HITACHI

CONTROLLERS FOR PACKAGED



Technical Catalogue

PC-ARFP1E
PC-ARH1E
PC-AWR
PC-ALH3
PC-ALHC1
PC-ALHD1
PC-ALHP1
PC-ALHZ1
PSC-A64GT
PSC-A32MN
PSC-A64S
PSC-A16RS
CSNET MANAGER 2
CSNET Lite
HC-A64NET
HC-A(8/64)MB
HC-A16KNX
KNX001
HARC-BX E (A/B)
BAC(001/002)
PSC-A1T
PSC-6RAD
PC-A1IO
PSC-5HR
PC-AMTB
THM-R2AE
WALL SUPPORT 2
STAND SUPPORT
DIN RAIL SUPPORT
PCC-1A
PRC-(10-30)E1
NET CONFIGURATION KIT

HITACHI

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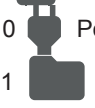
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1. Controllers code list

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1.1 General information

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HITACHI makes every effort to offer correct, up-to-date documentation. Despite this, printing errors cannot be controlled by HITACHI and are not its responsibility.

As a result, some of the images or data used to illustrate this document may not refer to specific models. No claims will be accepted based on the data, illustrations and descriptions included in this technical documentation.

No type of modification must be made to the equipment without prior, written authorization from the manufacturer.

NOTE

This equipment has been designed for standard air conditioning for human beings. For use in other applications, please contact your HITACHI dealer or service contractor.

1.2 Applied symbols

During normal air to water heat pump system design work or unit installation, greater attention must be paid in certain situations requiring particular care in order to avoid damage to the unit, the installation or the building or property.

Situations that pose a risk to the safety of those in the surrounding area or to the unit itself are clearly indicated in this technical documentation.

A series of special symbols are used to clearly identify these situations.

Pay close attention to these symbols and to the messages following them, as your safety and that of others depends on it.

DANGER

- ***The text following this symbol contains information and instructions relating directly to your safety.***
- ***Not taking these instructions into account could lead to serious, very serious or even fatal injuries to you and others.***

In the texts following the danger symbol you can also find information on safety procedures during unit installation.

CAUTION

- *The text following this symbol contains information and instructions relating directly to your safety.*
- *Not taking these instructions into account could lead to minor injuries to you and others.*
- *Not taking these instructions into account could lead to unit damage.*

In the texts following the caution symbol you can also find information on safety procedures during unit installation.

NOTE

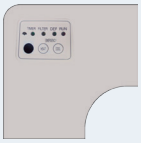
- *The text following this symbol contains information or instructions that may be of use or that require a more thorough explanation.*
- *Instructions regarding inspections to be made on unit parts or systems may also be included.*

1.3 Product guide

1.3.1 Individual remote controls

Name	Description	Code	Figure
PC-ARFP1E	Remote control with timer	70510003	
PC-ARH1E	Simplified remote control	70510004	
PC-AWR	Wireless remote control	60291969	

Receiver kit for combination with wireless remote control switch

Receiver kit name	Indoor unit application	Compatible wireless remote control	Code	Figure
PC-ALH3	RCI-FSN4	PC-AWR	60291767	on the panel 
PC-ALHC1	RCIM-FSN4E	PC-AWR	70590906	
PC-ALHD1	RCD-FSN3	PC-AWR	60292053	
PC-ALHP1	RPC-FSN3	PC-AWR	60291823	
PC-ALHZ1	RPI-FSN(3/5)(P)E, RPIM-FSN4E(-DU), RPF(I)-FSN2E RCI-FSN4, RCIM-FSN4E, RCD-FSN3, RPK-FSN(H)3M RPC-FSN3(E)	PC-AWR	60292245	on the wall 

NOTE

RPK-FSN(H)3M indoor unit comes with a built-in wireless receiver kit in the panel.

1.3.2 Centralised remote controls

Name	Description	Code	Figure
PSC-A64GT	Touch screen central station	60291730	
PSC-A32MN	Touch screen central station mini	7E511001	
PSC-A64S	Centralised remote control	60291479	
PSC-A16RS	Centralised ON/OFF control	60291484	

1.3.3 Building air conditioning controls

Name	Description	Code	Figure
CSNET Manager 2 T10	Centralised control with a touch interface of 10 inches which runs CSNET Manager 2 software to control the indoor units.	7E512203	
CSNET Manager 2 T15	Centralised control with a touch interface of 15 inches which runs CSNET Manager 2 software to control the indoor units.	7E512206	
CSNET Manager 2 SL (Screen less)	Screen less centralised control which runs CSNET Manager 2 software into a PC to control the indoor units.	7E512204	
CSNET Lite	Standalone centralized controller able to control 64 indoor units via a web interface. This device can also be used as HLINK interface by “CSNET Manager 2” devices.	7E512205	
HC-A64NET	H-LINK gateway used by CSNET Manager 2 to communicate with indoor units (Max. 64 indoor units)	7E512200	

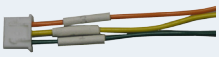
1.3.4 Gateways for building management systems (BMS)

Name	Description	Code	Figure
HC-A8MB	Integration with installation with intelligent control (Building Management System) Gateway Interface to MODBUS systems (Max. 8 indoor units).	7E513204	
HC-A64MB	Integration with installation with intelligent control (Building Management System) Gateway Interface to MODBUS systems (Max. 64 indoor units).	7E513205	
HC-A16KNX	Integration with installations with intelligent control (BMS). Gateway Interface to KNX systems.	7E513300	
KNX001	Integration with installations with intelligent control (BMS) through CSNET Manager 2 / CSNET Lite. Gateway Interface to KNX systems.	7E512100	
HARC-BX E (A)	Integration with installation with intelligent control (Building Management System) Gateway Interface to LONWORKS systems. (H-LINK I communication) (Max. 64 units with 8 parameters).	60290874	
HARC-BX E (B)	Integration with installation with intelligent control (Building Management System) Gateway Interface to LONWORKS systems. (H-LINK I communication) (Max. 32 units with 16 parameters).	60290875	
BAC001	BACnet gateway connectable to HC-A8MB.	7E512103	
BAC002	BACnet gateway connectable to HC-A64MB, CSNET Manager 2 / CSNET Lite.	7E512104	

1.3.5 Control support devices

Name	Description	Code	Figure
PSC-A1T	Programmable timer	60291482	
PSC-6RAD	H-LINK RAC Adapter	60063017	
PC-A1IO	Integration of external equipment into H-LINK	7E519000	
PSC-5HR	H-LINK Relay	60291105	
PC-AMTB	Connection board for multitenant buildings	7E519200	
THM-R2AE	Remote temperature sensor (THM4)	7E299907	

1.3.6 Control accessories

Name	Description	Code	Figure
Wall support 2	Wall mounted support (for both CSNET Manager 2 T10/T15)	7E512302	
Stand support	Stand mounted support (for both CSNET Manager 2 T10/T15)	7E512301	
DIN Rail support	DIN Rail support (for CSNET Manager 2 SL)	7E512303	
PCC-1A	Optional function connector	70590901	
PRC-10E1	2P-Extension cord (10 metres)	7E790211	
PRC-15E1	2P-Extension cord (15 metres)	7E790212	
PRC-20E1	2P-Extension cord (20 metres)	7E790213	
PRC-30E1	2P-Extension cord (30 metres)	7E790214	
Net Configuration Kit	Net configuration kit for HC-A(8/64)MB and HC-A64NET	7E512306	

1.3.7 Other devices compatible with HITACHI Air Conditioning systems

In addition to all the aforementioned HITACHI controls, there are some non-HITACHI devices for combination with HITACHI Air Conditioning systems. These are the following:

- HITACHI-AIRZONE gateway (HTI11001): Applicable to HITACHI RPI(M) units providing compatibility with the AIRZONE systems, zone-based climate-control systems.
- Power meter: Siemens and Socomec Countis power meter for CSNET Manager 2 and CSNET Lite.
- FIDELIO gateway: Solution offered by Intesis Software company which transfers HITACHI system data into FIDELIO data.

2. Control solutions

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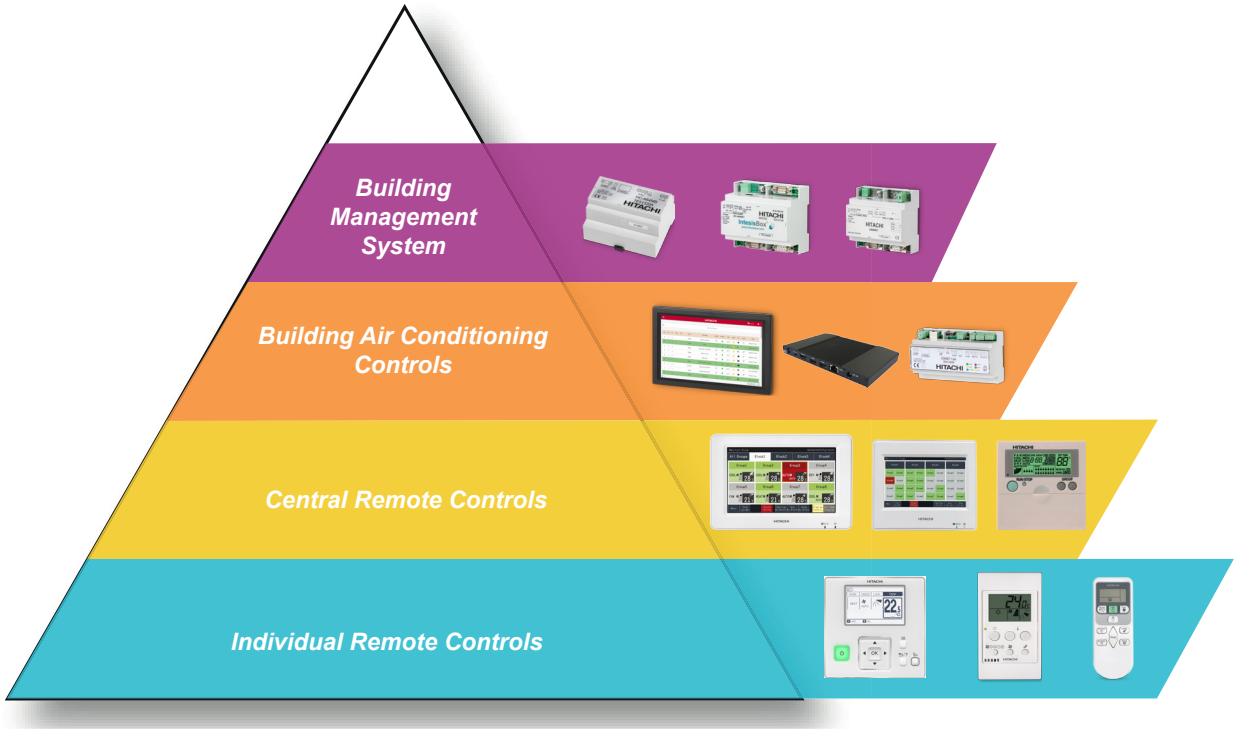
2.1 Introduction

Control devices used for air conditioning control belong to one the following four categories, depending on their type of control:

- Individual remote controls, which control each indoor unit separately.
- Centralised remote controls, which control several indoor units in the same space (office, etc.) from a single device.
- Building air conditioning controls (CSNET Manager 2 / CSNET Lite), which control all the indoor units of the entire building.
- Intelligent building gateways (BMS - Building Management System), which allow the interaction of intelligent building controllers with HITACHI air conditioning systems.

NOTE

The Building Management Systems (BMS) mentioned in this manual are also commonly known as Building Automation Systems (BAS).



Control hierarchy

Different types of remote controls can be used depending on the number of units to be controlled.

Individual remote controls

- Recommended to be always installed for the local control of each unit.
- The indoor units should be grouped in remote control groups with a maximum of 16 indoor units for each group.

Centralised remote controls

- Centralised remote controls are suitable for controlling a high number of indoor units distributed throughout a whole floor of a building. Anyway, several floors can also be controlled by these type of controls.
- The indoor units are grouped in different remote control groups, and the maximum number of groups is different depending on the device.

Building AC controls (CSNET Manager 2 / CSNET Lite)

- These controls are recommended for installations with a high number of indoor units distributed through several floors which need to be separately controlled.
- The device HC-A64NET / CSNET Lite can be installed at any point of the building. They can be connected to the CSNET Manager 2 for centralised control of the building.
- CSNET Manager 2 is accessible from inside/outside the building through a web browser if the network configuration is properly set-up.

Building management system (BMS)

- Recommended for use in intelligent buildings with integral control systems (building automation, security, access, etc.).
- Building Management systems (BMS) are based on information transmission protocols like LONWORKS, MODBUS, KNX, BACnet or FIDELIO.
- There are two different methods for controlling the units:
  - Via Building AC controls (CSNET Manager 2 / CSNET Lite) with the protocols MODBUS, FIDELIO or KNX.

    NOTE

    BMS is connected to CSNET Manager 2 / CSNET Lite, thus all their advantages can also be used in this system control.

  - Via direct connection with the protocols BACnet, LONWORKS, KNX or MODBUS.

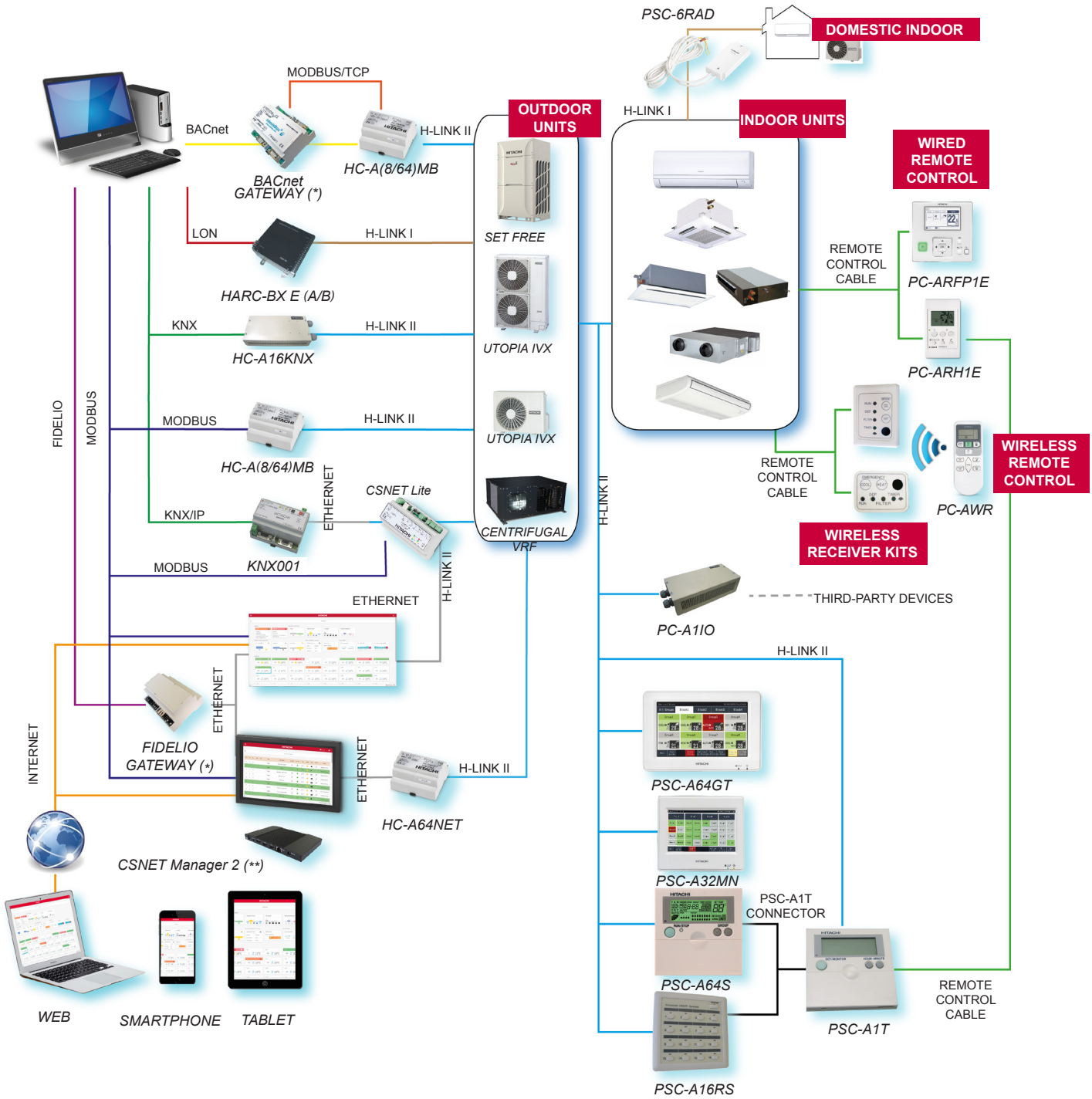
    NOTE

    BMS controller is limited to the comfort control of the building room.

2.2 Great control possibilities

HITACHI offers a wide range of control systems, from the most simple to the most sophisticated, providing smart management of the products and systems, at local or remotely.

The following examples and illustrations in the following chapters are for illustrative purpose and not cover all the possible installations.



NOTE

- *(*): Field-supplied components. For those applications, HITACHI recommends the use of Intesis Software Company fidelio gateways.*
- *(**): CSNET Manager 2 / CSNET Lite is also compatible with KNX001 and can be used with BAC001/BAC002.*
- *There are more control support devices that can be used with HITACHI systems. They are not included in the above diagram to provide a better understanding. Refer to the following pages for their specific information.*

2.2.1 Individual control systems

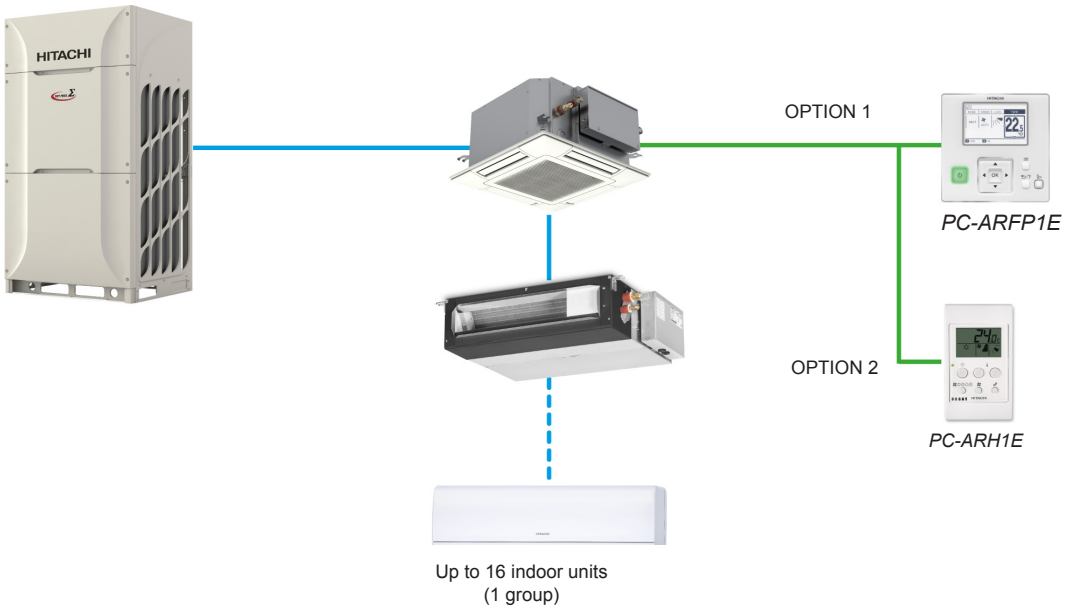
HITACHI air conditioning systems are supported by different individual remote controls covering the main customer needs.

The individual remote controls are recommended to be always installed for the local control of each unit. Up to a maximum of 16 indoor units can be controlled in simultaneous operation by grouping them in one remote control group.

They can be divided in two main groups: wired and wireless remote controls.

2.2.1.1 Wired remote controls

These remote controls require the electrical connection between the remote control and the indoor unit. The remote control is intended for install on the wall.



Option 1: PC-ARFP1E

If specific functionality is required, HITACHI recommends the use of these wired remote controls. A high number of optional functions can be set by means of the wired remote controls.

PC-ARFP1E is the individual remote control of HITACHI, with an attractive design, excellent display thanks to its large sized LCD screen and with new additional optional functions.

Option 2: PC-ARH1E

Simplified and easy to use wired remote control with functions restricted to basic customer needs. The best solution for installations such as hotel applications which are frequented by many different people.

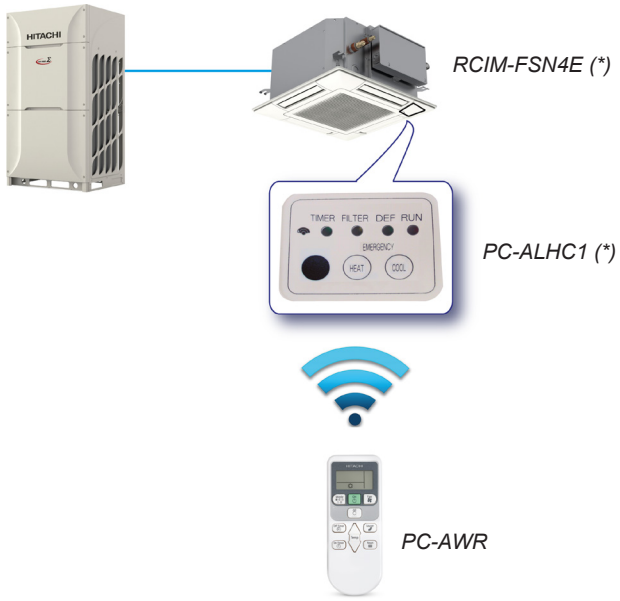
2.2.1.2 Wireless remote controls

Wireless remote controls are the most suitable option for those users who are only interested in basic functions (ON/OFF, setting temperature, fan speed and louver direction,...). Optional functions cannot be set by wireless remote controls.

These remote controls do not require electrical connection between the remote control and the indoor unit, since they are wireless. Anyway, they require the installation of the wireless receiver kit which receives the signal from the wireless remote control and sends it to the indoor unit.

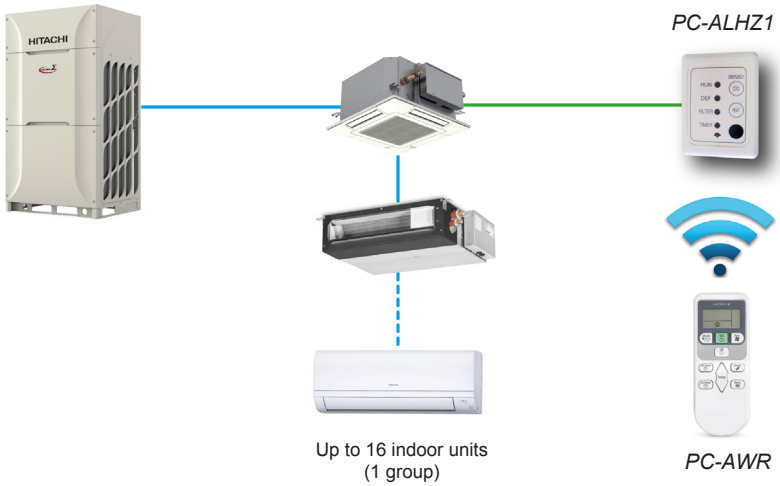
There are two types of wireless receiver kits depending on its installation place: Panel receivers and Wall receivers.

◆ Panel receivers



(*): This example shows the case of the wireless receiver kit PC-ALHC1 which corresponds to the indoor unit RCIM- FSN4E. For the rest of wireless receiver kits and their corresponding indoor unit, refer to the previous chapter.

◆ Wall receivers



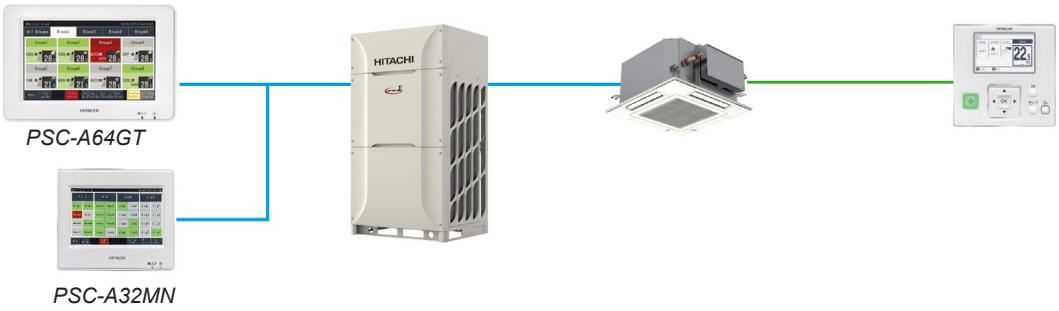
2.2.2 Centralised control systems

Centralised remote controls are ideal for use in installations subject to random occupation, enabling indoor units to be classified in groups by each considered zone.

HITACHI recommends the use of centralised remote controls for controlling a high number of indoor units distributed throughout one floor of a building.

2.2.2.1 Touch screen central stations (PSC-A64GT / PSC-A32MN)

These central stations offer high resolution touch screen display with easy control of up to 160 indoor units in the same H-LINK line. Both touch screens comes with incorporated timer option.

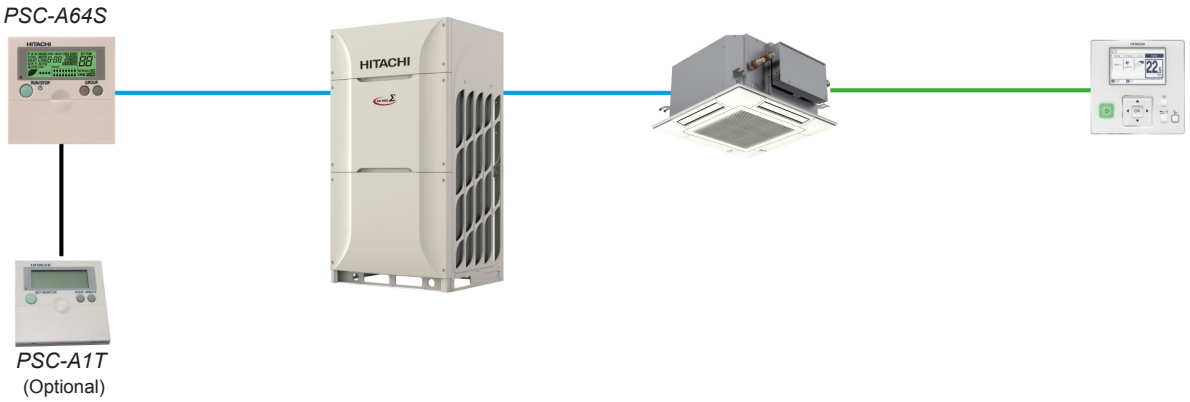


- PSC-A64GT: Easy to use large 8.5” touch screen with great functionality. Up to 64 groups can be created.
- PSC-A32MN: Low cost version of the PSC-A64GT touch screen central station. The PSC-A32MN offers the main functionality of PSC-A64GT, with a smaller touch screen (5.0”). Up to 32 groups can be created.

2.2.2.2 Standard centralised remote control (PSC-A64S)

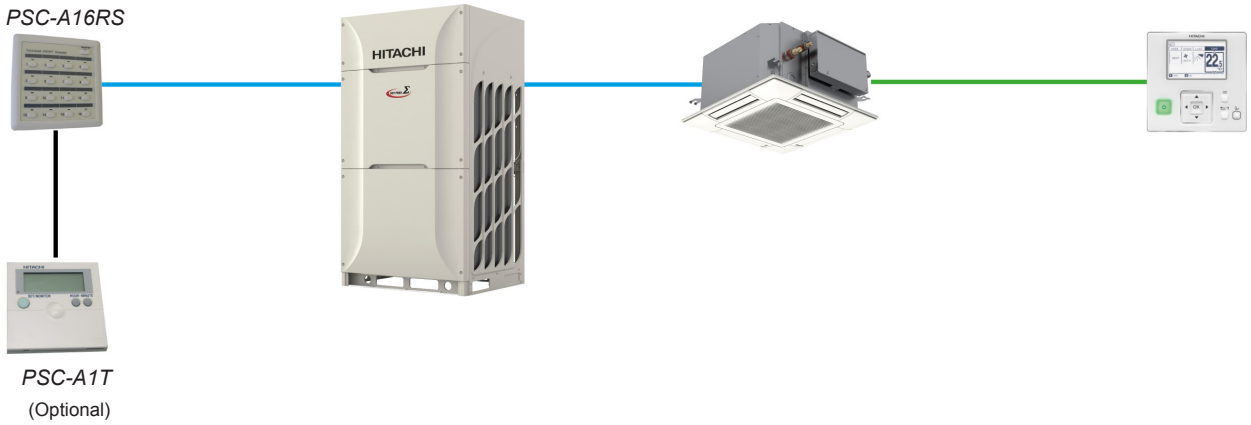
PSC-A64S provides individual control of up to 4 zones with a maximum number of 16 groups per zone. Therefore, up to 64 groups can be created. Several optional functions can also be used by setting input/output signals.

Connecting a PC-A1T Timer, schedule operation can be programmed for all the groups (zones).



2.2.2.3 Centralised ON/OFF control (PSC-A16RS)

PSC-A16RS is an user-friendly product that provides individual or simultaneous ON/OFF control of up to 16 groups of units. Connecting a PC-A1T Timer, schedule operation can be programmed for all the groups.



2.2.3 Building AC control systems

Building air conditioning control systems are recommended for installations with a high number of indoor units distributed through several floors which need to be separately controlled.

Furthermore, these control systems add many specific functions that are not available with other remote controls, as “Cold Draft”, “Power meter option”, “Modbus connection”, “Building layout”, etc.

2.2.3.1 CSNET Manager 2 / CSNET Lite

CSNET Manager 2 with touch screen (T10/T15) is a good solution when there is no computer in the installation with centralised control. In this case, with the use of its H-LINK gateway (HC-A64NET / CSNET Lite), all the installation parameters can be easily accessible through the touch screen.

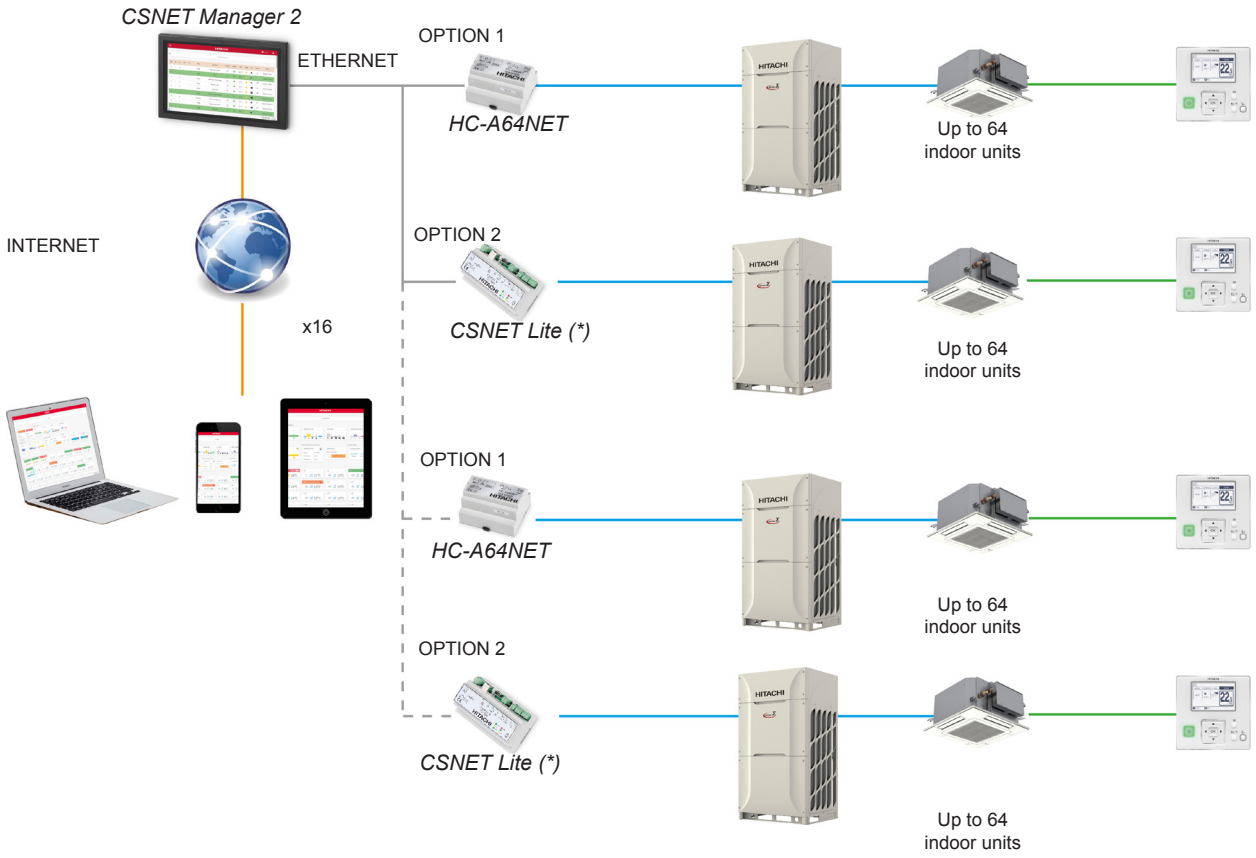
CSNET Manager 2 SL and CSNET Lite are both screenless devices that require a computer to manage the software.

One CSNET Manager 2 can control up to 16 devices in different H-LINK lines, and the total quantity of controlled indoor units can be up to 1024 indoor units (with same limitations).

In addition to the large quantity of functions habitually offered through the building air conditioning controls, CSNET Manager 2 / CSNET Lite brings additional functions like:

- Heating Fan stop during Thermo-OFF (Heat draft).
- Outdoor unit control (night mode, power control,...).
- Hotel Application (Only for CSNET Manager 2)
- Interlock
- Power Meter Multitenant
- Order Log
- Set-Back
- ICS Calender (Only for CSNET Manager 2)
- Individual Timer
- Fidelio (Only for CSNET Manager 2)
- Inputs and outputs
- Web Server

◆ Single CSNET Manager 2 system



Option 1: CSNET Manager 2 and its H-LINK gateway (HC-A64NET)

This option allows the control of up to 64 indoor units per each H-LINK line.

Option 2: CSNET Lite hardware interface

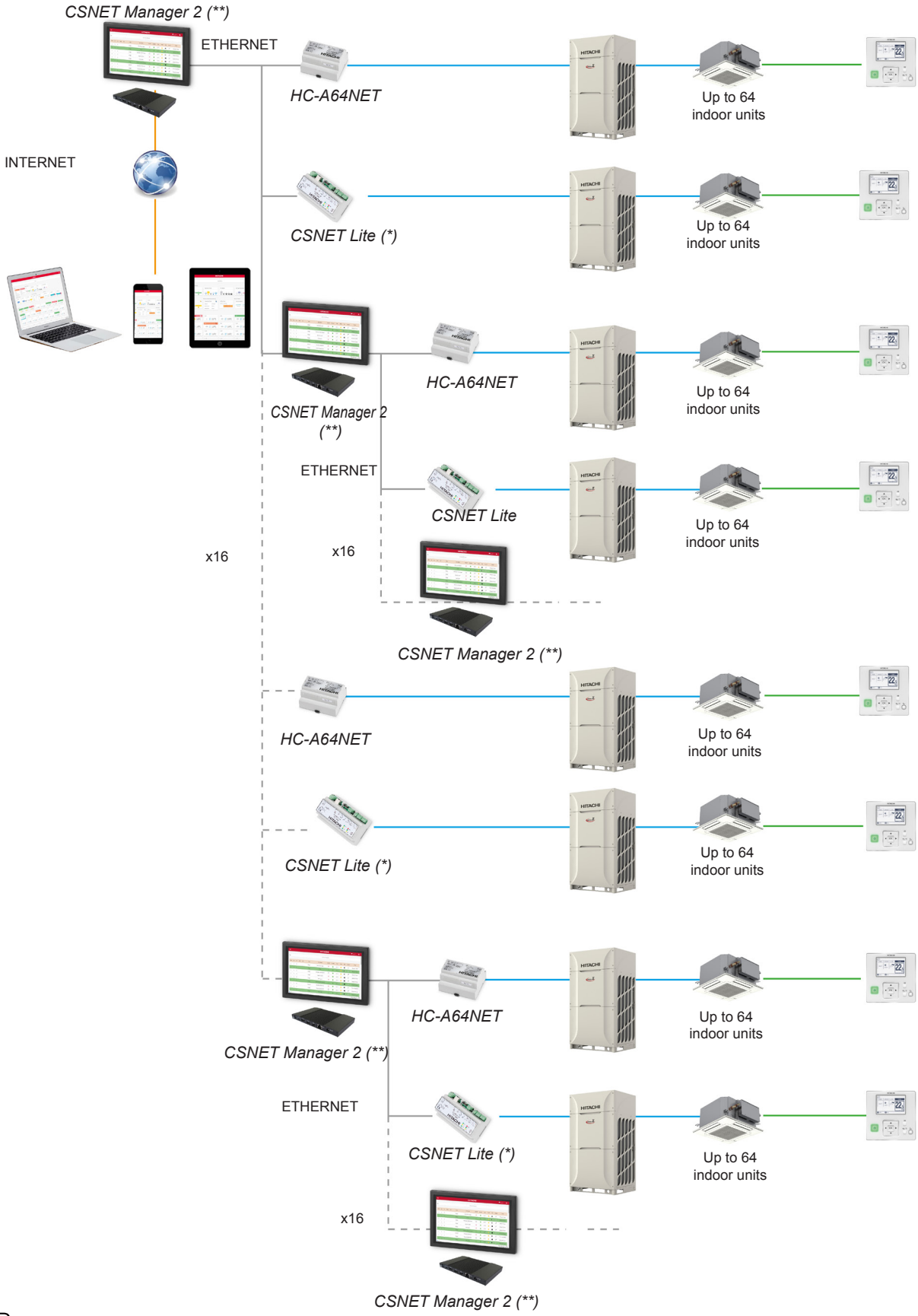
Combining the CSNET Manager 2 with the CSNET Lite hardware the control of up to 64 indoor units per each H-LINK line is allowed.

NOTE

(*) Direct access to the CSNET Lite from the internet is possible.

◆ Multiple CSNET Manager 2 system

This type of installation can be useful in order to have different access points in the entire installation. Recommended for very large facilities.



NOTE

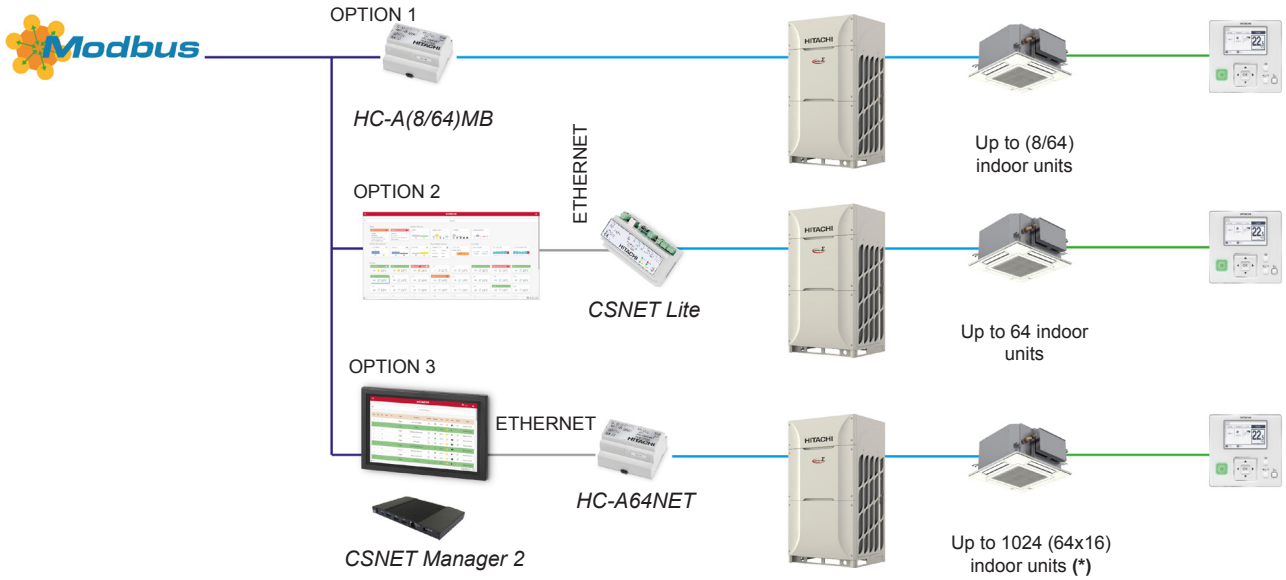
- *One CSNET Manager 2 can be connected to 16 devices maximum, mixing HC-A64NET, CSNET Lite and another touch screen.*
- *(*) Direct access to the CSNET Lite from the internet is possible.*
- *(**) See chapter 6.1.7 Connectable devices*

2.2.4 Standard protocol interfaces for building management systems (BMS)

HITACHI offers a wide range of control interfaces for the integration of the air conditioning equipment and controls into the BMS systems.

2.2.4.1 MODBUS interface

Integrated control system for connection between HITACHI air conditioning systems and BMS systems.



Option 1: Gateway interfaces to MODBUS systems (HC-A(8/64)MB)

Easy integration of HITACHI Air Conditioning installations to a MODBUS BMS by providing full management control of indoor unit to the BMS controllers.

- HC-A8MB: max. 8 indoor units.
- HC-A64MB: max. 64 indoor units.

Option 2: CSNET Lite hardware interface

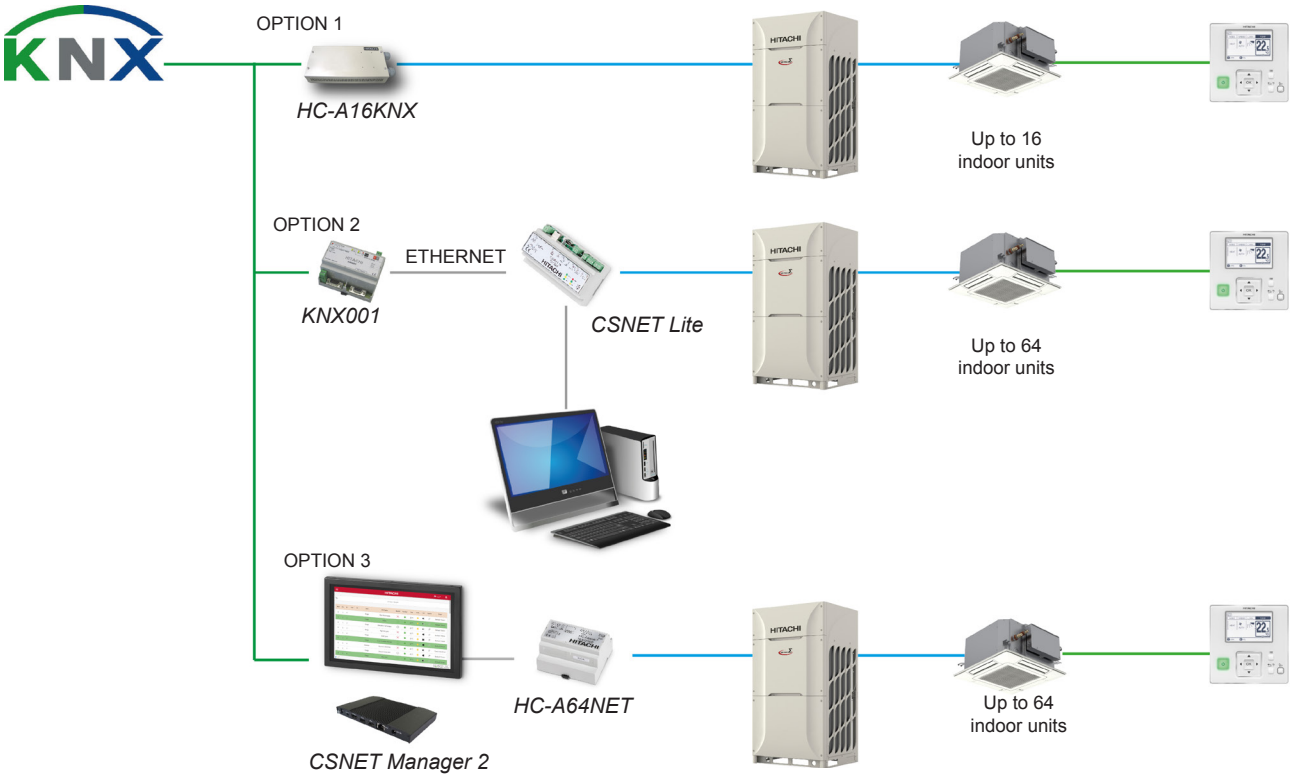
If CSNET Lite is installed on site, a Modbus IP option can be activated to create a link with the existing BMS system. The Modbus IP data can be read from the CSNET Lite interface, through the Ethernet line. It is not necessary to run the CSNET Manager 2 client software permanently to read the Modbus data. Indoor unit quantity shall be limited to 64 per CSNET Lite.

Option 3: CSNET Manager 2 and its H-LINK gateway (HC-A64NET)

The Modbus IP option can be activated from the CSNET Manager 2 touch screen and the Modbus data are then read from the CSNET Manager 2 device (Touch screen or screeless interface).

2.2.4.2 KNX interface

KNX is an European Standard Protocol used for household and industrial Building Management System (BMS). Complete integration between HITACHI air conditioning systems and KNX systems can be done through HITACHI KNX gateways.



Option 1: Integration to KNX systems through HC-A16KNX

The integration between HITACHI air conditioning H-LINK systems and KNX system is directly performed by the HC-A16KNX interface.

Option 2: Integration to KNX systems through CSNET Lite (CSNET Lite + KNX001)

This option allows to take advantage of the CSNET Manager 2 functionality, connecting the CSNET Lite hardware to the KNX001 gateway.

In that case the Modbus option of CSNET Lite shall be activated and indoor unit quantity is limited to 64.

Option 3: Integration to KNX systems (KNX001) through CSNET Manager 2

This option allows to take advantage of the CSNET Manager 2 functionality, connecting the CSNET Manager 2 hardware to the KNX001 gateway.

In that case the Modbus option of CSNET Manager 2 shall be activated and indoor unit quantity is limited to 64.

2.2.4.3 LONWORKS interface

Monitoring and control functions from LONworks networks can be easily integrated to the HITACHI air conditioning systems with the installation of the gateway interface HARC-BX E (A/B).



- HARC-BX E (A) allows the control of 64 indoor units and 8 outdoor units. It can also control 7 points per indoor unit.
- HARC-BX E (B) allows the control of 32 indoor units and 8 outdoor units. It can also control 14 points per indoor unit.

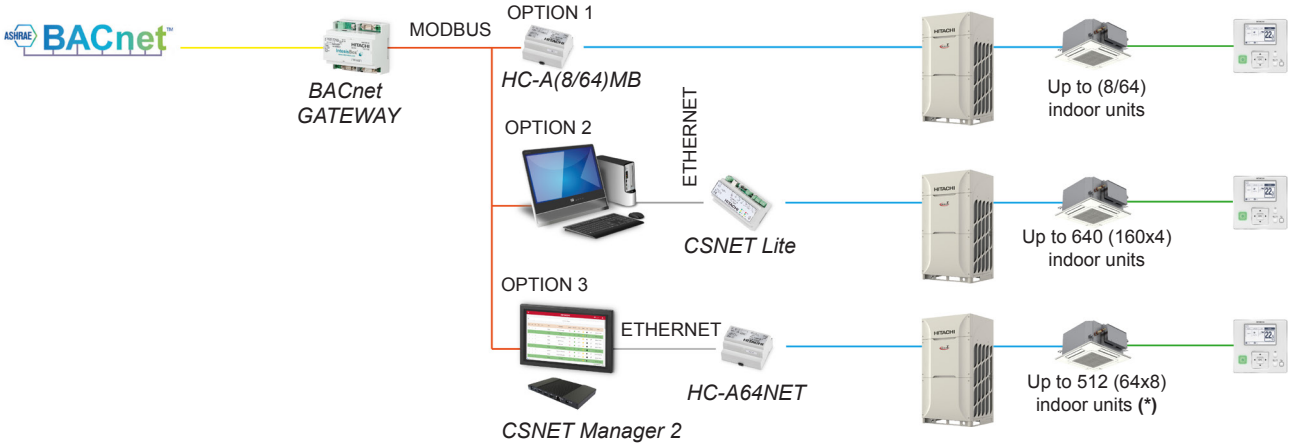
2.2.4.4 BACnet gateway (BAC001 / BAC002)

The integration of HITACHI systems into a BACnet installation can be carried out by using a double gateway system:

- HITACHI MODBUS gateway: HC-A(8/64)MB, CSNET Lite or CSNET Manager 2 (HC-A64NET / CSNET Lite is required for CSNET Manager 2) which provide H-LINK data into a MODBUS protocol.
- BACnet gateway BAC001 or BAC002 which transfers MODBUS data into BACnet data.

BAC001 BACnet gateway connectable to HC-A8MB.

BAC002 BACnet gateway connectable to HC-A64MB, CSNET Lite or CSNET Manager 2.



Option 1: Gateway interfaces to MODBUS systems (HC-A(8/64)MB)

Easy integration of HITACHI Air Conditioning installations to MODBUS BMS protocol by providing full management control of indoor unit to the BMS controllers.

- BAC001 BACnet gateway connected to HC-A8MB: max. 8 indoor units.
- BAC002 BACnet gateway connected to HC-A64MB: max. 64 indoor units.

Option 2: CSNET Lite hardware interface (**)

BAC002 BACnet gateway connected to CSNET Lite. This option allows to take advantage of the CSNET Manager functionality.

If CSNET Lite is installed on site, a Modbus option can be activated to create a link with the existing BMS system. The Modbus data can be read from the CSNET Lite interface, through the Ethernet line. It is not necessary to run the CSNET Manager 2 client software permanently to read the Modbus data. Indoor unit quantity shall be limited to 64 per CSNET Lite.

Option 3: CSNET Manager 2 (HC-A64NET gateway is required for CSNET Manager 2) (**)

BAC002 BACnet gateway connected to CSNET Manager 2. This option allows to take profit of the great CSNET Manager 2 functionality, connecting it to its HC-A64NET gateway.

The Modbus option can be activated from the CSNET Manager 2 touch screen and the Modbus data are then read from the Touch screen IP (and not from the HC-A64NET).

NOTE

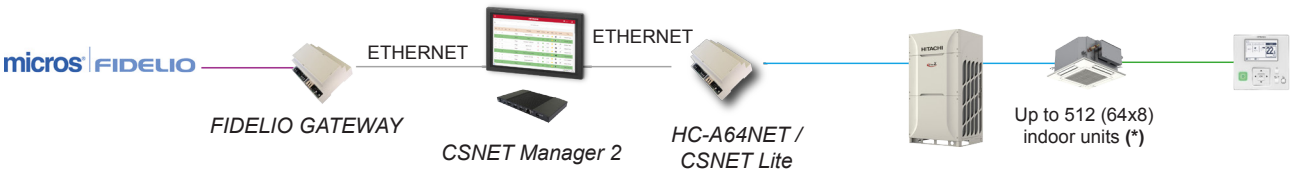
- *(*): Using CSNET Manager 2 with other CSNET Managers 2 or with CSNET Lite hardware the maximum number of controllable indoor units is increased up to 1024 indoor units.*
- *(**) BAC001 and BAC002 are compatible with CSNET Lite and CSNET Manager 2 with certain limitations.*

2.2.4.5 FIDELIO gateway for CSNET Manager 2

The integration of HITACHI systems into a FIDELIO installation can be carried out by using the CSNET Manager 2.

Standard FIDELIO gateway are available in the market which transfers HITACHI sytem data into FIDELIO data.

There are wide several solutions available in the market which should allow the transfer of collected data by HITACHI gateways into FIDELIO data. Anyway, HITACHI recommends the solution offered by Intesis Software company.



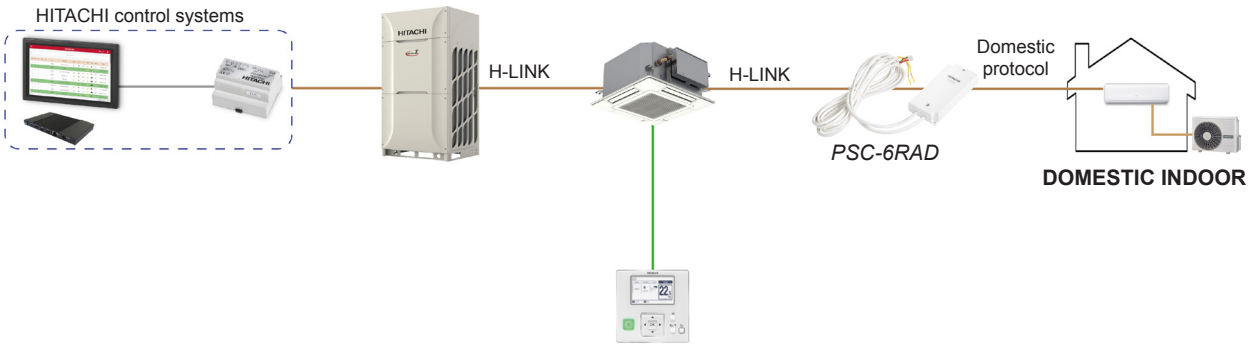
NOTE

(*): Using CSNET Manager 2 with other CSNET Managers 2 or with CSNET Lite hardware the maximum number of controllable indoor units is increased up to 1024 indoor units.

2.2.5 Other control possibilities

◆ Compatibility with HITACHI domestic units

HITACHI domestic units (RAC models) can be integrated into H-LINK systems by means of the PSC-6RAD adapter.



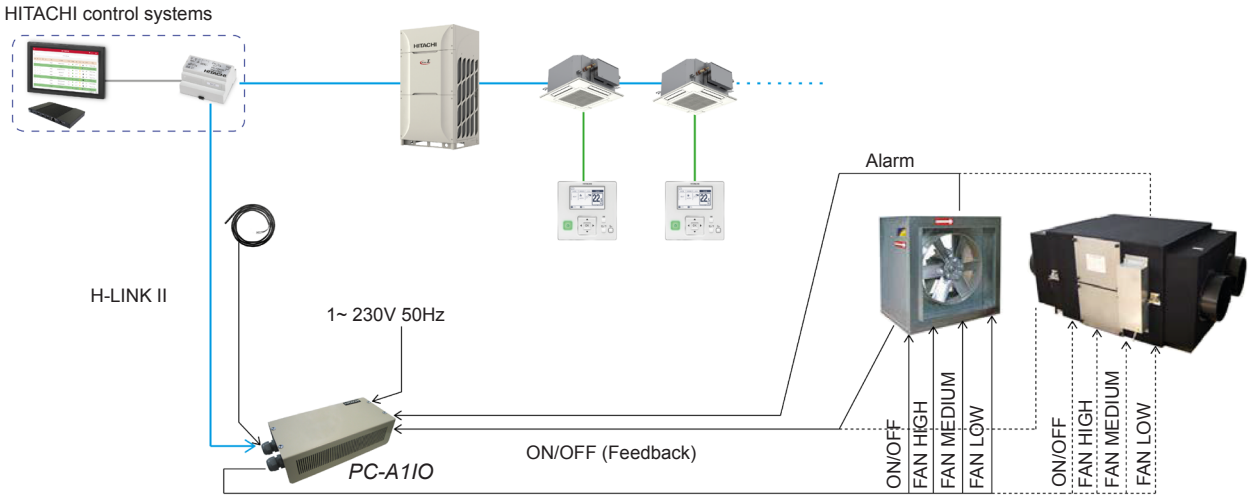
NOTE

Functions of H-LINK control devices can be limited when RAC units are connected through PSC-6RAD.

◆ Interaction with third-party devices

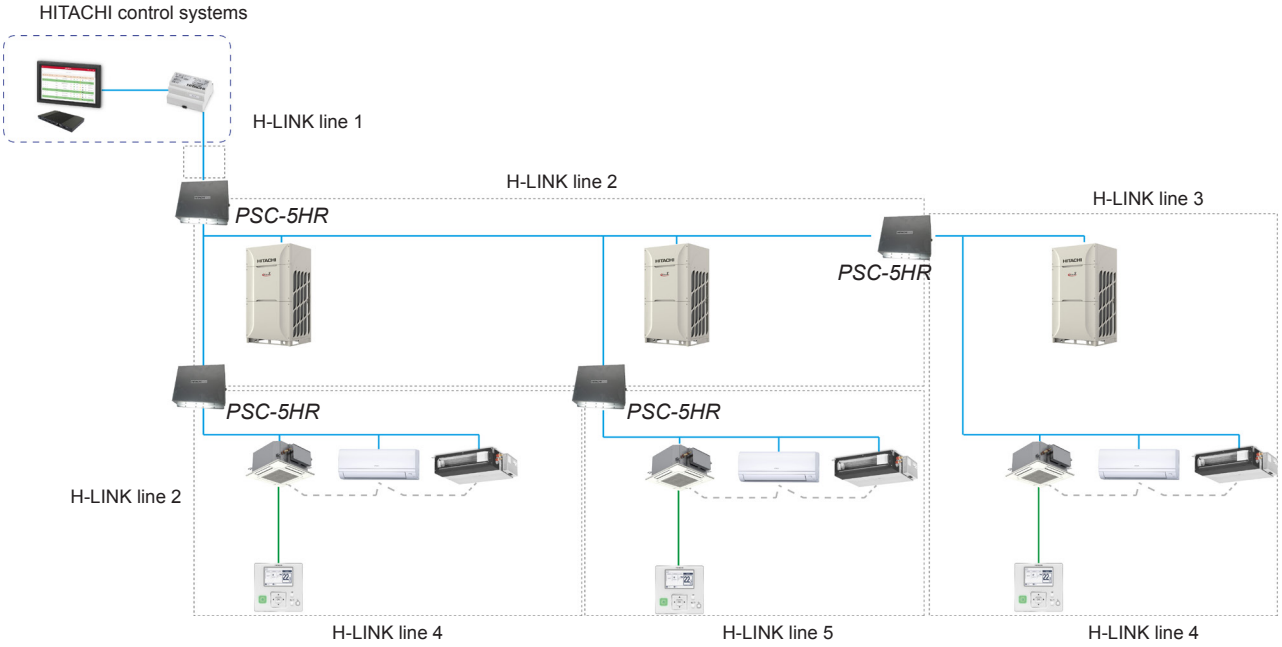
The integration of certain equipment to H-LINK bus can be performed by using the PC-A1IO device, giving the chance to monitor and control certain parameters of non-HITACHI equipment by HITACHI Building AC controls. For example: ventilation units, air handling units, etc.

Up to 16 PC-A1IO devices can be connected in an H-LINK line. At least one of this PC-A1IO devices must be set as master.



◆ Extension of the H-LINK line length

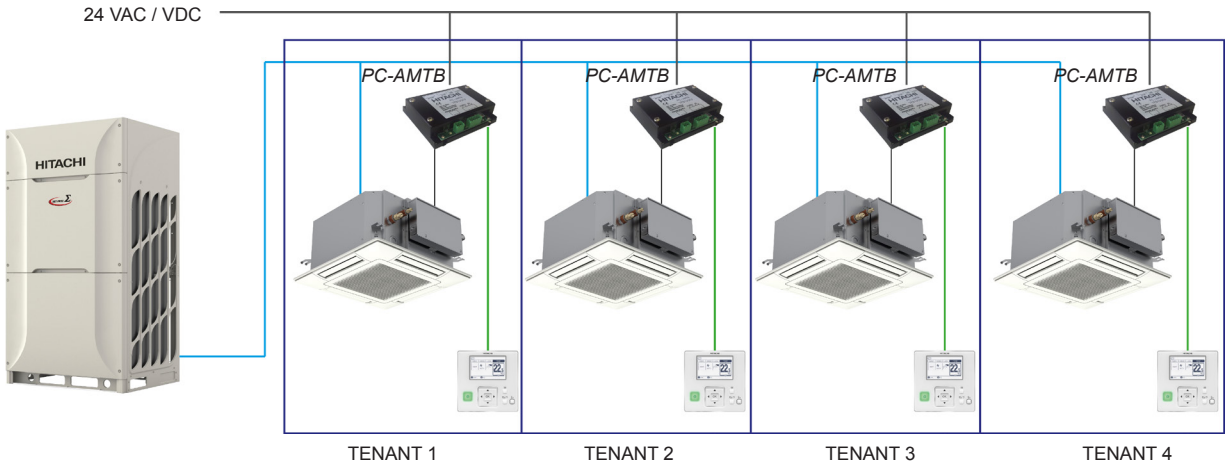
The maximum H-LINK electrical wiring length can be extended from 1,000 meters up to 5,000 meters by using four PSC-5HR devices as a maximum. Each PSC-5HR device allows an extra H-LINK wiring length of 1,000 meters.



◆ Multitenant installations

HITACHI offers the PC-AMTB control support for multitenant buildings (office buildings, multi dwelling, small hotels) with several indoor units of different tenants with a common shared outdoor unit.

Thanks to the PC-AMTB, the power supply of some indoor units can be shut-down without causing refrigerant problems, since the expansion valve of such indoor unit is controlled to adjust the refrigerant flow accordingly.



PC-AMTB is powered by a 24 V AC or DC power net independent from the tenant installation.

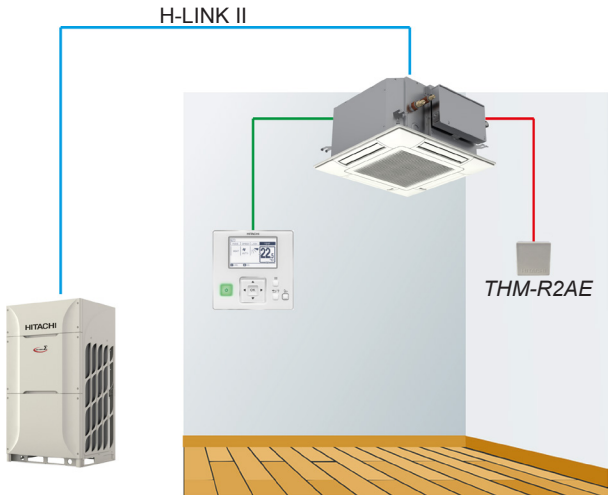
◆ Options to measure the room temperature

The room temperature value can be obtained from different ways:

1 By the air inlet temperature sensor of the indoor unit
2 By the temperature sensor of the remote controller (if available)
3 By the average between both previous values

Moreover, HITACHI offers the remote temperature sensor THM-R2AE in order to provide more options for the room temperature measurement. In this case, the room temperature value is obtained as follows:

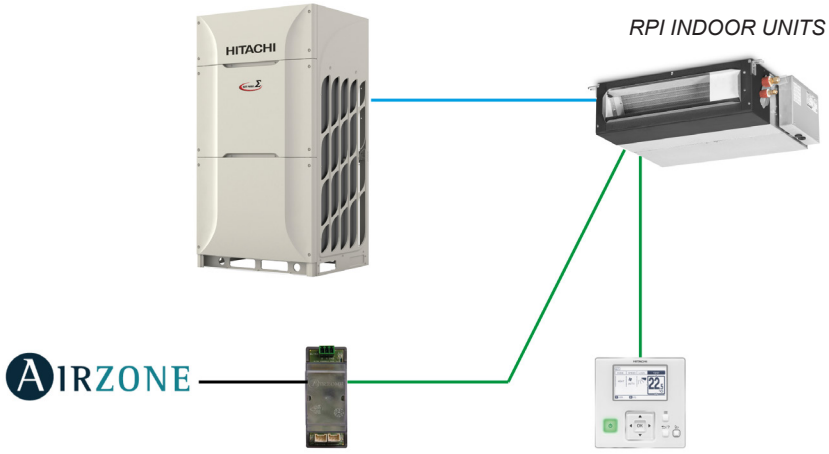
1 By the average between the air inlet temperature value at the indoor unit and the temperature detected at the remote sensor
2 By the temperature value at the remote sensor



◆ Zoning systems compatibility

Zoning systems, in a ducted air-conditioning installation, allows having an individual control of the temperature in each room. HITACHI ducted indoor units, RPI(M) units since FSN2E series, can be fully compatible with AIRZONE systems, zone-based climate-control systems, thanks to the HITACHI-AIRZONE communication gateway (HTI11001).

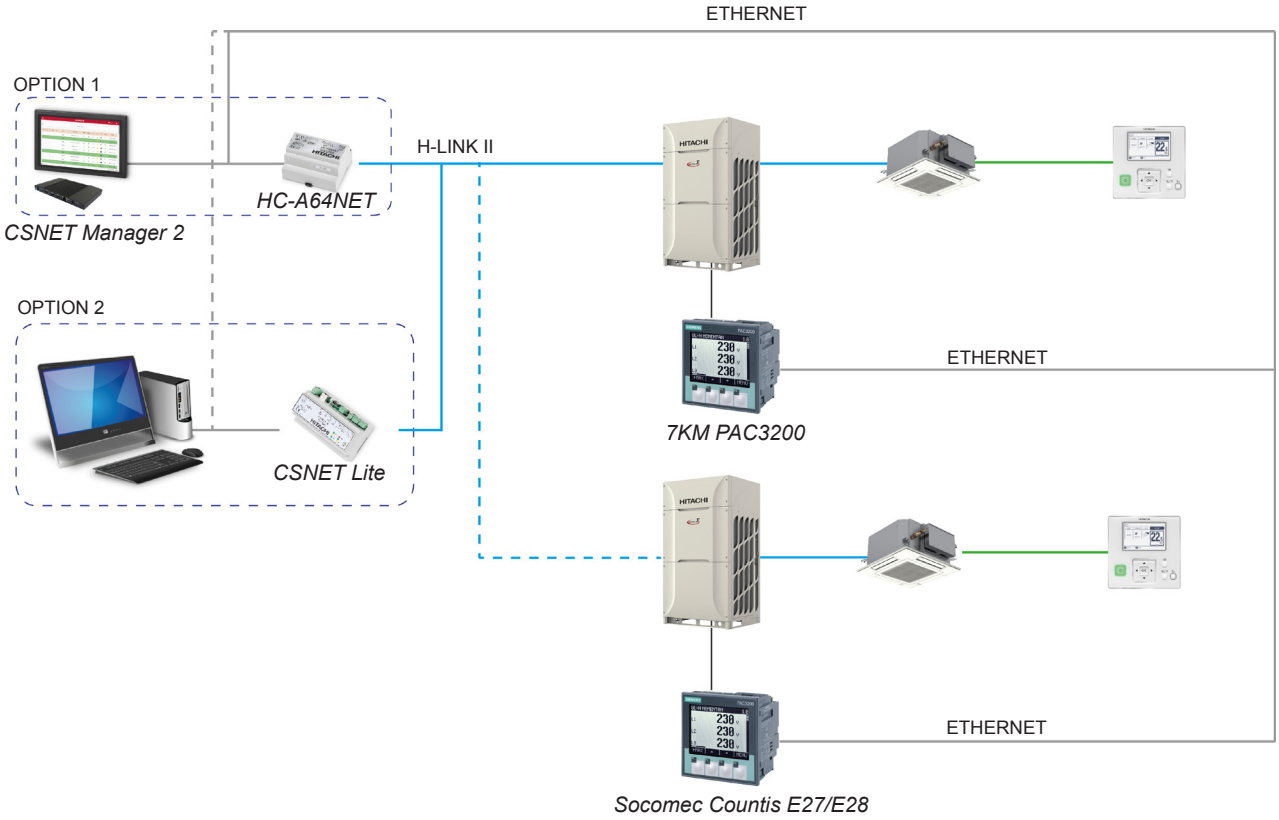
The HTI11001 is commercialised directly by AIRZONE.



◆ Power meter installations

Power Meter option by Building AC controls lets the user to configure a TCP-MODBUS power meter for each outdoor unit in order to read the power consumption in (kWh).

Suggested device tested by HITACHI is **7KM PAC3200** by Siemens or Socomec Countis E27/E28. Note that 7KM PAC3200 by Siemens only accepts one simultaneous connection for reading the data.



2.3 H-LINK II Specifications

2.3.1 Hardware characteristics

Elements	Specifications
Communication cable	Twin wire, without polarity
Communication system	Half-duplex
Communication method	Asynchronous
Transmission speed	9600 Bauds
Cable length Maximum	1000 m (5000 m if applied four PSC-5HR devices)
Recommended cable	Shielded twisted pair cable or shielded pair cable over 0.75 mm^2 (equivalent to KPEV-S)
Voltage	5 V DC

Either package units, water chillers or YUTAKI only can be connected in an H-LINK communication line. Mixed connection of package units and water chillers and YUTAKI is not permitted.

2.3.2 H-LINK II System

H-LINK II improves the characteristics of H-LINK I. The following table compares both systems and is valid for only 1000 meters of H-LINK line:

	H-LINK I	H-LINK II
Connectable outdoor units	16	64
Connectable indoor units	128	160
Units (outdoor and indoor)	-	176
Maximum connectable devices	145	200

H-LINK II has a limit of 200 connected devices and a maximum number of 160 indoor units. The following limitation must always be respected:

Outdoor units + Indoor units + other H-LINK devices ≤ 200

Therefore, in a case of 64 outdoor units connected to the same H-LINK, only 136 other elements may be connected (including indoor units and control systems).

Number of outdoor units	Maximum number of indoor units and control systems
1	64
20	160
40	160
50	150
60	140
64	136

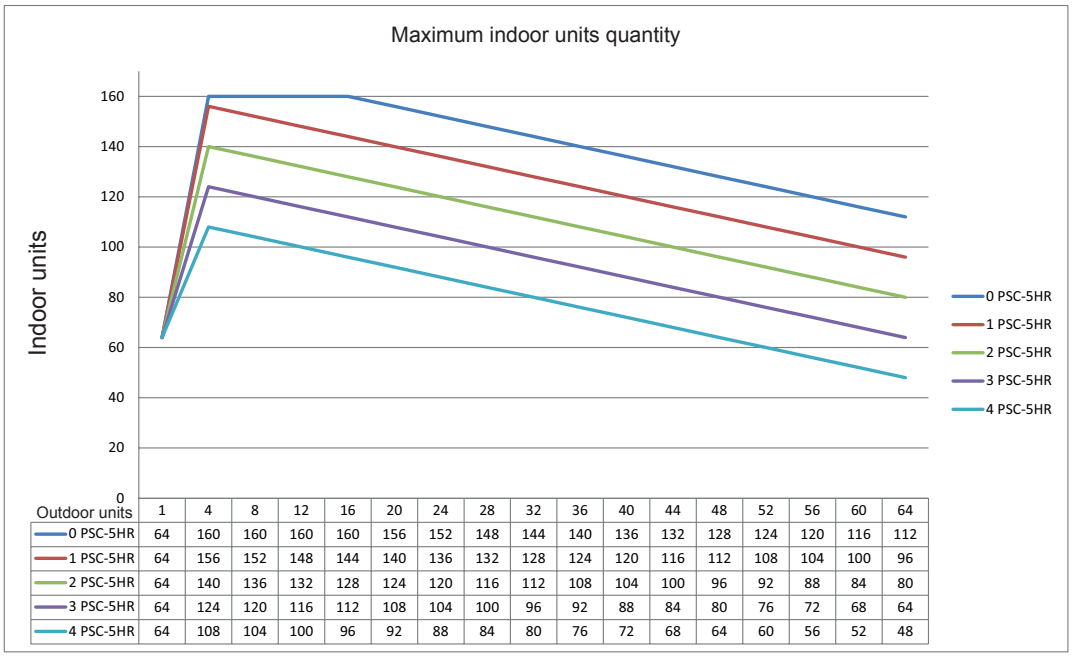
◆ Restrictions when using PSC-5HR accessory

H-LINK line length could be up to 1000 meters. It can be increased up to 5000 meters using up to 4 PSC-5HR devices. Each of them adds 1000 meters to the line, affecting the quantity of indoor units that can be connected to the same H-LINK.

Each H-LINK line repeater (PSC-5HR) counts as 16 indoor units. The following table summarizes the relation between the quantity of PSC-5HR devices and the maximum number of indoor and outdoor units allowed in each case.

Number of PSC-5HR	Maximum length of H-LINK	Maximum number of indoor and outdoor units
0	1000 meters	176
1	2000 meters	160
2	3000 meters	144
3	4000 meters	128
4	5000 meters	112

Therefore, considering the previous maximums and the number of PSC-5HR devices, the maximum number of indoor units with one central control is shown on the following table and graphic.



Outdoor units	1	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64
0 PSC-5HR	64	160	160	160	160	156	152	148	144	140	136	132	128	124	120	116	112
1 PSC-5HR	64	156	152	148	144	140	136	132	128	124	120	116	112	108	104	100	96
2 PSC-5HR	64	140	136	132	128	124	120	116	112	108	104	100	96	92	88	84	80
3 PSC-5HR	64	124	120	116	112	108	104	100	96	92	88	84	80	76	72	68	64
4 PSC-5HR	64	108	104	100	96	92	88	84	80	76	72	68	64	60	56	52	48

2.3.3 H-LINK I & H-LINK II Compatibility

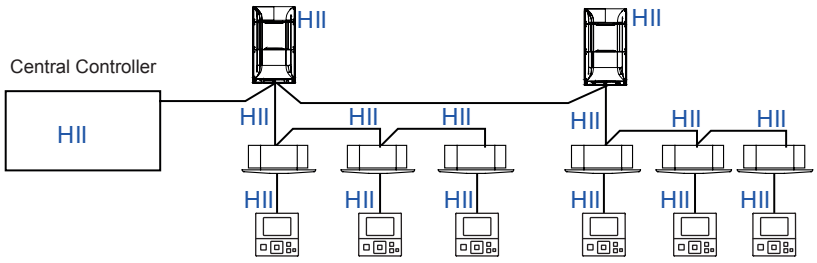
All the controls shown in this document work with H-LINK II except HARC-BX E (A/B) and PSC-6RAD. However, all the H-LINK II controls can also work with H-KINK I units.

H-LINK I unit and H-LINK II unit can be mixed in the same bus without any adapter. Anyway, refer to the following system samples to realise the existing limitations in each case.

Legend:

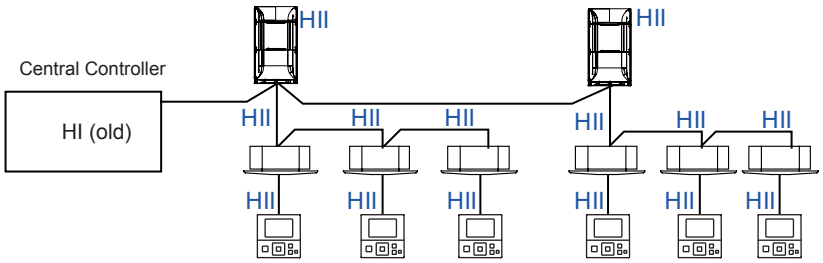
- HII: H-LINK II
- HI (old): H-LINK I

1 In case of Units and Central Controller are H-LINK II type



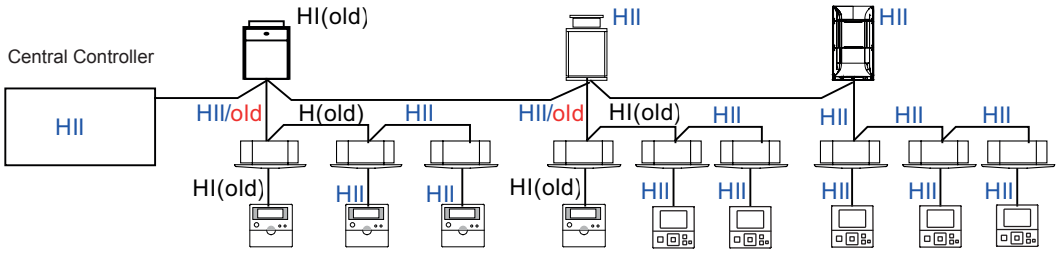
Refrigerant cycle range	0-63
Indoor address range	0-63
Connectable indoor units	160 units
Maximum connected devices	200 units

2 In case of Central Controller is H-LINK I type



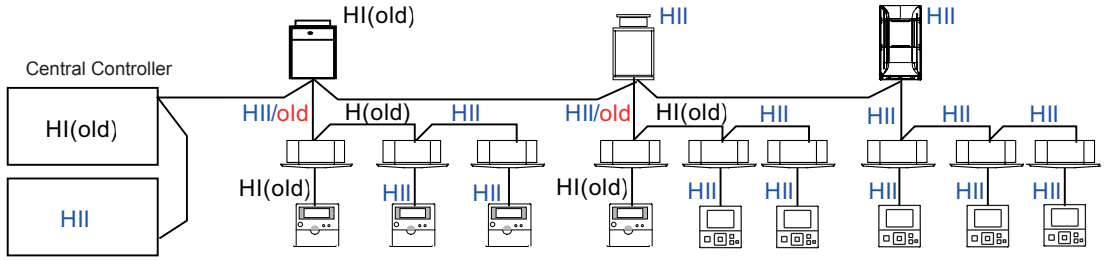
Refrigerant cycle range	0-15
Indoor address range	0-15
Connectable indoor units	128 units
Maximum connected devices	145 units

3 In case of Central Controller is controlling both H-LINK I and H-LINK II type



Refrigerant cycle range	0-15	0-15			0-63
Indoor address range	0-15	0-15	0-15	0-63	0-63
Connectable indoor units	128 units				
Maximum connected devices	145 units				

4 In case of central Controllers are mixed (H-LINK I and H-LINK II type)



Refrigerant cycle range	0-63 If HI(old) central controller controls address lower than 16.
Indoor address range	0-63 If HI(old) central controller controls address lower than 16.
Connectable indoor units	128 units
Maximum connected devices	145 units

2.4 Controls compatibility

2.4.1 Compatibility between controls and H-LINK system

Next table shows what sort of H-LINK and what gateway protocol has each device of this technical catalogue.

		H-LINK Type		Gateway protocol
		H-LINK I	H-LINK II	
Individual remote controls	PC-ARFP1E	O	O	-
	PC-AWR	O	O	-
Centralised remote controls	PSC-A64GT	O	O	-
	PSC-A32MN	O	O	-
	PSC-A64S	O	O	-
	PSC-A16RS	O	O	-
Building AC controls	CSNET WEB	O	O	Modbus / Fidelio / KNX
	CSNET Manager	O	O	Modbus / Fidelio / BACnet / KNX
	CSNET Manager 2	O	O	Modbus / Fidelio / BACnet / KNX
	CSNET Lite	O	O	Modbus / BACnet / KNX
	HC-A64NET	O	O	-
Gateways for building management systems (BMS)	HC-A8MB	O	O	H-LINK to Modbus
	HC-A64MB	O	O	H-LINK to Modbus
	HC-A16KNX	O	O	H-LINK to KNX
	KNX001	O	O	Modbus to KNX
	HARC-BX E (A)	O	X	H-LINK to LonWorks®
	HARC-BX E (B)	O	X	H-LINK to LonWorks®
	BAC001	O	O	Modbus to BACnet
	BAC002	O	O	Modbus to BACnet
Control support devices	PSC-A1T	O	O	-
	PSC-6RAD	O	X	RAC to H-LINK
	PC-A1IO	O	O	I/O
	PSC-5HR	O	O	-

- *O: 100% Compatible*
- *X: Not compatible*

Remember that:

- *Chiller and YUTAKI system is not compatible with package system, this means that chiller/YUTAKI and package controls can not be used in same systems.*
- *H-LINK II has a limitation of 200 devices.*

2.4.2 Compatibility between control groups

The different groups of controls, have a special compatibility between them, as shown in the following table:

	Individual remote controls	Central Remote Controls	Building AC Central Controls	Computerised Central Remote controls (BMS)	Accessories
Individual remote controls	O	O	O	O	O
Centralised remote controls	O	O	X	X	O
Building AC controls	O	X	X	X	O
Gateways for building management systems (BMS)	O	X	X	X	-
Accessories	O	O	O	-	-

- *O: 100% Compatible.*
- *X: not compatible with different sort of device.*
- *-: Compatibility depends on the kind of device.*

2.4.3 Compatibility between each control

		PC-ARFP1E	PC-ARH1E	PC-AWR	PSC-A64GT	PSC-A32MN	PSC-A64S	PSC-A16RS	CSNET WEB	CSNET Manager	CSNET Manager 2	CSNET Lite	HC-A64NET	HC-A8MB	HC-A64MB	HC-A16KNX	KNX001	HARC-BX E (A)	HARC-BX E (B)	BAC001	BAC002	PSC-A1T	PSC-6RAD	PC-A1IO	PSC-5HR
Individual remote controls	PC-ARFP1E	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	(2)	X	O	O
	PC-ARH1E	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	(2)	X	O	O
	PC-AWR	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	(2)	X	O	O
Centralised remote controls	PSC-A64GT	O	O	O	O	O	O	O	(1)	X	X	X	X	X	X	X	X	X	X	X	X	(2)	O	O	O
	PSC-A32MN	O	O	O	O	O	O	O	(1)	X	X	X	X	X	X	X	X	X	X	X	X	(2)	O	O	O
	PSC-A64S	O	O	O	O	O	O	O	(1)	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O
	PSC-A16RS	O	O	O	O	O	O	O	(1)	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O
Building AC controls	CSNET WEB	O	O	O	(1)	(1)	(1)	(1)	X	O	O	O	X	X	X	X	O	X	X	X	X	(2)	O	O	O
	CSNET Manager	O	O	O	X	X	X	X	O	O	O	O	O	X	X	X	(1)	X	X	(1)	(1)	(2)	O	O	O
	CSNET Manager 2	O	O	O	X	X	X	X	O	O	O	O	O	X	X	X	(1)	X	X	(1)	(1)	(2)	O	O	O
	CSNET Lite	O	O	O	X	X	X	X	O	O	O	O	O	X	X	X	(1)	X	X	(1)	(1)	(2)	O	O	O
	HC-A64NET	O	O	O	X	X	X	X	X	O	O	O	X	X	X	X	X	X	X	X	X	-	O	O	O
Gateways for building management systems (BMS)	HC-A8MB	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	O	O	O
	HC-A64MB	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	O	O	O
	HC-A16KNX	O	O	O	X	X	X	X	X	X	X	X	X	X	X	O	X	X	X	X	X	-	O	O	O
	KNX001	O	O	O	X	X	X	X	O	(1)	(1)	(1)	X	X	X	X	X	X	X	X	X	-	O	O	O
	HARC-BX E (A)	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	-	X	X	O
	HARC-BX E (B)	O	O	O	X	X	X	X	X	X	X	X	X	X	X	X	X	O	O	O	O	-	X	X	O
	BAC001	O	O	O	X	X	X	X	X	(1)	(1)	(1)	X	X	X	X	X	O	O	O	O	-	X	X	O
	BAC002	O	O	O	X	X	X	X	X	(1)	(1)	(1)	X	X	X	X	X	O	O	O	O	-	X	X	O
Control support devices	PSC-A1T	(2)	(2)	(2)	(2)	(2)	O	O	(2)	(2)	(2)	(2)	-	-	-	-	-	-	-	-	-	X	O	O	O
	PSC-6RAD	X	X	X	O	O	O	O	O	O	O	O	O	O	O	O	O	X	X	X	X	O	O	O	O
	PC-A1IO	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	X	X	X	X	O	O	O	O
	PSC-5HR	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O

- *O: 100% Compatible*
- *X: Not compatible*
- *(1): Compatible with limitations.*
- *(2): PSC-A1T is connected directly to central controls. If there are other controls in the same H-LINK II system with timer settings, ensure that contradictory timer orders are not set.*

2.4.4 Compatibility between multiple units of the same control

Next table shows the maximum number of same devices that can be connected on an H-LINK system.

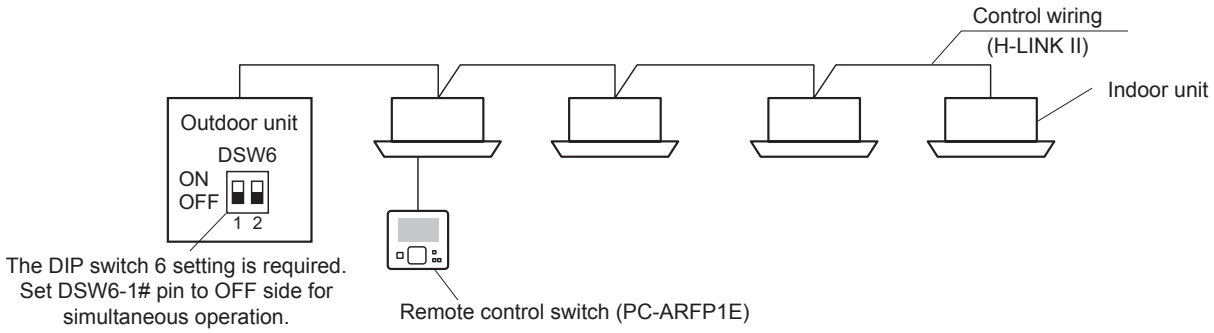
	PC-ARFP1E	PC-ARH1E	PC-AWR	PSC-A64GT	PSC-A32MN	PSC-A64S	PSC-A16RS	CSNET WEB	CSNET Manager	CSNET Manager 2	CSNET Lite	HC-A64NET	HC-A8MB	HC-A64MB	HC-A16KNX	KNX001	HARC-BX E (A)	HARC-BX E (B)	BAC001	BAC002	PSC-A1T	PSC-6RAD	PC-A1IO	PSC-5HR
Maximum number of same devices	nl-1	nl-1	nl-1	8	8	8	8	1	(*)	(*)	1	1	1	1	8	1	4	4	1	1	1	nl-2	16	4

- *nl-1: not limited because it is connected to an indoor unit.*
- *nl-2: not limited, maximum number defined by H-LINK (145 elements, H-LINK I device).*
- *(*) No limit in the number of CSNET Manager / CSNET Manager 2 because use a Ethernet LAN transmission. Each CSNET Manager / CSNET Manager 2 can control up to 16 devices and up to 1024 indoor units*

2.4.5 Considerations depending on the outdoor and indoor units

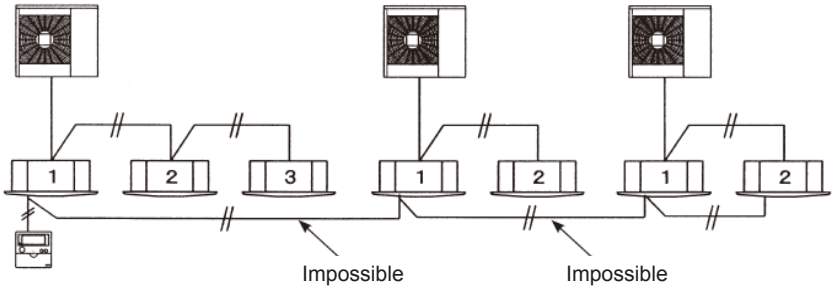
◆ Simultaneous operation for UTOPIA IVX series

One remote control switch (PC-ARFP1E) can control without transition wiring up to 4 indoor units of FSN2 series or later model types (H-LINK II supported models) simultaneously (Simultaneous operation is also available when there is a transmission wiring connected between all indoor units).



However, the following limitations exist.

1. PC-ARFP1E cannot be installed as a second remote control in the same unit as sub controller. (But they can be installed as main controller.)
2. Optional Function setting for “remote ON/OFF”, “power supply ON/OFF” and “controller not available mode” can be set only at the Master unit.
3. It is not permitted to group indoor units from different outdoor units in the same remote control. If grouping indoor units from different outdoor units, an interconnection cable must be installed between indoor units from different outdoor units.
4. In case of central control, only the Indoor unit with remote control connected can be the Master unit. Indoor Unit address cannot be set from remote control when no cable option is used.



Control method: by one remote control switch	
Operation method: by one group	
Operation	**Availability**
ON/OFF	Yes
Setting of operation mode	Yes (*1)
Room temperature setting	Yes
Fan speed setting	Yes
Timer setting	Yes
ON/OFF by timer control	Yes
Operation indication	Yes
Alarm indication	Yes
Self-checking	Yes
Test mode	Yes
Individual louver setting	Yes (*2)
Motion sensor setting	Yes (*3)

NOTE

- *(*1) Only if all units in one group are connected to the same outdoor unit.*
- *(*2) Only for RCI-FSN4 and RCIM-FSN4E series with PC-ARFP1E.*
- *(*3) Only for indoor units with motion sensor device and PC-ARFP1E remote control. Do not mix other indoor unit without motion sensor.*

◆ Combination with indoor units

- When using the controllers PC-ARFP1E, PC-ARH1E, HARC-BX E (A/B) or the receiver kits PC-ALHZ1 with RPK models, the RPK indoor unit must be set as “Wired” by means of the SW2 of the PCB2. Otherwise, the operation is not available.

Factory setting	Wired remote control
Wired / Wireless 	Wired / Wireless 

- When using two remote controls in one indoor unit, ensure that one of them is set as “Master” and the other one is set as “Slave”.

2.5 Controls specification

2.5.1 Number of controllable units

Next table shows the maximum quantity of each type of units which can be controlled depending on the controller.

		Number of controllable units		
		Outdoor units	Groups of units	Indoor units
Individual remote controls	PC-ARFP1E	1	1	16 (*)
	PC-ARH1E	1	1	16 (*)
	PC-AWR	1	1	16 (*)
Centralised remote controls	PSC-A64GT	64	64	160
	PSC-A32MN	32	32	160
	PSC-A64S	64	64	160
	PSC-A16RS	16	16	160
Building AC controls	CSNET WEB (PSC-A160WEB1)	256 (**) (64 units per each CSNET WEB)	160 (**)	640 (**) (160 units per each CSNET WEB)
	CSNET Manager	512	512	1024 (***)
	CSNET Manager 2	512	512	1024 (***)
	CSNET Lite	64	64	64
	HC-A64NET	64	64	64
Gateways for building management systems (BMS)	HC-A8MB	8	8	8
	HC-A64MB	64	64	64
	HC-A16KNX	16	16	16
	KNX001	64	64	128
	HARC-BX E (A)	8	64	128
	HARC-BX E (B)	8	32	128
	BAC001	8	8	8
	BAC002	64	64	64
Control support devices	PSC-A1T	-	-	-
	PSC-6RAD	-	1	1
	PC-A1IO	-	-	1
	PSC-5HR	-	-	-

NOTE

- *(*): It is possible to group up to 16 units under each controllable unit address. All of the grouped units are managed as one.*
- *(**): Up to 4 PSC-A160WEB1 software devices can be connected, increasing the maximum number of controllable units. Depending on the system configuration, some restrictions apply on the number of indoor units controlled by CSNET WEB. When functions such as Modbus transmission or monitoring of power consumption by means of a power meter are used, the recommended maximum quantity of indoor units is limited to 64. If this limitation is not observed, malfunction of the CSNET WEB may occur. Contact your HITACHI dealer for more detailed information.*
- *(***) When 16 CSNET WEB devices are connected to the CSNET Manager / CSNET Manager 2, some restrictions apply on the total number of the controllable indoor units (1024 units). Depending on the system configuration, some restrictions apply on the number of indoor units controlled by each CSNET WEB. In consequence, the total number of indoor units controllable through the CSNET Manager / CSNET Manager 2 may be limited to 512 units in certain system configurations. Contact your HITACHI dealer for more detailed information.*

2.5.2 List of main functions for each control

Next table shows the main available data on each control:

		ON/OFF	MODE	TEMPERATURE	FAN SPEED	LOUVER	INDIVIDUAL LOUVER	CENTRAL	TIMER	AUTO COOL/HEAT	ALARM	EXTRA DATA (1)
Individual remote controls	PC-ARFP1E	O	O	O	O	O	O	O	O	O	O	O
	PC-ARH1E	O	O	O	O	O	X	O	X	X	O	X
	PC-AWR	O	O	O	O	O	X	X	O	X	X	X
Centralised remote controls	PSC-A64GT	O	O	O	O	O	X	O	O	O	O	O
	PSC-A32MN	O	O	O	O	O	X	O	O	O	O	O
	PSC-A64S	O	O	O	O	O	X	O	O	O	O	X
	PSC-A16RS	O	X	X	X	X	X	X	X	X	X	X
Building AC controls	CSNET WEB	O	O	O	O	O	X	O	O	O	O	O
	CSNET Manager	O	O	O	O	O	X	O	O	O	O	O
	CSNET Manager 2	O	O	O	O	O	X	O	O	O	O	O
	CSNET Lite	O	O	O	O	O	X	O	O	O	O	O
	HC-A64NET	O	O	O	O	O	X	O	X	X	O	O
Gateways for building management systems (BMS)	HC-A8MB	O	O	O	O	O	X	O	O	X	O	O
	HC-A64MB	O	O	O	O	O	X	O	O	X	O	O
	HC-A16KNX	O	O	O	O	O	X	O	X	X	O	X
	KNX001	O	O	O	O	O	X	O	X	X	O	O
	HARC-BX E (A)	O	O	O	O	X	X	O	X	X	X	O
	HARC-BX E (B)	O	O	O	O	O	X	O	X	X	O	O
	BAC001	O	O	O	O	O	X	O	X	X	O	O
	BAC002	O	O	O	O	O	X	O	X	X	O	O
Control support devices	PSC-A1T	X	X	X	X	X	X	X	O	X	X	X
	PSC-6RAD	O	O	O	O	X	X	O	X	X	X	X
	PC-A1IO	O	O	X	O	O	X	O	X	X	O	X
	PSC-5HR	X	X	X	X	X	X	X	X	X	X	X

O: Available.

X: Not Available.

(1) The specific extra data available in each control is explained on its chapter.

◆ Special functions for CSNET WEB, CSNET Manager 2 and CSNET Lite

	CSNET WEB	CSNET Manager 2	CSNET Lite
Cold draft	O	O	O
Heating fan stop during Thermo-OFF (heat draft)	X	O	O
Power meter option	O	O	O
Modbus connection	O	O	O
Fidelio	O	O	X
Alarm email notification	O	O	O
Web access	O	O	O
Alarm log	O	O	O
Power consumption	O	O	O
Building layout	O	O	X
Embedded building layout editor	X	O	X
Outdoor unit control (night mode, power control,...)	X	O	O
Hotel application	X	O	X
Interlock	X	O	O
Power meter multitenant	X	O	O
Order log	X	O	O
Set-Back	X	O	O
ICS calender	X	O	X
Individual timer	X	O	O
Automatic export of power data	X	O	O
Connection to BACnet devices	X	O	O
Connection to KNX001	O	O	O

O: Available.

X: Not Available.

3. Features and benefits

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3.1 Individual remote controls

3.1.1 PC-ARFP1E



PC-ARFP1E: Remote control with timer

Clearly readable LCD screen with an attractive design

- The adopted LED-backlit LCD provides enhanced legibility.
- Large, clear character display is realized by Full Dot Matrix LCD.

Operation Improvement

- The adopted directional key provides optimised operation. The manual operation is facilitated by reducing number of switch buttons from 13 to 9.
- 4 types of menus are offered for flexible use as follows:
  - Menu: Contains “Schedule Timer”, “Elevating Grille”, etc. for users.
  - Help Menu: Contains information provided by this remote control switch for users such as “About Operation”, “Contact Information”, etc.
  - Test Run Menu: This menu provides the functions for installation of this remote control switch.
  - Check Menu: This menu provides the functions for service and maintenance.

Schedule Timer

- “Schedule Timer” provides the timer operations for “Run/Stop” and “Temperature Setting”. The weekly management is available by using this function. Additionally, “Holiday Setting” and “Schedule ON/OFF” setting are available.

Simple Timer

- In addition to the scheduled timer operation above, “Simple Timer” (timer operation for one day) is offered.

Adjusting Brightness of Run Indicator

- Going to “Menu” “Screen Display Setting”, brightness of run indicator is adjustable by the dimmer function for the night time.

Eco-operation

- It is possible to define a fixed setting temperature for the operation of the air conditioning system, which remains unchanged in spite of user operation of the remote control switch.
- If “Eco-operation” (Optional function J8) is enabled, the setting temperature upon startup from the remote control switch is automatically switched to the value corresponding to the selected operation mode, as specified in “Automatic reset temperature for cooling” (Optional function F5) and “Automatic reset temperature for heating” (Optional function F6).

Operation Mode

- “COOL” for cooling, “HEAT” for heating, “DRY” for dehumidification, “FAN” for ventilation and “AUTO” for automatic cooling/heating changeover.

Other functions

- Allows all indoor unit functions to be selected and changed.
- Malfunction or problem warnings with alarm code indications.
- Just one remote control can control up to 16 indoor units.
- Built-in temperature sensor.

3.1.2 PC-ARH1E



PC-ARH1E: Simplified remote control

- Specially designed for hotels applications.
- Just one remote control can control up to 16 indoor units.
- Operation mode selection.
- Smaller remote control than conventional models.
- Easy to use and therefore perfect for installations used by various different people.
- Malfunction or problem warnings with alarm code indications.
- Operation mode lock option.
- Louver can be selected.
- Fan speed can be selected.
- Adjustable temperature limit.
- Remote sensor.

Optional functions

- Auto COOL/HEAT.
- Increasing of Fan Hi Speed.
- Cooling and heating limitations for setting temperature.

3.1.3 PC-AWR



PC-AWR: Wireless remote control

- Wireless remote control that requires no wiring and provides simple one-touch operation.
- Same remote control for all the indoor units.
- Each indoor unit has its own receiver.
- Up to 16 indoor units can be controlled simultaneously by one wireless remote control in case that all units are installed in the same room. To do this, the indoor units must be interconnected by means of control cables.
- Specific function “Identifying of indoor units installed side by side” for those indoor units which are installed very close and each one needs to be independent. This function enables to operate individually each unit without interfering other unit’s operation.

3.2 Centralised remote controls

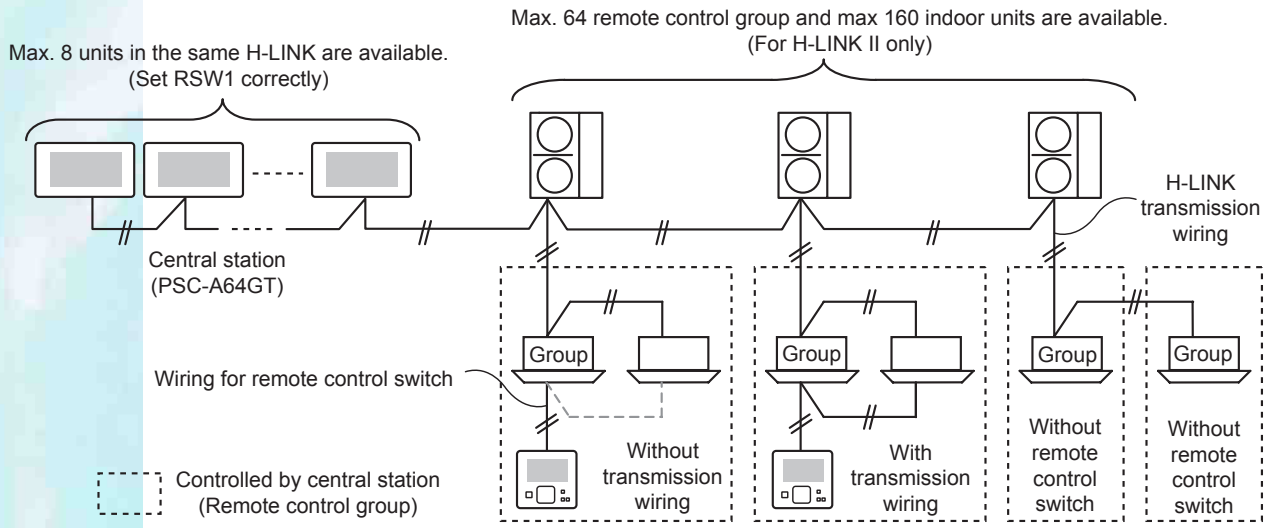
3.2.1 PSC-A64GT

The central station (PSC-A64GT) is connected to H-LINK system and used for the central control and monitoring of the air conditioners.



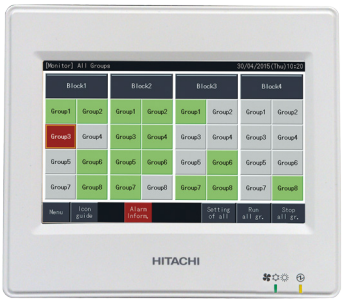
PSC-A64GT: Touch Screen Central Station

- Touch Screen Central Station with attractive design.
- Monitoring of Operating Conditions for Block/Groups.
- Up to 4 blocks with a maximum number of 16 groups per block. Therefore, up to 64 groups can be created.
- A maximum number of 16 indoor units by group is allowed, with a maximum of 160 indoor units per H-LINK II system.
- Up to 8 central stations EZ (PSC-A64GT) can be connected the same H-LINK line.
- Compatible with all RCS and Timers
- The main control functions are: Run/Stop, Operation Mode Change, Fan Speed Control, Swing Louver Direction Control, Temperature Setting, Permitting/Prohibiting Operation by Remote Control Switch.
- Optional Functions:
  - Schedule Operation (Run/Stop and Temperature Setting) for Block/Group
  - Run/Stop, Emergency Stop and Demand Function by External Input
  - Run an Alarm Output by External Output
  - Control Exception Function of All Run/Stop Command for Selected Groups
  - Control Exception Function of All Run/Stop Command for Selected Groups by External Input
  - Indication and Calculation of Unit Accumulated Operation Time of Each Group
  - Indication of Alarm History Record
  - Registering Name of Blocks and Groups
  - Registration and Indication of Service Contact Information
- Operation modes can be selected as Normal Operation or Run/Stop Only.
- A system configuration example is shown below:



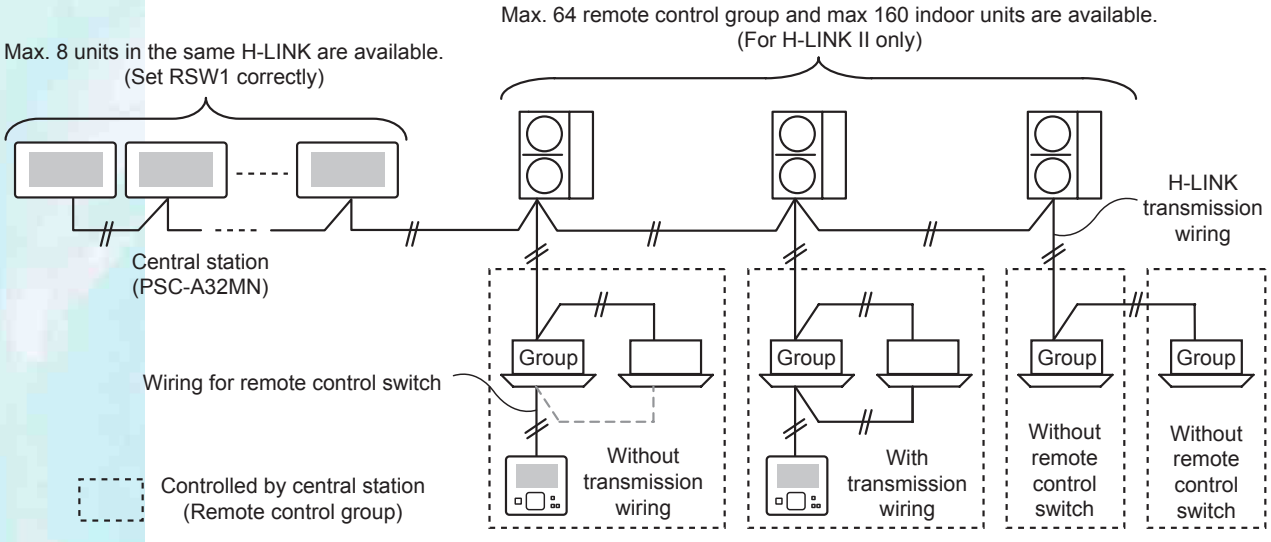
3.2.2 PSC-A32MN

The central station mini (PSC-A32MN) is connected to H-LINK system and used for the central control and monitoring of the air conditioners.



PSC-A32MN Touch Screen Central Station mini

- Touch Screen Central Station with attractive design and reduced dimensions.
- Monitoring of Oxperating Conditions for Block/Groups.
- Flexible selection of the Blocks/Groups. Up to 32 groups can be created and controlled by one PSC-A32MN. It allows the following combinations (4 blocks x 8 groups, 8 blocks x 4 groups, 2 blocks x 16 groups, 16 blocks x 2 groups).
- A maximum number of 16 indoor units by group is allowed, with a maximum of 160 indoor units per H-LINK II system.
- Up to 8 central stations mini (PSC-A32MN) can be connected to a H-LINK.
- The main control functions are: Run/Stop, Operation Mode Change, Fan Speed Control, Swing Louver Direction Control, Temperature Setting, Permitting/Prohibiting Operation by Remote Control Switch.
- Optional Functions:
  - New function “Setting temperature range of the remote control” for limiting the minimum temperature value in cooling operation, or the maximum temperature value in heating operation.
  - Schedule Operation (Run/Stop and Temperature Setting) for Block/Group
  - Run/Stop, Emergency Stop and Demand Function by External Input
  - Run an Alarm Output by External Output
  - Control Exception Function of All Run/Stop Command for Selected Groups
  - Control Exception Function of All Run/Stop Command for Selected Groups by External Input
  - Indication and Calculation of Unit Accumulated Operation Time of Each Group
  - Indication of Alarm History Record
  - Registering Name of Blocks and Groups
  - Registration and Indication of Service Contact Information
- Operation modes can be selected as Normal Operation or Run/Stop Only.
- Brief explanation of the different icons by pressing the “Icon Guide” button.
- A system configuration example is shown below:

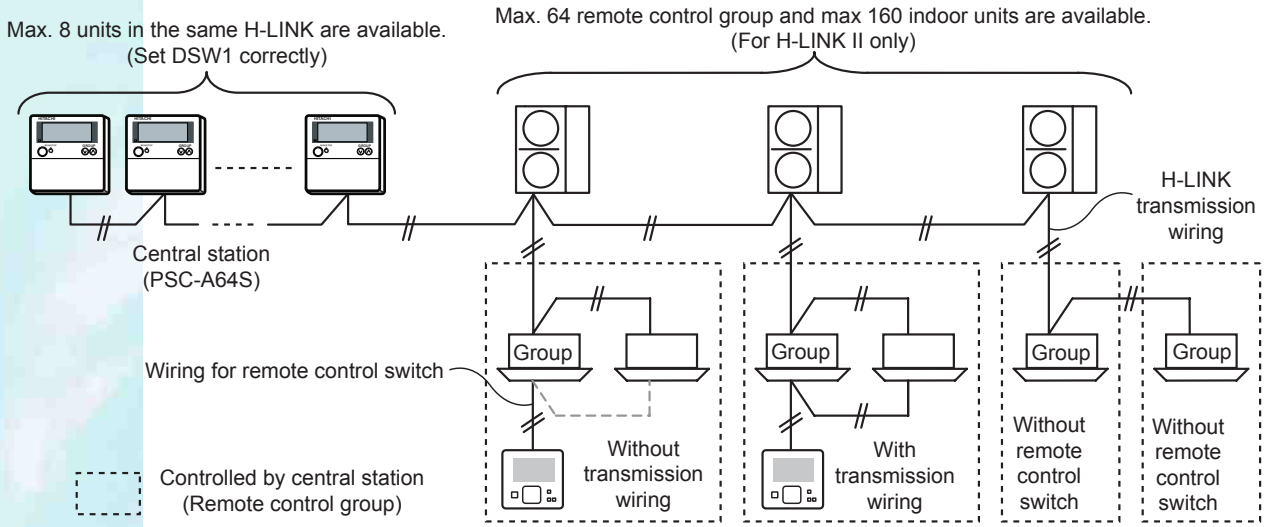


3.2.3 PSC-A64S



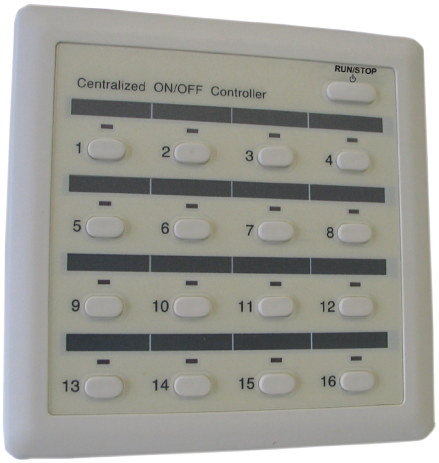
PSC-A64S: Centralised remote control

- Up to 4 zones with a maximum number of 16 groups per zone. Therefore, up to 64 groups can be created.
- A maximum number of 16 indoor units by group is allowed, with a maximum of 160 indoor units per H-LINK II system.
- Up to 8 central remote controls (PSC-A64S) can be connected to a H-LINK.
- Compatible with all the RCS and Timers.
- In addition to the basic functions, operation mode and temperature setting, the air flow and automatic louver can also be adjusted.
- When a problem occurs, an alarm code will immediately be displayed with detailed information about the error. The alarms are classified into groups to facilitate maintenance procedures.
- Also includes the option of receiving and sending external signals, along with the option to connect with the PSC-A1T timer.
- The external signals control the following functions:
  - Simultaneous operation/stop of all the units.
  - Simultaneous emergency stop of all the units.
  - Operation signal for some of the controlled units.
  - Alarm signal for some of the controlled units.
- The central station can be used together with each unit's individual remote control.
- A system configuration example is shown below:



3.2.4 PSC-A16RS

PSC-A16RS is an ON/OFF controller which allows to manage the running/stop state of 16 groups.



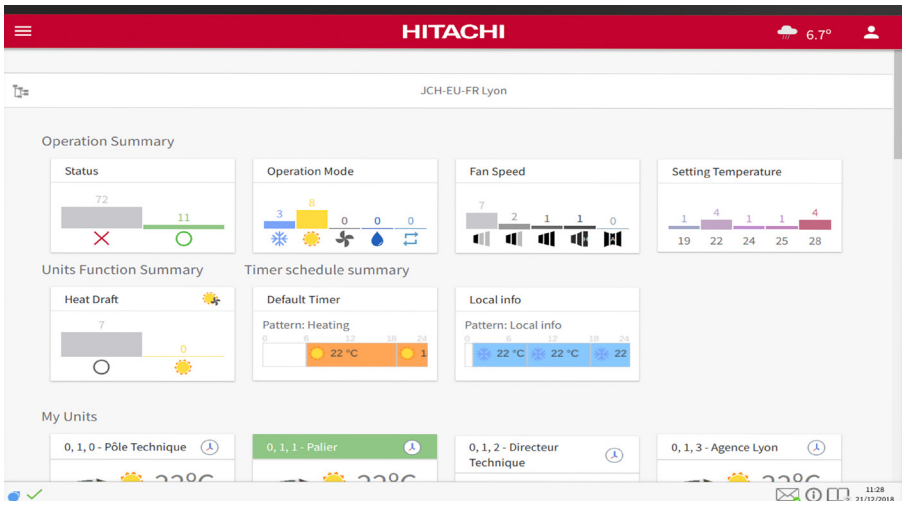
PSC-A16RS: Centralised ON/OFF remote control

- User-friendly product with a simply function works.
- Two available switches for the ON/OFF function:
  - Individual RUN/STOP switch: To order the operation/stoppage of one group.
  - Simultaneous RUN/STOP switch: To order the simultaneous operation/stoppage of all the groups. Up to 16 unit groups at the same time.
- Up to 8 centralised ON/OFF controllers (PSC-A16RS) can be connected to a H-LINK.
- A maximum number of 16 indoor units by group is allowed, with a maximum of 160 indoor units per H-LINK II system.

3.3 Building AC controls

3.3.1 CSNET Manager 2 / CSNET Lite

The CSNET Manager 2 / CSNET Lite is an independent centralised control system connected to a HC-A64NET / CSNET Lite gateway that can control indoor units in an H-LINK communication line up to 1024 units (16 HC-A64NET / CSNET Lite x 64 indoor units per each H-LINK).



CSNET Manager 2 / CSNET Lite: Centralised Building AC Control

Overview

- CSNET Manager 2 / CSNET Lite has internet connection and let users to control their units through the web browser of a computer, tablet or smartphone.
- CSNET Manager 2 is available with touch screen (T15: 15” screen, T10: 10” screen), the computer functions and hardware capacity being the same for both sizes or screenless (SL).
- CSNET Lite has an embeded H-LINK communication used to communicate with the units. Is able to manage and control 64 units through web server.
- One CSNET Manager 2 can control up to 16 CSNET Manager 2, but the total quantity of controlled indoor units can never exceed the maximum quantity of 1024 indoor units.

Accessories

- Mounting accessories:
  - HITACHI proposes 2 support accessories for CSNET Manager 2 touch screens, based on standard VESA dimensions:
    - Wall mounted
    - Stand support
  - A Din Rail adaptor is also available for the CSNET Manager 2 SL (Screen less).
- Net configuration tool: This kit includes a USB cable and an Ethernet crossed cable for the configuration and commissioning of the HC-A64NET / CSNET Lite and CSNET Managers 2. The pen drive includes a 'net configuration tool' which allows an easy and smart configuration of the HC-A64NET / CSNET Lite.

Special software functions

In addition to the large quantity of functions habitually offered through the building air conditioning controls, CSNET Manager 2 / CSNET Lite brings additional functions like:

- Heating Fan stop during Thermo-OFF (Heat draft)
- Outdoor unit control (night mode, power control,...)
- Hotel Application (Only for CSNET Manager 2)
- Fidelio (Only for CSNET Manager 2)
- Interlock
- Power Meter
- Multitenant
- Order Log
- Set-Back
- ICS Calender (Only for CSNET Manager 2)
- Individual Timer
- Timer with unlimited calendar configuration
- Virtual PC-ARF
- Control orders sent by multiple selections
- Inputs and outputs
- Optional functions

3.3.2 HC-A64NET (CSNET Manager 2 gateway)

HC-A64NET is the H-LINK gateway used by CSNET Manager 2 to communicate with the units through the H-LINK protocol.



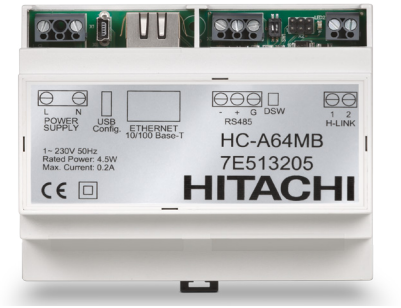
HC-A64NET: H-LINK gateway used by CSNET Manager screens

- HC-A64NET is connectable up to 64 indoor units and connectable only to one CSNET Manager 2. However, up to 16 HC-A64NET can be connected to the same CSNET Manager.
- Reduced dimensions.
- Easy installation: HC-A64NET is provided with a DIN rail 35 mm structure for a faster assembly. It is recommended to install inside electrical box.

3.4 Gateways for building management systems (BMS)

3.4.1 MODBUS gateways HC-A8MB & HC-A64MB

HC-A8MB and HC-A64MB are the interfaces which allow an easy integration of HITACHI Air Conditioning installations to a MODBUS BMS by providing full management control of Air Conditioning installation to the BMS controllers.



HC-A(8/64)MB: Gateway Interface to MODBUS systems

- HC-A8MB and HC-A64MB include new parameters compared with previous HC-A32MB:
  - Gas pipe temperature reading
  - Liquid pipe temperature reading
  - Compressor stop cause
  - Indoor unit expansion valve opening
  - Ambient temperature
  - Remote control switch temperature
  - Remote sensor temperature
- Two different available gateways for small and medium installations (nº. of indoor units):
  - HC-A8MB: max. 8 indoor units
  - HC-A64MB: max. 64 indoor units (max. indoor units quantity increased from 32 units in previous version)
- Only 1 HC-A(8/64)MB can be connected to an H-LINK system.
- Many BMS Systems have gateways to MODBUS system. Therefore, HC-A(8/64)MB can be used to connect to different BMS.
- Easy installation: HC-A(8/64)MB is provided with a DIN rail 35 mm structure for a faster assembly. It is recommended to install inside electrical box..
- Connectable ports:
  - RS485 Modbus
  - Modbus/TCP (Ethernet)
- Device setup by a smart computer application for a better system configuration.

⚠ CAUTION

It is highly recommended the use of local remote control on the Indoor units.

3.4.2 KNX gateway HC-A16KNX

KNX is a European Standard Protocol used for household and industrial Building Management System (BMS).

HC-A16KNX accessory allows a complete integration between HITACHI Air Conditioning installation and a KNX system.

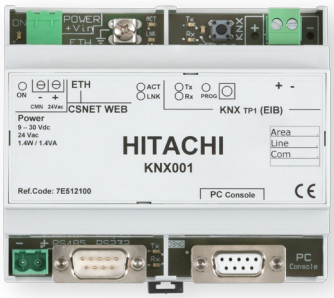


HC-A16KNX: Gateway Interface to KNX systems

- HC-A16KNX is a gateway that allows connection between KNX BMS communication network and HITACHI proprietary H-LINK line.
- Configuration of HC-A16KNX shall be first done to declare indoor units (using PUSH buttons or using the tools for HC-A32MB). Once done, it can be set up by ETS.
- HC-A16KNX is compatible with H-LINK II while maintaining full compatibility with H-LINK I units.
- Up to 8 HC-A16KNX can be connected in an H-LINK line. Only one of this HC-A16KNX devices must be set as master.

3.4.3 Modbus to KNX gateway for CSNET Manager 2 and CSNET Lite

A HITACHI Air-Conditioning system can be integrated into a KNX system using KNX001 combined with CSNET WEB or CSNET Manager.



KNX001: Gateway Interface to KNX system (Modbus to KNX interface)

- KNX001 is a Modbus to KNX interface that is connected to CSNET Manager 2 / CSNET Lite Modbus TCP output.
- KNX001 is connected to CSNET Manager 2 / CSNET Lite (Building Air Conditioning Control) using Modbus TCP connection.
- Connecting one KNX001 to CSNET Manager 2 / CSNET Lite allows to use:
  - Up to 64 refrigerant cycles
  - Up to 128 indoor units
- Reduced dimensions: Easy to place it in any location thanks to its compact size.
- Easy installation: KNX001 is provided with a DIN rail 35 mm structure for a faster assembly. It is recommended to install inside electrical box.

NOTE

CSNET Manager 2 / CSNET Lite limitation: the combination of indoor unit address + outdoor units cycle shall be unique in order to use KNX001 with CSNET Manager 2 / CSNET Lite and up to 128 IU.

3.4.4 LONWORKS gateways HARC-BX E (A/B)

HARC-BX E is a LonWorks® interface that allows connection between LON BMS communication and HITACHI proprietary H-LINK line.



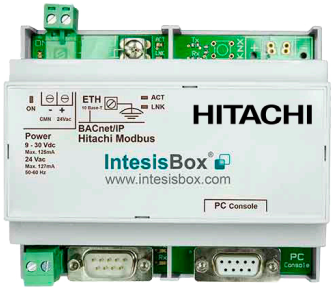
HARC-BX E (A/B): Gateway Interface to LONWORKS systems

- There are two types of HARC-BX E, (A) and (B), allowing to control a fixed quantity of units and points per units as follow:
  - HARC-BX E (A) allow the control of 64 indoor units and 8 outdoor units. HARC-BX(A) can control 7 points per indoor unit.
  - HARC-BX E (B) allow the control of 32 indoor units and 8 outdoor units. HARC-BX(B) can control 14 points per indoor unit.
- HARC-BX E (A/B) allows the control of up to 5 setting points and the remote supervision of a maximum of 9 values.
- Up to 8 HARC-BX E (A/B) can be connected on a H-LINK line.
- The HARC-BX E (A/B) can be connected to any point of the H-LINK system.
- The HARC-BX E (A/B) offers the option of self-checking their own status. It provides the necessary information for the BMS control to easily check the system's operation in addition to the alarms when they occur.

3.4.5 BACnet gateways BAC001 & BAC002

These gateways are Modbus to BACnet interfaces that must be combined with the Modbus interfaces HC-A(8/64)MB.

BAC001 and BAC002 are the interfaces which allow an easy integration of HITACHI Air Conditioning installations to a BACnet BMS by providing full management control of Air Conditioning installation to the BMS controllers.



The integration of HITACHI systems into a BACnet installation can be carried out by using a double gateway system:

- HITACHI MODBUS gateway: HC-A(8/64)MB, CSNET Manager 2 or CSNET Lite (HC-A64NET/CSNET Lite is required for CSNET Manager 2) which provide H-LINK data into a MODBUS protocol.
- BACnet gateway BAC001 or BAC002 which transfers MODBUS data into BACnet data.

BAC001 BACnet gateway connectable to HC-A8MB.

BAC002 BACnet gateway connectable to HC-A64MB or CSNET Manager 2.

- BAC001 and BAC002 are directly connectable to HC-A8MB, HC-A64MB, CSNET Manager 2 or CSNET Lite to their TPC-IP Modbus ports and connectable to the BACnet TCP port into the BACnet bus.
- BAC001 & BAC002 are provided with the pre-setting of the indoor units Modbus parameters, matching with the HC- A8MB, HC-A64MB and CSNET Manager 2 respectively and confirm the quantity of indoor units to be controlled.
- In that case, it is only necessary to set the BACnet IP address to be used in the BACnet bus. Modbus IP address is already preset, matching with HITACHI default IP.
- BAC001 and BAC002 can also be combined with CSNET Manager 2 / CSNET Lite, when up to 64 indoor units are controlled.

3.5 Control support devices

3.5.1 PSC-A1T

The PSC-A1T is a programmable weekly timer intended for use with other remote controls which do not have a built-in weekly timer option, in order to provide them a full complete timer control.



PSC-A1T: Programmable Timer

- The 7 days of the week and the start/stop times can be scheduled up to 3 times a day with the PSC-A1T timer.
- The remote control can be deactivated during the stoppage time (if it is used with the PSC-A64S).
- It has two types of weekly schedules (A and B), which can easily be changed for winter and summer periods.
- All the settings are digitally displayed allowing the operation and settings to be checked easily.
- The power failure safety function prevents the timer from stopping during a power cut (even if it lasts for weeks).

3.5.2 PSC-6RAD

The PSC-6RAD is an adapter which allows to connect the RAC models to a H-LINK system.



PSC-6RAD: RAC adapter

- Up to 128 units can be connected in case that H-LINK is made up only by RAC adapter.
- In case of combination use with H-LINK devices like package air-conditioner, 16 refrigerant systems and up to 128 indoor units can be used.
- RAC adapter and room air-conditioner shall be connected one by one. One RAC adaptor can only control 1 RAC indoor unit.
- PSC-6RAD makes possible the following points:
  - Enable Room Air Conditioner Central Control from the Central Controller: The room air conditioners in the facilities such as special elderly nursing homes, hotels or hospitals are available to be centrally controlled from the central controller.
  - Enable Central Control both Packaged Air Conditioners and Room Air Conditioners: In case of room air conditioners installed together with packaged air conditioners, both air conditioners are available to be controlled by the same central controller.
- The following control/monitor functions are available from the central controller:
  - Run/Stop
  - Setting Operation Mode
  - Setting Temperature
  - Setting Air Flow Volume

3.5.3 PC-A1IO

This product allows the integration of certain equipment to H-LINK bus, giving the chance to monitor and control certain parameters of non-HITACHI equipment by HITACHI CSNET WEB or CSNET Manager.



PC-A1IO: H-LINK system integration device

- This application is open to control this equipment and other devices/accessories that are compatible with the control specification of PC-A1IO.
- All the devices connected to PC-A1IO are managed as normal HITACHI Indoor Unit in current HITACHI Central Controls.
- PC-A1IO is compatible with H-LINK II while maintaining full compatibility with H-LINK I units.
- Up to 16 PC-A1IO can be connected in an H-LINK line. At least one of this PC-A1IO must be set as master.
- A PC-A1IO set as master uses two addresses, one as an Outdoor Unit and one as a Indoor Unit. In this case, PC- A1IO is counted as two H-LINK devices.
- With the PC-A1IO it is possible to control: ON/OFF, operation mode, fan speed, feedback signals like run/stop and alarm.

3.5.4 PSC-5HR

The maximum H-LINK electrical wiring length is 1,000 m. However, there are cases where a longer H-LINK electrical wiring length is required. For this cases, the PSC-5HR accessory is avaialble. The PSC-5HR is an H-LINK relay that re-sends the received H-LINK messages.

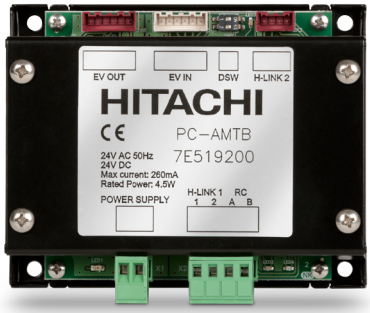


PSC-5HR: H-LINK relay

- Adding one PSC-5HR, a length of 1000 extra meters of H-LINK wiring is available.
- Up to 4 PSC-5HR can be connected, allowing 5000 meters in total.

3.5.5 PC-AMTB

PC-AMTB is a connection board for multitenant buildings (office buildings, multi dwelling, small hotels). It provides a solution in such installations with a refrigerant system compounded by several indoor units of different tenants with a common shared outdoor unit (typically SET FREE systems), when the power supply of some indoor units is shut-down together with the tenant installation without causing refrigerant systems problems.



PC-AMTB: Connection board for multitenant buildings

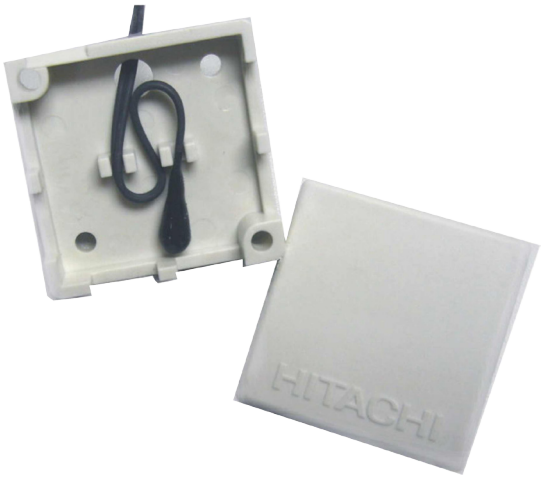
This device keeps the presence of the indoor unit in the refrigerant system control, even if the relevant indoor unit is disconnected, and it manages the expansion valve control in order to adjust the refrigerant flow accordingly.

PC-AMTB is power supplied at 24 VDC or VAC from a power net independent from the tenant installation.

3.5.6 THM-R2AE

The THM-R2AE is a remote sensor that can plugged on HITACHI SET FREE indoor units (THM4 connector). This sensor can be used to measure more accurately the room temperature. It allows to control the room temperature by this remote sensor or with the average value of the air inlet sensor of the indoor unit and this remote sensor (accoding to the setting of the optional function C8).

The length of the remote sensor cord is 8 m. It can be extended up to 15 m using additional wiring (accessory not provided by HITACHI, wire size over 0.3 mm^2).



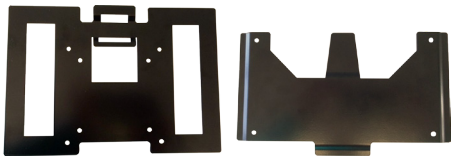
THM-R2AE: Remote sensor

3.6 Control accessories

3.6.1 Wall / Stand mounted support for CSNET Manager 2 T10/T15

CSNET Manager 2 has standard VESA mounting dimensions commonly available in the market. However, HITACHI proposes 2 accessories for the CSNET Manager 2 (T10 / T15) assembly:

◆ **Wall mounted support**

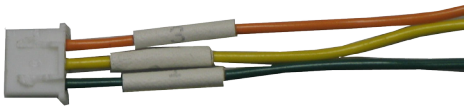


◆ **Stand mounted support**



3.6.2 PCC-1A

The PCC-1A is a 3P connector cable used when the remote ON/OFF device is connected or signals are taken out on the printed circuit board. One set contains five 3P connector cables.



PCC-1A Optional function 3P connector cable

- Dedicated connector for the optional functions. To be connected to the printed circuit board of the units.
- This last updated PCC-1A connector cable does not contain any Substance of Very High Concern (SVHC) according to Article 59 of REACH Regulation 1997/2006 of European Union.

3.6.3 PRC-(10/15/20/30)E1

The PRC-(10/15/20/30)E1 is a 2P extension cable intended for individual remote controllers or central controllers whose cables need to be extended up to more than 30m. When the total cable length is not higher than 30m, other type cable (more than 0.3mm^2) can be used.



PRC-(10/15/20/30)E1: 2P extension cable

- The 2P extension cable is available in four different lengths:
  - PRC-10E1: 10m
  - PRC-15E1: 15m
  - PRC-20E1: 20m
  - PRC-30E1: 30m
- The remote control cable can be extended to a maximum of 500m.

3.6.4 Net Configuration Kit

This accessory provides all the necessary devices for HITACHI installers when commissioning a Modbus installation.



Net Configuration Kit: Net configuration kit for HC-A(8/64)MB, HC-A64NET...

- The USB memory stick includes a software tool for Modbus communication check when commissioning.
- The USB cable is only required when configuring the device (network parameters).
- The Ethernet cable is provided for a quick connection with a laptop for the Modbus communication check.

3.7 Other devices compatible with HITACHI Air Conditioning systems

3.7.1 HITACHI-AIRZONE gateway (HTI11001)

- HTI11001 is a HITACHI-AIRZONE gateway applicable to HITACHI RPI(M) units, since FSN2E series, providing compatibility with the AIRZONE systems, zone-based climate-control systems. The HTI11001, HITACHI-AIRZONE Communication Gateway is commercialised directly by AIRZONE.
- Zoning Systems, in a ducted air-conditioning installation, allows having an individual control of the temperature in each room.
- AIRZONE has several zoning systems. This HTI11001 is providing compatibility with the following AIRZONE systems:
  - Universal AIRZONE system
  - AIRZONE Antree system
  - Innobus system
- RPI operation through AIRZONE protocol: AIRZONE protocol is acting in the following RPI setting points:
  - Unit ON/OFF
  - Unit operation mode: Only available COOL/HEAT/FAN
  - Unit fan speed
  - Unit setting temperature

NOTE

Beware that the use of the Airzone System may cause great variations to the static pressure in RPI units, potentially leading to malfunction if this matter is not taken into account.

3.7.2 Power meter for CSNET Manager 2 and CSNET Lite

- Power Meter option lets the user to configure a TCP-MODBUS power meter for each outdoor unit.
- The set up of one power meter includes the following steps:
  - Link with the corresponding outdoor unit.
  - IP address + Modbus Id setting.
  - Register settings to get the power data (energy, input power, tension, current).
- Once done, the power calculation can be done by CSNET, using direclty the real power consumption recorded by the power meter. The manual input of the power consumption is then no longer necessary.
- Suggested device tested by HITACHI is 7KM PAC3200 by Siemens or Socomec Countis E27/E28. Note that 7KM PAC3200 by Siemens only accepts one simultaneous connection for reading the data.

3.7.3 FIDELIO gateway for CSNET Manager 2

The integration of HITACHI systems into a FIDELIO installation can be carried out by using the CSNET Manager 2.

Standard FIDELIO gateway are available in the market which transfers HITACHI sytem data into FIDELIO data.

There are wide several solutions available in the market which should allow the transfer of collected data by HITACHI gateways into FIDELIO data. Anyway, HITACHI recommends the solution offered by Intesis Software company.

4. Individual remote controls

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4.1 PC-ARFP1E

4.1.1 Safety summary

HITACHI can not anticipate every possible circumstance that might involve a potential hazard.

⚠ DANGER

- ***DO NOT handle the remote control with wet hands.***
- ***DO NOT spill water on the remote control. This may cause an electric shock.***
- ***If the safety devices are activated too frequently or the buttons do not work properly, turn off the unit at the mains and contact your HITACHI service provider.***
- ***In the event of other incidents of an electrical nature, turn off the system, switch it off at the mains and contact your HITACHI service provider.***

⚠ CAUTION

DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:

- *Where there are oil vapours and the oil is dispersed.*
- *In the proximity of hot water or heat sources or in sulphuric environments.*
- *In locations prone to the generation, accumulation, leakage or flow of flammable gas.*
- *Close to the sea (saline atmospheres).*
- *In acidic or alkaline environments.*
- *Within the reach of children.*
- *Directly in front of the air-conditioning system outlet.*
- *To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m from strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.*
- *If electrical noise should be generated at the indoor unit power source, install a noise filter.*

⚠ CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*

4.1.2 Installation

4.1.2.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

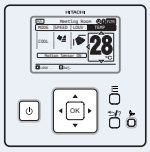
Cable section	0.3mm²	≥ 0.75mm²
Cable length	30m	500m

4.1.2.2 Components list

Unpack the unit and check that:

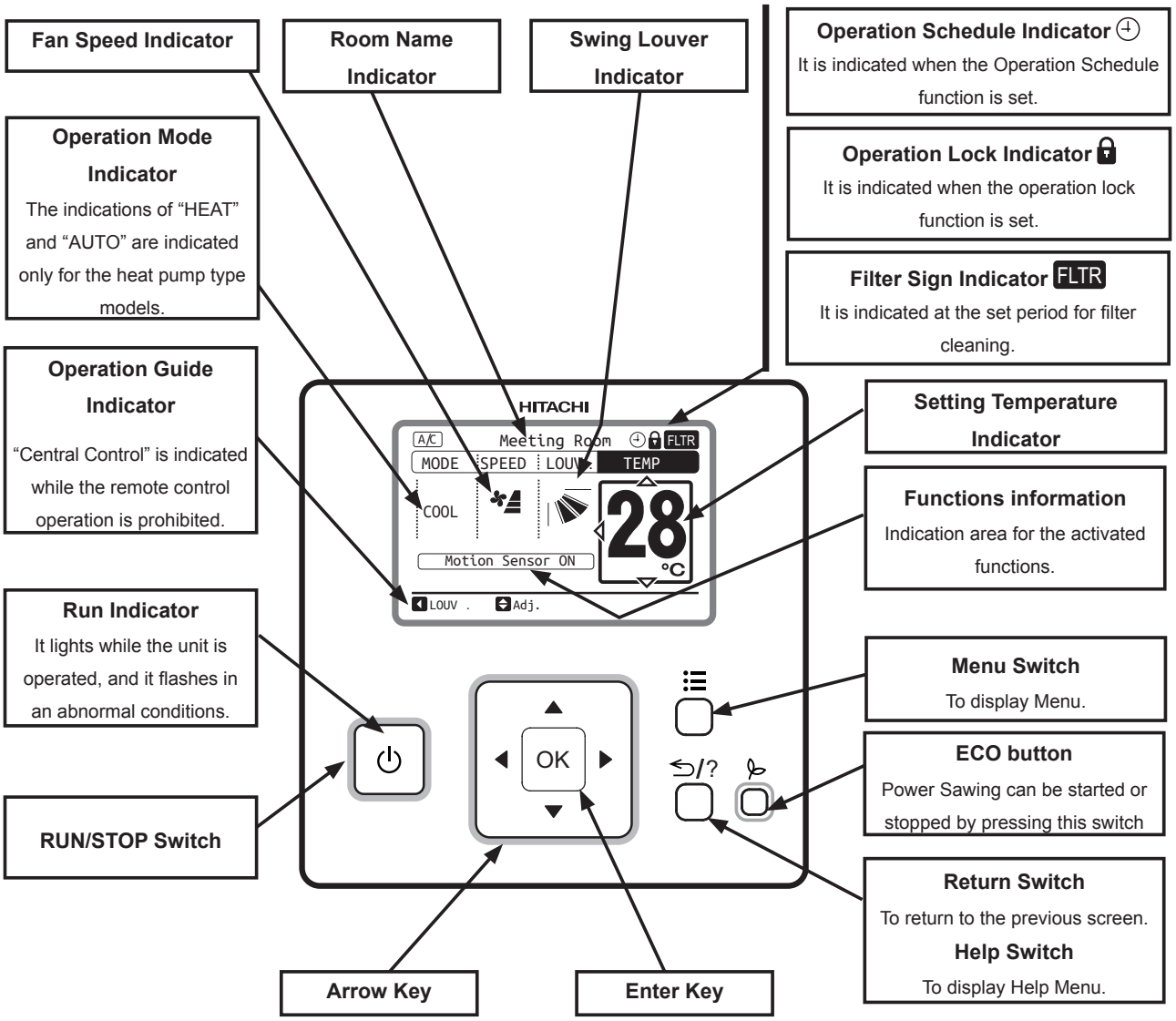
- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quantity	Comments
Remote control		1	For controlling system operation
M4x16L screws		2	For fixing the bracket to the wall
Installation and operation manual		1	Installation and operation unit instructions.

4.1.2.3 Description of the parts

The figure below shows all the indications for reference. The actual display during operation is different.

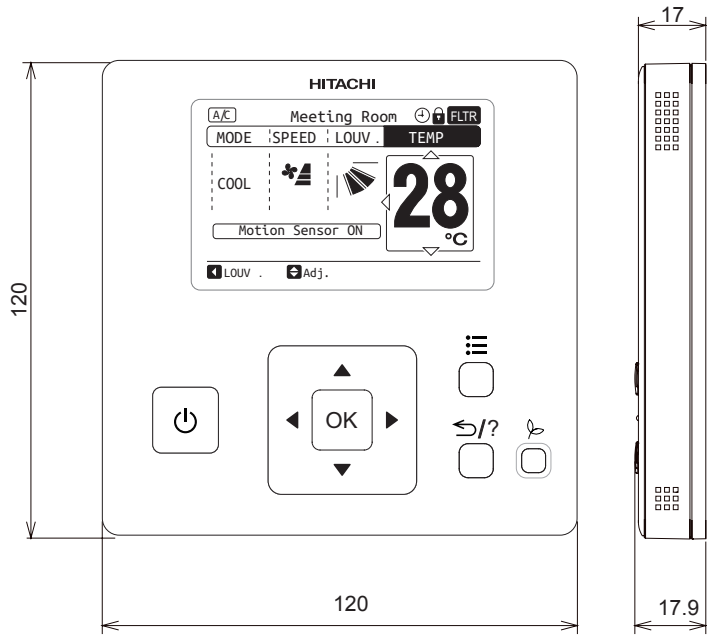


NOTE

- *Do NOT press the switches hard or press with sharply pointed material such as a ball point pen. The operation part of the remote control switch may be damaged.*
- *Make sure that the switches are pressed softly with fingers.*

4.1.2.4 Dimensional data

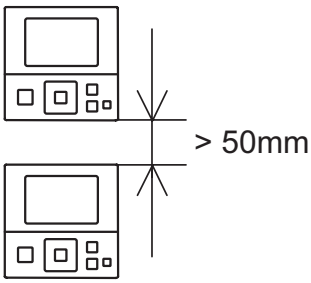
(mm)



4.1.2.5 Installation space

In case of installing the controllers in vertical line, keep a distance more than 50mm between the controllers vertically.

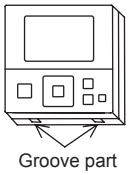
If the distance is insufficient, the controller can not be taken out.



4.1.2.6 Installation procedure

1 Insert the edge of the slotted screwdriver into the groove at the bottom of the holding bracket, push and turn the slotted screwdriver and then remove the remote control switch from the holding bracket.

2 Attach the remote control switch to the holding bracket and connect the cable as follows:



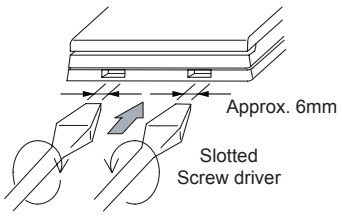
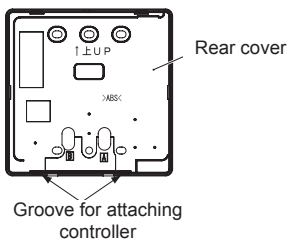
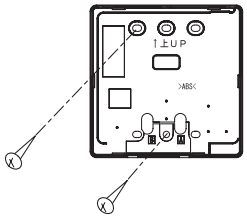


Figure seen from bottom side

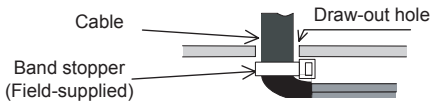


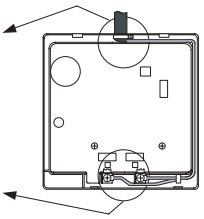
◆ In case of exposing remote control cable

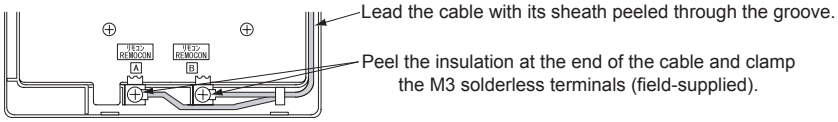
a. Fix the holding bracket onto the wall with screws (accessory).



b. Attach the stopper (plastic band) to the cable at the inside of the draw-out hole.



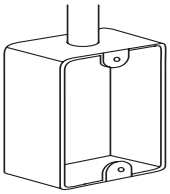




◆ When Using Switch Box

a. Prepare field-supplied Implanted Switch Box.

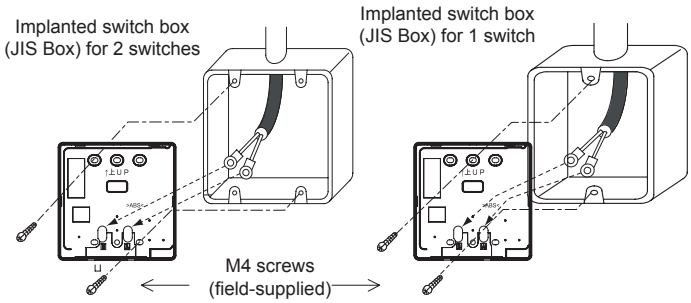
(JIS Box). (JIS C 8336-1988)



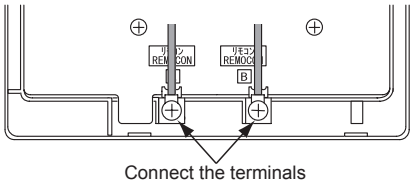
The following 5 types are available.

1 Switch box for 1 switch (without cover)
2 Switch box for 2 switches (without cover)
3 Switch box for 1 switch (with cover)
4 Switch box for 2 switches (with cover)
5 Outlet box (with cover)

b. Lead the cable through the conduit tube in the wall.

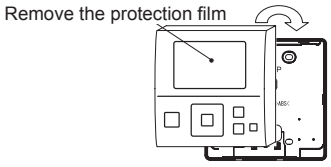


c. Peel the insulation at the end of the cable and clamp the M3 solderless terminals (field-supplied).



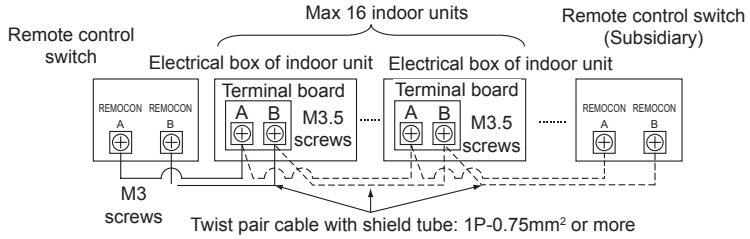
6 Attach the remote control switch to the holding bracket. Be careful not to pinch the cable when attaching it.

7 Remove the protection film from the liquid crystal display.



4.1.3 Electrical wiring

◆ Wiring example (using a twist pair cable with shield tube)



⚠ CAUTION

Always make sure to turn off the power of the indoor unit when performing electrical wiring work. Performing electrical wiring work with the power on can damage the circuit boards of the indoor unit and the remote control switch.

NOTE

- *Use a 0.3 to 0.75mm² cable for connecting. The maximum total cable length is 30m. If the total cable length exceeds 30m, use a twist pair cable with shield tube (1P - 0.75mm²). In that case, the maximum total cable length is 500m. If using in combination with the control timer, the allowable total cable length is up to 100m. The use of a cable other than that specified above can cause of malfunction due to effects of noise.*
- *Keep a distance more than 30cm between the transmission line (remote control switch cable and transmission wires) and power source of the indoor units. If not, the air-conditioner may not operate properly or malfunction may occur due to effect of power source noise.*
- *In case of simultaneously controlling multiple indoor units, set the refrigerant cycle numbers and addresses of the indoor units without overlapping.*
- *Refer to the Technical Catalogue provided with each indoor unit when performing electrical wiring work between the remote control switch and indoor units for setting the refrigerant cycle number and the indoor unit address.*
- *No gap shall exist between the remote control switch cable and hole of the remote control switch case. If there is a gap, cover the gap with vinyl tape. If not, malfunction may occur due to entrance of water droplets or insects.*
- *In case of operating with two remote control switches (Main and Sub), set the main and sub remote control switches by selecting the appropriate function with the remote control switches. After setting it, turn off the power supply of all the indoor unit connected to the remote control switches.*
- *Programmable control PSC-A1T is connected directly to central controls. If there are other controls in the same H-LINK II system with timer settings, ensure that contradictory timer orders are not set.*

4.1.4 Start Up Process

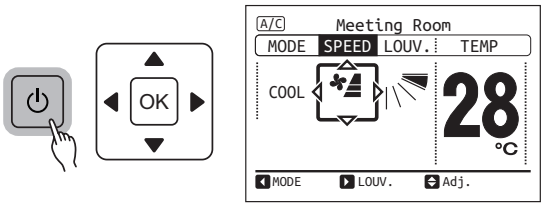
1 Turn ON the power supply for all the indoor units.

2 For the models with the auto-address function, wait for 3 minutes approximately. The addressing is automatically performed. (There is a case that 5 minutes is required according to the setting condition.) After that, press "☰" (menu) and select using language from *"Language Setting"* in *"4.1.9.21 Screen display setting"* menu.

4.1.5 Operation method

4.1.5.1 Operation start

Press "⏻" (run/stop). The run indicator will be turned on and the operation will be started.

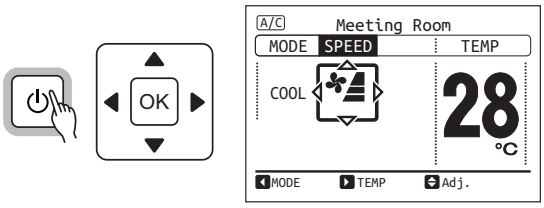


NOTE

Temperature / Air Flow Setting: The setting condition will be memorized once after the setting is confirmed, therefore the daily setting is not required.

4.1.5.2 Operation Stop

Press "⏻" (run/stop) again. The run indicator will be turned off and the operation will be stopped.



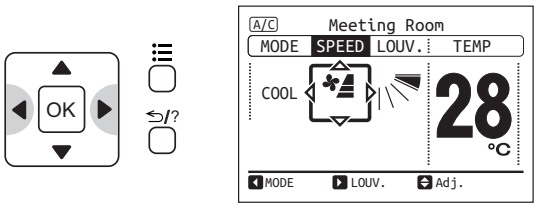
NOTE

The indoor unit fan may continue to operate for up to two minutes following the heating cycle to dissipate residual heat from the indoor unit.

4.1.5.3 Basic Operation

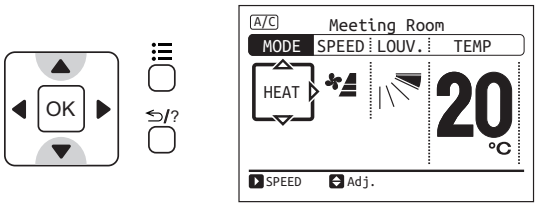
1 Item Selection.

By pressing "◁" or "▷", the icon "⬚" will move to the next item in order of the indications "MODE", "SPEED", "LOUV." and "TEMP".



2 Change of Settings

With the item ("MODE", "SPEED", "LOUV" or "TEMP") selected, press "△" or "▽". The setting will be changed.



4.1.5.4 Operation mode (Cooling, Heating, Dry, Cooling/Heating Automatic and Air Flow Operation)

◆ Function

- **Cooling Operation (COOL):**

  To decrease the room temperature.
- **Heating Operation (HEAT):**

  To increase the room temperature.
- **Dry Operation (DRY):**

  To decrease the humidity in the room.
- **Cooling/Heating Automatic Operation (AUTO):**

  To cooling and heating automatic changeover.
- **Air Flow Operation (FAN):**

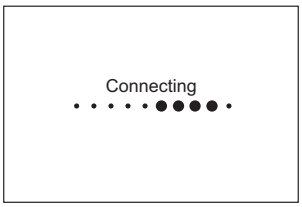
  To circulate the air in the room.

NOTE

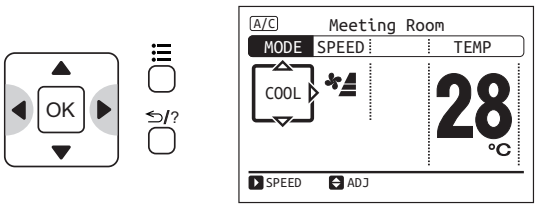
The available set temperature is as follows:

- *Cooling Operation: 19 to 30°C*
- *Heating Operation: 17 to 30°C*
- *Dry Operation: 19 to 30°C*

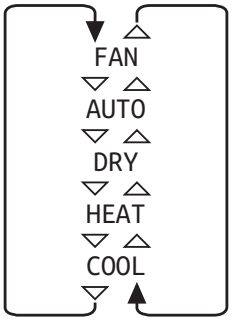
1 Turn ON the power supply.

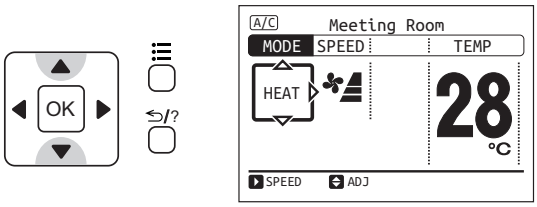


2 Press "◁" or "▷" and select "MODE".



3 By pressing "△" or "▽", the operation mode will be changed as follows.



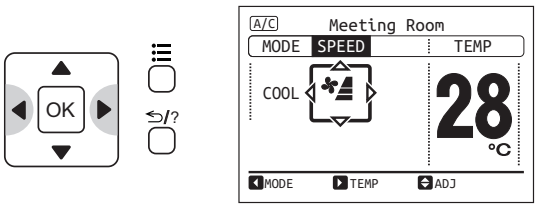


NOTE

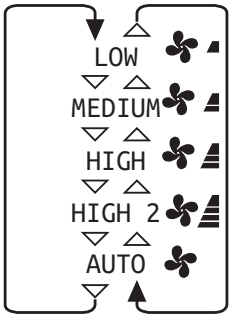
The optional function setting (b8=01) is required for the "AUTO" operation.

4.1.5.5 Fan speed

1 Press "◁" or "▷" and select "SPEED".



2 By pressing "△" or "▽", the fan speed will be changed as follows.

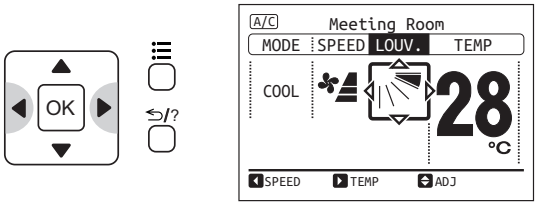


NOTE

- *During the dry operation, the fan speed is automatically changed to "LOW" and cannot be changed to other fan speed. ("LOW" will NOT be displayed on LCD at this time. The present setting condition will be displayed on LCD).*
- *The fan speed settings "HIGH 2" and (or) "AUTO" may not be available depending on the indoor unit type.*

4.1.5.6 Swing louver direction

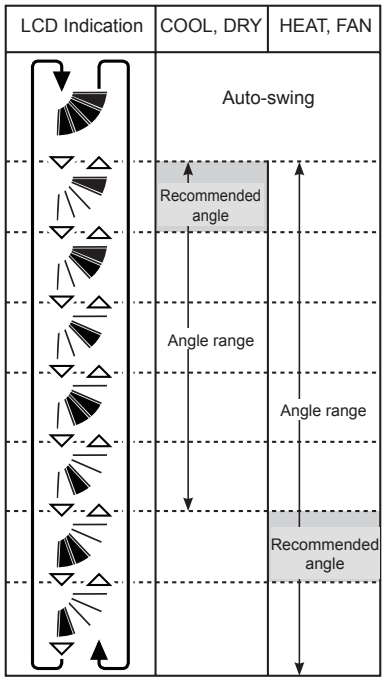
1 Press "⏻" (run/stop). Make sure that the operation is started. Press "◁" or "▷" and select "LOUV".



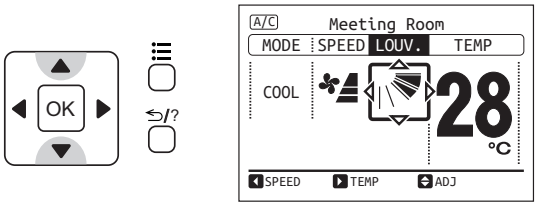
NOTE

For the indoor unit without the auto louver mechanism, the indication of "LOUV." will NOT be displayed on LCD.

2 By pressing "△" or "▽", the louver direction will be changed as follows.



: Auto swing operation will be started. At this time, the louver will swing repeatedly on LCD.



NOTE

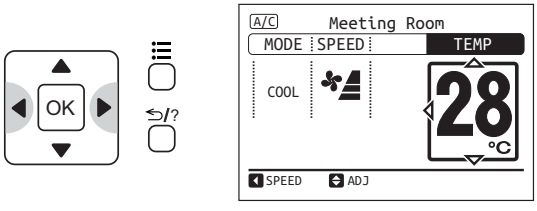
- *The air flow angle is different for each indoor unit type. Check Installation & Operation Manual for Indoor Unit to be used for the detailed information.*
- *Louver position on LCD and the actual louver position may not match during the auto swing operation. To fix the louver positions, set the angle after checking the position on LCD.*
- *The louver may NOT stop immediately right after the switch is pressed.*

◆ Temperature Setting

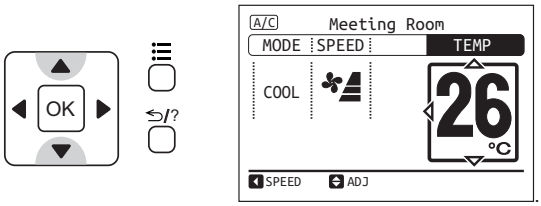
NOTE

- *It is possible to configure the setting temperature scale by means of the optional functions for every 0.5ºC (p1=00) or every 1ºC (p1=01).*
- *Depending on the type and setting of the indoor unit, it may not be possible to set the temperature by 0.5ºC.*
- *The max./min. temperature may differ depending on the type of indoor unit.*
- *The max/min temperature is available to change by setting the cooling lower limit for setting temperature (or heating upper limit for setting temperature) from the function selection.*
- *When the "Automatic Reset of Setting Temperature" function is selected, the temperature is automatically returned to the preset temperature after the temperature set-point change.*

1 Press "◁" or "▷" and select "TEMP".



2 By pressing "△", the temperature is increased by 0.5ºC. (Max. 30ºC). By pressing "▽", the temperature is decreased by 0.5ºC. (Cooling, Dry, Air Flow operation: Min. 19ºC) (Heating operation: Min. 17ºC).

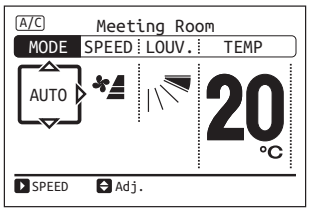


4.1.5.7 Automatic Cooling/Heating Operation

Automatically and according the indoor temperature the mode changes as follow:

When mode is in cooling, the mode is change to heating if the indoor temperature is the "heating setpoint" -1ºC.

When mode is in heating, the mode is changed to cooling if the indoor temperature is the "cooling setpoint" +1ºC.



NOTE

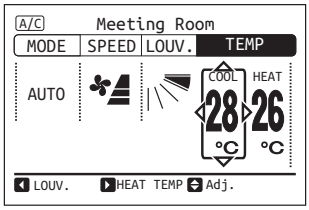
Optional function setting (b8=01) is needed for the use of automatic cooling/heating operation.

4.1.5.8 Automatic Cooling/Heating Operation dual setpoint

This function is available in standard air-to-air indoor units and is used to switch between heating and cooling operation automatically depending on a cooling set point and a heating set point (dual set point).

When mode is in cooling, the mode is change to heating if the indoor temperature is the "heating setpoint" - temperature set in optional function r2.

When mode is in heating, the mode is changed to cooling if the indoor temperature is the "cooling setpoint" + temperature set in optional function r2.



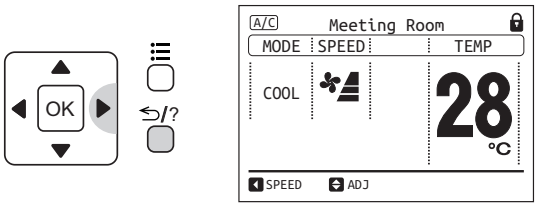
NOTE

Optional function setting (r1=01) is needed for the use of automatic cooling/heating operation and changing AUTO COOL/HEAT temperature.

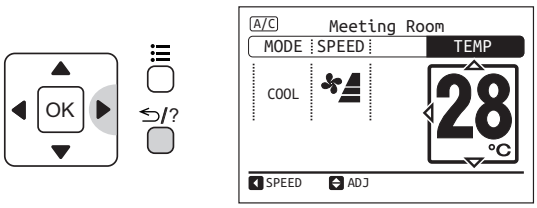
4.1.5.9 Operation lock

- This function is used to lock the setting from the remote control switch.
- The following functions are locked:
  - **a.** Operation Mode (MODE)
  - **b.** Temperature Setting (TEMP)
  - **c.** Fan Speed (SPEED)
  - **d.** Swing Louver Direction (LOUV)

1 Setting of the operation lock, press "▷" and "⮌/?" (return / help) simultaneously for 3 seconds. The icon of "🔒" will be turned ON. Even when "◁" or "▷" is pressed, locked setting items will be skipped.



2 Cancellation of the operation lock, press "▷" and "⮌/?" (return / help) simultaneously for 3 seconds. "🔒" will be turned OFF, and operation lock will be cancelled.



NOTE

- *Every time pressing "▷" and "⮌/?" (return / help) simultaneously for 3 seconds, the operation lock state will be switched alternately to locked/unlocked.*
- *In order to avoid the lock Set the optional functions to unlock individually the mode selection (F8=00), temperature setting (F9=00), speed selection (FA=00) or swing louver operation (Fb=00).*
- *Set the corresponding optional function, "mode(F8=00)", "temperature setting (F9=00)", "speed selection (FA=00)" or "swing louver operation (Fb=00)" in order to avoid the lock of any of them.*
- *In order to avoid the lock of any function set to "00" the corresponding optional function:*
  - *(F8=00) for the mode selection*
  - *(F9=00) for temperature setting*
  - *(FA=00) for the speed selection*
  - *(Fb=00) for the swing louver operation*

4.1.6 Power Saving Guide

This function easily sets the power-saving feature. The power save guide can be accessed directly by pressing the ECO button in the remote control switch.

Depending on the type and setting of the indoor unit and outdoor unit it may be impossible to set this function.

The power saving guide is showing the default settings for the following parameters:

- Power Saving mode (Sav mode)
- Power Saving ON/OFF (Sav ON/OFF)
- Power Saving Level (Sav Level)
- Schedule

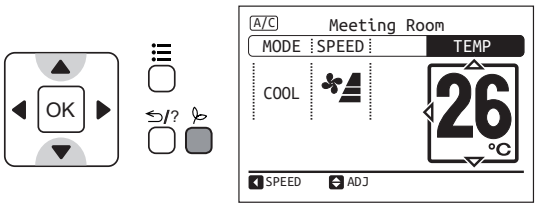
Only "Power Saving ON/OFF" and "Power Saving Level" can be updated from that screen.

The "Detailed Setting" menu contains further menus for changing the power saving mode and detailed settings, as well as to program a schedule.

NOTE

☒: *Unable to set: If a function displaying "☒" is selected from the "Menu", "No Function" will be displayed on the lower screen.*

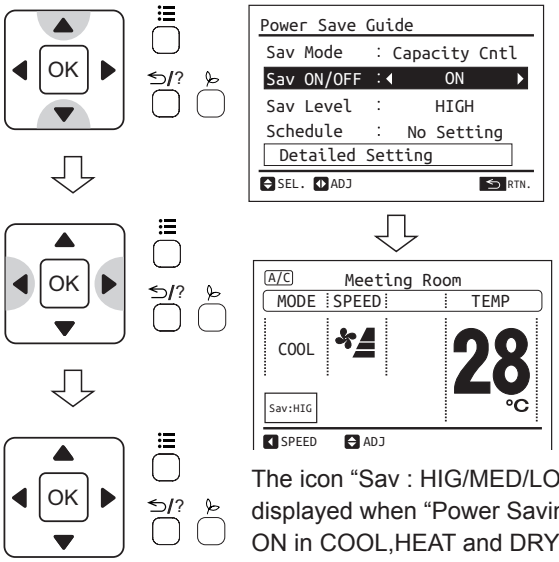
1 Press “ECO”: The Power Saving Guide will be displayed as shown in the image near the bottom of this page.



2 The current setting status is displayed for “Power Saving Mode”, “Power Saving ON/OFF”, “Power Saving Level” and “Schedule”. It is possible to change the “Sav ON/OFF” and “Sav Level” settings. (*1).

- **Power Saving ON/OFF Setting:**
  Press “Δ” or “∇” and select “SAV ON/OFF”. By pressing “ Δ” or “∇”, the setting will change between “ON” ↔ “OFF”. (*2)
- **Power Saving Level:**
  Depends on the configuration selected in “Change level” of the *“Power saving detailed setting (intermittent operation control)”* menu.

  Press “Δ” or “∇” and select “Sav Level”. By pressing “Δ” or “∇” the setting will change between “LOW” ↔ “MED” ↔ “HIGH”. (*2) (*3)



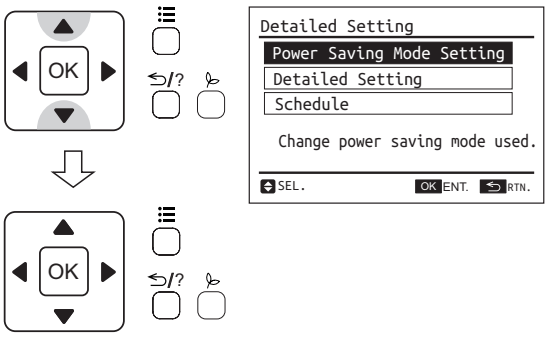
The icon “Sav : HIG/MED/LOW” is displayed when “Power Saving” is ON in COOL,HEAT and DRY modes

NOTE

- **1: When the Power Saving Mode is “Rotation Control”, the “Power Saving Level” and “Schedule” are not displayed.When the Power Saving Mode is “No Setting”, the “Power Saving ON/OFF”, “Power Saving Level” and “Schedule” are not displayed.*
- **2: When the Power Saving Mode is “Capacity Control” and Remote controller is set as SUB, it is not possible to change the settings for “Power Saving ON/OFF” and “Power Saving Level”.*
- **3: When Power Saving is OFF, the “Power Saving Level” cannot be changed.*
- **Detailed Setting:**
  Press “Δ” or “∇” and select “Detailed Setting”. By pressing “OK”, the Detailed Setting screen will be displayed.

3 Press "△" or "▽" and select the setting function. By pressing "OK", each type of setting will be displayed. Refer to the following concerning each setting.

- Power Saving Mode Setting (Section *"When the setting of schedule operation is invalid, the schedule operation will not be activated."*)
- Power Saving Detailed Setting (Section *"4.1.9.5 Power Saving"*)
- Power Saving Schedule Setting (Section *"4.1.9.9 Power saving / Operation noise reduction schedule"*).

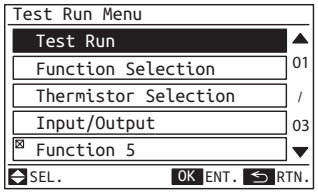


4.1.7 Test run menu

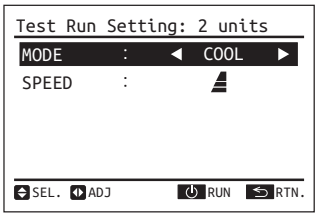
4.1.7.1 Test run

1 After *"4.1.4 Start Up Process"* press and hold "☰" (menu) and "⮌/?" (return / help) simultaneously for at least 3 seconds.

a. The test run menu will be displayed.

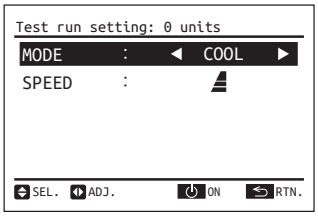


b. Select "Test Run" and press "OK". The test run settings will be displayed.

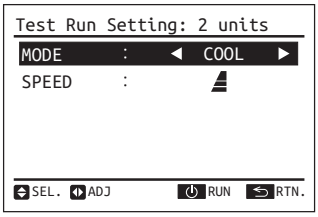


NOTE

When "00" is indicated, the auto-address function may be performing. Cancel "Test Run" mode and set it again.

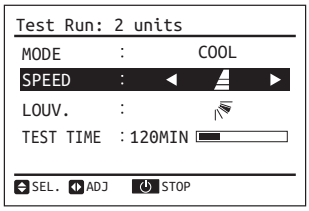


2 The total number of the indoor units connected is indicated on the LCD.

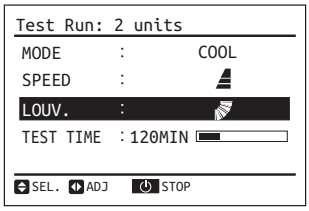


- If the indicated number is not equal to the actual connected number of indoor unit, the auto-address function is not performed correctly due to incorrect wiring, the electric noise or etc. Turn OFF the power supply and correct the wiring after checking the following points; (Do not repeat turning ON and OFF within 10 seconds.).
  - Power supply for indoor unit is not turned ON or incorrect wiring.
  - Incorrect connection of connecting cable between indoor units or incorrect connection of controller cable.
  - Incorrect setting of rotary switch and DIP switch (the setting is overlapped) on the indoor units PCB.

3 Press "⏻" (run/stop). The test run operation start. The operation mode, the air flow volume, the air flow direction and the test run time can be set on the test run screen. Select the item by pressing "△ ▽" and set the detail by pressing "◁ ▷". At this time, 2-hour OFF timer will be set automatically.



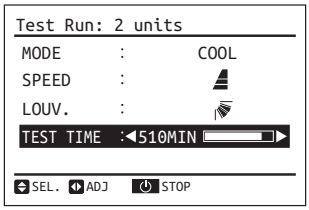
4 Press "△" or "▽", select "LOUV." and select "" (auto swing) by pressing "◁" or "▷". The auto swing operation will be started. Check the operating sound at the louvers. If abnormal sound is not generated, press "◁" or "▷" again to stop the auto swing operation.



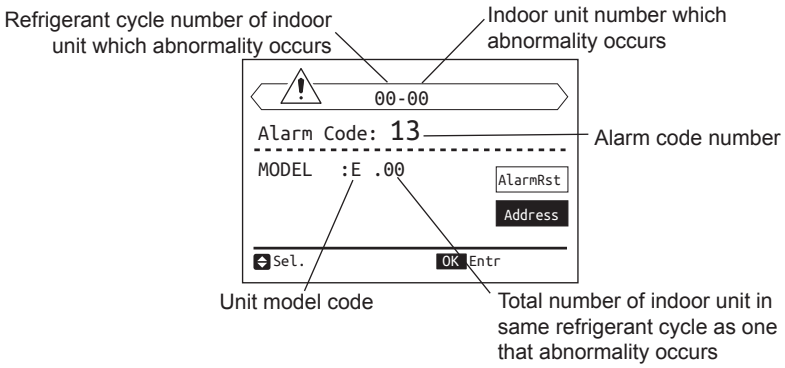
5 The temperature detections by the thermistors are invalid though the protection devices are valid during the test run.

6 For SET FREE Series: According to the label "Checking of Outdoor Unit by 7-Segment Display on PCB1", check temperature, pressure and the operation frequency, and connected indoor unit numbers by 7-segment displays.

7 To finish the test run, press "⏻" (run/stop) again or pass over the set test run time. When changing the test run time, press "△" or "▽" to select "TEST TIME". Then, set the test run time (30 to 600 minutes) by pressing "◁" or "▷".



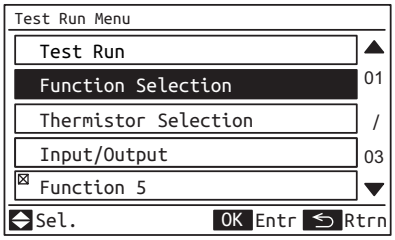
- The RUN indicator on the remote control switch flashes when some abnormalities such as protection devices activated occur during the test run as well as the RUN indicator (orange) on the indoor unit flashes (0.5 second ON/ 0.5 second OFF). Additionally, the alarm code, the unit model code and connected number of indoor units will be displayed on the LCD as shown in the figure below. If the RUN indicator on PC-ARFP1E flashes (2 seconds ON/ 2 seconds OFF), it may be a failure in the transmission between the indoor unit and the remote control switch (loosening of connector, disconnecting wiring or breaking wire, etc.). In this case, check the item *"4.1.14 Alarm codes"* and perform for troubleshooting. Consult to authorized service engineers if abnormality can not be recovered.
- Small sound may be heard from the outdoor unit after turning ON the power source because the electrical expansion valve is activated to adjust the opening. Therefore there is no abnormality of the unit.
- Sound may be heard from the outdoor unit for seconds after running or stopping the compressor, starting or finishing the defrosting, etc. It generates because of the pressure difference inside the piping from the compressor. Therefore, there is no abnormality of the unit.



4.1.7.2 Function Selection

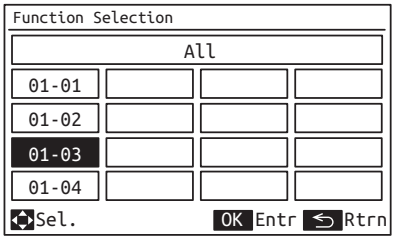
1 Press and hold "☰" (menu) and "⮌/?" (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu is displayed then.

2 Select "Function Selection" from the test run menu and press "OK".

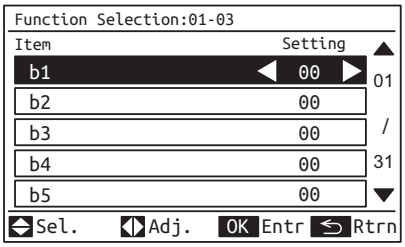


3 Select the indoor unit by pressing "△ ▽ ◁ ▷" and press "OK".

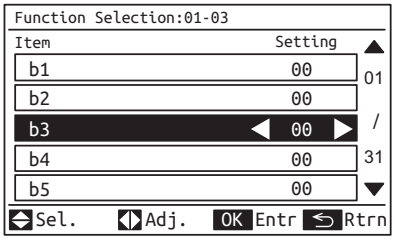
(This screen is NOT displayed when the number of indoor units connected with the remote control switch is 1. In this case, go directly to the step 4).



4 Press "△ ▽" and select the item.

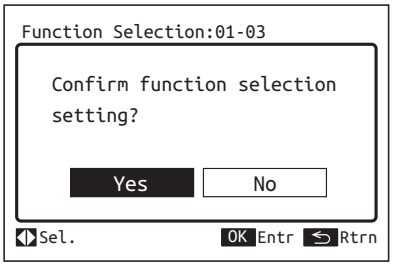


5 Press "◁ ▷" and change the setting.



6 Press "OK", then the confirmation screen is displayed.

7 Select “Yes” and press “OK”. The test run menu is displayed after the setting is confirmed. If “No” is pressed, the screen returns to step 4.



8 Press “⮌/?” (return / help) on the test run menu to return to the normal mode.

NOTE

To set other units, press “⮌/?” (return / help) at steps 4 and 5 so that the screen returns to step 3 (If the number of indoor units connected with the remote control switch is 1, the screen returns to step 4).

◆ Optional setting items for function selection

The next list refers to the optional functions available to indoor units from the remote control switch. Note that not all remote control switch have access to all the optional functions. Check the remote control switch technical documentation for detailed information.

Element	Optional function	Individual setting	Settings	Setting conditions	Description
b1	Heating temperature compensation Models: RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3 RPI-FSN5E RPI-FSN3E(P)E(-f) RPIM-FSN4E(-DU) RPK-FSN(H)3M	O	00	Normal (factory setting) (Setting Temperature + 4ºC)	This function is used to adjust the temperature difference between the temperature read by the inlet sensor and the real room temperature. This is useful when the inlet air thermistor is not placed inside the indoor unit or due to uneven heat load. Note: • *The “02”, “03”, “04” settings may not be available depending on the type of indoor unit.* • *This setting shall be performed separately for each indoor unit, even in case that multiple indoor units are connected to one remote controller.*
			01	No compensation (Setting Temperature)	
			02	Setting Temperature + 2ºC	
			03	Setting Temperature + 3ºC	
			04	Setting Temperature + 1ºC	
	Heating temperature compensation Models: RPF(I)-FSN2E	O	00	RPF(I)-FSN2E: Normal (factory setting) (Setting Temperature + 2ºC)	
			01	No compensation (Setting Temperature)	
			02	Setting Temperature + 2ºC	
b2	Circulation function at heating Thermo-OFF	O	00	Function disabled (factory setting)	This function keeps the fan running during the Thermo-OFF sequence, at the fan speed set on the remote control switch, to prevent the stratification of air in the room.
			01	Function enabled	
b3	Forced compressor operation for at least three minutes (Not available for models KPI-E4)	O	00	Function disabled (factory setting): Forced compressor operation for at least three minutes can be enabled or disabled through C7 setting	This function is used to allow the setting of C7, to protect the compressor by preventing it from being started or stopped for periods of less than 3 minutes.
			01	Function enabled: Forced compressor operation for at least three minutes always occurs independently of C7 setting	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
b4	Change of filter cleaning period	O	00	Standard (1200 hours)	This function is used to modify the period of operation after which the air filter cleaning indication is shown in the remote control. For RPK-FSN(H)3M models, the factory setting is b4=00: Standard setting 200 hours.
			01	100 hours	
			02	1200 hours (factory setting)	
			03	2500 hours	
			04	No indication	
b5	Locking of operation mode (Not available for models KPI-E4)	X	00	Function disabled (factory setting)	This function prevents the modification of the operation mode of the unit from the remote controller and from central controls, once it has been selected.
			01	Function enabled	
b6	Locking of temperature setting	X	00	Function disabled (factory setting)	This function prevents the modification of the setting temperature of the unit from the remote controller and from central controls, once it has been selected.
			01	Function enabled	
b7	Setting operation mode as cooling only (Not available for models KPI-E4)	X	00	Function disabled (factory setting)	This function is used to limit the operation mode to cooling only and to prevent heating mode from being enabled.
			01	Function enabled	
b8	Automatic COOL/HEAT operation (Not available for models KPI-E4)	X	00	Function disabled (factory setting)	This function enables the selection of Auto cool/heat operation mode. If the function is not activated, Auto cool/heat mode cannot be selected on the remote control switch.
			01	Function enabled	
b9	Locking of fan speed setting (Not available for models KPI-E4)	X	00	Function disabled (factory setting)	This function prevents the modification of the fan speed of the unit from the remote controller and from central controls, once it has been selected.
			01	Function enabled	
bA	Not available	X	“- -” permanent	Not available	–
bb	Cooling setting temperature correction	O	00	No compensation (factory setting)	This function decreases the setting temperature and is used to produce longer cooling periods.
			01	Setting temperature decreased by 1ºC	
			02	Setting temperature decreased by 2ºC	
bC	Not used	–	00	-	Use at 00 conditions
			01		
bd	Not used	–	00	-	Use at 00 conditions
			01		
bE	Not used	–	00	-	Use at 00 conditions
			01		
C1	Not used	–	00	-	Use at 00 conditions
			01		
C2	Not available	–	“- -” permanent	-	–
C3	Not used	–	00	-	Use at 00 conditions
			01		
	Only for DX-Interface, KPI-E4E and KPI-X4E: Fan stoppage delay		00	Function disabled (factory setting)	This function keeps the fan in operation for 60 minutes after stop of the KPI unit or DX- Interface.
			01	60 minutes	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
C4	Drain pump operation in heating mode	O	00	Function disabled (factory setting)	This function is used to activate the drain pump in heating mode. Only for models with drain pump.
			01	Function enabled	
C5	Static pressure selection Models RPI-FSN5E RPIM-FSN4E(-DU) RPI-FSN3(P)E(-f)	O	00	Standard static pressure (factory setting)	This function is used to change the static pressure of the RPI units from the remote control.
			01	High static pressure	
			02	Low static pressure	
	Increase of fan speed during normal operation (not during heating Thermo-OFF) Models RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3 RPK-FSN(H)3M RPF(I)-FSN2E	O	00	Standard (factory setting)	This function is used to change the fan speed of indoor units installed in high ceilings.
			01	Hi Speed 1	
			02	Hi Speed 2	

	Fan speed setting on the remote controller			
C5	High H	High	Medium	Low
0	Hi2	Hi	Me	Lo
1	Hi2	Hi1	Hi	Me
2	Hi2	Hi2	Hi1	Hi

(This function C5 is not available for DX-Interface models)

C6	Increase of fan speed at heating Thermo-OFF (Not available for models KPI-E4 and KPI-X4E)	O	00	Function disabled (factory setting)	This function is used to increase the fan speed when the thermostat reaches the set temperature in heating according to the setting of function C5.
			01	Function enabled	
C7	Cancellation of forced compressor operation for at least 3 minutes	O	00	Function disabled (factory setting)	This function is available depending on the setting of function b3.
			01	Function enabled (Compressor operation during 3 minutes is no longer forced)	
	Only for KPI-E4E and KPI-X4E CO_2 sensor enabled		00	Sensor non enabled (factory setting)	Via 7-segments display set the option CE (00: ON/OFF Sensor (Default); 01: 4-20mA 02: 0-10V)
			01	Sensor enabled/activated	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
C8	Control by the temperature sensor of the remote control switch. **NOTE** *The remote control switch shall be installed in a proper place for the correct detection of room temperature by its temperature sensor.*	O	00	Control by the air inlet sensor of indoor units (factory setting)	This function specifies the temperature sensor to be used as control sensor by the indoor unit.
			01	Control by the temperature sensor of the remote control switch	
			02	Control by the average value of the air inlet sensor of indoor units and the temperature sensor of the remote control switch (Air inlet + Remote control switch)/2	
	Control sensor when a remote sensor is connected to the THM4 connector in the indoor unit PCB. **NOTE** *The remote sensor shall be installed in a proper place for the correct detection of room temperature.* Model RPF(I)-FSN2E	O	00, 01, 02	When a remote sensor is connected to THM4, this remote sensor is used as control sensor, whichever the setting for C8 (factory setting C8=00)	
	Control sensor when a remote sensor is connected to the THM4 connector in the indoor unit PCB. **NOTE** *The remote sensor shall be installed in a proper place for the correct detection of room temperature.* Models RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3 RPI-FSN5E RPI-FSN3E(P)E(-f) RPIM-FSN4E(-DU) RPK-FSN(H)3M		00, 02	Air temperature control using the average value of the air inlet thermistor and the remote sensor (factory setting C8=00) (Air inlet + Remote sensor)/2	
			01	Air temperature control using the remote sensor	
C9	Not available	–	"- -" permanent	–	–
CA	Not available	–	"- -" permanent	–	–
Cb	Selection of forced stoppage logic	X	00	Forced stoppage input: A contact, normally open contact (factory setting)	This function determines the logic operation for the forced stoppage contacts.
			01	Forced stoppage input: B contact, normally closed contact	
CC	Not used	–	00	-	Use at 00 conditions
			01		
	Only for DX-Interface, KPI-E4E and KPI-X4E: High ventilation speed		00	Function disabled (factory setting)	This function sets the unit to run in high fan speed regardless the setting from remote control switch.
			01	Function enabled	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
Cd	Stop of indoor unit fan during cooling Thermo-OFF conditions **NOTE** *For model RPI-FSN3E(P)E and RCD-FSN3, this function is NOT available.*	O	00	Fan speed during cooling Thermo-OFF: Low (factory setting)	The operation of the indoor unit fan is stopped in cooling Thermo-OFF conditions when using the additional remote temperature sensor THM-R2AE (connected to THM4) or the PC-ARFP1E temperature sensor. C8 must be set to 01 to use the Cd=01 setting.
			01	Indoor unit fan is stopped during cooling Thermo-OFF	
CE	Stop of indoor unit fan during heating Thermo-OFF conditions Stop of indoor unit fan during heating Thermo-OFF conditions (with remote control switch temperature sensor)	O	00	Fan speed setting during heating Thermo-OFF: Low (factory setting)	The indoor unit uses the PC-ARFP1E temperature sensor to monitor the room temperature when the fan is stopped (heating Thermo-OFF fan stop sequence). C8 must be set to 01 to use the CE=01 setting. Control by remote temperature sensor connected to THM4 is not permitted (use E8 function in that case).
			01	Indoor unit fan is stopped during heating Thermo-OFF *(In case that automatic louver is set, the louvers will keep operating in both Thermo-ON and Thermo-OFF conditions)*	
CF	Modification of louver swing angle Models: RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3	O	00	Standard (7 steps) (factory setting)	This function adjusts the angle of the air outlet louver. *(Changes to the setting of this function are applied after turning the power supply off and on again, or after the automatic louver has made a full cycle in automatic mode).*
			01	Cold draft prevention (5 steps) *(Cannot be set to the lower two steps; lower 2 steps cut off)*	
			02	High ceilings (5 steps) *(Cannot be set the upper two steps; upper 2 steps cut off)*	
	Models: RPK-FSN(H)3M		00	Standard (7 steps) (5 steps for cooling / dry mode)	
			01	Cold draft prevention (5 steps for heating and fan only) *(Cannot be set to the lower two steps, lower 2 steps cut off)*	
			02	Not used	
d1	Management of indoor unit operation after a power supply cut off - option 1	O	00	Function disabled (factory setting)	When power supply is restored, the indoor units controlled by the wired remote control switch are turned on regardless of their ON/OFF status at the time of the last power cut off.
			01	Function enabled	
d2	Not available	–	"- -" permanent	–	–
d3	Management of indoor unit operation after a power supply cut off - option 2	O	00	Function disabled (factory setting)	When power supply is restored, the indoor units controlled by the wired remote control switch are turned on automatically ONLY if they were already ON at the time of the last power cut off. If indoor units were OFF when power was turned OFF, they remain in OFF status when power is restored.
			01	Function enabled	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
d4	Prevention of low air outlet temperature in cooling mode Models: RPI-(4.0-6.0)FSN5E RPIM-(0.6-1.5)FSN4E(-DU)	O	00	Function disabled (factory setting)	This function is used to prevent the decrease of discharge air temperature in cooling operation, by controlling Thermo-ON/ OFF according to the discharge air temperature. When ambient temperature > setting temperature: If air outlet temperature ≤ 11ºC for 3 minutes, the system is switched to Thermo-OFF. In this status, if air outlet temperature ≥ 13ºC, the system is switched back to Thermo-ON.
			01	Function enabled	
	Not used Models: RCD-FSN3 RPI-(0.4-3.0)FSN5E RPI-FSN3E(P)E(-f) RCI-FSN4 RPC-FSN3 RCIM-FSN4E RPF(I)-FSN2E	O	00	-	Use at 00 conditions
			01		
d5	RPI-(8~20)FSN3(P)E Prevention of low air outlet temperature in heating mode	O	00	Function disabled (factory setting)	This function prevents the occurrence of an excessively cold air flow in heating mode by decreasing the fan speed during heating operation, also taking into account the setting of function C5
			01	Function enabled	
d6	Room temperature control for energy saving	O	00	Function disabled (factory setting)	This function saves energy when the outdoor temperature is lower than the air conditioning load. The indoor unit is set to cooling Thermo-OFF when: Tout (outside ambient temperature - out of the building) < Tin
			01	Function activated	
d7	Econofresh: Minimum opening angle of the outdoor air (OA) damper	O	00	6º (factory setting)	This function is used to set the minimum opening angle of the damper for fresh outdoor air.
			01	12º	
			02	18º	
			03	24º	
			04	30º	
			05	36º	
			06	42º	
			07	48º	

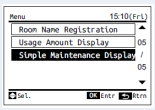
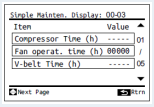
Element	Optional function	Individual setting	Settings	Setting conditions	Description
E1	KPI: Ventilation mode	O	00	Automatic ventilation (factory setting)	This function allows the outdoor air damper to be opened in All Fresh operation mode. This mode allows the full opening of the outdoor air damper (according to the control system).
			01	Ventilation with total heat exchanger	
			02	Ventilation with bypass (no total heat exchange)	
	DX-Interface: "A" Offset for Thermo- OFF in control by outlet for DX-Interface		00	Disabled (factory setting)	
			01	2ºC	
			02	4ºC	
	Econofresh: cooling mode		00	Standard process (factory setting)	This function allows the outdoor air damper to be opened in All Fresh operation mode. This mode allows to fully open the outdoor air damper (according to the control system).
			01/02	All Fresh	
E2	KPI: Increase of air supply volume	O	00	Disabled function (factory setting)	This function is used to make the room pressure higher or lower than the surrounded room. One of the fans Increases its speed while the other runs according the remote controller. Hi/Me/Lo change to Hi/ Hi/Me.
			01	Enabled function	
	Econofresh enthalpy sensor		00	Disabled function (factory setting)	This function selects the enthalpy sensor input for Econofresh.
			01	Enabled function	
E3	Not used	–	00	-	Use at 00 conditions
			01		
	Only for KPI-E4E and KPI-X4E: Selection of the fan for function E2	–	00	Activated for supply fan	This function selects which fan will increase the speed (when E2 enables this function).
			01	Activated for exhaust fan	
E4	KPI: Pre-cooling / pre-heating period	O	00	Disabled (factory setting)	This function delays unit startup with energy recovery
			01	30 minutes	
			02	60 minutes	
	Econofresh: CO_2 sensor		00	Disabled (factory setting)	This function selects the CO_2 gas sensor input for Econofresh.
			01/02	CO_2 sensor (required setting E1=00)	
E5	Not used	–	00	-	Use at 00 conditions
			01		
	Only for DX-Interface, KPI-E4E and KPI-X4E: High ventilation after switch ON	–	00	Disabled (factory setting)	This function forces that the unit will operate in high speed during 60 minutes after fan start. After this time the fan will be changed to setting value.
			01	60 minutes	
E6	Period of indoor fan operation after cooling operation stoppage	O	00	Disabled function (factory setting)	This function prevents the condensation in the unit by keeping the fan running after the unit operation has been turned OFF.
			01	60 minutes	
			02	120 minutes	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
E7	Not used	–	00	-	Use at 00 conditions
			01		
E8	Control for stop of the indoor unit fan during heating Thermo-OFF conditions (with remote sensor THM-R2AE connected to the THM4 connector in the indoor unit PCB)	O	00	Fan operation in Low speed	This function stops the fan to prevent cold draughts or overheating. C8 must be set to 01 to use the E8=01 setting. The connection of a THM- R2AE remote temperature sensor to the THM4 port in the indoor unit PCB is required. The remote sensor shall be installed in a proper place for the correct detection of room temperature. (In case that automatic louver is set, the louver will keep operating in both Thermo- ON and Thermo- OFF condition.)
			01	Fan stop in Thermo-OFF conditions.	
E9	Intermittent fan operation in heating stop Not available for models: RPF(I)-FSN2E	O	00	Function disabled (factory setting)	In case that indoor unit operation is set OFF by the remote control switch, under certain conditions the fan is operated in cycles consisting of 3 minutes of operation at SLow speed and 30 minutes of stoppage.
			01	Function enabled	
EA	Not used	–	00	-	Use at 00 conditions
			01		
			02		
Eb	Indoor unit fan control during cooling Thermo-OFF conditions	O	00	Function disabled (factory setting)	This function decreases speed of the indoor unit fan during cooling Thermo-OFF, to reduce the spread of smells and humidity.
			01	Low	
			02	Slow	
EC	Forced Thermo-ON when stopping in cooling operation	O	00	Function disabled (factory setting)	This function is used to force Thermo-ON during 6 minutes when stopping in cooling operation.
			01	Enabled	
Ed	Not used	O	00	-	Use at 00 conditions
			01		
EE	Control in “Automatic” indoor fan speed mode	O	00	Function disabled (factory setting)	This function limits the speed of the indoor fan when room temperature is close to the setting temperature.
			01	Enabled	
EF	Control in “Automatic” indoor fan speed mode (supporting High H) Models: RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3 RPI-FSN5E RPI-FSN3E(P)E(-f) RPIM-FSN4E(-DU) RPK-FSN(H)3M	O	00	Function disabled	This function limits the speed of the indoor fan when room temperature is close to the setting temperature, allowing to reach High H speed.
			01	Function enabled	
F0	Not available	–	“- -” permanent	–	–

Element	Optional function	Individual setting	Settings	Setting conditions		Description
F1	Automatic OFF timer setting Models: RCI-FSN4 RPC-FSN3 RPK-FSN3M RPI-FSN5E RPIM-FSN4E(-DU) RCD-FSN3 RCIM-FSN4E RPI-FSN3(P)E	X	00	Function disabled (Factory setting)		This function sets an automatic OFF timer to switch OFF the indoor units controlled by the remote control switch (when the units have been started by remote control). *(Do not set the values "0C"-"0F" when two remote control switches are used in the same remote control group).*
			01	1 hour		
			02	2 hours		
			03	3 hours		
			04-24	(04-24) hours		
			0A	30 minutes		
			0B	90 minutes		
			0C	40 minutes	Do not set these when two wired controllers are used.	
			0D	45 minutes		
			0E	50 minutes		
			0F	55 minutes		
	Automatic OFF timer setting Models: RPF(I)-FSN2E	X	00	Function disabled (Factory setting)		This function is used to set the automatic timer to switch off when the unit has been started by remote control.
			01	1 hour		
			02	2 hours		
			03	3 hours		
			04-24	(04-24) hours		
			0A	30 minutes		
			0B	90 minutes		
F2	Remote control main-sub setting	X	00	Main (Master remote control) (Factory setting)		This function is used to define which remote control switch is used as master or slave, when two remote controllers are connected to one indoor unit.
			01	Sub (Slave remote control)		
F3	Automatic reset of setting temperature	X	00	Function disabled (Factory setting)		This function is used to limit unit operation and save energy. The setting temperature is automatically set to the value defined with functions "F5" or "F6", according to the current operation mode, after the time set with function "F4" has passed since the last manual change of setting temperature. In case that the values of "F5" or "F6" are out of the limits set with functions "FC" and "Fd", limitations set by "FC" and "Fd" have priority.
			01	Function enabled		
F4	Automatic reset time	X	00	30 minutes (factory setting)		This function sets the automatic reset time delay for function F3.
			01	15 minutes		
			02	60 minutes		
			03	90 minutes		

Element	Optional function	Individual setting	Settings	Setting conditions	Description
F5	Automatic reset temperature for cooling	X	19	19ºC	This function defines the default temperature set point for the automatic reset function F3 in FAN/ COOL/DRY modes.
			20	20ºC	
			21	21ºC	
			. . .	. . .	
			24	24ºC	
			25	25ºC (factory setting)	
			26	26ºC	
			. . .	. . .	
			28	28ºC	
			29	29ºC	
			30	30ºC	
F6	Automatic reset temperature for heating	X	17	17ºC	This function defines the default temperature set point for the automatic reset function F3 in HEAT mode.
			18	18ºC	
			. . .	. . .	
			20	20ºC	
			21	21ºC (factory setting)	
			25	25ºC	
			. . .	. . .	
			28	28ºC	
			29	29ºC	
			30	30ºC	
F7	Prevention of operation stoppage due to wrong operation of the remote controller	X	00	Function disabled (factory setting)	Operation is stopped by pressing the run/stop switch for 3 seconds.
			01	Function enabled	
F8	Lock function for operation mode selection	X	00	Function disabled	This function is used to prevent changes to the operation mode.
			01	Function enabled (factory setting)	
F9	Lock function for temperature setting	X	00	Function disabled	This function is used to prevent changes to the temperature setting.
			01	Function enabled (factory setting)	
FA	Lock function for fan speed selection	X	00	Function disabled	This function is used to prevent changes to the fan speed.
			01	Function enabled (factory setting)	
Fb	Lock function for swing louver operation	X	00	Function disabled	This function is used to prevent changes to the automatic louver operation.
			01	Function enabled (factory setting)	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
FC	Lower limit of setting temperature for cooling (Minimum value of setting temperature allowed in cooling)	X	00	Function disabled 19ºC is the standard minimum set point (factory setting)	This function defines the lowest temperature setting value for FAN/COOL/DRY modes.
			01	+1ºC (Lower limit 20ºC)	
			02	+2ºC (Lower limit 21ºC)	
			03	+3ºC (Lower limit 22ºC)	
			. . .	. . .	
			08	+8ºC (Lower limit 27ºC)	
			09	+9ºC (Lower limit 28ºC)	
			10	+10ºC (Lower limit 29ºC)	
Fd	Upper limit of setting temperature for heating (Maximum value of setting temperature allowed in heating)	X	00	Function disabled 30ºC is the standard maximum set point. (factory setting)	This function defines the highest temperature setting value for HEATING mode. Models: RPF(I)-FSN2E up to 20ºC (FC=10)
			01	-1ºC (Upper limit 29ºC)	
			02	-2ºC (Upper limit 28ºC)	
			03	-3ºC (Upper limit 27ºC)	
			. . .	. . .	
			10	-10ºC (Upper limit 20ºC)	
			11	-11ºC (Upper limit 19ºC)	
			12	-12ºC (Upper limit 18ºC)	
FE	Not used	-	00	-	Use at 00 conditions
			01		
			02		
FF	Not Used	O	00	-	Use as 00 conditions
			01		
H1	No indication of maintenance alarm	–	00	Displayed	This function is used to display or hide the maintenance alarm indication.
			01	Hidden	
H2	Indication of hot start (No Indication of operation limitation)	X	00	Displayed	This function is used to display or hide the automatic control indication. Models: RPF(I)-FSN2E Not available, use at 00 conditions
			01	Hidden	
H3	Not used	–	00	-	Use at 00 conditions
			01 / 02		
H4	Not Used	–	00	-	Use at 00 conditions
			01	-	
	KPI: Operation modes for the ventilation unit with energy recovery	O	00	Air conditioning only (factory setting)	This function is only available for ventilation units with energy recovery.
			01	Ventilation only	
			02	Air conditioning + ventilation	
J1	Not used	-	00	-	Use at 00 conditions
			01		

Element	Optional function	Individual setting	Settings	Setting conditions	Description
J2	Not used	-	00	-	Use at 00 conditions
			01		
J3	Colour of the run indicator	X	00	Green (factory setting)	–
			01	Red	
J4	Override of Start/Stop prohibition at the remote controller	X	00	Start/Stop allowed (Factory setting)	When there is a remote control prohibition from a central control device, this function overrides this prohibition allowing the operation of the Run/Stop button of the remote control switch. Models: RPF(I)-FSN2E Not used. Use at 00 conditions
			01	Start/Stop not allowed ⚠ **DANGER** ***Blocking of Start/Stop shall never be set due to safety concerns.***	
			02	Only Stop allowed	
J5	Not used	-	00	-	Use at 00 conditions
			01		
J6	Not used	-	00	-	Use at 00 conditions
			01		
J7	Enabling steps 6 and 7 for the air louver in COOLING or DRY mode	O	00	Function disabled (factory setting)	When a RPK unit is stopped in louver positions 6 or 7, the louver is set to position 5.
			01	Function enabled	
J8	Eco-operation	X	00	Function disabled (factory setting)	When the unit is restarted by the remote control switch, the temperature automatically changes to the setting temperature of “F5” or “F6”. Models: RPF(I)-FSN2E Not available, use at 00 conditions
			01	Function enabled	
J9	Not used	-	00	-	Use at 00 conditions
			01		
JA	Display of "Simple maintenance display" menu	O	00	Function disabled (factory setting)	Enables the “Simple maintenance display” menu.   Models: RPF(I)-FSN2E Not available, use at 00 conditions
			01	Function enabled	
Jb	Enable automatic fan speed setting	O	00	Function disabled (factory setting)	Models: RPF(I)-FSN2E Not available, use at 00 conditions
			01	Function enabled	
K1	Not used	-	00	-	Use at 00 conditions
			01		
K2	Not used	-	00	-	Use at 00 conditions
			01		

Element	Optional function	Individual setting	Settings	Setting conditions	Description
K3	Not used	-	00	-	Use at 00 conditions
			01		
K4	Not used	-	00	-	Use at 00 conditions
			01		
			02		
			03		
K5	Detection level of the motion sensor kit	O	00	Standard (factory setting)	Models: RPF(I)-FSN2E Not available, use at 00 conditions. This parameter defines the sensitiveness of the motion sensor. The amount of activity in the room is assessed according to a different scale based on this setting. Detailed information about the operation of the motion sensor can be found in the technical documentation of the indoor units.
			01	High	
			02	Low	
K6	Selection of allowed operation modes when the control sensor of the indoor unit is set by C8 function	O	00	All modes allowed	This function is used to select the operation modes in which the setting of C8 (use of remote control switch sensor or remote sensor on THM4 to control the indoor unit) is enabled.
			01	Only cooling/dry allowed	
			02	Only heating allowed	
			03	All modes allowed	
K7	Not used	-	00	-	Use at 00 conditions
			01		
			02		
			03		
K8	Control for the prevention of condensation on the louvers.	O	00	Function disabled (factory setting)	Condensation may occur around air outlet during COOL/DRY operation with horizontal air flow or downward air flow for long periods. This function is used to prevent condensation by moving the louver swing angle to the third step automatically for 30 minutes every 1 hour. (In RPK units, this function is activated by means of DSW2-4 instead of the K8 optional function)
			01	Function enabled	
K9	Not used	-	00	-	Use at 00 conditions
			01		
KA	Not used	-	00	-	Use at 00 conditions
			01		
L1	Not used	-	00	-	Use at 00 conditions
			01		
			02		
			03		

Element	Optional function	Individual setting	Settings	Setting conditions	Description
L2	Not used	-	00	-	Use at 00 conditions
			01		
			02		
			03		
L3	Operation of the louvers in energy-saving Thermo- OFF (Cooling / Dry mode)	O	00	Direct air blow Low (factory setting)	Power save must be ON in order to use this function (L5 must be set to 01). This function is used to establish louver swinging operation ranging from continuous swing to static operation. Low: Continuous louver swing. Medium: Louver swing with intermittent stops for 20/40 seconds. High: Louver stopped at full opening position, according to the setting of CF.
			01	Direct air blow Medium	
			02	Direct air blow High	
			03	Disabled	
L4	Fan acceleration in energy-saving Thermo- OFF (cooling mode)	O	00	Function disabled (factory setting)	This function increases fan speed by one step to prevent the loss of comfort due to the forced Thermo- OFF for energy saving during cooling operation.
			01	Function enabled	
L5	Louver swing operation during energy-saving forced Thermo-OFF	O	00	Function disabled (factory setting)	This function is used to enabled the setting of function L3.
			01	Function enabled	
L6	Not used	-	00	-	Use at 00 conditions
			01		
L7	Not available	–	"- -" permanent	–	–
L8	Not used	-	00	-	Use at 00 conditions
			01		
L9	Not used	-	00	-	Use at 00 conditions
			01		
LA	Not used	-	00	-	Use at 00 conditions
			01		
Lb	Not used	-	00	-	Use at 00 conditions
			01		
P1	Setting temperature in 0.5ºC steps	X	00	Enabled (0.5ºC steps) (factory setting)	This function is used to define whether setting temperature is adjusted in 0.5ºC steps (when set to "00") or in 1ºC steps (when set to "01"). This setting also determines whether the resolution of temperature differential of the thermistor is 0.5ºC (when set to "00") or 1ºC (when set to "01").
			01	Disabled (1ºC steps)	
P2	Not used	-	00	-	Use at 00 conditions
			01		

Element	Optional function	Individual setting	Settings	Setting conditions	Description
P3	Temperature sensor displayed	X	00	Inlet air thermistor (Tin)	This function is used to select the thermistor whose temperature is shown when function P4 is set to 01.
			01	Outdoor air thermistor (Tout)	
			02	Remote controller thermistor (RCS)	
			03	Remote sensor (THM4)	
P4	Display of sensor temperature	X	00	Hidden	This function is used to display the temperature of the sensor selected with function P3.
			01	Shown	
P5	Display of setting temperature when operation mode is Fan	X	00	Shown	This function is used to hide the display of setting temperature during operation in fan mode.
			01	Hidden	
P6	Operation of the ECO button	X	00	ECO button enabled (factory setting)	The operation of ECO button is disabled when P6 is set to 01
			01	ECO button disabled	
P7	Prohibition of menu screen transition	X	00	Function disabled (factory setting)	This function is used to prohibit the access to the menu screens.
			01	Function enabled	The text "Display disabled" appears on screen instead.
P8	Not used	-	00	-	Use at 00 conditions
			01		
P9	Not used	-	00	-	Use at 00 conditions
			01		
PA	Daylight saving time	X	00	1 hour	This function is used to set the amount of adjustment when daylight saving time is applied.
			01	2 hours	
Pb	Not used	-	00	-	Use at 00 conditions
			01		
PC	Not used	-	00	-	Use at 00 conditions
			01		
q1	Not used	-	00	-	Use at 00 conditions
			01		
q2	Not used	-	-	-	Not used
q3	Not used	-	-	-	Not used
q4	Not used	-	-	-	Not used
q5	Not used	-	-	-	Not used
q6	Not used	-	00	-	Use at 00 conditions
			01		
q7	Not used	-	00	-	Use at 00 conditions
			01		
q8	Not used	-	00	-	Use at 00 conditions
			01		
q9	Not used	-	00	-	Use at 00 conditions
			01		
qA	Not used	-	00	-	Use at 00 conditions
			01		
qb	Operation mode with setback	X	00	Disabled	Operation modes in which setback operation is activated to keep a minimum comfort in the room while it is not occupied.
			01	Cooling	
			02	Heating	
			03	Cooling/Heating	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
qC	Temperature differential for the setback function	X	00	2.0ºC	Target temperatures for both cooling and heating operation are determined versus a temperature to start setback operation (rE, rF) Target temperature calculation: Target temperature in cooling mode: rF - qC (°C) Target temperature in heating mode: rE + qC (°C)
			01	3.0ºC	
			02	4.0ºC	
			03	5.0ºC	
			04	1.0ºC	
qd	Minimum stop time of setback	X	00	10 minutes	To avoid the frequent activation of setback operation, a minimum off-time shall pass from the end of setback operation until the beginning of the following setback operation. Even if room temperature reaches the setpoint to start setback operation, setback operation does not start until the minimum off-time has expired.
			01	20 minutes	
			02	30 minutes	
			03	40 minutes	
			04	50 minutes	
			05	60 minutes	
			06	70 minutes	
			07	80 minutes	
			08	90 minutes	
			09	100 minutes	
			10	110 minutes	
			11	120 minutes	
qE	Setback mode	X	00	Always	When selecting "01: Input", it is necessary to set up one input contact (i1 or i2) with the setback function "09". This operation has to be done in the input/output setting menu of the remote controller. When selecting "02: Schedule" or "03: Manual", additional settings are required.
			01	Input	
			02	Schedule	
			03	Manual	
qF	Operation state after the end of setback operation	X	00	Stop	Operation state to switch to upon the end of setback duration.
			01	Run	
			02	Operation state before the beginning of setback	
r1	Dual setpoint	X	00	Function disabled (factory setting)	This function allows the setting of independent setpoints for cooling and heating in the automatic cooling/heating mode.
			01	Function enabled	
r2	Setting of temperature differential for switching cooling and heating	X	0.5	0.5ºC	This function can only be set when function r1 is set to 01.
			1.0	1.0ºC	
			1.5	1.5ºC	
			2.0	2.0ºC	
			2.5	2.5ºC	
			3.0	3.0ºC	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
r3	Not used	-	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5	-	Not used
r4	Not used	-	00 01	-	Use at 00 conditions
r5	Not used	-	00 01	-	Use at 00 conditions
r6	Not used	-	00 01	-	Use at 00 conditions
r7	Not used	-	00 01	-	Use at 00 conditions
r8	Not used	-	00 01	-	Use at 00 conditions
r9	Remote control prohibition during setback operation	X	00	Start/Stop allowed (Factory setting)	Manual run/stop from the remote controller can be disabled during setback operation. This function is fixed to 00 (Disabled) when function qE is set to 00 (Always).
			01	Start/Stop not allowed ⚠ **DANGER** ***Blocking of Start/Stop shall never be set due to safety concerns.***	
			02	Only Stop allowed	
rA	Not used	-	00 01 02 03 04 05 06 07	-	Use at 00 conditions
rb	Minimum operation time to allow the change of operation mode in auto cooling/heating mode with dual set point	X	00	Disabled	This function is used to define a minimum time of operation in a given mode, in order to avoid too frequent changes of operation mode. Operation mode does not change until the minimum transition time passes, even if the room temperature reaches the setpoint to shift to the other operation mode.
			01	10 minutes	
			02	20 minutes	
			03	30 minutes	
			04	40 minutes	
			05	50 minutes	
			06	60 minutes	
			07	70 minutes	
			08	80 minutes	
			09	90 minutes	
			10	100 minutes	
			11	110 minutes	
			12	120 minutes	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
rC	Maximum outdoor temperature to allow operation mode switch to heating in auto cooling/ heating with dual set point	X	00	Disabled	If outdoor ambient temperature is higher than rC, there is no mode transition to heating in automatic cooling/heating operation mode, even if room temperature reaches the setpoint to switch operation mode from cooling to heating.
			01	20.0°C	
			02	21.0°C	
			03	22.0°C	
			. . .	. . .	
			21	40.0°C	
			22	0.0°C	
			23	1.0°C	
			24	2.0°C	
			. . .	. . .	
			41	19.0°C	
rd	Minimum outdoor temperature to allow operation mode switch to cooling in auto cooling/ heating with dual set point	X	00	Disabled	If outdoor ambient temperature is lower than rd, there is no mode transition to cooling in automatic cooling/heating operation mode, even if room temperature reaches the setpoint to switch operation mode from heating to cooling.
			01	10.0°C	
			02	11.0°C	
			03	12.0°C	
			. . .	. . .	
			31	40.0°C	
			32	-20.0°C	
			33	-19.0°C	
			34	-18.0°C	
			. . .	. . .	
			61	9.0°C	
rE	Temperature for the beginning of heating in setback	X	00	15.0°C	If room temperature becomes lower than this setting, indoor unit operation is resumed in heating mode by the setback function.
			01	16.0°C	
			02	17.0°C	
			03	18.0°C	
			04	19.0°C	
			05	10.0°C	
			06	11.0°C	
			07	12.0°C	
			08	13.0°C	
			09	14.0°C	
rF	Temperature for the beginning of cooling in setback	X	00	26.0°C	If room temperature becomes higher than this setting, indoor unit operation is resumed in cooling mode by the setback function.
			01	27.0°C	
			02	28.0°C	
			03	29.0°C	
			04	30.0°C	
			05	31.0°C	
			06	32.0°C	
			07	33.0°C	
			08	34.0°C	
			09	35.0°C	
			10	25.0°C	
S1	Not used	-	00	-	Use at 00 conditions
			01		
S2	Not used	-	00	-	Use at 00 conditions
			01		
S3	Not used	-	00	-	Use at 00 conditions
			01		

Element	Optional function	Individual setting	Settings	Setting conditions	Description
S4	Not used	-	00	-	Use at 00 conditions
			01		
S5	Not used	-	00	-	Use at 00 conditions
			01		
S6	Not used	-	00	-	Use at 00 conditions
			01		
			02		
S7	Not used	-	00	-	Use at 00 conditions
			01		
			02		
			03		
			04		
			05		
			06		
			07		
S8	Not used	-	00	-	Use at 00 conditions
			01		
			02		
			03		
			04		
			05		
			06		
			07		
			08		
			09		
			10		
			11		
			12		
			13		
			14		
			15		

NOTE

- *O: allows for individual setting.*
- *X: the setting is made for all outdoor units.*
- *–: not used.*

NOTE

- *The changes to the optional function settings must be done after 3 minutes have passed since start-up.*
- *It is recommended to keep track of the changes made to optional function settings, for further reference.*
- *The available optional settings are different depending on the indoor and outdoor unit models. Check the technical documentation of the indoor and outdoor units to ensure whether the optional settings are available for these units.*
- *The optional functions with "X" mark at the individual setting column can change the condition only when "All Rooms" is set.*
- *The following optional functions are disabled when RPI units with Econofresh are installed: b7, Cd, CF, d6, E9, H1, H4, J4, J7, J8, JA, JB, K5.*
- *The listed optional functions are valid for the following models:*

Indoor Unit series	With software number
RCI-(1.0~6.0)FSN4	P-4736
RCIM-(0.4~2.5)FSN4E	P-4729
RCD-(0.8~6.0)FSN3	P-4729
RPK-(0.4~4.0)FSN(H)4M	P-4725
RPI-(0.4~1.5)FSN5E	P-4725
RPI-(2.0~3.0)FSN5E	P-4725
RPI-(4.0~6.0)FSN5E	P-4735
RPIM-(0.6~1.5)FSN4E	P-4735
RPC-(1.5~6.0)FSN3	P-4736

◆ Detailed optional functions

b1 – Removal of heating temperature compensation

This function is used to adjust the difference of temperature between the setting temperature of the remote control switch and the inlet air temperature of the indoor unit.

This is useful when the inlet air thermistor is not placed inside the indoor unit or due to uneven Heat Load or for example in standard heating mode, the suction air temperature is greater than that of the room, therefore the setting temperature used according to the factory setting is calibrated to the indicated temperature +4ºC, but depending on the room conditions can be necessary to compensate a smaller value.

b2 – Circulator function at heating Thermo-OFF

This function means that the fan unit remains running after the air conditioning system has stopped in heating mode to prevent the air in the room from stratifying.

This function is useful when the air in the room is stratified (hot air accumulates at the ceiling). Air stratification may occur if has been selected fan speed changes to LOW when the thermostat of the unit is stopped. This function prevents air stratification in the room after stopping the air conditioning system.

This function maintains the fan speed, whether the thermostat is on or off. Hence, the air movement in the room is kept at the same level to ensure even air distribution.

NOTE

- *If the indoor unit has an automatic louver, this function also remains active when the heating thermostat is switched off.*
- *Everyone has a different perception of coolness, heat and air flow and, therefore, this issue should be discussed with the client and the unit set according to the results of the conversation.*

b3 – Forced compressor operation for at least three minutes

This function is used to allow the setting of C7 (Cancellation of the forced compressor operation for at least 3 minutes) preventing it from being started or stopped the compressor for periods of less than 3 minutes.

NOTE

- *In the case of SET FREE units, forced compressor operation for at least 3 minutes is standard, even when the setting is not available.*
- *The compressor stops immediately when the safety device is activated or ON/OFF is pressed.*
- *To cancel this function, see C7 – Cancellation of the forced compressor operation for at least 3 minutes.*
- *When this function is cancelled, the mode enabling operations for a minimum of 3 minutes remains available.*

b4 – Change the filter cleaning period

This function is used to modify the period during which the remote control indicates the air filter replacement. The filter cleaning period can be changed depending on the condition of the filter.

NOTE

- *The remaining number of hours before cleaning the filter is factory-set for all indoor unit models b2=02 (1200 hours).*
- *For RPK-FSN(H)3M models Factory-Setting is b4=00: Standard setting 200 hrs.*

b5 – Locking of operation mode

This function is used when the operating mode does not have to be changed. Once the unit operating mode has been selected, this function prevents it from being modified from the remote control.

b6 – Locking of temperature setting

This function is used when the temperature setting does not have to be changed. Once the unit temperature has been selected, this function prevents it from being modified from the remote control.

b7 – Setting operation mode as cooling only

This function is available to use refrigeration mode only and to prevent heating mode from being enabled. When this function is selected, heating operation and the automatic COOL/HEAT operation are cancelled.

b8 – Automatic COOL/HEAT operation

This function allows the automatic change from the cooling to the heating mode for the units with the same refrigerant cycle.

NOTE

This function is not valid when the outdoor unit is an exclusive cooling model or when the function to set operations as an exclusive cooling unit is enabled.

b9 – Locking of fan speed

Once the unit fan speed has been selected, this function prevents it from being modified from the remote control.

NOTE

When this function is enabled, the fan speed cannot be changed using the remote control.

bA – Not available

bb – Cooling setting temperature correction

This function decrease the temperature and it is used to obtain longer cooling periods. When this function is enabled, the air conditioning system is switched on/off with the temperature condition below the temperature indicated on the remote control.

NOTE

The lower set temperature limit after offset is 19°C.

bC – Not used

bd – Not used

bE – Not used

C1 – Not used

C2 – Not available

C3 – Not used

C4 – Drain pump operation in heating mode

This function is used to activate the drain pump in heating mode.

C5 – Increasing fan speed / Static pressure selection

This function is used to change the indoor units fan speed installed in high ceilings.

For RPI units this function is used to change the static pressure from the remote control.

C6 – Increasing speed at heating Thermo-OFF

This function is used to increase the fan speed when the thermostat reaches the set temperature in heating using function C5.

NOTE

The fan speed does not increase when the thermostat is switched off with the function setting (C5).

C7 – Cancellation of the forced compressor operation for at least 3 minutes

This function is available when b3 (Forced compressor operation for at least three minutes through C7 setting) is set 00 (C7 setting possible).

This function allows that the compressor are not forced 3 minutes operation.

NOTE

In the case of SET FREE units, the forced compressor operation for at least 3 minutes fixed as a standard function.

C8 – Thermistor of remote control switch and remote sensor

This function is useful when the unit is to be controlled by the thermistor included in the remote control or by remote sensor instead of by the suction air thermistor. It determines the thermistor to control the air temperature.

NOTE

When the function is set to "01" or "02", if the temperature detected by the remote control thermistor is abnormal due to a fault in the remote control thermistor or another fault, the Air Inlet Thermistor on the indoor unit is used automatically.

C9 – Not available

CA – Not available

Cb – Selection of forced stoppage logic

This function determines the operating logic for the forced stoppage contacts.

The setting conditions and contact logic are shown in the following table:

Setting condition				
Setting	Contact	Contact logic	Activation contact	
			Open	Closed
00	Contact A	Normally open	Normal	Forced stoppage
01	Contact B	Normally closed	Forced stoppage	Normal

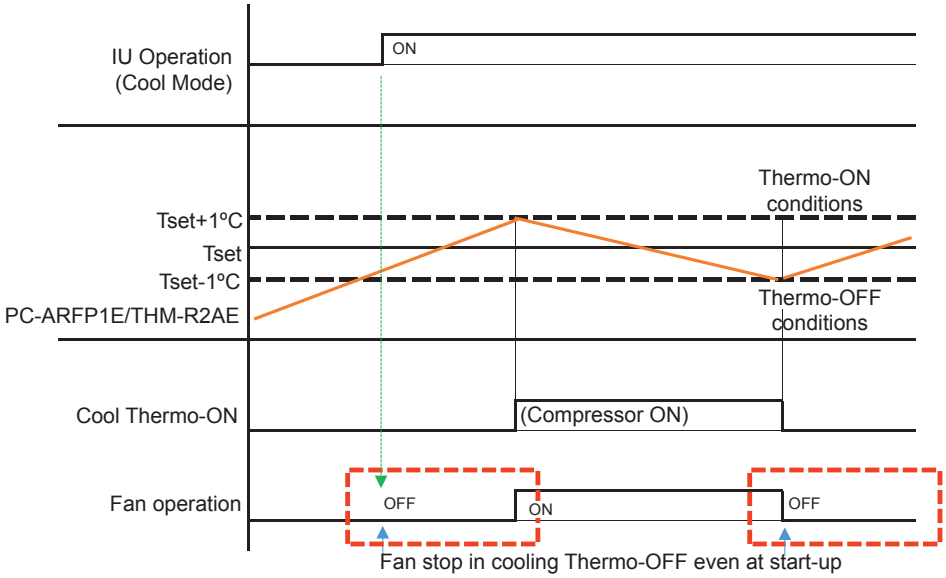
CC – Not used

Cd – Stop of indoor unit fan during cooling Thermo-OFF conditions

Fan stop operation in Thermo-OFF conditions when using the additional remote temperature sensor THM-R2AE (connected to THM4) or PC-ARFP1E temperature sensor.

This optional function keeps the fan stopped when the indoor unit is in Thermo-OFF conditions, even upon start-up.

"Cd=01": Fan stop operation in Thermo-OFF conditions when using the additional remote temperature sensor THM-R2AE (connected to THM4) or PC-ARFP1E temperature sensor ("C8=01" must be set in this case).



NOTE

It is advised to pay attention to the following points:

- *Do not set this function if no remote control sensor (in PC-ARFP1E) or remote sensor (THM-R2AE) are installed; otherwise, comfort conditions may never be reached.*
- *Do not set "Cd" function when indoor unit temperature control is based on:*
  - *"C8=00": Temperature control with the air inlet sensor of the indoor unit.*
  - *"C8=02": Temperature control with the average value of the remote control sensor and the air inlet sensor of the indoor unit. In these cases, comfort conditions may never be reached.*
- *In case that Automatic louver is set, the louver will keep operating in both Thermo-ON and Thermo-OFF conditions.*

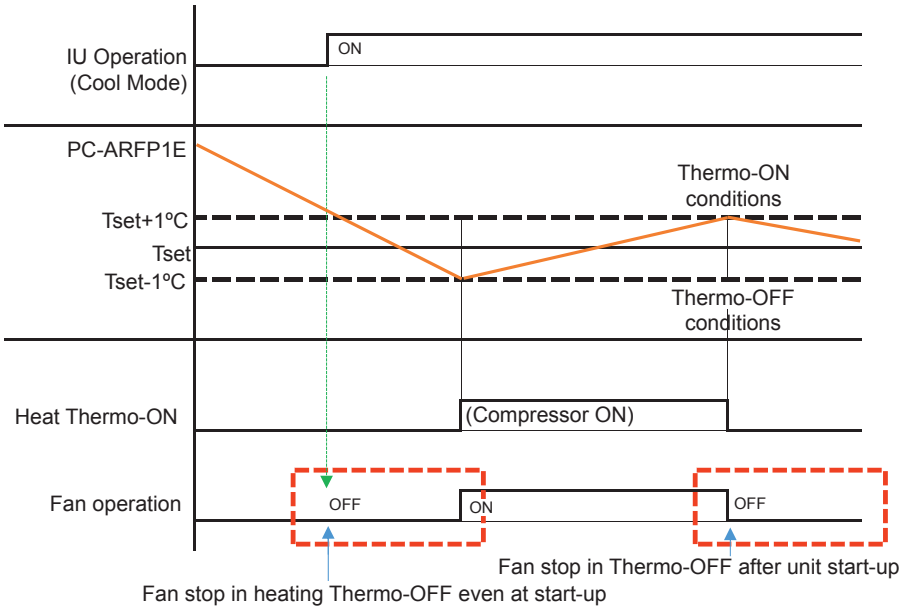
CE – Stop of indoor unit fan during heating Thermo-OFF conditions

This function is useful to avoid the perception of cold draughts.

When “CE=01”: Fan stop operation in Thermo-OFF conditions when using the PC-ARFP1E sensor, “C8=01” must be set in this case. The fan will not be turned on when the indoor unit is switched on in Thermo-OFF conditions.

Indoor unit will use the PC-ARFP1E Remote Control temperature sensor to monitor the room temperature when fan is stopped (heating Thermo-OFF fan stop sequence) The Remote Control Switch shall be installed in a proper place for the correct detection of room temperature by its temperature sensor.

Control by Remote Temperature Sensor not permitted.

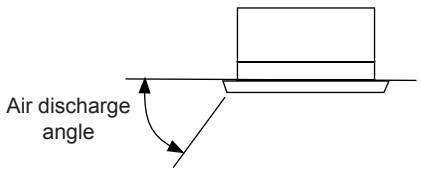


NOTE

- *These functions are only available when using the Remote Control Sensor (in PC-ARFP1E).*
- *Note: When using CE function:*
  - *“C8=00”: this setting is not permitted.*
  - *“C8=02”: this setting is not recommended since it may cause that comfort conditions are never reached (C8 set at 02 means that unit control is carried out with the average value of the Remote Control Sensor and the air inlet sensor of the indoor unit).*
- *In case that Automatic louver is set, the louver will keep operating in both Thermo-ON and Thermo-OFF conditions.*

CF – Change of louver swing angle

This function is useful when the louver swing angle (air discharge angle) must be changed.



Setting condition	Louver swing angle (air discharge angle)	Purpose
00	7 steps	Standard operation
01	5 steps	Cold draft prevention
02	5 steps (*)	For high ceiling

NOTE

(*) Not used for RPK-FSN(H)3M.

d1 – Power supply ON/OFF 1 (Automatic operation when power supply is ON)

This function stores the unit settings in the event of a power cut. The unit is restarted when the power is re-established.

CAUTION

When this function is used without anyone controlling the unit, set the system monitoring mode to avoid risks.

NOTE

In the event of an electrical fault, the unit starts and stops according to the on/off setting of the power supply. If the fault occurs during a stoppage enabled through the remote control, the unit will restart automatically once the power supply is reconnected.

d2 – Not available

d3 – Power supply ON/OFF 2 (Restarting function after power failure)

This function is used to restart the unit after a power cut taking more than 2 seconds. The standard unit starts automatically under the same operating conditions, such as the operating mode, etc. in the case of an electrical fault lasting for a maximum of 2 seconds.

The compressor unit restarts after 3 minutes plus the maximum 2 seconds of the fault.

CAUTION

When this function is used without anyone controlling the unit, set the system monitoring mode to avoid risks.

d4 – Prevention of drop of discharge temperature in cooling

This function is avoiding getting a too low air outlet temperature from indoor units in cooling operation. Remote Control Switch is controlling the air outlet temperature and adjusting the Thermo-ON/OFF status accordingly.

When ambient temperature > setting temperature:

- If air outlet temperature ≤ 11ºC for 3 minutes, the system is switched to Thermo-OFF.
- In this status, if air outlet temperature ≥ 13ºC, the system is switched back to Thermo-ON.

This optional function is only available for the following indoor units models: RPIM-(0.6-1.5)FSN4E, RPI-(4.0-6.0)FSN5E

For the following indoor units: RCD, RPK, RCI, RCIM, RPF(I), RPI-(0.4-3.0)FNS5E, RPI-(8~20)FSN3(P)E, this function is not used.

d5 – Prevention of decrease of heating discharge air temperature

This function prevents a drop in the air temperature by decreasing the fan speed, apart from the settings on the remote control.

d6 – Room temperature control for energy saving

This function saves energy when the outdoor temperature is lower than the air conditioning load.

The indoor unit is set to cooling Thermo-OFF when: T_{out} (outside ambient temperature - out of the building) < T_{in}

d7 – Only for Econofresh: OA Damper minimum opening

This function is setting the minimum opening angle of the damper for fresh-air intake.

E1 – KPI ventilation mode

This function is used to set the unit ventilation mode with energy / heat recovery

This function is useful to set the heat exchanger ventilation mode. The setting condition and ventilation mode are shown below:

Setting condition	
Setting	**Contents**
00	Effective ventilation mode selection (ventilation with total heat exchanger or ventilation bypass) to save energy by detecting the difference in temperature between indoors and outdoors.
01	Heat is exchanged continuously when the heat exchanger is started.
02	Heat is not continuously exchanged when the heat exchanger is started.

E1 – Econofresh cooling mode (100% fresh air operation for cooling mode)

This function allows the outdoor air damper to be open in All Fresh operation mode. This mode allows the full opening of the outdoor air damper (according to the control system).

E2 – KPI Increasing air supply volume

This function is useful when the air supply volume must be increased using the high-speed, one-way valve on the fan motor during total heat exchanger operations. This increases the pressure in the room with greatest air volume in relation to adjoining rooms and prevents the entry of contaminated air or unpleasant smells.

E2 – Econofresh enthalpy sensor

This function allows the outdoor air damper to be open in All Fresh operation mode. This mode allows the full opening of the outdoor air damper (according to the control system).

E3 – Not used

E4 – KPI: Pre-cooling / pre-heating period

This function is useful to delay start-up of the total heat exchanger.

E4 – Econofresh: CO_2 sensor

This function selects the CO_2 gas sensor input (required setting E1=00).

E5 – Not used

E6 – Indoor fan operation time after cooling operation stoppage

This functions prevents the condensation accumulation in the unit by keeping the fan running after it is switched off.

E7 – Not used

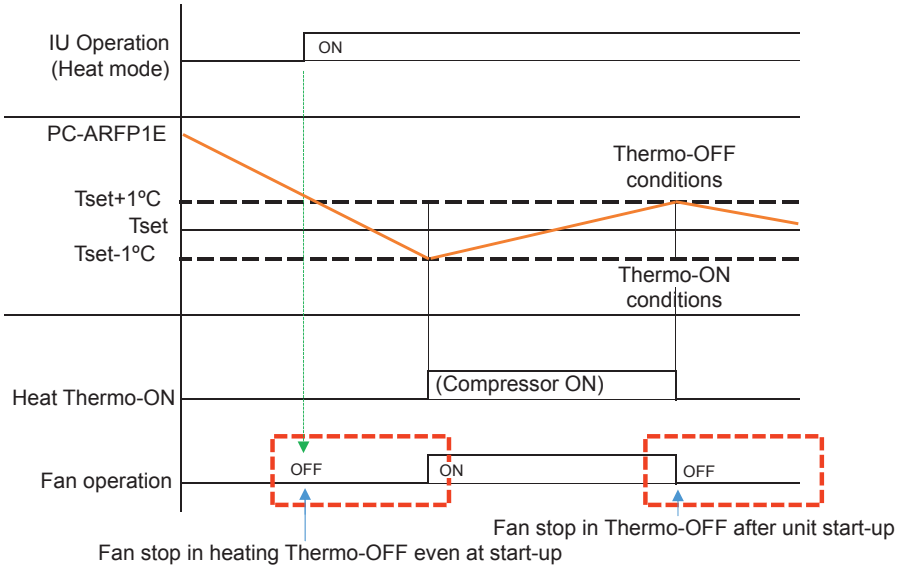
E8 – Fan operation control at heating Thermo-OFF

This function is useful to avoid the perception of cold draughts by stopping the indoor fan speed with the heating Thermo- OFF. These functions are only available when using the remote sensor (THM-R2AE).

THM-R2AE remote temperature sensor (connected to the THM4 port on the indoor unit PCB) is required.

This function stops the fan to prevent cold draughts.

The Remote Sensor shall be installed in a proper place for the correct detection of room temperature.



NOTE

- *These functions are only available when using the Remote Sensor (THM-R2AE).*
- *Note: When using E8 function:*
  - *"C8=00": this setting is not permitted.*
  - *"C8=02": this setting is not recommended since it may cause that comfort conditions are never reached (C8 set at 02 means that unit control is carried out with the average value of the Remote Sensor and the air inlet sensor of the indoor unit).*
- *In case that Automatic louver is set, the louver will keep operating in both Thermo-ON and Thermo-OFF conditions.*

E9 – Intermittent fan operation in heating stop

In case that the indoor unit is stopped (in switch OFF), under certain conditions the fan operation at Slo speed is performed for 3 minutes after 30 minutes of stoppage. Not available for models RPF(I)FSN2E.

EA – Not used

Eb – Fan operation control at cooling Thermo-OFF

This function reduces the unit fan speed to reduce the spreading of smells and humidity.

EC – Forced Thermo-ON stoppage at cooling operation

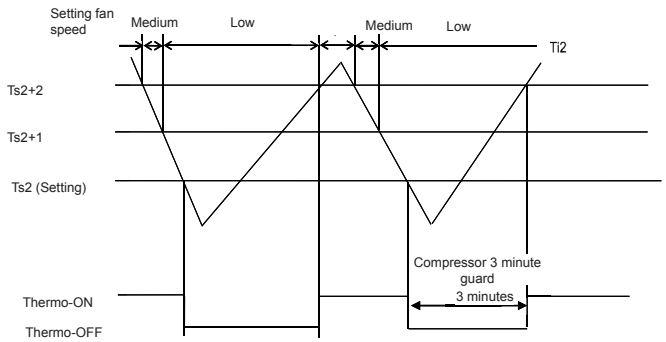
This function is used to force Thermo-ON during 6 minutes when stopping in cooling operation. It is effective for avoiding unpleasant smells, as the heat exchanger remains clean, e.g. it is rinsed with drainage water.

Ed – Not used

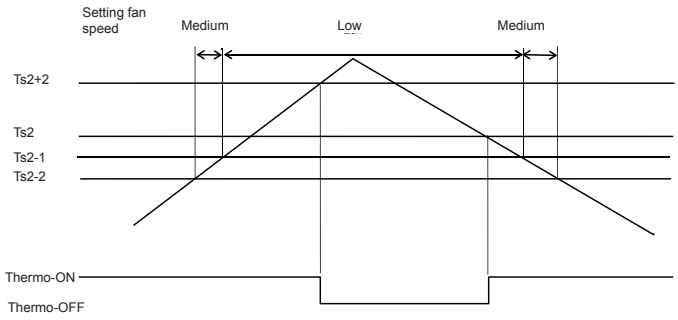
EE – Automatic fan speed control

This function limits indoor fan speed when room temperature is close to setting temperature.

- When EE: Automatic indoor fan speed mode is set to “01: Enables” in the function selection of the remote control, operation is carried out in automatic indoor fan speed mode.
- When setting fan speed is set as to “Auto” with the remote control, operation is carried out in automatic indoor fan speed mode with “High wind” as setting fan speed.
- Cooling
  - Indoor control temperature (Ti2) - Setting temperature 2 (Ts2) ≥ 2deg: Setting fan speed
  - Indoor control temperature (Ti2) - Setting temperature 2 (Ts2) ≥ 1deg: Medium (Low when setting fan speed is Low)
  - Indoor control temperature (Ti2) - Setting temperature 2 (Ts2) < 1deg: Low



- Heating
  - Setting temperature 2 (Ts2) - Indoor control temperature (Ti2) ≥ 2deg: Setting fan speed
  - Setting temperature 2 (Ts2) - Indoor control temperature (Ti2) ≥ 1deg: Medium (Low when setting fan speed is Low)
  - Setting temperature 2 (Ts2) - Indoor control temperature (Ti2) < 1deg: Low



- Maintenance of fan speed for 3 minutes
  - In switch ON with the remote control, fan speed is set to the setting fan speed, and then it enters in automatic mode after 3 minutes have passed. The switching of fan speed depending on temperature differential is performed when entering in the automatic mode, regardless of being in Thermo-ON or Thermo-OFF.
  - Once that fan speed is switched after Thermo-ON, the fan speed after the change is maintained for 3 minutes. (*) The aforementioned switching of fan speed depending on temperature differential is performed after 3 minutes have passed. Setting Temperature is the Temperature used for Thermo-OFF.
  - When switching fan speed due to a function of the motion sensor, it is switched immediately even during the 3 minutes of maintenance of fan speed.

- When switching fan speed due to the control of the sensor for heating radiation temperature, it is switched immediately even during the 3 minutes of maintenance of fan speed.
- When switching fan speed due to the beginning of the heating draft control, it is switched immediately even during the 3 minutes of maintenance of fan speed.

NOTE

**: However, when EE=01: Enabled is set, in case of switching setting fan speed from the remote control, it is directly switched to the automatic fan speed corresponding to the setting fan speed. When EE=00: Disabled is set, in case of switching setting fan speed from "Automatic" to "Other than automatic" from the remote control, it is directly switched to the setting fan speed. Also, in case of switching setting fan speed from "Other than automatic" to "Automatic" from the remote control, the switching of fan speed depending on temperature differential is carried out if being in Thermo-ON, while the switching of fan speed depending on temperature differential is not carried out if being in Thermo-OFF, and fan speed becomes the fan speed of the last automatic mode.*

- Common items
  - In case of changing from Thermo-ON to Thermo-OFF at the beginning of the automatic mode, the fan speed during Thermo-OFF is that of right after Thermo-OFF. Also, the switching of fan speed is not performed during Thermo-OFF. (When switching from Thermo-ON to Thermo-OFF, the maintenance of fan speed for 3 minutes is released, and the switching of fan speed depending on temperature differential is carried out)
  - The target of the automatic switching is the part of the control which operates at the normal setting fan speed.
  - When using a room thermostat and in test run, it is set to setting fan speed.
  - Even in case that the heating circulator is enabled (Function selection b2=01), it is set to the fan speed of the automatic indoor fan speed mode.

NOTE

- *The maximum fan speed in "Auto" mode is "High", unless EF function is also activated.*
- *Econofresh present, E1=01 and Fan speed setting is "Auto" mode, fan speed is fixed to "High"*

EF – Automatic indoor fan speed mode (supporting High H)

This function allows to increase the maximum fan speed to "High H" in "Auto" mode.

- Cooling

  Indoor control temperature (Ti2) - Setting temperature 2 (Ts2) ≥ 2deg ºC: Setting fan speed

  Indoor control temperature (Ti2) - Setting temperature 2 (Ts2) ≥ 1deg ºC: Medium

  Indoor control temperature (Ti2) - Setting temperature 2 (Ts2) < 1deg ºC: Low

- Heating

  Setting temperature 2 (Ts2) - Indoor control temperature (Ti2) ≥ 2deg ºC: Setting fan speed

  Setting temperature 2 (Ts2) - Indoor control temperature (Ti2) ≥ 1deg ºC: Medium

  Setting temperature 2 (Ts2) - Indoor control temperature (Ti2) < 1deg ºC: Low

- Relation with the automatic indoor fan speed mode (EE)

Setting of function selection EF	Setting of function selection EE	Remote control setting				
		Auto	High H	High	Medium	Low
00	00	High~Low	High2	High	High	Low
00	01	High~Low	High2~Low	High~Low	Medium~Low	Low
01	00	High2~Low	High2	High	High	Low
01	01	High2~Low	High2~Low	High~Low	Medium~Low	Low

F0 – Not available

F1 – Automatic OFF timer setting

This function is used to switch off the timer automatically when the unit is started using the remote control.

It is not possible to cancel or change the timer off setting during automatic timer off setting. However, it can be cancelled when the unit is stopped. When the unit is restarted, the off timer setting period is established according to the optional setting. Do not set the functions “0C”-”0F” when two remote control switches are used in the same remote control group.

NOTE

This function is not available for control using CSNET WEB or CSNET Manager or 7-day timer.

F2 – Remote control main-sub setting

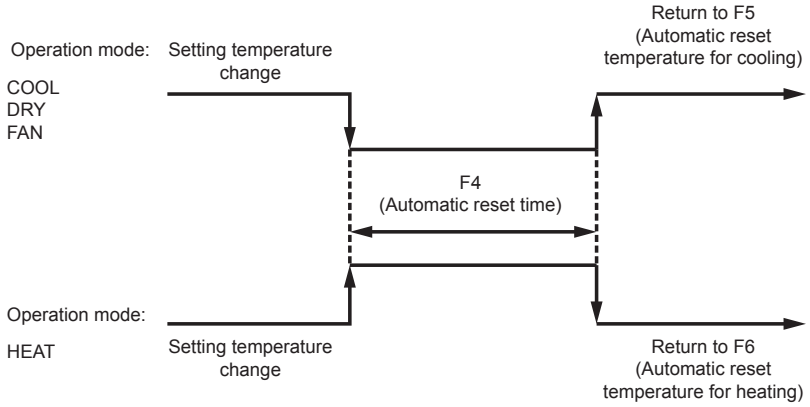
This function is useful when configuring two remote controls for the same installation: one in main mode and the other in secondary mode.

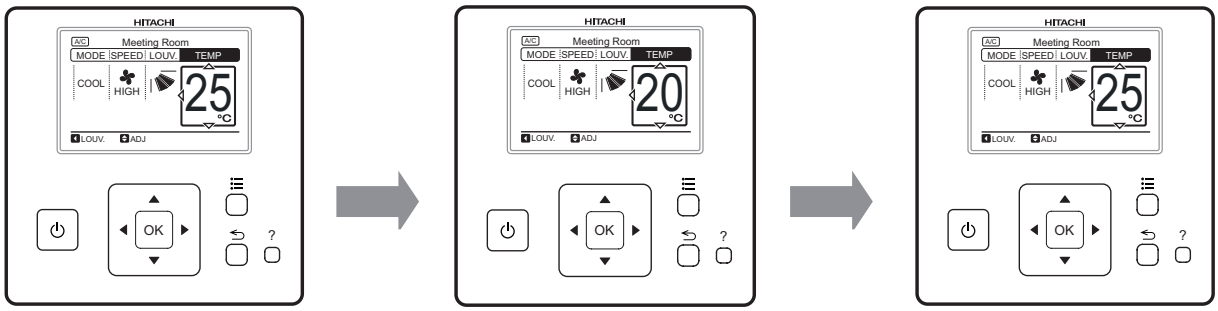
F3 – Automatic reset of setting temperature

This function releases the fixed temperature setting after a certain time to limit unit operations and save energy.

In case that the set temperature is changed and kept within the set time at “F4”, the temperature is automatically changed to “F5” and “F6”. In case that the set temperature is out of range at “F5” and “F6”, it is applied within upper and lower limit for the set temperature.

However, the temperature configuration does not perform the automatic Reset when operating in Automatic COOL/HEAT mode or operations using the remote control for the central unit are forbidden.





The setting temperature is changed from 25ºC to 20ºC by remote control switch.

Cooling operation at 20ºC is performed temporally.

If no operation is done for a defined period, the setting temperature returns to 25ºC automatically.

F4 – Automatic reset time

This function is used to set the automatic reset time with the temperature setting.

F5 – Automatic reset temperature for cooling

This function is used to set automatic temperature reset in FAN/COOL/DRY modes.

F6 – Automatic reset temperature for heating

This function is used to set automatic temperature reset in HEAT mode.

F7 – Prevention of operation stoppage due to Remote Control operating error

This function prevents the stoppage when pressing the start/stop button in the remote controller by error.

NOTE

Operation is stopped by pressing the run/stop switch for 3 seconds.

F8 – Lock function for operation mode selection

This function is used to prevent changes to the operating mode.

F9 – Lock function for temperature setting

This function is used to prevent changes to the temperature setting.

FA – Lock function for fan speed selection

This function is used to prevent changes to the fan speed.

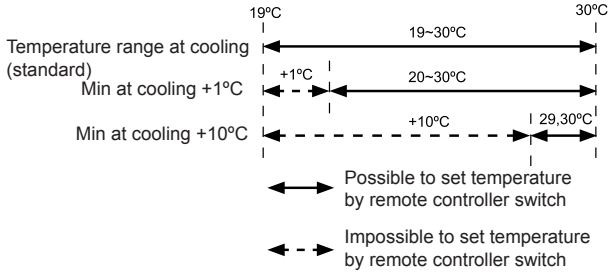
Fb – Lock function for swing louver operation

This function is used to prevent changes to automatic louver operations.

FC – Cooling lower limit for setting temperature

This function is used to define a lower temperature setting limit for FAN/COOL/DRY modes. It enables the cooling range to be reduced for configuration using the remote control.

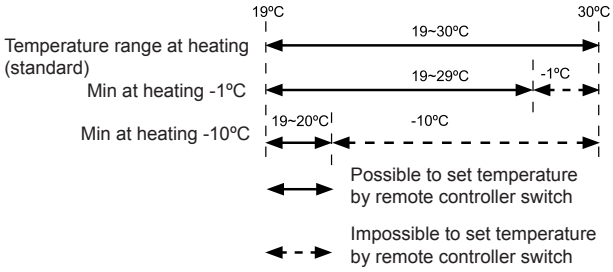
An example is shown in the following figure:



Fd – Heating upper limit for setting temperature

This function is used to define an upper temperature setting limit for the HEAT function. This function enables the heating range to be reduced for configuration using the remote control.

An example is shown in the following figure:



FE – Not used

FF – Not used

H1 – No indication of maintenance alarm

This function is used to display or hide the maintenance alarm indication.

H2 – Indication of hot start (No Indication of Operation Limitation)

This function is used to display or hide the automatic control indication.

H3 – Not used

H4 – Only for KPI : Operation modes for the ventilation unit with energy recovery

This function is only available for the ventilation unit with energy / heat recovery.

J1 – Not used

J2 – Not used

J3 – Colour of the run indicator

This function is used to set the run indicator colour.

J4 – Override of start / stop prohibition at the remote controller

This function allows to define the possibility to stop and/or restart an indoor unit when there is remote control prohibition from a central control device and that indoor unit is in operation.

It is suitable when for any reason or emergency (like a fire) it is necessary to stop the indoor units from the remote controller.

J5 – Not used

J6 – Not used

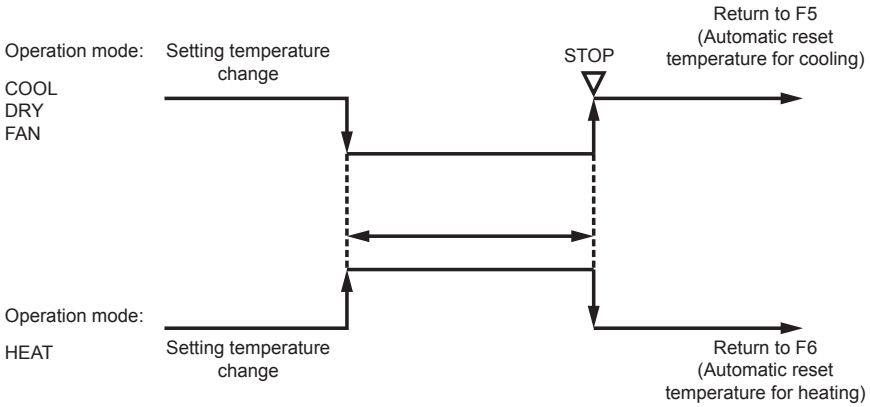
J7 – Enabling of louver steps 6 and 7 in cooling or dry mode

J8 – Eco-operation

This function is used to optimise the setting of temperature and provide energy saving.

When the setting temperature is changed during the air conditioning operation and while the operation is started/stopped by RUN/STOP on the remote control switch, the set temperature automatically returns to “Automatic Reset Temperature for Cooling/Heating (F5/F6)” (as shown in the next illustration).

However, the setting temperature is not automatically reset in the case that “Automatic COOL/HEAT Operation” mode, or “Prohibiting Operation by Remote Control Switch” is set by the centralized controller.



J9 – Not used

JA – Display of “Simple maintenance display” menu

When this function is enabled, in the “Simple maintenance display” menu is shown.

Jb – Display automatic fan speed

This function enables the automatic fan speed setting.

K1 – Not used

K2 – Not used

K3 – Not used

K4 – Not used

K5 – Detection level of the motion sensor kit

This function is used to determine the amount of human activity depending on the reaction rate.

When “High” is set, the detection level becomes more sensitive. When “Low” is set the sensor becomes lower.

	Setting conditions		
	00 (factory setting)	01	02
Human activity	**Standard**	**High sensitive**	**Low sensitive**
Large	30% ≤ Reaction rate	20% ≤ Reaction rate	40% ≤ Reaction rate
Small	3% < Reaction rate < 30%	3% < Reaction rate < 20%	3% < Reaction rate < 40%
Not available	Reaction rate ≤ 3%	Reaction rate ≤ 3%	Reaction rate ≤ 3%

K6 – Selection of allowed operation modes

This function is used to select the operation modes in which the setting of C8 (use of remote control switch sensor or remote sensor on THM4 to control the indoor unit) is enabled.

K7 – Not used

K8 – Control for the prevention of condensation in the louvers

In that units that are equipped with louvers, condensation may occur around the air outlet during operation in cooling or dry modes, when horizontal air flow or downward air flow are sustained for long periods.

This function is used to prevent condensation by setting the louver swing angle to the third step automatically for 30 minutes every 1 hour.

(In RPK units, this function is activated by means of DSW2-4 instead of the K8 optional function)

K9 – Not used

KA – Not used

L1 – Not used

L2 – Not used

L3 – Operation of the louvers in energy-saving Thermo-OFF (Cooling / Dry mode)

Power save must be ON in order to use this function (L5 must be set to 01). This function is used to establish louver swinging operation ranging from continuous swing to static operation.

- Low: Continuous louver swing
- Medium: Louver swing with intermittent stops for 20/40 seconds
- High: Louver stopped at full opening position, according to the setting of CF.

L4 – Fan acceleration in energy-saving Thermo-OFF (Cooling mode)

This function increases fan speed by one step to prevent the loss of comfort due to the forced Thermo-OFF for energy saving during cooling operation.

L5 – Louver swing operation during energy-saving forced Thermo-OFF

This function is used to enabled the setting of function L3.

L6 – Not used

L7 – Not available

L8 – Not used

L9 – Not used

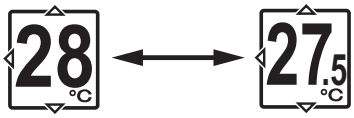
LA – Not used

Lb – Not used

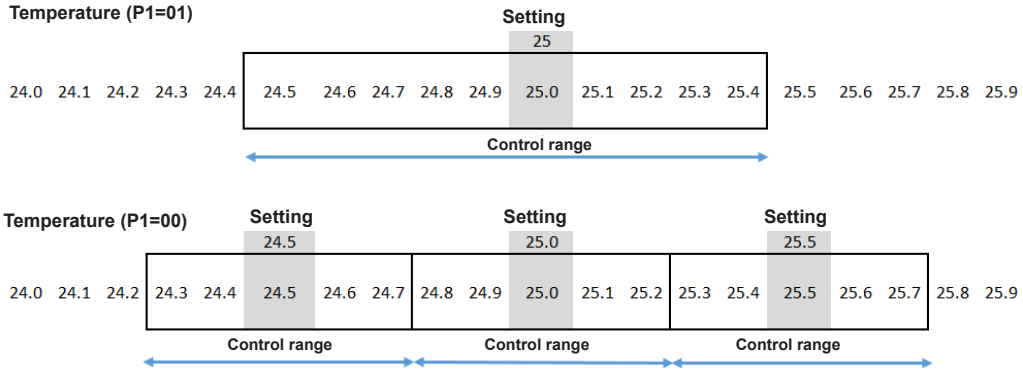
P1 – Setting temperature in 0.5ºC steps

This function is used to define whether setting temperature is adjusted in 0.5ºC steps (when set to “00”) or in 1ºC steps (when set to “01”).

This setting also determines whether the resolution of temperature differential of the thermistor is 0.5ºC (when set to “00”) or 1ºC (when set to “01”) enabling more precise setting control.



Simplified scheme of the control system (for illustrative purposes only, as the control system also manages other parameters):



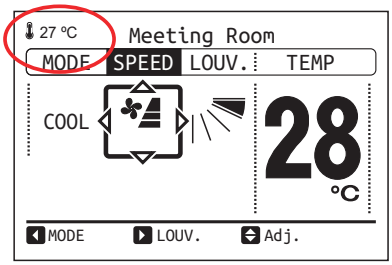
P2 – Not used

P3 – Temperature sensor displayed

This function is used to select the thermistor whose temperature is shown.

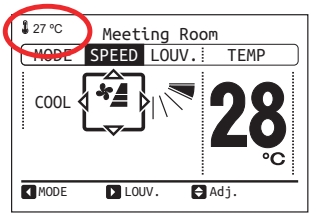
P4 – Display of sensor temperature

This function is used to display the temperature of the sensor selected with P3.

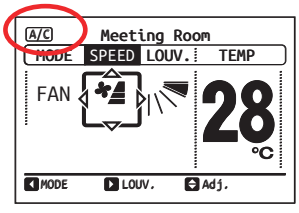


P5 – Display of setting temperature when operation mode is Fan

This function is used to hide the display of setting temperature during operation in fan mode.



P5=00: Shown



P5=01: Hidden

P6 – Operation of the ECO button

The Operation of ECO button is disabled when P6 is set to 01.

P7 – Prohibition of menu screen transition

This function is used to prohibit the access to the menu screens. The text “Display disabled” appears on screen instead.

PA – Daylight saving time

This function is used to set the amount of adjustment when daylight saving time is applied.

Pb – Not used

PC – Not used

q1 – Not used

q2 – Not used

q3 – Not used

q4 – Not used

q5 – Not used

q6 – Not used

q7 – Not used

q8 – Not used

q9 – Not used

qA – Not used

qb – Operation mode with setback

This function is used to select the operation modes in which setback operation is activated to keep a minimum comfort in the room while it is not occupied.

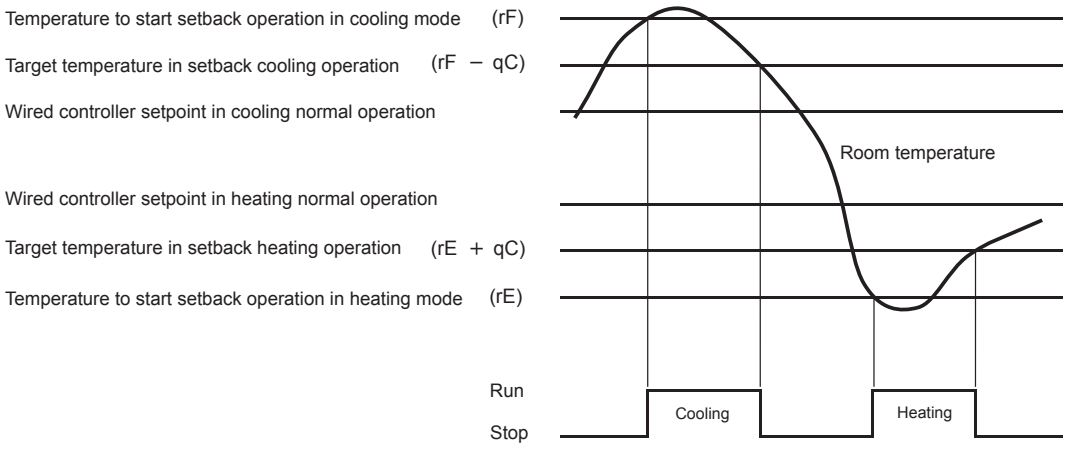
qC – Temperature differential for the setback function

This function is used to select the temperature differential for the setback function.

Target temperatures for cooling and heating operation are determined versus a temperature to start setback operation (rE, rF).

Target temperature calculation:

Target temperature in cooling mode: rF - qC (°C)
Target temperature in heating mode: rE + qC (°C)



Setback operation runs as room temperature reaches the specified temperature to start, and stops when the target temperature is reached.

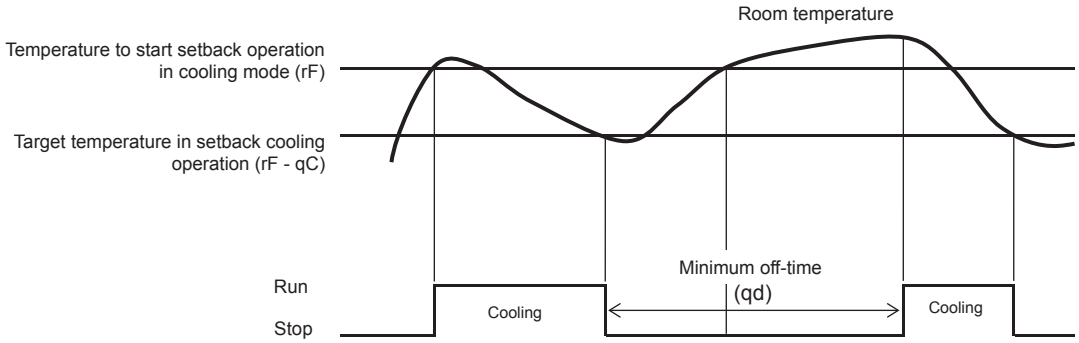
A target temperature higher than the normal operation temperature shall be selected for cooling mode.
A target temperature lower than the normal operation temperature shall be selected for heating mode.

qd – Minimum stop time of setback

This function is used to select the minimum stop time of setback.

To avoid the frequent activation of setback operation, a minimum off-time shall pass from the end of setback operation until the beginning of the following setback operation.

Even if room temperature reaches the setpoint to start setback operation, setback operation does not start until the minimum off-time has expired.



qE – Setback mode

This function is used to select the Setback mode.

- When “01: Input” is selected, it requires the setup of “Input: 09” as well.
- When “02: Schedule” and “03: Manual” are selected, they need to be setup from the wired controller.

qF – Operation state after the end of setback operation

This function is used to select the operation state after the end of setback operation.

Select the operation mode that shall be set to the unit once the set back operation is disabled.

In case that “02: Operation state before the beginning of setback” is set, the state returns to the last operating condition before the beginning of setback.

r1 – Dual set point

Function in the automatic cooling/heating mode allowing the preset of respective setpoint for cooling and heating.

r2 – Setting of temperature differential for switching cooling and heating

Function in the automatic cooling/heating mode allowing the preset of respective setpoint for cooling and heating.

r3 – Not used

r4 – Not used

r5 – Not used

r6 – Not used

r7 – Not used

r8 – Not used

r9 – Remote control prohibition during setback operation

This function is used to disable the manual run/stop from the remote controller during setback operation.

This function is fixed as 00 (Disabled) when the qE is set as 00 (Always).

rb – Minimum operation time to allow the change of operation mode in automatic cooling/heating mode with dual set point

This function is used to define a minimum time of operation in a given mode, in order to avoid too frequent changes of operation mode.

Operation mode does not change until the minimum transition time passes, even if the room temperature reaches the setpoint to shift to the other operation mode.

rC – Maximum outdoor temperature to allow operation mode switch to heating in auto cooling/heating with dual set point

If outdoor ambient temperature is higher than rC, there is no mode transition to heating in automatic cooling/heating operation mode, even if room temperature reaches the setpoint to switch operation mode from cooling to heating.

rd – Minimum outdoor temperature to allow cooling operation in automatic cooling/heating mode with dual set point

If outdoor ambient temperature is lower than rd, there is no mode transition to cooling in automatic cooling/heating operation mode, even though room temperature has reached the setpoint to switch operation mode from heating to cooling.

rE – Temperature for the beginning of heating in setback

This function is used to select the room temperature used to determine the start of heating operation during setback.

rF – Temperature for the beginning of cooling in setback

This function is used to select the room temperature used to determine the start of cooling operation during setback.

s1 – Not used

s2 – Not used

s3 – Not used

s4 – Not used

s5 – Not used

s6 – Not used

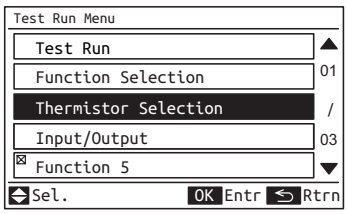
s7 – Not used

s8 – Not used

4.1.7.3 Thermistor Selection

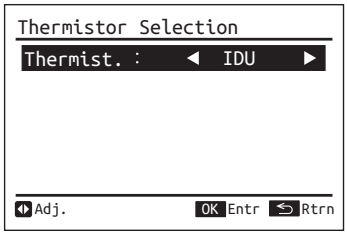
This function changes the temperature thermistor from indoor unit thermistor to thermistor of remote control switch or an average between both temperatures.

1 Press and hold "☰" (menu) and "↩/?" (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu will be displayed.

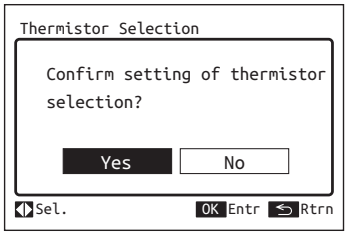


2 Select "Thermistor Selection" from the test run menu and press "OK".

3 Change the temperature thermistor item by pressing "◁▷" and press "OK". Select between Remote, Average or IDU.



4 Select "Yes" and press "OK". The test run menu will be displayed after the setting is confirmed. If "No" is pressed, the screen will return to step 3.

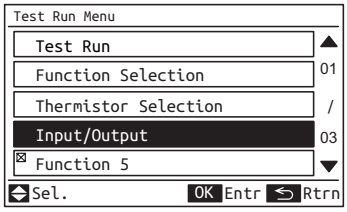


5 Press "↩" (return / help) on the test run menu to return to the normal mode.

4.1.7.4 Input/output Selection

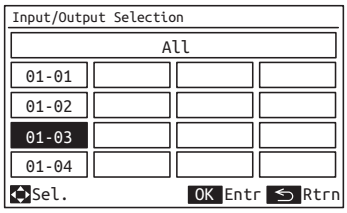
1 Press and hold "☰" (menu) and "↩/?" (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu is displayed then.

2 Select "Input/Output" from the test run menu and press "OK".

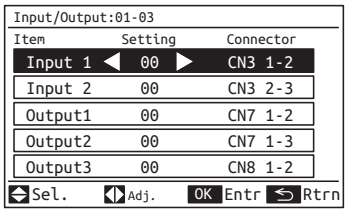


3 Select the indoor unit by pressing "△ ▽ ◁ ▷" and press "OK".

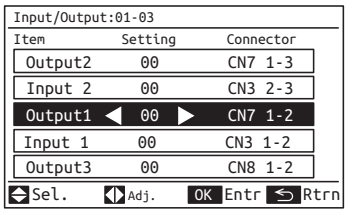
(This screen is NOT displayed when the number of indoor units connected with the remote control switch is 1. In this case, go directly to the step 4).



4 Press "△ ▽" and select the item.

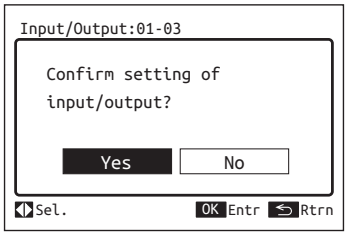


5 Press "◁ ▷" and change the setting.



6 Press "OK", then the confirmation screen is displayed.

7 Select "Yes" and press "OK". The test run menu is displayed after the setting is confirmed. If "No" is pressed, the screen returns to step 4.



8 Press "↩/?" (return / help) on the test run menu to return to the normal mode.

NOTE

To set other units, press "↩/?" (return / help) at steps 4 and 5 so that the screen returns to step 3 (If the number of indoor units connected with the remote control switch is 1, the screen returns to step 4).

◆ Input and Output Number Display and Connectors

Input number display	Port	Factory setting		New setting record
Input/Output indication		Setting item	Indication	
Input 1	CN3 1-2	Remote ON/OFF 1 (Level)	03	
Input 2	CN3 2-3	Prohibiting Remote Control after Manual Stoppage	06	
Output 1	CN7 1-2	Operation	01	
Output 2	CN7 1-3	Alarm	02	
Output 3	CN8 1-2	Thermo-ON for Heating	06	

NOTE

Output 2 configuration not available for RPI-(16.0/20.0)FSN3PE(-f) units.

◆ Input and output settings and display codes

Indication	Input
00	Not set
01	Room Thermostat (for Cooling)
02	Room Thermostat (for Heating)
03	Remote ON/OFF 1 (Level)
04	Remote ON/OFF 2 (Operation)
05	Remote ON/OFF 2 (Stoppage)
06	Forbidding remote control after manual stoppage
07	Remote cooling / heating change
08	Not used
09	Setback operation

Indication	Output
00	Not set
01	Operation signal
02	Alarm signal
03	Cooling signal
04	Thermo-ON signal for cooling
05	Heating signal
06	Thermo-ON signal for heating
07	Total heat exchanger
08	Not used

NOTE

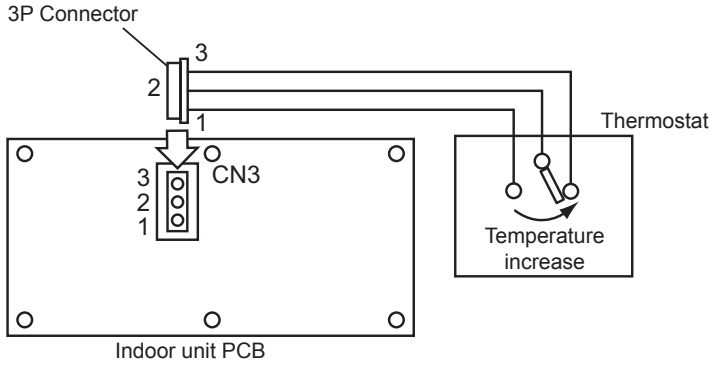
- *After at least 3 minutes from the power ON, change the optional setting.*
- *Record the setting conditions for each input and output in the "Setting" column of the table.*
- *Recommendations for wiring installation:*
  1. *Keep the CN3 connector cables as short as possible.*
  2. *Try not to pull on the cable along the power line. The cables should be laid separately at a distance of over 30cm. Cable crossing is feasible.*
  3. *Where the cable along the power line is pulled, insert the cables through a metal pipe, earth one end of the pipe and install a safety device such as an earth leakage breaker or smoke detector.*
  4. *It is recommended to install safety devices such as an electric leakage breaker, etc, (because this is unattended function).*
- *If an input signal is set, the on-screen display on the remote controller automatically changes to the following.*

◆ Description of optional input signals

Control by field-supplied room thermostat

On-screen display: 01 or 02.

When a field-supplied room thermostat is used instead of the inlet thermistor on the indoor unit, connect the wires as shown below.



NOTE

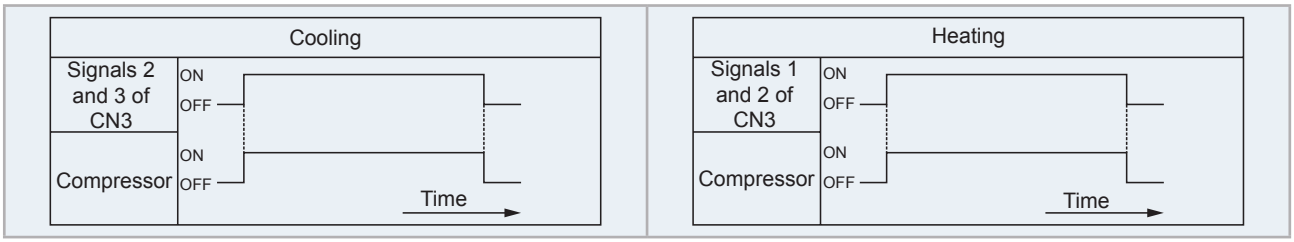
- *The contact capacity of a thermostat shall be DC12V and several ma. Select a thermostat which makes and breaks the contact with this capacity.*
- *Make the wires CN3 as short as possible. Do not install the wires along the 220-240V power line. Install them more than 30cm away from each other. (Intersecting them is acceptable.) If the wires are installed along the power line, comply with the following points to prevent noise.*
  - *Pass either of the low voltage wire and 220-240V power line through a metal tube and ground one end.*
  - *Use a shielded wire for a low voltage wire and ground one end. The maximum wiring length is 70m.*
- *When using this function, it is recommended to use safety devices such as an electric leakage breaker or smoke detector, etc. as this is unattended function.*
- *For a thermostat, do not use a thermostat which contains mercury for switch, because chattering is likely to occur at ON/OFF.*
- *Use a thermostat with a differential of 1.5deg. or more.*
- *Comply with the following points. If not, a high-voltage circuit breaker will be activated or the unit will repeat ON/OFF operations.*
  - *Install a thermostat where the air inlet temperature can be measured accurately.*
  - *Install a thermostat where the suction air from the unit does not blow directly against it.*
- *When using room thermostats, set each room thermostat (for cooling and heating) correctly. If one of them is set incorrectly, other room thermostats do not operate.*

Example:

- Room thermostat Input (for Cooling) is set to terminals 2 and 3 of CN3
- Room thermostat Input (for Heating) is set to terminals 1 and 2 of CN3

Operation

- Cooling operation:
  - Compressor is ON by closing terminals 2 and 3 of CN3
  - Compressor is OFF by opening terminals 2 and 3 of CN3
- Heating operation:
  - Compressor is ON by closing terminals 1 and 2 of CN3
  - Compressor is OFF by opening terminals 1 and 2 of CN3



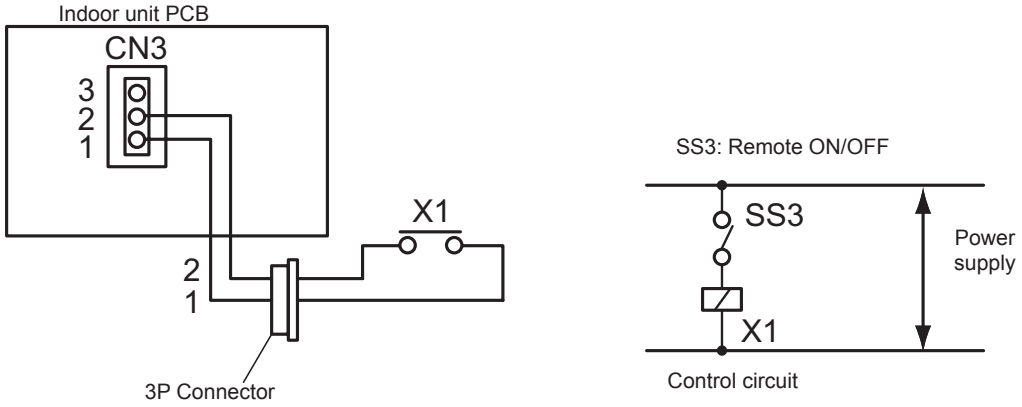
Specifications for field-supplied room thermostat:

- Manufacturer or type: equivalent to YAMATAKE R7031P005, R7031Q005.
- Contactor charge: 12 V dc
- Difference of over 1.5 degrees.
- Do not use a mercury thermostat.
- The remote control must remain connected to the unit. When the power supply is reconnected, start the unit by pressing the on button. The compressor will then run under the control of the field-supplied thermostat. All other functions are controlled in the normal manner via the remote control.

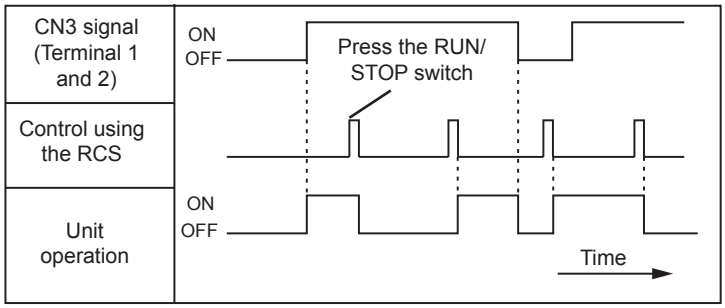
Remote ON/OFF 1 (Level signal input)

On-screen display: 03.

This is an optional on/off signal that uses the signal levels ON and OFF. Connect the wires as shown below.



Remote ON/OFF is set to terminals 1 and 2 of CN3



NOTE

- *Wired controller or receiver kit is required for this function.*
- *When the unit is started using the remote ON/OFF switch, the fan speed depends on the mode stored in the remote control.*
- *The collection of signals during the first 10 seconds after connecting the power supply is not available due to component initialization. Do not change the signal in this period.*
- *Operation priority is given to the remote on/off signal or to the remote control, whichever is transmitted last.*
- *If multiple indoor units are connected to the same transmission wiring for remote control switch, input the signal to any of these indoor units. When the transmission wiring is not used in a multiple indoor unit system for simultaneous operation, input the signal to the main indoor unit.*

Remote ON/OFF 2 (pulse signal input)

On-screen display: 04 - Input 1 (Remote switching ON)

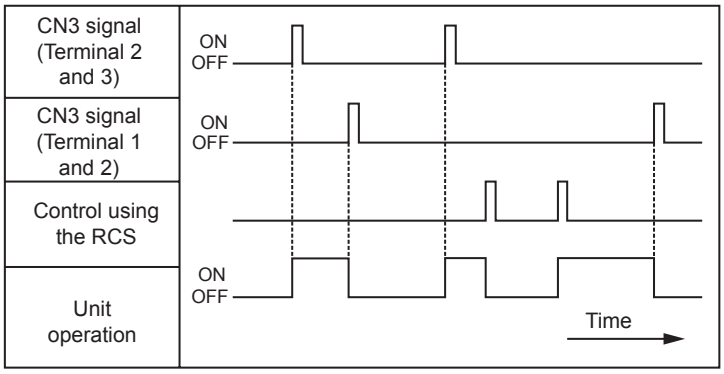
On-screen display: 05 - Input 2 (Remote switching OFF)

This is an optional remote on/off signal that uses the pulse signal.

If a signal is input during the stoppage of the system, it remains unchanged.

Connect the wires as shown below. (Example: terminal 2 and 3 of CN3)

A time chart with the uses of functions 2 is shown below.



NOTE

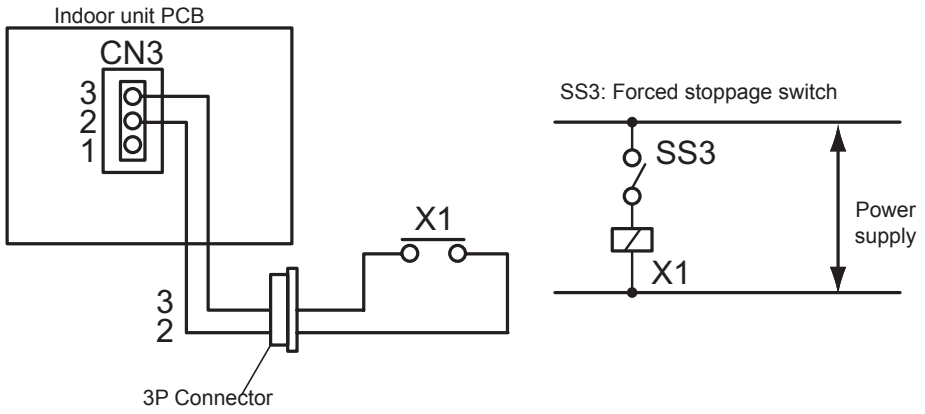
- *The collection of signals during the first 10 seconds after connecting the power supply is not available due to component initialization. Do not change the signal in this period.*
- *Wired controller or receiver kit is required for this function.*
- *If multiple indoor units are connected to the same transition wiring for controller, input the signal to any of these indoor units.*
- *When the transition wiring is not used in the twin, triple and quad combinations for simultaneous operation, input the signal to the main indoor unit.*

Forbidding remote control after manual stoppage

On-screen display: 06.

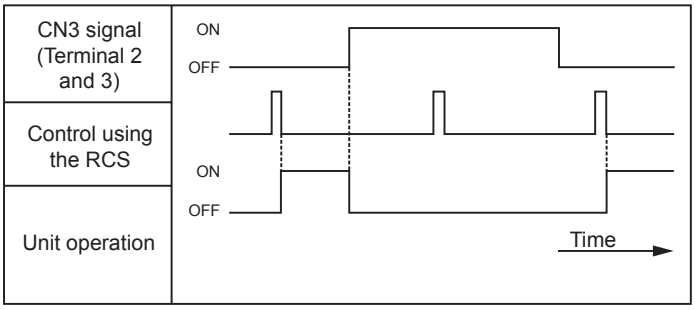
It is possible to stop the air conditioning systems using the signal from a building management system. In this case, the individual commands transmitted from the remote control are cancelled.

Connect the wires as shown below. (Example: terminal 2 and 3 of CN3).



Forbidding remote control after manual (forced) stoppage is set to terminals 2 and 3 of CN3

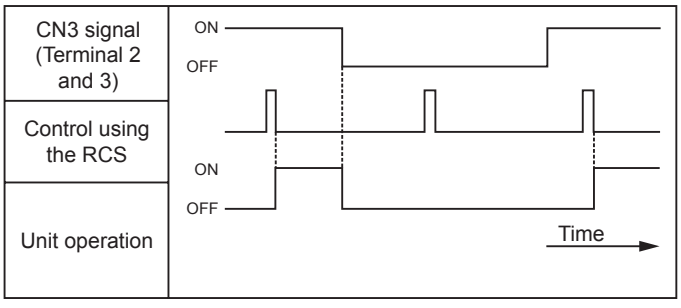
A time chart with the uses of the function is shown below.



NOTE

The collection of signals during the first 10 seconds after connecting the power supply is not available due to component initialization.

With this optional function, contact B can be used through the optional setting of the remote control. The time chart is shown below, which provides information on when contact B can be used. See *"Detailed optional functions"* for further details on contacts A and B.



NOTE

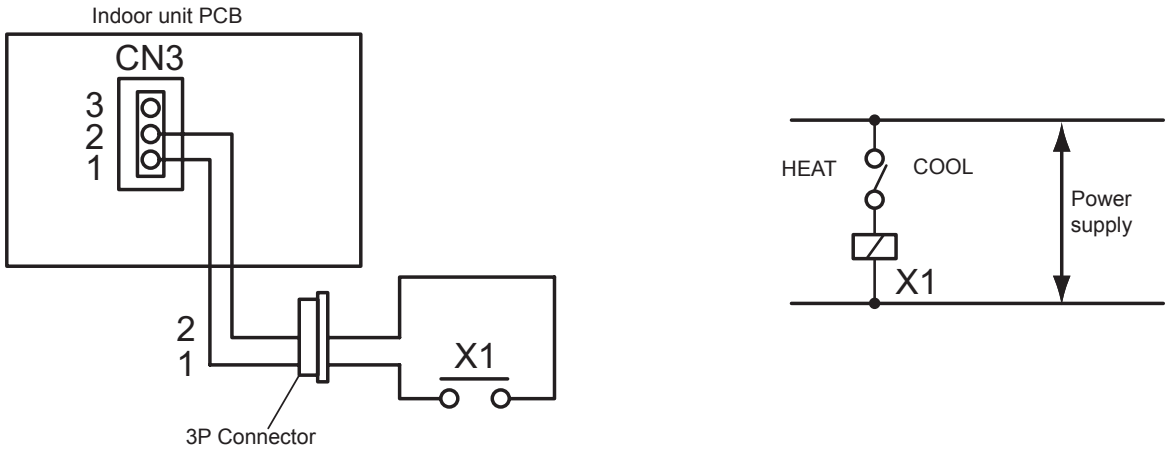
- *It is not available to pick up a signal within 10 seconds after power supply is turned ON due to the initialization of the components. Do not change the signal (RUN/STOP) in this period.*
- *Wired controller or receiver kit is required for this function.*
- *The following ON/OFF functions are not available after the manual (forced) stoppage because commands from the controller is cancelled.*
  - *ON/OFF function from a remote place*
  - *ON/OFF function by the centralized controller while the wireless controller switch is used.*

Remote cooling / heating change

On-screen display: 07.

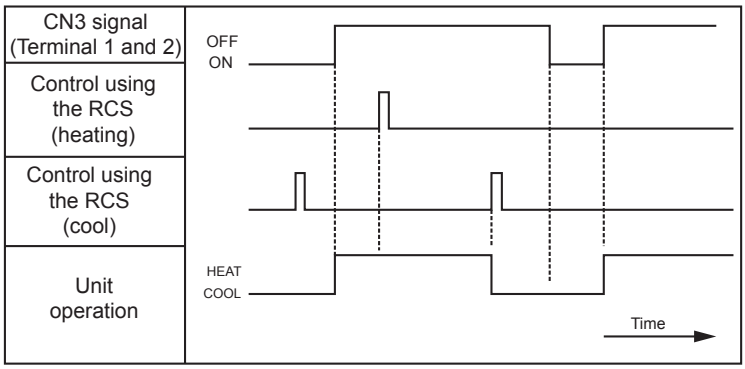
This optional signal can be used to change the heating or cooling operating mode by sending a contact signal from outside the unit. The operating mode is controlled by the field-supplied switch or by the remote control, whichever is used last.

Connect the wires as shown below.



Cooling or heating operation mode setting change is set to terminals 1 and 2 of CN3

A time chart with the uses of the functions is shown below.



NOTE

- *Wired controller or receiver kit is required for this function.*
- *Refer to the table 4.1 for details of the required components.*
- *If multiple indoor units are connected to the same transition wiring of the controller, input the signal to any of these indoor units.*
- *When the transition wiring is not used in the twin, triple and quad combinations for simultaneous operation, set this function only to the main indoor unit.*

Setback operation

On-screen display: 09.

The function is to identify occupied/unoccupied by means of card key in/out. It keeps the unoccupied room (the card key is out) being as comfortable as when it is occupied (the card key is in).

To enable the function, the function selection and input on the wired controller are required.

Refer to *"4.1.9.19 Setback setting"* for function selection, and below procedures and table *"Specifications on required components for Setback operation"* for input.

Input in setback mode

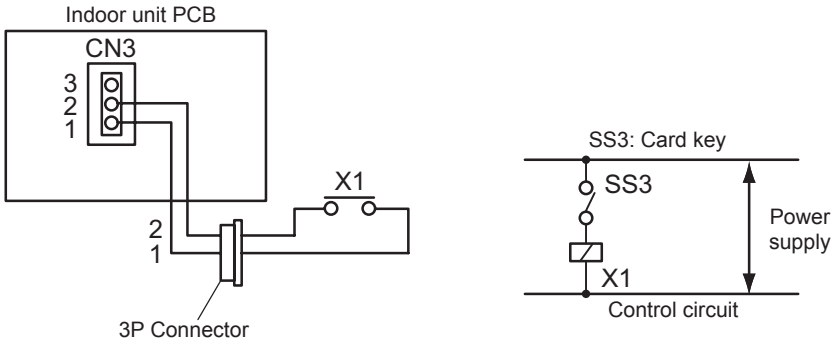
1 Press and hold "Menu" and "Back/Help" on the wired controller simultaneously for at least 3 seconds during the normal mode (unit stoppage). The "Test Run" menu is displayed. Select "Input/Output" from the "Test Run" menu and press "OK".

2 Select either "Input 1" or "Input 2" and change the setting to "09".

3 Build a circuit as shown below. On the indoor unit PCB, use the input terminal (CN3) to receive external signals.

NOTE

When a card key is removed, the switch SS3 is turned OFF. It gives no voltage on a coil of the auxiliary relay "X1" and turns OFF the contact "X1". This starts the setback operation.



Wiring diagram example of Setback operation by external input (Card key input is set to terminals 1 and 2 of CN3)

NOTE

- *After a power supply is turned ON, picking up a signal is not available for 10 seconds due to the initialization of the component. Wired controller is required for this function.*
- *When using a wireless controller, or not using a wired controller, the function does not work.*
- *To simultaneously apply constraints of the setback operation to multiple indoor units, connect transition wiring to the wired controller and enter a signal to the representative unit in the setback.*
- *In case that a transition wiring connection is not applied to the simultaneous twin/triple/quad operations, send out a signal to the main unit.*

Specifications on required components for Setback operation

Component		Manufacture or Specification	Remarks
Changeover Switch (SS2, SS3)		Manual Type, Card Key	Voltage 220-240V
Auxiliary Relay (*)		OMRON Mini Power Relay Model: MY1F/2F or Equivalent	
3P Connector Cord (*)		Optional Part PCC-1A (Connectable to JST Connector XARP-3), 12V	Five cords with connectors as one set
Cord (Indoor)	Low Voltage	0.3 mm^2	Less than 12V
	220-240V Class	0.5 to 0.75 mm^2	-
Cord (Outdoor)	Low Voltage	0.5 to 0.75 mm^2	Less than 12V
	220-240V Class	2 mm^2	-

NOTE

- *(*) These parts are compatible with optional remote control adopter PSC-5RA.*
- *Make the wires CN3 as short as possible. Do not install the wires along the 220V power line. Install them more than 30cm away from each other. (Intersecting them is acceptable.)*
- *If the wires are installed along the power line, comply with the following points to prevent noise.*
  - *Pass either the low voltage wire or 220-240V power line through a metal conduit tube, then earth one end.*
  - *Use a shielded wire for a low voltage wire and ground one end.*
- *The maximum wiring length is 70m.*
- *Since automatic operation by remote control switch is unattended operation, explain necessity of electric leakage breaker or smoke detector near the indoor unit besides monitoring by "Alarm signal" as safety matters.*

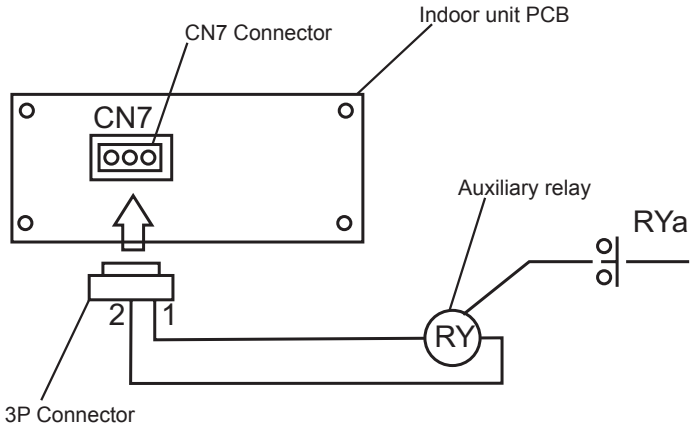
◆ Description of optional output signals

Picking up of the operation signal

On-screen display: 01.

This optional signal is used to pick up the operation signal. Thanks to this function, the operation signal can be checked from a remote location and, for example, the outdoor air intake fan operation can be stopped.

An example of basic wiring is shown below. The contact of the auxiliary relay “RYa” is closed when this operation signal is given. This function enables the signal check during the remote control operation and an interlock of the fan for air inlet, etc. The contact of the auxiliary relay “RYa” is opened while the protection devices are activated.



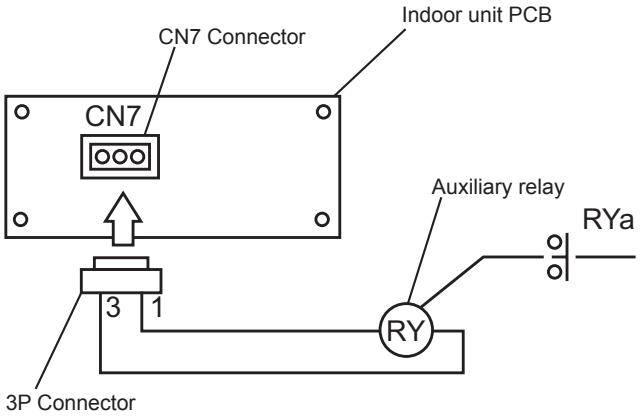
Operation output is set to terminals 1 and 2 of CN7

Alarm signal

On-screen display: 02.

This optional signal is used to pick up the activation of safety devices. The signal is normally displayed on the remote control. This function is not available under abnormal transmission conditions.

An example of basic wiring is shown below. The contact of the auxiliary relay “RYa” is closed while the protection devices are activated.

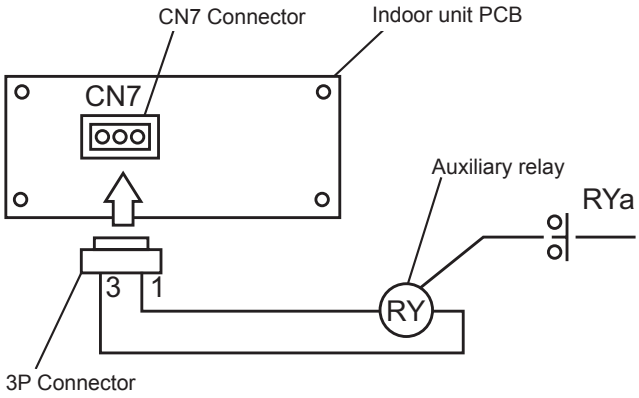


Alarm output is set to terminals 1 and 3 of CN7

Cooling operation signal

On-screen display: 03.

This optional signal is used to pick up the cooling operation signal. An example of basic wiring is shown below. The contact of the auxiliary relay “RYa” is closed when this operation signal is given.



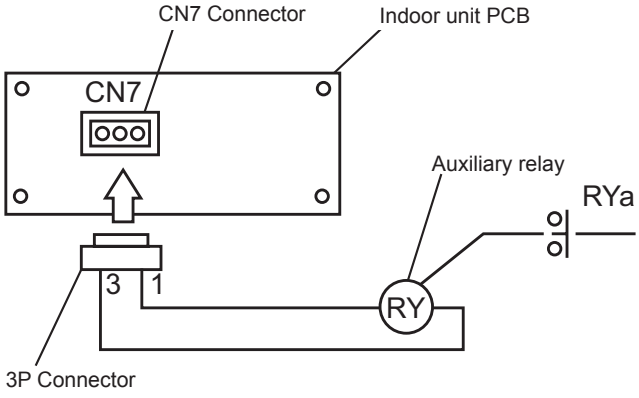
Cooling operation output is set to terminals 1 and 3 of CN7

Thermostat enabled signal during the cooling process

On-screen display: 04.

This optional signal is used to pick up the thermostat enabled signal for the compressor operating during the cooling process (Thermo-ON).

An example of basic wiring is shown below. The contact of the auxiliary relay “RYa” is closed during Thermo-ON in cooling operation.

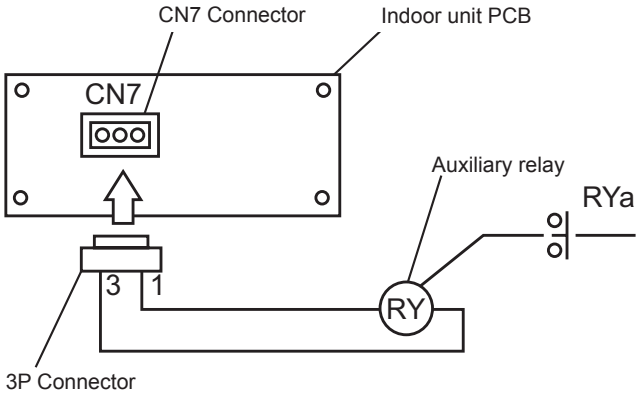


Cooling Thermo-ON output is set to terminals 1 and 3 of CN7

Heating operation signal

On-screen display: 05.

This optional signal is used to pick up the heating operation signal. An example of basic wiring is shown below. The contact of the auxiliary relay “RYa” is closed when this operation signal is given.



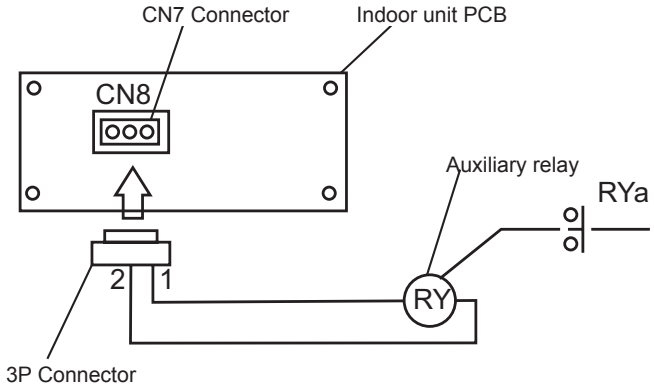
Heating operation output is set to terminals 1 and 3 of CN7

Thermostat enabled signal during the heating process

On-screen display: 06.

This optional signal is used to pick up the thermostat enabled signal for the compressor operating (Thermo-ON) during the heating process and to control, for example, a circulation pump or humidifier.

The contact of the auxiliary relay “RYa” is closed during Thermo-ON in the heating operation.

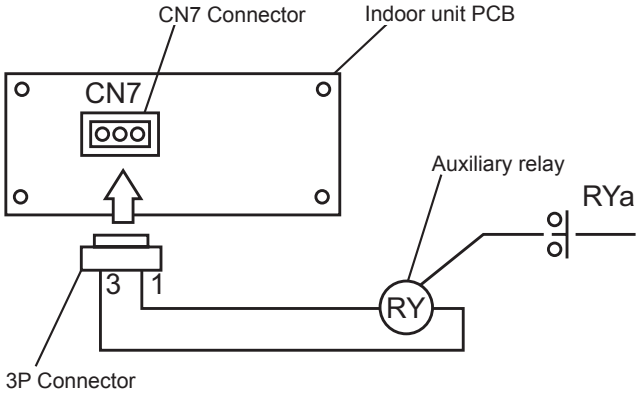


Heating Thermo-ON output is set to terminals 1 and 2 of CN8

Total heat exchanger signal

On-screen display: 07.

This function is utilized to pick up the total heat exchanger signal during the ventilation mode selected with a wired controller. An example of basic wiring is shown below.



Total heat exchanger output is set to terminals 1 and 3 of CN7

4.1.7.5 Elevating grille

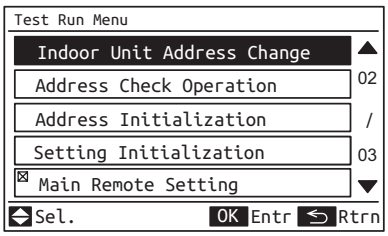
This function is available only when the elevating grille is equipped with the air panel. European models are not equipped with this function.

4.1.7.6 Indoor unit address change

This function changes the address (refrigerant cycle number and indoor unit number) of indoor units. If this setting is done, it will take priority over DIP Switch setting.

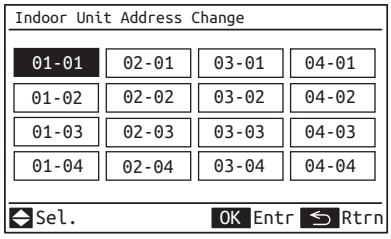
1 Press and hold "☰" (menu) and "⮌/?" (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu will be displayed.

2 Select "Indoor Unit Address Change" from the test run menu pressing "△ ▽" and "OK".



3 Select the indoor unit by pressing "△ ▽ ◁ ▷" and press "OK".

* Indoor units which are not supporting "Indoor Unit Address Change" function can not be selected.



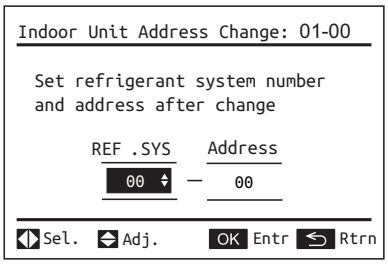
4 Determine the new indoor unit address.

Press "△ ▽ ◁ ▷" to switch the refrigerant cycle number and address in range of 00-63.

To display confirmation screen press "OK".

* "Cycle No. 99" is used as a temporary address only when all the cycle numbers and unit numbers are in use (occupied).

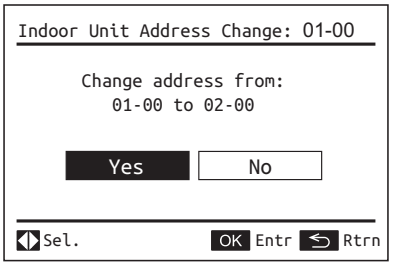
If "Cycle No. 99" is used temporarily, the address must be changed within the standard range of 00-63.



5 The confirmation screen will be displayed. Select “Yes” and press “OK” to start address change process. Result will be displayed in seconds. If “No” is pressed, the screen will go to (4).

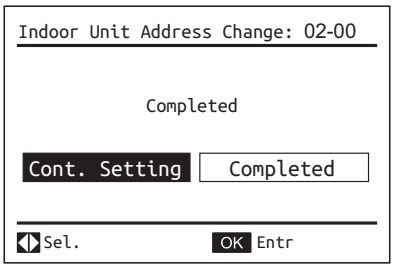
*When the process successfully completes, “Completed” will be displayed.

Otherwise the process has been failed. Check the setting and contents again.



6 To change the address for another indoor unit, select “Cont. Setting” and press “OK”. the screen will return to (3). To finish this function select “Completed” and press “OK”.

*If “Indoor Unit Address Change” is successfully completed, connection check will be started automatically.



7 Turn OFF the power supply of the indoor units for 3-5 minutes. Wait until the remote control switches display turn off, and turn ON the power supply of indoor units again.

NOTE

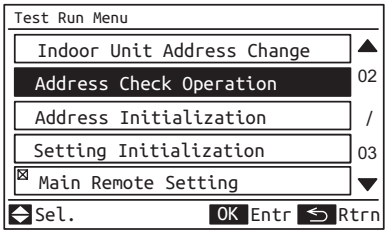
- *“Indoor Unit Address Change” is not available when the control of 2 remote control switches (main and sub) are used.*
- *Do not operate from the central controlling devices while “Indoor Unit Address Change” is performed by the remote control switch.*
- *This function should not be used if there is a Central Control (like CSNET WEB) in the H-LINK line.*

4.1.7.7 Address check operation

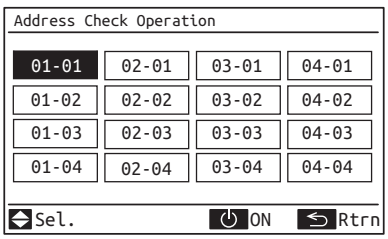
This function is used to check the relation between the indoor unit and Indoor Unit address. This operation is effective when multiple indoor units are connected to the remote control switch and address of the certain unit is unknown.

1 Press and hold “☰” (menu) and “⮌/?” (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu will be displayed.

2 Select “Address Check Operation” from the test run menu pressing “△ ▽” and “OK”.



3 Select the indoor unit by pressing “△ ▽ ◁ ▷”.



4 To start operation of the indoor unit selected in (3) press "⏻" (ON/OFF).
To return to (3) screen press "⏻" (ON/OFF) while indoor units is operated.

*Repeat (3)-(4) until desired indoor unit address is confirmed.

5 To return to the test run menu press "↩/?" (return / help) while indoor unit is not operated.

Confirm the selected indoor unit address and go to "Indoor Unit Address Change".

NOTE

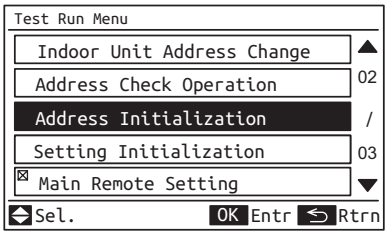
- *"Address Check Operation" is not available when the control of 2 remote control switches (main and sub) are used.*
- *The switch operation other than "Run/Stop" is not available while "Address Check Operation" is performed.*
- *Do not operate from the central controlling devices while "Address Check Operation" is performed by the remote control switch.*
- *This function should not be used if there is a Central Control (like CSNET WEB) in the H-LINK line.*

4.1.7.8 Address initialization

This function initializes the indoor unit address that has been changed by "Indoor Unit Address Change" function or set by the automatic address allocation.

Initializing the address by this function, indoor unit address will be changed to the DIP switch setting.

1 Press and hold "☰" (menu) and "↩/?" (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu will be displayed.

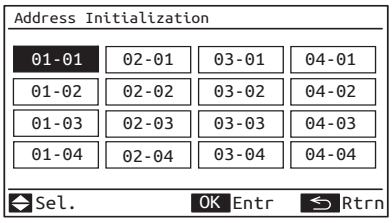


2 Select "Address Initialization" from the test run menu pressing "△ ▽" and "OK".

3 Select the indoor unit by pressing "△ ▽ ◁ ▷" and press "OK". The confirmation screen will be displayed.

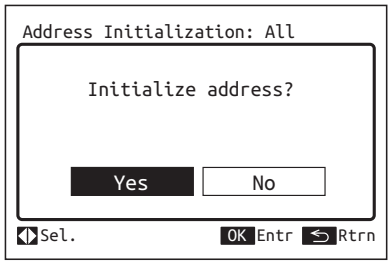
*Indoor units which are not supporting "Address Initialization" function can not be selected.

The address of indoor unit that does not support "Address Initialization" function will not be initialized even when "All" is specificated.



4 Select "Yes" and press "OK" to start the address initialization process.

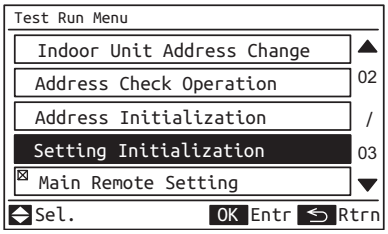
*If the address initialization is successfully completed, connection check will be started automatically.



4.1.7.9 Setting initialization

This function re-establishes the function selection and Input/Output values to factory setting values.

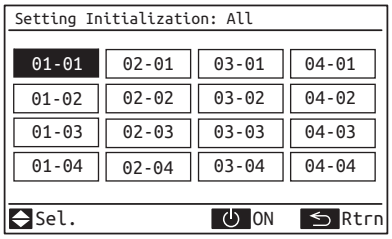
1 Press and hold "☰" (menu) and "⮌/?" (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu will be displayed.



2 Select "Setting Initialization" from the test run menu pressing "△ ▽" and "OK".

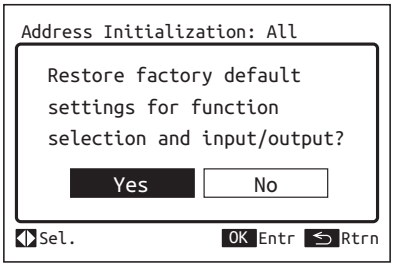
3 Select the indoor unit by pressing "△ ▽ ◁ ▷" and press "OK".

*This screen is not displayed when the number of indoor units connected with the remote control switch is 1. In this case, (4) will be displayed.



4 To start initialization, select "Yes" and press "OK" on the confirmation screen. It takes approx. 30 seconds to complete the process.

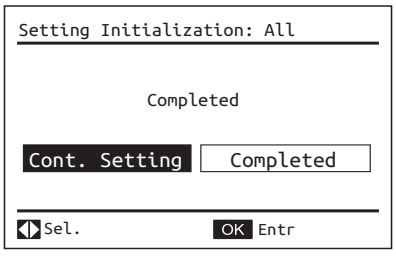
*Check that initialization will not cause any problems, and then start the initialization work.



5 Select "Completed" and press "OK". The test run menu will be displayed.

Press "⮌/?" (return / help) on the test run menu to return to the normal mode.

To initialize setting for the other indoor units, select "Indoor Unit Select" and press "OK". The screen will return to (3).



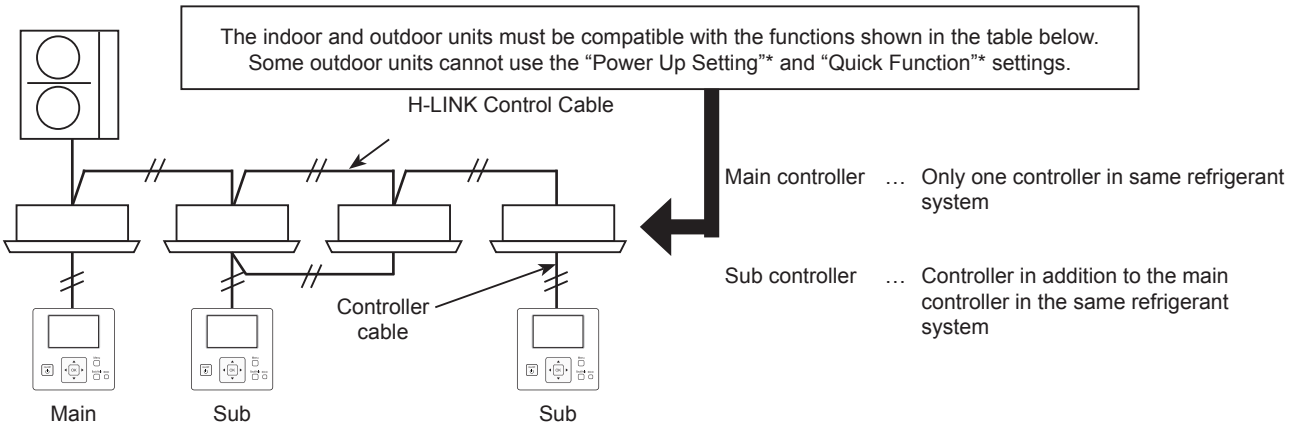
NOTE

- *"No Function" will be indicated when the indoor unit that does not support the initialization function for "Function Selection" and "Input/Output Setting".*
- *The setting for indoor units that does not support the initialization function for "Function Selection" and "Input/Output Setting" will not be initialized even when "All" is specified at item (3).*

4.1.7.10 Main remote setting

The assignation of the controllers in the same refrigerant cycle as Main (only one) or Sub (all the other ones) is automatically done by the system upon installation.

This can be later changed with “Main Remote Setting” in the “Test Run Menu”, as explained below. This is required for the “Priority setting” function and also for some other functions as follows.



Concerning main and sub controllers, the range of settings may differ for the functions shown below.

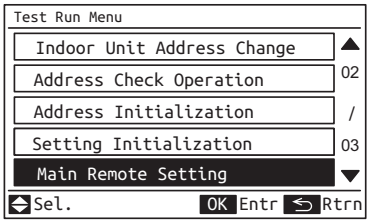
Function		Main	Sub
Power saving mode setting		○	×
Outdoor unit capacity control	Detailed setting	○	×
	Power saving level switch	○	×
Indoor unit rotation control	Detailed setting	○	×
	ON/OFF	○	○
Intermittent control	Detailed setting	○	○
	Power saving level switch	○	○
Operation noise reduction		○	×
Power saving schedule	Outdoor capacity control	○	×
	Intermittent control	○	○
Operation noise reduction schedule		○	×
Power up setting*		○	×
Quick function*		○	○

○: Available *×: Not Available*

This “Main remote setting” function is only displayed when the remote controller is configured as SUB.

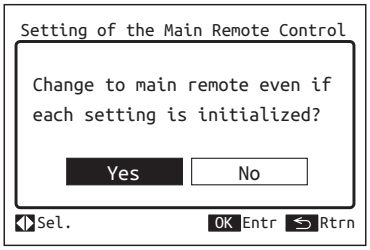
The purpose is to change the setting of a SUB remote controller to be a MAIN remote controller. In consequence, the other remote controller previously set as a MAIN is automatically set as SUB.

1 Press and hold “☰” (menu) and “⮌/?” (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu will be displayed.



2 Select “Main remote setting” from the test run menu pressing “△ ▽” and “OK”. This menu is only available when the remote controller is configured as SUB.

3 The confirmation screen is displayed.



4 Select “Yes” and press “OK”. The test run menu will be displayed after the setting is confirmed. If “No” is pressed, the screen will return to test run menu.

5 After the change is applied, the Power Save Mode reads: “No Setting”.

Also, the power saving “Detailed Settings”, “Power Saving”, “Save/Reduction Schedule”, “Operation Noise Reduction”, “Priority Setting” and “Power Up Setting” functions are initialized.

6 Reset the settings.

7 Press “⮌/?” (return / help) on the test run menu to return to the normal mode.

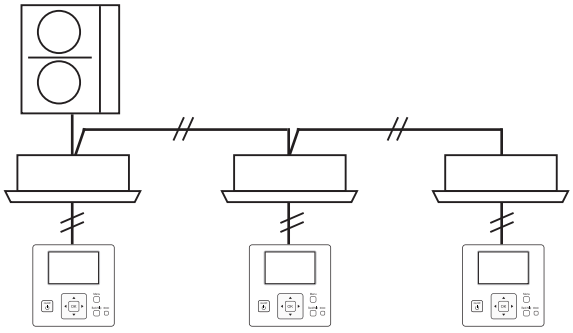
4.1.7.11 Priority setting

It is possible to set the operation mode and the setting temperature of several indoor units in the same refrigerant cycle from one specific remote controller (main remote controller), without using a central controller. The sub remote controllers follow the settings of the main remote controller.

Priority setting is changed in the following order:

“Not available” ↔ “Operation Mode” ↔ “Operation Mode + Setting Temperature”

Example system:



Priority setting		Remote selection		
		Controller A (Main)	Controller B and C (Sub)	
		Operation mode + Setting temperature	Operation mode	Setting temperature
Without priority		○	○	○
With priority	Operation mode	○	▲	○
	Operation mode + Setting temperature		▲	×

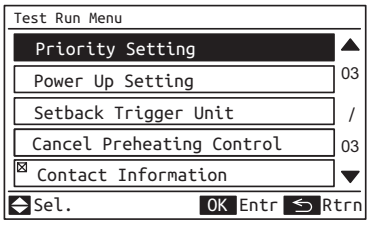
○: Selection possible

▲: Selection possible partially

- *When Main controller is set in COOL mode, Sub controller can be set in COOL↔DRY↔FAN mode.*
- *When Main controller is set in HEAT mode, Sub controller can be set in HEAT↔FAN.*

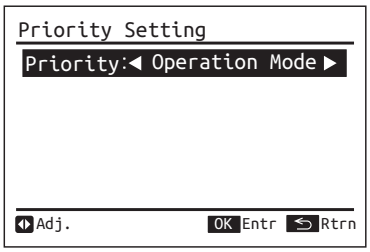
×: Selection not possible (Apply to setting temperature of Controller A (Main))

1 Press and hold "☰" (menu) and "↩/?" (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu will be displayed.



2 Select "Priority setting" from the test run menu pressing "△ ▽" and "OK".

3 Press "◁ ▷" to change the settings in the following order "Not available" ↔ "Operation Mode" ↔ "Operation Mode" + "Setting Temperature".



4 Select "Yes" and press "OK". The test run menu will be displayed after the setting is confirmed. If "No" is pressed, the screen will return to test run menu.

5 Press "↩/?" (return / help) on the test run menu to return to the normal mode.

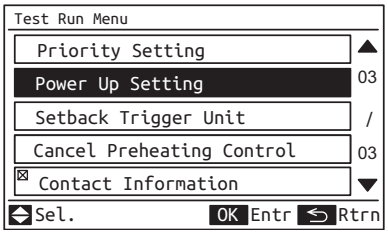
NOTE

- *The factory default "Priority Setting" is "Not available". This can be set in "Priority Setting" in the Test Run menu.*
- *It is not possible to set a priority for setting temperature only.*
- *When operation mode is set as "priority", and operation mode in MAIN is set in Auto Cool/Heat then operation mode change is possible in all indoor units under auto Cool/Heat control.*
- *Simultaneous operation in cooling and heating modes in the same refrigerant system is not possible except in Auto Cool/Heat mode in 3 pipe systems. If multiple remote controllers exist within the same refrigerant system, only one remote controller can be given the right to set the operation mode.*
- *It is not possible to set a priority when using two controllers for the same indoor unit.*
- *This function cannot be used in case that any of the following devices is connected to the same refrigerant cycle:*
  - *Outdoor unit or indoor unit not supporting power saving functions*
  - *Receiver Kit*
  - *Central Station, CSNET Manager and BMS Gateways*
  - *A remote controller with activated function for fixed operation mode (b5), fixed setting temperature (b6) or fixed cooling-only (b7).*
  - *Cooling/Heating CH-Box*

4.1.7.12 Power up setting

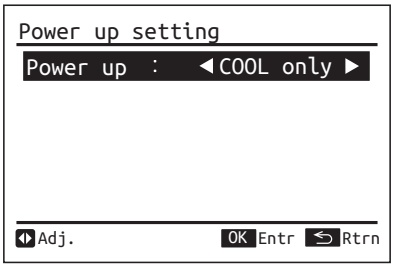
This function is used to set the maximum compressor frequency and the target compressor frequency higher than usual. Power up operation is performed after starting operation in the selected operation mode (COOL only - HEAT ONLY - COOL+HEAT).

1 Press and hold "☰" (menu) and "⮌/?" (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu will be displayed.

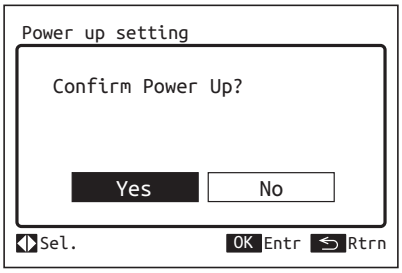


2 Select "Power up setting" from the test run menu pressing "△ ▽" and "OK".

3 Press "◁ ▷" to switch to select between "COOL only - HEAT only - HEAT + COOL" and press "OK" .



4 Select "Yes" and press "OK". The test run menu will be displayed after the setting is confirmed. If "No" is pressed, the screen will return to step 3.



5 Press "⮌" (return / help) on the test run menu to return to the normal mode.

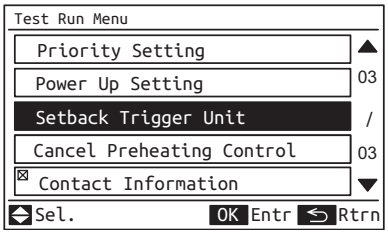
NOTE

Power up setting is only available when using outdoor units RAS-(3-12)H(V)NC1(E) and RAS-(4-6)FS(V)NME series.

4.1.7.13 Setback trigger unit

In case one remote controller PC-ARFP1E is controlling several indoor units, the system is selecting automatically one unit as the reference to judge the Setback operations. This unit is the trigger unit. It is possible to change the trigger unit and to select it manually with the following function:

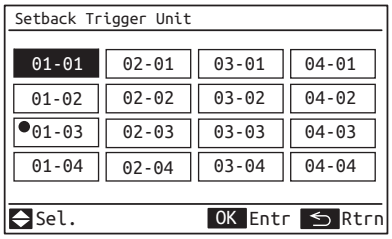
1 Press and hold "☰" (menu) and "⮌/?" (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu will be displayed.



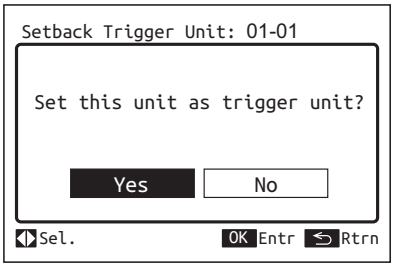
2 Select "Setback trigger unit" from the test run menu pressing "△ ▽" and "OK".

3 Select the indoor unit by pressing "△ ▽ ◁ ▷" and press "OK".

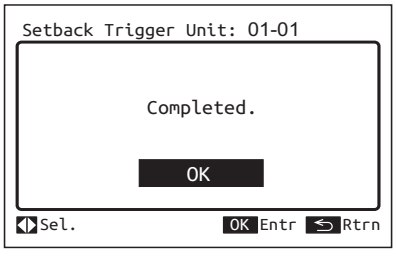
* This screen is not displayed when the number of indoor units connected with the remote control switch is 1 (one). In this case, (4) will be displayed.



4 Press "◁ ▷" to switch to select "Yes" and press "OK" to set trigger unit. Step 5 is shown.
Select "No" to return to "3".



5 Press "OK" switch to return to "1".



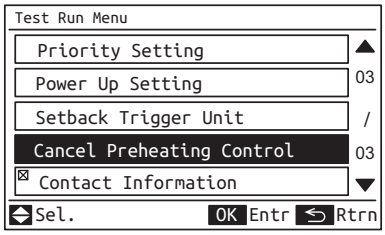
NOTE

- *When one remote controller is controlling several indoor units, the indoor unit with the input for setback activation connected to it must be selected as the trigger indoor unit.*
- *If two remote controllers are connected, "Trigger Unit Setting" is available only on primary remote controller.*
- *Child unit without transmission wiring cannot be set as trigger unit.*
- *For the first start up, the indoor unit with the smallest refrigerant cycle and address number is set as trigger unit by default.*

4.1.7.14 Compressor preheating cancellation

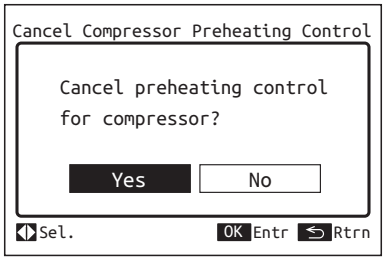
This function cancels the compressor preheating control.

1 Press and hold "☰" (menu) and "↩/?" (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu will be displayed.



2 Select "Cancel Preheating Control" from the test run menu pressing "△ ▽" and "OK".

3 The confirmation screen will be displayed.



4 Select "Yes" and press "OK". The test run menu will be displayed after the setting is confirmed. If "No" is pressed, the screen will return to test run menu.

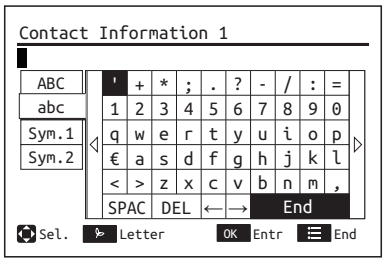
5 Press "↩/?" (return / help) on the test run menu to return to the normal mode.

4.1.7.15 Contact information registration

Contact information can be registered from "Contact Information".

1 Press and hold "☰" (menu) and "↩/?" (return / help) simultaneously for at least 3 seconds during the normal mode (when unit is not operated). The test run menu will be displayed.

2 Select "Contact Information" from the test run menu and press "OK". The contact information 1 will be displayed.



3 Press "🍃" (ECO) to change font type.

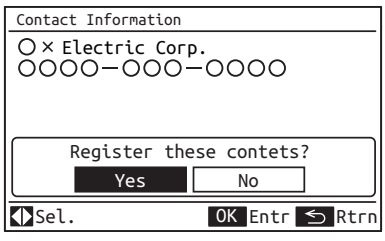
4 Press "△ ▽ ◁ ▷" to select letter.

5 Press "OK" to confirm the letter. (Max.: 28 letters)

6 Select "End" and press "OK" (or simply press "☰" (menu)), (7) will be displayed.

7 Repeat (2)~(6) to register contact information 2.

Select "End" and press "OK", the confirmation screen will be displayed. (Also, press "☰" (menu) and the confirmation screen will be displayed).

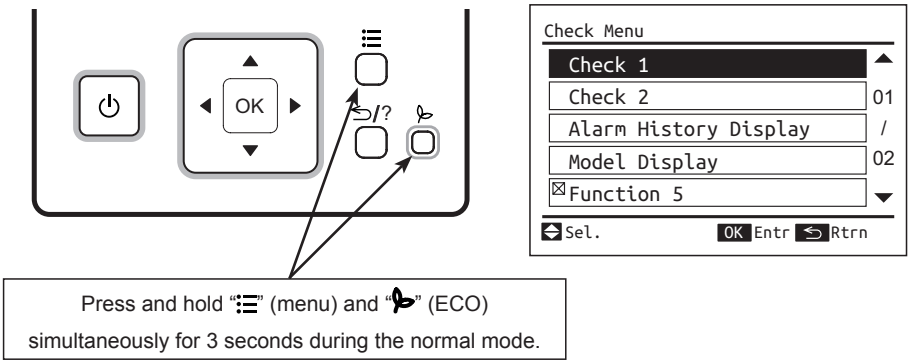


8 Select "Yes" and press "OK". The test run menu will be displayed after the setting is confirmed. If "No" is pressed, the screen will return to (2).

4.1.8 Check menu

Each “Check Menu” item and its function are explained in the following table.

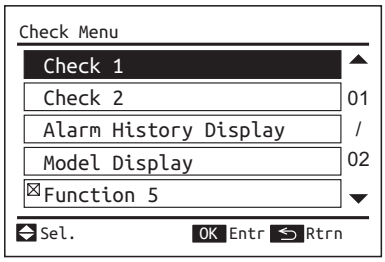
Indication of check Menu



Check menu item	Function
Check 1	Sensor condition of air conditioner will be monitored and indicated.
Check 2	Sensor data of air conditioner prior to alarm occurrence will be indicated.
Alarm history display	Previous alarm record (date, time, alarm code) will be indicated.
Model display	Model name and manufacturing number will be indicated.
Check PCB of the units	The result of PCB check will indicated.
Self checking	Checking of remote control switch will be carried out.

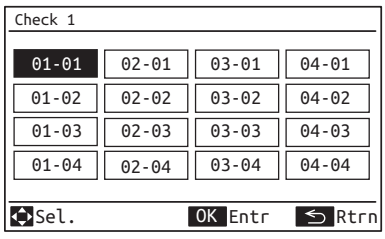
4.1.8.1 Check 1 and Check 2

1 Press and hold “Menu” and “ECO” simultaneously for 3 seconds during the normal mode. The Check Menu is displayed.

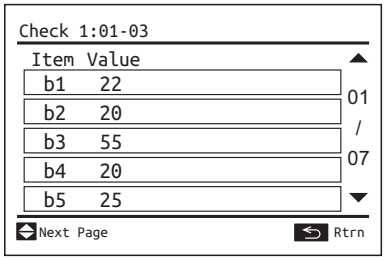


2 Select “Check 1” (or “Check 2”) from the Check Menu and press “OK”.

3 Select the Set Indoor Unit by pressing “△ ▽ ◁ ▷” and press “OK”. This screen is NOT displayed when there is only one indoor unit connected with the wired controller. In this case, (4) below is displayed.



4 Press “△“ or “▽“ to change the screen.



4.1.8.2 Items of Check 1

Item	Item name
b1	Setting temperature
b2	Inlet air temperature
b3	Discharge air temperature
b4	Liquid pipe temperature
b5	Remote thermistor temperature
b6	Outdoor air temperature
b7	Gas pipe temperature
b8	Evaporating temperature in heating
bg	Condensing temperature in cooling
bA	Compressor top temperature
bb	Temperature of the wired controller thermostat
bC	Reserved
C1	Indoor unit microcontroller
C2	Outdoor unit microcontroller
d1	Indication of stop cause state
E1	Number of occurrences of abnormality
E2	Number of occurrences of power failure
E3	Number of occurrences of abnormal transmission
E4	Number of times of inverter tripping
F1	State of the louver sensor
H1	Discharge pressure
H2	Suction pressure
H3	Control information
H4	Operation frequency
J1	Indoor unit capacity
J2	Outdoor unit code
J3	System number (1)
J4	System number (2)
L1	Expansion valve of the indoor unit
L2	Expansion valve of the outdoor unit 1
L3	Expansion valve of the outdoor unit 2
L4	Expansion valve of the outdoor unit B
P1	Compressor current
P2	Accumulated time of compressor operation
q1	Reaction rate of the motion sensor *1
q2	Temperature of the radiation sensor *1
q3	Reaction rate of the motion sensor 1 *1
q4	Reaction rate of the motion sensor 2 *1
q5	Reaction rate of the motion sensor 3 *1
q6	Reaction rate of the motion sensor 4 *1
q7	Collected value of setting temperature

*1 The average value of 30 seconds (update time of the check mode cycle) is displayed on the LCD.

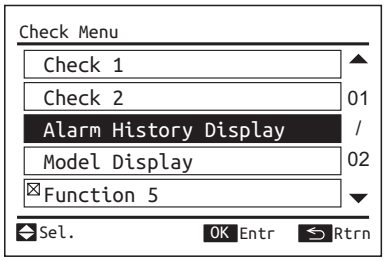
4.1.8.3 Items of Check 2

Item	Item name
q1	Inlet air temperature
q2	Discharge air temperature
q3	Liquid pipe temperature
q4	Outdoor air temperature
q5	Gas pipe temperature
q6	Evaporating temperature in heating
q7	Control information
q8	Compressor top temperature
q9	Discharge pressure
qA	Suction pressure
qb	Control information
qC	Operation frequency
qd	Expansion valve of the indoor unit
qE	Expansion valve of the outdoor unit 1
qF	Compressor current

4.1.8.4 Alarm history display

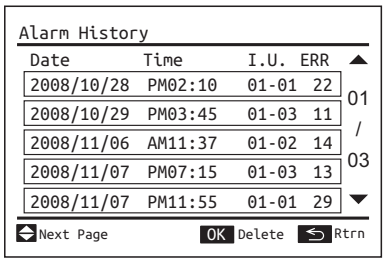
The alarm history display can be set from the check menu.

1 Press and hold “Menu” and “ECO” simultaneously for 3 seconds during the normal mode. The Check Menu is displayed.

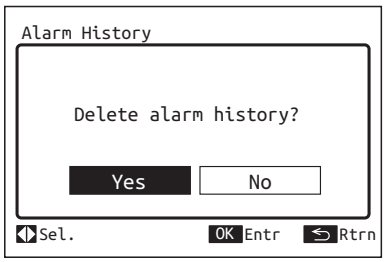


2 Select “Alarm History Display” from Check Menu and press “OK”.

3 The alarm history display changes by pressing “△“ or “▽“.

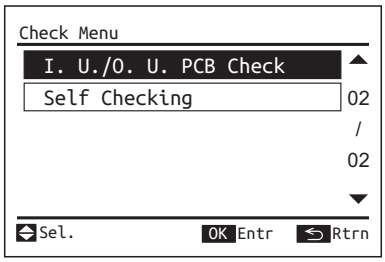


4 To delete the alarm history, press “OK”. The confirmation screen is displayed.
Select “Yes” and press “OK”. The alarm history is deleted and the screen returns to (3) above.
If “No” is pressed, the screen returns to (3) above.



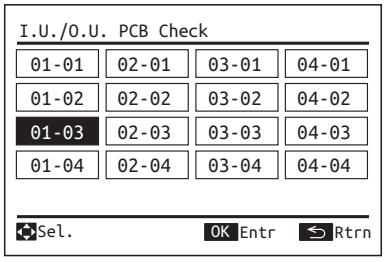
4.1.8.5 Check PCB of the units

1 Press and hold "☰" (menu) and "?" (help) simultaneously for 3 seconds during the normal mode. The check menu is displayed.



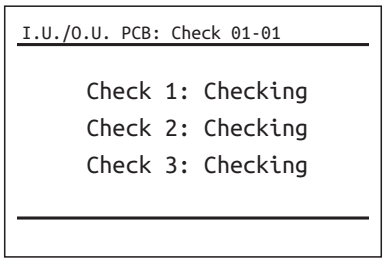
2 Select "I.U./O.U. PCB Check" from the check menu and press "OK".

3 Select the set indoor unit by pressing "△ ▽ ◁ ▷" and press "OK". (This screen is NOT displayed when the number of indoor units connected with the remote control switch is 1 (one). In this case, (4) is displayed.)

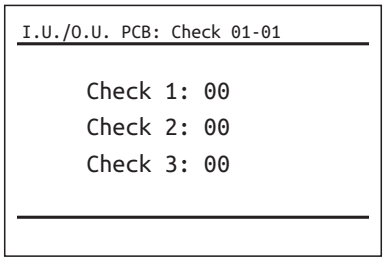


4 The indoor unit PCB and the outdoor unit PCB checks are started.

- * If "☰" (menu) is pressed during the check, the check is canceled and the screen returns to (2).
- * If "⮌" (return) is pressed during the check, the check is canceled and the screen returns to (3).



5 After completing the check, the result of PCB check is indicated. Press "⮌" (return) and return to (3).



◆ Result of the PCB check

Indoor unit PCB	
00	Normal
01	Abnormality of inlet air temperature thermistor
02	Abnormality of outlet air temperature thermistor
03	Abnormality of liquid pipe temperature thermistor
04	Abnormality of remote thermistor
05	Abnormality of gas pipe temperature thermistor
08	Abnormality of Central Station transmission
0A	Abnormality of EEPROM
0b	Zero cross input failure
EE	Abnormality of indoor unit transmission during check

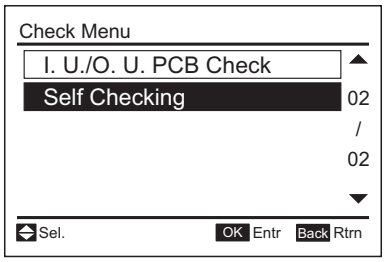
Outdoor unit PCB	
00	Normal
07	Abnormality of outdoor unit transmission
F4	ITO input failure
F5	HPS input failure
F6	Abnormality of protection signal detection circuit
F7	Abnormality of phase detection
F8	Abnormality of inverter transmission
FA	Abnormality of high pressure sensor
Fb	Abnormality of temperature thermistor of compressor discharge gas
FC	Abnormality of low pressure sensor
Fd	Abnormality of evaporating temperature thermistor in heating
FF	Abnormality of ambient air temperature thermistor

4.1.8.6 Self checking

The self checking performs to check the wired controller and to clear EEPROM (storage cell inside of the wired controller).

1 Press and hold “Menu” and “ECO” simultaneously for three seconds during the normal mode (when unit is not operating). The Check Menu is displayed.

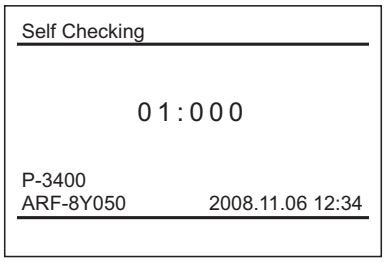
2 Select “Self Checking” from the Check Menu and press “OK”.



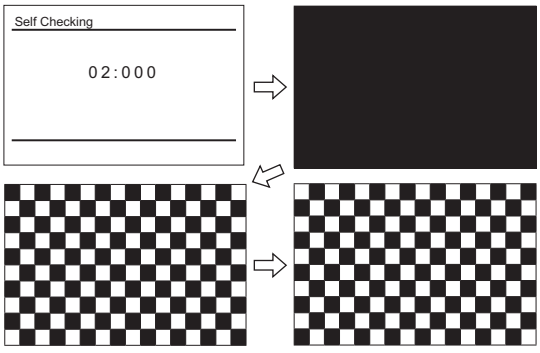
3 (01) Select the process for “Self Checking”.

- To start self check, press “ECO”.
- To clear EEPROM, press “▽” and “ECO” simultaneously.

→ See EEPROM clear process (15) below.



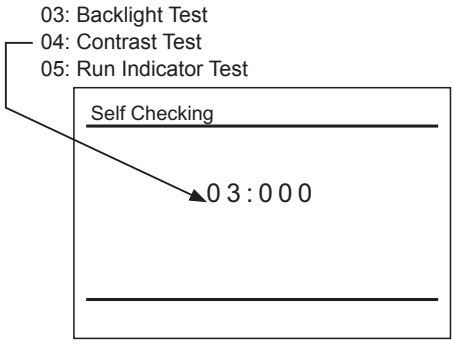
4 (02) LCD Test
Press “OK” and the screen changes as shown at the right.



5 (03) Backlight Test
LCD brightness is changed gradually by pressing “OK”.

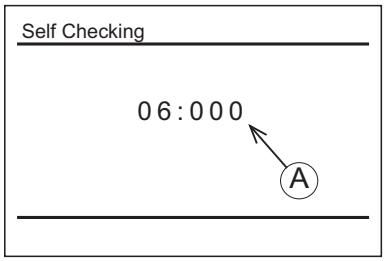
6 (04) Contrast Test
Contrast of the LCD gradually changes by pressing “OK”.

7 (05) Run Indicator Test
Press “OK” and the run indicator flashes in red and green twice for each.



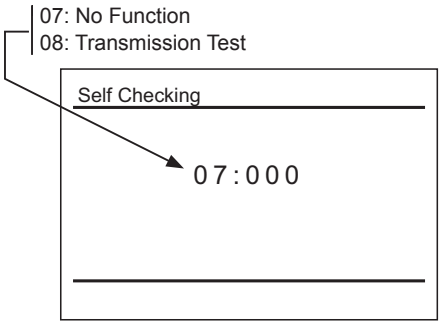
8 (06) Button Input Test
Press the nine buttons one-by-one. The number indicated with “Ⓐ” counts up as buttons are being pressed.

* The order of pressing buttons is random.
Do not press more than one button at a time. It is not be counted.

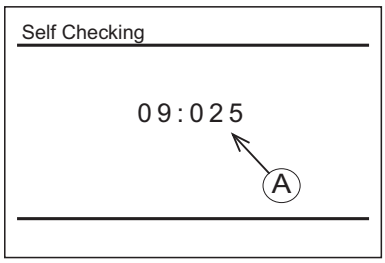


9 (07) No Function
This function is not used.
Press “OK” to proceed.

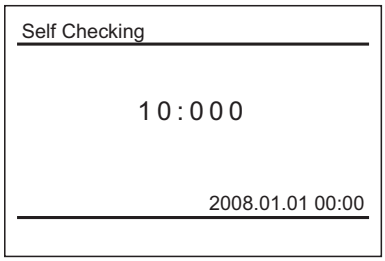
10 (08) Communication (Transmission) Circuit Test
The wired controller automatically starts to check the communication circuit.



11 (09) Wired Controller Thermistor Test
The detected temperature by the wired controller thermistor is displayed at “Ⓐ” in the figure at the right.

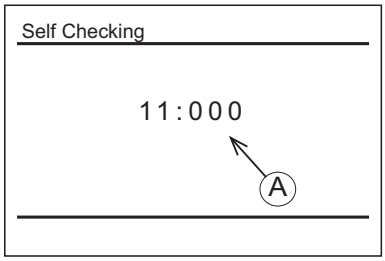


12 (10) Date/Time Test
The date and time is changed from “2012.03.04 12:34” to “2008.01.01 00:00”.

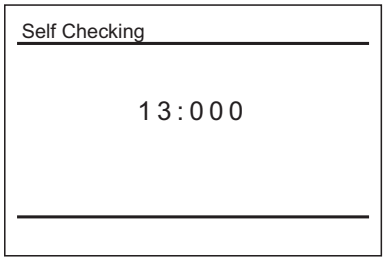


13 (11) EEPROM Test

- EEPROM Clearing Cancel
  Press “⮌/?” (return / help).
- EEPROM Clear
  Press “OK” or wait 15 seconds. EEPROM data is cleared. During the process, the numbers is indicated the location with “Ⓐ”.
- If Ⓐ has a value of “999”, EEPROM is in a faulty condition.
  If Ⓐ has “999”, the process does not proceed to the next step.



14 (13) Clear EEPROM
The wired controller automatically starts the EEPROM clearing process.



15 After several seconds pass, the self checking is completed and the wired controller is automatically restarted.

4.1.9 Menu operation

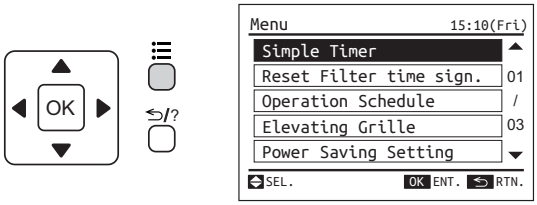
4.1.9.1 Menu

Every setting function is displayed in the menu. Refer to the following sections for each function.

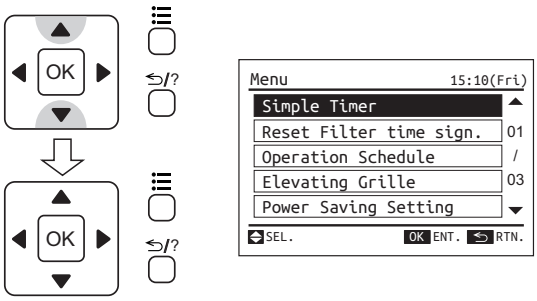
NOTE

- ☒: *Unable to set .*
- *If the function with "☒" is selected from the menu, "No Function" or "Setting Disabled" will be displayed on the lower screen.*

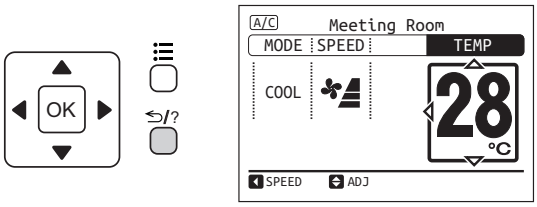
1 Press "☰" (menu). The menu will be displayed.



2 Select the function by pressing "△" or "▽" and press "OK".



3 Press "⮌/?" (return / help) to return to the normal mode (Operation Mode Indication).



NOTE

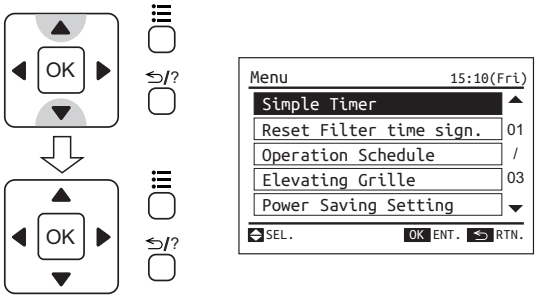
If the menu screen remains unchanged for approximately 10 minutes, the screen will automatically return to the normal mode.

4.1.9.2 Simple timer operation

This function is used to start or stop the unit operation at the setting time.

The timer operation contents can be set from "Not Used", "Once" or "Everyday".

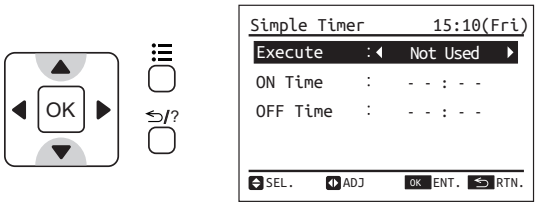
1 Select "Simple Timer" from the menu and press "OK". The simple timer setting will be displayed.



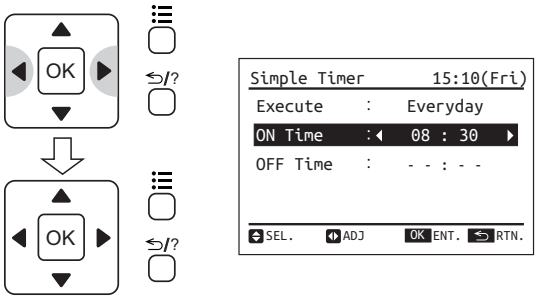
NOTE

If the present time has not been set yet, automatically "Set Date/Time" will be displayed. Refer to "4.1.9.16 Adjusting date/time" section.

2 Press "△" or "▽" to select the setting items. The setting items are displayed "Execute", "ON Time" and "OFF Time".



3 Press "◁" or "▷" to set each setting content for the selected item. When "Execute" is selected, the setting contents are switched in order of "Not Used" ⟷ "Once" ⟷ "Everyday" by repeatedly pressing "◁" or "▷". When "ON Time" or "OFF Time" is selected, the setting time can be set every 30 minutes by pressing "◁" or "▷". Press and hold "◁" or "▷", the setting time can be continuously indicated.

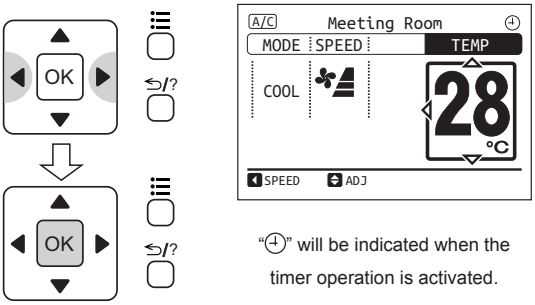


NOTE

- *If "Once" of the timer operation setting is selected, the setting content will be automatically changed to "Not Used" after "Once" timer operation.*
- *Do not set the same hour for both ON/OFF timers.*

4 Press "OK" to finish the simple timer setting. The confirmation screen will be displayed.

5 Select "Yes" by pressing "◁" or "▷" and press "OK". The setting will be confirmed and the screen will return to the normal mode.



"⏲" will be indicated when the timer operation is activated.

NOTE

In the case of the following condition, the simple timer operation is NOT available:

- *When the prohibiting operation by remote control switch is set from the central controller.*
- *When "⊗" is indicated on LCD, the timer operation cannot perform. Set the date and time according to "4.1.9.16 Adjusting date/time" section.*

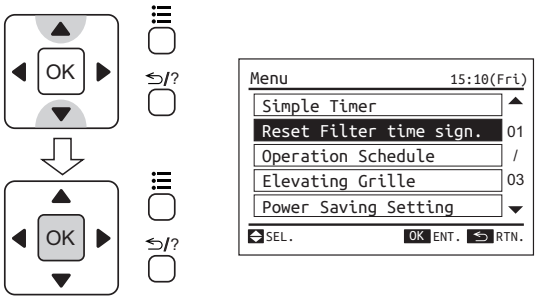
4.1.9.3 Reset filter time sign

This function is used to turn off the filter sign indication and to reset the time of use for the filter.

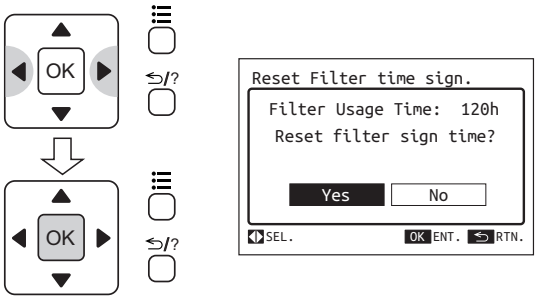
NOTE

The filter cleaning period can be set by means of the optional function b4

1 Select “Reset Filter time sign.” from the menu and press “OK”. The “Reset Filter time sign.” screen will be displayed.

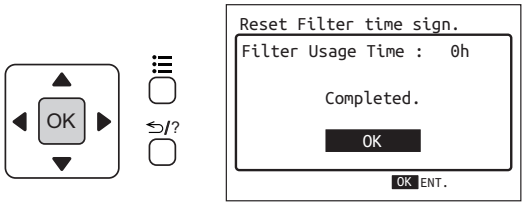


2 Select “Yes” by pressing “◁” or “▷” and press “OK”. The indication of “FLTR” will be turned OFF and the screen will return to the normal mode.



The “Filter Usage time sign.” may not display depending on the type of the indoor unit.

3 Press “OK” to return to the normal mode.



4.1.9.4 Operation schedule

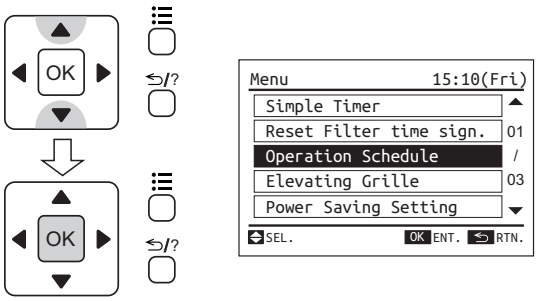
◆ Schedule setting (Day/Time setting)

This function is used to start or stop the unit operation at the setting time.

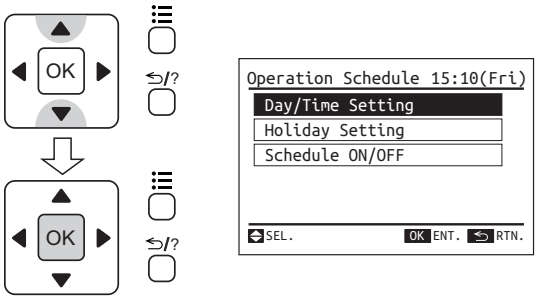
Temperature can be also set with “Operation Schedule” operation.

Five different schedule timers (max.) can be set for each day of the week.

1 Select “Operation Schedule” from the menu and press “OK”.



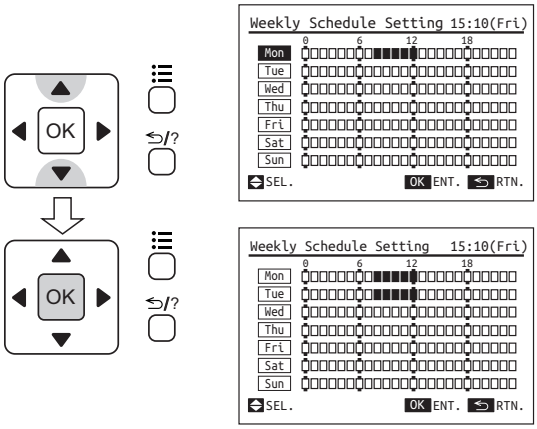
2 Select “Day/Time Setting” by pressing “△” or “▽” and press “OK”.



NOTE

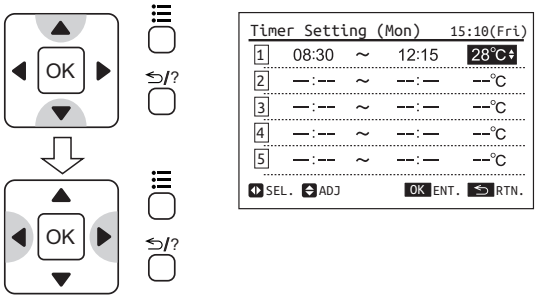
If the present time has not been set yet, automatically “Set Date/Time” will be displayed. Refer to “4.1.9.16 Adjusting date/time”.

3 Select the day of the week (from Monday to Sunday) by pressing “△” or “▽”. Press “OK”.



4 Select the schedule No (from 1 to 5) by pressing "△" or "▽". Select "ON Time", "OFF Time" or "Setting Temperature" by pressing "◁" or "▷". Set the ON/OFF timer and temperature by pressing "△" or "▽".

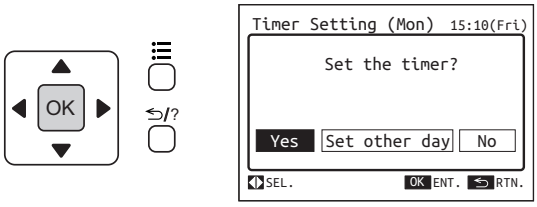
- Press or keep pressing "△" or "▽" to adjust numbers.
- Five different schedule timers (max) can be set for each day of the week.
- When setting other days of the week, press "Menu". The schedule setting screen of the next day will display.



The figure shows that following timers are set for Monday;

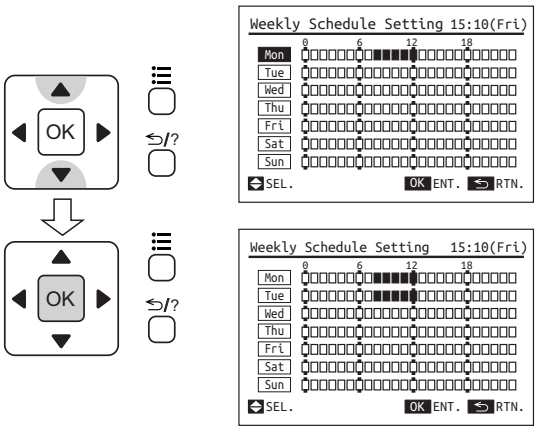
- ON Time: 8:30
- OFF Time: 12:15
- Setting temperature: 28ºC

5 Press "OK". The confirmation screen will be displayed.



6 To set other days of the week, select "Set other day" and press "OK".

7 "■" (run) and "□" (stop) will be displayed on LCD.



8 To copy the setting contents of the previous day, press "◁" and "OK" simultaneously.

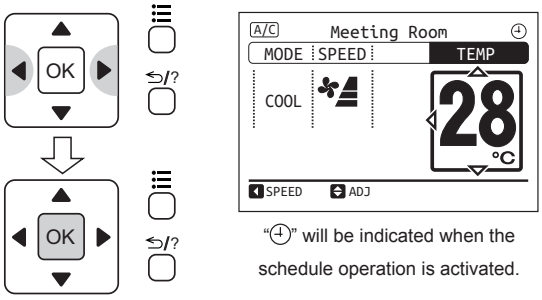
Example:

The setting contents of Monday is copied in Tuesday.

- Select "Tue".
- Press "◁" and "OK" simultaneously.
- The setting contents of Monday are copied in Tuesday.

9 Press "OK". The confirmation screen will be displayed.

10 Select "Yes" by pressing "◁" or "▷" and press "OK". The setting will be confirmed and the screen will return to the normal mode.



"⏲" will be indicated when the schedule operation is activated.

NOTE

In the case of the following condition, the schedule operation is NOT available;

- *When the prohibiting operation by remote control switch is set from the central controller.*
- *When "⊗" is indicated on LCD, the schedule operation cannot perform. Set the date and time according to "4.1.9.16 Adjusting date/time" section.*

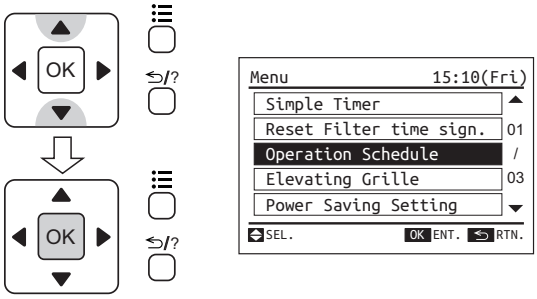
◆ Holiday setting

This function is used to deactivate the schedule operation temporarily.

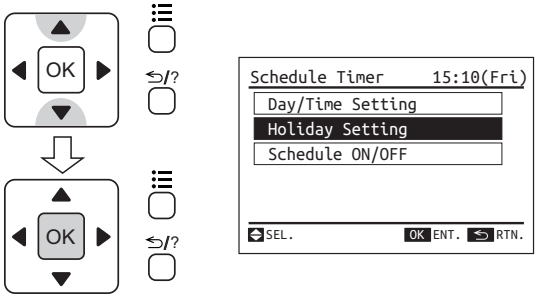
After that, the schedule operation will recover automatically.

This function is used to set irregular schedules such as national holidays.

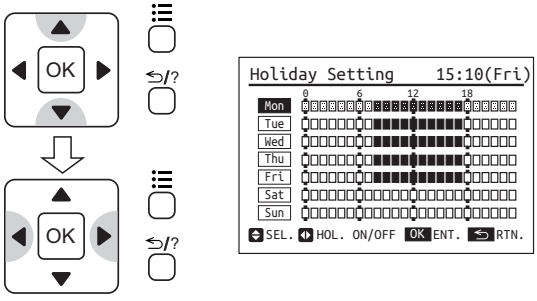
1 Select "Operation Schedule" from the menu and press "OK". The operation schedule setting will be displayed.



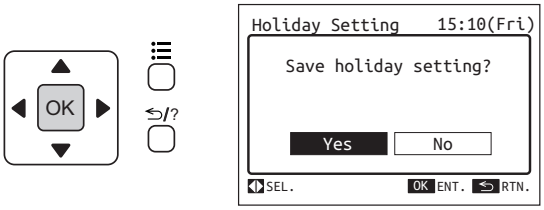
2 Select "Holiday Setting" by pressing "△" or "▽" and press "OK".



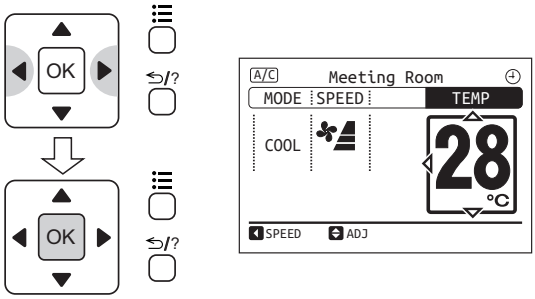
3 Select the day of the week to stop the operation by pressing "△" or "▽". Select "HOL. ON/OFF" by pressing "◁" or "▷". "■" and "□" will be changed to "▣" and "▣" on LCD.



4 Press “OK” after the setting is completed. The confirmation screen will be displayed.



5 Select “Yes” by pressing “◁” or “▷” and press “OK”. The holiday setting will be confirmed and the screen will return to the normal mode.



NOTE

“⏲” will be turned off when the holiday setting is activated.

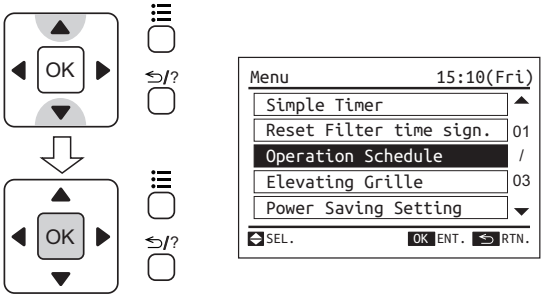
◆ Schedule ON/OFF setting

This function is used to deactivate the schedule operation temporarily.

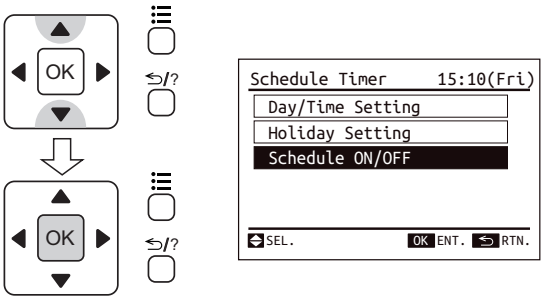
The schedule operation will not be carried out when “OFF” is set in this function.

This function is used to apply for long period of holidays.

1 Select “Operation Schedule” from the menu and press “OK”.



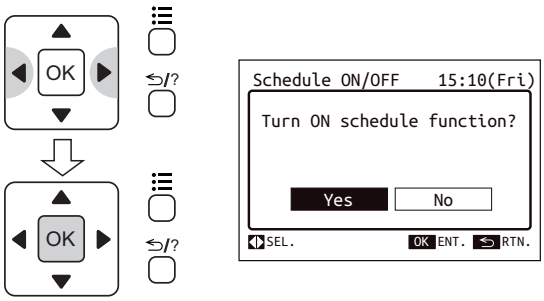
2 Select “Schedule ON/OFF” by pressing “△” or “▽” and press “OK”. The confirmation screen will be displayed.



3 Select “Yes” by pressing “◁” or “▷” and press “OK”. The schedule ON/OFF setting will be confirmed and the screen will return to the normal mode.

“⏲” will be turned on when the setting of schedule operation is valid.

“⏲” will be turned off when the setting of schedule operation is invalid.



NOTE

When the setting of schedule operation is invalid, the schedule operation will not be activated.

4.1.9.5 Power Saving

Functions

The power saving mode can be selected as follows:

1 **Outdoor Unit Capacity Control:**
Controls the COOL/HEAT capacity of the outdoor unit.

2 **Indoor Unit Rotation Control:**
In a system where all the indoor units belonging to the same refrigerant cycle are operating in either cooling or heating mode, each indoor unit is temporarily switched to fan mode, one by one in an established sequence. The sequence as well as the criteria for rotation are explained in the description of rotation control.

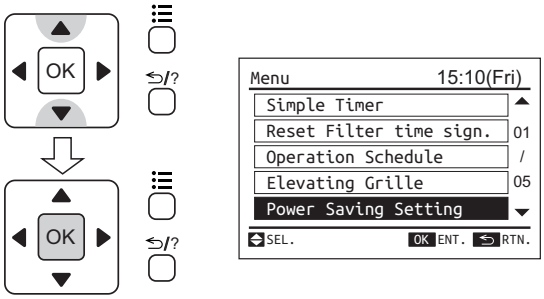
3 **Intermittent Operation Control:**
Cooling/heating and fan modes are alternated in fixed intervals.

4 **No Setting:**
The power saving function will not operate.

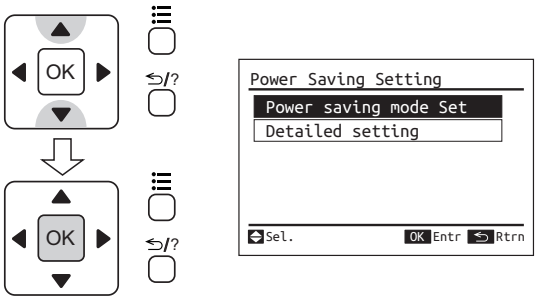
NOTE

- *The power saving mode can be changed and may differ depending on the type of the outdoor unit or indoor unit in use. Different power saving modes can be selected depending on what is displayed in the “4.1.10.1 Current setting” in the “4.1.10 Help menu”, as shown below:*
  - *“Main”: The power saving mode can change functions 1 through 4 above.*
  - *“Sub”: The power saving mode cannot be changed. It will synchronize with the power saving mode of the main controller from the same outdoor unit cycle.*
  - *“−−”: The power saving mode can be changed between functions 3 and 4 above.*
- *If the power saving mode is changed, the “Power Saving ON/OFF” will be set as OFF.*

1 Select “Power Saving Setting” from the “Menu” and press “OK”.
The “Power Saving Setting” screen will be displayed.

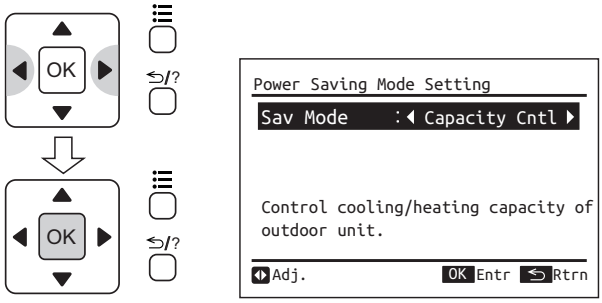


2 Select “Power Saving Setting” by pressing “△” or “▽” and press “OK”.
The “Power Saving Setting” screen will be displayed.

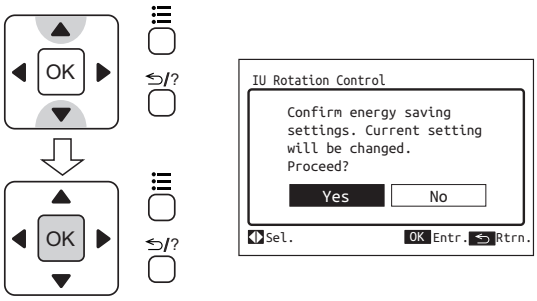


3 By pressing “◁ ”or “ ▷”, “Power Saving Mode Set” will change between:
Capacity Control ↔ Rotation Control ↔ Intermittent Control ↔ No Setting

Select the power saving mode and press “OK”. The setting confirmation screen will display



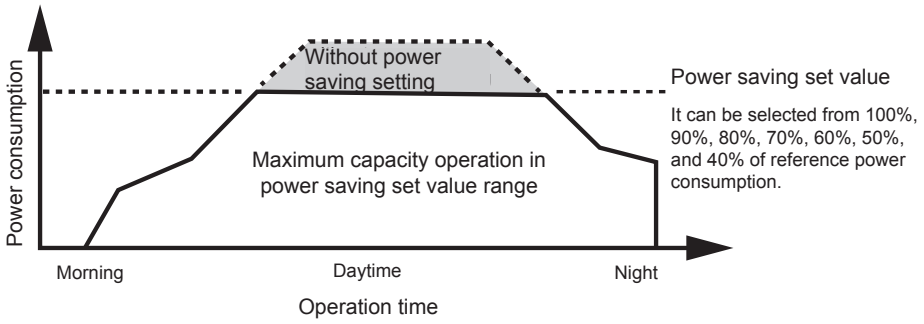
4 Select “Yes” using “◁ ”or “ ▷” and press “OK”.
The screen will return to normal mode.

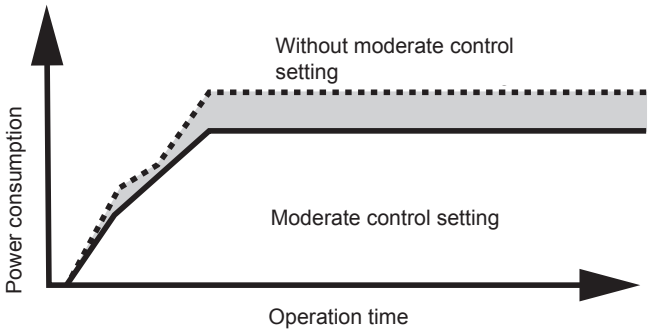


◆ Power Saving Detailed Setting (Outdoor Unit Capacity Control)

This function is used to adjust the detailed settings of outdoor unit capacity control.

- Control Method:
  The “Peak Cut Control” reduces the power consumption range when it exceeds the value of the power setting. On the basis of the current air conditioning capacity, the “Moderate Control” is used to moderate the air conditioning capacity as well as the peak.



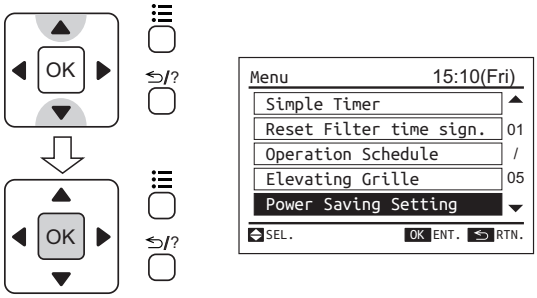


- Power Saving (LOW / MED / HIGH):
  This menu allows to assign percentages of capacity for each level of capacity control, to be applied when power saving is activated.
- Change Level:
  It is possible to change the power saving level from the power saving guidance.

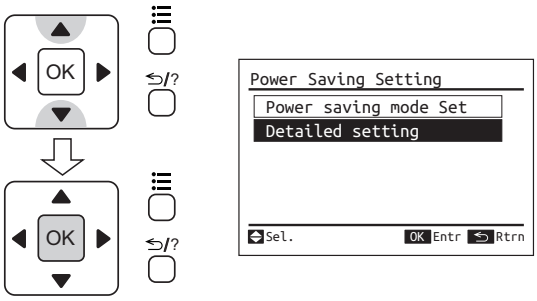
NOTE

- *The “Main/Sub-Remote” display in “4.1.10.1 Current setting” in the “4.1.10 Help menu” cannot be set if the indication is “Sub” or “−−”.*
- *If the power saving mode changes the power saving detailed setting in the outdoor unit capacity control, the “Power Saving ON/OFF” will be OFF.*
- *It is necessary to assign a value of capacity control as follows: “Sav LOW” > “Sav MED” > “Sav HIGH”.*
- *The cooling/heating capacity can decrease when using the “Power Saving” function.*

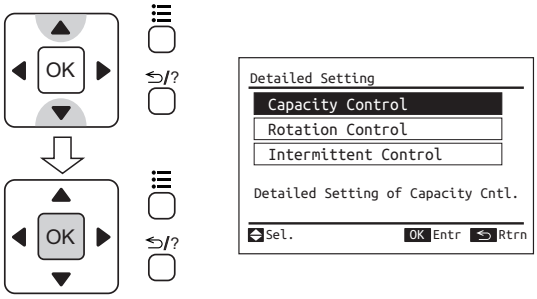
1 Select “Power Saving Setting” from the “Menu” screen and press “OK”.
The “Power Saving Setting” screen will be displayed.



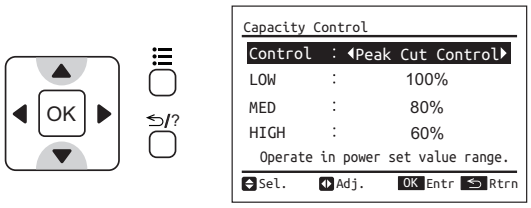
2 Select “Detailed Setting” by pressing “△” or “▽” and press “OK”.
The power saving “Detailed Setting” screen will be displayed.



3 Select “Capacity Control” using “△” or “▽” and press “OK”.
The outdoor unit “Capacity Control” screen will be displayed.



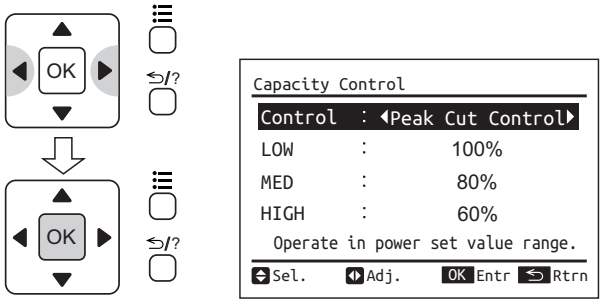
4 Press “△” or “▽” and select the setting function. The setting will change as follows:
“Control” ↔ “LOW” ↔ “MED” ↔ “HIGH”.



5 Press “◁” or “▷” and select setting content.

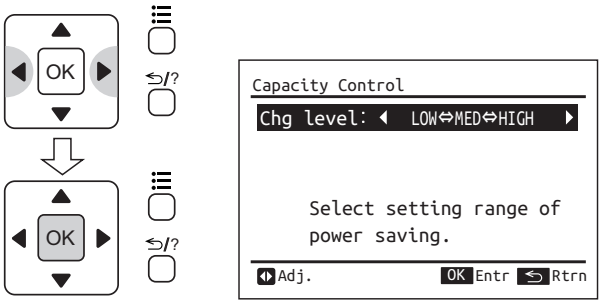
- If “Control Method” is selected, it will change as follows:
  “Peak Cut Control” ↔ “Moderate Control”.
- If “LOW, MED or HIGH” is selected, it will change as follows:
  “100%” ↔ “90%” ↔ “80%” ↔ “70%” ↔ “60%” ↔ “50%” ↔ “40%” ↔ “0%”.

Press “OK” after completing all settings.
The next setting screen will be displayed.

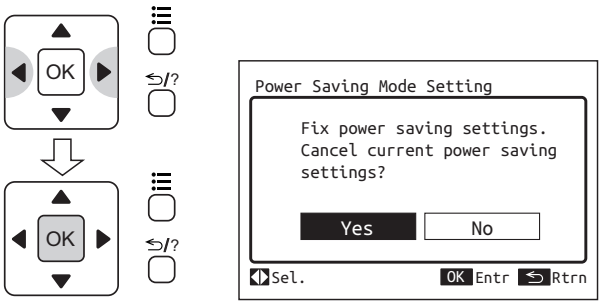


6 By pressing "◁ " or " ▷", the setting function will change as follows
"LOW→MED→HIGH" ↔ "LOW Only" ↔ "MED Only" ↔ "HIGH Only".

Press "OK" after completing the setting.



7 The confirmation screen will be displayed. Select "Yes" by pressing "◁" or "▷", and press "OK" to confirm the setting.
The screen will return to the normal mode.
If the power saving setting is available, set it "ON" using the "Power Save Guide".



◆ Power saving detailed setting (indoor unit rotation control)

This control is setting the indoor units in to Fan mode, depending on one parameter that can be selected by the user: indoor unit address, temperature difference, availability of motion sensor. The details of these settings are explained below.

This function sets the data of the indoor unit rotation control.

- Control Method

  “Address order”: Indoor units are set to FAN mode depending on their H-LINK address, in ascending order, one by one.

  “Temperature order”: Indoor units are set to Fan mode according to the temperature difference between temperature set point and air inlet temperature, in ascending order: units for which TSet is closer to the setting temperature are the first to be switched to fan mode.

  “Sensor order:*” If the motion sensor is used, Fan mode will be applied to the indoor unit that has the lowest activity detected. Once the fan mode operation time is elapsed, this unit returns to the previous operation mode and fan mode is applied to another indoor unit with the lowest activity.

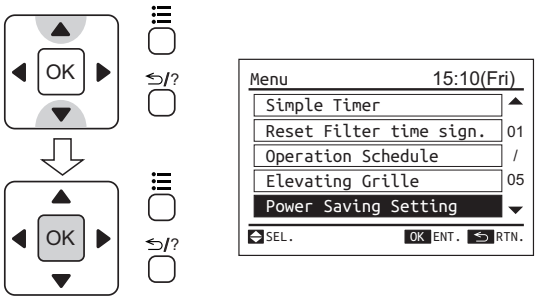
  *: This function can only be set with outdoor units and indoor units supporting it.

- FAN Operation Time
  It is possible to change the timing of the FAN operation of the indoor unit. If “FAN Mode Time” is selected, it will change between: “10 min.” ↔ “5 min.” ↔ “3 min.”

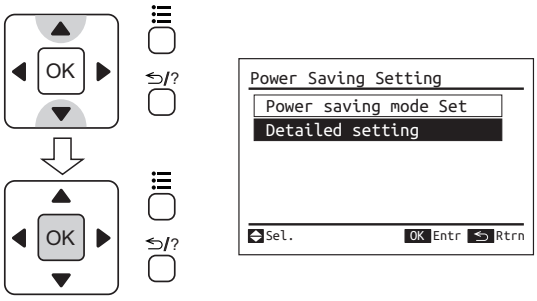
NOTE

- *The “Main/Sub-Remote” display in “4.1.10.1 Current setting” in the “4.1.10 Help menu” cannot be set if the indication is “Sub” or “−−”.*
- *If the “Power Saving Mode” changes the power saving “Detailed Setting” in the outdoor unit capacity control, “Power Saving ON/OFF” will be OFF.*
- *This function can only be used when the operation mode is in COOL or HEAT.*
- *The cooling/heating capacity can decrease when using the “Power Saving” function.*

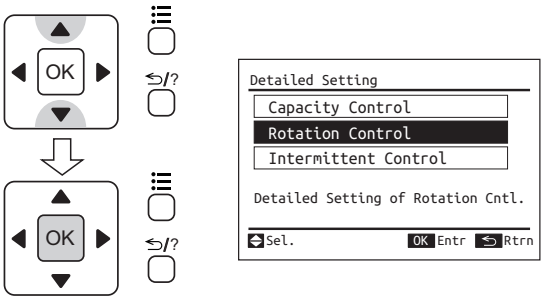
1 Select “Power Saving Setting” from the menu screen and press “OK”.



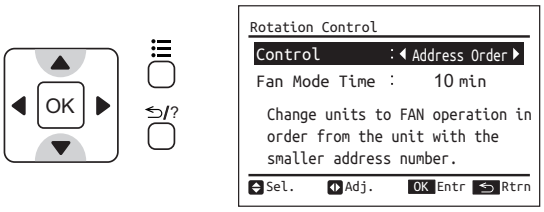
2 The “Power Saving Setting” screen will be displayed. Select “Detailed Setting” with “Δ” or “∇” and press “OK”.



3 Select “Rotation Control” with “△” or “▽” and press “OK”.
The detailed setting screen of the indoor unit “Rotation Control” will be displayed.



4 Press “△” or “▽” and select the setting.
The setting will change as follows.
“Control” ↔ “FAN Mode Time”

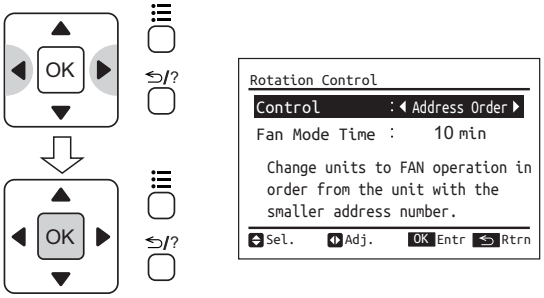


5 Press “◁ ”or “ ▷” and select the setting content.

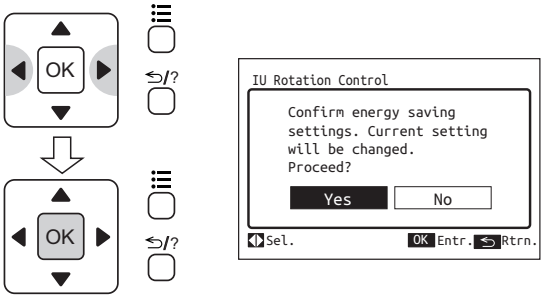
- If “Control” is selected, it will change as follows:
  “Address Order” ↔ “Temperature Order” ↔ “Sensor Order* ”
- If “FAN Mode Time” is selected, it will change between:
  “10 min.” ↔ “5 min.” ↔ “3 min.”

Press “OK” when all settings have been carried out.

* It is not possible to set the indoor or outdoor unit when the “Sensor Order” is not supported.



6 The setting confirmation is displayed.
Select “Yes” with “◁ ” or “ ▷” and press “OK” to confirm the setting and return to the normal mode.
If the “Power Saving Mode” setting is accessible, set “Power Saving ON” from “Power Saving Guide”.



◆ Power saving detailed setting (intermittent operation control)

This function is used to set details of the Intermittent Operation Control. The following indications will be displayed :

"LOW→MED→HIGH" ↔ "LOW Only" ↔ "MED Only" ↔ "HIGH Only"

- Change Level: It is possible to change the "Power Saving Level" from "Power Save Guide".

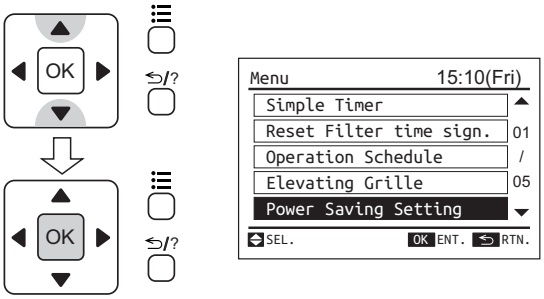
NOTE

- *This function cannot be set if it is connected only to the total heat exchanger.*
- *Each power saving level will repeat the operation as follows:*

	Cool / Dry Mode	Heat Mode
SAV:LOW	Normal Mode 20min. ↕ Fan Mode 10min.	Normal Mode 25min. ↕ Fan Mode 5min.
SAV:MED	Normal Mode 17min. ↕ Fan Mode 13min.	Normal Mode 20min. ↕ Fan Mode 10min.
SAV:HIGH	Normal Mode 15min. ↕ Fan Mode 15min.	Normal Mode 15min. ↕ Fan Mode 15min.

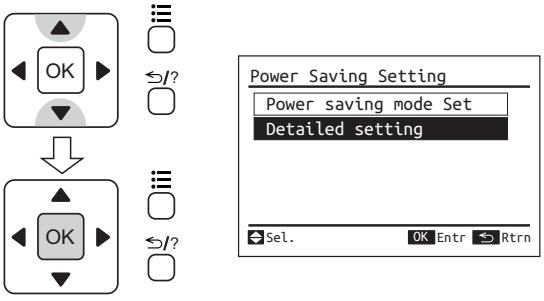
- *If the "Power Saving Mode" changes the "Power Saving Detailed" setting in intermittent operation control, the "Power Saving ON/OFF" will be OFF.*
- *The cooling/heating capacity can decrease when using the "Power Saving" function.*

1 Select "Power Saving Setting" from the "Menu" screen and press "OK".
The "Power Saving Setting" screen will be displayed.

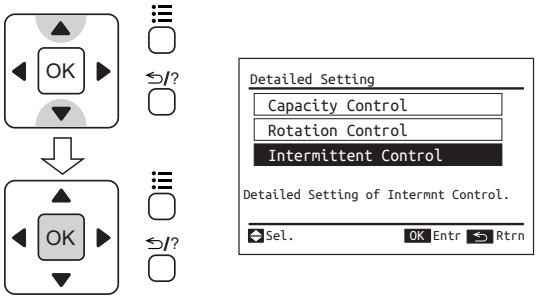


2 Select "Detailed Setting" with "△" or "▽" and press "OK".

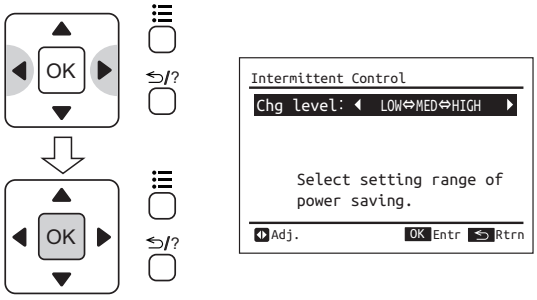
- When using a main controller, the "Power Saving Detailed Setting" screen will be displayed. Refer to (3) below.
- When using a sub controller or if the indoor unit does not support power saving, the "Detailed Setting" of the "Intermittent Control" will be displayed.
  Refer to (4) below.



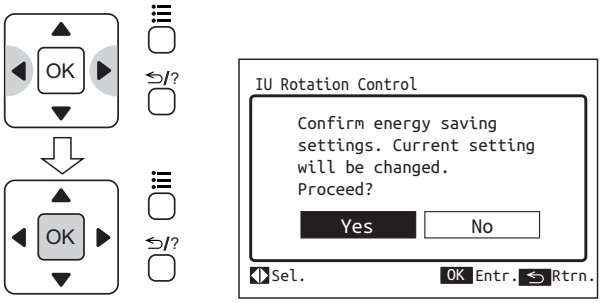
3 Select “Intermittent Control” with “△” or “▽” and press “OK”.
The detailed setting screen of the intermittent control will be displayed.



4 By pressing “◁” or “ ▷”, the following indications will be displayed : “LOW→MED→HIGH” ↔ “LOW Only” ↔ “MED Only” ↔ “HIGH Only”.
Press “OK” after selecting a setting.



5 The setting confirmation screen will be displayed. Select “Yes” with “◁” or “▷” and press “OK” to confirm the setting. The screen will return to normal mode.
If the “Power Saving Setting” setting is accessible, set it “ON” using “Power Saving Guide”.



6 The setting confirmation screen will be displayed. Select “Yes” with “◁” or “▷” and press “OK” to confirm the setting. The screen will return to normal mode.

4.1.9.6 Operation noise reduction

This function is used to control the operation noise of the outdoor unit, by partially reducing its nominal capacity.

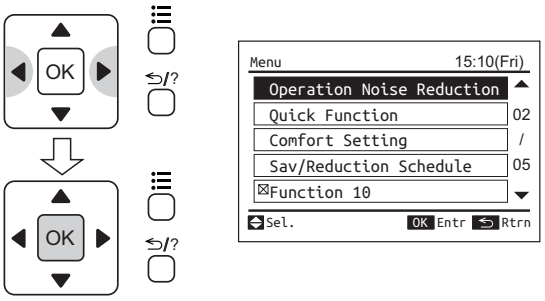
NOTE

- *The "Main/Sub-Remote" display in "4.1.10.1 Current setting" in the "4.1.10 Help menu" cannot be set if the indication is "Sub" or "−−".*
- *Depending on the operation noise reduction setting below, it is possible to change the function setting to reduce the noise of the outdoor unit.*

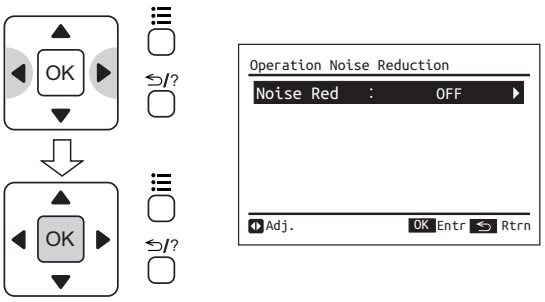
Setting	Description
Not available	No Setting
LOW	Reduction of outdoor unit capacity to approximately 80% of its nominal capacity, in order to reduce the fan speed level and noise. (Other control parameters can change this conditions)
MED	Reduction of outdoor unit capacity to approximately 60% of its nominal capacity, in order to reduce the fan speed level and noise. (Other control parameters can change this conditions)
HIGH	Reduction of outdoor unit capacity to approximately 40% of its nominal capacity, in order to reduce the fan speed level and noise. (Other control parameters can change this conditions)

- *The cooling/heating capacity can be decreased when using the "Operation Noise Reduction" setting.*

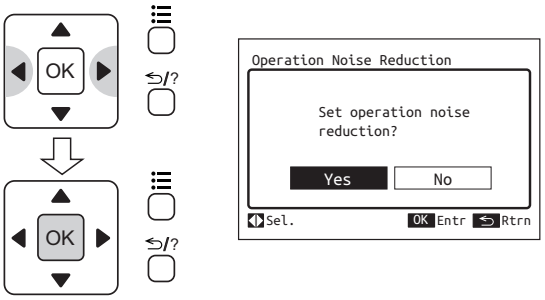
1 Select "Operation Noise Reduction" from the menu screen and press "OK".
The "Operation Noise Reduction" setting screen will be displayed.



2 By pressing "◁" or "▷" the setting will change as follows: OFF ↔ LOW ↔ MED ↔ HIGH
Select the level and press "OK".



3 The setting confirmation screen will be displayed. Select "Yes" with "◁" or "▷" and press "OK" to confirm the setting.
The screen will return to normal mode.



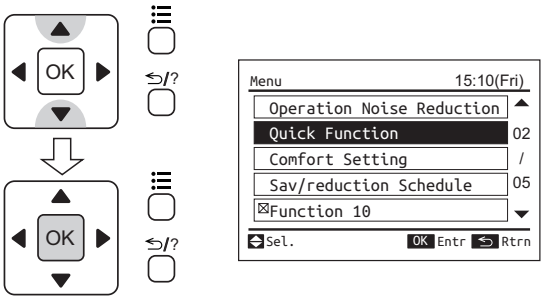
4.1.9.7 Quick function

This is a function to increase cooling and heating capacity for 30 minutes since the beginning of operation, in order to reach the setting temperature as quickly as possible. It is only available when the operation mode is cooling or heating. This function makes operation begin in quick mode every time ON operation is set, until the setting is cancelled.

NOTE

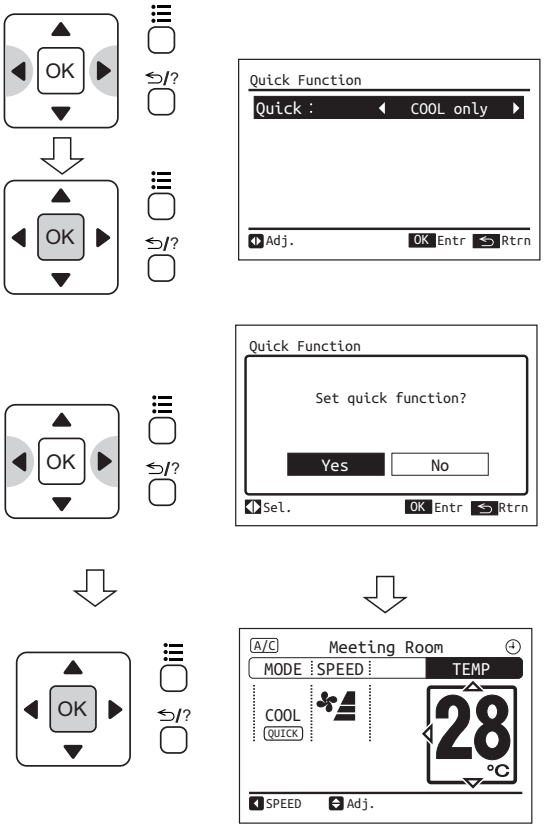
- *The outdoor unit cannot be set when the function is not supported.*
- *The "Main/Sub-Remote" display in "4.1.10.1 Current setting" in the "4.1.10 Help menu" cannot be set if the indication is "−−".*
- *It is possible that the automatic fan speed will fall to LOW for a maximum of 30 minutes. The operation will start regardless of the fan speed setting of the controller when in cooling mode.*

1 Select "Quick Function" from the "Menu" screen and press "OK".
The "Quick Function" screen will be displayed.



2 By pressing "◁" or "▷" the "Quick" mode will change as follows:
OFF ↔ COOL Only ↔ HEAT Only ↔ COOL + HEAT

Select the "Quick" mode and press "OK".



The icon "QUICK" will be displayed when in "Quick" mode.

4.1.9.8 Comfort setting

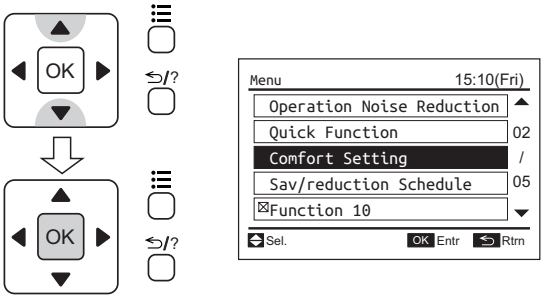
The control system adjusts the comfort and cooling response time, room by room, for maximum comfort and energy efficiency.

This function controls the air outlet temperature of indoor units operating in cooling mode, to ensure a perfect comfort of the users.

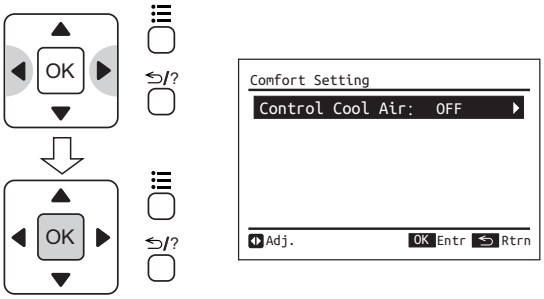
NOTE

- *The indoor unit cannot be set when the function is not supported.*
- *The cool air level order is as follows: "HIGH" > "MED" > "LOW" and the temperature of the discharged air is high.*
- *It is possible the operation may not function if there are more than two units operating.*
- *When this function is set, it may take time for the entire room to cool down.*

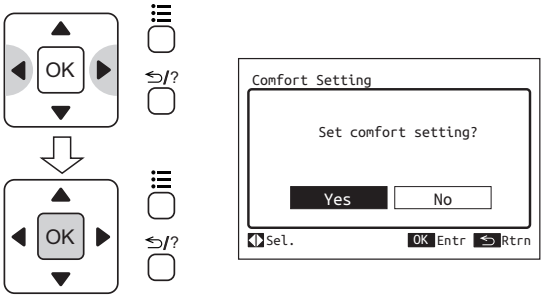
1 Select "Comfort Setting" from the "Menu" screen and press "OK". The "Comfort Setting" screen will be displayed.



2 By pressing "◁" or "▷" the Comfort Setting Mode will change as follows: OFF ↔ LOW ↔ MED ↔ HIGH
Select the "Control Cool Air" level and press "OK".



3 The setting confirmation screen will be displayed. Select "Yes" with "◁" or "▷" and press "OK" to confirm the setting. The screen will return to normal mode.



The settings of this comfort function define the minimum discharge target temperature, with the following values:

- OFF : no change
- LOW : 12ºC
- MED : 14ºC
- HIGH: 16ºC

Once the discharge temperature becomes lower than the target value, the setting temperature of the indoor unit is increased by up to 4ºC, in order to make the discharge temperature become higher than the target value. In case that discharge temperature cannot reach the target, then the unit is set to Thermo-OFF.

The function remains active until both the following conditions are given:

- At least 5 minutes after return to Thermo-ON
- Discharge temperature 2°C higher than the target value

4.1.9.9 Power saving / Operation noise reduction schedule

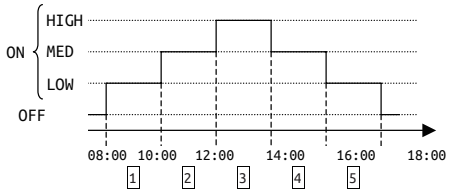
This function is used to start or stop power saving (capacity control or intermittent control) or noise reduction modes at the desired time. Up to five daily schedules can be set for power saving or operation noise reduction.

The detailed settings for each of the modes available for scheduled activation are carried out at their corresponding setup menus.

NOTE

Set time zones so they don't overlap during a day when managing multiple schedule patterns as in Example 1 below. If time zones are overlapped as in Example 2, the first "OFF Time" (14:00 in the example 2) will be cancelled.

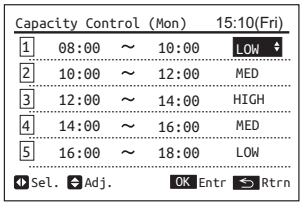
◆ Example of power saving operation and schedule setting



Example of power saving schedule operation

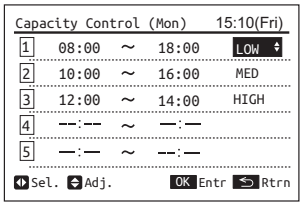
- Example 1:

CORRECT

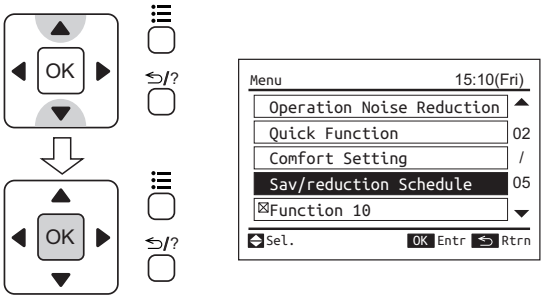


- Example 2:

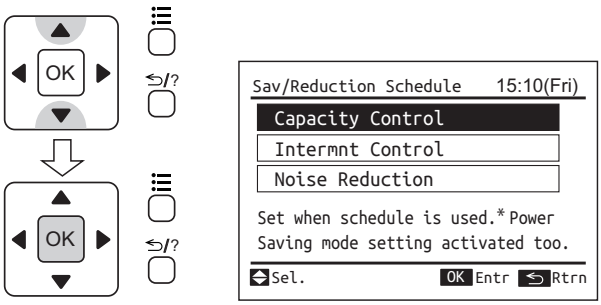
INCORRECT



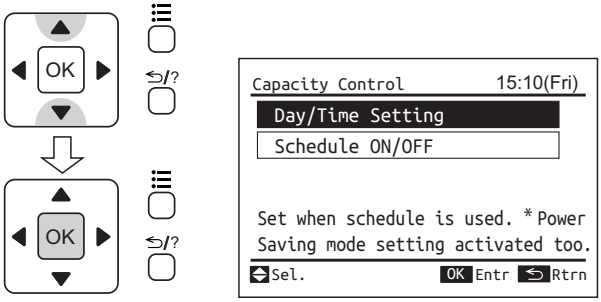
1 Select "Sav/Reduction Schedule" from the "Menu" screen and press "OK".
The power saving/operation noise reduction schedule setting screen will be displayed as "Sav/Reduction Schedule".
When using a Sub controller or if the indoor unit does not support power saving, the power saving schedule setting of the "Intermittent Control" will be displayed.
Refer to (3) below.



2 By pressing "△ " or "▽", select the setting item. The setting will change as follows:
"Capacity Control" ↔ "Intermittent Control" ↔ "Noise Reduction"
Press "OK".



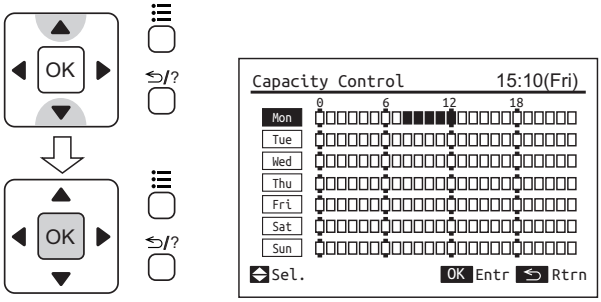
3 Select the "Day/Time Setting" with "△" or "▽" and press "OK".
The weekly schedule setting screen will be displayed.



When the current time is not set, the "Time Adjusting" screen will be displayed automatically.

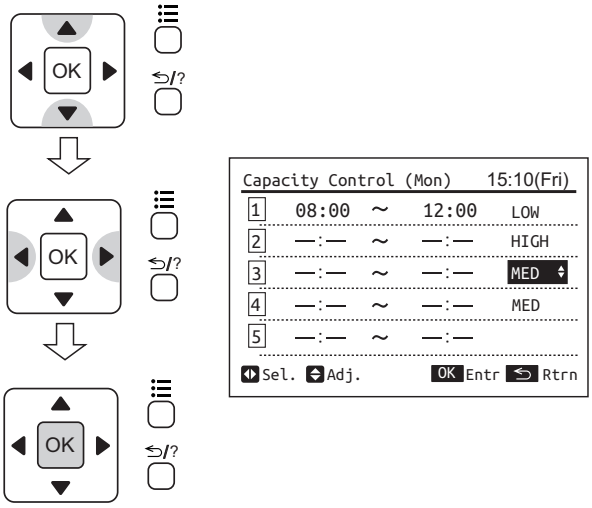
4 Select the day set with "△" or "▽" and press "OK". The "Time Setting" screen will be displayed.

- The icon " ■ " indicates the power saving control (or the operation noise reduction control), and the icon " □ " indicates the cancelled time period.
  In case of a holiday setting, the icons will appear as follows " ▪ " and " ▫ ".
- To copy a setting, press "◁ " and "OK" simultaneously for the selected day.
  The setting data of the previous day will be copied.



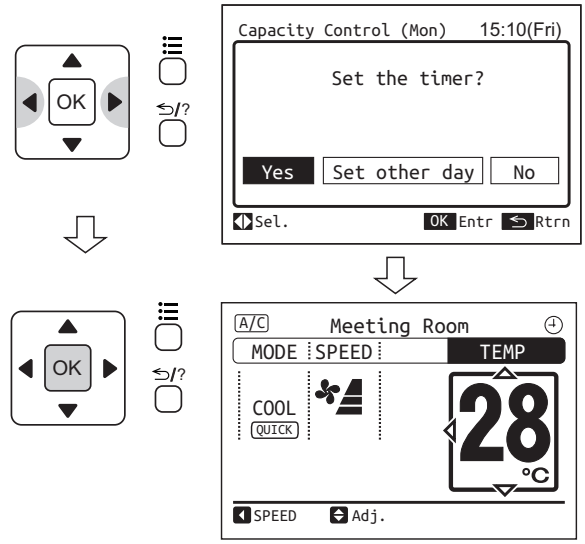
5 Select the schedule number from 1 to 5 with "△" or "▽". Then select "ON Time" or "OFF Time" or "Power Saving level" (or "Operation Noise Reduction level") with "◁ " or " ▷".
Set the ON/OFF time or the "Power Saving level" (or "Operation Noise Reduction") with "△" or "▽".

- When pressing continuously "△" or "▽", the level will increase or decrease in a row.
- The setting is possible every day up to five times a day.
- To set another day, press "Menu" to display the time setting of the next day. Press "OK".



The figure above displays the ON Time at 8:00, the OFF Time at 12:00 and the power saving level as LOW.

6 The setting confirmation screen will be displayed. Select "Yes" with "◁ " or " ▷" and press "OK" to confirm schedule setting. The screen will return to normal mode.
When another day is set, select "Set other day" and press "OK".



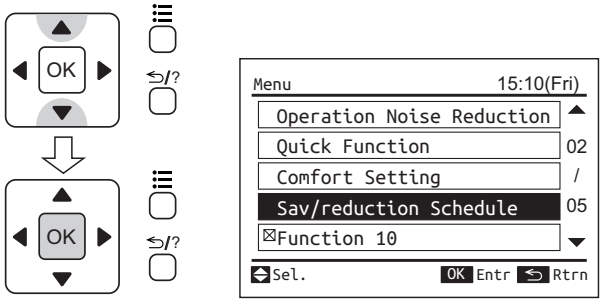
If the schedule control is activated, the icon " ⊕ " will be displayed.

* If the icon "⊗" is displayed, the schedule control is NOT activated due to the Date/Time setting being not specified yet. To specify the Date/Time setting, refer to Section *"4.1.9.16 Adjusting date/time"* for details.

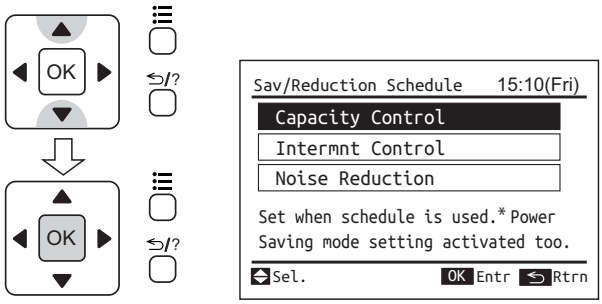
◆ Schedule ON/OFF Setting

- This function is used to temporarily deactivate the schedule operation.
- Schedule control cannot be performed when the schedule setting is not accessible.
- This function is used for holidays over long periods of time.

1 Select “Sav/Reduction Schedule” from the “Menu” screen and press “OK”.
The power saving/operation noise reduction schedule setting screen will be displayed as “Sav/Reduction Schedule”.

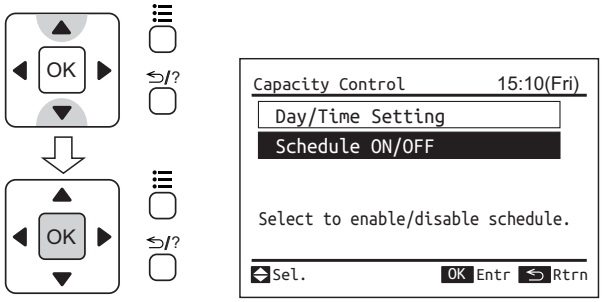


2 By pressing “△ ” or “ ▽”, select the setting item. The power saving/operation noise reduction schedule will change as follows: “Capacity Control” ↔ “Intermittent Control” ↔ “Noise Reduction”
Press “OK”.
The power saving schedule setting (or noise reduction schedule) screen will be displayed as “Sav/Reduction Schedule”.



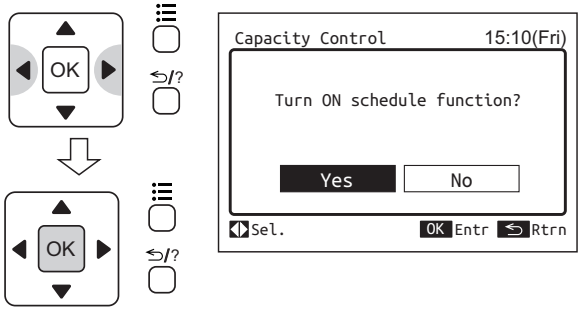
- If the display of the “Main/Sub-Remote” Current Setting is displayed as “Sub” or “−−”, “Capacity Control” and “Noise reduction” cannot be selected.

3 Select “Schedule ON/OFF” with “△ ” or “ ▽” and press “OK”.



4 The Schedule ON/OFF setting confirmation screen will be displayed.

When schedule is ON, select “Turn OFF schedule function”. When schedule is OFF, select “Turn ON schedule function”. Select “Yes” with “◁ ” or “ ▷” and press “OK” to confirm the schedule ON/OFF setting.
The screen will return to the normal mode.



4.1.9.10 Individual louver setting

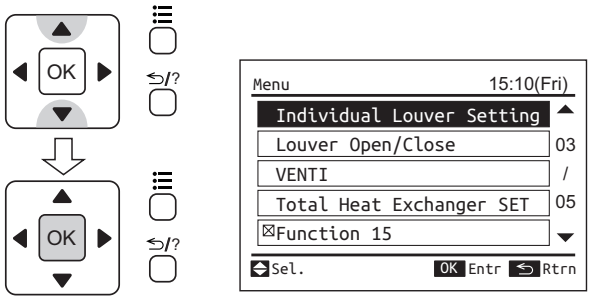
◆ Setting

This setting is available only for the indoor unit adopting the individual louver. Each louver angle can be set individually.

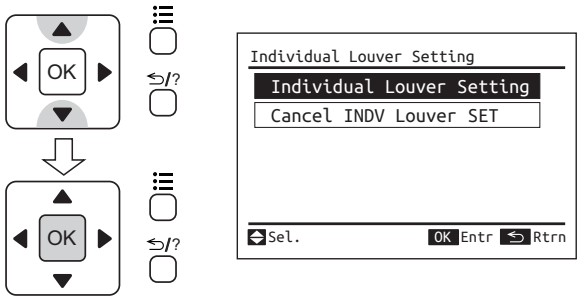
NOTE

- *This function is available only when the indoor unit corresponds to the individual louver.*
- *This function cannot be set when the unit is stopped.*
- *The fan speed changes to "LOW" while this function is being set. (After the setting is completed, the unit operation returns to normal).*
- *As for "Start-up of Heating Operation", "During Defrost Operation" and "Activation of Thermo-Controller", all the louver angles are fixed at horizontal position automatically even when this function is activated.*
- *This function will not be available if two controllers (including a combination of wired controller + wireless controller) are used.*

1 Select "Individual Louver Setting" from the "Menu" and press "OK". The "Individual Louver Setting" menu will be displayed.



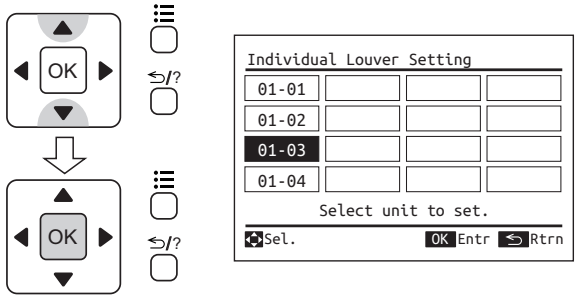
2 Select "Individual Louver Setting" from the "Individual Louver Setting" menu and press "OK".



NOTE

If the number of indoor units connected with the remote control is 1, the screen passes directly to display the step 4 after this step.

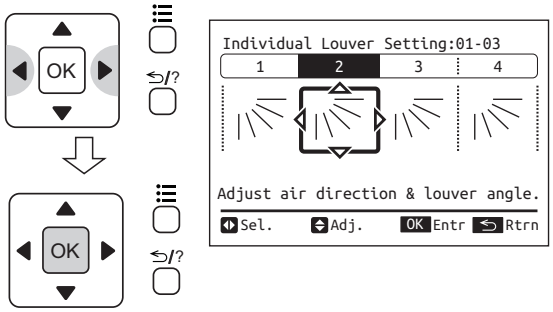
3 Select the indoor unit to change the louver direction by pressing "△", "▽", "◁" or "▷". Press "OK".



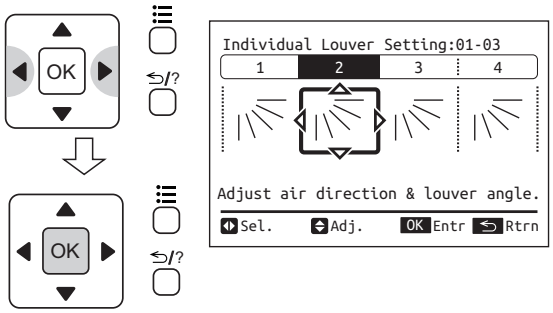
NOTE

The indoor unit displayed on the screen flashes if the individual louver is set.

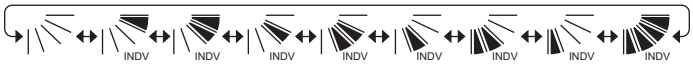
4 Press "◁" or "▷" and select the louver from 1 to 4. The selected louver is opened and the other louvers are closed.



5 Select the louver angle by pressing "△" or "▽" and press "OK".



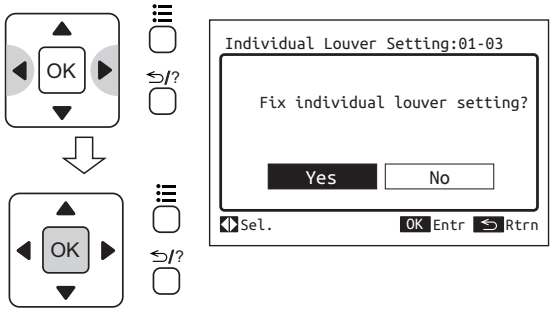
The louver angle will be changed as follows.



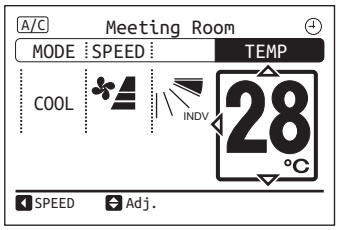
NOTE

The louver direction without "INDV" complies with the setting of the normal mode.

6 The confirmation screen will be displayed.
Select "Yes" by pressing "◁ " or " ▷" and press "OK". The setting is confirmed and the screen will return to the normal mode.

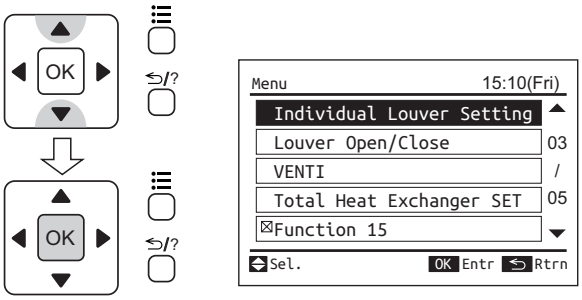


7 Ensure that "INDV" is turned on at the air flow section on the normal mode.

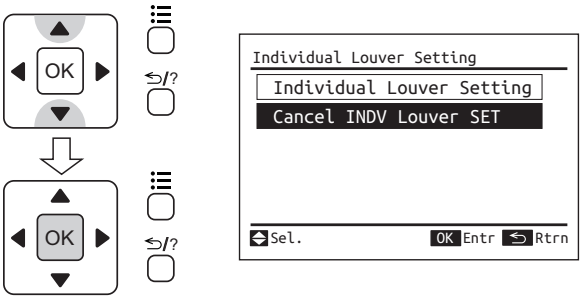


◆ Cancellation of louver setting

1 Select “Individual Louver Setting” from the menu and press “OK”.



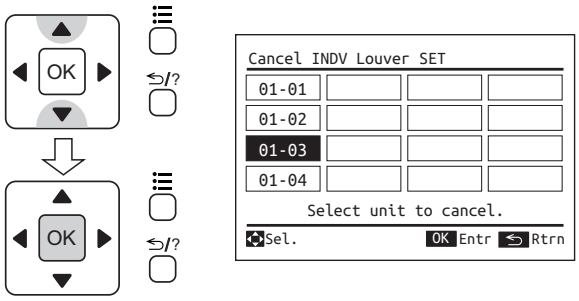
2 Select “Cancel INDV Louver SET” from the individual louver set and press “OK”.



NOTE

If the number of indoor unit connected with the remote control switch is 1, (4) will be displayed after the procedure (2).

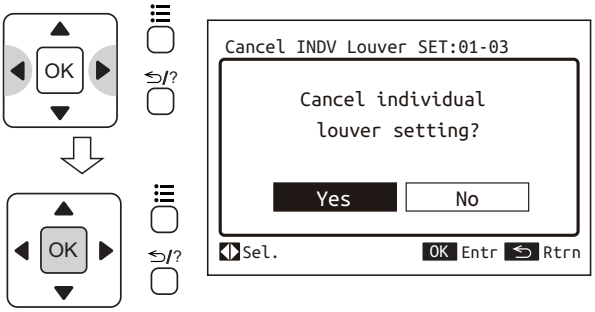
3 Select the indoor unit to cancel by pressing “△”, “▽”, “◁” or “▷”. Press “OK”. The confirmation screen will be displayed.



NOTE

The indoor unit displayed on the screen flashes if the individual louver is set.

4 Select “Yes” by pressing “◁” or “▷” and press “OK”. The individual louver setting will be cancelled and the screen will return to the normal mode.



NOTE

All the individual louver setting will be cancelled.

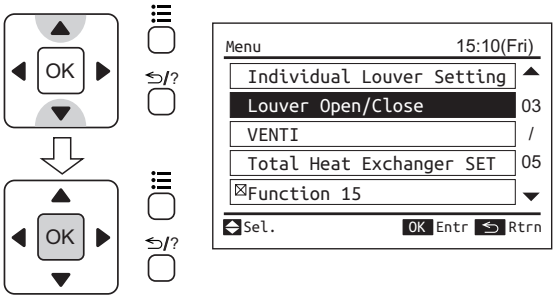
4.1.9.11 Louver Open/Close

This function is used to fully open louver for adjusting the vertical deflector for air flow direction (manually).

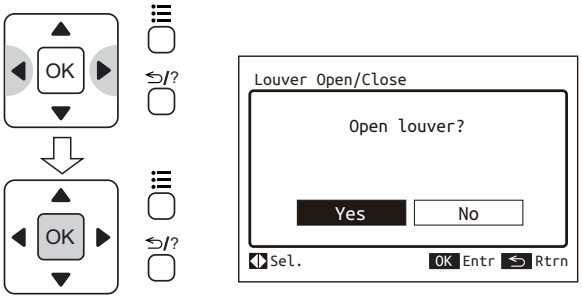
This function cannot be set when the unit is operated.

This function is invalid depending on the indoor unit type. Refer to Installation and Maintenance Manual for detailed information

1 Select “Louver Open/Close” from the menu and press “OK”.



2 Select “Yes” by pressing “◁” or “▷” and press “OK”. The louver will be open (closed) and the screen will return to the normal mode.



4.1.9.12 Ventilation

◆ Function

- **A/C (Air Conditioning):**

  To operate the air conditioner individually.
- **VENTI (Ventilation):**

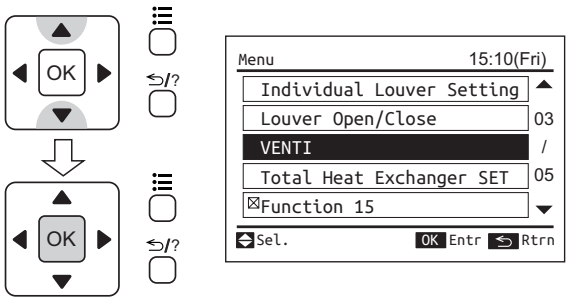
  To operate the total heat exchanger individually.
- **A/C+VENTI:**

  To operate the air conditioner and the total heat exchanger together.

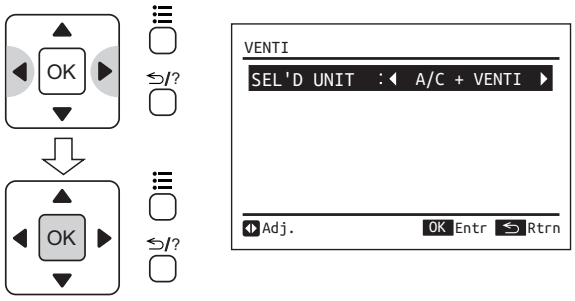
NOTE

This function is available only when the total heat exchanger is connected.

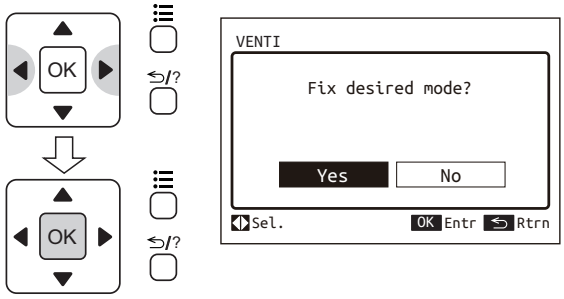
1 Select “VENTI” from the menu and press “OK”.



2 By repeatedly pressing "◁" or "▷", the indication is changed in order of "A/C", "VENTI" and "A/C + VENTI". Select the operation target and press "OK". The confirmation screen will be displayed.



3 Select "Yes" by pressing "◁" or "▷" and press "OK". The setting will be confirmed and the screen will return to the normal mode.



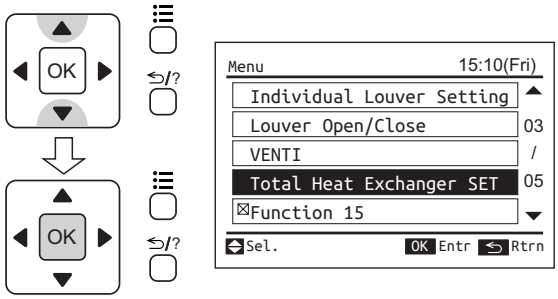
4.1.9.13 Setting of total heat exchanger

This function is used to change the ventilation mode of the total heat exchanger.

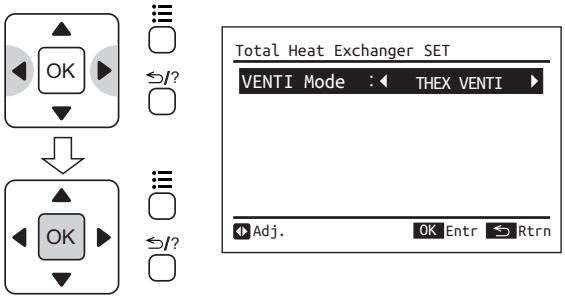
NOTE

This function is available only when the total heat exchanger is connected. This function cannot be set when the unit is operated.

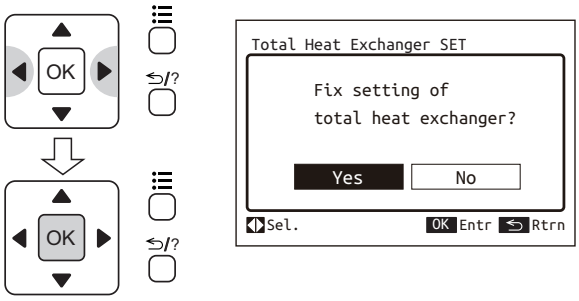
1 Select "Total Heat Exchanger SET" from the menu and press "OK". The total heat exchanger set will be displayed.



2 By repeatedly pressing "◁" or "▷", the indication is changed in order of "AUTO VENTI", "THEX VENTI", "Normal VENTI". Select the operation target and press "OK". The confirmation screen will be displayed.



3 Select “Yes” by pressing “◁” or “▷” and press “OK”. The setting will be confirmed and the screen will return to the normal mode.



4.1.9.14 Motion sensor setting

This function is available only when the motions sensor is equipped with the air panel.

The motion sensor detects a human activity by the change of the infrared light.

This function saves the air conditioning capacity (adjusting the set temperature, the air flow volume and the air flow direction) automatically depending on a situation.

The operation after the motion sensor detects as absence can be selected from “Running”, “Stand-by” or “Stop” on the remote control switch with the capacity saving.

NOTE

This setting is available only for the air panel with motion sensor.

CAUTION

- *Do not use the motion sensor function when a baby or a handicapped person stays by oneself. The motion sensor may detect as absence and the operation may be stopped in the case of staying for long time with a bit motion.*
- *The motion sensor detects the human activity. However, if someone is in a room with a bit motion, the motion sensor may detect as absence.*
- *The motion sensor may detect as human activity if the indoor unit with the motion sensor is installed near a moving object (ex. swing operation of a heating appliance) which is difference in temperature against atmosphere.*
- *In the case that the indoor units are operated by 2 remote control switches, the motion sensor setting is available only from the main remote control switch.*
- *The indoor unit operation can be stopped by the motion sensor control.*
- *While the air conditioning capacity is saved or the operation is stopped by the motion sensor control, “Motion sensor is activated” is displayed on LCD.*
- *If the function “Prohibiting operation by remote control switch” is used from the centralized controller, select the command “Running” or “Stand-by” in “If absent” at the motion sensor control setting.*
- *If “Stop” is selected, the motion sensor control can not be performed correctly as follows:*
  - *In the case that “Stop” is selected in the motion sensor control setting and “Prohibiting operation by remote control switch” (for all items) is set by the centralized controller, the operation will not be stopped even if the motion sensor control function changes to the stoppage condition.*
  - *In the case that “Stop” is selected in the motion sensor control setting and “Prohibiting operation by remote control switch” (for part of items) is set by the centralized controller, the indoor unit operation can not be restarted from the centralized controller although the operation can be stopped under the stoppage condition by the motion sensor control function.*

◆ Details for motion sensor control

The motion sensor control adjusts automatically the following items depending on a situation.

- Setting Temperature:

  The temperature is adjusted 1ºC or 2ºC for saving capacity.
- Air Flow Volume:

  The air flow volume is adjusted to lower one volume or to “Slo” (except during the dry operation).
- Air Flow Direction:

  The air flow direction is adjusted to horizontal.

◆ Motion sensor setting

- OFF: The operating control function by the motion sensor is not activated
- HEAT: The operating control function by the motion sensor is activated when HEAT mode is selected.
- COOL + DRY: The operating control function by the motion sensor is activated when COOL + DRY mode is selected.
- ALL MODES: The operating control function by the motion sensor is activated when HEAT or COOL+DRY mode are selected.

If absent

“If absent” is set for the indoor unit operation after the motion sensor detects as absence for set time in “Check interval”. The operation can be selected from “ON”, “Standby” or “OFF” on the remote control switch.

(The default setting is “ON”.)

- **ON:**

  The operation is continued with saving the capacity after detected as an absence.

  If the human activity is detected for a period of time, the normal operation will be performed again.
- **Standby:**

  The operation mode is the fan operation at “Slo” speed. If the human activity is detected for a period of time, the normal operation will be performed again.
- **OFF:**

  The operation is stopped by the remote control switch when all the indoor units with motion sensor detect absence which are connected with same remote control switch.
  If the human activity is detected for a period of time by the stoppage, the normal operation is performed again.

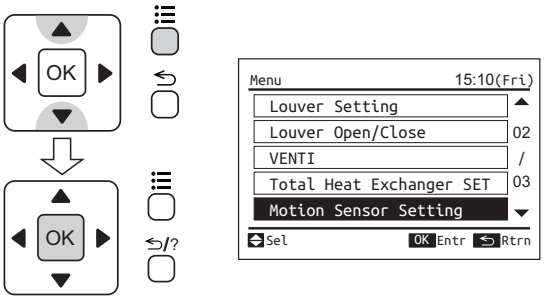
4.1.9.15 Check Interval

When the motion sensor detects an absence at selected check interval time, the function “If absent” will be executed. The interval can be selected from 30, 60, 90 120 or 180 minutes.

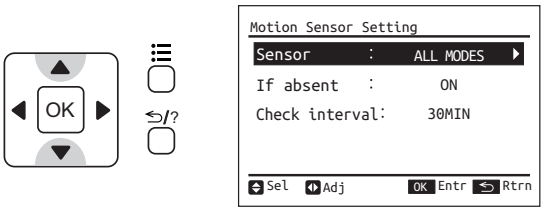
(The default setting is 30 minutes.)

◆ Setting of motion sensor

1 Press "☰" (menu). Select "Motion Sensor Setting" from the menu by pressing "△" or "▽" and press "OK".

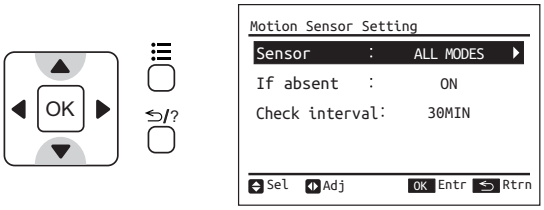


2 "Motion Sensor Setting" is displayed. The highlighted item is shifted to "Sensor", "If absent" and "Check interval" by pressing "△" or "▽".



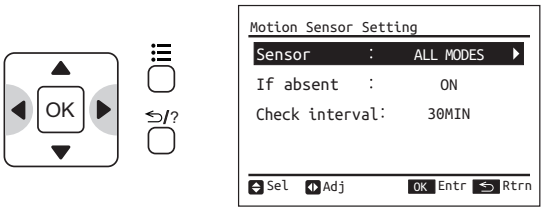
To set "Sensor", move to procedure (3). To set "If absent", move to procedure (5). To set "Check interval", move to procedure (7).

3 Press "△" or "▽" and select "Sensor".

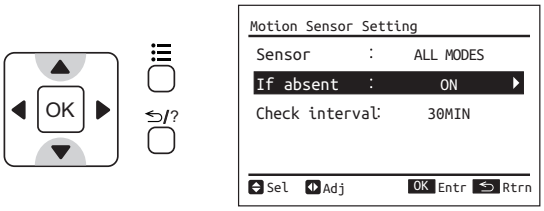


4 The display is switched "ALL MODES", "COOL + DRY", "HEAT" and "OFF" in order by pressing "◁" or "▷" and change the setting.

If other settings are not required, move to procedure (9).

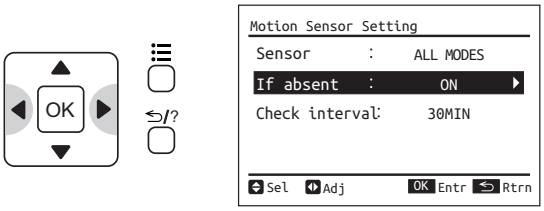


5 Press "△" or "▽" and select "If absent".

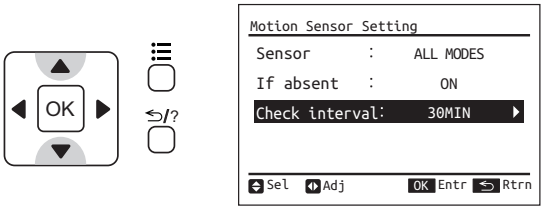


6 The display is switched "ON", "Standby" and "OFF" in order by pressing "◁" or "▷" and change the setting.

If other settings are not required, move to procedure (9).

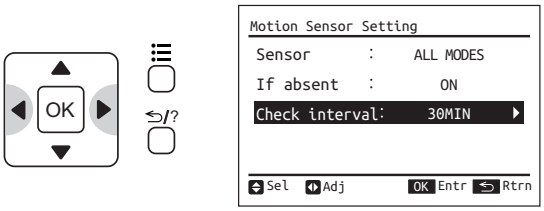


7 Press "△" or "▽" and select "Check interval".

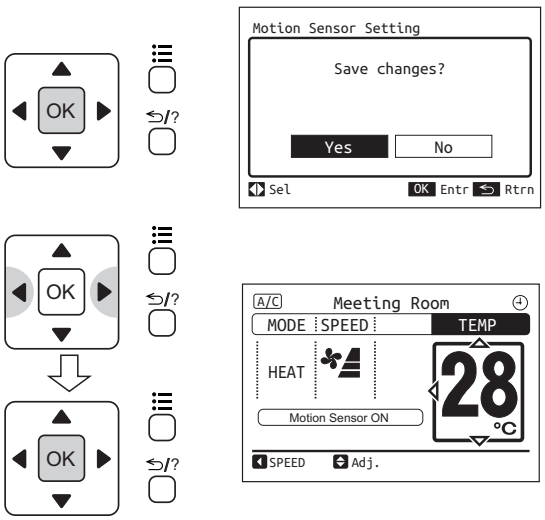


8 The display is switched "30MIN", "60MIN", "90MIN", "120MIN" and "180MIN" in order by pressing "◁" or "▷" and change the setting.

If other settings are not required, move to procedure (9).



9 Press "OK" after the setting is completed. The confirmation screen will be displayed. Select "Yes" by pressing "◁" or "▷" and press "OK". The motion sensor setting will be confirmed and the screen will return to the normal mode (operation mode indication).



4.1.9.16 Adjusting date/time

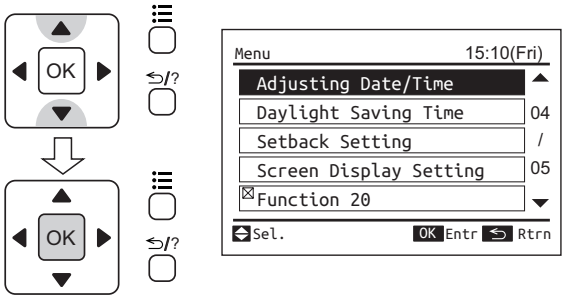
This function is used to adjust the date and time.

Periodic time setting is recommended. (Clock accuracy: difference within +70 seconds by month).

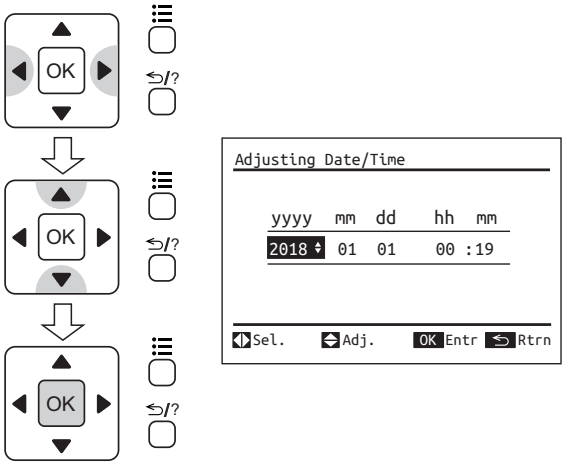
As for this remote control switch, the clock can work up to 72 hours when power failure occurs. Reset the date and time if the remote control switch remains without power supply for longer than 72 hours or main power supply is OFF for long time.

When adjusting time from the main controller, the sub controller of the same refrigerant cycle will be set at the same time.

1 Select “Adjusting Date/Time” from the menu and press “OK”.

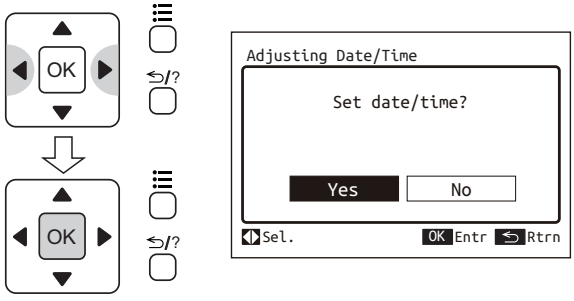


2 Press “◁” or “▷” to change the setting. Press or keep pressing “△” or “▽” to adjust numbers.



3 After the setting is completed, press “OK” and the confirmation screen will be displayed.

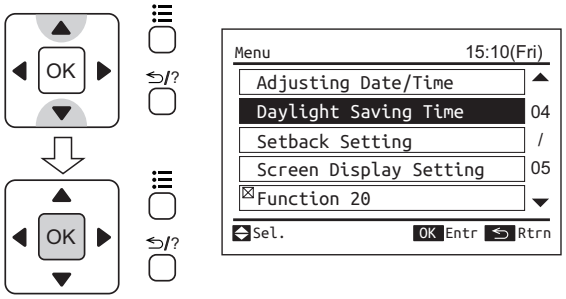
4 Select “Yes” by pressing “◁” or “▷” and press “OK”. The setting will be confirmed and the screen will return to the normal mode.



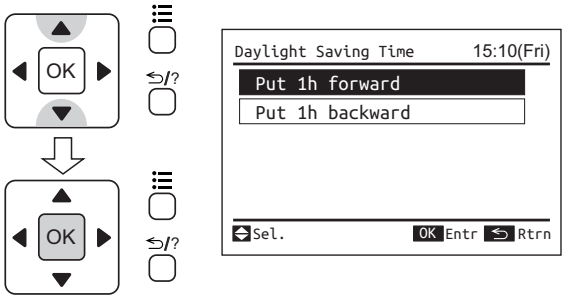
4.1.9.17 Daylight saving time

This function adjusts time forward or backward one hour (by default) or two (optional function setting pa=01) when daylight saving time starts or ends.

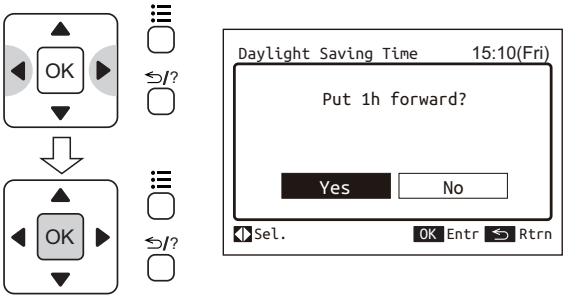
1 Select “Daylight Saving Time” from the “Menu” and press “OK”.



2 The “Daylight Saving Time” screen will display. Select “Put 1h backward” using “△” or “▽” and press “OK”.

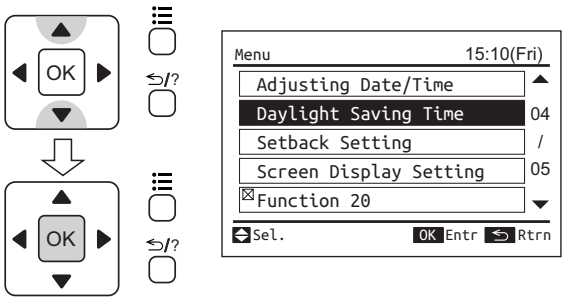


3 The daylight saving time confirmation screen will display. Select “Yes” using “◁ ” or “ ▷” and press “OK” to confirm the setting.
The screen will return to normal mode.

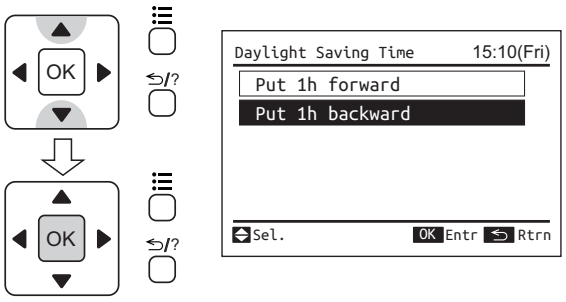


4.1.9.18 Stop daylight saving time

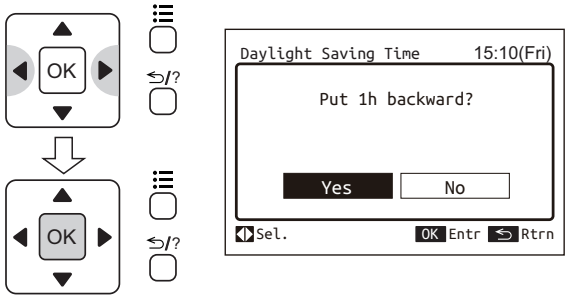
1 Select “Daylight Saving Time” from the “Menu” and press “OK”.



2 The “Daylight Saving Time” screen will display. Select “Put 1h backward” using “△” or “▽” and press “OK”.



3 The “Daylight Saving Time” confirmation screen displays. Select “Yes” using “◁” or“ ▷” and press “OK” to confirm the setting.
The screen will return to normal mode.



4.1.9.19 Setback setting

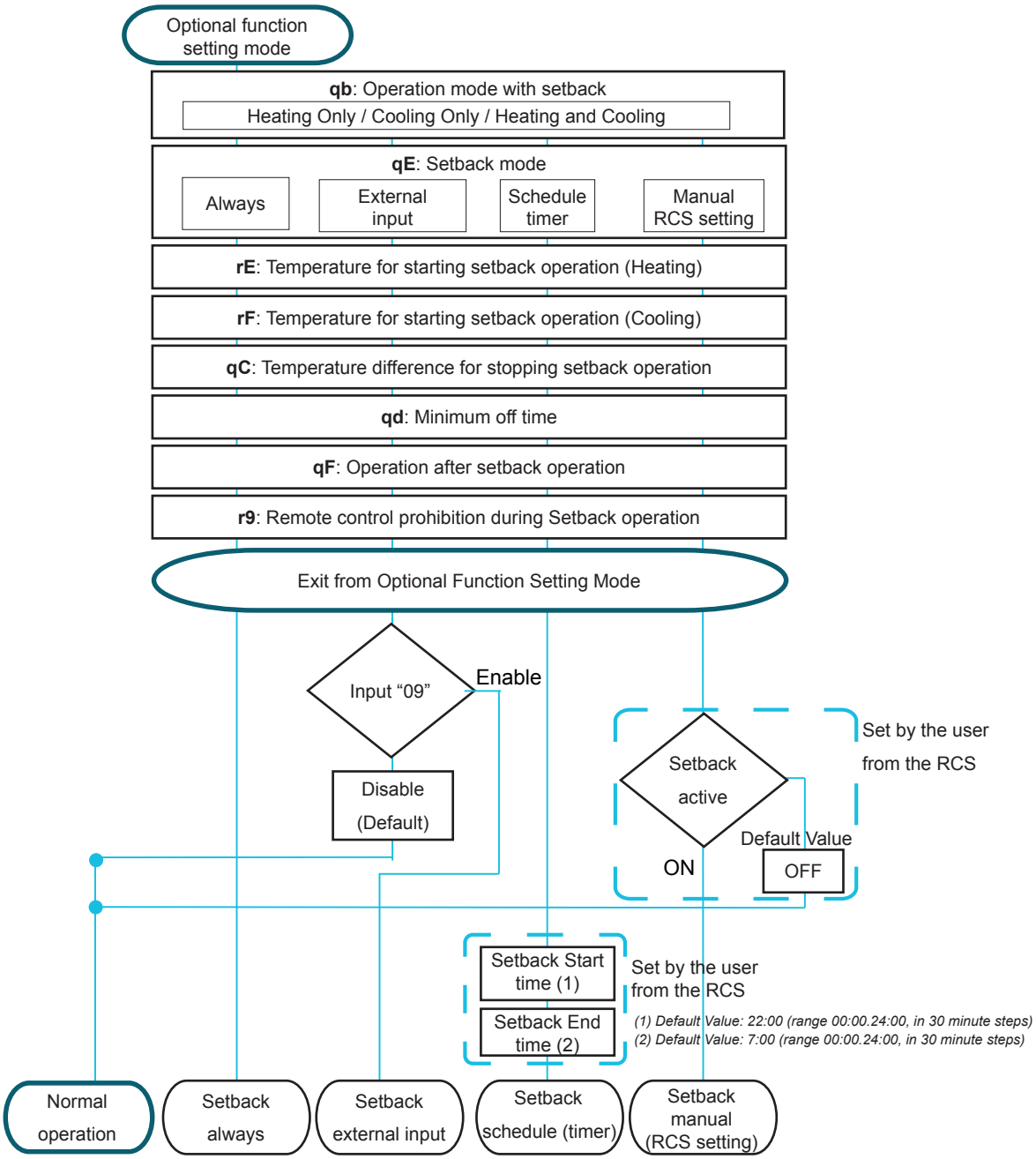
Setback function is designed to maintain a minimum level of comfort in a room when it is not occupied.

Setback operation is made available through the setting of optional functions in the Function Selection menu, which is located in the Test Run menu of the wired controller. In case of using an external input, the setting of the external input in the Test Run menu of the wired controller is also required.

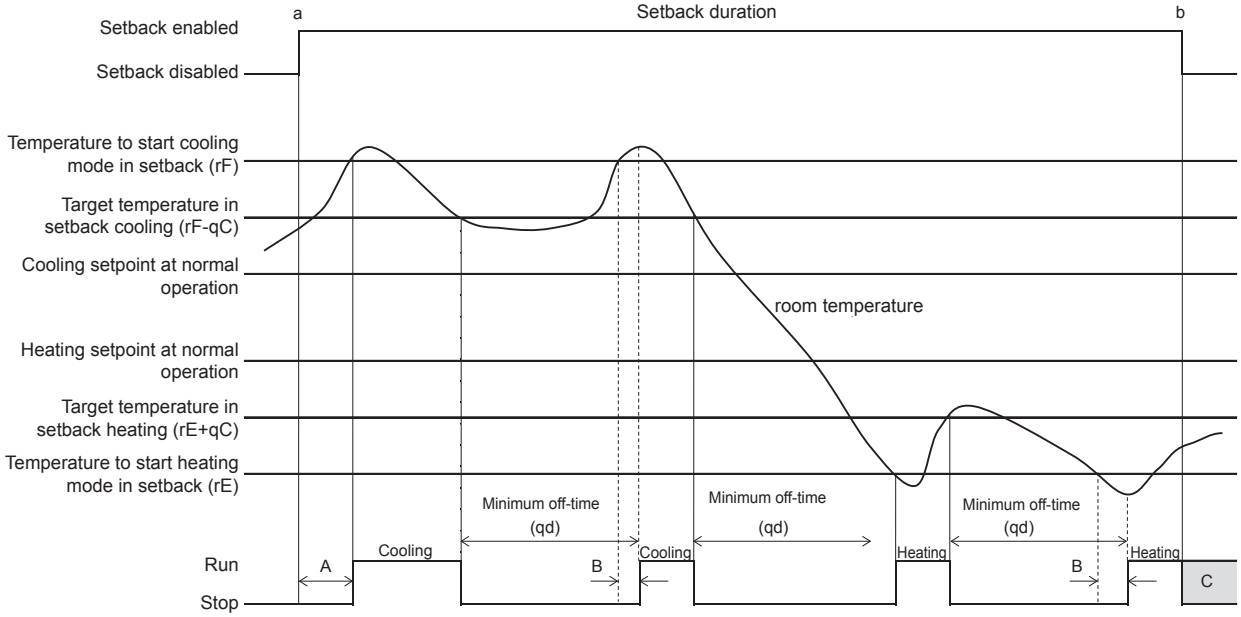
During Setback operation, fan speed is automatically set to LOW.

"Setback" is displayed on the LCD of the wired controller while the Setback control is in operation.

◆ Setback flow chart



◆ Setback time chart



A: There should be setback operation, but is does not start until the specified setpoint is reached.

B: There is no setback operation due to the minimum off-time.

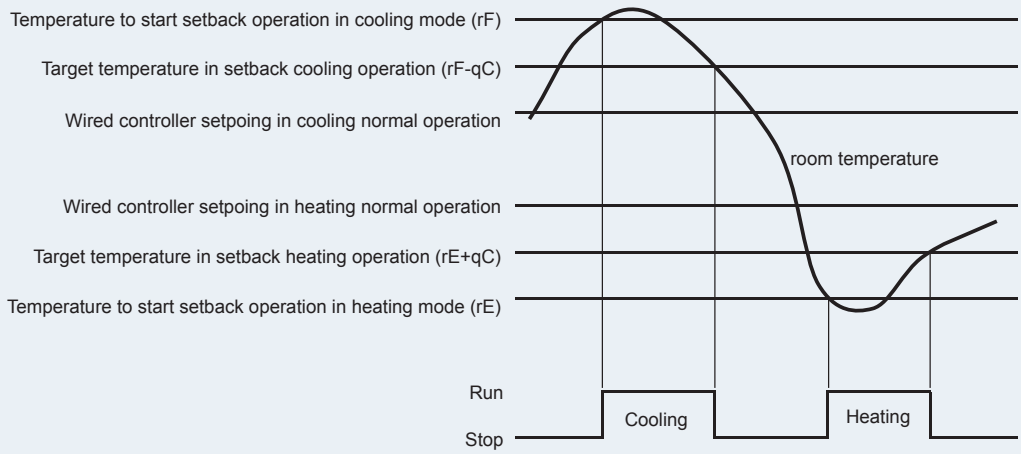
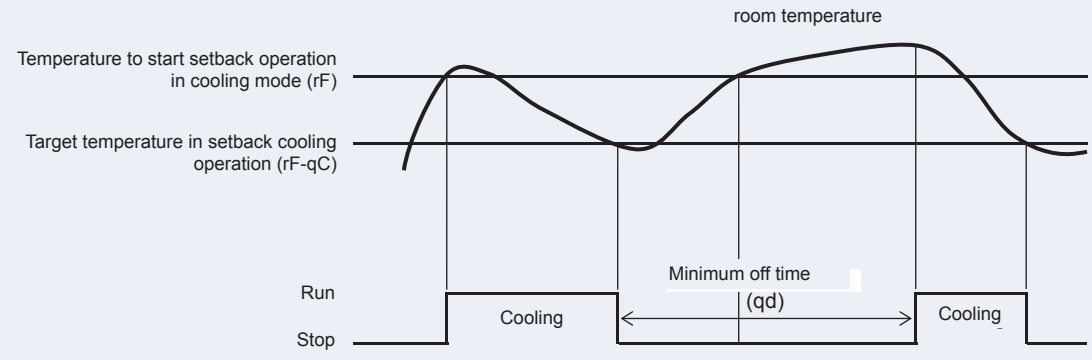
C: Setback operation is running or stopped depending on the setting of run/stop upon the end of setback (qF).

a: Setback operation becomes enabled (beginning of setback duration).

b. Setback operation becomes disabled (end of setback duration).

◆ Setting of setback optional functions

Parameter	Description	Setting options
qb	Operation modes in which setback operation is activated to keep a minimum comfort in the room while it is not occupied.	qb=00 : Disable qb=01 : Cooling qb=02 : Heating qb=03 : Cooling / Heating
qE	Setback mode When “01: Input” is selected, it requires the setup of “Input: 09” as well. When “02: Schedule” and “03: Manual” are selected, they need to be setup from the wired controller.	qE=00 : Always qE=01 : Input qE=02 : Schedule qE=03 : Manual
rE	Temperature for the beginning of heating in setback Room temperature is used to determine the start of heating operation during setback.	rE=00 : 15ºC rE=01 : 16ºC rE=02 : 17ºC rE=03 : 18ºC rE=04 : 19ºC rE=05 : 10ºC rE=06 : 11ºC rE=07 : 12ºC rE=08 : 13ºC rE=09 : 14ºC
rF	Temperature for the beginning of cooling in setback Room temperature is used to determine the start of cooling operation during setback.	rF=00 : 26ºC rF=01 : 27ºC rF=02 : 28ºC rF=03 : 29ºC rF=04 : 30ºC rF=05 : 31ºC rF=06 : 32ºC rF=07 : 33ºC rF=08 : 34ºC rF=09 : 35ºC rF=10 : 25ºC

<table>
<tr><th>Parameter</th><th>Description</th><th colspan="2">Setting options</th></tr>
<tr><td rowspan="2">qC</td><td>Temperature differential for the setback function
Target temperatures for cooling and heating operation are determined versus a temperature to start setback operation (rE, rF)
Target temperature calculation:
Target temperature in cooling mode: rF - qC (°C)
Target temperature in heating mode: rE + qC (°C)</td><td>qC=00 : 2.0ºC
qC=01 : 3.0ºC
qC=02 : 4.0ºC
qC=03 : 5.0ºC
qC=04 : 1.0ºC</td><td>Setback operation runs as room temperature reaches the specified temperature to start, and stops when the target temperature is reached.
A target temperature higher than the normal operation temperature shall be selected for cooling mode.
A target temperature lower than the normal operation temperature shall be selected for heating mode.</td></tr>
<tr><td colspan="3"> 
</td></tr>
<tr><td rowspan="2">qd</td><td>Minimum stop time of setback
To avoid the frequent activation of setback operation, a minimum off-time shall pass from the end of setback operation until the beginning of the following setback operation.
Even if room temperature reaches the setpoint to start setback operation, setback operation does not start until the minimum off-time has expired.</td><td colspan="2">qd=00 : 10 minutes
qd=01 : 20 minutes
qd=02 : 30 minutes
qd=03 : 40 minutes
qd=04 : 50 minutes
qd=05 : 60 minutes
qd=06 : 70 minutes
qd=07 : 80 minutes
qd=08 : 90 minutes
qd=09 : 100 minutes
qd=10 : 110 minutes
qd=11 : 120 minutes</td></tr>
<tr><td colspan="3"> 
</td></tr>
<tr><td>qF</td><td>Operation state after the end of setback operation.
Select the operation mode that shall be set to the unit once the set back operation is disabled.</td><td>qF=00 : Stop
qF=01 : Run
qF=02 : Operation state before the beginning of setback</td><td>In case that “02: Operation state before the beginning of setback” is set, the state returns to the last operating condition before the beginning of setback.</td></tr>
<tr><td>r9</td><td>Remote control prohibition during setback operation</td><td>r9=00 : disabled
r9=01 : Prohibition of Run / Stop operations
r9=02 : Prohibition of Run operation</td><td>Manual run/stop from the remote controller can be disabled during setback operation.
This function is fixed as 00 (Disabled) when the qE is set as 00 (Always).</td></tr>
</table>

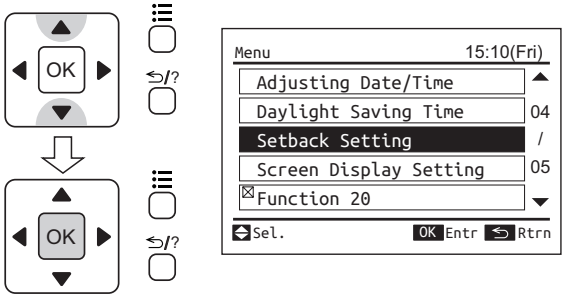
◆ Setback schedule setting

Setback temperature control works during a period determined by the users, such as during night time. The normal control is restored once the scheduled period is over.

This function is available only when setback mode is set as schedule mode (qE=02).

The items cannot be set/modified if indoor unit does not support this function.

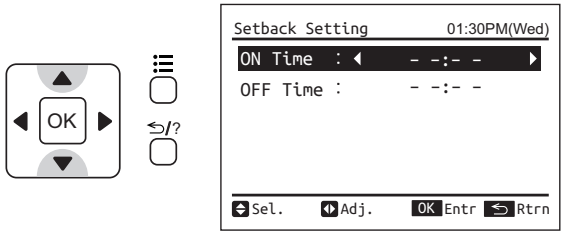
1 Select “Setback Setting” from the “Menu” screen and press “OK”.
The “Setback Setting” screen displays.



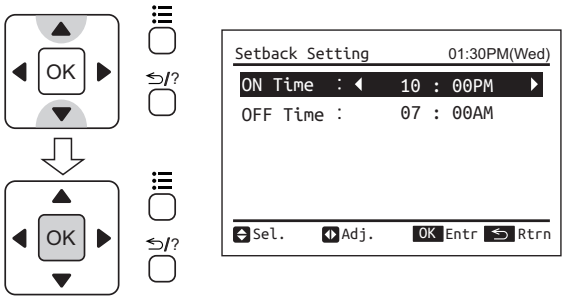
NOTE

If the present time has not been set yet “Set Date/Time” will automatically be displayed. Refer to Section “4.1.9.16 Adjusting date/time”.

2 Press “△” or “▽” to select the setting data.
“ON Time” and “OFF Time” will be selected in turn.



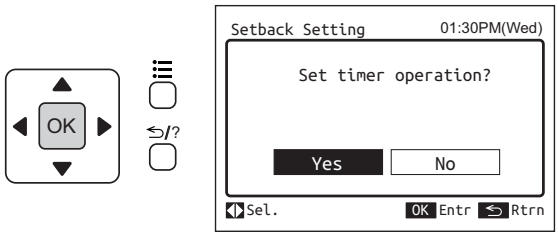
3 Press “◁” or “ ▷” to select setting contents.
The time goes 30 minutes ahead or behind.
Long press “◁” or “ ▷” to seamlessly increase/decrease number.
Press “OK” to finish setting.
The confirmation screen will display.



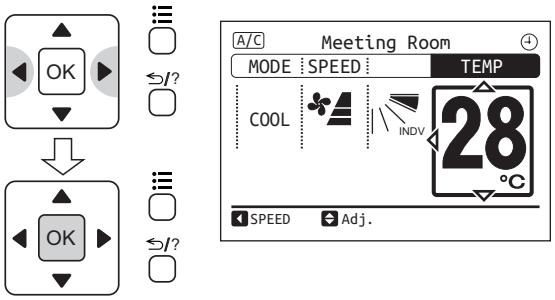
NOTE

Do not set the same time for ON Time and OFF Time. Unavailable if ON time/OFF Time is not set.

4 Press “OK ” to finish the “Setback” setting.
The confirmation screen will display.
Press “Return / Help” to return to operation setting screen.



5 Select “Yes” by pressing “◁ ” or “ ▷” and press “OK”.
The setting will be confirmed and the screen will return to the normal mode.



NOTE

- *“ ⊕ ” will indicate when the scheduled operation is activated.*
- *Setback operation cannot be ON/OFF while RC operation is prohibited, or “ ✱ ” is indicated.*
- *If “ ✱ ” is indicated, the clock is not set. Refer to Section “4.1.9.16 Adjusting date/time” to set year/month/day/time.*

◆ Setback manual setting

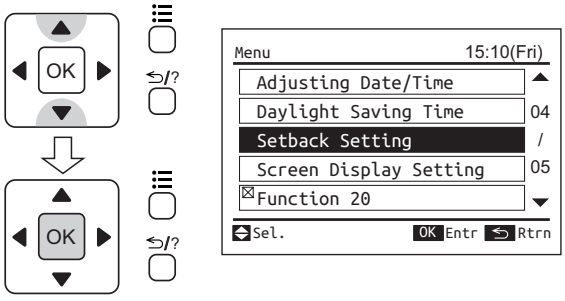
Setback temperature control is activated manually by the user when he is leaving the room. The normal control is restored when setback temperature control is turned off manually.

This function is available only when setback mode is set as Manual mode (qE=03).

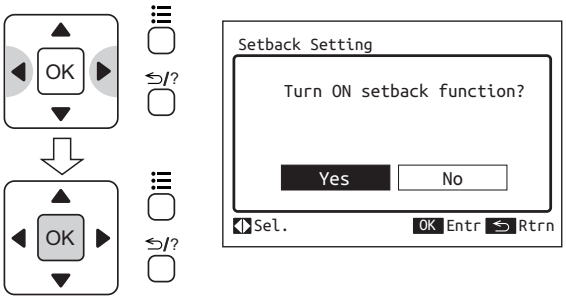
Use this function for long vacation.

The items cannot be set/modified if indoor unit does not support this function.

1 Select “Setback Setting” from the “Menu” screen and press “OK”.
The “Setback Setting” screen displays.



2 Select “Yes” by pressing “◁” or “ ▷” and press “OK”.
The setting will be confirmed and the screen will return to the normal mode.



NOTE

Setback operation cannot be ON/OFF while RC operation is prohibited.

◆ Setback always setting

Setback Temperature Control in constant operation.

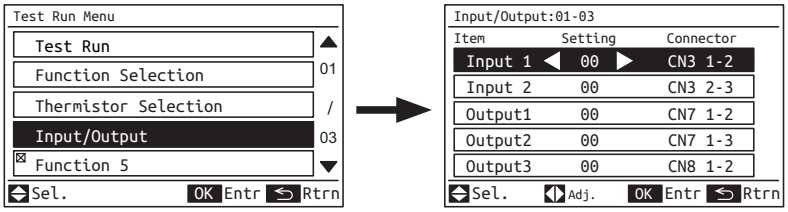
Setback function can bet set as Always by setting the optional function (qE=00) or as Input (qE=01).

◆ Setback input setting

In hotel rooms, Setback Temperature Control becomes activated when the card key is taken out from the card holder. As soon as the card key is inserted again, the normal control is restored.

Setback function can be set as Input by setting the optional function (qE=01).

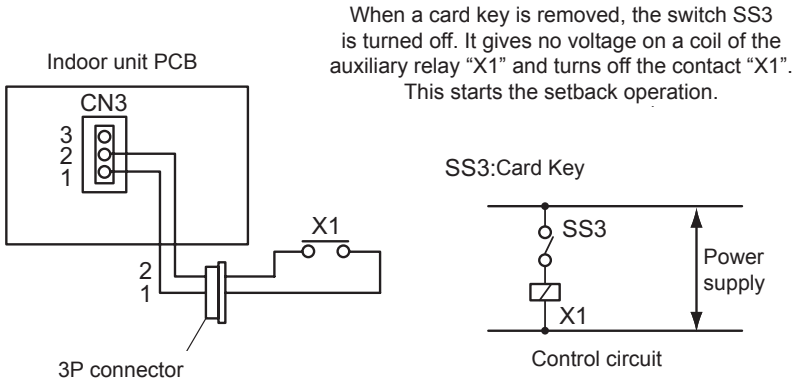
From the test run menu, select Input/Output setting. Select either “Input 1” or “Input 2” and change the setting to “09”.



Build the input circuit

Build a circuit as shown below.

On the indoor unit PCB, use the input terminal (CN3) to receive external signals.



Wiring diagram example of setback operation by external input (example: card key input is set to terminals 1 and 2 of CN3)

A wired controller is required for this function.

4.1.9.20 Automatic cooling/heating with dual setting

This function is available in standard air-to-air indoor units and is used to switch between heating and cooling operations automatically depending on a cooling set point and a heating set point (dual set point).

In the case of 2-pipe systems, the same operation mode will be applied to all the indoor units of the concerned refrigerant cycle.

In the case of 3-pipe systems, the same operation mode will be applied to all the units connected to the same single CH-Box, or to all the units connected to the same Multi CH-Box outlet.

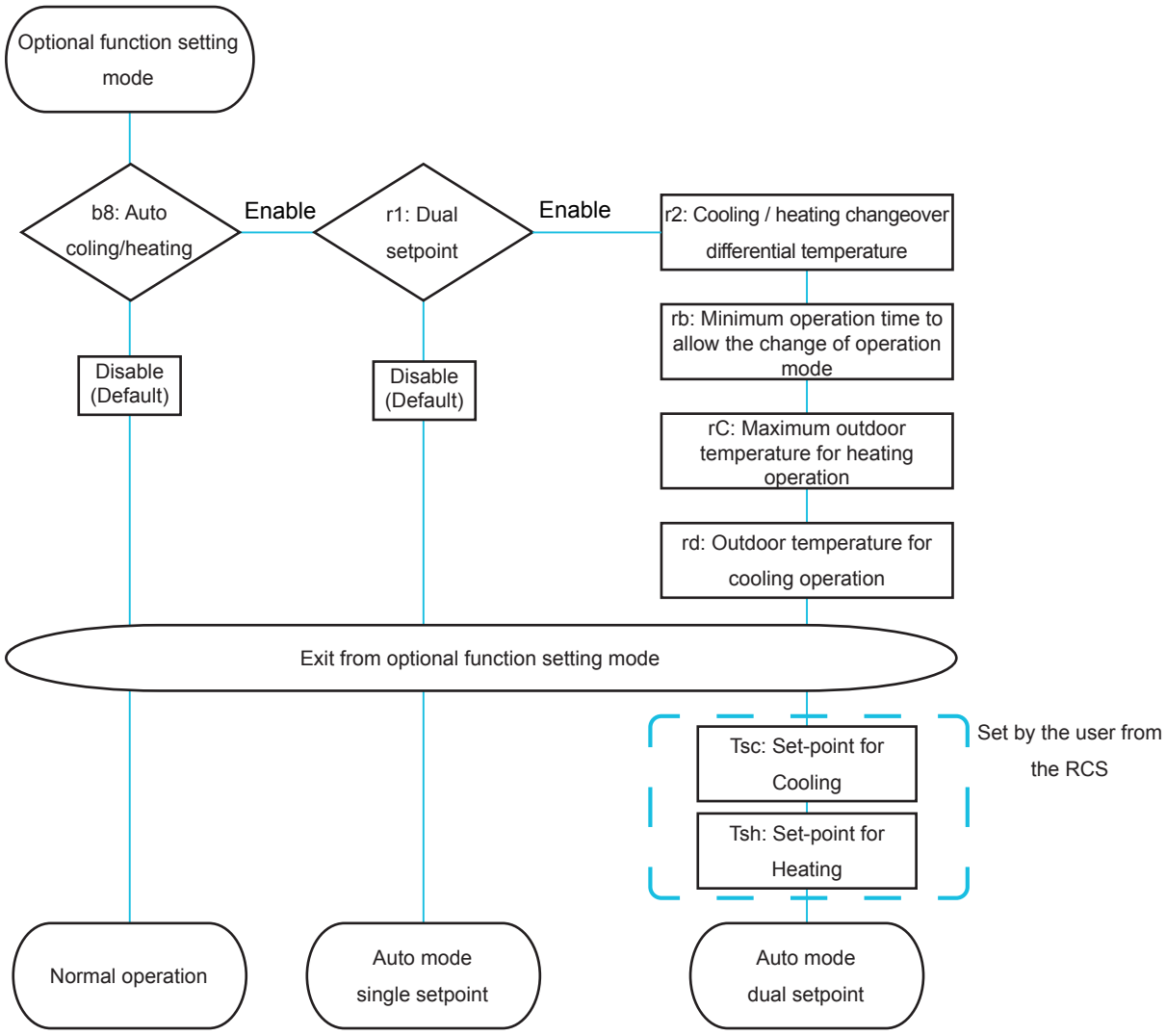
It is recommended to use this function with heat recovery systems (3-pipe systems).

This function can be activated by the optional parameters (b8, r1...) available in the optional function menu of the controllers (PC-ARFP1E or PC-ARH1E).

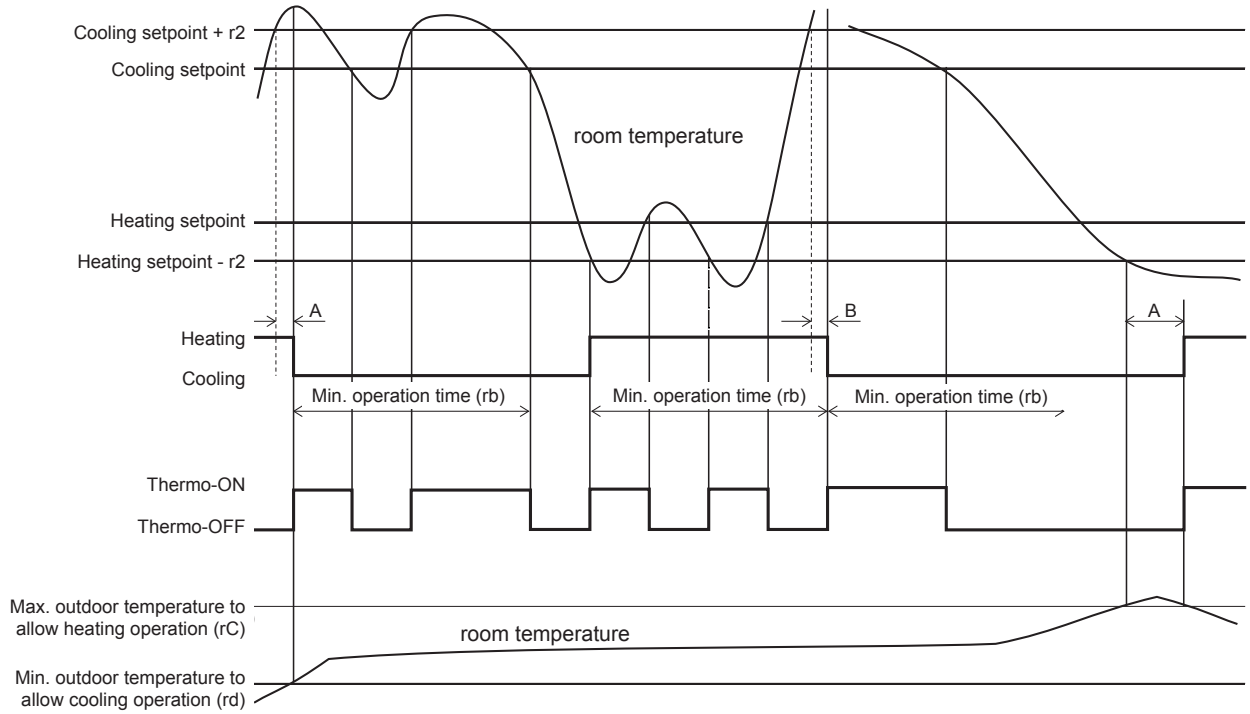
NOTE

- *Systems without CH-Box (2-pipe system) are not designed to operate in the simultaneous Cool/Heat mode when more than one indoor unit is connected to the same outdoor unit, but only in the cool or heat mode. Thus all indoor units connected to the same outdoor unit should be changed from one mode to another at the same time. The same is applicable to the system with CH-Box (3-pipe system) for all indoor units connected to the same CH-Box.*
- *This function is not available for HYDRO FREE, KPI and DX-Interface.*

◆ Flow chart of automatic cooling/heating with dual setting



◆ Time chart of automatic cooling/heating with dual setting



A: Period in which operation mode does not change due to the constraints of mode transition based on ambient temperature.

B: Period in which operation mode does not change due to the minimum operation time.

This function is not available if one of the wired controllers in the same refrigerant system does not support it.

This function is not available if one indoor unit in the same refrigerant system does not support it.

Cooling set point (Tsc) and heating set point (Tsh) shall be set as follows: “cooling setpoint ≥ heating setpoint + 2°C”.

Minimum and Maximum outdoor temperatures defined by rC and rd can not override the limits used by the control system for the normal operation of outdoor unit. The temperature limits defined by the control system will always have priority over rC and rd.

◆ Optional function setting of automatic cooling/heating with dual setting

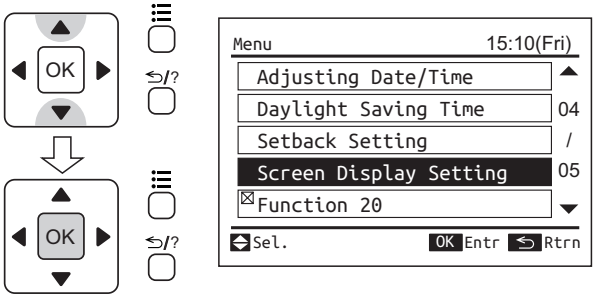
Parameter	Description	Setting option
b8	Automatic cooling/heating operation This function allows the automatic switching of cooling and heating modes of the units in the same refrigerant cycle.	b8=00 : Function not activated b8=01 : Function activated
r1	Dual setpoint Function in the automatic cooling/heating mode allowing the preset of respective setpoint for cooling and heating.	r1=00 : Function not activated r1=01 : Function activated
r2	Setting of temperature differential for switching cooling and heating. This setting is possible when r1=01.	r2=0.5 : 0.5ºC r2=1.0 : 1.0ºC r2=1.5 : 1.5ºC r2=2.0 : 2.0ºC r2=2.5 : 2.5ºC r2=3.0 : 3.0ºC

Parameter	Description	Setting option	
rb	Minimum operation time to allow the change of operation mode in automatic cooling/heating mode with dual setting.	rb=00 : Disabled rb=01 : 10 minutes rb=02 : 20 minutes rb=03 : 30 minutes rb=04 : 40 minutes rb=05 : 50 minutes rb=06 : 60 minutes rb=07 : 70 minutes rb=08 : 80 minutes rb=09 : 90 minutes rb=10 : 100 minutes rb=11 : 110 minutes rb=12 : 120 minutes	
rC	Maximum outdoor temperature to allow heating operation in automatic cooling/ heating mode with dual set point.	rC=00 : Disabled rC=01 : 20.0ºC rC=02 : 21.0ºC rC=03 : 22.0ºC ↓ rC=20 : 39.0ºC rC=21 : 40.0ºC rC=22 : 0.0ºC rC=23 : 1.0ºC rC=24 : 2.0ºC ↓ rC=40 : 18.0ºC rC=41 : 19.0ºC	If outdoor ambient temperature is higher than rC, there is no mode transition to heating in automatic cooling/heating operation mode, even though room temperature has reached the setpoint to switch operation mode from cooling to heating.
rd	Minimum outdoor temperature to allow cooling operation in automatic cooling/ heating mode with dual set point.	rd=00 : Disabled rd=01 : 10.0ºC rd=02 : 11.0ºC rd=03 : 12.0ºC ↓ rd=30 : 39.0ºC rd=31 : 40.0ºC rd=32 : -20.0ºC rd=33 : -19.0ºC rd=34 : -18.0ºC ↓ rd=60 : 8.0ºC rd=61 : 9.0ºC	If outdoor ambient temperature is lower than rd, there is no mode transition to cooling in automatic cooling/heating operation mode, even though room temperature has reached the setpoint to switch operation mode from heating to cooling.
Tsc	Setting temperature for cooling in dual temperature control in automatic cooling/ heating, set with the remote controller	-	
Tsh	Setting temperature for heating in dual temperature control in automatic cooling/ heating, set with the remote controller	-	

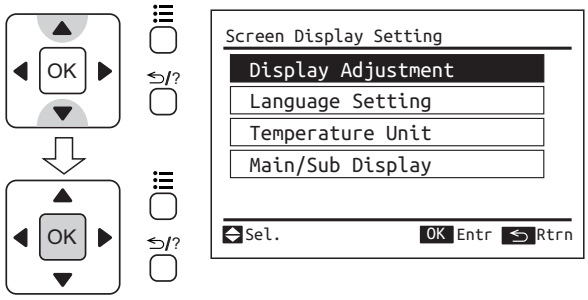
4.1.9.21 Screen display setting

◆ Display Adjustment

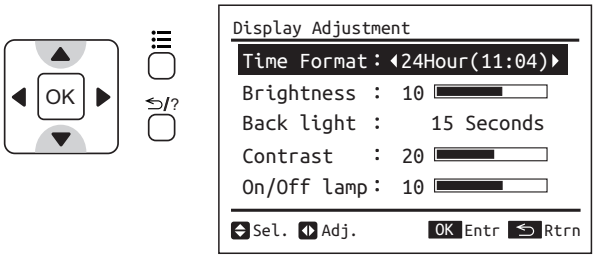
1 Select “Screen Display Setting” from the menu and press “OK”.



2 Select “Display Adjustment” by pressing “△” or “▽” and press “OK”.



3 Select the setting item by pressing “△” or “▽”. The indication is changed in order of “Time Format”, “Brightness”, “Back light”, “Contrast” and “On/OFF lamp”



4 Press “◁” or “▷” and set the display.

- **Time Format:**

  The time form is changed as follows; (AM/PM)12 Hour ⟷ 24 Hour

- **Brightness:**

  Press “◁” or “▷” and the brightness of backlight is changed.

- **Back light:**

  The display back light is OFF after the specified time interval of inactivity (no input from touch screen). The back light off time interval can be selected as follows:

  5 Seconds ⟷ 15 Seconds ⟷ 30 Seconds

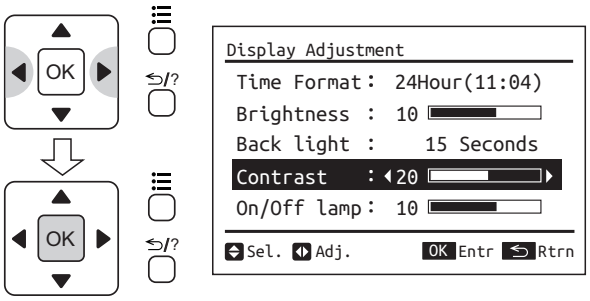
- **Contrast:**

  Press “◁” or “▷” and the degree of difference between light and dark parts of LCD is changed.

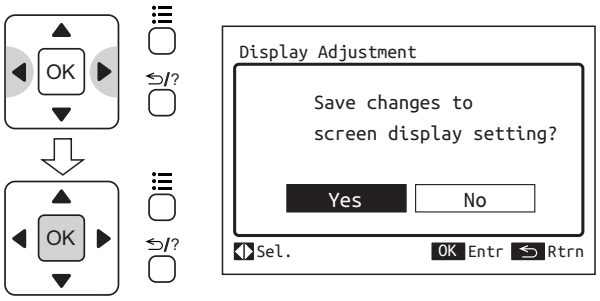
- **On/OFF lamp:**

  Press “◁” or “▷” and the brightness of run indicator is changed.

After the setting is completed, press “OK”. The confirmation screen will be displayed.



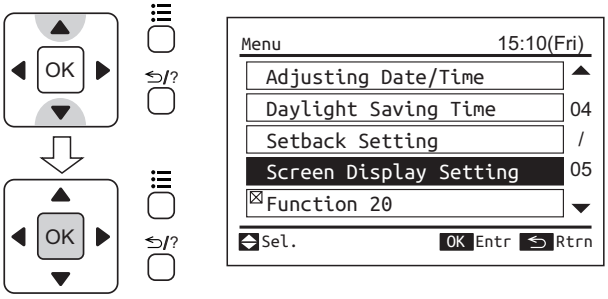
5 Select “Yes” by pressing “◁” or “▷” and press “OK”. The setting will be confirmed and the screen will return to the normal mode.



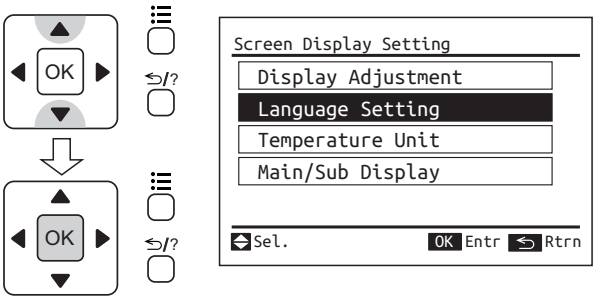
◆ Language Setting

This function is used to change the displayed language.

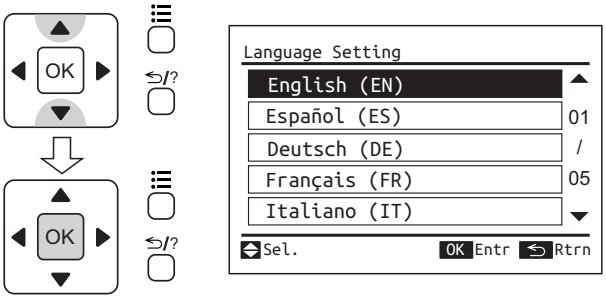
1 Select “Screen Display Setting” from the menu and press “OK”.



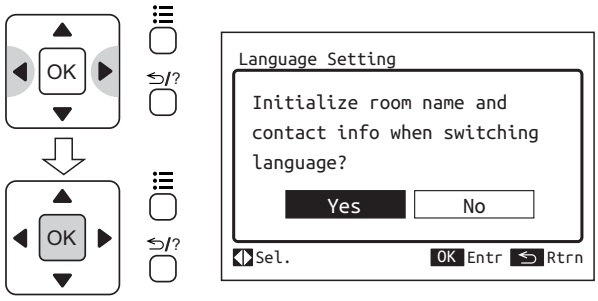
2 Select “Language Setting” by pressing “△” or “▽” and press “OK”. The language setting will be displayed.



3 Press “△” or “▽” to select the language and press “OK”. The confirmation screen will be displayed.



4 Select “Yes” by pressing “◁” or “▷” and press “OK”. The setting will be confirmed and the screen will return to the normal mode.



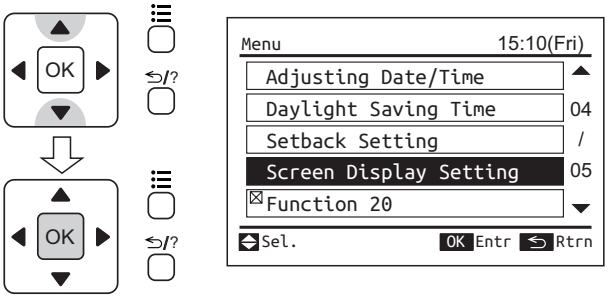
NOTE

If displayed language is changed, the registered room name and contact information will be deleted.

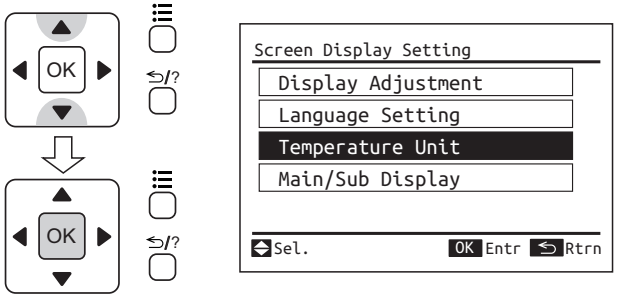
◆ Temperature unit

This function is used to change the temperature unit.

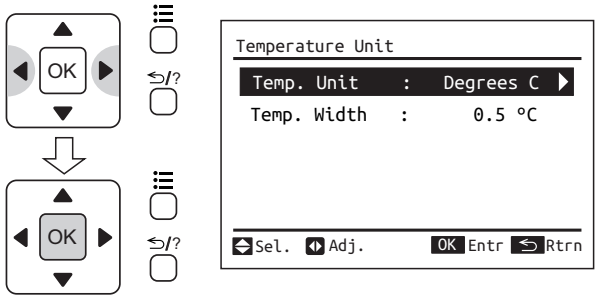
1 Select “Screen Display Setting” from the menu and press “OK”.



2 The “Screen Display Setting” screen will display. Select “Temperature Unit” using “△” or “▽” and press “OK”. The temperature setting screen will be displayed.

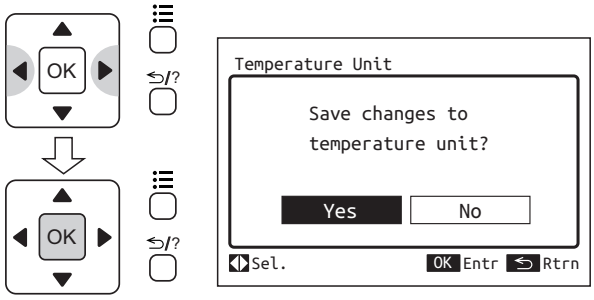


3 By repeatedly pressing “◁” or “▷”, the indication is changed:
If “Temperature Unit” is selected it will change as follows :
“Degrees C” ↔ “Degrees F”.
If “Temperature Width” is selected it will change as follows :
“0.5ºC” ↔ “1ºC”. Press “OK” when all settings are complete.



When the selected language is English,Fahrenheit temperature degrees can be selected.

4 The setting confirmation screen will display. Select “Yes” using “◁” or “ ▷” and press “OK” to confirm the setting. The screen will return to the normal mode.



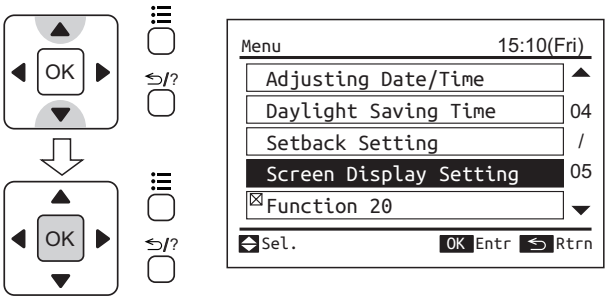
◆ Main / Sub Remote Controller

This function is used to select Display/Non-display for “MAIN” or “SUB” displayed on the normal mode screen.

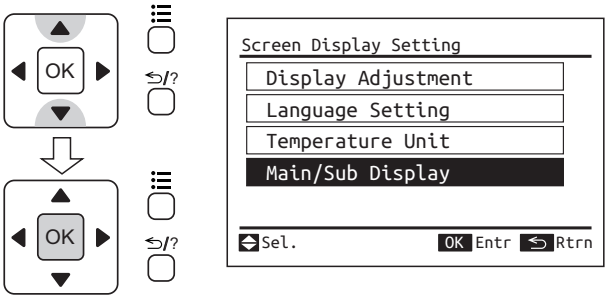
NOTE

If the unit is set as “Non-display”, it is possible to verify if the controller is Main/Sub in the “Main/Sub-Remote” of the “4.1.10.1 Current setting” of the “4.1.10 Help menu” section.

1 Select “Screen Display Setting” from the “Menu” screen and press “OK”.

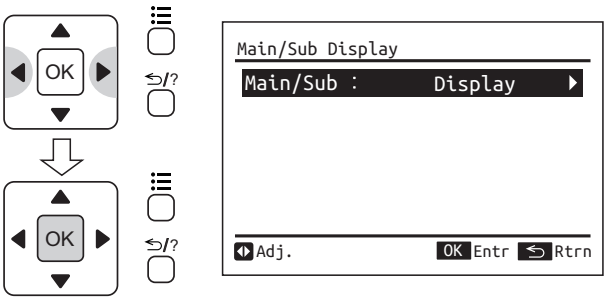


2 The “Screen Display Setting” screen will display. Select “Main/Sub Display” using “△” or “▽” and press “OK”. It cannot be set if only the main controller is available or when the display for “Main/Sub-Remote” in the *“4.1.10.1 Current setting”* is shown as “−−”.



3 The “Main/Sub Display” screen displays.
By pressing “◁” or “ ▷” the setting will change as follows:
“Display” ↔ “Non-display”

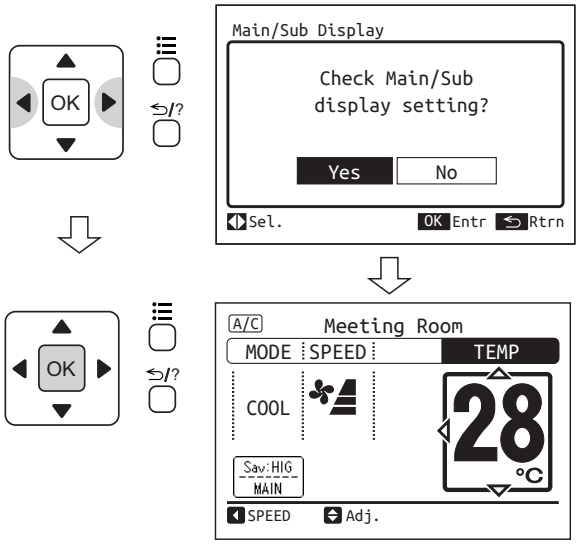
Select the setting and press “OK”.



4 The setting confirmation screen will display. Select “Yes” with “◁ ” or “ ▷” and press “OK” to confirm the setting. The screen will return to normal mode.

Main/Sub / Power saving setting	Main/Sub Display Setting	
	Display	Non-display
OFF	MAIN SUB	Hide
ON	Sav:HIG MAIN Sav:HIG SUB	Sav:HIG

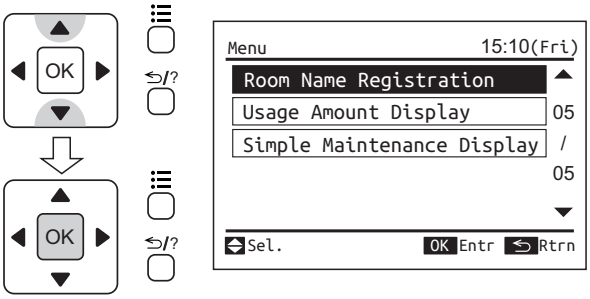
The icon will be displayed as above when set as “Display”.



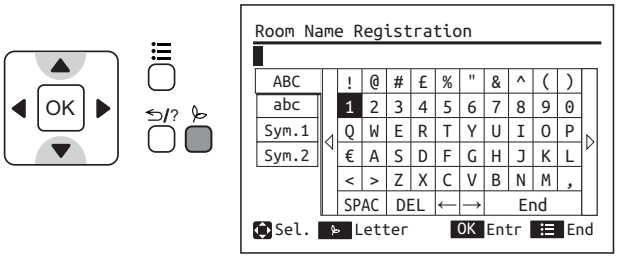
4.1.9.22 Room name registration

This function is used to register the name of the room (installation location of remote control switch)

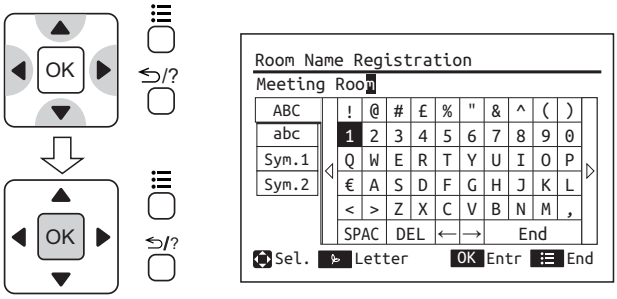
1 Select “Room Name Registration” from the “Menu” screen and press “OK”.
The room name will be displayed.



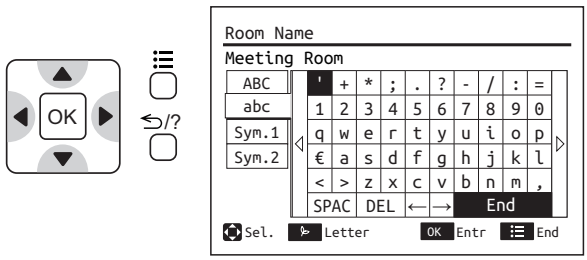
2 By pressing ⮌/? “Return / Help”, letter and symbol types can be changed.



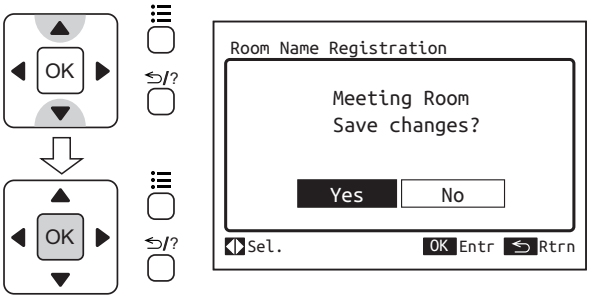
3 Press “△”, “▽”, “◁” or “▷” and select the letter or symbol. Press “OK” to confirm the selected letter or symbol (maximum of 12 characters).



4 Select “End” by pressing “△”, “▽”, “◁” or “▷” and press “OK” (or simply press “☰” (menu)). The confirmation screen will be displayed.



5 Select “Yes” by pressing “◁” or “▷” and press “OK”. The setting will be confirmed and the screen will return to the normal mode.



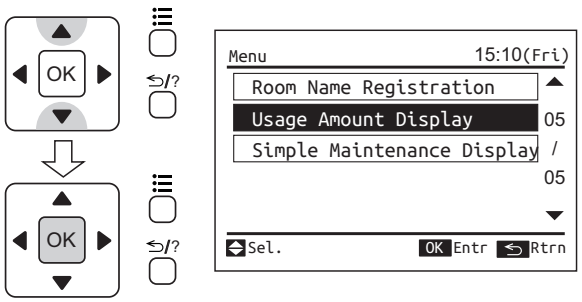
4.1.9.23 Usage amount display

This function displays the power consumption of the outdoor unit compressor and a comparison between selected periods. It is possible to change the display period of graphs and lists to 1 day (24 hours, in 2 hour segments), 1 week (7 days) and 1 year (12 months).

NOTE

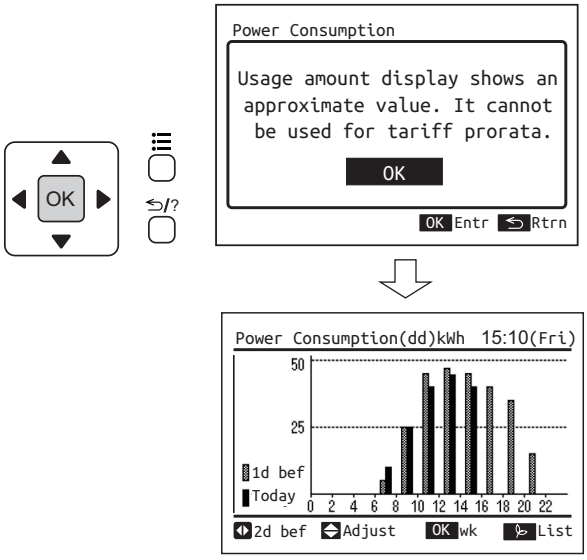
- *The numerical value is strictly provided as a reference, and shall not be used for the calculation of power rates or the examination of power supply contracts.*
- *All indoor units connected to the same outdoor unit show the same power consumption (SET FREE Sigma modular systems are considered as a single outdoor unit).*
- *In the following instances, the calculated value may be a deficit or may be changed.*
  - *Power Failure (outdoor unit, indoor unit, wired controller)*
  - *Communication Failure (outdoor unit ↔ indoor unit ↔ wired controller)*
  - *Modification of time*

1 Select “Usage Amount Display” from the “Menu” screen and press “OK”.



The Usage amount display setting screen will be displayed. When the current time is not set, the time adjusting screen will be automatically displayed.

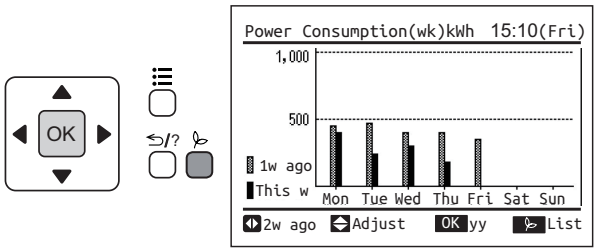
2 The confirmation screen will be displayed. Press “OK” to change the screen to “Power Consumption” display.



The numerical value is strictly provided as a reference, and shall not be used for the calculation of power rates or the examination of power supply contracts.

All indoor units connected to the same outdoor unit show the same power consumption (SET FREE Sigma modular systems are considered as one unit all together).

3 Display Period
Press “OK” to change the Display Period as follows:
1 day (24h) / 1 Week (7 days) / 1 year (12 months)



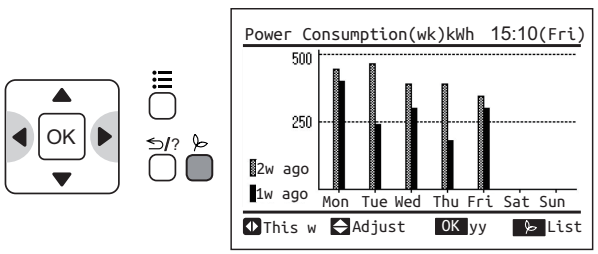
Comparison

Press “◁” or “▷” to change the periods of comparison as follows:

“2 days before / 1 day before”
↕
“1 day before / Today”

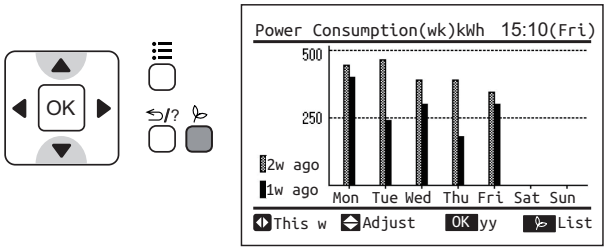
“2 weeks ago / 1 week ago”
↕
“1 week ago / This week”

“2 years ago / 1 year ago”
↕
“1 year ago / This year”



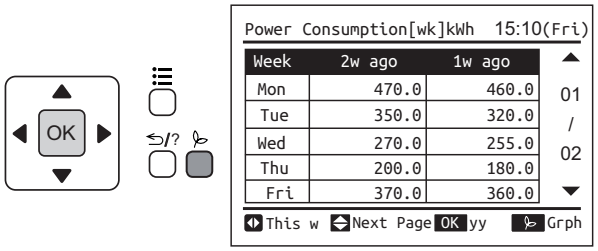
Display Scale

Change the scale using "△" or "▽".

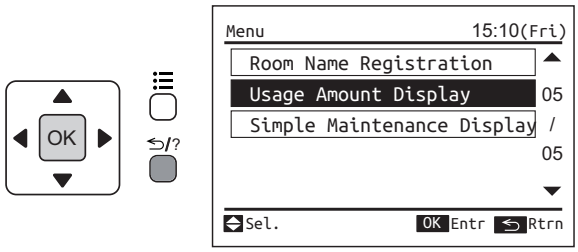


Graph ↔ List Display

Press "ECO" to change the "Power Consumption" display as follows:
"Graph" ↔ "List"



4 Press ⮌/? "Return / Help" to return to the "Menu" screen.

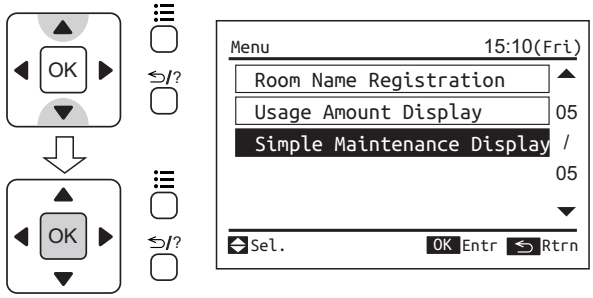


4.1.9.24 Simple Maintenance Display

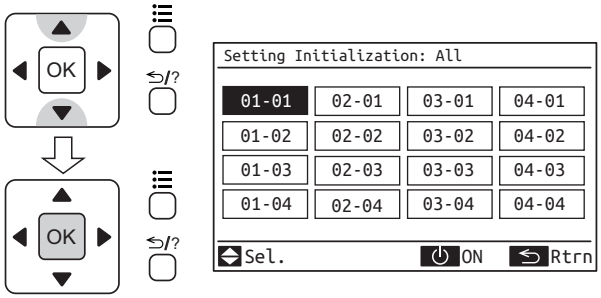
This function displays the current data for maintenance information.

1 If simple maintenance menu does not appear is necessary to configure the optional function JA = 01 (activated).

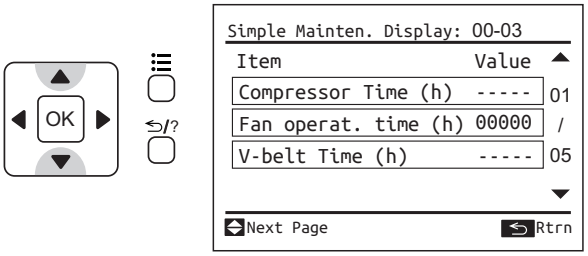
2 Select "Simple Maintenance Display" from the "Menu" screen and press "OK".



3 Select the indoor unit by pressing "△ ▽ ◁ ▷" and press "OK".



4 The Simple Maintenance Display setting screen will be displayed.



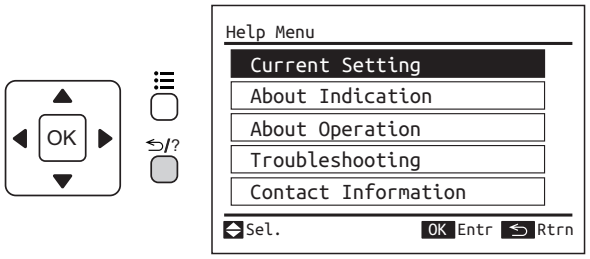
4.1.10 Help menu

The explanation of indicators on LCD and operations can be found in the help menu.

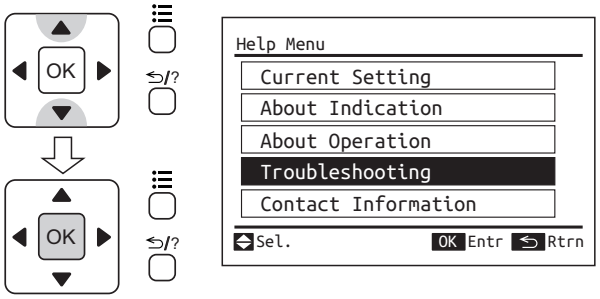
The purpose of this function is to support manual operation.

Refer to the following sections for more details.

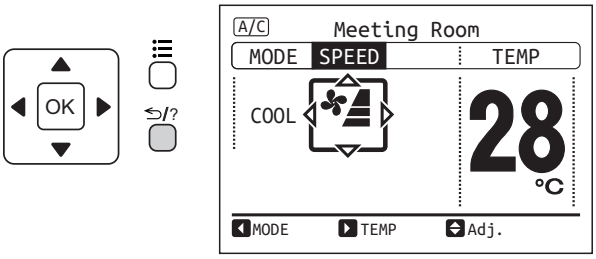
1 Press ⮌/? “Return / Help”.
The “Help Menu” will be displayed.



2 Select the item from the help menu by pressing “△” or “▽” and press “OK”.



3 To return to the normal mode, press “⮌/?” (Return / Help).



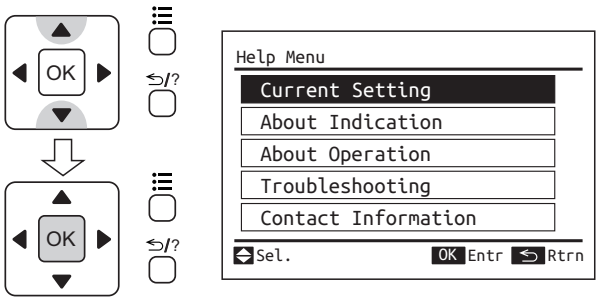
NOTE

If the menu screen remains unchanged for approximately 10 minutes, the screen will automatically return to the normal mode.

4.1.10.1 Current setting

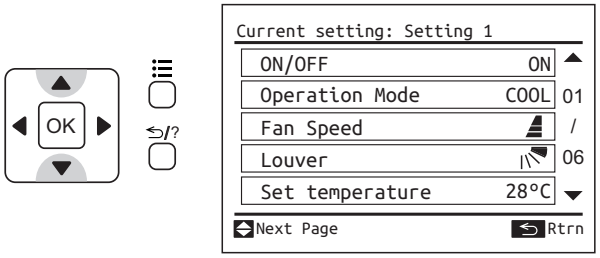
This function displays the setting content of the operating condition of the air conditioning and controller.

1 Select “Current Setting” from the “Menu” screen and press “OK”.



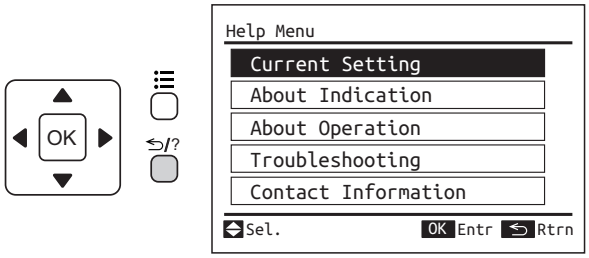
2 The “Current Setting” screen displays.

Press “△” or “▽” to change to the indication “page”.



3 Press “Return / Help” to return to the “Help Menu”.

Press “Return / Help” again to return to the normal mode.



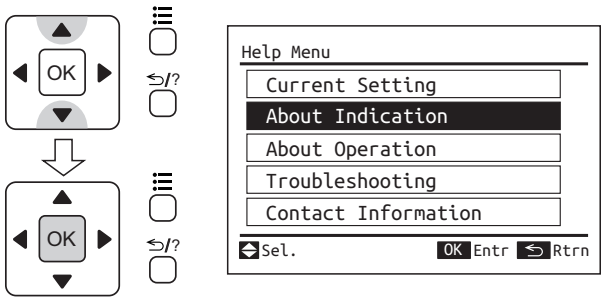
List of indications for the “Current Setting”

Setting 1	ON/OFF
	Operation mode
	Fan speed
	Louver
	Setting temperature
Setting 2	Air conditioning / Ventilation setting
	Ventilation mode
	Date
	Room name
Setting 3	Main/Sub-remote
	External power saving
	Priorities
	Noise reduction
	Quick mode
Schedule	Simple
	Operation
	Outdoor unit capacity control schedule
	Intermittent operation control schedule
	Noise reduction schedule
Lock operation	Operation mode
	Fan speed
	Louver
	Setting temperature
Central control	ON/OFF
	Operation mode
	Fan speed
	Louver
	Setting temperature

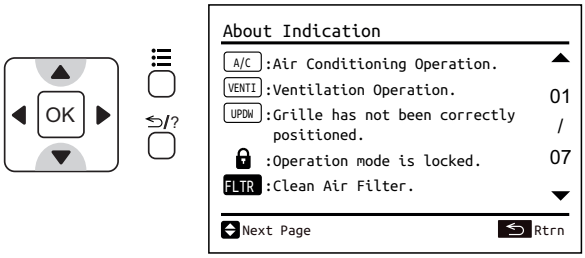
4.1.10.2 Indicators on LCD

This function is used when the explanation of each icon on LCD is required.

1 Select “About Indication” from the help menu and press “OK”. The explanation of indicators on LCD will be displayed.

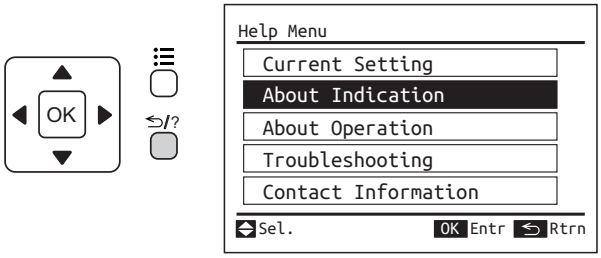


2 Press “△” or “▽” to scroll the text up and down.



3 Press “⮌/?” (return / help). The screen will return to the help menu.

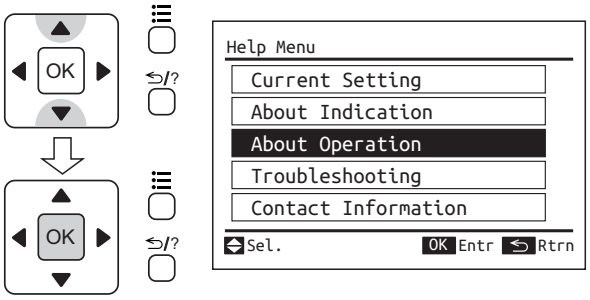
To return to the normal mode, press “⮌/?” (return / help) again.



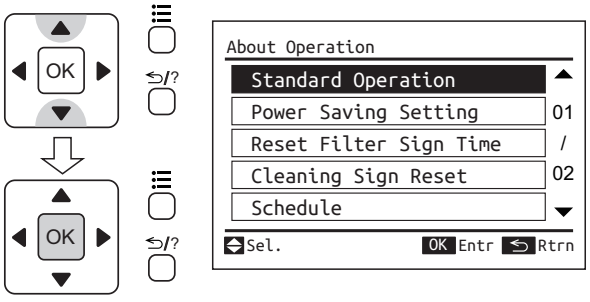
4.1.10.3 About Operation

This function is used when the explanation of operations and operation methods is required.

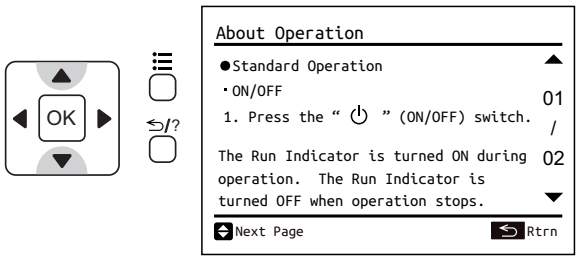
1 Select “About Operation” from the help menu and press “OK”. The explanation of operation list will be displayed.



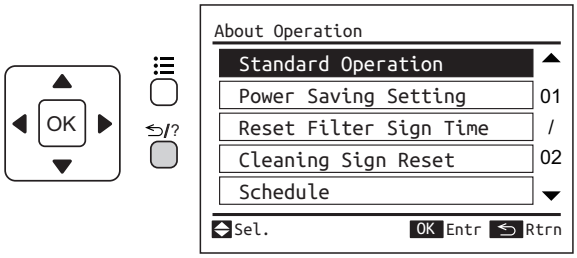
2 Select the operation from the list by pressing “△” or “▽” and press “OK”. The explanation of the selected operation will be displayed.



3 Press "△" or "▽" to scroll the text up and down.

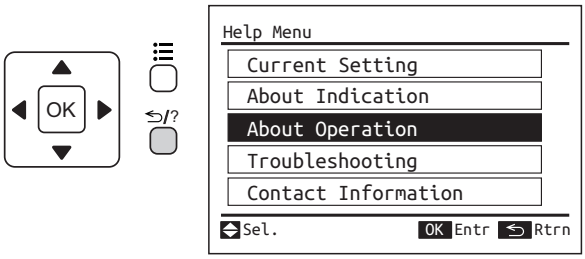


4 Press "⮌/?" (return / help). The screen will return to the operation item.



5 Press "⮌/?" (return / help). The screen will return to the help menu.

To return to the normal mode, press "⮌/?" (return / help) again.

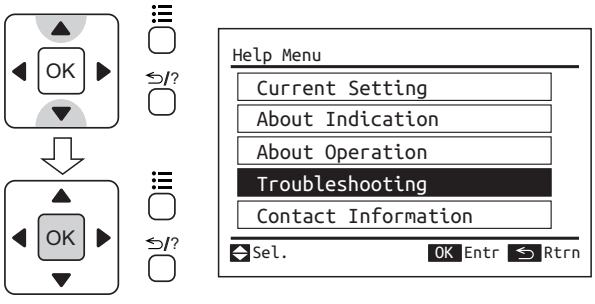


4.1.10.4 Troubleshooting

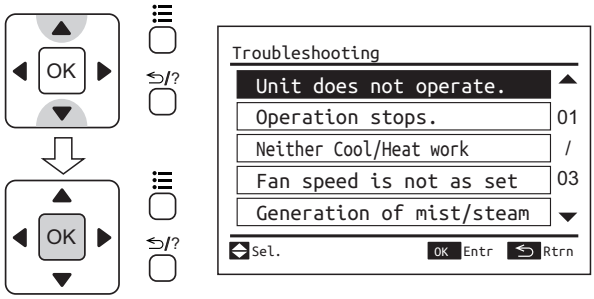
This function is used to troubleshoot operating problems.

Make sure that the troubleshooting section is read carefully before requesting repairs.

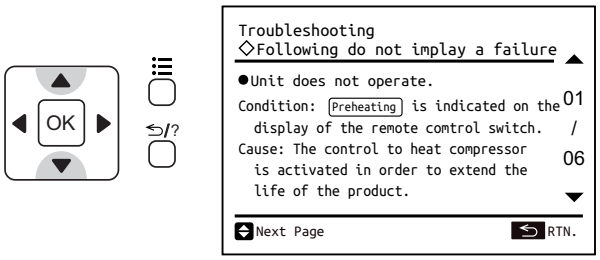
1 Select "Troubleshooting" from the "Help Menu" and press "OK".



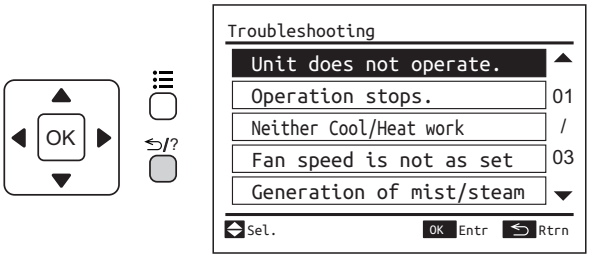
2 A list of troubleshooting issues is displayed. Select a problem from the list by pressing "△" or "▽" and press "OK". The details of the selected problem will be displayed.



3 Press "△" or "▽" to scroll the text up and down.

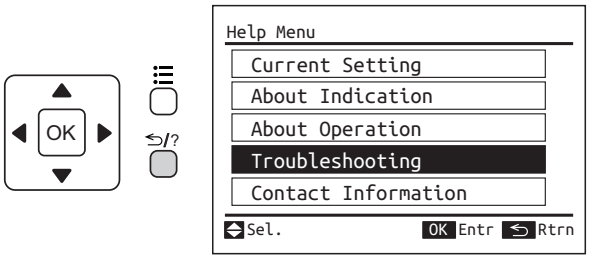


4 Press "⮌/?" (return / help). The screen will return to the list of troubleshooting.



5 Press "⮌/?" (return / help). The screen will return to the help menu.

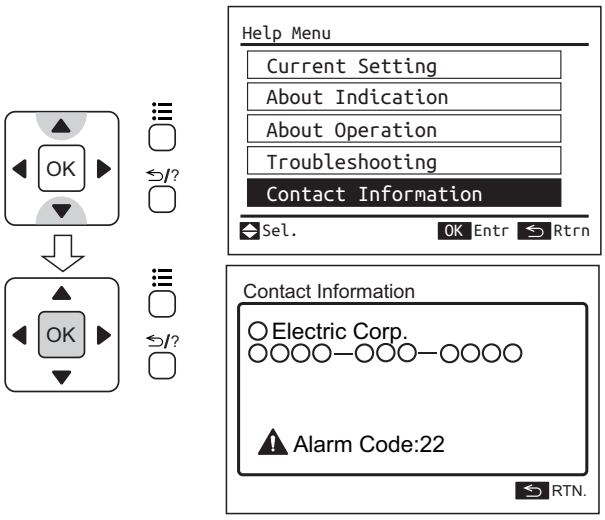
To return to the normal mode, press "⮌/?" (return / help) again.



4.1.10.5 Contact information

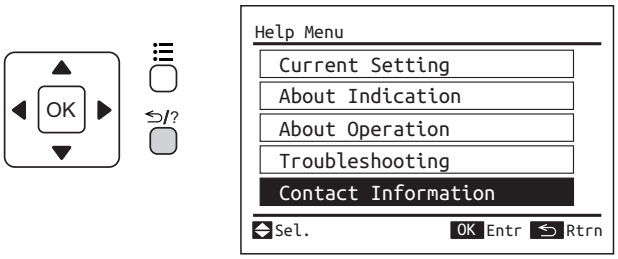
The screen will display contact information and the latest alarm code.

1 Select "Contact Information" from the help menu and press "OK". The contact information and the latest alarm code will be displayed.



2 Press "↩/?" (return / help). The screen will return to the help menu.

To return to the normal mode, press "↩/?" (return / help) again.



4.1.11 Other indications

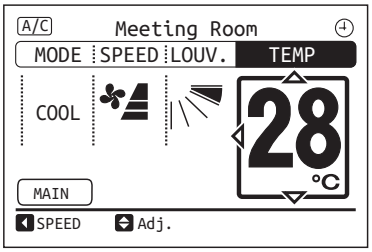
4.1.11.1 In normal condition

◆ Main / Sub controller

The icon "MAIN" will be displayed as ON when the controller is set as MAIN.

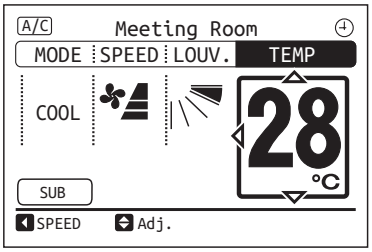
Use the main controller to set principal power saving.

When there is a single controller, the icon "MAIN" will not display as ON.



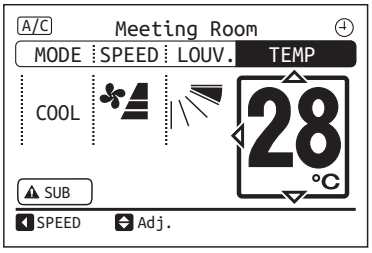
The icon "SUB" will display as ON when the controller is set as Sub.

The sub controller cannot set power saving except for a part of the power saving function.



The icon "⚠ SUB" will display as ON when the main controller is absent.

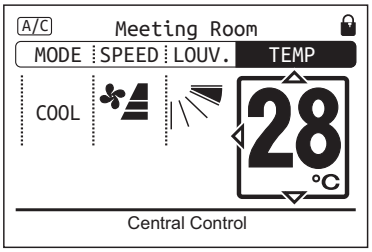
In this instance, it is possible that the control with the power saving and the operation noise reduction functions may not operate normally.



◆ Central control

When remote control operation is restricted (all functions)

The central control "🔒" will turn ON. If the remote control restriction is set from the central controller, the settings for "RUN", "Operation Mode", "Temperature Setting", "Fan Speed", and "Louver" will not be accessible from the controller.



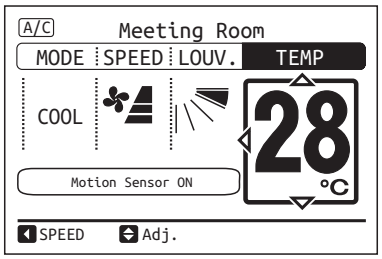
When remote control operation is restricted (some functions):

The icon "🔒" will display as ON.

The function operation which is restricted from the central controller cannot be set.

4.1.12 Motion sensor control

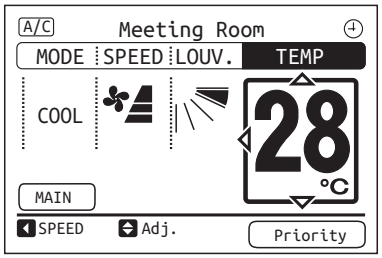
"Motion sensor ON" is turned ON during the motion sensor control. In this case, the operation is performed with saving the capacity or stopped by the motion sensor control.



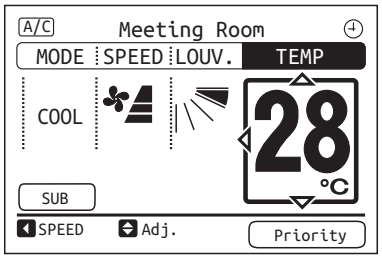
◆ Priorities

When only the Operation Mode or Operation Mode and Temperature Setting have setting priorities (only when using the main controller). The icon "Priority" will display as ON.
In this instance, the sub controller "Restrict" icon will display as ON and the setting modifications of the Operation Mode and Temperature Setting from the sub controller will be restricted.

- Main Controller:



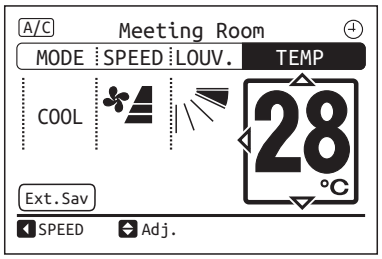
- Sub Controller:



◆ External Power Saving Control Processing

During Outdoor Capacity Control setting in process of the central controller or outdoor unit, he icon "Ext. Sav" will display as ON.

However, if the controller is set for indoor unit rotation or intermittent operation control, the icon will not display as ON.



◆ Thermo-controller

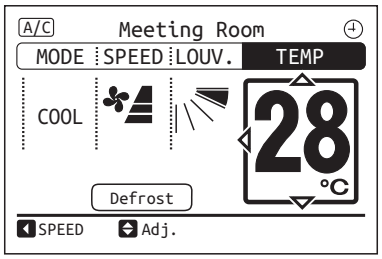
The fan speed is changed to "LOW" at the thermo-controller actuation. However, the indication is not changed. (Only in the heating operation mode).

◆ Defrost

- Defrost operation

  The icon “Defrost” will display as ON and the indoor fan will turn OFF.

  The indoor fan is stopped though the indication is not changed. The louver is fixed at the horizontal position. However, the louver indication of LCD continues to activate.



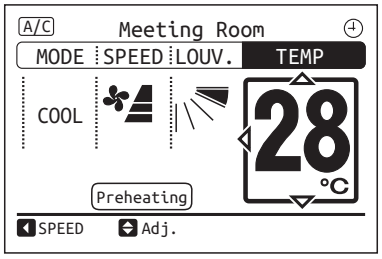
- Operation stoppage during defrosting operation

  The RUN indicator (Green) is turned OFF when the operation is stopped during the defrosting. However, the operation continues with “Defrost” indication, and the unit is stopped after the defrost operation is finished.

◆ Operation control

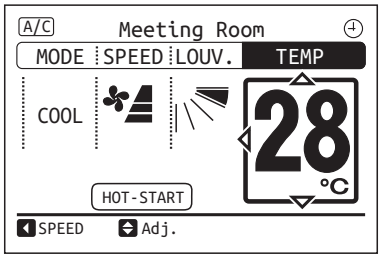
- Power Activation

  The icon “Preheating” will display as ON.
  The compressor is preheating.
  Because the unit cannot operate beyond four hours at a maximum, do not turn OFF the power of the outdoor unit in a cooling/heating season.
  Apply power to the outdoor unit(s) at least 12 hours prior to operation of the system for preheating of the compressor oil.



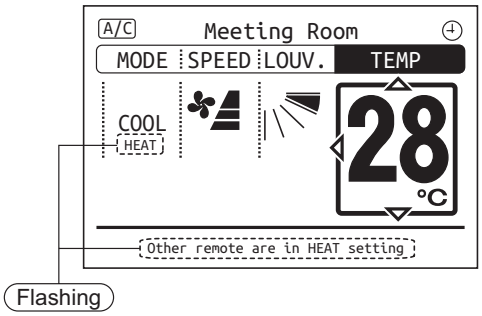
- Activating in Hot Start (only for heating mode)

  The icon “HOT-START” will display as ON.
  The icon “HOT-START” will turn OFF when the unit is not operating.



  In an instance where the operation mode set by the central station is different from the operation mode of the outdoor unit (when the outdoor unit is operating in a mode other than heat/cool simultaneous operation.)

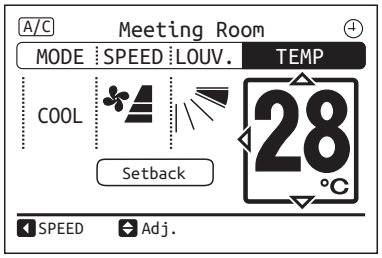
The current operation mode and the message “Other remote are in HEAT setting” will be flashing.



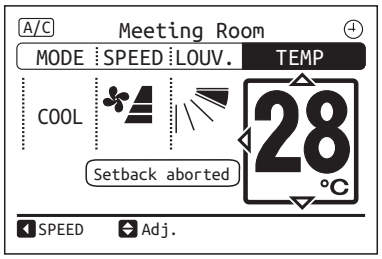
Indication when “COOL” operation is set by the remote control switch at the outdoor unit “HEAT” operation.

◆ Setback operation

While in setback operation, setpoint is compensated and fan operates at “Low” speed. During this time, “Setback” is displayed on the LCD.



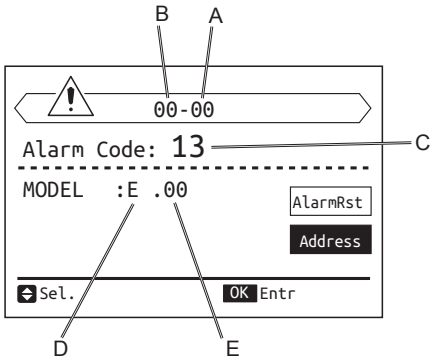
“Setback aborted” will be displayed on the LCD when Setback is aborted.



NOTE

Optional function configuration is needed for the use of setback operation and changing compensation for setback.

4.1.13 In abnormal condition



4.1.13.1 Abnormality

The RUN (red) indicator flashes and the ALARM indicator appears on the liquid crystal display.

The screen also displays the following items:

- A: indoor unit address.
- B: Refrigerant cycle number.
- C: Alarm code.
- D: Model code.

Model code	
Indication	**Model**
H	Heat pump
P	Inverter
F	Multi (SET FREE)
C	Cooling only
E	Other
b	IVX, individual operation
L	KPI

- E: If there are various indoor units connected, the above mentioned information is shown for each one of them.

4.1.13.2 Power failure

All the indications are OFF.

Once the unit is stopped by the power failure, the unit will not be started again although the power recovers. Perform the starting procedures again.

In case of instantaneous power failure within 2 seconds, the unit will be started again automatically.

4.1.13.3 Electric noise

There could be a case that all the indications are OFF and the unit is stopped. This is occurred by the activation of the micro computer for the unit protection from the electric noise.

Perform the starting procedures again.

4.1.14 Alarm codes

The list of the alarms which are actually shown in the remote control switch display may vary depending on the models and combinations of indoor and outdoor units. The causes leading to the activation of a specific alarm in certain models may not trigger the same alarm in other models, without this implying an abnormality.

Code	Category	Content of Abnormality	Leading Cause
01	Indoor unit	Activation of protection device (Float switch (*1))	Activation of float switch (high water level in drain pan, abnormality of drain pipe, float switch, or drain pan)
02	Outdoor unit	Activation of protection device (High pressure cut)	Activation of HPS (Pipe clogging, excessive refrigerant, inert gas mixing)
03	Communication	Abnormal communication between Indoor units and outdoor units	Incorrect wiring, loose terminals, disconnected communication cable, blowout of fuse, indoor unit power OFF, outdoor fuse meltdown
04		Abnormal communication between inverter PCB and Outdoor PCB	Inverter PCB - Outdoor PCB communication failure (loose connector, wire breaking, blowout of fuse)
05	Supply phase	Abnormality of power supply phases	Incorrect power supply, phase R or S open
06	Voltage	Abnormal inverter voltage	Outdoor voltage decrease, insufficient power capacity
07	Cycle	Decrease in discharge gas superheat	Excessive refrigerant charge, failure of thermistor, incorrect wiring, incorrect piping connection, expansion valve locking at opened position (Disconnect connector)
08		Excessively high discharge gas temperature	Insufficient refrigerant charge, pipe clogging, failure of thermistor, incorrect wiring, incorrect piping connection, expansion valve locking at closed position (disconnect connector)
09	Fan motor	Activation of protection device for outdoor fan	Fan motor overheat, locking
0A	Communication	Abnormal communication between outdoor units	Incorrect wiring, broken cable, loose terminals
0b	Outdoor unit	Incorrect outdoor unit address setting	Duplication of address setting for outdoor units (Sub units) in same refrigerant cycle number
0C		Main unit of the outdoor unit incorrectly set	Two (or more) outdoor units set as "Main Unit" exist in same refrigerant cycle number
11	Sensor on indoor unit	Abnormality of inlet air thermistor	Incorrect wiring, disconnecting wiring, breaking wire, short circuit
12		Abnormality of outlet air thermistor	
13		Abnormality of freeze protection thermistor	
14		Abnormality of gas piping thermistor	
15		Abnormality of outdoor air thermistor (Econofresh)	
16		Abnormality of remote sensor (DOAS)	
17		Abnormality of thermistor built-in remote Controller (DOAS)	
18	Indoor fan motor	Abnormality of indoor fan system	Abnormality of indoor fan motor (step-out), indoor fan controller failure
19		Activation of protection device for indoor fan	Fan motor overheat, lockup
1A	Indoor fan controller	Abnormality of fan controller fin temperature	Abnormality of fin thermistor or fan controller, heat exchanger clogging, abnormality of fan motor
1b		Activation of overcurrent protection	Abnormality of fan motor
1C		Problem with current sensor	Abnormality of fan controller current sensor
1d		Activation fan controller protection	Driver IC error signal detection, instantaneous overcurrent
1E		Abnormality of indoor fan controller voltage	Indoor voltage decrease, insufficient capacity of power supply wiring

Code	Category	Content of Abnormality	Leading Cause
20	Sensor on outdoor unit	Abnormality of the compressor thermistor	
21		Abnormality of high pressure sensor	Incorrect wiring, disconnecting wiring, breaking wire, short circuit
22		Abnormality of outdoor air thermistor	
23		Abnormality of discharge gas thermistor on top of compressor	
24		Abnormality of heat exchanger liquid pipe thermistor	
25		Abnormality of heat exchanger gas pipe thermistor	
29		Abnormality of low pressure sensor	
30	System	Incorrect dsw settings of outdoor unit for CH-Box	Connection of CH-Box to heat pump system, disconnection of CH-Box to heat recover system
31		Incorrect capacity setting of outdoor unit and indoor unit	Incorrect capacity setting of outdoor unit and indoor unit, excessive or insufficient indoor unit total capacity code
32		Incorrect setting of other indoor unit number (RPK series only)	Problem with a different Indoor Unit in the same refrigerant cycle, (failure at the power supply, defective PCB)
35		Incorrect indoor unit number setting	Duplication of indoor unit number in same refrigerant cycle number
36		Incorrect of indoor unit combination	Indoor unit is designed for R22
38		Abnormality of picking up circuit for protection (outdoor unit)	Failure of protection detecting device (incorrect wiring of outdoor PCB)
39	Compressor	Abnormal operation current in constant speed compressor	Overcurrent, blown fuse, current sensor fault, instant power failure, voltage drop, abnormal power supply
3A	Outdoor unit	Abnormal outdoor unit capacity	Outdoor unit capacity > Permitted maximum
3b		Incorrect setting of outdoor unit models combination or voltage	Incorrect setting of main and sub units(s) combination or voltage
3d		Abnormal communication between main unit and sub unit(s)	Incorrect wiring, disconnect wire, breaking wire, PCB failure
3E		Abnormal combination between inverter PCB and outdoor PCB	Incorrect combination between inverter PCB and outdoor PCB
41	Protection device	Cooling overload (possible activation of high pressure device)	If the outdoor unit pipe thermistor temperature is higher than 55ºC and the compressor top temperature is higher than 95ºC, outdoor unit pretection device is activated.
42		Heating overload (possible activation of high pressure device)	If the indoor unit freeze protection thermistor temperature is higher than 55ºC and the compressor top temperature is higher than 95ºC, outdoor unit pretection device is activated
43		Activation of the protection device from compression ratio decrease	Abnormal compression (failure of compressor or inverter, loose power supply connection)
44		Activation of the protection device from excessively high suction pressure	Overload during cooling, high temperature with heating, locked expansion valve
45		Activation of the protection device from excessively high discharge pressure	Overload (obstruction of Heat exchanger or clogging, short circuit) mixture of inert gas
47		Activation of the protection device from excessively low suction pressure (protection from vacuum operation)	Shortage or leakage of refrigerant, piping clogging, expansion valve close-locked, fan motor locked
48		Abnormality of current sensor for inverter	Overload operation, compressor failure, failure of DIP-IPM, heat exchanger clogged, locked compressor, EVI/EVO failure or overcharge
51	Sensor	Abnormality of current sensor for inverter	Current sensor failure
53	Inverter	Protection activation of inverter module	Driver IC error signal detection (inverter module abnormality, protection for overcurrent, voltage decrease, short circuit), instantaneous overcurrent. Failure of compressor, clogging of heat exchanger
54		Inverter fin temperature increase	Abnormal inverter fin thermistor, clogging of heat exchanger, abnormal outdoor fan.
55		Inverter module abnormality	Failure of inverter module (PCB failure)
56	Outdoor fan	Abnormal detection of fan motor position	Abnormal of fan motor position detection circuit, disconnected wiring

Code	Category	Content of Abnormality	Leading Cause
57	Fan controller	Activation of fan controller protection	Driver IC error signal detection (Protection for overcurrent, voltage decrease, short circuit), instantaneous overcurrent. disconnected wire of incorrect wiring between control PCB, and inverter PCB, incorrect wiring or fan motor abnormality.
58		Abnormal fan controller	Abnormal operation speed
5A		Abnormal fan controller fin temperature	Fin thermistor fault, heat exchanger clogging, fan motor fault
5b		Activation of overcurrent protection	Fan motor failure
5C		Abnormality of fan controller sensor	Failure of current sensor (instantaneous overcurrent, increase of fin temperature, low voltage, grand fault, step-out)
75	HYDRO FREE	Freeze protection by cold water inlet, outlet temperature detection	There is leakage at HYDRO FREE solenoid valves or there is a very low temperature refrigerant flow through heat plate exchanger
88	Outdoor unit	Abnormality of fan or compressor driver	The fan or the compressor driver do not transfer an identification code
A1	External input	Detection of external abnormality	Input signal by external abnormality detection setting
b0	Indoor unit	Incorrect setting of unit model code	Incorrect setting of indoor unit model
b1		Incorrect setting of unit and refrigerant cycle number	The setting number of the indoor units is over 64 or the indoor unit address in not correct
b2		Abnormality of EEPROM	EEPROM failure, incorrect data of EEPROM.
b3		Wrong combination of indoor unit and remote control switches	Wrong combination of indoor unit and remote control switches
b5		Incorrect indoor unit connection number setting	There are more than 17 units not corresponding to H-LINK II connected to one system
b6		Abnormal communication between indoor PCB and indoor fan controller	Communication failure, disconnected communication cable, abnormal connection
b7		Transmission abnormality between the indoor and the PCB for 2 fans	Transmission abnormality between the indoor and the PCB for 2 fans
bF		Abnormality in the number of connected sub-PCB	Abnormality in the number of connected sub-PCB
C1	CH-Box	Incorrect CH-Box connection	2 or more CH-Box are connected between outdoor unit and indoor unit
C2		Connection number of the indoor unit incorrectly set	There are 9 or more indoor units connected to CH-Box
C3		Incorrect indoor unit refrigerant number setting	Indoor units from different refrigerant cycles have been connected to CH-Box
C4		Incompatible outdoor unit connection (CH-Box)	
C5		Incorrect connection port setting	Indoor unit is connected to a port that is set to not used for multiple branch type CH-Box
EE	Compressor	Compressor protection alarm (it can not be reset from wired controller)	This alarm code appears when the following alarms* occurs three times within 6 hours. *02, 07, 08, 39, 43 To 45, 47

NOTE

(*) In the case of RPI-16/20, the fan motor of both units is stopped immediately upon occurrence of an alarm at either of the units (upper or lower side). The remote control switch indicates the cause of alarm (codes 1, 11, 12, 13, 14, 19) for the unit where the alarm has occurred, while alarm code 19 (Fan motor stoppage) is indicated for the other unit. Therefore it is necessary to check both units only in case of occurrence of alarm 19.

4.1.15 Function availability vs. different series

New Functions	PC-ARFP1E	RCIM-FSN4E	RCI-FSN4	RPK-FSN4M	RPC-FSN3	RCD-FSN3	RPIM-(0.6-1.5)FSN4E	RPI-(0.4~3.0)FSN5E	RPI-(4.0-6.0)FSN5E	RPI-(8.0-10.0)FSN3E	RPF(I)-FSN2E	IVX RAS-(2-12)H(V)NP1(E) Centrifugal RASC-(4-10)HNPE	IVX RAS-(3-12)H(V)NC1(E)	SET FREE Mini (RAS-(4-6)FS(V)NME)	SET FREE Sigma RAS-(8-96)FSXNSE& RAS-(5-72)FSXNPE SET FREE Mini (RAS-(8-12)FSXNME)	Compatible software
Software	From beginning of mass production	P-4729	P-4736	From beginning of mass production	P-4736	P-4729	P-4735	P-4725	P-4735	Current	Current	--	--	--	--	--
Sensor selection for temperature control																
Parameter C8: Optional setting for IU control by RCS sensor or remote sensor (THM4)	o	Depends on Remote Controller (RCS)														⊙
Parameter K6: operating mode by THM4 or RCS sensor only in COOL/DRY mode	o	o	o	o	o	o	x	o	x	x	x	Depends on RCS and Indoor Unit				▲
Special EU functions for Fan stop in Thermo-OFF																
Parameters Cd: Fan stop in cooling Thermo-OFF by THM4 or RCS sensor control	o	o	o	o	o	o	o	o	o	o	o	Depends on RCS and Indoor Unit				▲
Parameters CE: Fan stop in heating Thermo-OFF by RCS sensor	o	o	o	o	o	o	o	o	o	o	o	Depends on RCS and Indoor Unit				▲
Parameter E8: Fan stop during Thermo-OFF when THM4 is connected	o	o	o	o	o	o	o	o	o	o	o	Depends on RCS and Indoor Unit				▲
Temperatures display in RCS																
Parameters J1: Temporary ambient temperature (C8) display on the RCS	x	Depends on connected Remote Controller														⊙
Parameters P3, P4: Ambient temperature display on the RCS.	o	Depends on connected Remote Controller														⊙
Parameter P5: Setting temperature display on the RCS. (Hidden for fan operation mode)	o	Depends on connected Remote Controller														⊙
Parameter P1: Temperature setting width (0.5ºC)	o	o	o	o	o	o	o	o	o	o	o	Depends on RCS and Indoor Unit				▲
Function preventing uncomfortable operation																
Parameter d4: Prevention for cooling discharge air temperature decrease RPK---Default ON Cancel function by using DSW2-4=OFF	o	x	x	x	x	x	o	x	o	o	o	Depends on RCS and Indoor Unit				▲
Comfort setting: 1-4	x	o	o	o	o	o	x	o	x	x	x	Depends on RCS and Indoor Unit				▲
Parameter K8: control of dew condensation prevention by IU louvers (For RPK activation by DSW2-4 instead of K8)	o	o	o	x	o	o	x (no louver)	x	x	x	x	Depends on RCS and Indoor Unit				▲
Energy saving/noise/Eco functions																
"Parameter d6: Room temperature control for energy saving IU in Cool Thermo-OFF when Tout<Tin"	o	o	o	o	o	o	o	o	o	o	o	x	o	o	o	■
Power saving function	o	o	o	o	o	o	o	o	o	o	x	x	o	o	o	■
ECO button	o	Depends on connected Remote Controller														⊙
Noise reduction operation	o	o	o	o	o	o	o	o	o	o	x	x	o	o	o	■
Power saving and noise reduction scheduled operations	o	o	o	o	o	o	o	o	o	o	x	x	o	o	o	■
Power consumption display	o	o	o	o	o	o	o	o	o	o	x	x	o	o	o	■
ECONOFRESH control	o	x	x	x	x	x	x	x	o	x	x	Depends on RCS and Indoor Unit				▲
Setback function																
Setback function for hotel application (key card)	x	o	o	o	o	o	o	o	o	x	x	Depends on RCS and Indoor Unit				▲
Smart set back function (key card, timer, manual)	o	o	o	o	o	o	o	o	o	x	x	Depends on RCS and Indoor Unit				▲
Auto Cool/Heat with dual setting																

New Functions	PC-ARFP1E	RCIM-FSN4E	RCI-FSN4	RPK-FSN4M	RPC-FSN3	RCD-FSN3	RPIM-(0.6-1.5)FSN4E	RPI-(0.4~3.0)FSN5E	RPI-(4.0-6.0)FSN5E	RPI-(8.0-10.0)FSN3E	RPF(I)-FSN2E	IVX RAS-(2-12)H(V)NP1(E) Centrifugal RASC-(4-10)HNPE	IVX RAS-(3-12)H(V)NC1(E)	SET FREE Mini (RAS-(4-6)FS(V)NME)	SET FREE Sigma RAS-(8-96)FSXNSE& RAS-(5-72)FSXNPE SET FREE Mini (RAS-(8-12)FSXNME)	Compatible software
Software	From beginning of mass production	P-4729	P-4736	From beginning of mass production	P-4736	P-4729	P-4735	P-4725	P-4735	Current	Current	--	--	--	--	--
Simple Auto Cool / Heat with dual set point	x	o	o	o	o	o	o	o	o	x	x	Depends on RCS and Indoor Unit				▲
Smart Auto Cool / Heat with dual set point	o	o	o	o	o	o	o	o	o	x	x	Depends on RCS and Indoor Unit				▲
Auto Cool/Heat with single setting																
Improvement for AUTO COOL HEAT operation mode (new differential Temperature Set Temp. - Room Air Temp. = 2°C instead of 3°C)	o	o	o	o	o	o	o	o	o	o	o	Depends on RCS and Indoor Unit				▲
Setting main / sub controller	o	o	o	o	o	o	o	o	o	o	x	x	x	o	o	■
Operation mode / Tset priority	o	o	o	o	o	o	o	o	o	o	x	x	o	o	o	■
Quick functions	o	o	o	o	o	o	o	o	o	o	x	x	o	o	o	■
Others																
CN3 inputs i1 and i2 status read through H-LINK	Depends on IU	o	o	o	o	o	o	o	o	o	o	Depends on RCS and Indoor Unit				▲
0.4HP IU model	Depends on IU	o	x	o	x	x	x	o	x	x	x	Depends on RCS and Indoor Unit				▲
Languages	21	Depends on connected Remote Controller														⊙

o	Available
x	not available
⊙	Function depending on remote controller switch
▲	Function depending on remote controller switch + indoor unit software
■	Function depending on remote controller switch + indoor unit + outdoor units software

4.2 PC-ARH1E

4.2.1 Safety summary

DANGER

- ***DO NOT handle the remote control with wet hands.***
- ***DO NOT spill water on the remote control. This may cause an electric shock.***
- ***If the safety devices are activated too frequently or the buttons do not work properly, turn off the unit at the mains and contact your HITACHI service provider.***
- ***In the event of an incident of an electrical nature, turn off the system, switch it off at the mains and contact your HITACHI service provider.***

CAUTION

- *DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:*
- *Where there are oil vapours and the oil is dispersed.*
- *In the proximity of hot water or heat sources or in sulphuric environments.*
- *In locations prone to the generation, accumulation, leakage or flow of flammable gas.*
- *Close to the sea (saline atmospheres).*
- *In acidic or alkaline environments.*
- *Within the reach of children.*
- *Directly in front of the air-conditioning system outlet.*
- *To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m of strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.*
- *If electrical noise should be generated at the indoor unit power source, install a noise filter.*

CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*

4.2.2 Installation

4.2.2.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

Cable section	0.3 mm²	≥ 0.75 mm²
Cable length	30 m	500 m

4.2.2.2 Components list

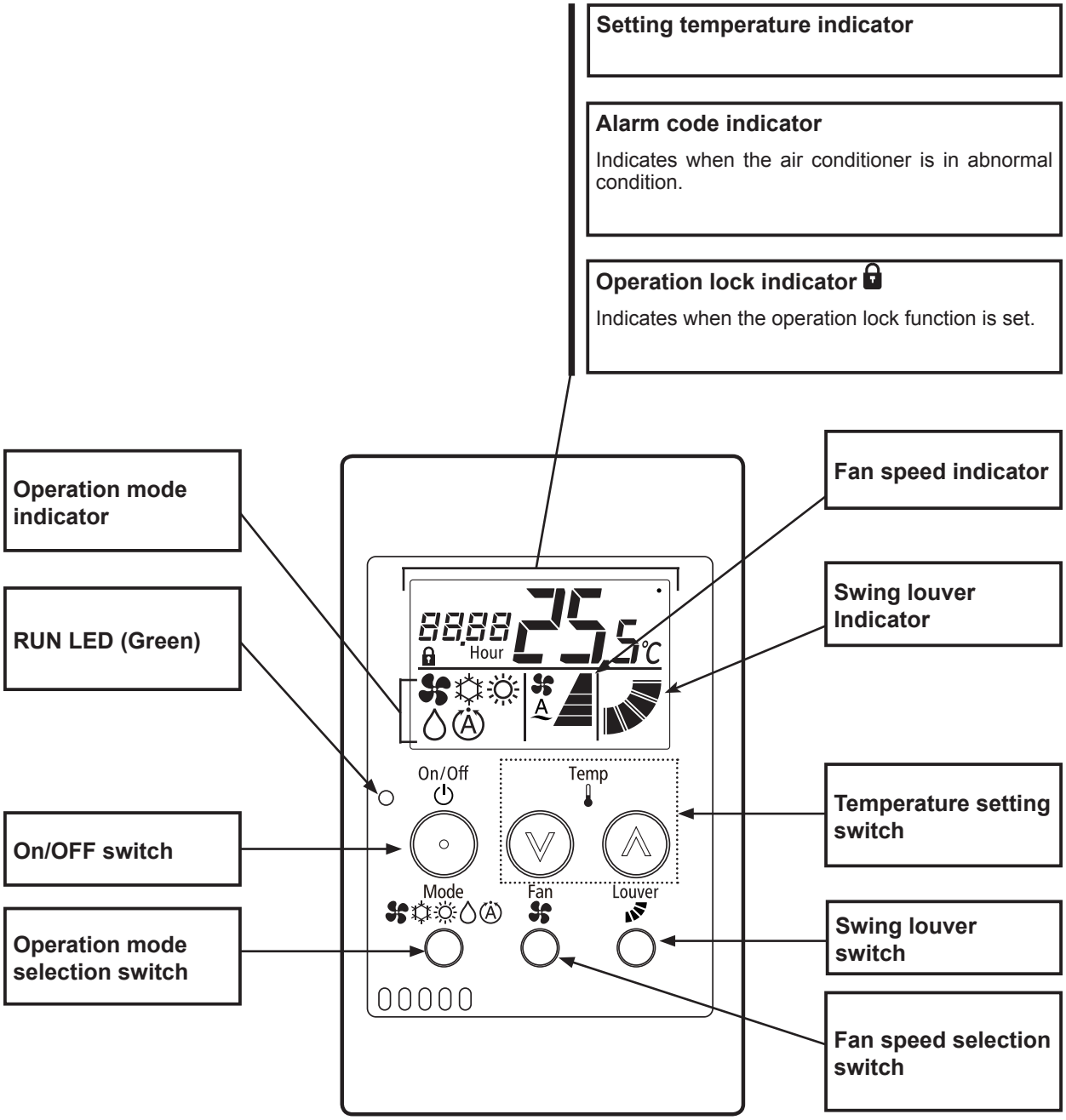
Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

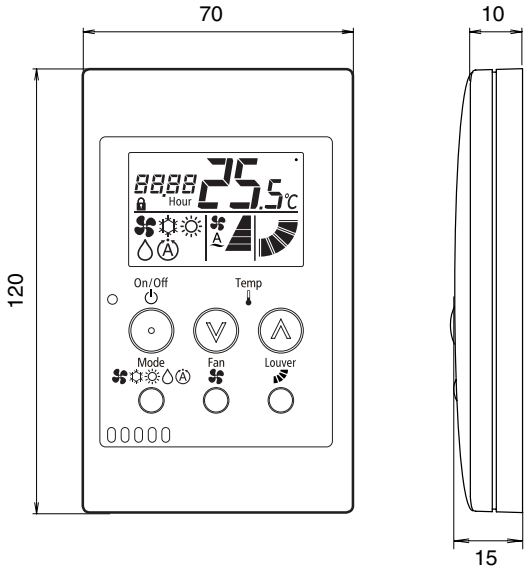
Name		Quantity	Comments
Remote control		1	For controlling system operation
M4x16L screws		2	For fixing the bracket to the wall
Cable tie		1	For attaching the cable to the ring core
Ring core		1	For securing the cables
Cable with connector (20 cm)		1	–
Installation and operation manual		1	Installation and operation unit instructions.

4.2.2.3 Description of the parts



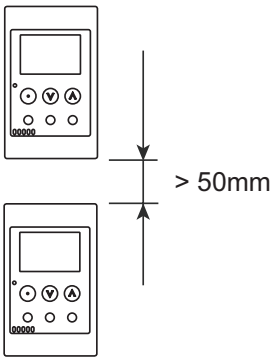
4.2.2.4 Dimension data

(mm)



4.2.2.5 Installation space

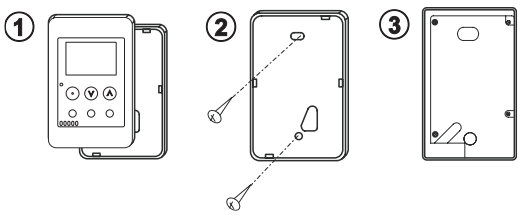
In case of installing the controllers in vertical line, keep a distance more than 50 mm between the controllers vertically. If the distance is insufficient, the controller can not be taken out.



4.2.2.6 Installation procedure

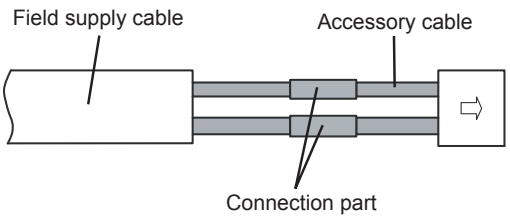
1 Insert the end of the screwdriver into the indents on the bottom of the bracket, push and rotate the screwdriver to remove the remote from the bracket.

Unscrew the base to release the bracket



2 Cable connection.

Connect and solder the accessory cable to the cable supplied with the unit. Insulate the contact area with vinyl tape.

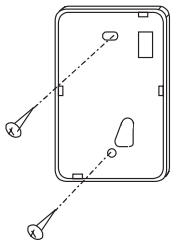


3 Choose one of the following installation options for securing the remote control, depending on the installation requirements:

- With remote control cable exposed.
- Using an electrical box.
- With a bedside table.

◆ In cases where the remote control cable is exposed

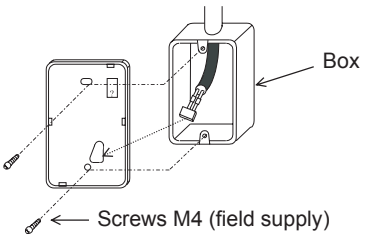
Secure the cable holder accessory to the wall using 2 M4 screws (accessories).



◆ If using an electric control box

There are different types of electrical boxes available on the market that can be used for this installation, for example:

- Electrical box for one control unit (with or without cover.)
- Electrical box for 2 control units (with or without cover.)
- Other types of box



1 Pass the cable through the wall duct.

2 Pass the cable through the electrical box.

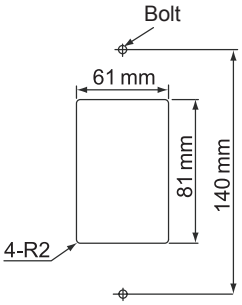
3 To secure the bracket to the box, make sure you leave the necessary length of cable, taking into account the height of the terminals A and B.

◆ If using a bedside table

1 Cut a hole to leave the remote control exposed and prepare the bolts (over 140 mm), as shown in the diagram.

NOTE

The bolts must be positioned in-line with the spacers (field supply).

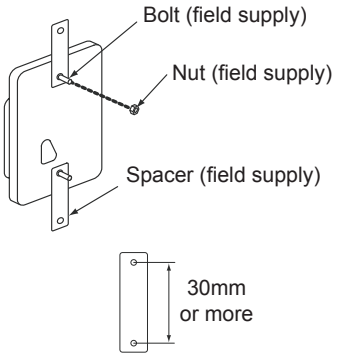


2 Fit the bolts into the fixing bracket and secure the spacers with nuts.

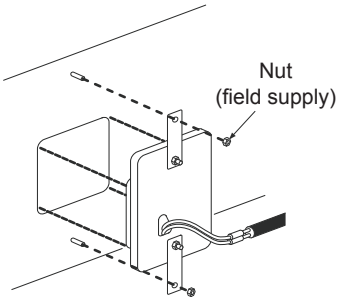
- Bolt (field supply).
- Nut (field supply).
- Spacer (field supply).

NOTE

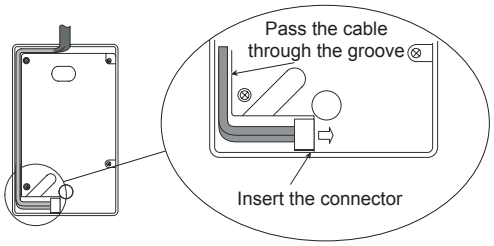
Leave a distance of at least 30 mm between the spacer holes.



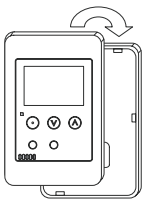
3 Remove the decorative cover and place the remote control in the hole for installation.



4 Secure the remote to the bracket using the screws and connect the cable as shown in the diagram.



5 Secure the remote to the fixing bracket. First connect the top, and then the bottom.



4.2.3 Electrical wiring

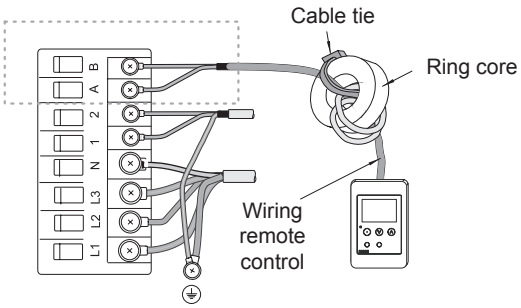
4.2.3.1 Standard electrical connection

⚠ CAUTION

For operational and safety purposes, fit the ring core "attachment" when installing the unit.

- Wind the remote control cable around the ring core twice, as shown beside, before connecting it to the indoor unit terminal board.
- If the cable measures 0.75 mm² or more, the outer insulation must be stripped (only on the part to be wound), otherwise you will not be able to wind the cable around the ring core.
- Secure the cable using the cable tie (accessory).

This diagram shows an example of a standard connection, with the cable connected to terminals A and B.

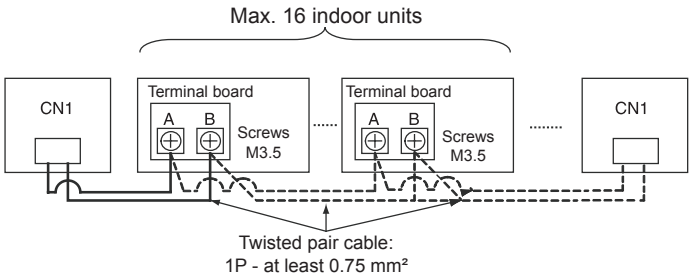


4.2.3.2 Electrical connection for multiple units

◆ **Wiring example (Using a twist pair cable with shield tube)**

This remote control can control up to a maximum of 16 units. If this setting is changed, the wiring connection and other necessary tasks must be carried out, as shown below.

Two remote controls can be connected to the same unit or group of units. The second is a secondary remote control, as shown below. See *"4.2.12 Optional functions"* for more information.



⚠ CAUTION

Always make sure to turn off the power of the indoor unit when performing electrical wiring work. Performing electrical wiring work with the power on can damage the circuit boards of the indoor unit and the remote control switch.

NOTE

- *Use a 0.3 - 0.75mm² cable (maximum total cable length: 30m). If the total cable length exceeds 30m, use a twisted pair cable (1P - 0.75mm²) (maximum total cable length: 200m). If using the remote control timer, the maximum total cable length is 100m. The use of other cables can produce noise, which may lead to a defective system operation.*
- *The remote control cable/indoor unit transmission cables and the power supply cable must be kept at least 30cm apart.*
- *If this distance is less than 30cm, install the cables in a conduit (type-D; ≤ 100 Ω) and connect one end to earth. Failure to do so may cause a fault or may cause the air conditioning unit to work incorrectly due to the noise.*
- *If several indoor units are controlled simultaneously, establish the addresses for the refrigerant cycle and indoor units. This is particularly important when simultaneously controlling indoor units with several refrigerant cycles since abnormal transmission may occur due to duplicate addresses.*
- *Do not leave any space in the remote control box cable hole. Any space must be covered using vinyl tape for example to prevent problems caused by dew or by insects entering the remote control box.*
- *To use two remote controls (primary and secondary), see "4.2.12 Optional functions".*

4.2.4 Checking procedure

PC-ARH1E doesn't have Test Run mode.

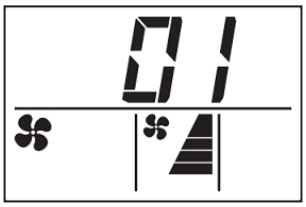
The test running shall be performed from the outdoor units.

1 Turn ON the power for all the indoor units.
2 Models with automatic addressing will take three to five minutes to complete the setting.
3 Set the Test Run mode from the outdoor units.
4 Cancellation the Test Run mode

The Test Run mode can be cancelled when:

- The Test Run will be finished automatically after two hours of running.
- Cancellation the Test Run from the outdoor units.
- Stop the Test Run by pressing the Run/Stop switch of the PC-ARH1E.

The total number of the indoor units connected will be indicated on the temperature display.



NOTE

Display indication when one indoor unit is connected.

Example when one unit is connected.

In case that the indicated number of connected units is incorrect, any transmission abnormality due to, an incorrect wiring/addressing or noise may exist. In such a case, turn OFF the power supply and check the following.

(DO NOT repeat the ON/OFF operation of the main switch within 10 seconds).

1 Indoor units power supply not turn ON, or incorrect wiring.
2 Incorrect wiring connection between indoor units or of remote controllers.
3 Incorrect setting of rotary switch (overlapped setting).

CAUTION

- *PC-ARH1E memorizes Test Run operation mode. The units will start in the Test Run mode if the mode of operation is not changed from the central control equipment which will be used with the unit after the Test Run, or from the remote control switch.*
- *Change the mode of operation using these devices or refer to "4.2.12.1 Optional functions list" (H3 Operation Mode Change Restriction – 02: Not Restricted) after the Test Run.*

4.2.5 Operation Mode (Cooling, Heating, Dry, Cooling/Heating Automatic and Airflow Operation)

4.2.5.1 Function

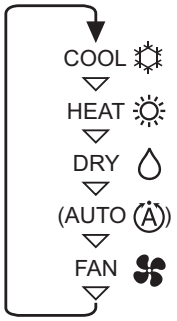
- Cooling Operation (COOL): To decrease the room temperature.
- Heating Operation (HEAT): To increase the room temperature.
- Dry Operation (DRY): To decrease the humidity in the room.
- Cooling/Heating Automatic Operation (AUTO): To cooling and heating automatic changeover.
- Airflow Operation (FAN): To circulate the air in the room.

4.2.5.2 Before operation

⚠ CAUTION

- *Turn ON the power supply for the air conditioner.*
- *To protect the compressor unit, the power supply should be energized 12 hours before the startup operation is begun.*
- *Do not turn OFF the power supply during in-season heating or cooling operation.*
- *Make sure that the outdoor unit is always free of ice and snow. If snow covered, remove it by using hot water (cooler than 50ºC).If the water temperature is higher than 50ºC, it will damage plastic parts.*

By pressing “Mode”, the operation mode will be adjusted as follows.



NOTE

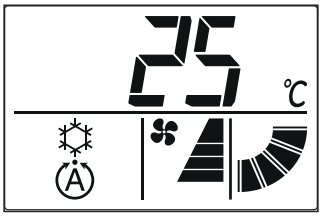
The advanced setting is required for “AUTO” operation mode. Contact your distributor or dealer for detailed information.

4.2.6 Automatic Cooling/Heating operation

By default, temperature when the cooling/heating mode changes are as follows.

Cooling mode changes to heating mode when the indoor temperature is heating setpoint -1°C.

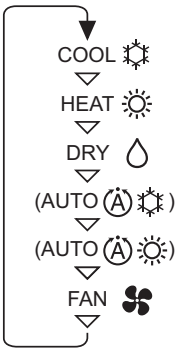
Heating mode changes to cooling mode when the indoor temperature is cooling setpoint +1°C.



NOTE

- *In case of AUTO COOL indication.*
- *In case dual setpoint is selected in automatic cooling/heating operation, during auto mode both cooling setpoint and heating setpoint can be selected.*

By pressing “Mode”, the operation mode will be adjusted as follows.



NOTE

- *For Auto COOL/HEAT, though the temperature indication on display changes by pressing “Mode”, the actual operation mode remains as “AUTO” and it does not change between AUTO COOL and AUTO HEAT.*
- *Advanced configuration is needed for the use of automatic cooling/heating operation and changing AUTO HEAT/COOL temperature.*
- *Contact your distributor or dealer for detailed information.*

4.2.7 Setting method

4.2.7.1 Temperature setting

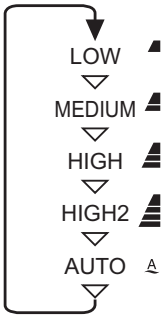
- By pressing “Temp ∧”, the temperature is increased by 0.5°C (Max. 30°C).
- By pressing “∨ Temp”, the temperature is decreased by 0.5°C.
- Cooling, Dry, Airflow operation: Min. 19°C
- Heating operation: Min. 17°C

NOTE

Minimum and maximum temperature levels can be adjusted by setting the lower limit (set temperature for cooling) and the upper limit (set temperature for heating) from the function selection.

4.2.7.2 Fan speed

By pressing “Fan”, the fan speed will be adjusted as follows.

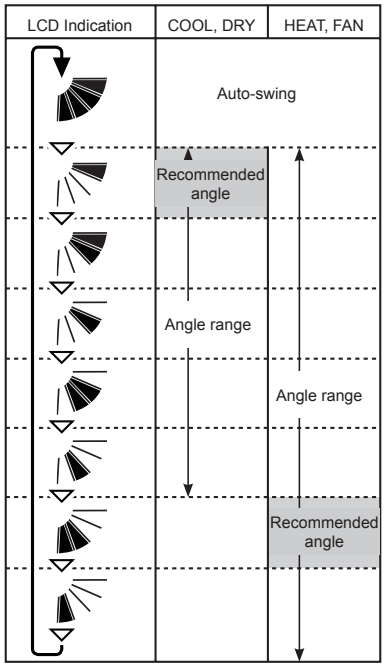


NOTE

- *During the dry operation, the fan speed is automatically adjusted to “LOW” and cannot be changed to another fan speed. (“LOW ” will NOT be displayed on the LCD (liquid crystal display) at this time. The present setting condition will be displayed on the LCD.)*
- *The fan speed settings “HIGH2” and (or) “AUTO” might not be available depending on the type of indoor unit.*

4.2.7.3 Swing louver direction

By pressing “Louver”, the louver direction will be adjusted as follows.



: The Auto-swing operation will start. At this time, the louver graphic will swing repeatedly on the LCD display.

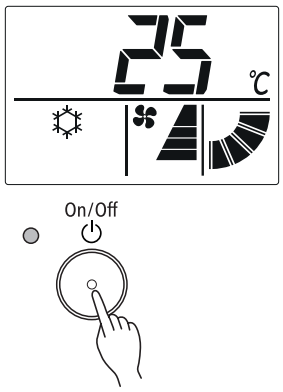
NOTE

- *The airflow angle is different for each indoor unit type. Check for detailed information in “Swing Louver Direction” of each operation manual for indoor unit.*
- *Louver action as depicted on the LCD display might not mimic the actual movement of the louver during the auto-swing operation. To adjust louver position, first set the angle new angle on the LCD display.*
- *Louver action might not stop immediately after the switch is pressed.*

4.2.8 Operation Start

Press “On/OFF”.

The run indicator will be turned ON and the operation will initiate.



NOTE

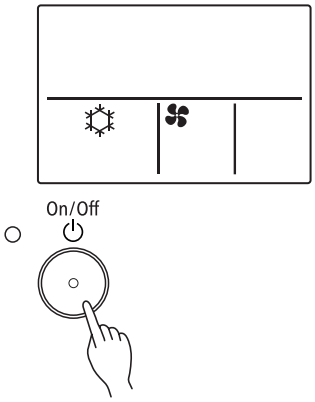
Temperature/Airflow Setting:

- *The setting condition will be entered into memory once the setting is confirmed, therefore a daily setting is not required. In cases where a change of setting is required, refer to items “4.2.5 Operation Mode (Cooling, Heating, Dry, Cooling/Heating Automatic and Airflow Operation)” and “4.2.7.1 Temperature setting”*

4.2.9 Operation Stop

Press “On/OFF” again.

The run indicator will shut OFF and the operation will be halted.



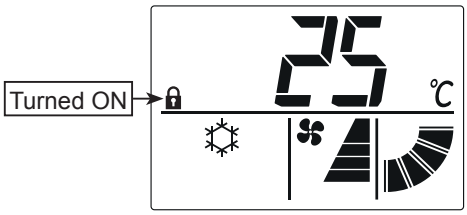
4.2.10 Other Indicators

4.2.10.1 In Normal Conditions

◆ Remote control operation prohibited

When “ ” is turned on, means that the operation with remote controller is not possible.

This is applied for the optional functions: F8, F9, FA, Fb



◆ Thermo-controller

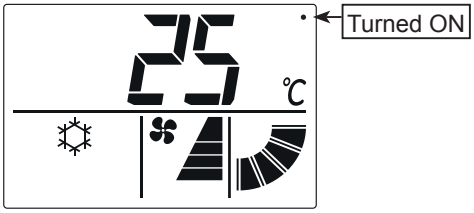
The fan speed is changed to “LOW” at the thermo-controller switch. However, the graphic indication remains unchanged. (Only in the heating operation mode.)

◆ Defrost

Defrost operation

The “ • ” is turned ON during the defrosting.

The indoor fan is stopped although the graphic indication is unchanged.
The louver is fixed at the horizontal position.
The graphic louver symbol on the LCD remains animated.



Operation stoppage during defrosting operation

The RUN LED (Green) goes out when the operation is stopped during defrosting.

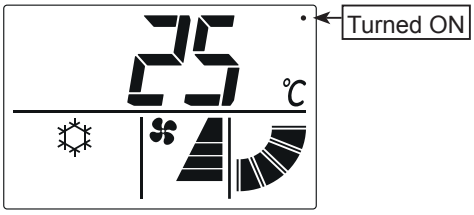
However, the operation continues with the “ • ” displayed, and the unit stops after the defrost operation is finished.

◆ Operation control

Supplying electrical power

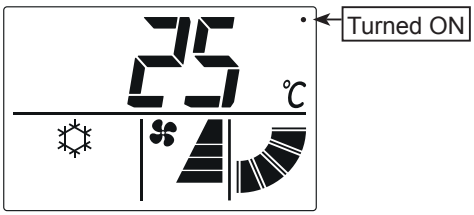
The " • " is activated when electrical power is turned ON.

In this case, the compressor is now in the preheat stage. Operation might be delayed by a maximum of four hours. Do not cut power to the outdoor unit during seasonal heating and cooling operation.



During Hot Start (heating operation only)

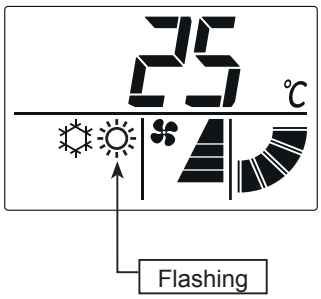
The " • " is turned ON.



Different operation mode

The operation mode set by the controller is different from the outdoor unit operation mode. (Except for the heat recovery system models.)

The operation mode indicator will flash.



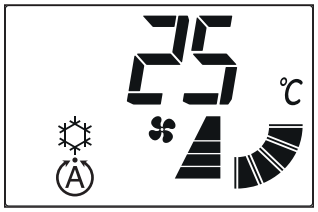
This indicator will flash when a command to COOL has been set by way of the controller during a HEATING operation.

Setback Operation

Setback function can be activated for PC-ARH1E but only with the “External input” control. When the room is not occupied (no key card inserted), the comfort in the room is checked by the indoor unit that permanently runs in low fan speed and a modified set point. When the room is occupied again (key card is inserted), the original setting temperature is restored. The current operation mode of the indoor unit is maintained when Setback operation is started.

The parameter is the temperature differential value to adjust the setting temperature during Setback operation.

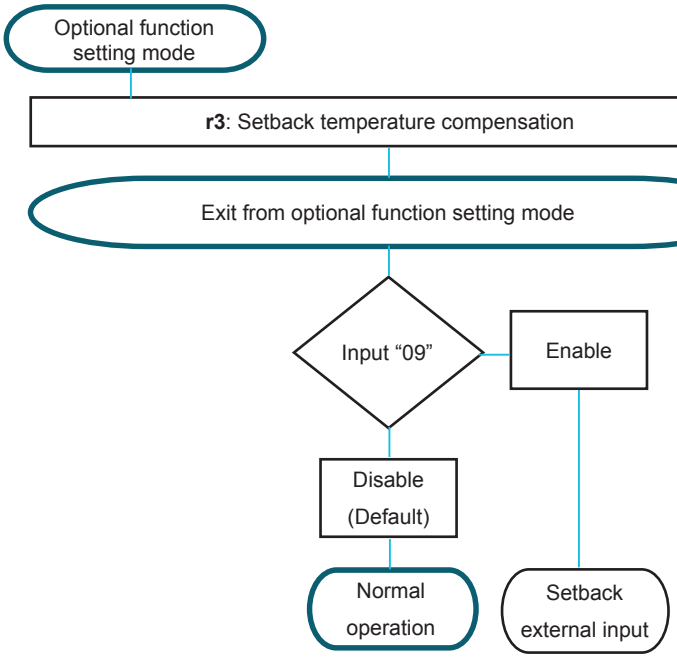
By default,
Cooling: Setpoint +2.5°C
Heating: Setpoint -2.5°C



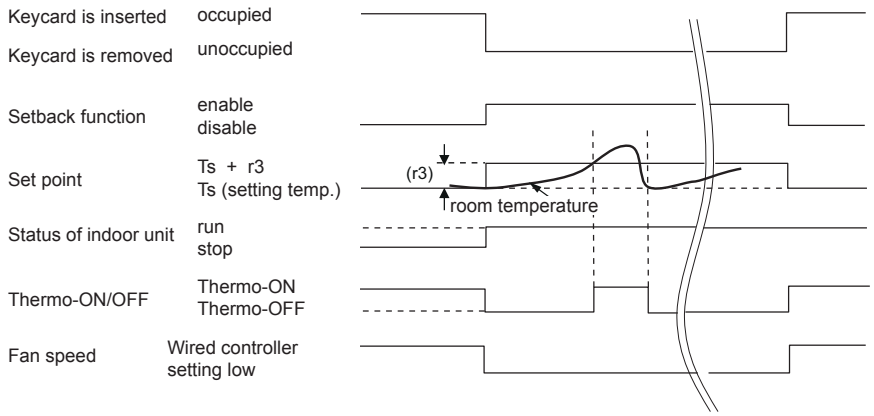
NOTE

Advanced configuration is needed for the use of setback operation and changing compensation for setback. Contact your distributor or dealer for detailed information.

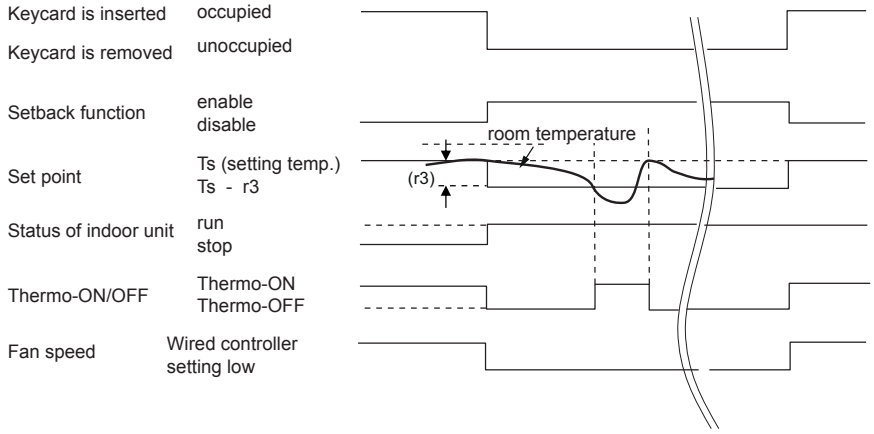
Setback flow chart



Control Operation Time Chart (Cooling/Dry Mode)



Control Operation Time Chart (Heating)

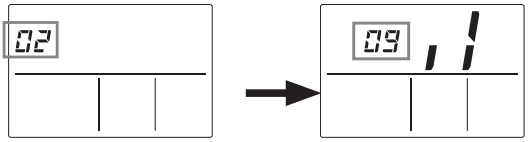


Setting of setback optional functions

Parameter	Description	Setting options
r3	Setback temperature compensation	r3= 0.5 : 0.5ºC r3=1.0 : 1.0ºC r3=1.5 : 1.5ºC r3=2.0 : 2.0ºC r3=2.5 : 2.5ºC r3=3.0 : 3.0ºC r3=3.5 : 3.5ºC r3=4.0 : 4.0ºC r3=4.5 : 4.5ºC r3=5.0 : 5.0ºC r3=5.5 : 5.5ºC

Input setting from the remote control

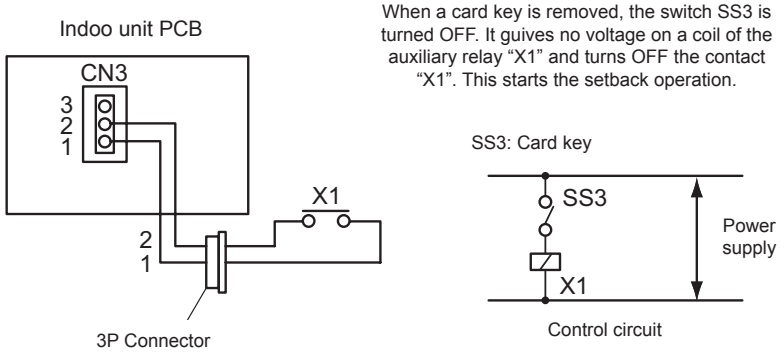
Select 02 in the menu for choosing between function selection and input/output to set the input/output. Select either “Input 1” or “Input 2” and change the setting to “09”.



Build the input circuit

Build a circuit as shown below.

On the indoor unit PCB, use the input terminal (CN3) to receive external signals.



Wiring diagram example of setback operation by external input (example: card key input is set to terminals 1 and 2 of CN3)

A wired controller is required for this function.

Automatic cooling/heating with dual setting

This function is available in standard air-to-air indoor units and is used to switch between heating and cooling operations automatically depending on a cooling set point and a heating set point (dual set point).

In the case of 2-pipe systems, the same operation mode will be applied to all the indoor units of the concerned refrigerant cycle.

In the case of 3-pipe systems, the same operation mode will be applied to all the units connected to the same single CH-Box, or to all the units connected to the same Multi CH-Box outlet.

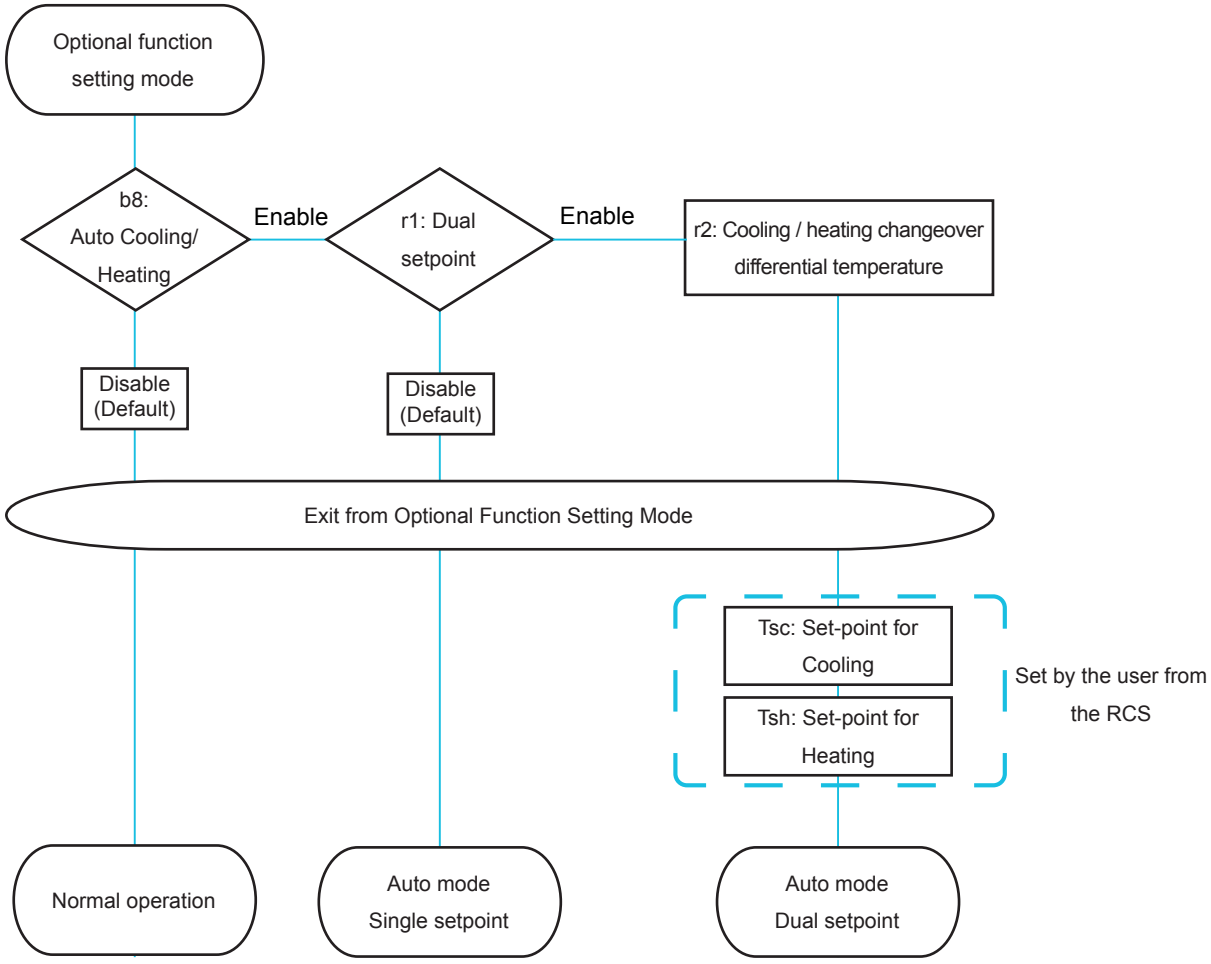
It is recommended to use this function with heat recovery systems (3-pipe systems).

This function can be activated by the optional parameters (b8, r1...) available in the optional function menu of the controller.

NOTE

- *Systems without CH-Box (2-pipe system) are not designed to operate in the simultaneous Cool/Heat mode when more than one indoor unit is connected to the same outdoor unit, but only in the cool or heat mode. Thus all indoor units connected to the same outdoor unit should be changed from one mode to another at the same time. The same is applicable to the system with CH-Box (3-pipe system) for all indoor units connected to the same CH-Box.*
- *This function is not available for HYDRO FREE, KPI and DX-Interface.*

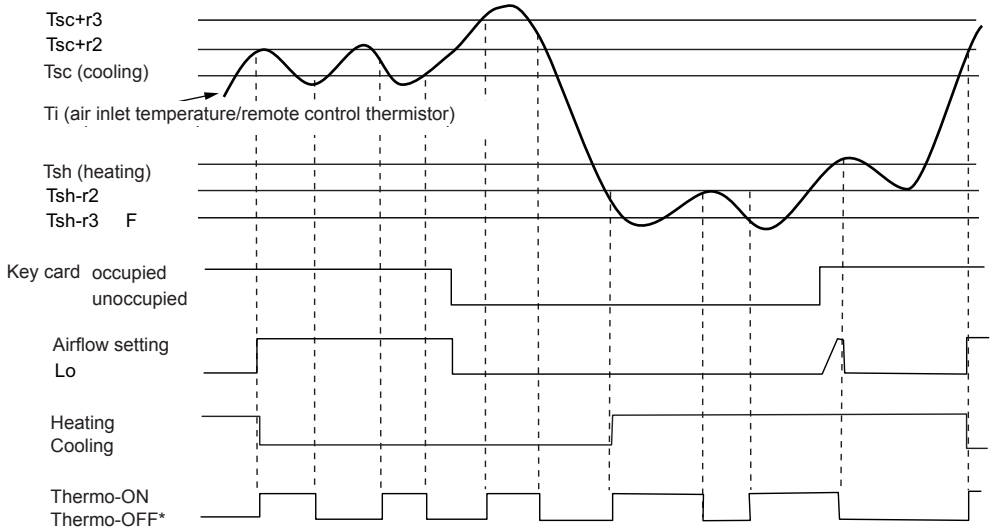
Flow chart of automatic cooling/heating with dual setting



Operation of dual setting during simultaneous cooling and heating with the setback control activated

In case both setback temperature and automatic cooling/heating with dual setting are performed, the operation is shown below.

For dual setpoint, the heating set point must be lower than the cooling set point.



* The Thermo-OFF conditions are the same as the current cooling/heating automatic control.

Optional function setting of automatic cooling/heating with dual setting

Parameter	Description	Setting option
b8	Automatic cooling/heating operation This function allows the automatic switching of cooling and heating modes of the units in the same refrigerant cycle.	b8=00 : Function not activated b8=01 : Function activated
r1	Dual setpoint Function in the automatic cooling/heating mode allowing the preset of respective setpoint for cooling and heating.	r1=00 : Function not activated r1=01 : Function activated
r2	Setting of temperature differential for switching cooling and heating. This setting is possible when r1=01.	r2=0.5 : 0.5ºC r2=1.0 : 1.0ºC r2=1.5 : 1.5ºC r2=2.0 : 2.0ºC r2=2.5 : 2.5ºC r2=3.0 : 3.0ºC

4.2.11 In Abnormal Conditions

4.2.11.1 Abnormality

- The RUN LED (Red) is flashing.
- The indoor unit number, alarm code, model code, and the connected number of indoor units are displayed on LCD.
- In cases where a number of indoor units are connected, the above items for each indoor unit are displayed one by one.

4.2.11.2 Power Failure

- All indicators are off.
- Once a unit is shut down by a power failure, it cannot be restarted after the power recovers. Repeat starting procedures again.
- In instances where the power failure and recovery are instantaneous, the unit will restart automatically.

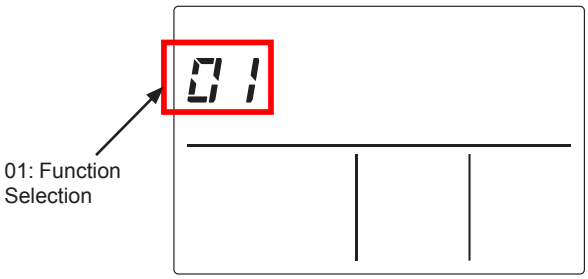
4.2.11.3 Electronic interference

For instance, if a unit is in a shutdown state and all indicators are OFF, this condition could have been induced by the reaction of the unit's micro-computer fail-safe protections against electronic interference (EMI). If this is the case, perform restart procedures.

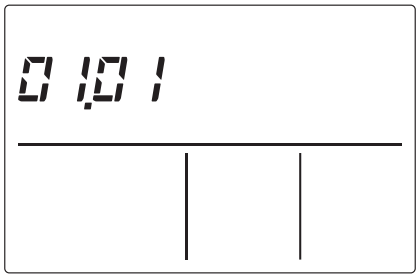
4.2.12 Optional functions

1 Press and hold "▽" for "Temp" and "Fan" simultaneously for at least three seconds during the normal mode (when unit is not operated).

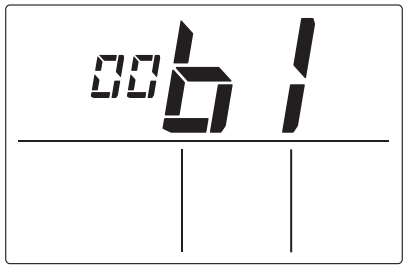
2 Select the optional mode by pressing "▽" or "△" for "Temp" and press "Fan".



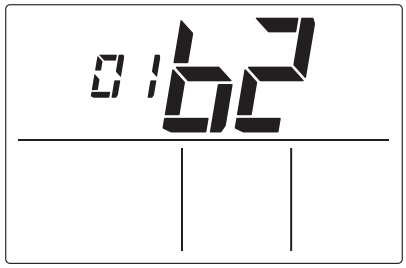
3 Select the indoor unit by pressing "▽" or "△" for "Temp" and press "Fan".
(This screen is NOT displayed when there is only one indoor unit connected with the controller. In this case, (4) will be displayed.)



4 Press "▽" or "△" for "Temp" and select the item.



5 Press "Fan" and change the setting.



6 Press "▽" and "△" for "Temp" simultaneously to return to the normal mode.

4.2.12.1 Optional functions list

Item	Optional function	Individual setting	Settings	Setting conditions	Description
b1	Heating temperature compensation Models: RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3 RPI-FSN5E RPI-FSN3E(P)E(-f) RPIM-FSN4E(-DU) RPK-FSN(H)3M	○	00	Normal (factory setting) (Setting Temperature + 4ºC)	This function is used to adjust the temperature difference between the temperature read by the inlet sensor and the real room temperature. This is useful when the inlet air thermistor is not placed inside the indoor unit or due to uneven heat load. Note: • *The "02", "03", "04" settings may not be available depending on the type of indoor unit.* • *This setting shall be performed separately for each indoor unit, even in case that multiple indoor units are connected to one remote controller.*
			01	No compensation (Setting Temperature)	
			02	Setting Temperature + 2ºC	
			03	Setting Temperature + 3ºC	
			04	Setting Temperature + 1ºC	
	Heating temperature compensation Models: RPF(I)-FSN2E	○	00	RPF(I)-FSN2E: Normal (factory setting) (Setting Temperature + 2ºC)	
			01	No compensation (Setting Temperature)	
			02	Setting Temperature + 2ºC	
b2	Circulation function at heating Thermo- OFF	○	00	Function disabled (factory setting)	This function keeps the fan running during the Thermo-OFF sequence, at the fan speed set on the remote control switch, to prevent the stratification of air in the room.
			01	Function enabled	
b3	Not Used	-	00	-	Use as 00 conditions
			01		
b4	Change of filter cleaning period	○	00	Standard (1200 hours)	This function is used to modify the period of operation after which the air filter cleaning indication is shown in the remote control. For RPK-FSN(H)3M models, the factory setting is b4=00: Standard setting 200 hours.
			01	100 hours	
			02	1200 hours (factory setting)	
			03	2500 hours	
			04	No indication	
b5	Locking of operation mode (Not available for models KPI-E4)	×	00	Function disabled (factory setting)	This function prevents the modification of the operation mode of the unit from the remote controller and from central controls, once it has been selected.
			01	Function enabled	
b6	Locking of temperature setting	×	00	Function disabled (factory setting)	This function prevents the modification of the setting temperature of the unit from the remote controller and from central controls, once it has been selected.
			01	Function enabled	
b7	Setting operation mode as cooling only (Not available for models KPI-E4)	×	00	Function disabled (factory setting)	This function is used to limit the operation mode to cooling only and to prevent heating mode from being enabled.
			01	Function enabled	

Item	Optional function	Individual setting	Settings	Setting conditions	Description
b8	Automatic COOL/ HEAT operation (Not available for models KPI-E4)	×	00	Function disabled (factory setting)	This function enables the selection of Auto cool/heat operation mode. If the function is not activated, Auto cool/heat mode cannot be selected on the remote control switch.
			01	Function enabled	
b9	Locking of fan speed setting. (Not available for models KPI-E4)	×	00	Function disabled (factory setting)	This function prevents the modification of the fan speed of the unit from the remote controller and from central controls, once it has been selected.
			01	Function enabled	
bA	Not available	-	"- -" permanent	Not available	–
bb	Cooling setting temperature correction	×	00	No compensation (factory setting)	This function decreases the setting temperature and is used to produce longer cooling periods.
			01	Setting temperature decreased by 1ºC	
			02	Setting temperature decreased by 2ºC	
bC	Not used	-	00	-	Use at 00 conditions
			01		
bd	Not used	-	00	-	Use at 00 conditions
			01		
bE	Not used	-	00	-	Use at 00 conditions
			01		
C1	Not used	-	00	-	Use at 00 conditions
			01		
C2	Not available	-	"- -" permanent	-	–
C3	Not used	-	00	-	Use at 00 conditions
			01		
	Only for DX- Interface, KPI- E4E and KPI- X4E: Fan stoppage delay		00	Function disabled (factory setting)	This function keeps the fan in operation for 60 minutes after stop of the KPI unit or DX-Interface.
			01	60 minutes	
C4	Not used	-	00	-	Use at 00 conditions
			01		
C5	Static pressure selection Models RPI-FSN5E RPIM-FSN4E(-DU) RPI-FSN3(P)E(-f)	○	00	Standard static pressure (factory setting)	This function is used to change the static pressure of the RPI units from the remote control.
			01	High static pressure	
			02	Low static pressure	
	Increase of fan speed during normal operation (not during heating Thermo-OFF) Models RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3 RPK-FSN(H)3M RPF(I)-FSN2E	○	00	Standard (factory setting)	This function is used to change the fan speed of indoor units installed in high ceilings.
			01	Hi Speed 1	
			02	Hi Speed 2	

	Fan speed setting on the remote controller			
C5	High H	High	Medium	Low
0	Hi2	Hi	Me	Lo
1	Hi2	Hi1	Hi	Me
2	Hi2	Hi2	Hi1	Hi

(This function C5 is not available for DX-Interface models)

Item	Optional function	Individual setting	Settings	Setting conditions	Description
C6	Increase of fan speed at heating Thermo- OFF (Not available for models KPI-E4 and KPI-X4E)	○	00	Function disabled (factory setting)	This function is used to increase the fan speed when the thermostat reaches the set temperature in heating according to the setting of function C5.
			01	Function enabled	
C7	Cancellation of forced compressor operation for at least 3 minutes	○	00	Function disabled (factory setting)	This function is available depending on the setting of function b3.
			01	Function enabled (Compressor operation during 3 minutes is no longer forced)	
	Only for KPI-E4E and KPI-X4E CO_2 sensor enabled		00	Sensor non enabled (factory setting)	Via 7-segments display set the option CE (00: ON/OFF Sensor (Default); 01: 4-20mA 02: 0-10V)
			01	Sensor enabled/activated	
C8	Control by the temperature sensor of the remote control switch **NOTE** *The remote control switch shall be installed in a proper place for the correct detection of room temperature by its temperature sensor.*	○	00	Control by the air inlet sensor of indoor units (factory setting)	This function specifies the temperature sensor to be used as control sensor by the indoor unit.
			01	Control by the temperature sensor of the remote control switch	
			02	Control by the average value of the air inlet sensor of indoor units and the temperature sensor of the remote control switch. (Air inlet + Remote control switch)/2	
	Control sensor when a remote sensor is connected to the THM4 connector in the indoor unit PCB **NOTE** *The remote sensor shall be installed in a proper place for the correct detection of room temperature.* Model RPF(I)-FSN2E	○	00, 01, 02	When a remote sensor is connected to THM4, this remote sensor is used as control sensor, whichever the setting for C8 (factory setting C8=00)	
	Control sensor when a remote sensor is connected to the THM4 connector in the indoor unit PCB **NOTE** *The remote sensor shall be installed in a proper place for the correct detection of room temperature.* Models RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3 RPI-FSN5E RPI-FSN3E(P)E(-f) RPIM-FSN4E(-DU) RPK-FSN(H)3M	○	00, 02	Air temperature control using the average value of the air inlet thermistor and the remote sensor (factory setting C8=00) (Air inlet + Remote sensor)/2	
			01	Air temperature control using the remote sensor	

Item	Optional function	Individual setting	Settings	Setting conditions	Description
C9	Not available	-	"- -" permanent	–	–
CA	Not available	-	"- -" permanent	–	–
Cb	Selection of forced stoppage logic	○	00	Forced stoppage input: A contact, normally open contact (factory setting)	This function determines the logic operation for the forced stoppage contacts.
			01	Forced stoppage input: B contact, normally closed contact	
CC	Not used	–	00	-	Use at 00 conditions
			01		
	Only for DX-Interface, KPI-E4E and KPI-X4E: High ventilation speed		00	Function disabled (factory setting)	This function set the unit runs in high fan speed regardless the setting from remote control switch.
			01	Function enabled	
Cd	Stop of indoor unit fan during cooling Thermo-OFF conditions **NOTE** *For model RPI-FSN3E(P)E and RCD-FSN3, this function is NOT available.*	-	00	Fan speed during cooling Thermo- OFF: Low (factory setting)	The operation of the indoor unit fan is stopped in cooling Thermo- OFF conditions when using the additional remote temperature sensor THM-R2AE (connected to THM4) or the PC- ARFP1E temperature sensor. CB must be set to 01 to use the CB=01 setting.
			01	Indoor unit fan is stopped during cooling Thermo-OFF	
CE	Stop of indoor unit fan during heating Thermo-OFF conditions. Stop of indoor unit fan during heating Thermo-OFF conditions (with remote control switch temperature sensor)	-	00	Fan speed setting during heating Thermo-OFF: Low (factory setting)	The indoor unit uses the PC-ARFP1E temperature sensor to monitor the room temperature when the fan is stopped (heating Thermo-OFF fan stop sequence) CB must be set to 01 to use the CE=01 setting. Control by remote temperature sensor connected to THM4 is not permitted (use EB function in that case).
			01	Indoor unit fan is stopped during heating Thermo-OFF. *(In case that automatic louver is set, the louvers will keep operating in both Thermo-ON and Thermo-OFF conditions)*	
CF	Modification of louver swing angle Models: RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3	○	00	Standard (7 steps) (factory setting)	This function adjusts the angle of the air outlet louver. *(Changes to the setting of this function are applied after turning the power supply off and on again, or after the automatic louver has made a full cycle in automatic mode)*
			01	Cold draft prevention (5 steps) *(Cannot be set to the lower two steps; lower 2 steps cut off)*	
			02	High ceilings (5 steps) *(Cannot be set the upper two steps; upper 2 steps cut off)*	
	Models: RPK-FSN(H)3M	○	00	Standard (7 steps) (5 steps for cooling / dry mode)	
			01	Cold draft prevention (5 steps for heating and fan only) *(Cannot be set to the lower two steps, lower 2 steps cut off)*	
			02	Not used	
d1	Management of indoor unit operation after a power supply cut off - option 1	○	00	Function disabled (factory setting)	When power supply is restored, the indoor units controlled by the wired remote control switch are turned on regardless of their ON/ OFF status at the time of the last power cut off.
			01	Function enabled	
d2	Not available	-	"- -" permanent	–	–

Item	Optional function	Individual setting	Settings	Setting conditions	Description
d3	Management of indoor unit operation after a power supply cut off - option 2	○	00	Function disabled (factory setting)	When power supply is restored, the indoor units controlled by the wired remote control switch are turned on automatically ONLY if they were already ON at the time of the last power cut off. If indoor units were OFF when power was turned OFF, they remain in OFF status when power is restored.
			01	Function enabled	
d4	Not used	-	00	-	Use at 00 conditions
			01		
d5	Prevention of low air outlet temperature in heating mode	○	00	Function disabled (factory setting)	This function prevents the occurrence of an excessively cold air flow in heating mode by decreasing the fan speed during heating operation, also taking into account the setting of function C5.
			01	Function enabled	
d6	Not Used	-	00	-	Use as 00 conditions
			01		
d7	Not available	-	"- -" permanent	–	–
E1	Not Used	-	00	-	Use as 00 conditions
			01/02		
	KPI: Ventilation mode	O	00	Automatic ventilation (factory setting)	This function allows the outdoor air damper to be opened in All Fresh operation mode. This mode allows the full opening of the outdoor air damper (according to the control system).
			01	Ventilation with total heat exchanger	
			02	Ventilation with bypass (no total heat exchange)	
	DX-Interface: "A" Offset for Thermo- OFF in control by outlet for DX-Interface		00	Disabled (factory setting)	
			01	2ºC	
			02	4ºC	
	Econofresh: cooling mode		00	Standard process (factory setting)	This function allows the outdoor air damper to be opened in All Fresh operation mode. This mode allows to fully open the outdoor air damper (according to the control system).
			01/02	All Fresh	
E2	Not Used	-	00	-	Use as 00 conditions
			01		
	KPI: Increase of air supply volume	O	00	Disabled function (factory setting)	This function is used to make the room pressure higher or lower than the surrounded room. One of the fans increases its speed while the other runs according the remote controller Hi/Me/Lo changes to Hi/Hi/Me
			01	Enabled function	
	Econofresh enthalpy sensor		00	Disabled function (factory setting)	This function selects the enthalpy sensor input for Econofresh.
			01	Enabled function	
E3	Not used	-	00	-	Use at 00 conditions
			01		
	Only for KPI-E4E and KPI-X4E: Selection of the fan for function E2	–	00	Activated for supply fan	This function es selects which fan will increase the speed (when E2 enables this function).
			01	Activated for exhaust fan	

Item	Optional function	Individual setting	Settings	Setting conditions	Description
E4	Not Used	-	00	-	Use as 00 conditions
			01/02		
	KPI: Pre-cooling / pre-heating period	O	00	Disabled (factory setting)	This function delays unit startup with energy recovery
			01	30 minutes	
			02	60 minutes	
	Econofresh: CO_2 sensor		00	Disabled (factory setting)	This function selects the CO_2 gas sensor input for Econofresh.
			01/02	CO_2 sensor (required setting E1=00)	
E5	Not used	-	00	-	Use at 00 conditions
			01		
	Only for DX-Interface, KPI-E4E and KPI- X4E: High ventilation after switch ON	–	00	Disabled (factory setting)	This function forces that the unit will operate in high speed during 60 minutes after fan start. After this time the fan will be changed to setting value.
			01	60 minutes	
E6	Period of indoor fan operation after cooling operation stoppage	○	00	Disabled function (factory setting)	This function prevents the condensation in the unit by keeping the fan running after the unit operation has been turned OFF.
			01	60 minutes	
			02	120 minutes	
E7	Not used	-	00	-	Use at 00 conditions
			01		
E8	Control for stop of the indoor unit fan during heating Thermo- OFF conditions (with remote sensor THM- R2AE connected to the THM4 connector in the indoor unit PCB)	○	00	Fan operation in Low speed	This function stops the fan to prevent cold draughts or overheating. C8 must be set to 01 to use the E8=01 setting. The connection of a THM-R2AE remote temperature sensor to the THM4 port in the indoor unit PCB is required. The remote sensor shall be installed in a proper place for the correct detection of room temperature. (In case that automatic louver is set, the louver will keep operating in both Thermo-ON and Thermo- OFF condition.)
			01	Fan stop in Thermo-OFF conditions	
E9	Not Used	-	00	-	Use as 00 conditions
			01		
EA	Not used	-	00	-	Use at 00 conditions
			01		
			02		
Eb	Indoor unit fan control during cooling Thermo-OFF conditions	○	00	Function disabled (factory setting)	This function decreases speed of the indoor unit fan during cooling Thermo-OFF, to reduce the spread of smells and humidity.
			01	Low	
			02	Slow	
EC	Forced Thermo-ON when stopping in cooling operation	○	00	Function disabled (factory setting)	This function is used to force Thermo-ON during 6 minutes when stopping in cooling operation.
			01	Enabled	

Item	Optional function	Individual setting	Settings	Setting conditions	Description
Ed	Not used	-	00	-	Use at 00 conditions
			01		
EE	Control in “Automatic” indoor fan speed mode	○	00	Function disabled (factory setting)	This function limits the speed of the indoor fan when room temperature is close to the setting temperature.
			01	Enabled	
EF	Control in “Automatic” indoor fan speed mode (supporting High H) Models: RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3 RPI-FSN5E RPI-FSN3E(P)E(-f) RPIM-FSN4E(-DU) RPK-FSN(H)3M	○	00	Function disabled	This function limits the speed of the indoor fan when room temperature is close to the setting temperature, allowing to reach High H speed.
			01	Function enabled	
F0	Not available	-	“- -” permanent	–	–
F1	Automatic OFF timer setting Models: RCI-FSN4 RPC-FSN3 RPK-FSN3M RPI-FSN5E RPIM-FSN4E(-DU) RCD-FSN3 RCIM-FSN4E RPI-FSN3(P)E	×	00	Function disabled (Factory setting)	This function sets an automatic OFF timer to switch OFF the indoor units controlled by the remote control switch (when the units have been started by remote control). *(Do not set the values "0C"-"0F" when two remote control switches are used in the same remote control group)*
			01	1 hour	
			02	2 hours	
			03	3 hours	
			04-24	(04-24) hours	
			0A	30 minutes	
			0B	90 minutes	
			0C	40 minutes } Do not set these when two wired controllers are used.	
			0D	45 minutes	
			0E	50 minutes	
			0F	55 minutes	
	Automatic OFF timer setting Models: RPF(I)-FSN2E	×	00	Function disabled (Factory setting)	This function is used to set the automatic timer to switch off when the unit has been started by remote control.
			01	1 hour	
			02	2 hours	
			03	3 hours	
			04-24	(04-24) hours	
			0A	30 minutes	
			0B	90 minutes	
F2	Remote control main-sub setting	×	00	Main (Master remote control) (Factory setting)	This function is used to define which remote control switch is used as master or slave, when two remote controllers are connected to one indoor unit.
			01	Sub (Slave remote control)	

Item	Optional function	Individual setting	Settings	Setting conditions	Description
F3	Automatic reset of setting temperature	×	00	Function disabled (Factory setting)	This function is used to limit unit operation and save energy. The setting temperature is automatically set to the value defined with functions "F5" or "F6", according to the current operation mode, after the time set with function "F4" has passed since the last manual change of setting temperature. In case that the values of "F5" or "F6" are out of the limits set with functions "FC" and "Fd", limitations set by "FC" and "Fd" have priority.
			01	Function enabled	
F4	Automatic reset time	×	00	30 minutes (factory setting)	This function sets the automatic reset time delay for function F3.
			01	15 minutes	
			02	60 minutes	
			03	90 minutes	
F5	Automatic reset temperature for cooling	×	19	19°C	This function defines the default temperature set point for the automatic reset function F3 in FAN/COOL/DRY modes.
			20	20°C	
			21	21°C	
			. . .	. . .	
			24	24°C	
			25	25°C (factory setting)	
			26	26°C	
			. . .	. . .	
			28	28°C	
			29	29°C	
			30	30°C	
F6	Automatic reset temperature for heating	×	17	17°C	This function defines the default temperature set point for the automatic reset function F3 in HEAT mode.
			18	18°C	
			. . .	. . .	
			20	20°C	
			21	21°C (factory setting)	
			25	25°C	
			. . .	. . .	
			28	28°C	
			29	29°C	
			30	30°C	
F7	Prevention of operation stoppage due to wrong operation of the remote controller	×	00	Function disabled (factory setting)	Operation is stopped by pressing the run/stop switch for 3 seconds.
			01	Function enabled	
F8	Lock function for operation mode selection	×	00	Function disabled	This function is used to prevent changes to the operation mode.
			01	Function enabled (factory setting)	

Item	Optional function	Individual setting	Settings	Setting conditions	Description
F9	Lock function for temperature setting	×	00	Function disabled	This function is used to prevent changes to the temperature setting.
			01	Function enabled (factory setting)	
FA	Lock function for fan speed selection	×	00	Function disabled	This function is used to prevent changes to the fan speed.
			01	Function enabled (factory setting)	
Fb	Lock function for swing louver operation	×	00	Function disabled	This function is used to prevent changes to the automatic louver operation.
			01	Function enabled (factory setting)	
FC	Lower limit of setting temperature for cooling (Minimum value of setting temperature allowed in cooling)	×	00	Function disabled 19°C is the standard minimum set point. (factory setting)	This function defines the lowest temperature setting value for FAN/ COOL/DRY modes.
			01	+1°C (Lower limit 20°C)	
			02	+2°C (Lower limit 21°C)	
			03	+3°C (Lower limit 22°C)	
			· · ·	· · ·	
			08	+8°C (Lower limit 27ºC)	
			09	+9°C (Lower limit 28°C)	
			10	+10°C (Lower limit 29°C)	
Fd	Upper limit of setting temperature for heating (Maximum value of setting temperature allowed in heating)	×	00	Function disabled 30°C is the standard maximum set point. (factory setting)	This function defines the highest temperature setting value for HEATING mode. Models: RPF(I)-FSN2E up to 20ºC (FC=10)
			01	-1°C (Upper limit 29°C)	
			02	-2°C (Upper limit 28°C)	
			03	-3°C (Upper limit 27°C)	
			· · ·	· · ·	
			10	-10°C (Upper limit 20°C)	
			11	-11°C (Upper limit 19°C)	
			12	-12°C (Upper limit 18°C)	
FE	Not used	-	00	-	Use at 00 conditions
			01		
			02		
FF	Not Used	-	00	-	Use as 00 conditions
			01		
H1	No indication of maintenance alarm	×	00	Displayed	This function is used to display or hide the maintenance alarm indication.
			01	Hidden	
H2	Indication of hot start (No indication of operation limitation)	×	00	Displayed	This function is used to display or hide the automatic control indication. Models: RPF(I)-FSN2E Not available, use at 00 conditions
			01	Hidden	
H3	Operation mode change restriction	×	00	Unlimited operation	**NOTE** *"01" is available only when one controller is used. Do not use this setting when two controllers are used.*
			01	Operation mode set by central control equipment + "Fan" mode	
			02	Operation mode change not available (Hide operation mode) (Factory setting)	

Item	Optional function	Individual setting	Settings	Setting conditions	Description
H4	Not Used	-	00	-	Use as 00 conditions
			01		
	KPI: Operation modes for the ventilation unit with energy recovery	o	00	Air conditioning only (factory setting)	This function is only available for ventilation units with energy recovery.
			01	Ventilation only	
			02	Air conditioning + ventilation	
H5	Not Used	-	00/01	-	Use as 00 conditions
H6	Not Used	-	00/01	-	Use as 00 conditions
J1	Not used	-	00	-	Use at 00 conditions
			01		
J2	Not used	-	00	-	Use at 00 conditions
			01		
J3	Colour of the Run indicator	×	00	Green (factory setting)	–
			01	Red	
J4	Not used	-	00/01	Not used (Use as 00 conditions)	
J5	Not used	-	00	-	Use at 00 conditions
			01		
J6	Not used	-	00	-	Use at 00 conditions
			01		
J7	Not used	-	00/01	-	Use as 00 conditions
J8	Eco-operation	×	00	Function disabled (factory setting)	When the unit is restarted by the remote control switch, the temperature automatically changes to the setting temperature of "F5" or "F6". Models: RPF(I)-FSN2E Not available, use at 00 conditions
			01	Function enabled	
J9	Not used	-	00	-	Use at 00 conditions
			01		
JA	Not Used	-	00/01	-	Use as 00 conditions
Jb	Not Used	-	00/01	-	Use as 00 conditions
F1	Not used	-	00	-	Use at 00 conditions
			01		
F2	Not used	-	00	-	Use at 00 conditions
			01		
F3	Not used	-	00	-	Use at 00 conditions
			01		
F4	Not used	-	00	-	Use at 00 conditions
			01		
			02		
			03		

Item	Optional function	Individual setting	Settings	Setting conditions	Description
A5	Detection level of the motion sensor kit	○	00	Standard (factory setting)	Models: RPF(I)-FSN2E Not available, use at 00 conditions. This parameter defines the sensitiveness of the motion sensor. The amount of activity in the room is assessed according to a different scale based on this setting. Detailed information about the operation of the motion sensor can be found in the technical documentation of the indoor units.
			01	High	
			02	Low	
A6	Selection of allowed operation modes when the control sensor of the indoor unit is set by C8 function	○	00	All modes allowed	This function is used to select the operation modes in which the setting of C8 (use of remote control switch sensor or remote sensor on THM4 to control the indoor unit) is enabled.
			01	Only cooling/dry allowed	
			02	Only heating allowed	
			03	All modes allowed	
A7	Not used	○	00	-	Use at 00 conditions
			01		
			02		
			03		
A8	Control for the prevention of condensation on the louvers.	○	00	Function disabled (factory setting)	Condensation may occur around air outlet during COOL/DRY operation with horizontal air flow or downward air flow for long periods. This function is used to prevent condensation by moving the louver swing angle to the third step automatically for 30 minutes every 1 hour. (In RPK units, this function is activated by means of DSW2-4 instead of the K8 optional function)
			01	Function enabled	
A9	Not used	-	00	-	Use at 00 conditions
			01		
AA	Not used	-	00	-	Use at 00 conditions
			01		
L1	Not used	○	00	-	Use at 00 conditions
			01		
			02		
			03		
L2	Not used	-	00	-	Use at 00 conditions
			01		
			02		
			03		
L3	Operation of the louvers in energy-saving Thermo-OFF (Cooling / Dry mode)	○	00	Direct air blow Low (factory setting)	Power save must be ON in order to use this function (L5 must be set to 01). This function is used to establish louver swinging operation ranging from continuous swing to static operation. Low: Continuous louver swing Medium: Louver swing with intermittent stops for 20/40 seconds High: Louver stopped at full opening position, according to the setting of CF.
			01	Direct air blow Medium	
			02	Direct air blow High	
			03	Disabled	

Item	Optional function	Individual setting	Settings	Setting conditions	Description
L4	Fan acceleration in energy-saving Thermo-OFF (Cooling mode)	○	00	Function disabled (factory setting)	This function increases fan speed by one step to prevent the loss of comfort due to the forced Thermo-OFF for energy saving during cooling operation.
			01	Function enabled	
L5	Louver swing operation during energy-saving forced Thermo-OFF	○	00	Function disabled (factory setting)	This function is used to enabled the setting of function L3.
			01	Function enabled	
L6	Not used	-	00	-	Use at 00 conditions
			01		
L7	Not available	-	"- -" permanent	–	–
L8	Not used	-	00	-	Use at 00 conditions
			01		
L9	Not used	○	00	-	Use at 00 conditions
			01		
LA	Not used	-	00	-	Use at 00 conditions
			01		
Lb	Not used	-	00	-	Use at 00 conditions
			01		
P1	Setting temperature in 0.5ºC steps	×	00	Enabled (0.5 °C steps) (factory setting)	This function is used to define whether setting temperature is adjusted in 0.5ºC steps (when set to "00") or in 1ºC steps (when set to "01"). This setting also determines whether the resolution of temperature differential of the thermistor is 0.5ºC (when set to "00") or 1ºC (when set to "01").
			01	Disabled (1 °C steps)	
P2	Not used	-	00	-	Use at 00 conditions
			01		
P3	Temperature sensor displayed	×	00	Inlet air thermistor (Tin)	This function is used to select the thermistor whose temperature is shown when function P4 is set to 01.
			01	Outdoor air thermistor (Tout)	
			02	Remote controller thermistor (RCS)	
			03	Remote sensor (THM4)	
P4	Not used	-	00	-	Use at 00 conditions
			01	-	
P5	Display of setting temperature when operation mode is Fan	×	00	Shown	This function is used to hide the display of setting temperature during operation in fan mode.
			01	Hidden	
P6	Operation of the ECO button	×	00	ECO button enabled (factory setting)	The operation of ECO button is disabled when P6 is set to 01
			01	ECO button disabled	
P7	Prohibition of menu screen transition	×	00	Function disabled (factory setting)	This function is used to prohibit the access to the menu screens. The text "Display disabled" appears on screen instead.
			01	Function enabled	
P8	Not used	-	00	-	Use at 00 conditions
			01		
P9	Not used	-	00	-	Use at 00 conditions
			01		
PA	Daylight saving time	×	00	1 hour	This function is used to set the amount of adjustment when daylight saving time is applied.
			01	2 hours	

Item	Optional function	Individual setting	Settings	Setting conditions	Description
Pb	Not used	-	00	-	Use at 00 conditions
			01		
PC	Not used	-	00	-	Use at 00 conditions
			01		
91	Not used	×	00	-	Use at 00 conditions
			01		
92	Not used	×	-	-	Not used
93	Not used	×	-	-	Not used
94	Not used	×	-	-	Not used
95	Not used	×	-	-	Not used
96	Not used	-	00	-	Use at 00 conditions
			01		
97	Not used	-	00	-	Use at 00 conditions
			01		
98	Not used	-	00	-	Use at 00 conditions
			01		
99	Not used	-	00	-	Use at 00 conditions
			01		
9A	Not used	-	00	-	Use at 00 conditions
			01		
9b	Not used	-	00/01	-	Use as 00 conditions
9C	Not used	-	00/01/02/03/04	-	Use as 00 conditions
9d	Not used	-	00-11	-	Use as 00 conditions
r1	Dual setpoint	×	00	Function disabled (factory setting)	This function allows the setting of independent setpoints for cooling and heating in the automatic cooling/heating mode.
			01	Function enabled	
r2	Setting of temperature differential for switching cooling and heating	×	0.5	0.5ºC	This function can only be set when function r1 is set to 01.
			1.0	1.0ºC	
			1.5	1.5ºC	
			2.0	2.0ºC	
			2.5	2.5ºC	
			3.0	3.0ºC	
r3	Setback temperature compensation	×	0.5	0.5ºC	This setting is the temperature differential value to adjust the setting temperature during Setback operation.
			1.0	1.0ºC	
			1.5	1.5ºC	
			2.0	2.0ºC	
			2.5	2.5ºC	
			3.0	3.0ºC	
			3.5	3.5ºC	
			4.0	4.0ºC	
			4.5	4.5ºC	
			5.0	5.0ºC	
			5.5	5.5ºC	
r4	Not used	-	00	-	Use at 00 conditions
			01		
r5	Not used	-	00	-	Use at 00 conditions
			01		
r6	Not used	-	00	-	Use at 00 conditions
			01		

Item	Optional function	Individual setting	Settings	Setting conditions	Description
r7	Not used	-	00	-	Use at 00 conditions
			01		
r8	Not used	-	00	-	Use at 00 conditions
			01		
r9	Not used	-	01	-	Use at 00 conditions
			02		
rA	Not used	-	00-07	-	Use at 00 conditions
rb	Not used	-	00-12	-	Use at 00 conditions
S1	Not used	-	00	-	Use at 00 conditions
			01		
S2	Not used	-	00	-	Use at 00 conditions
			01		
S3	Not used		00	-	Use at 00 conditions
			01		
S4	Not used		00	-	Use at 00 conditions
			01		
S5	Not used		00	-	Use at 00 conditions
			01		
S6	Not used		00	-	Use at 00 conditions
			01		
			02		
S7	Not used		00-07	-	Use at 00 conditions
S8	Not used		00-15	-	Use at 00 conditions

NOTE

- *The changes to the optional function settings must be done after 3 minutes have passed since start-up.*
- *It is recommended to keep track of the changes made to optional function settings, for further reference.*
- *The available optional settings are different depending on the indoor and outdoor unit models. Check the technical documentation of the indoor and outdoor units to ensure whether the optional settings are available for these units.*
- *The above optional functions marked with an "X" at the individual setting can change the condition only when "All Rooms" is set.*

4.2.12.2 Remote control optional functions

b1 – Removal of heating temperature compensation (due to uneven heat load)

This function is used when the temperature settings of the remote control switch and the suction air temperature of the indoor unit are required to be equal.

This is useful when the thermistor at the suction side of an indoor unit is removed and installed in another place.

Setting temperature for room temperature control at heating

Setting condition	Actual control temperature
00 (Standard)	Remote control switch setting temperature (indicated value) +4ºC
01	Remote control switch setting temperature (indicated value)
02	Remote control switch setting temperature (indicated value) +2ºC

NOTE

The setting temperature upper limit after compensation is as follows: Inverter Multi Unit: 34°C

b1 – Removal of heating temperature compensation

This function is used to adjust the difference of temperature between the setting temperature of the remote control switch and the inlet air temperature of the indoor unit.

This is useful when the inlet air thermistor is not placed inside the indoor unit or due to uneven heat load or for example in standard heating mode, the suction air temperature is greater than that of the room, therefore the setting temperature used according to the factory setting is calibrated to the indicated temperature +4°C, but depending on the room conditions can be necessary to compensate a smaller value.

b2 – Circulator function at heating Thermo-OFF

This function means that the fan unit remains running after the air conditioning system has stopped in heating mode to prevent the air in the room from stratifying.

This function is useful when the air in the room is stratified (hot air accumulates at the ceiling). Air stratification may occur if has been selected fan speed changes to LOW when the thermostat of the unit is stopped. This function prevents air stratification in the room after stopping the air conditioning system.

This function maintains the fan speed, whether the thermostat is on or off. Hence, the air movement in the room is kept at the same level to ensure even air distribution.

NOTE

- *If the indoor unit has an automatic louver, this function also remains active when the heating thermostat is switched off.*
- *Everyone has a different perception of coolness, heat and air flow and, therefore, this issue should be discussed with the client and the unit set according to the results of the conversation.*

b3 – Not used

b4 – Change of the filter cleaning period

This function is used to modify the period during which the remote control indicates the air filter replacement. The filter cleaning period can be changed depending on the condition of the filter.

NOTE

- *The remaining number of hours before cleaning the filter is factory-set for all indoor unit models b2=02 (1200 hours).*
- *For RPK-FSN(H)3M models Factory-Setting is b4=00: Standard setting 200 hrs.*

b5 – Locking of operation mode

This function is used when the operating mode does not have to be changed. Once the unit operating mode has been selected, this function prevents it from being modified from the remote control.

b6 – Locking of temperature setting

This function is used when the temperature setting does not have to be changed. Once the unit temperature has been selected, this function prevents it from being modified from the remote control.

b7 – Setting operation mode as cooling only

This function is available to use refrigeration mode only and to prevent heating mode from being enabled. When this function is selected, heating operation and the automatic COOL/HEAT operation are cancelled.

b8 – Automatic COOL/HEAT operation

This function allows the automatic change from the cooling to the heating mode for the units with the same refrigerant cycle.

NOTE

This function is not valid when the outdoor unit is an exclusive cooling model or when the function to set operations as an exclusive cooling unit is enabled.

b9 – Locking of fan speed setting

Once the unit fan speed has been selected, this function prevents it from being modified from the remote control.

NOTE

When this function is enabled, the fan speed cannot be changed using the remote control.

bA – Not available

bb – Cooling setting temperature correction

This function decrease the temperature and it is used to obtain longer cooling periods. When this function is enabled, the air conditioning system is switched on/off with the temperature condition below the temperature indicated on the remote control.

NOTE

The lower set temperature limit after offset is 19ºC.

bC – Not used

bd – Not used

bE – Not used

C1 – Not used

C2 – Not available

C3 – Not used

C4 – Not used

C5 – Increasing fan speed / Static pressure selection

This function is used to change the indoor units fan speed installed in high ceilings.

For RPI units this function is used to change the static pressure from the remote control.

C6 – Increasing fan speed at heating Thermo-OFF

This function is used to increase the fan speed when the thermostat reaches the set temperature in heating using function C5.

NOTE

The fan speed does not increase when the thermostat is switched off with the function setting (C5).

C7 – Cancellation of forced compressor operation for at least 3 minutes

This function is available when b3 (Forced compressor operation for at least three minutes through C7 setting) is set 00 (C7 setting possible).

This function allows that the compressor are not forced 3 minutes operation.

NOTE

In the case of SET FREE units, the forced compressor operation for at least 3 minutes fixed as a standard function.

C8 – Thermistor of remote control switch and remote sensor

This function is useful when the unit is to be controlled by the thermistor included in the remote control or by remote sensor instead of by the suction air thermistor. It determines the thermistor to control the air temperature.

NOTE

When the function is set to "01" or "02", if the temperature detected by the remote control thermistor is abnormal due to a fault in the remote control thermistor or another fault, the Air Inlet Thermistor on the indoor unit is used automatically.

C9 – Not available

CA – Not available

Cb – Selection of forced stoppage logic

This function determines the operating logic for the forced stoppage contacts.

The setting conditions and contact logic are shown in the following table:

Setting condition				
Setting	Contact	Contact logic	Activation contact	
			Open	Closed
00	Contact A	Normally open	Normal	Forced stoppage
01	Contact B	Normally closed	Forced stoppage	Normal

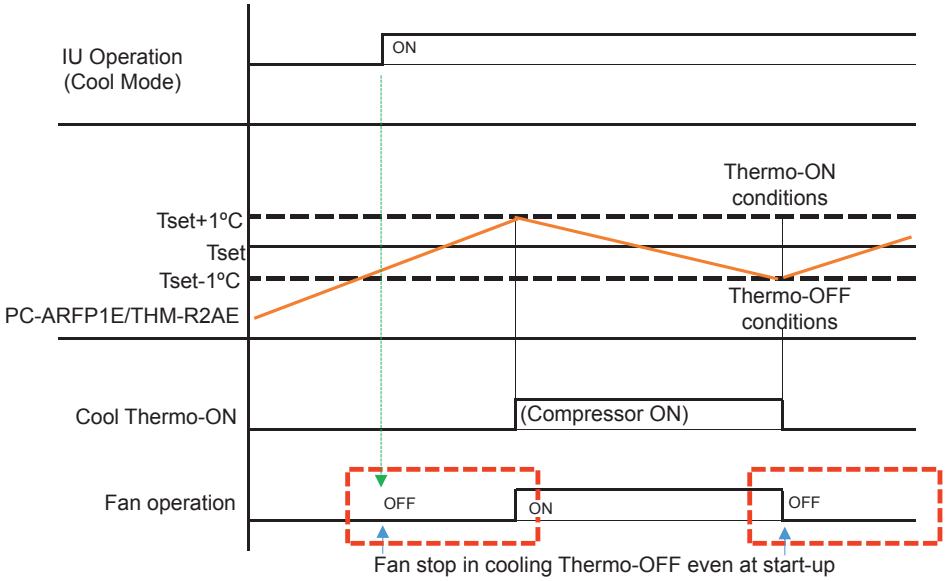
CC – Not used

Cd – Stop of indoor unit fan during cooling Thermo-OFF conditions

Fan stop operation in Thermo-OFF conditions when using the additional remote temperature sensor THM-R2AE (connected to THM4) or PC-ARFP1E temperature sensor

This optional function keeps the fan stopped when the indoor unit is in Thermo-OFF conditions, even upon start-up.

"Cd=01": Fan stop operation in Thermo-OFF conditions when using the additional remote temperature sensor THM-R2AE (connected to THM4) or PC-ARFP1E temperature sensor ("C8=01" must be set in this case).



NOTE

It is advised to pay attention to the following points:

- *Do not set this function if no remote control sensor (in PC-ARFP1E) or remote sensor (THM-R2AE) are installed; otherwise, comfort conditions may never be reached.*
- *Do not set "Cd" function when indoor unit temperature control is based on:*
  - *"C8=00" : Temperature control with the air inlet sensor of the indoor unit.*
  - *"C8=02" : Temperature control with the average value of the remote control sensor and the air inlet sensor of the indoor unit. In these cases, comfort conditions may never be reached.*
- *In case that Automatic louver is set, the louver will keep operating in both Thermo-ON and Thermo-OFF conditions.*

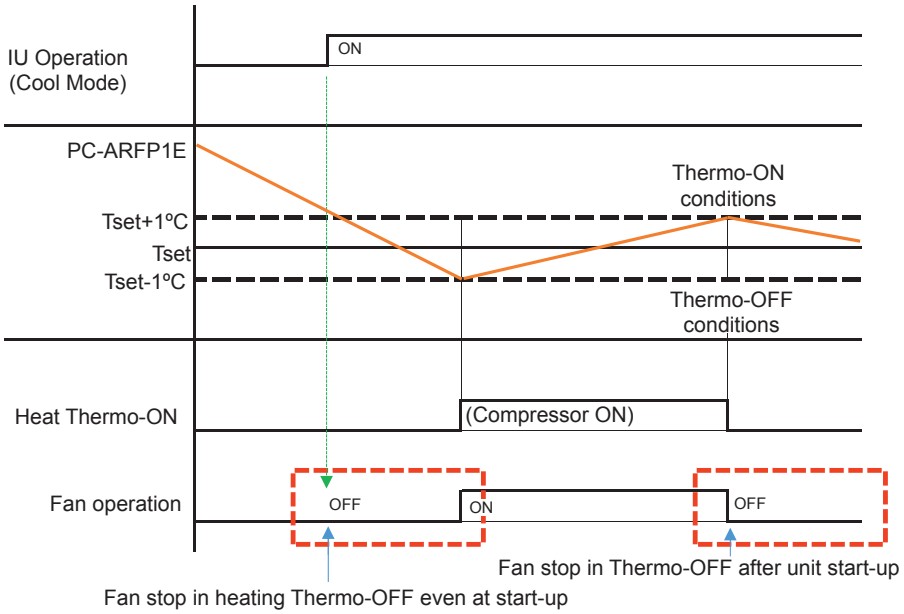
CE – Stop of indoor unit fan during heating Thermo-OFF conditions

This function is useful to avoid the perception of cold draughts.

When "CE=01" : Fan stop operation in Thermo-OFF conditions when using the PC-ARFP1E sensor, "CB=01" must be set in this case. The fan will not be turned on when the indoor unit is switched on in Thermo-OFF conditions.

Indoor unit will use the PC-ARFP1E remote control temperature sensor to monitor the room temperature when fan is stopped (heating Thermo-OFF fan stop sequence). The remote control switch shall be installed in a proper place for the correct detection of room temperature by its temperature sensor

Control by remote temperature sensor not permitted.

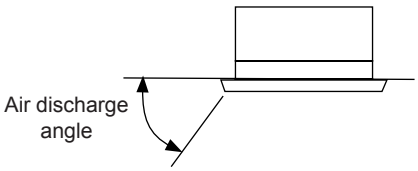


NOTE

- *These functions are only available when using the remote control sensor (in PC-ARFP1E).*
- *Note: When using CE function:*
  - *"CB=00" : this setting is not permitted.*
  - *"CB=02" : this setting is not recommended since it may cause that comfort conditions are never reached (CB set at 02 means that unit control is carried out with the average value of the remote control sensor and the air inlet sensor of the indoor unit).*
- *In case that automatic louver is set, the louver will keep operating in both Thermo-ON and Thermo-OFF conditions*

CF – Modification of louver swing range

This function is useful when the louver swing angle (air discharge angle) must be changed.



Setting condition	Louver swing angle (Air discharge angle)	Purpose
00	7 steps	Standard operation
01	5 steps	Cold draft prevention
02	5 steps (*)	For high ceiling

NOTE

(*) Not used for RPK-FSN(H)3M.

d1 – Power supply ON/OFF 1 (Automatic operation when power supply is ON)

This function stores the unit settings in the event of a power cut. The unit is restarted when the power is re-established.

CAUTION

When this function is used without anyone controlling the unit, set the system monitoring mode to avoid risks.

NOTE

In the event of an electrical fault, the unit starts and stops according to the on/off setting of the power supply. If the fault occurs during a stoppage enabled through the remote control, the unit will restart automatically once the power supply is reconnected.

d2 – Not available

d3 – Power supply ON/OFF 2 (Restarting runction after power failure)

This function is used to restart the unit after a power cut taking more than 2 seconds. The standard unit starts automatically under the same operating conditions, such as the operating mode, etc. in the case of an electrical fault lasting for a maximum of 2 seconds.

The compressor unit restarts after 3 minutes plus the maximum 2 seconds of the fault.

CAUTION

When this function is used without anyone controlling the unit, set the system monitoring mode to avoid risks.

d4 – Not used

d5 – Prevention of decrease of heating discharge air temperature

This function prevents a drop in the air temperature by decreasing the fan speed, apart from the settings on the remote control.

d6 – Not used

d7 – Not available

E1 – Not used

E2 – Not used

E3 – Not used

E4 – Not used

E5 – Not used

E6 – Period of indoor unit fan operation after cooling operation stoppage

This functions prevents the condensation accumulation in the unit by keeping the fan running after it is switched off.

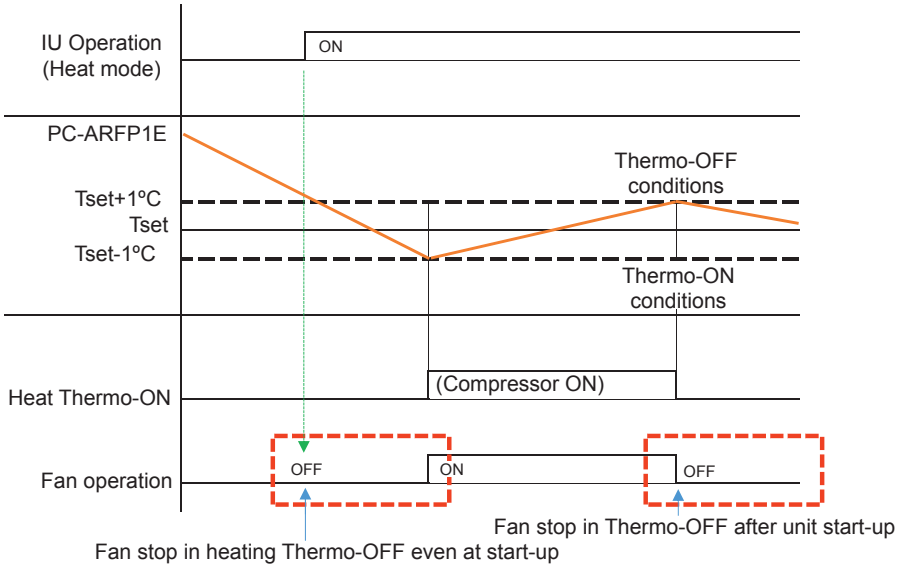
E7 – Not used

E8 – Fan operation control at heating Thermo-OFF

This function is useful to avoid the perception of cold draughts by stopping the indoor fan speed with the heating Thermo- OFF. These functions are only available when using the remote sensor (THM-R2AE).

THM-R2AE Remote temperature sensor (connected to the THM4 port on the IU PCB) is required.
This function stops the fan to prevent cold draughts.

The remote sensor shall be installed in a proper place for the correct detection of room temperature.



NOTE

- *These functions are only available when using the remote sensor (THM-R2AE).*
- *Note: When using E8 function:*
  - *"C8=00" : this setting is not permitted.*
  - *"C8=02" : this setting is not recommended since it may cause that comfort conditions are never reached (C8 set at 02 means that unit control is carried out with the average value of the Remote Sensor and the air inlet sensor of the indoor unit).*
- *In case that Automatic louver is set, the louver will keep operating in both Thermo-ON and Thermo-OFF conditions.*

E9 – Not used

EA – Not used

Eb – Fan operation control at cooling Thermo-OFF

This function reduces the unit fan speed to reduce the spreading of smells and humidity.

EC – Forced Thermo-ON stoppage at cooling operation

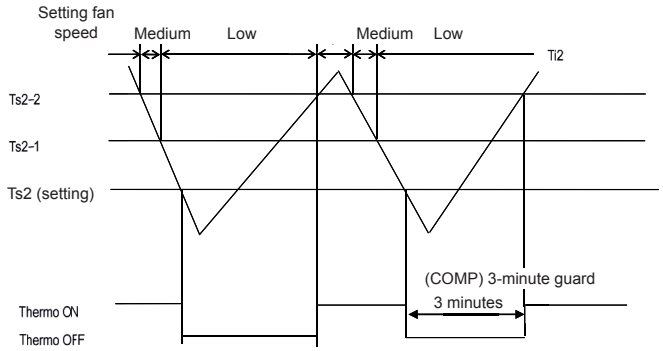
This function is used to force Thermo-ON during 6 minutes when stopping in cooling operation. It is effective for avoiding unpleasant smells, as the heat exchanger remains clean, e.g. it is rinsed with drainage water.

Ed – Not used

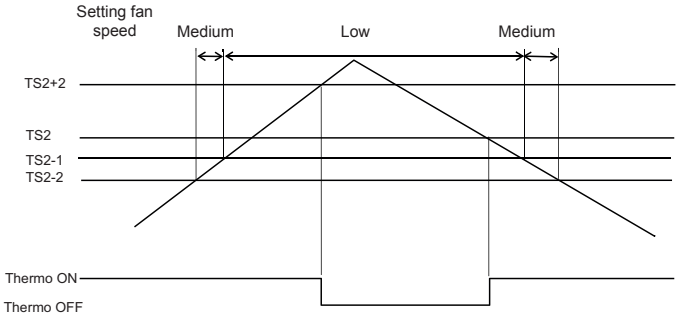
EE – Automatic fan speed control

This function limits indoor fan speed when room temperature is close to setting temperature.

- When EE: Automatic indoor fan speed mode is set to "01: Enabled" in the function selection of the remote control, operation is carried out in automatic indoor fan speed mode.
- When setting fan speed is set as to "Auto" with the remote control, operation is carried out in automatic indoor fan speed mode with "High wind" as setting fan speed.
- Cooling
  - Indoor control temperature (Ti2) - Setting temperature 2 (Ts2) ≥ 2deg ºC: Setting fan speed
  - Indoor control temperature (Ti2) - Setting temperature 2 (Ts2) ≥ 1deg ºC: Medium (Low when setting fan speed is Low)
  - Indoor control temperature (Ti2) - Setting temperature 2 (Ts2) < 1deg ºC: Low



- Heating
  - Setting temperature 2 (Ts2) - Indoor control temperature (Ti2) ≥ 2deg ºC: Setting fan speed
  - Setting temperature 2 (Ts2) - Indoor control temperature (Ti2) ≥ 1deg ºC: Medium (Low when setting fan speed is Low)
  - Setting temperature 2 (Ts2) - Indoor control temperature (Ti2) < 1deg ºC: Low



- Maintenance of fan speed for 3 minutes
  - In switch ON with the remote control, fan speed is set to the setting fan speed, and then it enters in automatic mode after 3 minutes have passed. The switching of fan speed depending on temperature differential is performed when entering in the automatic mode, regardless of being in Thermo-ON or Thermo-OFF.
  - Once that fan speed is switched after Thermo-ON, the fan speed after the change is maintained for 3 minutes. (*) The aforementioned switching of fan speed depending on temperature differential is performed after 3 minutes have passed. Setting Temperature is the Temperature used for Thermo-OFF.
  - When switching fan speed due to a function of the motion sensor, it is switched immediately even during the 3 minutes of maintenance of fan speed.
  - When switching fan speed due to the control of the sensor for heating radiation temperature, it is switched immediately even during the 3 minutes of maintenance of fan speed.
  - When switching fan speed due to the beginning of the heating draft control, it is switched immediately even during the 3 minutes of maintenance of fan speed.

NOTE

**: However, when EE=01:Enabled is set, in case of switching setting fan speed from the remote control, it is directly switched to the automatic fan speed corresponding to the setting fan speed. When EE=00: Disabled is set, in case of switching setting fan speed from "Automatic" to "Other than automatic" from the remote control, it is directly switched to the setting fan speed. Also, in case of switching setting fan speed from "Other than automatic" to "Automatic" from the remote control, the switching of fan speed depending on temperature differential is carried out if being in Thermo-ON, while the switching of fan speed depending on temperature differential is not carried out if being in Thermo-OFF, and fan speed becomes the fan speed of the last automatic mode.*

- Common items
  - In case of changing from Thermo-ON to Thermo-OFF at the beginning of the automatic mode, the fan speed during Thermo-OFF is that of right after Thermo-OFF. Also, the switching of fan speed is not performed during Thermo-OFF. (When switching from Thermo-ON to Thermo-OFF, the maintenance of fan speed for 3 minutes is released, and the switching of fan speed depending on temperature differential is carried out)
  - The target of the automatic switching is the part of the control which operates at the normal setting fan speed.
  - When using a room thermostat and in test run, it is set to setting fan speed.
  - Even in case that the heating circulator is enabled (Function selection b2=01), it is set to the fan speed of the automatic indoor fan speed mode.

NOTE

- *The maximum fan speed in "Auto" mode is "High", unless EF function is also activated.*
- *Econofresh present, E1=01 and Fan speed setting is "Auto" mode, fan speed is fixed to "High"*

EF – Automatic indoor fan speed mode (supporting High H)

This function allows to increase the maximum fan speed to "High H" in "Auto" mode.

This function allows to increase the maximum fan speed to "High H" in "Auto" mode.

- Cooling

  Indoor control temperature (Ti2) - Setting temperature 2 (Ts2) ≥ 2deg ºC: Setting fan speed

  Indoor control temperature (Ti2) - Setting temperature 2 (Ts2) ≥ 1deg ºC: Medium

  Indoor control temperature (Ti2) - Setting temperature 2 (Ts2) < 1deg ºC: Low
- Heating

  Setting temperature 2 (Ts2) - Indoor control temperature (Ti2) ≥ 2deg ºC: Setting fan speed

  Setting temperature 2 (Ts2) - Indoor control temperature (Ti2) ≥ 1deg ºC: Medium

  Setting temperature 2 (Ts2) - Indoor control temperature (Ti2) < 1deg ºC: Low
- Relation with the automatic indoor fan speed mode (EE)

Setting of function selection EF	Setting of function selection EE	Remote control setting				
		Auto	High H	High	Medium	Low
00	00	High~Low	High2	High	High	Low
00	01	High~Low	High2~Low	High~Low	Medium~Low	Low
01	00	High2~Low	High2	High	High	Low
01	01	High2~Low	High2~Low	High~Low	Medium~Low	Low

F0 – Not available

F1 – Automatic OFF timer setting

This function is used to switch off the timer automatically when the unit is started using the remote control.

It is not possible to cancel or change the timer off setting during automatic timer off setting. However, it can be cancelled when the unit is stopped. When the unit is restarted, the off timer setting period is established according to the optional setting. Do not set the functions "0C"-"0F" when two remote control switches are used in the same remote control group.

NOTE

This function is not available for control using CSNET WEB or CSNET Manager or 7-day timer.

F2 – Remote control main-sub setting

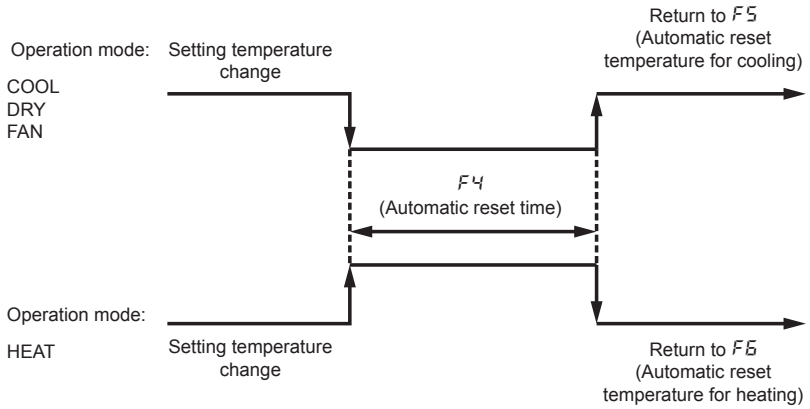
This function is useful when configuring two remote controls for the same installation: one in main mode and the other in secondary mode.

F3 – Automatic reset of setting temperature

This function releases the fixed temperature setting after a certain time to limit unit operations and save energy.

In case that the set temperature is changed and kept within the set time at "F4", the temperature is automatically changed to "F5" and "F6". In case that the set temperature is out of range at "F5" and "F6", it is applied within upper and lower limit for the set temperature.

However, the temperature configuration does not perform the automatic Reset when operating in Automatic COOL/HEAT mode or operations using the remote control for the central unit are forbidden.



F4 – Automatic reset time

This function is used to set the automatic reset time with the temperature setting.

F5 – Automatic reset temperature for cooling

This function is used to set automatic temperature reset in FAN/COOL/DRY modes.

F6 – Automatic reset temperature for heating

This function is used to set automatic temperature reset in HEAT mode.

F7 – Prevention of operation stoppage due to remote control operating error

This function prevents the stoppage when pressing the start/stop button in the remote controller by error.

NOTE

Operation is stopped by pressing the run/stop switch for 3 seconds.

F8 – Lock function for operation mode selection

This function is used to prevent changes to the operating mode.

F9 – Lock function for temperature setting

This function is used to prevent changes to the temperature setting.

FA – Lock function for fan speed selection

This function is used to prevent changes to the fan speed.

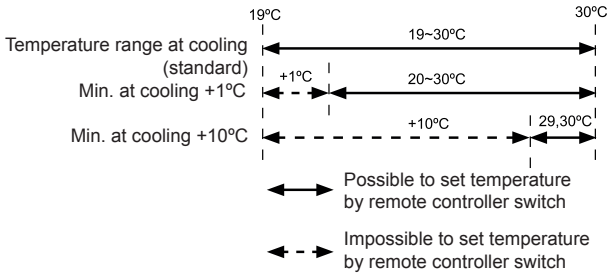
Fb – Lock function for swing louver operation

This function is used to prevent changes to automatic louver operations.

FC – Lower limit of setting temperature for cooling

This function is used to define a lower temperature setting limit for FAN/COOL/DRY modes. It enables the cooling range to be reduced for configuration using the remote control.

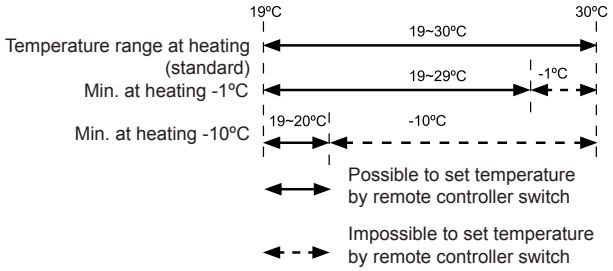
An example is shown in the following figure:



Fd – Upper limit of setting temperature for heating

This function is used to define an upper temperature setting limit for the HEAT function. This function enables the heating range to be reduced for configuration using the remote control.

An example is shown in the following figure:



FE – Not used

FF – Not used

H1 – No indication of maintenance alarm

This function is used to display or hide the maintenance alarm indication.

H2 – Indication of hot start (No indication of operation limitation)

This function is used to display or hide the automatic control indication.

H3 – Operation mode change restriction

This function is used in order to configure restrictions about the operation mode change action.

When this function is “00”, the operation mode change is disabled.

When this function is “01”, the operation mode change is only allowed from central control unit and mode FAN.

When this function is “02”, there are no restrictions.

H4 – Not used

H5 – Not used

H6 – Not used

J1 – Not used

J2 – Not used

J3 – Colour of the run indicator

This function is used to set the run indicator colour.

J4 – Not used

J5 – Not used

J6 – Not used

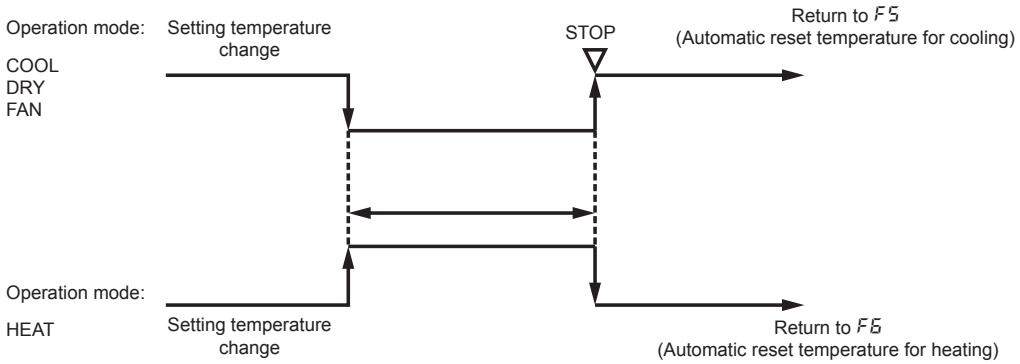
J7 – Not used

J8 – Eco-operation

This function is used to optimise the setting of temperature and provide energy saving.

When the setting temperature is changed during the air conditioning operation and while the operation is started/stopped by RUN/STOP on the remote control switch, the set temperature automatically returns to “Automatic Reset Temperature for Cooling/Heating (F5/F6)” (as shown in the next illustration).

However, the setting temperature is not automatically reset in the case that “Automatic COOL/HEAT Operation” mode, or “Prohibiting Operation by Remote Control Switch” is set by the centralized controller.



J9 – Not used

JA – Not used

Jb – Not used

A1 – Not used

A2 – Not used

A3 – Not used

A4 – Not used

A5 – Detection level of the motion sensor kit

This function is used to determine the amount of human activity depending on the reaction rate.

When “High” is set, the detection level becomes more sensitive. When “Low” is set the sensor becomes lower.

	Setting conditions		
	00 (factory setting)	01	02
Human activity	**Standard**	**High sensitive**	**Low sensitive**
Large	30% ≤ Reaction rate	20% ≤ Reaction rate	40% ≤ Reaction rate
Small	3% < Reaction rate < 30%	3% < Reaction rate < 20%	3% < Reaction rate < 40%
Not available	Reaction rate ≤ 3%	Reaction rate ≤ 3%	Reaction rate ≤ 3%

A6 – Selection of allowed operation modes

This function is used to select the operation modes in which the setting of C8 (use of remote control switch sensor or remote sensor on THM4 to control the indoor unit) is enabled.

A7 – Not used

A8 – Control for the prevention of condensation in the louvers

In that units that are equipped with louvers, condensation may occur around the air outlet during operation in cooling or dry modes, when horizontal air flow or downward air flow are sustained for long periods.

This function is used to prevent condensation by setting the louver swing angle to the third step automatically for 30 minutes every 1 hour.

(In RPK units, this function is activated by means of DSW2-4 instead of the H8 optional function).

A9 – Not used

AA – Not used

L1 – Not used

L2 – Not used

L3 – Operation of the louvers in energy-saving Thermo-OFF (Cooling / Dry mode)

Power save must be ON in order to use this function (L5 must be set to 01). This function is used to establish louver swinging operation ranging from continuous swing to static operation.

- Low: Continuous louver swing
- Medium: Louver swing with intermittent stops for 20/40 seconds
- High: Louver stopped at full opening position, according to the setting of CF.

L4 – Fan acceleration in energy-saving Thermo-OFF (Cooling mode)

This function increases fan speed by one step to prevent the loss of comfort due to the forced Thermo-OFF for energy saving during cooling operation.

L5 – Louver swing operation during energy-saving forced Thermo-OFF

This function is used to enabled the setting of function L3.

L6 – Not used

L7 – Not available

L8 – Not used

L9 – Not used

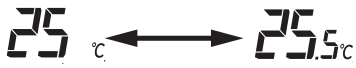
LA – Not used

Lb – Not used

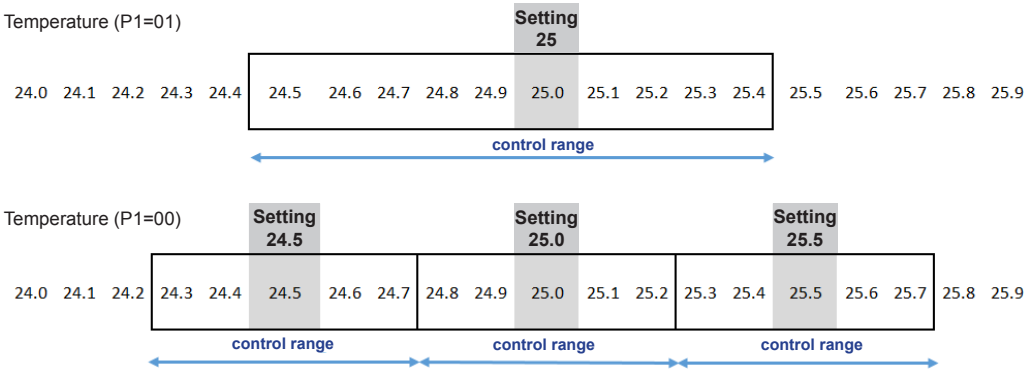
P1 – Setting temperature in 0.5°C steps

This function is used to define whether setting temperature is adjusted in 0.5°C steps (when set to “00”) or in 1°C steps (when set to “01”).

This setting also determines whether the resolution of temperature differential of the thermistor is 0.5°C (when set to “00”) or 1°C (when set to “01”) enabling more precise setting control.



Simplified scheme of the control system (for illustrative purposes only, as the control system also manages other parameters):



P2 – Not used

P3 – Temperature sensor displayed

This function is used to select the thermistor whose temperature is shown.

P4 – Display of sensor temperature

This function is used to display the temperature of the sensor selected with P3.

P5 – Display of setting temperature when operation mode is Fan

This function is used to hide the display of setting temperature during operation in fan mode.

P6 – Operation of the ECO button

The Operation of ECO button is disabled when P6 is set to 01.

P7 – Prohibition of menu screen transition

This function is used to prohibit the access to the menu screens. The text “Display disabled” appears on screen instead.

PA – Daylight saving time

This function is used to set the amount of adjustment when daylight saving time is applied

P8 – Not used

P9 – Not used

Pb – Not used

PC – Not used

91 – Not used

92 – Not used

93 – Not used

94 – Not used

95 – Not used

96 – Not used

97 – Not used

98 – Not used

99 – Not used

9A – Not used

9b – Not used

9C – Not used

9d – Not used

r1 – Dual set point

Function in the automatic cooling/heating mode allowing the preset of respective setpoint for cooling and heating.

r2 – Setting of temperature differential for switching cooling and heating

Function in the automatic cooling/heating mode allowing the preset of respective setpoint for cooling and heating.

r3 – Setback temperature compensation

r4 – Not used

r5 – Not used

r6 – Not used

r7 – Not used

r8 – Not used

r9 – Not used

rb – Not used

51 – **Not used**

52 – **Not used**

53 – **Not used**

54 – **Not used**

55 – **Not used**

56 – **Not used**

57 – **Not used**

58 – **Not used**

4.2.13 Alarm indication

The run LED (green) will flash. The LCD screen will show the following information:

- Number of indoor unit affected by the alarm.
- Alarm code.
- Unit model.
- Number of indoor units connected to the system.

NOTE

- *The Alarm code corresponds to the alarm that is happening on the unit.*
- *Refer to the Service Manual of the unit to know the meaning of the alarm code.*

4.2.14 Function availability vs. different series

New Functions	PC-ARH1E	RCIM-FSN4E	RCI-FSN4	RPK-FSN4M	RPC-FSN3	RCD-FSN3	RPIM-(0.6-1.5)FSN4E	RPI-(0.4~3.0)FSN5E	RPI-(4.0-6.0)FSN5E	RPI-(8.0-10.0)FSN3E	RPF(I)-FSN2E	IVX RAS-(2-12)H(V)NP1(E) Centrifugal RASC-(4-10)HNPE	IVX RAS-(3-12)H(V)NC1(E)	SET FREE Mini (RAS-(4-6)FS(V)NME	SET FREE Sigma RAS-(8-96)FSXNSE& RAS-(5-72)FSXNPE SET FREE Mini (RAS-(8-12)FSXNME)	Compatible software
Software	From beginning of mass production	P-4729	P-4736	From beginning of mass production	P-4736	P-4729	P-4735	P-4725	P-4735	Current	Current	--	--	--	--	--
Sensor selection for temperature control																
Parameter C8: Optional Setting for indoor unit control by RCS sensor or remote sensor (THM4)	o	Depends on Remote Controller (RCS)														⊙
Parameter K6: operating mode by THM4 or RCS sensor only in COOL/DRY mode	o	o	o	o	o	o	x	o	x	x	x	Depends on RCS and Indoor Unit				▲
Special European market functions for Fan stop in Thermo-OFF																
Parameters Cd: Fan stop in cooling Thermo-OFF by THM4 or RCS sensor control.	o	o	o	o	o	o	o	o	o	o	o	Depends on RCS and Indoor Unit				▲
Parameters CE: Fan stop in heating Thermo-OFF by RCS sensor	o	o	o	o	o	o	o	o	o	o	o	Depends on RCS and Indoor Unit				▲
Parameter E8: Fan stop during Thermo-OFF when THM4 is connected	o	o	o	o	o	o	o	o	o	o	o	Depends on RCS and Indoor Unit				▲
Temperatures display in RCS																
Parameters J1: Temporary ambient temperature (C8) display on the RCS.	x	Depends on connected Remote Controller														⊙
Parameters P3, P4: Ambient temperature display on the RCS.	o	Depends on connected Remote Controller														⊙
Parameter P5: Setting temperature display on the RCS. (hidden for Fan operation mode)	o	Depends on connected Remote Controller														⊙
Parameter P1: Temperature setting width (0.5°C)	o	o	o	o	o	o	o	o	o	o	o	Depends on RCS and Indoor Unit				▲
Function preventing uncomfortable operation																
Parameter d4: Prevention for cooling discharge air temperature decrease RPK---Default ON Cancel function by using DSW2-4=OFF	o	x	x	x	x	x	o	x	o	o	o	Depends on RCS and Indoor Unit				▲
Comfort setting: 1-4	x	o	o	o	o	o	x	o	x	x	x	Depends on RCS and Indoor Unit				▲
Parameter K8: control of dew condensation prevention by IU louvers (For RPK activation by DSW2-4 instead of K8)	o	o	o	x	o	o	x	x	x	x	x	Depends on RCS and Indoor Unit				▲
							(no louver)									
Energy saving/noise/Eco functions																
"Parameter d6: Room temperature control for energy saving IU in Cool Thermo-OFF when Tout<Tin"	o	o	o	o	o	o	o	o	o	o	o	x	o	o	o	■
Power saving function	o	o	o	o	o	o	o	o	o	o	x	x	o	o	o	■
ECO button	o	Depends on connected Remote Controller														⊙
Noise reduction operation	o	o	o	o	o	o	o	o	o	o	x	x	o	o	o	■
Power saving and noise reduction scheduled operations	o	o	o	o	o	o	o	o	o	o	x	x	o	o	o	■
Power consumption display	o	o	o	o	o	o	o	o	o	o	x	x	o	o	o	■
ECONOFRESH control	o	x	x	x	x	x	x	x	o	x	x	Depends on RCS and Indoor Unit				▲
Setback function																
Setback function for hotel application (key card)	o	o	o	o	o	o	o	o	o	x	x	Depends on RCS and Indoor Unit				▲
Smart set back function (key card, timer, manual)	x	o	o	o	o	o	o	o	o	x	x	Depends on RCS and Indoor Unit				▲
Auto Cool/Heat with dual setting																

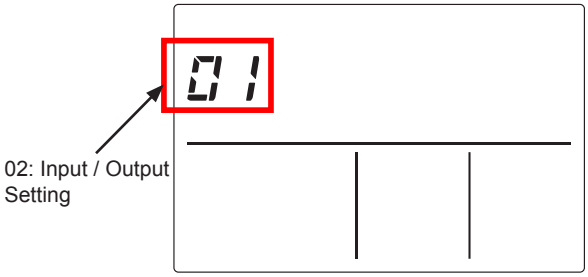
New Functions	PC-ARH1E	RCIM-FSN4E	RCI-FSN4	RPK-FSN4M	RPC-FSN3	RCD-FSN3	RPIM-(0.6-1.5)FSN4E	RPI-(0.4~3.0)FSN5E	RPI-(4.0-6.0)FSN5E	RPI-(8.0-10.0)FSN3E	RPF(I)-FSN2E	IVX RAS-(2-12)H(V)NP1(E) Centrifugal RASC-(4-10)HNPE	IVX RAS-(3-12)H(V)NC1(E)	SET FREE Mini (RAS-(4-6)FS(V)NME	SET FREE Sigma RAS-(8-96)FSXNSE& RAS-(5-72)FSXNPE SET FREE Mini (RAS-(8-12)FSXNME)	Compatible software
Software	From beginning of mass production	P-4729	P-4736	From beginning of mass production	P-4736	P-4729	P-4735	P-4725	P-4735	Current	Current	--	--	--	--	--
Simple Auto Cool / Heat with dual set point	o	o	o	o	o	o	o	o	o	x	x	Depends on RCS and Indoor Unit				▲
Smart Auto Cool / Heat with dual set point	x	o	o	o	o	o	o	o	o	x	x	Depends on RCS and Indoor Unit				▲
Auto Cool/Heat with single setting																
Improvement for AUTO COOL HEAT operation mode (new differential temperature set temp.- Room Air Temp. = 2°C instead of 3°C)	o	o	o	o	o	o	o	o	o	o	o	Depends on RCS and Indoor Unit				▲
Setting main / sub controller	o	o	o	o	o	o	o	o	o	o	x	x	x	o	o	■
Operation mode / Tset priority	o	o	o	o	o	o	o	o	o	o	x	x	o	o	o	■
Quick functions	o	o	o	o	o	o	o	o	o	o	x	x	o	o	o	■
Others																
CN3 inputs i1 and i2 status read through H-LINK		o	o	o	o	o	o	o	o	o	o	Depends on RCS and Indoor Unit				▲
0.4HP IU model		o	x	o	x	x	x	o	x	x	x	Depends on RCS and Indoor Unit				▲
Languages	--	Depends on connected Remote Controller														⊙

o	Available
x	Not available
⊙	Function depending on remote controller switch
▲	Function depending on remote controller switch + indoor unit software
■	Function depending on remote controller switch + indoor unit + outdoor units software

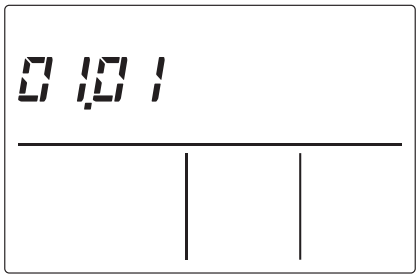
4.2.15 Input and output settings

1 Press and hold “▽” for “Temp” and “Fan” simultaneously for at least three seconds during the normal mode (when unit is not operated).

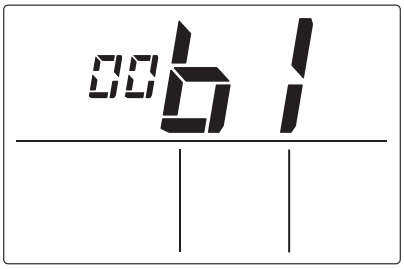
2 Select the optional mode by pressing “▽” or “△” for “Temp” and press “Fan”.



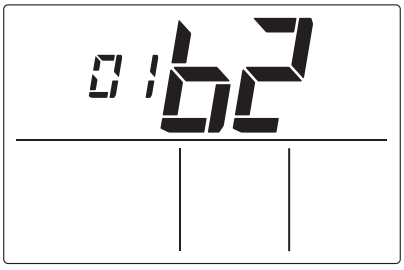
3 Select the indoor unit by pressing “▽” or “△” for “Temp” and press “Fan”.
(This screen is NOT displayed when there is only one indoor unit connected with the controller.
In this case, (4) will be displayed.)



4 Press “▽” or “△” for “Temp” and select the item.



5 Press “Fan” and change the setting.



6 Press “▽” and “△” for “Temp” simultaneously to return to the normal mode.

4.2.16 Input and output settings and display codes

Indication	Input	Output
00	Not set	Not set
01	Room Thermostat (for cooling)	Operation
02	Room Thermostat (for heating)	Alarm
03	Remote ON/OFF 1 (Level)	Cooling
04	Remote ON/OFF 2 (Operation)	Thermo-ON for cooling
05	Remote ON/OFF 2 (Stoppage)	Heating
06	Forbidding remote control after manual stoppage	Thermo-ON for heating
07	Remote cooling / heating change	Total heat exchanger
09	Setback operation	

NOTE

- *After at least three minutes from power ON, change the optional setting.*
- *Do not set the elevating grille for the total heat exchanger.*
- *Record the setting conditions for each input and output in the "Setting" column of the table.*

◆ Input and output number display and connectors

Input number display	Port	Factory setting		Setting
Input/Output indication		Setting item	Indication	
Input 1	CN3 1-2	Remote ON/OFF 1 (Level)	03	
Input 2	CN3 2-3	Prohibiting Remote Control after Manual Stoppage	06	
Output 1	CN7 1-2	Operation	01	
Output 2	CN7 1-3	Alarm	02	
Output 3	CN8 1-2	Thermo-ON for Heating	06	

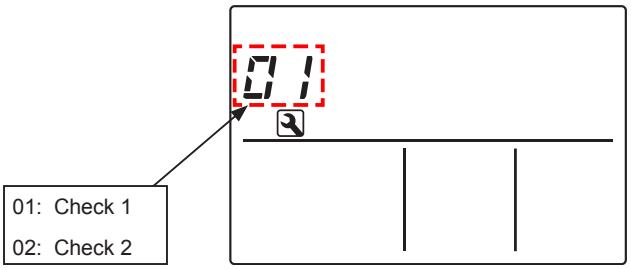
4.2.17 Check mode

Check 1: Sensor condition of the air conditioner will be monitored and indicated.

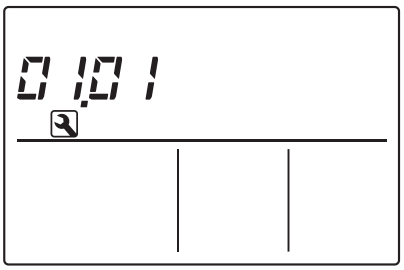
Check 2: Sensor data of the air conditioner prior to alarm occurrence will be indicated.

1 Press and hold “▽”, “△” for “Temp” and “Fan” simultaneously for at least three seconds during the normal mode.

2 Select the “Check” mode by pressing “▽” or “△” for “Temp” and press “Fan”.

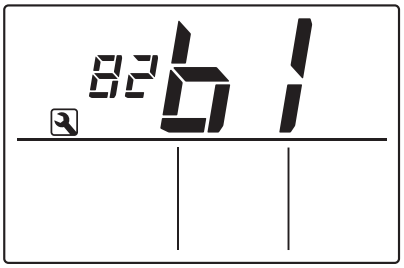


3 Select the indoor unit by pressing “▽” or “△” for “Temp” and press “Fan”.



4 Press “▽” or “△” for “Temp” and select the item.

5 Press “▽” or “△” for “Temp” simultaneously to return to the normal mode.



NOTE

The “check” items are different for each indoor unit type. Check the service manual for the indoor unit to be used for the detailed information.

◆ Items of check mode 1

Item	Item name
b1	Setting temperature
b2	Inlet air temperature
b3	Discharge air temperature
b4	Liquid pipe temperature
b5	Remote thermistor temperature
b6	Outdoor air temperature
b7	Gas pipe temperature
b8	Evaporating temperature in heating
b9	Condensing temperature in cooling
bA	Compressor top temperature
bb	Temperature of the wired controller thermostat
bC	Reserved
C1	Indoor unit microcontroller
C2	Outdoor unit microcontroller
d1	Indication of stop cause state
E1	Number of occurrences of abnormality
E2	Number of occurrences of power failure
E3	Number of occurrences of abnormal transmission
E4	Number of times of inverter tripping
F1	State of the louver sensor
H1	Discharge pressure
H2	Suction pressure
H3	Control information
H4	Operation frequency
J1	Indoor unit capacity
J2	Outdoor unit code
J3	System number (1)
J4	System number (2)
L1	Expansion valve of the indoor unit
L2	Expansion valve of the outdoor unit 1
L3	Expansion valve of the outdoor unit 2
L4	Expansion valve of the outdoor unit B
P1	Compressor current
P2	Accumulated time of compressor operation
R1	Reaction rate of the motion sensor *1
R2	Temperature of the radiation sensor *1
R3	Reaction rate of the motion sensor 1 *1
R4	Reaction rate of the motion sensor 2 *1
R5	Reaction rate of the motion sensor 3 *1
R6	Reaction rate of the motion sensor 4 *1
R7	Collected value of setting temperature

*1 The average value of 30 seconds (update time of the check mode cycle) is displayed on the LCD.

◆ Items of check mode 2

Item	Item name
F1	Inlet air temperature
F2	Discharge air temperature
F3	Liquid pipe temperature
F4	Outdoor air temperature
F5	Gas pipe temperature
F6	Evaporating temperature in heating
F7	Control information
F8	Compressor top temperature
F9	Discharge pressure
FA	Suction pressure
Fb	Control information
FC	Operation frequency
Fd	Expansion valve of the indoor unit
FE	Expansion valve of the outdoor unit 1
FF	Compressor current

◆ Results of check table

Indoor unit PCB	
00	Normal
01	Abnormality of inlet air temperature thermistor
02	Abnormality of outlet air temperature thermistor
03	Abnormality of liquid pipe temperature thermistor
04	Abnormality of remote thermistor
05	Abnormality of gas pipe temperature thermistor
08	Abnormality of Central Station transmission
0A	Abnormality of EEPROM
0b	Zero cross input failure
EE	Abnormality of indoor unit transmission during check

Outdoor unit PCB	
00	Normal
07	Abnormality of outdoor unit transmission
F4	ITO input failure
F5	HPS input failure
F6	Abnormality of protection signal detection circuit
F7	Abnormality of phase detection
F8	Abnormality of inverter transmission
FA	Abnormality of high pressure sensor
Fb	Abnormality of temperature thermistor of compressor discharge gas
FC	Abnormality of low pressure sensor
Fd	Abnormality of evaporating temperature thermistor in heating
FF	Abnormality of ambient air temperature thermistor

4.3 PC-AWR

4.3.1 Safety summary

DANGER

- ***DO NOT pour water into the remote controller. This product is equipped with electrical parts. If poured, it will cause a serious electrical shock.***
- ***DO NOT perform installation work and electrical wiring connection by yourself. Contact your HITACHI distributor or dealer and ask them for installation work and electrical wiring by service person.***

CAUTION

- *DO NOT install the indoor unit, outdoor unit, controller and cable at such places as;*
  - *Where there is oil vapor and the oil is dispersed.*
  - *Where the hot springs are near (in a sulfuric environment).*
  - *Where generation, flowing, staying or leaking of flammable gas is detected.*
  - *Where the sea is near (in the salty environment).*
  - *An acid or alkaline environment.*
- *DO NOT install the indoor unit, outdoor unit, controller and cable within approximately 3 meters from strong electromagnetic wave radiators such as medical equipment. In case that the controller is installed in a place where there is electromagnetic wave radiation, shield the controller and cables by covering with the steel box and running the cable through the metal conduit tube.*
- *In case that there is electric noise at the power source for the indoor unit, provide a noise filter.*
- *Use specified cables to connect between indoor unit and remote control switch. Selecting incorrect cables may lead to fire or electrical shock.*

NOTE

- *The installer and system specialist shall comply with local regulations or standards for the safety. The following standards may be applicable, if local regulations are not available. International Organization for Standardization, ISO5149 or European Standard, EN378 or Japan Standard, KHKS0010.*
- *Perform electrical work according to the Installation Manual. As for the electrical wiring work and check, turn OFF the main power supply before opening/closing the service cover of indoor unit. If service cover is opened with main power supply left on, it may result in an electrical shock.*
- *It is assumed that this control remote will be operated and serviced by English speaking people. If this is not the case, the customer should add safety such as and operating signs in the native language for non English speakers.*
- *This manual should be considered as a permanent part of the air conditioning equipment and should remain with the air conditioning equipment.*
- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*
- *Important: read and understand this manual before using this remote controller.*

If you have any questions, contact your HITACHI distributor or dealer.

4.3.2 Installation

4.3.2.1 Components list

Unpack the unit and check that:

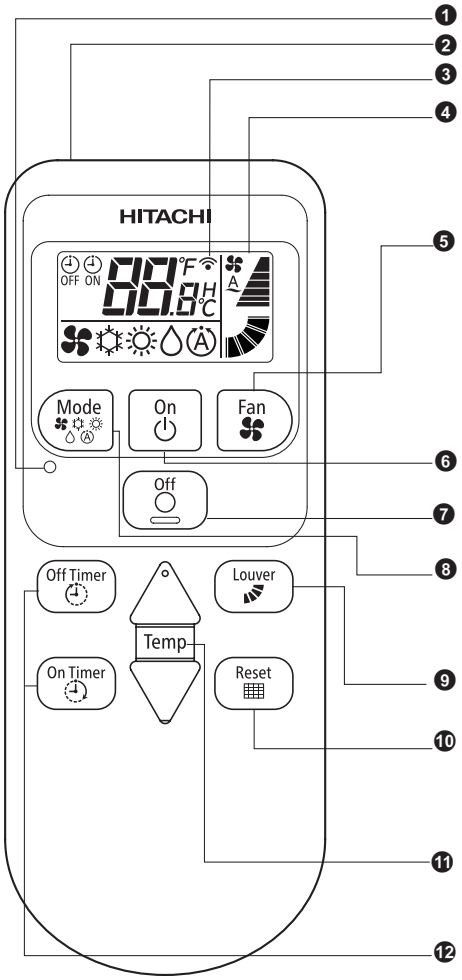
- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quant.	Comments
Wireless remote control		1	For controlling system operation
Bracket		1	For the remote control
AAA/1.5 battery		2	For the remote control
Screw		2	For fixing the bracket to the wall
Installation and operation manual		1	Installation and operation unit instructions.

4.3.2.2 Description of the parts

- This controller is used to send commands about operation mode, timer setting, etc. to the indoor unit. Face the transmitter of the controller toward the receiver of the indoor unit and press the switch of required operation so that commands (by infrared rays) are sent to the indoor unit.
- The distance for transmitting is approximately 6 meters as a maximum. (The capable distance for transmitting will get shorter in case that the transmitting angle is not vertical to the receiver or an electronic type light is used in the room, etc.).
- Use the combination of the receiver kit and the indoor unit which are supported this controller.



❶ Reset switch

❷ Transmitter

Point the transmitter towards the receiver of the indoor unit when sending commands. The transmitting indication on the liquid crystal display flashes when sending commands.

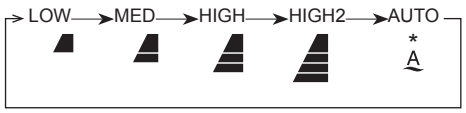
❸ Transmitting indication: It will turn ON when sending commands by infrared rays.

❹ Liquid crystal display

The set temperature, timer operation, position of air louver, operation mode, air flow mode, etc., are indicated.
The diagram of the display shown on the left is for explanation purposes only. The display will differ during actual operation.

❺ Fan speed switch

Press this switch to select the fan speed. By repeatedly pressing the button, the setting will change sequentially through LOW, MED, HIGH, HIGH2 and AUTO *.



❻ ON switch

Operation of the unit can be started by pressing this switch.

❼ OFF switch

Operation of the unit can be stopped by pressing this switch.

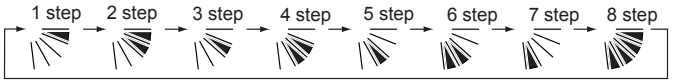
❽ Mode Selection Switch

By repeatedly pressing the mode switch, the unit cycles through the different operating modes in the order of FAN, COOL, HEAT, DRY, AUTO. Depending on the setting for selecting the function, it is possible to set the ON/OFF for AUTO, HEAT and DRY display.

FAN, COOL, HEAT, DRY, AUTO

❾ Louver angle switch

The airflow angle and auto-louver operation can be set by this switch. When pressing the switch, the angle is changed in the following order. (In COOL or DRY or AUTO operation modes, steps 1-5 and Auto swing are available.)



❿ Filter sign reset switch

This switch is used to turn off the filter indication lamp of the indoor unit, which is turned on when it is required to clean the filter. The alarm sound can be cancelled temporarily by pressing the button.

⓫ Temperature switch

The setting temperature can be adjusted using this switch.

By pressing "▲", the temperature will increase by 1ºC (or 0.5ºC*), at a time.

By pressing "▼", the temperature will decrease by 1ºC (or 0.5ºC*), at a time.

NOTE

Depending on the setting for selecting the function, it is possible to set the unit 1ºC (or 0.5ºC) for the temperature range.*

⓬ Timer switches

Used to set the timer.

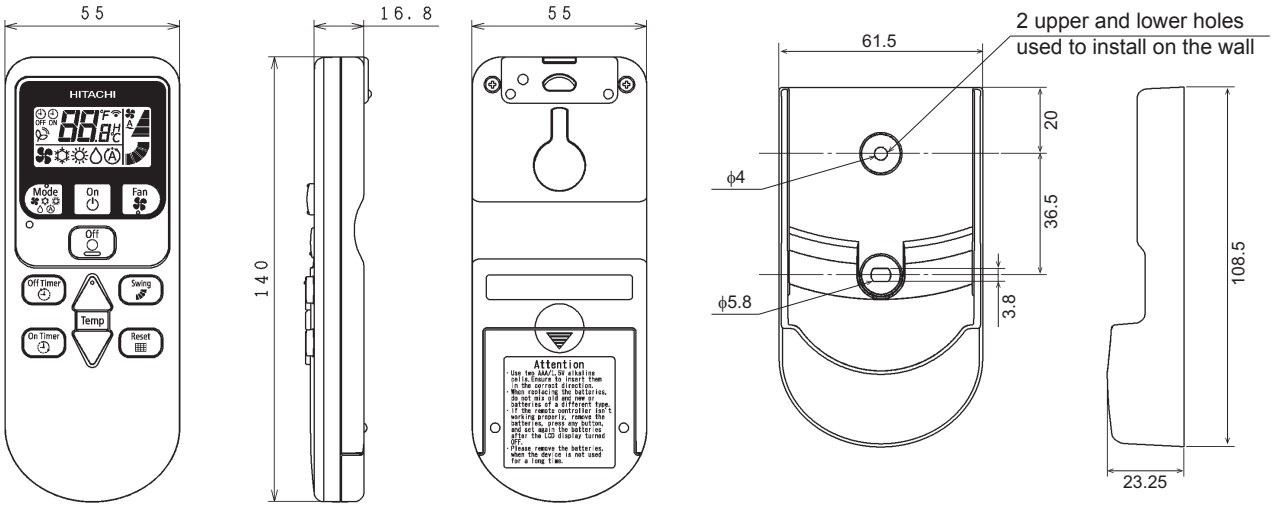
The set time can be changed by pressing "ON TIMER" or "OFF TIMER". The timer can be set from 0.5 to 23 hours. When 0.5 to 9.5 hours, the unit will set as 30 min. at a time, and when 10 to 23 hours, the unit will be set as 1 hour at a time.

NOTE

- *When the wireless controller is prohibited by central controller, this function is disabled even though the indoor unit is set with the wireless controller and the buzzer sounds.*
- ** Only available for the combination of indoor unit and receiver kit supporting the "0.5°C increment" and "Operation mode AUTO" functions*

4.3.2.3 Dimension data

(mm)



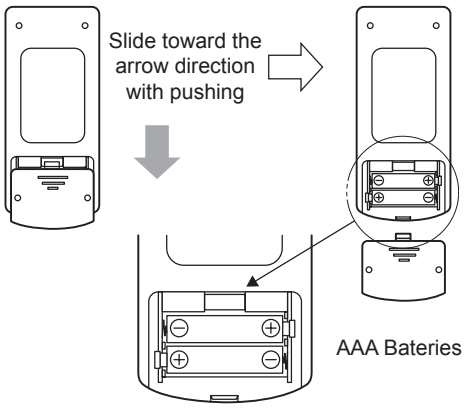
4.3.2.4 Installation space

The space necessary for the installation is the minimum necessary to fix the bracket allowing to remove without problems the remote control.

4.3.2.5 Batteries setting

Place the batteries (AAA/1.5Vx2) in the controller as follows.

1. Remove the battery cover by sliding toward the arrow direction by pushing the part of the cover as shown in the figure below.
2. Insert the batteries according to the marks of + and - on the case.



4.3.2.6 Installation procedure

◆ Installing onto the wall or pillar

⚠ CAUTION

When the commands are sent by the controller hooked onto the wall, the receiver of the indoor unit may not receive the commands depending on the installation place.

1 Select the suitable place for handling and install the controller with the customer's acceptance. Do not install the controller at the following places:
- where children can touch
- where the air from the air conditioner is directly discharged
- where there is oil vapor and the oil is dispersed
- where the humidity is high

2 Pay attention to the following points in case that the controller is installed in a place where there is medical equipment radiating electromagnetic waves.

a. Install the controller in a place where electromagnetic waves are not radiated directly toward the electrical box of the indoor unit and the controller.

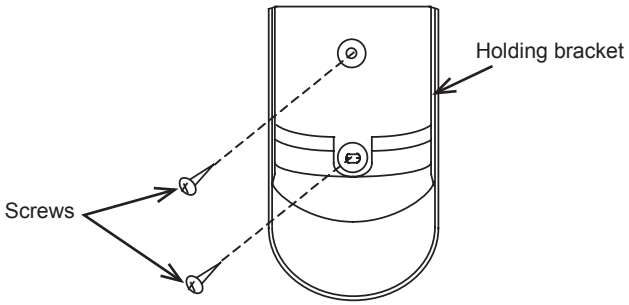
b. Keep a distance more than 3 meters away from the equipment radiating electromagnetic waves, the receiver of the radio, etc. for prevention of the noise through the air.

c. In case that there is electric noise at the power source for the indoor unit, the treatment such as providing a noise filter is required.

3 Do not install the controller in a place where generation, flowing, staying or leaking of flammable gas is detected.

4 Install the controller in a place where there is a distance more than 30cm from the power supply cable when installing the controller onto the wall.

5 Install the holding bracket (accessory) onto the wall by using screw (accessory) and attach the controller to the holding bracket.



4.3.3 Checking procedure

◆ Test running by controller

⚠ CAUTION

Test running by the controller can not be performed in case that the wired remote control switch is used together; in case that multiple units are operated simultaneously (SET FREE and UTOPIA series). In such cases, perform the test running by the wired remote control switch.

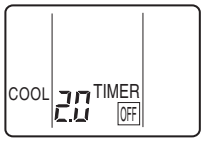
1 Perform the test run after the installation work is completed.

a. Set the batteries for the controller.

b. Turn ON the power supply for the indoor and outdoor units.

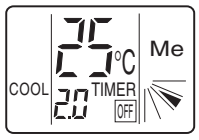
c. "((•))" lamp (yellow) on the receiver of the indoor unit flashes (0.25 seconds ON ◄► 0.25 seconds OFF), and then turns OFF. While the lamp is flashing, the unit will not operate because it is initializing.

2 Set the test run mode by pressing "LOUVER" and "ON TIMER" switch simultaneously for more than 3 seconds. The LCD should be as shown in the figure on the below.



Test run mode is under suspension

3 Set the operation mode by pressing the "MODE" switch.



Test run mode is under operating

4 Operate the test run by pointing the transmitter towards the receiver of the indoor unit and press the "⏻ On" switch. When the commands are received by the indoor unit, the "((•))" lamp (yellow) of the receiver will come on briefly. Check the commands are received well and the mode selected 3) is set correctly.

In the test run mode, the red lamp (RUN) of the receiver is turned ON and the green lamp (TIMER) flashes (0.5 seconds ON ◄► 0.5 seconds OFF) (*2). And then set off timer for 2 hours.

NOTE

- *In the case that the "((•))" lamp (yellow) does not turn ON, the controls may not have reached the receiver. Send the commands again.*
- *(*2) In the case of RPK model, "TIMER" lamp is turned ON without flashing.*

5 Adjust the angle of the air louver as follows.

Check the commands are received correctly using the lamp and buzzer of the receiver kit. Use the wireless remote controller pointing the transmitter toward the receiver.

⚠ CAUTION

The air louver has a mechanism for the auto-swing function. Do not move the louver by hand forcefully.

a. Select the FAN mode by pressing the 'MODE' switch.

b. Set the louver angle by pressing the 'LOUVER' switch. The louver direction is changed as follows. (For heating and fan operation).

LCD Indication



6 Stop the test run

a. Test run is stopped after 2 hours automatically.

b. Test run is stopped by pressing " ○ OFF" switch.

After Test Run is finished, check that the red lamp (RUN) and the green lamp (TIMER) are turned OFF.

4.3.4 Operation

CAUTION

Turn ON the power supply to the system for approximately 12 hours before start-up after long shutdown. Do not start the system immediately after the power supply. It may cause a compressor failure, because the compressor is not heated well. Do not turn OFF the power supply during the seasons.

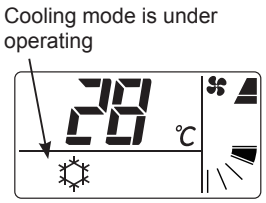
NOTE

- *The " " lamp (yellow) is turned ON with the beep sound for receipt confirmation.*
- *The beep sound may not be heard by surrounding noise.*
- *" " lamp (yellow) on the receiver of the indoor unit flashes (0.25 seconds ON 0.25 seconds OFF), and then turns OFF. While the " " lamp is flashing, the unit will not operate because it is initializing.*

4.3.4.1 Basic Operation

◆ Start operation

1 Press "MODE" switch. By repeatedly pressing "MODE" switch, the unit cycles through the different operating modes in the order of HEAT, DRY, COOL and FAN.

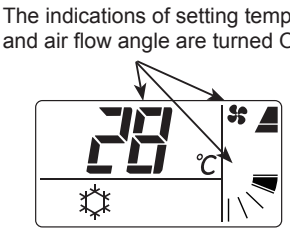


The indications of setting temperature, fan speed and air flow angle may be turned ON depending on the condition of control.

NOTE

Refer about automatic cooling/heating operation mode to the item "4.3.4.4 Automatic cooling/heating operation".

2 Point the transmitter towards the receiver kit and press "On" switch. When the transmitting indication " " flashes on the LCD of wireless remote control switch, the " " lamp (yellow) on the receiver will be turned on briefly. The Run indicator (red) on receiver is turned ON when the operation is started.



NOTE

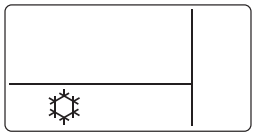
Do not press "On" or "OFF" switch repeatedly (less than 3 seconds). If the switch is pressed frequently, the controller may not work correctly.

◆ Temperature, fan speed and air flow direction setting

Once the setting is confirmed, the setting condition will be stored. Therefore the daily setting is not required. In case that the setting change is required, refer to the item *"4.3.4.3 Setting method"*.

◆ Stop operation

Point the transmitter towards the receiver kit and press “OFF” switch again. The Run indicator (red) on receiver is turned OFF and the operation is stopped.



The indications of setting temperature, fan speed and air flow angle are turned OFF.

NOTE

After the heating operation is stopped, the fan mode may be operated for approximately 2 minutes.

4.3.4.2 Operation mode (cooling, heating, dry, automatic cooling/heating and fan operation)

◆ Function

- Cooling operation (COOL): to decrease the room temperature.
- Heating operation (HEAT): to increase the room temperature.
- Dry operation (DRY): to decrease the humidity in the room.
- Automatic cooling/heating operation (AUTO): to cooling and heating automatic changeover.
- Fan operation (FAN): to circulate the air in the room.

NOTE

The recommendable set temperature is as follows;

- *Cooling operation: 27 to 29ºC*
- *Heating operation: 18 to 20ºC*
- *Dry operation: 23 to 25ºC*

4.3.4.3 Setting method

NOTE

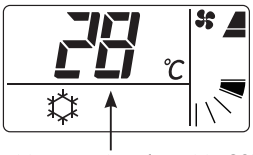
- *The “ ” lamp (yellow) is turned ON with the beep sound for receipt confirmation.*
- *The beep sound may not be heard by surrounding noise.*
- *To adjust the air flow angle, refer to the installation and operation manual of indoor unit.*

◆ Temperature setting

Point the transmitter towards the receiver kit and press “TEMP.” switch to set the temperature.

By pressing “ ∧ ”, the temperature is increased by 1ºC (or 0.5ºC*).

By pressing “ ∨ ”, the temperature is decreased by 1ºC (or 0.5ºC*).



The set temperature is set to 28ºC in the cooling operation

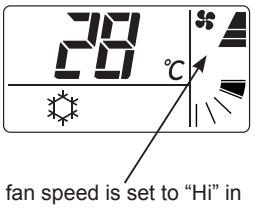
* Configuration selecting temperature setpoint by 0.5ºC depends on Indoor unit type. If not available, make it by 1ºC.

NOTE

- *The temperature is not displayed during the stoppage. In the case that the temperature is set during the stoppage, the temperature indication is turned ON temporally. It is automatically turned OFF after setting.*
- *The temperature can be set for each operation mode.*
- *The setting temperature is available from 17ºC to 30ºC by the wireless remote control switch. However, for indoor unit which setting temperature range is 19 ~ 30ºC, the temperature settings of 17ºC and 18ºC are not available.*

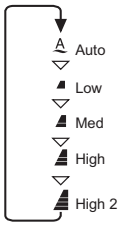
◆ Fan speed

Point the transmitter towards the receiver kit and press “FAN” switch to set the fan speed.



The fan speed is set to “Hi” in the cooling operation.

By repeatedly pressing the switch, the setting will change sequentially through Auto, Low, Med, High and High2.

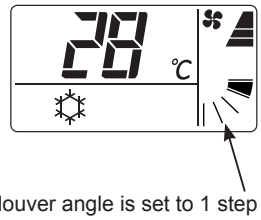


NOTE

- *The fan speed is not displayed during the stoppage. In the case that the fan speed is set during the stoppage, the fan speed indication is turned ON temporally. It is automatically turned OFF after setting.*
- *The fan speed can be set for each operation mode. However, the fan speed will be fixed at “LOW” in dry operation.*

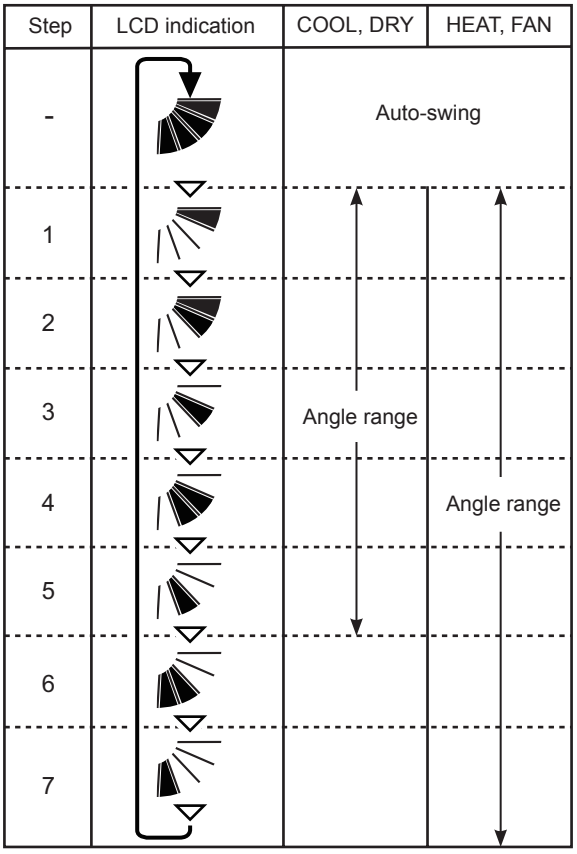
◆ Air flow direction

1 Point the transmitter towards the receiver kit and press “LOUVER” switch to set the louver angle.



The louver angle is set to 1 step at “Hi” in the cooling operation.

2 By pressing “LOUVER” switch, the louver angle will be changed as follows.



: Auto swing operation will be started. At this time, the louver will swing repeatedly on LCD.

NOTE

- *The louver angle is not displayed during the stoppage.*
- *The louver setting are only available from 1 step through 5 step and auto swing at the cooling and dry operation modes.*
- *The louver angle may be changed automatically during the heating operation. (Refer to the installation and operation manual of indoor unit about detail.)*
- *The louver may NOT stop immediately right after the switch is pressed.*
- *To adjust the louver angle, refer to the installation and operation manual of indoor unit.*

4.3.4.4 Automatic cooling/heating operation

This function is only available for DC Inverter UTOPIA series (single combination) and SET FREE series (heat recovery system).

CAUTION

Turn ON the power supply to the system for approximately 12 hours before start-up after long shutdown. Do not start the system immediately after the power supply. It may cause a compressor failure, because the compressor is not heated well. Do not turn OFF the power supply during the seasons.

NOTE

- *The “ ” lamp (yellow) is turned ON with the beep sound for receipt confirmation.*
- *The beep sound may not be heard by surrounding noise.*
- *“ ” lamp (yellow) on the receiver of the indoor unit flashes (0.25 seconds ON 0.25 seconds OFF), and then turns OFF. While the “ ” lamp is flashing, the unit will not operate because it is initializing.*

◆ Function

Automatic cooling/heating operation is automatically switched cooling and heating based on the set temperature as following inlet air temperature conditions.

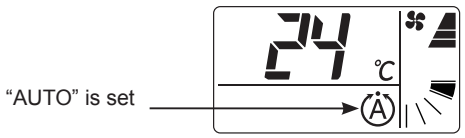
The cooling operation is performed when the inlet air temperature is approximately 2ºC higher than set temperature. The heating operation is performed when the inlet air temperature is approximately 2ºC lower than set temperature.

NOTE

- *If the fan speed is set to "LOW" during the heating operation, the operation tends to be stopped by activating the protection devices, etc. In this case, set to "MED", "HIGH" or "HIGH 2".*
- *The heating operation is not available when the ambient temperature is higher than approximately 21ºC.*
- *The threshold of switching temperature against the setting temperature is ± 2ºC in case of using this function. Therefore, this function should not be utilized in the room where the accurate temperature and humidity controls are required.*

◆ Start Operation

1 Press and hold the "MODE" switch for more than 3 seconds. The indication "AUTO" (automatic cooling/heating operation) will appear.



The indications of setting temperature, fan speed and air flow angle may be turned ON depending on the condition of control.

NOTE

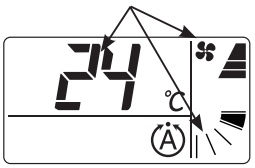
- *The automatic cooling/heating operation is required other setting. Contact your distributor and contractor for details.*
- *When the "MODE" switch is pressed at "AUTO", the fan operation is started.*

2 Point the transmitter towards the receiver kit and press "On" switch.

When the transmitting indication " " flashes, the " " lamp (yellow) on the receiver will be turned on briefly.

The Run indicator (red) on receiver is turned ON and the operation is started.

The indications of setting temperature, fan speed and air flow angle are turned ON.



NOTE

Do not press "ON or OFF" switch repeatedly (less than 3 seconds). If the switch is pressed frequently, the wireless remote control switch may not work correctly.

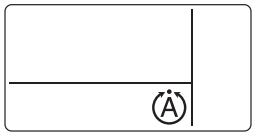
Temperature, fan speed and air flow direction setting

To set the temperature, fan speed and air flow direction, refer to the item *"4.3.4.3 Setting method"*.

Stop operation

Point the transmitter towards the receiver kit and press "OFF" switch again.

The Run indicator (red) of receiver is turned OFF and the operation is stopped.



The indications of setting temperature, fan speed and air flow angle are turned OFF.

4.3.4.5 Timer setting method

NOTE

- *The "((•)) " lamp (yellow) is turned ON with the beep sound for receipt confirmation.*
- *The beep sound may not be heard by surrounding noise.*

◆ Function

- This function is used to start or stop the unit operation at the setting time.
- The timer setting is available for "ON TIMER" and "OFF TIMER".

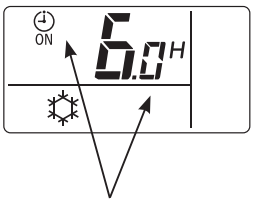
  ON TIMER: the operation is started after the set time is passed.

  OFF TIMER: the operation is stopped after the set time is passed.

◆ Timer setting

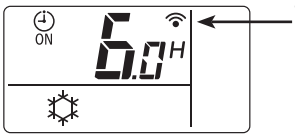
1 Press "ON TIMER" or "OFF TIMER". By repeatedly pressing "ON TIMER" or "OFF TIMER", the indication of setting time is changed.

The setting time is available at half hour intervals up to 10 hours and at one hour interval up to 23 hours after 10 hours.



The setting time for "ON TIMER" is set to 6 hours.

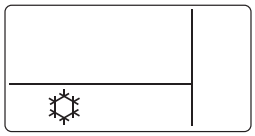
2 Point the transmitter towards the receiver kit and press "ON TIMER" switch. The Timer indicator (green) on receiver is turned ON.



Cancel setting

To cancel the timer setting, point the transmitter towards the receiver kit and press "ON TIMER" or "OFF TIMER" switch after proceeding up to 23 hours by repeatedly pressing the switch.

The TIMER indicator (green) on receiver is turned OFF.



4.3.4.6 Sending commands from remote controller

The operation commands are sent by pressing the required operation switch by facing the transmitter of the controller toward the receiver of the indoor unit.

1 When the commands are sent, the "((•))" indication on the liquid crystal display of the controller flashes once.

2 The indication lamp (yellow) on the receiver part of the indoor unit turns ON for an instant when the indoor unit receives the commands.

CAUTION

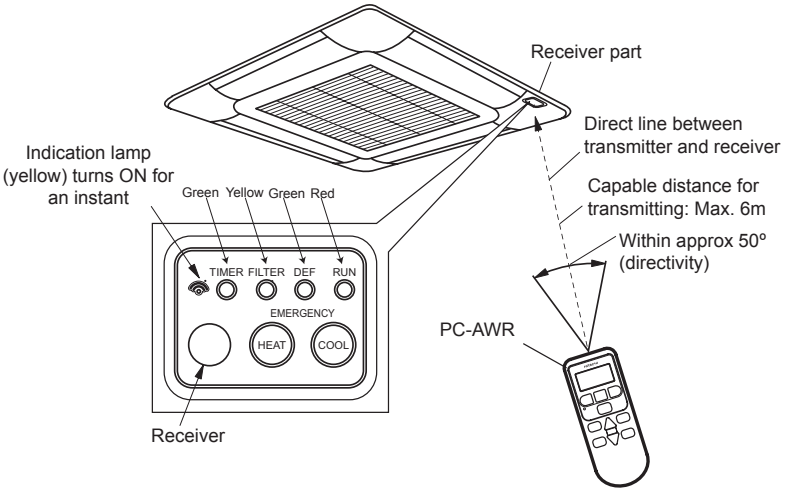
- *In case that the indication lamp (yellow) does not turn ON although the commands are sent, the commands are not received by the indoor unit. In such a case, send the commands again.*
- *The transmitter of the controller has the vertical directivity to the receiver, and the permissible angle for transmitting is within 50º. However, the capable distance for transmitting gets half when the transmitting angle is 50º, and also get shorter in case that an electronic type light is used in the room.*

LCD (Liquid crystal display) indication

When viewed from certain angles the LCD can be difficult to read.

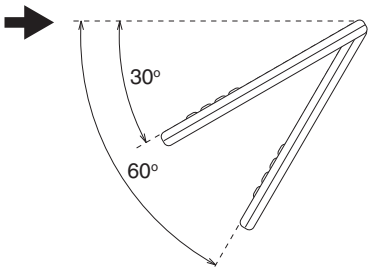
The viewing angle ranges from an optimal of 60º down to 30º, as shown in the diagram on the right.

If the viewing angle is below 30º, the indications not displayed are slightly faded so that makes the indication be hardly readable. It is the characteristics of this LCD, which is not abnormality.



NOTE

The above figure shows the case of a 4-way cassette type indoor unit. The figures for other models are different partially.



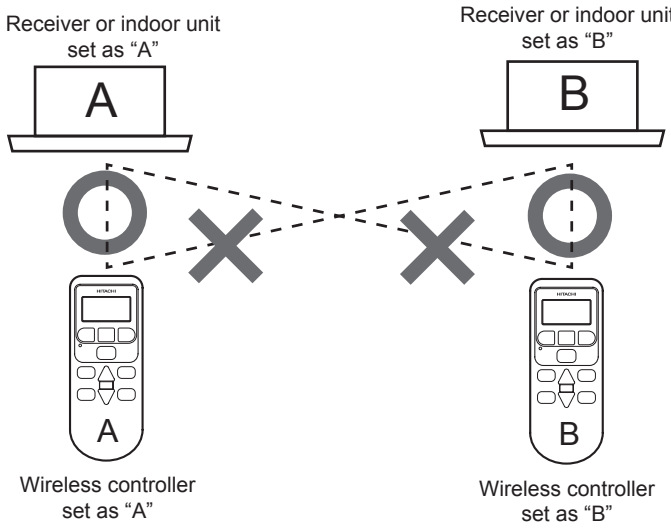
4.3.4.7 Identifying of indoor units installed side by side

This function is used when operating several receivers or indoor units side by side, to prevent a malfunction because of receiving incorrect signals from the wireless remote controllers used in other areas.

Only the communication between the paired setting is possible, and 4 pairs (A, B, C, D) are available.

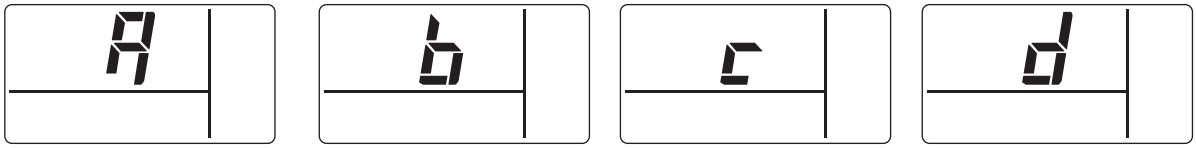
For example, the receiver set as “A” can only receive signals from the wireless controller set as “A”. It cannot receive signals from wireless controller set as B, C or D.

Refer to the installation & maintenance manual or the operation manual for each receiver kit or indoor unit settings. Depending on the type of the receiver kit or the indoor unit, only setting as A, B are available and not C, D. In that case, set the wireless controller as A or B too.



1 Press both “ON TIMER” and “Reset” 3 seconds.

2 The current value set for this function will be displayed (A, B, C or D).



A Mode (A) **B Mode (b)** **C Mode (c)** **D Mode (d)**

3 Press “▽” to change the setting in ascending order. (A → B → C → D)
Press “△” to change the setting in descending order. (A ← B ← C ← D)

NOTE

The setting will be recorded each time “ On” switch is pressed.

4 Press “ ○ OFF ” switch to exit this function and reset.

NOTE

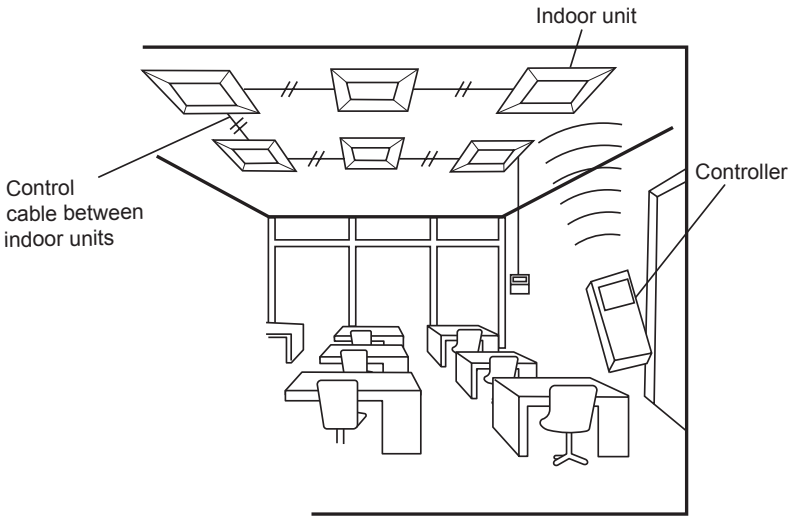
If no operation is performed 30 seconds after this function is displayed, it will automatically end and reset.

4.3.4.8 Simultaneous operation of multiple indoor units

The multiple indoor units (Max. 16 units) can be started and stopped simultaneously by one controller. Perform this operation only in case that multiple indoor units are installed in a room. The detail for setting method shall be referred to the installation manual of the indoor unit.

⚠ CAUTION

Do not perform this operation in case that the multiple indoor units are installed in different rooms separately. It may happen that some indoor units remain unchanged.



Control example of simultaneous operation of multiple units

◆ Remote control installation for several units

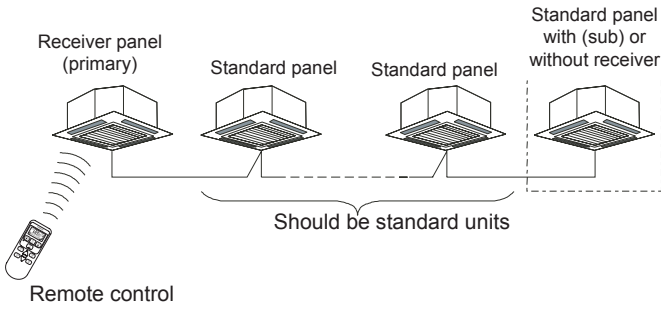
⚠ CAUTION

Disconnect all power supplies before carrying out operations such as wiring, rotary switch setting, etc.

When several indoor units (a maximum of 16) are operating simultaneously with just one remote control (wireless), apply the receiver kit for wireless control to the unit to be operated, and apply the standard panels (without receiver kit) to the rest of the units (wired control).

If you need to use several receiver panels for wireless control, a maximum of 2 can be installed.

If 2 receiver panels are used, set them as primary and secondary panels by following the procedures indicated below.



NOTE

- *It is also possible to combine a remote control and a wireless control with the same group of units.*
- *The RPK units cannot be connected at the same time as the built-in receiver. If you want to use several RPK units simultaneously with only one remote control, the PC-ALHZ(F) should be used.*

The maximum permitted cable lengths between units shown in the following table must be taken into account:

Cable section	0.3 mm^2	≥ 0.75 mm^2
Cable length	30 m	500 m

◆ Secondary receiver kit setting for a wireless remote control

1 Remove the back cover of the receiver kit.

2 Set pin number 1 of DIP switch to the ON position.



NOTE

Refer to the optional functions of the receiver kit for more information.

◆ Wiring procedure between indoor units

DANGER

- ***Turn OFF the power source completely before performing the DIP switch setting and electrical wiring work for receiver kit. If not, it may cause an electric shock.***
- ***Perform securely the electrical wiring work. If the electrical work is not completed, heat generation at the connection, a fire or an electric shock may occur.***
- ***Make sure that the electrical wires are securely fixed in order not to apply an external force to the terminal connections of the wirings. If fixing is not completed, it may cause heat generation or a fire.***

1 Lay the wiring between the indoor units after reading the receiver installation manual. The total cable length should not exceed 500 metres.

References on the 2P extension cables (accessory) are indicated below:

2P extension cable	PRC-10E1	PRC-15E1	PRC-20E1	PRC-30E1
Cable length	10 m	15 m	20 m	30 m

2 Fix the connection control cable between the indoor units at certain points with flexible flanges ensuring that it does not run in parallel with the power supply cable inside the indoor unit. Keep a distance of more than 30cm between the control cable and the power supply cable. Earth one end of the conduit after inserting the control cable inside the metal conduit.

NOTE

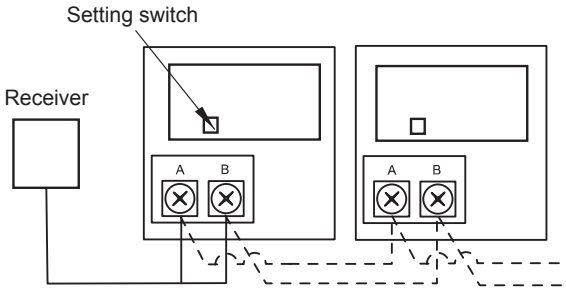
Do not run the connecting cable for receiver kit and the power source cable (220-240V) in parallel. It may cause malfunction of receiver kit by noise.

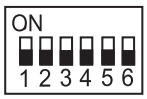
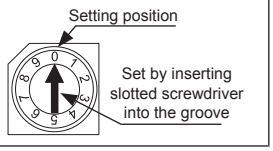
3 Fit the setting switches on the printed circuit boards of each indoor unit's electrical box as shown in the figure on the right.

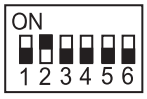
4 Check the number of indoor units connected using test mode.

NOTE

- *The 7-segment display of the wireless remote control will show the number of indoor units connected when the operation test is carried out with the remote control.*
- *However, this number cannot be indicated on some models. In these cases, check the number with the wired remote control.*



Setting Switch	
Tens digit	Units digit
	

Ex: In case of setting unit Number 25	
	
Turn ON pin number 2	Set Dial to number 5

Dip Switch and Rotary Switch setting before shipment is "00".

Maximum unit number is 63

4.3.5 Optional function setting

◆ Optional function setting procedure

1 Press both “OFF TIMER” and “Reset” 3 seconds.

2 Press “▽” to change the item in ascending order.(No. ▻ 1 → 2 → 3 .... b ▭)
Press “△” to change the item in descending order. (No. ▻ 1 → b → A .... 2 ▭)

3 Press the “ ⏻ On” switch to make the last digit flash, and then change to the next setting content by pressing the “△” “▽” switches.

4 Change to the required setting with the “△” “▽” and confirm the setting content with the “ ⏻ On” switch.

5 Finally exit the optional function setting by pressing the “○ OFF” switch to perform the reset.

The optional function setting will automatically end and reset if no operation is performed 60 seconds after it is displayed.

The display range of the wireless controller can be set, following the function to set the indoor unit.

⚠ CAUTION

Some settings may not operate even if they are selected and displayed on the wireless remote control, depending on the indoor unit model.

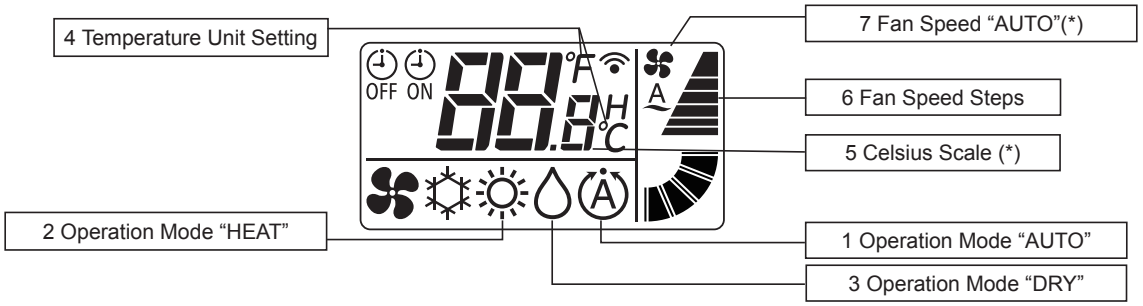
“△” Switch

“▽” Switch

Switching		Press “▽” while the last digit is flashing Press “△” while the last digit is flashing	
1	Operation Mode “AUTO”	10	Non-display
		11	Display
2	Operation Mode “HEAT”	20	Non-display
		21	Display
3	Operation Mode “DRY”	30	Non-display
		31	Display
4	Temperature Unit Setting	40	°C
		41	°F
5	Celsius Scale (*)	50	1°C
		51	0.5°C(*)
6	Fan speed Steps	60	3 steps
		61	4 steps
		62	6 steps
7	Fan Speed “AUTO” (*)	70	Non-display
		71	Display
8, 9, A, b	Not Use		

NOTE

- ▭ *The selected items are set when restore setting (factory default). These settings can be restored when the wireless remote control is reset.*
- *(*) Only available for the combination of indoor unit and receiver kit supporting the “0.5°C increment” and “Operation mode AUTO” functions.*
- *IMPORTANT: Optional function 7 needs to be set 0 (Non display) when this function is not available.*
- *After replacing the battery, selected optional function settings are retained.*



4.3.6 Maintenance

4.3.6.1 Cleaning wireless remote control switch

- Wipe it by soft, dry cloth.
- Do not use wet cloth to clean. It may cause failure of wireless remote control switch.
- Do not use benzine, thinner or detergent (Surfactant). If it is used, the wireless remote control switch may be deformed or changed color.

4.3.6.2 Replacing batteries

Under the normal use, the battery life should be about 1 year (in case of alkaline batteries).

Replace the batteries if the following phenomenon is occurred:

The transmission distance between the remote control switch and the receiver kit gets shorter for operation or fan speed adjustment

NOTE

- *Pay attention to the followings to use the batteries correctly. If not, it may cause liquid spill or burst.*
  - *Never use the new and the used batteries together.*
  - *Never use the different types of batteries (for example manganese battery and alkaline battery) together.*
  - *When the wireless remote control switch is not used for a long time (more than 2 or 3 months), take out the batteries from the wireless remote control switch.*
- *The batteries attached are for validation. Therefore, the battery life may get shorter.*
- *When the batteries are replaced, wait for more than 5 seconds to replace new.*

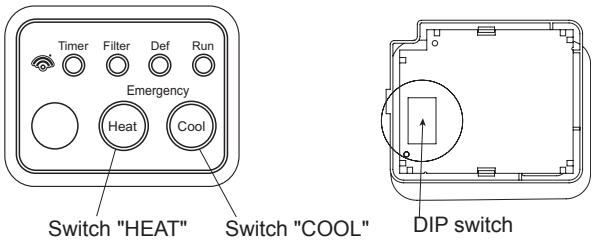
4.4 Receiver kit for wireless remote control

A receiver is required in order for the indoor units to receive the signal when a wireless remote control is used (PC-AWR).

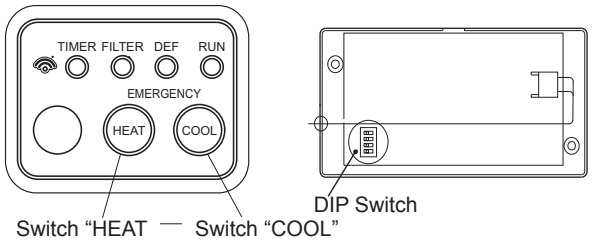
Compatible models:

Receiver	Compatible models	Mounted on
PC-ALHC1	RCIM-FSN4E	Panel
PC-ALHD1	RCD-FSN3	Panel
PC-ALH3	RCI-FSN4	Panel
PC-ALHP1	RPC-FSN3	Panel
PC-ALHZ1	RPI-FSN(3/5)(P)E, RPIM-FSN4E(-DU), RPF(I)-FSN2E RCI-FSN4, RCIM-FSN4E, RCD-FSN3, RPK-FSN(H)3M RPC-FSN3(E)	Wall

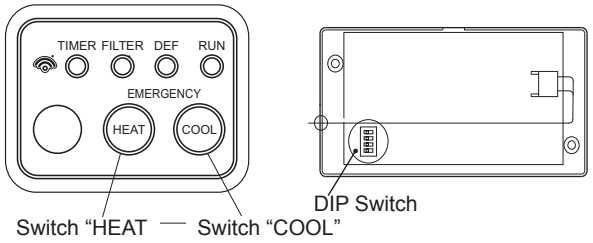
◆ PC-ALHC1



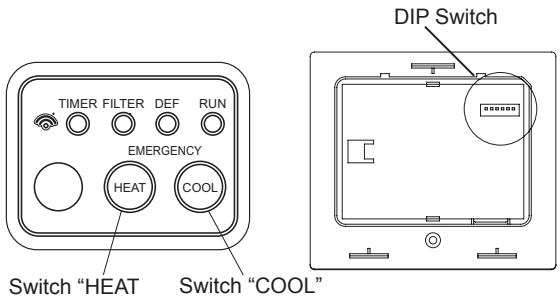
◆ PC-ALHD1



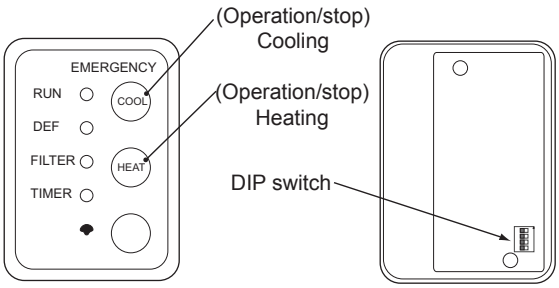
◆ PC-ALH3



◆ PC-ALHP1



◆ PC-ALHZ1



4.4.1 Installation of PC-ALH3 Receiver kit (For RCI-FSN4)

4.4.1.1 Safety summary

⚠ DANGER

- ***DO NOT handle the remote control with wet hands.***
- ***DO NOT spill water on the remote control. This may cause an electric shock.***
- ***If the safety devices are activated too frequently or the buttons do not work properly, turn off the unit at the mains and contact your HITACHI service provider.***
- ***In the event of other incidents of an electrical nature, turn off the system, switch it off at the mains and contact your HITACHI service provider.***

⚠ CAUTION

DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:

- *Where there are oil vapours and the oil is dispersed.*
- *In the proximity of hot water or heat sources or in sulphuric environments.*
- *In locations prone to the generation, accumulation, leakage or flow of flammable gas.*
- *Close to the sea (saline atmospheres).*
- *In acidic or alkaline environments.*
- *Within the reach of children.*
- *Directly in front of the air-conditioning system outlet.*
- *To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m of strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.*
- *If electrical noise should be generated at the indoor unit power source, install a noise filter.*

⚠ CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*

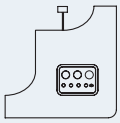
4.4.1.2 Installation

◆ Components list

Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quantity	Comments
Receiver kit PC-ALH3		1	With connection wire
Connection cable		1	-
Flexible cable tie		3	For securing the cables
Wiring cover		1	To protect the connection cable
Installation and operation manual		1	Installation and operation unit instructions

◆ Installation procedure

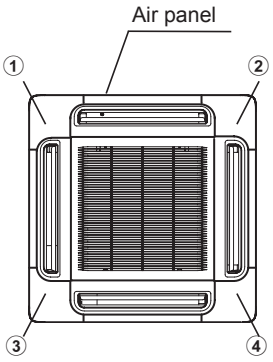
⚠ CAUTION

Follow these installation procedures carefully. Failure to do so may cause the receiver to become detached from the panel causing a serious accident.

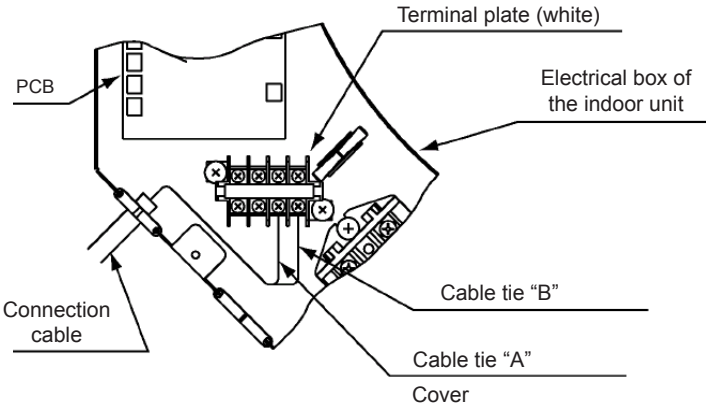
1 Install the wireless receiver kit, indoor unit and air panel at the same time.

2 If the wireless receiver kit is installed after the indoor unit, unplug the power source from the indoor unit and remove the air panel.

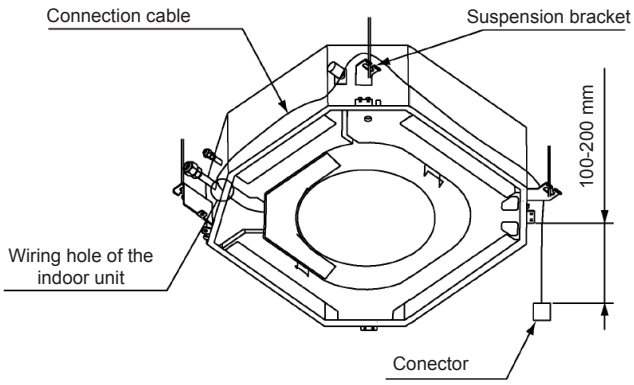
3 This receiver kit can be installed in positions 1, 2, 3 or 4.



4 Remove the cover from the electrical box of the indoor unit and connect the cable to the terminal plate (white) as shown below.



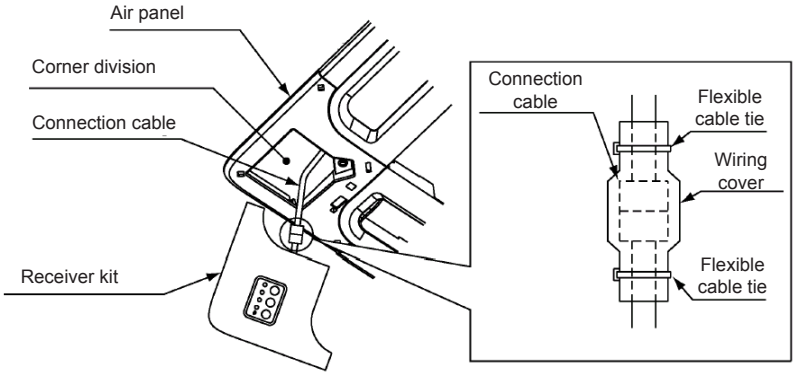
5 Draw the connection cable through the wiring hole on the indoor unit and pass it over the unit's suspension bracket to the receiver kit installation position. Secure any excess cable with a cable tie.



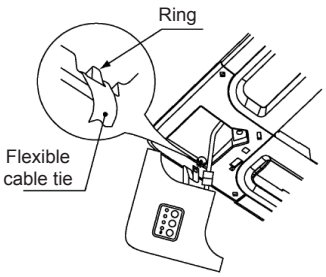
6 Install the air panel accessory on the indoor unit.

7 Connect the receiver kit using the following procedure.

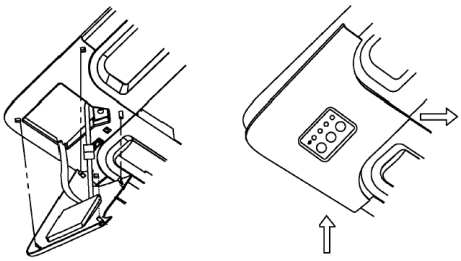
a. Route the connection cable outside the box and connect it to the receiver kit cable. Once connected, cover the connector with the wiring cover and secure the cables using a flexible cable tie.



b. Hook the cable tie onto the air panel ring at the back of the receiver kit, as shown in the following diagram.



c. Hook the L-shaped tab on the back of the receiver kit into the square hole of the air panel.

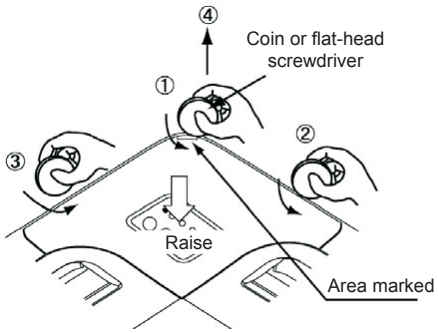


8 Hook the other fixing tabs (3 positions) into the square holes of the air panel.

NOTE

When removing the receiver kit after installing the air panel:

- *The corner point of the receiver kit can be raised by inserting a coin or flat-head screwdriver in the area marked ① and pressing downwards. With ① raised, turn a coin or flat-head screwdriver under positions ② and ③, and the entire receiver kit will lift up.*
- *After disconnecting the fixing tabs (3 positions), slide the receiver kit in the direction of the arrow ④ and remove it.*



4.4.2 Installation of PC-ALHC1 Receiver kit (For RCIM-FSN4E)

4.4.2.1 Safety summary

DANGER

- ***DO NOT handle the remote control with wet hands.***
- ***DO NOT spill water on the remote control. This may cause an electric shock.***
- ***If the safety devices are activated too frequently or the buttons do not work properly, turn off the unit at the mains and contact your HITACHI service provider.***
- ***In the event of other incidents of an electrical nature, turn off the system, switch it off at the mains and contact your HITACHI service provider.***

CAUTION

DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:

- *Where there are oil vapours and the oil is dispersed.*
- *In the proximity of hot water or heat sources or in sulphuric environments.*
- *In locations prone to the generation, accumulation, leakage or flow of flammable gas.*
- *Close to the sea (saline atmospheres).*
- *In acidic or alkaline environments.*
- *Within the reach of children.*
- *Directly in front of the air-conditioning system outlet.*
- *To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m of strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.*
- *If electrical noise should be generated at the indoor unit power source, install a noise filter.*

CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*

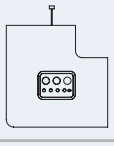
4.4.2.2 Installation

◆ Components list

Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quantity	Comments
Receiver kit PC-ALHC1		1	With connection wire
Connection cable		1	–
Flexible cable tie		2	For securing the cables
Wiring cover		1	To protect the connection cable
Installation and operation manual		1	Installation and operation unit instructions

◆ Installation procedure

⚠ CAUTION

- *Turn OFF the power source completely before performing the DIP switch setting, installation work and electrical wiring work for receiver kit. If not, it may cause an electric shock.*
- *Perform securely the installation work referring to this installation manual. If the installation is not completed, it may cause injury by falling down the receiver kit.*
- *Do not install the receiver kit where the flammable gases may generate or enter. It may cause heat generation or a fire.*
- *Perform securely the electrical wiring work. If the electrical work is not completed, heat generation at the connection, a fire or an electric shock may occur.*
- *Make sure that the electrical wires are securely fixed in order not to apply an external force to the terminal connections of the wirings. If fixing is not completed, it may cause heat generation or a fire.*

NOTE

- *When the receiver kit is attached near lighting which generates the ambient light, it may not receive the signal from the wireless remote control. Pay attention to the installation position of receiver kit.*
- *Do not run the connecting cable for receiver kit and the power source cable in parallel. It may cause malfunction of receiver kit by noise.*

1 Perform the installation work for receiver kit while the optional air panel is being attached to the indoor unit.

2 In the case that the receiver kit is attached after the air panel is attached to the indoor unit, turn OFF the power source of indoor unit, and remove the air panel. The removing air panel should be performed according to the installation manual of the air panel or the service manual.

3 This receiver kit can be attached to any of corners (4 directions, ①, ②, ③, and ④). Determine the attaching place as user's request.

NOTE

The DIP switch setting for receiver kit is available to select each function. If the optional function selection is required, it shall be performed according to the item "4.4.8 Optional functions" before the receiver kit is attached to the air panel.

4 Attach the air panel.

The installation of air panel should be referred to the installation manual of itself.

5 After the installation work for air panel is completed, attach the receiver kit.

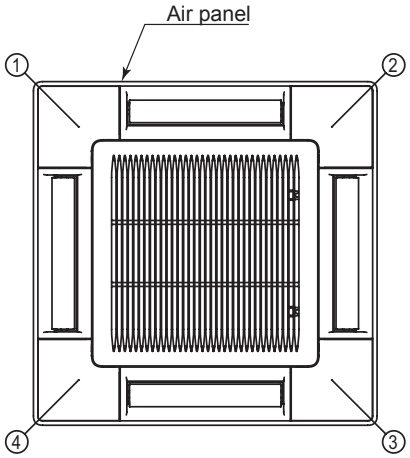
a. Removing the corner pocket cover.

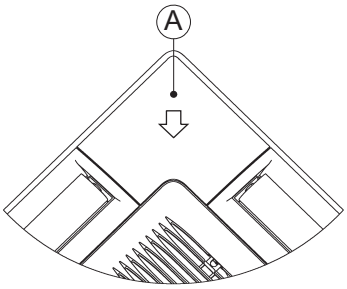
Remove the corner pocket covers by pulling Ⓐ part towards the arrow direction.

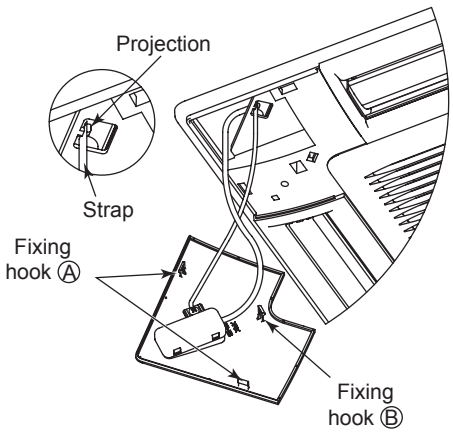
b. Catch the band at the rear side of the receiver kit onto the projection at the air panel as shown in the figure.

NOTE

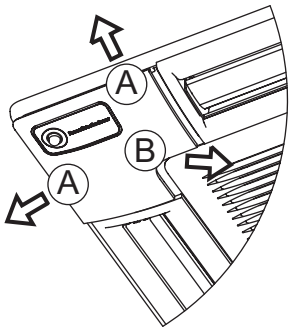
Catch securely the band onto the projection to prevent falling down the receiver kit.







c. While pushing the wiring into the corner pocket, insert the fixing hooks (2 portions) at Ⓐ to the square hole of the air panel, and push the receiver kit toward the arrow direction (Ⓐ). Then, insert the fixing hook (1 portion) at Ⓑ to the square hole of the air panel.

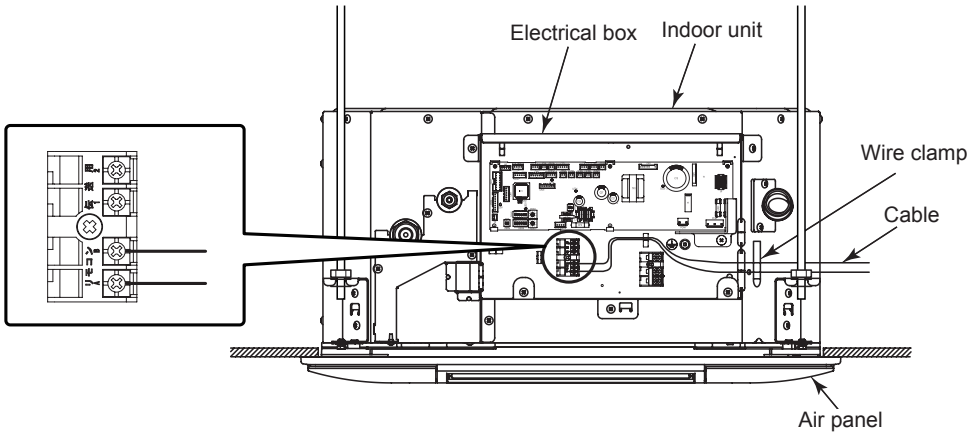


NOTE

Catch securely the fixing hooks of the receiver kit to the air panel. If not, the fixing hooks will be damaged.

6 Connect the cable to the terminal block.

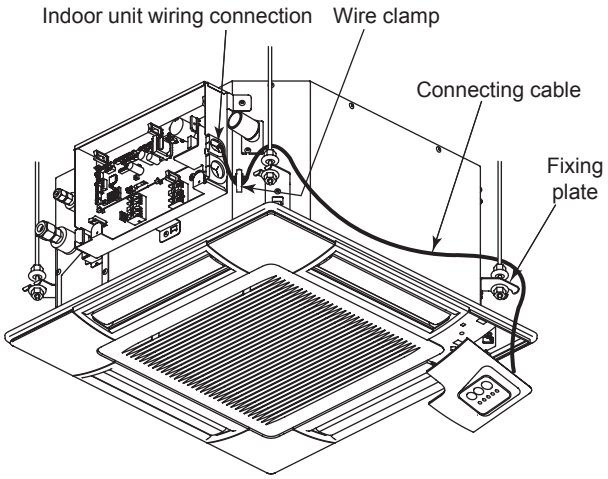
Open the electrical box cover at the indoor unit. Connect the connecting cable to the terminal A and B in the electrical box. (No polarity with terminals A and B)



This receiver kit can be installed to any four corners of the air panel. In the case of installing it to far corner from the electrical box, run through the wiring for the receiver kit on the fixing plate of the unit between the receiver kit and the electrical box of the unit as shown.

After running the connecting cable, clamp the extra length of the connecting cable by the plastic band and store it at inside the ceiling.

Example: installing receiver kit to far corner from electrical box



NOTE

If installing the receiver kit near the electrical box, an extra cable shall bind up by the wire clamp.

7 After the installation work for receiver kit is completed, attach the corner pocket covers (3 portions).

The detail should be referred to the installation manual of the air panel.

NOTE

After the receiver kit is attached to the air panel, the one corner pocket cover (It was attached with air panel.) becomes unnecessary.

4.4.3 Installation of PC-ALHD1 Receiver kit (For RCD-FSN3)

4.4.3.1 Safety summary

⚠ DANGER

- ***DO NOT handle the remote control with wet hands.***
- ***DO NOT spill water on the remote control. This may cause an electric shock.***
- ***If the safety devices are activated too frequently or the buttons do not work properly, turn off the unit at the mains and contact your HITACHI service provider.***
- ***In the event of other incidents of an electrical nature, turn off the system, switch it off at the mains and contact your HITACHI service provider.***

⚠ CAUTION

DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:

- *Where there are oil vapours and the oil is dispersed.*
- *In the proximity of hot water or heat sources or in sulphuric environments.*
- *In locations prone to the generation, accumulation, leakage or flow of flammable gas.*
- *Close to the sea (saline atmospheres).*
- *In acidic or alkaline environments.*
- *Within the reach of children.*
- *Directly in front of the air-conditioning system outlet.*
- *To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m of strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.*
- *If electrical noise should be generated at the indoor unit power source, install a noise filter.*

⚠ CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*

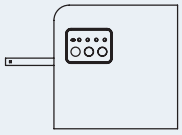
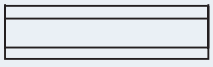
4.4.3.2 Installation

◆ Components list

Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Accessory	Quantity	Remarks
Receiver Kit PC-ALHD1 	1	with connecting cable
Connecting cable 	1	-
Wiring cover 	1	for protection of connecting cable
Plastic band 	3	for fixing wiring cover and connecting cable
Installation and Operation Manual	1	-

◆ Installation procedure

⚠ CAUTION

- *Turn OFF the power source completely before performing the DIP switch setting, installation work and electrical wiring work for receiver kit. If not, it may cause an electric shock.*
- *Perform securely the installation work referring to this installation manual. If the installation is not completed, it may cause injury by falling down the receiver kit.*
- *Do not install the receiver kit where the flammable gases may generate or enter. It may cause heat generation or a fire.*
- *Perform securely the electrical wiring work. If the electrical work is not completed, heat generation at the connection, a fire or an electric shock may occur.*
- *Make sure that the electrical wires are securely fixed in order not to apply an external force to the terminal connections of the wirings. If fixing is not completed, it may cause heat generation or a fire.*

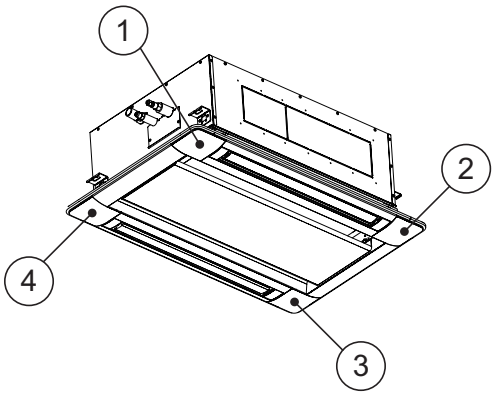
NOTE

- *When the receiver kit is attached near lighting which generates the ambient light, it may not receive the signal from the wireless remote control. Pay attention to the installation position of receiver kit.*
- *Do not run the connecting cable for receiver kit and the power source cable in parallel. It may cause malfunction of receiver kit by noise.*

1 Perform the installation work for receiver kit while the optional air panel is being attached to the indoor unit.

2 In the case that the receiver kit is attached after the air panel is attached to the indoor unit, turn OFF the power source of indoor unit, and remove the air panel. The removing air panel should be performed according to the installation manual of the air panel or the service manual.

3 This receiver kit can be attached to any of corners (4 directions, ①, ②, ③, and ④). Determine the attaching place as user's request.

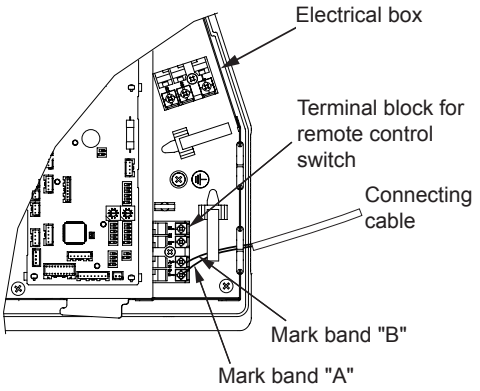


NOTE

The DIP switch setting for receiver kit is available to select each function. If the optional function selection is required, it shall be performed according to the item "4.4.8 Optional functions" before the receiver kit is attached to the air panel.

4 Connect the accessory connecting cable to the terminal block.

Open the electrical box cover at the indoor unit. Connect the connecting cable terminals to the terminal A and B in the electrical box. (No polarity with terminals A and B).



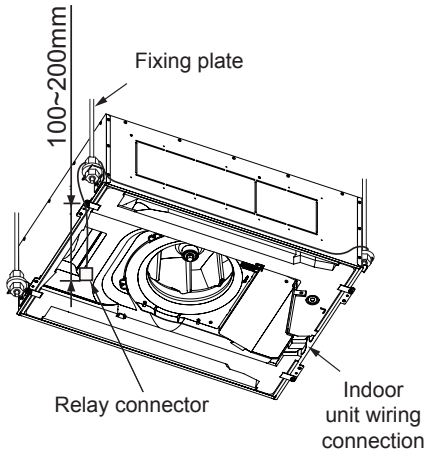
5 After connecting the connecting cable to each terminal, take it out to inside the false ceiling or outside of the unit.

Then, run it to the installation position of receiver kit. The wiring connection at the indoor unit should be referred "Installation and operation Manual" of the indoor unit.

When running the connecting cable, run it to the installation position of receiver kit through the top of fixing plate for the indoor unit.

After running the connecting cable, take the distance (from 100mm to 200mm) from the indoor unit undersurface to the connecting cable as shown in the right figure.

After running the connecting cable, clamp the extra length of the connecting cable by the plastic band and store it at inside the ceiling.



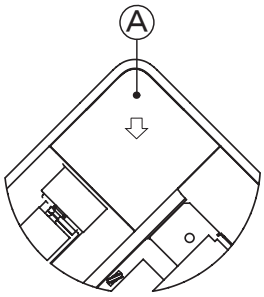
6 Attach the air panel.

The installation of air panel should be referred to the installation manual of itself.

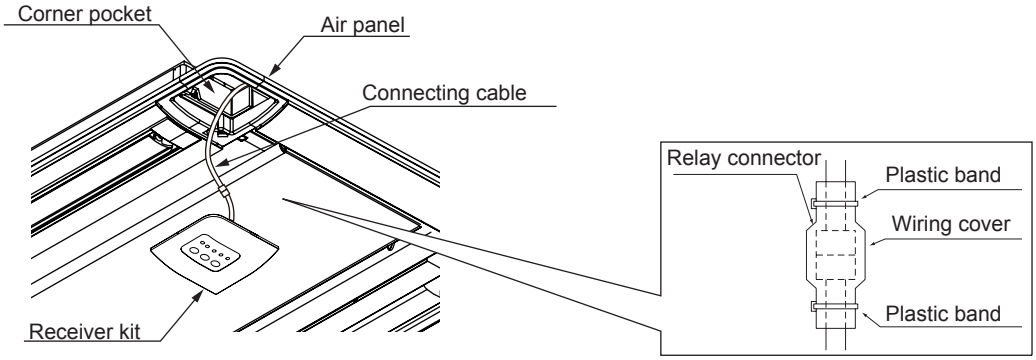
7 After the installation work for air panel is completed, attach the receiver kit.

a. Removing the corner pocket cover.

Remove the corner pocket covers by pulling Ⓐ part towards the arrow direction.



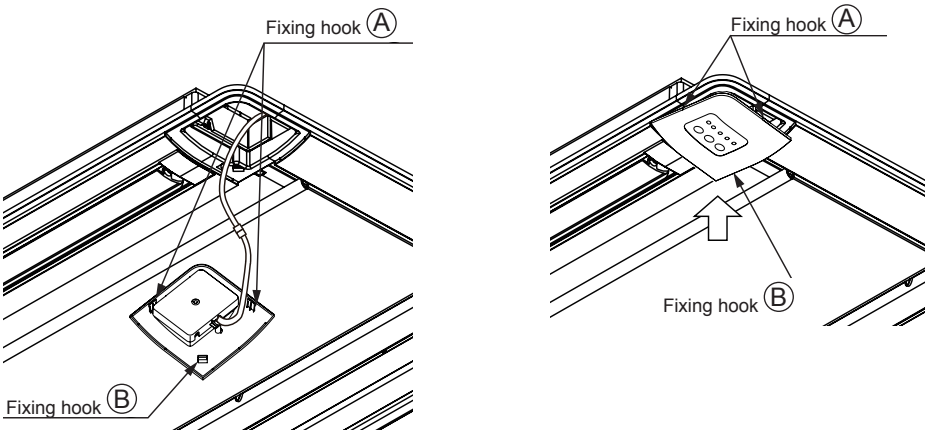
b. Take the connecting cable out from the corner pocket of the air panel. Connect the wiring for receiver kit to the relay connector as the following figure.
After connecting, cover the relay connector connection by the wiring cover, and fix the wiring cover by the plastic bands.



c. While pushing the wiring into the corner pocket, insert the fixing hooks (2 portions) at Ⓐ to the square hole of the air panel, and push the receiver kit toward the arrow direction (Ⓐ). Then, insert the fixing hook (1 portion) at Ⓑ to the square hole of the air panel.

NOTE

Catch securely the fixing hooks of the receiver kit to the air panel. If not, the fixing hooks will be damaged.



8 After the installation work for receiver kit is completed, attach the corner pocket covers (3 portions).

The detail should be referred to the installation manual of the air panel.

NOTE

After the receiver kit is attached to the air panel, the one corner pocket cover (It was attached with air panel.) becomes unnecessary.

4.4.4 Installation of PC-ALH3 Receiver kit (For RCI-FSN4)

4.4.4.1 Safety summary

⚠ DANGER

- ***DO NOT handle the remote control with wet hands.***
- ***DO NOT spill water on the remote control. This may cause an electric shock.***
- ***If the safety devices are activated too frequently or the buttons do not work properly, turn off the unit at the mains and contact your HITACHI service provider.***
- ***In the event of other incidents of an electrical nature, turn off the system, switch it off at the mains and contact your HITACHI service provider.***

⚠ CAUTION

DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:

- *Where there are oil vapours and the oil is dispersed.*
- *In the proximity of hot water or heat sources or in sulphuric environments.*
- *In locations prone to the generation, accumulation, leakage or flow of flammable gas.*
- *Close to the sea (saline atmospheres).*
- *In acidic or alkaline environments.*
- *Within the reach of children.*
- *Directly in front of the air-conditioning system outlet.*
- *To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m of strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.*
- *If electrical noise should be generated at the indoor unit power source, install a noise filter.*

⚠ CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*

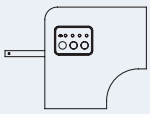
4.4.4.2 Installation

◆ Components list

Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quant.	Comments
Receiver kit PC-ALH3		1	With connection wire
Relay wire		1	–
Cable tie		2	For securing the cables
Wiring cover		1	To protect the connection cable
Installation and operation manual		1	Installation and operation unit instructions

◆ Installation procedure

⚠ DANGER

- ***Turn OFF the power source completely before performing the DIP switch setting, installation work and electrical wiring work for receiver kit. If not, it may cause an electric shock.***
- ***Perform securely the installation work referring to this installation manual. If the installation is not completed, it may cause injury by falling down the receiver kit.***
- ***Do not install the receiver kit where the flammable gases may generate or enter. It may cause heat generation or a fire.***
- ***Perform securely the electrical wiring work. If the electrical work is not completed, heat generation at the connection, a fire or an electric shock may occur.***
- ***Make sure that the electrical wires are securely fixed in order not to apply an external force to the terminal connections of the wirings. If fixing is not completed, it may cause heat generation or a fire.***

⚠ CAUTION

- *When the receiver kit is attached near lighting which generates the ambient light, it may not receive the signal from the wireless remote control. Pay attention to the installation position of receiver kit.*
- *Do not run the wire for receiver kit and wire of 220-240V (power source wire) in parallel. It may cause malfunction of receiver kit by noise.*

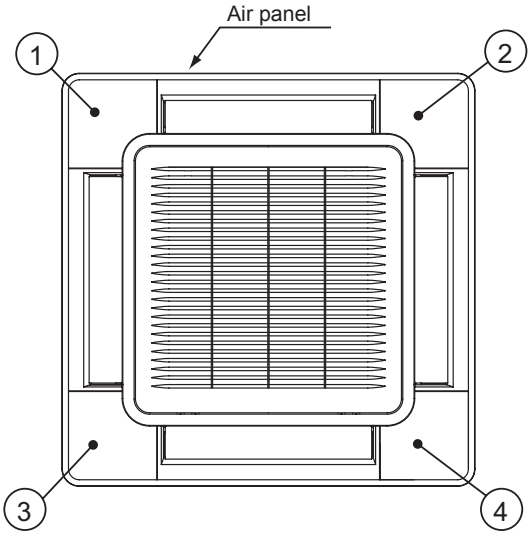
1 Perform the installation work for receiver kit while the optional air panel is being attached to the indoor unit.

2 In the case that the receiver kit is attached after the air panel is attached to the indoor unit, turn OFF the power source of indoor unit, and remove the air panel. The removing air panel should be performed according to the installation manual of the air panel or the service manual.

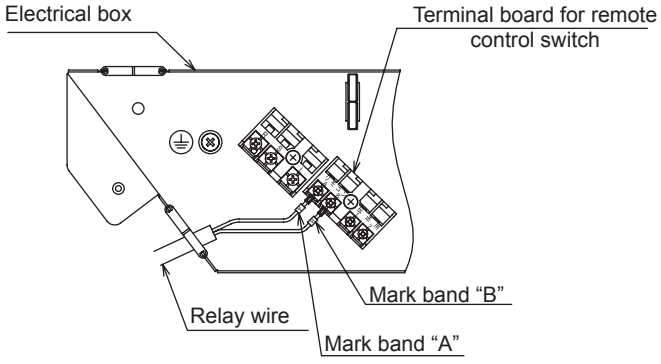
3 This receiver kit can be attached to any of corners (4 directions, ①, ②, ③ and ④). Determine the attaching place as user's request.

NOTE

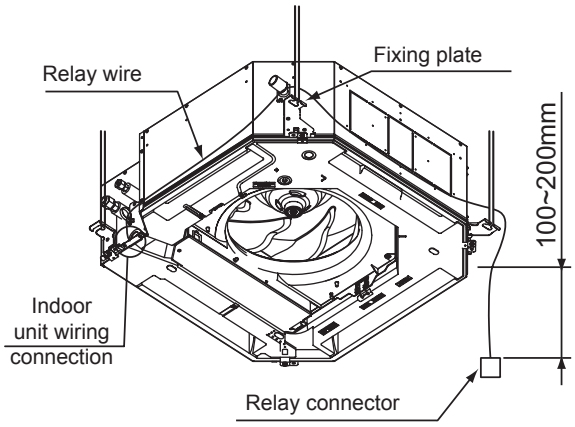
The DIP switch setting for receiver kit is available to select each function. If the optional function selection is required, it shall be performed according to the item "4.4.8 Optional functions" before the receiver kit is attached to the air panel.



4 Connect the optional relay wire to the terminal board. Open the electrical box cover at the indoor unit. Connect the relay wire terminals to the terminal A and B in the electrical box. (No polarity with terminals A and B).



5 After connecting the relay wire to each terminal, take it out to inside the false ceiling or outside of the unit. Then, run it to the installation position of receiver kit. The wiring connection at the indoor unit should be referred Installation and Maintenance Manual of the indoor unit. When running the relay wire, run it to the installation position of receiver kit through the top of fixing plate for the indoor unit. After running the relay wire, take the distance (from 100mm to 200mm) from the indoor unit undersurface to the relay wire as shown in the right figure. After running the relay wire, clamp the extra length of the relay wire by the plastic band and store it at inside the ceiling.



6 Attach the air panel. The installation of air panel should be referred to the installation manual of itself.

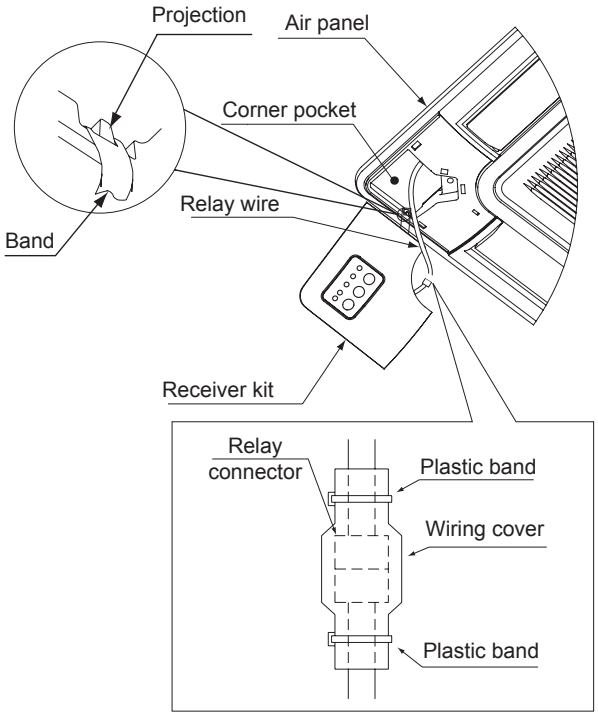
7 After the installation work for air panel is completed, attach the receiver kit.

a. Take the relay wire out from the corner pocket of the air panel. Connect the wiring for receiver kit to the relay connector as the following figure. After connecting, cover the relay connector connection by the wiring cover, and fix the wiring cover by the plastic bands.

b. Catch the band at the rear side of the receiver kit onto the projection at the air panel as shown in the figure below.

NOTE

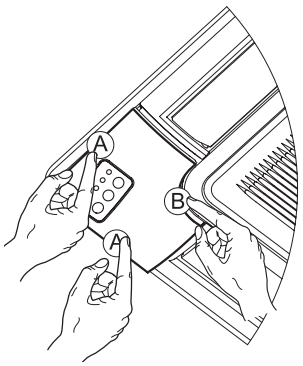
Catch securely the band onto the projection to prevent falling down the receiver kit.



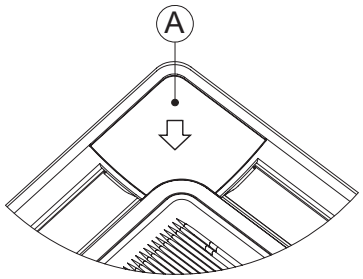
c. While pushing the wiring into the corner pocket, insert the fixing hooks (2 portions) at Ⓐ to the square hole of the air panel, and push the receiver kit toward the arrow direction (Ⓐ). Then, insert the fixing hook (1 portion) at Ⓑ to the square hole of the air panel.

NOTE

Catch securely the fixing hooks of the receiver kit to the air panel. If not, the fixing hooks will be damaged.



d. Removing corner pocket cover method
Remove the corner pocket covers.
The corner pocket covers can be removed pulling Ⓐ part toward the arrow direction.



8 After the installation work for receiver kit is completed, attach the corner pocket covers (3 portions). The detail should be referred to the installation manual of the air panel.

NOTE

After the receiver kit is attached to the air panel, the one corner pocket cover (It was attached with air panel.) becomes unnecessary.

4.4.5 Installation of PC-ALHP1 Receiver kit (For RPC-FSN3)

4.4.5.1 Safety summary

⚠ DANGER

- ***DO NOT handle the remote control with wet hands.***
- ***DO NOT spill water on the remote control. This may cause an electric shock.***
- ***If the safety devices are activated too frequently or the buttons do not work properly, turn off the unit at the mains and contact your HITACHI service provider.***
- ***In the event of other incidents of an electrical nature, turn off the system, switch it off at the mains and contact your HITACHI service provider.***

⚠ CAUTION

- *DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:*
- *Where there are oil vapours and the oil is dispersed.*
- *In the proximity of hot water or heat sources or in sulphuric environments.*
- *In locations prone to the generation, accumulation, leakage or flow of flammable gas.*
- *Close to the sea (saline atmospheres).*
- *In acidic or alkaline environments.*
- *Within the reach of children.*
- *Directly in front of the air-conditioning system outlet.*
- *To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m of strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.*
- *If electrical noise should be generated at the indoor unit power source, install a noise filter.*

⚠ CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*

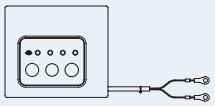
4.4.5.2 Installation

◆ Components list

Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quant.	Comments
Receiver kit PC-ALHP1		1	With connection wire
Flexible cable tie		5	For securing the cables
Wiring cover		1	To protect the connection cable
Installation and operation manual		1	Installation and operation unit instructions

◆ Installation procedure

⚠ DANGER

- ***Turn OFF the power source completely before performing the DIP switch setting, installation work and electrical wiring work for receiver kit. If not, it may cause an electric shock.***
- ***Perform securely the installation work referring to this installation manual. If the installation is not completed, it may cause injury by falling down the receiver kit.***
- ***Do not install the receiver kit where the flammable gases may generate or enter. It may cause heat generation or a fire.***
- ***Perform securely the electrical wiring work. If the electrical work is not completed, heat generation at the connection, a fire or an electric shock may occur.***
- ***Make sure that the electrical wires are securely fixed in order not to apply an external force to the terminal connections of the wirings. If fixing is not completed, it may cause heat generation or a fire.***

⚠ CAUTION

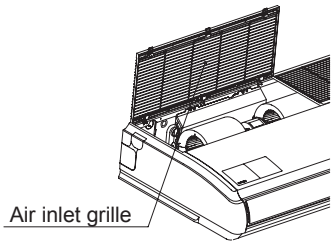
- *When the receiver kit is attached near lighting which generates the ambient light, it may not receive the signal from the wireless remote control. Pay attention to the installation position of receiver kit.*
- *Do not run the wire for receiver kit and wire of 220-240V (power source wire) in parallel. It may cause malfunction of receiver kit by noise.*

1 Perform the installation work for receiver kit while the indoor unit is being mounted.

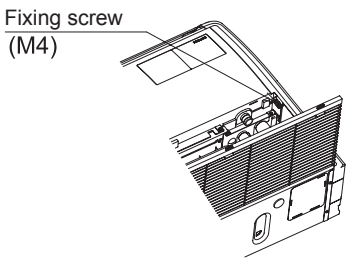
2 Be sure to turn OFF the power source of indoor unit when the receiver kit is attached after the indoor unit is mounted.

3 Remove the right side cover.

a. Open the air inlet grille.

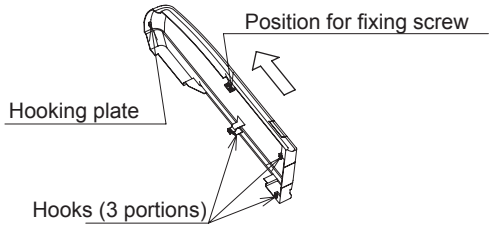


b. Remove the fixing screw (M4)



c. Push the side cover to 15mm forward to remove the hooks and the hooking plate.

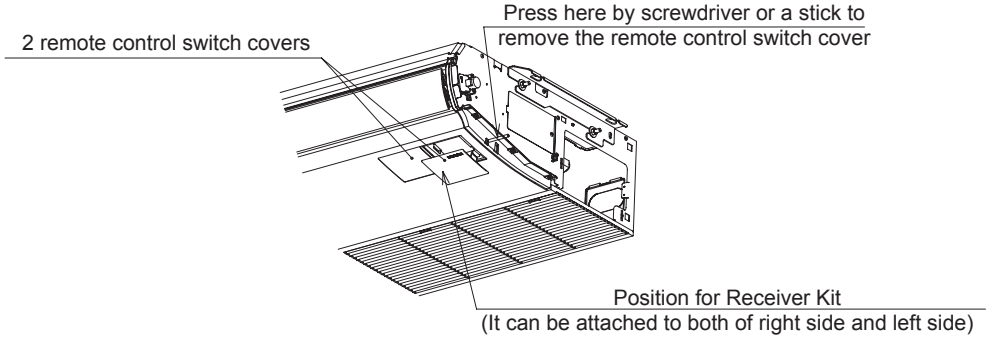
d. Remove the side cover to lift upward.



4 Remove the remote control switch cover attaching to the lower cover.

a. Insert screwdriver or a stick (maximum ∅5) into the service hole at the lower right side of lower cover.

b. Press the service hole to remove the remote control switch cover.

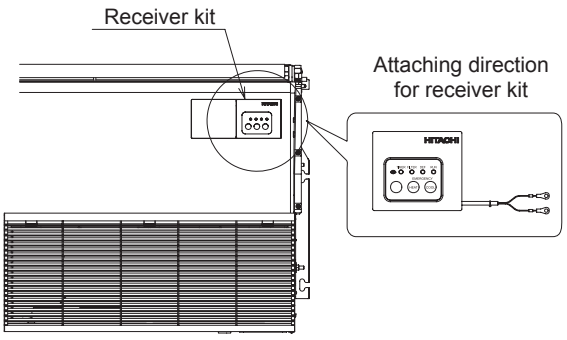


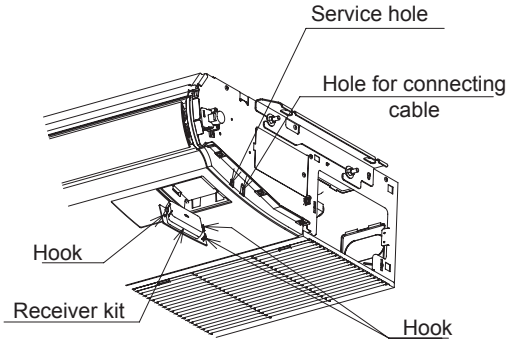
5 Attach the receiver kit to the lower cover.

a. Insert the receiver kit and the connecting cable to the position for receiver kit.

b. Lead the connecting cable through the hole for connecting cable.

c. Catch 3 hooks of receiver kit onto the square hole. Pay attention to the direction of receiver kit when it is attached.

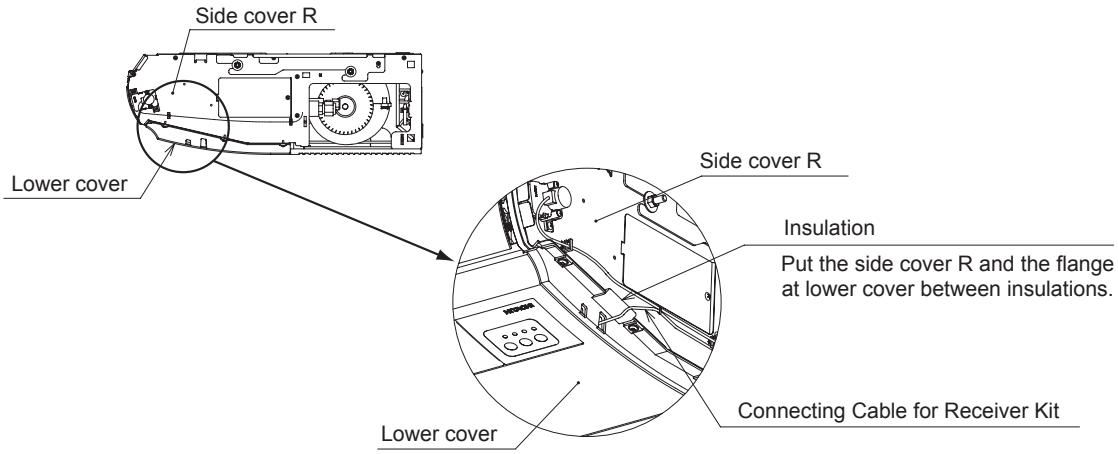




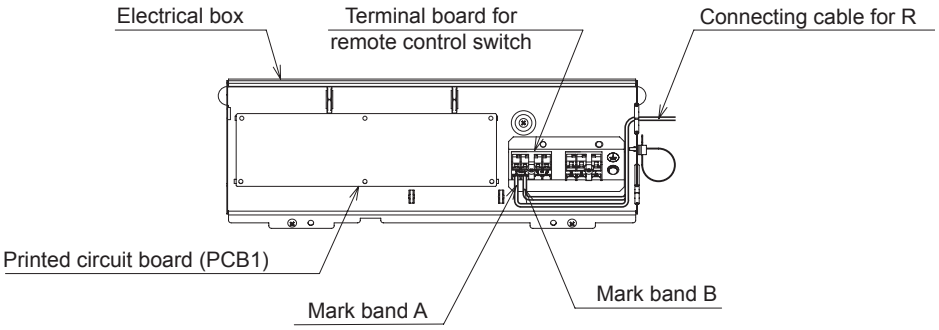
NOTE

Check whether the receiver kit is securely fixed.

6 Lead the connecting cable into the electrical box with other wires.Attach the accessory insulation to the edge of side cover R in order to prevent a scratch by contacting the connecting cable to the edge of side cover R.



7 Remove the electrical box cover. Connect the connecting cable to the terminals A and B at the terminal board for remote control switch as following figure. (There are no polarity between terminals A and B.)



4.4.6 Installation of PC-ALHZ1 Receiver kit (For RPI-FSN(3/5)(P)E, RPIM-FSN4E(-DU), RPF(I)-FSN2E, RCI-FSN4, RCIM-FSN4E, RCD-FSN3, RPK-FSN(H)3M and RPC-FSN3(E))

4.4.6.1 Safety summary

⚠ DANGER

- ***DO NOT handle the remote control with wet hands.***
- ***DO NOT spill water on the remote control. This may cause an electric shock.***
- ***If the safety devices are activated too frequently or the buttons do not work properly, turn off the unit at the mains and contact your HITACHI service provider.***
- ***In the event of other incidents of an electrical nature, turn off the system, switch it off at the mains and contact your HITACHI service provider.***

⚠ CAUTION

DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:

- *Where there are oil vapours and the oil is dispersed.*
- *In the proximity of hot water or heat sources or in sulphuric environments.*
- *In locations prone to the generation, accumulation, leakage or flow of flammable gas.*
- *Close to the sea (saline atmospheres).*
- *In acidic or alkaline environments.*
- *Within the reach of children.*
- *Directly in front of the air-conditioning system outlet.*
- *To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m of strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.*
- *If electrical noise should be generated at the indoor unit power source, install a noise filter.*

⚠ CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*

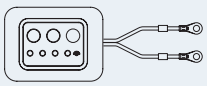
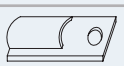
4.4.6.2 Installation

◆ Components list

Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quant.	Comments
Receiver kit PC-ALHZ1		1	With connection cable
Flexible cable tie		1	For securing the cables
Screw		4	To secure the receiver kit
Screw		2	To secure the clamp
Clamp		2	For securing the cables
Installation and operation manual		1	Installation and operation unit instructions.

◆ Installation procedure

⚠ CAUTION

Follow these installation procedures carefully. Failure to do so may cause the receiver to become detached from the panel causing a serious accident.

◆ Installation

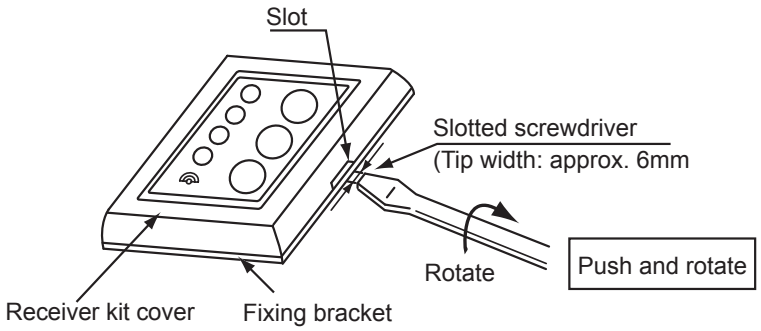
1 Perform the installation work for receiver kit while the indoor unit is being mounted.

2 Turn OFF the power source of indoor unit if the receiver kit is attached after the indoor unit is installed.

3 Install the receiver kit within the length of connecting cable (accessory). (The cable length is approximately 5m.)

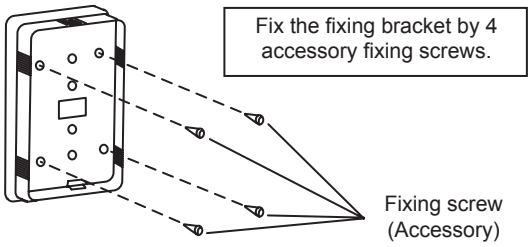
4 Open the receiver kit cover. Push the slotted screwdriver which tip width is approximately 6mm into the slot of receiver kit cover and rotate it to open the receiver kit cover as shown in the right figure.

5 Install the receiver kit onto the wall or the ceiling surface as followings.

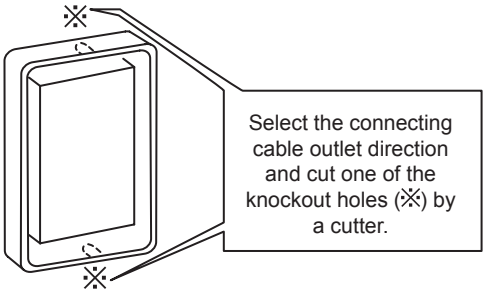


Case A

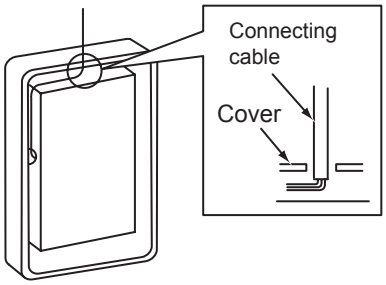
1 Fix the fixing bracket.



2 Select the connecting cable outlet direction and cut one of the knockout holes at the cover.

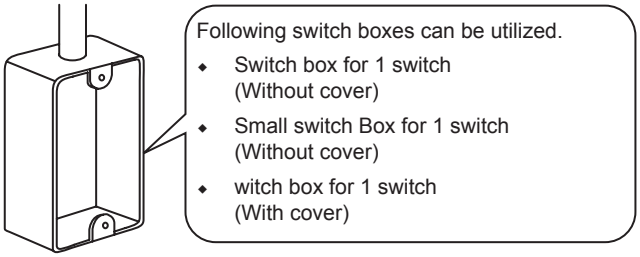


3 Lead the connecting cable through the knockout hole.



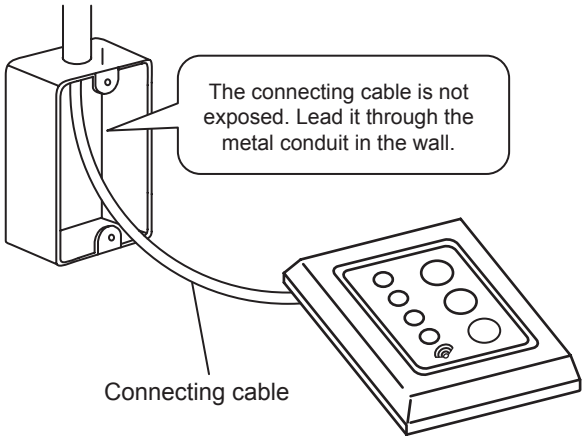
Case B

1 Prepare the field-supplied implanted switch box (JIS Box). (JIS C8340)

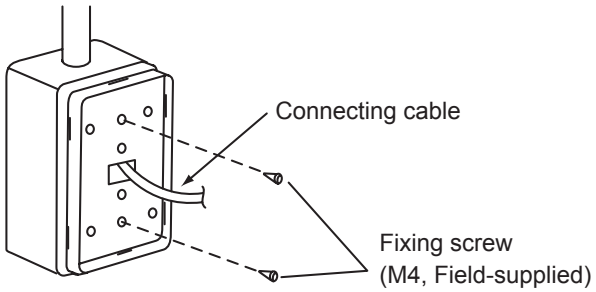


- Metal conduit (larger than I.D. Ø20)
- 2 fixing screws (M4, field-supplied)

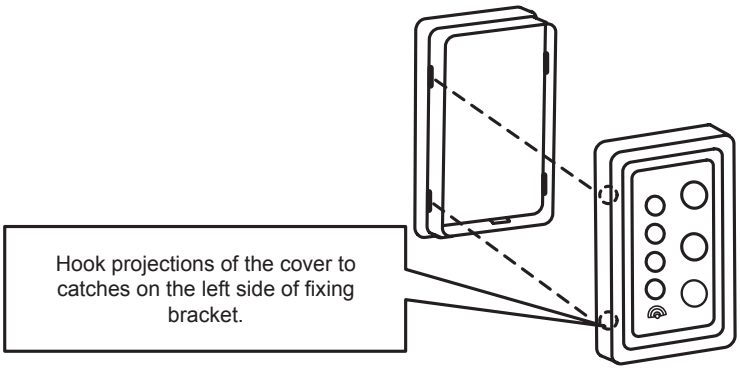
2 Run the connecting cable into the metal conduit.

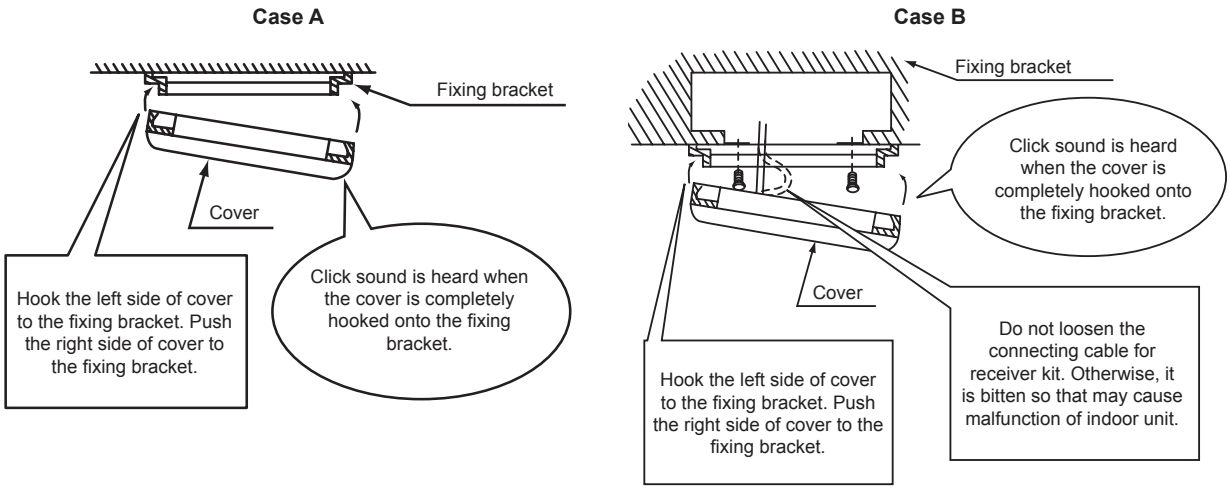


3 Fix the fixing bracket.



4 Attach the receiver kit. Do not bite the cable between the fixing bracket and the receiver kit cover when the receiver kit is attached. Attach the receiver kit cover with correct direction.





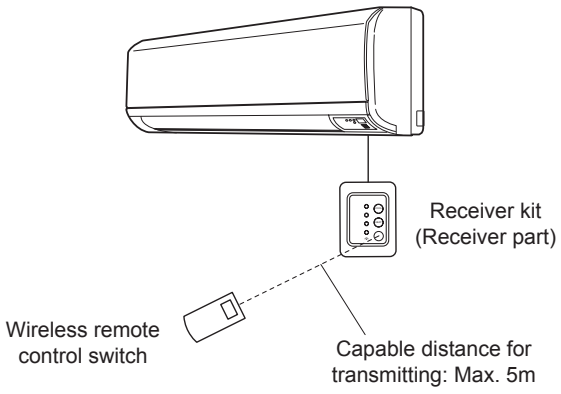
4.4.7 Operation

4.4.7.1 Communication between wireless remote control and receiver kit

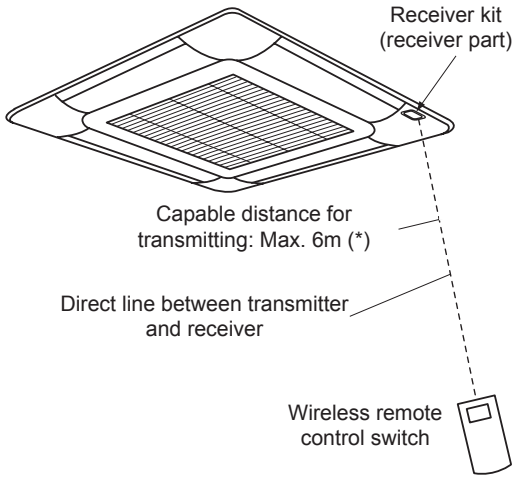
◆ Sending commands from wireless remote control

- The operation commands are sent by pressing the required operation switch by facing the transmitter of the wireless remote control switch toward the receiver of the indoor unit.
- When commands are sent from the wireless remote control switch, it should face vertically and be as close as possible to the receiver kit. The capable distance for transmitting will get shorter in case that the transmitting angle is not vertical to the receiver or an electronic type light is used in the room, etc.
- The distance for transmitting will get shorter due to battery consumption. In this case, replace the battery.
- The wireless remote control switch has directivity against the receiver. In case of receivers installed on the panel, the distance for transmitting depends on the ceiling height. Refer to the table below about the distance. The distance may differ depending on the building structure. Control the wireless remote control switch within the distance shown in the table below.

On the wall receiver kit



On the panel receiver kit



On the wall receiver kit

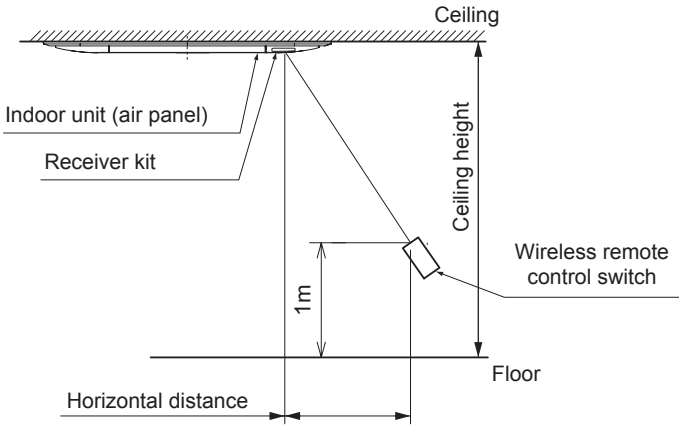
(The figure shows for the wall type indoor unit (RPK)).

On the panel receiver kit

(The figure shows for the 4-way casette type indoor unit (RCIM)).

(*) The distance for transmitting differs depending on the ceiling height. Refer to the table below about the detail.

Horizontal distance limit for receiver kit (in the case that height of wireless remote control from floor is 1 m):



- RCIM-FSN4E

Height of indoor unit (m)	2.7	3.0	3.5	4.0
Horizontal distance (m)	2.9	3.5	4.0	4.5

- RCD-FSN3

Height of indoor unit (m)	2.5	3.0	3.5	3.8
Horizontal distance (m)	2.5	3.5	4.0	4.0

- RCI-FSN4

Height of indoor unit (m)	2.7	3.0	3.5	4.0	4.5	5.0
Horizontal distance (m)	2.9	3.5	4.0	4.5	4.5	4.5

- RPC-FSN3(E)

Height of indoor unit (m)	2.5	3.0	3.5	3.8
Horizontal distance (m)	2.5	3.5	4.0	4.0

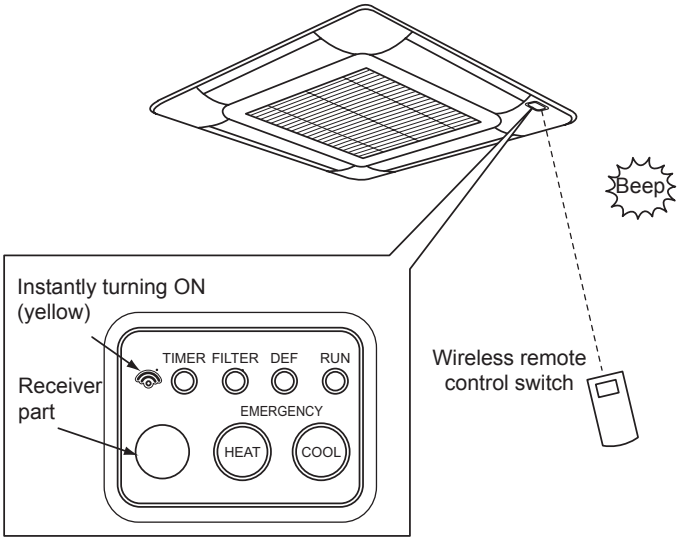
◆ Receipt confirmation of receiver kit

The " " lamp (yellow) on the receiver part of the indoor unit is turned ON for an instant when the receiver kit receives the commands from the wireless remote control switch. In the case that the " " lamp (yellow) is not turned ON, the controls may not have reached the receiver. Send the commands again.

NOTE

- *The " " lamp (yellow) is turned ON with the beep sound for receipt confirmation.*
- *The beep sound may not be heard by surrounding noise.*

Example:



4.4.7.2 Indication of receiver kit

◆ In normal condition

Defrost

- Defrost operation: DEF indicator (green) is turned ON during the defrosting. The indoor fan is stopped. The louver is fixed at the horizontal position. However, the louver indication of LCD continues to activate.
- Operation stoppage during defrosting operation: The RUN indicator (red) is turned OFF when the operation is stopped during the defrosting. However, the operation continues with turning ON DEF indicator (green), and the unit is stopped after the defrost operation is finished.

Filter sign

The cleaning period for air filter is notified by turning ON the FILTER indicator (yellow).

(The detail of cleaning method and filter cleaning time should be referred to the installation and operation manual of the indoor unit.)

After cleaning, point the transmitter towards the receiver kit and press “RESET” switch to turn OFF the FILTER indicator.

Central Control

When “ ” lamp (yellow) remains turning ON, the indoor unit is under the centralized control. In this case, “RESET” and “RUN/STOP” switches are only available to control from the wireless remote control switch.

Periodic check (only for gas heat pump air conditioner)

For the gas heat pump air conditioning, the periodic check is required because the engine is equipped.

If the indication lamp flashes in follows, the periodic check shall be performed.

Contact your distributor or contractor to request the maintenance.

- When the FILTER indicator (yellow) and the TIMER indicator (green) flash slowly (2 seconds ON/ 2 seconds OFF cycle), it is notified that the periodic check for outdoor unit is nearby.
- When the FILTER indicator (yellow) and the TIMER indicator (green) flash quickly (0.5 seconds ON/ 0.5 seconds OFF cycle), it is notified that the periodic check time for outdoor unit is passed. Contact beforehand your distributor or contractor to request the maintenance.

◆ In abnormal condition

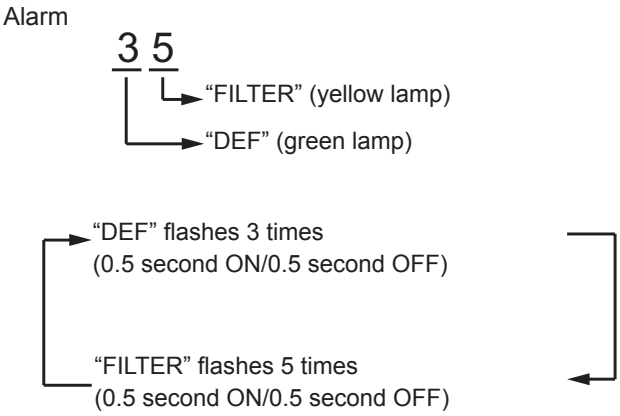
Abnormality

- When some troubles occur such as safety device actuation, etc. during the test run or the normal operation, “RUN” (red lamp) flashes (0.5 second ON / 0.5 second OFF).
- The alarm codes are indicated by the flashing times of “DEF” (green lamp) and “FILTER” (yellow lamp).

“DEF” (green): The number of flashing is shown at the tens digit of alarm code.

“FILTER” (yellow): The number of flashing is shown at the units digit of alarm code.

Example



These indications are repeated until the alarm is reset.

Power failure

- All the indications are OFF.
- Once the unit is stopped by the power failure, the unit will not be started again although the power recovers. Perform the starting procedures again.
- In case of instantaneous power failure within 2 seconds, the unit will be started again automatically.

Electric noise

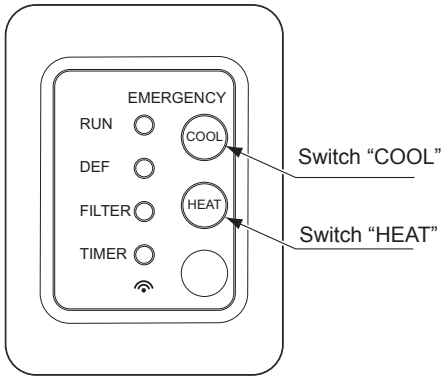
There could be a case that all the indications are OFF and the unit is stopped. This is occurred by the activation of the micro computer for the unit protection from the electric noise.

Perform the starting procedures again.

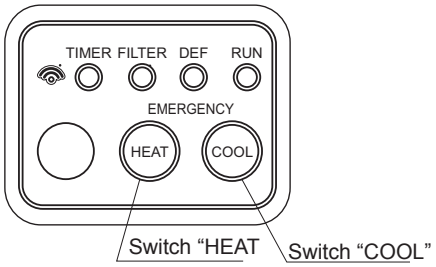
4.4.7.3 Emergency operation

"COOL" and "HEAT" switches are used for emergency operation when the wireless remote control (PC-AWR) is unusable by batteries shortage, etc.

On the wall receiver kit



On the panel receiver kit



1 Switch "COOL":
- Press "COOL" so that the cooling operation is started.
- Press "COOL" again so that the cooling operation is stopped.

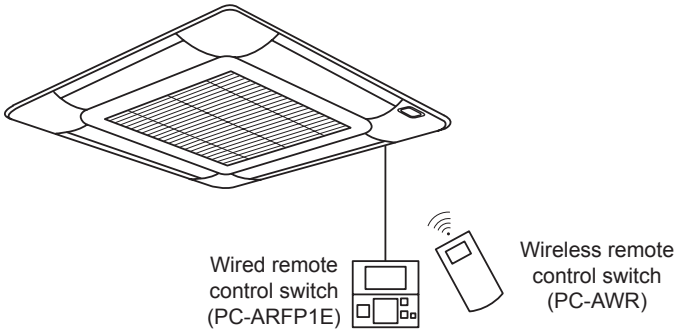
2 Switch "HEAT":
- Press "HEAT" so that the heating operation is started.
- Press "HEAT" again so that the heating operation is stopped.

NOTE

- *The setting temperature and the fan speed for cooling/heating operation are the same as before starting emergency operation.*
- *During the emergency operation, "((•))" lamp (yellow) flashes (0.5 second ON / 0.5 second OFF).*

4.4.7.4 Operation with wired remote control

The indoor unit can also be operated with a wired remote control in addition of the installed receiver kit for wireless use. Contact your dealer for more details.



4.4.8 Optional functions

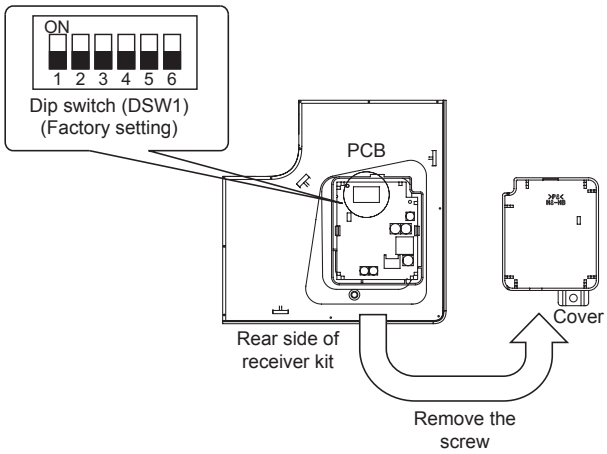
DANGER

Turn OFF the power source completely before performing the DIP switch setting for receiver kit. If not, it may cause an electric shock.

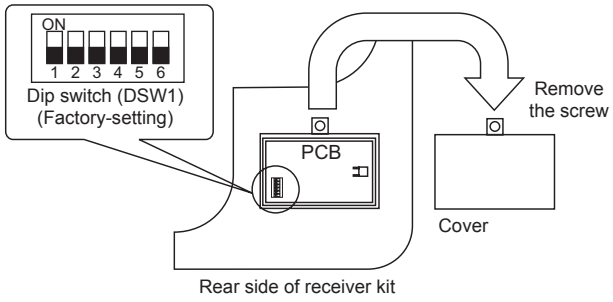
◆ DIP switch for optional functions (DSW1)

Open the cover by removing the two screws in order to access the following functions.

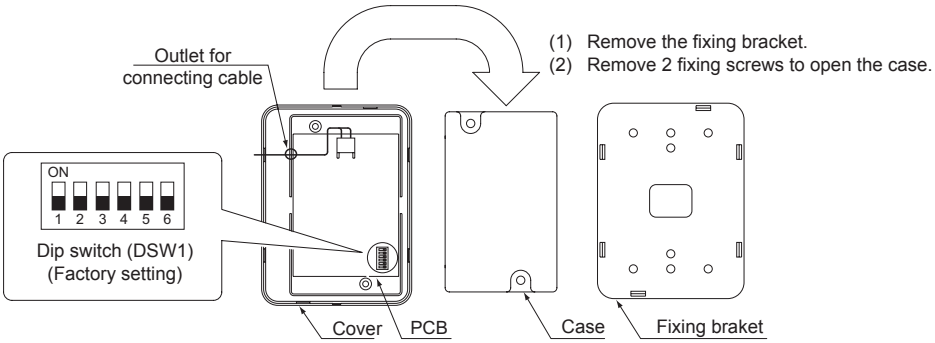
PC-ALHC1



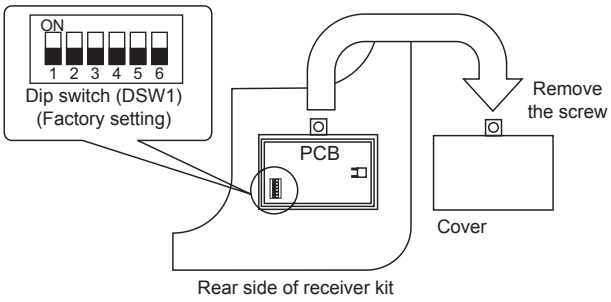
PC-ALHD1



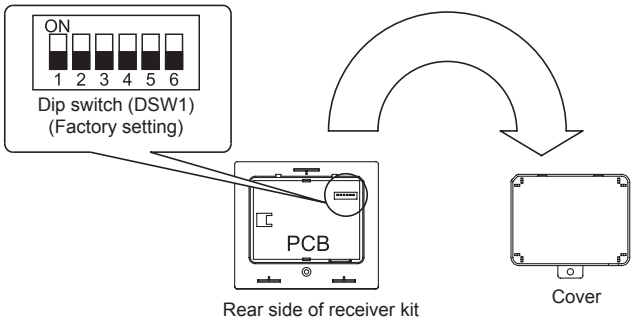
PC-ALHZ1

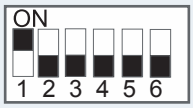
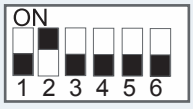
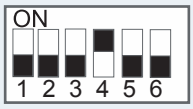


PC-ALH3



PC-ALHP1



Operational function	DIP switch adjustment	Details
Secondary receiver adjustment.		Change the Main (OFF setting) / Sub (ON setting) remote control switch used for 2 to 4 remote control system.
Identifying of indoor units		In case of ON setting, it performs as B mode (Identifying of indoor unit) of wireless remote control switch.
Invalidity of Emergency Operation		The switches for emergency operation are invalid.

⚠ CAUTION

Pay attention to the following settings when the function for receiver kit is selected from the remote control switch or the centralized controller.

- *The cooling lower limit for setting temperature and the heating upper limit for setting temperature are not available. The setting is available beyond the upper and lower limit for setting temperature from the wireless remote control switch.*
- *The optional function setting "Fixing of Setting Temperature" is not available. When the operation mode is changed from the wireless remote control switch, the indicated temperature on the remote control switch becomes set temperature.*

4.4.9 Troubleshooting

◆ This is not abnormal

Refer to the operation manual of the indoor unit together.

Phenomenon		Cause and action
Stopped operation	All indication lamps on the receiver kit are turned OFF.	The micro-computer is activated to protect the device from electromagnetic waves. The operation can be recovered if it is started from the beginning.
	Power failure occurs.	Start the operation from the beginning.

◆ Before contact

Check the items before contacting a contractor.

Refer to the operation manual of the indoor unit together.

Trouble	Checking point	Action
Not Operated	Is the transmitter of wireless remote control switch pointed towards the receiver kit?	Point the transmitter towards the receiver kit.
	Is the receiver surface covered by dust?	Wipe the receiver part by soft, dry cloth.

5. Centralised remote controls

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5.1 PSC-A64GT

5.1.1 Safety summary

HITACHI can not anticipate every possible circumstance that might involve a potential hazard.

⚠ DANGER

- ***DO NOT pour water into the central station (hereafter called "controller"). This product is equipped with electrical parts. If water is poured, it will cause a serious electrical shock.***
- ***Prior to the installation work, ensure that foundation is flat, level and sufficiently strong and then fix the unit securely. If the foundation is not strong enough, it may lead to injuries caused by falling of the product, electrical shock or fire.***
- ***DO NOT install the unit in a place where generation, flow, accumulation or leakage of flammable gas is detected.***
- ***DO NOT perform installation work and electrical wiring connection by yourself. Contact your distributor or dealer of HITACHI and ask them for installation work and electrical wiring by a trained service person.***
- ***Perform electrical work according to the Installation Manual and all relevant regulation and standards. If the instructions are not followed, electrical shock and fire may occur due to insufficient capacity and inadequate performance.***
- ***Use the specified cables for connection between indoor unit and central station. Selecting incorrect cables may lead to fire or electrical shock.***
- ***As for the electrical wiring work and check, turn OFF the main power supply before opening/closing the service cover of the indoor unit. If the service cover is opened with main power supply left on, electrical shock may occur.***
- ***Turn OFF the main power supply when opening the case for checking or maintenance. If only the switch is turned OFF but not the power supply, the power terminal part or the power switch part will stay activated and may cause an electrical shock. When performing wiring work, make sure to turn OFF the power supply as well.***
- ***When performing local wiring work, check whether the local wiring has been gnawed by animals like mice or small rodents. Gnawed wiring could cause a fire.***

⚠ CAUTION

- *DO NOT install the indoor unit, outdoor unit, central station and cable in the following places:*
  - *Where oil vapour or oil is dispersed (it may cause a fire, deformation, corrosion or failure).*
  - *In the vicinity of hot springs (in a sulphuric environment).*
  - *In the vicinity of the sea (in a salty environment, which may cause corrosion).*
  - *In an acid or alkaline environment.*
  - *At the reach of children.*
  - *Under direct blow of discharge air from the unit.*
  - *In places with humid atmosphere.*
  - *In places where the unit may get wet.*
  - *In poorly ventilated places.*
- *DO NOT install the indoor unit, outdoor unit, central station and cable within approximately 3 metres from strong electromagnetic wave radiators such as a radio.*
- *In case that the central station is installed in a place where electromagnetic wave radiation is generated, shield the central station and cables by covering the unit with a steel box and running the cable through a metal conduit tube.*

⚠ CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*

5.1.2 Installation

5.1.2.1 Installation site selection

Select a suitable place for handling and determine the installation place of the central station with the customer's acceptance.

Do not install the central station at such places as:

- Where children can touch.
- Where the air from the air conditioner is directly discharged.

Before installing a controller, prepare the following items.

Parts	Specification
Switch box	JIS switch box for 4 switches (with cover) (JIS C8340)
Power supply cable	Cable SPEC: 1.25 to 2mm^2 Recommended cable: 600V CV, CCV, CEV
H-LINK cable (for control)	Cable SPEC: 0.75 to 1.25mm^2 Recommended cable: twist pair cable with shield, over 0.75mm^2 (equivalent to KPEV-S)

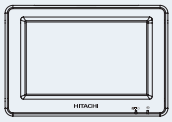
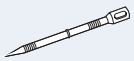
* The recommended cables are the model name of HITACHI Cables, Ltd.

5.1.2.2 Components list

Unpack the unit and check that:

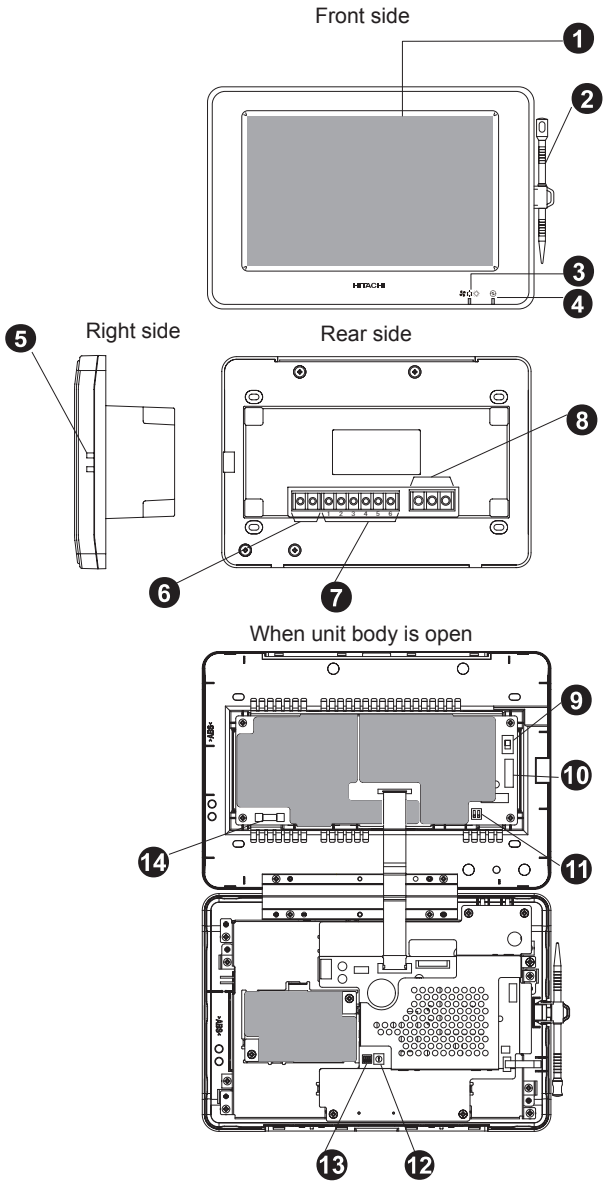
- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quantity	Comments
Central station PSC-A64GT		1	For controlling system operation
M4x16L screws		4	For fixing the central station
Touch pen		2	For activating/deactivating the touch options on the screen
Touch pen holder		1	For holding the touch pen on the central station
Installation and operation manual		1	Installation and operation unit instructions

5.1.2.3 Description of the parts

1. **Colour LCD Display with Touchscreen**
   To operate and monitor the units through the touchscreen display. It is operated by using the touch pen (accessory). The touchscreen display will be automatically turned off when the touchscreen is not operated for the given length of time.
2. **Touch Pen**
   To operate the touchscreen of the central station.
3. **Operation Indicator**
   To indicate the Run/Stop condition of the units
   OFF: All the units are stopped.
   ON (Green): One or more units are in operation.
   Flashing (Red): In abnormal condition.
4. **Power Indicator**
   To indicate the power condition of the central station
   OFF (lamp): Power is turned OFF
   ON (lamp): Power is turned ON
5. Fixing holes for Touch Pen holder
6. **TB2**
   Terminals for connecting H-LINK control wiring (Non-pole)
7. **TB3**
   Terminals for external input/output
   1-2: External input 1
   2-3: External input 2
   4-5: External output 1
   5-6: External output 2
8. **TB1**
   Terminals for connecting the power cable
9. **Power switch to turn OFF power supply**
   Use this switch to avoid an electrical shock when unit body is opened
10. **Fuse for H-LINK Transmission Line**
    For protection of H-LINK transmission line
11. **DSW2**
    For terminating resistance. It is used for transmission line recovery
12. **Rotatory Switch for Address Setting**
    For address setting of controller
13. **DSW1**
    For optional function setting
14. **Fuse for Power supply**
    For protection of power circuit



Model: PSC-A64GT

NOTE

Remove the protection sheet on the LCD (liquid crystal display) before using this product.

DANGER

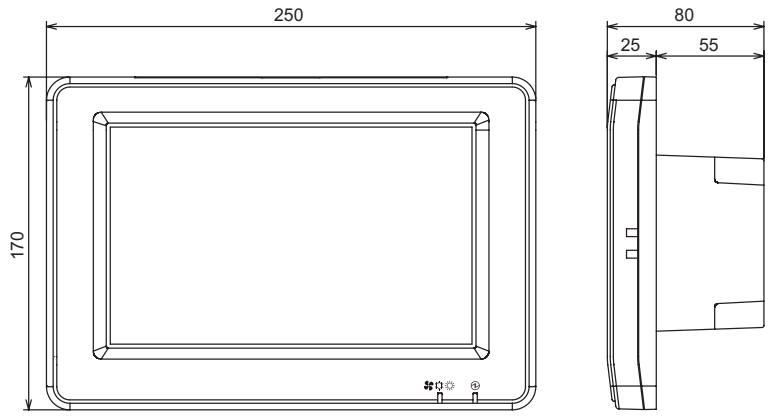
DO NOT remove the covers of parts marked with " " for safety. If these covers are removed, contact with the inside components may cause a serious electrical shock.

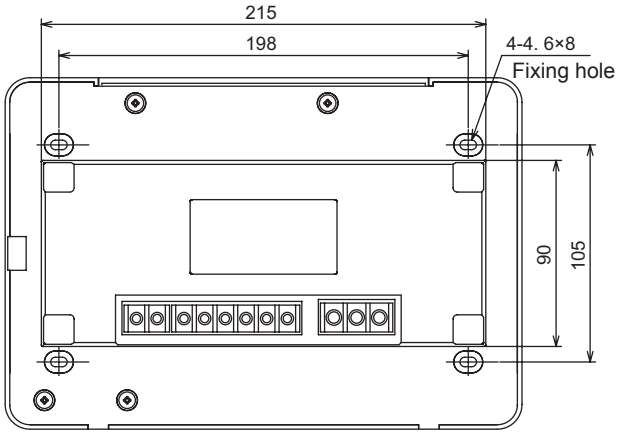
5.1.2.4 General data

Item	Specification
Outer dimension <W x H x D + (Built-in Part)>	250 × 170 × 25 + 55 (mm)
Net weight	1.5 kg (approx.)
Installation location	Indoor
Installation method	Wall built-in with JIS switch box for 2 switches (with cover) (JIS C 8340)
Connected indoor units (Quantity)	160 (Max.)
Clock accuracy	± 70 seconds/month (at normal temperature)
Ambient temperature	5 ~ 35°C
Ambient humidity	35 ~ 90% (No dew condensation)
Display	8.5” TFT Color liquid crystal display (800 x 480 dots)
Rated power supply	1ϕ, AC 100~240V, 50/60Hz
Electrical power consumption	30W (Max.)

5.1.2.5 Dimensional data

(Unit: mm)





5.1.2.6 Installation space

Keep the installation space for the central station as shown in the figure.

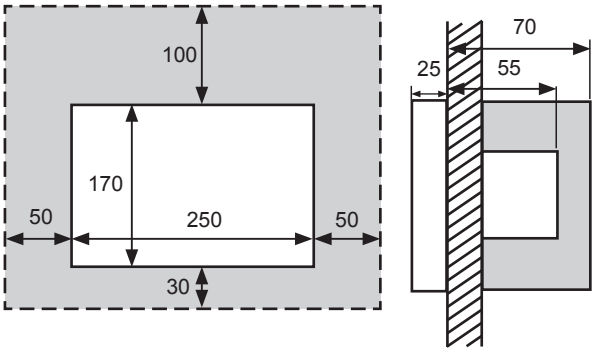
When installing more than 2 central stations in row or in line, keep the space between each.

* Vertical Direction: 100 mm

* Horizontal Direction: 50 mm

Do not attach anything in the halftone screen area "".

(Unit: mm)



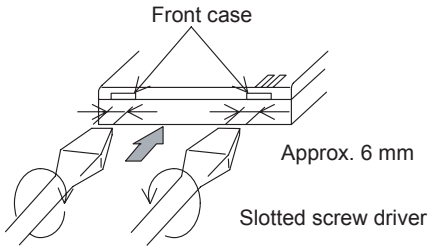
5.1.2.7 Installation procedure

1 Install the switch box into the wall. (Field-supplied: JIS Switch Box for 4 Switches (with cover) (JIS C8340).

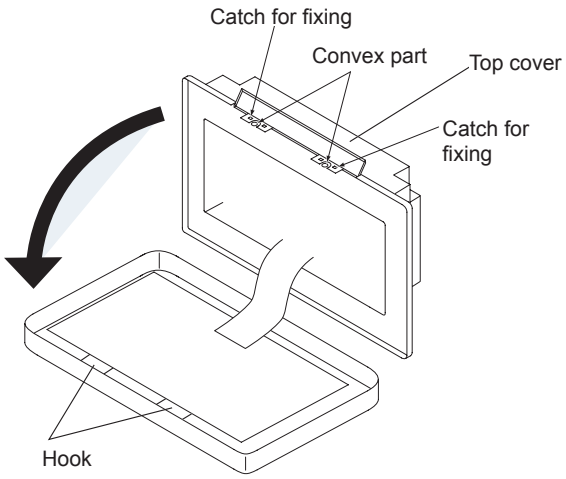
2 Open the unit body. (The unit body is opened when the factory shipping). If the unit body is closed, open it as shown below.

   a. Open the top cover of unit body.

   b. While pressing the convex part (2 portions), pull the top case and it is opened because the catches for fixing are removed.



View from lower side

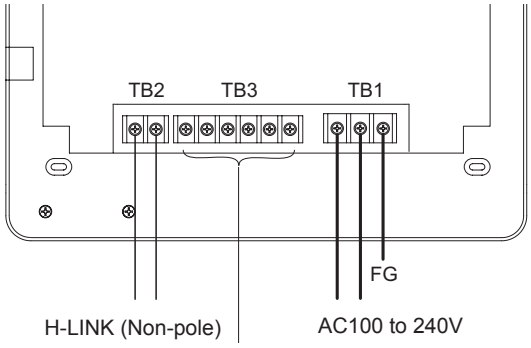


3 Connect the wiring to the terminal board of the central station.

   TB1: Terminal Board for Power Supply

   TB2: Terminal Board for H-LINK

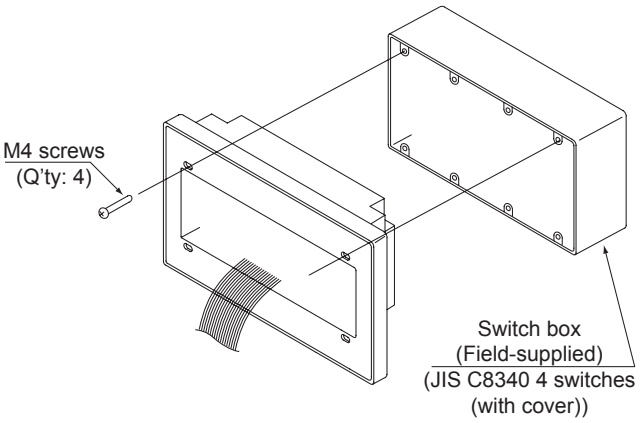
   TB3: Terminal Board for External Input and Output



Terminals for external input/output

Refer to item *"External Input/Output Setting"*

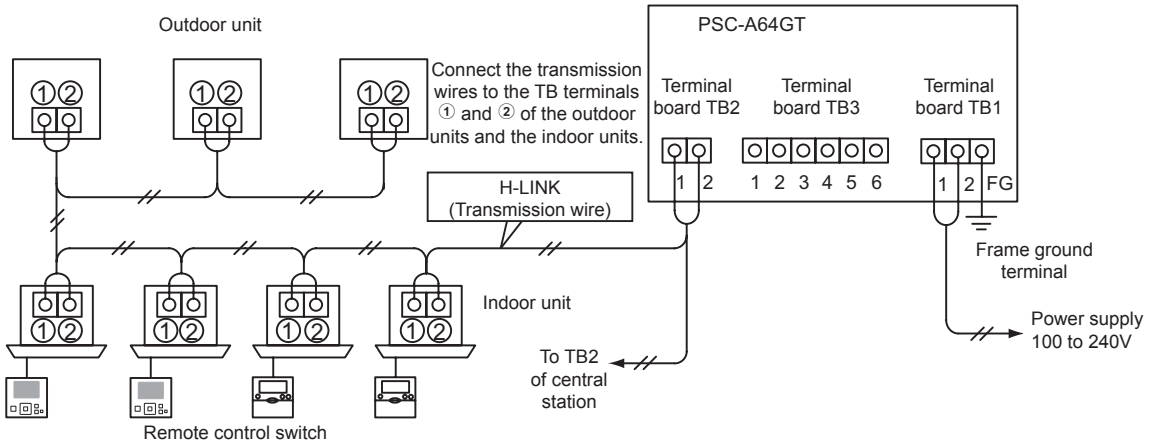
4 Fix the switch box (Field-supplied: JIS Switch Box for 4 Switches (with cover) (JIS C8340) by accessory fixing screw (M4 x 16 mm).



5.1.3 Electrical wiring

◆ Electrical wiring connection

The central station requires wiring work for the power supply, air conditioner and control wiring (H-LINK) cables.



Type of wiring	Specification	Length of wiring	Cable specification	Recommended cable model
Power supply cable	AC100~240V	-	1.25 to 2.0 mm²	600V CV, CCV, CEV (HITACHI Cable)
Earth wiring				
H-LINK (Control Wire)	DC5V	≤1000m	0.75 to 1.25 mm²	Twist pair cable with shield > 0.75mm² (Equivalent to KPEV-S)
Wiring for external input and output	Input: Non-voltage normal open Output: DC12V, ≤75mA	≤70m	0.75 to 1.25 mm²	JKPEV-S, JKEV-S, CVV-S, CVV, 600V VCT (HITACHI Cable)

NOTE

- *The central station may be damaged because of incorrect wiring.*
- *Transmission wires shall be separated from the power supply wiring and other electrical device wiring. Keep a separation of at least 30cm between transmission wiring and the power supply wiring. If it is not possible to secure this space, then route the power supply wiring and transmission wiring through separate metal conduit tubes. One end of the metal conduit tubes shall be earthed for noise reduction.*
- *Do not connect the power supply wiring to the terminals for transmission of central station. However, if the power supply wires are connected incorrectly, the fuse of the printed circuit board will blow out for protection. In such a case, turn ON pin 2 of DSW2 on the printed circuit board to allow emergency operation without the fuse.*
- *Always remove the earth wiring of "FG" terminal when performing insulation capacity test or withstand voltage test. Failure to do so may result in damage to the central station.*
- *Remove the earth wiring of "FG" terminal securely when the insulating capacity test or the withstand voltage test is performed. If the above is not secured, it may cause of breaking down of the central station.*

Main breaker switch

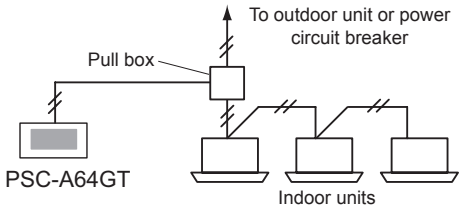
Model	Supply voltage	Maximum current (A)	ELB(1)		CB(2)
			Rated current (A)	Sensitivity (mA)	Rated current (A)
PC-A64GT	1~ 230V 50 Hz	5	40	30	5

(1) ELB: earth leakage breaker (field-supplied)

(2) CB: circuit breaker (field-supplied)

⚠ CAUTION

- *When using an AC200V to 240V power supply.*



- *In case of using a 200V~240V power supply, diverge the main power supply cables by using a pull box as shown in the figure.*
- *The electricity supply to the unit should be via an exclusive power control switch and protective circuit breaker, certified and installed in accordance with local or national safety regulations.*
- *Use an earth leakage breaker with medium sensitivity, and an activation speed of 0.1 or less. If this is not fitted, there is a risk of electric shock and/or fire.*
- *Install an earth leakage breaker, fuse and circuit breaker for each outdoor unit power line. Not fitting it may cause an electric shock or fire.*

⚠ DANGER

- ***Turn OFF the main power switch for the indoor units, outdoor units, and central stations before the electrical wiring work is performed. If not, it may cause a fire, electrical shock or device breaking down.***
- ***Do not use cables that are lighter than the normal flexible coated polychloroprene cable (code H05RN-F).***

◆ DIP switch adjustment

The list for switch settings of central stations is shown in the following table.

1 Apply switch settings as appropriate.

Switch	Switch number	Usage	Factory setting	Remarks
RSW1 (Rotary switch 16-poles)	-	For address setting of central station	0	When using multiple units of the central stations (*)
DSW1 (Dip switch 4-poles)	1	ON: Setting for non H-LINK II OFF: Setting for H-LINK II	OFF	Refer to the chart in the next page.
	2	OFF (Fixed)	OFF	Not used
	3	OFF (Fixed)	OFF	Not used
	4	OFF (Fixed)	OFF	Not used
DSW2 (Dip switch 2-poles)	1	ON: end resistance enable OFF: end resistance disable	OFF	Make sure no other terminating resistance exists on the same H-LINK when enabling the terminating resistance from the central station.
	2	ON: Protection fuse for H-LINK ... Disable (Short-circuited) OFF: Protection fuse for H-LINK ... Enable (Normal)	OFF	
SW1	-	ON: Turn ON central station OFF: Turn OFF central station	ON	

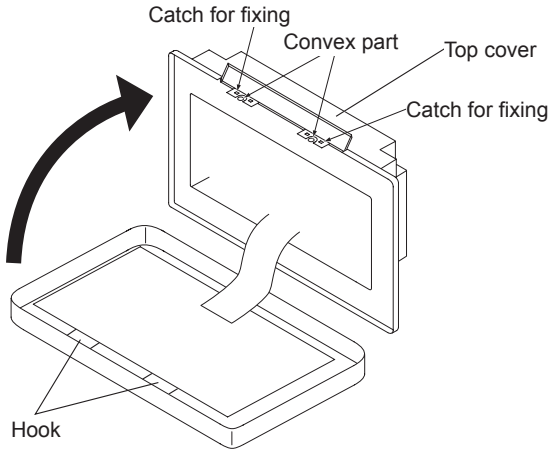
NOTE

- *Turn OFF the power supply when setting the DIP switches and rotary switch. Do not touch directly the printed circuit board and metal part to avoid the central station malfunction.*
- *The central station is reconnected to H-LINK/H-LINK II automatically when change the setting of H-LINK or H-LINK II.*
- *When same central station are connected to H-LINK with incorrect DIP switch setting, then "63" alarm will be indicated in the central station. In this case, turn OFF the power supply for all central control devices, and check the DIP switch settings of each central control device. After that, restart central control devices.*
- *(*): When using several central stations at the same time, set the values of each "RSW1" not to overlap.*

DSW1 setting

		Name	Model	Pin 1	Pin 2	Pin 3	Pin 4
Combination of PSC-A64GT with other central controllers	Other central controllers	Central Station EZ	PSC-A64GT	OFF	OFF	OFF	OFF
		Central Station mini	PSC-A32MN	OFF	OFF	OFF	OFF
		Central Station	PSC-A64S	OFF	OFF	OFF	OFF
		Centralised ON/OFF Controller	PSC-A16RS	OFF	OFF	OFF	OFF
		BMS Gateways	HC-A(8/64)MB	Not compatible			
			HC-A16KNX	Not compatible			
			KNX001	Not compatible			
			HARC-BX E (A/B)	Not compatible			
		CSNET	CSNET Lite	Not compatible			
			CSNET Manager 2	Not compatible			
			CSNET Manager 2 LT	Not compatible			
			CSNET Manager 2 XT	Not compatible			
			CSNET WEB	OFF	OFF	OFF	OFF
Without other central controllers				OFF	OFF	OFF	OFF

2 Close the unit case until hearing a snapping sound, and make sure that the front and rear parts of the case close fully. At this time, check that connection bands are not trapped between the front and the rear parts of the case.

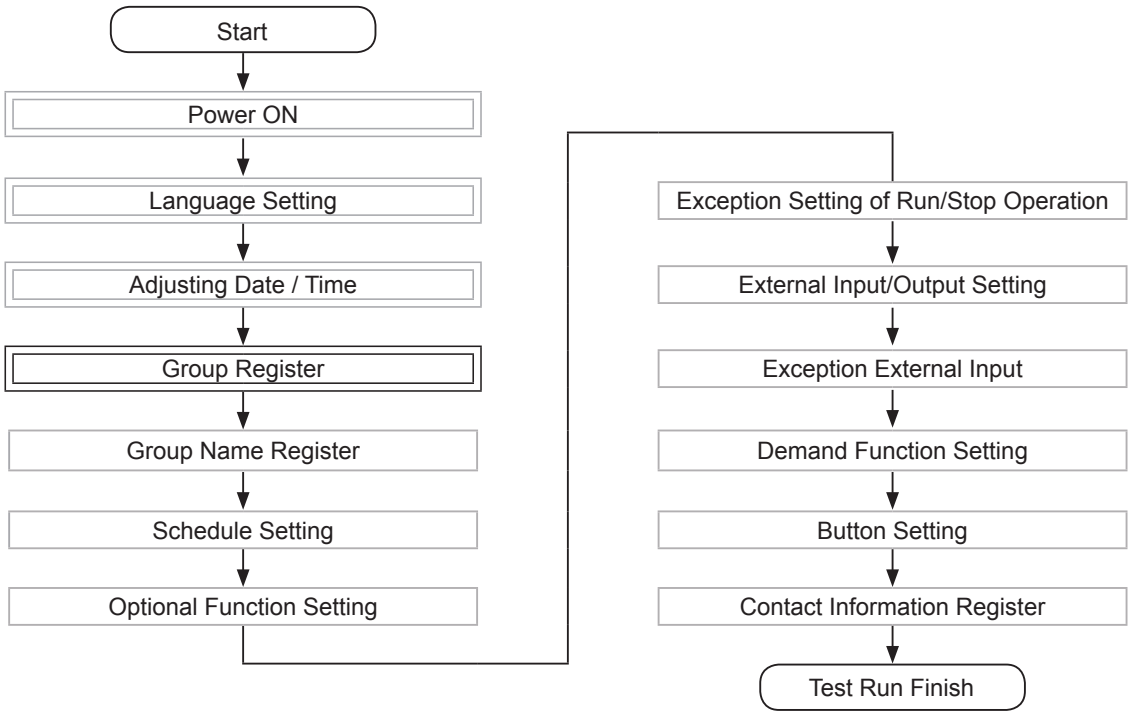


5.1.4 Operation

5.1.4.1 Test run

The outline of the test run procedure is indicated as shown in the figure. The items marked with the thick frame ( ) are required items.

The rest of items, which are not specifically required for the test run procedure but they are optional, are explained in its specific section.



List of items

Item	Function
Language Setting	This function is used for language selection.
Adjusting Date/Time	This function is used for adjusting the date and time.
Group Register	The connected indoor units are checked by the central station in the same H-LINK. This function is used for the group or block registration of them.
Main Unit Register	This function is used for the main unit registration in the each remote control group. (The main unit is the only one per one remote control group.) The control command is sent from the central station to the main unit for the remote control group.
Sub Unit Register	This function is used for registration of the sub units except the main unit in the same remote control group. In the case of using the remote control switches or the receiver kits as follows, the sub units are registered automatically by the central station after the main unit registration. • The remote control switches and the receiver kits which model names start from PC-A**. • The remote control switches which model names start from PC-P**.
Group Name Register	This function is used for registering name of the block and group. The registrable number of letters are maximum 20 letters for the name of each block or group. It is also available to copy the name. If the group/block is registered without name, it will be registered as “Group 1” or “Block 1” automatically.
Schedule Setting	This function is used for scheduled timer operation which is possible to set by each group or block.
Schedule Timer Setting	This function is used for setting the time (by the minute), “Run/Stop” and temperature (19~30ºC). For weekly schedule setting, up to 10 schedule items can be set per day. It is also available to copy the setting contents.
Holiday Setting	This function is used for suspending the schedule operation temporarily. The schedule operation will not be available when this function is set. This function is used for setting irregular holidays such as national holidays.
Schedule Timer ON/OFF Setting	“Schedule Timer OFF Setting” is used for suspending the schedule operation for the target group. The schedule operation will not be available when Schedule Timer is OFF. This function is used for a long holiday, sudden holidays, national holidays, etc.
Optional Function Setting	This function is used for setting and changing of the function for air conditioners and central stations.
Exception Setting of Run/Stop Operation	This function is used to specify exceptional Groups/Blocks for “All Run/Stop” command. The “All Run/Stop” command will not be affected to the specified group/block.
Selecting of Exception Operation	This function is used to select which of the followings will be excepted. • Run • Stop • Run and Stop
Selecting of Exception Groups	This function is used to select “All Run/Stop” command of which of the following items will be excepted. • All Groups Run/Stop • Run/Stop by Block • All Groups Setting • Setting by Block
External Input/Output Setting	Two external input terminals and two (2) external output terminals are equipped in the central station. These terminals are used for “All Groups Run/Stop” and “Demand Function” operations for the connected air conditioners. The external output terminals are used for the operation signal output or alarm signal output of the air conditioners which is connected to the central station.
Exception External Input	This function is used for cancelling the operation commands such as “All Groups Run/Stop”, etc. by the external input signal. “Exception External Input” is available for each external input (Input 1 and Input 2).
Selecting Groups of Exception External Input 1	This function is used for selecting the group to cancel of operation command from the external input 1.
Selecting Groups of Exception External Input 2	This function is used for selecting the group to cancel of operation command from the external input 2.
Demand Function Setting	This function is used for setting of “Demand Function” to the terminal of “Input 1”. The operating condition is changed by the demand signal such as the operation stop, Thermo-OFF, etc. “Demand Function” is available under the following conditions. **1** Select “Demand Function” at “Input 1” on the “External Input/Output Setting” screen. (“Demand Function” will not be available without this setting.) **2** Select one of “Demand Function” No.1 to No.4 at “Demand Function Setting” screen.

Item		Function
	Demand Function Setting	This function is to select the action at “Demand Function” control.
	Selecting Group for Demand Function	This function is to select the target group for “Demand Function” control.
Button Setting		This function specifies each button to be shown/hidden. This function also includes specification/setting for “one-tap operation” or “press and hold” operation.
Contact Information Register		This function is used for editing the contents of contact information registration.
Restore Setting		This function is used for restoring all the settings such as registered Groups (Blocks) and schedules.
Checking Connection		This function is used for checking of the connected indoor unit numbers in the same H-LINK. When this function is used, the confirmation for the keeping of registered information such as the group names, schedules, etc. will be indicated. If “OK” is tapped, the connected indoor unit numbers are updated with keeping the registered information. If “Cancel” is tapped, the setting of the central station is all restored.
Alarm History		This function is used for displaying the list of alarm history that occurred in the air conditioner and the controller. (Maximum 100 records)

◆ Initial power ON setting

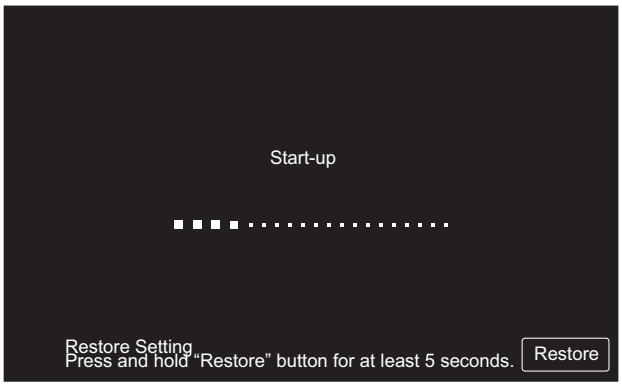
Turn on the power supply of the air conditioners.

To protect the compressor, the power supply should be turned on 12 hours before starting operation. Do not turn the power supply off during air conditioning seasons.

Perform a test run of each air conditioner first to ensure normal operation.

Turn on the power supply of the central station.

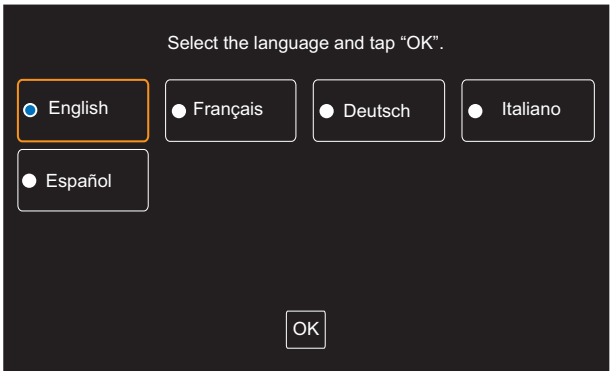
“Start-up” is displayed for a while during the boot process, after which the screen changes to “Monitor 1 (All Groups)”.



◆ Language setting

When turning the power supply ON for the first time, the language setting screen is displayed after a few minutes.

Select the using language for operation and tap “OK”.



◆ Adjusting date/time

After setting the language, the screen for adjusting date and time screen is displayed on the touchscreen as shown in the figure.

Tap “Set” on the touchscreen display, and set the date and time following the indicated procedure.

Refer to the *“Adjusting Date/Time”* section in the *“5.1.4.3 Menu”* chapter for detailed information.

NOTE

Setting the date and time may be required after a prolonged power failure. If “Set Date/Time” is displayed on the screen in such a case, then tap “Set” to adjust the date and time.

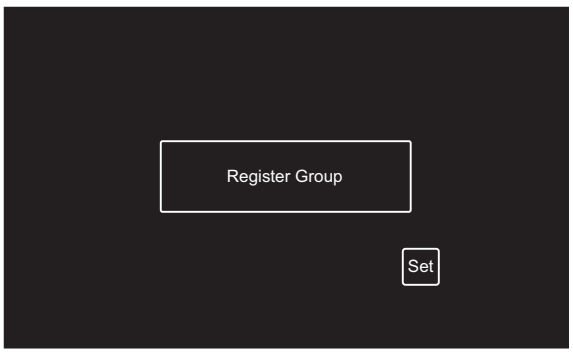


◆ Group Register

Register the connected indoor units to the groups and blocks of the central station.

Tap “Set” on the touchscreen and the setting screen is displayed. (When the power supply is turned ON at the first time.)

The registrable number of letters is maximum 20 for the name of the group (block).



Definitions

- Group (Remote Control Switch Group):

  The minimum operation unit controlled by one central station. 1 remote control group is considered as 1 group, and the same setting is applied to the entire group. A maximum of 64 groups (organized as 4 blocks with 16 groups each) can be controlled with one central station.

- Block:

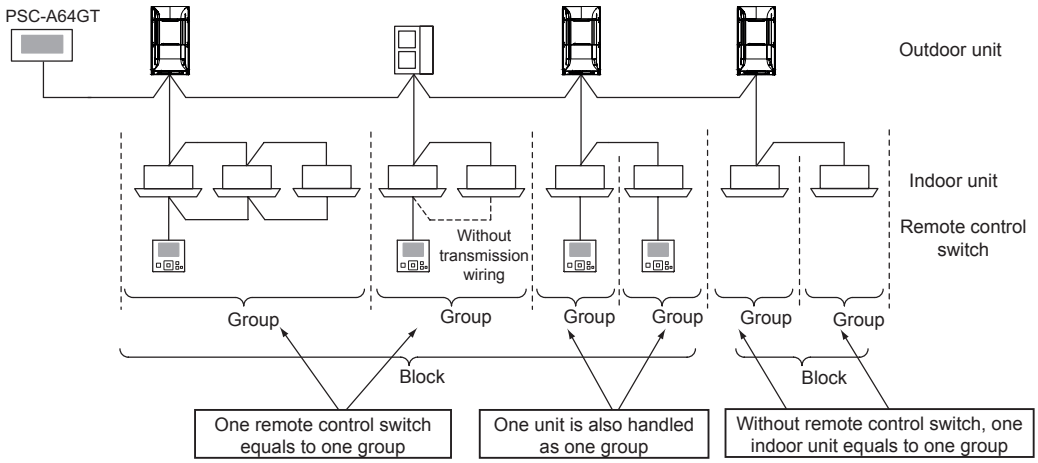
  An operation unit composed of several groups. Maximum of 16 groups can be registered within one block. Maximum of 4 blocks can be controlled by one central station.

- Main unit:

  The representative unit of the remote control group. The central station transmits control orders to this representative unit.

- Sub unit:

  Indoor units other than the main unit of the remote control group.



Main Unit Registration

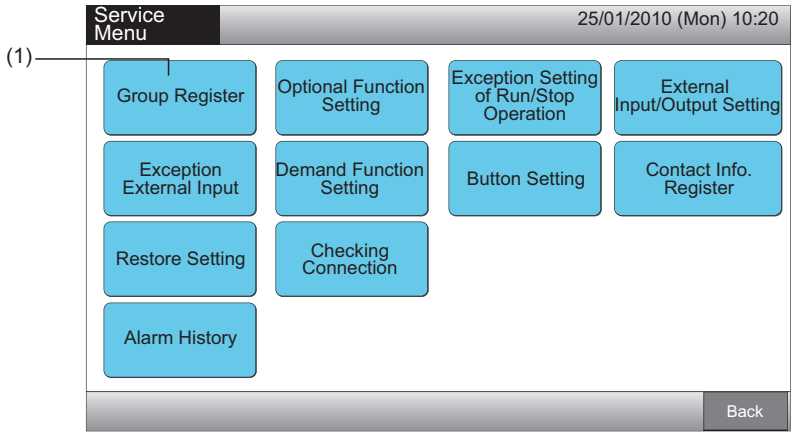
- Only one unit can be registered as the main unit of a group. Thus, duplicate registration of the main unit is not possible inside a group. If the unit registered as the main unit has to be changed for some reason, then cancel the current register of main unit before registering the new main unit again.
- When mixing indoor units with automatic swing louver and indoor units without automatic swing louver together in the same remote control group, an indoor unit with auto-louver shall be registered as the main unit of the group. If an indoor unit without auto-louver is registered as the main unit, then the auto-louver setting cannot be applied for the entire group.
- When registering a group which has no transmission wiring, the indoor unit without a remote control switch cannot be registered as the main unit.

Sub Unit Registration

- A maximum of 15 sub units can be registered in the same remote group with the main unit (when applying the control pattern of 2 blocks with 16 groups each).
- In case of changing the registration of an indoor unit which is already registered as a sub unit, cancel the register settings first, and then proceed to the new register.
- If tap “Enter” at the name registration, the name of the group or the block will be indicated in the two lines. 10 letters can be input in each line. (Total 20 letters).

Registration of a group (Main unit)

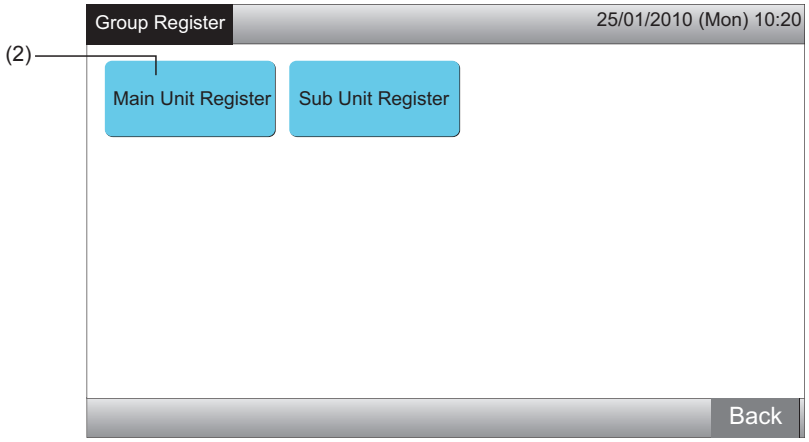
1 Select “Group Register” on the “Service Menu” screen.



NOTE

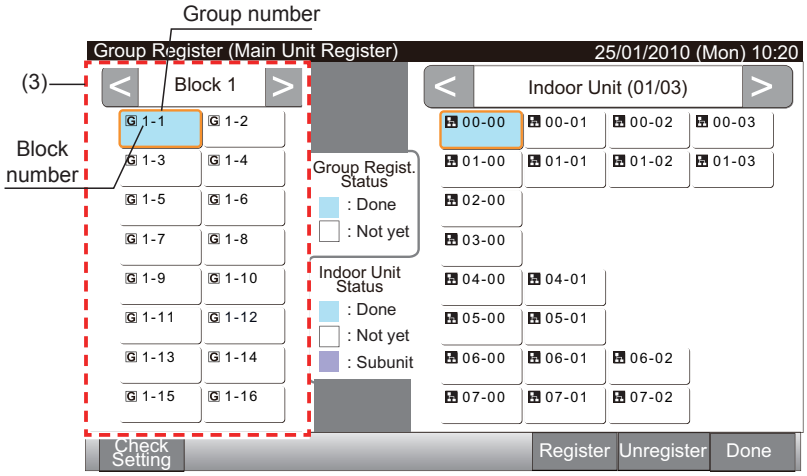
This function cannot be selected when the external input signal is input to the external input terminal 1 or 2.

2 Select “Main Unit Register” on the “Group Register”.



3 Select the group for registration of the main unit.

- Tap buttons “<” and “>” on the upper left of the touchscreen to switch the block display.
- The numbers shown inside the buttons indicate block number and group number.
- Select a group button by tapping it. The selected button is highlighted with an orange outline. If the selected group button is tapped again, the group selection is cancelled.



4 Select the indoor unit for registration of the main unit.

- Tap buttons “<” and “>” on the upper right of the touchscreen to switch the display of indoor units.
- The numbers shown inside the buttons indicate refrigerant cycle number and indoor unit address.
- Select an indoor unit button by tapping it. The selected button is highlighted with an orange outline. If the selected indoor unit button is tapped again, the indoor unit selection is cancelled.
- An indoor unit which has been already selected as a main unit cannot be selected again (its button becomes blue).
- About the Indoor Unit Selecting
  - It is not possible to register an indoor unit with red letters as a main unit. In this case, the indoor unit is registered as a sub unit automatically.
  - When mixing indoor units with auto louver function and indoor units without auto louver function together in the same H-LINK, register one unit with auto louver function as the main unit. Otherwise, the auto louver function becomes disabled for the entire H-LINK. The same applies to other functions as well.

5 Tap “Register” to register the main unit while the group and indoor unit are selected.

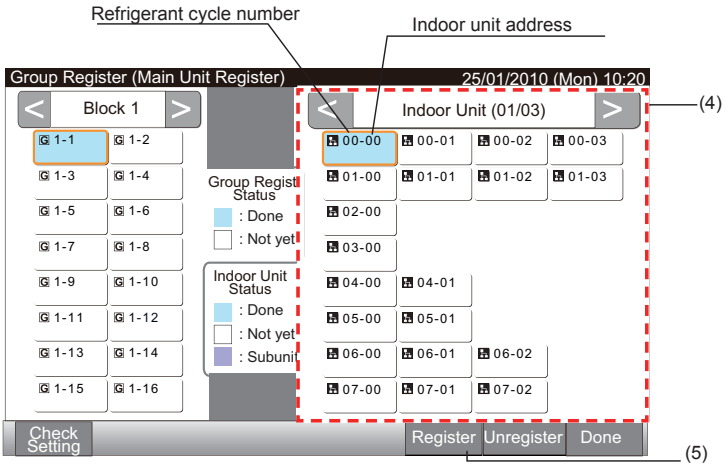
- If the group and indoor unit for the main unit are not selected, the “Register” indication is greyed out and therefore cannot be tapped.
- The colour of the buttons of the registered group and the indoor unit changes to blue, and the following information is displayed inside the buttons.



Proceed the main unit registering depending on the setting afterwards.

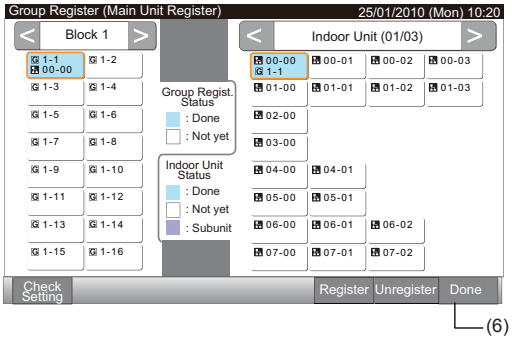
Continue “Main Unit Register” (3)

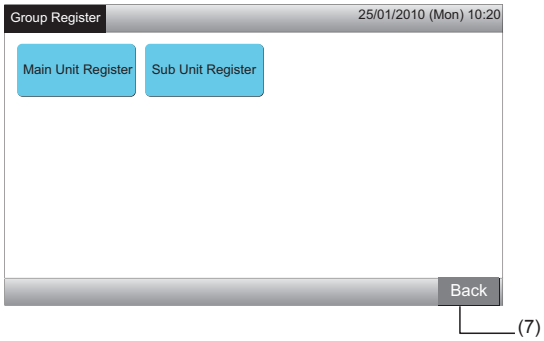
Exit “Main Unit Register” (6)



6 Tap “Done” to register the group and return to Group Register menu screen.

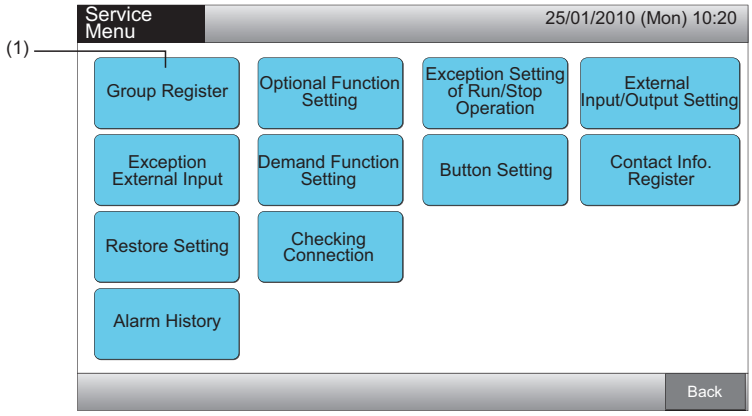
7 Tap “Back” on “Group Register” to return to the screen of “Service Menu”.





Registration of a group (Sub unit)

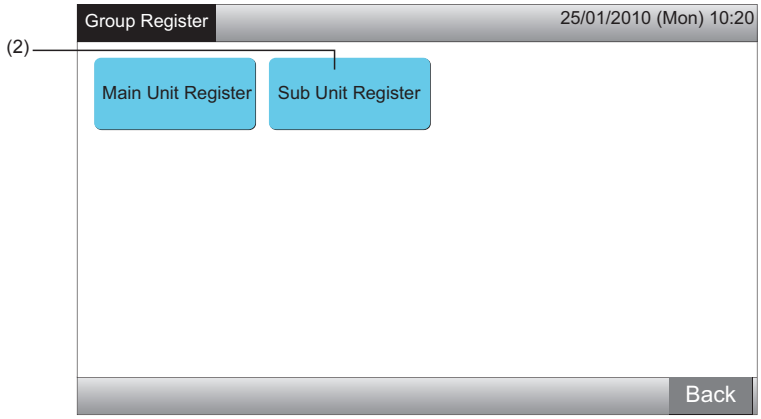
1 Select “Group Register” on the screen of “Service Menu”.



NOTE

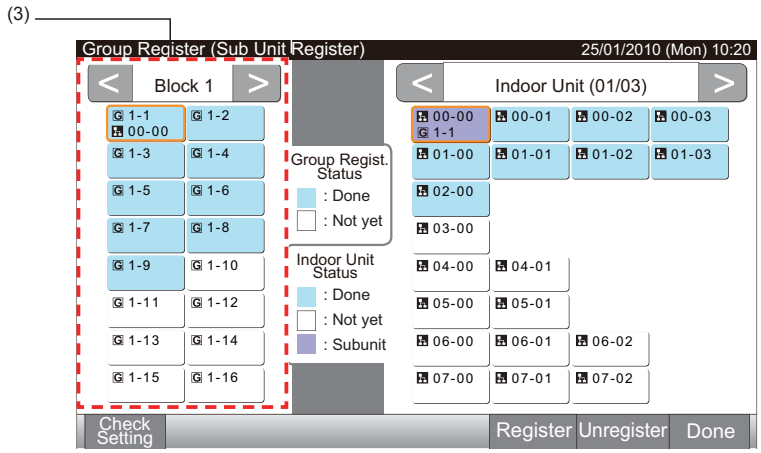
This function cannot be selected when the external input signal is input to the external input terminal 1 or 2.

2 Select “Sub Unit Register” on the screen of “Group Register”.



3 Select the group for registration of the sub unit.

- Tap buttons “<” and “>” on the upper left of the touchscreen to switch the block display.
- Select a group by tapping it. The selected button is highlighted with an orange outline.
- If the selected group button is tapped again, the selection is cancelled.



NOTE

The white colour button indicates the non-registered main unit which cannot be selected.

4 Select the indoor unit for registration of the sub unit.

- Tap buttons “<” and “>” on the upper right of the touchscreen to switch the display of indoor units.
- The numbers shown inside the buttons indicate refrigerant cycle number and indoor unit address.
- Select an indoor unit button by tapping it. The selected button is highlighted with an orange outline. If the selected indoor unit button is tapped again, the indoor unit selection is cancelled.
- An indoor unit which has been already registered as main unit cannot be selected (its button appears in blue).

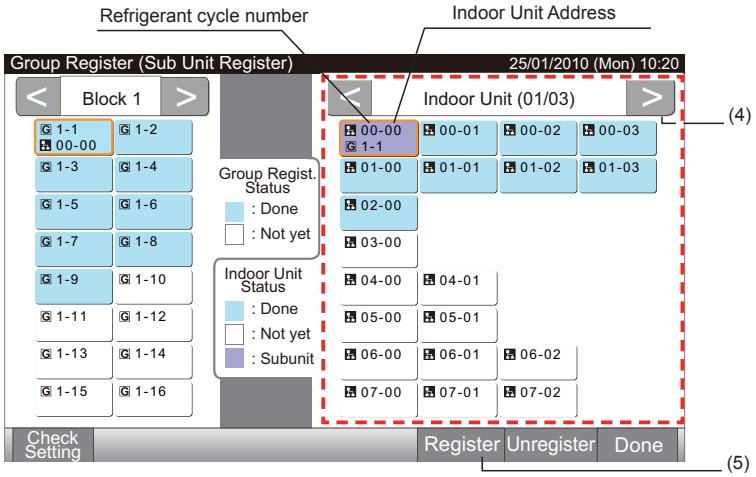
5 Tap “Register” to register the sub units while the group and indoor units are selected.

- If the group and indoor units for the sub units are not selected, the “Register” indication is greyed out and therefore cannot be tapped.
- The colour of the buttons of the registered group and the indoor unit changes to purple.

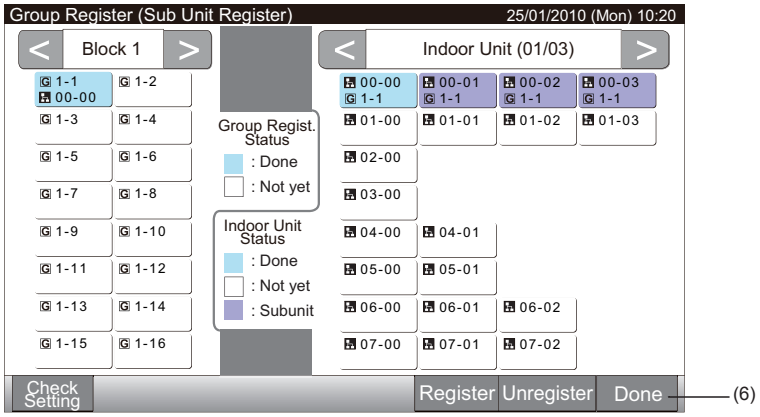
Proceed to register the sub unit depending on the setting afterwards.

Continue “Sub Unit Register” (3)

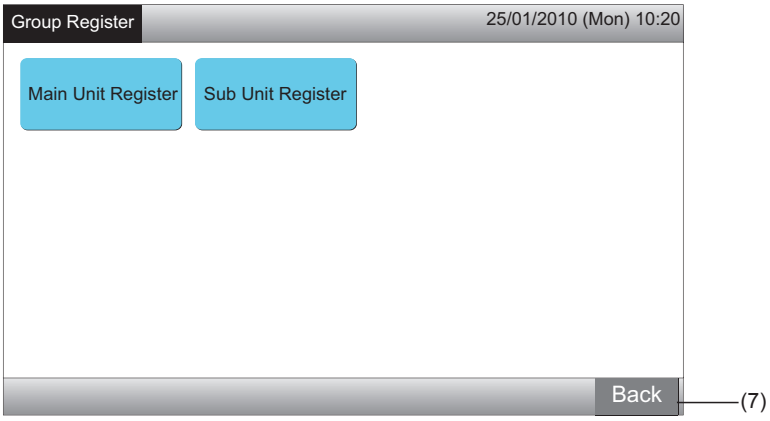
Exit “Sub Unit Register” (6)



6 Tap “Done” on “Group Register (Sub Unit Register)” to return to the “Group Register” screen.



7 Tap “Back” to return to the “Service Menu” screen.



NOTE

- *It is possible to register a maximum of 15 sub units in the same remote control group.*
- *It is not possible to register an indoor unit without remote control switch as a sub unit. (Refer to “Group register” section).*

Cancellation of group registration

1 Select “Group Register” on the screen of “Service Menu”. Refer to *“Registration of a group (Main unit)”*.

NOTE

This function cannot be selected when the external input signal is input to the external input terminal 1 or 2.

2 Select “Main Unit Register (or Sub Unit Register)” on the screen of “Group Register”.

3 Select the group to cancel registration.

- Tap buttons “<” and “>” on the upper left of the touchscreen to switch the block display.
- Select a group button by tapping it. The selected button is highlighted with an orange outline. If the selected group button is tapped again, the group selection is cancelled.

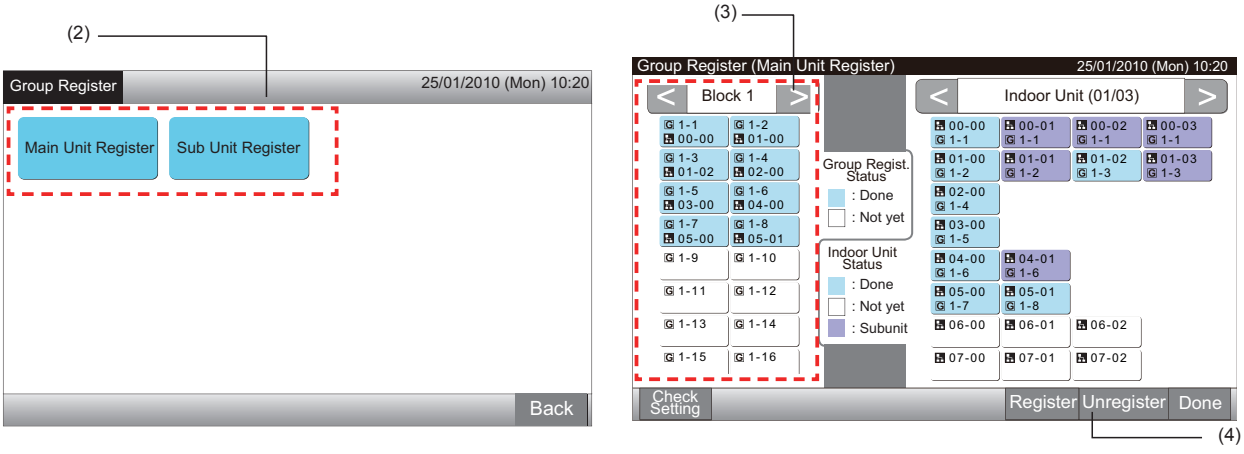
4 Tap “Unregister” and group register is unregistered. The button colour of the group and the indoor unit turn to white.

- When tapping “Unregister” on the screen of “Main Unit Register”, the main unit and the sub units are unregistered.
- When tapping “Unregister” on the screen of “Sub Unit Register”, the sub units are unregistered.

Proceed to unregister the group depending on the setting afterwards.

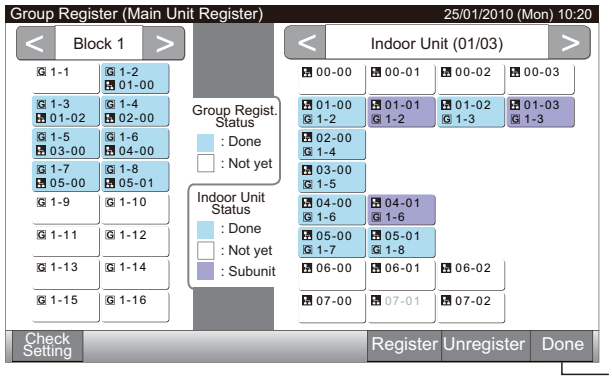
Continue of unregistering “Group Register” (3)

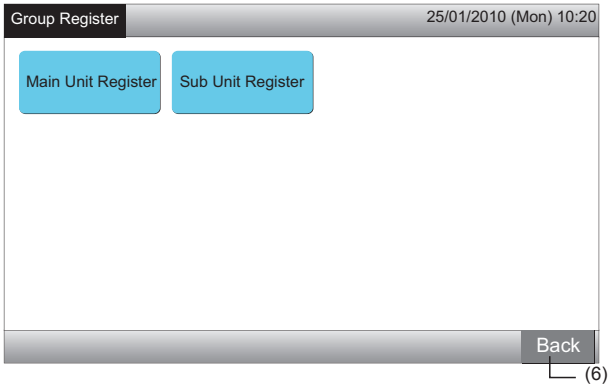
Exit of unregistering “Group Register” (5)



5 Tap “Done” to return to the “Group Register” screen.

6 Tap “Back” to return to Service Menu screen.





Checking of group registration (Checking of main unit register)

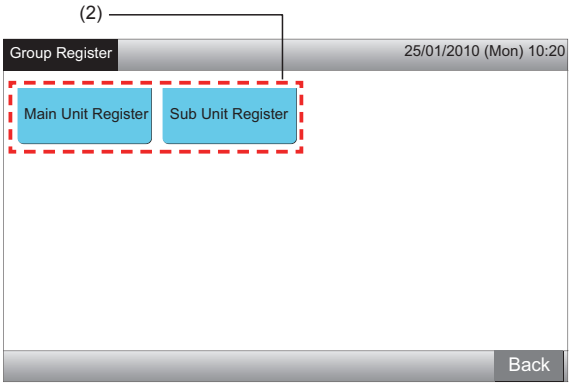
1 Select “Group Register” on the screen of “Service Menu”. Refer to item *“Registration of a group (Main unit)”*.

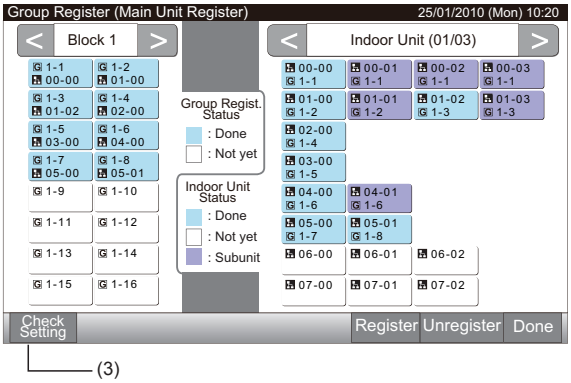
NOTE

This function cannot be selected when the external input signal is input to the external input terminal 1 or 2.

2 Select “Main Unit Register” (or “Sub Unit Register”) on the “Group Register” screen.

3 Tap “Check Setting” on the lower left of the touchscreen.





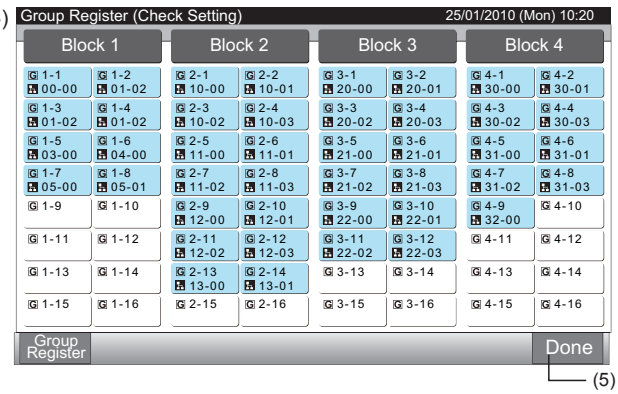
4 The screen switches to the Group Register check screen then.

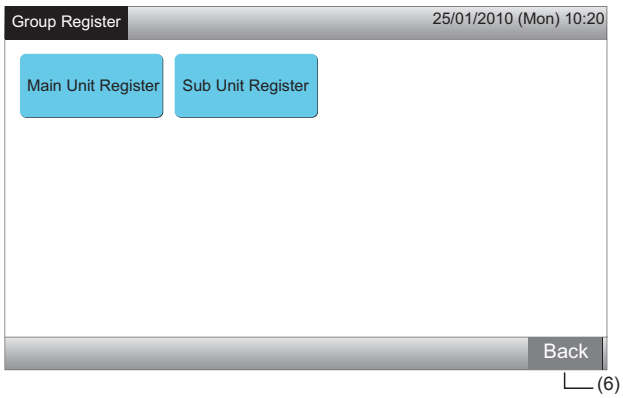
NOTE

If tap “Register” on the lower right of the touchscreen the screen of “Group Register” will be indicated.

5 Tap “Done” to return to the Group Register Menu screen.

6 Tap “Back” to return to “Service Menu” screen.

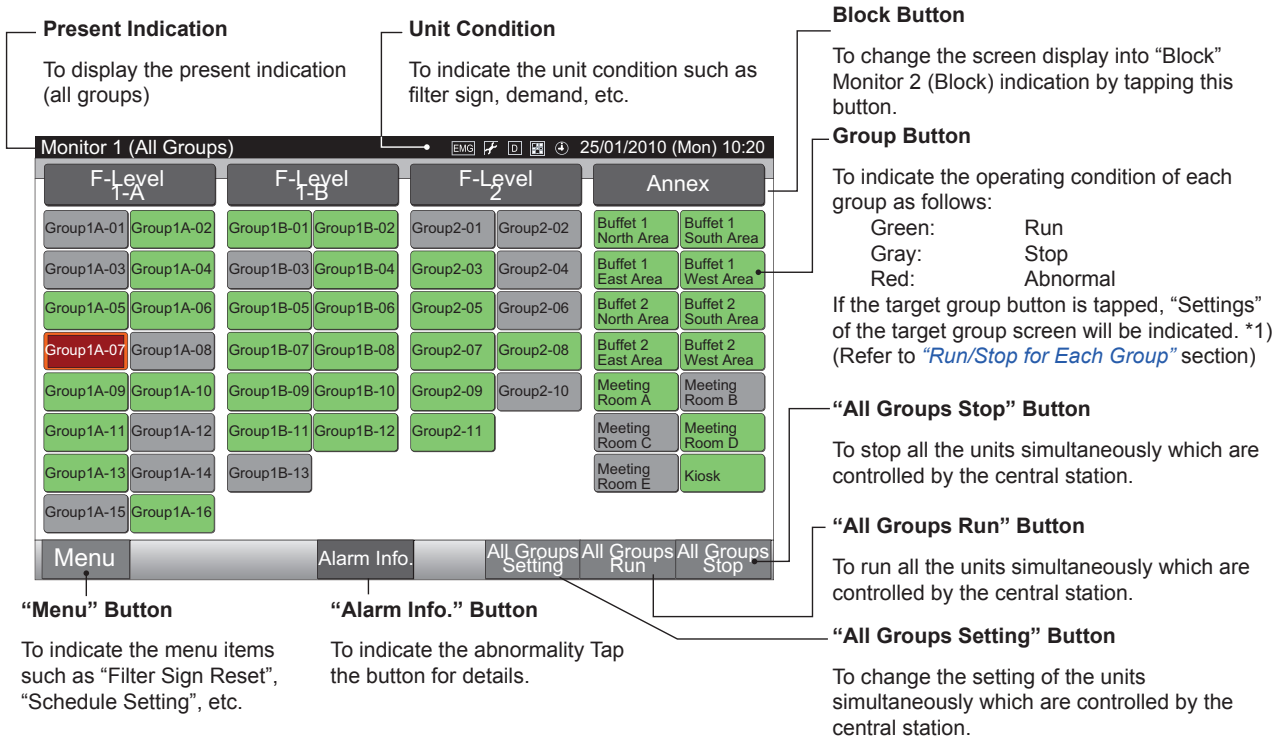




5.1.4.2 Main screen

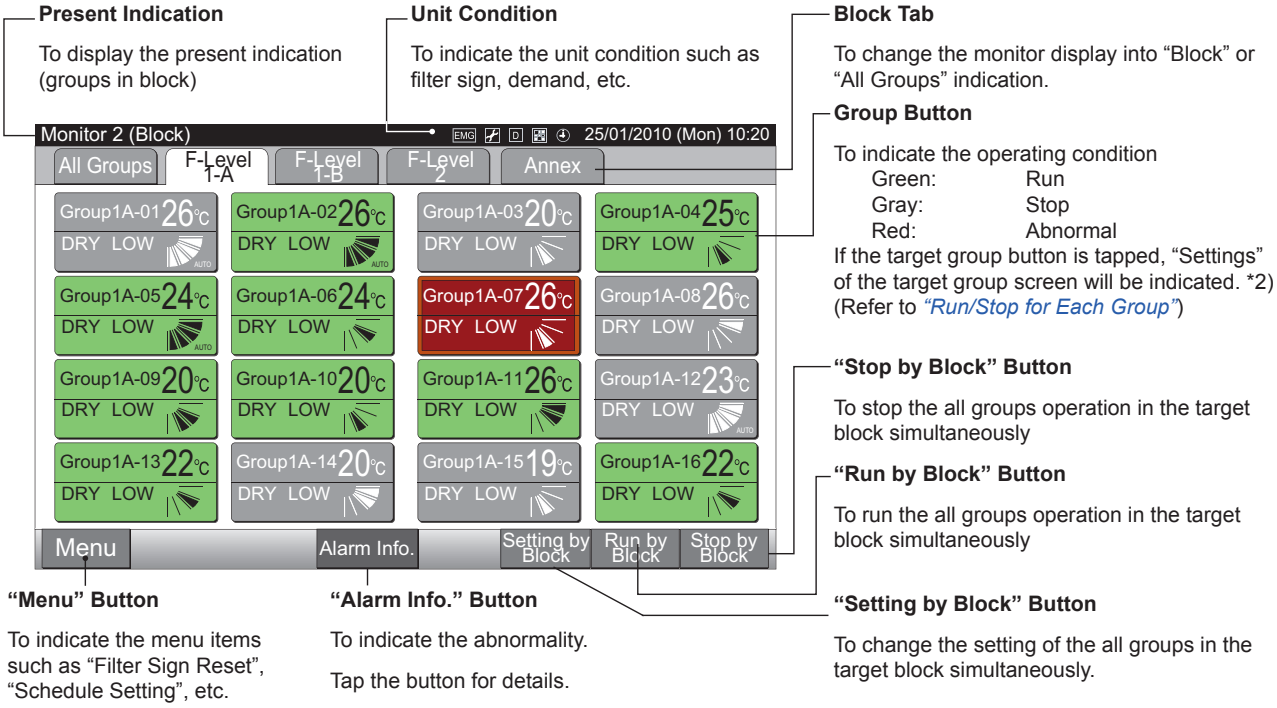
◆ Overall view

“Monitor 1 (All groups)”



*1) Only for the “Normal Mode” operation. In “Run/Stop Only” mode, the operation is switched to Run ⟷ Stop.

“Monitor 2 (Block)”



*2) Only for the “Normal Mode” operation. In “Run/Stop Only” mode, the operation is switched to Run ⟷ Stop.

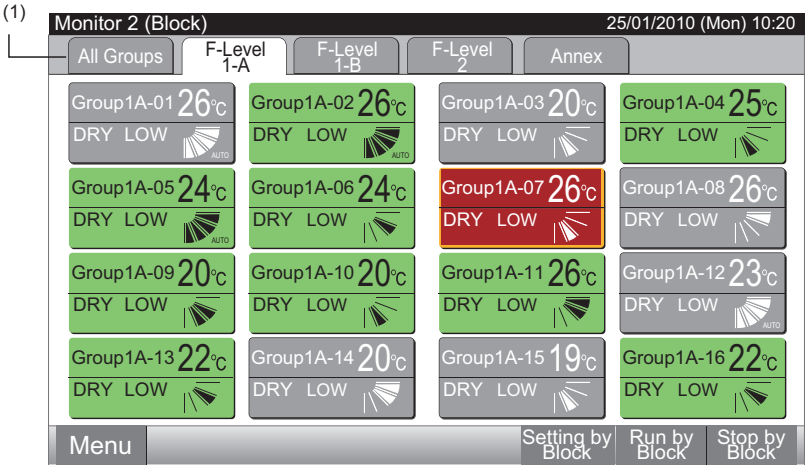
◆ Group and block settings

Display of All Groups

1 Tap “All Groups” on the touchscreen display.

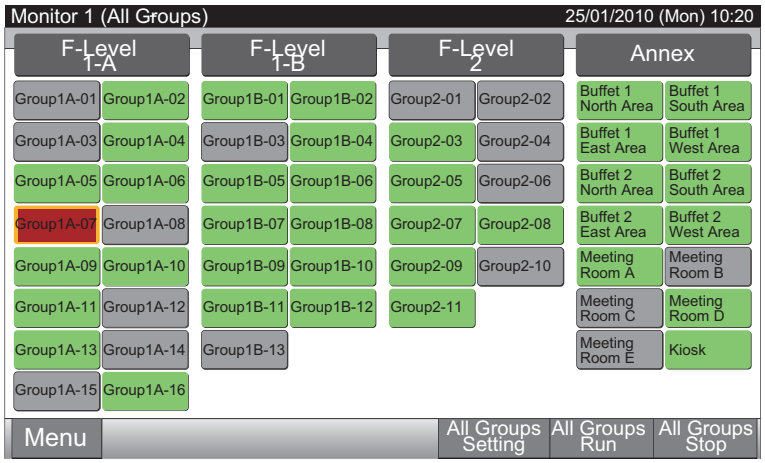
The tab of marked with (1), “All Groups” will not be displayed if only 1 (one) block has been registered.

(1)



2 All groups are displayed on the touchscreen. (All indoor units connected to the central station will be indicated). Each operation status is indicated by colour of the group button as follows:

(2)



Green: Run

Gray: Stop

Red: Abnormal

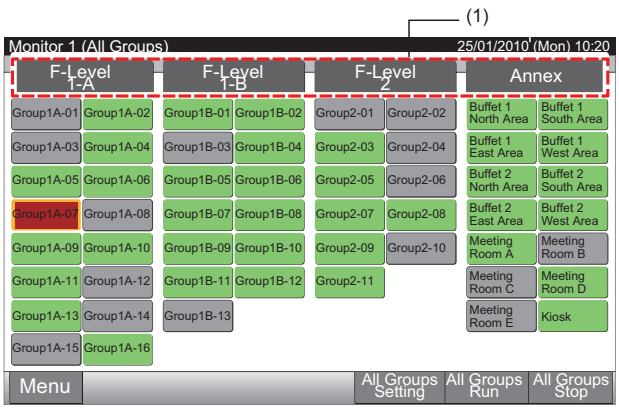
NOTE

The touchscreen display will automatically sleep when the touchscreen is not operated for the given length of time. (To wake up, tap the screen).

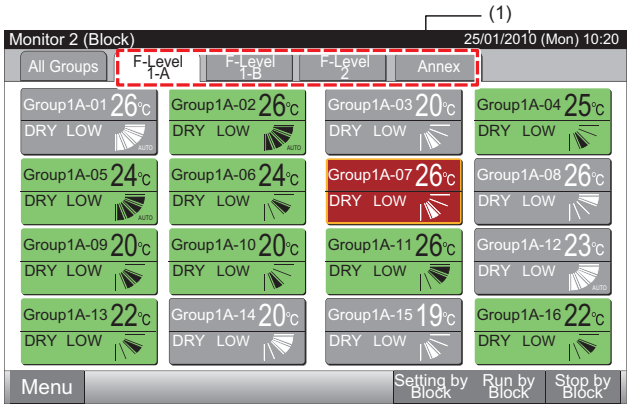
Display of specified block

1 Select the target block from the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.

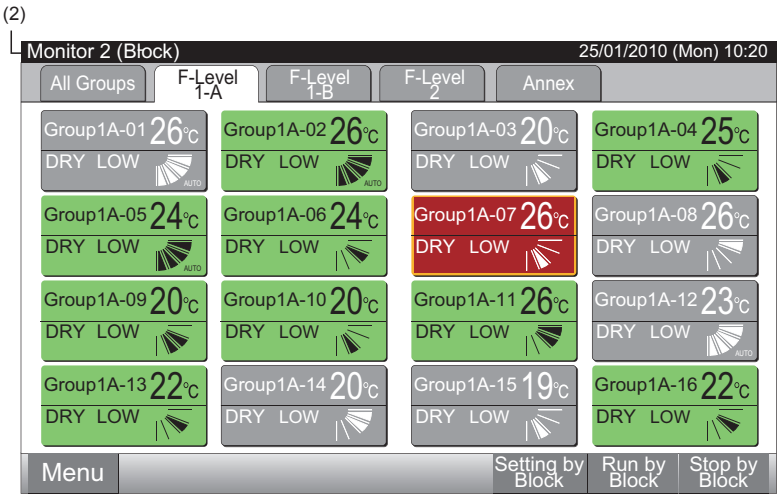
Monitor 1 (All Groups)



Monitor 2 (Block)



2 The groups in the selected block will be displayed on the touchscreen. Each operation status is indicated by colourof the group button as follows:



Green: Run

Gray: Stop

Red: Abnormal

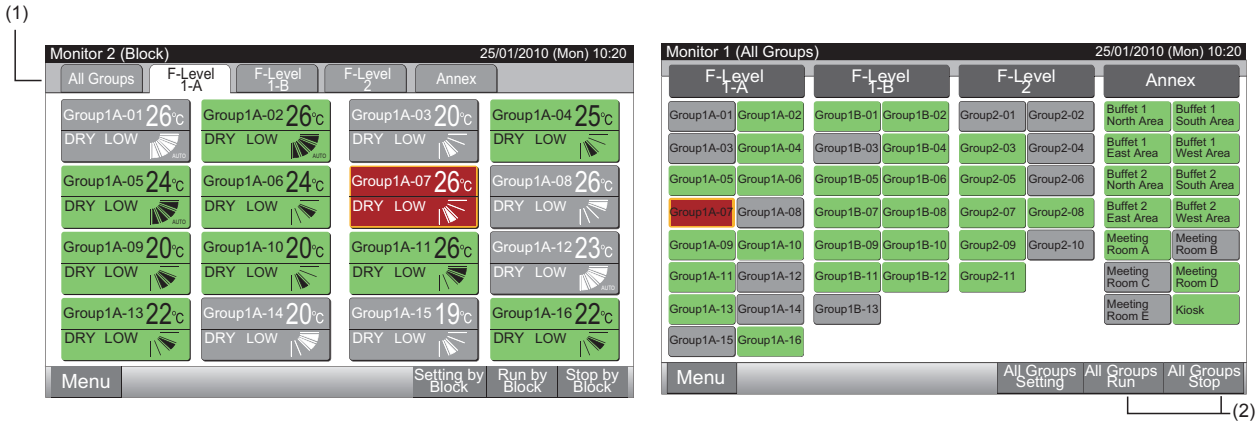
NOTE

The touchscreen display will automatically sleep when the touchscreen is not operated for the given length of time. (To wake up, tap the screen).

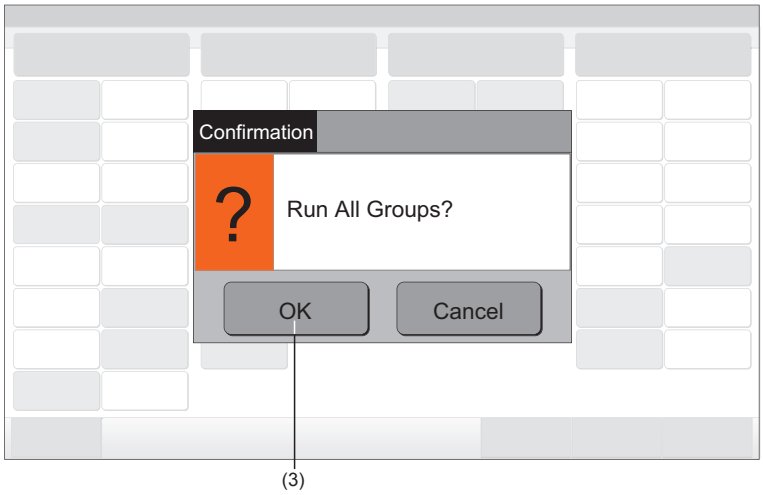
Simultaneous Run/Stop for All Groups

1 Tap “All Groups” on the touchscreen display.

2 Tap “All Groups Run” or “All Groups Stop”.



3 The confirmation screen will be displayed. Tap “OK”. (All indoor units connected to the central station will be simultaneously operated). Tap “Cancel” to cancel this command.



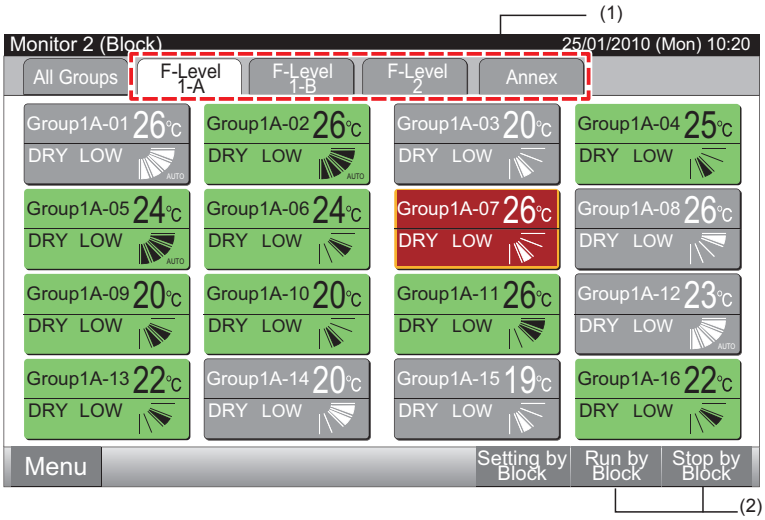
NOTE

“All Groups Run/Stop” command will not be effected to the groups specified in “Exception Setting of Run/Stop Operation”.

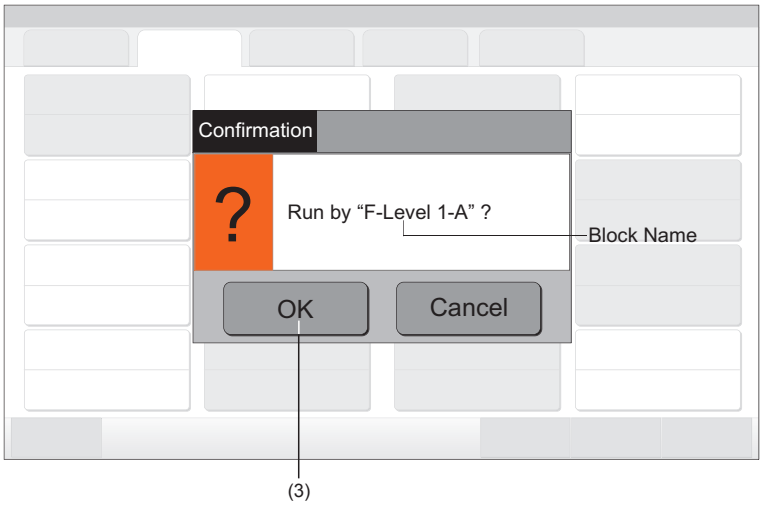
Simultaneous Run/Stop for Block

1 Select the target block from the touchscreen display to set simultaneous Run/Stop operation.

2 Tap “Run by Block” or “Stop by Block”.



3 The confirmation screen will be indicated. Tap “OK”. All groups (all indoor units) in the selected block connected to the central station will be simultaneously operated. Tap “Cancel” to cancel this command.



NOTE

“Run/Stop by Block” command will not be effected to the blocks specified in “Exception Setting of Run/Stop Operation”.

◆ Run/Stop for each group

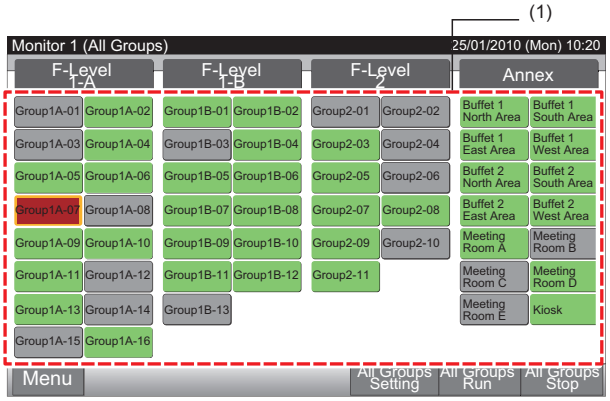
Check the control mode before setting.

The control method is different depending whether the control mode is set to “Normal” or “Run/Stop only”.

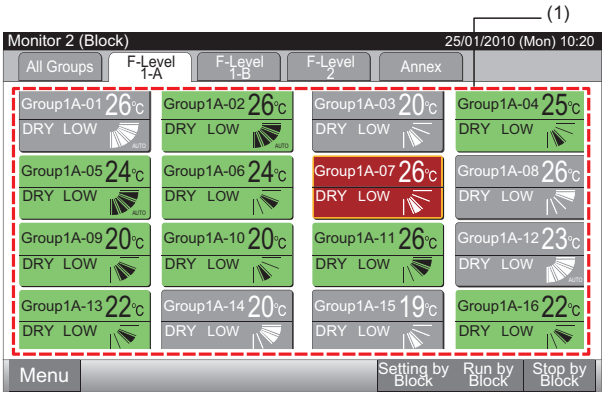
Run/Stop operation for each group (Control mode: Normal)

1 Select the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”. Select the group to set by tapping the group button.

Monitor 1 (All Groups)

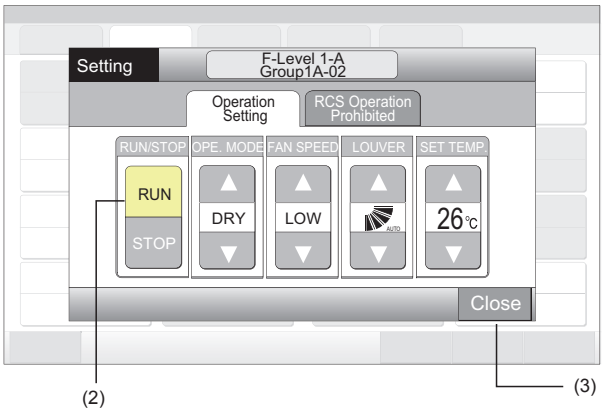


Monitor 2 (Block)



2 Selected group setting will be indicated on the touchscreen display. Tap “RUN” or “STOP”.

3 Tap “Close” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.



Run/Stop operation for each group (Control mode: "Run/Stop only")

Monitor 1 (All Groups)

1 Select the target group at screen of "Monitor 1 (All Groups)" in "Run/Stop Only" mode.

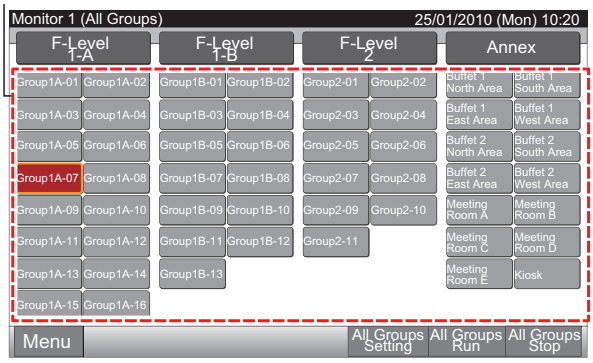
2 The selected group operation is alternately changed by tapping as follows.

"Stop" ◄► "Run"

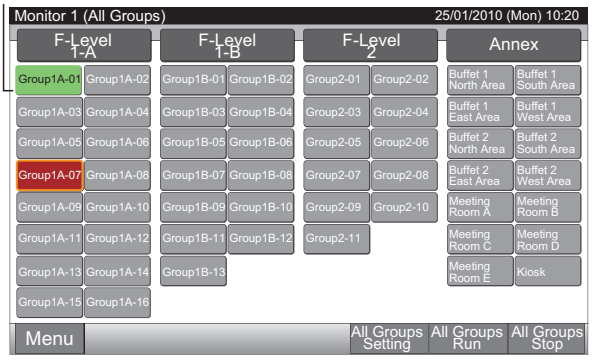
In this mode, simultaneous Run/Stop operations for all groups is available by "All Groups Run" and "All Groups Stop" buttons.

Refer to *"Simultaneous Run/Stop for All Groups"* section for details.

(1)



(2)



Monitor 2 (Block)

1 Select the target group at screen of "Monitor 2 (Block)" in "Run/Stop Only" mode.

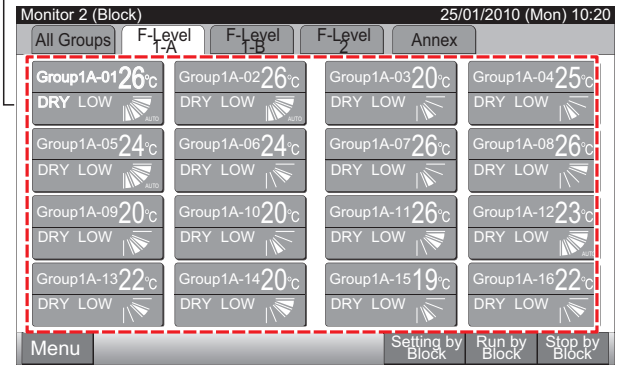
2 The selected group operation is alternately changed by tapping as follows.

"Stop" ◄► "Run"

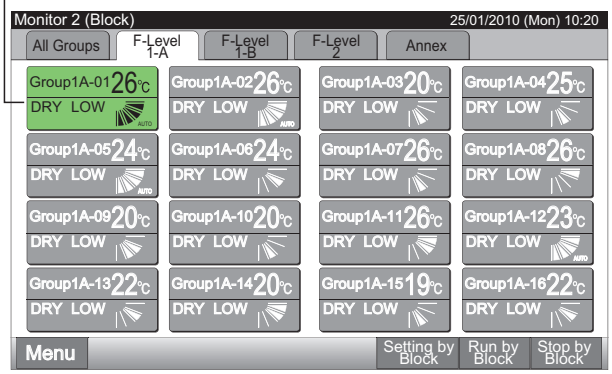
In this mode, simultaneous Run/Stop operations for block is available by "Run by Block" and "Stop by Block" buttons.

Refer to the item *"Simultaneous Run/Stop for Block"* section for details.

(1)



(2)



NOTE

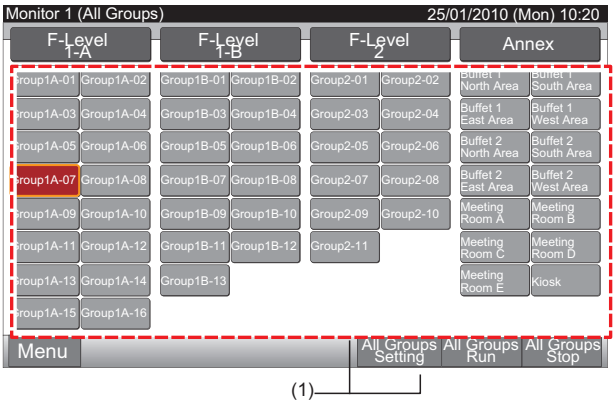
The details of setting method for this function are according to the item Optional function setting of Installation & Maintenance Manual.

◆ Main parameters setting

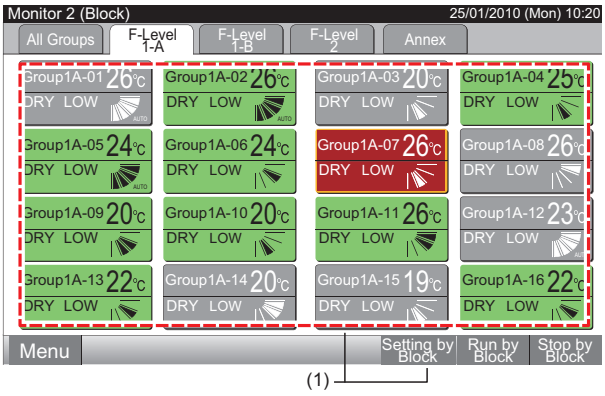
Operation Mode

1 Select the target group at screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)” to change the operation mode setting. The pop-up of “Setting” for the selected group is displayed on the touchscreen.

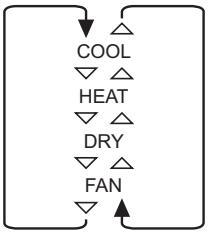
Monitor 1 (All Groups)



Monitor 2 (Block)

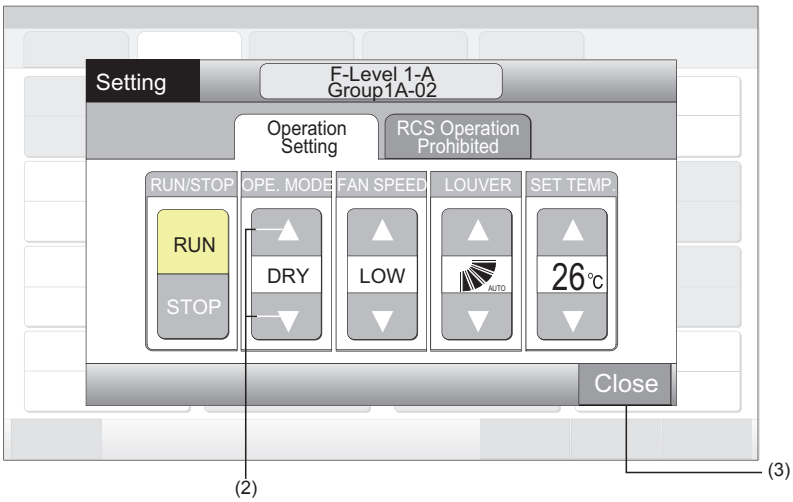


2 By tapping “△” or “▽” of the “OPE MODE”, the operation mode will be changed alternately as follows.



The “AUTO” (Heating/Cooling Automatic Operation) will be included as option if applicable.

3 Tap “Close” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.



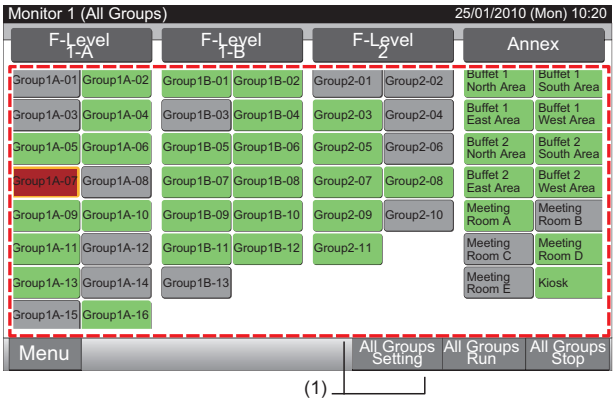
NOTE

- *In the case of “Run/Stop Only” mode, setting change is available by only “All Groups Setting” or “Setting by Block” button. (Setting change for each group is NOT available).*
- *Some operation modes cannot be set depending on the unit model. Contact your dealer for detailed information.*

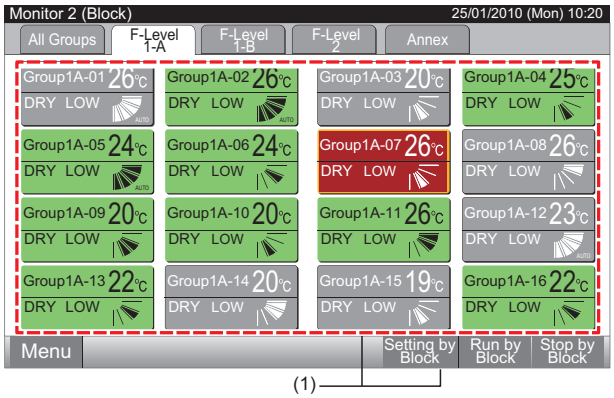
Fan speed

1 Select the target group at screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)” to change the fan speed setting. The pop-up of “Setting” for the selected group is displayed on the touchscreen.

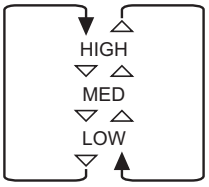
Monitor 1 (All Groups)



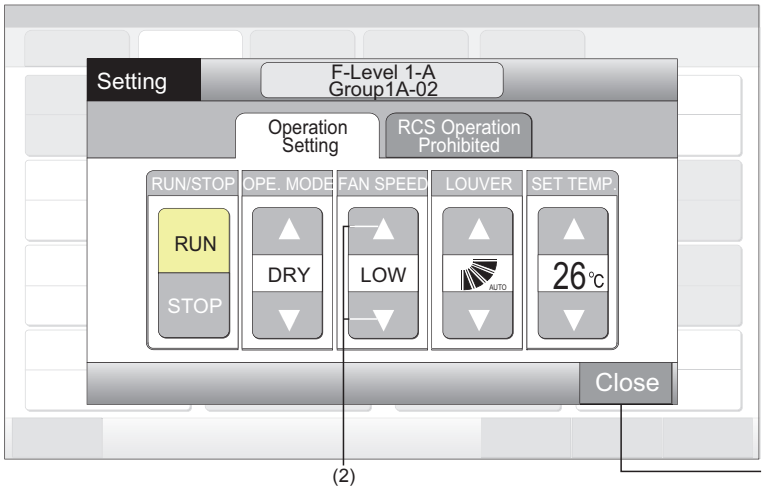
Monitor 2 (Block)



2 By tapping “△“ or “▽” of the “FAN SPEED”, the fan speed setting will be changed alternately as follows.



3 Tap “Close” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.



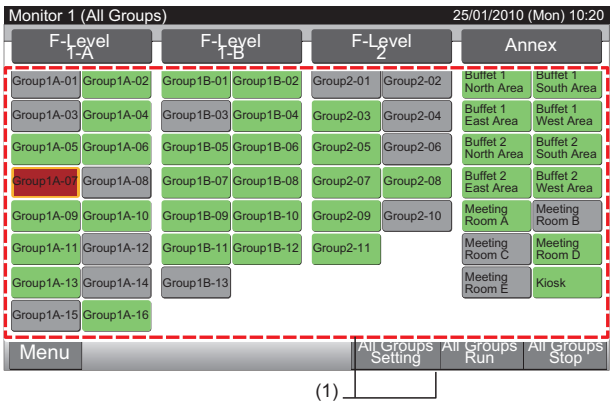
NOTE

- *In the case of “Run/Stop Only” mode, setting change is available by only “All Groups Setting” or “Setting by Block” button. (Setting change for each group is NOT available.)*
- *Actual fan speed during the dry operation will be “LOW” regardless of the fan speed setting.*
- *The figure above shows an example of standard unit. The fan speed may not be indicated for certain indoor unit model.*

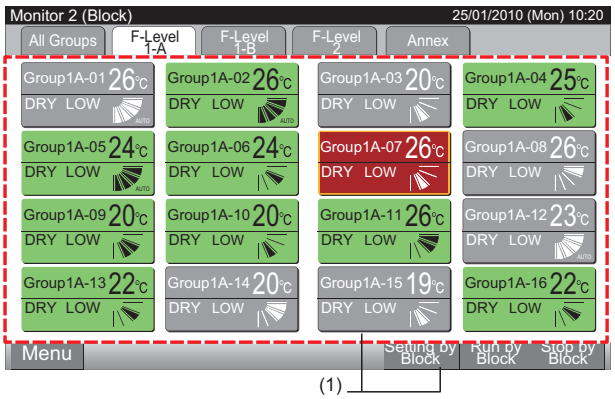
Swing louver direction

1 Select the target group at screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)” to change the swing louver direction. The pop-up of “Setting” for the selected group is displayed on the touchscreen.

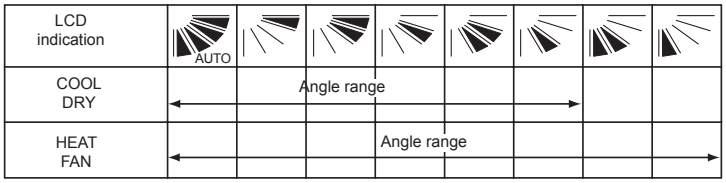
Monitor 1 (All Groups)



Monitor 2 (Block)

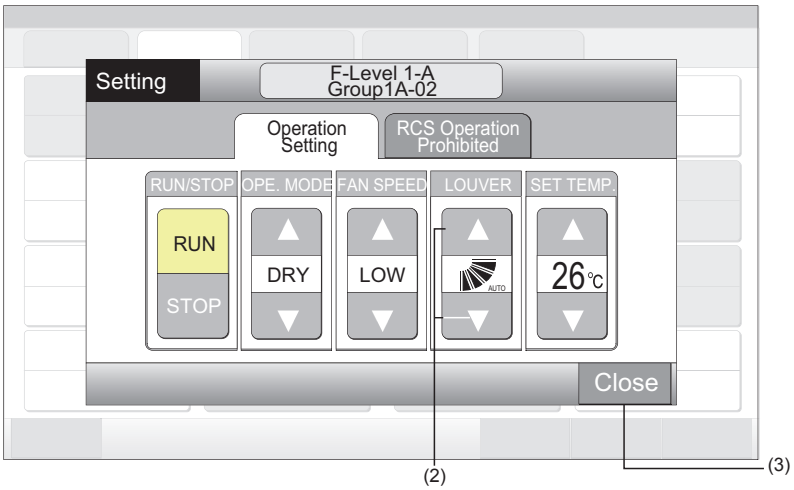


2 By tapping “△“ or “▽” of the “LOUVER”, the swing louver direction will be changed alternately as follows.



: Auto swing operation will be started.

3 Tap “Close” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.



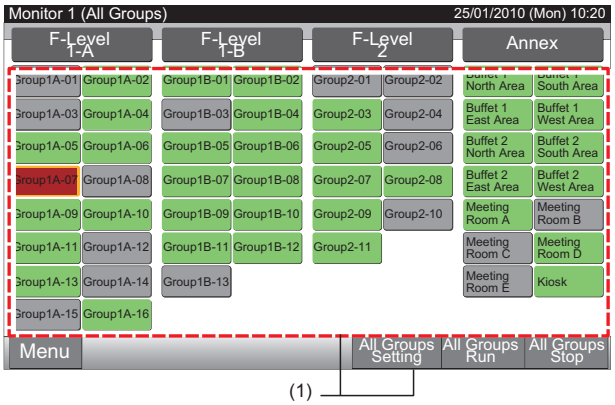
NOTE

- *In the case of “Run/Stop Only” mode, setting change is available by only “All Groups Setting” or “Setting by Block” button. (Setting change for each group is NOT available).*
- *This function (swing louver direction) may not be set depending on the unit model.*
- *Louver position on LCD and the actual louver position do not always match during the auto swing operation.*
- *The louver may not stop immediately after the switch is pressed.*

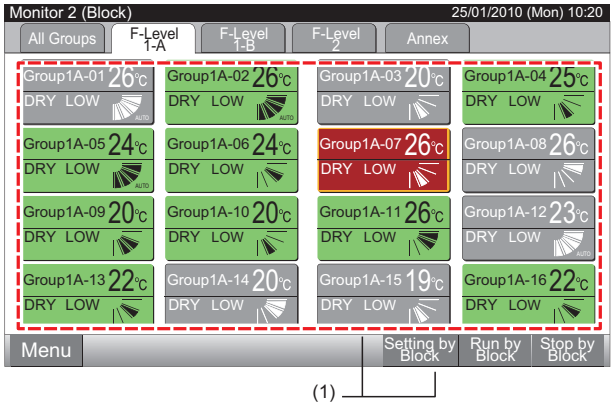
Setting temperature

1 Select the target group at screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)” to change the setting temperature. The pop-up of “Setting” for the selected group is displayed on the touchscreen.

Monitor 1 (All Groups)



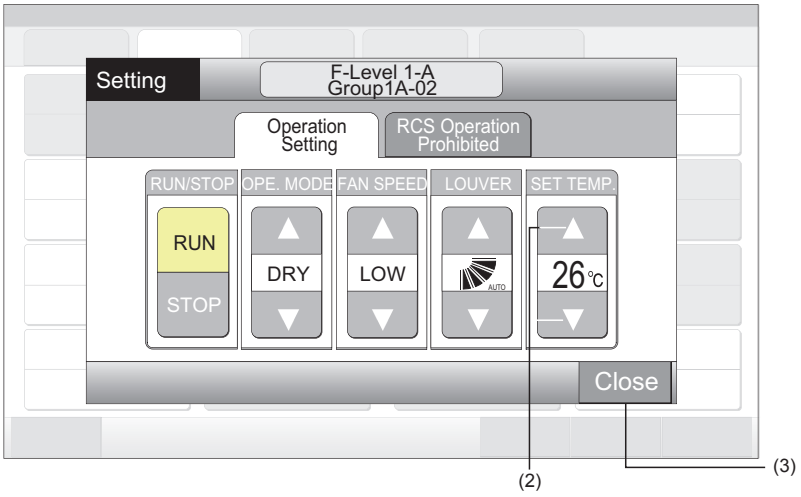
Monitor 2 (Block)



2 By tapping “△”, the temperature is increased by 1ºC. (Max. 30ºC). By tapping “▽”, the temperature is decreased by 1ºC.

- At Cooling, Dry and Fan operation: Min. 19ºC
- At Heating operation: Min. 17ºC

3 Tap “Close” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.



NOTE

- *In the case of “Run/Stop Only” mode, setting change is available by only “All Groups Setting” or “Setting by Block” button. (Setting change for each group is NOT available).*
- *The figure above shows an example of the setting temperature for the standard unit. The temperature setting range may be different depending on the connected indoor units.*

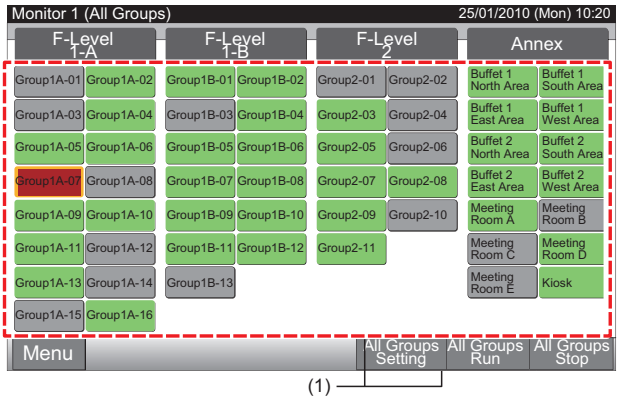
◆ Permitting/Prohibiting operation from remote control switch

This function is used for prohibiting the operation from the remote control switch.

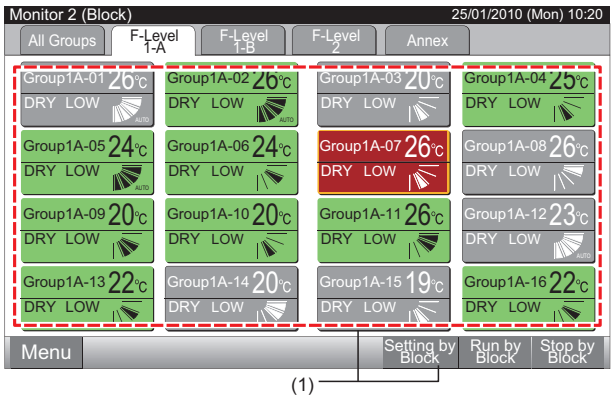
While operation is prohibited, “Central Control” is indicated on LCD of remote control switch and operating by the remote control switch is not available.

1 Select the target group at the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)” to set the function of “RCS Operation Prohibited” setting. The pop-up of “Setting” for the selected group is displayed on the touchscreen.

Monitor 1 (All Groups)



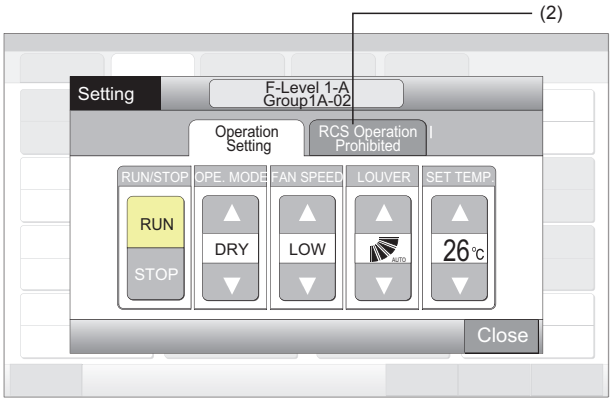
Monitor 2 (Block)

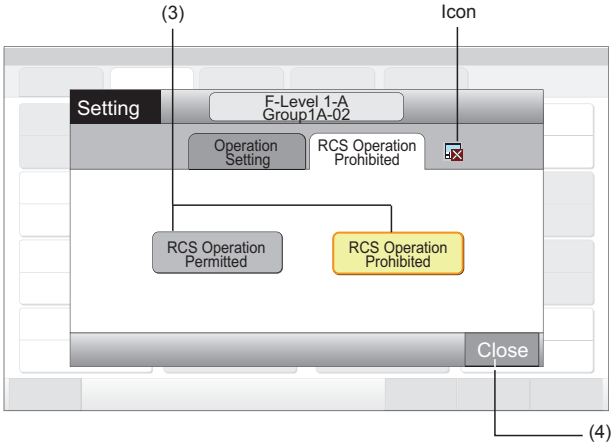


2 Select “RCS Operation Prohibited” by tapping.

3 Select “RCS Operation Prohibited” or “RCS Operation Permitted”. If “RCS Operation Prohibited” is selected, the icon “ ” will be indicated in “Setting” pop-up.

4 Tap “Close” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.





NOTE

- *In the case of “Run/Stop Only” mode, setting change is available by only “All Groups Setting” or “Setting by Block” button.*
- *If the unit is started from the central station (by tapping “Run” on the central station), it can be stopped from the remote control switch (by pressing “Stop” on the remote control switch) even while the operation from the remote control switch is prohibited. In this case, press “Run” on the remote control switch to start the operation again. However, this method is for an emergency stop therefore do not use this for the normal operation.*
- *For the unit without the remote control switch, the prohibiting operation should be set.*
- *Do not set the prohibiting operation if multiple centralised controllers are used in the same H-LINK. Additionally, do not set this by other centralised controller or it may cause malfunction.*

5.1.4.3 Menu

The table below shows menu item and its function.

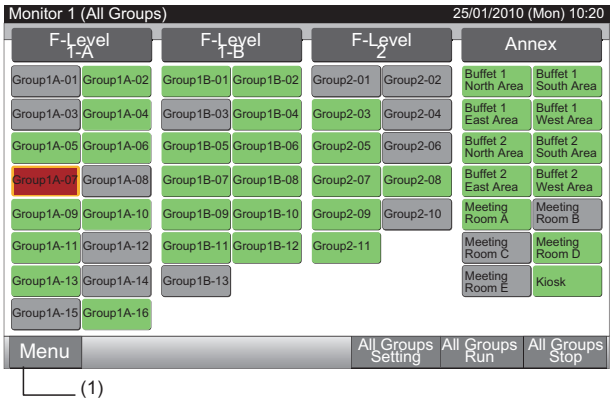
Item	Function
Filter Sign Reset	This function is used for turning off the filter sign of the connected indoor units. This function can be used only for the indoor unit with “Filter Sign”.
Schedule Setting	This function is used for scheduled timer operation which is possible to set by each block or group.
Schedule Timer Setting	This function is used for setting the time (by the minute), “Run/Stop” and temperature (19~30ºC). For weekly schedule setting, up to 10 schedule items can be set per day. It is also available to copy the setting contents.
Holiday Setting	This function is used for suspending the schedule operation temporarily. The schedule operation will not be available when this function is set. This function is used for setting irregular holidays such as national holidays.
Schedule Timer ON/OFF Setting	“Schedule Timer OFF Setting” is used for suspending the schedule operation for the target group. The schedule operation will not be available when Schedule Timer is OFF. This function is used for a long holiday, sudden holidays, national holidays, etc.
Adjusting Date/Time	This function is used for adjusting date and time.
Touchscreen Cleaning	This function is used for cleaning LCD (liquid crystal display) of central station.
Touchscreen Calibration	This function is used for calibrating the tap position for touchscreen. This function is used if the operation is not carried out smoothly when the button on the touchscreen is tapped.
Group Name Register	This function is used for registering name of the block and group. The registrable number of letters are maximum 20 letters for the name of each block or group. It is also available to copy the name. If the group/block is registered without name, it will be registered as “Group 1” or “Block 1” automatically.
Screen Display Setting	This function is used for setting the screen display.
Brightness	This function is used for adjusting the brightness of the touchscreen display.
Language Setting	This function is used for changing the displayed language.
Temperature Unit	This function is used for changing the temperature unit.
Accumulated Operation Time	This function is used for indicating the accumulated operation time of the air conditioner. The accumulated operation time will be indicated by month. The operation time is memorized for 15 months.
Contact Information	This function is used for indicating the service contact address and the latest alarm code.
Service menu	This switch is for the serviceman only. Therefore do not use it. If this switch is used and the service menu is indicated on the screen, tap “Back”. The screen will return to the menu.

◆ Display menu screen

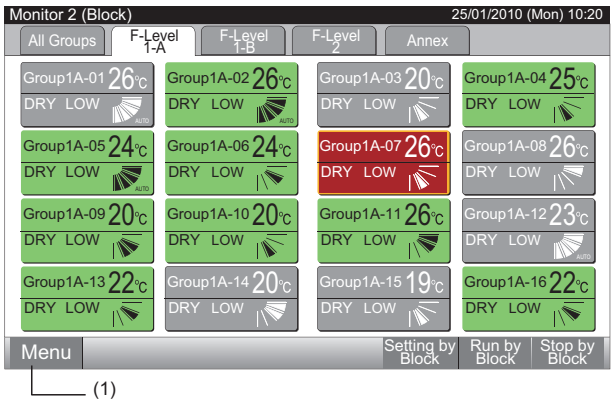
The setting items for the indoor unit and central station are laid out in the menu.

1 Tap “Menu” at screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.

Monitor 1 (All Groups)

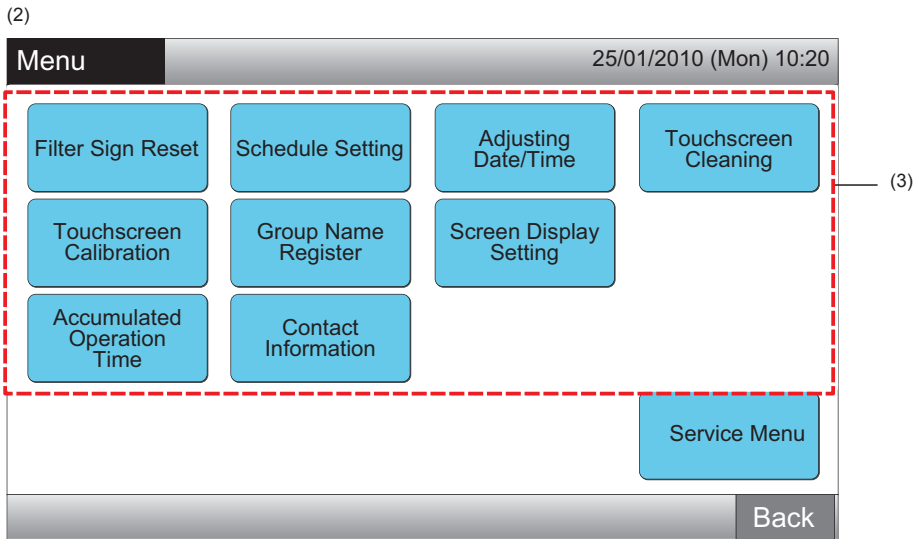


Monitor 2 (Block)

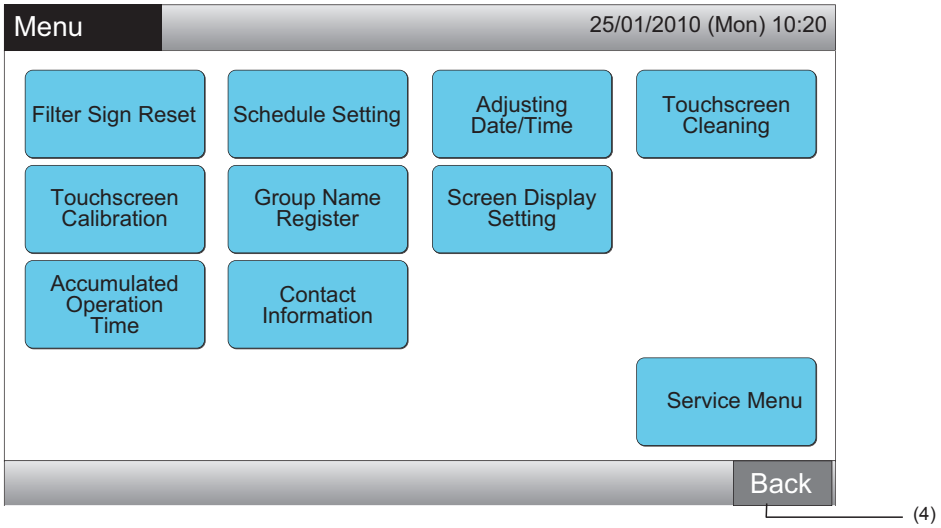


2 The screen of “Menu” will be displayed.

3 Select the item from the screen of “Menu”.

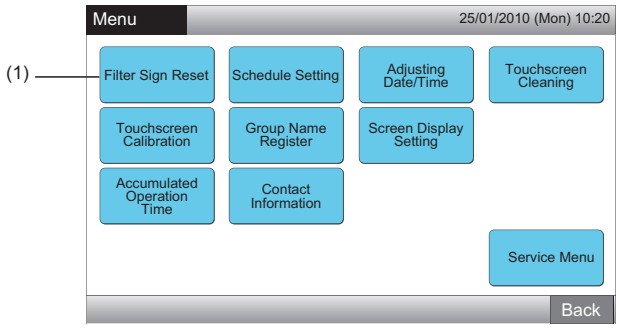


4 Tap “Back” to return the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.



◆ Filter Sign Reset

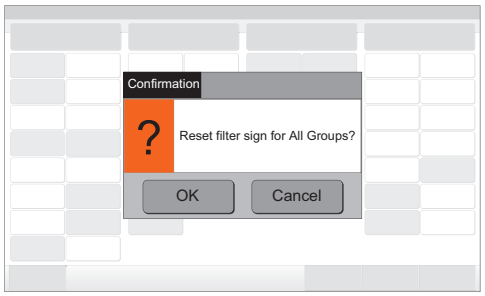
1 Select “Filter Sign Reset” from the screen of “Menu”. (This is available only when the filter sign is indicated).



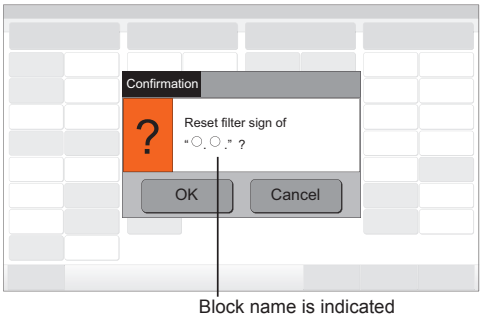
2 Select the target (all groups, block or group) to reset the filter sign. The yellow button is indicated for the group with filter sign.

In the case of simultaneous reset of filter sign: Select “All Groups” or “Block”. The following confirmation screen will be indicated. The filter sign can be reset simultaneously by selecting “OK”.

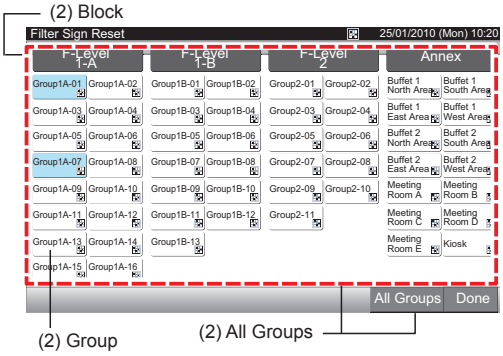
When “All Groups” is Tapped



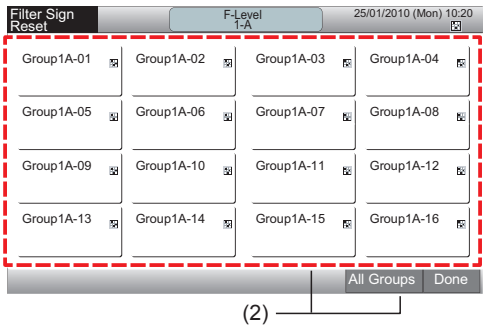
When “Block” is Tapped



Block (Q’ty): 2 and more

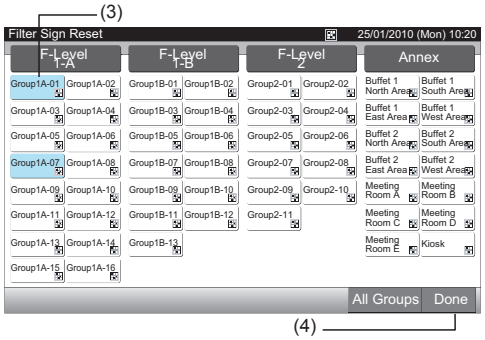


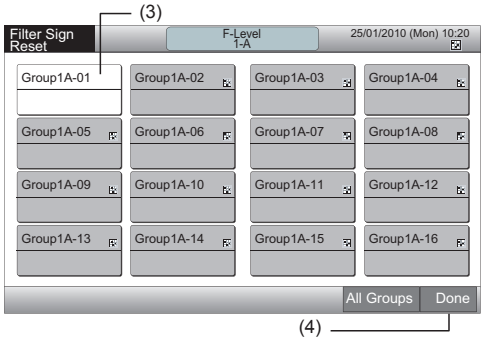
Block (Q’ty): 1



3 When the filter sign is reset, the group button colour changes into white.

4 Tap “Done” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.





◆ Schedule settings

This function is used for timer operation.

It is possible to set a schedule for a block and for each group.

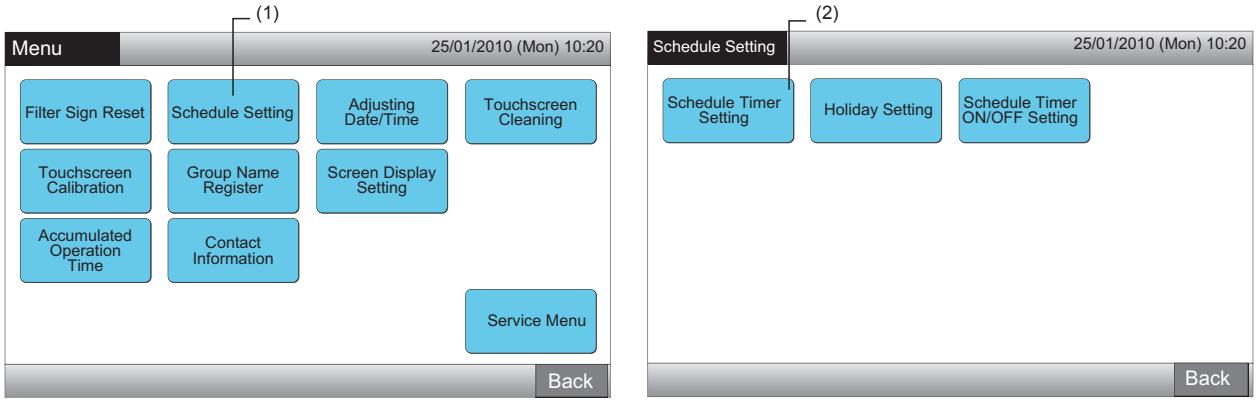
A holiday setting independent of the schedule is also available.

Schedule timer settings

Timer setting for weekly schedule

1 Select “Schedule Setting” from the screen of “Menu”.

2 Select “Schedule Timer Setting” from the screen of “Schedule Setting”.

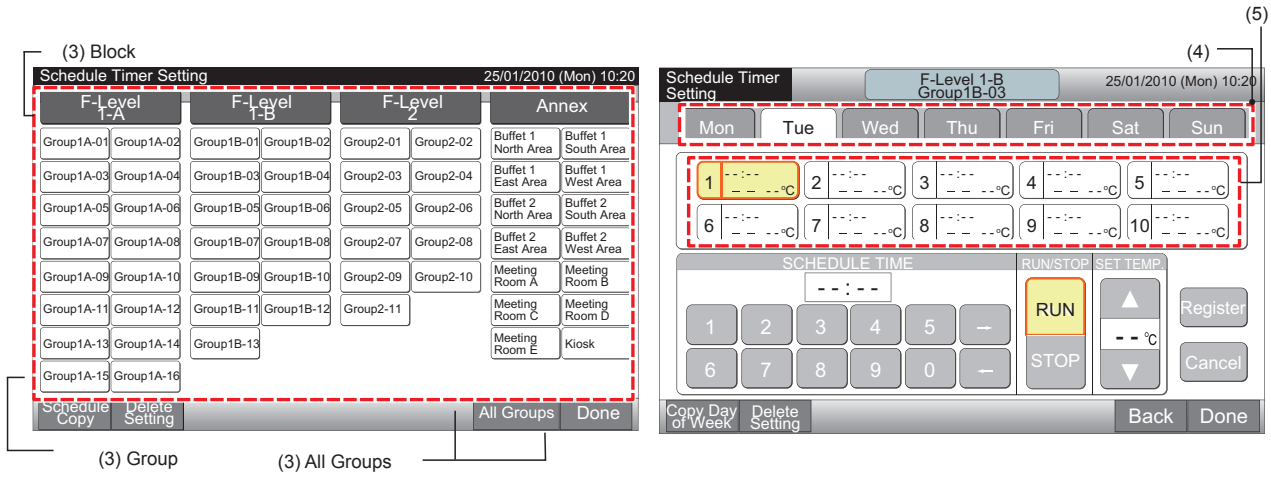


3 Select the target (all groups, block or group).

- The blue button is indicated for the group with setup schedule.
- The white button is indicated for the group without setup schedule.

4 Select the target day of the week. (from Mon. to Sun.).

5 Select the schedule item number (from 1 to 10).



6 Set the schedule time, run/stop operation and temperature.

Select the schedule item No. (1~10) and set the time.

Select “RUN” or “STOP”.

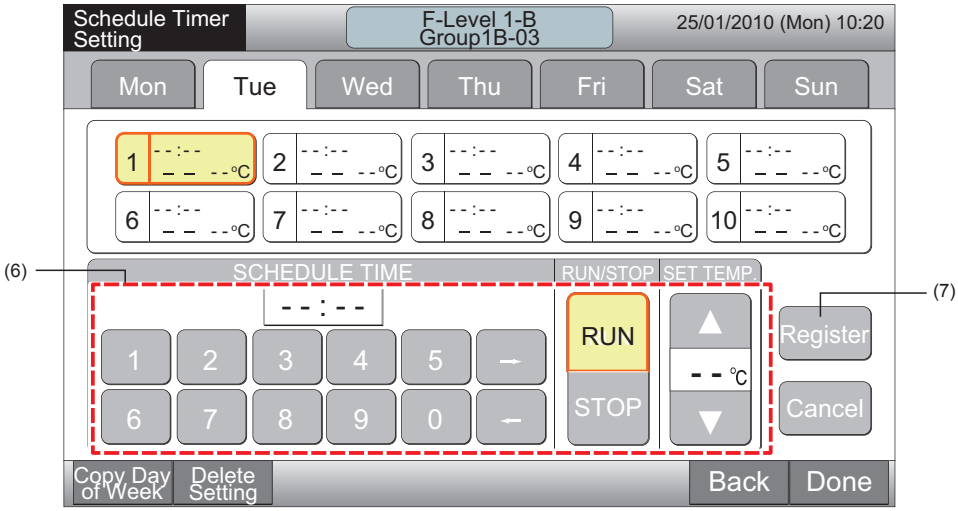
Set the temperature by tapping “Δ” or “∇”.

“- -” will be indicated when the time and temperature are not set.

7 Tap “Register” to register the scheduled items. If “Cancel” is tapped, the scheduled items will be cancelled.

To set the same day of the week, refer to the (5).

To set other days of the week, refer to the (4).



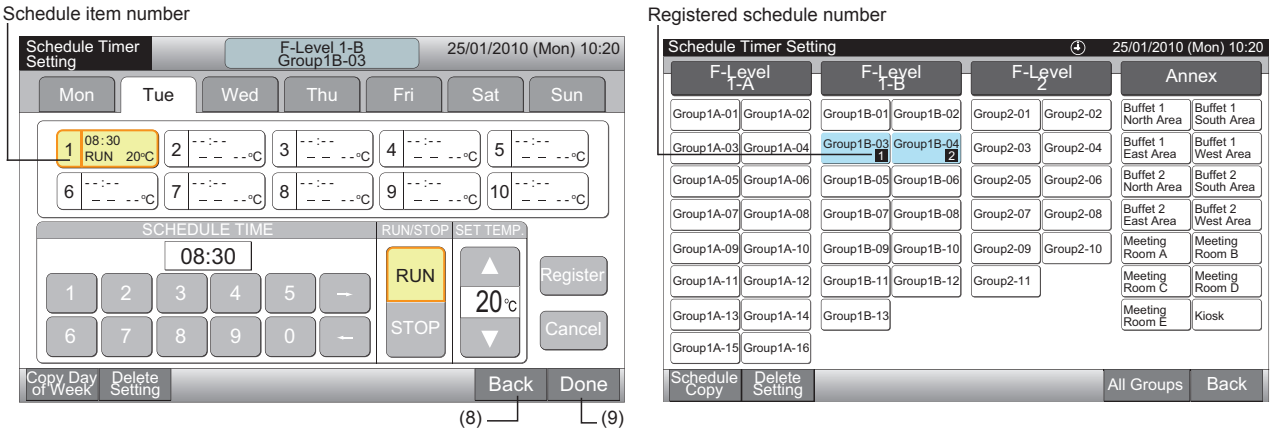
8 Tap “Back” to set the timer for other groups. The screen will return to “Schedule Timer Setting” (3).

After the schedule is set, the registered schedule number (1~64) will be indicated in the group button. (The scheduled group button colour changes to blue).

In case that the setting is the same, the same registered schedule No. will be indicated.

9 Tap “Done” to return the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.

If “Done” is tapped without registration, the scheduled items are cancelled. And the screen will be changed to “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.



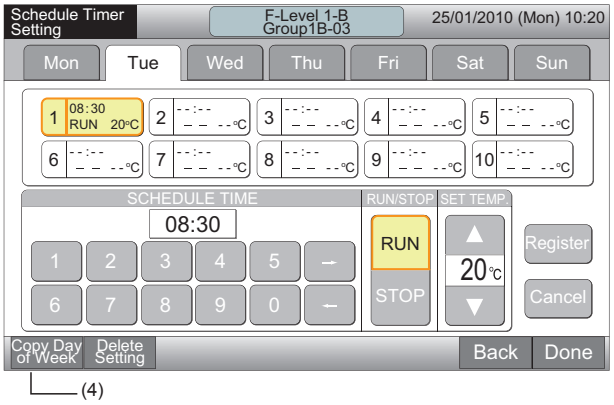
NOTE

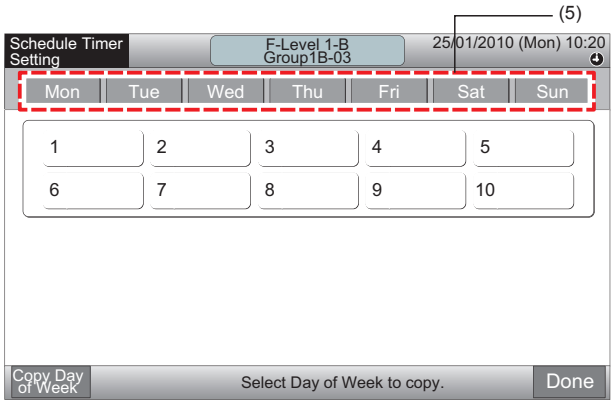
Make sure that the time and run/stop are set for the timer setting. (It is not necessary to set the temperature).

Copying Schedule Setting by Days of Week

1 Select “Schedule Setting” from the screen of “Menu”.
2 Select “Schedule Timer ON/OFF Setting” from the “Schedule Setting”.
3 Select the target (all groups, block or group).
4 Tap “Copy Day of Week”.
5 Select the day of the week tab to copy.

All the schedules (Schedule Item number 1 to 10) for the selected day are indicated with yellow.





6 Select the day of the week tabs to paste.

After the day of the week is selected, the mark of “✔” will be indicated in the day of the week tab.

Multiple selection of the days of the week is available to copy.

Tap the day of week for re selecting the day of the week tabs.

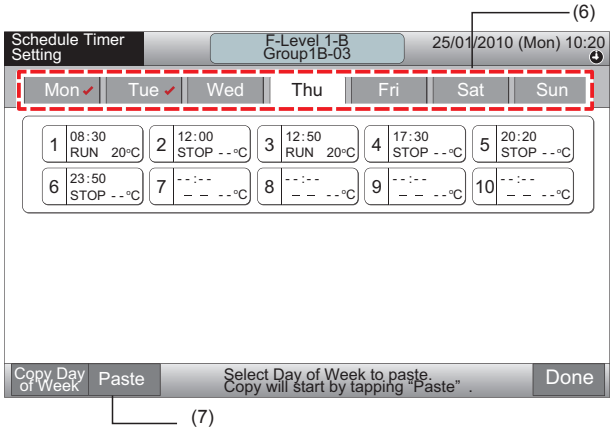
7 Tap “Paste”. The schedule setting is copied.

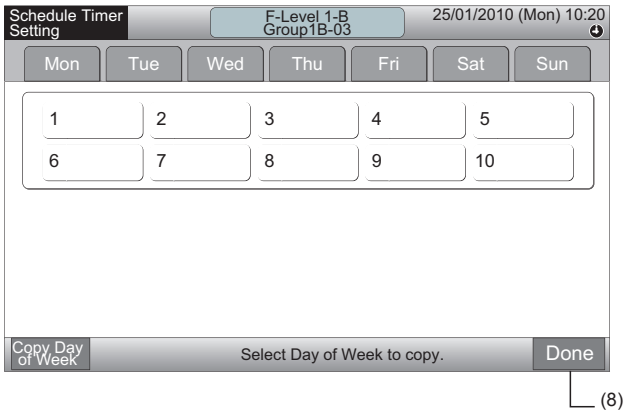
To copy the schedule for other days of the week, refer to the (5).

To finish, refer to the (8).

8 If “Done” is tapped, the screen will return to “Schedule Timer Setting”.

If “Done” is tapped without tapping of “Paste”, the selected items for copy are cancelled.





Copying Schedule Setting by Each Group

1 Select “Schedule Setting” from the screen of “Menu”.

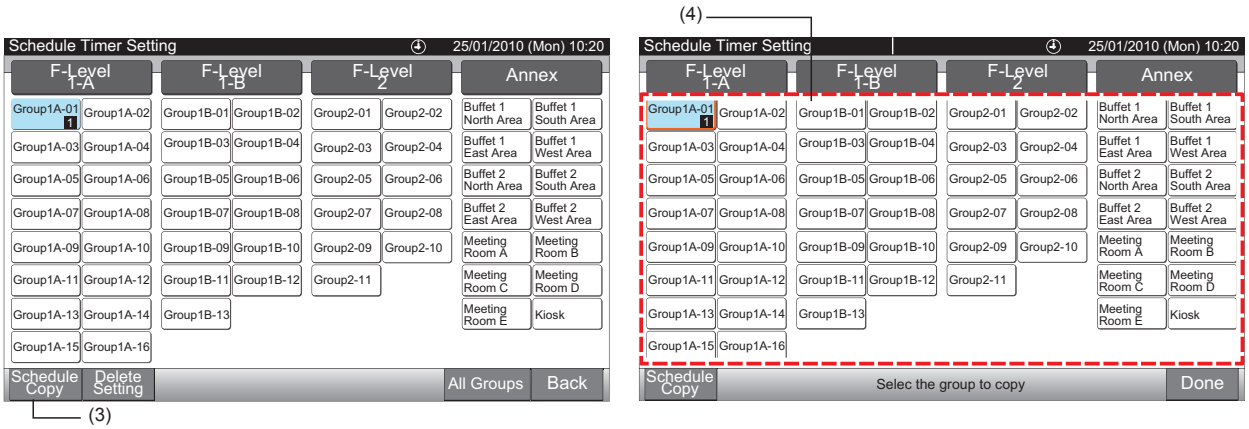
2 Select “Schedule Timer Setting” from the screen of “Schedule Setting”.

3 Tap “Schedule Copy”.

4 Select the group to copy. (Block cannot be selected to copy).

Selected group button is rimmed with orange line.

Tap the selected group again to cancel the selection. The orange line will turn off.



5 Select the group (block) to paste.

The mark of “✔” will be indicated in the button.

Multiple selection of the group (including block) is available to paste.

To cancel the selection, press the selected group again, the mark of “✔” will turn off.

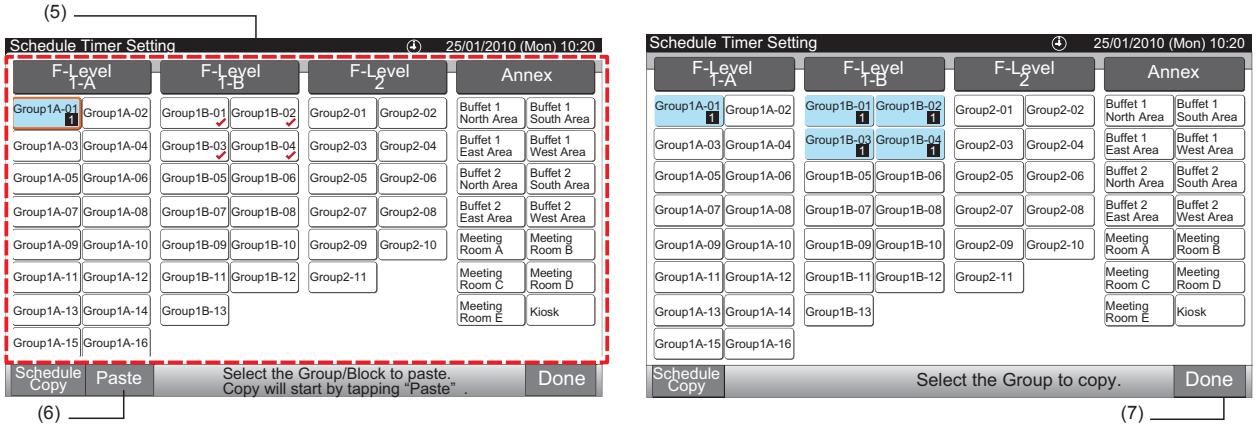
6 Tap “Paste”. The schedule setting is copied.

To copy the schedule for other groups, refer to (4).

To finish, refer to (7).

7 If “Done” is tapped, the screen will return to “Schedule Timer Setting”.

If “Done” is tapped without tapping “Paste”, the selected items for copy are cancelled.



Deleting Schedule Setting by Operation Number

1 Select “Schedule Setting” from the screen of “Menu”.

2 Select “Schedule Timer Setting” from the screen of “Schedule Setting”.

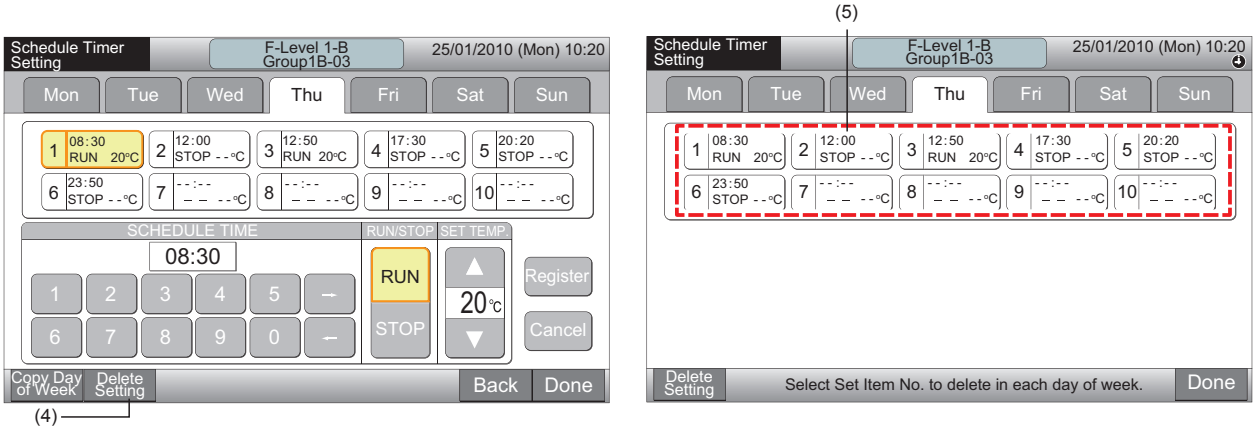
3 Select the target (all groups, block or group).

4 Tap “Delete Setting”.

5 Select the schedule item number for deleting schedule.

If other days of the week tabs are tapped, the schedule item number for other days of the week can be selected.

If the schedule item number is selected, the mark of “✔” is indicated. Multiple selection of schedule item number is available.



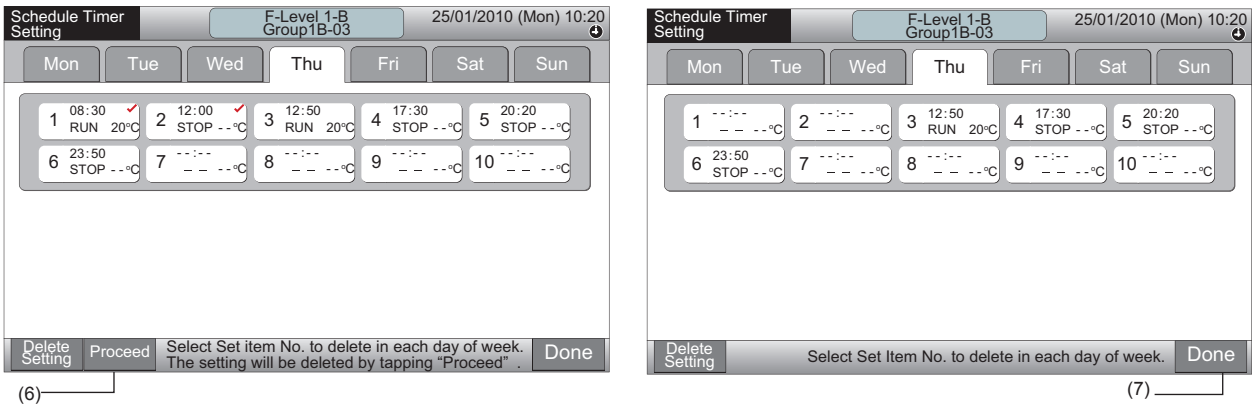
6 Tap “Proceed”. The selected schedule item number will be deleted.

To delete other schedule number, refer to (5).

To finish, refer to (7).

7 If “Done” is tapped, the screen will return to “Schedule Timer Setting”.

If “Done” is tapped without tapping “Proceed”, the selected items for deleting are cancelled.



Deleting Schedule Setting by Each Group

1 Select “Schedule Setting” from the screen of “Menu”.

2 Select “Schedule Timer Setting” from the screen of “Schedule Setting”.

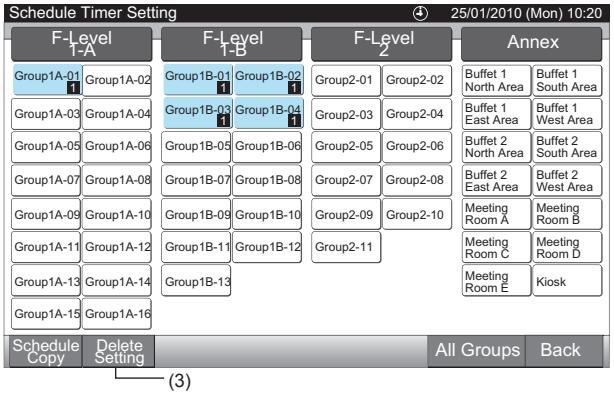
3 Tap “Delete Setting”.

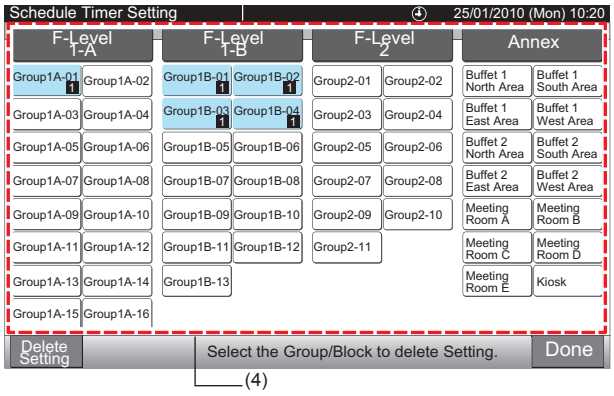
4 Select the groups or blocks to delete the setting.

If the groups or blocks are selected, the mark of “✔” is indicated.

Multiple selection of group and block are available for deleting.

To cancel the selection, press the selected group again, the mark of“✔” will turn off.



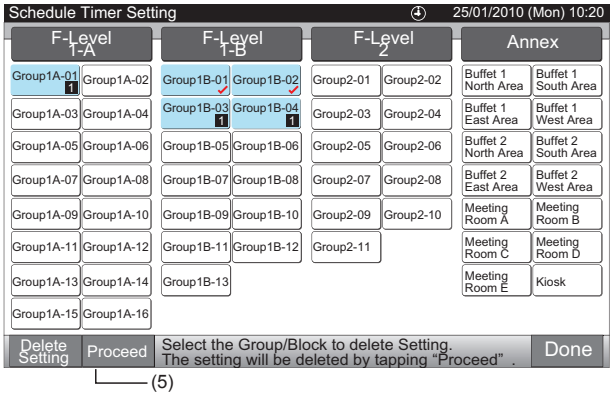


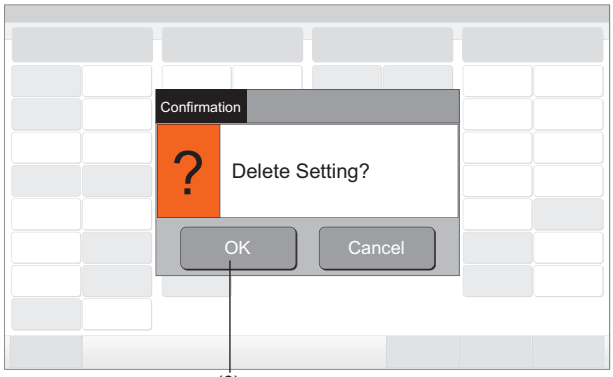
5 Tap “Proceed” and the confirmation screen will be displayed.

6 If “OK” is tapped, the schedule setting will be deleted.

To delete the schedule for other groups, refer to (4).

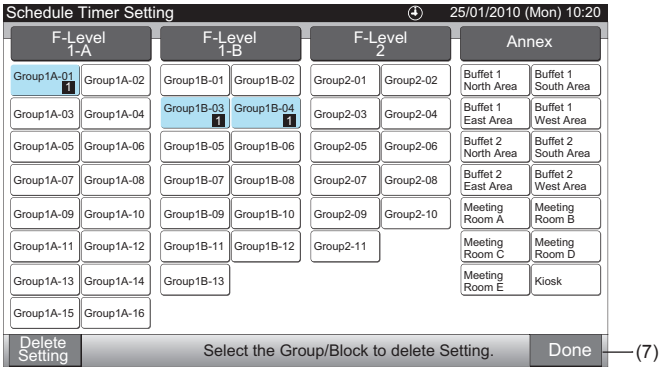
To finish, refer to (7).





7 If “Done” is tapped, the screen will return to “Schedule Timer Setting”.

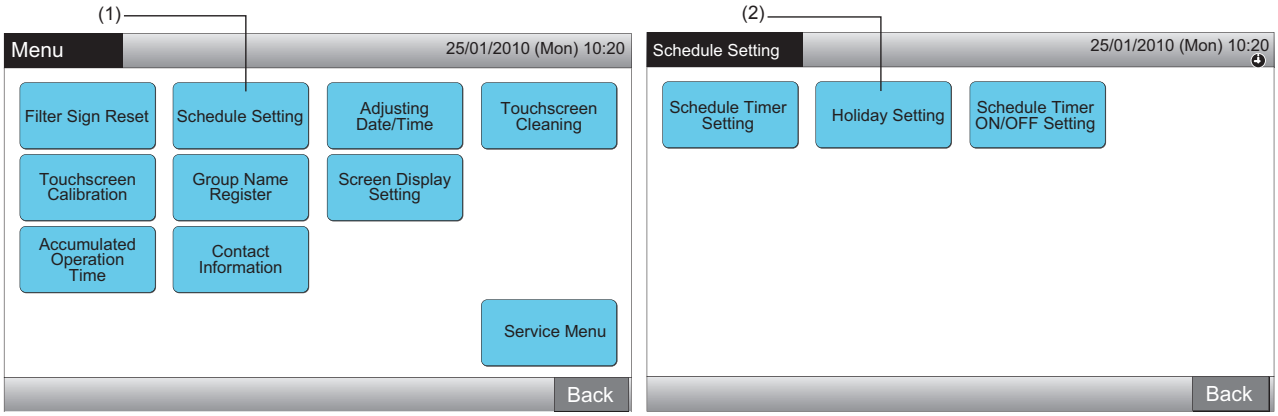
If “Done” is tapped without tapping “Proceed”, the selected groups for deleting are cancelled.



Holiday setting for suspending operation

1 Select “Schedule Setting” from the screen of “Menu”.

2 Select “Holiday Setting” from the screen of “Schedule Setting”.



3 Select the target (all groups, block or group). The calender will be indicated.

Blue button is indicated for the group with holiday set.

White button is indicated for the group without setup holiday.

NOTE

“Holiday” means Operation Suspended Day.

4 Set the date to suspend the scheduled operation.

The calender will be forwards/backwards by tapping “<” or “>”.

By tapping the date on the calendar, the “Holiday” is set with mark of “▢”. “Holiday Setting” is cancelled by tapping the same date again.

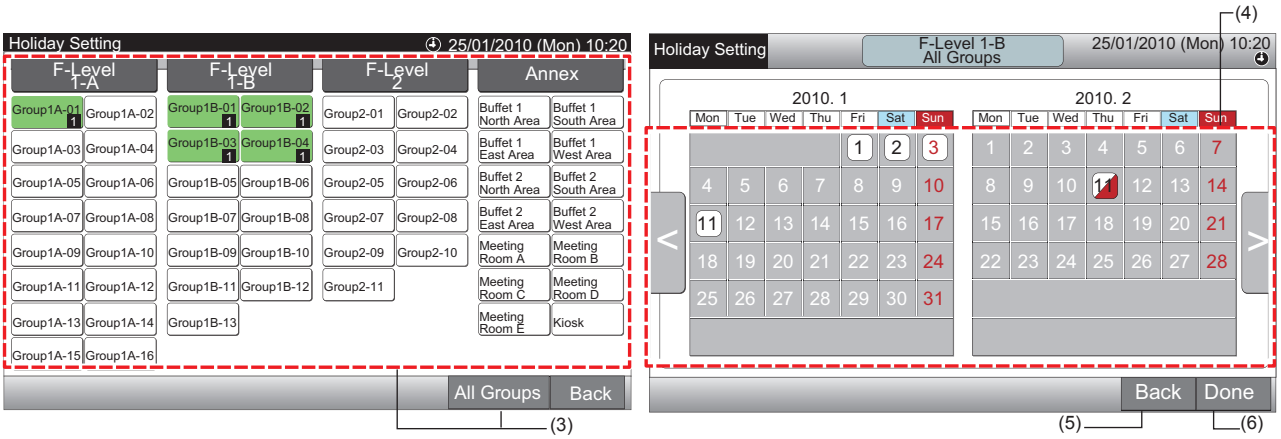
Holiday setting is not available for the days before the present day.

The mark of “▢” will be indicated for the day with holiday set.

With “All Groups” or “Block” selected, the mark of “◪” will be indicated for the day when the groups with setup holiday and the groups without setup holiday are mixed.

5 Tap “Back” to set the schedule for other groups. The screen will return to “Holiday Setting”.

6 Tap “Done” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.

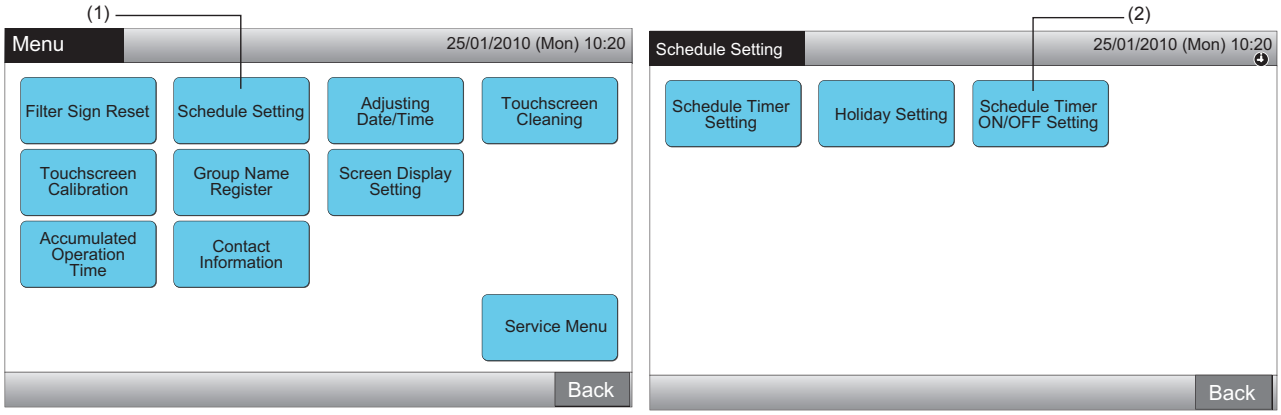


Schedule timer ON/OFF setting

1 Select “Schedule Setting” from the screen of “Menu”.

2 Select “Schedule Timer ON/OFF Setting” from the “Schedule Setting”.

The screen will be changed to the “Schedule Timer ON/OFF Setting”. At first, the setting is “ON” with the mark of “”.



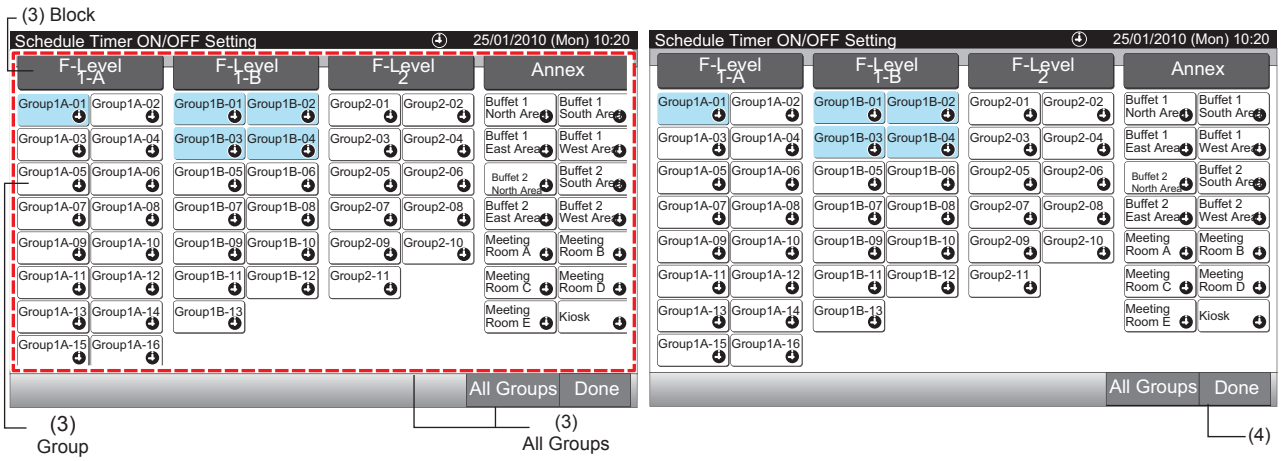
3 Select the target (all groups, blocks or groups).

By tapping the button of all groups, blocks or groups, the indication is changed to the “OFF” setting with the mark “”.

By tapping the all groups, blocks or groups, the indication is changed alternately in order of “” and “”.

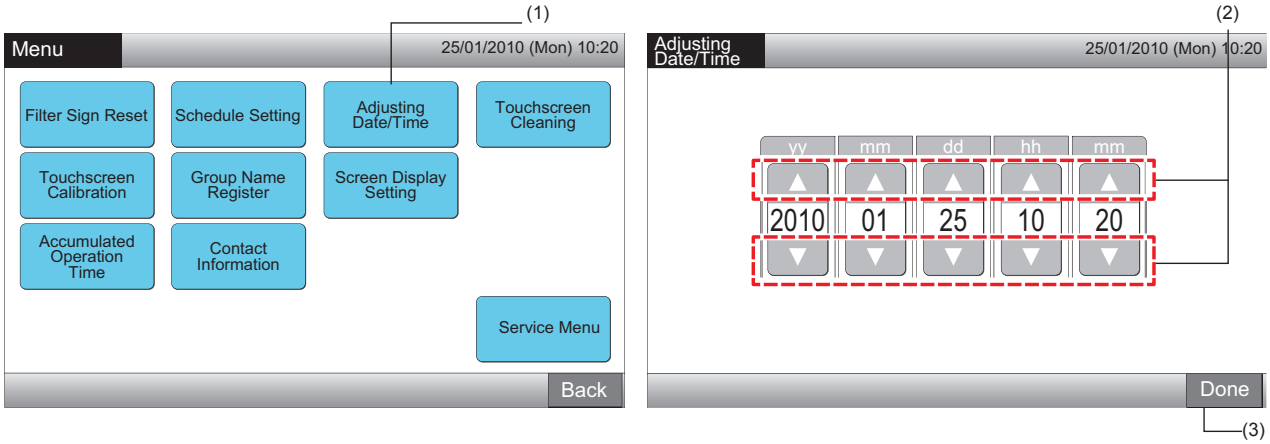
- Blue button is indicated for the group with schedule set.
- White button is indicated for the group with schedule unset.
- Schedule is turned ON:
  Schedule is turned OFF:

4 Tap “Done” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.



◆ Adjusting Date/Time

1 Select “Adjusting Date/Time” from the screen of “Menu”.
2 Tap or press-and-hold “△” or “▽” to adjust the date and time.
3 Tap “Done” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.



5

NOTE

- *According to the backup function of the central station, the clock works for 10 days (approx.) after the electric power failure. Set the date and time again after long-term electric power failure.*
- *Periodical clock adjustment is Recommended. (Clock accuracy: difference +70 sec. per month).*

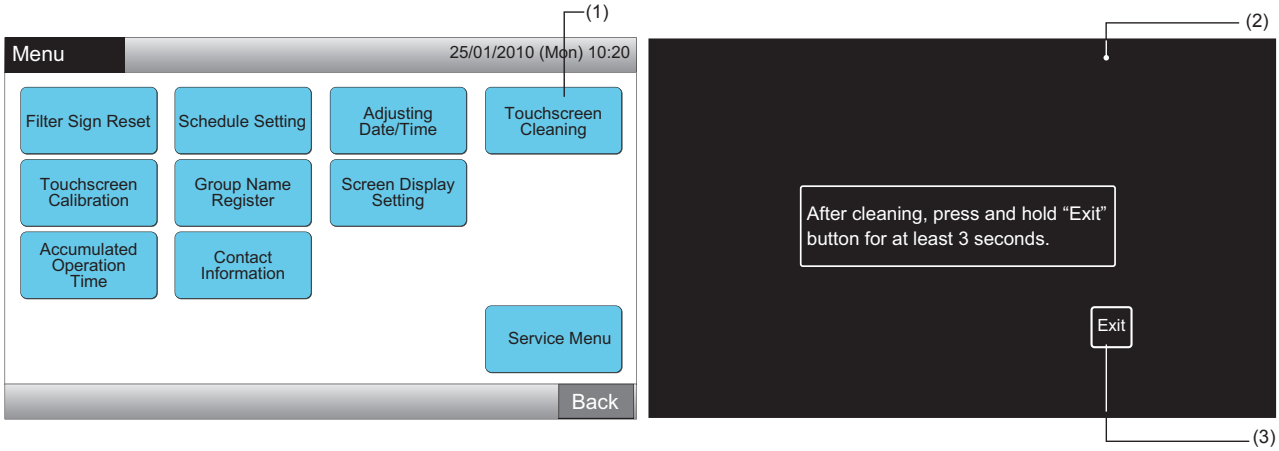
◆ Touchscreen Cleaning

1 Select “Touchscreen Cleaning” from the screen of “Menu”.
2 The screen will be changed as shown in the figure (2).

The screen will be locked until “Exit” is pressed and held for at least 3 seconds.

Clean the touchscreen display while the screen is locked.

3 Press and hold “Exit” for at least 3 seconds to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.

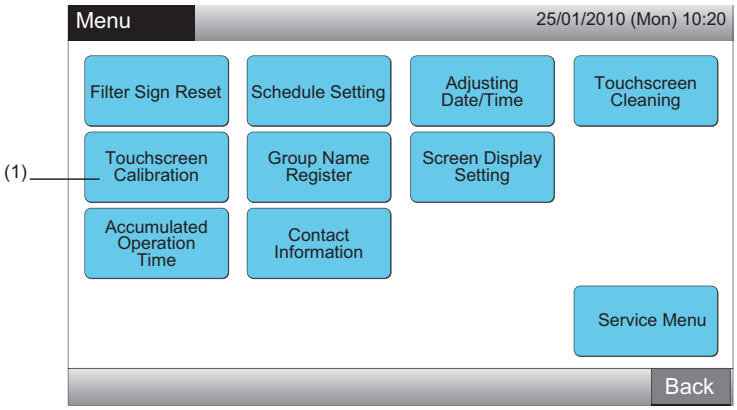


NOTE

- *Clean and wipe the display with dry and soft cloth.*
- *For oil and fat on the touchscreen such as finger print marks, use diluted neutral detergent. Before cleaning, wring water out to dry. After that, again wipe the display with dry and soft cloth.*
- *Do not use benzine, thinner or surface active agent in order to protect the touchscreen and body from deformation or deterioration.*

◆ Touchscreen calibration

1 Select “Touchscreen Calibration” from the screen of “Menu”.

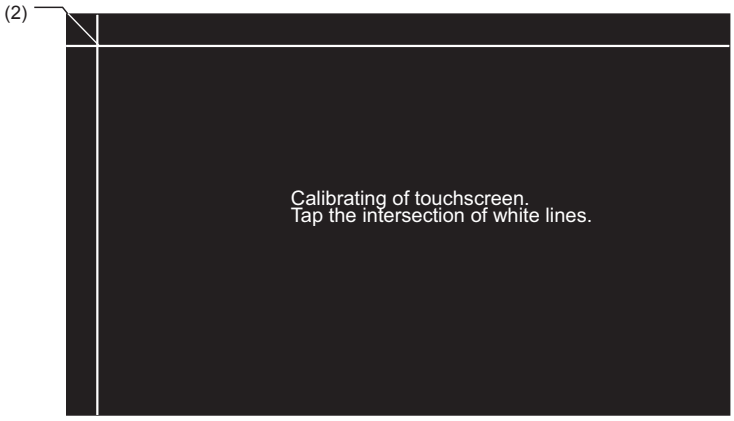


2 Calibrating touchscreen

Tap every intersections of white lines sequentially indicated on the screen.

After that, the screen will be changed to (3).

If the intersections of white lines are not recognized normally, “Calibration is cancelled” will be displayed on the screen. And then, the screen will automatically return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)” without calibrating.

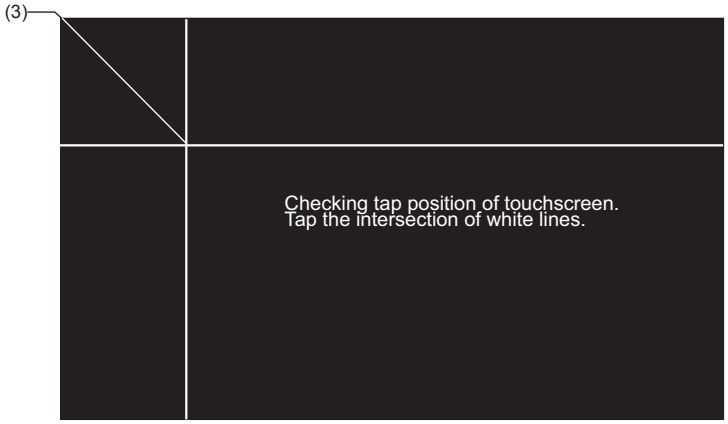


3 “Checking tap position of touchscreen”

Touch the intersection of white lines sequentially according to the screen indication.

The white dots will be indicated when tapping other than the intersection of white lines.

When every intersections of white lines are normally recognized, the screen will automatically return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.

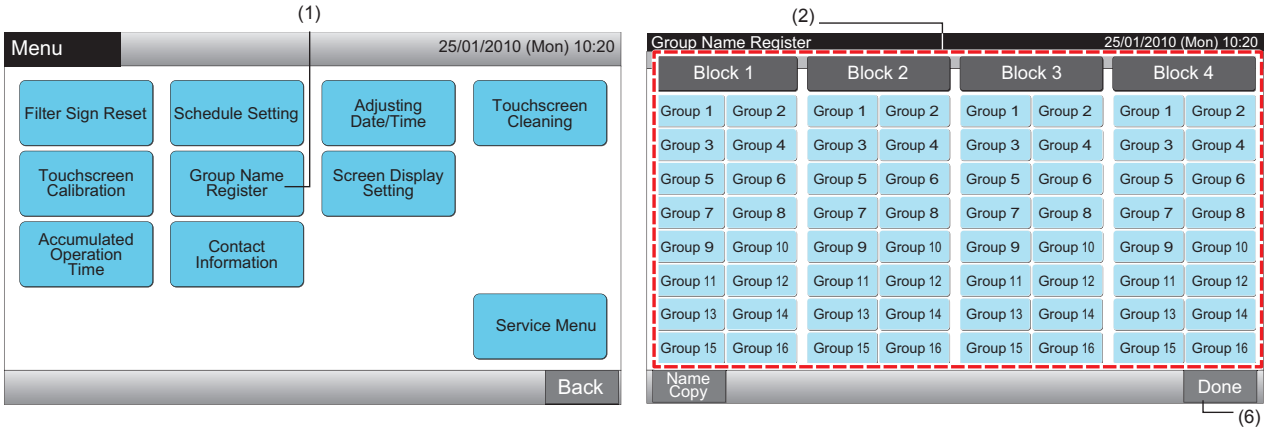


◆ Registering Groups/Blocks name

Registering name of group (Block)

1 Select “Group Name Register” from the screen of “Menu”.

2 Select the target (block or group) to register the name.



3 Select the letter type from “Capital Letter”, “Small Letter”, “Symbol 1” or “Symbol 2”.

If “Delete Name” is pressed, the registered name for the selected group (block) will be deleted. If “Close” is tapped without inputting the group (block) name, the screen will return to “Group Name Register” and indicate the group (block) name as Group 1 (Block 1).

NOTE

The “Delete Name” will be switched to “Delete” by tapping any keys (except the letter tabs).

4 Enter the group (block) name and tap “Close”.

The screen will return to “Group Name Register” and entered name is stored.

5 Perform 3 and 4 to enter the name for other groups (block).

6 Tap “Done” on the screen of (2) to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.



NOTE

The registrable number of letters are maximum 20 for the name of the group (block). If “↵” is pressed, the name is indicated in 2 lines (10 letters/line) on the touchscreen display.

Copying name of group (Block)

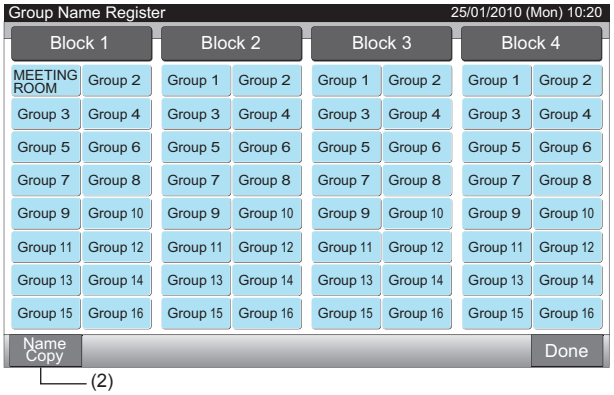
1 Select “Group Name Register” from the screen of “Menu”.

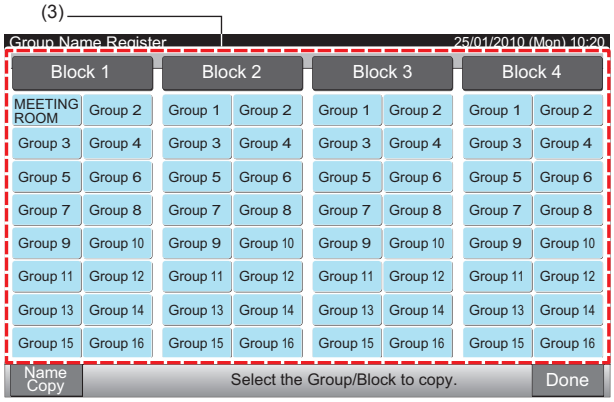
2 Tap “Name Copy”.

3 Select the source group (block) to copy.

Selected group (block) button is rimmed with orange line.

Press the selected group (block) again to cancel the selection. The orange line will turn off.





4 Select the destination group (block) to paste.

The mark of “✔” will be indicated in the button.

Multiple selection of group (block) is available to paste.

To cancel the selection, press the selected group (block) again, the mark of “✔” will turn off.

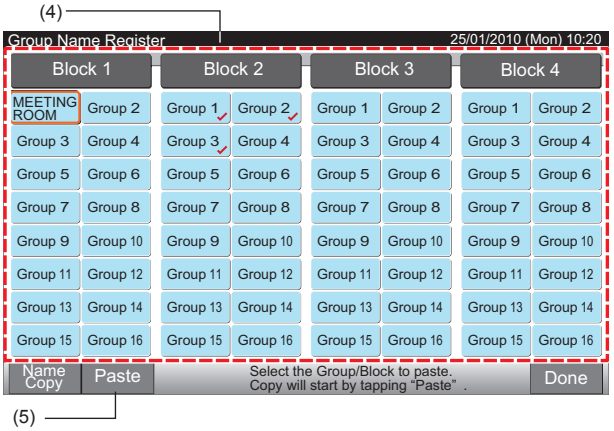
5 Tap “Paste”. The name of the group (block) is copied.

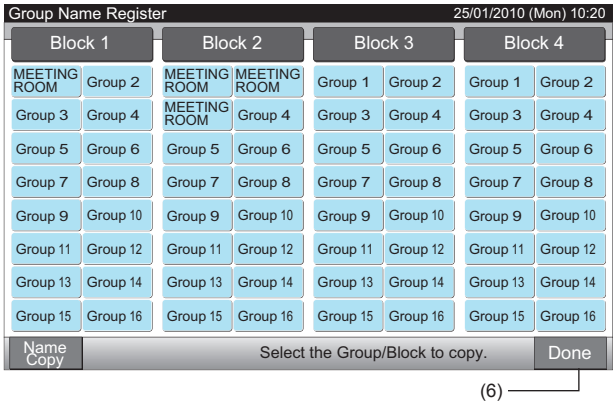
To copy the name of other groups, refer to (3).

To finish, refer to (6).

6 If “Done” is tapped, the screen will return to “Group Name Register”.

If “Done” is tapped without tapping “Paste”, the selected items for copying are cancelled.

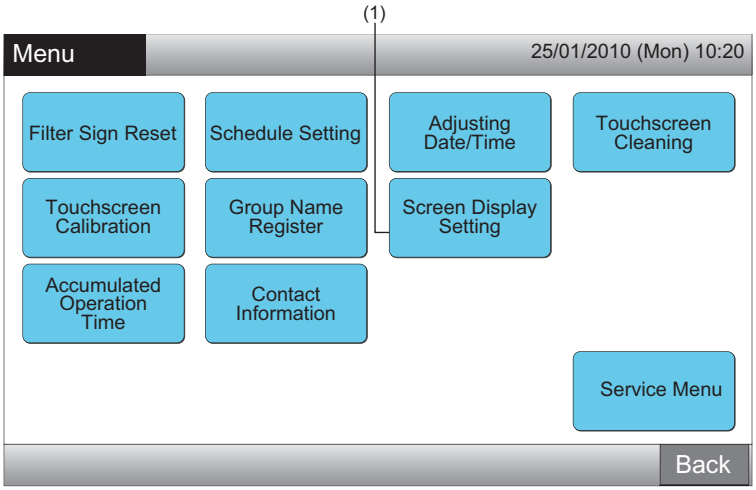




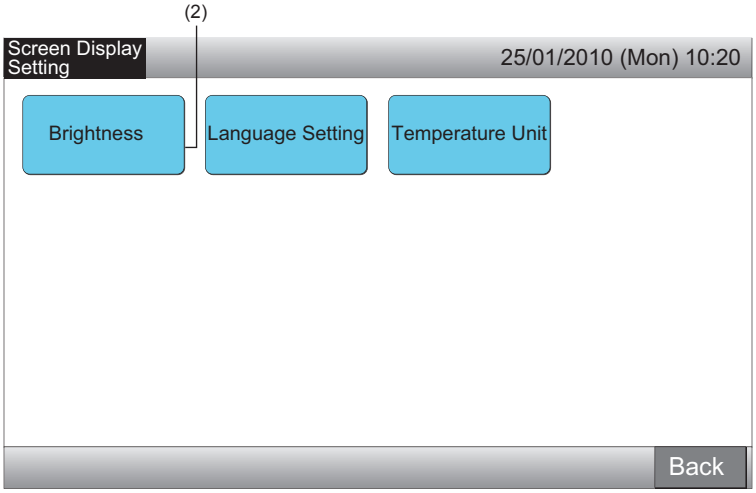
◆ Screen display setting

Adjusting backlight brightness of touchscreen display

1 Select “Screen Display Setting” from the screen of “Menu”.

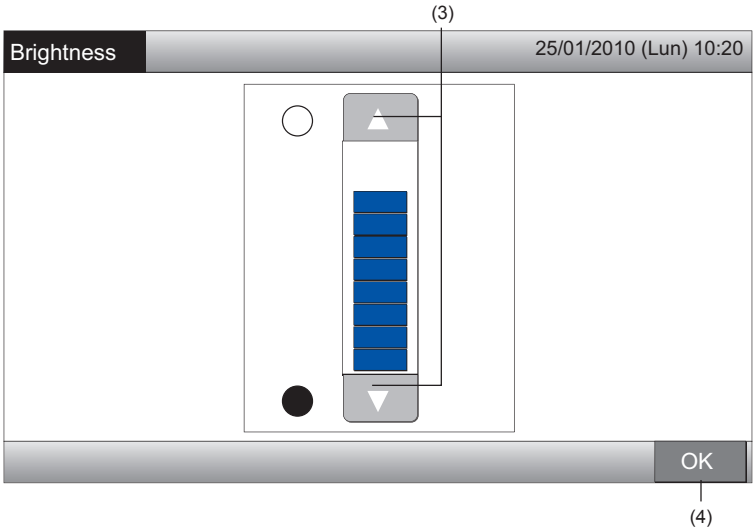


2 Select “Brightness” from the screen of “Screen Display Setting”.



3 Tap “△” or “▽” and adjust the brightness of the backlight.

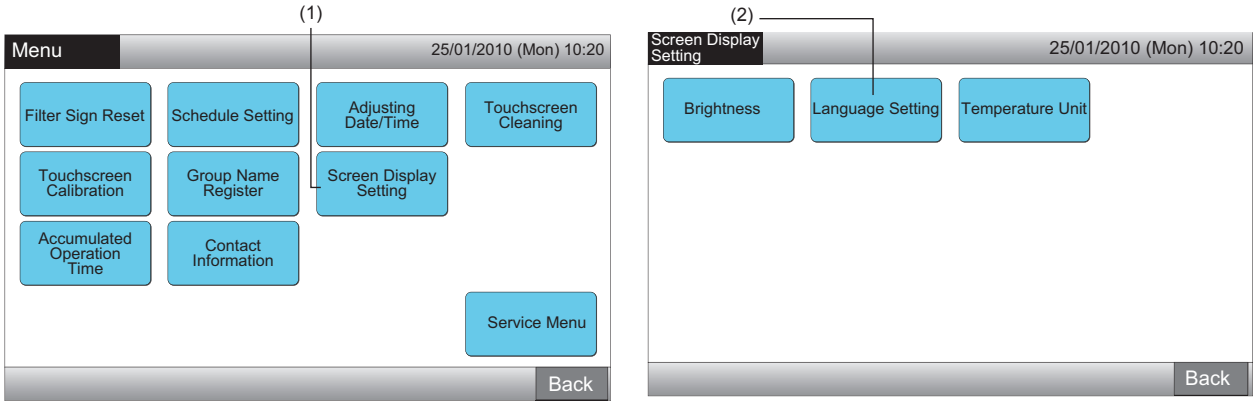
4 Tap “OK” to return to the screen of “Screen Display Setting”.



Language setting

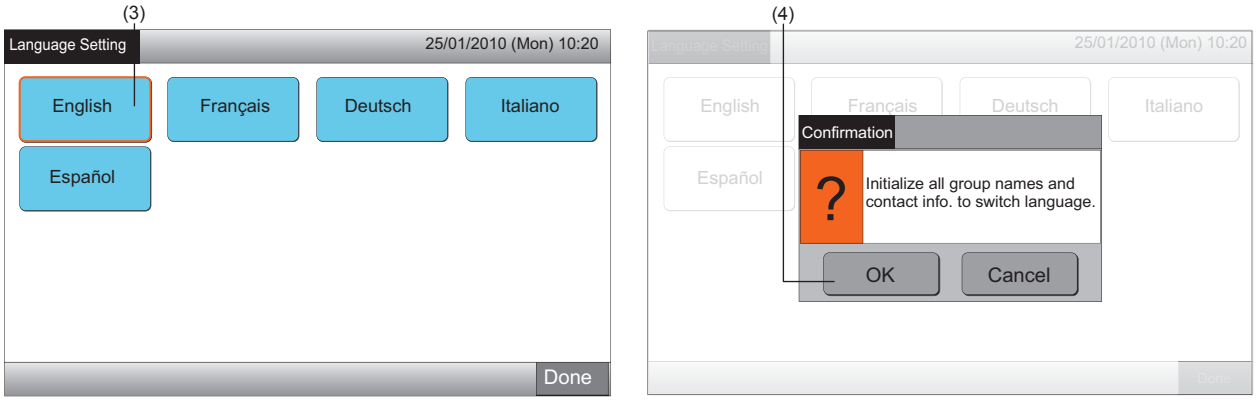
1 Select “Screen Display Setting” from the screen of “Menu”.

2 Select “Language Setting” from the screen of “Screen Display Setting”.



3 The confirmation screen is displayed when selecting the language button.

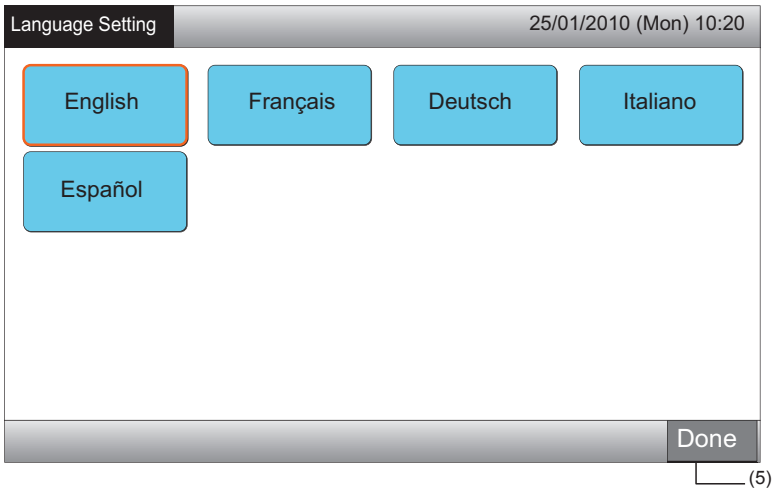
4 Tap “OK” at the confirmation screen.



NOTE

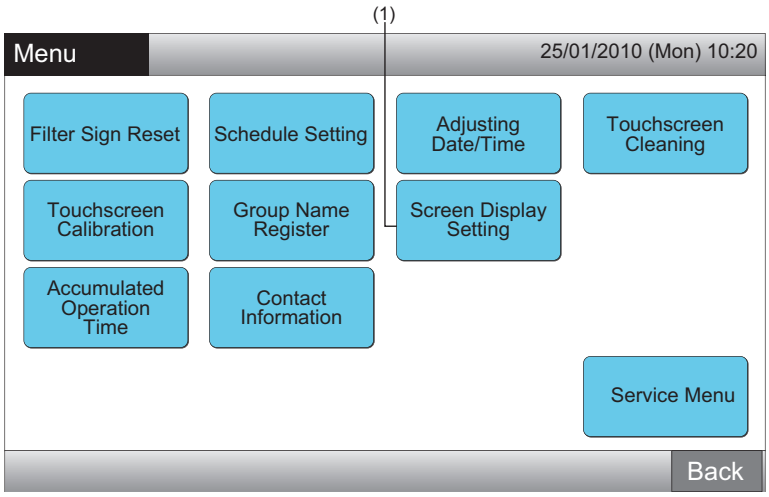
If language is changed, the registered block/group name and contact information will be initialized.

5 Tap “Done” to return to the screen of “Screen Display Setting”.

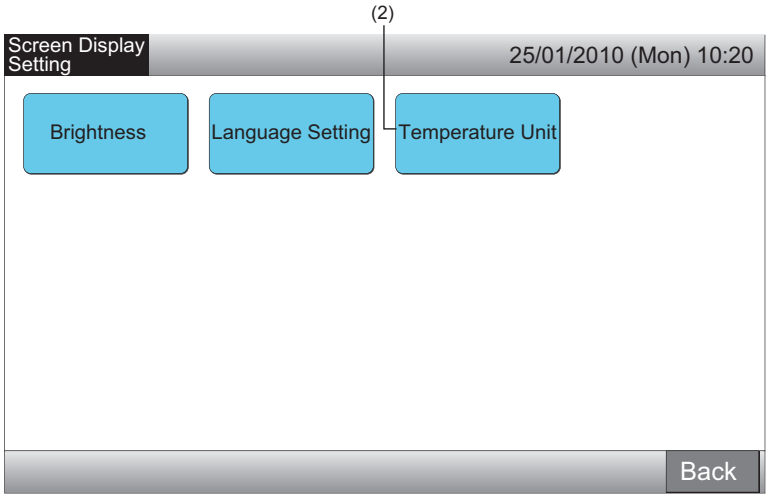


Temperature unit setting

1 Select “Screen Display Setting” from the screen of “Menu”.

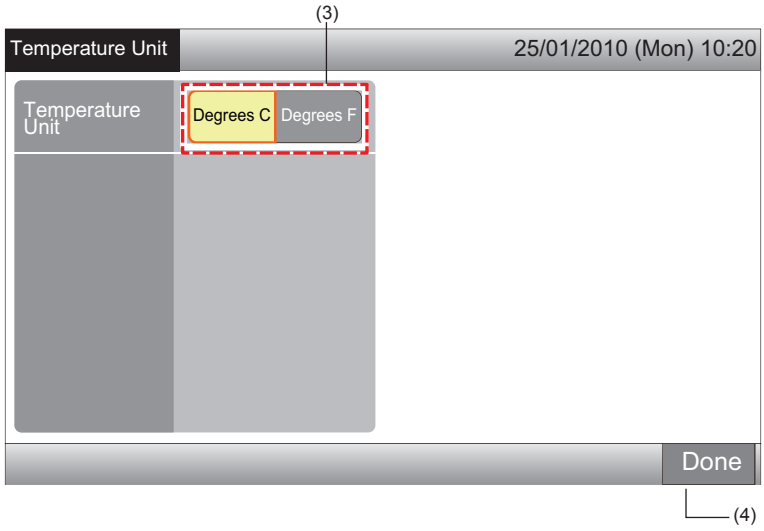


2 Select “Temperature Unit” from the screen of “Screen Display Setting”.



3 Select “Degrees C” or “Degrees F” for the operating button indication. The selected button colour is changed.

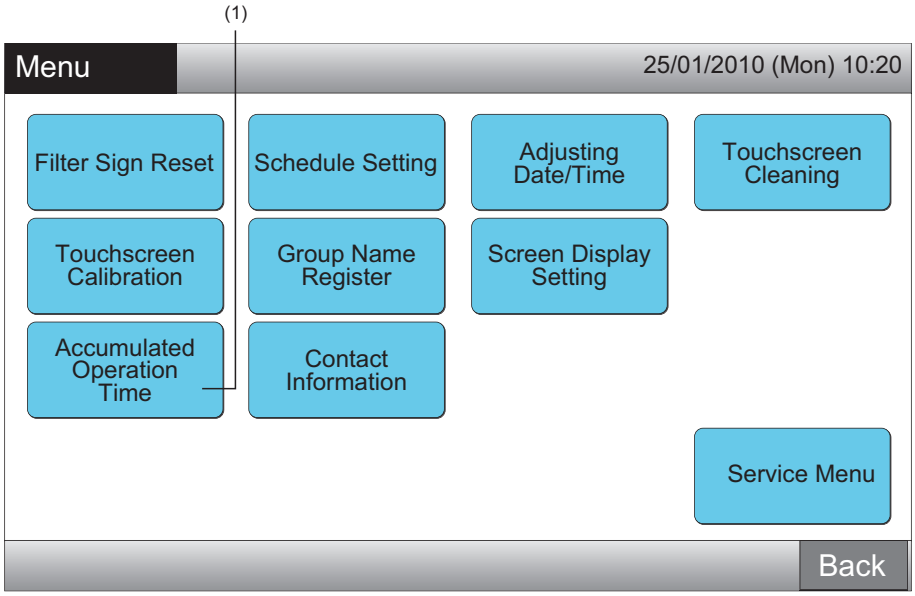
4 Tap “Done” to return to the screen of “Screen Display Setting”.



◆ Accumulated operation time of unit

Display by month

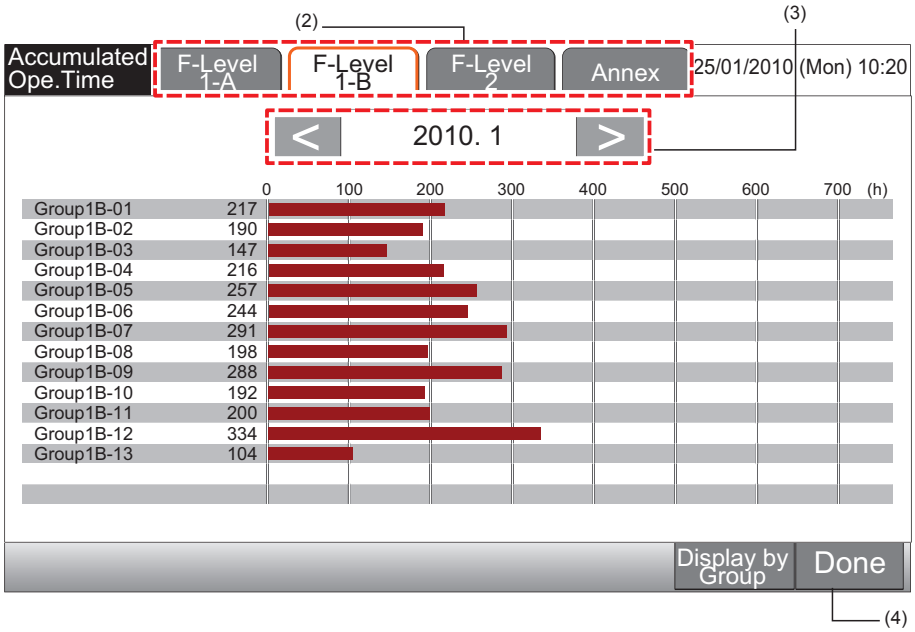
1 Select “Accumulated Operation Time” from the screen of “Menu”.



2 Select the target block.

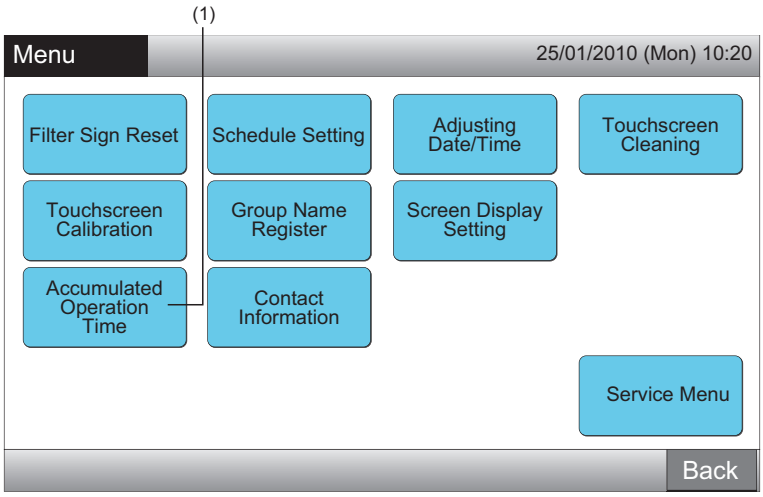
3 Tap “<” or “>” and select the target month. The operation time for the groups in the selected block are indicated according to the selected month.

4 Tap “Done” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.

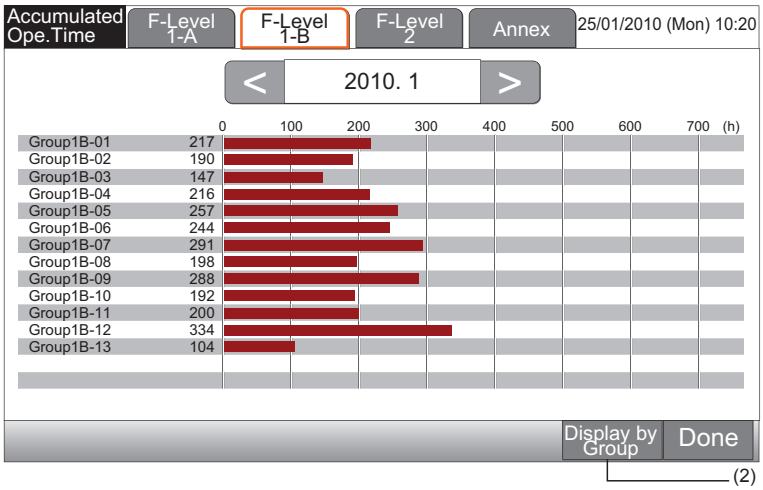


Display by group

1 Select “Accumulated Operation Time” from the screen of “Menu”.



2 Tap “Display by Group”.

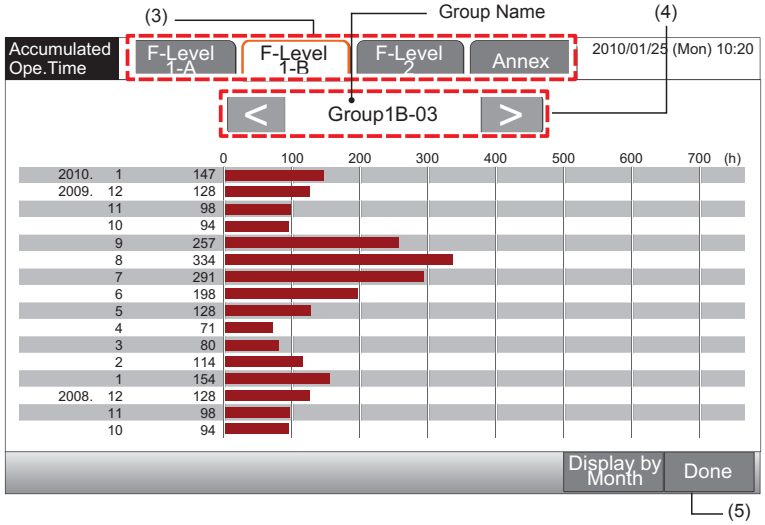


3 Select the target block tab.

4 Tap “<” or “>” and select the target group. The operation time for the group in the selected block is indicated.

5 Tap “Done” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.

If “Display by Month” is pressed, the screen will be changed to (2).



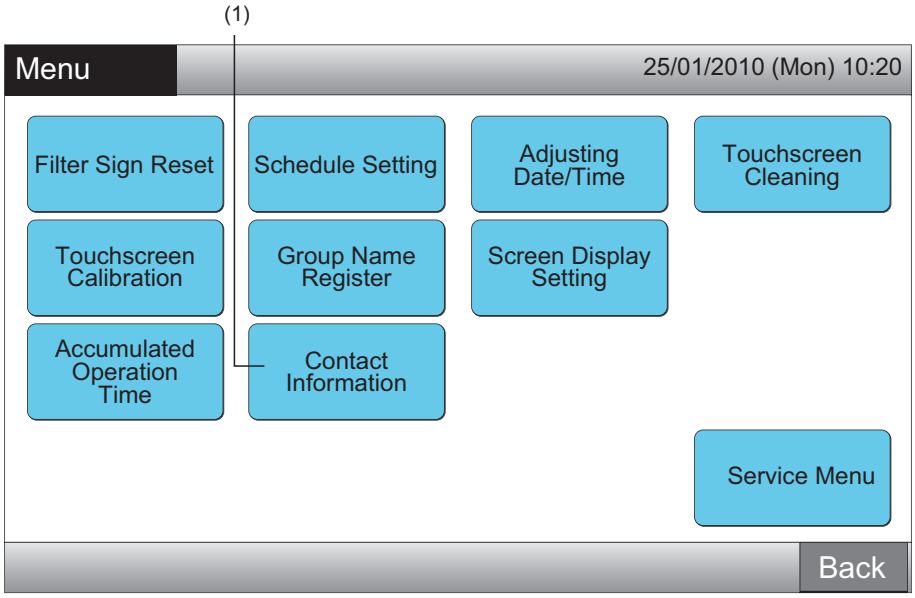
NOTE

Accumulated operation time of this central station is for only reference. HITACHI does not warrant about above reference accumulated operation time.

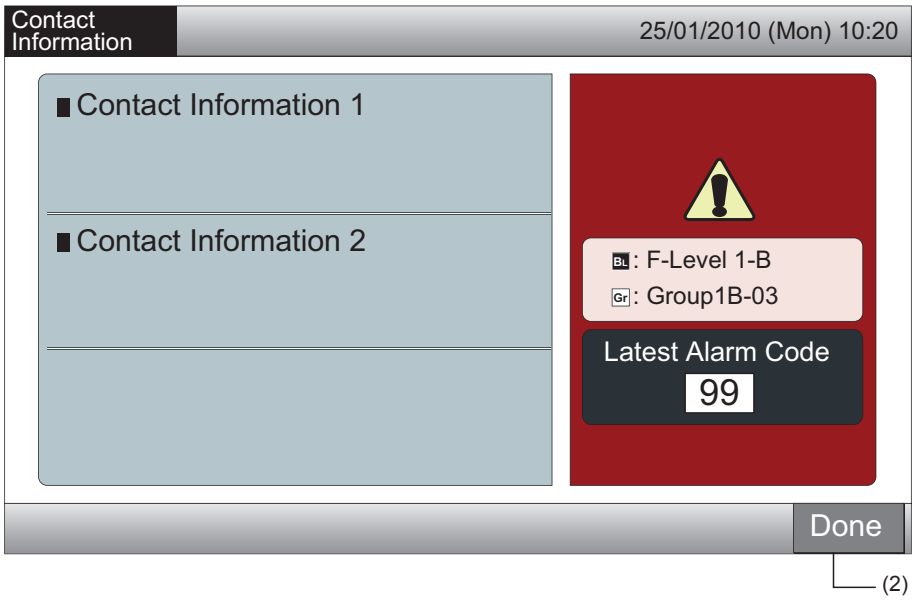
◆ Contact Information

1 Select “Contact Information” from the screen of “Menu”. The following information will be displayed:

- Contact address
- Block/group name of the latest alarm
- Latest alarm code



2 Tap “Done” to return to the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”.



NOTE

- *This function is not available if there is no contact address registered.*
- *Without alarm occurrence, the name of the target block/group and the alarm code will not be indicated.*

5.1.4.4 Service menu

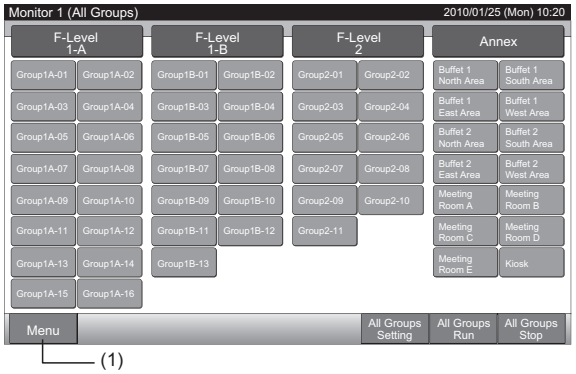
NOTE

- *This switch is for the serviceman only. Therefore do not use it.*
- *If this switch is used and the service menu is indicated on the screen, tap "Back". The screen will return to the menu.*

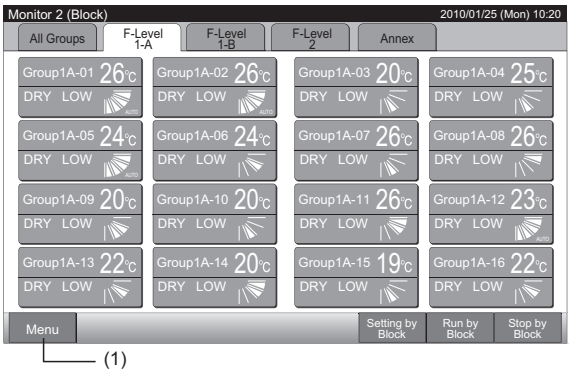
Items		Contents
Group Register		The connected indoor units are checked by the central station in the same H-LINK. This function is used for the group or block registration of them.
	Main Unit Register	This function is used for the main unit registration in the each remote control group. (The main unit is the only one (1) in the one (1) remote control group). The control command is sent from the central station to the main unit for the remote control group.
	Sub Unit Register	This function is used for registration of the sub units except the main unit in the same remote control group. In the case of using the remote control switches or the receiver kits as follows, the sub units are registered automatically by the central station after the main unit registration. • The remote control switches and the receiver kits which model names start from PC-A**. • The remote control switches which model names start from PC-P**.
Optional Function Setting		This function is used for setting and changing of the optional functions for the air conditioners and the central stations.
Exception Setting of Run/Stop Operation		This function is used to specify exceptional Groups/Blocks for All Run/Stop command. The All Run/Stop command will not be affected to the specified group/block.
	Selecting of Exception Operation	This function is used to select which of the followings will be excepted. • Run • Stop • Run and Stop
	Selecting of Exception Groups	This function is used to select All Run/Stop command of which of the following items will be excepted. • All Groups Run/Stop • Run/Stop by Block • All Groups Setting • Setting by Block
External Input/Output Setting		Two (2) external input terminals and two (2) external output terminals are equipped in the central station. These terminals are used for "All Groups Run/Stop" and "Demand Function" operations for the connected air conditioners. The external output terminals are used for the operation signal output of the air conditioners which is connected to the central station.
Exception External Input		This function is used for cancelling the operation commands such as "All Groups Run/Stop", etc. by the external input signal. "Exception External Input" is available for each external input (Input 1 and Input 2).
	Selecting Groups of Exception External Input 1	This function is used for selecting the group to cancel of operation command from the external input 1.
	Selecting Groups of Exception External Input 2	This function is used for selecting the group to cancel of operation command from the external input 2.
Demand Function Setting		This function is used for setting of "Demand Function" to the terminal of "Input 1". The operating condition is changed by the demand signal such as the operation stop, Thermo-OFF, etc. "Demand Function" is available under the following conditions. Select "Demand Function" at "Input 1" on the "External Input/Output Setting" screen. ("Demand Function" will not be available without this setting.) Select one of "Demand Function" No. 1 to No. 4 at "Demand Function Setting" screen.
	Demand Function Setting	This function is to select the action at "Demand Function" control.
	Selecting Group for Demand Function	This function is to select the target group for "Demand Function" control.
Button Setting		This function specifies each button to be shown/hidden. This function also includes specification/setting for "one-tap operation" or "press and hold" operation.
Contact Information Register		This function is used for editing the contents of contact information registration.
Restore Setting		This function is used for restoring all the settings such as registered Groups (Blocks) and schedules.
Checking Connection		This function is used for checking of the connected indoor unit numbers in the same H-LINK. When this function is used, the confirmation for the keeping of registered information such as the group names, schedules, etc. will be indicated. If "OK" is tapped, the connected indoor unit numbers are updated with keeping the registered information. If "Cancel" is tapped, the setting of the central station is all restored.
Alarm History		This function is used for displaying the list of alarm history that occurred in the air conditioner and the controller. (Maximum 100 records)

1 Tap “Menu” on the “Monitor (All Groups)” or “Monitor (Block)” screens.

Monitor 1 (All Groups)



Monitor 2 (Block)



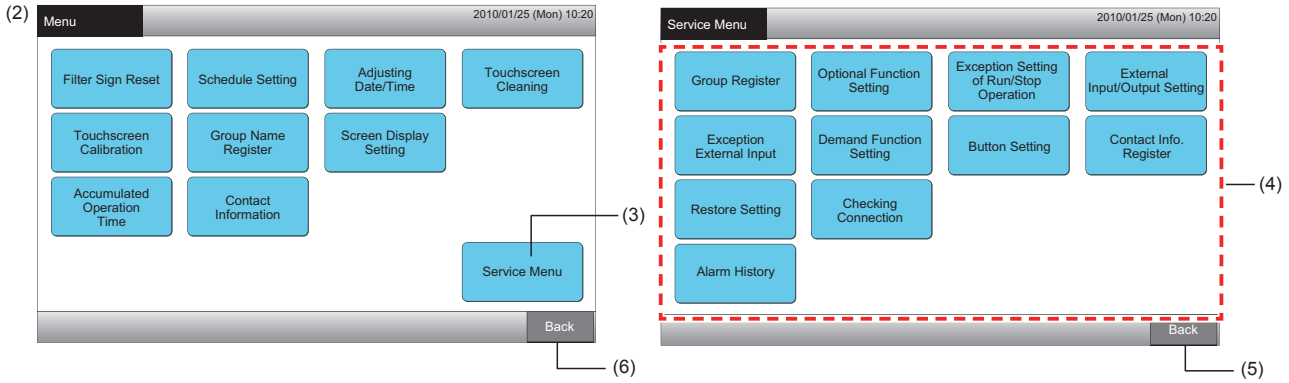
2 “Menu” screen is displayed.

3 Press and hold “Service Menu” for at least 3 seconds. “Service Menu” is displayed.

4 Select the service menu item by tapping each item button. The setting screen of the tapped item will be displayed.

5 Tap “Back” on the “Service Menu” to return to the “Menu” screen.

6 Tap “Back” on the “Menu” to return to Monitor screen.



NOTE

- *Following items are available only when none of the air conditioners (connected to the central station) is being operated:*
  - *Optional Function Setting*
  - *External Input/Output Setting*
  - *Exception External Input*
  - *Checking Connection*
- *Stop the operation of all indoor units when selecting the items above. After that, perform the operation of (1) to (3).*

◆ Group register

NOTE

This function is detailed in section "5.1.4.1 Test run" since it is a required item when performing the test run procedure.

◆ Optional Function Setting

This function is used for setting and changing the function selection of air conditioner and central station listed in the following table.

Function	Description
Fixing Operation Mode	Set "Fixing Operation Mode" to "Enable" to fix the present operation mode. The operation mode is fixed to the present settings, which cannot be changed from the remote control switch or from the central station.
Fixing Temperature Setting	Set "Fixing Temperature Setting" to "Enable" to fix the present set temperature. The setting temperature is fixed to the present settings, which cannot be changed from the remote control switch or from the central station.
Cooling Only	Set "Cooling Only" to "Enable" to fix the operation mode to cooling. This function is used when setting heat pump models to restricted operation in cooling only. Operation modes "HEAT" and "AUTO" cannot be selected from the remote control switch or from the central station.
Auto	Set "Auto" to "Enable" to use the cooling/heating automatic operation. It is possible to set this mode from the remote control switch and from the central station. However, "AUTO" cannot be selected in the following cases: * When connected to a cooling-only model. * When the "Cooling Only" function is enabled.
Fixing Fan Speed	Set "Fixing Fan Speed" to "Enable" to fix the fan speed. The fan speed is fixed to the present settings, which cannot be changed from the remote control switch or from the central station.
Control Mode	This function is used for switching the control mode of the central station between "Normal" and "Run/Stop Only" *Normal: The settings of each group are displayed when tapping its button. This is the control mode by default. *Run/Stop Only: The control mode at "Monitor 1" and "Monitor 2" is changed to "Run and Stop" for each group only. Tapping the button of each groups has the effect of switching its operation on and off, without changing any of the settings.
RCS Operation Prohibited to set OFF time	Set to "Enable" in order to set the prohibition of all remote control operation (all the items) together with a stop order to the remote control at the OFF time of the schedule function of the controller. In this case, the prohibition of all remote control operation (all the items) is cancelled at the ON time, but there is no operation order. This function cannot be set when there is a prohibition of remote control operation (for individual items). Set this function to "Disable" in such cases.
Display of Accumulated Operation Time	Tap "Disable" to hide the numerical value of the accumulated operation time. Before setting, tap "All Groups" at "Optional Function" screen.

NOTE

- *"Optional Function Setting" contents are set to the group by the central station, check the setting from the remote control switch in the same group. If setting is not reflected, set same contents by the remote control switch. In the same way, "Optional Function Setting" contents such as "Fixing Operation Mode", "Fixing Temperature Setting", "Cooling Only", "Fixing Fan Speed" or "Auto" are set to the group by the remote control switch, check the setting from the central station. If setting it not reflected, set same contents by the central station.*
- *Number 3 of "Demand Function Setting" is set to the group, the setting temperature is reset to 20ºC (in heating operation) or 28ºC (in cooling operation) when the demand signal is OFF. In the case, both of "Fixing Temperature Setting" and Number 3 of "Demand Function Setting" are set to group, the fixed temperature is not changed even if the demand signal is OFF.*
- *Do not set "Power Supply ON/OFF 1 and 2" by remote control switch when the function "RCS Operation Prohibited" is used. If use "Power Supply ON/OFF 1 and 2" mode, the function "RCS Operation Permitted" setting is required.*

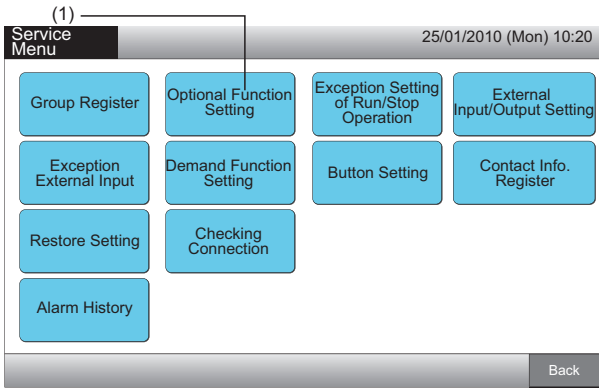
1 Select “Optional Function Setting” on the “Service Menu” screen when the air conditioners are not in operation.

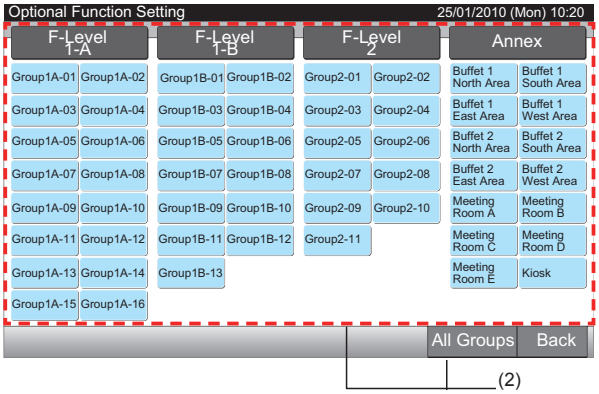
NOTE

This function cannot be selected when the air conditioner is operating.

2 Select the target groups or block for “Optional Function Setting” by tapping “All Groups”, “Block” or “Group”.

- Select “All Groups” for the optional function setting when the following item settings are changed.
- Operation mode
- Display of Accumulated Operation Time





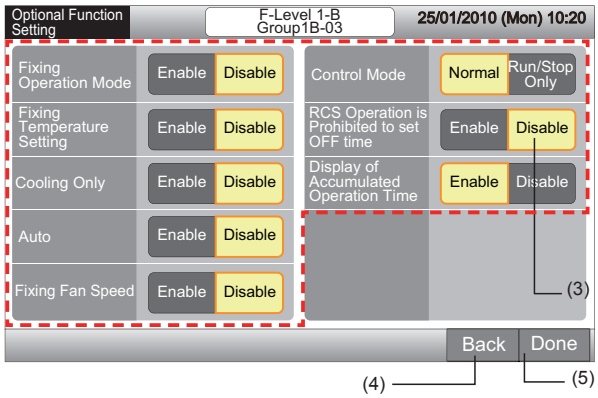
3 Select “Enable” or “Disable” for the each function.

The button colour of selected function is changed to yellow with orange rim.

Proceed to select the optional function setting depending on the setting afterwards.

Set the optional function of other group. (4)

Exit the optional function setting. (5)



4 Tap “Back” to return to the screen of “Optional Function Setting”. Repeat (2) and (3) to set “Optional Function Setting”.

5 Tap “Done” to finish this setting. The screen is returned to “Service Menu”.

◆ Exception setting of Run/Stop operation

This function is used in cases of exception to the command of “All Groups Run/Stop” operation and “Run/Stop by Block” operation to the selected groups or blocks.

Selecting of “Exception Setting of Run/Stop Operation” (All Groups/Block) is available as follows.

- Run and Stop
- Run
- Stop

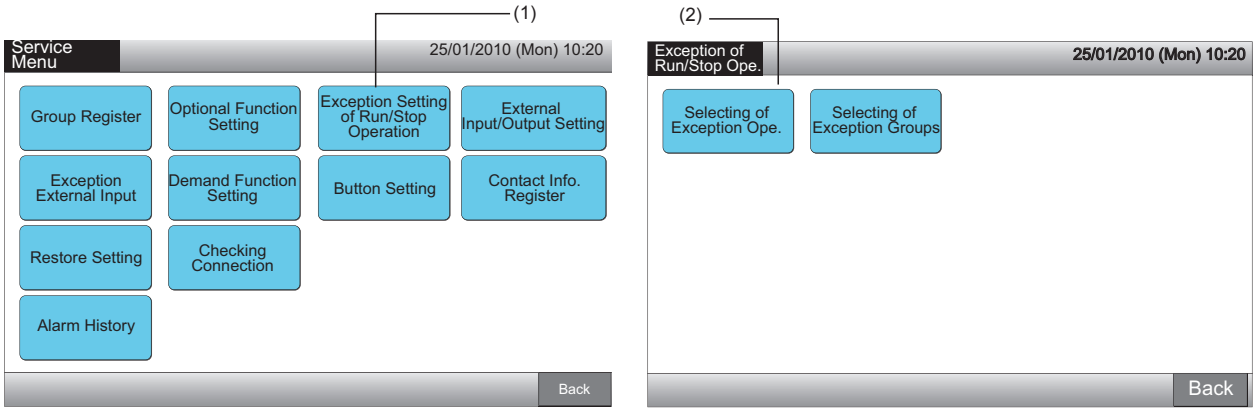
NOTE

- *“All Run/Stop” and “Run/Stop by Block” command will not be affected when they are set to the groups/blocks. However, these commands are affected as follows even this function is set:*
  - *Scheduled Timer Operation.*
  - *“All Run/Stop” and “Run/Stop by Block” by External Input command.*
- *“Run/Stop” operation is available when the group is selected individually.*

Selecting of exception operation

1 Select “Exception Setting of Run/Stop Operation” on the screen of “Service Menu”.

2 Select “Selecting of Exception Ope.” on the screen of “Exception of Run/Stop Ope.”



3 Select the operation button for exception.

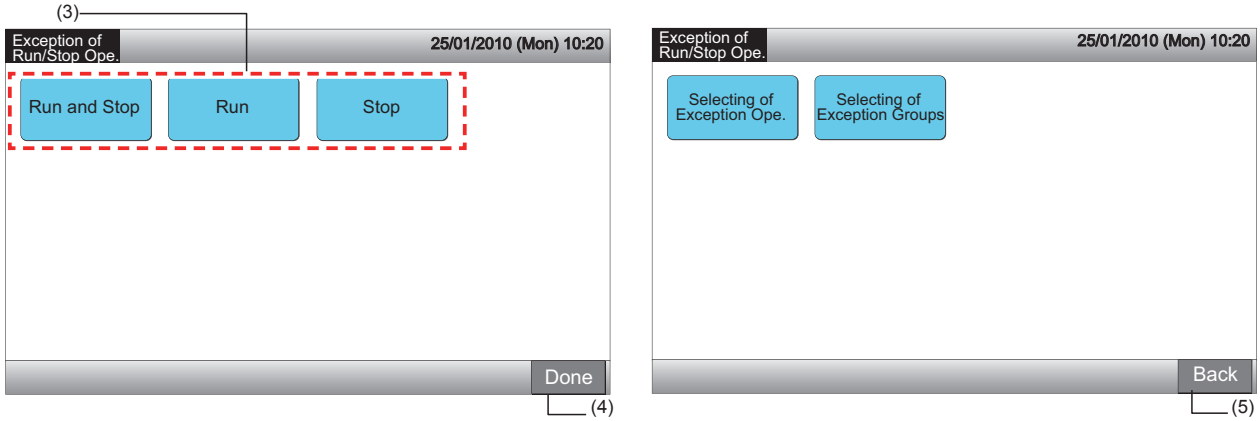
The selected button is rimmed with orange line.

4 Tap “Done” to return to the screen of “Exception of Run/Stop Ope.”

NOTE

If the target groups for the exception setting of Run/Stop operation are not selected, tap “Selecting of Exception Groups” and select the target groups.

5 Tap “Back” to return to the screen of “Service Menu”.



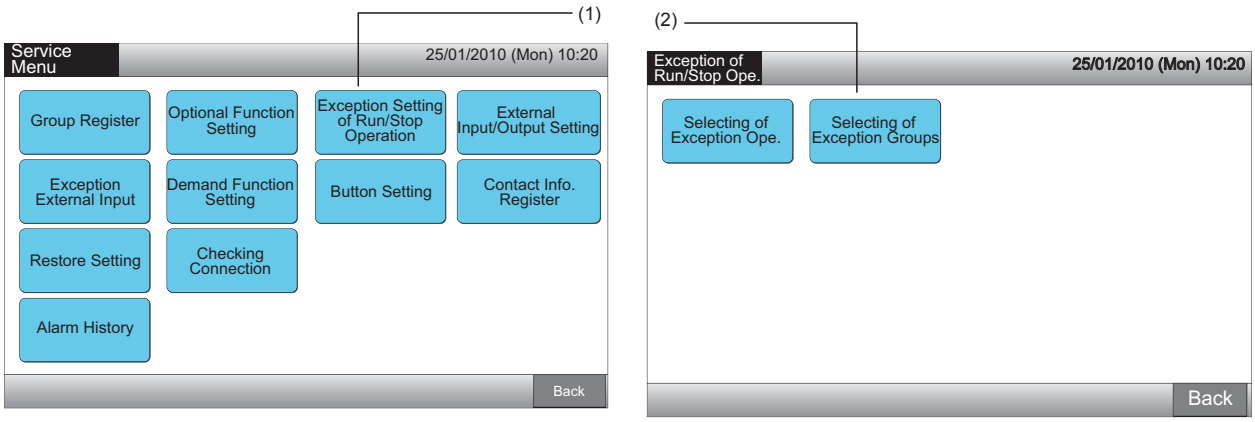
Selecting of exception groups

1 Select “Exception Setting of Run/Stop Operation” on the screen of “Service Menu”.

2 Select “Selecting of Exception Groups” on the screen of “Exception of Run/Stop Ope.”

NOTE

The button of “Selecting of Exception Groups” cannot select when “Selecting of Exception Ope.” is not set. Set “Selecting of Exception Ope.” content firstly.

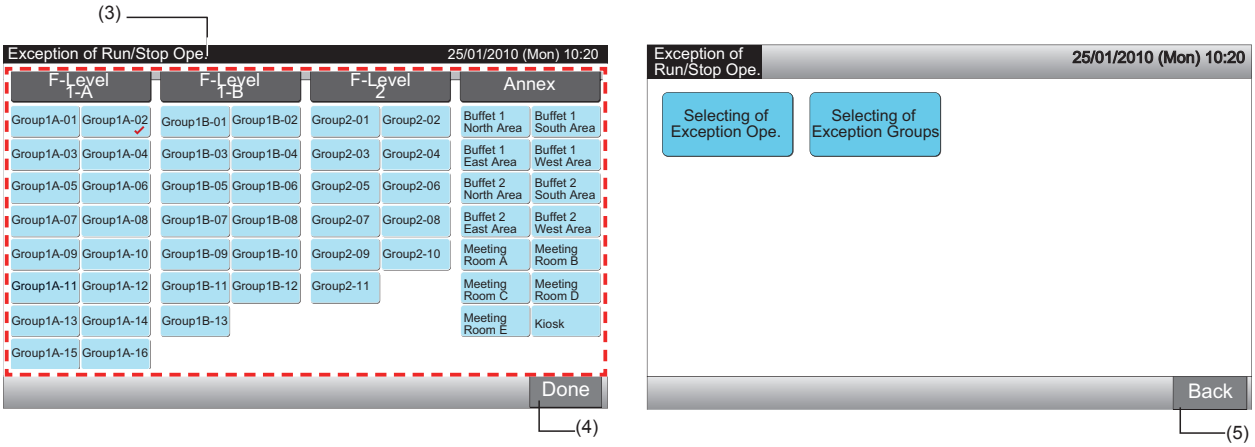


3 Select the target Blocks/Groups for exception operation.

- Tap the each group or block button to select the target. If tap again the same group or block button, the selection will be cancelled.
- The mark of “✔” is indicated in the selected group button.

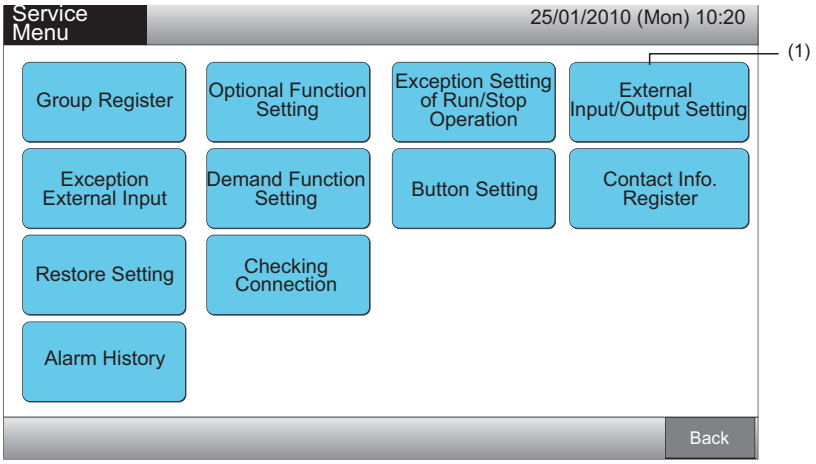
4 Tap “Done” to return to the screen of “Exception of Run/Stop Ope.”

5 Tap “Back” to finish this setting. The screen is returned to “Service Menu”.



◆ External Input/Output Setting

1 Select “External Input/Output Setting” on the screen of “Service Menu”.



NOTE

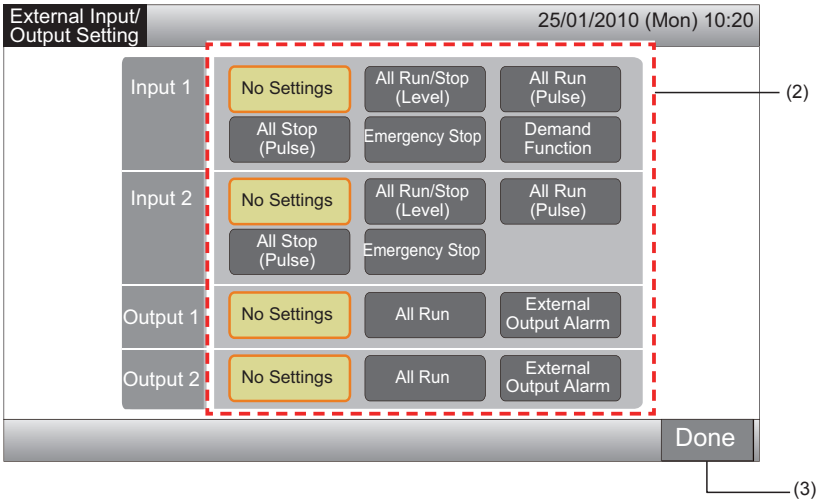
This function cannot be selected when the air conditioner(s) is operated or the external input signal is input to the external input terminal 1 or 2.

2 Select the function by tapping the button for each external input/output terminal as follows:

“Input 1”, “Input 2”, “Output 1” and “Output 2”

The selected function button colour is changed.

3 Tap “Done” to finish this setting. The screen is returned to “Service Menu”.



The external input/output each of two terminals are available. The assigned functions are shown in below.

Input and Output	Connection	Function	
Input 1	TB3 1-2 Pin	All Run/Stop (Level)	Emergency Stop (Level)
Input 2	TB3 2-3 Pin	All Run (Pulse)	Demand Function (Input 1 only)
		All Stop (Pulse)	No Settings (Factory Setting)
Output 1	TB3 4-5 Pin	All Run	
Output 2	TB3 5-6 Pin	All Alarm	
		No Settings (Factory Setting)	

External input function

1 All Run/Stop (Level): All groups simultaneously Run/Stop operation by the external input signal.

2 All Run (Pulse): All groups simultaneously Run operation by the external pulse input signal.

3 All Stop (Pulse): All groups simultaneously Stop operation by the external pulse signal inpu.t

4 Emergency Stop (Level): All groups simultaneously Stop operating on receiving an the external emergency stop signal. While an “Emergency Stop” is performed, the LCD of the remote control switch displays “Central Control” and the operation cannot be changed from the remote control switch.

In the case using with other central stations, “Run/Stop” operation is available from other central stations even if during the emergency stop.

5 Demand Control Function

A peak demand electrical consumption is cut by the external demand control signal. Only the input terminal 1 is available for the external demand signal. The operation mode of selected group will be changed by the demand signal as follows.

<table>
<tr><th></th><th>Demand Signal ON (*1)</th><th>Demand Signal OFF (*2)</th></tr>
<tr><td>Demand Function 1</td><td>Indoor Unit Operation Stop with RCS Operation Prohibited Mode</td><td rowspan="2">The operating condition returns to previous status.</td></tr>
<tr><td>Demand Function 2 (*3)</td><td rowspan="2">Cooling or Dry Operation
↓
Fan Operation with RCS Operation Prohibited Mode
Heat Operation
↓
Operation Stop with RCS Operation Prohibited Mode</td></tr>
<tr><td>Demand Function 3 (*4)</td><td rowspan="2">The setting temperature is set as follows.
Cooling and Dry Operation.....28ºC,
Heating Operation.....20ºC
The operating condition returns to previous status except for setting temperature.</td></tr>
<tr><td>Demand Function 4 (*5)</td><td>Indoor Unit Operation Stop with RCS Operation Prohibited Mode</td></tr>
</table>

(*1): The target groups of “Demand Function” are controlled from large numbered group at intervals of 15 seconds. The numbered group arrangement is shown below.

(*2): The target groups of “Demand Function” are controlled from a small numbered group at intervals of 15 seconds. The numbered group arrangement is shown below.

(*3): When “AUTO” operation is performed, or “Fixing Operation Mode” is enabled at “Optional Function Setting”.

(*4): When “AUTO” operation is performed, or “Fixing Operation Mode” or “Fixing Temperature Setting” is enabled at “Optional Function Setting”.

(*5): When “Fixing Temperature Setting” is enabled at “Optional Function Setting”.

6 Demand function rotation

When the demand control signal is ON, the operation starting target group for “Demand Function” is selected randomly. After that, “Demand Function” operation is started from selected group to the small numbered group at every intervals for 15 seconds as shown below.

Example.

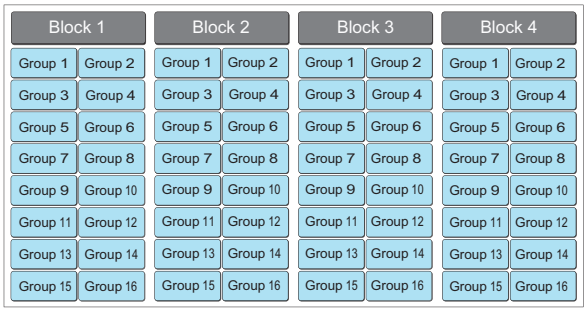
In the case of 6 groups

Group 5 → Group 4 → Group 3 → Group 2 → Group 1 → Group 6

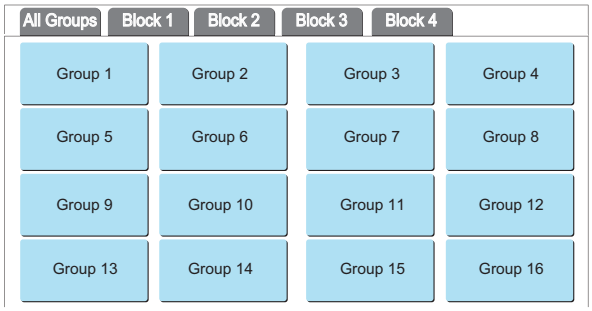
↑ Selected Group

The numbered group arrangement is shown below.

Monitor 1 (Group)



Monitor 2 (Block)



Numbered Group Arrangement

5

External Output Function

1 All Run Output

External output for indoor unit operation signal in the target group. The operation signal outputs even if one indoor unit in the target group is operated.

2 External Output Alarm

External output alarm signal for indoor unit in the target group. The alarm signal outputs even if one indoor unit abnormality occurs in the target group.

External Input/Output Terminals Specification

Input Terminal:

Non-voltage contact (normal open) for demand signal Input DC12V, 10 mmA.

The switching of the contact is available.

Pulse width is 300 mm or more for pulse signal input.

Output Terminal:

Contact (voltage is applied) for signal Output DC12V

Recommended Relay: MY Relay manufactured by Omron Corporation

(Do not use a diode built-in type.)

◆ Exception external input

The external input signals such as “All Run/Stop”, etc. are not accepted when this function has been set for the group.

The external input signal exception is available for the input terminal 1 and 2.

NOTE

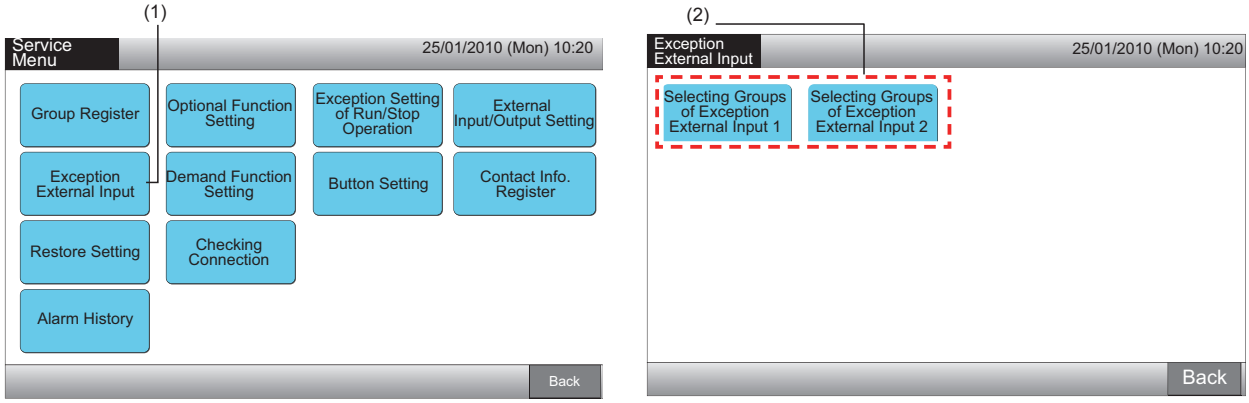
If this function is set, the emergency stop command from the external input will be disabled.

1 Select “Exception External Input” on the screen of “Service Menu”.

NOTE

This function cannot be selected when the air conditioner(s) is operated or the external input signal is input to the external input terminal 1 or 2.

2 Select “Selecting Groups of Exception External Input 1” or “Selecting Groups of Exception External Input 2” according to the exception external input command.



3 Select Blocks/Groups for exception operation.

Tap each group or block button for the exception operation target, the marked of “✔” is indicated in the selected group button.

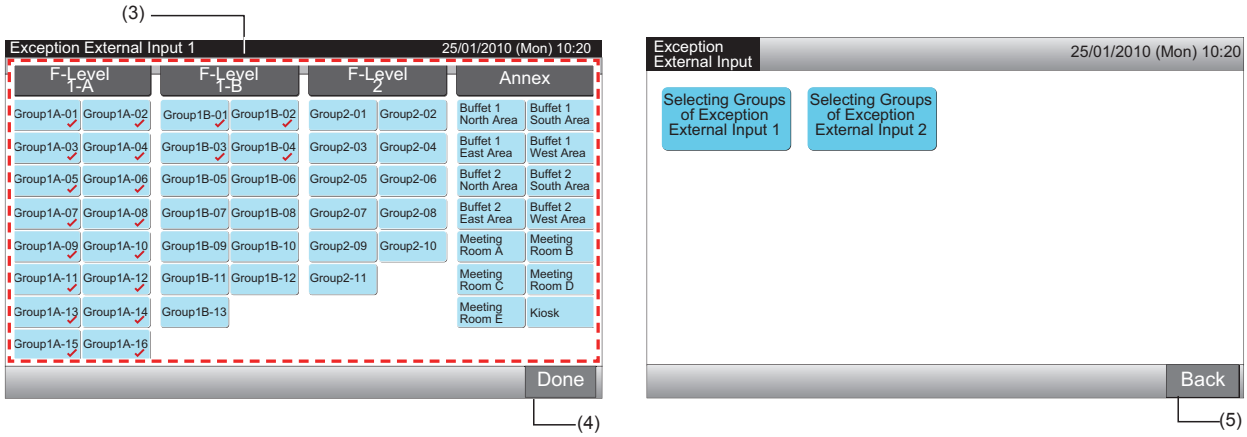
If tap the same group or block button again, the selection of the group will be cancelled.

4 Tap “Done” to return to the screen of “Exception External Input”.

Proceed to select the group depending on the setting afterwards.

- Select exception group of other external input (1 or 2). (2)
- Exit “Exception External Input”. (5)

5 Tap “Back” to finish this setting. The screen is returned to “Service Menu”.



◆ Demand function setting

The operating condition of the indoor unit is changed to “Stop” or “Thermo-OFF” when “Demand Function” is selected to the terminal of external input 1.

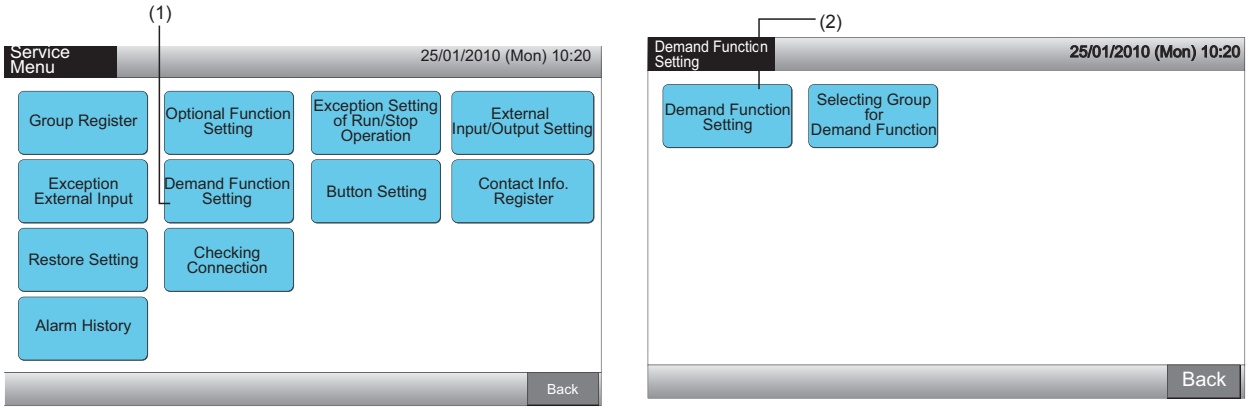
Demand function setting

1 Select “Demand Function Setting” on the screen of “Service Menu”.

NOTE

This function cannot be selected when the external input signal is input to the external input terminal 1 or 2.

2 Select “Demand Function Setting” on the “Demand Function Setting” screen.



3 Select the function by tapping the button for each demand function setting.

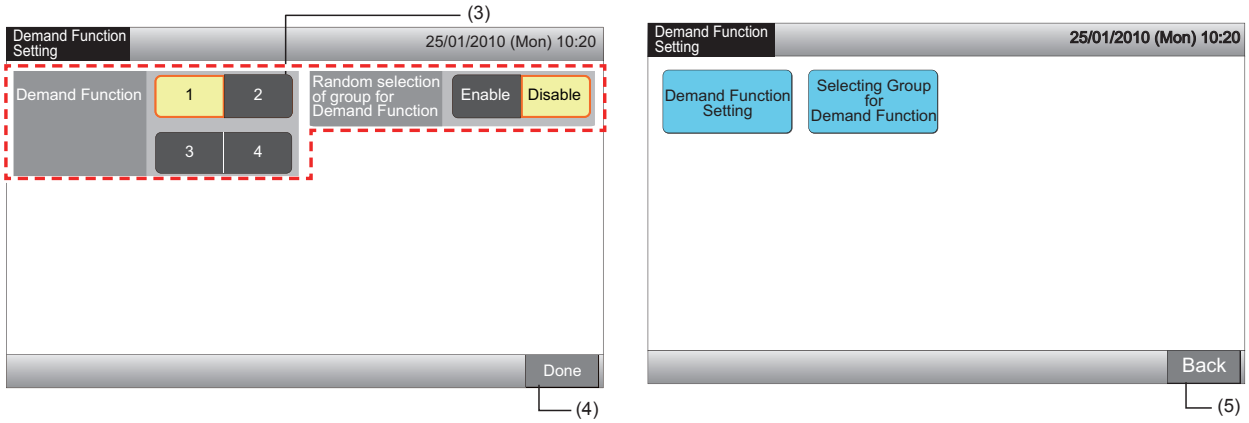
4 Tap “Done” to return to the screen of “Demand Function Setting”.

NOTE

If the target groups for the demand function are not selected, tap “Selecting Group for Demand Function” and select the target groups.

5 Tap “Back” to finish this setting.

The screen is returned to “Service Menu”.



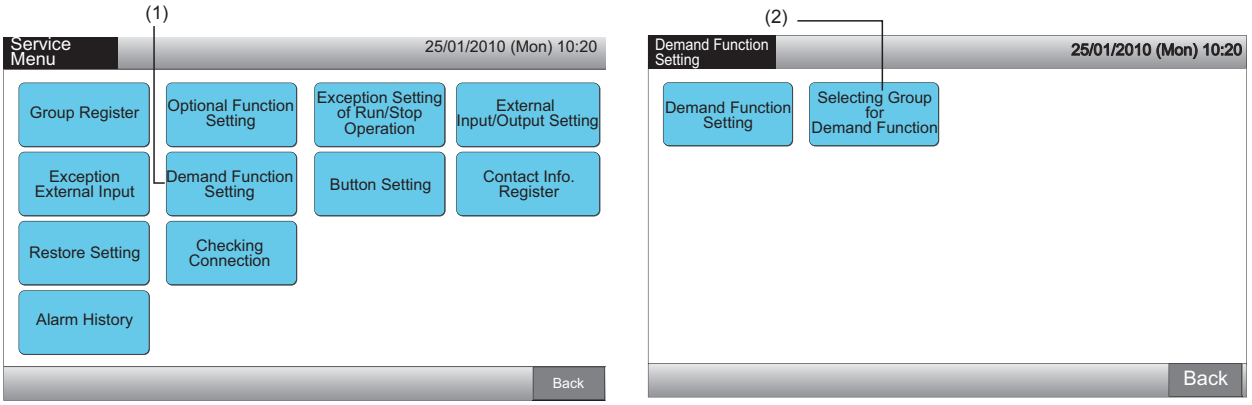
Selecting group for demand function

1 Select “Demand Function Setting” on the screen of “Service Menu”.

NOTE

This function cannot be selected when the external input signal is input to the external input terminal 1 or 2.

2 Select “Selecting Group for Demand Function” on the screen of “Demand Function Setting”.

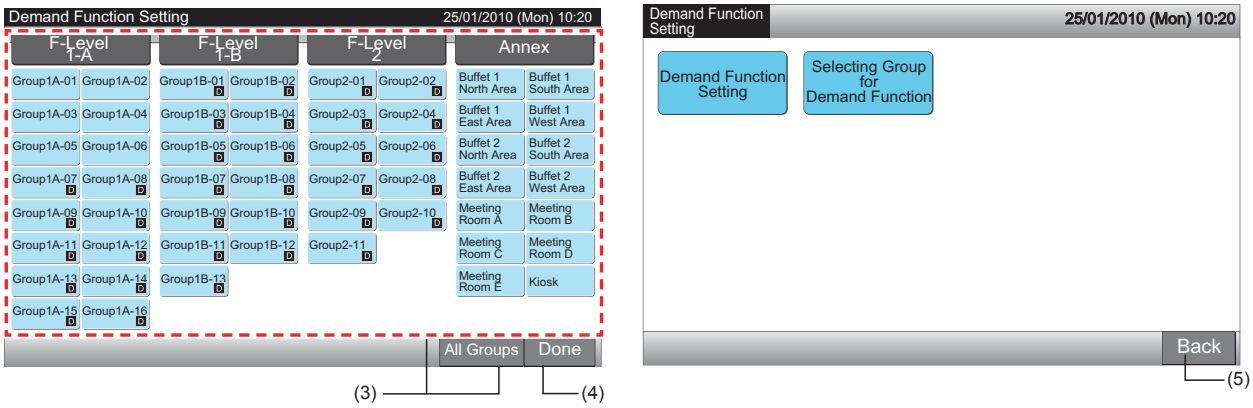


3 Tap the group, block or “All Groups” button(s) to select the target groups for the demand function control.

- The selected group button colour is changed to blue and the mark of “ D ” is indicated.
- If the selected group buttons, block buttons or “All Groups” are tapped again, the selection will be cancelled.

4 Tap “Done” to return to the screen of “Demand Function Setting”

5 Tap “Back” to finish this setting. The screen is returned to “Service Menu”.



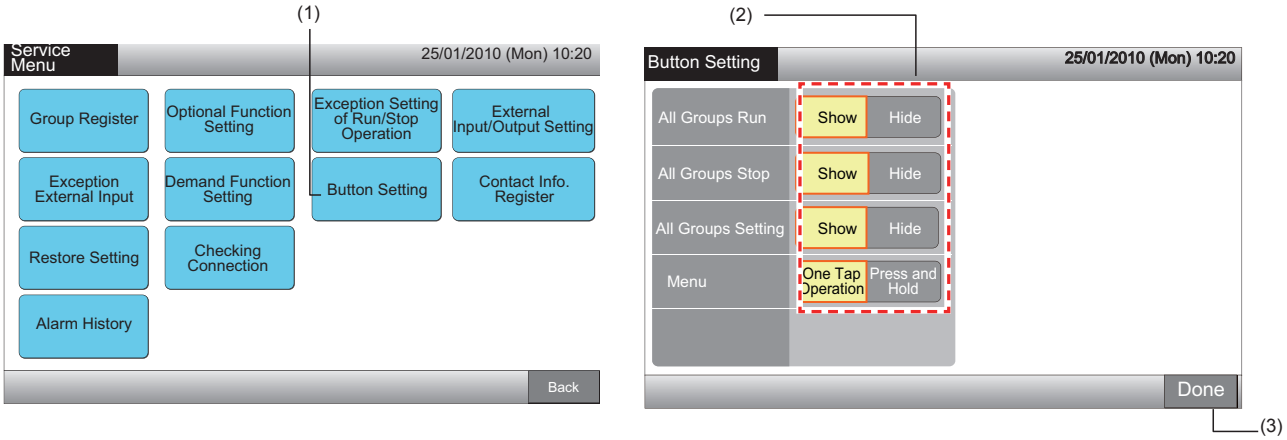
◆ Button setting

The operating button indication can be selected to show or hide for restricting operation.

1 Select “Button Setting” on the screen of “Service Menu”.

2 Select “Show” or “Hide” for the operating button indication of the each function. The selected button colour is changed.

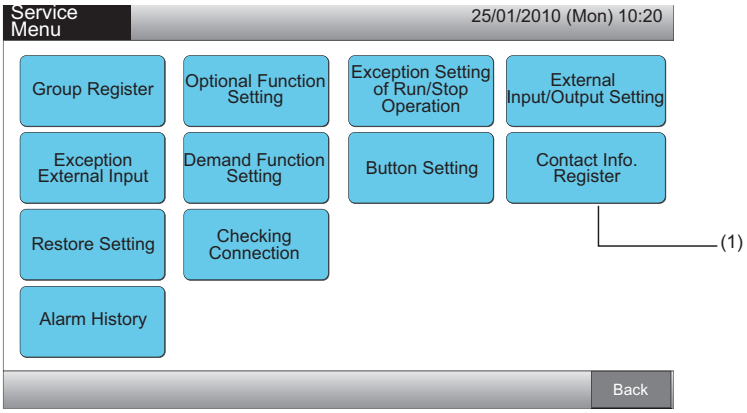
3 Tap “Done” to finish this setting. The screen is returned to “Service Menu”.



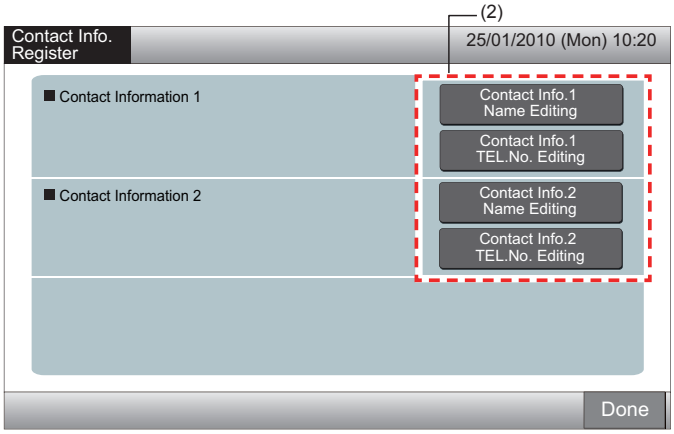
◆ Contact information register

The contact information editing or registering for “Contact Info Register” indication function.

1 Select “Contact Info Register” on the screen of “Service Menu”.



2 Select “Contact Info 1 Name Editing” or “Contact Info 1 TEL No.Editing” (2) to register the information.



NOTE

Only the keyboard of numeric characters and symbols can be selected when “Contact Info 1 TEL No. Editing” (2) is selected.

3 Select the characters to input from the keyboard.

4 Input the information. Max 50 characters are available to input.

5 Tap “Done” to finish. The screen is returned to “Contact Info Register”.

6 Proceed to register the contact information depending on the setting afterwards.

- Continue to register or edit the contact information. (2)
- Finish this setting. (7)

7 Tap “Done” to finish this setting. The screen is returned to “Service Menu”.





◆ Restore Setting

1 Select “Restore Setting” on the screen of “Service Menu”.

NOTE

This function cannot be selected when “RCS Operation Prohibited” is set. Set “RCS Operation Permitted”.

2 Tap “OK” at the confirmation screen.

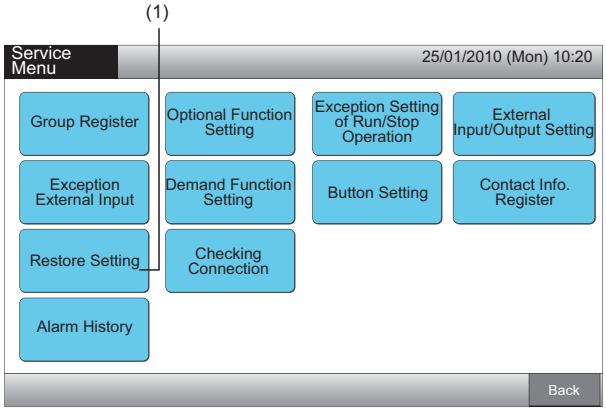
NOTE

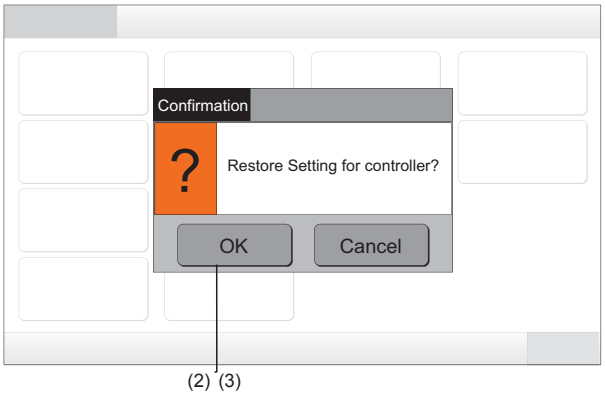
If “Cancel” is tapped, the screen will be returned to “Service Menu”.

3 The confirmation screen is displayed again, tap “OK” to restore. After several seconds, the screen is changed and the connection check of the system is started.

NOTE

If “Cancel” is tapped, the screen will be returned to “Service Menu”.

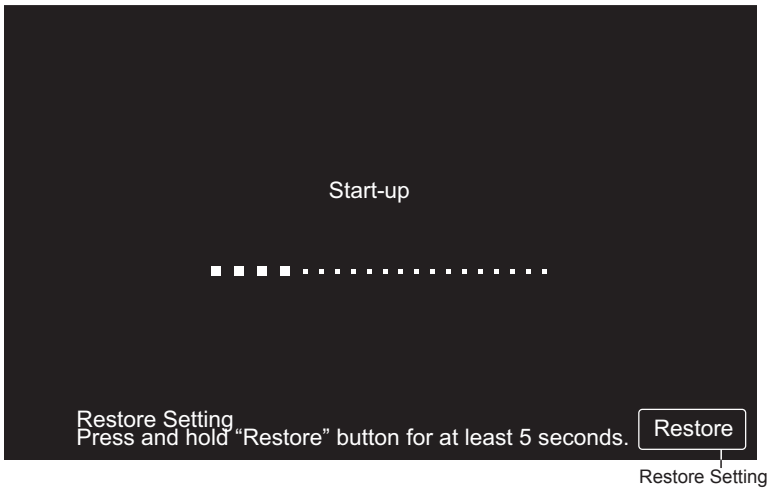




Information

Restore setting can be set by the screen of “Start-up” displayed.

1 Tap “Restore” for more than 5 seconds in the lower right on the screen of “Start-up”.
2 After a while, connection check process is started.
3 When the process for connection check is finished, “Adjusting Date/Time” screen is indicated. (Refer to *“Adjusting Date/Time”*)



◆ Checking Connection

1 Select “Checking Connection” on the screen of “Service Menu”.

NOTE

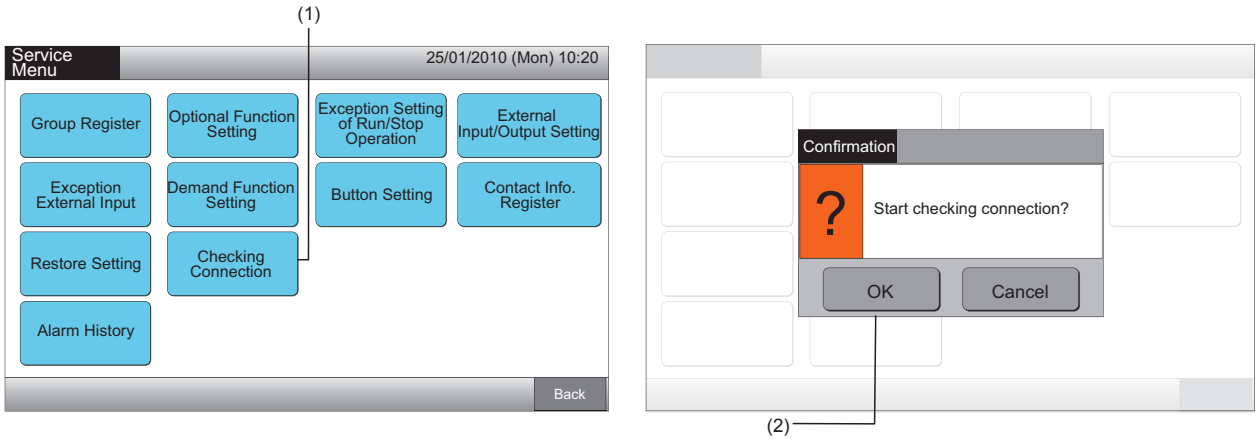
This function cannot be selected when the air conditioner(s) is operated or the external input signal is input to the external input terminal 1 or 2.

2 Tap “OK” at the confirmation screen.

NOTE

If tap “Cancel”, the screen will be returned to “Service Menu”. Proceed to update the connection information depending on the setting afterwards.

- *Update connection information with keeping Group register and settings such as schedule setting, etc. (3)*
- *Perform reconnection checking by initializing each setting. (It is same as the restore setting). (7)*

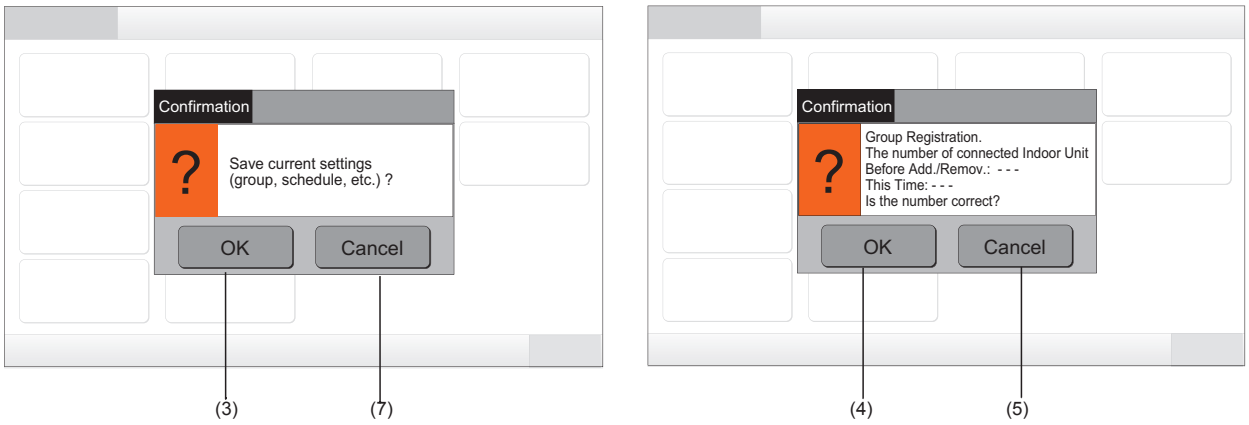


Keeping the setting

3 Tap “OK” at the confirmation screen for keeping the setting.

4 When the process of checking connection is finished, the number of connected units is indicated on the confirmation screen. If the number of connected units is indicated correctly, tap “OK”. The screen of “Main Unit Register” will be displayed. Refer to item *“Registration of a group (Main unit)”*.

5 If the number of connected units indicates different from actual number, tap “Cancel”.



6 The confirmation screen is displayed again. Check the items in the confirmation screen to the air conditioners. The process of checking connection will start again.

NOTE

If tap “Cancel”, the screen is returned to “Service Menu”.

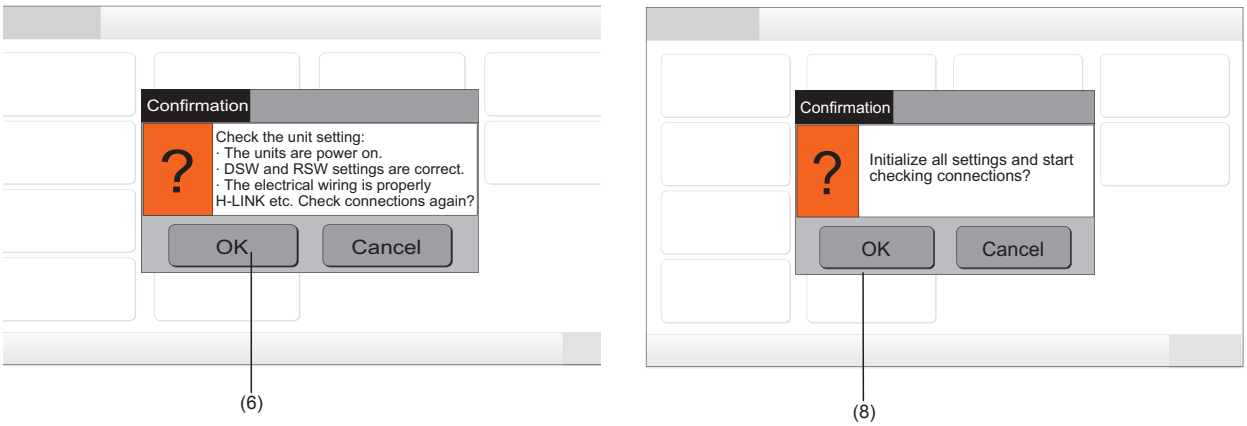
Not keeping the setting

7 Tap “Cancel” at the confirmation screen.

8 Display the confirmation screen of initialization, tap “OK”. Initialize all settings and start checking connection. “OK” cannot be selected when the “RCS Operation Prohibited” is set, change to “RCS Operation Permitted”.

NOTE

If tap “Cancel”, the screen is returned to “Service Menu”.



◆ Alarm history

The alarm history record of the air conditioner and the central station.

The time of alarm occurrence, abnormal unit and alarm code are recorded, and the alarm history record deleting is performed by this function.

1 Select “Alarm History” on the screen of “Service Menu”.

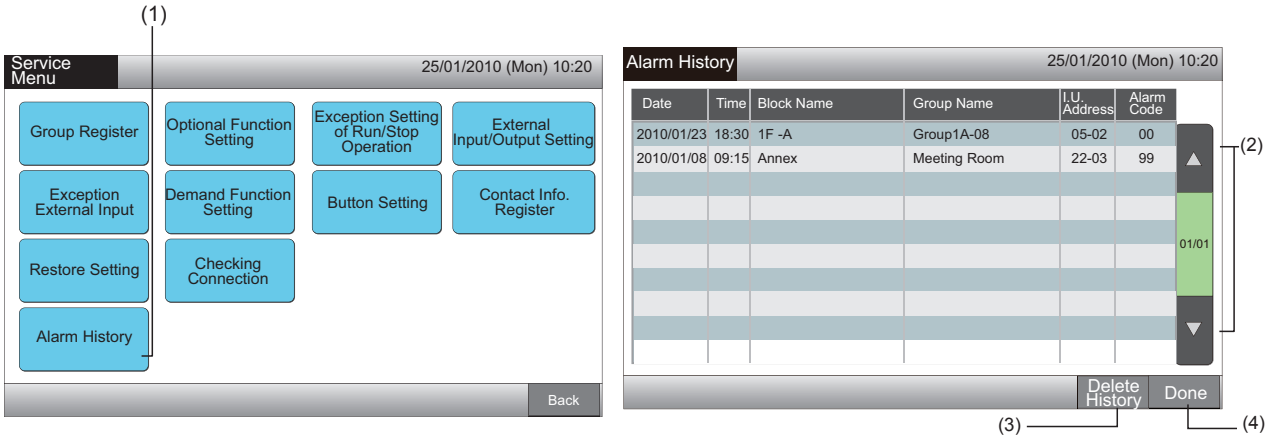
2 “Alarm History” screen is indicated. If the alarm records are more than 11, tap “△” or “▽” to change of the page.

• Maximum 100 records can be stored in the memory.

3 When deleting alarm history record, tap “Delete History”. When tapping “OK” at the confirmation screen, all alarm history records are deleted.

• If tap “Cancel”, the screen will be returned to “Alarm History”.

4 Tap “Done” to finish this setting. The screen is returned to “Service Menu”.



5.1.4.5 Other indications on LCD

◆ In normal condition

	Schedule	“” is indicated for the group with the schedule setting
	RCS Operation Prohibited	“” is indicated for the group when operation by remote control switch is prohibited. Operation by remote control switch is not available while operation by remote control switch is prohibited (except for the emergency stop operation).
	Emergency Stop	“” is indicated when emergency stop signal is set by optional external input function. During the emergency stop, the indoor unit is stopped and operation by remote control switch is not available. Contact your dealer for detailed information.
D	Demand	“D” is indicated when demand signal is set by optional external input function. “D” is indicated for the group with demand setting and “D” is flashed when the demand signal is set. Contact your dealer for detailed information.
	Filter Sign	“” is indicated when the air filter of the indoor unit is clogged. After cleaning, press menu and reset the filter sign. The indication will turn off.

◆ In abnormal condition

Abnormality

- The operation indicator (Red) will be flashing when an abnormal condition of the air conditioner occurs.
- The red button is indicated on the screen when there is a group in abnormal condition.
- “Alarm Info.” is indicated on the lower screen.

If “Alarm Info.” is tapped, the following items are indicated.

a. Name of the block/group in abnormal condition

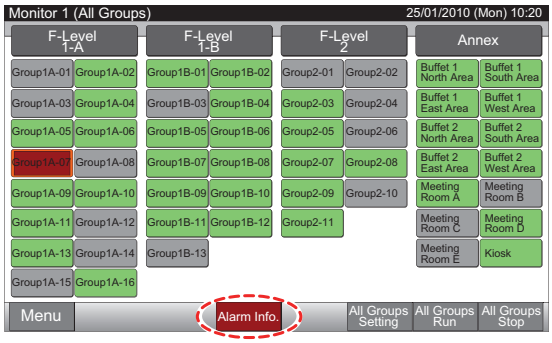
b. Refrigerant cycle number, address and model code* of indoor unit in abnormal condition

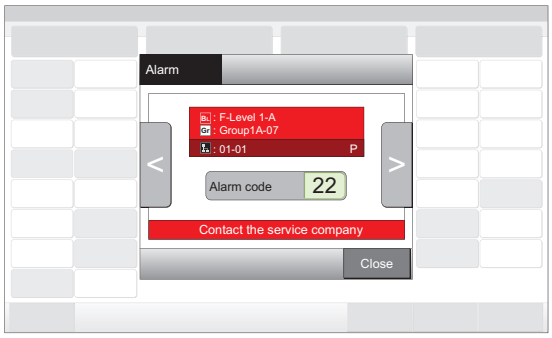
c. Alarm code

NOTE

(*) The model code may not be indicated depending on the unit model.

- In case that multiple indoor units are in abnormal condition, the details information of abnormality are indicated in turn as above. In that case, the group in abnormal condition can be also selected by tapping “<” or “>” on “Alarm” information screen. Check the contents of LCD indication and contact your dealer for details.





Power failure

- The display is OFF.
- Once the unit is stopped by the power failure, the unit will not start again after the power recovery. Perform the starting procedures again.
- In case of instantaneous power failure within 2 seconds, the unit will automatically start again.

Noise

- There could be a case that the display is OFF and the unit is stopped. This is caused by the activation of the micro computer for the unit protection from the electric noise. When the unit is stopped, perform the starting procedures again.

5.1.5 Troubleshooting

Check the following table before contacting a dealer for maintenance.

Condition	Cause
Indications on the touchscreen are not displayed.	Check that the wiring for the power supply is connected to the plug. Check that the power supply is turned ON.
The touchscreen display is slept.	The touchscreen will automatically sleep when the touchscreen is not operated for the given length of time. Tap the screen to wake up.
A part of the touchscreen is not turned on or is constantly turned on.	There may be dead pixel on the LCD. This is not faulty.
The operation is not carried out smoothly when the switch is tapped.	When the central station is used for a long time, the touchscreen may not match the position of display indication. Refer to *"Touchscreen calibration"* section for the Touchscreen Calibration.
"- -" is indicated for the setting temperature. The temperature cannot be set.	No setting temperature is set. Press and hold "△" or "▽" for 3 seconds on the setting touchscreen. Refer to *"Setting temperature"* section.
The setting of louver direction returns to previous setting.	When the operation mode is "AUTO", the direction of louver is automatically corrected depending on the indoor unit model.
The timer operation by the schedule setting does not run.	Check if the holiday setting is turned ON. If so, cancel the holiday setting according to *"Holiday setting for suspending operation"* section. Check if the setting of schedule operation is turned OFF. If so, the schedule operation should be turned ON according to *"Schedule timer ON/OFF setting"* section.
"- -" is indicated for the date and time.	"- -" is indicated when electrical power is shut down for a long time. Set the date and time again according to *"Adjusting Date/Time"* section.
The setting is not changed.	When the central station is operated immediately after turning ON the air conditioners, the central station may not be possible to control because the starting up of the air conditioners are prior. Wait for a certain time before operation.

5.1.6 Maintenance

- Clean and wipe the display with dry and soft cloth.
- For oil and fat on the touchscreen such as finger print marks, use diluted neutral detergent mixed with water to clean. Before cleaning, wring water out to dry. After that, again wipe the display with dry and soft cloth.
- Do not use benzine, thinner or surface active agent in order to protect the display from deformation or tarnish.

5.2 PSC-A32MN

5.2.1 Safety summary

HITACHI can not anticipate every possible circumstance that might involve a potential hazard.

⚠ DANGER

- ***DO NOT pour water into the central station (hereafter called "controller"). This product is equipped with electrical parts. If water is poured, it will cause a serious electrical shock.***
- ***Prior to the installation work, ensure that foundation is flat, level and sufficiently strong and then fix the unit securely. If the foundation is not strong enough, it may lead to injuries caused by falling of the product, electrical shock or fire.***
- ***DO NOT install the unit in a place where generation, flow, accumulation or leakage of flammable gas is detected.***
- ***DO NOT perform installation work and electrical wiring connection by yourself. Contact your distributor or dealer of HITACHI and ask them for installation work and electrical wiring by a trained service person.***
- ***Perform electrical work according to the Installation Manual and all relevant regulation and standards. If the instructions are not followed, electrical shock and fire may occur due to insufficient capacity and inadequate performance.***
- ***Use the specified cables for connection between indoor unit and central station. Selecting incorrect cables may lead to fire or electrical shock.***
- ***As for the electrical wiring work and check, turn OFF the main power supply before opening/closing the service cover of the indoor unit. If the service cover is opened with main power supply left on, electrical shock may occur.***
- ***Turn OFF the main power supply when opening the case for checking or maintenance. If only the switch is turned OFF but not the power supply, the power terminal part or the power switch part will stay activated and may cause an electrical shock. When performing wiring work, make sure to turn OFF the power supply as well.***
- ***When performing local wiring work, check whether the local wiring has been gnawed by animals like mice or small rodents. Gnawed wiring could cause a fire.***

⚠ CAUTION

- *DO NOT install the indoor unit, outdoor unit, central station and cable in the following places:*
  - *Where oil vapour or oil is dispersed (It may cause a fire, deformation, corrosion or failure.)*
  - *In the vicinity of hot springs (in a sulphuric environment)*
  - *In the vicinity of the sea (in a salty environment, which may cause corrosion.)*
  - *In an acid or alkaline environment*
  - *At the reach of children*
  - *Under direct blow of discharge air from the unit*
  - *In places with humid atmosphere*
  - *In places where the unit may get wet*
  - *In poorly ventilated places*
- *DO NOT install the indoor unit, outdoor unit, central station and cable within approximately 3 metres from strong electromagnetic wave radiators such as a radio.*
- *In case that the central station is installed in a place where electromagnetic wave radiation is generated, shield the central station and cables by covering the unit with a steel box and running the cable through a metal conduit tube.*

⚠ CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*

5.2.2 Installation

5.2.2.1 Installation on site selection

Select a suitable place for handling and determine the installation place of the central station with the customer's acceptance.

Do not install the central station at such places as:

- Where children can touch.
- Where the air from the air conditioner is directly discharged.

Before installing the controller, prepare the following items.

Parts	Specification
Switch Box	JIS switch box for 2 switches (with cover) (JIS C 8340)
Power Supply Cable	Cable specification: 1.25 to 2 mm^2 Recommended cable: 600V CV, CCV, CEV
H-LINK Cable (For control)	Cable SPEC: 0.75 to 1.25 mm^2 Recommended cable: JKEPV-S, JKEV-S, CVV-S, CVV, 600V VCT

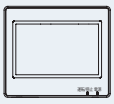
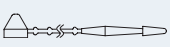
** The recommended cables are the model name of HITACHI Cable, Ltd.*

5.2.2.2 Components list

Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quantity	Comments
Central station PSC-A32MN		1	For controlling system operation
M4x16L screws		4	For fixing the central station.
Touch pen		2	For activating/deactivating the touch options on the screen.
Touch pen holder		1	For holding the touch pen on the central station.
Installation and operation manual		1	Installation and operation unit instructions.
Connector Cord		3	For using external input/output functions (CN1~3).
Closed End Connector		9	For closing the wire end of the connection cord.
Nylon Band		3	For fixing the cables.

5.2.2.3 Description of the parts

❶ **Colour LCD with touchscreen**
For operation and monitoring of the units through the touchscreen display. It is operated by using the touch pen (accessory). The touchscreen display will be automatically turned off when the touchscreen is not operated for a given length of time.
Gesture controls such as multi touch (simultaneous press of several points of the screen) or swipe operation are not supported.
- Tap 2 places simultaneously
- Flick Operation

❷ **Touch Pen**
Use the touch pen to operate the touchscreen of the central station.

❸ **Operation Indicator**
Indicates the Run/Stop state of the units
OFF: All the units are stopped.
ON (Green): One or more units are in operation.
Flashing (Red): In abnormal condition.

❹ **Power Indicator**
Indicates the power state of the central station.
OFF (lamp): Power is turned OFF
ON (lamp): Power is turned ON

❺ **Hole for attachment of the touch pen holder (accessory)**
Attaching holes are located on both sides.
Attach the touch pen holder to one side.

❻ **TB2**
Terminals for connection of the H-LINK control wiring

❼ **CN1 ~ CN3**
Terminals for connection of connector cords (accessory) in case of using external input/output

❽ **TB1**
Terminals for connection of the power cable

❾ **Power switch to turn OFF the power supply**
Use this switch to prevent electrical shock when the case of the unit is opened.

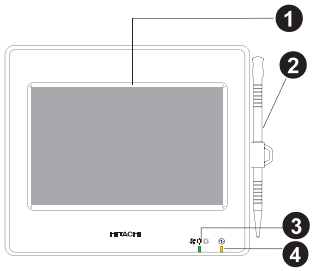
❿ **Fuse for H-LINK Transmission Line**
H-LINK Transmission Line(Behind the PCB)
For protection of H-LINK transmission line.

⓫ **DSW2**
For terminating resistance.
It is used for transmission line recovery.

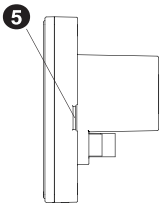
⓬ **Rotatory Switch for Address Setting**
For address setting of controller

⓭ **DSW1**
For optional function setting

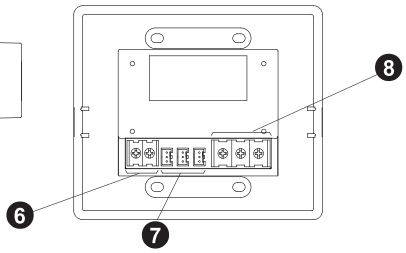
Front side



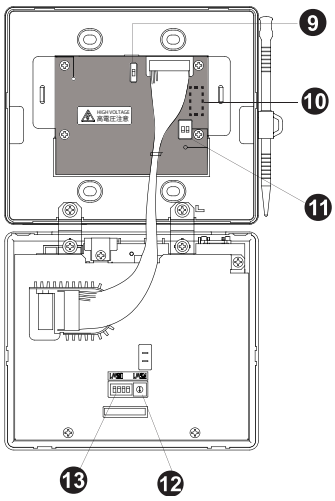
Right side



Rear side



When unit body is open



Model: PSC-A32MN

NOTE

Remove the protection sheet on the LCD (liquid crystal display) before using this product.

DANGER

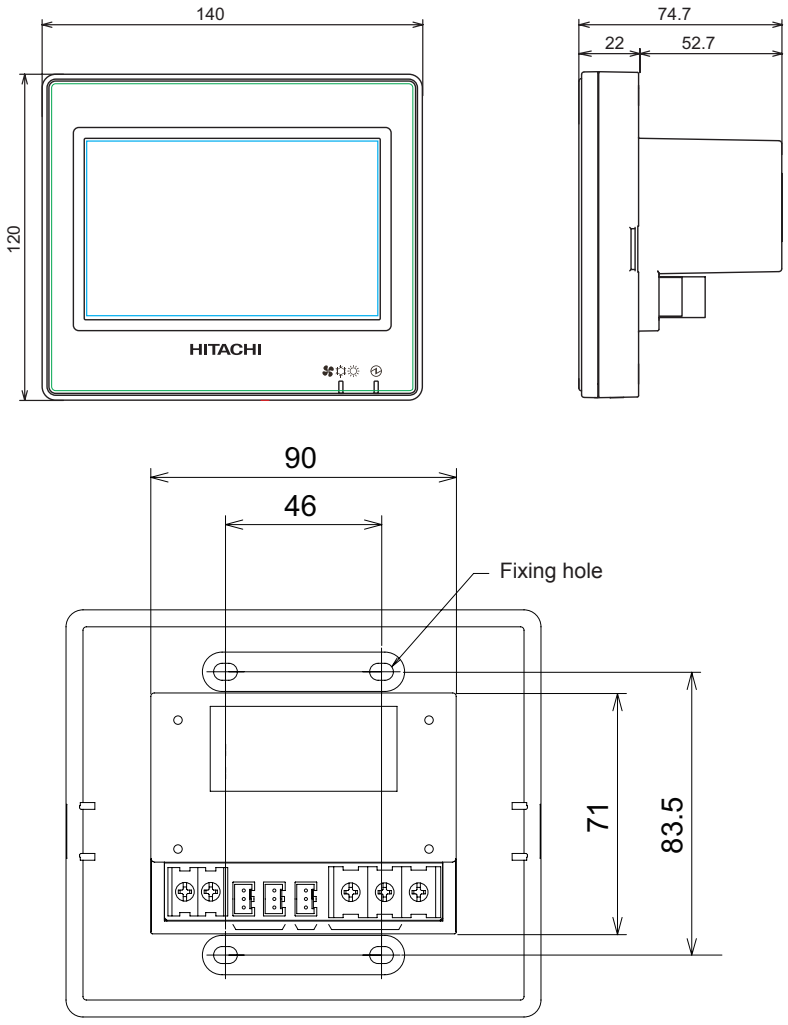
DO NOT remove the covers of parts marked with " " for safety. If these covers are removed, contact with the inside components may cause a serious electrical shock.

5.2.2.4 General data

Item	Specification
Outer Dimension <W x H x D + (Built-in Part)>	140 × 120 × 22 + 52.7 (mm)
Net weight	0.5 kg (approx.)
Installation location	Indoor
Installation method	Wall built-in with JIS switch box for 2 switches (with cover) (JIS C 8340)
Connected indoor units (Quantity)	160 (Max.)
Clock accuracy	± 70 seconds/month (at normal temperature)
Ambient temperature	5 ~ 35ºC
Ambient humidity	35 ~ 90% (No dew condensation)
Display	5.0” TFT colour liquid crystal display
Rated power supply	1ϕ, AC 100~240V, 50/60Hz
Electrical power consumption	20W (Max.)

5.2.2.5 Dimensional data

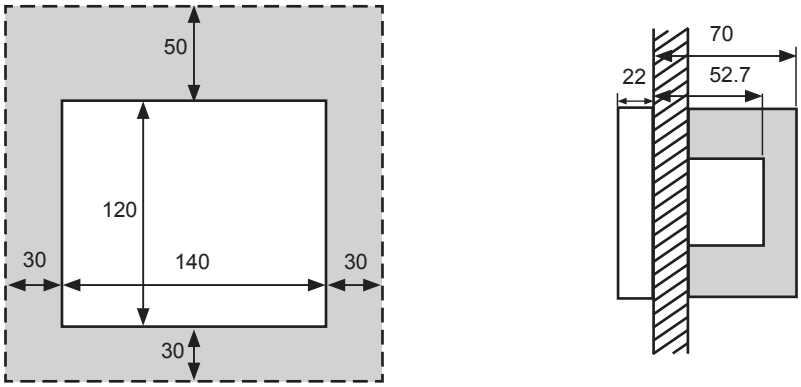
(Unit: mm)



5.2.2.6 Installation space

Keep the installation space for the central station as shown below.

(Unit: mm)



Do not place anything in the shaded area “ ”.

When installing two or more central stations side by side, keep the following separation between each of them.

* Vertical space: 50 mm

* Horizontal space: 30 mm

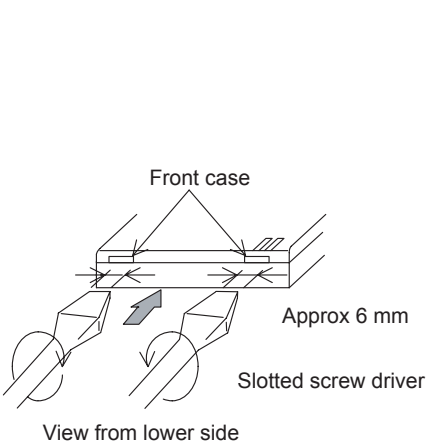
5.2.2.7 Installation procedure

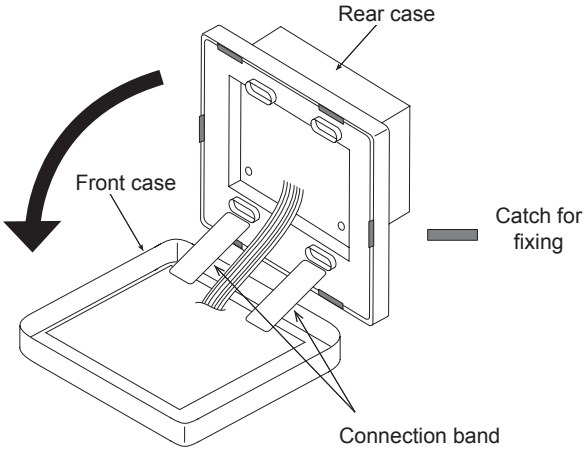
1 Install the switch box into the wall. (Field supplied JIS switch box for 2 switches (with cover) (JIS C 8340)).

2 Open the unit case, in case that it is closed. (It is shipped opened from the factory). Follow the procedure below to open the case.

a. Remove the front side of the case by inserting and rotating a tool like the tip of a slotted screwdriver in the notches (2 notches on the lower side).

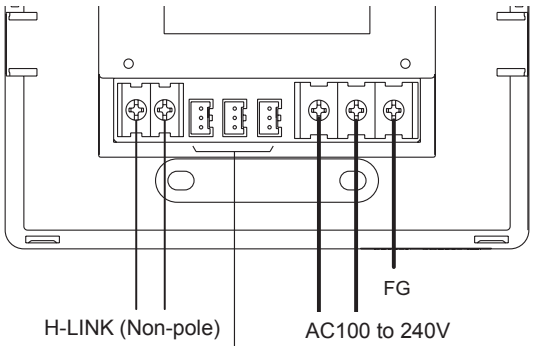
b. To open the case, pull up the front side from the bottom and unhook the tabs at the upper and lateral sides. Do not apply an excessive force when opening the front and rear sides of the case, as they are joined with connection bands.



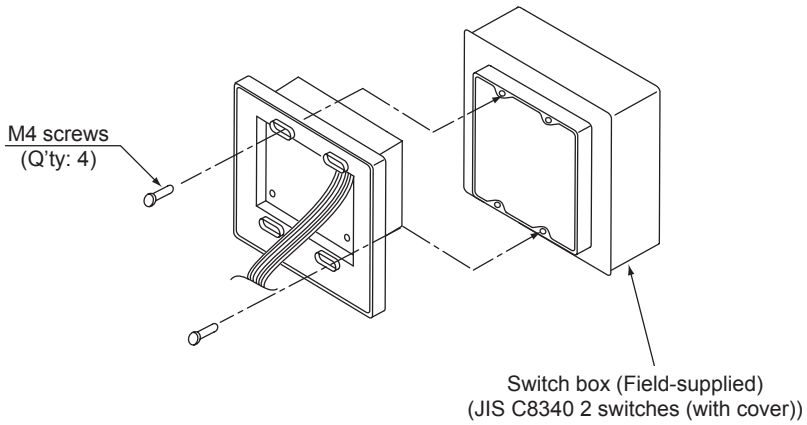


3 Connect the wiring to the terminal board of the central station.

Terminal board	Use	Connection procedure
TB1	For power supply	M3 screw-on terminal Round terminal connection Tightening torque 0.5N·m
TB2	For H-LINK transmission	
CN1 ~ 3	For external input/ output	3-pin connector Insert connector cords (accessory) until hearing a click.

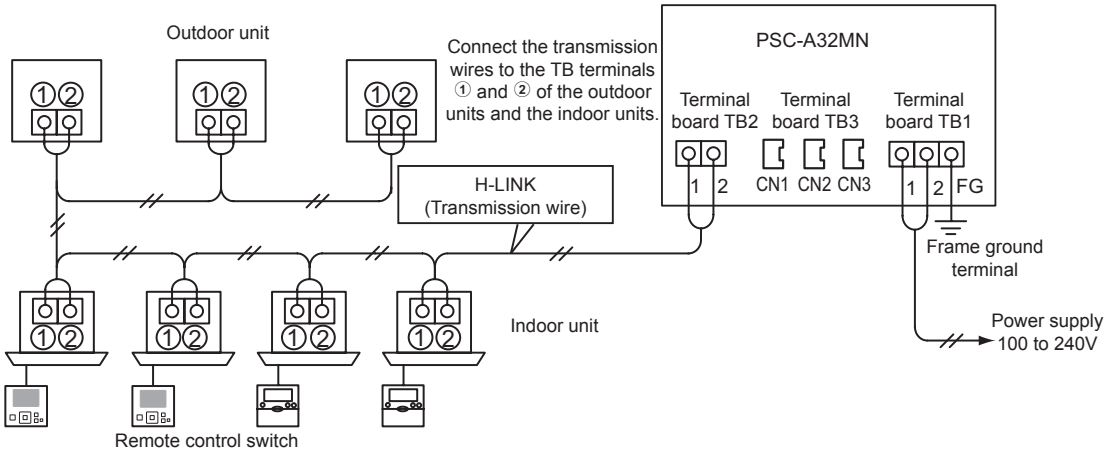


4 Fix the switch box (field-supplied JIS switch box for 2 switches (with cover) (JIS C 8340)) using the accessory fixing screw (M4 × 16 mm).



5.2.3 Electrical wiring

The central station requires wiring work for the power supply, air conditioner and control wiring (H-LINK) cables.



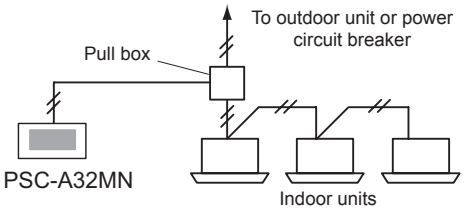
Type of wiring	Specification	Length of wiring	Cable specification	Recommended cable model
Power supply cable	AC100 ~ 240V	-	1.25 to 2 mm²	600V CV, CCV, CEV (HITACHI Cable)
Earth wiring	-	-	-	-
H-LINK(Control wire)	DC5V	≤1000 m	0.75 to 1.25 mm²	JKPEV-S, JKEV-S, CVV-S, CVV, 600V VCT (HITACHI Cable)
Wiring for external input and output	Input: Non-voltage normal open Output: DC12V, 75mA	≤300 m	0.5 to 1.25 mm²	

NOTE

- *In case that a specified wire length is mentioned for the external input of transmission side, use either [1] the specified wire length of transmission side or [2] 300m, whichever is shorter.*
- *The central station may be damaged because of incorrect wiring.*
- *The controller may be damaged in case of performing wiring work with the main power turned ON. Turn OFF the main power of the air conditioner and the controller before performing any wiring work.*
- *Transmission wires shall be separated from the power supply wiring and other electrical device wiring. Keep a separation of at least 30 cm between transmission wiring and the power supply wiring. If it is not possible to secure this space, then route the power supply wiring and transmission wiring through separate metal conduit tubes. One end of the metal conduit tubes shall be earthed for noise reduction.*
- *Do not connect the power supply wiring to the terminals for transmission of central station. However, if the power supply wires are connected incorrectly, the fuse of the printed circuit board will blow out for protection. In such a case, turn ON pin 2 of DSW2 on the printed circuit board to allow emergency operation without the fuse.*
- *Always remove the earth wiring of "FG" terminal when performing insulation capacity test or withstand voltage test. Failure to do so may result in damage to the central station.*

CAUTION

- *When using an AC200V to 240V power supply.*



- *In case of using a 200V~240V power supply, diverge the main power supply cables by using a pull box as shown in the figure.*
- *The electricity supply to the unit should be via an exclusive power control switch and protective circuit breaker, certified and installed in accordance with local or national safety regulations.*
- *Use an earth leakage breaker with medium sensitivity, and an activation speed of 0.1 or less. If this is not fitted, there is a risk of electric shock and/or fire.*
- *Install an earth leakage breaker, fuse and circuit breaker for each outdoor unit power line. Not fitting it may cause an electric shock or fire.*

DANGER

- ***Turn OFF the main power switch for the indoor units, outdoor units, and central stations before the electrical wiring work is performed. If not, it may cause a fire, electrical shock or device breaking down.***
- ***Do not use cables that are lighter than the normal flexible coated polychloroprene cable (code H05RN-F).***

◆ DIP switch adjustment

The list for switch settings of central stations is shown in the following table.

1 Apply switch settings as appropriate.

Switch	Switch number	Usage	Factory setting	Remarks
RSW1 (16-pole rotary switch)	-	For address setting of central station	0	When using multiple central stations units. (*)
DSW1 (4-pole DIP switch)	1	ON: Setting for no H-LINK II support OFF: Setting for H-LINK II support	OFF	Refer to the specific table
	2	OFF (Fixed)	OFF	Not used
	3	OFF (Fixed)	OFF	Not used
	4	OFF (Fixed)	OFF	Not used
DSW2 (2-pole DIP switch)	1	ON: End resistance enabled OFF: End resistance disabled	OFF	Make sure that no other terminating resistance exists on the same H-LINK when enabling the terminating resistance from the central station.
	2	ON: Protection fuse for H-LINK ... Disabled (Short-circuited) OFF: Protection fuse for H-LINK ... Enabled (Normal)	OFF	
SW1		ON: Turn the central station ON OFF: Turn the central station OFF	ON	

NOTE

- *Turn OFF the power supply when setting the DIP switches and the rotary switch. Do not touch the printed circuit board and metal parts directly to avoid malfunction of the central station.*
- *When switching the setting for H-LINK II support, perform a checking procedure following "Checking connection".*
- *If DSW1-1 is misconfigured, alarm 63 (Central Device Combination Fault) will be emitted from a central control device with H-LINK support. In this case, turn OFF the power supply for all central control devices and correct the settings of each central control device. Then, restart the central control devices.*
- *(*): When using several central stations at the same time, set the values of each "RSW1" not to overlap.*

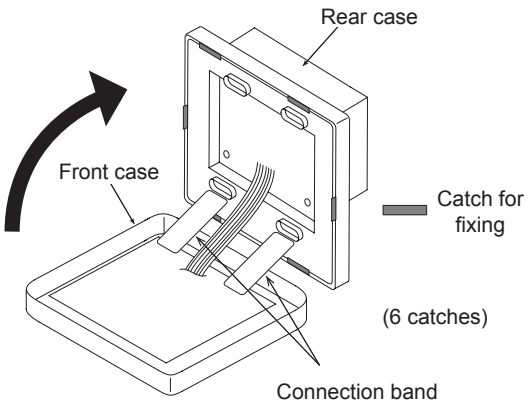
DSW1 setting

		Name	Model	Pin 1	Pin 2	Pin 3	Pin 4
Combination of PSC-A32MN with other central controllers	Other central controllers	Central Station EZ	PSC-A64GT	OFF	OFF	OFF	OFF
		Central Station mini	PSC-A32MN	OFF	OFF	OFF	OFF
		Central Station	PSC-A64S	OFF	OFF	OFF	OFF
		Centralised ON/OFF Controller	PSC-A16RS	OFF	OFF	OFF	OFF
		BMS Gateways	HC-A(8/64)MB	Not compatible			
			HC-A16KNX	Not compatible			
			KNX001	Not compatible			
			HARC-BX E (A/B)	Not compatible			
		CSNET	CSNET Lite	Not compatible			
			CSNET Manager 2	Not compatible			
			CSNET Manager 2 LT	Not compatible			
			CSNET Manager 2 XT	Not compatible			
			CSNET WEB	OFF	OFF	OFF	OFF
Without other central controllers				OFF	OFF	OFF	OFF

2 Close the unit case until hearing a snapping sound, and make sure that the front and rear parts of the case close fully. At this time, check that connection bands are not trapped between the front and the rear parts of the case.

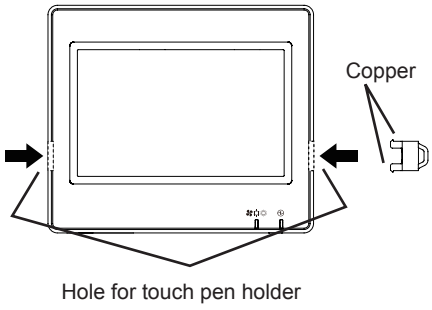
a. Hook the tabs into the front side of the case.

b. The front side of the case will close when hooking up the tabs of the lateral and lower sides.



To attach the touch pen holder

When attaching the touch pen holder to the controller, insert the chip into any of the attaching holes for the holder until hearing a click.



5.2.4 Operation

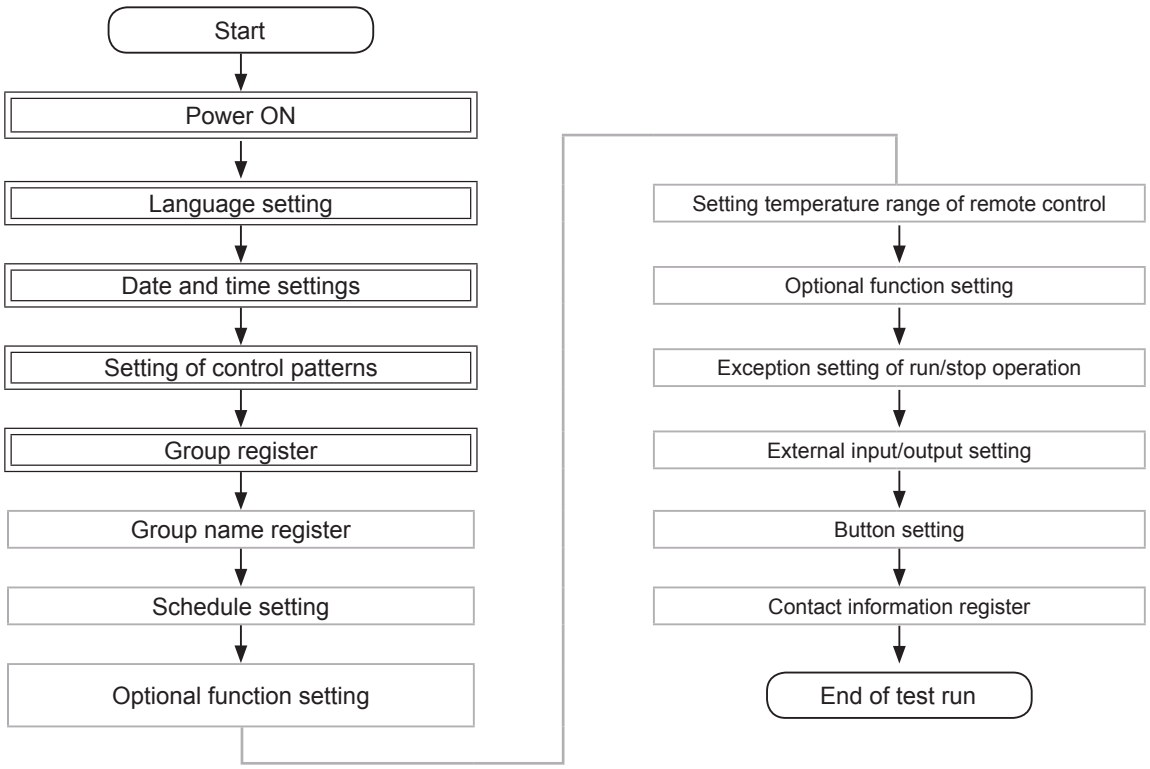
5.2.4.1 Test run

The outline of the test run procedure is indicated as shown in the figure. The items marked with the thick frame (▭) are required items.

The rest of items, which are not specifically required for the test run procedure but they are optional, are explained in its specific section.

NOTE

The actual design of the screens may vary with respect to the screenshots shown in this chapter.



List of Items

Item		Function
Language Setting		This function is used for language selection.
Date and Time Settings		This function is used for adjusting the date and time.
Group Register		The function is used for the registration of groups or blocks of the indoor units connected to the same H-LINK, and which have been identified by the central station.
	Main Unit Register	This function is used for the registration of the main unit in each remote control group. This unit represents the remote control group. Control orders for the entire remote control group are sent to this main unit from the central station.
	Sub Unit Register	This function is used for the registration of units other than the main unit in each remote control group. In case of using the following remote control switches or receiver kits, the sub units are registered automatically by the central station after registration of the main unit. • Remote control switches and receiver kits with model names beginning with PC-A**. • Remote control switches with model names beginning with PC-P**.
Group Name Register		This function is used for the registration of the names of groups and blocks. The name of each group or block may consist of up to 20 characters. It is also possible to copy names. If the group or block is registered without a name, it is registered as “Group 1” or “Block 1” automatically.
Schedule Settings		This function is used for the scheduling of timer operation available for each group or block.
	Schedule Timer Setting	This function is used for setting the time (by the minute), “Run/Stop” and temperature (19~30ºC). For weekly schedule setting, up to 10 schedule items can be set per day. It is also possible to copy setting contents.
	Holiday Setting	This function is used for suspending scheduled operation temporarily. Scheduled operation is not available when this function is set. This function is used for setting irregular holidays such as national holidays.
	Schedule Timer ON/OFF Setting	“Schedule Timer OFF Setting” is used for suspending scheduled operation for the target group. Scheduled operation is not available when Schedule Timer is OFF. This function is used for long holidays, sudden holidays, national holidays, etc.
Optional Function Setting		This function is used for setting and changing the functions of air conditioners and central stations.
Exception Setting of Run/Stop Operation		This function is used for specifying the exception of All Run/Stop commands for particular groups or blocks. All Run/Stop commands have no effect on the specified group or block.
	Selection of Excepted Operation	This function is used for selecting which of the following is affected by the exception. • Run • Stop • Run and Stop
	Selection of Excepted Groups	This function is used for selecting which of the following is affected by the exception of All Run/Stop commands. • All Groups Run/Stop • Run/Stop by Block • All Groups Setting • Setting by Block
External Input/Output Setting		The central station has two external input terminals and two external output terminals. These terminals are used for “All Groups Run/Stop” and “Demand Function” operations for the connected air conditioners. The external output terminals are used for the output of operation signals or alarm signals of the air conditioners connected to the central station.
Exception of External Input		This function is used for cancelling operation commands such as “All Groups Run/Stop” by means of the external input signal. “Exception of External Input” is available for each external input (Input 1 and Input 2).
	Selection of Excepted Groups for External Input 1	This function is used for selecting the groups whose operation orders are cancelled from external input 1.
	Selection of Excepted Groups for External Input 2	This function is used for selecting the groups whose operation orders are cancelled from external input 2.

Item		Function
Demand Function Setting		This function is used for setting of “Demand Function” to the terminal of “Input 1”. Operation state changes by demand signals such as operation stop, or Thermo-OFF. “Demand Function” is available under the following conditions. Selecting “Demand Function” for “Input 1” at the “External Input/Output Setting” screen. (“Demand Function” is not available without this setting.) Selecting one of “Demand Function” No. 1 to No. 4 at “Demand Function Setting” screen.
	Demand Function Setting	This function is used for selecting the action for “Demand Function” control.
	Selection of Group for Demand Function	This function is used for selecting the target group for “Demand Function” control.
Button Setting		This function is used for specifying whether each button shall be shown or hidden. This function also includes the specification of “one-tap” or “press and hold” operation style of the touchscreen.
Contact Information Register		This function is used for editing the contents of contact information.

◆ Initial power ON setting

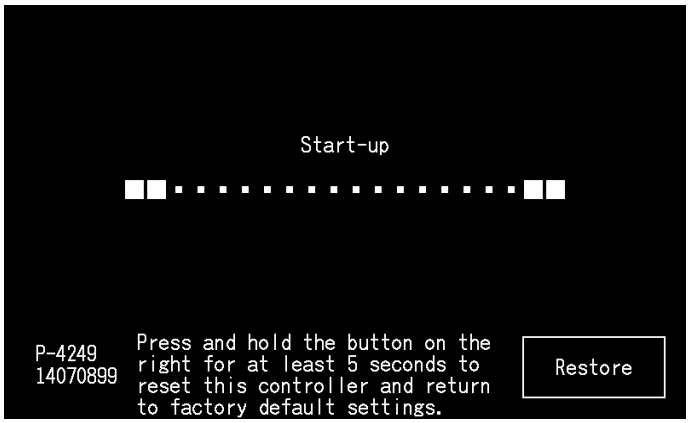
Turn on the power supply of the air conditioners.

To protect the compressor, the power supply should be turned on 12 hours before starting operation. Do not turn the power supply off during air conditioning seasons.

Perform a test run of each air conditioner first to ensure normal operation.

Turn on the power supply of the central station.

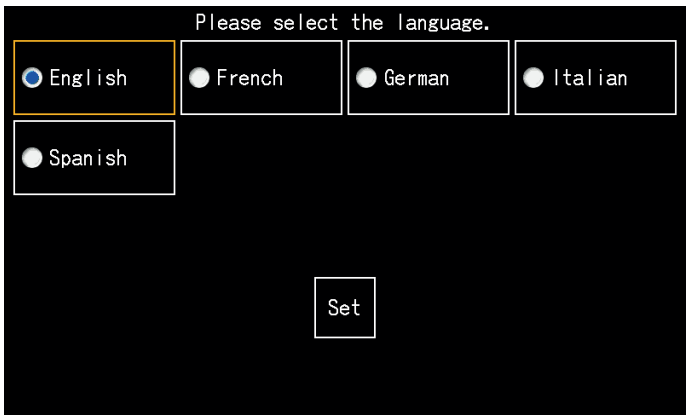
“Start-up” is displayed for a while during the boot process, after which the screen changes to “Monitor 1 (All Groups)”.



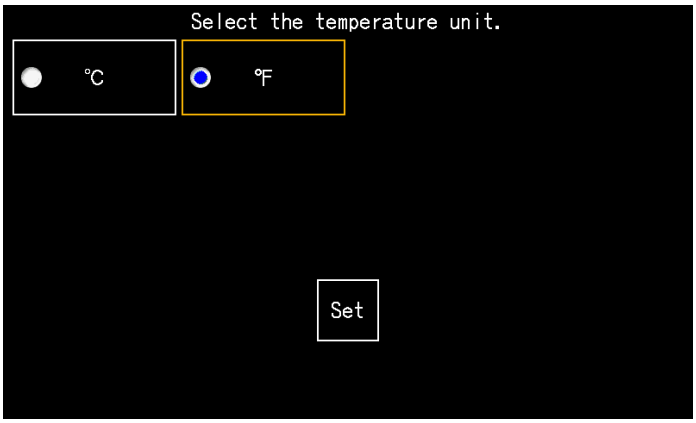
◆ Language setting

When turning the power supply ON for the first time, the language setting screen is displayed after a few minutes.

Select the language for operation and tap “Set”.



◆ Temperature unit setting



After the language is set, the screen will be displayed as shown on the right.

Select the appropriate temperature unit, then tap “Done”.

Refer to the *“Temperature unit setting”* section in the *“5.2.4.3 Menu”* chapter for detailed information.

◆ Adjusting Date/Time

After setting the language, the screen for adjusting date and time screen is displayed on the touchscreen as shown in the figure.

Tap “Set” on the touchscreen display, and set the date and time following the indicated procedure.

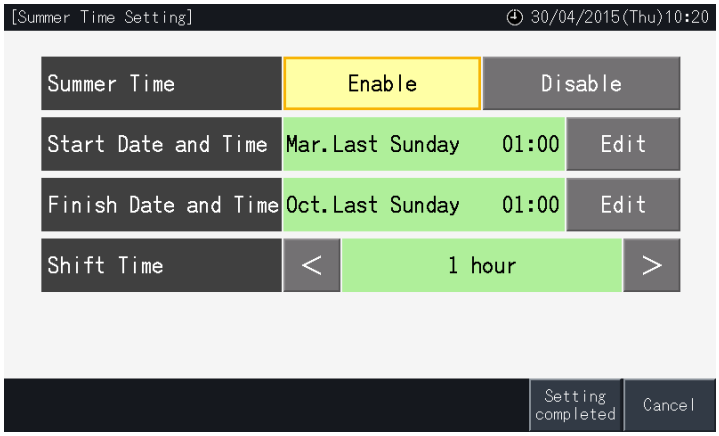
Refer to the *“Adjusting Date/Time”* section in the *“5.2.4.3 Menu”* chapter for detailed information.

NOTE

Setting the date and time may be required after a prolonged power failure. If “Set Date/Time” is displayed on the screen in such a case, then tap “Set” to adjust the date and time.



◆ Summer time setting



After the Date/Time function is set, the screen will be displayed as shown on the right.

Set each item, then tap “Setting completed”.

Refer to the *“Summer time setting”* section in the *“5.2.4.3 Menu”* chapter for detailed information.

◆ Setting of control patterns

After adjusting date and time settings, the control pattern screen is displayed. Tap “Set” on the touchscreen to proceed to the setting of control patterns.

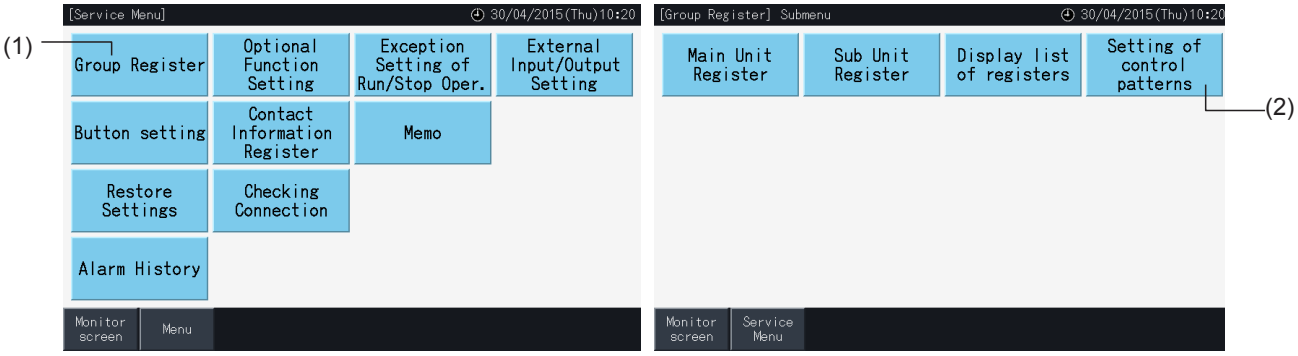
When tapping on a control pattern button, the selected button is highlighted with an orange outline.

The procedure for the setting of control patterns is explained below.

Registration of control patterns

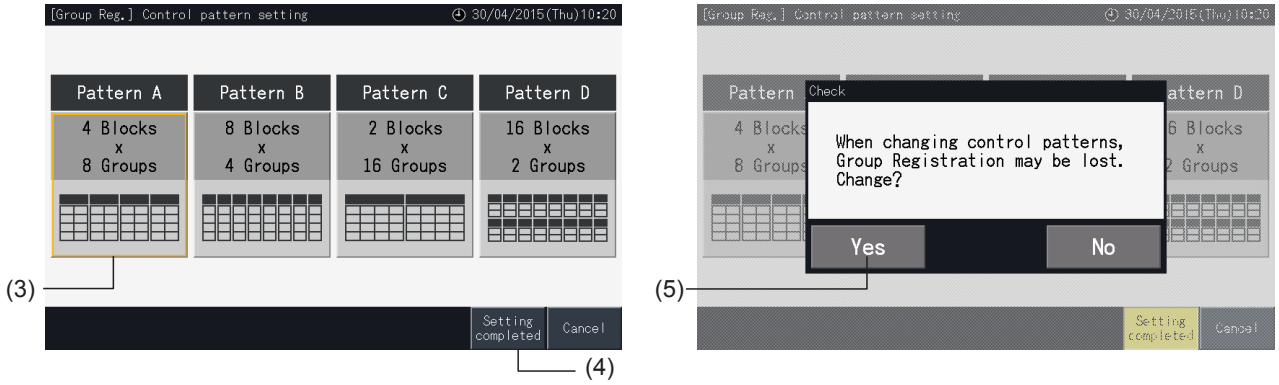
1 Select “Group Register” on the Service Menu screen.

2 Select “Setting of control patterns” on the Group Register screen.



3 Set the Control Pattern.

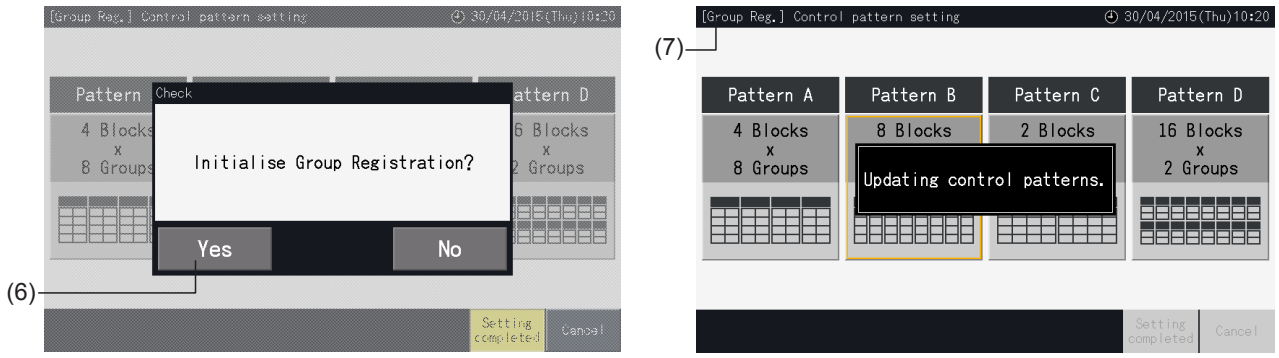
When tapping on the Control Pattern button, the selected button is highlighted with an orange outline.



4 Tap “Setting completed”.

* In case of tapping “No”, the screen returns to the Group Register menu.

* Group registration is deleted when changing to a different control pattern



5 Tap “Yes” on the confirmation screen.

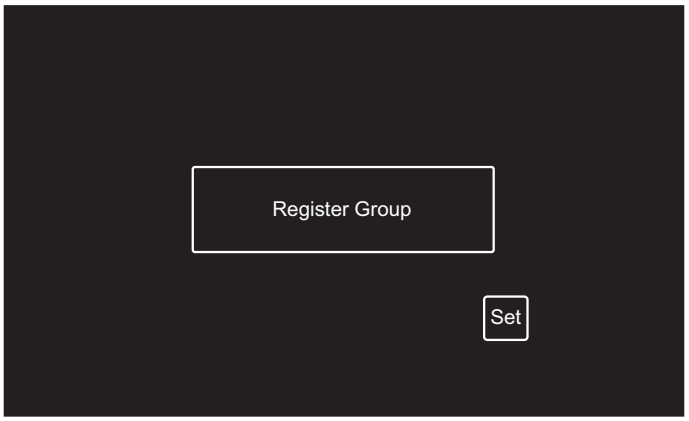
*Tap “No” to return to the setting of control patterns screen.

6 Tap “No” on the confirmation screen to confirm the selected control pattern and to delete all group registers.

*Tap “No” to confirm the selected control pattern. After modifying the control pattern, the assignment of main and sub units is maintained as much as the control range allows.

7 The Control Pattern up-dating screen is displayed. After up-dating the Control Pattern, the Group Register screen will display when register the Main Unit and if not register the Main Unit, the Unregister Group screen will display.

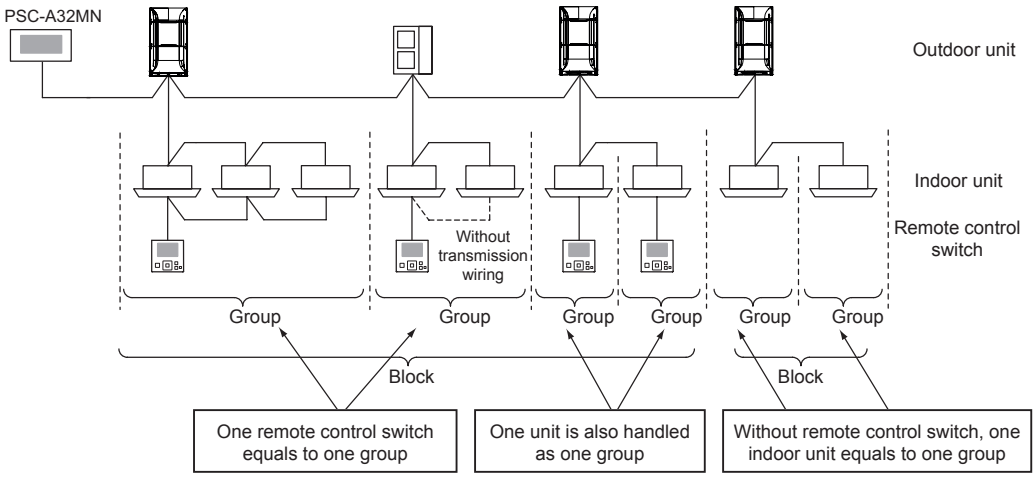
◆ Group register



Register the connected indoor units to groups and blocks of the central station.

Definitions

- Group:
  The minimum operation unit controlled by one central station. 1 remote control group is considered as 1 group, and the same setting is applied to the entire group. A maximum of 32 groups (organized as 4 blocks with 8 groups each, 8 blocks with 4 groups each, 2 blocks with 16 groups each or 16 blocks with 2 groups each) can be controlled with one central station.
- Block:
  An operation unit composed of several groups. The central station organizes blocks in patterns of 4 blocks with 8 groups each, 8 blocks with 4 groups each, 2 blocks with 16 groups each or 16 blocks with 2 groups each.
- Remote control group:
  A group of multiple indoor units (Max. 16) connected by the transmission line of the remote control switch. The same settings are applied to all the indoor units in the same remote control group.
- Main unit:
  The representative unit of the remote control group. The central station transmits control orders to this representative unit.
- Sub unit:
  Indoor units other than the main unit of the remote control group.



Main unit registration

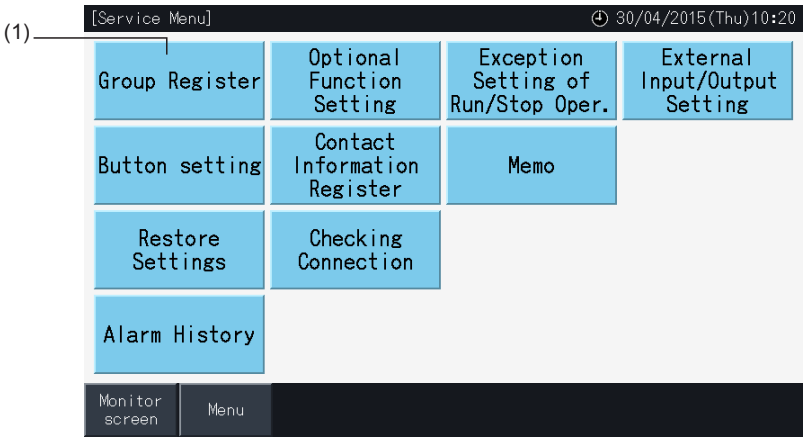
- Only one unit can be registered as the main unit of a group. Thus, duplicate registration of the main unit is not possible inside a group. If the unit registered as the main unit has to be changed for some reason, then cancel the current register of main unit before registering the new main unit again.
- When indoor units with 3 and 4 available fan speeds are mixed in the same remote control group, register the indoor unit with 4 fan speeds as the main unit. If the indoor unit with 3 fan speeds is registered as the main unit, the fan speed setting number 4 cannot be selected for this group.
- When mixing indoor units with automatic swing louver and indoor units without automatic swing louver together in the same remote control group, an indoor unit with auto-louver shall be registered as the main unit of the group. If an indoor unit without auto-louver is registered as the main unit, then the auto-louver setting cannot be applied for the entire group.
- When registering a group which has no transmission wiring, the indoor unit without a remote control switch cannot be registered as the main unit.

Sub unit registration

- A maximum of 15 sub units can be registered in the same remote group with the main unit (when applying the control pattern of 2 blocks with 16 groups each).
- Indoor units without a remote control switch cannot be registered as sub units.
- In case of changing the registration of an indoor unit which is already registered as a sub unit, cancel the register settings first, and then proceed to the new register.

Registration of a group (Main unit)

1 Select “Group Register” on the “Service Menu” screen.



NOTE

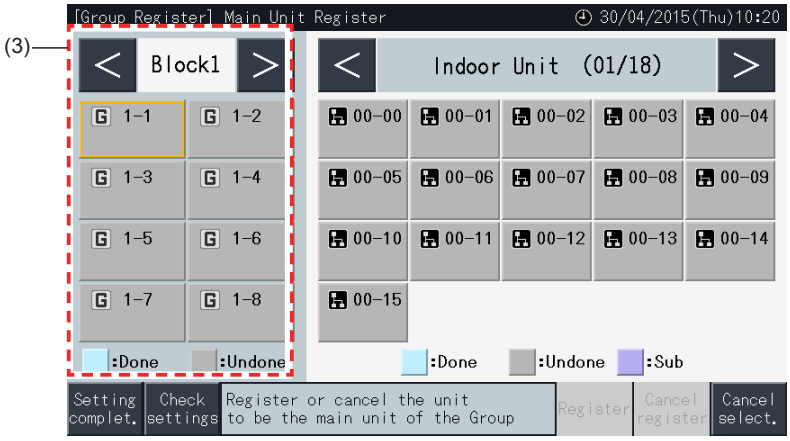
This function cannot be selected when the external input signal is input to the external input terminal 1 or 2.

2 Select “Main Unit Register” on the “Group Register”.



3 Select the group for registration of the main unit.

- Tap buttons “<” and “>” on the upper left of the touchscreen to switch the block display.
- The numbers shown inside the buttons indicate block number and group number.
- Select a group button by tapping it. The selected button is highlighted with an orange outline. If the selected group button is tapped again, the group selection is cancelled.
- The main unit screen may be different depending on the control pattern. The screen below shows the setting of control patterns when Pattern A (4 Blocks with 8 Groups each) is selected.

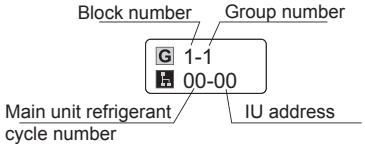


4 Select the indoor unit for registration of the main unit.

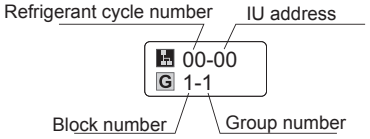
- Tap buttons “<” and “>” on the upper right of the touchscreen to switch the display of indoor units.
- The numbers shown inside the buttons indicate refrigerant cycle number and indoor unit address.
- Select an indoor unit button by tapping it. The selected button is highlighted with an orange outline. If the selected indoor unit button is tapped again, the indoor unit selection is cancelled.
- An indoor unit which has been already selected as a main unit cannot be selected again (its button becomes blue).
  - About the selection of indoor units
    - It is not possible to register an indoor unit with red letters as a main unit. In this case, the indoor unit is registered as a sub unit automatically.
    - When mixing indoor units with 4 fan speed taps and indoor units with 3 fan speed taps together in the same remote control group, register an indoor unit with 4 fan speed taps as the main unit.
    - When mixing indoor units with auto louver function and indoor units without auto louver function together in the same H-LINK, register one unit with auto louver function as the main unit. Otherwise, the auto louver function becomes disabled for the entire H-LINK. The same applies to other functions as well.

5 Tap “Register” to register the main unit while the group and indoor unit are selected.

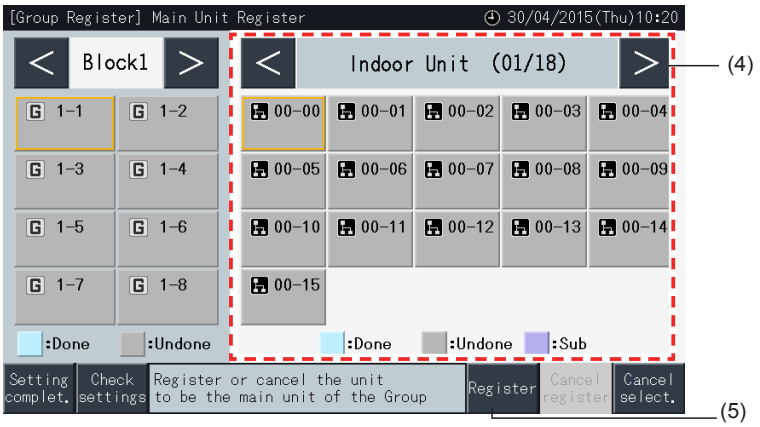
- If the group and indoor unit for the main unit are not selected, the “Register” indication is greyed out and therefore cannot be tapped.
- The colour of the buttons of the registered group and the indoor unit changes to blue, and the following information is displayed inside the buttons.
  - “Group” button



  - “Indoor Unit” button



Tap buttons “<” and “>” on the upper left of the touchscreen to continue with the setting of another Block, or tap the “Setting complet.” button to exit.

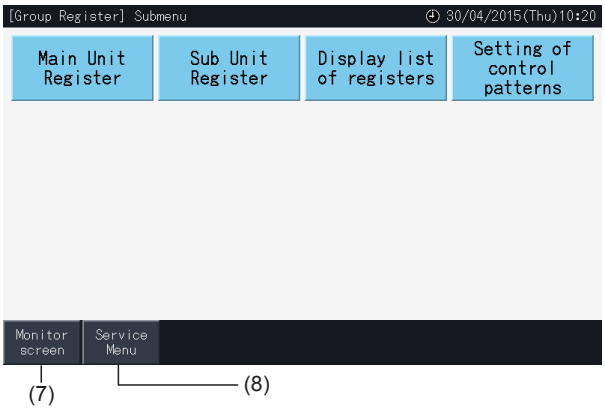


6 Tap “Setting Complet.” to register the group and return to Group Register menu screen.

7 Tap “Monitor screen” to return to Monitor screen.

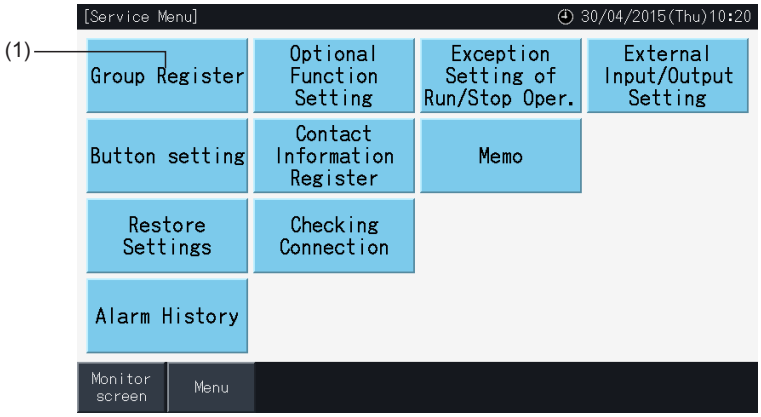
8 Tap “Service Menu” to return to Service Menu screen.





Registration of a group (Sub unit)

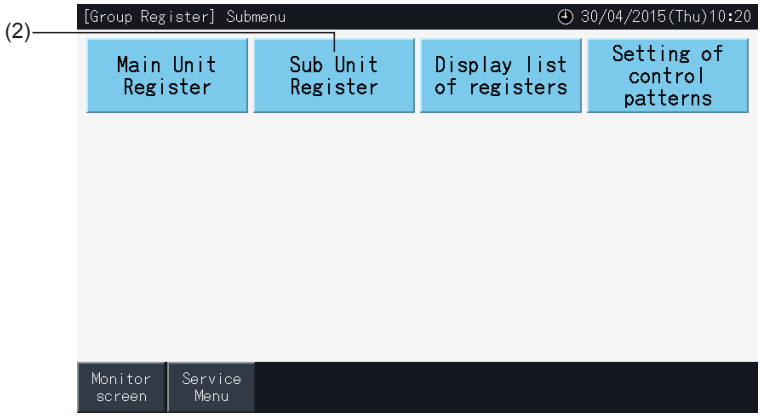
1 Select “Group Register” on the screen of “Service Menu”.



NOTE

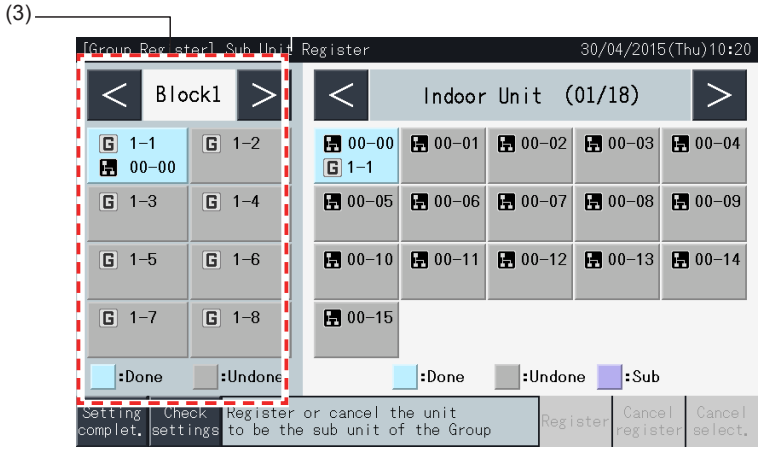
This function cannot be selected when the external input signal is input to the external input terminal 1 or 2.

2 Select “Sub Unit Register” on the screen of “Group Register”.



3 Select the group for registration of the sub unit.

- Tap buttons “<” and “>” on the upper left of the touchscreen to switch the block display.
- Select a group by tapping it. The selected button is highlighted with an orange outline.
- If the selected group button is tapped again, the selection is cancelled.
- The main unit cannot be selected if the group is unregistered (shown in grey).
- The sub unit register screen may be different depending on the control pattern. The screen below shows the setting of control patterns when pattern A (4 blocks with 8 groups each) is selected.



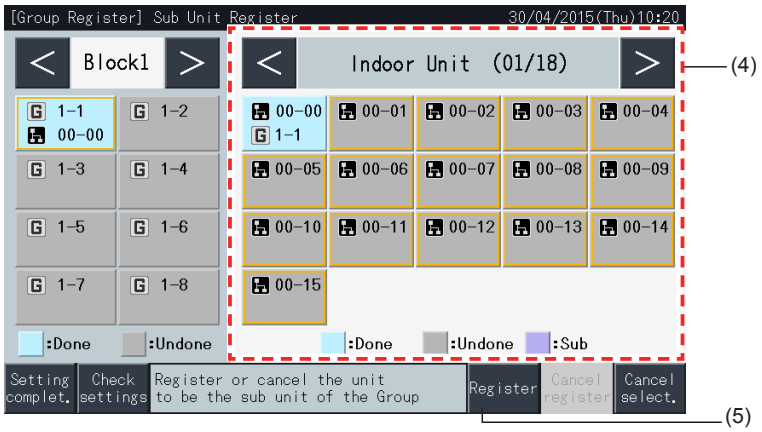
4 Select the indoor unit for registration of the sub unit.

- The numbers shown inside the buttons indicate refrigerant cycle number and indoor unit address.
- Select an indoor unit button by tapping it. The selected button is highlighted with an orange outline. If the selected indoor unit button is tapped again, the indoor unit selection is cancelled.
- An indoor unit which has been already registered as main unit cannot be selected (its button appears in blue).

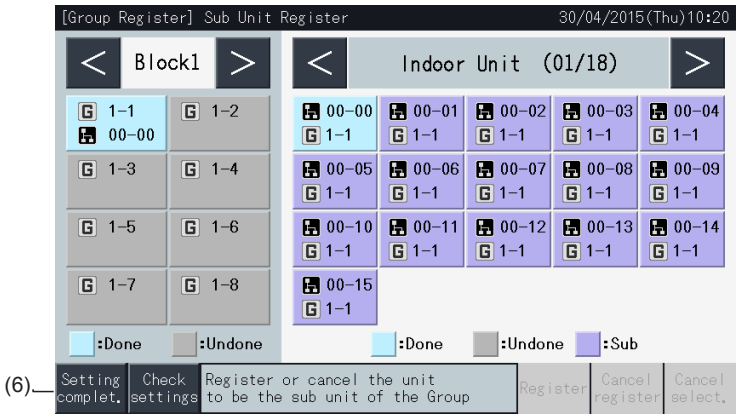
5 Tap “Register” to register the sub units while the group and indoor units are selected.

- If the group and indoor units for the sub units are not selected, the “Register” indication is greyed out and therefore cannot be tapped.
- The colour of the buttons of the registered group and the indoor unit changes to purple.

Tap buttons “<” and “>” on the upper left of the touchscreen to continue with the setting of another Block, or tap the “Setting complet.” button to exit.

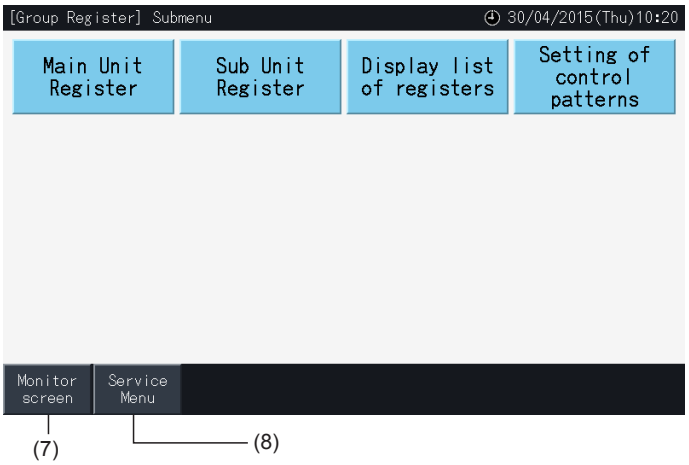


6 Tap “Setting complet.” on “Group Register (Sub Unit Register)” to return to the “Group Register” screen.



7 Tap “Monitor screen” to return to Monitor screen.

8 Tap “Service Menu” to return to Service Menu screen.



NOTE

- *It is possible to register a maximum of 15 sub units in the same remote control group.*
- *It is not possible to register an indoor unit without remote control switch as a sub unit. (Refer to “Group register” section).*

Cancellation of group registration

1 Select “Group Register” on the screen of “Service Menu”. Refer to *“Registration of a group (Main unit)”*.

NOTE

This function cannot be selected when the external input signal is input to the external input terminal 1 or 2.

2 Select “Main Unit Register (or Sub Unit Register)” on the screen of “Group Register”.

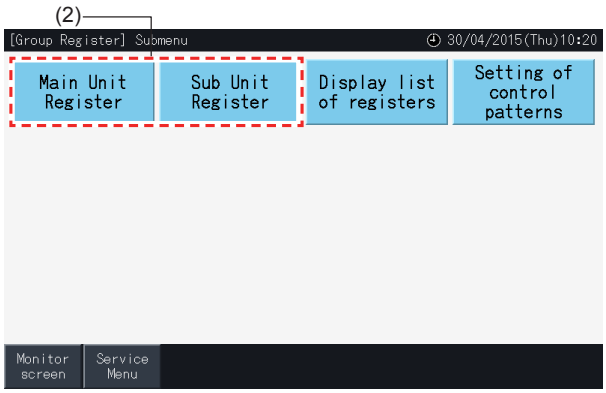
3 Select the group to cancel registration.

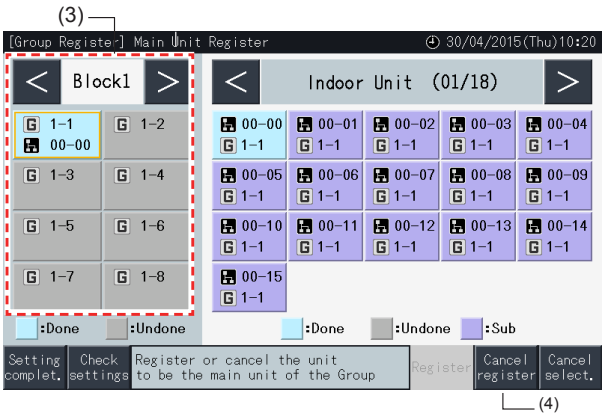
- Tap buttons “<” and “>” on the upper left of the touchscreen to switch the block display.
- Select a group button by tapping it. The selected button is highlighted with an orange outline. If the selected group button is tapped again, the group selection is cancelled.

4 Tap “Cancel register” to delete the register of the group. The group button and indoor unit button turn to grey.

- When tapping “Cancel register” on the “Main Unit Register” screen, the main unit and the sub units are unregistered.
- When tapping “Cancel register” on the “Sub Unit Register” screen, the sub units are unregistered.

Tap buttons “<” and “>” on the upper left of the touchscreen to continue unregistering groups in other blocks, or tap the “Setting complet.” button to exit.

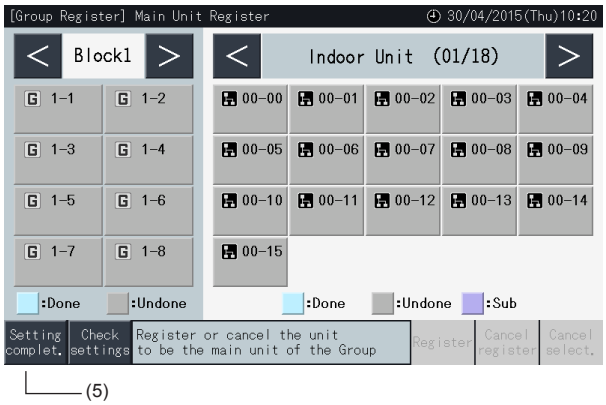


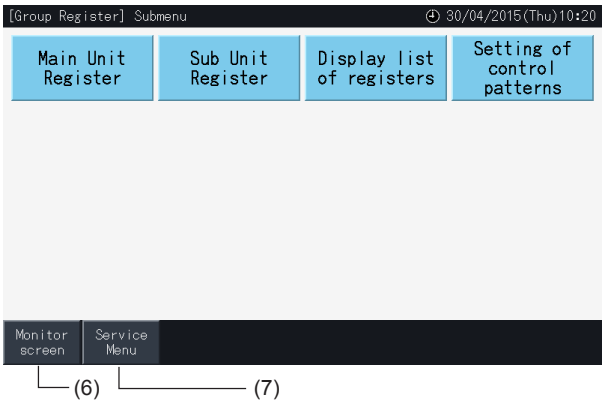


5 Tap “Setting complet.” to return to the “Group Register” screen.

6 Tap “Monitor screen” to return to Monitor screen.

7 Tap “Service Menu” to return to Service Menu screen.





Checking of group registration (Checking of main unit register)

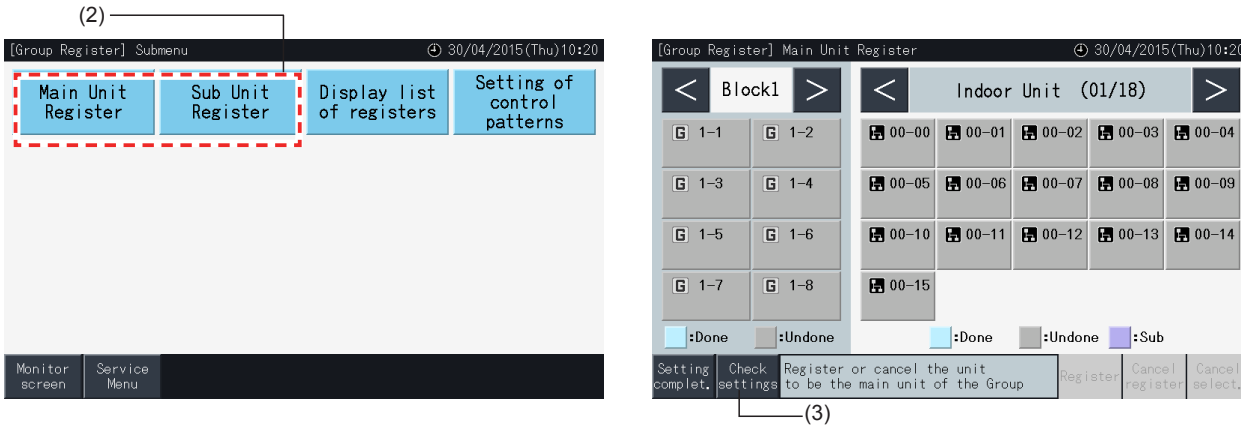
1 Select “Group Register” on the “Service Menu” screen. Refer to section *“Registration of a group (Main unit)”*.

NOTE

This function cannot be selected when the external input signal is input to the external input terminal 1 or 2.

2 Select “Main Unit Register” (or “Sub Unit Register”) on the “Group Register” screen.

3 Tap “Check Setting” on the lower left of the touchscreen.

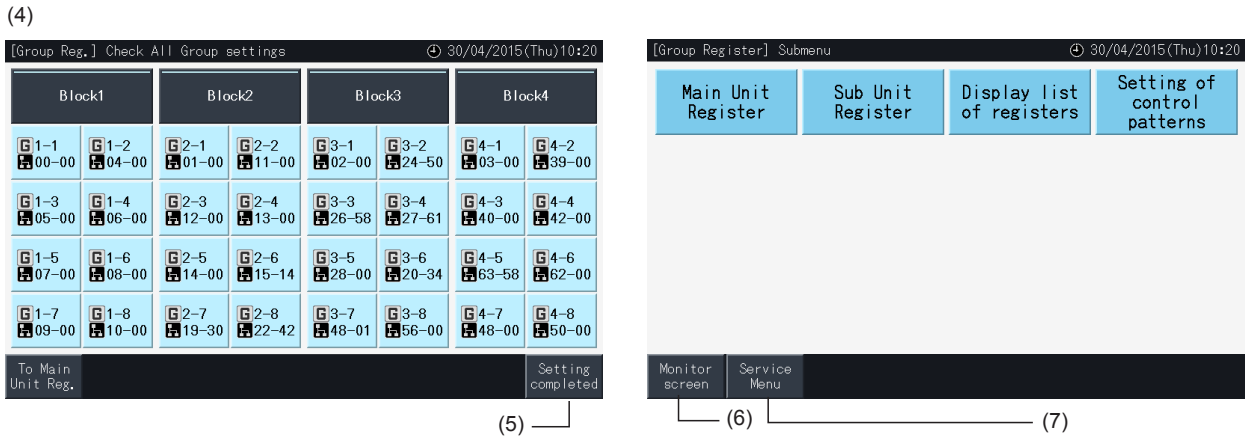


4 The screen switches to the Group Register check screen then. Tap “To Main Unit Reg.” to enter the Main Unit Register screen from there.

5 Tap “Setting completed” to return to the Group Register Menu screen.

6 Tap “Monitor screen” to return to Monitor screen.

7 Tap “Service Menu” to return to Service Menu screen.



Checking of group registration (checking register details)

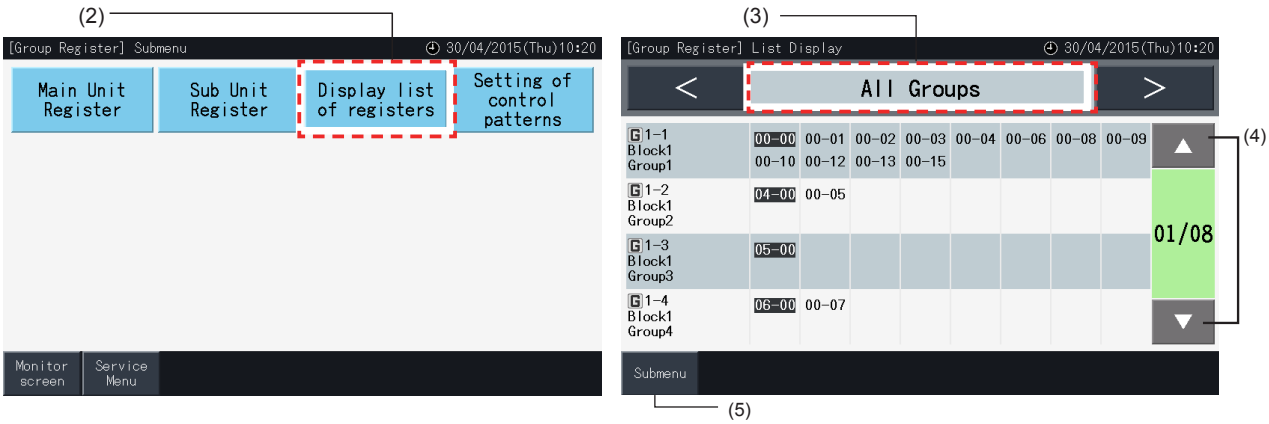
1 Select “Group Register” on the “Service Menu” screen. Refer to section *“Registration of a group (Main unit)”*.

NOTE

This function cannot be selected when the external input signal is input to the external input terminal 1 or 2.

2 Select “Display list of registers” on the Group Register screen.

3 Select the display target (All Groups / individual Blocks)



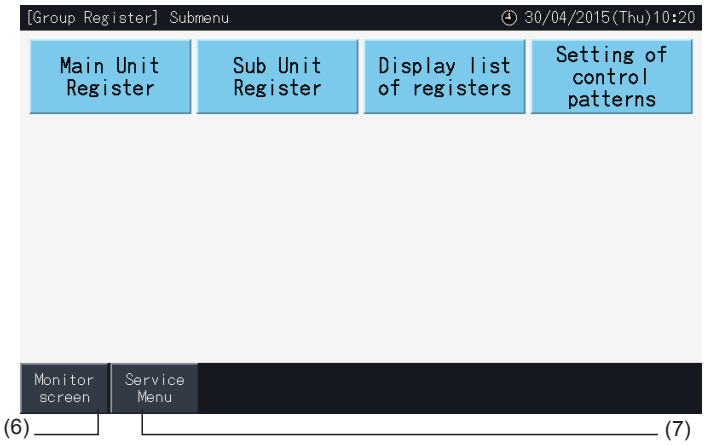
4 The refrigerant system number and the address of all the units connected to each Group are displayed.

- Black: Main Unit.
- Other: Sub Unit.
- Switch the page by tapping on “▲” or “▼”.

5 Tap “Submenu” to return to Group Register screen.

6 Tap “Monitor screen” to return to Monitor screen.

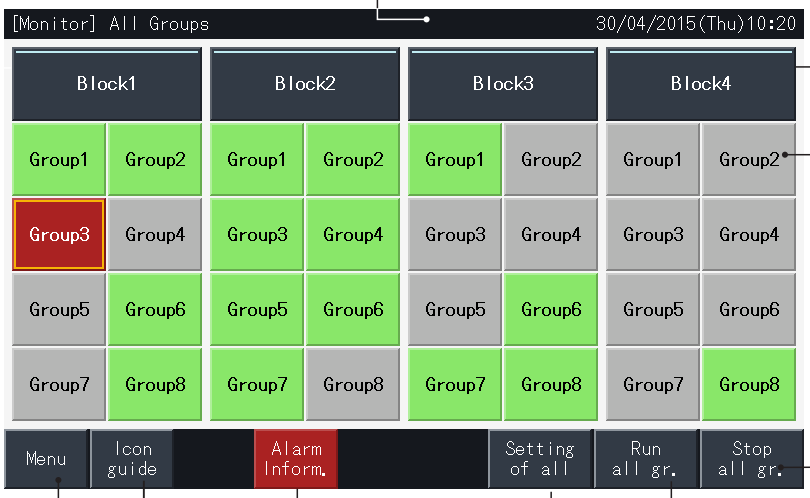
7 Tap “Service Menu” to return to Service Menu.



5.2.4.2 Main screen

◆ Overall view

“Monitor (All Groups)”



Current display

Indicates the current display (All Groups)

Unit state

Indicates the state of the unit with icons like filter sign, demand, etc.

Block button

The screen display changes into “Block” Monitor (Block) display by tapping this button.

Group button

Indicates the operation state of each group as follows:

Green:	Running
Grey:	Stopped
Red:	Abnormal

If the target group button is tapped, “Settings” of the target group screen will be indicated. (Refer to section *“Run/Stop for each group”*

“Stop all gr.” button

Stops all the units controlled by the central station at once.

“Run all gr.” button

Runs all the units controlled by the central station at once.

“Setting of all” button

Changes the setting of all the units controlled by the central station at once.

“Alarm Inform.” button

Provides detailed information about abnormalities.

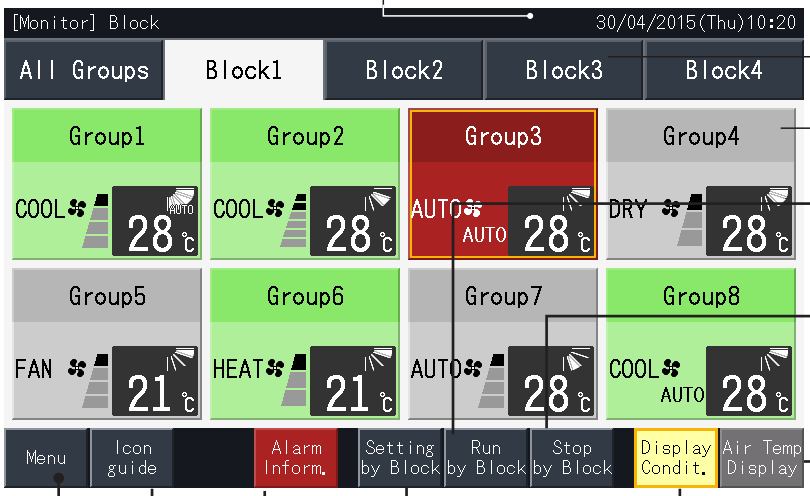
“Menu” button

Displays menu items such as “Filter Sign Reset”, “Schedule Setting”, etc.

“Icon Guide” Button

Displays an explanation of the icons.

“Monitor (Block)”



Current display

Indicates the current display (groups in block)

Unit state

Indicates the state of the unit with icons like filter sign, demand, etc.

Block tab

Changes the monitor display into “Block” or “All Groups” display.

Group button

Indicates the operation status

Green:	Running
Grey:	Stopped
Red:	Abnormal

If the target group button is tapped, “Settings” of the target group screen will be indicated. *(Refer to section *“Run/Stop for each group”*)

“Run by Block” button

Runs the operation of all groups in the target block simultaneously.

“Stop by Block” button

Stops the operation of all groups in the target block simultaneously.

“Air Temp Display” button

The outside air temperature and the inlet temperature are displayed.

“Display Condit.” button

The setting condition of the air conditioning unit is displayed.

“Menu” button

Displays menu items such as “Filter Sign Reset”, “Schedule Setting”, etc.

“Icon Guide” button

Displays an explanation of the icons.

“Alarm Inform.” button

Provides detailed information about abnormalities.

“Setting by Block” button

Changes the setting of all the groups in the target block simultaneously.

NOTE

- *(*) This function can be used when Control Mode (Run/Stop Only) is in “Disable” mode. If Control Mode (Run/Stop Only) is in “Enable” mode, the Run/Stop operation will be switched by tapping the target.*
- *The screen image may be different from the actual screen.*

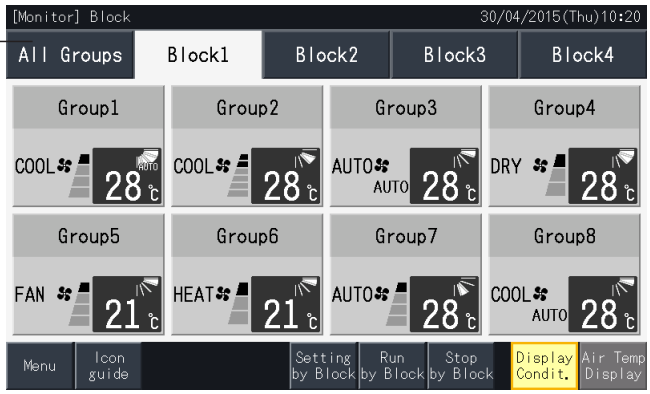
◆ Group and block settings

Display of All Groups

1 Tap “All Groups” on the touchscreen display.

The tab marked with (1), “All Groups”, is not displayed if only one block has been registered.

(1)*



2 All groups are displayed on the touchscreen (all the indoor units connected to the central station are shown). The operation status of each group is indicated by the colour of the group, as shown below:

(2)



Green: Run

Grey: Stop

Red: Abnormal

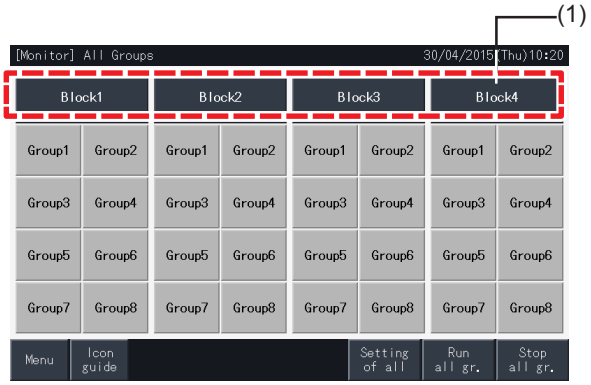
NOTE

- *“All Groups” screen may be different depending on the Control Pattern. The screen on the left corresponds to the display of Pattern A (4 Blocks × 8 Groups), as set by Control Pattern.*
- *The touchscreen display is put to sleep mode automatically when the touchscreen is not operated for a given length of time. Tap the screen to wake up.*

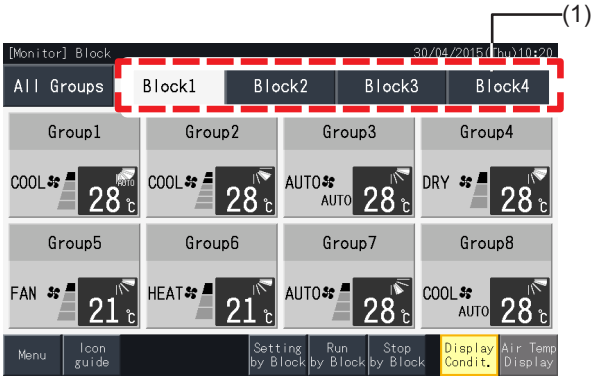
Display of Specified Block

1 Select the target block from the screen of “Monitor (All Groups)” or “Monitor (Block)”.

Monitor (All Groups)



Monitor (Block)

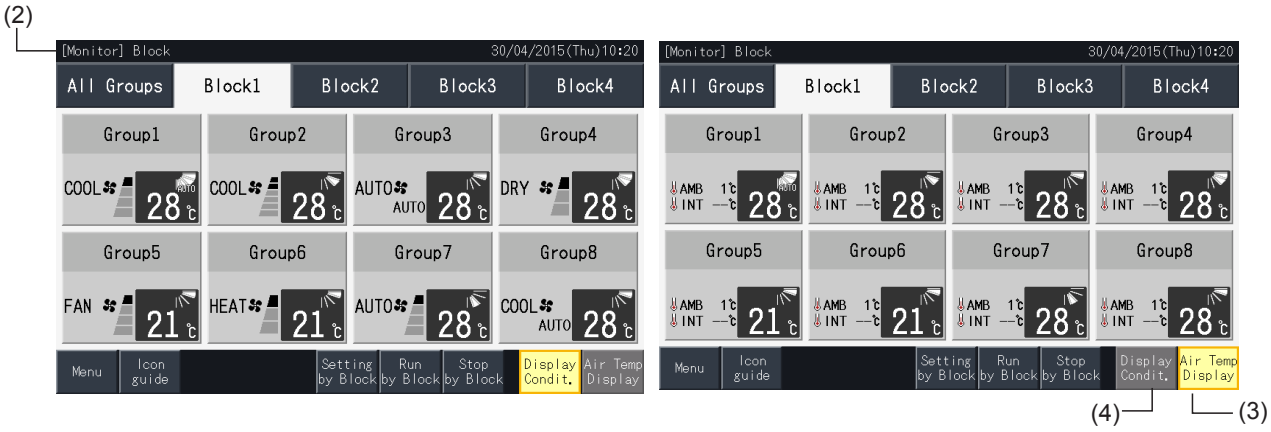


2 The groups in the selected block are displayed on the touchscreen. The operation status of each group is indicated by the colour of the group, as shown below:

Green: Run

Grey: Stop

Red: Abnormal



3 Tap “Air Temp Display” to display the outside air temperature and the inlet temperature.

4 Tap “Display Condit.” to display the condition of the operation.

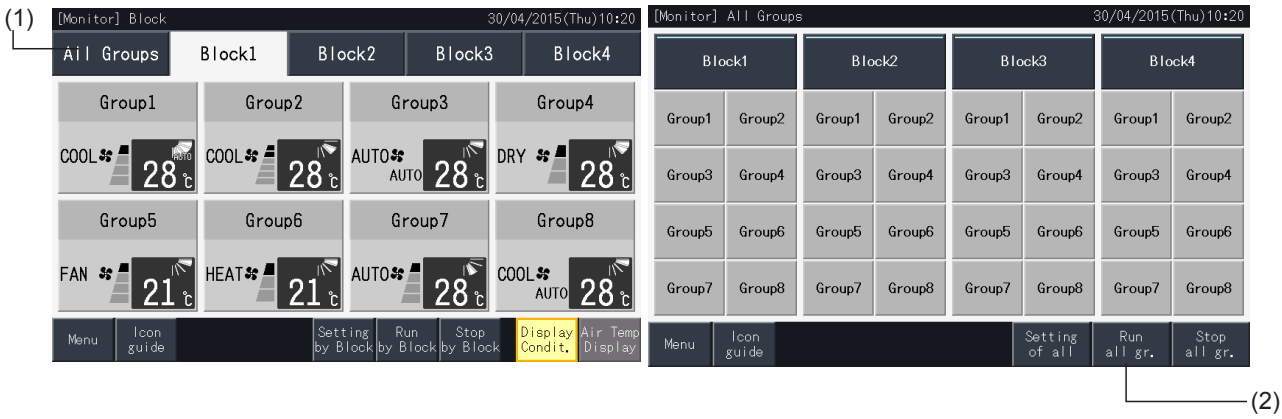
NOTE

- *“Block” screen may be different depending on the Control Pattern. The screen on the left corresponds to the display of Pattern A (4 Blocks × 8 Groups), as set by Control Pattern.*
- *The touchscreen display is put to sleep mode automatically when the touchscreen is not operated for a given length of time. Tap the screen to wake up.*

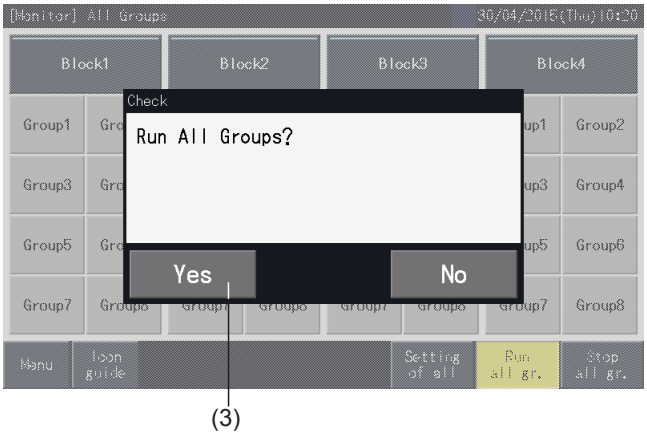
Simultaneous Run/Stop for all groups

1 Tap “All Groups” on the touchscreen display.

2 Tap “Run all gr.” to run all the groups simultaneously.
Tap “Stop all gr.” to stop all the groups simultaneously.



3 The confirmation window is displayed. Tap “Yes” for simultaneous operation of all indoor units connected to the central station. Tap “No” to cancel this command.



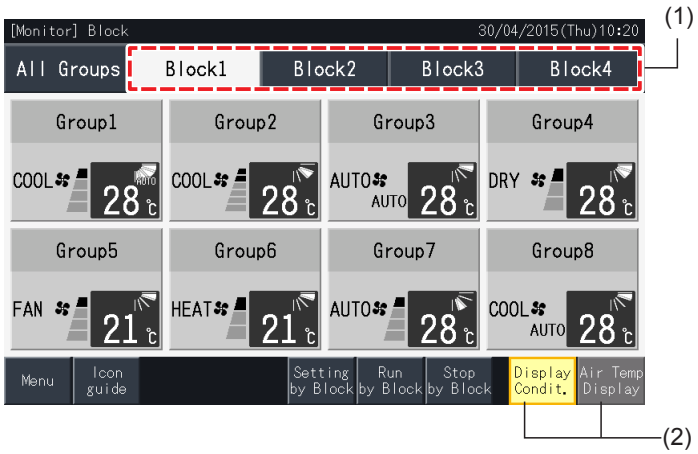
NOTE

The commands to run all the groups and stop all the groups have no effect on the groups specified in “Exception Setting of Run/Stop Operation”.

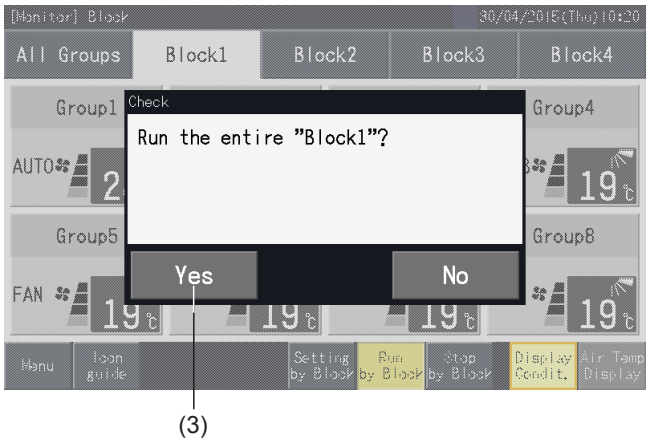
Simultaneous Run/Stop for block

1 Select the target block from the touchscreen display to set simultaneous Run/Stop operation.

2 Tap “Run by Block” to run all the groups in the selected block simultaneously.
Tap “Stop by Block” to stop all the groups in the selected block simultaneously.



3 The confirmation window is displayed. Tap “Yes”. for simultaneous operation of all the groups (all the indoor units) in the selected block connected to the central station. Tap “No” to cancel this command.



NOTE

The commands to run by block and stop by block have no effect on the groups specified in “Exception Setting of Run/Stop Operation”.

Run/Stop for each group

Check the control mode before setting.

The control method is different depending whether the control mode is set to “Normal” or “Run/Stop Only”.
The mode is different depending on the setting of the Control Mode (Run/Stop Only).

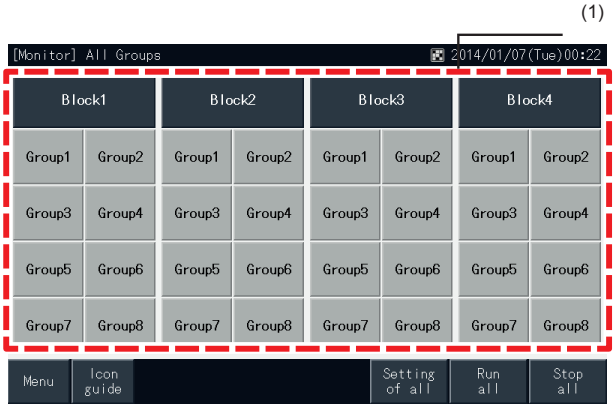
Control Restricted (Run/Stop Only) : Control method when set as “Disable” Refer to section *“Run/Stop operation for each group (Control mode: Normal)”.*

Control Restricted (Run/Stop Only) : Control method when set as “Enable” Refer to section *“Run/Stop operation for each group (Control mode: “Run/Stop only”)”.*

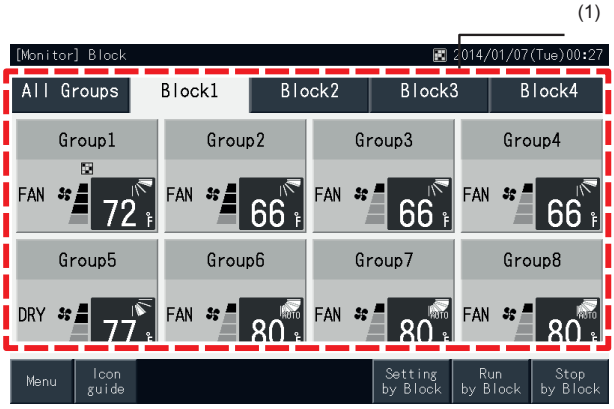
Run/Stop operation for each group (Control mode: Normal)

1 Select the screen of “Monitor 1 (All Groups)” or “Monitor 2 (Block)”. Select the group to set by tapping its group button.

Monitor 1 (All Groups)

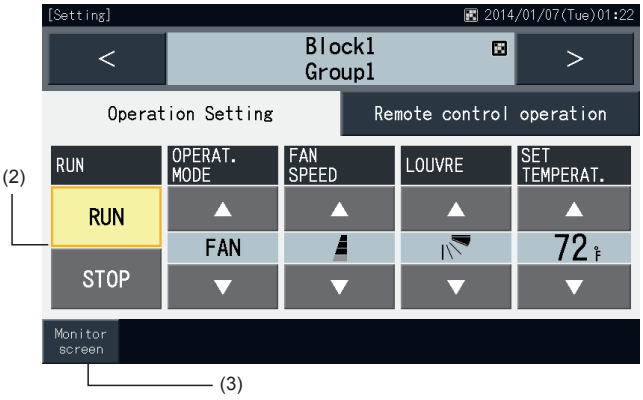


Monitor 2 (Block)



2 The settings of the selected group appear displayed on the touchscreen display. Tap “RUN” or “STOP” to change the operation state.

3 Tap “Monitor screen” to return to the “Monitor” screen.



Run/Stop operation for each group (Control mode: "Run/Stop only")

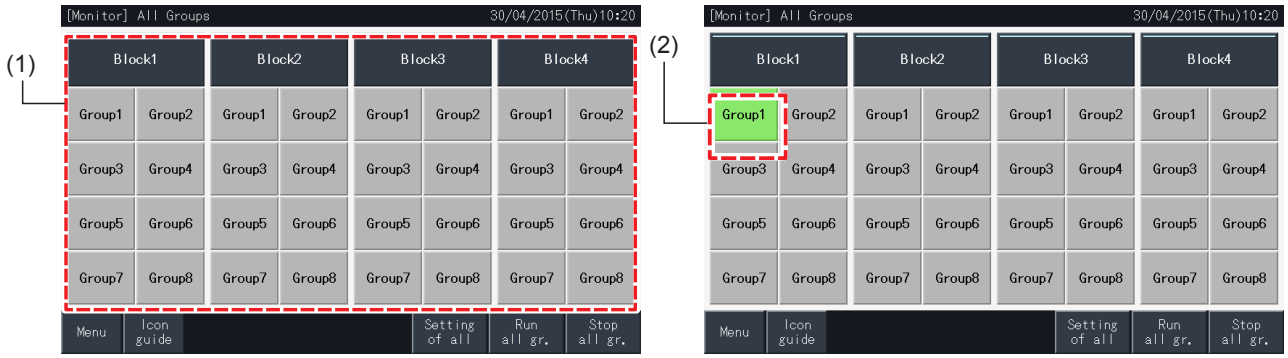
Monitor (All Groups)

1 Select the target group at the "Monitor (All Groups)" screen in "Run/Stop Only" mode.

2 The operation state of the selected group is switched alternatively between Run and Stop when tapping its button.

In this mode, simultaneous Run/Stop operation for all groups is available with the "Run all gr." and "Stop all gr." buttons.

Refer to section *"Simultaneous Run/Stop for All Groups"* for details.



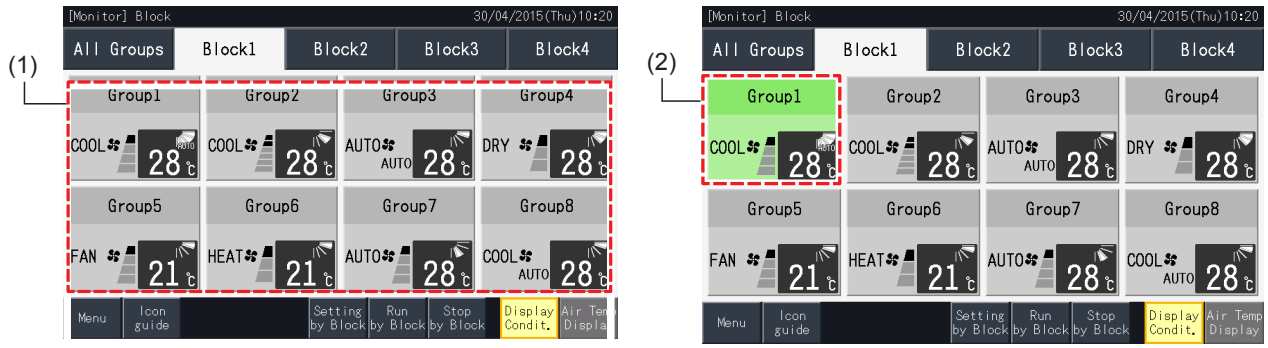
Monitor (Block)

1 Select the target group at the "Monitor (Block)" screen in "Run/Stop Only" mode.

2 The operation state of the selected group is switched alternatively between Run and Stop when tapping its button.

In this mode, simultaneous Run/Stop operation by block is available with the "Run by Block" and "Stop by Block" buttons.

Refer to section *"Simultaneous Run/Stop for block"*.

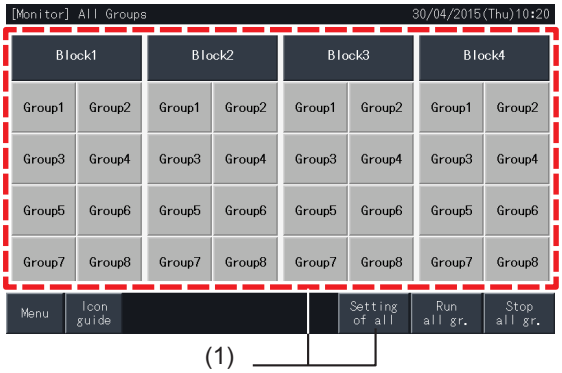


◆ Main parameters settings

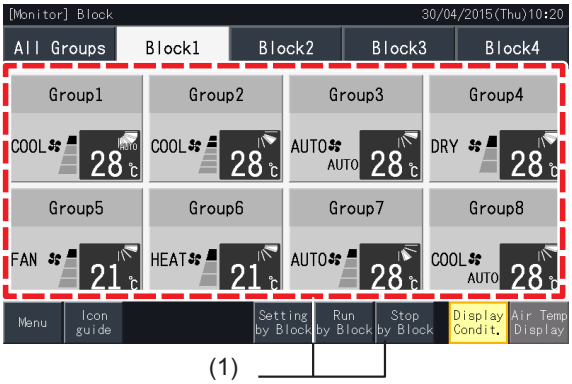
Operation mode

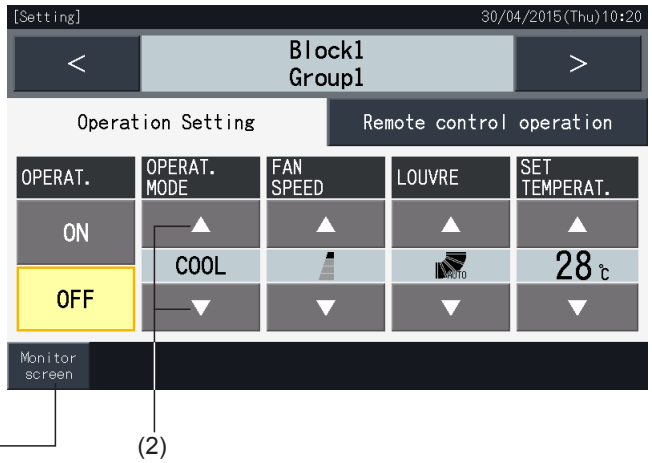
1 Select the target group for the change of operation mode settings at the “Monitor (All Groups)” or “Monitor (Block)” screens. The screen with the settings for the selected group is displayed on the touchscreen.

Monitor (All Groups)

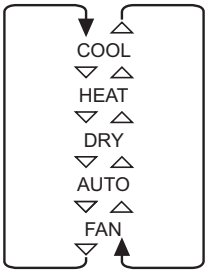


Monitor (Block)





2 By tapping the “△” or “▽” buttons under “Operat. Mode”, operation mode changes alternatively as shown below:



The “AUTO” (Heating/Cooling Automatic Operation) is also included as an option when applicable.

3 Tap “Monitor screen” to return to Monitor screen.

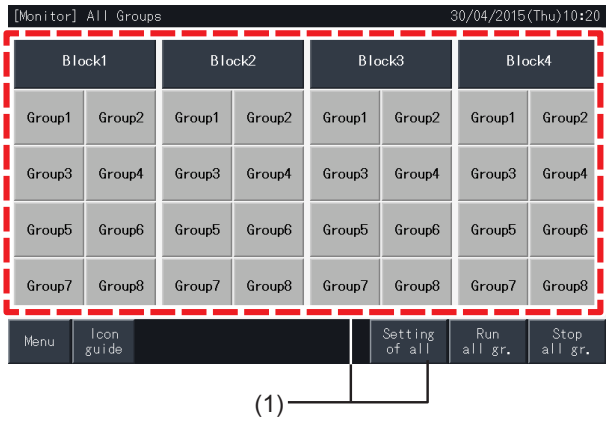
NOTE

- *By tapping “<” or “>” at the detailed setting screen, the operation mode will be switched to another group in the same block.*
- *Control Restricted (Run/Stop Only): In case of “Enable”, each Setting Change is for all Groups or Blocks. Setting Change is not possible for each Group.*
- *Some operation mode cannot be set depending on the type of Air Conditioner Unit. Contact your dealer or go to the inquiry counter of a designated maker for detailed information.*
- *If the settings are mixed when multiple groups are selected, the display will remain blank.*

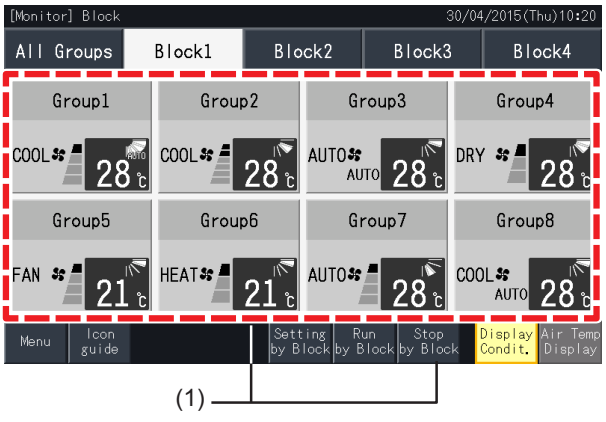
Fan speed

1 Select the target group for the change of fan speed setting at the “Monitor (All Groups)” or “Monitor (Block)” screens. The screen with the settings for the selected group is displayed on the touchscreen.

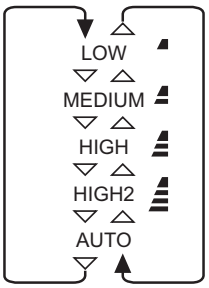
Monitor (All Groups)



Monitor (Block)

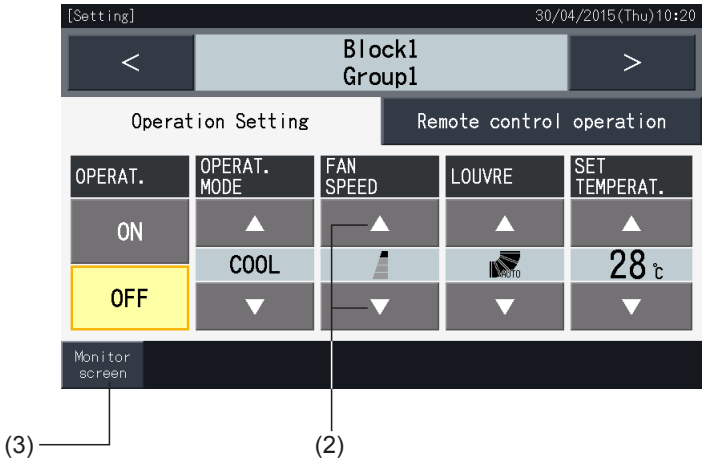


2 By tapping “△“ or “▽” buttons under “Fan Speed”, the fan speed setting changes alternatively as shown below.



* “HIGH2” or “AUTO” may not be indicated depending on the type of air conditioner.

3 Tap “Monitor screen” to return to the “Monitor” screen.



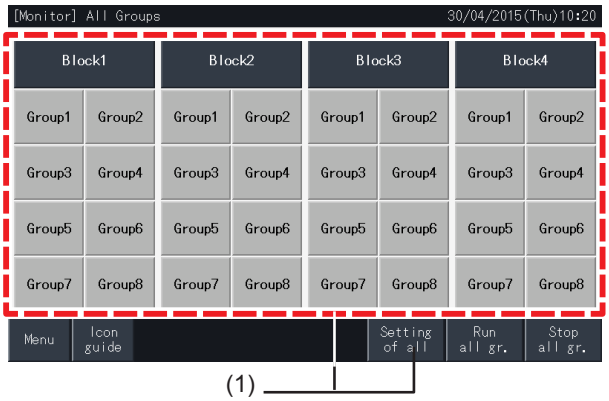
NOTE

- *By tapping “<” or “>” at the detailed setting screen, the fan speed will be switched to another group in the same block.*
- *Control Restricted (Run/Stop Only): In case of “Enable”, each setting change is for all Groups or Blocks.*
- *Setting change is not possible for each group.*
- *Actual fan speed during the dry operation will be “LOW” regardless of the fan speed setting.*
- *The figure above shows an example of a connected air conditioner unit. The fan speed may not be indicated in certain case.*
- *If the settings are mixed when multiple groups are selected, the display will remain blank.*

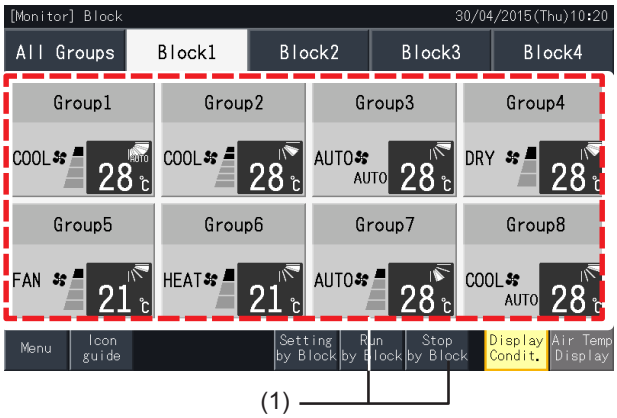
Swing louver direction

1 Select the target group for the change of swing louver direction at the “Monitor (All Groups)” or “Monitor (Block)” screens. The screen with the settings for the selected group is displayed on the touchscreen.

Monitor (All Groups)



Monitor (Block)

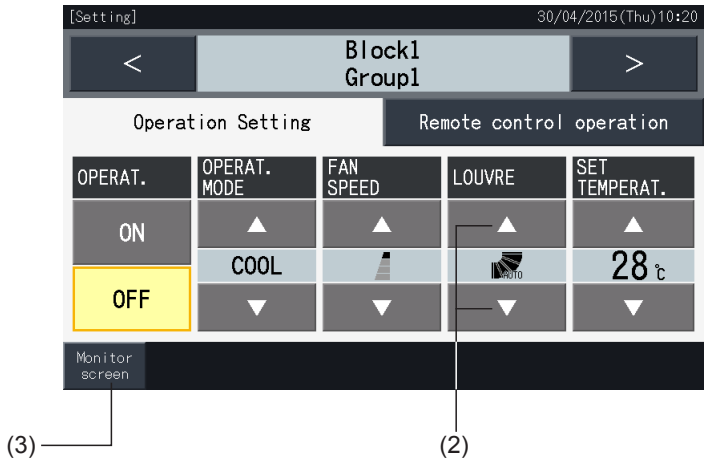


2 By tapping “△“ or “▽” of the “Louver”, the swing louver direction changes alternatively as shown below.

LCD indication	AUTO							
COOL DRY Auto Swing	←		Angle range		→			
HEAT FAN Auto Swing	←			Angle range		→		

AUTO : Auto swing operation is started.

3 Tap “Monitor screen” to return to the “Monitor” screen.



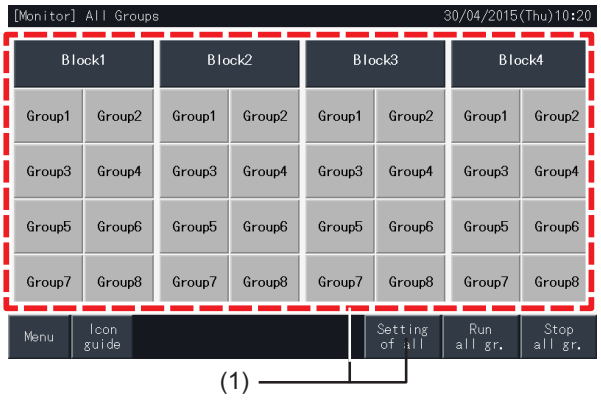
NOTE

- *By tapping “<” or “>” at the detailed setting screen, the swing louver direction will be switched to another group in the same block.*
- *Control Restricted (Run/Stop Only) : In case of “Enable”, each setting change is for all Groups or Blocks.*
- *Setting change is not possible for each Group.*
- *Depending on the model of the air conditioner, the setting may not be possible or may be calibrated automatically.*
- *Louver position on LCD and the actual louver position do not always match during the auto swing operation.*
- *The actual swing louver direction may not stop immediately after the switch is pressed.*
- *If the settings are mixed when multiple groups are selected, the display will remain blank.*

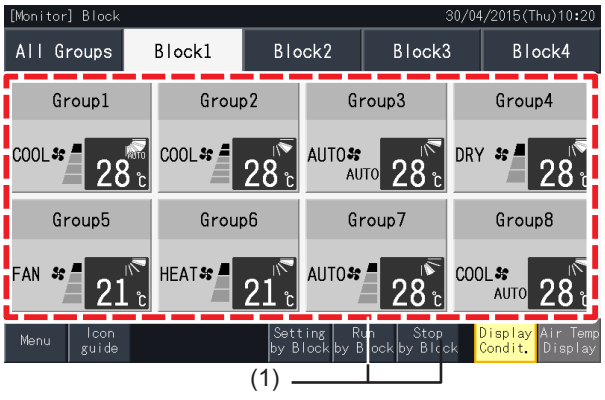
Setting temperature

1 Select the target group for the change of setting temperature at the “Monitor (All Groups)” or “Monitor (Block)” screens. The screen with the settings for the selected group is displayed on the touchscreen.

Monitor (All Groups)

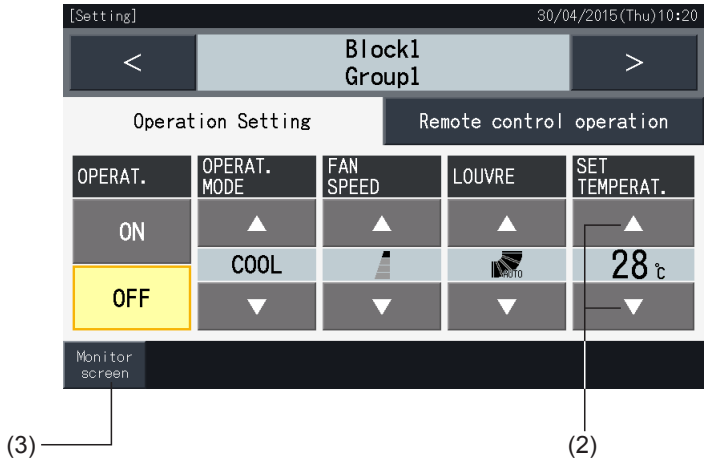


Monitor (Block)



2 By tapping “△”, the temperature is increased by 1ºC. (Max. 30ºC). By tapping “▽”, the temperature is decreased by 1ºC. (Min. 9ºC in cooling, dry and fan operation; Min. 17ºC in heating operation)

3 Tap “Monitor screen” to return to the “Monitor” screen.



NOTE

- *By tapping “<” or “>” at the detailed setting screen, the setting temperature will be switched to another group in the same block.*
- *Control Restricted (Run/Stop Only): In case of “Enable”, each setting change is for all Groups or Blocks.*
- *Setting Change is not possible for each Group.*
- *The figure above shows an example of the setting temperature for a connected air conditioner unit.*
- *The setting temperature range may not be indicated in certain case.*
- *If the settings are mixed when multiple groups are selected, the display will remain blank.*

◆ Permission/prohibition of operation from remote control switch

This function is used for prohibiting the operation from the remote control switch (RCS).

When the remote control switch is set as prohibited (by item / for all Items), the control of the selected item becomes unavailable. The items that can be selected are: Run/Stop, operation mode, fan speed, swing louver and temperature.

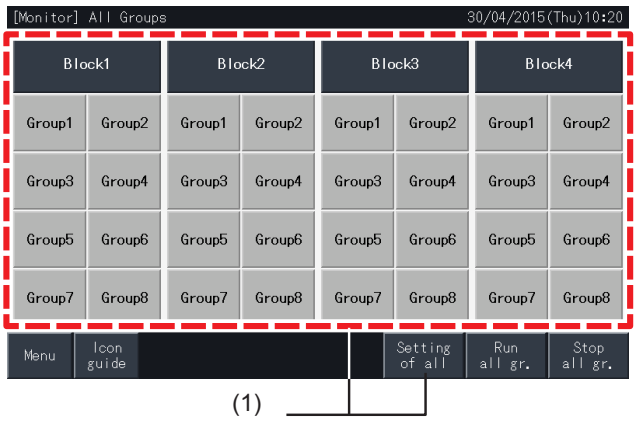
NOTE

Pay attention to the following when applying prohibition by Item to a group:

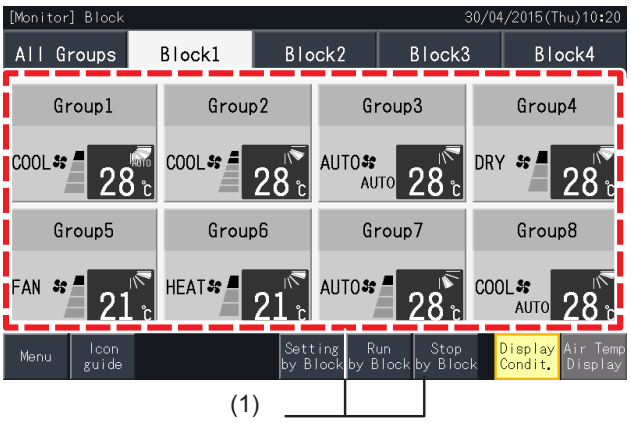
- *When setting "Remote control operation," do not use the function control lock of the remote control switch.*
  - *When using at the same time, "Remote control operation" and control lock functions, "Remote control operation" is prior and the control lock function cannot be set.*
  - *When changing setting from "All prohib." to "All permitt." at "Remote control operation", all the setting for the control lock of the remote control switch will be cancelled.*

1 Select the target group for setting the prohibition of RCS operation at the "Monitor (All Groups)" or "Monitor (Block)" screens. The window for change of the settings of the selected group is then displayed on the touchscreen.

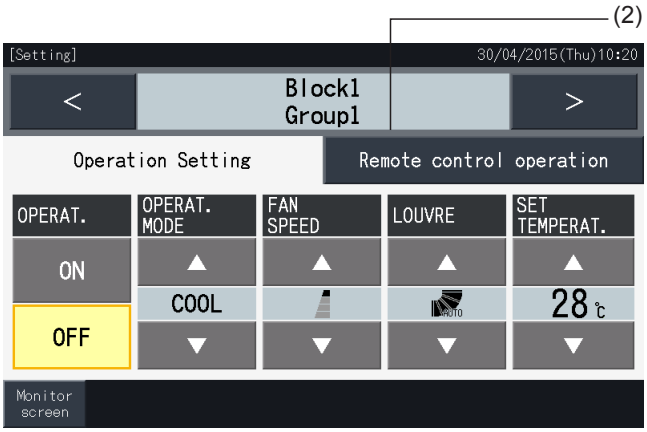
Monitor (All Groups)



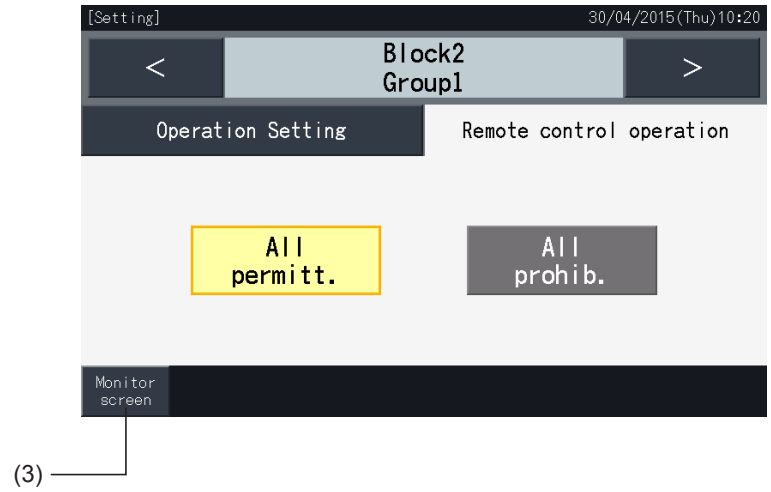
Monitor (Block)



2 Select the "Remote control operation" by tapping on it.



3 Tap “Monitor screen” to return to the “Monitor” screen.



NOTE

- *By tapping “<” or “>” at the detailed setting screen, the remote control switch Permitted/ Prohibited will be switched to another group in the same block.*
- *Control Prohibited (Run/Stop Only) : In case of “Enable”, each setting change is for all Groups or Blocks.*
- *Setting Change is not possible for each Group.*
- *Even if remote control switch is set as “Prohibit.”, it is possible to stop operation with the remote control switch while running. It is also possible to restart operation using the remote control switch. However, the Stop operation will be only used in the case of an emergency. Do not use it in normal operation.*
- *If “Power Supply ON/OFF” (d1, d3) is set, do not set the remote control switch as “Prohibit.”. If the remote control switch is restricted when using “Power Supply ON/OFF”, the function “Control lock” for the remote control switch shall be used.*
- *If a communication error occurs, the remote control switch “STOP” (by item) may be cancelled. In this case, do the setting again.*
- *Do not set the prohibiting operation if multiple centralized controllers are used in the same H-LINK.*
- *Additionally, do not set this by other centralized controller or it may cause malfunction.*

5.2.4.3 Menu

The table below shows the menu items and their functions.

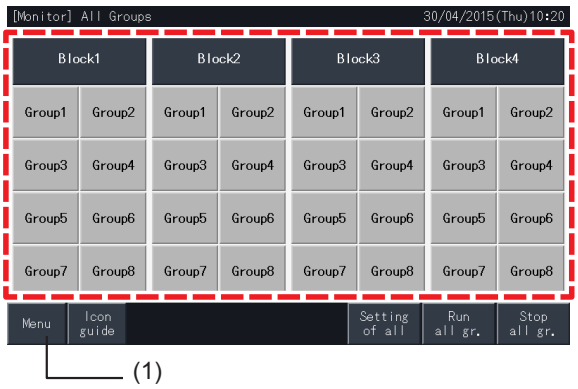
Item		Function
Filter Sign Reset		This function is used for turning off the filter sign display of indoor units in which filter sign has occurred. Regardless of the occurrence of the filter sign, it is also possible to reset the display time of the filter sign in the air conditioner units.
Schedule Setting		This function is used to start and stop the operation of air conditioners at the desired time. It is possible to set the schedule in block and group units.
	Schedule Timer Setting	This function is used for setting the time (by the minute), “Run/Stop” and temperature (19~30ºC). For weekly schedule setting, up to 10 schedule items can be set per day. It is also possible to copy the setting contents.
	Holiday Setting	This function is used for suspending the schedule operation temporarily. Scheduled operation remains suspended when the day is set as holiday. This function is used for setting irregular holidays such as national holidays.
	Schedule Timer ON/OFF Setting	“Schedule Timer OFF Setting” is used for suspending scheduled operation for the target group. Scheduled operation remains suspended when Schedule Timer is OFF. This function is used for long holidays, sudden holidays, national holidays, etc.
Adjusting Remote Control Switch Setting Temperature Range		This function is used for limiting the setting temperature range of the remote control. It is possible to define a minimum setting temperature for cooling and a maximum setting temperature for heating.
Adjusting Date/Time		This function is used for adjusting date and time.
Touchscreen Cleaning		This function is used when cleaning the LCD screen of the central station. The screen returns to “Menu” when it is not tapped for 10 seconds.
Touchscreen Calibration		This function is used for calibrating (correcting) the recognition position of the touchscreen of the control. This function shall be used when there is a continued lack of response to the press of the buttons displayed on the screen.
Group Name Register		This function is used for registering the names of blocks and groups. The maximum length allowed for the name of each block or group is of 16 characters. It is also possible to copy names If a group or block is registered without a name, it is registered as “Group 1” or “Block 1” automatically.
Screen Display Setting		These functions are used for adjusting settings related with the screen display.
	Brightness	This function is used for adjusting the brightness of the touchscreen display.
	Language Setting	This function is used for changing the display language.
	Temperature Unit	This function is used for changing the temperature unit.
Accumulated Operation Time		This function is used for indicating the accumulated operation time of the air conditioner. • The value of accumulated operation time is displayed by month. • The operation time is displayed for 16 months, including the current month. • It is also possible to display “Thermo-ON time” by setting the appropriate controller option.
Contact Information		This function is used for displaying the service contact address and the latest alarm code.
Summer Time Setting		This function is used for setting the summer time operation.

◆ Display menu screen

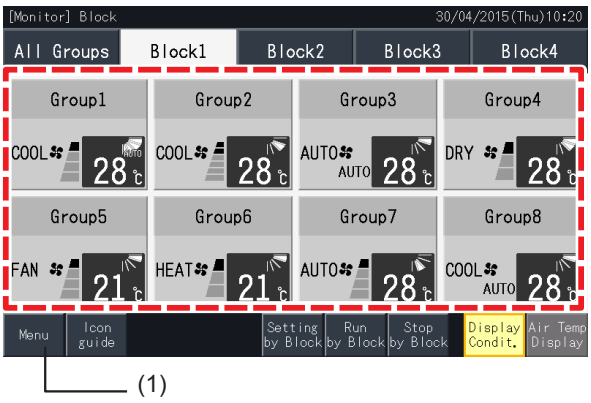
The setting items for the indoor unit and central station are laid out in the menu.

1 Tap “Menu” at the “Monitor (All Groups)” or “Monitor (Block)” screens.

Monitor (All Groups)

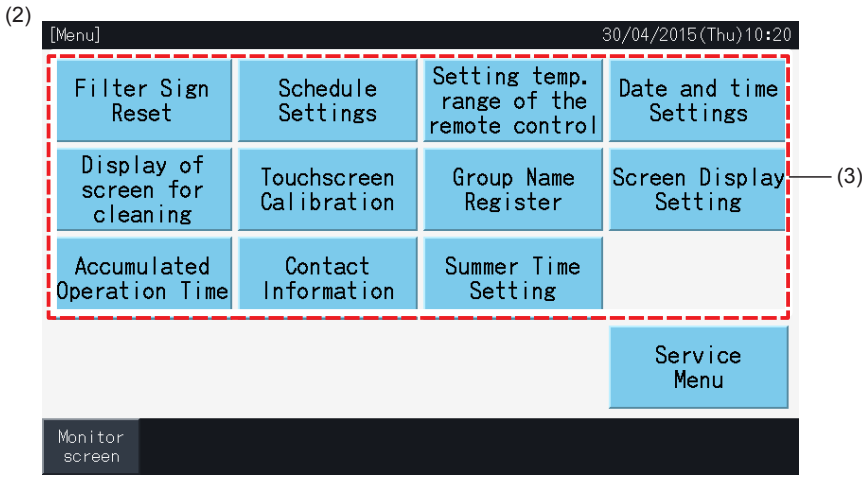


Monitor (Block)

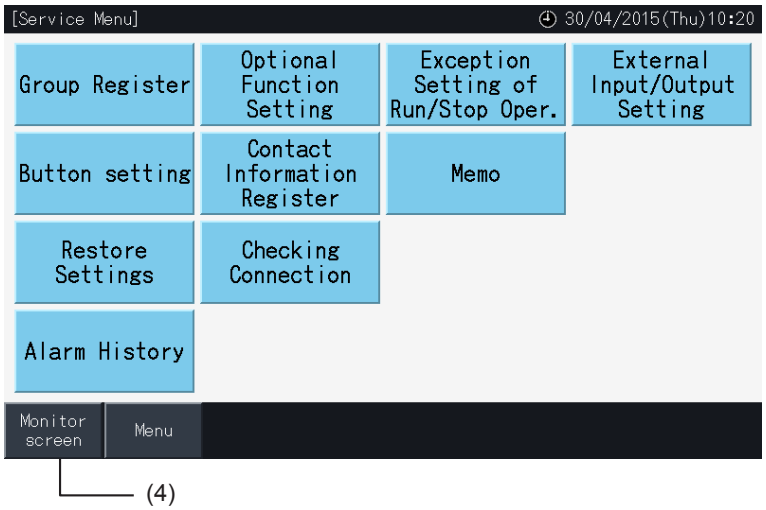


2 The “Menu” screen is displayed.

3 Select the item from the “Menu” screen.



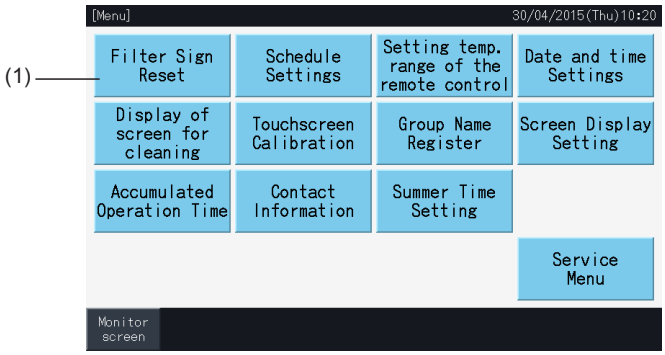
4 Tap “Monitor screen” on the screen to return to the “Monitor” screen.



◆ Filter sign reset

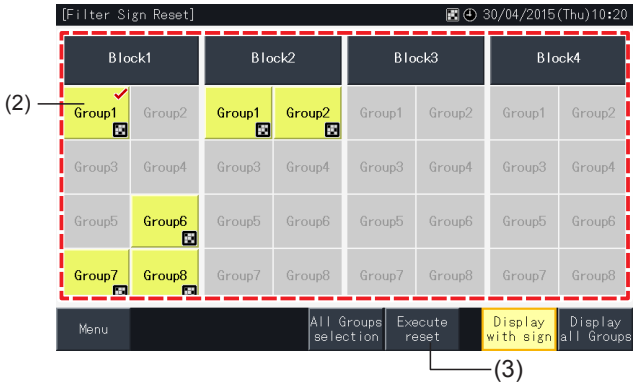
Reset filter sign

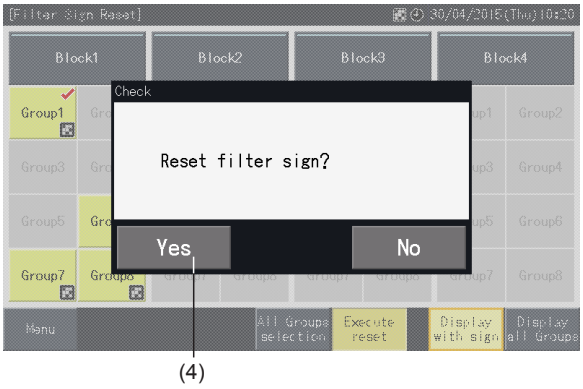
1 Select “Filter Sign Reset” at the “Menu” screen. (This is available only when the filter sign is indicated).



2 Select the target to reset the filter sign.

- Tap “Display with Sign” to indicate only the groups with filter sign.
- The target groups are indicated in yellow.
- When selected, a “ ✔ ” sign appears on the group button.





3 Tap “Execute reset”.

4 Tap “Yes” on the confirmation window, to reset the display of the filter sign and the operation time.

- Tap “No” to return to the “Filter Sign Reset” screen.

5 After resetting filter sign, the button becomes inactive.

6 Tap “Menu” to return to the “Menu” screen.



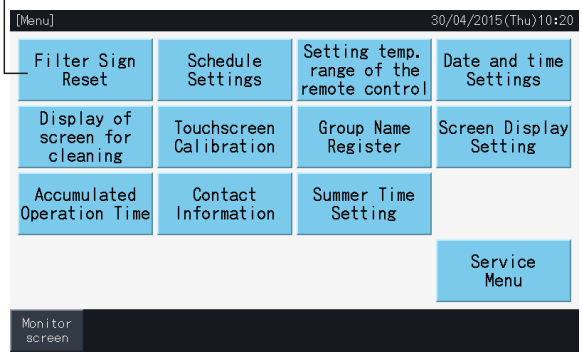
NOTE

- *This screen may be different depending on the control pattern. The screen above displays the pattern A (4 blocks × 8 groups) set by the control pattern.*
- *Filter sign will be indicated if the operating time of the filter reaches the time set.*

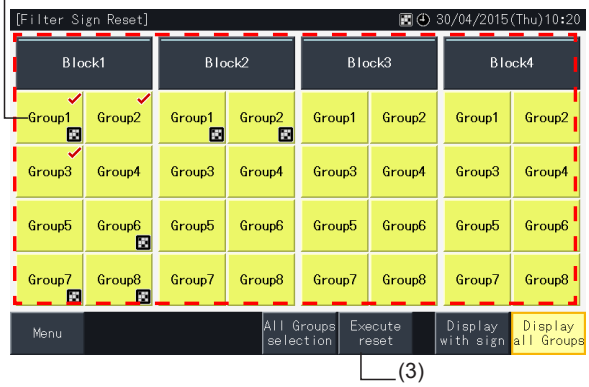
Reset filter operating time

1 Select “Filter Sign Reset” at the “Menu” screen. (This is available only when the filter sign is indicated).

(1)



(2)



(3)

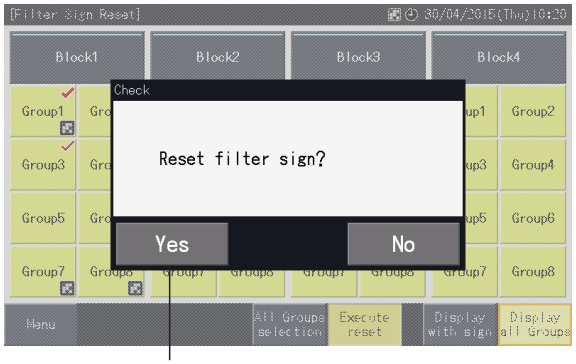
2 Select the target to reset the Filter operating time.

- Tap “Display All Groups” to target all groups.
- The target Groups are indicated in Yellow.
- When selected, the group button will be indicated with a “✔ ” sign.

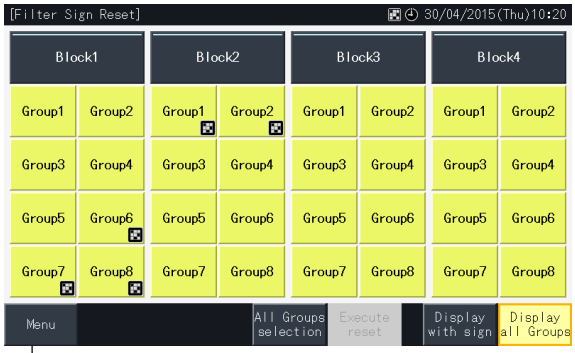
3 Tap “Execute reset”.

4 Tap “Yes” on the confirmation screen.

- The group that indicated Filter Sign will reset Filter Sign and Filter operating time.
- The group that did not indicate Filter Sign will reset Filter operating time.
- Tap “No” to return to Filter Sign Reset screen.



(4)



(5)

5 Tap “Menu” to return to Menu screen.

NOTE

- *This screen may be different depending on the control pattern. The screen above displays the pattern A (4 blocks × 8 groups) set by the control pattern.*
- *Filter sign will be indicated if the operating time of the filter reaches the time set.*

◆ Schedule settings

This function is used for timer operation.

It is possible to set a schedule for a block and for each group.

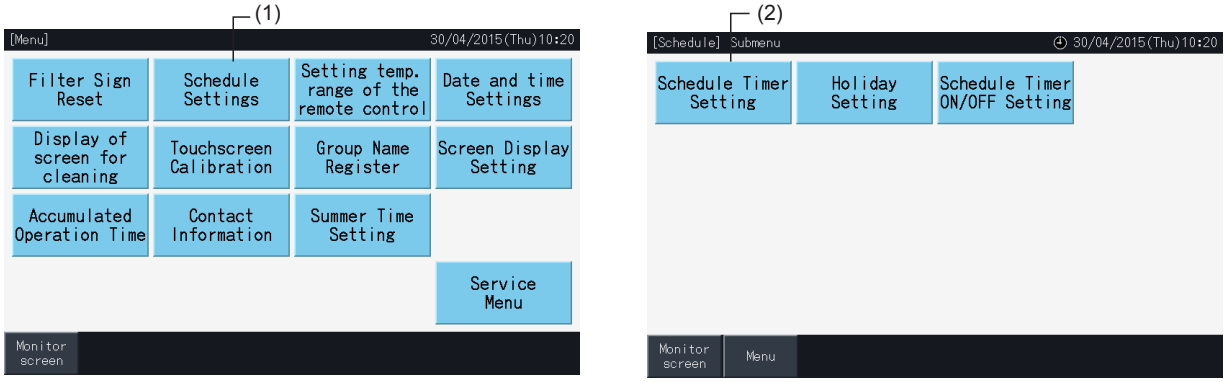
A holiday setting independent of the schedule is also available.

Schedule timer settings

Timer setting for weekly schedule

1 Select “Schedule Settings” at the “Menu” screen.

2 Select “Schedule Timer Setting” at the “Schedule Settings” screen.

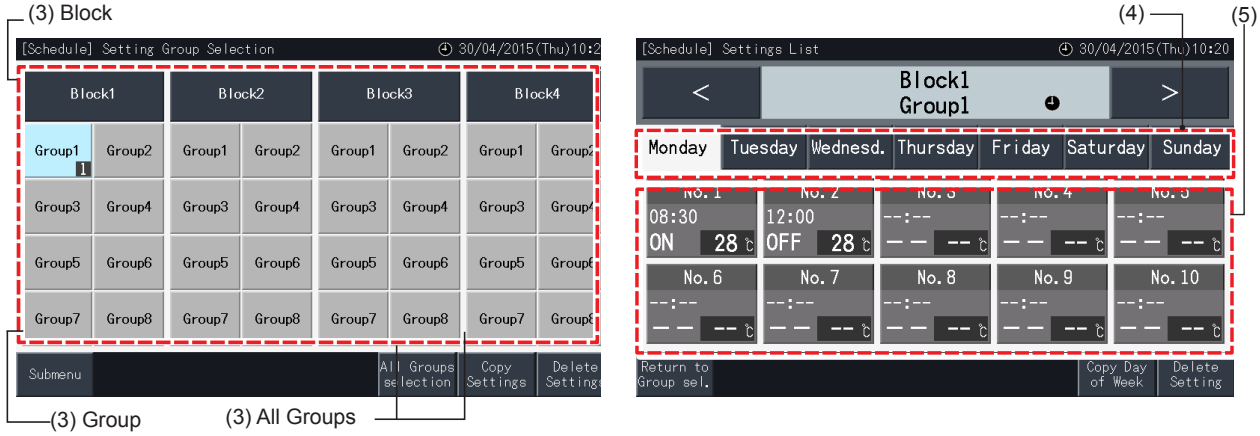


3 Select the target (all groups, block or group).

- The buttons of the groups with schedule setup are shown in blue.
- The buttons of the groups with no schedule setup are shown in grey.

4 Select the target day of the week (from Monday to Sunday).

5 Select the schedule item number (from 1 to 10).



6 Set the schedule time, run/stop operation and temperature parameters.

Select the schedule item No. (1~10) and set the time.

Select “ON”, “OFF” or “Unspe”.

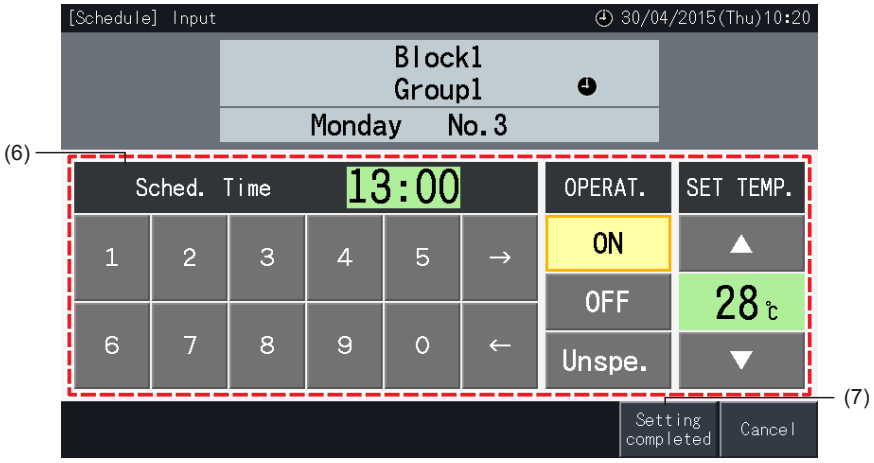
Set the temperature by tapping “Δ” or “∇”.

“- -” is shown in case that there are no settings for the change of a particular parameter, such as operation mode or temperature.

7 Tap “Setting completed” to confirm the setting. If “No” is tapped, the displayed setting contents are discarded, and the screen returns to the schedule setting screen.

Go back to step (5) to continue adding settings for the same day of the week.

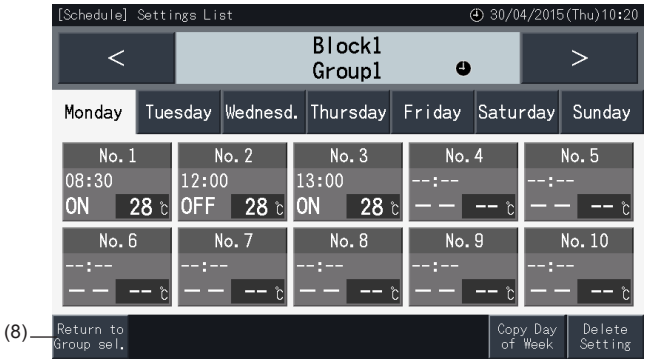
Go back to step (4) to continue adding settings for other days of the week.

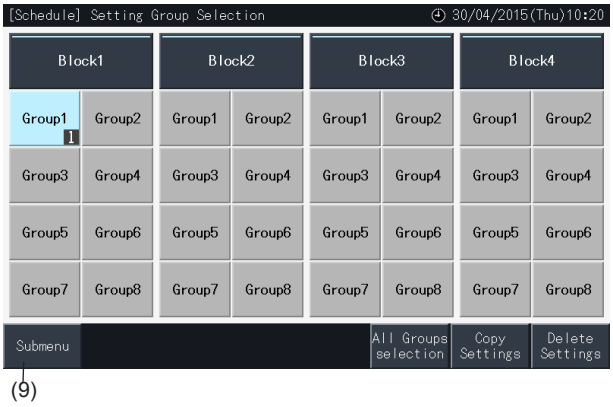


8 Tap “Return to Group Sel.” to set the schedule timer for other groups. The screen returns to “Setting Group Selection” screen.

After setting the schedule, the registered schedule number (1~32) appears indicated in the group button. (The colour of the buttons with schedule changes to blue)

In case that multiple groups share the same setting is the same, the same registered schedule numbers appears in all of them.





9 Tap “Sub Menu” to return to the “Schedule Settings” screen.

NOTE

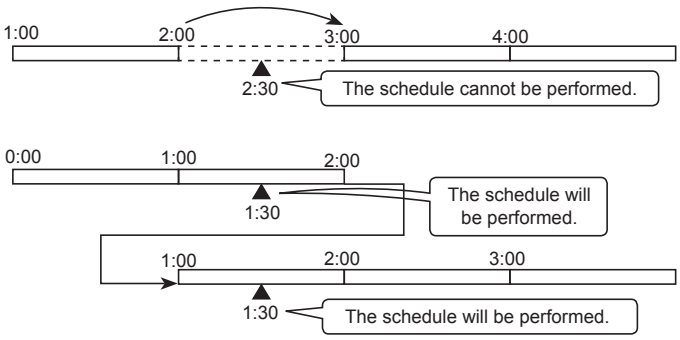
- *Make sure that the time and run/stop are set for the timer setting. (It is not necessary to set the temperature).*
- *The schedule control selection screen may be different depending on the control pattern.*
- *Schedule process when Summer Time is operating.*

  1 Starting Time

  - When starting at 2:00 with a 1 hour shifting time, the schedule set at 2:30 cannot be performed.

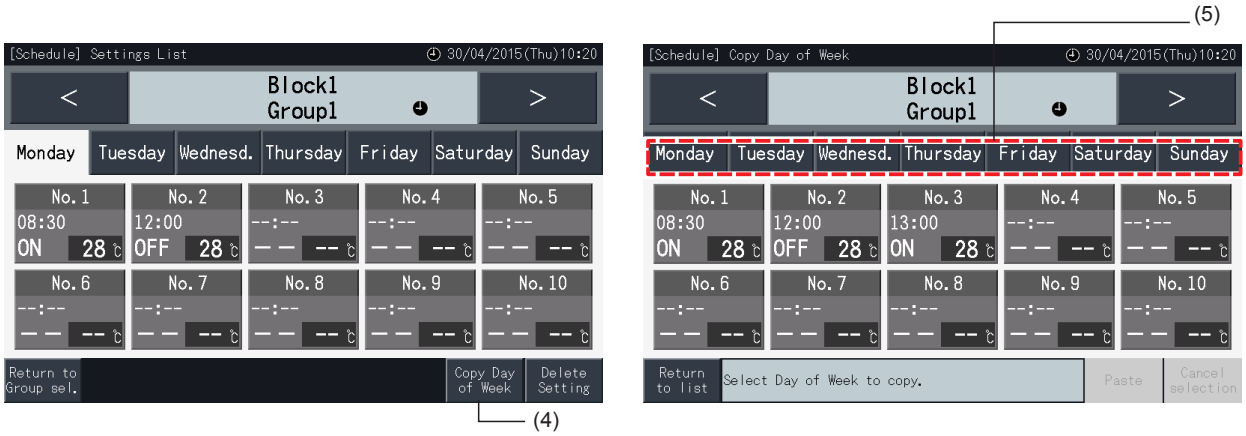
  2 Finishing Time

  - When finishing at 2:00 with a 1 hour shifting time, the schedule set at 0:30 will be performed twice.



Copying schedule setting by days of the week

1 Select “Schedule Settings” at the “Menu” screen.
2 Select “Schedule Timer Setting” at the “Schedule Settings” screen.
3 Select the target (all groups, block or group).
4 Tap “Copy Day of Week”.
5 Select the day of the week to copy. The selected day appears highlighted with an orange frame.



6 Select the tab of the day of the week to paste.

A check mark “✔” is displayed in the selected tabs.

It is possible to select multiple tabs.

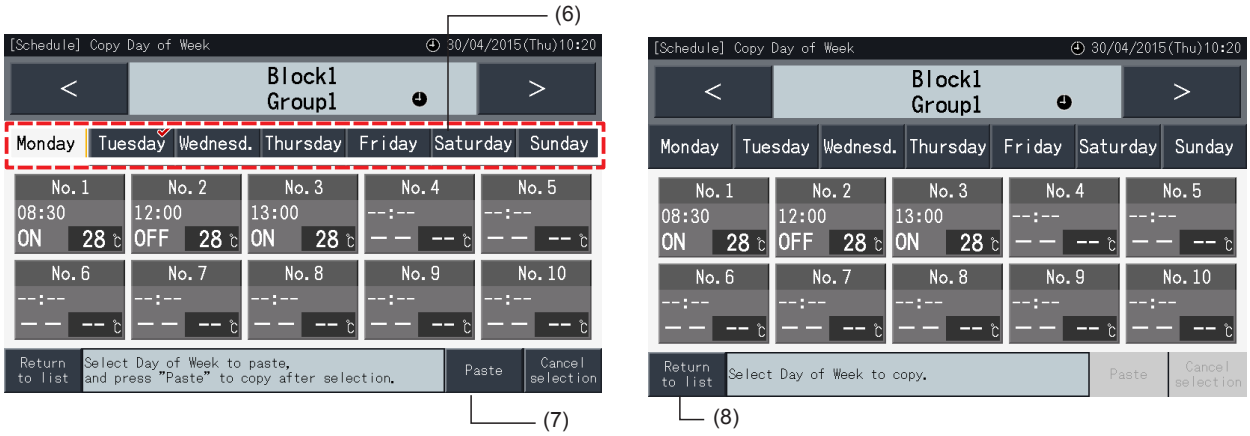
Tap on a selected tab to switch its selection status back to unselected.

7 Tap “Paste” to copy the schedule settings.

Go back to step (5) to copy the schedule of other days of the week.

Proceed to step (8) to finish the settings.

8 Tap “Return to list” to return to the “Settings List” screen.



Copying schedule setting by each group

1 Select “Schedule Settings” at the “Menu” screen.

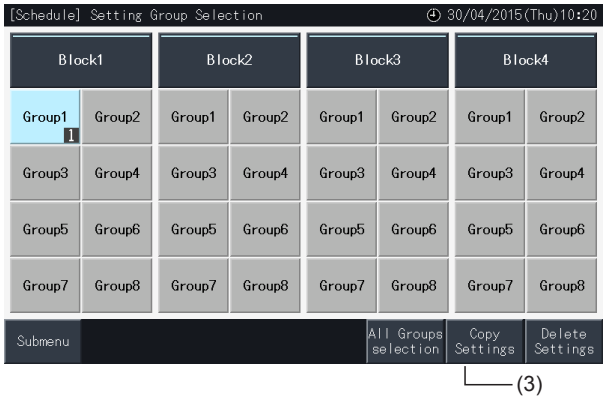
2 Select “Schedule Timer Setting” at the “Schedule Settings” screen.

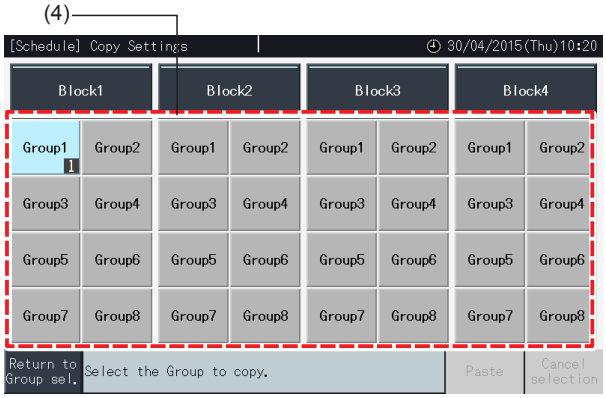
3 Tap “Copy Settings”.

4 Select the group to copy. (A block cannot be selected as a source for copy).

The button of the selected group is highlighted in orange.

Tap the selected group again to cancel the selection. The orange frame disappears then.





5 Select the destination group (or block) to paste.

A check mark “✔” is displayed in the selected buttons.

It is possible to select multiple groups (including blocks) as paste destination.

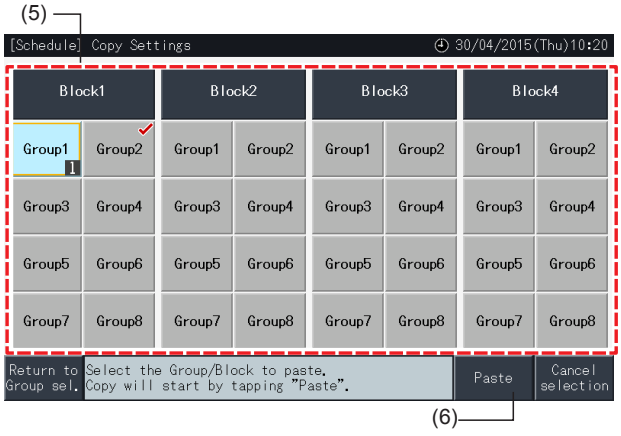
To cancel the selection, press the selected group again. The check mark “✔” disappears then.

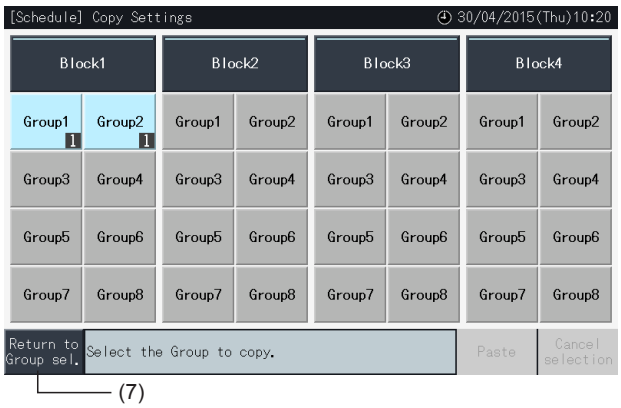
6 Tap “Paste” to copy the schedule settings.

Go back to step (4) to copy the schedule of other groups.

Proceed to step (7) to finish.

7 Tap “Return to Group sel.” to return to the “Group Selection” screen.



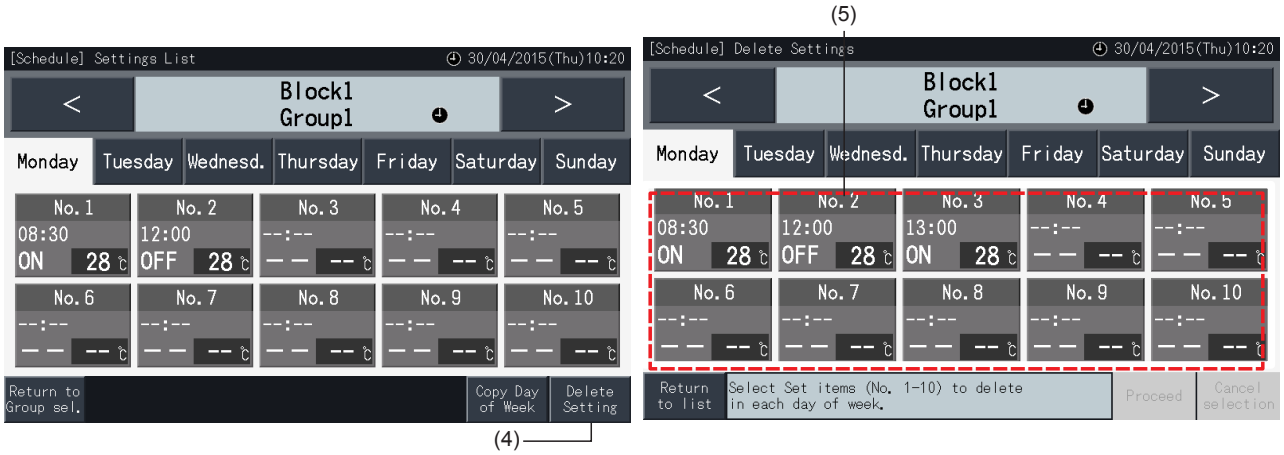


Deleting schedule setting by individual item

1 Select “Schedule Settings” at the “Menu” screen.
2 Select “Schedule Timer Setting” at the “Schedule Setting” screen.
3 Select the target (all groups, block or group).
4 Tap “Delete Settings”.
5 Select a schedule item number to delete that schedule item.

It is possible to select multiple item number, even for different days of the week, when switching the display to each day by tapping its tab.

A check mark “✔” is displayed in the selected item numbers.

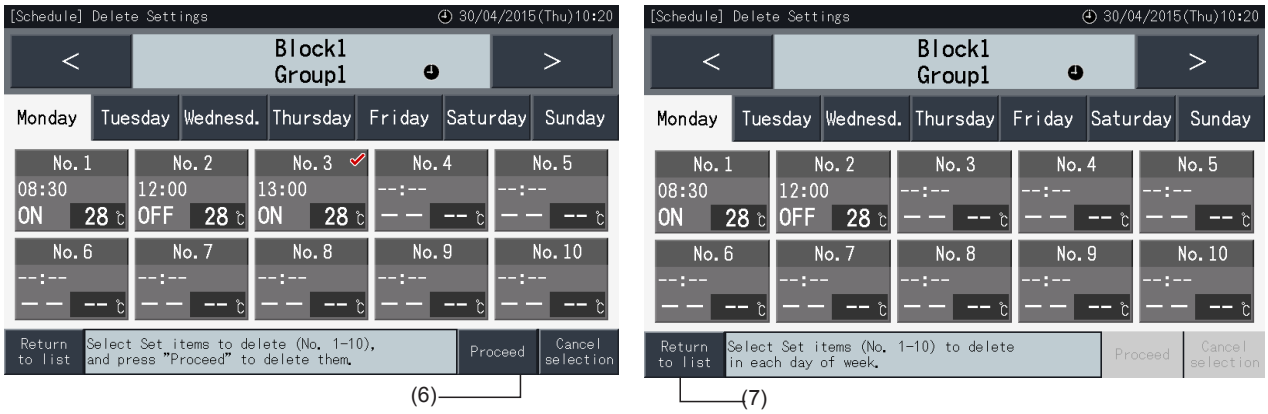


6 Tap “Proceed” to delete the selected schedule item number

Go to step (5) to delete other schedule numbers.

Proceed to step (7) to finish the setting.

7 Tap “Return to list” to return to the “Settings List” screen.



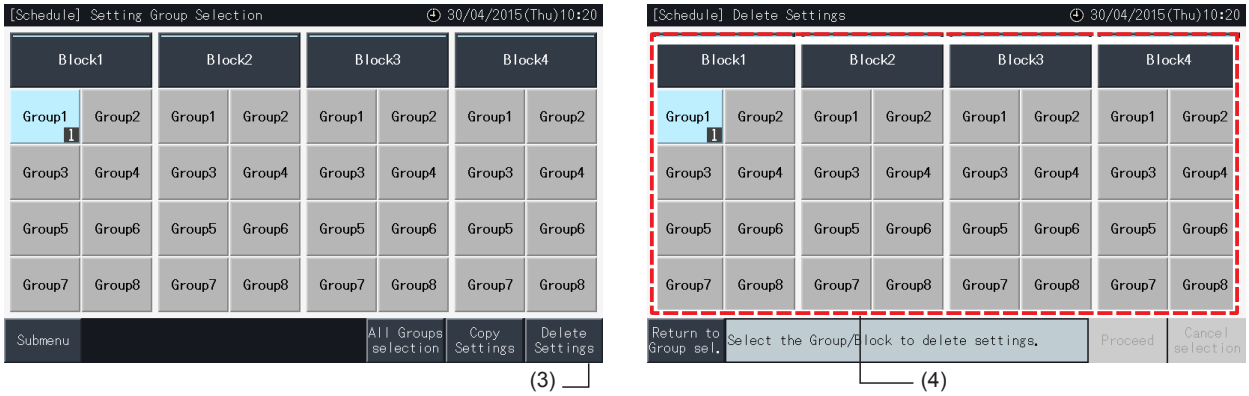
Deleting schedule setting by each group

1 Select “Schedule Settings” at the “Menu” screen.
2 Select “Schedule Timer Setting” at the “Schedule Settings” menu.
3 Tap “Delete Settings”.
4 Select the groups or blocks to delete their settings.

A check mark “✔” is displayed in the selected groups and blocks.

It is possible to select multiple groups and blocks for deletion.

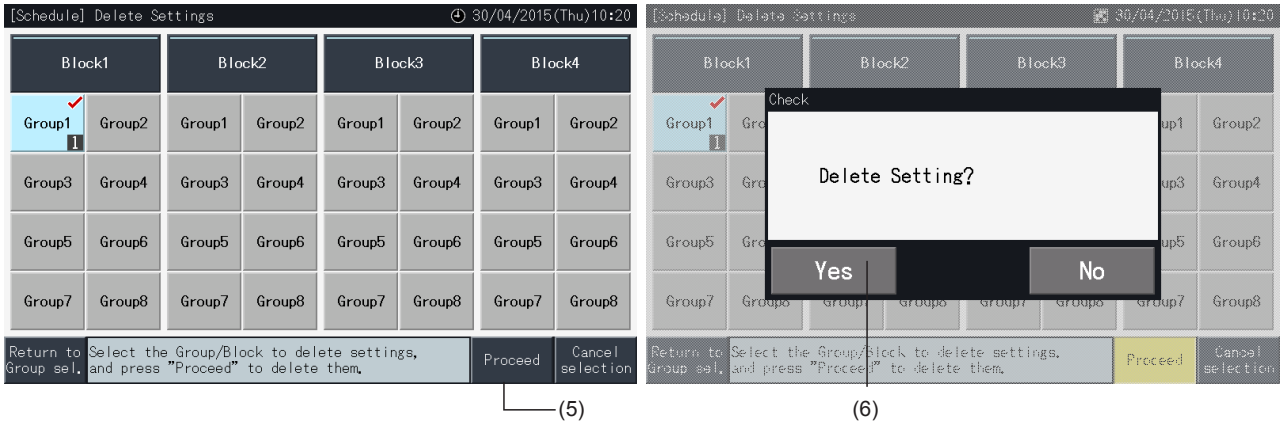
Tap the selected group again to cancel the selection. The check mark “✔” disappears then.



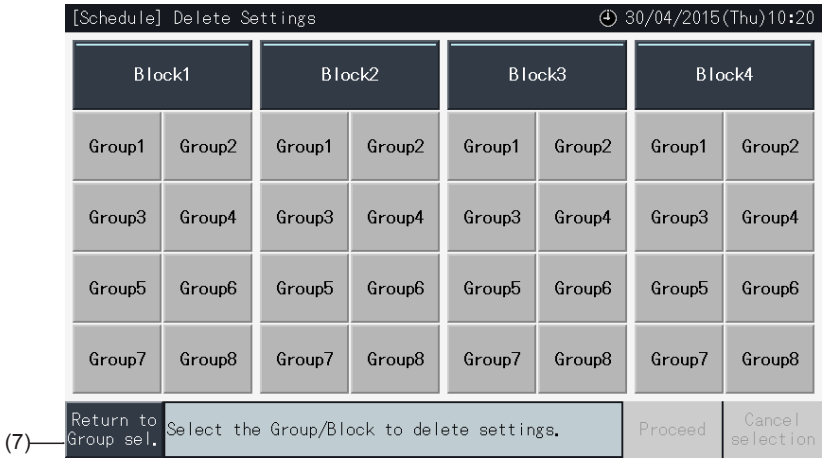
5 Tap “Proceed” to continue to the confirmation window.
6 Tap “Yes” at the confirmation window to delete the schedule settings.

Go back to step (4) to delete the schedule of other groups.

Proceed to step (7) to finish.



7 Tap “Return to Group sel.” to return to the “Group Selection” screen.



Holiday setting for suspending operation

1 Select “Schedule Settings” at the “Menu” screen.

2 Select “Holiday Setting” at the “Schedule Settings” screen.



3 Select the target (all groups, block or group). The calendar for the selection is shown.

The buttons of the groups with holiday setup are shown in blue.

The buttons of the groups with no holiday setup are shown in grey.

NOTE

“Holiday” means that operation is suspended for the entire day.

4 Set the date to suspend the scheduled operation.

Browse the calendar forth and back by tapping “<” or “>”.

By tapping on a date in the calendar, it is set as “Holiday” and marked with “▢”. The “Holiday” setting is cancelled by tapping on the same date again.

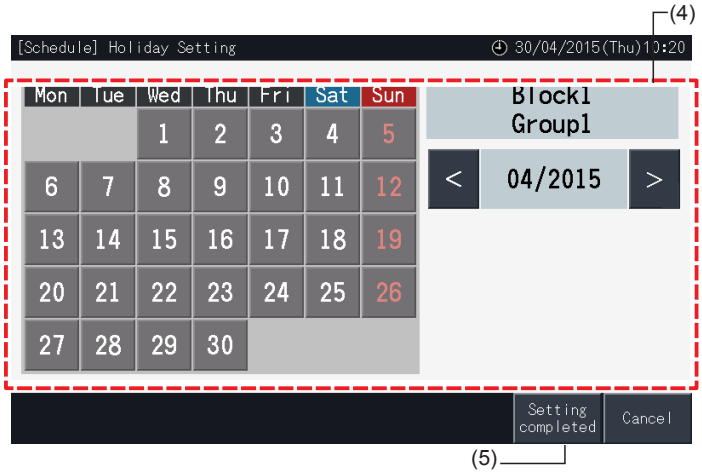
Holiday setting is disabled for days before the current day.

The days with holiday setting are marked with “▢”.

When “All Groups” or “Block” have been selected, the “◪” mark indicates those days when there are groups with holiday settings mixed with groups with no holiday settings.

5 Tap “Setting Completed” to confirm the contents of settings and return to the “Holiday Setting” selection screen.

6 Tap “Submenu” at “Holiday setting” selection screen to return to the “Schedule settings” screen.

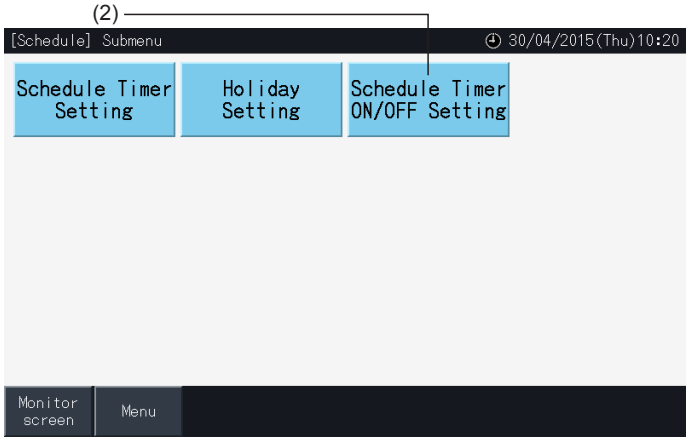


Schedule timer ON/OFF setting

1 Select “Schedule Settings” at the “Menu” screen.

2 Select “Schedule Timer ON/OFF Setting” at the “Schedule Settings” screen.

The screen changes to “Schedule Timer ON/OFF Setting”. The initial setting is “ON”, as indicated with the “” mark.

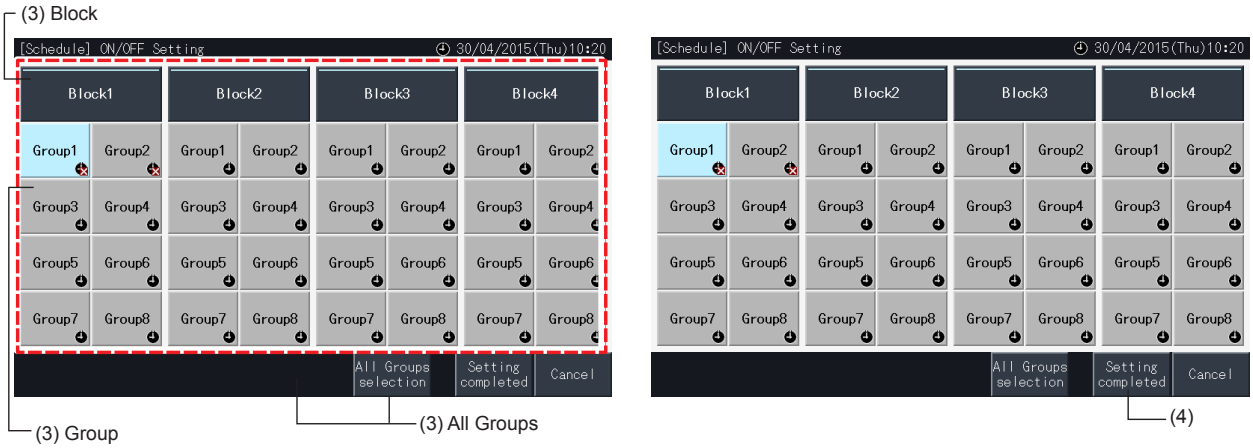


3 Select the target (all groups, blocks or groups).

By tapping the button of all groups, blocks or groups, the setting changes to “OFF”, as indicated with the “” mark.

- The buttons of the groups with schedule timer settings are shown in blue.
- The buttons of the groups with no schedule timer settings are shown in grey.
- Schedule is turned ON:
  Schedule is turned OFF:

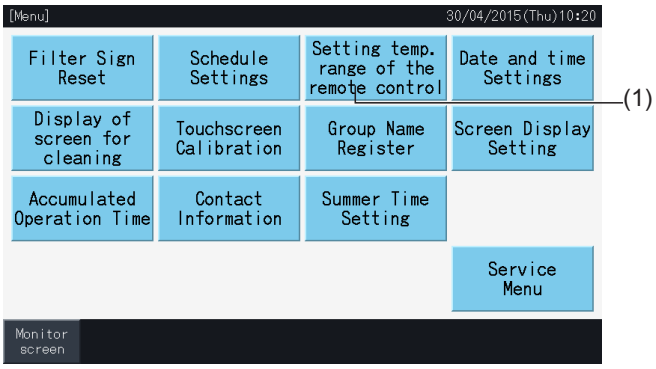
4 Tap “Setting Completed” to confirm the content of the settings and return to the “Schedule settings” screen.



◆ Adjustment of the setting temperature range of the remote control switch

1 Select “Setting temp. range of the remote control” at the “Menu” screen.*

* Selection is not possible in case that the connected air conditioners do not support this function.

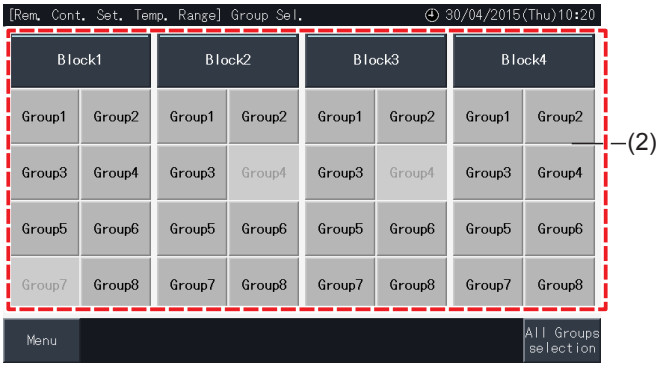


2 Select the target for setting of temperature range. (All Groups/Block/Group)*

- The buttons of the groups with temperature range settings are shown in blue.
- The buttons of the groups in which temperature range setting is not available are shown in grey.
- The buttons of the groups with no temperature range settings remain inactive.
- Do not apply settings in groups using a wireless receive kit, since it is possible to set temperatures outside of the setting range from a wireless remote control switch.

The following cannot be selected:

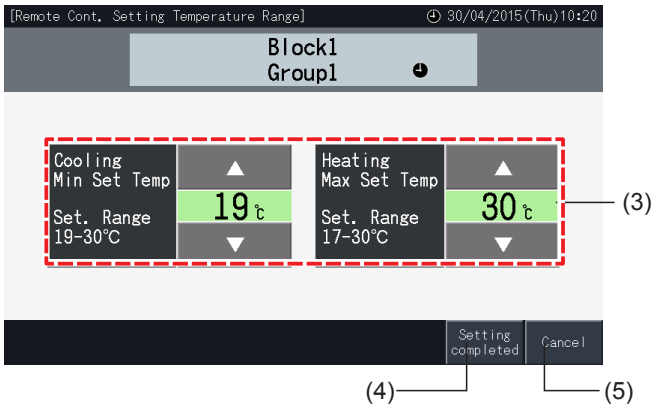
- Groups without a remote control switch
- Groups in which the representative remote control switch group is not a standard unit supporting H-LINK II (setting temperature range is from 19 to 30 degrees for cooling, and from 17 to 30 degrees for heating).



3 Tap “△” or “▽” to set the minimum setting temperature for cooling and/or the maximum temperature for heating.

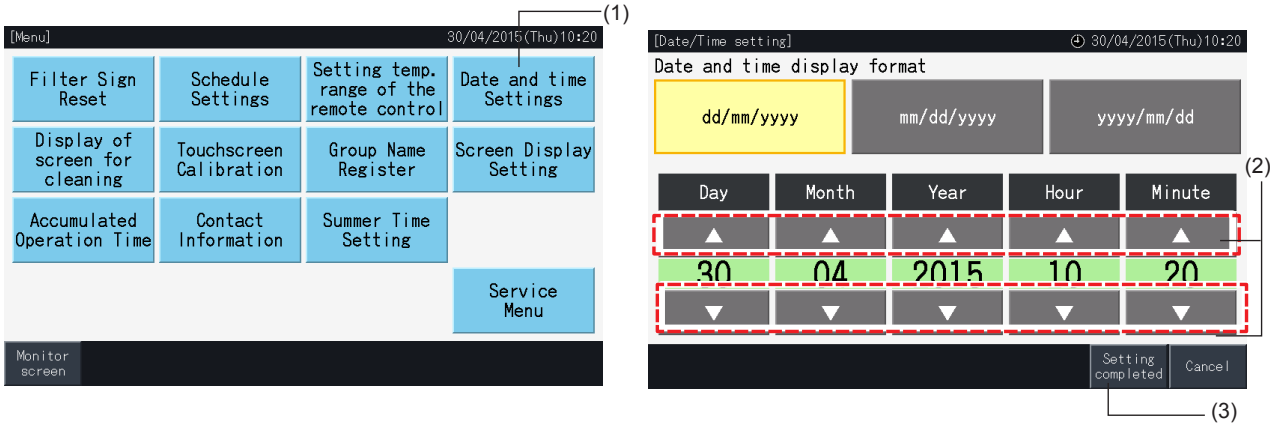
4 Tap “Setting completed” to confirm the content of settings and to return to the selection screen.

5 Tap “No” to discard the displayed settings and return to the selection screen.



◆ Date and time setings

1 Select “Date and time Settings” at the “Menu” screen.
2 Set the display in order of “Year”, “Month” and “Day”.
3 Tap or press-and-hold the “△” or “▽” buttons for each field to adjust the date and time.
4 Tap “Setting completed” to return to the “Menu” screen.

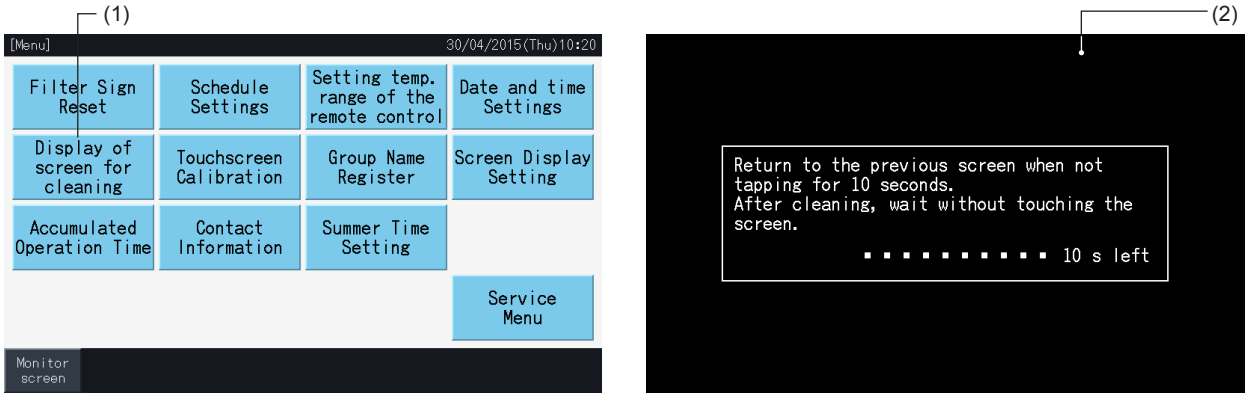


NOTE

- *The clock can keep working for approximately 10 days after an electric power failure thanks to the backup function of the central station. It may be necessary to set the date and time again after a longer electric power failure.*
- *It is recommended to adjust the clock periodically. (Clock accuracy: ~70 s/month)*

◆ Display of screen cleaning

1 Select “Display of screen for cleaning” at the “Menu” screen.
2 The display is changed to the screen shown in figure (2). The screen becomes deactivated for cleaning. The display returns to the “Menu” screen when the touchscreen is not touched for 10 seconds.

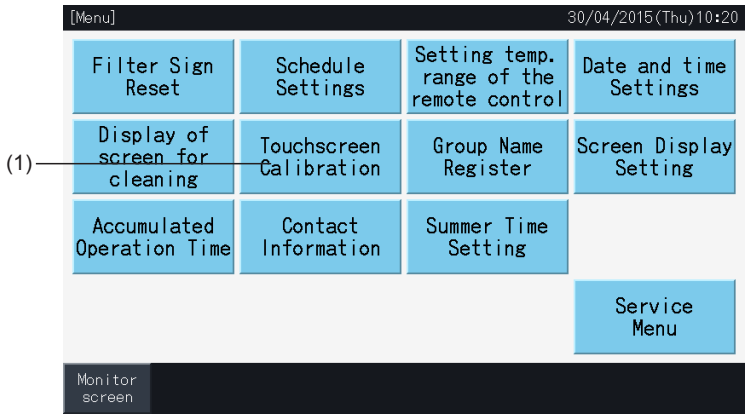


NOTE

- *Clean and wipe the LCD screen with a dry soft cloth.*
- *Use diluted neutral detergent to remove oil and fat such as fingerprint marks from the touchscreen. Wring water out to dry the cloth before cleaning. After that, wipe the LCD screen again with a dry soft cloth.*
- *Do not use benzine, thinner or surface active agents in order to protect the touchscreen and its case from deformation or deterioration.*

◆ Touchscreen calibration

1 Select “Touchscreen Calibration” at the “Menu” screen.

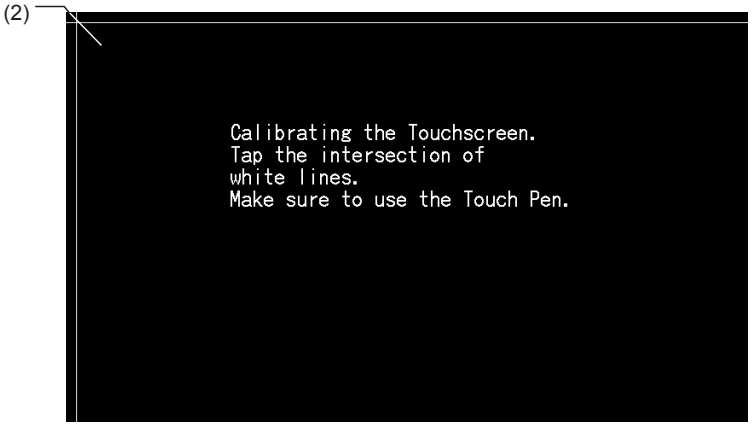


2 Calibrating touchscreen

Tap the intersections of white lines in order, as prompted on the screen.

After that, the display changes to the screen shown in figure (3).

If the intersections of white lines are not recognized normally, the message “Calibration is cancelled” is displayed on the screen. And then, and the display returns automatically to the “Monitor (All Groups)” or “Monitor (Block)” screens, without calibrating.

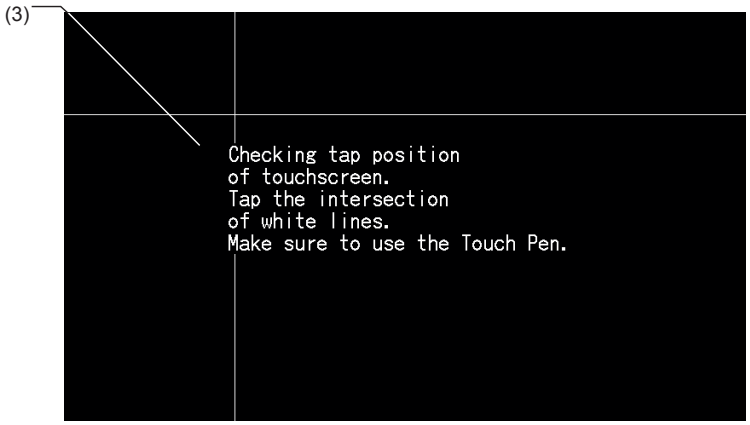


3 “Checking tap position of touchscreen”

Touch the intersections of white lines in order, as prompted on the screen.

White dots appear on the screen when tapping in positions other than the intersections of white lines.

When every intersection of white lines has been recognized normally, the display returns automatically to the “Monitor (All Groups)” or “Monitor (Block)” screens.

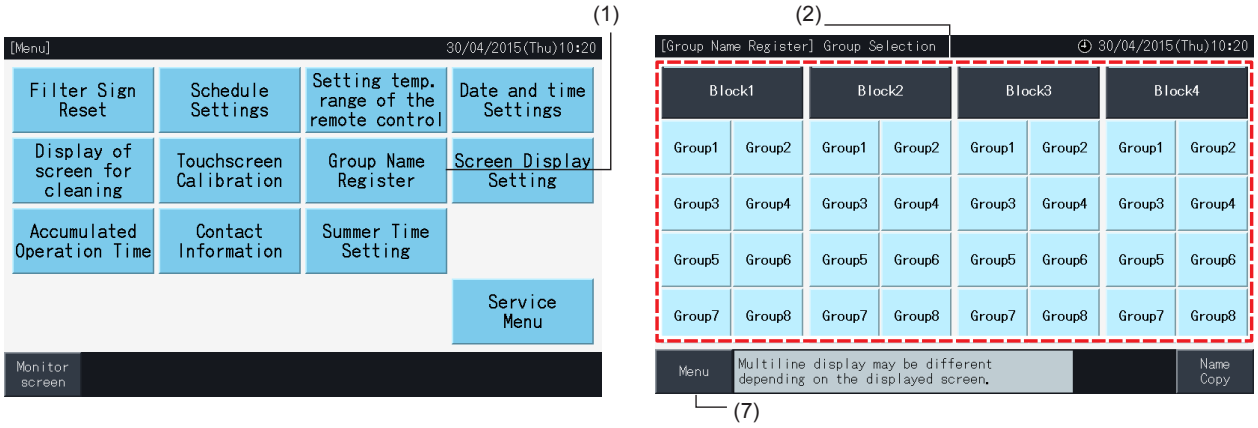


◆ Registration of names of groups and blocks

Group name register

1 Select “Group Name Register” at the “Menu” screen.

2 Select the target (block or group) to register its name.



3 The display changes to the text input screen.

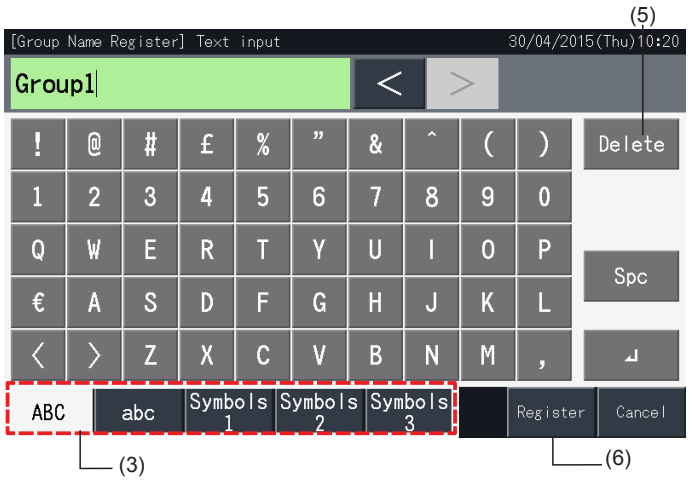
It is possible to choose between upper case, lower case and symbol keyboards.

4 Enter the name of the group or block.

5 Tap “Delete” to delete the character to the left of the current position of the cursor.

6 Tap “Register” to confirm the introduced name and return to the selection screen (2).

7 Tap “Menu” at the selection screen (2) to return to the “Menu” screen, after having registered all the group and block names.



NOTE

- *The names of groups and blocks may consist of a maximum of 16 characters. When the display of group and block names is restricted to 8 characters per line, the 9th character appears at the beginning of the second line.*
- *The layout of the “Name Register” selection screen may be different depending on the control pattern.*
- *The heading will be only displayed in 1 line, even if a new line is entered to display the title of the Group (Block).*
- *The title of the Group (Block) cannot be registered as blank. If it is left blank and “Register” is selected, the title of the factory default will be displayed.*

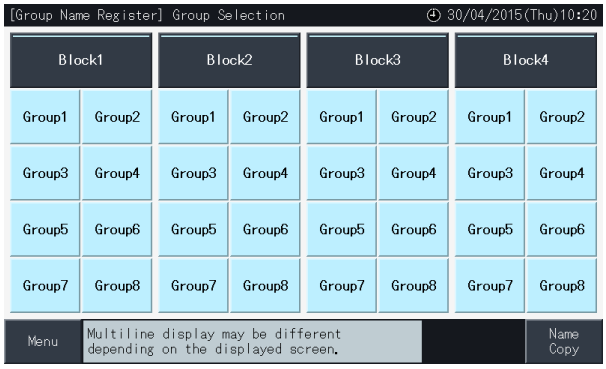
Copy of group or block name

1 Select “Group Name Register” at the “Menu” screen.

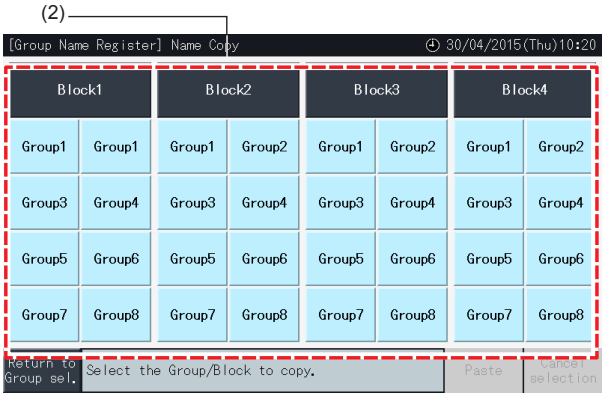
2 Select the source group or block to copy.

The button of the selected group or block appears highlighted with an orange frame.

Press the button of the selected group or block again to cancel the selection. The orange frame disappears then.



(2)



3 Select the destination group or block to paste.

It is possible to select multiple groups or blocks for destination.

The buttons of the selected groups or blocks are indicated with a “✔” check mark.

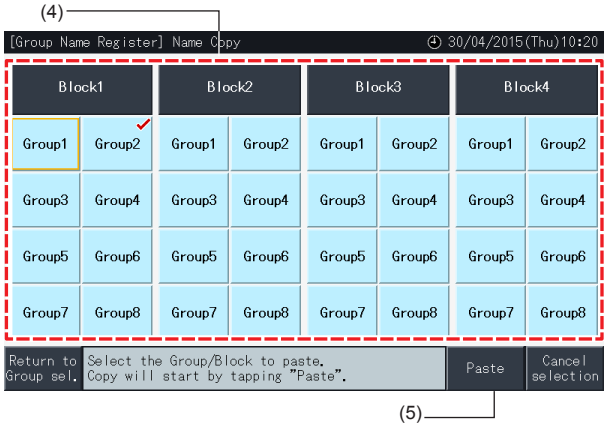
To cancel the selection, press the button of the selected group or block again. The “✔” check mark disappears then.

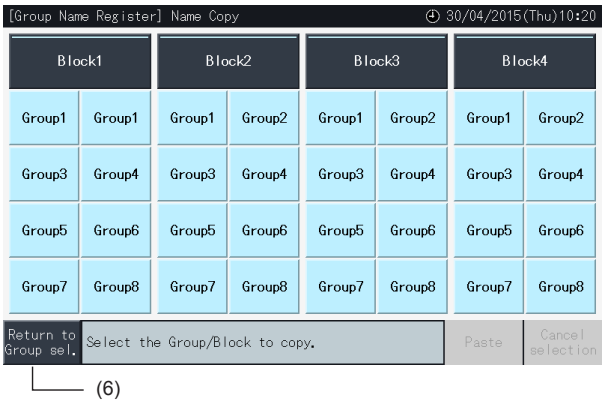
4 Tap “Paste” to copy the name of the group or block to the selected destination.

Go back to step (3) to copy the name of other groups or blocks.

Proceed to step (6) to finish.

5 Tap “Return to Group sel.” to return to the “Group Name Register” selection screen.

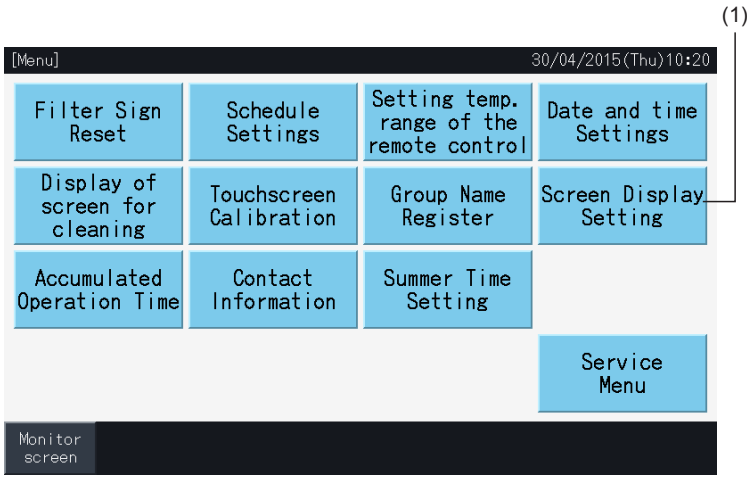




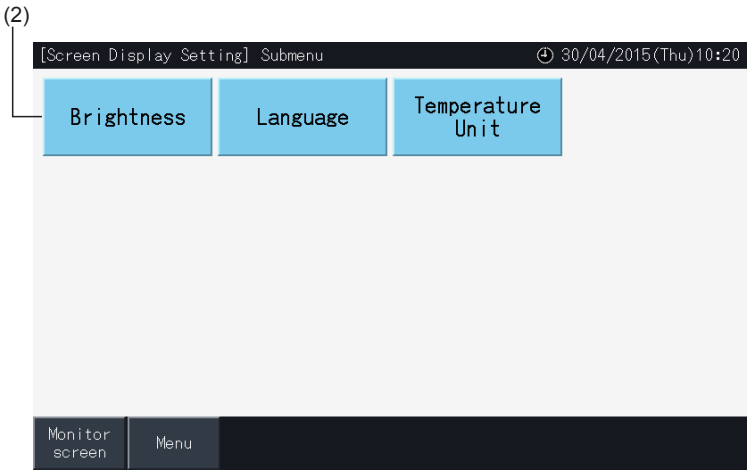
◆ Screen Display Setting

Adjustment of backlight brightness of the touchscreen display

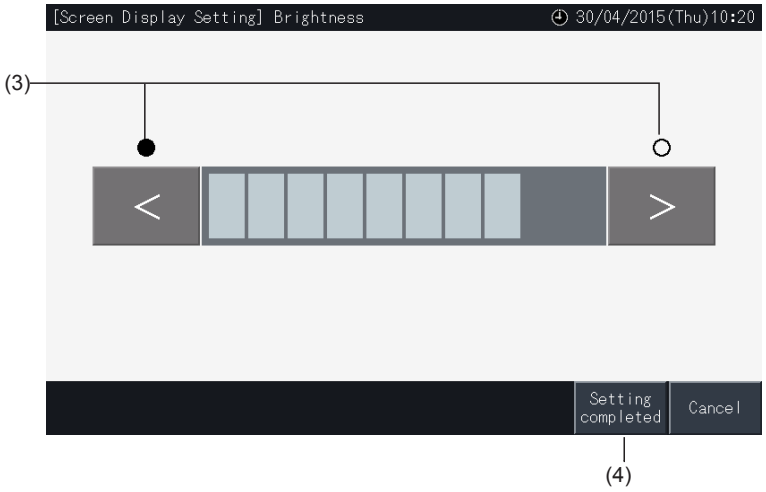
1 Select “Screen Display Setting” at the “Menu” screen.



2 Select “Brightness” at the “Screen Display Setting” screen.



3 Tap “ < ” or “ > ” to adjust the brightness of the backlight.

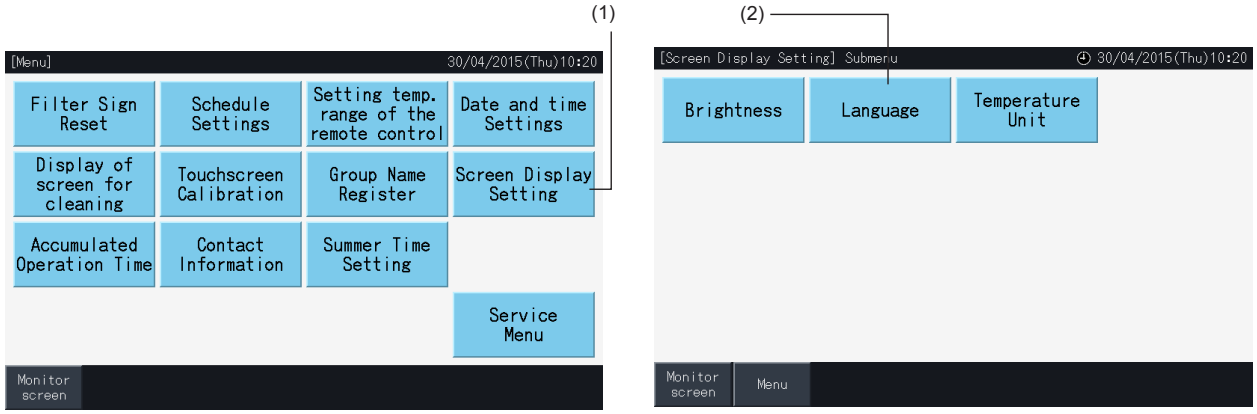


4 Tap “Setting completed” to return to Menu screen.

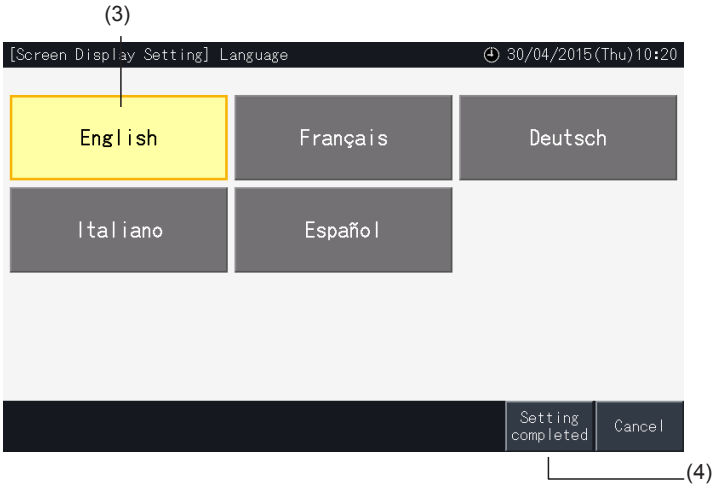
Language setting

1 Select “Screen Display Setting” at the “Menu” screen.

2 Select “Language” at the “Screen Display Setting” screen.



3 A confirmation window is displayed when selecting the language button.



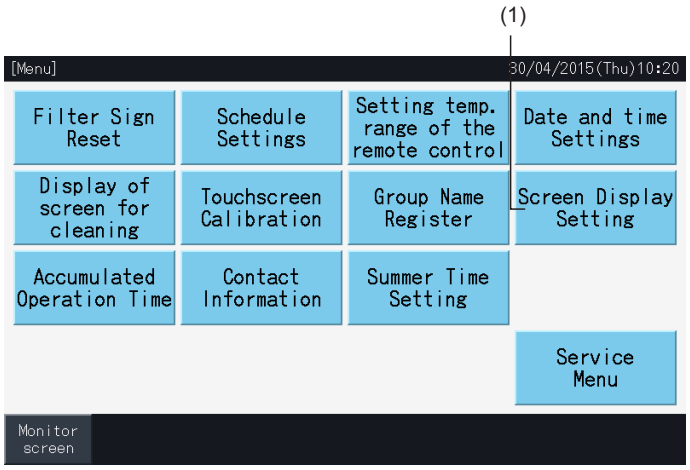
NOTE

If the language is changed, the registered block and group names as well as contact information are initialized, too.

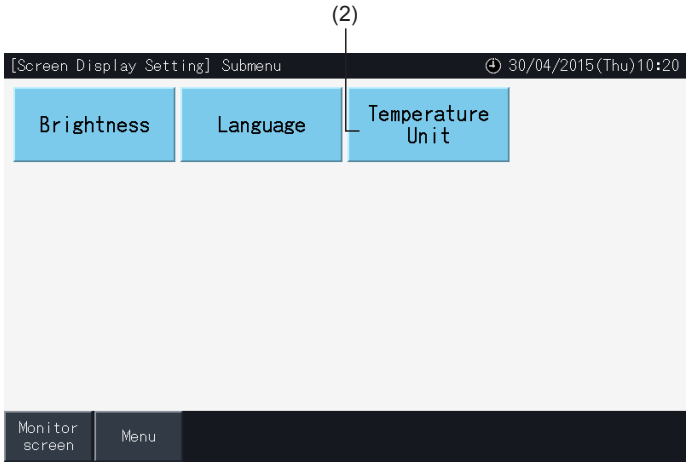
4 Tap “Setting completed” to return to the “Screen Display Setting” screen.

Temperature unit setting

1 Select “Screen Display Setting” at the “Menu” screen.

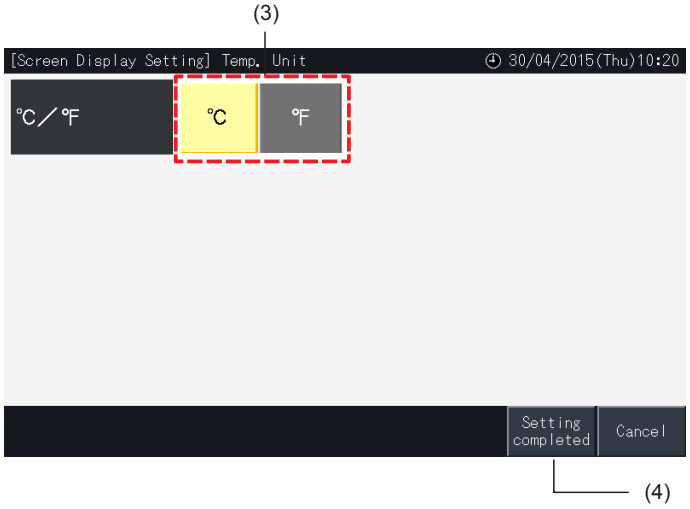


2 Select “Temperature Unit” at the “Screen Display Setting” screen.



3 Select Celsius degrees or Fahrenheit degrees with the corresponding button. The selected button is highlighted in yellow.

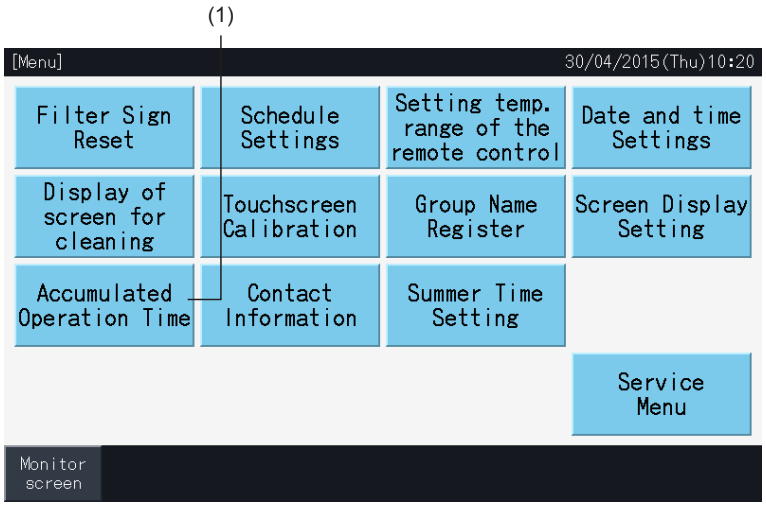
4 Tap “Setting completed” to return to the “Screen Display Setting” screen.



◆ Display of accumulated operation time

Display by month

1 Select “Accumulated Operation Time” at the “Menu” screen.

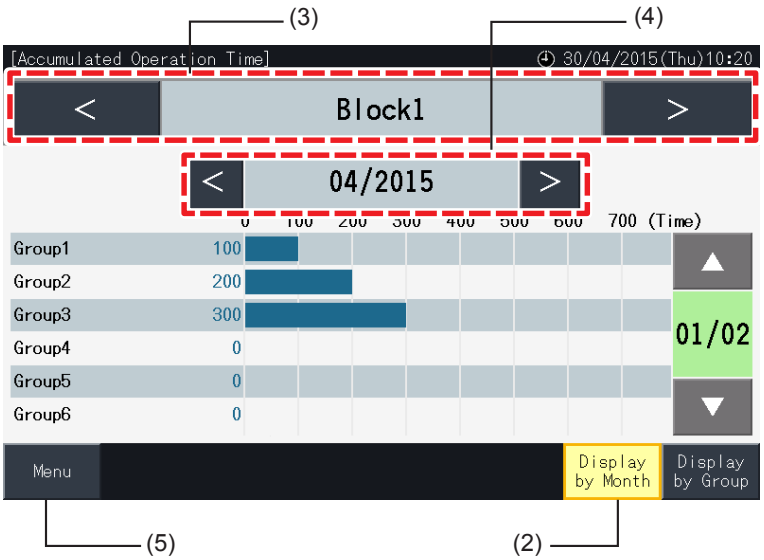


2 Tap “Display by Month”.

3 Tap the “<” or “>” buttons to select the target block.

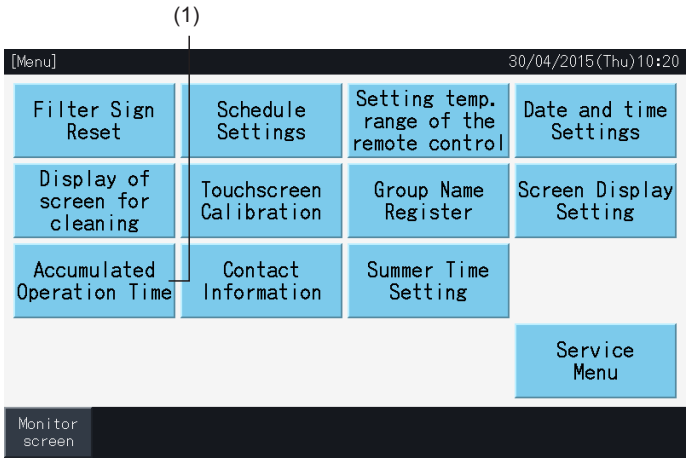
4 Tap the “<” or “>” buttons to select the target year and month

5 Tap “Menu” to return to the “Menu” screen.



Display by group

1 Select “Accumulated Operation Time” at the “Menu” screen.

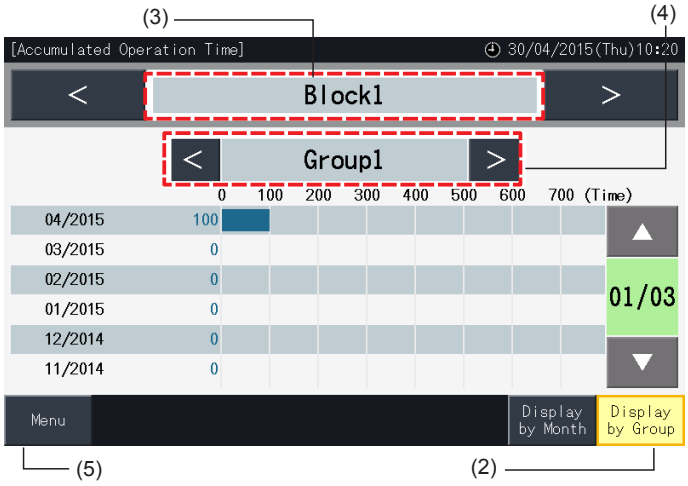


2 Tap “Display by Group”.

3 Tap the “<” or “>” buttons to select the target Block.

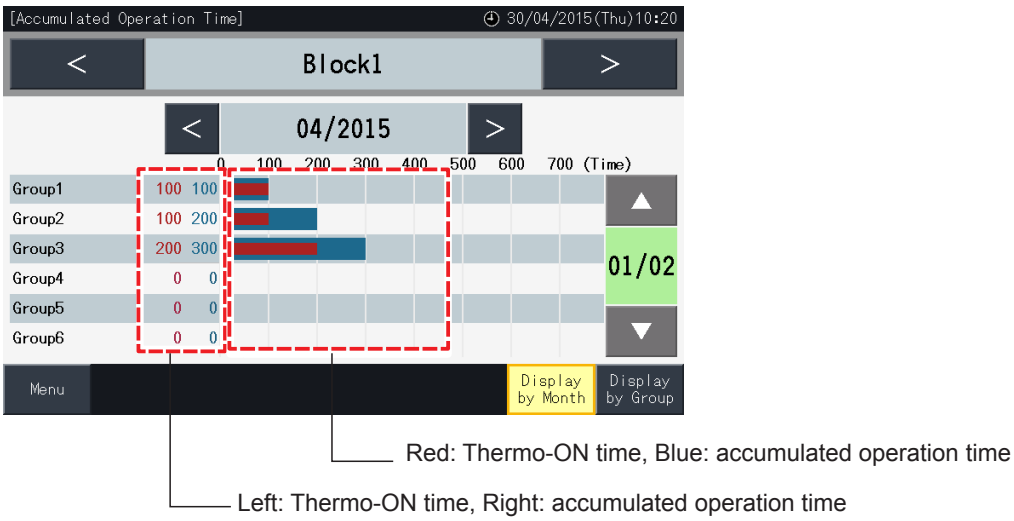
4 Tap the “<” or “>” buttons to select the target Group.

5 Tap “Menu” to return to the “Menu” screen.



NOTE

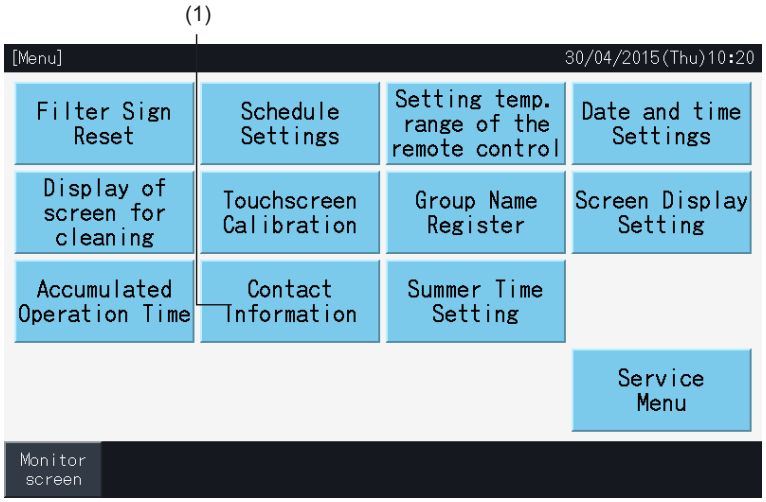
- *Accumulated operation time of this central station is displayed for reference purposes only. HITACHI does not ensure the precise accuracy of the aforementioned accumulated operation time for reference.*
- *“Thermo-ON Time” can also be displayed additionally, if the corresponding option is selected in “Optional Function Setting”. via the option for function selection setting. Contact your dealer or a HITACHI customer service centre for detailed information.*



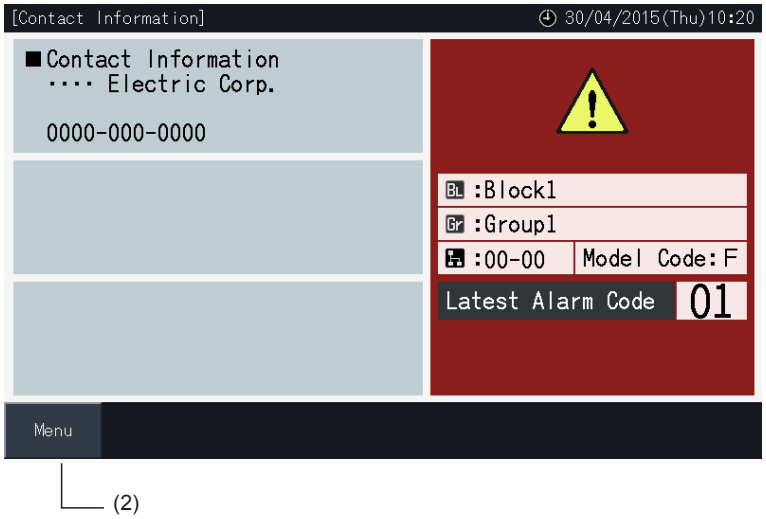
◆ Contact Information

1 Select “Contact Information” at the “Menu” screen. The following information is displayed:

- Contact information (2 independent items)
- Name of block and group of the latest alarm occurrence
- Latest alarm code



2 Tap “Menu” to return to the “Menu” screen.

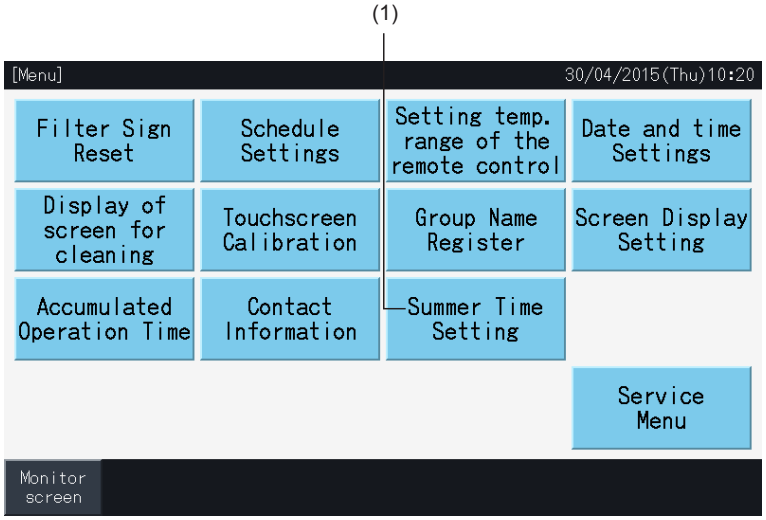


NOTE

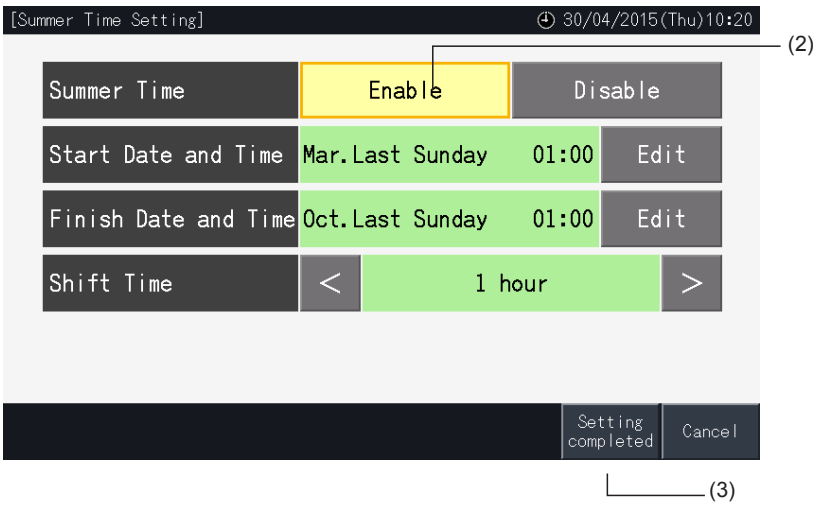
- *This function is not available if there is no contact address registered.*
- *There is no indication of target blocks and groups and alarm codes if there is no alarm occurrence.*

◆ Summer time setting

1 Select “Summer Time Setting” at the “Menu” screen. The following information is displayed:



2 Select the function concerning each items. The colour of the selected function will change.



3 Tap “Setting completed” to confirm the content and return to Menu screen.

5.2.4.4 Service Menu

NOTE

- *This switch is for the serviceman only. Therefore do not use it.*
- *If this switch is used and the service menu is indicated on the screen, tap "Back". The screen will return to the menu.*

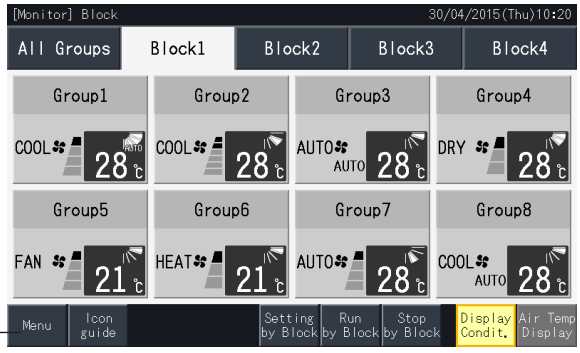
Items		Contents
Group Register		The connected indoor units are checked by the central station in the same H-LINK. This function is used for the group or block registration of them.
	Setting of control patterns	Set the control pattern.
	Main Unit Register	This function is used for the main unit registration in the each remote control group. (The main unit is the only one (1) in the one (1) remote control group). The control command is sent from the central station to the main unit for the remote control group.
	Sub Unit Register	This function is used for registration of the sub units except the main unit in the same remote control group. In the case of using the remote control switches or the receiver kits as follows, the sub units are registered automatically by the central station after the main unit registration. • The remote control switches and the receiver kits which model names start from PC-A**. • The remote control switches which model names start from PC-P**.
	Display list of registers	Display the address of the Indoor Units which were registered in each group.
Optional Function Setting		This function is used for setting and changing of the optional functions for the air conditioners and the central stations.
	Air Conditioner, Remote Control Switch Setting	Set or change the optional function of the air conditioner and remote control switch.
	Central Station Setting	Set or change the operation mode or the color of the operation indicator or the central station.
Exception Setting of Run/ Stop Operation		The set group is "All Group Run (stop)", "Block run (stop)" or when"All Groups (Blocks)"operate as "Run(Stop)", this operation is not accepted.
External Input/Output Setting		There are 4 inputs and 2 outputs for external Input/Output function in the central station.
Button Setting		This function specifies each button to be shown/hidden. This function also includes specification/setting for "one-tap operation" or "press and hold" operation.
Contact Information Register		This function is used for editing the contents of contact information registration.
Memo		Record and Browse the Test Run and Maintenance Informations.
Restore Setting		This function is used for restoring all the settings such as registered Groups (Blocks) and schedules.
Checking Connection		This function is used for checking of the connected indoor unit numbers in the same H-LINK. When this function is used, the confirmation for the keeping of registered information such as the group names, schedules, etc. will be indicated. If "OK" is tapped, the connected indoor unit numbers are updated with keeping the registered information. If "Cancel" is tapped, the setting of the central station is all restored.
Alarm History		This function is used for displaying the list of alarm history that occurred in the air conditioner and the controller. (Maximum 100 records).

1 Tap “Menu” on the “Monitor (All Groups)” or “Monitor (Block)” screens.

Monitor (All Groups)

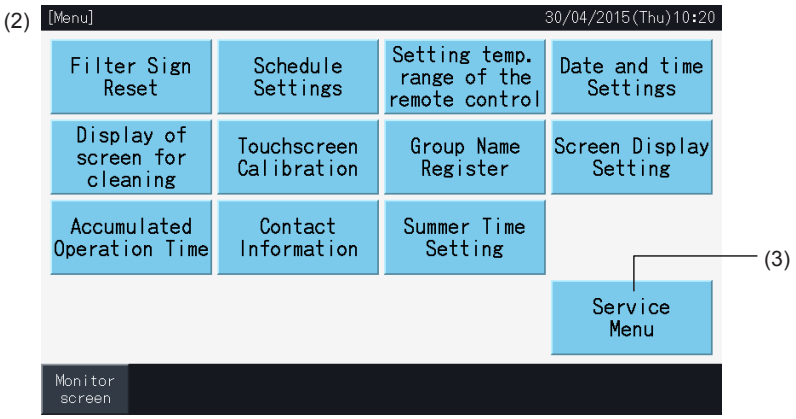


Monitor (Block)



2 “Menu” screen is displayed.

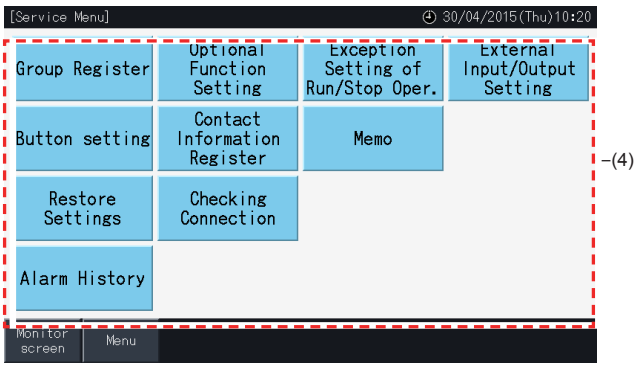
3 Press and hold “Service Menu” for at least 3 seconds. “Service Menu” is displayed.



4 Select the service menu item by tapping each item button. The setting screen of the tapped item will be displayed.

5 Tap “Menu” on the “Service Menu” to return to the “Menu” screen.

6 Tap “Monitor screen” to return to Monitor screen.



NOTE

Depending on the conditions of the air conditioner unit and the central station, the following items may not be selected.

**Group Register (*1)*

** A/C unit and Remote Control Switch setting (Optional Function Setting) (*2)*

** External Input/Output Setting (*1) (*2)*

** Restore Settings (*1) (*3) (*4)*

** Checking Connection (*1) (*2)*

*(*1): When the external input signal is ON.*

*(*2): When one air conditioner unit is operating.*

*(*3): When one air conditioner unit has the remote control switch restricted (“Without Remote Control Switch” not included).*

*(*4): When one outdoor unit is operating in capacity control.*

◆ Group register

NOTE

This function is detailed in section "5.2.4.1 Test run" since it is a required item when performing the test run procedure.

◆ Optional function setting

This function is used for setting and changing the selection of air conditioner and central station functions listed in the following table. Set by Monitor → Menu → Service Menu → Optional Function Setting.

Function	Description
Fixing Operation Mode	Set "Fixing Operation Mode" to "Enable" to fix the present operation mode. The operation mode is fixed to the present settings, which cannot be changed from the remote control switch or from the central station.
Fixing Setting Temperature	Set "Fixing Temperature Setting" to "Enable" to fix the present set temperature. The setting temperature is fixed to the present settings, which cannot be changed from the remote control switch or from the central station.
Cooling Only	Set "Cooling Only" to "Enable" to fix the operation mode to cooling. This function is used when setting heat pump models to restricted operation in cooling only. Operation modes "HEAT" and "AUTO" cannot be selected from the remote control switch or from the central station.
Auto	Set "Auto" to "Enable" to use the cooling/heating automatic operation. It is possible to set this mode from the remote control switch and from the central station. However, "AUTO" cannot be selected in the following cases: * When connected to a cooling-only model. * When the "Cooling Only" function is enabled.
Fixing Fan Speed	Set "Fixing Fan Speed" to "Enable" to fix the fan speed. The fan speed is fixed to the present settings, which cannot be changed from the remote control switch or from the central station.
Control Restriction Run/Stop only	This function is used for switching the control mode of the central station between "Normal" and "Run/Stop Only" * Normal: The settings of each group are displayed when tapping its button. This is the control mode by default. * Run/Stop Only: The control mode at "Monitor 1" and "Monitor 2" is changed to "Run and Stop" for each group only. Tapping the button of each groups has the effect of switching its operation on and off, without changing any of the settings.
RUN Indicator	This function allows to switch the colour of the RUN lamp between green and red. When an error occurs, the indicator flashes on and off regardless of the colour setting.
All Groups Automatic Switching	Set to "Enable" in order to begin operation from All Groups display. If a central station is not operated for a given time, the screen returns automatically from Block display to All Groups display.
OFF time Remote control prohibition	Set to "Enable" in order to set the prohibition of all remote control operation (all the items) together with a stop order to the remote control at the OFF time of the schedule function of the controller. In this case, the prohibition of all remote control operation (all the items) is cancelled at the ON time, but there is no operation order. This function cannot be set when there is a prohibition of remote control operation (for individual items). Set this function to "Disab." in such cases.
Display graph values	Set to "Disable" in order to display the graphs for operation time or Thermo-ON time without numeric values.
Thermo-ON time display	Set to "Enable" in order to display Thermo-ON time in the operation time display.

NOTE

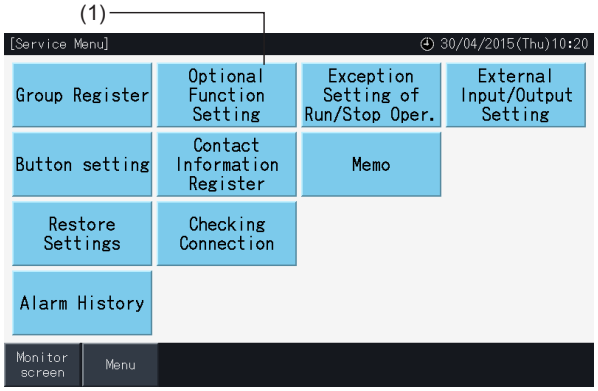
- *When setting optional functions (Air conditioner or remote control settings), please set the same optional functions at the remote control of the group which has been set. Also, in case of setting optional functions at the remote control which can also be set from the controller (fixed, automatic cooling/heating), please set the same optional functions from the controller as well.*
- *For groups in which operation mode has been fixed by optional function settings and the demand of external input/output settings has been set to operation mode shift, demand signal ON results in stop regardless of the operation mode.*

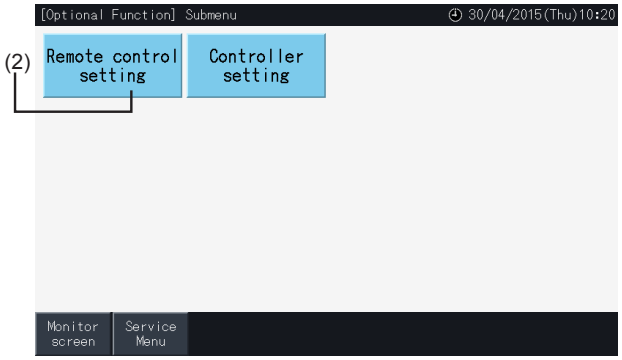
Air Conditioner Remote Control Settings

1 Select “Optional Function Setting” on the “Service Menu” screen when the air conditioners are not in operation.

2 Select “Remote control setting” on the Menu screen.

- Selection is not possible when one or more air conditioners are in operation.





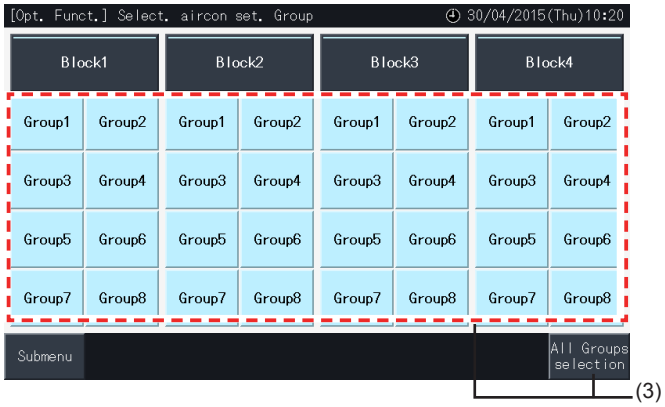
3 Select the target of Optional Function (All Groups/ Block/Group).

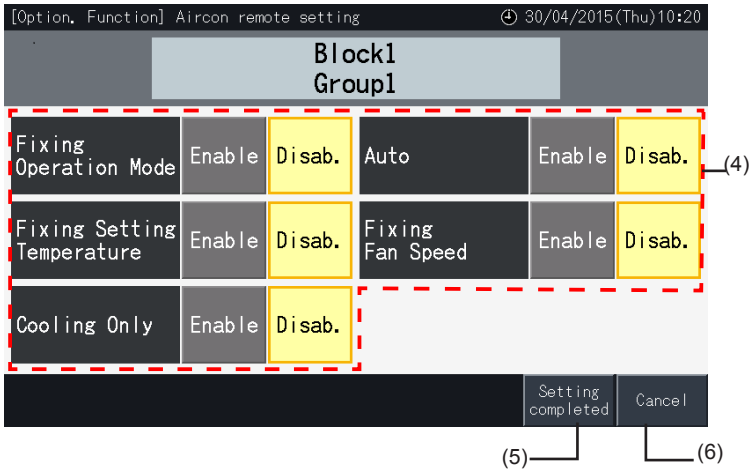
4 Select the function concerning each item. The function button selected will change colour.

5 Tap “Setting completed” to confirm the set contents and return to the Menu screen of the target group.

6 Tap “No” to cancel the set contents and return to the Optional Function target selection screen.

* Depending on the unit, the set contents may not apply. Please check the Installation and Operation Manual and the Instruction Manual of each indoor unit or remote control for more details.

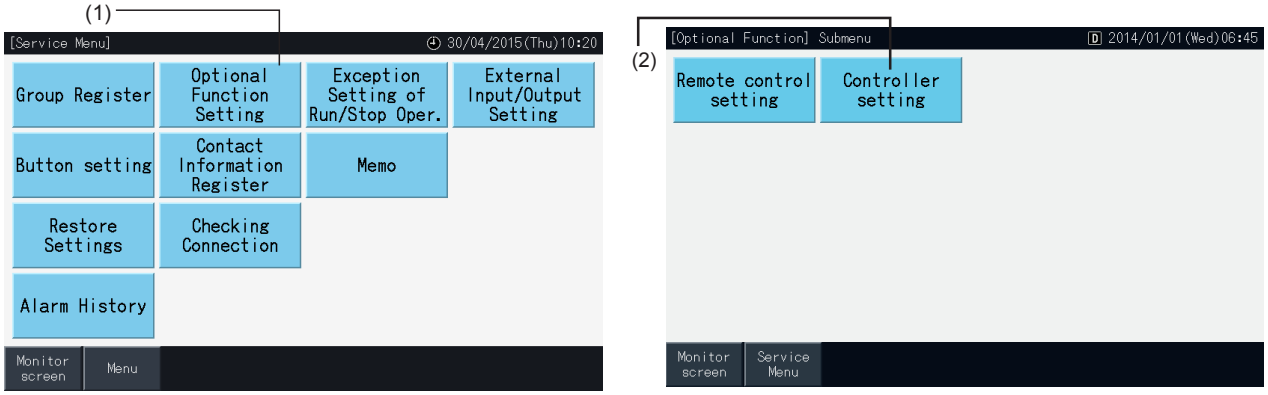




Controller Setting

1 Select “Optional Function Setting” on the “Service Menu” screen when the air conditioners are not in operation.

2 Select “Controller setting” on the “Optional Function Setting” screen.



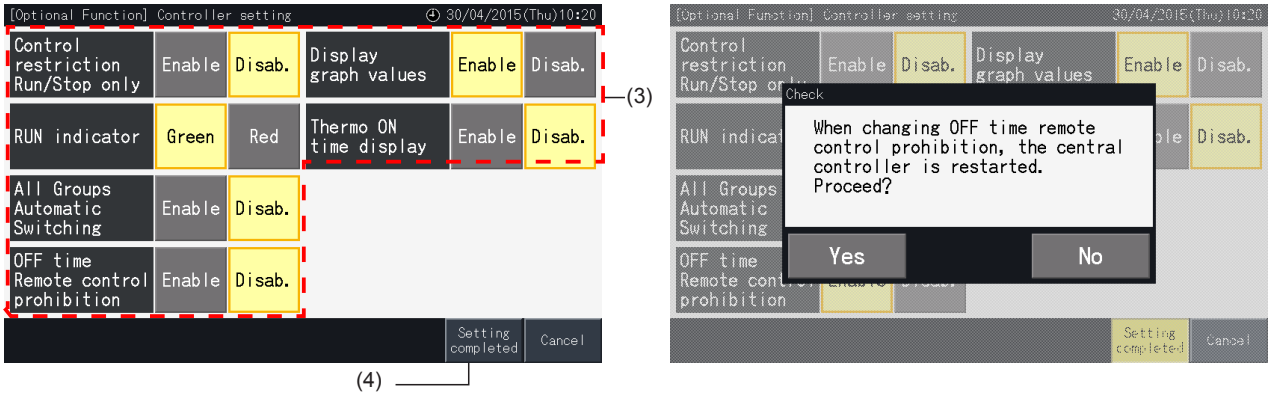
3 Select the setting of each of the function items as necessary. The selected setting appears highlighted in yellow.

a. About OFF time Remote control prohibition

* *When it is enabled, it is not possible to set remote operation prohibition (for individual items). When setting as Enable, the Remote Operation Prohibited (by item) cannot be set. The Remote Operation Prohibited (by item) can do setting but, if operating simultaneously with other controllers then do not do setting.*

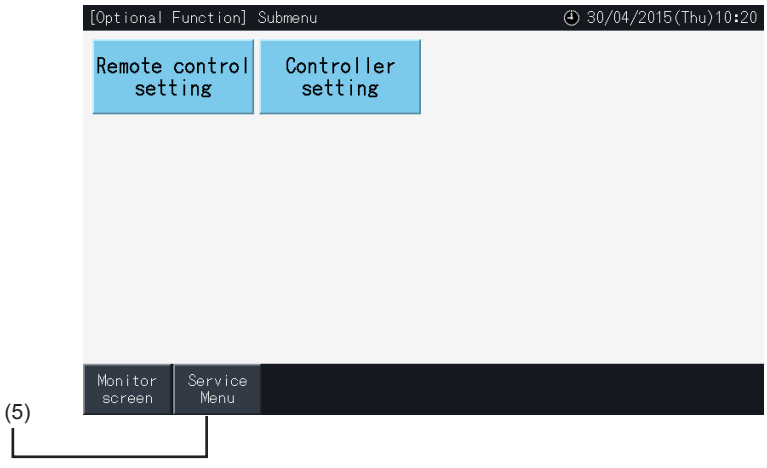
* *When All groups have Remote Operation permitted (all items) only, It is possible to switch “Enable” ↔ “Disable”.*

4 Tap “Setting completed” to confirm the content set and return to Optional Function Setting Menu screen.*



When switch “Enable” ↔ “Disable” of OFF Time Remote prohibition setting and tap “Setting completed”, the confirmation screen is displayed as below.

5 Tap “Service Menu” to complete Optional Function Setting and return to Service Menu screen.



◆ Exception setting of Run/Stop operation

"RUN" and "STOP" orders are not accepted when the group is set to operation in "All groups" or "All blocks".

However, it is possible to set an exception rule for any of the following orders or combinations of orders, affecting specific groups:

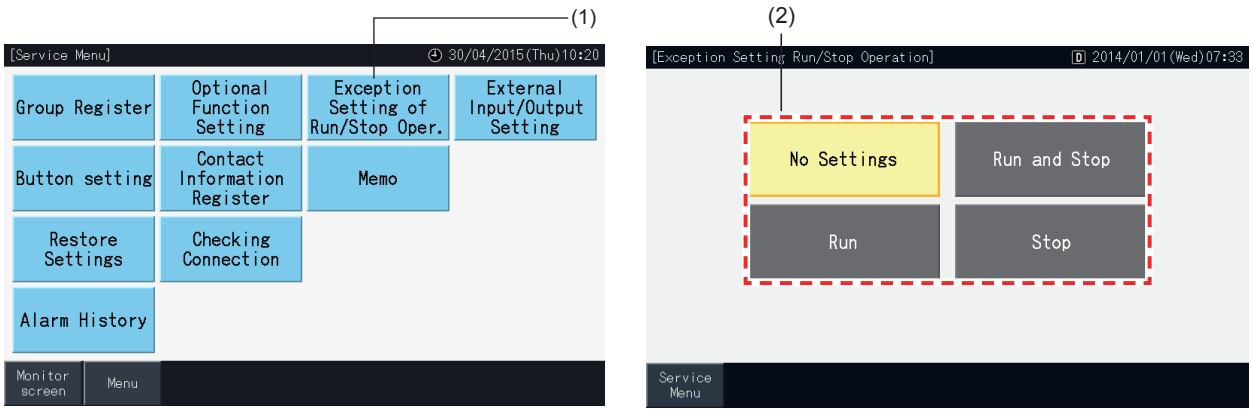
- None
- Run + Stop
- Stop
- Run

NOTE

- *The following commands are affected when this function is set:*
  - *Scheduled Timer Operation.*
  - *"All Run/Stop" and "Run/Stop by Block" by external input command.*
- *"Run/Stop" operation is available when the group is selected individually.*

1 Select "Exception Setting of Run/Stop Operation" on the "Service Menu" screen.

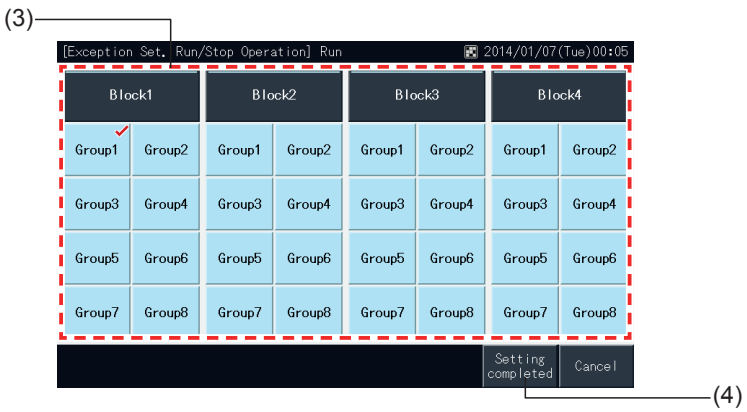
2 Select the operation to exclude. The selected operation is highlighted in yellow.



3 Select the target for the rule of exception for the selected operation (group/block)

- Tap on a Group button to switch the selection state of that group.
- Tap on a Block button to switch the selection state of all the groups in that block.
- The selected groups are indicated with a check mark.

4 Tap "Setting completed" to confirm the set contents and to return to the "Exception setting of Run/Stop Operation" screen.



◆ External Input/Output Setting

The External Input/Output function of the central station provides the capacity to control 4 inputs and 2 outputs.

Select “External Input/Output Setting” on the “Optional Function Setting” screen to access the setting menu.

Input and Output	Connection	Function
Input 1	CN1 Pins 1-2	All Run/Stop (Level)
Input 2	CN1 Pins 2-3	Emergency Stop (Level)
Input 3	CN2 Pins 1-2	All Run (Pulse)
Input 4	CN2 Pins 2-3	Demand (Shift of Run/Stop mode / Outdoor Unit Capacity Control) All Stop (Pulse) No Setting (Factory Setting)
Output 1	CN3 Pins 1-2	All Run
Output 2	CN3 Pins 1-3	No Setting (Factory Setting) All Alarm

External Input Function

1 All Run/Stop (Level)
Performs run/stop operation of all groups simultaneously by means of the external input signal.

2 All Run (Pulse)
Performs run operation of all groups simultaneously by means of the external input signal.

3 All Stop (Pulse)
Performs stop operation of all groups by means of the external pulse signal input.

4 Emergency Stop (Level)
The operation of all groups is stopped simultaneously by means of the external emergency stop signal.
While “Emergency Stop” is being carried out, “Central Control” is displayed in the LCD of the remote control switch, and operation from the remote control switch becomes disabled.
In case of using other central stations together, “Run/Stop” operation is available from the other central stations even during the emergency stop.

5 Demand Control Function

The external demand control signal allows to cut a peak demand of electrical consumption. The external demand signal can only be input through input terminal 1.The operation mode of the selected group is changed by the demand signal as shown below.

	Demand signal ON (*1)	Demand signal OFF (*2)
Demand Function 1	Indoor unit operation stop with RCS operation prohibited mode	The operation condition returns to the previous state.
Demand Function 2 (*3)	Cooling or dry operation ↓ Fan operation with RCS operation prohibited mode	
Demand Function 3 (*4)	Heating operation ↓ Operation stop with RCS operation prohibited mode	The setting temperature is set as follows. Cooling and dry pperation.....28ºC, Heating pperation.....20ºC
Demand Function 4 (*5)	Indoor unit operation stop with RCS operation prohibited mode	The operating condition returns to the previous state, except for setting temperature.

(*1): Do not set “STOP” or “Run Mode Shift” when using other central stations at the same time. When setting outdoor unit capacity control, set one of the central station and do not set the others.

(*2): Setting is only possible for Stop or Run Mode Shift. And it is not possible to set multiple contact points.

(*3): When operating in “AUTO” mode, or when “Fixing Operation Mode” is enabled at “Optional Function Setting”.

(*4): Operation stops even if it is in Auto mode, or if the operation mode is fixed in the optional function settings.

(*5): Outdoor unit capacity control can be set to multiple contact points. When there is a signal input in multiple contact

points, the priority for the execution of the controls is established according to the input number (Input 1 > Input 2 > Input 3 > Input 4).

(*6): There are cases in which the outdoor unit may not support certain settings, or in which available settings may differ according to its capacity value. Please contact with your dealer or with the designated customer service centre for detailed information.

(*7): It is possible to control via schedule without using demand control.

External Output Function

1 All Run Output

External output of indoor unit operation signal to the target group. The operation signal is output even if one indoor unit in the target group is in operation.

2 External Output Alarm

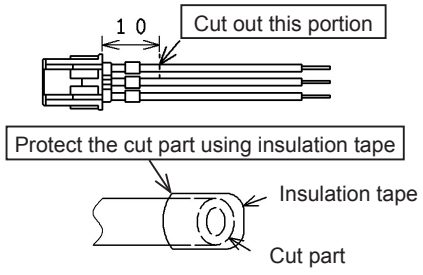
External output alarm signal of indoor units to the target group. The alarm signal is output even if one indoor unit abnormality occurs in the target group.

Specifications of the external Input/Output terminals

- Input Terminal: Non-voltage contact (normal open) for demand signal Input DC12V, 10 mA.
  The contact can be switched.
  Pulse width is 300 ms or more for pulse signal input.
- Output Terminal: Contact (voltage is applied) for signal Output DC12V.
  Recommended Relay: MY Relay manufactured by Omron Corporation.
  (Do not use a diode built-in type).
- Input/Output connection: using accessory connector cord.

Connection procedure:

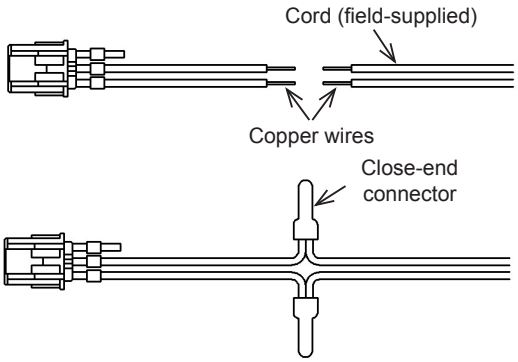
1 In case that there is a section of cord which is not going to be used, please confirm the connector number, cut the cord as shown in the figure on the right, and protect the cut section with locally supplied insulation tape.



2 Follow one of the procedures below in order to connect a relay or a timer with a locally supplied cord.

a. Soldering
Twist and solder copper wires together and insulate them by winding plastic tape around.

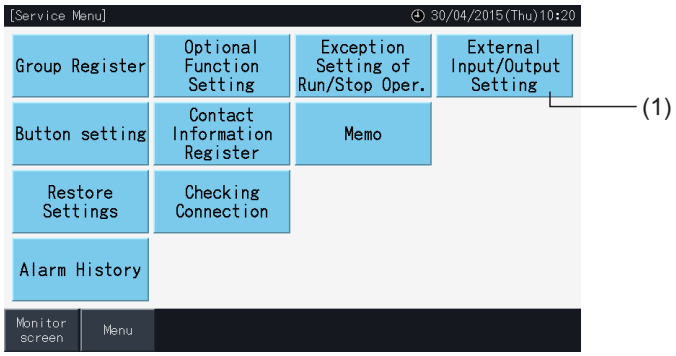
b. Caulking with closed-end connector accessory
Insert the closed-end connector after twisting and soldering copper wires together, then caulk with a clamping tool. (Pull the cord to check the tightness of the connection).



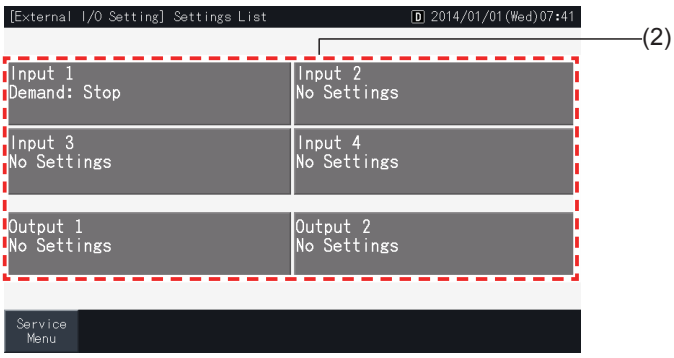
External input setting

1 Select “External Input/Output setting” on the Service Menu screen.

- Selection is not possible when air conditioners are in operation, or when the contact for external input signal is ON.



2 Select the input target (From input 1 to 4) of the external input.

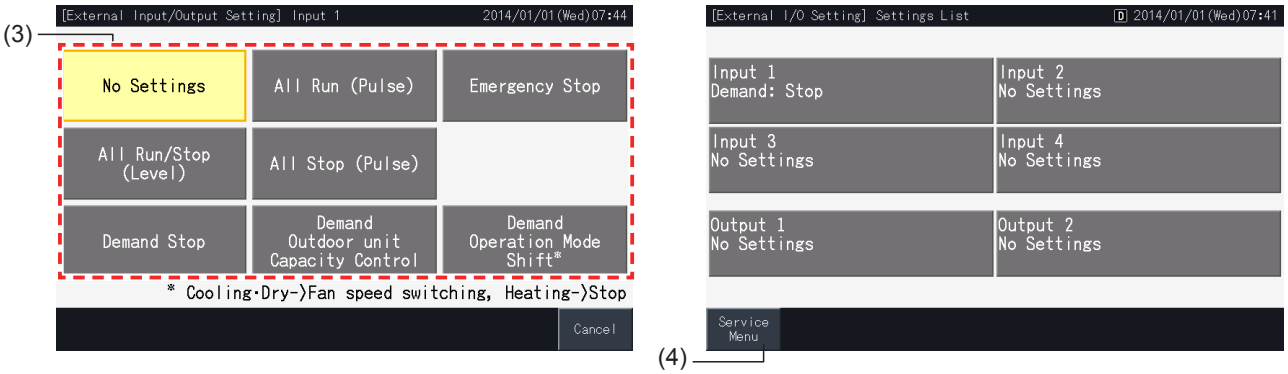


3 Select the function to be used with the external input.

- The button for the selected function is highlighted in yellow. After selecting a function, proceed to the following point in the process as indicated below:
- If “No Setting” is selected, go to step 4.
- If “Demand outdoor unit capacity control” is selected, go to step 5.
- If any other function is selected, go to step 10.

< “No Settings” >

4 Tap “Service Menu” to complete External Input/Output setting and return to the Service Menu screen.



<Outdoor Unit Capacity Control>

5 Select the value for Outdoor Unit Capacity.

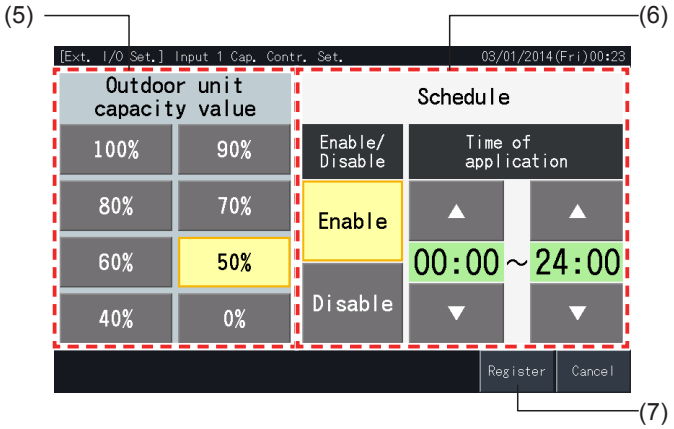
- The selected capacity value button is highlighted in yellow.

6 Use the buttons on the right side of the screen in order to schedule outdoor unit capacity control when there is no external input contact being applied for this purpose.

- Select “Enable” or “Disable”.
- Tap “△” or “▽” to set the applicable starting time and ending time, in 30 minute steps.
- When the ending time falls earlier than the starting time, ending time becomes effective on the next day.

For example:
Starting Time 15:00
Ending Time 08:00,
Capacity control starts at 15:00 and ends at 08:00 on the following day.

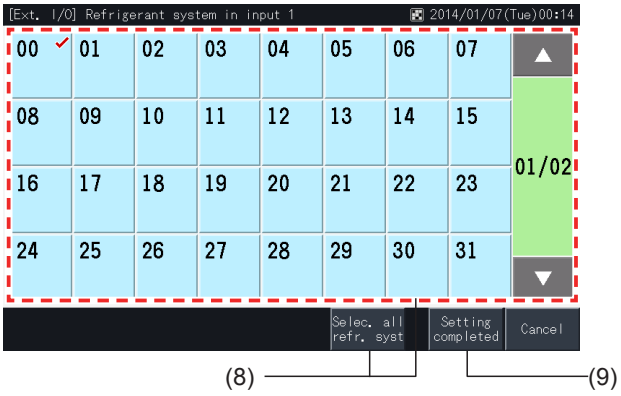
7 Tap “Register”



8 Select the target of capacity control (Refrigerant system).

- The buttons of the numbers of refrigerant systems of registered outdoor units are indicated in blue.
- The buttons of the numbers of refrigerant systems of unregistered outdoor units are indicated in grey. These refrigerant systems cannot be selected.
- Tap the button of a refrigerant system number in order to switch its selection state.
- Tap “Selec all refr syst” to switch the selection state of all refrigerant systems.
- The selected refrigerant systems are indicated with a check mark.

9 Tap “Setting completed” to confirm the setting contents and return to the External Input/Output Setting screen.

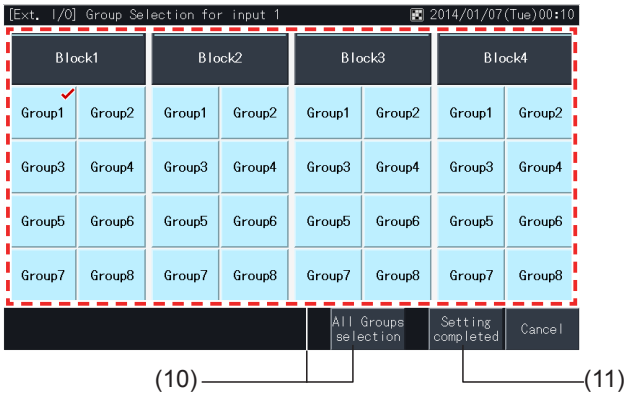


< Other settings >

10 Select the target of external input control. (All Groups/Block/Group).

- Tap the button of a Group to switch its selection state.
- Tap the button of a Block to switch the selection state of all the Groups in the Block.
- Tap the “All groups selection” button to switch the selection state of all the Groups.
- The selected groups are indicated with a check mark.

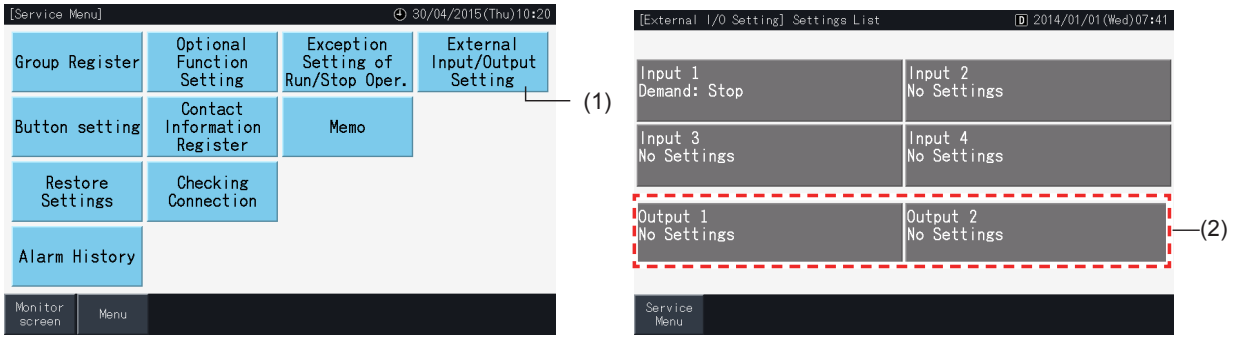
11 Tap “Setting completed” to confirm the set contents and return to the External Input/Output etting screen.



External Output Setting

1 Select “External Input/Output Setting” on the Service Menu screen.

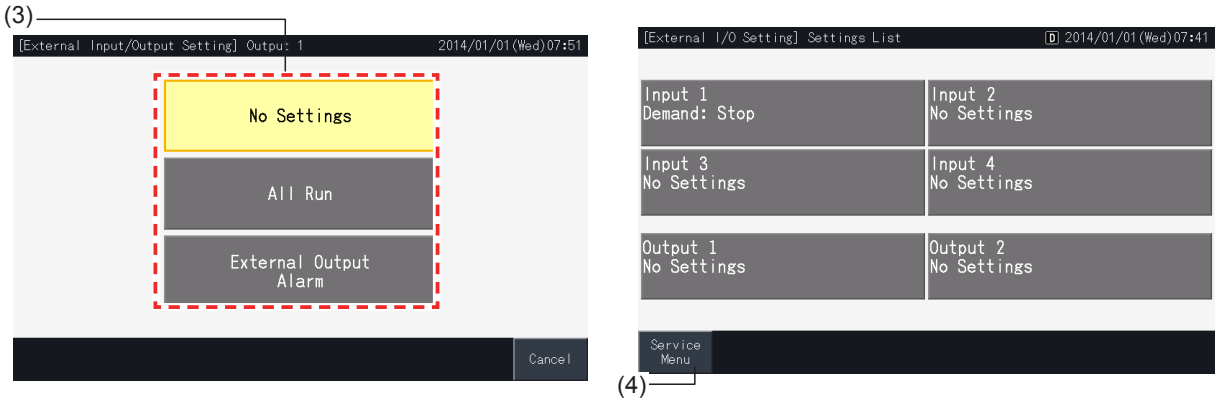
- Selection is not possible when air conditioners are in operation, or when the contact for external input signal is ON.



2 Select the Output target of the External Output (Output 1, Output 2).

3 Select the function to be used with the external output.

- The button for the selected function is highlighted in yellow.



4 Tap “Service Menu” to complete the external Input/Output Setting and return to Service Menu screen.

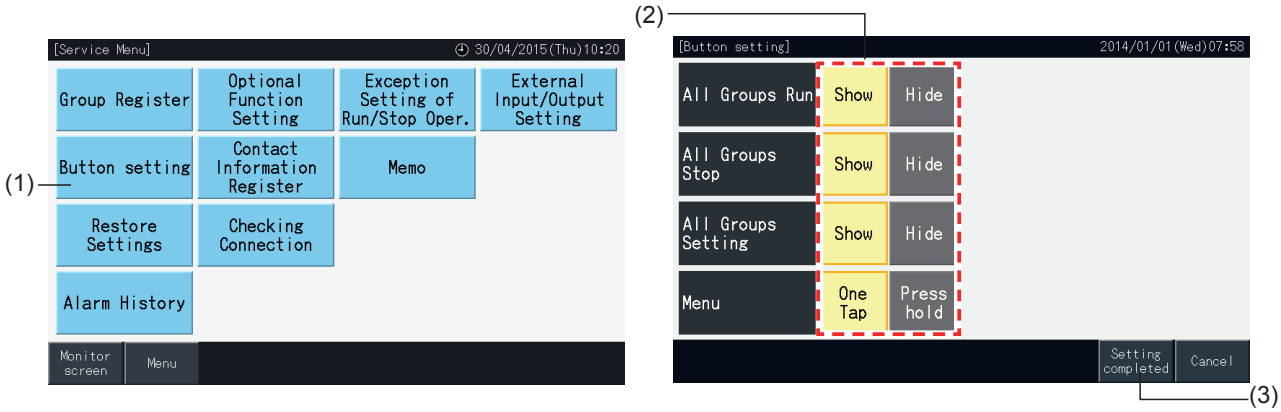
◆ Button Setting

Button setting is used to select whether to show or hide certain operation buttons, thus restricting operation.

1 Select “Button Setting” on the screen of “Service Menu”.

2 Select the function concerning each items. The selected function appears highlighted in yellow.

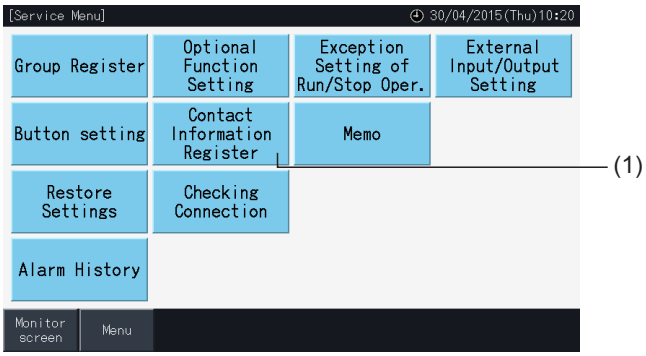
3 Tap “Setting completed” to confirm the set contents and return to Service Menu screen.



◆ Contact information register

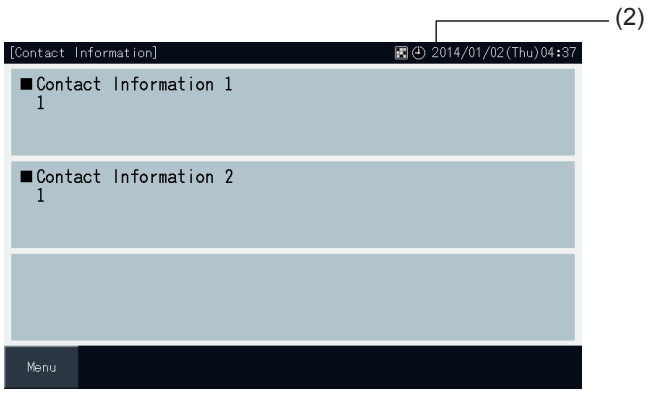
This function is used to edit or register the displayed contact information.

1 Select “Contact Information Register” on the “Service Menu” screen.



2 Tap “Name Edition” or “TEL No.Edition” buttons (2) to register the information corresponding to each field of “Contact Information 1” and “Contact Information 2”.

3 Enter the desired text at the keyboard screen.

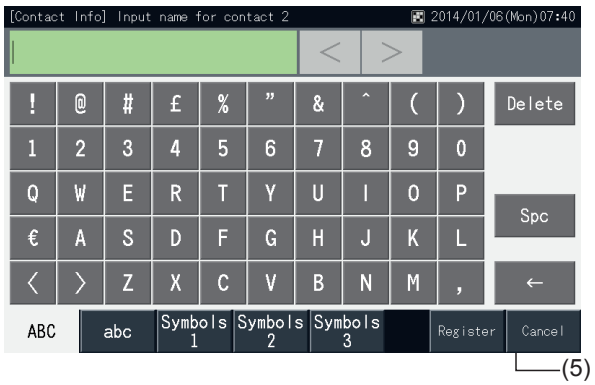


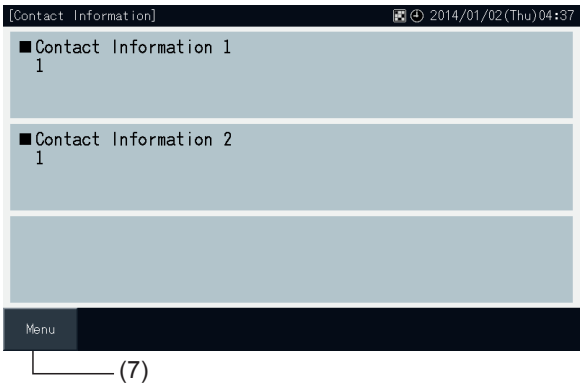
NOTE

Only numbers and symbols are available at the keyboard when inserting telephone numbers.

4 The name fields have a maximum length of 50 characters.

5 Tap “Register” or “Cancel” to finish the edition, and return to the “Contact Information Register” screen.
6 Proceed to step 2 again to continue registering other fields or to step 7 to finish the setting.
7 Tap “Menu” to finish the setting and return to “Service Menu”.

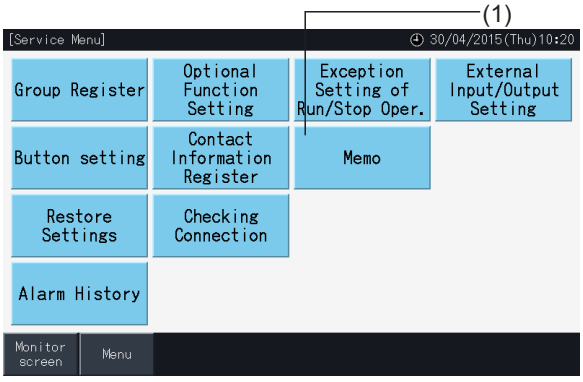


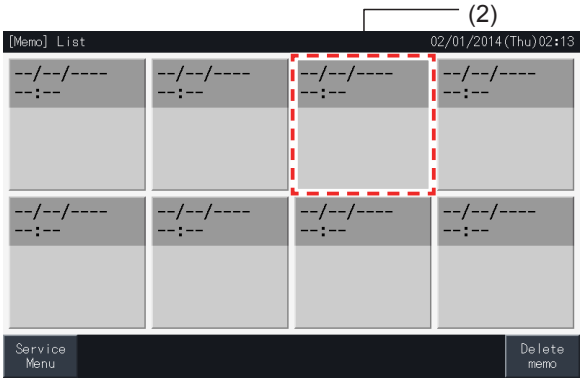


◆ Memo

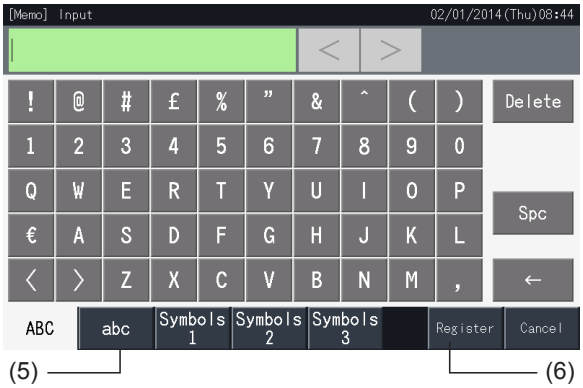
Register memo

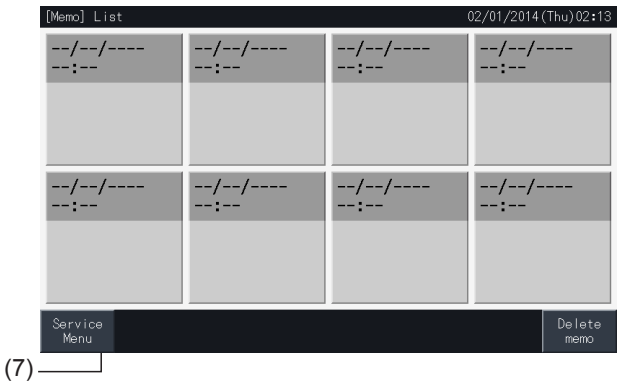
1 Select “Memo” on the “Service Menu” screen.
2 Select the target to register.





3 Enter the desired text at the keyboard screen.
4 The memo can have a maximum length of 52 characters.
5 Tap the buttons at the bottom of the screen to switch between upper and lower case and symbol keyboard.
6 Tap “Register” or “Cancel” to finish the edition, and return to the “Memo” screen.



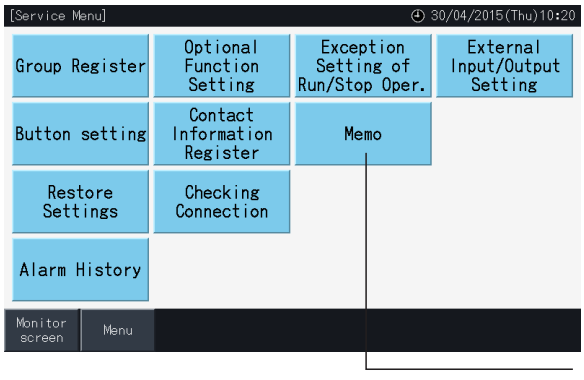


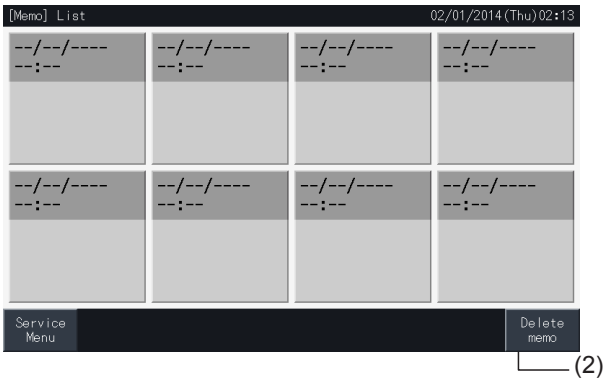
7 Tap “Service Menu” to return to the “Service Menu” screen.

Delete memo

1 Select “Memo” on the “Service Menu” screen.

2 Tap “Delete Memo”.

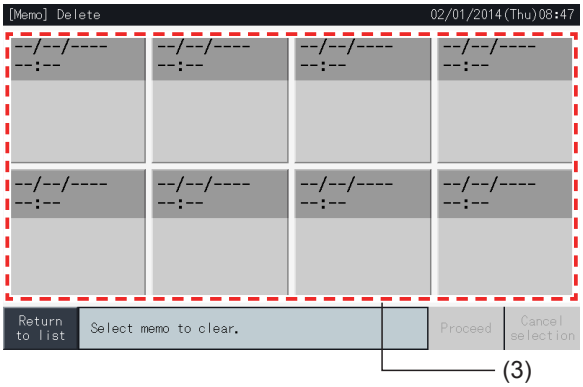


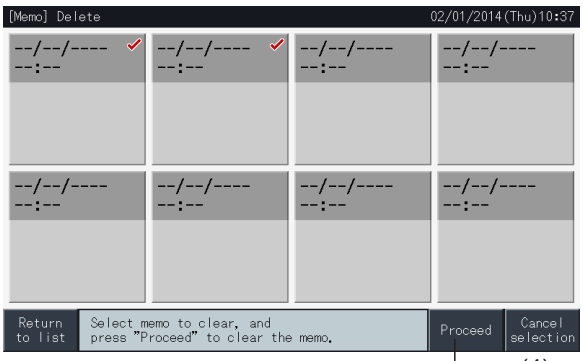


3 Select the memo to delete.

- Tap a memo button to switch its selection state.
- It is possible to select multiple memos.
- A check mark is displayed on the selected memos.

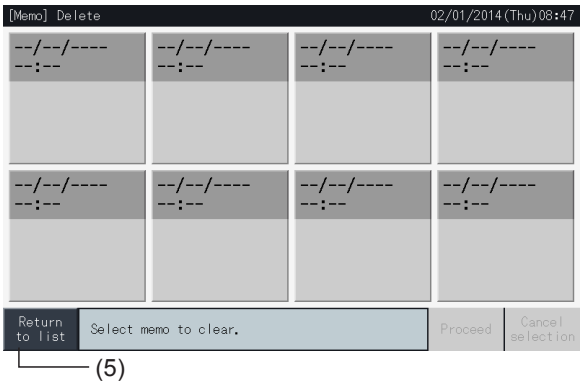
4 Tap “Proceed” to clear the selected memos.

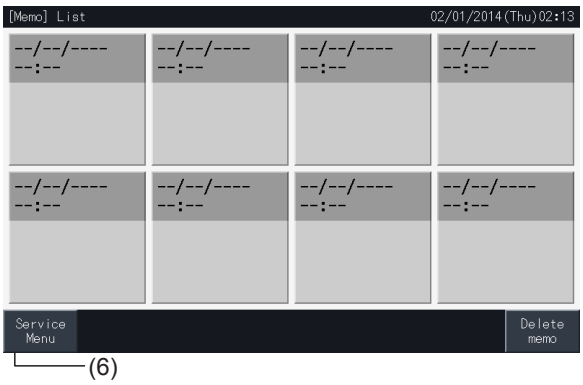




5 Tap “Return to list” to return to the “Memo” screen.

6 Tap “Service Menu” to return to the “Service Menu” screen.



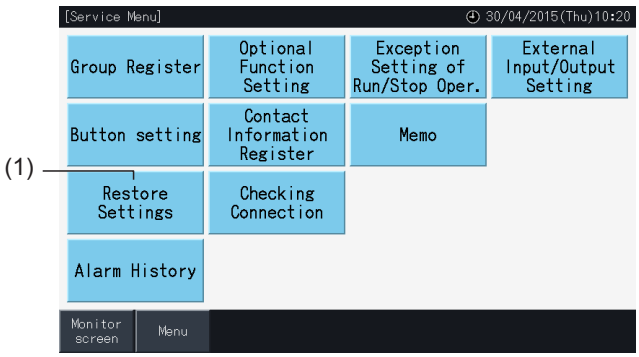


◆ Restore settings

1 Select “Restore Settings” on the “Service Menu” screen.

NOTE

This function cannot be selected when remote control switch operation is prohibited, an external input contact is ON, or outdoor unit capacity control is not cancelled. Cancel these parameters before performing “Restore settings”.



2 Tap “OK” at the confirmation screen.

NOTE

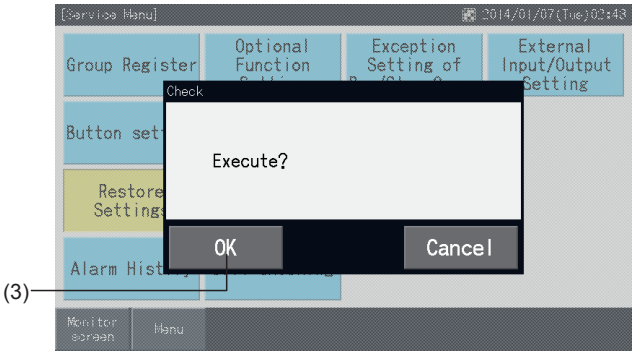
If “Cancel” is tapped, the screen returns to “Service Menu”.

3 A second confirmation screen is displayed. Tap “OK” here to restore the settings. The screen changes after several seconds, and a check of the connections of the system starts.

NOTE

If “Cancel” is tapped, the screen returns to “Service Menu”.





Information

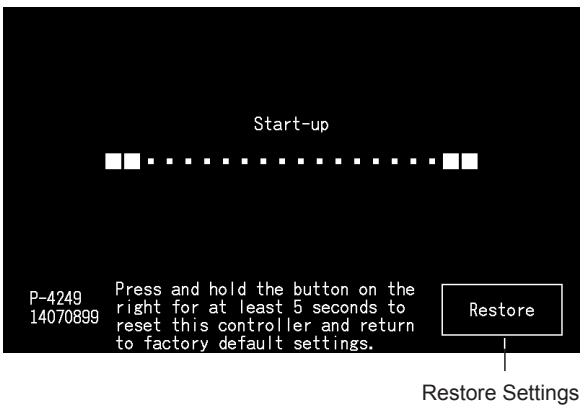
It is also possible to restore the settings when the “Start-up” screen is being displayed.

1 Tap the “Restore” at the lower right corner of the “Start-up” screen for more than 5 seconds.

- Restore settings is not displayed when remote control switch operation is prohibited, an external input contact is ON, or outdoor unit capacity control is not cancelled.

2 Connection check process starts after a few seconds.

3 When the process for connection check is finished, the “Date and Time Settings” screen is displayed. (Refer to *“Date and time setings”*).

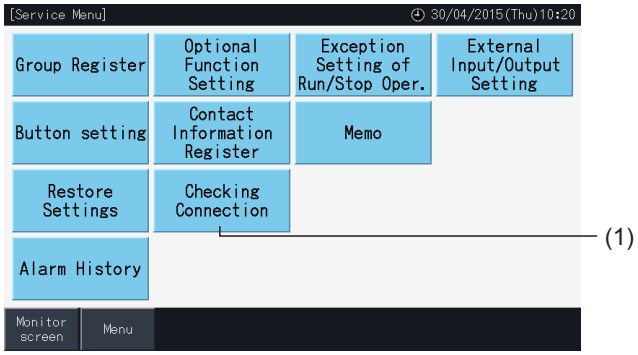


◆ Checking connection

1 Select “Checking Connection” on the “Service Menu” screen.

NOTE

This function cannot be selected when there is one ore more air conditioners in operation, or if there is an external input signal input to external input terminals 1 or 2.

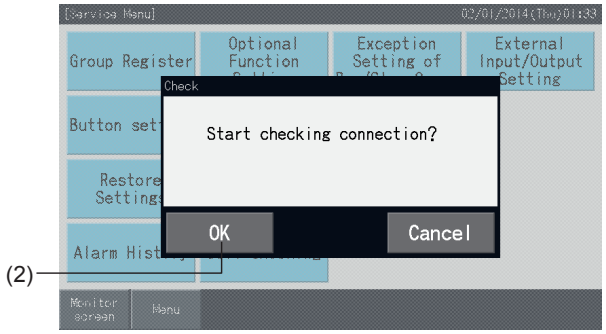


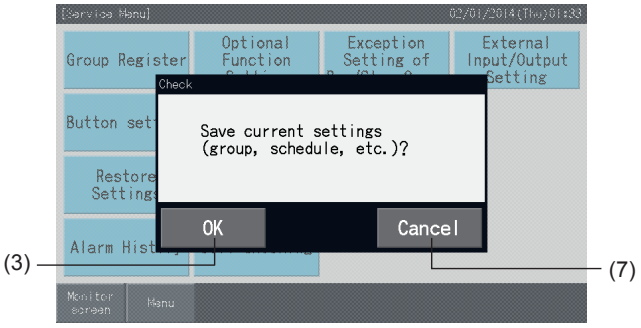
2 Tap “OK” at the confirmation screen.

NOTE

If tapping “Cancel”, the screen returns to “Service Menu”. The type of update of connection information depends on the following setting.

- *Proceed to step 3 to update connection information while keeping Group register and settings such as schedule setting, etc. (3)*
- *Proceed to step 7 to perform connection checking initializing each setting. (It is same as restoring the settings). (7)*





Keeping settings

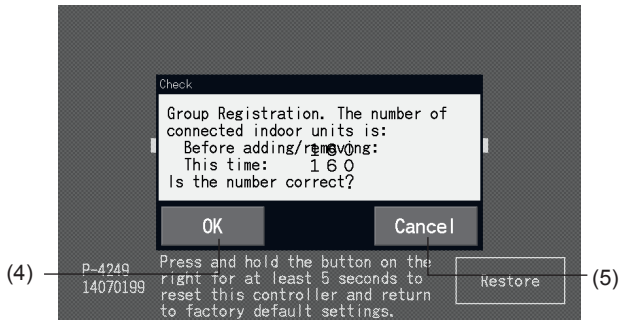
3 Tap “OK” at the confirmation screen for keeping settings.

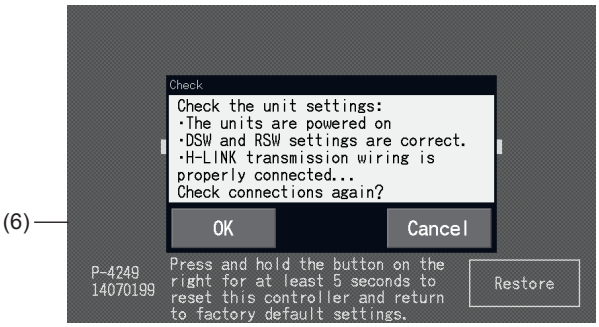
4 When the process of checking connection is finished, the number of connected units is indicated on the confirmation screen.

If the number of connected units is indicated correctly, tap “OK”.

The screen of “Main Unit Register” will be displayed. Refer to section *“Registration of a group (Main unit)”*.

5 If the indicated number of connected units is different from the actual number, tap “Cancel”.





6 A further confirmation screen is displayed. Check the air conditioners and tap “OK”.

NOTE

- *If “Cancel” is tapped, the screen returns to “Service Menu”.*
- *This function cannot be selected when remote control switch operation is prohibited, an external input contact is ON, or outdoor unit capacity control is not cancelled. Cancel these parameters before restoring the settings.*

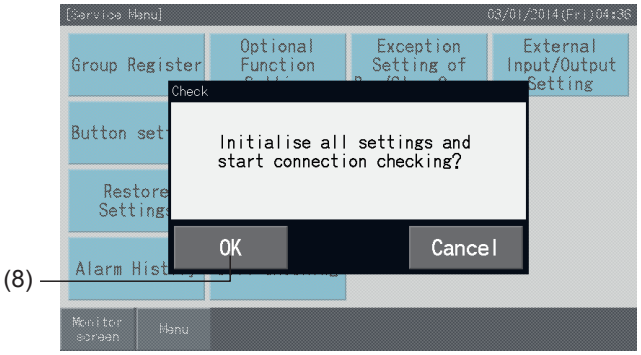
Not keeping settings

7 Tap “Cancel” at the confirmation window.

8 The confirmation window of initialization is displayed. Tap “OK” to initialise all the settings and to start checking connection. “OK” cannot be selected when there are units with remote control switch operation prohibition settings. All remote control switch operation prohibitions shall be cancelled beforehand.

NOTE

If “Cancel” is tapped, the screen returns to “Service Menu”.



◆ Alarm History

This function is used to record the time of alarm occurrence, the unit in which the abnormality has occurred and the relevant alarm code. The deletion of the alarm history record is also performed by this function.

1 Select “Alarm History” on the “Service Menu” screen.

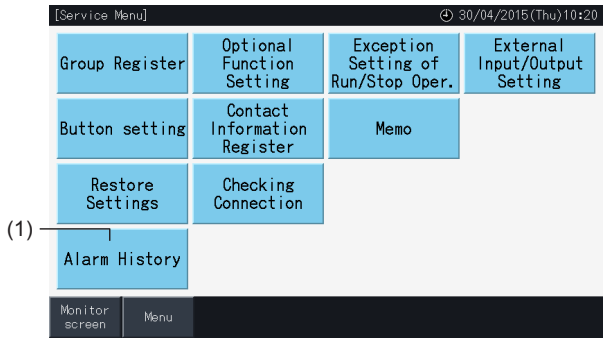
2 “Alarm History” screen is shown. Tap “△” or “▽” to scroll down the page in case that there are more than 11 alarm records.

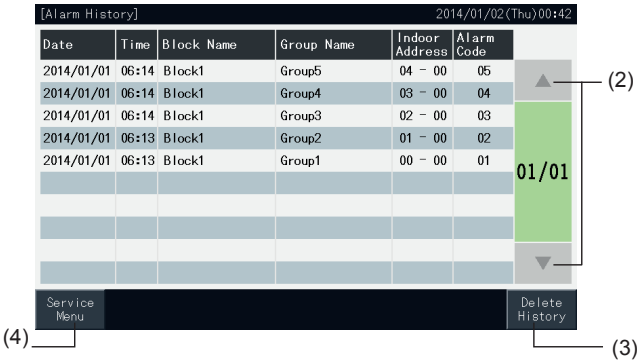
- It is not possible to scroll down the page if there are less than 10 alarm records.
- Up to 100 records can be stored in the memory.

3 Tap “Delete History” to delete the alarm history. When tapping “OK” at the confirmation screen, all alarm history records are deleted.

- If tapping “Cancel”, the screen returns to “Alarm History”.

4 Tap “Service Menu” to close the Alarm History display and return to Service Menu Screen.





5.2.4.5 Other indications on the LCD

◆ In normal condition

Schedule	Displayed in case that the schedule is set.
Filter Sign	Displayed when it is necessary to clean the indoor unit filter or the dust box for automatic cleaning filter needs cleaning. After cleaning, it is possible to suppress this indication with filter sign reset at the menu.
Filter Automatic Cleaning Error	Displayed in abnormal stop in a unit with auto-cleaning. Please contact the shop where the product was purchased.
Demand	Displayed when demand input is set by optional external input function. The icon blinks during the demand control. Contact your dealer or a HITACHI customer service centre for detailed information.
Demand (Schedule)	Displayed when optional outdoor unit capacity control schedule is enabled, blinks during the control. Apart from the schedule, the icon blinks also during normal demand control when the demand input of the external input function is set.
Inspection (Gas Heat Pump only)	In case of using a gas heat pump air conditioner, the blinking indicates the time for periodic inspection of the outdoor unit. • When it blinks slowly (in a cycle of 2 seconds ON / 2 seconds OFF): It indicates that the periodic inspection of the outdoor unit is near. • When it blinks faster (in a cycle of 0.5 seconds ON / 0.5 seconds OFF): It indicates that the time for the periodic inspection has passed. An engine failure may occur if the outdoor unit continues to be used without performing the periodic inspection. Request a periodic inspection to your dealer as soon as possible. **NOTE** *The periodic inspection shall be performed every 5 years or 10,000 operation hours, whatever comes first. The accumulated operation time is indicated on the controller as mentioned above.*
Heat Storage Operating	Indicates that the heat storage is operating. At this time, the air conditioner cannot operate.
Emergency Stop	Indicates when emergency stop signal is set by optional external input function. During the emergency stop, the indoor unit is stopped and operation by remote control switch is not available. Contact your dealer or a HITACHI customer service centre for detailed information.
Remote Control Switch prohibited	Indicates the group in which operation from the remote control switch is prohibited. The set items cannot be operated from the remote control switch.

◆ In Abnormal Condition

Abnormality

- The operation lamp flashes in red when an abnormal condition of the air conditioners occurs.
- When there is a group in abnormal condition, the colour of its button changes to red.
- The “Alarm Inform.” button also appears at the lower side of the screen.

If “Alarm Inform.” is tapped, the following items are displayed.

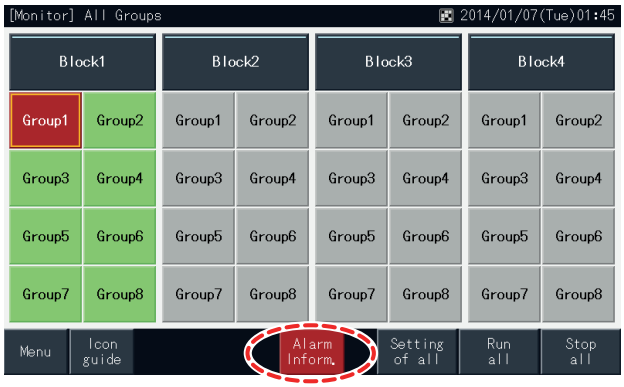
a. Refrigerant cycle number, address and model code* of the indoor unit in abnormal condition

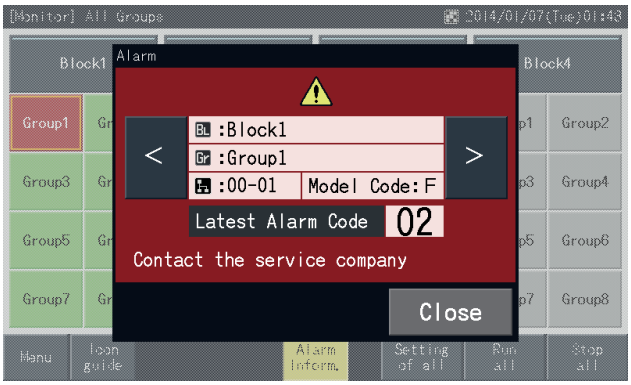
b. Alarm code

NOTE

(*) The model code may not be shown depending on the type of air conditioner unit.

- In case that multiple indoor units are in abnormal condition, the detailed information of abnormality for each unit is shown alternatively. In such cases, it is also possible to select the group in abnormal condition to display by tapping the “<” or “>” buttons at the “Alarm” window. Contact your dealer or a HITACHI customer service centre for detailed information, after checking the indications of the LCD.





Power Failure

- The display turns OFF in the event of a power failure.
- Once the devices stops due to a power failure, it does not start again after the power is recovered. Starting procedure shall be performed again.
- In case of a momentary power failure which lasts less than 2 seconds, the device starts up automatically again.

Noise

- There may be cases in which the display turns OFF and the device stops due to the activation of the micro controller for protection from electric noise. When the device stops due to this reason, perform the starting procedures again.

Freezing of display at the “Start-up” screen

- There is the possibility that a communication error occurred. Contact your dealer or a HITACHI customer service centre for detailed information.

5.2.5 Troubleshooting

Check the following table before contacting a dealer for assistance.

Condition	Cause
Indications on the touchscreen are not displayed.	• Check that the wiring for the power supply is connected to the wall plug. • Check that the power supply is turned ON.
The touchscreen display is in sleep mode.	• The touchscreen enters in sleep mode automatically when the touchscreen is not operated for a given length of time. Tap the screen to wake it up.
A part of the touchscreen does not turn ON or is always turned ON.	• There may be dead pixels on the LCD. This is not faulty.
There is no response when tapping a button on the touchscreen. However, the button next to the tapped one is responding.	• When the central station is used for a long time, the touchscreen may not match the position of display indication. Refer to section *"Touchscreen calibration"*.
The air conditioner unit does not run.	• Check if the air conditioner unit is in heat storage mode. The air conditioner cannot operate while the heat storage unit is operating (with the exception of heat storage units which explicitly allow simultaneous operation).
The setting of louver direction returns to previous setting.	• When the operation mode is "AUTO", the direction of the louver is automatically corrected depending on the indoor unit model.
Scheduled operation does not work.	• Check if the holiday setting is turned ON. If so, cancel the holiday setting following the instructions of section *"Holiday setting for suspending operation"*. • Check if the setting of scheduled operation is turned OFF. If so, the scheduled operation should be turned ON following the instructions of section *"Schedule timer ON/OFF setting"*.
Date and time appear as "- -".	• Date and time appear as "- -" when the electrical power is suspended for a prolonged period. Set date and time again following the instructions of section *"Date and time setings"*.
The selected settings are not applied.	• It may happen that the air conditioners do not respond to the orders of the central station immediately after power ON, because the starting process of the air conditioners has priority. Wait for a brief time before attempting operation again.
Simultaneous Run/Stop of all the units does not work.	• Check if exception settings for Run/Stop operation are being selected. If so, cancel the settings.
The state of the remote control switch does not match with the state of this controller when the indoor unit is recovering from a power failure.	• There is the possibility that the power supply was not stable when recovering from a power failure. Perform control operation from this controller to make the state of the remote control switch to match.

5.2.6 Maintenance

- Clean and wipe the LCD screen with a dry soft cloth.
- Use diluted neutral detergent to remove oil and fat such as fingerprint marks from the touchscreen. Wring water out to dry the cloth before cleaning. After that, wipe the LCD screen again with a dry soft cloth.
- Do not use benzine, thinner or surface active agents in order to protect the touchscreen and its case from deformation or deterioration or tarnishing.

5.3 PSC-A64S

5.3.1 Safety summary

HITACHI can not anticipate every possible circumstance that might involve a potential hazard.

⚠ DANGER

- ***DO NOT handle the remote control with wet hands.***
- ***DO NOT spill water on the remote control. This may cause an electric shock.***
- ***If the safety devices are activated too frequently or the buttons do not work properly, turn off the unit at the mains and contact your HITACHI service provider.***
- ***In the event of other incidents of an electrical nature, turn off the system, switch it off at the mains and contact your HITACHI service provider.***

⚠ CAUTION

DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:

- *Where there are oil vapours and the oil is dispersed.*
- *In the proximity of hot water or heat sources or in sulphuric environments.*
- *In locations prone to the generation, accumulation, leakage or flow of flammable gas.*
- *Close to the sea (saline atmospheres).*
- *In acidic or alkaline environments.*
- *Within the reach of children.*
- *Directly in front of the air-conditioning system outlet.*
- *To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m of strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.*
- *If electrical noise should be generated at the indoor unit power source, install a noise filter.*

⚠ CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*

5.3.2 Installation

5.3.2.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

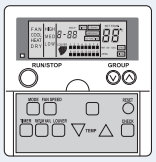
Cable section	0.3 mm²	≥ 0.75 mm²
Cable length	30 m	500 m

5.3.2.2 Components list

Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

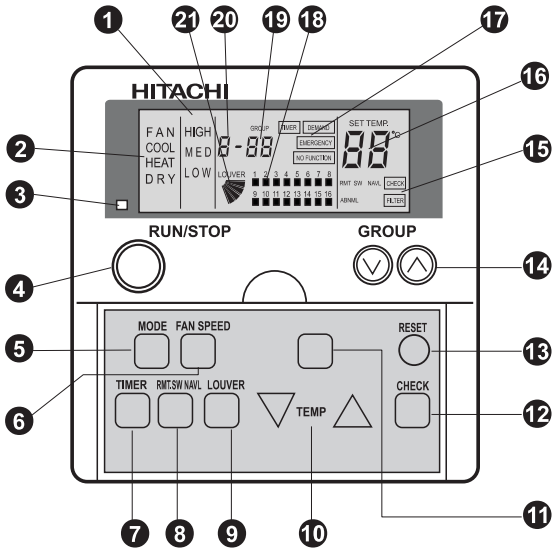
Name		Quant.	Comments
Central remote control		1	For controlling system operation
M4x16L screws		2	For fixing the holding bracket to the wall
Installation and operation manual		1	Installation and operation unit instructions

NOTE

Bear in mind that the central remote control is divided into two parts:

- *Central remote control*
- *Power source*

5.3.2.3 Description of the parts



Model: PSC-A64S

❶ Fan speed indicator
Indicates the fan speed selected for each group indicated: “HIGH”, “MED”, “LOW”.

❷ Mode indication
Indicates the operation mode selected for the indicated group: “Fan”, “Cool” , “Heat” and “Dry”.

NOTE

The automatic mode is available if the AUTO function is on.

❸ Run indicator (red pilot light)

❹ "RUN/STOP" button

❺ "MODE" button

❻ “FAN SPEED” button

❼ "ON/OFF TIMER" button (starts/stops timer).
Used to switch the timer on/off; when this button is pressed, the timer schedule of the control unit (PSC-A1T) will become available and the "TIMER" indication will appear.

❽ “RMT.SW AVL/NAVL” button
Used to either block or accept the control unit through each remote control. When “RMT.SW NAVL” appears, use of the remote control is blocked.

NOTE

When monitor mode is selected, the aforementioned operation modes will be indicated along with the temperature setting.

❾ "LOUVER" button

❿ "TEMP" button (temperature setting)

⓫ Button with no assigned function

⓬ “CHECK” button Used to set the unit as master or slave

⓭ “RESET” button
Used to cancel the “CHECK” and “FILTER” functions.

⓮ Group selection button
Used to change the number of the group of interior units to be monitored (01 to 16). Press “AA” to monitor all units simultaneously.

⓯ Indicators: “CHECK”, “FILTER”, “RMT SW NAVL” and “ABNML” (alarm)

⓰ Temperature indicator

⓱ “TIMER”, “DEMAND”, “EMERGENCY” and “NO FUNCTION” indication.
“TIMER” appears when the timer is connected.“DEMAND” appears when the "DEMAND" function (Thermostat Stoppage) is selected. “EMERGENCY” appears when the outdoor input function sends out the emergency stop signal.“NO FUNCTION” when the button pressed is not available.

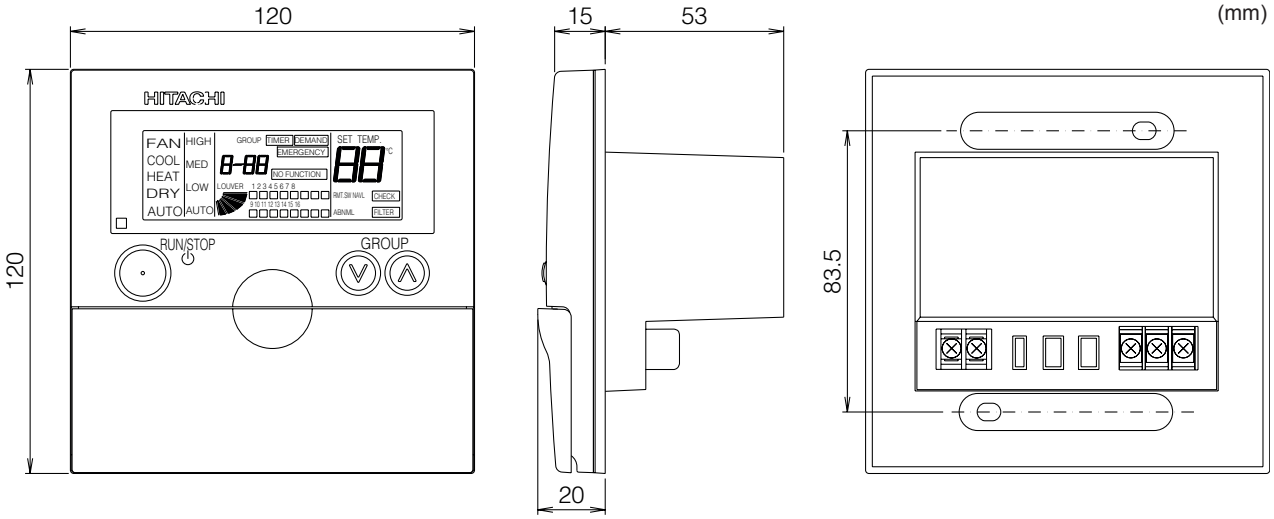
⓲ The ■ symbol indicates the operating condition of each group.
Off indicates a stoppage, on indicates running, and flashing indicates an abnormal condition.

⓳ Group number indication

⓴ Model number checking indication

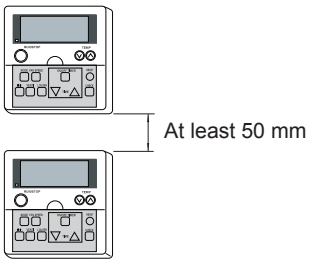
㉑ Swing louver indication

5.3.2.4 Dimensional data



5.3.2.5 Installation space

If several control units are to be installed in a vertical position, leave a distance of at least 50 mm between them to allow the front cover to be opened and to insert the tool for removing the control from its housing.

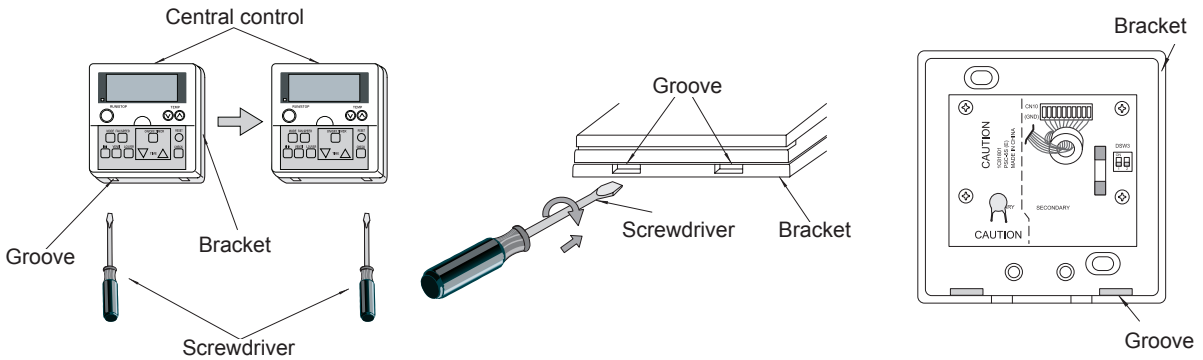


5.3.2.6 Installation procedure

NOTE

Follow the national regulations for the right assembly of the PSC-A64S in the wall.

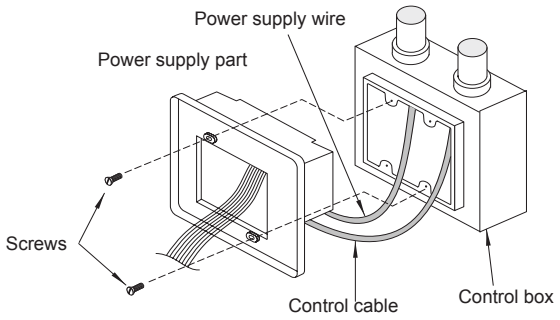
1 Using a flat-head screwdriver, separate the control unit bracket from the front section as indicated below.



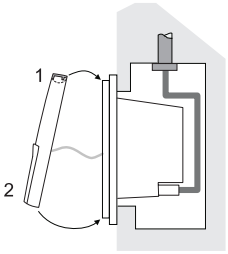
2 Connect the power supply part to the control box, as shown below.

NOTE

Do not lay the cables from the power source and the control unit in the same duct, since the power cable is liable to cause interference with the control cable.



3 Connect the control unit part to the power supply part. Join them at the top first, then at the bottom.

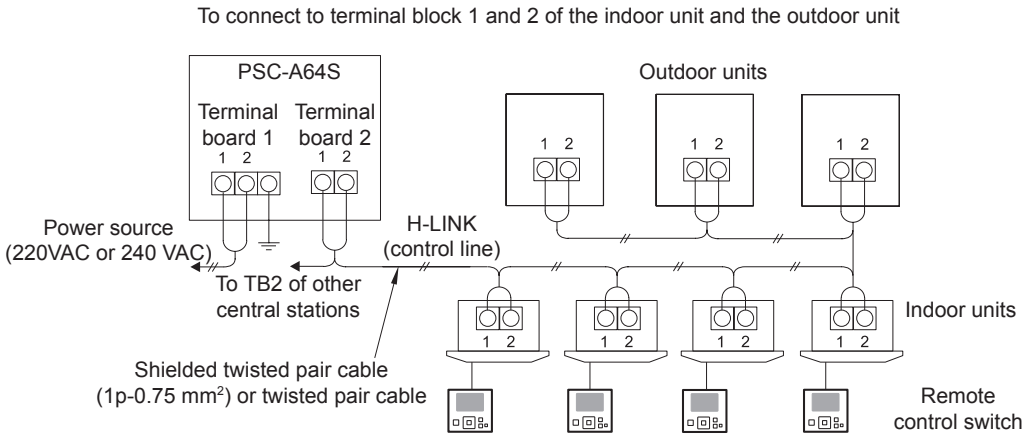


5.3.3 Electrical wiring

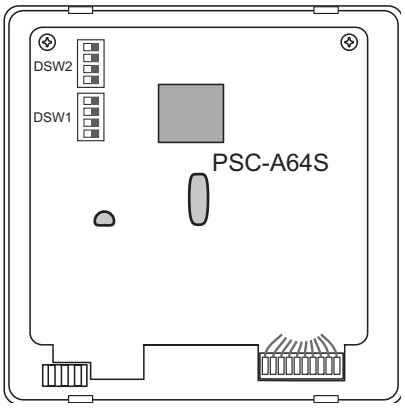
◆ Electrical wiring connection

Up to 8 central controls can be connected to the H-LINK system.

Use the 2-core cable of 0.75-1.25 mm^2 or the 2-core twist pair cable (Max. 1.000 m) for the transmission cable for the central station, for the outdoor unit and between indoor units (DC5V). The maximum total length of the cables shall be within 1.000 m.



◆ DIP switch setting



	Pin Nº	Contents	Setting of DSW		Remarks
			OFF	ON	
DSW1	1	For address setting	Refer to the description		For connecting plural central stations with H-LINK (control line), the adress setting for each central station is required
	2				
	3				
	4	Simultaneous use of other central controller	NO	YES	When using the following central controllers simultaneously, set the DSW1-4 pin ON - CSNET WEB - CSNET Manager
DSW2	1	External input function for indoor units operation (ON/OFF) by pulse or level	Level	Pulse	
	2	External input functions to stop the units by demand or emergency stop	Demand	Emergency stoppage	- Available only when the DSW2-1 pin is OFF.
	3	Not prepared	-	-	Set OFF
	4	H-LINKII Adaptive	Adaptive	Non-adaptive	- Set DSW2-4 pin OFF: H-LINK II adaptive. - Set DSW2-4 pin ON: Non-H-LINK II adaptive.

NOTE

The DIP switches are all deactivated before they are sent from the factory.

Address setting with DSW1 Dip Switch

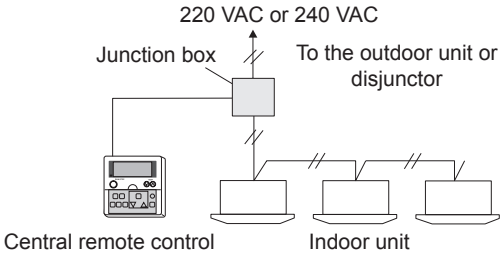
If connecting more than one central control (up to a maximum of 8) to the H-LINK system, first set the address using the DIP switch DSW1, as shown below:

Address 1	Address 2	Address 3	Address 4	Address 5	Address 6	Address 7	Address 8
							

NOTE

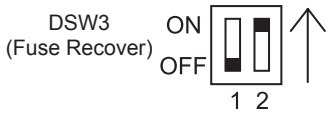
If using the central station PSC-5S and PSC-A64S together in the same H-LINK (control line) system, set the DSW1 not to be overlapped.

Split the central control power supply line from the main power supply line using a junction box, as shown in the following diagram:



⚠ CAUTION

- *Before installing the wiring, switch off the power supply to the air conditioning system and central control unit. Installing the wiring while the central control power supply is switched on may cause the central control unit to malfunction.*
- *Check to ensure that the wiring is correct. Incorrect wiring may cause malfunction of the central station.*
- *DO NOT run all the transmission cable for the central station along the power line and other transmission cables, or malfunction may occur due to the noise, etc. If the transmission cable for the central station is required to be run along the power line and other transmission cables, separate the cable more than 30 cm away from other cables, or run the cable through a metal tube and earth the tube.*
- *In case of applying high voltage to the TB2, the fuse on the PCB is blown out. In such a case, firstly correct the wiring to TB1, and then set Nº.2 pin ON.*

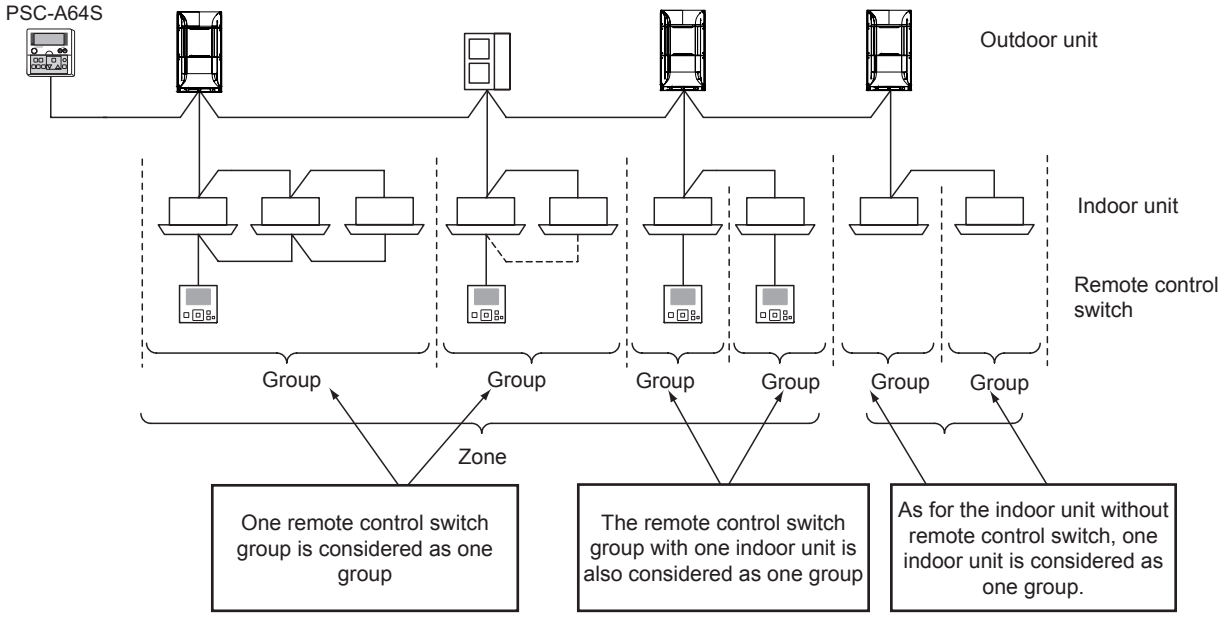


5.3.4 Operation

5.3.4.1 Group setting

◆ Group and zone concept

- Group: Minimum unit for operation of Central Station. One remote control switch group is considered as one group under the same control. The Central Station can control up to 64 groups (4 zones x 16 groups).
- Zone: Operation unit with plural groups. Up to 16 groups as maximum can be set in one zone. The central station can control up to 4 zones.
- Remote control switch group: Unit of plural indoor units (max. 16 units). Connected with transmission line of remote control switch. In this group the indoor units are under the same control setting.



⚠ CAUTION

When setting the remote control switch group without transmission line between indoor units, the indoor unit connected with the remote control switch shall be set as master unit. If the setting of the master unit is wrong, the group can not be controlled with the central station.

The central control unit is designed to control up to 16 groups of up to 16 units (the maximum number of indoor units is defined by the H-LINK limit).

Each of these groups is made up of two types of unit:

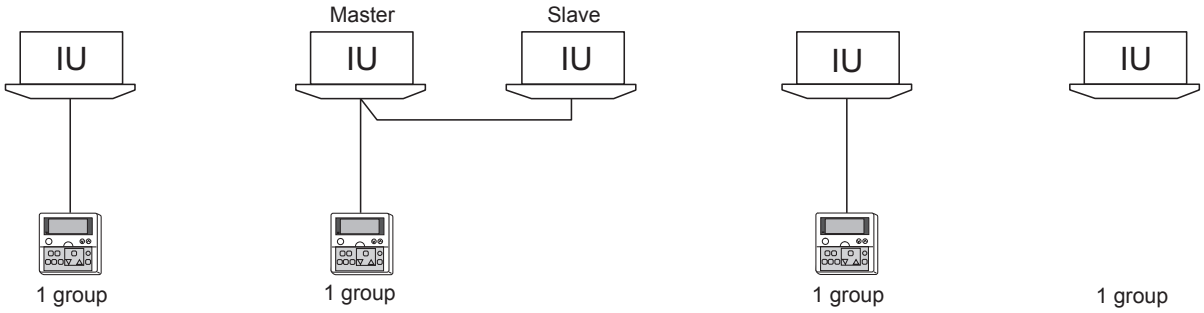
- Master Unit: Unit selected in each group to control and set each of the group parameters equally and at the same time.
- Slave Unit: Units (up to 15 in one group) which follow the master unit configuration assigned for this group.

To use the central control unit correctly, each group of units must be configured as indicated below:

⚠ CAUTION

- *Before installing the wiring, switch off the power supply to the air conditioning system and central control unit.*
- *Installing the wiring while the central control power supply is switched on may cause the central control unit to malfunction.*

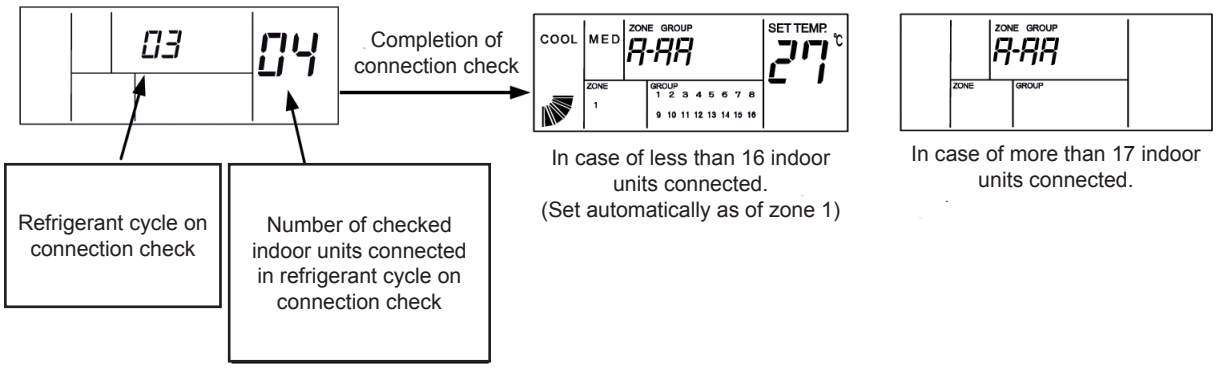
Examples of groups:



◆ Automatic initial group configuration

After completion of electrical wiring work and test running of the air conditioner, turn ON the power supply of the central station. (Ensure to perform the test runing of the air conditioner before turning ON the power supply of the central station).

In case that group setting is not performed, the indication of the central station is as shown below for checking indoor unit connection after turning ON the power supply.



NOTE

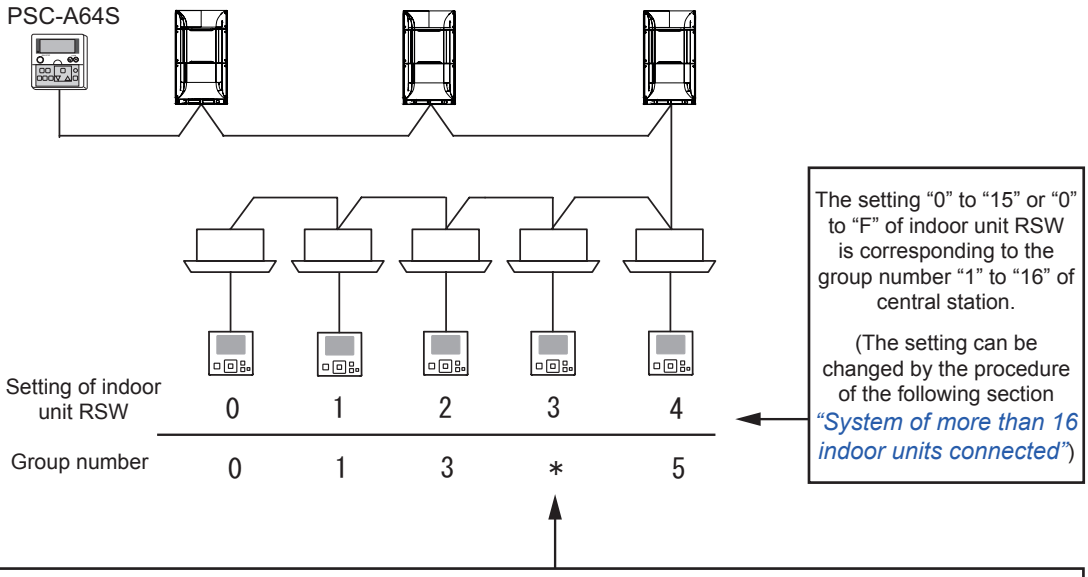
- *The checked number of connected indoor units may be more than the actual number according to the condition of transmission.*
- *During the connection check, the indications of group number and setting temperature may be "- -" temporarily.*
- *When the "63" alarm is indicated, the setting of H-LINK II adaptive is wrong. Check for the setting of the central station and other central controller used together.*

◆ Group configuration

- The group setting consists of the master unit setting and the slave unit setting. The indoor unit, which is connected directly to the remote control switch, is set as the master unit, and the indoor unit connected with the transmission line is set as the slave unit.
- Without the remote control switch, the control by the remote control switch group is not available. Therefore, in this case, one indoor unit is set as one group. (Only the master unit is set without the slave unit).
- When setting the remote control switch group without transmission line between indoor units, the indoor unit connected with the remote control switch shall be set as master unit.
- When using the remote control switch (PC-ARFP1E), the half-sized remote control switch (PC-ARH1E) or receiver kit (PC-ALH*), after the setting of master unit, the central station automatically set the slave unit. Check for the setting state by the slave unit setting mode.

System of up to 16 indoor units connected, refrigerant system address and indoor unit address

The group is automatically set as zone Nº 1 by the indoor unit address regardless of the refrigerant cycle address. Set the indoor unit address without duplication of address.



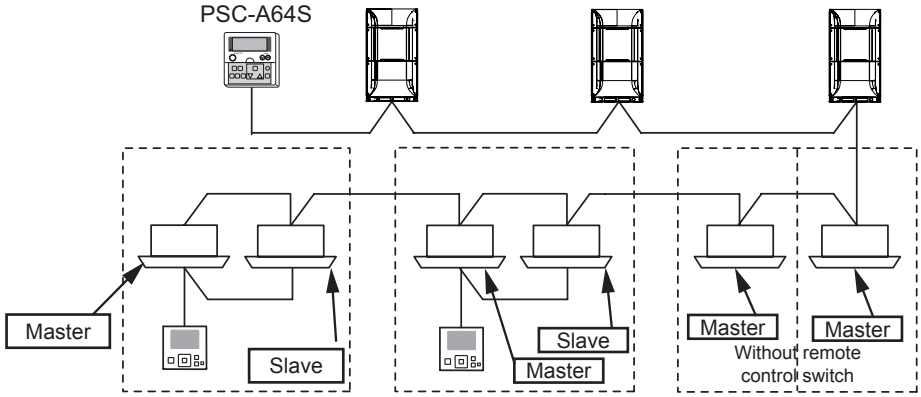
- When using the remote control switch (PC-ARFP1E) or the half-sized remote control switch (PC-ARH1E) and the receiver kit (PC-ALH*), the indoor units are automatically recognized as the slave unit of the indoor unit 2 and set to the group 3. (The setting of the slave unit is not required. However, the contents of the setting should be checked.)
- When using other controllers than the described above, the indoor unit can not be recognized as the slave unit automatically, and set as the master unit of group 5. In this case change the setting to the slave unit of the group 3 according to the above *“Group configuration”*.

System of more than 16 indoor units connected

In this case, the group setting by central station is required. Group setting is for master unit (directly connected to remote control switch) and slave unit (connected by extension cable).

In case that the remote control switch is not connected, the group setting by remote control switch is not available and only one master unit is controlled as one group.

In case of up to 16 indoor units connected, the group setting is automatically performed as described in *"System of up to 16 indoor units connected, refrigerant system address and indoor unit address"*. In this case, correct the group setting by the next procedure.



Refrigerant number setting	1	1	2	2	3	3
Indoor Unit RSW Setting	0	1	0	1	0	1
Group Number	1		2		3	4

◆ Setting of master unit

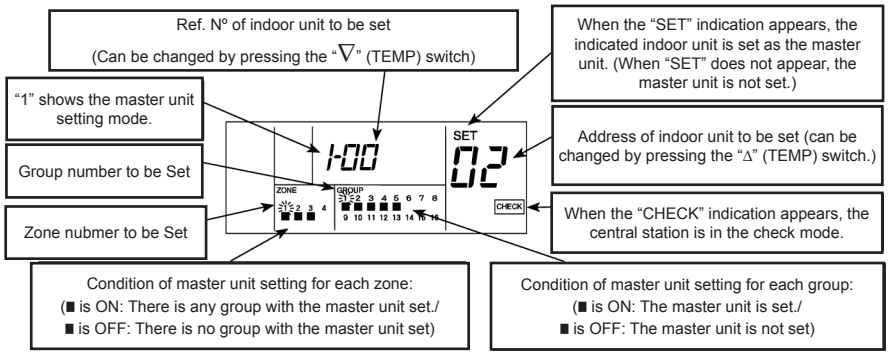
Indication of master unit setting mode

When the central station is changed to the master unit setting mode, the LCD indication on the central station is as shown below. The indication of the group to be set is flickered. The refrigerant cycle number (hereafter called "Ref. Nº") and the indoor unit address (hereafter called "I.U Add.") indicates the address of the indoor unit which is set as the master unit of the group to be set.

The "■" indication of group flickers in case that the master unit of the group is set. When the "SET" indication appears, the indoor unit indicated on LCD is set as the master unit.

In case that the master unit is not set, "- -" is indicated at Ref Nº and I.U Add, and the "SET" indication does not appear.

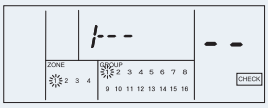
* When there is one or more group with indoor unit set as master unit in the zone, the zone indication "■" turns ON.



The above figure shows that the indoor unit of reference number "00" and indoor unit address "02" is set as the master unit for Group 1 of Zone 1.

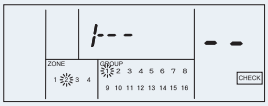
Procedure of master unit setting

a. Screen change for Master Unit Setting keep pressing the “CHECK” switch for 3 seconds during all the indoor unit is stopped (with “RUN” indicator OFF). The “CHECK” indicator turns ON, and it shows the state is changed to the CHECK mode. In addition, “1” (master unit setting mode) is turns ON at the 7-segment indicator for checking.



b. Select Zone to be set depress the “ZONE” switch, and the flickering indication of zone number is changed in order as shown below.



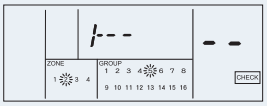


The above figure shows the case of selecting Zone “2”.

c. Select of Group Nº. to be set select the group to be set by pressing the “GROUP” switch.The flickering indication of group Nº is moved in order as shown below every time the “GROUP” switch depressed.

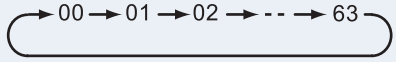


i. When the main unit of the selected group is already set, the Ref Nº and I.U Add of the main unit already set are indicated and the “SET” indication appears.



The above figure shows the case of selecting Zone “2” and group “5”.

d. Selection of Indoor Unit to be set select the refrigerant system address and indoor unit address to set. The refrigerant system address is changed by pressing "﹀" (TEMP) switch and the indoor unit address is changed by pressing "﹀" (TEMP) switch in order as shown below. In this case, the switch is kept pressing, and the indication of the refrigerant system address or the indoor unit address is fast-forwarded.





The above figure shows the case of selecting Ref Nº “3” and I.U Add “6”.

⚠ CAUTION

- *When the indication of refrigerant number is “- -”, the indication of indoor unit address is also “- -”. In such a case, indoor unit address can not be changed although the “Δ” (TEMP) switch is depressed.*
- *Refrigerant number with no indoor unit connected and indoor unit address not connected are not indicated.*
- *The indoor unit already set as the master unit is not indicated.*

e. Setting procedure
Depress the “RUN/STOP” switch after selecting indoor unit, the indicated unit is set as the master unit, and the “■” and “SET” indications appear. The “■” indicator of zone turns ON when there is one or more group with the master unit set.



f. Perform the master unit setting procedure b. to e. for each group and zone.

g. After completion of the master unit setting, change the mode to the standard state by pressing “RESET” switch.



⚠ CAUTION

- *When there is any group in operation (with “RUN” indicator ON), the “CHECK” mode is not available.*
- *Only one indoor unit can be set as the master unit in one group. Other indoor unit can not be set as the master unit for the group with the master unit set already. For setting the master unit as the master unit for another group, cancel the present master unit setting and perform the setting for another group.*
- *In case that there are indoor units with auto-louver and indoor units without auto-louver in the same group, set the indoor unit with auto-louver as the master unit. If the indoor unit without auto-louver is set as the master unit, the auto-louver setting is not available for all the units of the group.*
- *When setting the remote control switch group without transmission line between indoor units, the indoor unit connected with the remote control switch shall be set as master unit.*

Procedure for the cancellation of master unit setting

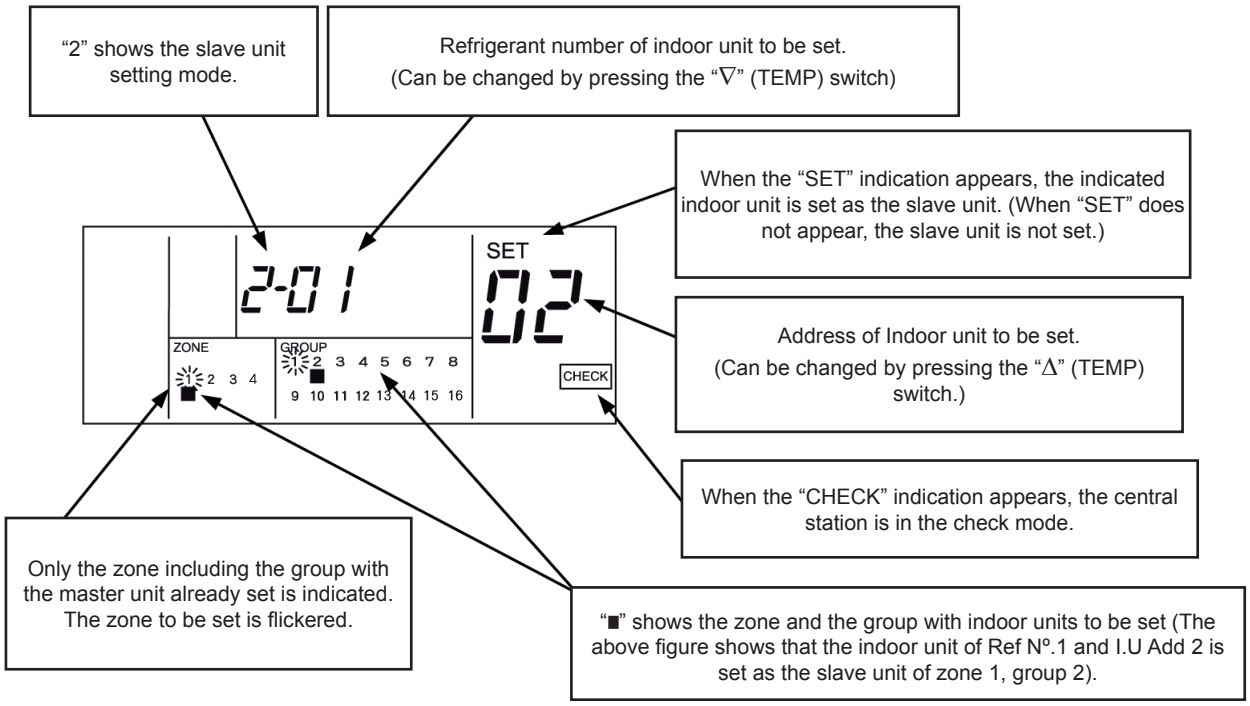
a. Screen change for cancellation of Master Unit setting keep pressing the “CHECK” switch for 3 seconds during all the indoor unit is stopped (with “RUN” indicator OFF). The “CHECK” indicator turns ON, and it shows the state is changed to the CHECK mode and “1” (master unit setting mode) turns ON at the 7-segment indicator for checking.	
b. Select of Zone to be cancelled depress the “ZONE” switch and the “GROUP” ﹀ ﹀ switch, and select the zone and the group to cancel.	
c. Cancel the slave unit setting. Depress the “RUN/STOP” switch and the master unit is cancelled “SET” indicator and the “■” indicators of group turn OFF. The “■” indicators of zone turns OFF when there is one or more group with the master unit set.	
d. Perform the cancellation of master unit setting procedure b and c for each zone and group. **e.** After completion of cancelling the master unit setting, change the mode to the standard state by pressing “RESET” switch.	

◆ Setting of slave unit

When using the remote control switch (PC-ARFP1E), the half-size remote control switch (PC-ARH1E) or receiver kit (PC- ALH*), after the setting of master unit, the central station automatically set the slave unit. Check for the setting state by the slave unit setting mode.

Indication of slave unit setting mode

When the central station is changed to the slave unit setting mode, the LCD indication on the central station is as shown below. The indication of the group to be set is flickered. The Ref Nº and I.U Add indicates the address of the indoor unit with the smallest address among the slave units of the group to be set. The “■” indication of group flickers in case that the slave units of the group are already set. In case that the slave units are not set, “- -” is indicated at Ref Nº and I.U Add.



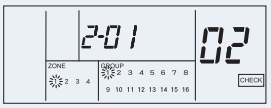
Procedure of slave unit setting

a. Screen Change for slave unit setting.
Keep pressing the “CHECK” switch for 3 seconds during all the indoor unit is stopped (with “RUN” indicator OFF). The “CHECK” indicator turns ON, and it shows the state is changed to the “CHECK” mode. When “1” (master unit setting mode) is turns ON at the 7-segment indicator for checking, depress the “CHECK” switch again, and then the checking indication is changed to “2” (slave unit setting mode).



b. Select the refrigerant system address and indoor unit address to set. The refrigerant system address is changed by pressing “▽” (TEMP) switch and the indoor unit address is changed by pressing “△” (TEMP) switch in order as shown below. In this case, the switch is kept pressing, and the indication of the refrigerant system address or the indoor unit address is fast-forwarded.

00 → 01 → 02 → - - → 63



The above figure shows the case of selecting Ref Nº “1” and I.U Add. “2”.

⚠ CAUTION

a Ref Nº with no indoor unit connected and I.U Add not connected are not indicated.

b When the selected unit is already set as slave unit, the zone and the group Nº indication “■” of the unit and “SET” indication appear.

c The indoor unit already set as the master unit is not indicated.

c. Select of Zone to be set.
Depress the “ZONE” switch, and the flickering indication of zone Nº is changed in order as shown below.

1 → 2 → 3 → 4

* The zone, in which there is no group with the master unit already set, is not indicated.



The above figure shows the case of selecting Zone “2”.

d. Select of Group to be set
Depress the “GROUP” ∨∧ switch, and the flickering indication of group Nº is changed in order as shown below.

1 ↔ 2 ↔ - - ↔ 16

* The group, in which the master unit is not set, is not indicated.



The above figure shows the case of selecting Zone “2” and group “2”

e. Setting Procedure
Depress the “RUN/STOP” switch after selecting zone and group, the slave unit is set. The “SET” indicator and the “■” indicator of group turn ON.



f. Perform the slave unit setting procedure “b” to “e” for each group and zone.

g. After completion of the slave unit setting, change the mode to the standard state by pressing “RESET” switch



⚠ CAUTION

- *Up to 15 slave units can be set in one group (Max. 16 units (including the master unit) in one group).*
- *For changing the setting of slave unit to another group, cancel the present slave unit setting and perform the setting for another group.*
- *In case that all the units are set as the master unit, the central station can not be changed to the slave unit setting mode.*
- *When there is any group in operation (with “RUN” indicator ON), the “CHECK” mode is not available.*

Procedure for the cancellation of slave unit setting

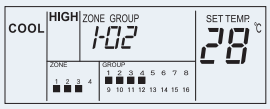
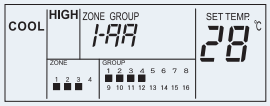
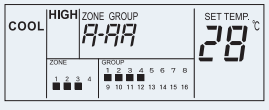
a. Screen Change for Cancellation of Slave Unit Setting. Keep pressing the “CHECK” switch for 3 seconds during all the indoor unit is stopped (with “RUN” indicator OFF). The “CHECK” indicator turns ON, and it shows the state is changed to the CHECK mode. When “1” (master unit setting mode) is turns ON at the 7-segment indicator for checking, depress the “CHECK” switch again, and then the checking indication is changed to “2” (slave unit setting mode).	
b. Select the refrigerant system address and indoor unit address to cancel. The refrigerant system address is changed by pressing “∇” (TEMP) switch and the indoor unit address is changed by pressing “Δ” (TEMP) switch in order as shown below. In this case, the switch is kept pressing, and the indication of the refrigerant system address or the indoor unit address is fast-forwarded. 00 → 01 → 02 → - - → 63 * The Ref Nº and I.U Add of the indoor unit unconnected are not indicated. * The Ref Nº and I.U Add of the indoor unit set as the master unit are not indicated.	 *The above figure shows the case of selecting Ref Nº. “1” and I. U. Add. “2”.*
c. Cancellation of Slave Unit Address. Depress the “RUN/STOP” switch and the slave unit is cancelled “SET” indicator and the “■” indicators of zone and group turn ON.	
d. Perform the cancellation of slave unit setting procedure b and c for each intended refrigerant system and address.	
e. After completion of canceling the slave unit setting, change the mode to the standard state by pressing “RESET” switch.	

5

5.3.4.2 Operation selection procedure

◆ About Setting Target

The zone and the group subject to setting and monitoring are called as setting target. The central station indicates the setting target as shown below.

Indication Example 1 This indication is the example in the case where the setting target is group. The setting of the selected group is ordered.	 *(ex. in case of Zone 1 and Group 2)*
Indication Example 2 This indication is the example in the case where the setting target is zone. The setting of all the groups set in the selected zone is ordered.	 *(ex. in case of All Group in Zone 1)*
Indication Example 3 This indication is the example in the case where the setting target is all the indoor units. The setting of all the units (all the groups) set is ordered.	 *(ex. In case of All Indoor Units)*

◆ Setting target selection and monitoring operation status

The central station can control up to 64 groups by each group, each zone or simultaneously. (The selected setting target can be operated and the unit operation status can be monitored.)

⚠ CAUTION

- *When changing the zone Nº by pressing the "ZONE" switch, the zone, which is not set as group, is not indicated.*
- *The group number is changed by pressing the "GROUP" switch. The group without group setting is not indicated.*

Preparation 1

Supply power to the unit.

⚠ CAUTION

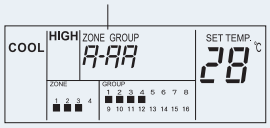
a Supply power to the unit more than 6 hours before unit operation for compressor protection.

b Do not cut off power during the term of using air conditioner.

Preparation 2

After the preparation for air conditioner operation is completed, turn ON the power supply of the central station.

The setting target zone and group number is indicated on the liquid crystal display

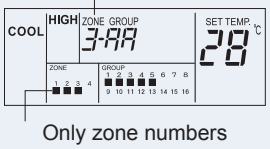


1 Depress the "ZONE" switch.
Every time the "ZONE" switch is depressed, the zone and group number to be controlled is changed in the order as shown below:

A-AA → 1-AA → 2-AA → 3-AA → 4-AA

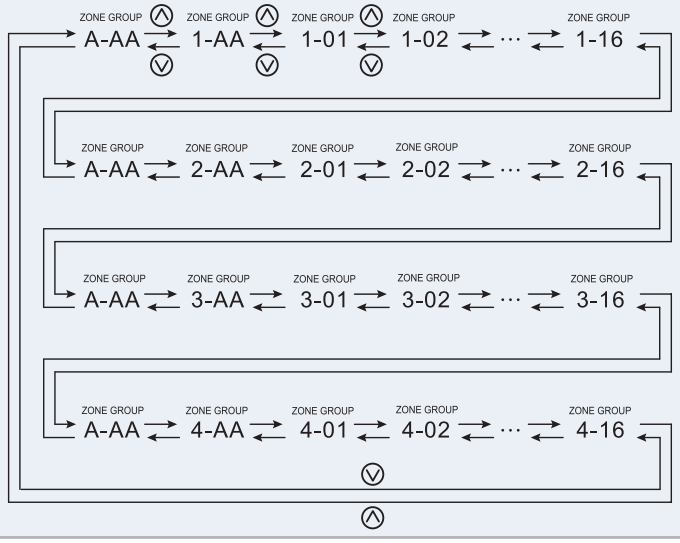
When the zone is changed, the setting target group is AA (All Groups) initially. For example, pressing "ZONE" switch when the setting target is 1-02, the indication is changed to 2-AA.

Zone number is changed. (Ex. in case of all group in Zone 3)

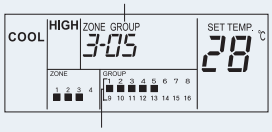


Only zone numbers already set are indicated

2 Depress the "GROUP" switch.
Every time the "GROUP" switch is depressed, the zone and group Nº. to be controlled is changed in the order as shown below. In case of "AA", all the units are controlled simultaneously.



Group number is changed. (ex. in case of selecting zone 3, group 5)



Only group numbers already set are indicated

3 When selecting the group, the setting conditions of each group are indicated.

i. By operating by the remote control switch, the content of the setting is indicated.

Zone ■ 1 ~ ■ 4 show the operating conditions of each zone as follows;

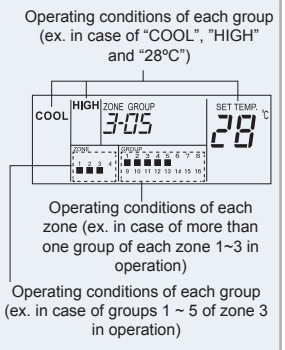
- ■ OFF...Stoppage of All Groups in Zone
- ■ ON...Operation of One or More Group in Zone
- ■ Flickering...Failure in One or More Group in Zone

■ 1 ~ ■ 16 show the operating conditions of each group as follows;

- ■ Turned OFF: Stop
- ■ Turned ON: Operation
- Flickering: Abnormality

The Run indicator (Red Lamp) shows the followings;

- Turned OFF: All indoor units stop.
- Turned ON: More than 1 group in operation.
- Flickering: More than 1 group in abnormal condition.



NOTE

- *The indication of setting temperature “- -” shows no setting of temperature.*
- *When the setting target group is “AA” (All Groups), the indications of operation mode, set temperature, fan speed, louver angle and remote control switch not available are indicated only for the items which all groups are under the same setting.*
- *When the setting target group is “A-AA” (All Indoor Units), the indication “■” turns ON when there is one or more group in operation in each zone, and also flickers when there is one or more group in failure in each zone.*

5

◆ Setting of operation mode

<Function>

“COOL” Operation: To cool the room temperature by distributing the cooled air.

“HEAT” Operation: To heat the room temperature by distributing the heated air.

“DRY” Operation: To dehumidify more than standard cooling operation.

“FAN” Operation: To circulate the room air.

NOTE

The recommended temperature for each operation is as follows:
“COOL” Operation: 27~29°C / “HEAT” Operation: 18~20°C / “DRY” Operation: 23~25°C

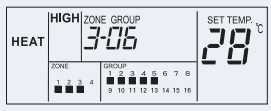
1 Depress the “ZONE” switch and the “GROUP” switch and select the setting target.
(Refer to item *“Setting target selection and monitoring operation status”*).



The above figure shows the case of selecting “ZONE 3, GROUP 6”.

2 Depress the “MODE” switch.
The operation mode is changed in the following order.

FAN → COOL → HEAT → DRY



The above figure shows the case of setting “HEAT” operation.

NOTE

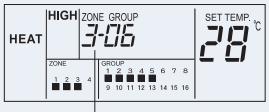
- *The above indications show the case of setting operation mode for “Zone 3, Group 6”. The same setting procedure shall be performed for other groups.*
- *Some operation modes can not be set according to the unit model. Contact to HITACHI dealer or your distributor for details.*
- *The operation mode can be set while the unit is stopped or in operation.*

◆ Setting of temperature, fan speed and louver angle

⚠ CAUTION

- *Do not touch the "CHECK" switch. The "CHECK" switch is only for service use.*
- *When the "CHECK" switch is depressed by a mistake and the central station is changed to the check mode, depress the "RESET" switch to cancel.*

1 Depress the "ZONE" switch and the "GROUP" switch and select the setting target. (Refer to item *"Setting target selection and monitoring operation status"*).



The above figure shows the case of selecting "ZONE 3, GROUP 6".

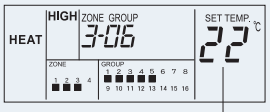
<TEMPERATURE>

Set temperature by pressing "TEMP" switch.

Depressing "∇" switch, the temperature is increased by 1ºC (Maximum 30ºC).

Depressing "Δ" switch, the temperature is decreased by 1ºC (Minimum 19ºC, for Cool, Dry and Fan mode, and 17ºC for Heat mode).

When pressing Δ for 3 seconds at set temperature at 30ºC, or pressing ∇ for 3 seconds at the minimum temperature, the temperature is not set and the indication of setting temperature is "--". In this case, depress Δ or ∇, the indication of setting temperature returns to the minimum temperature or 30ºC.



The above figure shows the case of setting 22°C.

NOTE

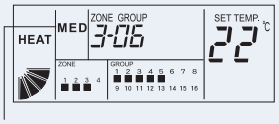
The above shows the setting range for standard model. The setting temperature range may be different according to the connected unit model.

<FAN SPEED>

Depress the "FAN SPEED" switch.

By pressing the "FAN SPEED" switch, the indication is changed in the following order;

HIGH → MED → LOW →



The above figure shows the case of setting "MED" fan speed.

NOTE

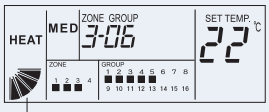
- *In case of dry operation, the fan speed is automatically changed and fixed at the "LOW" fan speed.*
- *In this case, the fan speed can not be changed (The indication remains at the setting condition).*

<LOUVER ANGLE>

Depress the "AUTO LOUVER" switch.

Every time the "AUTO LOUVER" switch is depressed, the indication of the louver angle is changed.

Depress the "AUTO LOUVER" switch at the position of  , the indication is changed to  and this indication indicates the auto-swing. Depress the "AUTO LOUVER" switch again, the indication is turned to  .



The above figure shows the case of setting auto-swing.

NOTE

- *The above indications show the case of setting operation mode for "ZONE 3, GROUP 6". The same setting procedure shall be performed for other groups.*
- *The temperature, fan speed and louver angle can be set while the unit is stopped or in operation.*

In Case of 4-Way Cassette Type (Example)

LCD Indication							
Air louver angle	Approx. 25°	Approx. 30°	Approx. 35°	Approx. 40°	Approx. 50°	Approx. 55°	Approx. 60°
Cooling / Dry							
	Angle range						
Heat							
	Angle range						

	: Recommended Angle

NOTE

- *The fixing angle of the louver shown above is the case of 4-way cassette type indoor unit. The fixing angle is different according to unit model. Refer to the operation manual of each model for details.*
- *There exists a time lag between the indicated louver position on LCD and the actual louver angle in operation. Therefore, when fixing the louver, set the angle according to the indicated louver angle on LCD.*
- *When the "AUTO LOUVER" switch is depressed, the louver may not stop immediately.*

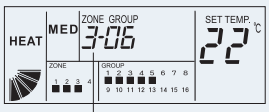
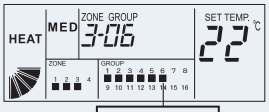
CAUTION

The louver angle is automatically changed during heating operation for unit control.

When heating operation is started When dry operation is started When temperature controller is activated	→	The louver angle is automatically changed.	→	When the discharged air temperature is increased over 30°C, the louver angle automatically return to the set position.

The LCD indication remains at the setting condition.

◆ Unit operation

1 Depress the "ZONE" switch and "GROUP" switch and select the setting target. (Refer to item 2 of *"Setting target selection and monitoring operation status"*).	 The above figure shows the case of selecting "ZONE 3, GROUP 6".
2 Depress the "RUN/STOP" switch. In case that the selected group is in operation, the group is stopped by pressing "RUN/STOP" switch. In case that the group is not in operation, the group is started by pressing the "RUN/STOP" switch. In case of group "AA", depress the "RUN/STOP" switch, and; - All indoor units are stopped (when more than 1 group is in operation (Run lamp is ON)). - All the groups are started operation (When all the groups are stopped (Run lamp is OFF)).	 Turned ON The above figure shows the case of "ZONE 3, GROUP 6".

NOTE

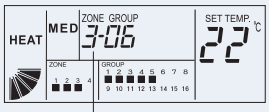
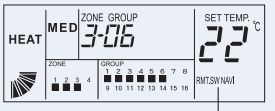
- *The above indications show the case of setting operation mode for "Zone 3, Group 6"*
- *The same setting procedure shall be performed for other groups. In case of the simultaneous operation for all groups, select the group number of "AA".*

◆ Prohibiting operation by remote control switch

<Function>

To prohibit the operation by the remote control switch.

When this function is available, the “CENTRAL” indication appears on the LCD on the remote control switch and the operation by the remote control switch is not available.

1 Depress the “ZONE” switch and the “GROUP” switch and select the setting target. (Refer to item 2 of “A. *“Setting target selection and monitoring operation status”*).	 The above figure shows the case of selecting “ZONE 3, GROUP 6”.
2 Depress the “RMT SW NAVL” switch. Every time the “RMT SW NAVL” switch is depressed, the “RMT SW NAVL” indication is turned ON and OFF alternately.	 The above figure shows the case of “ZONE 3,GROUP 6” prohibited from operating by the remote control switch.

⚠ CAUTION

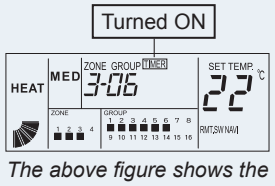
- *The above indications show the case of setting operation mode for group 4. The same setting procedure shall be performed for other groups. In case of the same setting for all groups, select the group number of “AA”.*
- *Although the “RMT SW NAVL” function is set, in case of operation by the central station, the unit can be stopped by the remote control switch, and in this case, the unit can be started again by the remote control switch.*
- *For the unit without remote control switch, the “RMT SW NAVL” function shall be set.*
- *In case of using together with other controllers, do not set the “RMT SW NAVL” function. Additionally, do not set the “RMT SW NAVL” function by other controller or the malfunction may occur.*
- *In case of no setting of temperature (“- -”), the temperature can be set by the remote control switch during the “RMT SW NAVL” function is available.*

◆ Timer Operation

<Function>

To set the schedule operation “available” or “not available” by the signal from the control timer in case of connection with the control timer (PSC-A1T; Option).

The schedule operation can be set “available” or “not available” individually for each unit, however, the operation schedule is all the same.

1 Depress the “ZONE” switch and the “GROUP” switch and select the setting target. (Refer to item 2 of *“Setting target selection and monitoring operation status”*).	 *The above figure shows the case of selecting “ZONE 3, GROUP 6”.*
2 Depress the “TIMER” switch. Every time the “TIMER” switch is depressed, the “TIMER” indication is turned ON and OFF alternately. The group with timer setting is operated according to setting schedule by the signal from the control timer.	 *The above figure shows the case of “ZONE 3, GROUP 6” setting timer operation.*

NOTE

- *The above indications show the case of setting operation mode for “ZONE 3, GROUP 6”.*
- *The same setting procedure shall be performed for other groups.*

5.3.4.3 Input/Output function

The central station has two input functions and two output functions as shown below.

1 Simultaneous Operation/Stoppage.
This function is for operating / stopping all the indoor units of the group, which is set by the central station, by the external contact signal.

2 Simultaneous Operation.
This function is for operating all the indoor units of the group, which is set by the central station, by the external pulse signal.

3 Simultaneous Stoppage.
This function is for stopping all the indoor units of the group, which is set by the central station, by the external pulse signal.

4 Emergency Stop signal connection function.
This function is for stopping all the air conditioners connected with the central station by the external emergency stop signal.
* When other central controller is used together with, even in the state of emergency stop, the RUN/STOP operation by other central controllers is available.

5 Demand Control Function.
The peak-cut according to the electricity is available by the control of air conditioners with the control signal from the demand control. The group set by the central station is operated by the demand signal as follows.

Table A. Input / Output Setting Mode and Connector

	Demand signal ON (1*)	Demand signal ON (2*)
Demand 1	Indoor Unit Stop (Remote Control Inhibited)	Back to the former state of operation
Demand 2 (*3,*4)	COOL, DRY→FAN HEAT→STOP (Remote Control Inhibited)	
Demand 3 (*3,*5)		The setting temperature is set as follows; COOL, DRY...28ºC HEAT...20ºC

- *1: The control is performed every 15 seconds for the zone, which is subject to demand control, in descending order of the zone number
- *2: The control is performed every 15 seconds for the zone, which is subject to demand control, in ascending order of the zone number
- *3: During automatic cooling/heating operation, the activation of “Demand 1” is executed.
- *4: For the group with the optional setting of fixing operation mode, the activation of “Demand 1” is executed.
- *5: For the group with the optional setting of fixing operation mode or fixing set temperature, the activation of “Demand 1” is executed.

6 Simultaneous Operation Output.
This function is for outputting signal outward in the case where there is any air conditioner in operation in the group set by the central station.

7 Simultaneous Alarm Output.

This function is for outputting signal outward in the case where there is any air conditioner in abnormal condition in the group set by the central station.

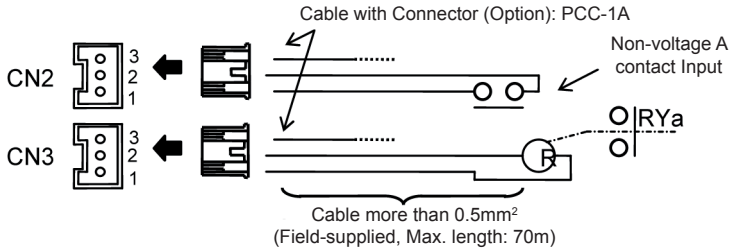
The input function is set by DSW2 as shown in the table below:

Function	DSW Pin Nº				Remarks
	1	2	3	4	
Simultaneous Operation/Stoppage (Level)	OFF	*	OFF	OFF	CN2 1-2 Pin Contact Connection
Simultaneous Operation/Stoppage (Pulse)	ON	OFF	OFF	OFF	CN2 1-2 Pin Contact Connection
Emergency Stop	OFF	ON	OFF	OFF	CN2 2-3 Pin Contact Connection
Demand 1~3	OFF	OFF	OFF	OFF	CN2 2-3 Pin Contact Connection

* Both ON and OFF setting are available. Set ON or OFF by the emergency stop or the demand function.

Specifications of required components:

- Input: DC12V,10 mA Non-voltage A contact (pulse with more than 300 ms)
- Output: OMRON MY Relay
- Cable: PCC-1A

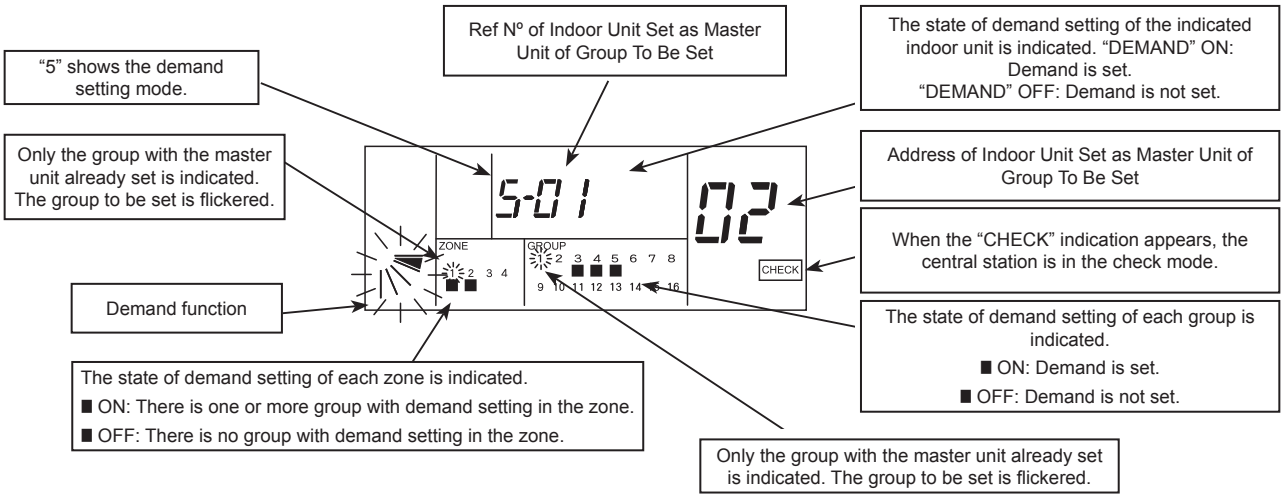


As for demand input, the group to be controlled can be set when signal is input.

◆ Demand setting procedure

1 Changing to Check Mode.
Depress the “CHECK” switch for more than 3 seconds, and the central station is changed to the check mode.
* When there is any group in operation (with “RUN” indicator ON), the “CHECK” mode is not available.

2 Changing to Demand Setting Mode.
Depress the “CHECK” switch and change the 7-segment indication for check to “5” (Demand Setting Mode). The LCD indication of the central station is as shown below.

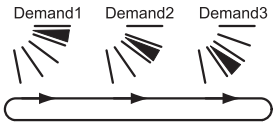


3 Selection of Demand Function.

a. Select the demand function by pressing the “LOUVER” switch.

b. Depress the “RUN/STOP” switch, and the flickering indication of louver angle turns ON.

By pressing the “LOUVER” switch, the indication of louver angle is changed as shown in right figure.



4 Selection of Group To Be Set
The demand function can be set for all the indoor units, each zone or each group.
The “■” indication of “GROUP”, for which the demand setting is already set, turns ON.
In the case where there is one or more group with demand setting in the zone, the “■” indication of “ZONE” section turns ON.

- Simultaneous Setting for all Indoor Units

a. Depress the “ZONE” switch to make all the zone Nº. flicker. Then, the minimum refrigerant system address and the minimum indoor unit address of the indoor unit, which is set as the master unit, in all groups are indicated.

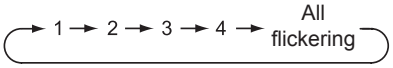
- Setting for each Zone

a. Depress the “ZONE” switch and select the zone to set.

b. Depress the “GROUP” ﹀﹀ switch to make the group Nº to set flicker. Then, the minimum Ref Nº and the minimum I.U Add of the indoor unit set as the master unit of all groups are indicated.

[Zone Selection]

Depress the “ZONE” switch, and the flickering indication of zone Nº is changed in order as shown below.



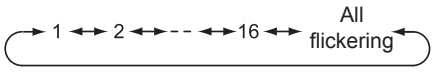
* Only the zone Nº to set is indicated.

* When selecting the all flickering state (Simultaneous Operation for all Indoor Units), the groups to set are automatically fixed at the all flickering state. For selecting the group, select the indication state except all flickering.

- Setting for each group
  - **a.** Depress the “ZONE” switch and select the zone to set.
  - **b.** Depress the “GROUP” ∨∧ switch to select the group to set. Then, the Ref Nº and I.U Add of the indoor unit set as the master unit of selected group are indicated.

[Group Selection]

Depress the “GROUP” ∨∧ switch, and the flickering indication of group Nº is changed in order as shown below.



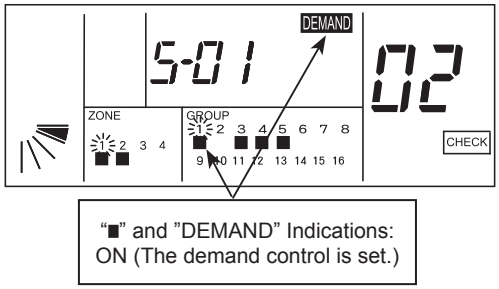
* Only the group Nº to set is indicated.

5 Setting procedure

Depress the “RUN/STOP” switch and the selected group is set with demand control, and the “■” and “DEMAND” indications appear.

In the case where there is one or more group with demand setting in the zone, the “■” indication of zone turns ON.

(Every time the “RUN/STOP” switch is depressed, the demand control is set and canceled alternately.)



5.3.4.4 Option setting

◆ Changing to option setting mode

1 Depress the “CHECK” switch for more than 3 seconds while all the groups are stopped. The central station is changed to the option setting mode and the “CHECK” indication appears, and “1” (Master Unit Setting Mode) is indicated on the 7-segment for check.

⚠ CAUTION

When there is a group in operation, the central station can not be changed to the check mode.

2 Depress the “CHECK” switch and change the indication of the 7-segment.

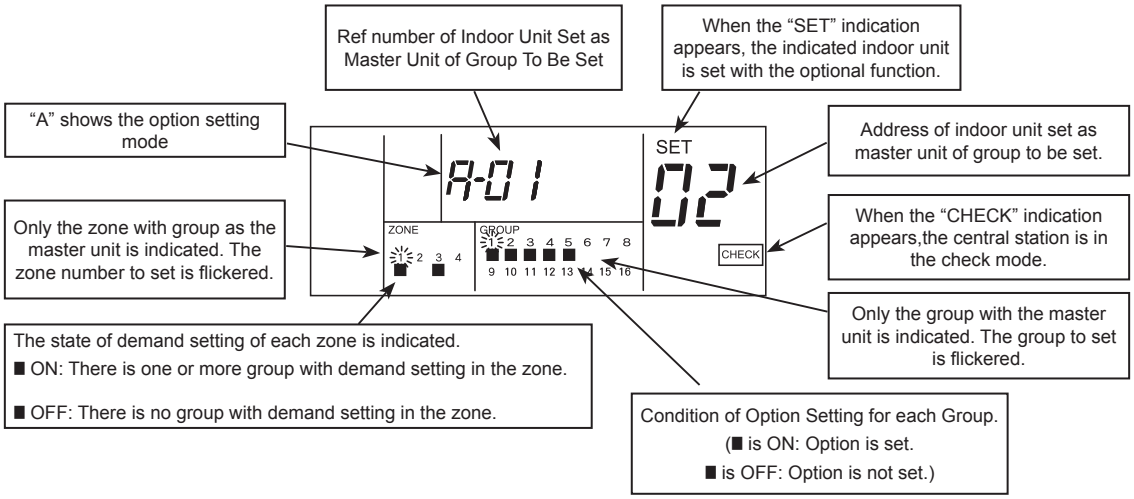
7-Segment	Function
A	Fixing operation mode
b	Fixing setting temperature
c	Fixing cooling only
d	Fixing air flow
E	Auto COOL / HEAT

3 Depress the “RESET” switch and the central station is changed to the normal mode.

◆ Indication of option setting mode

When the central station is changed to the slave unit setting mode, the LCD indication on the central station is as shown below. The indication of the group to be set is flickered. The Ref Nº and I.U Add indicates the address of the indoor unit which is set as the master unit of the group to be set. The "■" indication of group flickers in case that the option setting is already done.

When the "SET" indication appears, the indoor unit indicated on LCD is already set with the optional function.



◆ Setting Procedure

a. Depress the "CHECK" switch and select the setting item A – E.

b. Select the group to be set by pressing the "ZONE" switch and the "GROUP" switch.
Refer to the *"Group configuration"*, for the group selection procedure.

c. Depress the "RUN/STOP" switch, the selected group is subject to option setting and the "■" indication and the "SET" indication turn ON.
When there is one or more group with indoor unit set with option in the zone, the zone indication "■" turns ON.
Every time the "RUN/STOP" switch is depressed, the "■" indication and the "SET" indication turn ON and OFF alternately, and the state of option setting is changed; the selected group is to be set/not to be set with option setting.

⚠ CAUTION

- *In case that the optional functions are set by the central station, it is required to set the same optional functions for the group by the remote control switch.*
- *In case that the optional functions (items A – E as shown above) are set by the remote control switch, it is required to set the same optional functions for the group by the central station.*
- *The group, which is set with both of the fixing set temperature (option setting) and "Demand 3" function, is back to the former set temperature (before Demand ON) when the demand signal is OFF.*

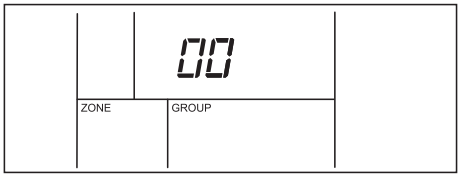
5.3.4.5 Initialization of central station

The procedure for initialization of the group setting and the optional setting is as follows.

◆ Changing to self check mode

Depress the “GROUP (∨∧)” and ”MODE” switches simultaneously, the central station is changed to the self check mode. In case that there is a group in operation, the “NO FUNCTION” is indicated and the central station can not be changed to the self check mode.

After changing to the self check mode, the LCD indication is changed as shown below. Then, depress the “GROUP(∨∧)” and “MODE” switches simultaneously again, and the central station is changed to the initializing mode.



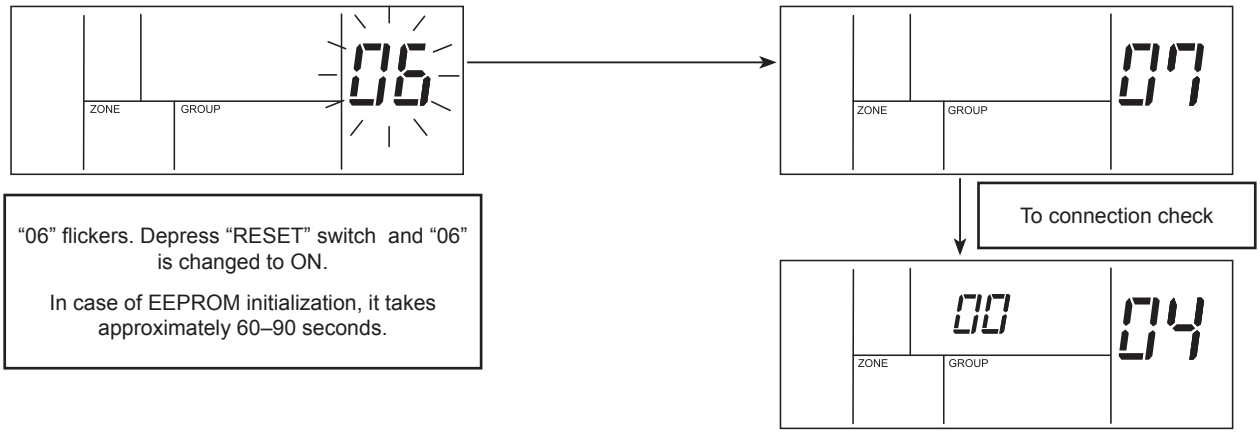
NOTE

In case that the “GROUP (∨∧)” and ”MODE” switches are not depressed again, the self check operation continues.

◆ Initialization of EEPROM

When the central station is changed to the initializing mode, the LCD indication on the central station is as shown below. In this condition, depress the “RESET” switch, and the flickering “06” indication is changed to ON and the initialization is performed.

(In case that initialization is not required, depress the “CHECK” switch, the LCD indication is automatically changed as shown below.)



5.4 PSC-A16RS

5.4.1 Safety summary

DANGER

- ***DO NOT pour water into the centralised ON/OFF controller. This product is equipped with electrical parts. If poured, it will cause a serious electrical shock.***
- ***DO NOT perform installation work and electrical wiring connection by yourself. Contact your distributor or dealer of HITACHI and ask them for installation work and electrical wiring by service person.***
- ***When performing the insulation test, withstand voltage test and so on, ensure to remove the FG terminal connection of TB1. If performing aforementioned test with the FG terminal connected, the malfunction will occur.***
- ***DO NOT turn OFF the power supply within 3 minutes after operation by the controller. It may cause the malfunction.***

CAUTION

DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:

- *Where there are oil vapours and the oil is dispersed.*
- *In the proximity of hot water or heat sources or in sulphuric environments.*
- *In locations prone to the generation, accumulation, leakage or flow of flammable gas.*
- *Close to the sea (saline atmospheres).*
- *In acidic or alkaline environments.*
- *Within the reach of children.*
- *Directly in front of the air-conditioning system outlet.*
- *To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m of strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.*
- *If electrical noise should be generated at the indoor unit power source, install a noise filter.*

CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*

5.4.2 Installation

5.4.2.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

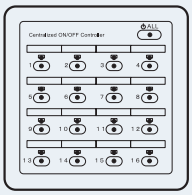
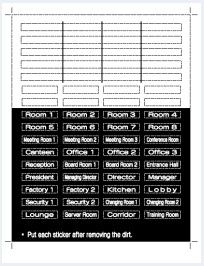
Cable section	0.3 mm^2	≥ 0.75 mm^2
Cable length	30 m	500 m

5.4.2.2 Components list

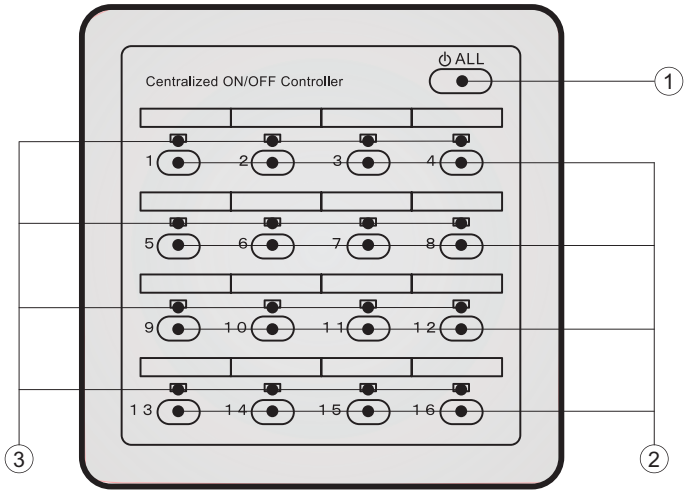
Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

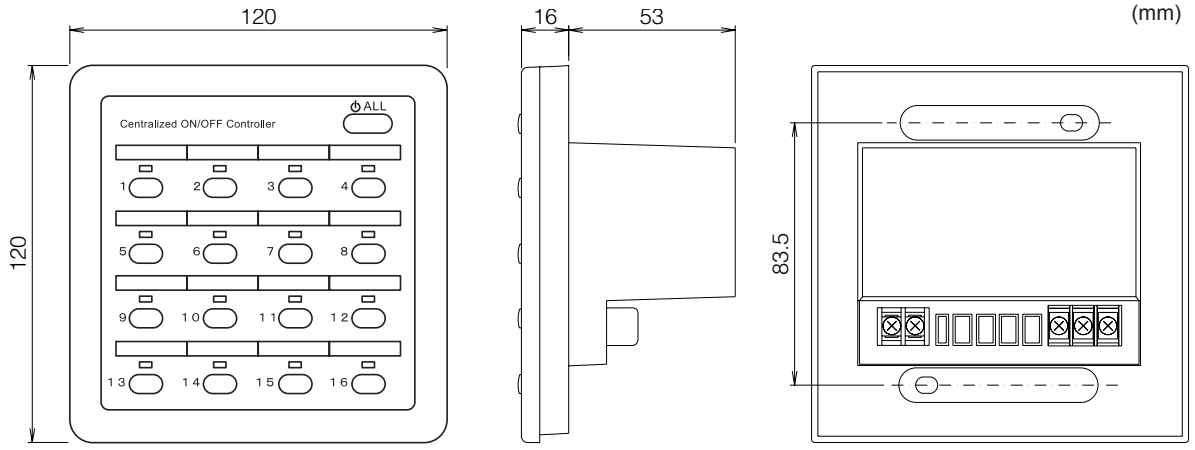
Name		Quant.	Comments
Centralised ON/OFF Controller		1	For managing the run/stop state of up to 16 groups of units
M4x16L screws		2	For fixing the centralised ON/OFF controller to the wall
Seal		1	For attaching nameplate
Installation and operation manual		1	Installation and operation unit instructions.

5.4.2.3 Description of the parts



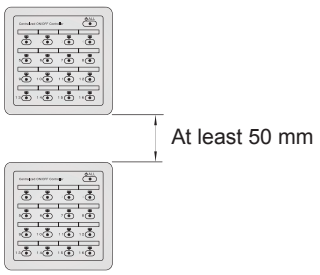
No.	Description
①	Simultaneous RUN/STOP Switch This switch is for ordering the simultaneous operation/stoppage to all groups. Depressing this switch when there is any group in operation, all the group is stopped simultaneously. Depressing this switch when all the group is stopped, all the group is started operation simultaneously.
②	Individual RUN/STOP Switch This switch is for ordering the operation/stoppage of the air conditioner. Depressing this switch when the air conditioner, which is stopped, is started operation and the air conditioner in operation is stopped.
③	Individual Operation Lamp (Red) The operation state of the air conditioner is indicated. • ON: Operation • OFF: Stoppage • Flickering: Abnormal

5.4.2.4 Dimensional data



5.4.2.5 Installation space

If several control units are to be installed in a vertical position, leave a distance of at least 50 mm between them to allow the front cover to be opened and to insert the tool for removing the control from its housing.

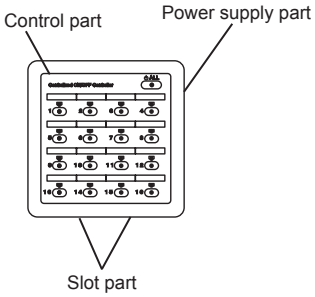


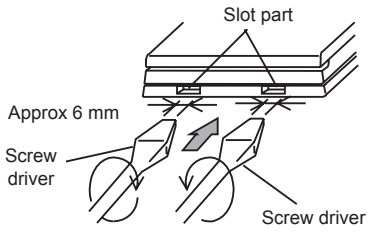
5.4.2.6 Installation procedure

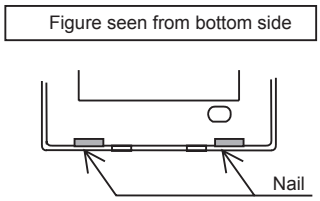
DANGER

Ensure to fix the centralised ON/OFF controller according to this manual. The incorrect installation will cause personal injury due to the fall of the centralised ON/OFF controller.

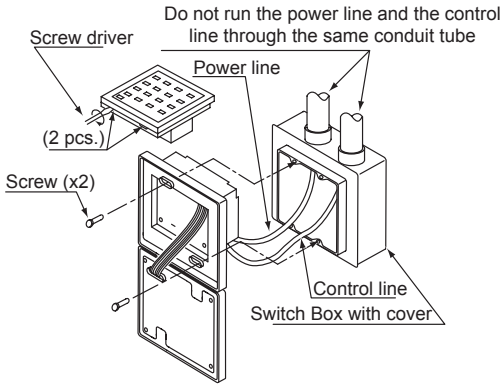
1 Insert the edge of the screwdriver into the slot parts at the bottom of the case, push and turn the screw-driver and remove the control part from the power supply part. Do not insert the screwdriver into the nail near the slot part, or the nail will be damaged.



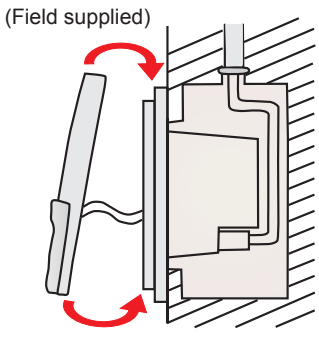




2 Attach the power supply part to the switch box.



3 Attach the control part onto the power supply part. At first, attach the upper side, and then the lower side.

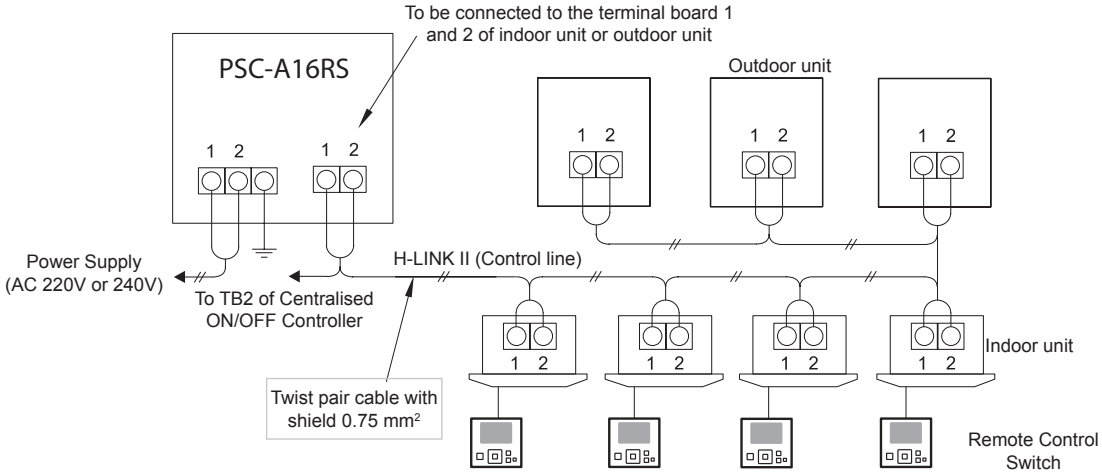


5.4.3 Electrical wiring

◆ Electrical wiring connection

Up to 8 centralised ON/OFF controllers can be connected to the H-LINK II (Control Line).

Use the 2-core cable of 0.75-1.25 mm² or the 2-core twist pair cable (Max 1,000 m) for the transmission cable for the centralised ON/OFF controller, for the outdoor unit and between indoor units (DC5V). The maximum total length of the cables shall be within 1,000m.



◆ DIP switch setting

Set the DIP switches as shown below.

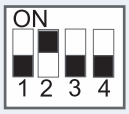
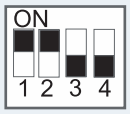
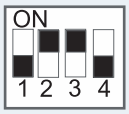
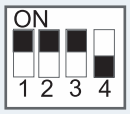
The address setting is required only if multiple centralised ON/OFF controllers (Max. 8 units) are connected to the H-LINK(Control Line). (The setting of DIP switches is all OFF before shipping).

	Pin No.	Contents	Setting of DSW		Remarks
			OFF	ON	
SW18	1	For address setting	Refer to the SW18 table.		For connecting plural centralised ON/OFF controllers with H-LINK (control line), the address setting for each centralised ON/OFF controllers is required. (*)
	2				
	3				
	4	Not In Use	-	-	Set SW18-4 pin OFF.
SW19	1	External input function for indoor units operation (ON/OFF) by pulse or level	Level	Pulse	
	2	External input functions to stop the units by demand or emergency stop	No	Yes	When using the following centralised controllers simultaneously, set the SW19-2 pin ON. Central Station III-S Central Station W Central Station Web
	3	Not in use	-	-	Set SW19-3 pin OFF.
	4	H-LINKII Adaptive	Adaptive	Non-adaptive	Set SW19-4 pin OFF: H-LINK II adaptive. Set SW19-4 pin ON: Non-H-LINK II adaptive.

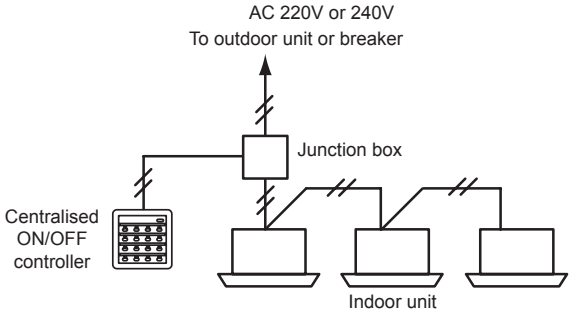
NOTE

(*): When using the multiple centralised ON/OFF controllers in the same H-LINK (control line) system, set the SW18 not to be overlapped.

SW18 (Address Setting)

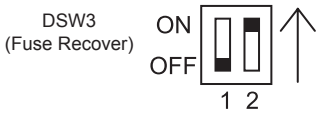
Address 0	Address 1	Address 2	Address 3
			
Address 4	**Address 5**	**Address 6**	**Address 7**
			

Split the central control power supply line from the main power supply line using a junction box, as shown in the following diagram:



⚠ CAUTION

- *Before installing the wiring, switch off the power supply to the air conditioning system and centralised ON/OFF controller. Installing the wiring while the centralised ON/OFF controller power supply is switched on may cause the centralised ON/OFF controller to malfunction.*
- *Check to ensure that the wiring is correct. Incorrect wiring may cause malfunction of the centralised ON/OFF controller.*
- *DO NOT run all the transmission cable for the centralised ON/OFF controller along the power line and other transmission cables, or malfunction may occur due to the noise, etc. If the transmission cable for the centralised ON/OFF controller is required to be run along the power line and other transmission cables, separate the cable more than 30 cm away from other cables, or run the cable through a metal tube and earth the tube.*
- *In case of applying high voltage to the TB2, the fuse on the PCB is blown out. In such a case, firstly correct the wiring to TB1, and then set Nº.2 pin ON.*



- *Connect the shield tube of cable to earth.*

5.4.4 Operation

5.4.4.1 Test run

◆ Preparation

- Ensure to perform the test running of air conditioner before turning ON the power supply of the centralised ON/OFF controller.
- Check to ensure that the setting temperature is indicated on the remote control switch after the test running of air conditioner.
  (If the setting temperature is not indicated on the remote control switch, the test running of the centralised ON/OFF controller is not available.)

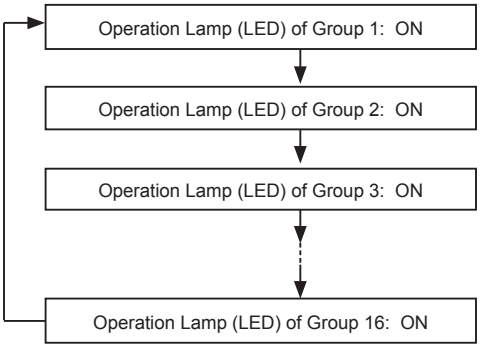
1 Perform the group recognition according to the following procedures.

a. After the operation check of air conditioner, turn ON the power supply of air conditioner.

b. Turn ON the power supply of the centralised ON/OFF controller and reset.

c. The operation lamp (LED) turns ON and the connection check is started. The group recognition is completed when all the operation lamp turns OFF.

- Flowchart of Operation Lamp (LED) Lighting State



During connection check, the operation lamp (LED) turns ON as shown above and repeats several times. When the connection check of all 16 groups is completed before the refrigerant cycle address 16, the lighting state is back to the beginning; “Operation Lamp (LED) of Group 1: ON”.

* When all the operation lamp (LED) flickers quickly (cycle: 0.25 seconds ON / 0.25 seconds OFF), the setting of H-LINK adaptive / non-adaptive is incorrect. Check for the setting of the centralised ON/OFF controller and other centralised controller used together.

2 Check the group.

a. Check to ensure that the group recognition is correct by operating air conditioner from group 1 in order.

b. When the actual operation corresponds to the group setting, it is considered that the group recognition is correct.

c. If the actual operation does not correspond to the group setting, the connection is incorrect. Turn OFF the power supply of the centralised ON/OFF controller, check for the following items and correct the wiring connection and the setting.

- Is the power supply turned ON and the wiring connection correct?
- Is the setting of the indoor unit address and the refrigerant cycle address correct?
- Is the address setting of the centralised ON/OFF controller correct?

d. After correcting the wiring connection and the setting, turn ON the power supply of the indoor unit and the outdoor unit, and reset the centralised ON/OFF controller.

◆ Resetting of centralised ON/OFF controller

1 Depress the switches “15” and “16” simultaneously for 3 seconds when all group is stopped. The operation lamps (LED) of the group 15 and 16 is turned ON.

2 Depress the switches “15” and “16” simultaneously again. The operation lamp (LED) of the group 16 flickers, then depress the switch “2” and confirm that the operation lamp(LED) of the group 6 is turned ON.

3 When the resetting of centralised ON/OFF controller is completed, all the operation lamp (LED) is turned OFF, and the group recognition is started again.

⚠ CAUTION

DO NOT perform the resetting within 3 minutes after the operation order from the centralised ON/OFF controller is performed. If the resetting is performed within 3 minutes, the remote control switch may be in the state of centralised control. When turning OFF the power supply of the centralised ON/OFF controller within 3 minutes, the same consequence may occur.

5.4.4.2 Group setting

For group setting with the centralised ON/OFF controller, the remote control switch is required. When using with other centralised controllers, the remote control switch is also required.

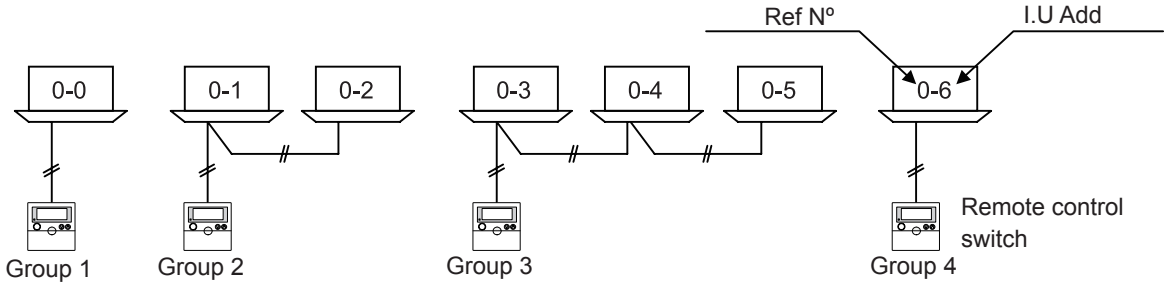
In case that there are indoor units with auto-louver and indoor units without auto-louver in the same group, the address of the smaller number in the remote control switch group shall be applied for the indoor units with auto-louver. If the address of the smaller number is applied for the indoor units without auto-louver, the setting of auto-louver is not available for the remote control switch group.

◆ Case 1: Group setting by centralised ON/OFF controller alone

Group setting

1 The centralised ON/OFF controller has no function of group setting itself. The group setting is automatically performed according to the address setting of the indoor unit.

2 The group of indoor units controlled by the same remote control switch is regarded as one group. Therefore, in the case where the remote control switch is connected individually with each indoor unit, one unit is regarded as one group as shown below.



3 Up to 8 centralised ON/OFF controllers can be connected to the same H-LINK (Control Line) system. For connection of multiple centralised ON/OFF controllers, provide address for each centralised ON/OFF controller by setting the DIP switch (SW18) inside of the centralised ON/OFF controller.

4 The group setting of the centralised ON/OFF controller is performed in order, from the indoor unit with the smallest address number, and finished on the following conditions.

- When the group setting up to 16 groups is completed.
- When there is no indoor unit in the same refrigerant cycle.
- When the serial numbered address of the indoor unit breaks off, and there are indoor units with continued address number in the same refrigerant cycle.

5 In the case where the multiple centralised ON/OFF controllers are connected in the same H-LINK (Control Line) system, the group setting is performed in order from the centralised ON/OFF controller No. 0. After completion of the group setting of the centralised ON/OFF controller No. 0, the group setting of the centralised ON/OFF controller No. 1 is started, and the group setting is continued in order of the number of centralised ON/OFF controller.

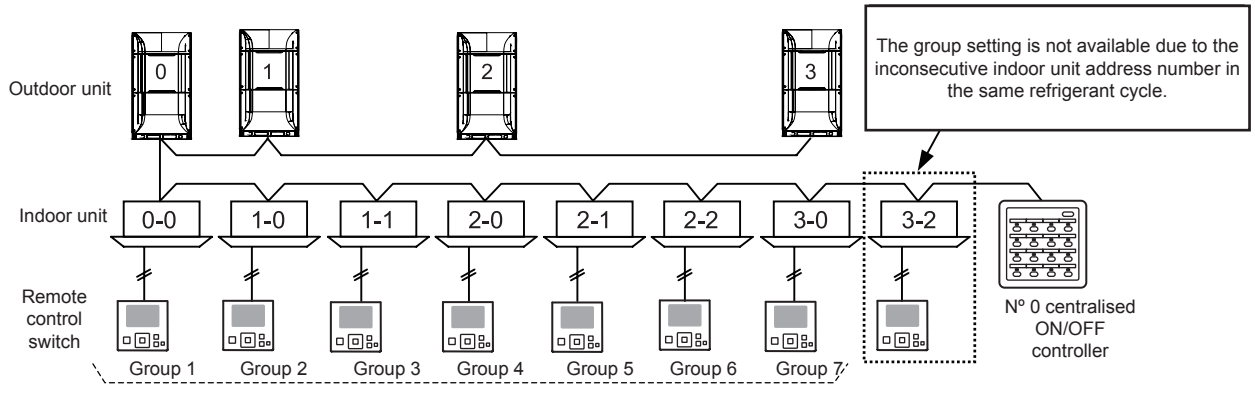
I.U Add. / Ref Nº.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	...
0	G1	G2 Remocon Group		G3 Remocon Group			G4	G5	G6	G7	G8										
1									G9	G10	G11	G12	G13	G14	G15	G16	G1	G2			
2			G3	G4	G5	G6	G7	G8	G9	G10											
3																					
4	G1	G2	G3	G4	G5	G6	G7	G8													
5	G9	G10	G11	G12		G1	G2	G3	G4	G5	G6										
6	G7	G8																			
...																					

NOTE

"G1 to G16" indicates the group number set for the centralised ON/OFF controllers.

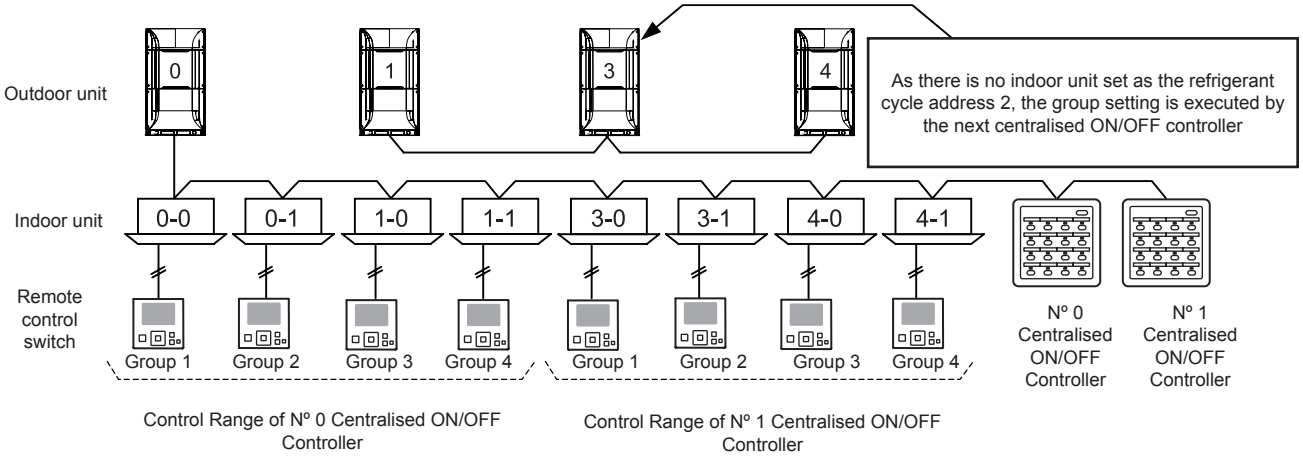
Examples of Group

1 In the case where the remote control switch is connected to each indoor unit.

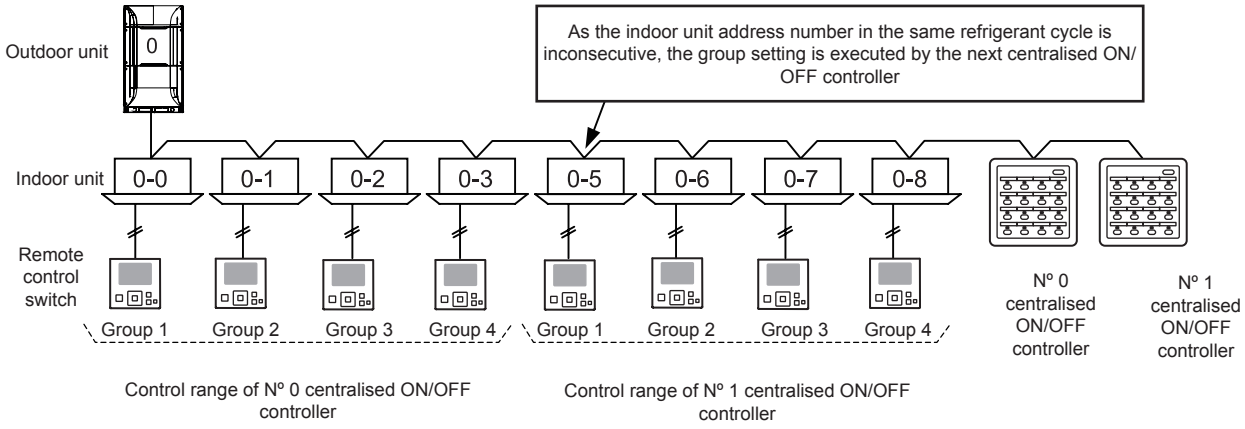


Control range of Nº 0 centralised ON/OFF controller

2 In the case where there are multiple centralised ON/OFF controllers:

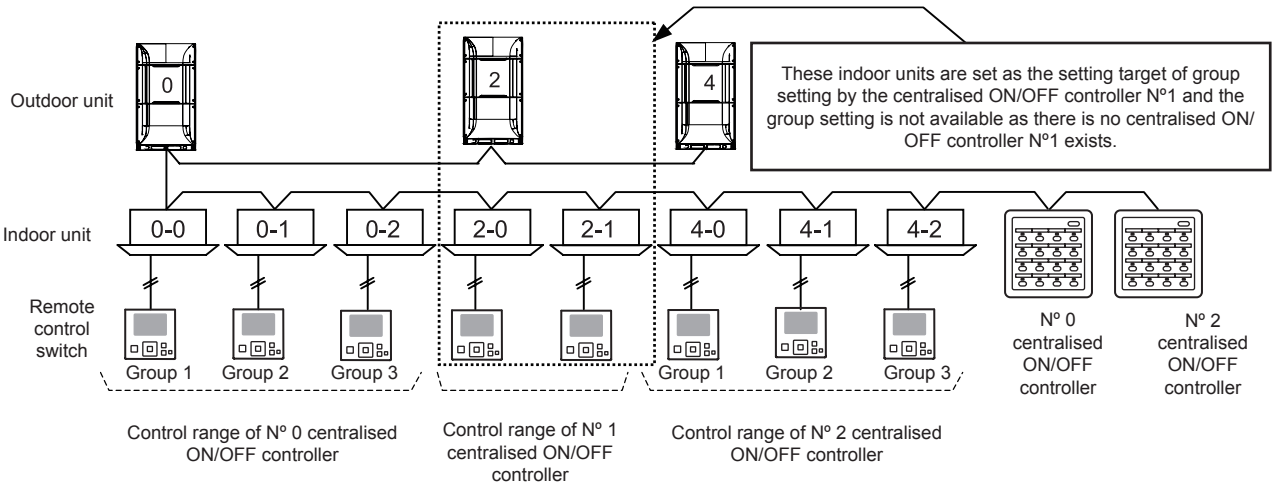


3 In the case where the indoor units in the same refrigerant cycle are controlled by different centralised ON/OFF controllers:

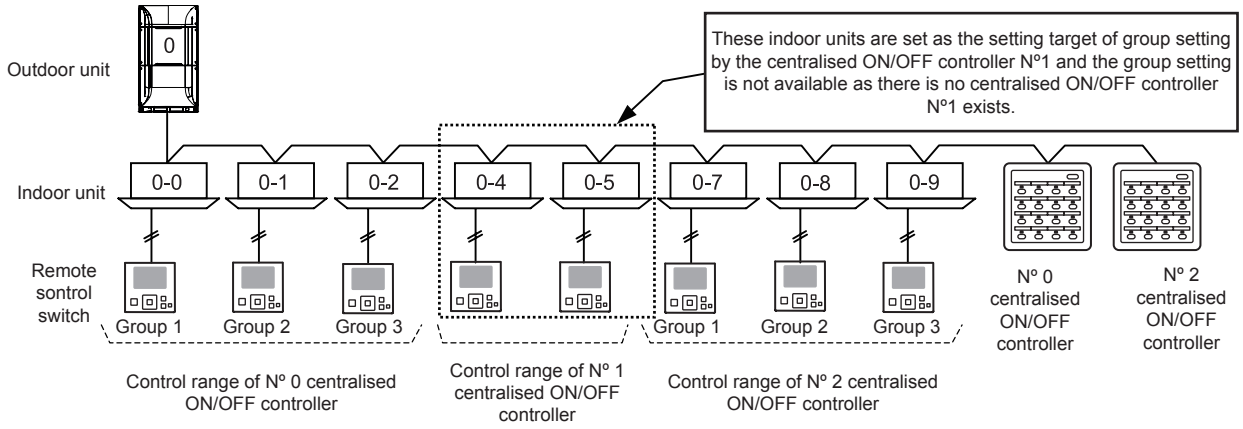


4 In the case where there is any indoor unit not to control by the centralised ON/OFF controller. Exclude the intended indoor unit from the setting target of group setting by the address setting of the centralised ON/OFF controller.

a. Set the intended indoor unit with the inconsecutive refrigerant cycle address number.



b. Set the intended indoor unit with the inconsecutive indoor unit address number.



◆ Case 2: Group setting for centralised ON/OFF controller with group information of central station (PSC-A64S)

Set up the centralised ON/OFF controller with the same group information of the central station (PSC-A64S). In this case, the group information for Zone 1 of Central Station number 0 is provided to the centralised ON/OFF controller.

5

⚠ CAUTION

- *This function is available only when the central station (PSC-A64S) is used together in the same H-LINK (Control Line) system.*
- *When the central station is other than No. 0 and/or belongs to other than Zone 1, the group information of the central station is not provided to the centralised ON/OFF controller.*
- *When the group setting is executed by this function, the former group information will be deleted.*

1 Group Setting of Central Station

The group setting is performed for Zone 1 of the central station number 0. Refer to the “Installation & Maintenance Manual” of the central station for the procedures of group setting.

2 Group Setting of Centralised ON/OFF Controller

a. Depress the switches “1” and “16” simultaneously for 3 seconds in the state where all the operation lamp (LED) of the centralised ON/OFF controller is OFF. Then, the operation lamp of Group 1 flickers, and the group setting is started. If there is any group in operation (with the operation lamp ON), the group setting is not available. Stop all the operation and perform the group setting again.

b. When the group setting is completed normally, all the operation lamp (LED) is turned ON for 3 seconds. If failed, all the operation lamp flickers.

NOTE

In the case where the group setting fails to complete normally, check to ensure that the following items are satisfied and perform the group setting by the centralised ON/OFF controller again.

- *The central station is connected to the same H-LINK (Control Line) system where the centralised ON/OFF controller is connected.*
- *The power is distributed to the central station and the liquid crystal display is appeared.*
- *The address of the central station is No. 0 (DSW1-1 to 3 pin: OFF).*
- *The group setting is performed for Zone 1 of the central station No. 0 (main unit and slave unit).*

⚠ CAUTION

- *The remote control switch is required to control indoor units by the centralised ON/OFF controller.*
- *The remote control switch is required when other centralised controller is used together.*
- *The operation by the centralised ON/OFF controller is not available during the process of group setting.*

5.4.4.3 Operation selection procedure

◆ Individual operation/stoppage

- **Preparation 1**

  Supply power to the unit.

⚠ CAUTION

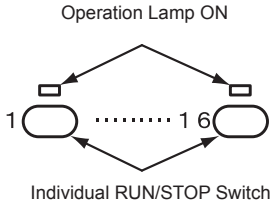
- *Supply power to the unit more than 6 hours before unit operation for compressor protection.*
- *Do not cut OFF power during the term of using air conditioner.*

- **Preparation 2**

Supply power to the centralised ON/OFF controller after the preparation of the unit is completed.

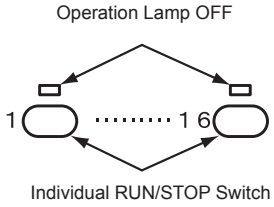
- **Operation**

  Depress the individual RUN/STOP switch of the room (group) No. to operate/stop. The operation lamp corresponding to the depressed switch is turned ON, and the air conditioner is started operation.



- **Stoppage**

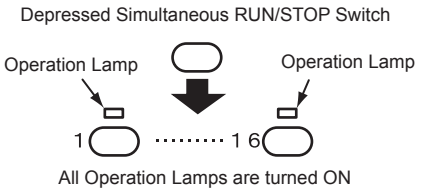
  Supply power to the centralised ON/OFF controller after the preparation of the unit is completed.



◆ Simultaneous operation/stoppage

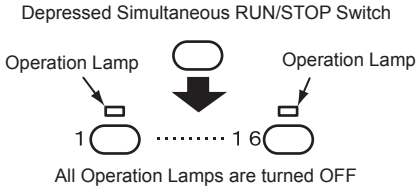
- **Operation**

  Depress the simultaneous RUN/STOP switch when 16 rooms (16 groups) is stopped. The operation lamp of 16 rooms (16 groups) is turned ON, and all the air conditioner of 16 rooms (16 groups) is started operation simultaneously.



- **Stoppage**

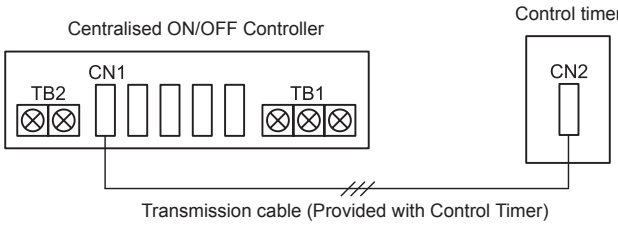
  Depress the simultaneous RUN/STOP switch when one or more room (group) is in operation. The operation lamp of the room (group) in operation is turned OFF, and the air conditioner of the room (group) in operation is stopped operation.



5.4.4.4 Schedule control function

The centralised ON/OFF controller, connecting to the control timer, can control the running schedule of “RUN/STOP” operation three times a day for a week.

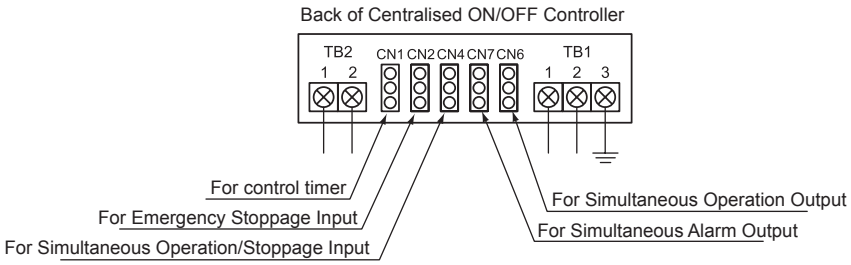
The “RUN/STOP” operation is controlled simultaneously, and the schedule control for each group is not available.



5.4.4.5 External input/output function

The centralised ON/OFF controller has the following input and output functions:

Mode	Port	Setting
Input 1	CN2 1-2 Pin	Emergency Stop
Input 2	CN4 2-3 Pin	Simultaneous Operation / Stoppage (Level Signal) or Simultaneous Operation (Pulse Signal)
Input 3	CN4 1-2 Pin	Simultaneous Stoppage (Pulse Signal)
Output 1	CN6 1-3 Pin	Simultaneous Operation Output (DC12V)
Output 2	CN7 1-3 Pin	Simultaneous Alarm Output (DC12V)



The input function is set by the DIP switch (SW19) as follows:

1 Simultaneous Operation/Stoppage

This function is for operating/stopping all the indoor units of the group, which is set by the centralised ON/OFF controller, by the external contact signal.

2 Simultaneous Operation

This function is for operating all the indoor units of the group simultaneously, which is set by the centralised ON/OFF controller, by the external pulse signal.

3 Simultaneous Stoppage

This function is for stopping all the indoor units of the group simultaneously, which is set by the centralised ON/OFF controller, by the external pulse signal.

4 Transmission Function of Emergency Stop Signal

This function is for stopping all the air conditioners connected to the centralised ON/OFF controller by the external emergency stop signal.

* When other centralised controller is used together, even in the state of emergency stop, the RUN/STOP operation by other central controllers is available.

5 Simultaneous Operation Output

This function is for outputting signal outward in the case where there is any air conditioner in operation in the group set by the centralised ON/OFF controller.

6 Simultaneous Alarm Output

This function is for outputting signal outward in the case where there is any air conditioner in abnormal condition in the group set by the centralised ON/OFF controller. The input function is set by the DIP switch SW19-1 as follows:

Function	Setting of SW-19-1	Remarks
ALL RUN/STOP (Level)	OFF	CN4: 2~3 Pin Connection
ALL RUN (Pulse)	ON	CN4: 2~3 Pin Connection
ALL STOP (Pulse)		CN4: 1~2 Pin Connection

Specifications of Required Components:

- Input: Non-Voltage A Connection (DC12V)
- Output: DC12V
- OMRON MY Relay (Recommended)
- PCC-1 Cable (Option): For Connection of External Input/Output

⚠ CAUTION

Use the cable more than 0.3 mm^2 (field-supplied, maximum length 70m) for Input/Output.

6. Building air conditioning controls

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6.1 CSNET Manager 2 T10/T15, CSNET Manager 2 SL and CSNET Lite

6.1.1 Safety summary

HITACHI cannot anticipate every possible circumstance that might involve a potential hazard.

IMPORTANT NOTE

Read carefully the document PMML0505 inside the USB Pen Drive Memory before performing the installation work.

DANGER

- ***Do not install CSNET Manager 2 / CSNET Lite unit outdoors.***
- ***Do not install this device in places accessible to the general public. Install it in enclosures or other places which are accessible only by the usage of a tool.***
- ***Do not connect power supply before the device installation is correctly done. Always disconnect power supply from the device before any maintenance or servicing action.***

CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle properly and safely this appliance.*
- *Children should be supervised to ensure that they do not play with the appliance.*

6.1.2 Components list

Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

6.1.2.1 CSNET Manager 2 T10/T15

Name		Quant.	Comments
Touch computer (T10: 10.0” ; T15: 15.0”)		1	Touch interface which runs CSNET Manager 2 software to control the indoor units.
Power adaptor		1	12 VDC, 5.0 A (maximum)
Ethernet cable		1	For PC connection
USB stick memory		1	To configure the gateway device.
Installation manual		1	Installation unit instructions.

6.1.2.2 CSNET Manager 2 SL

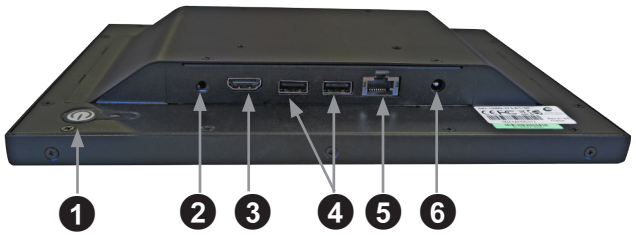
Name		Quant.	Comments
Embedded mini PC		1	Screen less centralised control which runs CSNET Manager 2 software into a PC to control the indoor units.
Power adaptor		1	12 VDC, 5.0 A (maximum)
Ethernet cable		1	For PC connection
USB stick memory		1	To configure the gateway device.
Installation manual		1	Installation unit instructions.

6.1.2.3 CSNET Lite

Name		Quant.	Comments
CSNET Lite		1	Centralised control used to communicate with the units through the H-LINK protocol. Is able to manage and control 64 units through web server.
Ethernet cable		1	For PC connection.
USB stick memory		1	To configure the gateway device.
Installation manual		1	Installation unit instructions.

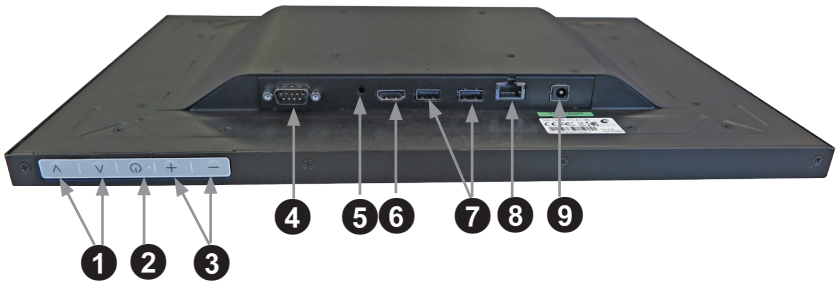
6.1.3 Name of parts

6.1.3.1 CSNET Manager 2 T10



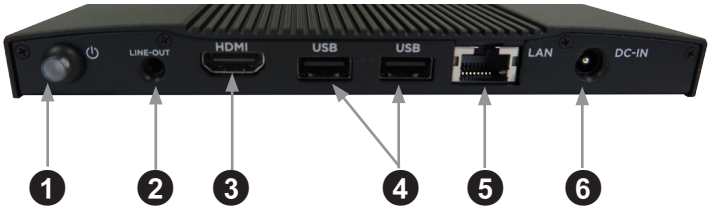
Nº	Description
1	Power on/off switch
2	Audio output (not used)
3	HDMI output (not used)
4	2x USB 2.0 slots
5	RJ45 Ethernet for TCP/IP connection
6	External power supply

6.1.3.2 CSNET Manager 2 T15

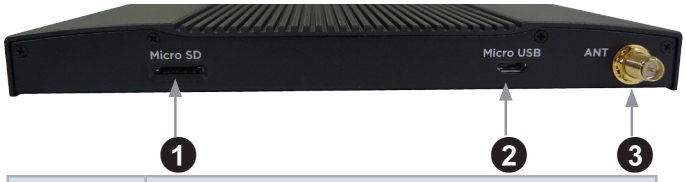


Nº	Description
1	Bright up/down buttons
2	Power on/off switch
3	Volume up/down buttons
4	VGA output (not used)
5	Audio output (not used)
6	HDMI output (not used)
7	2x USB 2.0 slots
8	RJ45 Ethernet for TCP/IP connection
9	External power supply

6.1.3.3 CSNET Manager 2 SL

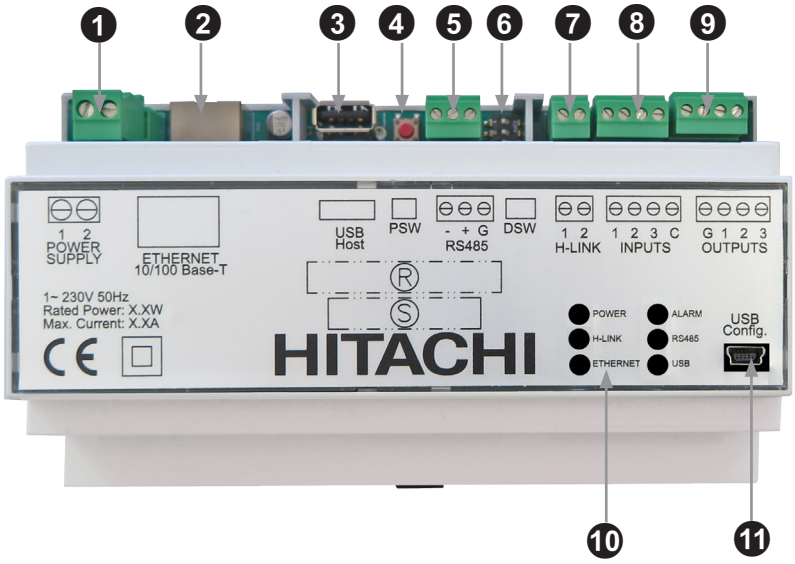


Nº	Description
1	Power on/off switch
2	Audio output (not available)
3	HDMI output
4	2x USB 2.0 slots
5	RJ45 Ethernet for TCP/IP connection
6	External power supply



Nº	Description
1	Micro SD slot
2	Micro USB port
3	Antenna opening (SMA type)

6.1.3.4 CSNET Lite



Nº	Description
1	Power supply
2	RJ45 Ethernet
3	USB for log
4	Push button
5	RS485 for Modbus RTU
6	DSW for device configuration
7	H-LINK comunication
8	Inputs
9	Ouputs
10	LEDs for operation indication
11	USB at configuration time only

6.1.4 Start up process

6.1.4.1 CSNET Manager 2 (T10 / T15)

1 Connect the power cable.
2 Connect the LAN cable.
3 Switch ON the CSNET Manager 2.
4 Wait until the screen is started and CSNET Manager 2 software is launched automatically.

NOTE

Remote Connection:

- *Use a computer connected to the same network as the device or connected directly to the device with a crossed Ethernet cable.*
- *Open the address http://192.168.0.5:8080 in a web browser. The default IP address of the CSNET Manager 2 devices is 192.168.0.5.*

6.1.4.2 CSNET Manager 2 SL

1 Connect the power cable.
2 Connect the device to the network using a LAN cable.
3 There are two ways to interface with the device:

a. Direct Connection:

ii. Connect a monitor to the HDMI output, and a mouse and a keyboard to the USB ports of the device.

iii. Turn the device on and wait until the software is automatically launched.

b. Remote Connection:

i. Use a computer connected to the same network as the device.

ii. Open the address http://192.168.0.5:8080 in a web browser.

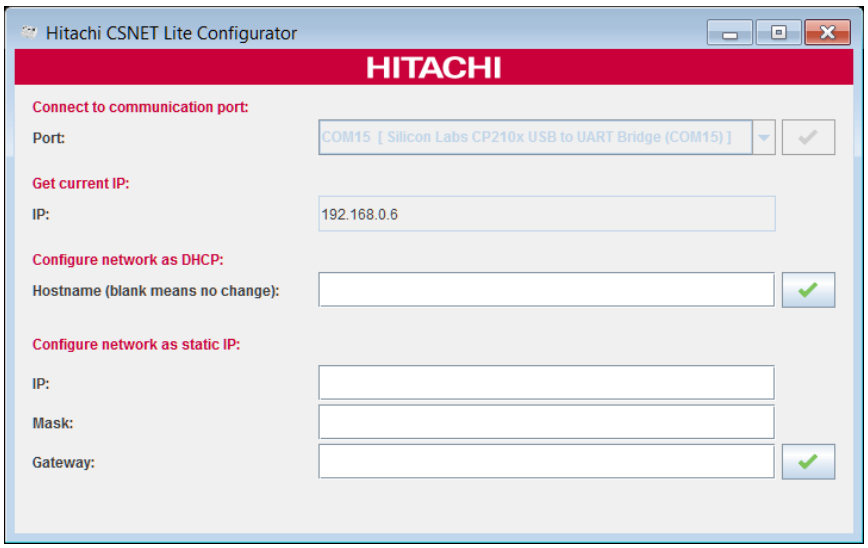
6.1.4.3 CSNET Lite

1 Connect the power cable.
2 Connect the device to the network using a LAN cable.
3 Turn the device On
4 There are two ways to interface with the device:

a. Direct Connection:

i. Connect PC to CSNET Lite using USB cable mini (field supplied or available with the “Net Configuration Kit”)

ii. Use CSNET Lite configuration tool to connect to CSNET Lite (in USB Memory)



CSNET Lite configuration tool

iii. Select communication port and click connect 

iv. Configure network as DHCP: it is necessary to give a hostname. This hostname is given by the costumer IT service.

v. Configure network as static IP: it is necessary to fill IP, Mask and Gateway fields. This information is given by the costumer IT service.

NOTE

- *Any changes may require some time to be updated by network server.*
- *IP field gives information about configuration state.*

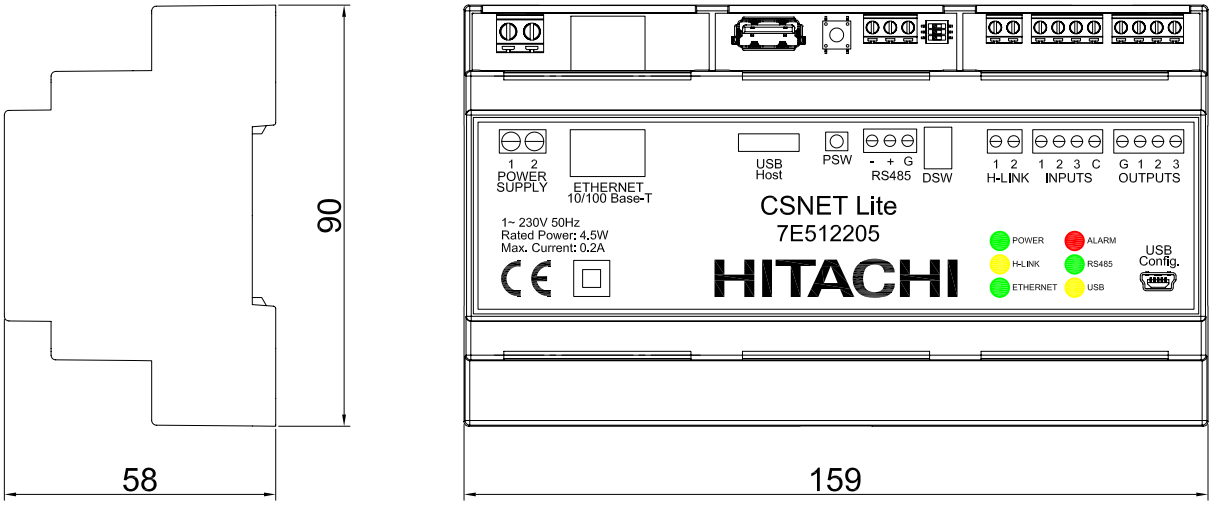
b. Remote connection:

i. Use a computer connected to the same network as the device.

ii. Open the address http://192.168.0.6:8080 in a web browser.

6.1.5 Dimensional

6.1.5.1 CSNET Lite



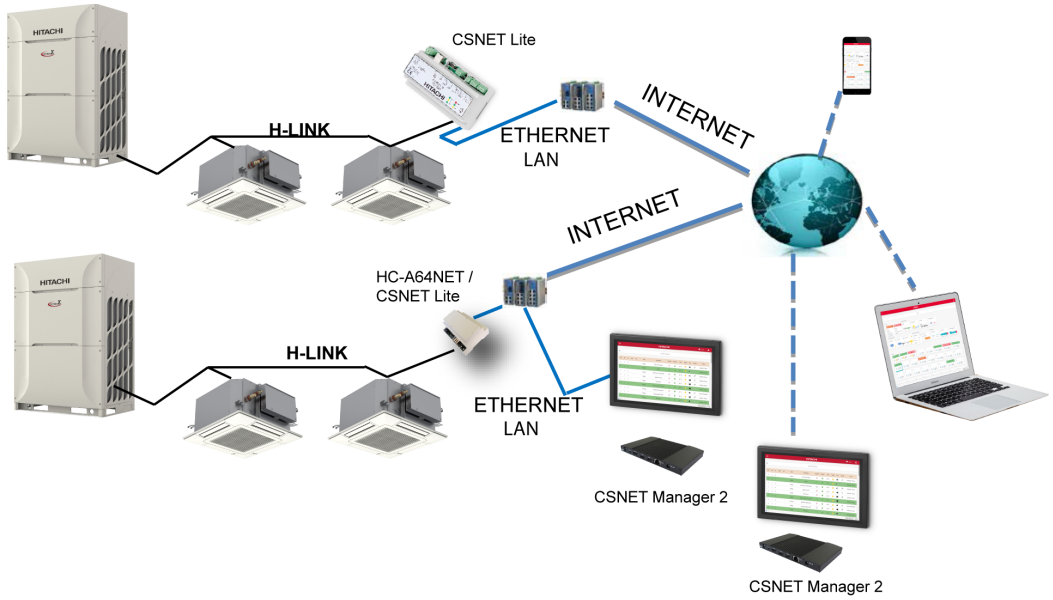
6.1.6 System description

CSNET Manager 2 is a composed centralized control system.

CSNET Lite is a standalone centralized control system.

CSNET Manager 2 connects through the LAN to an HC-A64NET or a CSNET Lite, which can control an H-LINK communication line.

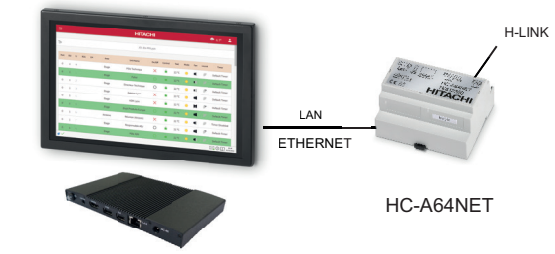
CSNET Manager 2 / CSNET Lite connects to a Local Area Network (using a DSL Router) by means of its Ethernet port, allowing remote adjustment and monitoring of parameters. The internet access parameters of CSNET Manager 2 / CSNET Lite shall be set up through the Network Settings screen of CSNET software.



6.1.7 Connectable devices

CSNET Manager 2 Screen can connect up to 16 different devices. The following devices are suitable for connection:

- **HC-A64NET**

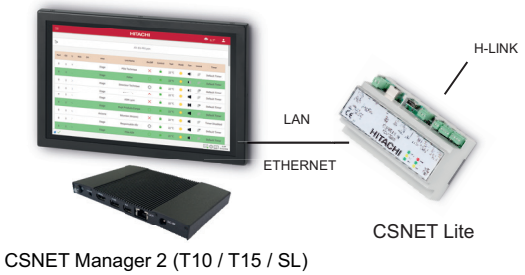


CSNET Manager 2 is connected to an H-LINK installation through an HC-A64NET gateway. CSNET Manager 2 is used to transmit orders, to store historical data and for time and power consumption management.

NOTE

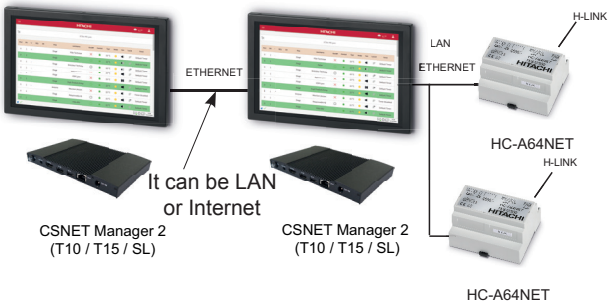
Do not connect more than one HC-A64NET per H-LINK bus.

◆ CSNET Lite



CSNET Manager 2 is connected to an H-LINK installation through CSNET Lite hardware. Its control functions are those in CSNET Lite, and CSNET Manager 2 operates as a graphical interface for the user, like the current TS002.

◆ CSNET Manager 2

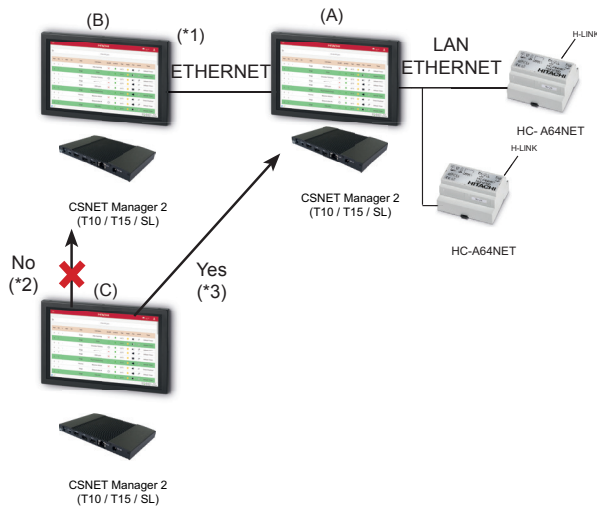


CSNET Manager 2 is connected to another CSNET Manager 2 that it is connected to the H-LINK installation through a HC-A64NET or CSNET Lite. The maximum number of indoor units controlled by CSNET Manager 2 is 1024 in case of having 16 connected CSNET Lite devices.

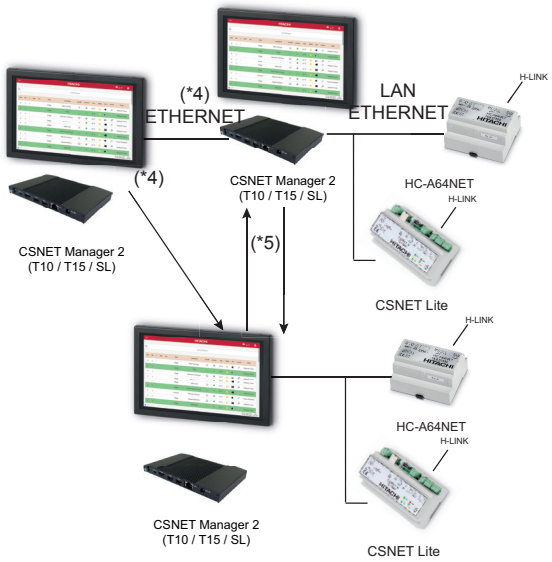
Furthermore, two CSNET Managers 2 can be interconnected, allowing each of them to monitor and control the H-LINK installation connected to the other one.

One CSNET Manager 2 can control up to 16 CSNET Managers 2, but the total quantity of controlled indoor units can never exceed the maximum quantity of 1024 indoor units.

Example 1:



Example 2:



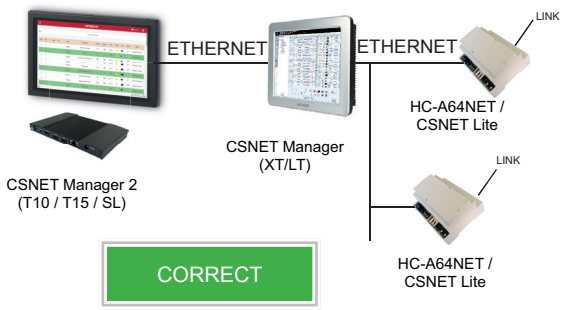
- One “HC-A64NET” can be connected to one “CSNET Manager 2” only.
- (*1) “CSNET Manager 2” (A) only sends information of the units controlled through its “HC-A64NET” and / or “CSNET Lite” to all the “CSNET Manager 2” (B) that are connected directly with it.
- (*2) This “CSNET Manager 2” (C) connected directly to the “CSNET Manager 2” (B) does not monitor the units that are connected to “CSNET Manager 2” (A), these units are not shown in the screen of “CSNET Manager 2” (C).
- (*3) The “CSNET Manager 2” (C) connected directly to “CSNET Manager 2” (A) monitors the units connected to “CSNET Manager 2” (A).
- (*4) Each “CSNET Manager 2” can share with the other “CSNET Manager 2”, which are connected to it, the information of those units that have directly connected (through “HC-A64NET” and/or “ CSNET Lite”).
- (*5) “CSNET Manager 2” devices can be managed reciprocally.

◆ CSNET Manager 2 with previous CSNET Manager LT/XT

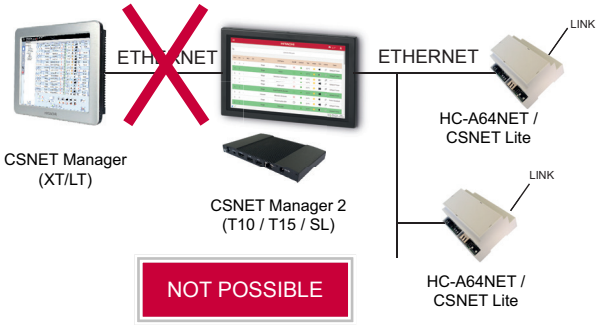
CSNET Manager 2 can operate completely with CSNET Manager LT/XT.

CSNET Manager XT/LT cannot read or control a CSNET Manager 2.

Example 1:



Example 2:



6.1.8 Based on Java technology

CSNET Manager 2 , RCS Web Net configurator and building layout use JAVA.

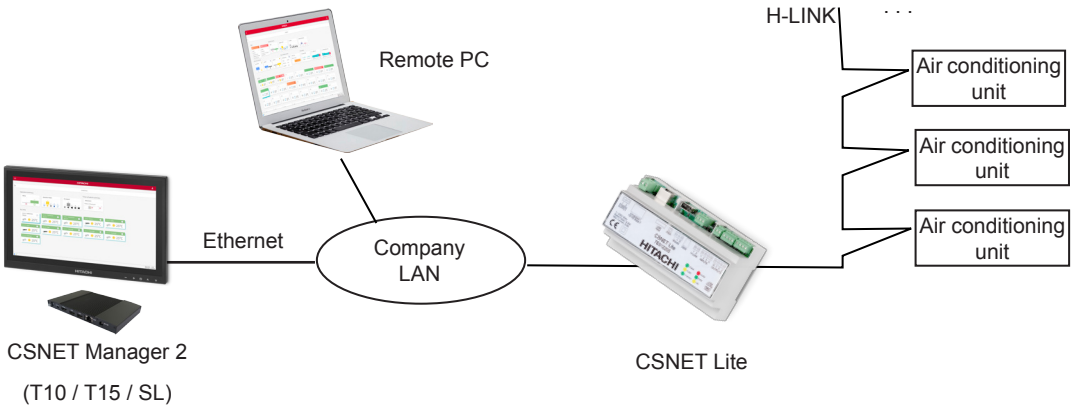
JAVA J2SE Runtime Environment must be installed in order to run RCS Web, Net configurator or building layout.

6.1.9 CSNET Manager 2 / CSNET Lite connection

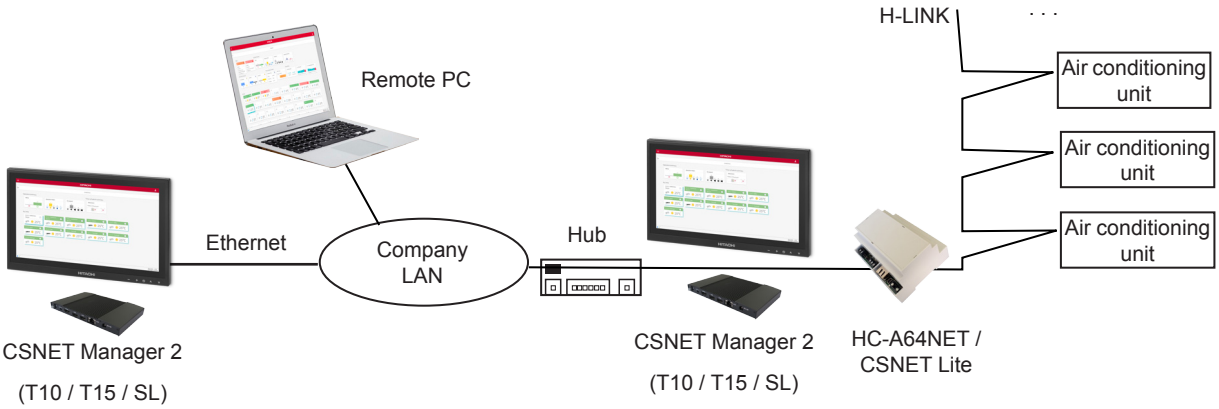
CSNET Manager 2 / CSNET Lite is connected to a Local Area Network through its Ethernet port. After configuring the network, the system will be accessible from any site in the company's network.

Some adjustments are required for the LAN connection, and the network administrator's assistance is needed.

Option 1:



Option 2:



6.1.10 Internet connection

CSNET Manager 2 / CSNET Lite has been designed to be accessible via Internet. This means that maintenance is quick and effective, which satisfies the needs of the final user.

NOTE

It is recommended to set up a dedicated DSL line, in order to reduce the burden on the existing data network of the building.

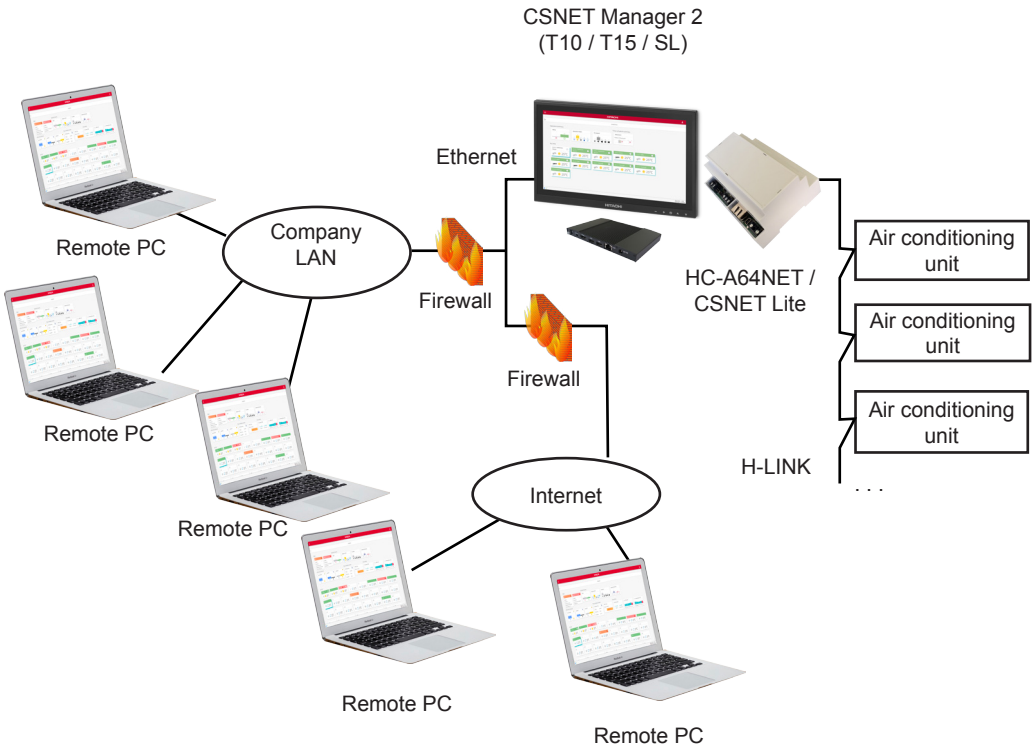
◆ Via LAN

CSNET Manager 2 / CSNET Lite can be connected to the Internet and to the company's LAN using a router.

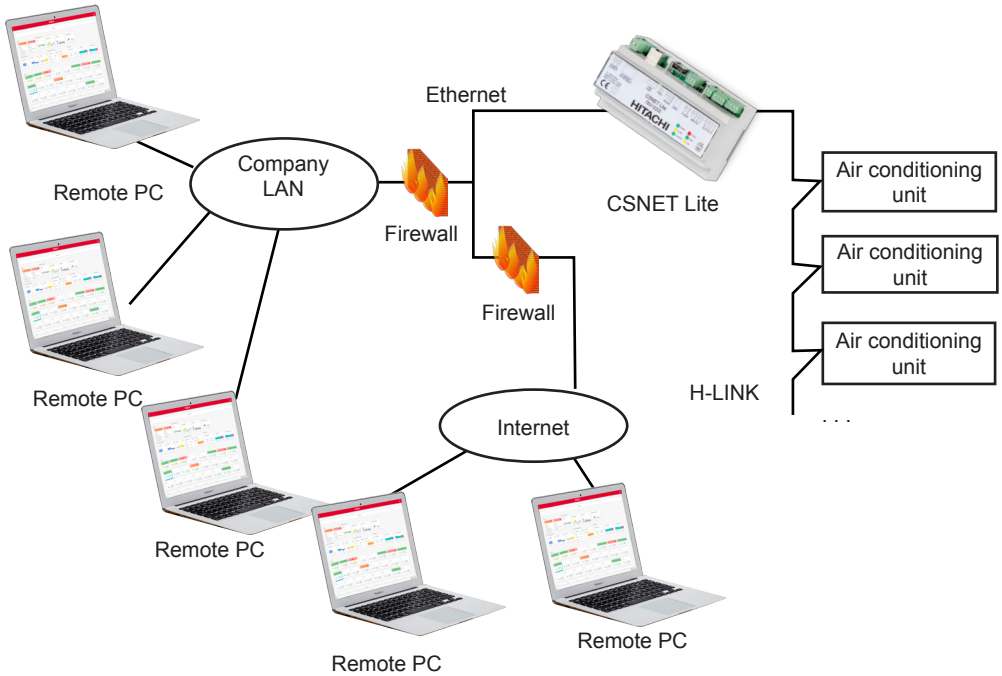
The LAN has to be specially configured to guarantee security, using firewalls and anti-virus software.

This requires the assistance of the company's LAN administrator.

Option 1:



Option 2:

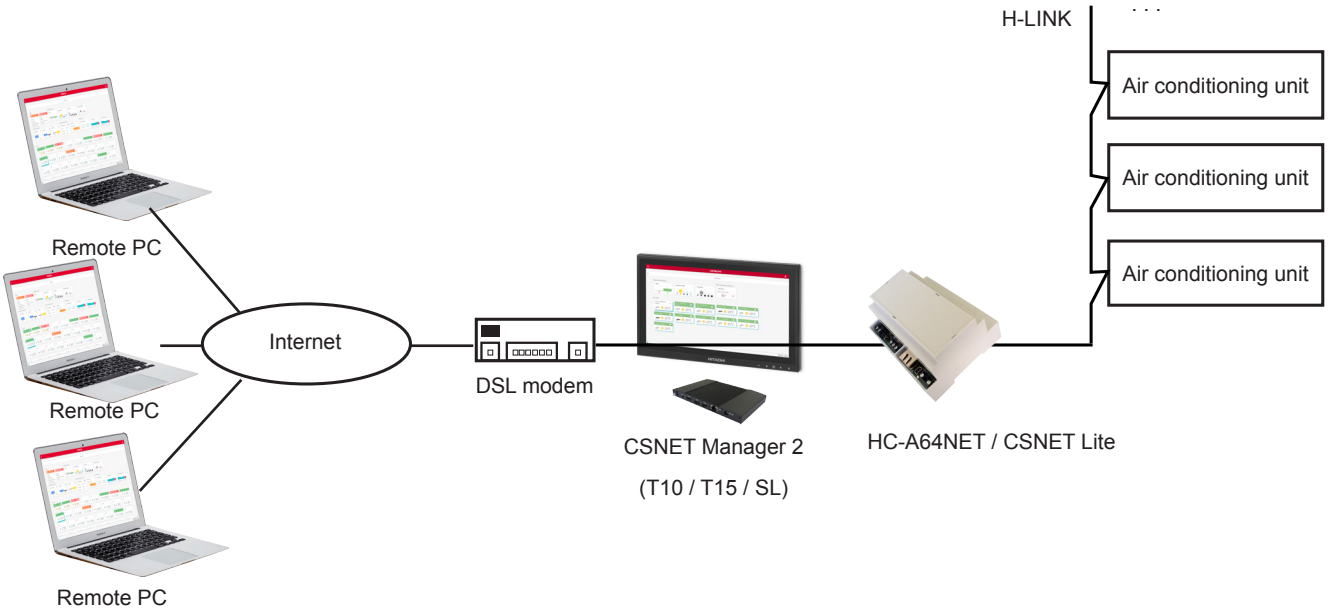


◆ Direct

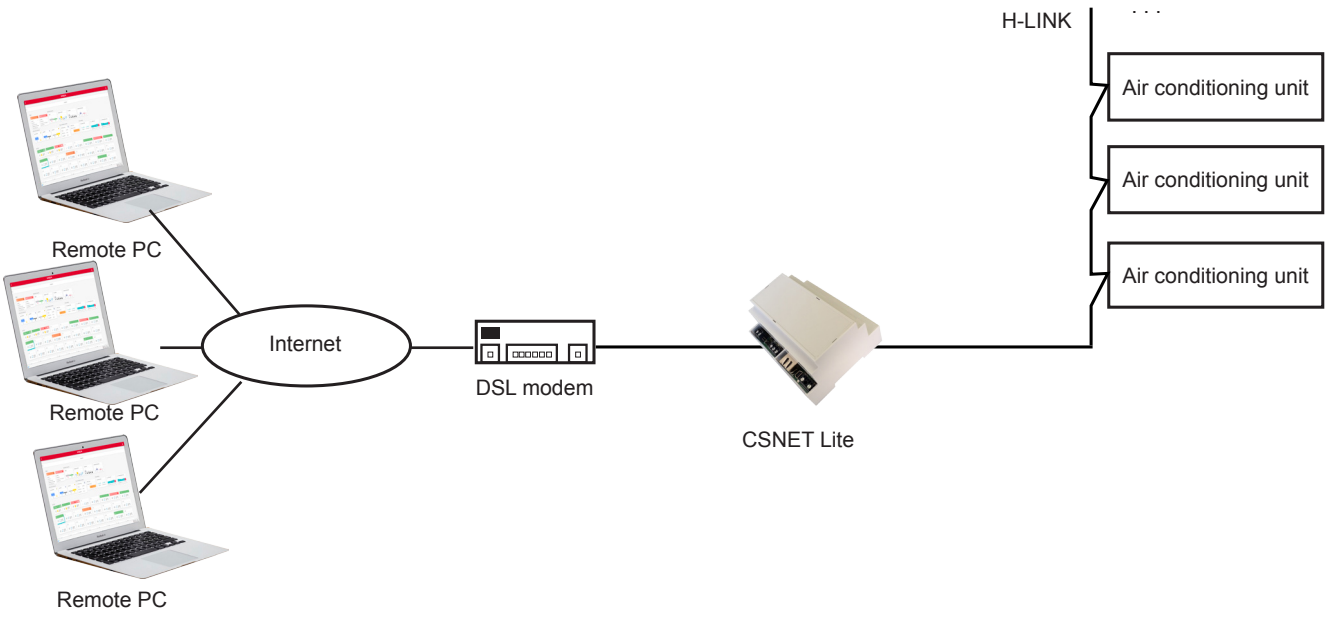
Using the Ethernet port, CSNET Manager 2 / CSNET Lite can be connected directly to the Internet via a suitably configured DSL modem. This makes possible to monitor the system from any computer with Internet access.

Assistance from an IT expert is required. Security should also be ensured by external means such as firewalls and anti-virus software.

Option 1:



Option 2:

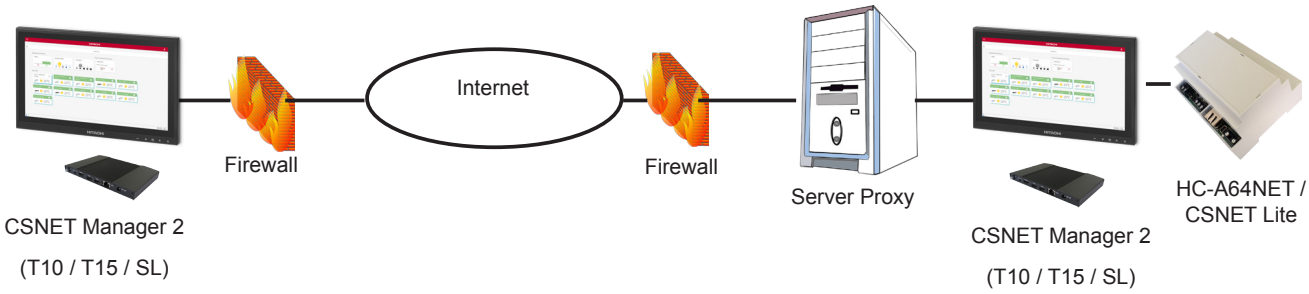


◆ Proxy

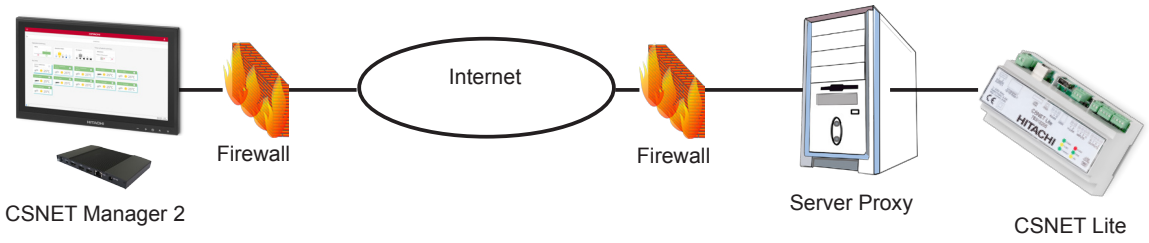
A proxy is a network server which generally only allows access to WEB content.

It is configured in the new proxy adjustment window which has been added to the Local software configuration, as shown later.

Option 1:



Option 2:



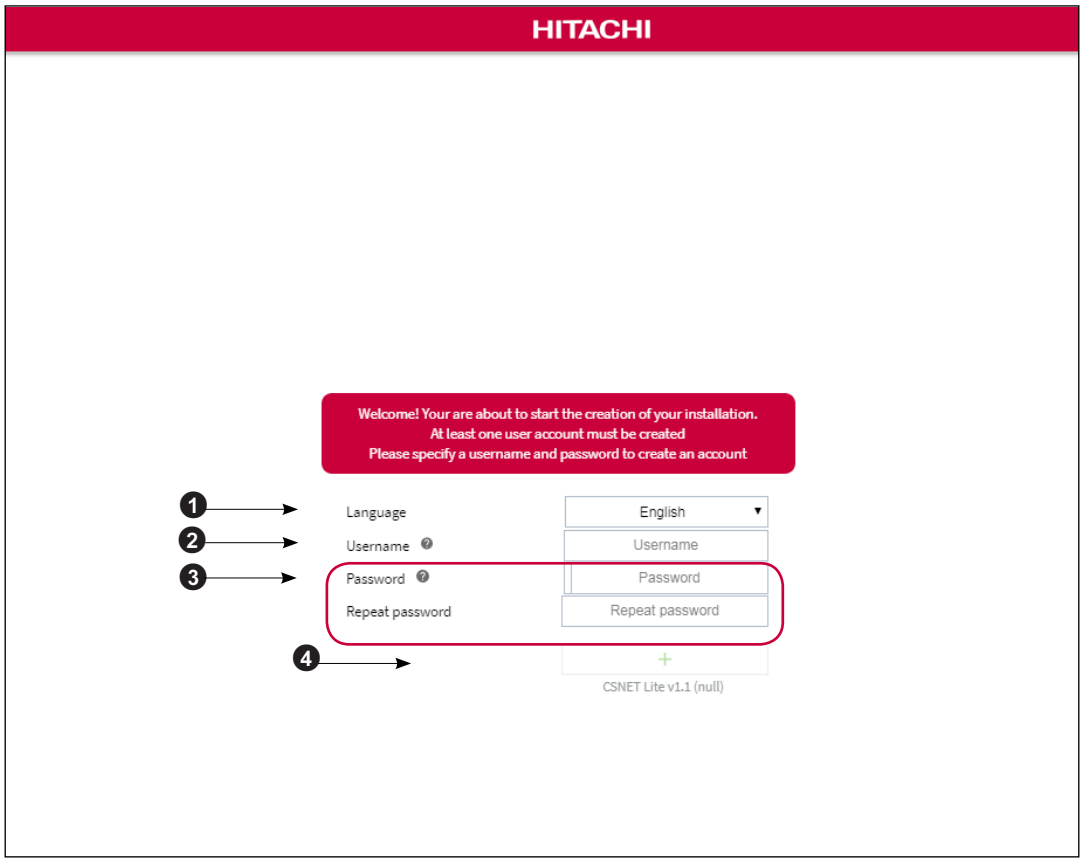
6

NOTE

- *Proxy uses NTLM1, Kerberos, Basic or Digest authentication. NTLM2 authentication is not permitted. Your network administrator should provide you the information about authentication. The operation through a proxy is not guaranteed as the network configuration and the anti virus software may hinder the correct communication between the client computer and the HC-A64ANET.*
- *The proxy and firewalls allow communication through port 8080.*

6.1.11 Welcome screen

After switch on CSNET Manager 2 / CSNET Lite, create the first user on the Welcome Screen and then follow the Wizard, Auto-configuration, Area tree and Unit configuration screens to complete the system configuration.



❶ **Language:** Select the application default language. Login screen will be always shown in this language. After login, the language used will be the selected by the user.

❷ **User name:** Enter the name of the user who will access the installation. The first user created has full privileges to create other users and create the installation.

NOTE

User name must have more than 3 characters.

❸ **Password:** Write the password of the user you have entered.

NOTE

Password must have 8 or more characters.

❹ + **Add sign:** Click on the add sign to create the user and start the wizard to configure the installation.

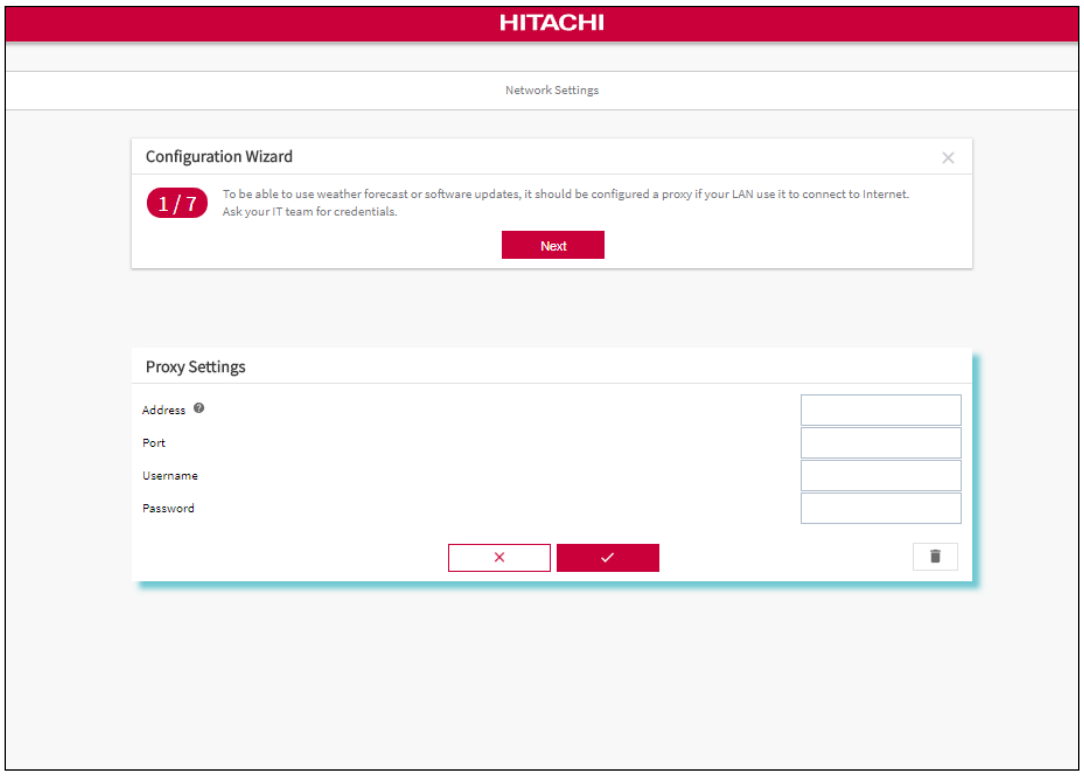
6.1.12 Wizard

The Wizard procedure drives the Installer to all the necessary configuration steps.

Step 1: To be able to use “Weather forecast” or software updates, it should be configured a proxy if your LAN use it to connect to internet. Ask your IT team for credentials.

NOTE

For more details refer to “6.1.25.2 Network Settings” chapter.



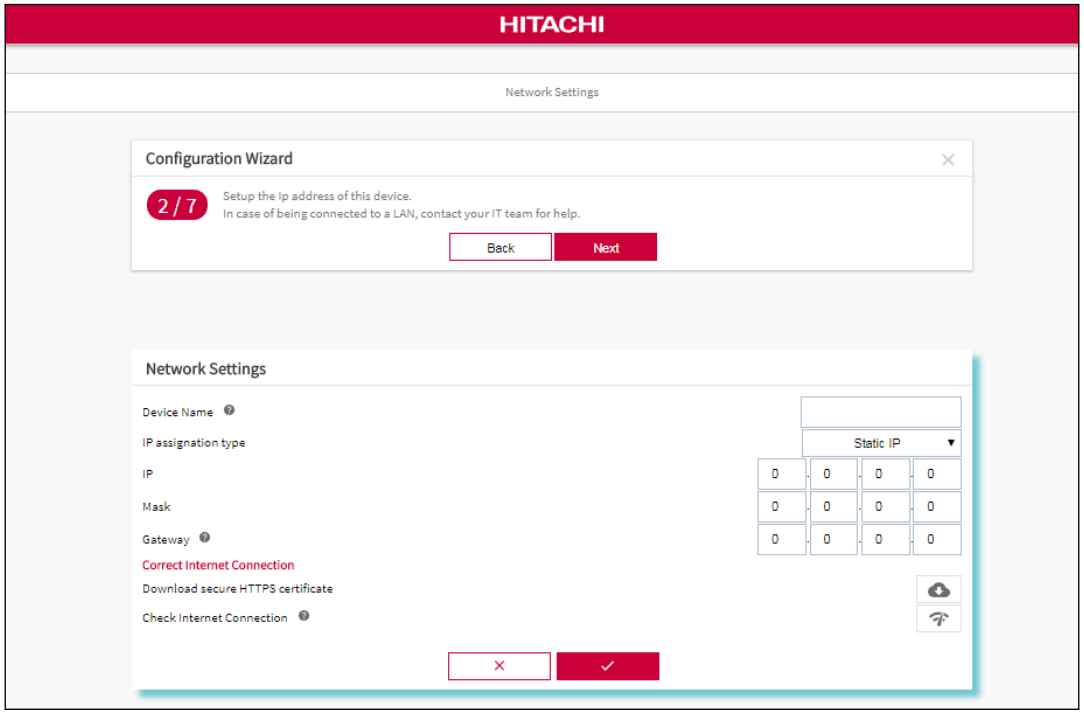
Step 2: Setup the IP address and the host name of this device. In case of being connected to a LAN, contact your IT team for help.

This step is strictly necessary to connect with H-LINK gateways.

System is reset after entering the IP address, and it is necessary to log in again to access the local computer setup.

NOTE

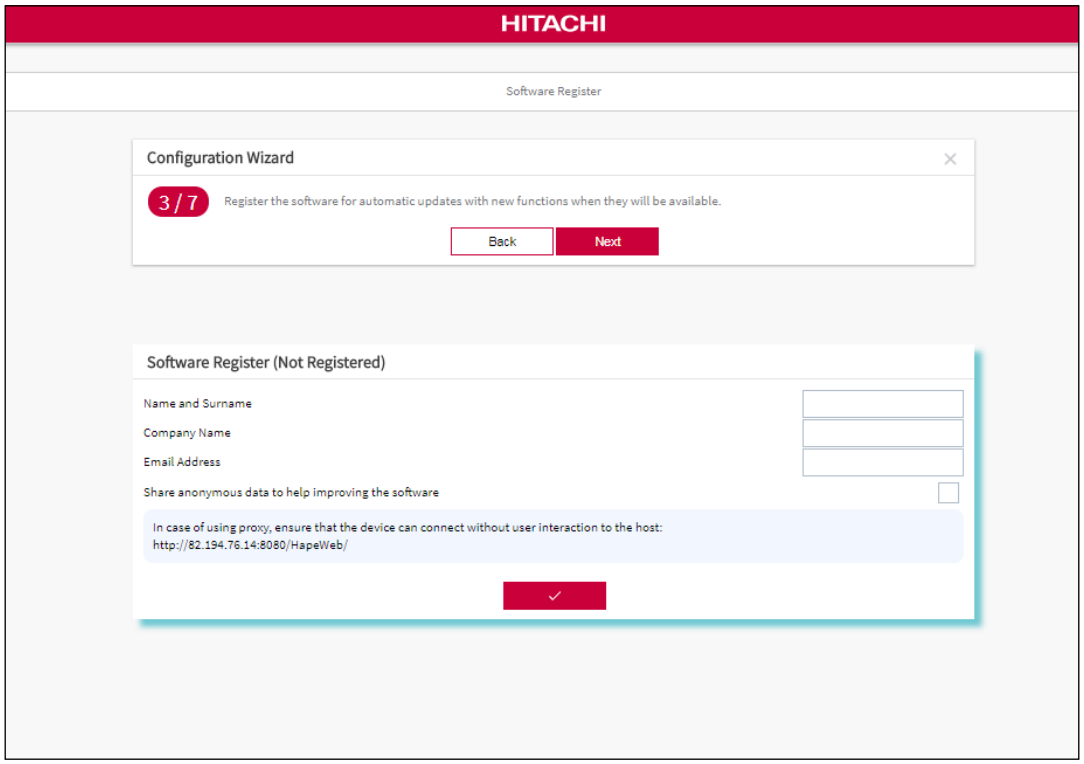
For more details refer to "6.1.25.2 Network Settings" chapter.



Step 3: Register the software for automatic updates with new functions when they will be available.

NOTE

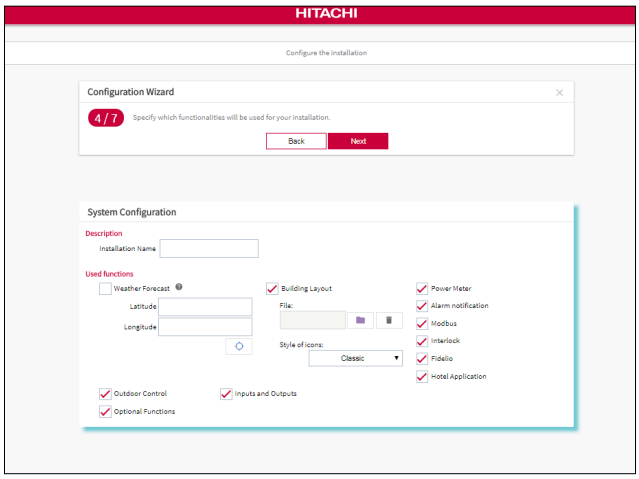
For more details refer to "6.1.25.4 Register And Updater" chapter.



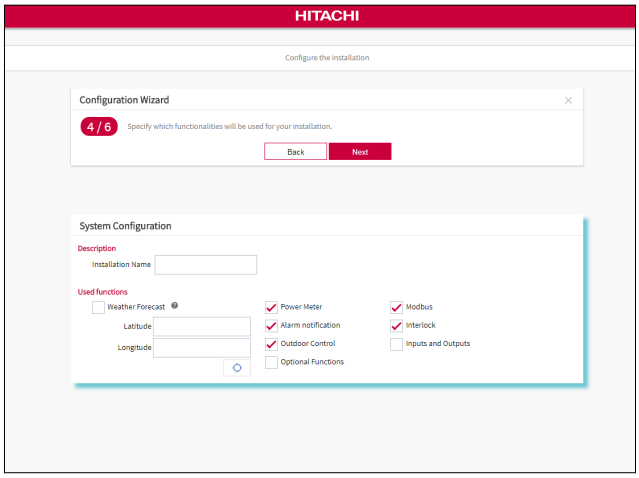
Step 4: Specify which functionalities will be used for your installation.

NOTE

For more details refer to "6.1.25.1 Installation" chapter.



CSNET Manager 2

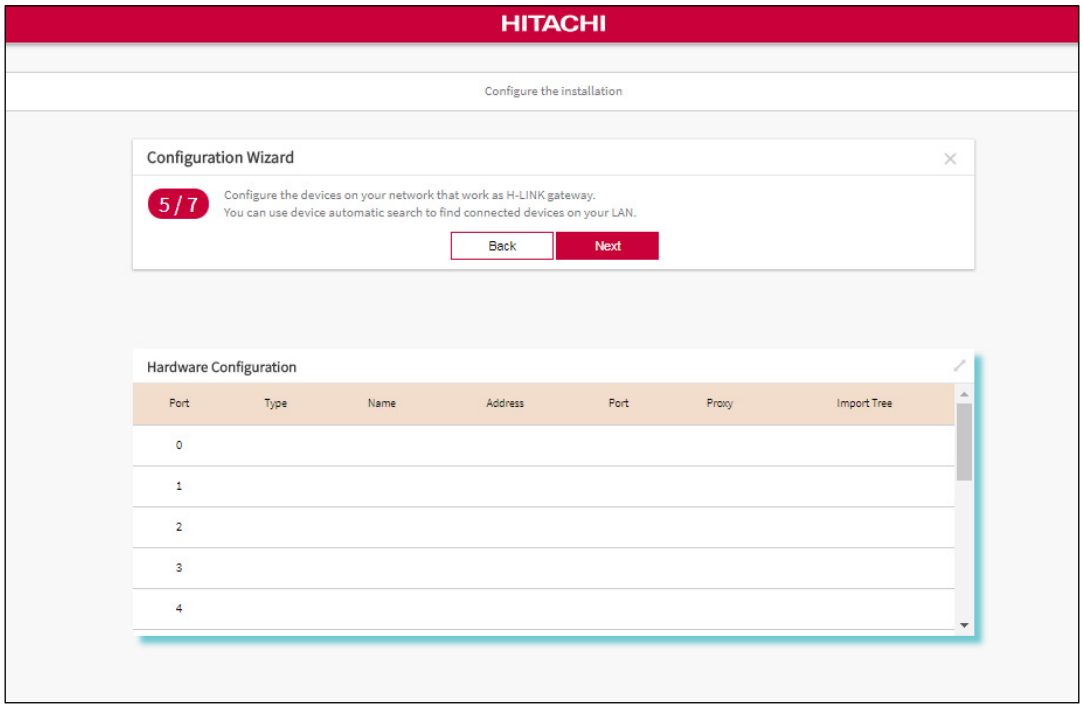


CSNET Lite

Step 5: Configure the devices on your network that work as H-LINK gateway. You can use device automatic search to find connected devices on your LAN.

NOTE

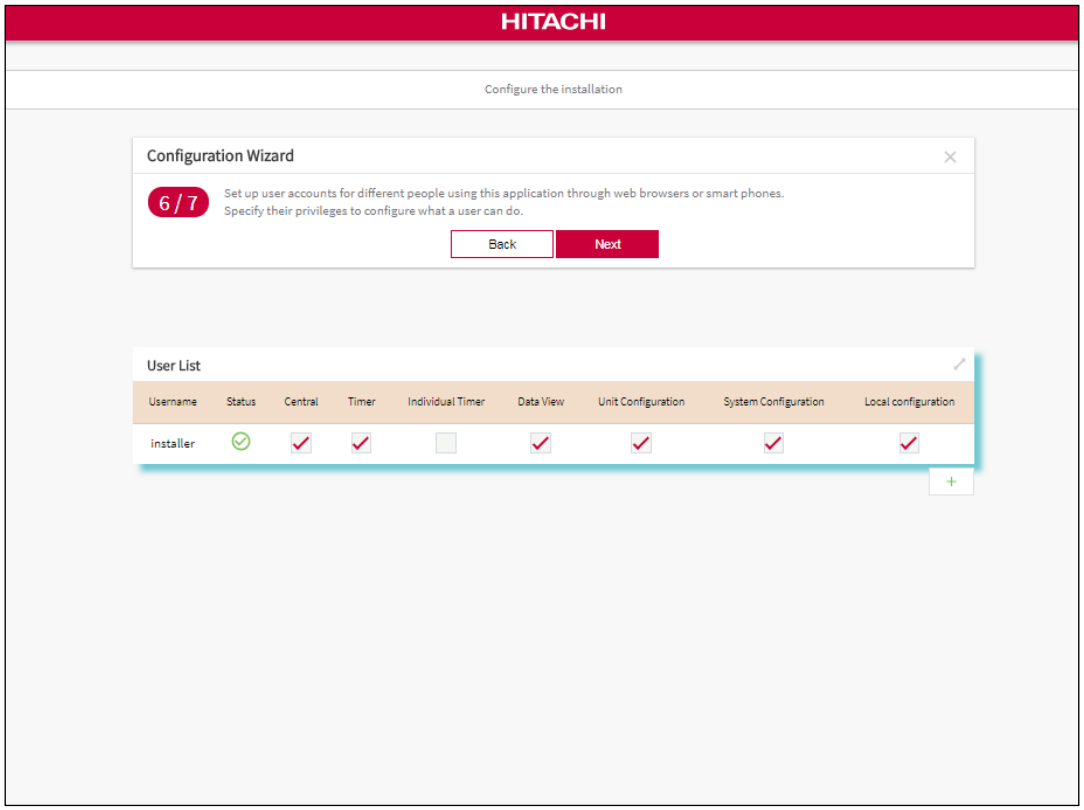
- *This function is not available for CSNET Lite.*
- *For more details refer to "6.1.25.1 Installation" chapter.*



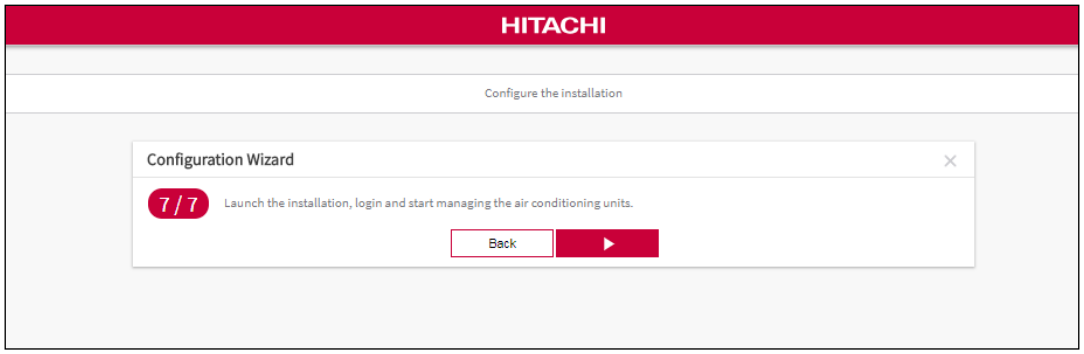
Step 6: Set up user accounts for different people using this application through web browsers or smart phones. Specify their privileges to configure what a user can do.

NOTE

For more details refer to "6.1.25.1 Installation" chapter.

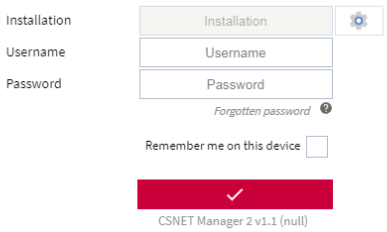


Step 7: Press ▶ to launch the installation, login and start managing the air conditioning units.

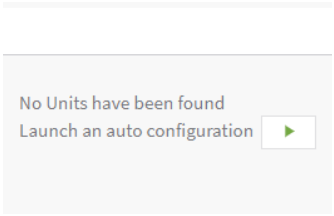


6.1.13 Unit detection

Step 1: Enter the user name and password and press ✓ to make login on the installation.



Step 2: Press ▶ to launch an auto configuration to find automatically the units.

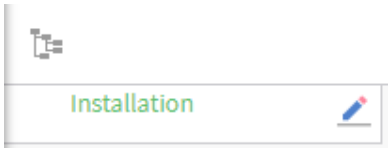


6.1.14 Area tree creation

Step 1: Press the "Area tree" icon to show or hide the installation tree. This menu is accessible from the following screens:

- Dashboard view
- List view
- Grid view
- Building layout view (Only for CSNET Manager 2)
- Units (Timer configuration menu)
- Auto Cool/Heat
- Cold Draft
- Heat Draft
- Set back
- Unit configuration
- Owners (Power management menu)
- Modbus
- Interlock
- Hotel application (Only for CSNET Manager 2)
- Fidelio (Only for CSNET Manager 2)
- Optional functions

Step 2: Press the icon to create or edit different areas for the installation.

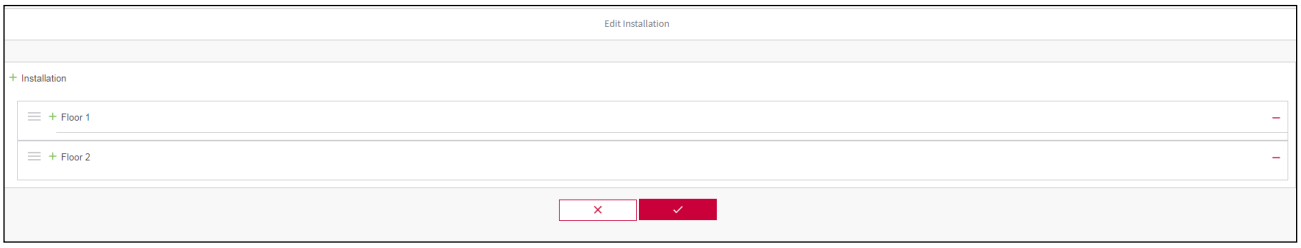


Step 3: Press the + add a new area or sub area of the installation. Areas can be arranged by dragging the ☰ button.

Use — to delete the selected area.

Use ✓ to accept the changes.

Use ✗ to cancel and turn to the previous view.

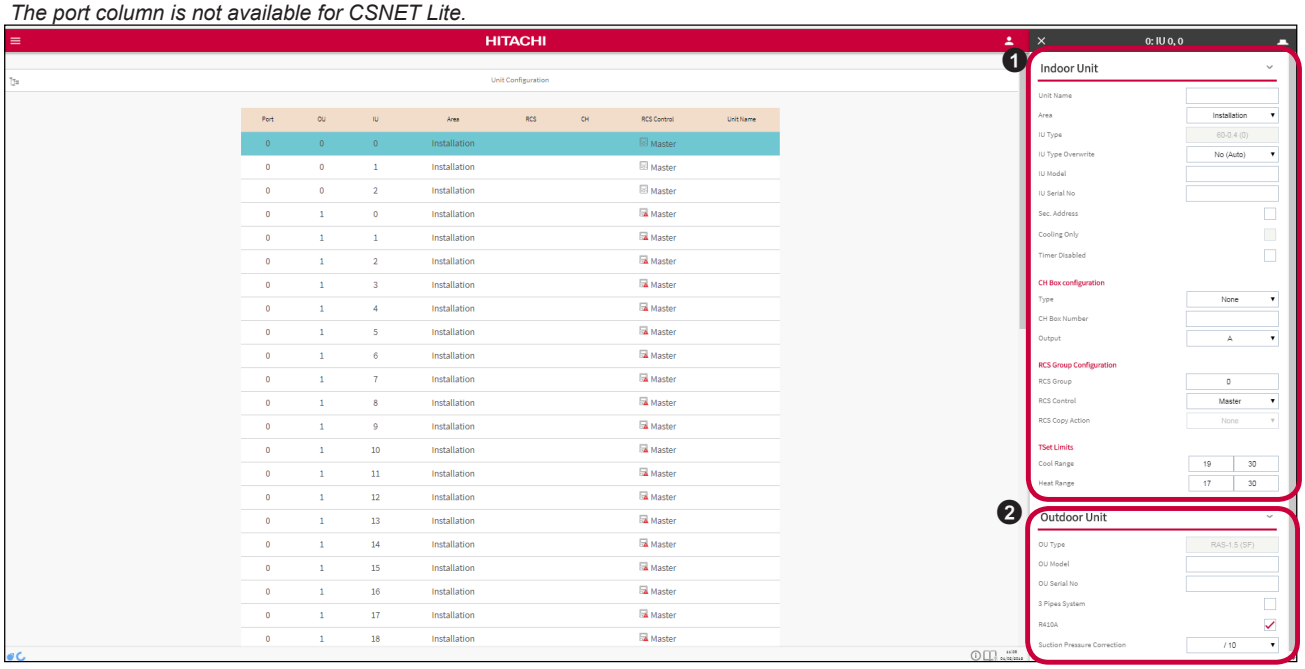


6.1.15 Unit configuration

The unit configuration menu shows all the data of the units controlled by CSNET software. Complete the following fields for all the connected units to define the installation.

NOTE

The port column is not available for CSNET Lite.



1 Indoor unit configuration:

Unit name: Name of the unit.

Area: Zone to which this unit belongs. CSNET software allows to select among areas created in *"6.1.14 Area tree creation".*

IU Type: Model of indoor unit (recognized by the system) (see Note 1).

IU Type Overwrite: To change the indoor unit model recognized by the system.

IU Model: Exact model of the indoor unit (see Note 2).

IU Serial No: Serial Number of the indoor unit (see Note 2).

Sec. Address: in SET FREE of H-LINK (I) with more than 16 indoor units, we use a virtual address to indicate that this unit is a secondary unit of the previous unit.

Cooling only: Sets the indoor unit in cooling mode only. Also dry and fan modes are allowed. Heat draft is not allowed when this option is activated.

Timer Disabled: Deactivate the timer setting option.

CH Box Type: Select the CH-Box type used (none, single, multi) to the selected indoor units. (See Note 4).

CH Box Number: Number of the CH-Box connected to the selected indoor units.

CH Box Output: CH Box Output: Selection of the output used for the CH-Box. When CH-Box type is multi, every CH- Box output works like a single CH-Box, with a same working mode.

RCS Group: Remote control number used by more than one indoor unit including this one, for example 1. A second group should have a different number, etc. If any of the parameters within a group changes, all the group units will adopt the specified value at the same time. This process is automatic and there is no need to select the unit group to change. (Note 3)

RCS Control: Sets the RCS control as Master, Slave or RCS not installed. (See Note 6 for RCS Control configuration examples).

RCS Copy Action: Selection of the action (none, copy all changes, copy mode, copy temperatures, copy mode and temperatures, "block and overwrite") to be copied to all the remote controllers used within the same RCS Group (See Note 7).

Cool Range: Sets the maximum and the minimum temperature values in cool mode.

Heat Range: Sets the maximum and the minimum temperature values in heat mode.

❷ Outdoor unit configuration:

OU Type: Model of the outdoor unit connected to this indoor unit (recognized by the system).

OU Model: Exact model of the outdoor unit connected to this indoor unit (see Note 2).

OU Serial No: Serial number of the outdoor unit to which the indoor unit is connected (see Note 2).

3 Pipes System: Activate when using a CH-Box (Heat recovery systems).

R410A: If you mark the check box, the cooling system used is R410A; if you do not mark it, the cooler is R407C (see Note 5).

Suction Pressure correction: Correction factor used for the suction pressure shown at the System Status.

NOTE

1 If the indoor unit is RPC or RPK, CSNET software will display RPC(RPK), as they cannot be identified properly.

2 The precise model should be entered to make necessary maintenance and repair work easier.

3 It is not possible for two or more units with a remote controller to function in different conditions. Only use the remote control Group within the same cooling system or CH Box. Do not use a single controller to control indoor units connected to different outdoor units or CH-Boxes. RCS is set automatically when HC-A64NET is doing auto configuration for the units that let detect this configuration. The assigned value is indicative and it's always suggested to revise the assignation or do it manually.

- In case of units without remote control:

a. Set RCS control as not installed.
b. Set individual RCS group for each unit.

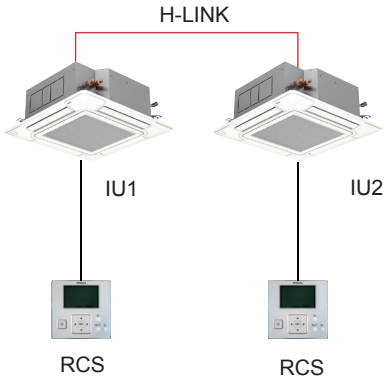
4 The compatibility of the operation modes is as follows:

Operation mode	Compatible modes in the other units bellow the same CH-Box
Cool	Cool, Dry, Fan
Heat	Heat, Fan
Dry	Cool, Dry, Fan
Fan	Cool, Dry, Heat, Fan
Automatic cooling / heating	Automatic cooling / heating

5 This information will be used by CSNET software to calculate the control parameters of the cooling system, like TdSH.

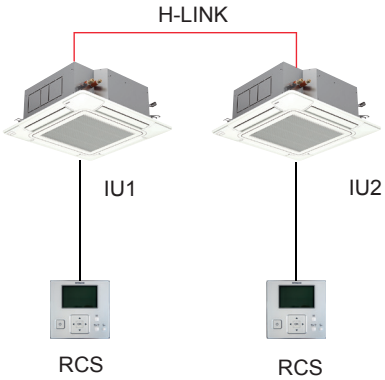
6 RCS Control configuration examples:

a. Not mandatory to create RCS Group:



- IU1 RCS Control: Master
- IU1 RCS Group: 1
- IU2 RCS Control: Master
- IU2 RCS Group: 1

b. Not possible since a unit having a RCS directly connected to it can not be configured as Slave:



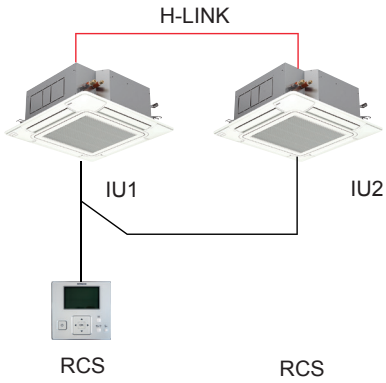
- IU1 RCS Control: Master
- IU1 RCS Group: 1
- IU2 RCS Control: Slave
- IU2 RCS Group: 1

Note:
IU RCS Group:

- 0 (none)= for individual control
- Same IU1 and IU2 RCS Group for copying the "CSNET Manager 2" orders between them.

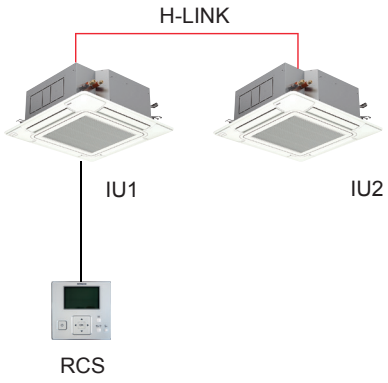
Check RCS copy action information to know more about copying orders between remote controllers in the same RCS Group.

c. Mandatory to create RCS Group:



- IU1 RCS Control: Master
- IU1 RCS Group: 1

- IU2 RCS Control: Slave
- IU2 RCS Group: 1



- IU1 RCS Control: Master
- IU1 RCS Group: 1

- IU2 RCS Control: Not installed
- IU2 RCS Group: 1

Note:

Same IU1 and IU2 RCS Group for copying the "CSNET Manager 2" orders between them.

7 RCS Copy Action

- ***none:*** *Indoor units in same RCS Group will copy orders from CSNET Manager 2, but will remain individually controlled from their remote controller.*
- ***copy all changes:*** *Indoor units in same RCS Group will copy orders from CSNET Manager 2 and from any installed remote controllers.*
- ***copy mode:*** *Indoor units in same RCS Group will copy orders from CSNET Manager 2 and the mode from any installed remote controllers.*
- ***copy temperatures:*** *Indoor units in same RCS Group will copy orders from CSNET Manager 2 and the temperature from any installed remote controllers.*
- ***copy mode and temperatures:*** *Indoor units in same RCS Group will copy orders from CSNET Manager 2 and the mode and temperature from any installed remote controllers.*
- ***"block and overwrite":*** *Indoor units in same RCS Group will copy orders from CSNET Manager 2, but will undo (or block) the orders done from the remote controller. (Remote controller useless).*

6.1.16 Interface utilities

6.1.16.1 Unit icons

	Icon	Description
ON/OFF		On
		OFF
		OFF state by heat draft
MODE		Cool
		Dry
		Fan
		Heat
		Auto
FAN		Low
		Medium
		High
		High-H
		Automatic fan
		No fan

	Icon	Description
LOUVER		Step 1
		Step 2
		Step 3
		Step 4
		Step 5
		Step 6
		Step 7
		Automatic louver
		No louver
CENTRAL		All settings can be changed from the remote controller
		Any settings can be changed from the remote controller
		Some settings can be changed from the remote controller Block mode / Block temperature / Block fan
		No central
Remote Control		Remote control not detected on a indoor unit configured with remote controller
		Remote control not installed

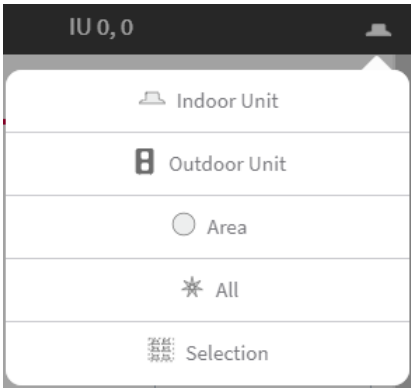
6.1.16.2 System icons

	Icon	Description
COMMUNICATION STATUS		Communication is established.
		Web server is running but it has some communication problems.
		Auto configuration is running.
		Auto configuration is searching units.
FIDELIO		Fidelio data is configured and working.
		Fidelio data is configured but it is not working.
MODBUS		CSNET software is accepting Modbus TCP connection.
		Modbus TCP connection error.
MAIL		Mail alarm is running.
		Mail alarm error sending.
		Mail alarm is sending an email.
		Mail alarm is waiting to send an email.

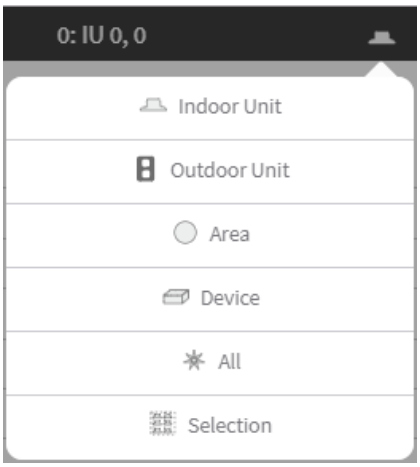
	Icon	Description
POWER STATUS		Power meters are configured and enabled.
		Problem communicating with Power Meters.
POWER CONSUMPTION		Power consumption files are uploaded.
		Error sending power consumptions files.
GATEWAY		Multiple connection to network gateway notification.
UPDATES		There are updates available for some of the connected devices.
		There are updates available for CSNET software.
MANUAL		Open the operation documentation file for helping the user to find extended information about the product.
ABOUT		About information.

6.1.16.3 Unit selection tool

The following options can be used to select the units:



CSNET Lite



CSNET Manager 2

	Name	Send the order to
	Indoor unit	The selected indoor unit.
	Outdoor unit	All the indoor units belonging to the same outdoor unit than the selected one.
	Area	All the indoor units belonging to the same tree area unit than the selected one.
	Device	All the units connected on the same device than the selected units. (Only for CSNET Manager 2)
	All	All the units.
	Selection	The selected units on the table or layout.

This menu is accessible from the following screens:

- Dashboard view
- List view
- Grid view
- Building layout view (Only for CSNET Manager 2)
- Units (Timer configuration menu)
- Auto Cool/Heat
- Cold Draft
- Heat Draft
- Set back
- Unit configuration
- Optional functions
- Interlock
- Hotel application (Only for CSNET Manager 2)

6.1.16.4 Virtual keyboard

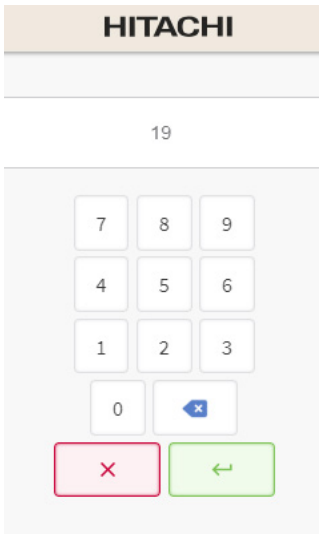
When an empty field is selected, the virtual keyboard icon is shown.



The virtual keyboard appears for the selected language.



Alphanumeric keyboard



Numeric keyboard

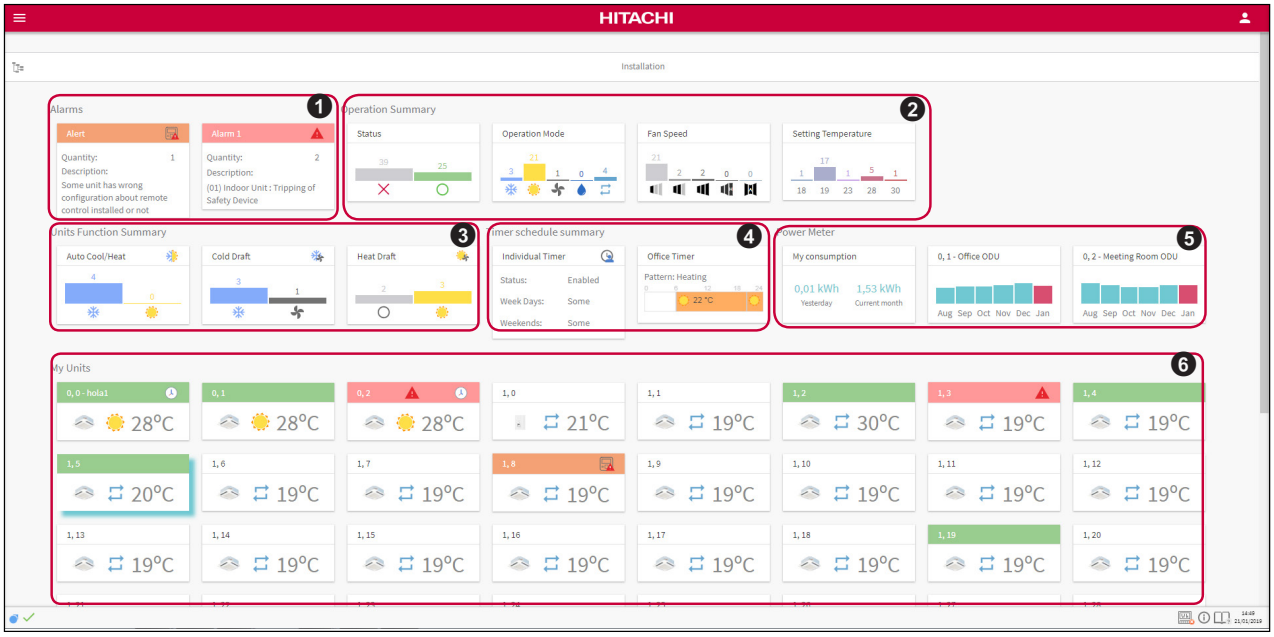
6.1.16.5 Functions comparison

Functions		CSNET Manager 2 T10/T15	CSNET Manager 2 SL	CSNET Lite
Units Views	Dashboard	Yes	Yes	Yes
	Table of indoors view	Yes	Yes	Yes
	Building layout view	Yes	Yes	No
	Matrix view on Web	Yes	Yes	Yes
	Embedded Building Layout	Yes	Yes	Yes
Timer Configuration	Pattern	Yes	Yes	Yes
	Timer	Yes	Yes	Yes
	Units assignation	Yes	Yes	Yes
	ICS Calendar	Yes	Yes	No
	User Timers	Yes	Yes	Yes
Registered Data	Historical Data	Yes 2 years	Yes 2 years	Yes 1 year
	Alarm Log	Yes 1 year	Yes 1 year	Yes 6 months
	Order log	Yes 1 year	Yes 1 year	Yes 6 months
	Live Data	Yes	Yes	Yes
	System status	Yes	Yes	Yes
Power management	Power consumption	Yes	Yes	Yes
	Max nº of power meters	8	8	8
	Owners	Yes	Yes	Yes
	Settings	Yes	Yes	Yes
	Power meters not linked to units	Yes	Yes	Yes
	Power Meter Data	Yes 1 years	Yes 1 years	Yes 1 years
Unit Functions	Auto Cool/Heat	Yes	Yes	Yes
	Heat Draft (Fan stop during Thermo-OFF in heating mode)	Yes	Yes	Yes
	Cold Draft	Yes	Yes	Yes
	Set Back	Yes	Yes	Yes
	Unit Configuration	Yes	Yes	Yes
	Optional functions	Yes (if use Lite or new HC-A64NET)	Yes (if use Lite or new HC-A64NET)	Yes
System Settings	H-LINK Installation management	Yes	Yes	Yes
	Web Server	Yes	Yes	Yes
	Alarm Notification	Yes	Yes	Yes
	Modbus	Yes	Yes	Yes
	Hotel Application	Yes	Yes	No
	Fidelio	Yes	Yes	No
	Interlock	Yes	Yes	Yes
	Outdoor Control	Yes	Yes	Yes
	Power Meters configuration	Yes	Yes	Yes
	Inputs & Outputs	Yes (if use Lite or new HC-A64NET)	Yes (if use Lite or new HC-A64NET)	Yes
	Configuration Files	Yes	Yes	Yes

6.1.17 Unit views

6.1.17.1 Dashboard view

The dashboard view provides a general overview of the installation. In any case information on cards is updated according to the viewed area.



1. **Alarms:** A description of the issue is shown in a card for each alarm or alert.
2. **Operation summary:** The following information is shown:

   Status: The number of indoor units in switched ON and switched OFF states.

   Operation mode: The number of indoor units operating in each mode.

   Fan speed: The number of indoor units operating in each fan speed.

   Setting Temperature: The number of indoor units in operation with the same setting temperature.
3. **Unit function summary:** The following information is shown:

   Auto Cool/Heat: The number of indoor units in COOL or HEAT mode which are additionally set to Auto Cool/Heat.

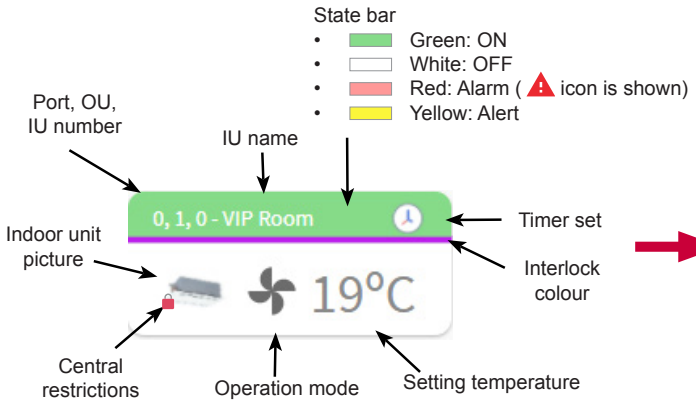
   Cold Draft: The number of indoor units in COOL or FAN mode which also have the Cold Draft option enabled.

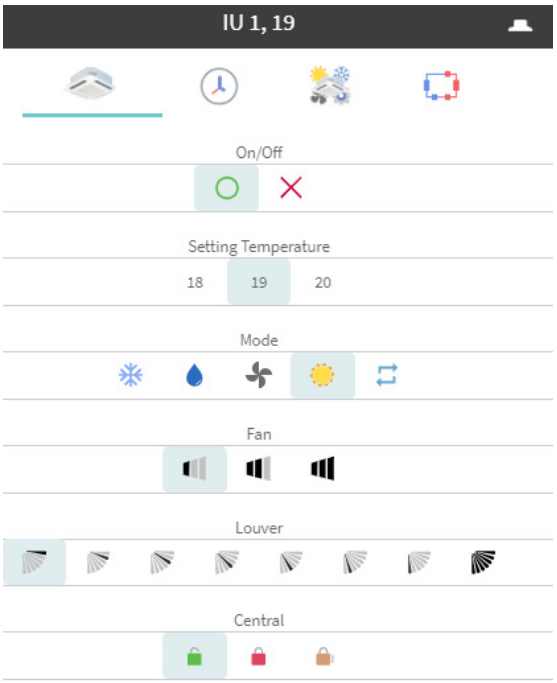
   Heat Draft: The number of indoor units in HEAT or FAN mode which also have the Heat Draft option enabled.
4. **Timer schedule summary:** The individual timer and timers scheduled are shown in a card with the name of the pattern applied and a graphic summary for the current day.
5. **Power meter:** A power meter card is shown for each power meter installed. The “My consumption card” provides a summarised view when multiple power meters are installed.
6. **My units:** A card is shown for each unit installed with updated information about state, operation mode, setting temperature, interlock or timer of the indoor unit. Clicking on the unit card the unit operation panel appears.

NOTE

- *Cards are displayed when the information on it is relevant. For example: setting temperature will not be shown if all units on the chart have the same temperature.*
- *Dashboard contents can be set in “6.1.26.1 My Preferences” menu.*

◆ Units at the dashboard view





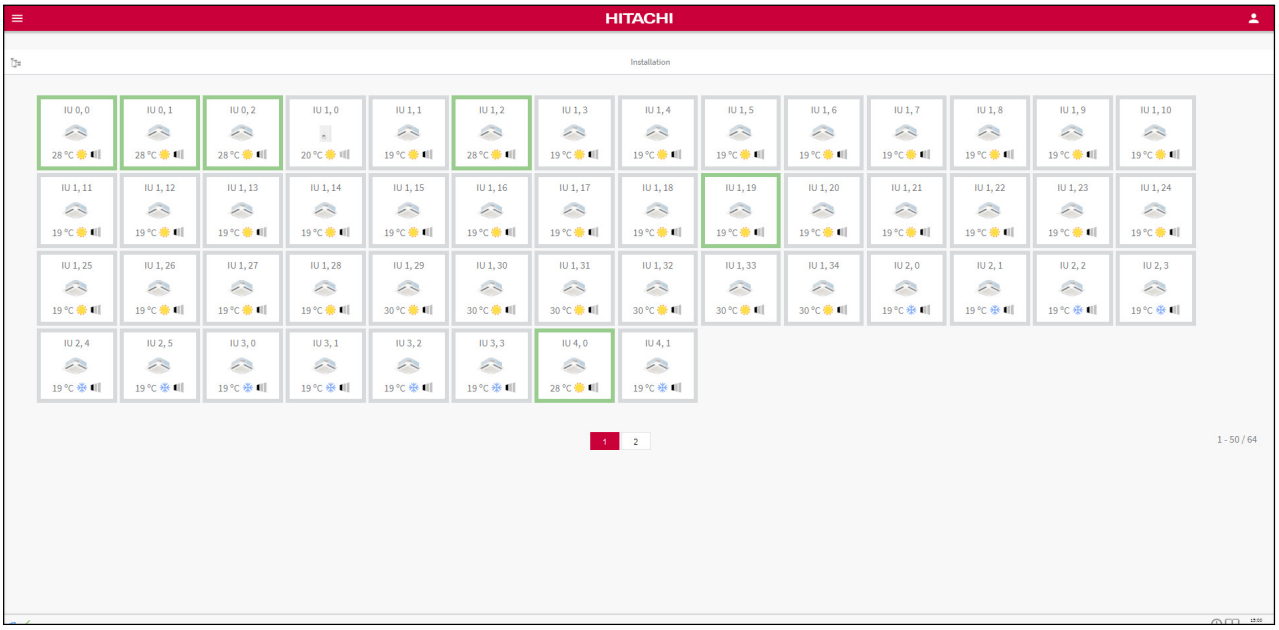
Unit operation panel

6.1.17.2 Grid View

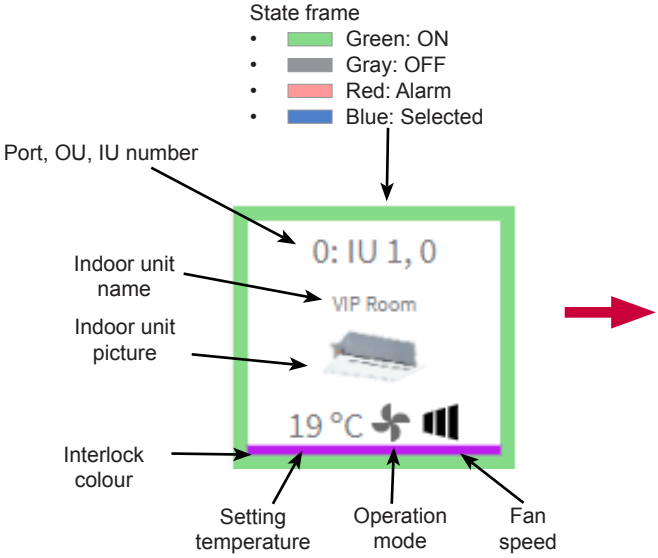
The Grid view shows all the units connected and gives updated information about state, operation mode, setting temperature and fan speed of the indoor units. Clicking on the unit the unit operation panel appears.

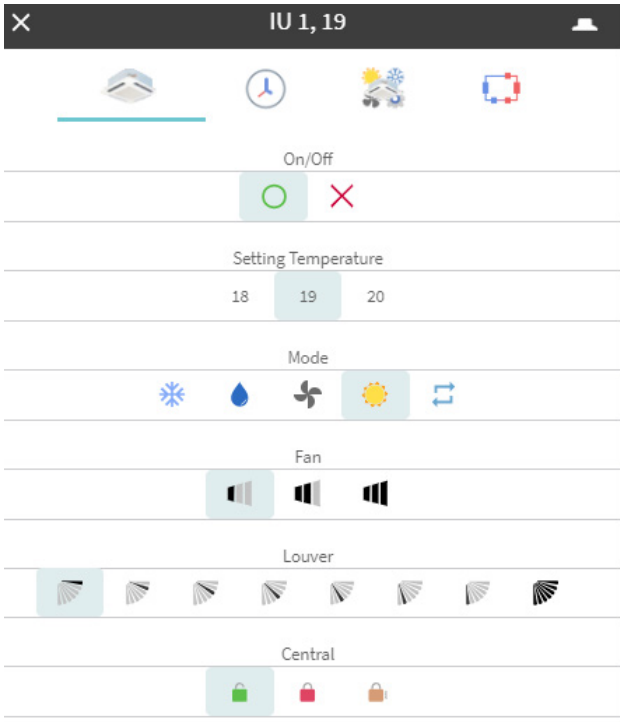
NOTE

The Grid view is only available when "Building Layout" is disabled.



◆ **Units at the grid view**





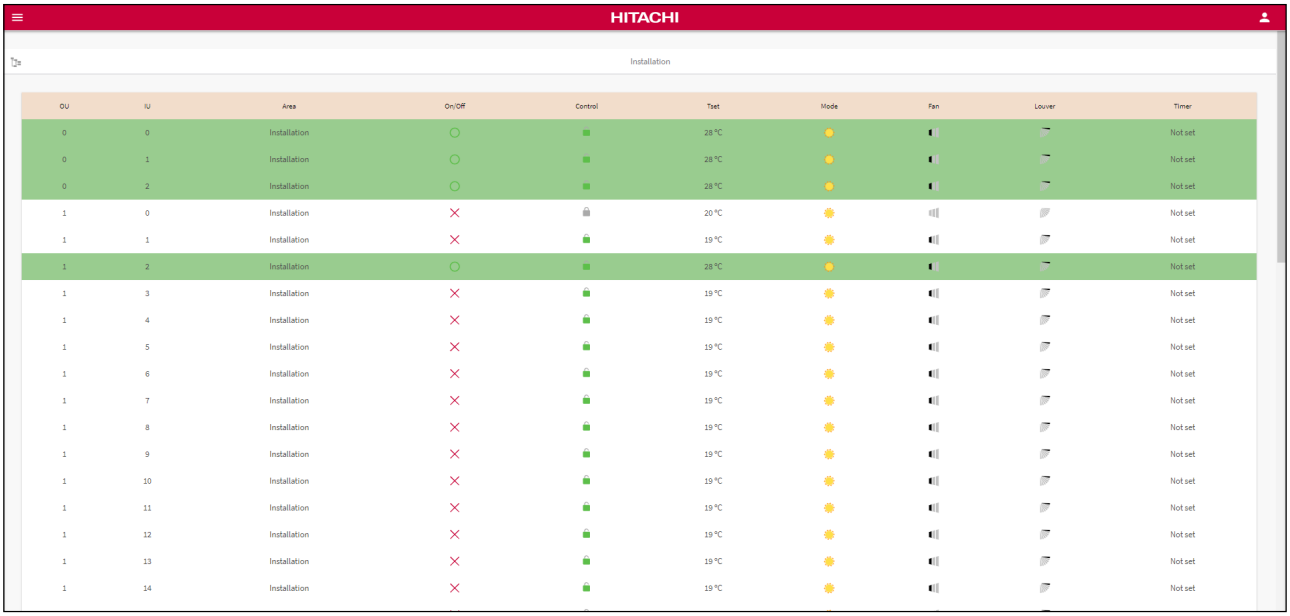
Unit operation panel

6.1.17.3 List View

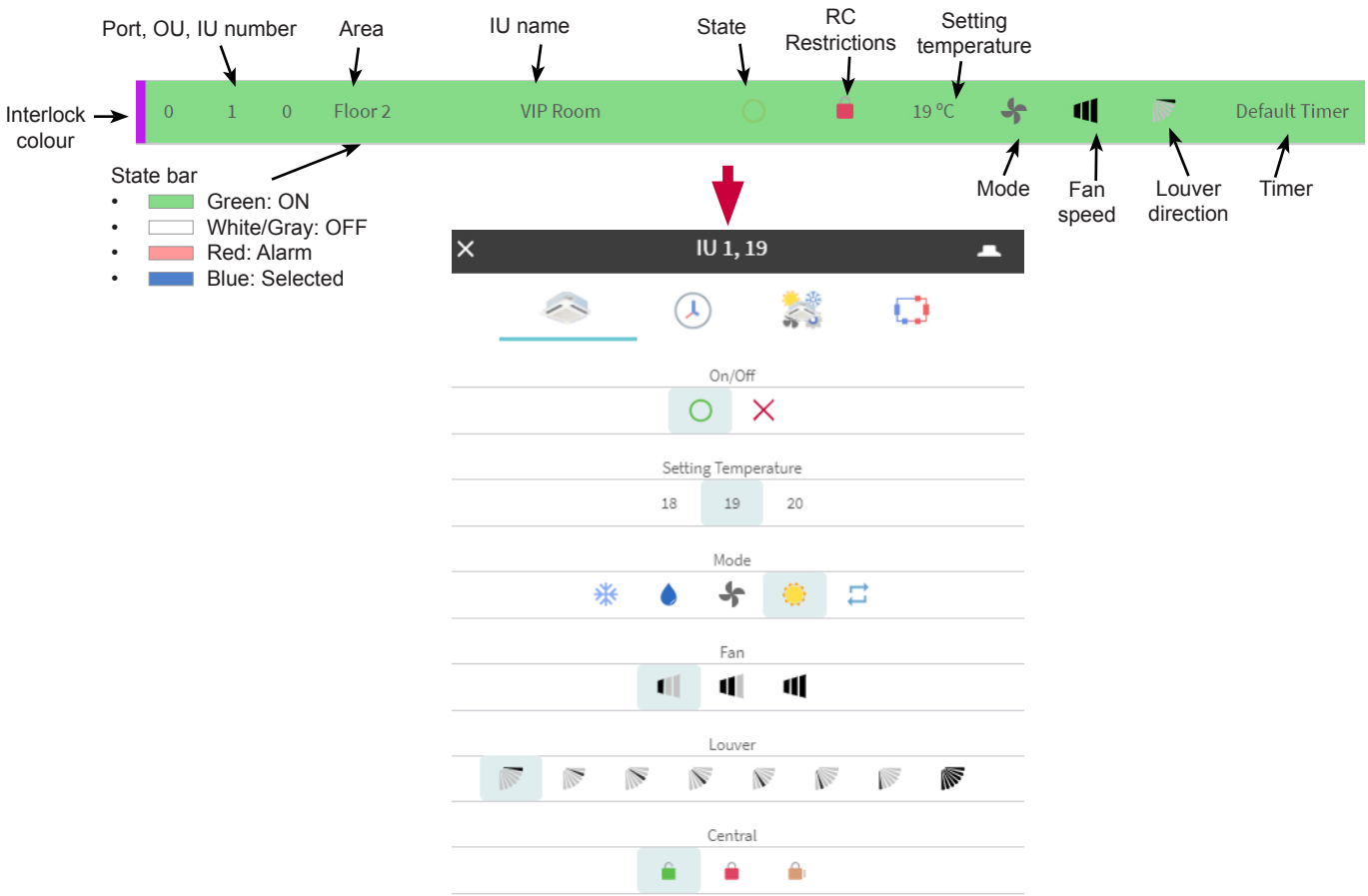
The list view provides updated information for all the units about the area, state, operation mode, setting temperature, fan speed, RC restrictions and timer settings of the indoor units. Clicking on the unit the unit operation panel appears.

NOTE

CH Box and RCS Group columns appear if there is some configured.



◆ **Units at the list view**



Unit operation panel

6.1.17.4 Building Layout View (Only For CSNET Manager 2)

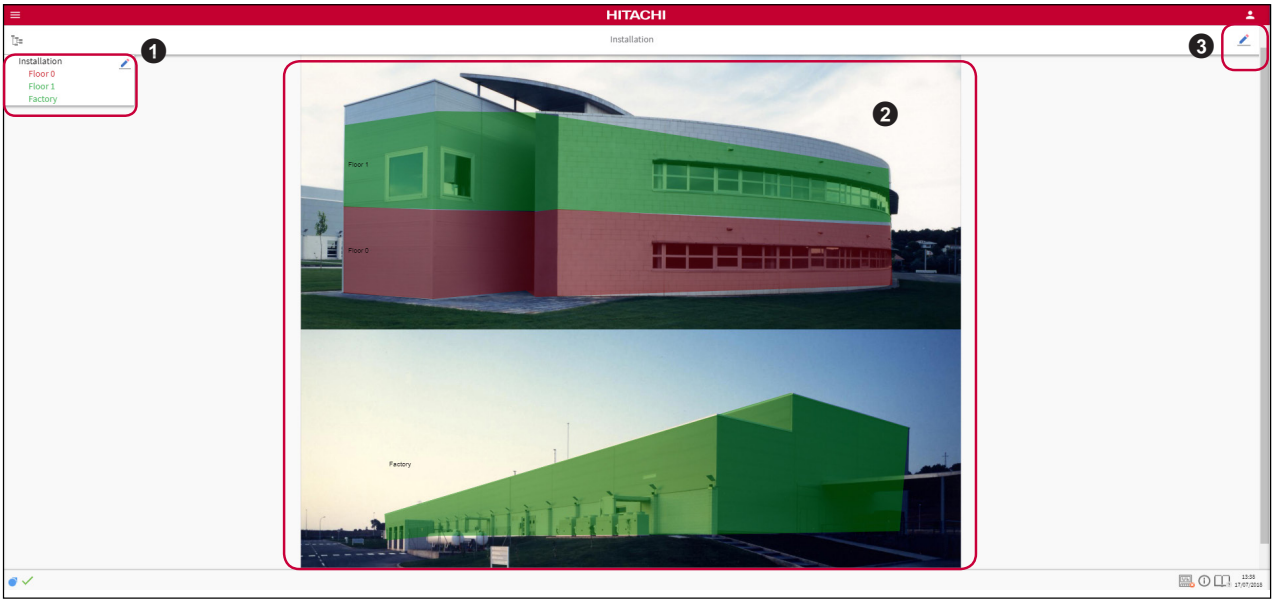
Building Layout lets the user to customize their view and the way of how the units are distributed through the installation.

If there is an existing Building Layout file, that must be created using the editor, should be configured as the layout of our installation.

Inside the “Local configuration” option (in the initial page) when creating or editing an installation you can set the path of the building layout file.

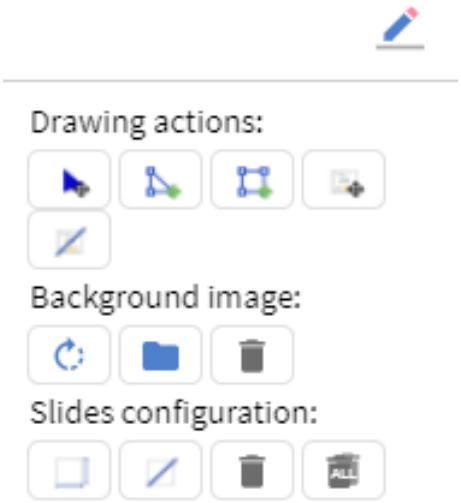
Otherwise, CSNET Manager 2 is creating its own building layout based on the area tree settings, which gives a matrix view of the units.

The shape colour shows the state of the unit. Unit Icons has a little frame that indicates the same.



1. **Area tree:** Shows the area tree of the installation, it is possible to edit the area tree from this menu. When a sub-area is selected a back button is shown to return to the previous area.
2. **Slide:** Shows the main areas of the installation. Clicking on each area shows a display with all the indoor units belonging that area.
3. **Drawing menu:** To put a background image for the building layout creation or to edit the shapes of each area.

6.1.18 Creating a new building layout



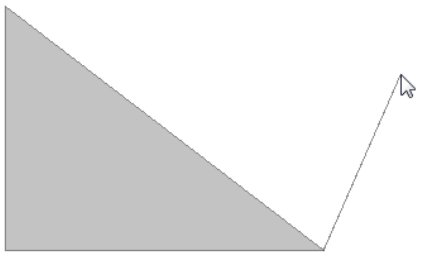
DRAWING ACTIONS		Move area
		Polygon creation
		Square creation
		Move unit
		Hide unit
BACKGROUND IMAGE		Rotate background
		Open background
		Delete background
SLIDES CONFIGURATION		Slide dimension
		Hide background
		Delete active background
		Delete all backgrounds

Step 1: Open the drawing menu and select the folder of the background image with the icon.

Step 2: Edit the shape of each area. Select the area and then create a polygon or a square .

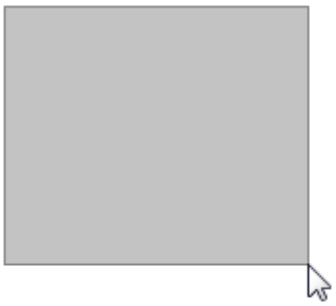
Polygon Creation:

Adding a polygon consist on clicking in each limiting point of the desired shape. A line will indicate you where the next point will be add.

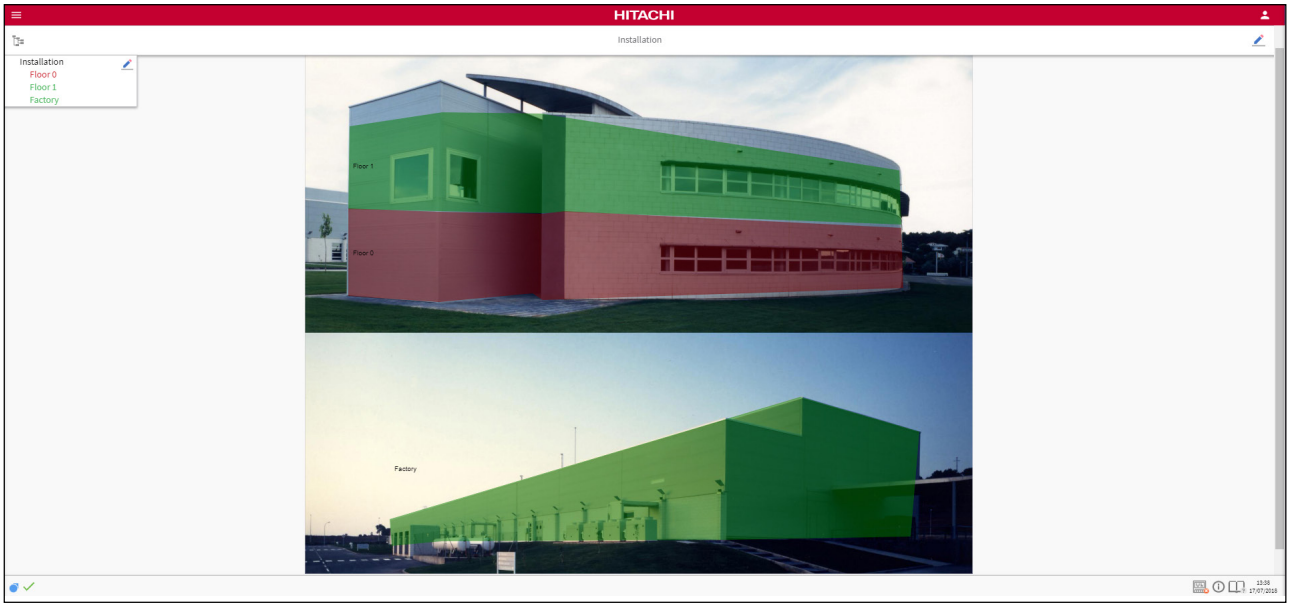


Rectangle creation:

Rectangular shapes creation is easy, you only have to click with the mouse and drag selecting the area you are creating.

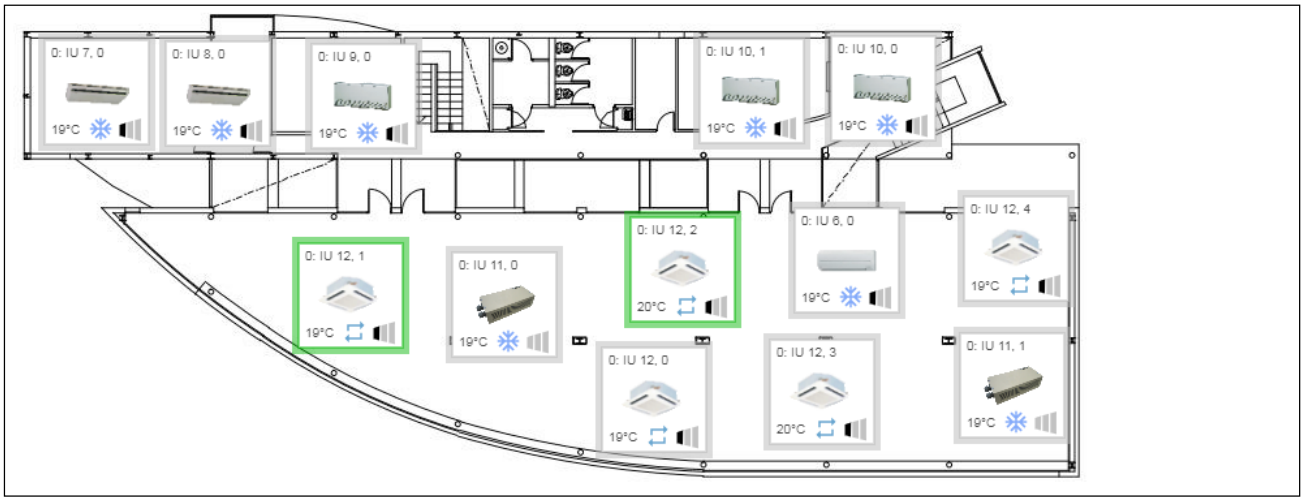


Step 3: Select the area and press to move the area to the desired zone of the background image.



Step 4: Close the drawing menu and click on an area. The indoor units of the selected area are shown.

Step 5: Choose another background for the sub area and move the indoor units to their respective room with .



Step 6: To adjust the influence area of the indoor unit select the unit with and then edit the shape of the area with the polygon or square buttons.

Step 7: To move the unit to the respective influence area press or to hide the indoor unit.

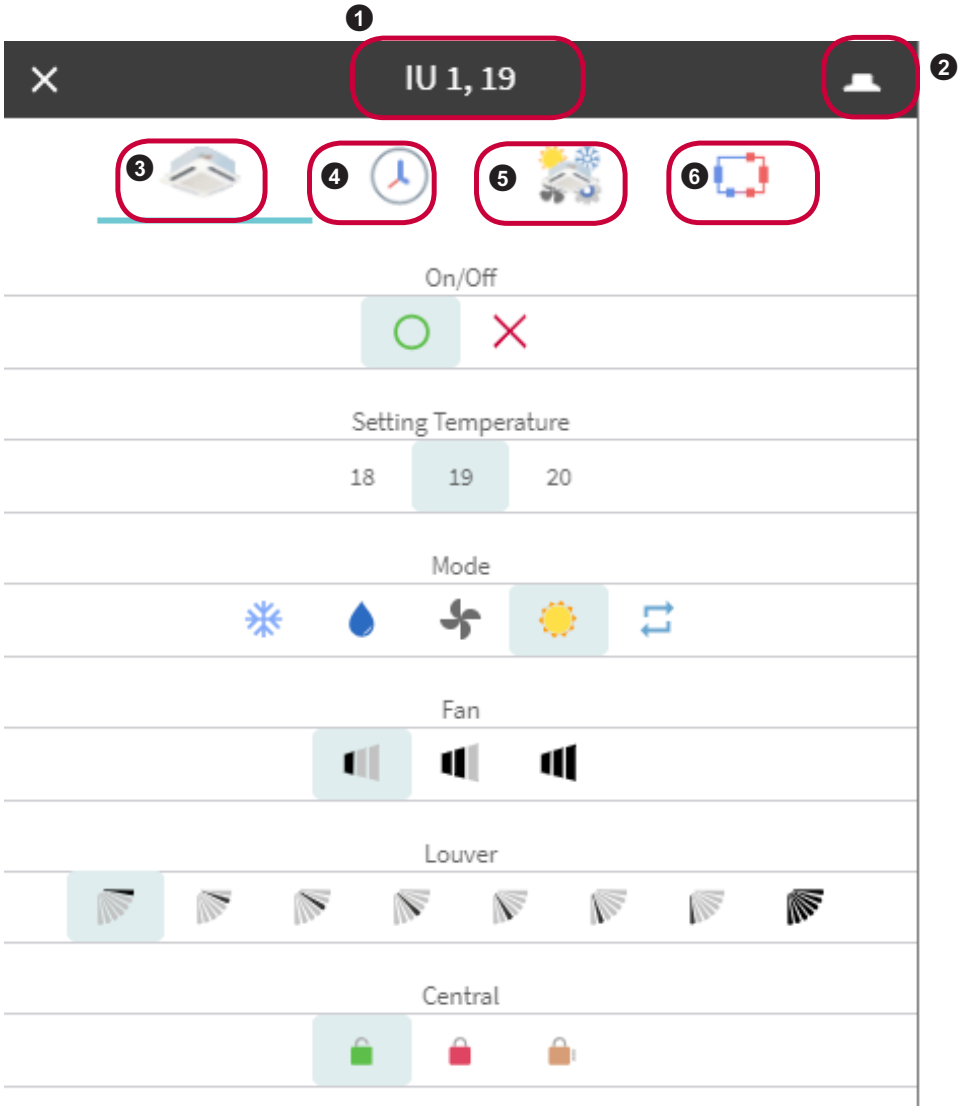
Step 8: Clicking on the unit the unit operation panel appears.

NOTE

- *For installations with more than 100 units, the Building Layout only allows to show the first 100 units for slide.*
- *Icons style (classic, transparent, only unit image, small card, information only) can be selected from "6.1.25 Local configuration" menu.*

6.1.19 Unit operation panel

Is possible to access to this menu, through all the views (Home-dashboard, Grid, Building layout and List view)



❶ **Indoor unit name:** When any name has been configured, the information about port, outdoor unit and indoor unit number is not shown.

❷ **Multi selection:** Different options for selecting units appears.

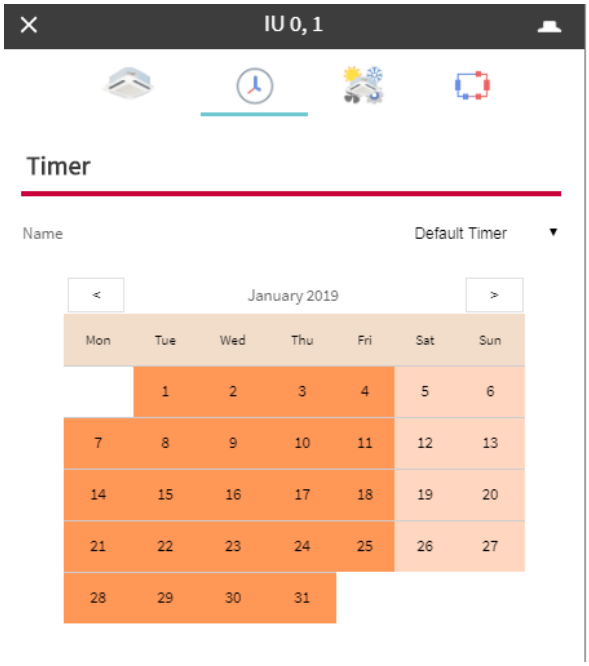
❸ **Indoor unit operations:**

- ON/ OFF (also shows when indoor unit is in OFF status due to heat draft)
- Setting temperature
- Mode (Cool, Dry, Fan, Heat or Auto heat/cool)
- Fan (Low, Medium, High, High H or Auto)
- Louver (8 different steps)
- Central: Restrictions applied to the remote control (Without restrictions, all restricted and with some restrictions)

NOTE

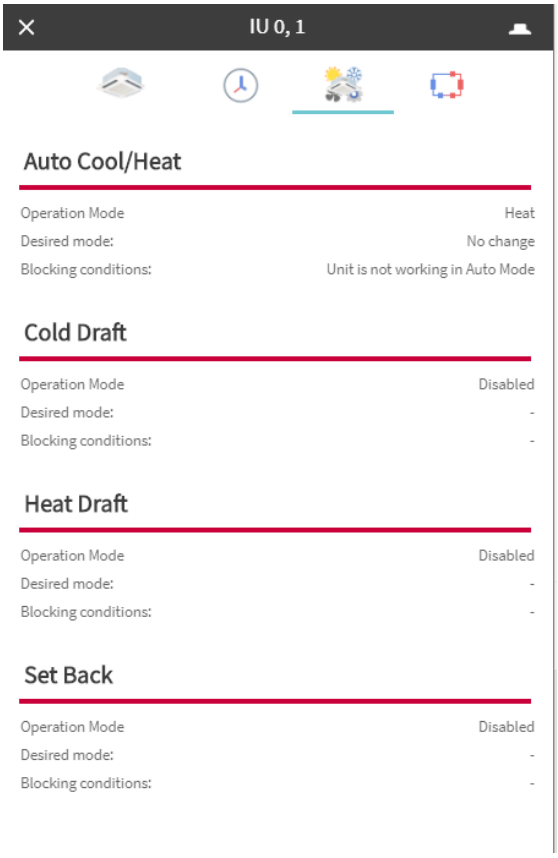
- *Setting temperature, Mode, Fan and Louver panels could not be shown if unit does not have them.*
- *Central panel only appears if user has privilege for it.*

❹ **Timer:** Change between timers and to visualize the selected timer.



❺ **Unit functions:** Show information about the configured unit functions:

- Auto Cool/Heat
- Cold Draft
- Heat Draft
- Set Back

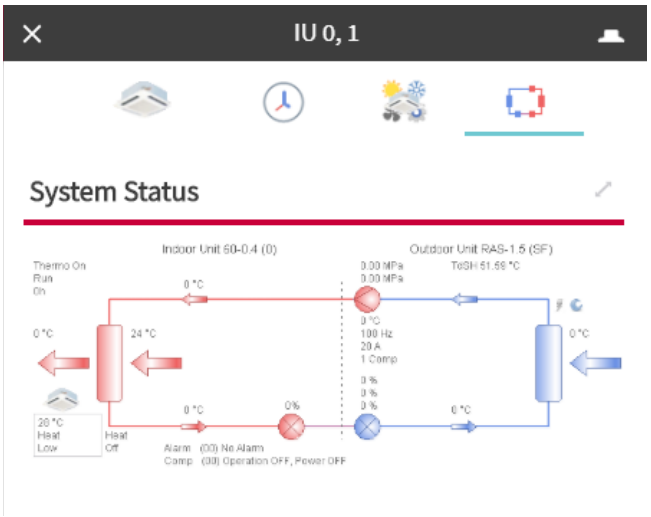


❻ **System status:** Shows the operating conditions of each of the units controlled by CSNET software.

The system status shown corresponds to the same unit selected in the indoor unit table, as shown in the adjoining example.

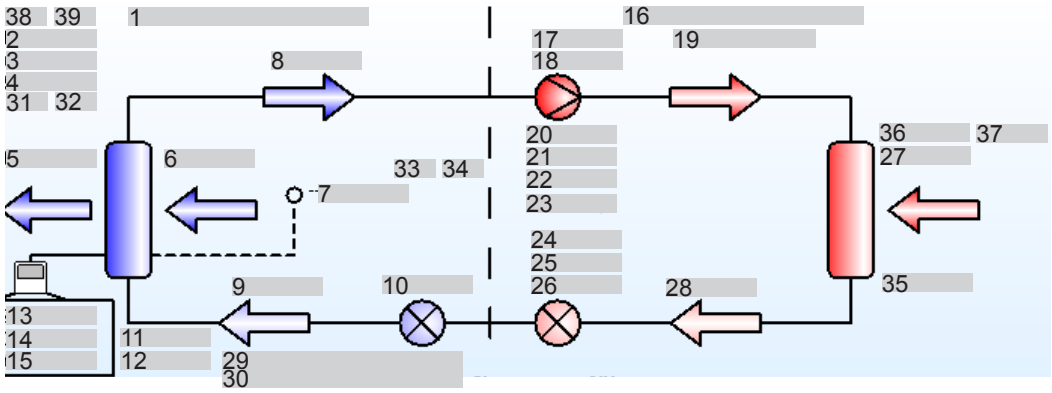
The information display is divided into 4 parts:

- Data of the indoor unit.
- Setting data of the remote control and/or the configuration field.
- Data of the outdoor unit.
- Alarm produced and reason for the compressor status.



◆ Explanation of the fields

Parameters are available depending on the system. Check the indoor and outdoor unit technical documentation for availability.



No.	Group	Description	Units
1	Indoor unit	Model of the indoor unit and its power	—
2		Thermo-ON/OFF	—
3		OFF/ON	—
4		Filter time	h
5		Air outlet temperature (5)	°C
6		Air inlet temperature (6)	°C
7		Optional remote thermistor (RCS / THM4) (4)	°C
8		Gas piping temperature	°C
9		Liquid piping temperature	°C
10		Expansion valve opening	%
11		Real operation mode	°C
12		Real vent speed	—
13	Remote control	Setting temperature	—
14		Selected operation mode	—
15		Selected fan speed	—

No.	Group	Description	Units
16	Outdoor unit	Model of outdoor unit and its power	—
17		Discharge pressure	MPa
18		Suction pressure	MPa
19		Discharge gas overheating (TdSH)	ºC
20		Discharge gas temperature	ºC
21		Compressor frequency	Hz
22		Total consumption of compressors	A
23		Number of compressors operating	—
24		MV1 expansion valve opening	%
25		MV2 expansion valve opening (1)	%
26		MV3 expansion valve opening/MVB (2)	%
27		Ambient temperature	ºC
28		Evaporating temperature (Heating)	ºC
29	Alarms	Number and description of alarm	—
30		Last cause of compressor stop (3)	—
31	Others	THM1	ºC
32		THM2 (Dx-kit only)	ºC
33		PCB1 THM1 (RA) (KPI only)	ºC
34		PCB1 THM2 (OA) (KPI only)	ºC
35	Power Meter	Power Meter values	—
36	OU Control	Power control activated	—
37		Night mode activated	—
38	CN3 Inputs	Input 1	—
39		Input 2	—

NOTE

- *(1) Not for FS units of up to 10 HP.*
- *(2) Not for FS units of up to 20 HP.*
- *(3) The value shown does not disappear until the cause of the compressor stop does not change.*
- *(4) THM4 is the remote thermistor.*
- *(5) Water outlet temperature.*
- *(6) Water inlet temperature.*

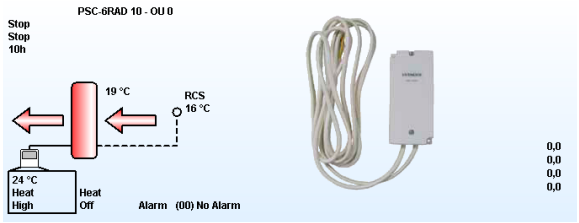
PC-A1IO System status

PC-A1IO has an special system status layout, it shows the value of all the digital outputs and two analogue inputs.



RAD Units System Status

Its special view only shows the values that can be read when a PSC-6RAD adapter is connected.



Alarms

The alarms shown in CSNET Manager 2 are the same that can be found in the Service Manual of the outdoor unit in question.

Cause of compressor stop

The cause of the compressor stop shown in CSNET Manager 2 is the same that can be found in the service manual of the outdoor unit in question.

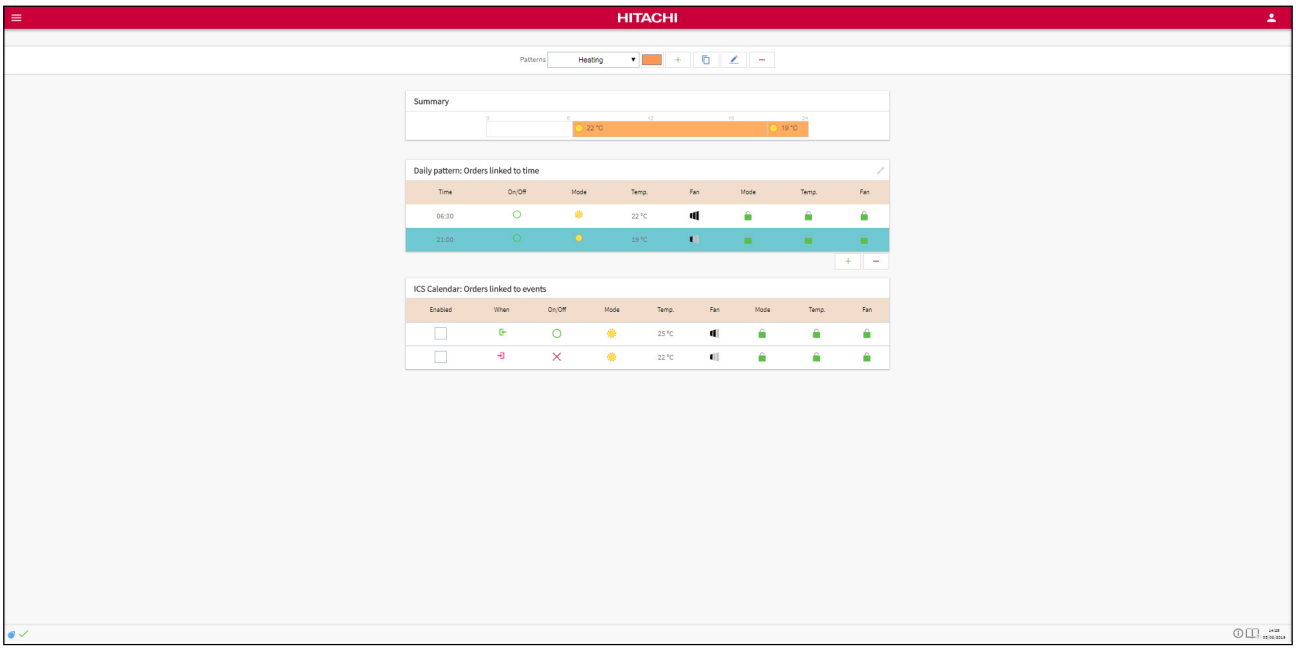
6.1.20 Timer configuration

6.1.20.1 Patterns Configuration

A pattern defines the operations to apply in a period of a day for the selected days of the weeks.

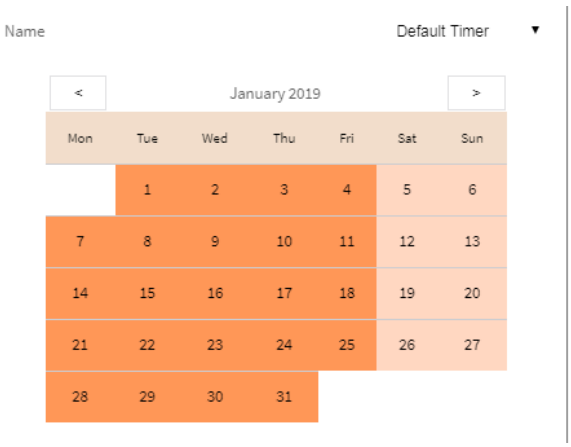
There are 4 patterns created by default which can be modified or deleted by the user or create new ones:

- Heating
- Soft Heating
- Summer Season
- Intermediate Season



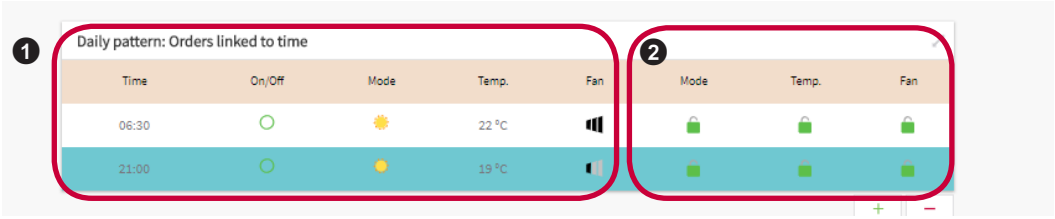
Step 1: To create a new pattern press + . A window emerges to define the name of the new pattern. Press ✓ to accept.

Step 2: Select the pattern colour. All days affected by this pattern will shown painted by this colour at the timer calendar.



◆ Orders linked to time

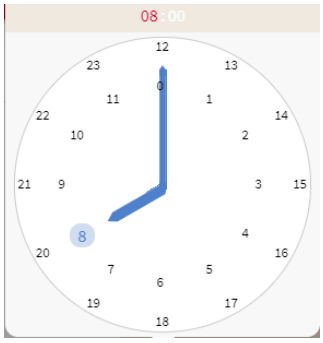
Create the orders linked to the selected pattern with the + button .



❶ **Programming orders:** In this area is possible to configure time, on/off, mode, temperature and fan speed for the pattern.

? (By default): This option will not apply any modification on the parameter. It will remaining at their previous state.

- Click on the time (00:00 by default) and a clock picture appears for the time selection.



- Click on the On/OFF icon and select the action desired for the selected time (ON ○ or OFF ✕).
- Select the Mode: Cool, Dry, Fan, Heat, Auto or Auto Once for the selected time.

  Auto Once mode decides automatically the working mode of an specified moment of time. At the specified time, CSNET Manager 2 gets the “input data” defined on Auto Cool / Heat screen (Tin, THM4, RCS Sensor, or the average of any of them).
  - If Setting temperature - “input data” >= HystH: Unit will be switched on in Heating mode.
  - If Setting temperature - “input data” >= HystC*-1: Unit will be switched on in Cooling mode.
  - Otherwise unit will be stopped

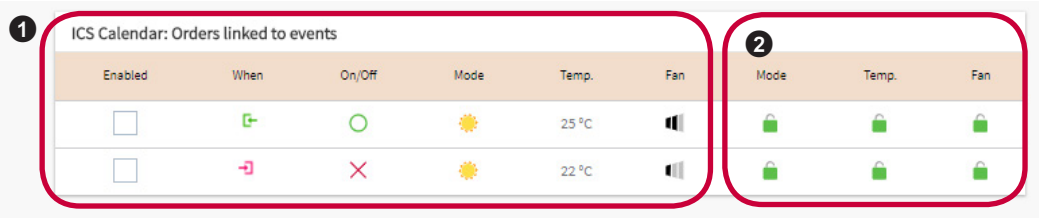
  The sent setting temperature, will be according to the “Corrected Value” configuration on the Auto cool/heat screen.
- Selection of the setting temperature: Determine the setting temperature for the selected time.
- Select the fan speed: Low, Medium, High, High-H or Auto for the selected time.

❷ **Restrictions area:** In this area is possible to block some actions at the Remote Controller at the given time.

- Click on the Mode, Temp. or Fan to block 🔒 or unblock 🔓 at the given time.

◆ Orders linked to ICS Events

In case of enable the ICS Calendar orders is necessary to import or to select an URL for the ICS Calendar. See chapter *"6.1.20.4 ICS calendar selection (only for CSNET Manager 2)".*



❶ **Programming orders:** In this area is possible to create orders linked to an ICS event. An .ics event is defined by an entry hour and a exit hour .

(By default): This option will not apply any modification on the parameter. It will remaining at their previous state.

- Select Enabled to allow orders linked to an ICS Calendar
- Click on the On/OFF icon and select the action desired for the entry or exit hour (ON or OFF).
- Select the Mode: Cool, Dry, Fan, Heat, Auto or Auto Once for the entry or exit hour.

  Auto Once mode decides automatically the working mode of an specified moment of time. At the specified time, CSNET Manager 2 gets the "input data" defined on Auto Cool / Heat screen (Tin, THM4, RCS Sensor, or the average of any of them).

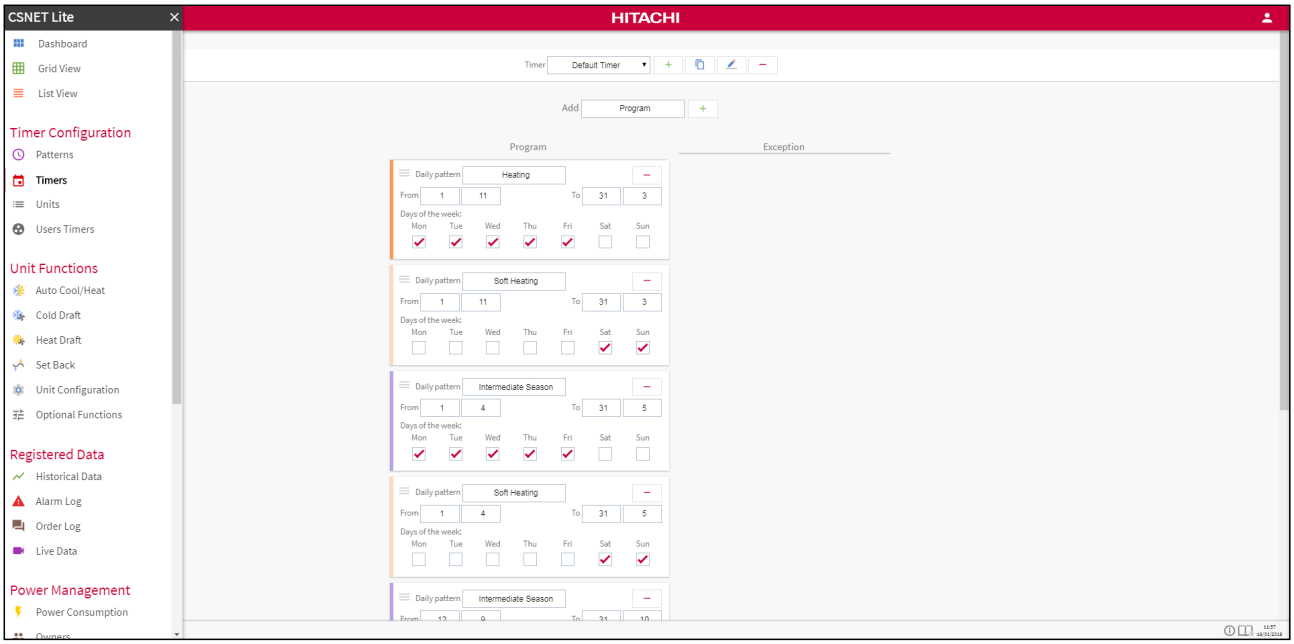
  - If Setting temperature - "input data" >= HystH: Unit will be switched on in Heating mode.
  - If Setting temperature - "input data" >= HystC*-1: Unit will be switched on in Cooling mode.
  - Otherwise unit will be stopped

  The sent setting temperature, will be according to the "Corrected Value" configuration on the Auto cool/heat screen.
- Selection of the setting temperature: Determine the setting temperature for the entry or exit hour.
- Select the fan speed: Low, Medium, High, High-H or Auto for the entry or exit hour.

❷ **Restrictions area:** In this area is possible to block some actions at the remote controller when the .ics event is active.

6.1.20.2 Timer creation

In the Timer creation screen it is defined the daily pattern that will be executed on each day.

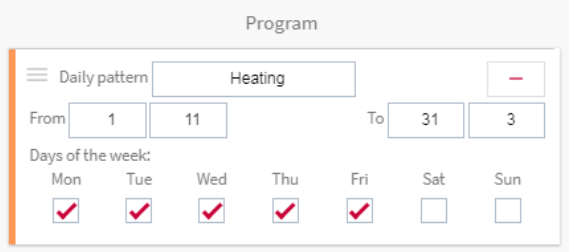


◆ How to create a Program

Defining a program specifies 2 dates in between a pattern will be executed if the day of the week has been selected.

Step 1: To create a new timer press + . A window emerges to define the name of the new timer. Press ✓ to accept.

Step 2: Select “Program” and press + to define the period when the daily pattern is executed.



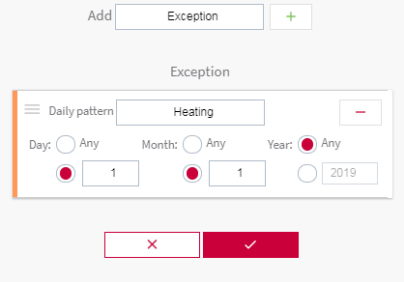
Step 3: Choose the daily pattern from the drop-down list.

Step 4: Select the period time (start date and finish date) and select the days of the week.

◆ How to create an Exception

Creating exceptions defines the days were a daily pattern will be executed by configuring day, month and/or year.

Step 1: Select “Exception” and press + to apply a specific pattern at a specific day/month/year. Exception allows to not define day/month/year.



Step 2: Choose the daily pattern from the drop-down list.

Step 3: Select Day, Month, Year or Any.

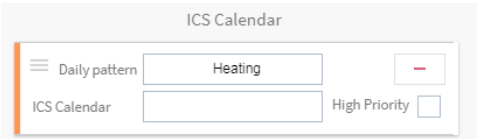
Examples:

- In case only year is not specified, specific exception is applied at specific day at specific month every year.
- In case only day is not specified, specific exception is applied at specific month and year.
- In case only month is not specified, specific exception is applied at specific day every month within specific year.

◆ How to create an ICS Calendar (Only for CSNET Manager 2)

Linking the execution of a daily pattern with an ICS Calendar links up the days where a calendar has events with the days where a daily pattern will be executed.

Step 1: Select “ICS Calendar” and press + to apply specific pattern according to the events defined on an .ics calendar. An example of usage would be an ICS calendar that is used to book room occupancy. Whenever room is booked, specific pattern will be applied. In case of add an ICS Calendar orders is necessary to import or to select an URL for the ICS Calendar. See chapter “ICS Calendar creation”.



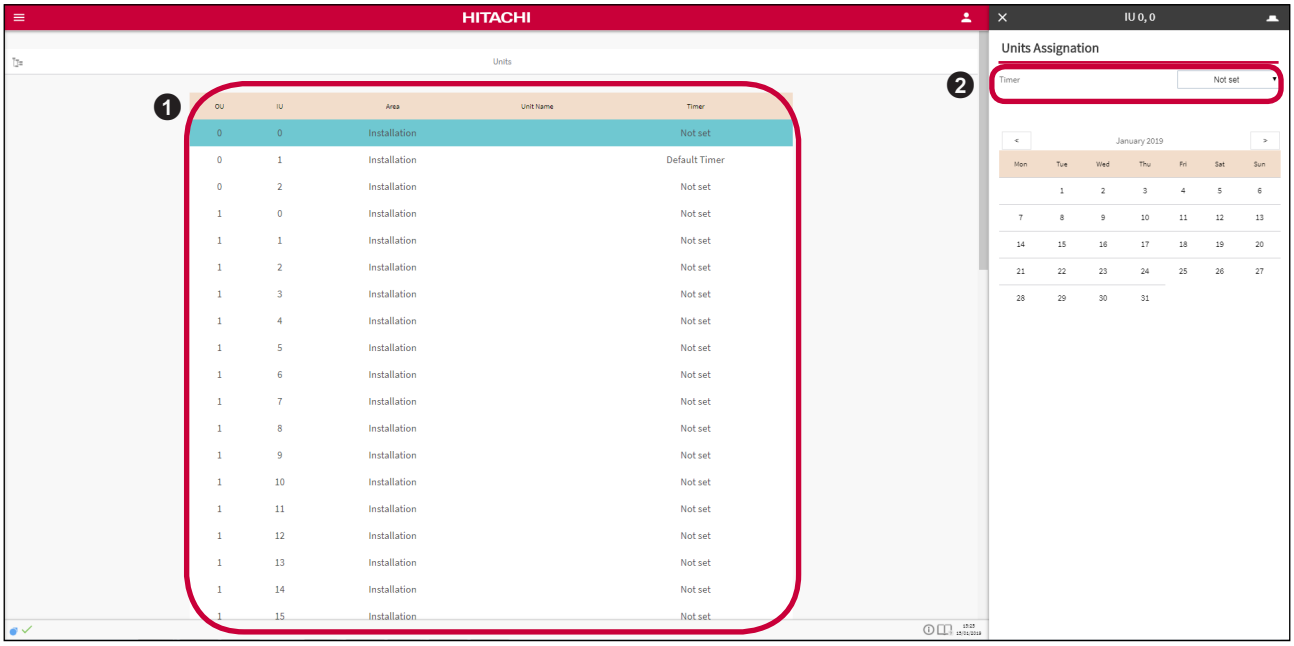
Step 2: Choose the daily pattern from the drop-down list.

Step 3: Choose the ICS Calendar from the drop-down list.

Step 4: Enable the High Priority check-box to prioritize ICS Calendar over Exceptions and Programs. In case that High priority is disabled ICS Calendar only has priority over programs.

6.1.20.3 Timer Assignation To Units

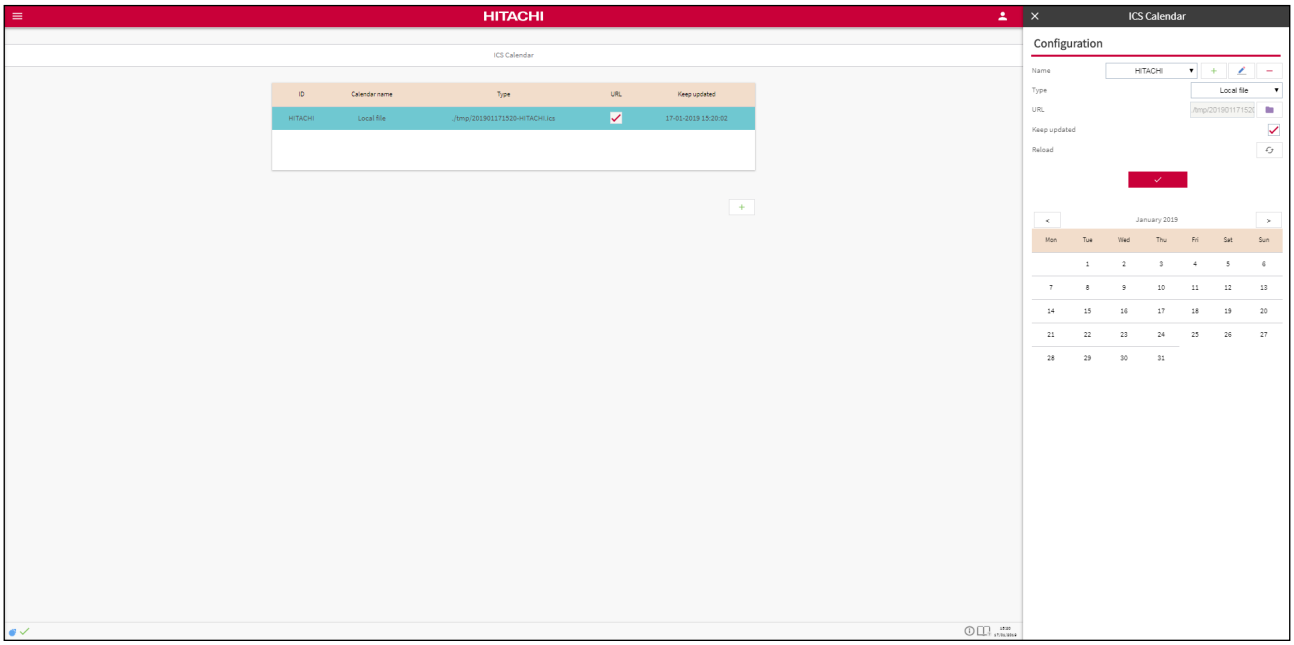
After the creation of patterns and timers, it is necessary to assign the timers to the specific units.



❶ **Units list:** Select the unit or group of units with the multi-selection option .

❷ **Timer:** Open the drop-down list to see all the timers created and link the desired on the selected units. The calendar below shows the coloured days depending on the timer selected.

6.1.20.4 ICS calendar selection (only for CSNET Manager 2)



Step 1: To create a new ICS Calendar press + . The ICS Calendar configuration window appears to define the name of the new ICS Calendar.

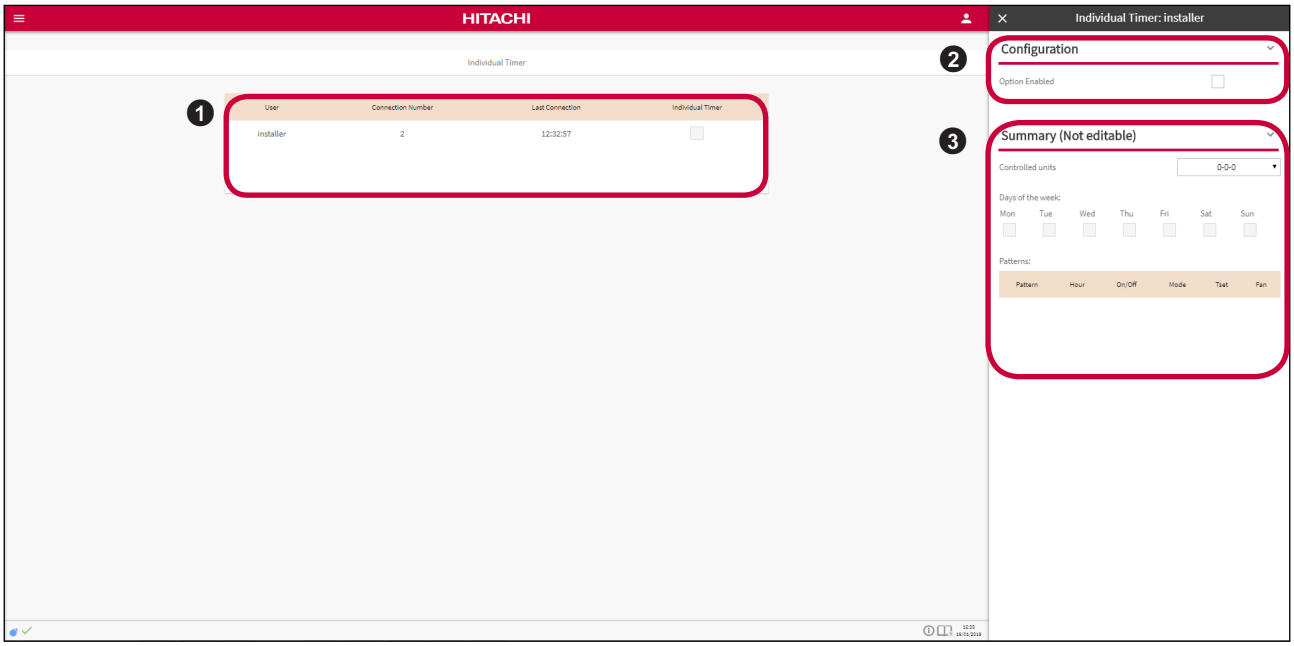
Step 2: Press + to define a name for the ICS Calendar and then press ✓ to accept.

Step 3: Select from the drop-down list where is located the file, online or local. In case that the file is local press and select the file. In case that selecting Online, the field to write the URL is active.

Step 4: By selecting “Keep updated”, CSNET Manager 2 is refreshing the data from the calendar file every 30 minutes.

6.1.20.5 User Timers

"User timers" screen allows to manage all the individual timers configured by the installation users.



❶ **Users list:** List of the users created with or without individual timer privileges. The users with individual timer privileges have a check-box at the individual timer column.

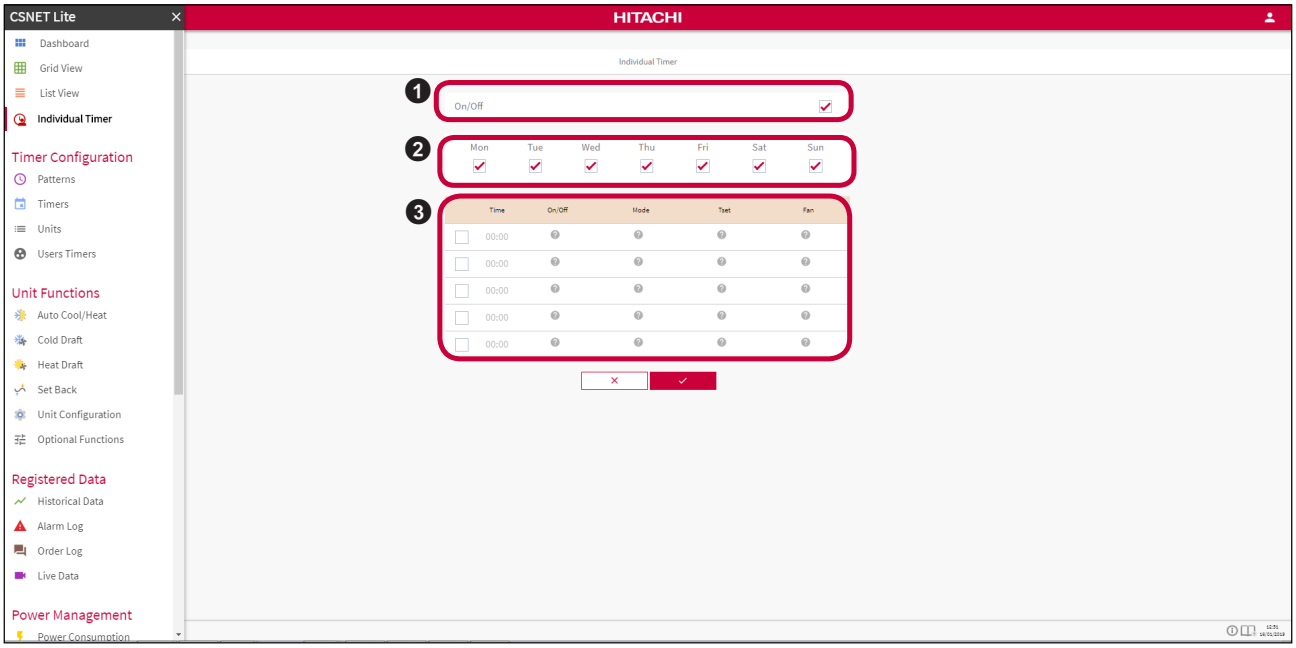
Clicking on a row of a user with individual timer privileges opens a configuration and summary window.

❷ **Configuration:** When "option enabled" is checked the user individual timer is enabled.

❸ **Summary:** A complete view of the individual timer configured by the user. It is possible to visualize the days of the week and patterns of the timer and also the controlled units. It is not possible to edit any timer parameter from this window.

6.1.20.6 Individual Timer

Each user is allowed to edit an individual timer in case user have individual timer privileges.



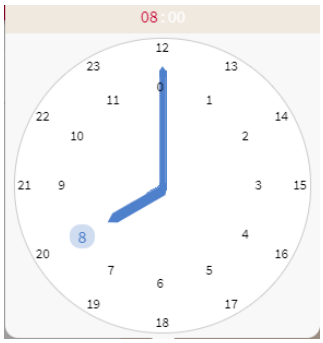
❶ Switch ON/OFF individual timer.

❷ Selection of the week day that individual timer is applied.

❸ Configure up to 5 actions that will be executed according to parameter time.

Step 1: Click on the check-box to enable the timer edition.

Step 2: Select time (00:00 by default) and a clock picture appears for the time selection.



Step 3: Click on the On/OFF icon and select the action desired for the selected time (ON ◯ or OFF ✕).

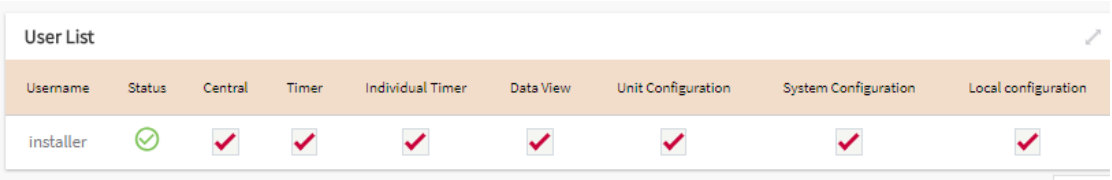
Step 4: Select the Mode: Cool, Dry, Fan, Heat, Auto for the selected time.

Step 5: Selection of the setting temperature: Determine the setting temperature for the selected time.

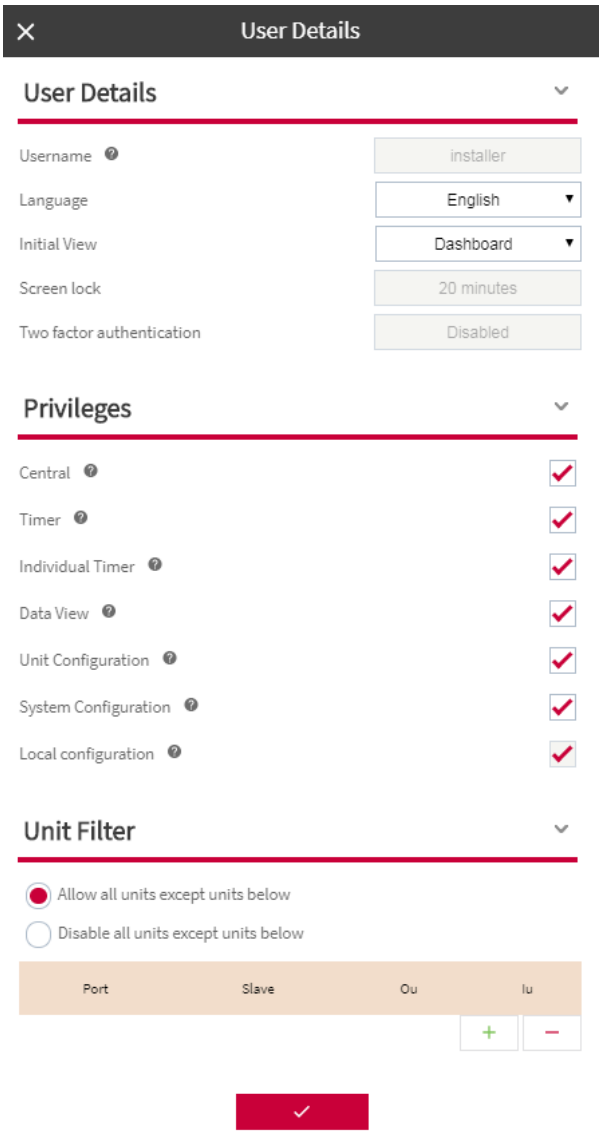
Step 6: Select the fan speed: Low, Medium, High, High-H or Auto for the selected time.

Step 7: Press ✓ to save the changes.

Individual Timer is applied to all units assigned to that user at User List at “Local configuration” or at “Web server” - User details menu.



User list at Installation menu



User list at Web server - User details menu

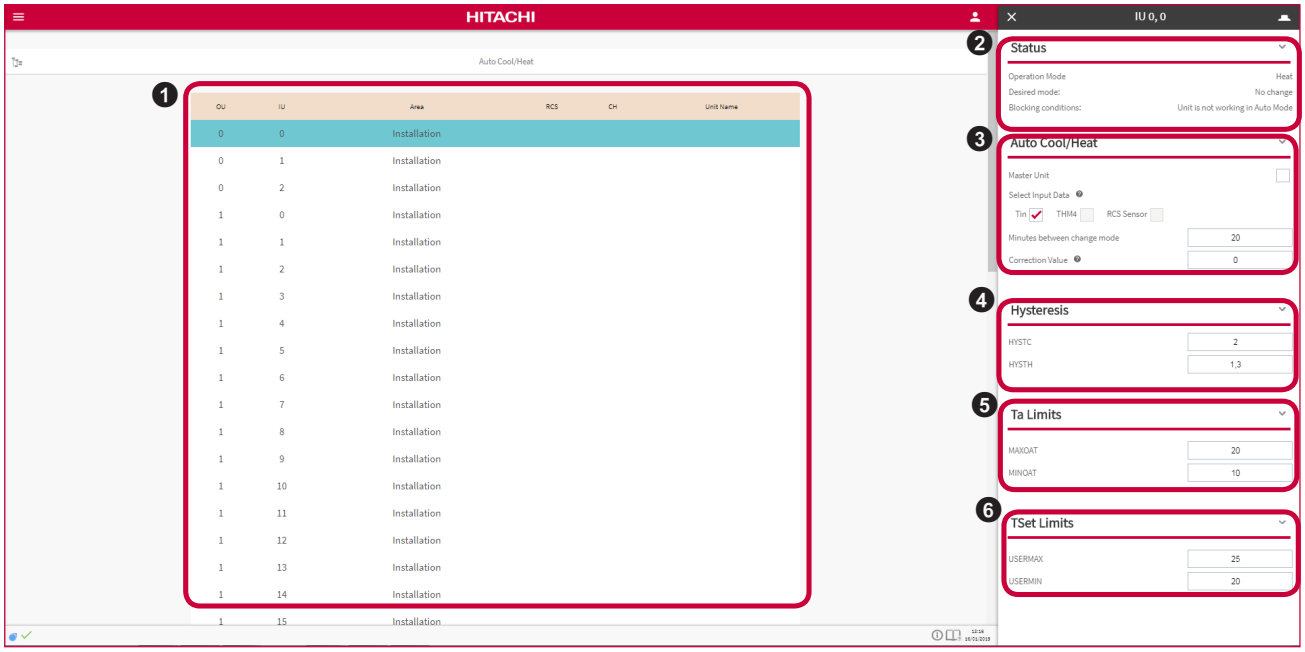
6.1.21 Unit functions

NOTE

Unit functions menu only can be visible for user if this has request privilege.

6.1.21.1 Auto Cool/Heat

The Auto Cool / Heat function is to avoid discharge air temperature go below comfort value by setting unit in fan mode. Unit is set again in cooling mode once discharge temperature is high enough.



❶ **Units list:** Select the unit or group of units with the multi-selection option clicking on .

❷ **Status:** To use this option, you have to set the parameters shown in the **Auto Cool/Heat** operation panel. After that, if unit is working in **Auto Cool/Heat** mode, you can see the status of this operation on the status zone of the panel.

❸ **Auto Cool / Heat:**

- **Master unit:** Field for selecting the method CSNET Manager 2 will use to calculate the temperature difference.
  - ☑ (Marked): CSNET will only use this unit to calculate the temperature difference and decide the change, not taking into account the other units connected to the same 2-tube cooling circuit.
  - ☐ (Not marked): CSNET will use the average temperature difference of all the indoor units connected to the same 2-tube cooling circuit.

CAUTION

When this method is used (marked), the following outdoor unit option cannot be used: "control of indoor unit fan speed" (during operation with the thermostat deactivated in heat mode, the indoor fan stops for 6 minutes and operates for 2 minutes). If it is used, the decision of when to change will not always be correct (if it is measured during the deactivation cycle of 6 minutes).

- **Select input data:** field for selecting what inlet temperature CSNET software should use to calculate the temperature difference if an optional remote temperature sensor is connected in THM4 of the PCB of the indoor unit or if there is RCS remote sensor. When there are selected a combination of different sensor it will calculate the average between them. When nothing is selected, it is forced to use the Tin value.

NOTE

In case of configuring Heat Draft, software shall use same sensors than in Heat Draft.

- **Minutes between change mode:** The time which must elapse between the last change of operation mode to the next change.

- **Correction value**: Temperature corrected on changing the operation mode, to ensure greater comfort..

  The Setting temperature is adjusted using the following formula when the operation mode is changed, depending on the DIFF option selected:

Depending on the operation mode, setting temperature will be corrected as it is explained on the following table:

Option	Cool	Heat
0	0	0
1	+1	0
2	+1	-1
3	+2	-1
4	+2	-2

NOTE

The remote control and the CSNET Manager 2 always show the corrected temperature (the result is the setting temperature).

❹ **Hysteresis:**

- **HYSTC**: Value of the temperature difference calculated to pass from heat to cool mode.
- **HYSTH**: Value of the temperature difference calculated to pass from cool to heat mode.

❺ **Ta Limits:**

- **MAXOAT:** Maximum outdoor ambient temperature for heat operation.
- **MINOAT:** Minimum outdoor ambient temperature for cool operation.

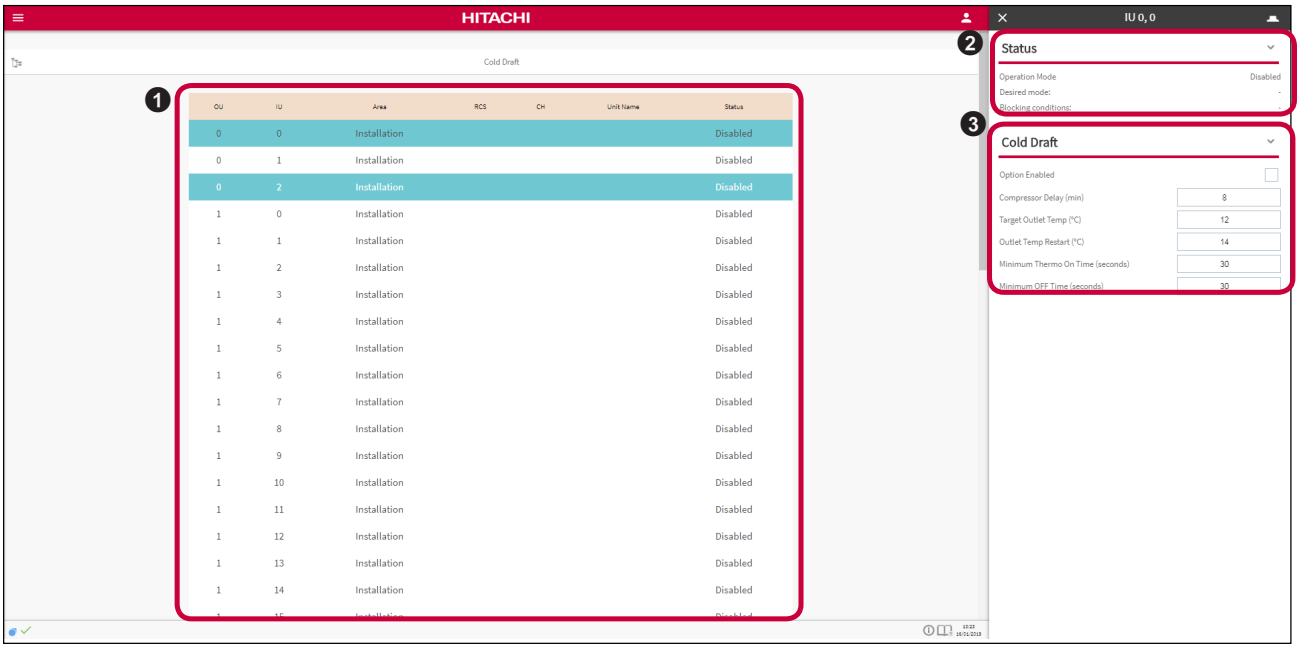
❻ **TSet Limits:**

- **USERMAX:** Maximum Setting temperature. If the selected temperature is higher, CSNET will use USERMAX as the value for the Setting temperature, changing this value as soon as the operation mode changes.
- **USERMIN:** Minimum Setting temperature. If the selected temperature is lower, CSNET will use USERMIN as the value for the Setting temperature, changing this value as soon as the operation mode changes.

After adjust previously parameters, if unit is working in Auto Cool/Heat mode, it will be displayed on the status zone which option is currently doing.

6.1.21.2 Cold Draft

The Cold draft function is to avoid discharge air temperature go below comfort value by setting unit in fan mode. Unit is set again in cooling mode once discharge temperature is high enough.



❶ **Units list:** Select the unit or group of units with the multi-selection option clicking on .

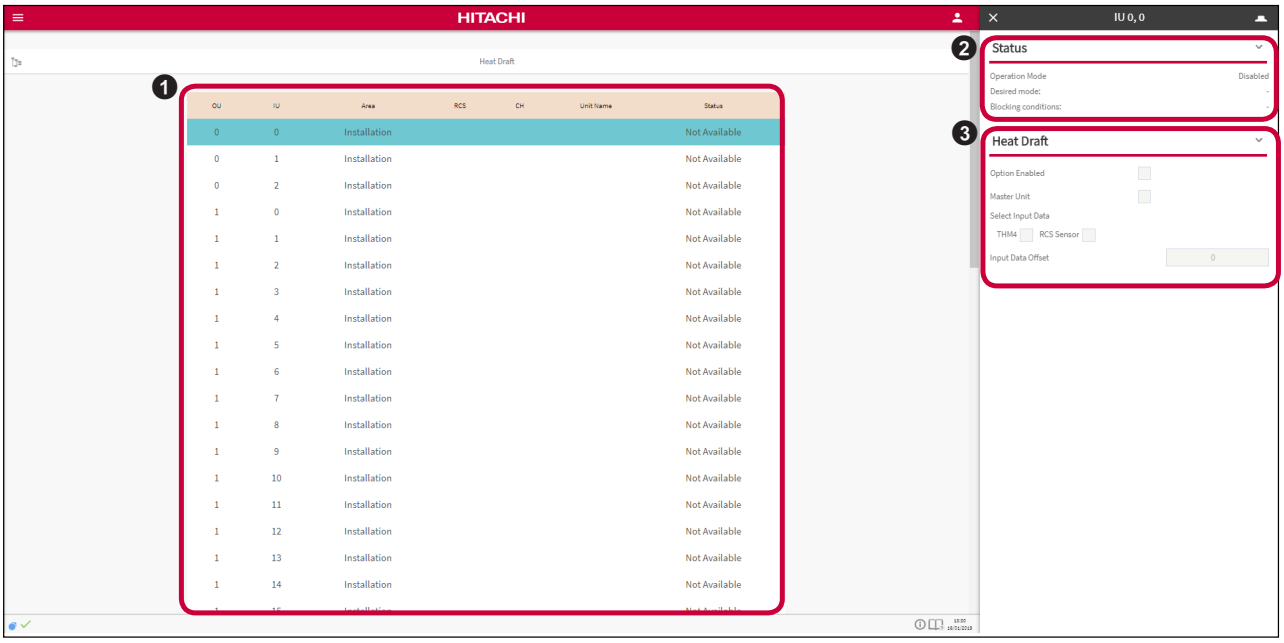
❷ **Status:** To use this option, you have to set the parameters shown in the **Cold Draft** operation panel. After that, if unit is working in **Cold Draft** mode, you can see the status of this operation on the status zone of the panel.

❸ **Cold Draft:**

- **Option Enabled:** Activate/not activate cold draft option in the selected indoor unit.
- **Compressor Delay (min):** Minimum enforced time between two compressor start up when start required by Cold Draft option.
- **Target Outlet Temp (ºC):** Minimum outlet temperature that we accept in this room in order to force the Thermo-OFF.
- **Outlet temp Restart (ºC):** Temperature that unit is finishing the forced Thermo-OFF.
- **Minimum Thermo-ON Time (seconds):** Minimum time that should be in Thermo-ON before accepting a new Thermo-OFF.
- **Minimum OFF time (seconds):** Minimum time that unit should be Thermo-OFF before accepting a new Thermo-ON.

6.1.21.3 Heat Draft

The Heat Draft function stops fan when indoor unit reaches Demand OFF conditions in order to avoid Room overheating, cold sensation or noise.



❶ **Units list:** Select the unit or group of units with the multi-selection option clicking on .

❷ **Status:** To use this option, you have to set the parameters shown in the **Heat Draft** operation panel. After that, if unit is working in **Heat Draft** mode, you can see the status of this operation on the status zone of the panel.

❸ **Heat Draft:**

- **Option Enabled:** Activate/not activate heat draft option in the selected indoor unit.
- **Master unit:** To select a Master Unit within a RCS group.
- **Select input data:** To select the sensor (THM4 or RCS sensor) to control Heat Draft operation.
- **Input data offset:** Add an offset to the value of the selected input data sensors.

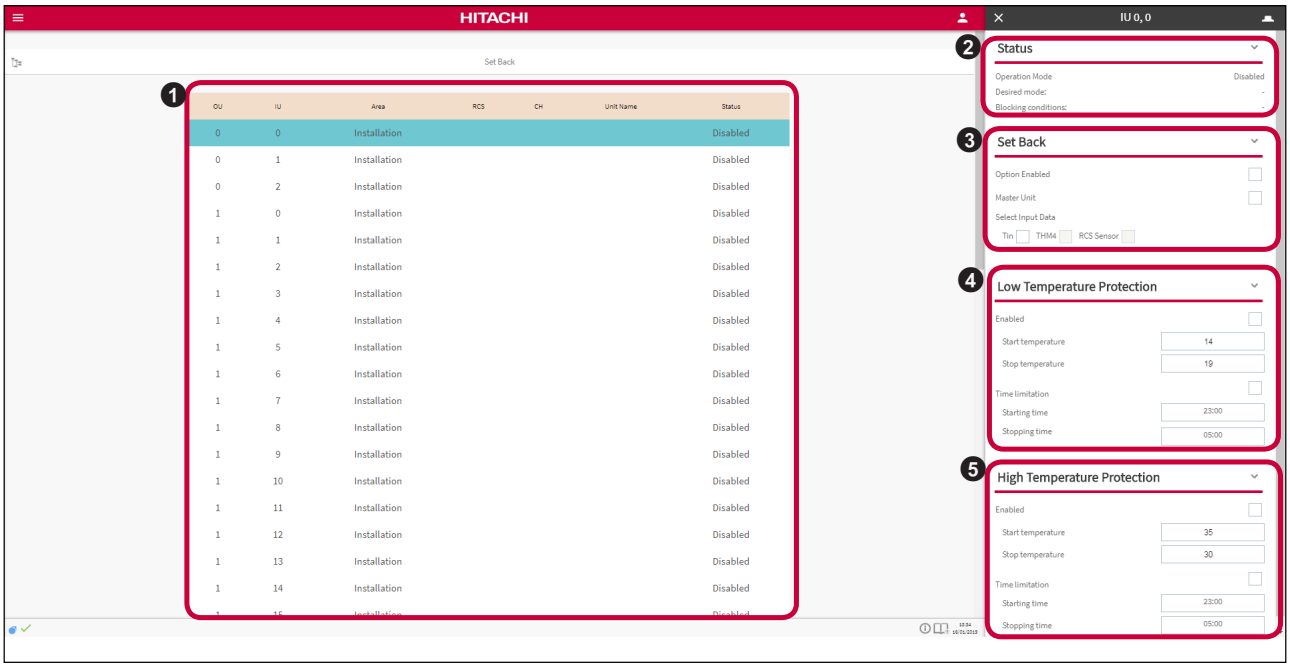
6.1.21.4 Set Back

Setback function is a protection against high and low temperatures. In case room temperature is above a defined limit in High Temperature Protection control, unit is switched ON in cooling mode until room temperature reaches the desired lower temperature. In contrary, in case room temperature is below a limit defined in Low Temperature Protection, unit is switched ON in heating mode until room temperature reaches the desired higher temperature.

Selection of the sensors let decide which one of them will be used. In case of more than one it use the average to take decisions. In case of RCS group, one master unit should be selected.

NOTE

Cold Draft and Heat Draft are not compatible with Set back. If unit is performing Set back, Cold Draft or Heat Draft are disabled.



❶ **Units list:** Select the unit or group of units with the multi-selection option clicking on .

❷ **Status:** To use this option, you have to set the parameters shown in the **Set Back** operation panel. After that, if unit is working in **Set back** mode, you can see the status of this operation on the status zone of the panel.

❸ **Set back:**

- **Option Enabled:** Activate/not activate Set Back option in the selected indoor unit.
- **Master unit:** To select a Master Unit within a RCS group.
- **Select input data:** To select the sensor (Tin, THM4 or RCS sensor) to control Set Back operation.

❹ **Low temperature protection:**

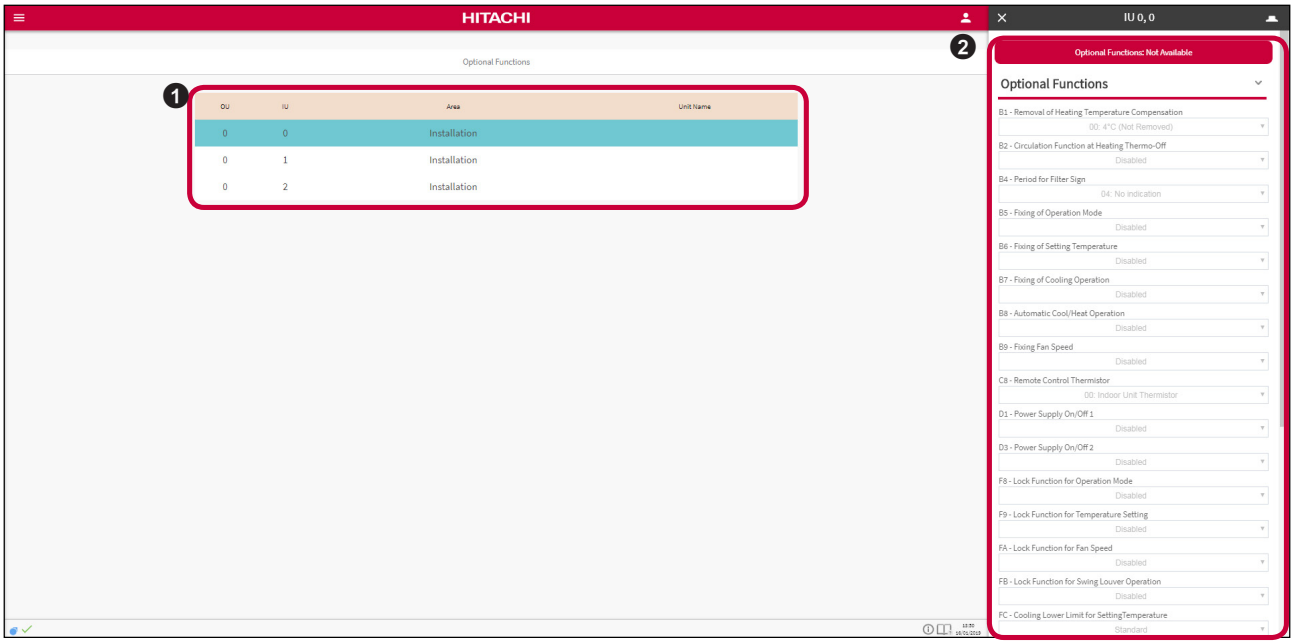
- **Enabled:** Activate/not activate Low temperature protection.
  - **Start temperature:** When temperature is lower than start temperature and unit is OFF, the unit is started in heating mode with the minimum heating temperature as setting.
  - **Stop temperature:** In case that stop temperature is higher than minimum heating temperature, the setting send to the unit will be the stop temperature. When the stop temperature is reached, Set back is stopped and previous unit setting is restored.
- **Time limitation:** To select Set Back function activation time frame. In case Time limitation is not selected, set back function can be applied at any moment in case room temperature fulfils starting and stopping conditions for low temperature protections.
  - **Starting time:** To select starting time.
  - **Stopping time:** To select stopping time.

❺ High temperature protection:

- **Enabled:** Activate/not activate High temperature protection.
  - **Start temperature:** When temperature is higher than start temperature and unit is OFF, the unit is started in cooling mode with the maximum cooling temperature as setting.
  - **Stop temperature:** In case that stop temperature is lower than maximum cooling temperature, the setting send to the unit will be the stop temperature. When the stop temperature is reached, setback is stopped and previous unit setting is restored.
- **Time limitation:** To select Set Back function activation time frame. In case Time limitation is not selected, set back function can be applied at any moment in case room temperature fulfils starting and stopping conditions for low temperature protections.
  - **Starting time:** To select starting time.
  - **Stopping time:** To select stopping time.

6.1.21.5 Optional functions

Optional functions menu is used to select the optional functions, inputs and outputs for the selected units. The following options are available:



❶ **Units list:** Select the unit or group of units with the multi-selection option clicking on .

❷ **Optional functions, inputs and outputs:** Configure the desired optional function, input or output at the drop-down menu. It is not possible to configure optional function for that indoor units connected to current HC-A64NET.

Element	Optional function	Individual setting	Settings	Setting conditions	Description
b1	Heating temperature compensation Models: RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3 RPI-FSN5E RPI-FSN3E(P)E(-f) RPIM-FSN4E(-DU) RPK-FSN(H)3M	O	00	Normal (factory setting) (Setting Temperature + 4ºC)	This function is used to adjust the temperature difference between the temperature read by the inlet sensor and the real room temperature. This is useful when the inlet air thermistor is not placed inside the indoor unit or due to uneven heat load. Note: • *The "02", "03", "04" settings may not be available depending on the type of indoor unit.* • *This setting shall be performed separately for each indoor unit, even in case that multiple indoor units are connected to one remote controller.*
			01	No compensation (Setting Temperature)	
			02	Setting Temperature + 2ºC	
			03	Setting Temperature + 3ºC	
			04	Setting Temperature + 1ºC	
	Heating temperature compensation Models: RPF(I)-FSN2E	O	00	RPF(I)-FSN2E: Normal (factory setting) (Setting Temperature + 2ºC)	
			01	No compensation (Setting Temperature)	
			02	Setting Temperature + 2ºC	
b2	Circulation function at heating Thermo-OFF	O	00	Function disabled (factory setting)	This function keeps the fan running during the Thermo-OFF sequence, at the fan speed set on the remote control switch, to prevent the stratification of air in the room.
			01	Function enabled	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
b3	Forced compressor operation for at least three minutes	O	00	Function disabled (factory setting): Forced compressor operation for at least three minutes can be enabled or disabled through C7 setting	This function is used to allow the setting of C7, to protect the compressor by preventing it from being started or stopped for periods of less than 3 minutes.
			01	Function enabled: Forced compressor operation for at least three minutes always occurs independently of C7 setting	
b4	Change of filter cleaning period	O	00	Standard (1200 hours)	This function is used to modify the period of operation after which the air filter cleaning indication is shown in the remote control. For RPK-FSN(H)3M models, the factory setting is b4=00: Standard setting 200 hours.
			01	100 hours	
			02	1200 hours (factory setting)	
			03	2500 hours	
			04	No indication	
b5	Locking of operation mode	X	00	Function disabled (factory setting)	This function prevents the modification of the operation mode of the unit from the remote controller and from central controls, once it has been selected.
			01	Function enabled	
b6	Locking of temperature setting	X	00	Function disabled (factory setting)	This function prevents the modification of the setting temperature of the unit from the remote controller and from central controls, once it has been selected.
			01	Function enabled	
b7	Setting operation mode as cooling only	X	00	Function disabled (factory setting)	This function is used to limit the operation mode to cooling only and to prevent heating mode from being enabled.
			01	Function enabled	
b8	Automatic COOL/HEAT operation	X	00	Function disabled (factory setting)	This function enables the selection of Auto cool/heat operation mode. If the function is not activated, Auto cool/heat mode cannot be selected on the remote control switch.
			01	Function enabled	
b9	Locking of fan speed setting	X	00	Function disabled (factory setting)	This function prevents the modification of the fan speed of the unit from the remote controller and from central controls, once it has been selected.
			01	Function enabled	
bb	Cooling setting temperature correction	O	00	No compensation (factory setting)	This function decreases the setting temperature and is used to produce longer cooling periods.
			01	Setting temperature decreased by 1ºC	
			02	Setting temperature decreased by 2ºC	
C4	Drain pump operation in heating mode	O	00	Function disabled (factory setting)	This function is used to activate the drain pump in heating mode. Only for models with drain pump.
			01	Function enabled	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
C5	Static pressure selection Models RPI-FSN5E RPIM-FSN4E(-DU) RPI-FSN3(P)E(-f)	O	00	Standard static pressure (factory setting)	This function is used to change the static pressure of the RPI units from the remote control.
			01	High static pressure	
			02	Low static pressure	
	Increase of fan speed during normal operation (not during heating Thermo-OFF) Models RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3 RPK-FSN(H)3M RPF(I)-FSN2E	O	00	Standard (factory setting)	This function is used to change the fan speed of indoor units installed in high ceilings.
			01	Hi Speed 1	
			02	Hi Speed 2	
C6	Increase of fan speed at heating Thermo-OFF	O	00	Function disabled (factory setting)	This function is used to increase the fan speed when the thermostat reaches the set temperature in heating according to the setting of function C5.
			01	Function enabled	
C7	Cancellation of forced compressor operation for at least 3 minutes	O	00	Function disabled (factory setting)	This function is available depending on the setting of function b3.
			01	Function enabled (Compressor operation during 3 minutes is no longer forced)	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
C8	Control by the temperature sensor of the remote control switch **NOTE** *The remote control switch shall be installed in a proper place for the correct detection of room temperature by its temperature sensor.*	O	00	Control by the air inlet sensor of indoor units (factory setting)	This function specifies the temperature sensor to be used as control sensor by the indoor unit.
			01	Control by the temperature sensor of the remote control switch	
			02	Control by the average value of the air inlet sensor of indoor units and the temperature sensor of the remote control switch. (Air inlet + Remote control switch)/2	
	Control sensor when a remote sensor is connected to the THM4 connector in the indoor unit PCB **NOTE** *The remote sensor shall be installed in a proper place for the correct detection of room temperature.* Model RPF(I)-FSN2E	O	00, 01, 02	When a remote sensor is connected to THM4, this remote sensor is used as control sensor, whichever the setting for C8 (factory setting C8=00)	
	Control sensor when a remote sensor is connected to the THM4 connector in the indoor unit PCB **NOTE** *The remote sensor shall be installed in a proper place for the correct detection of room temperature.* Models RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3 RPI-FSN5E RPI-FSN3E(P)E(-f) RPIM-FSN4E(-DU) RPK-FSN(H)3M		00, 02	Air temperature control using the average value of the air inlet thermistor and the remote sensor (factory setting C8=00) (Air inlet + Remote sensor)/2	
			01	Air temperature control using the remote sensor	
Cb	Selection of forced stoppage logic	X	00	Forced stoppage input: A contact, normally open contact (factory setting)	This function determines the logic operation for the forced stoppage contacts.
			01	Forced stoppage input: B contact, normally closed contact	
Cd	Stop of indoor unit fan during cooling Thermo- OFF conditions **NOTE** *For model RPI-FSN3E(P)E and RCD-FSN3, this function is NOT available.*	O	00	Fan speed during cooling Thermo- OFF: Low (factory setting)	The operation of the indoor unit fan is stopped in cooling Thermo- OFF conditions when using the additional remote temperature sensor THM-R2AE (connected to THM4) or the PC- ARFP1E temperature sensor. C8 must be set to 01 to use the Cd=01 setting.
			01	Indoor unit fan is stopped during cooling Thermo-OFF	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
CE	Stop of indoor unit fan during heating Thermo- OFF conditions Stop of indoor unit fan during heating Thermo- OFF conditions (with remote control switch temperature sensor)	O	00	Fan speed setting during heating Thermo-OFF: Low (factory setting)	The indoor unit uses the PC- ARFP1E temperature sensor to monitor the room temperature when the fan is stopped (heating Thermo-OFF fan stop sequence) C8 must be set to 01 to use the CE=01 setting. Control by remote temperature sensor connected to THM4 is not permitted (use E8 function in that case).
			01	Indoor unit fan is stopped during heating Thermo-OFF. *(In case that automatic louver is set, the louvers will keep operating in both Thermo-ON and Thermo- OFF conditions)*	
CF	Modification of louver swing range Models: RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3	O	00	Standard (7 steps) (factory setting)	This function adjusts the angle of the air outlet louver. *(Changes to the setting of this function are applied after turning the power supply off and on again, or after the automatic louver has made a full cycle in automatic mode)*
			01	Cold draft prevention (5 steps) *(Cannot be set to the lower two steps; lower 2 steps cut off)*	
			02	High ceilings (5 steps) *(Cannot be set the upper two steps; upper 2 steps cut off)*	
	Models: RPK-FSN(H)3M		00	Standard (7 steps) (5 steps for cooling / dry mode)	
			01	Cold draft prevention (5 steps for heating and fan only) *(Cannot be set to the lower two steps, lower 2 steps cut off)*	
			02	Not used	
d1	Management of indoor unit operation after a power supply cut off - option 1	O	00	Function disabled (factory setting)	When power supply is restored, the indoor units controlled by the wired remote control switch are turned on regardless of their ON/OFF status at the time of the last power cut off.
			01	Function enabled	
d3	Management of indoor unit operation after a power supply cut off - option 2	O	00	Function disabled (factory setting)	When power supply is restored, the indoor units controlled by the wired remote control switch are turned on automatically ONLY if they were already ON at the time of the last power cut off. If indoor units were OFF when power was turned OFF, they remain in OFF status when power is restored.
			01	Function enabled	

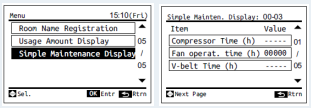
Element	Optional function	Individual setting	Settings	Setting conditions	Description
d4	Prevention of low air outlet temperature in cooling mode Models: RPI-(4.0-6.0)FSN5E RPIM-(0.6-1.5)FSN4E(-DU)	O	00	Function disabled (factory setting)	This function is used to prevent the decrease of discharge air temperature in cooling operation, by controlling Thermo-ON/OFF according to the discharge air temperature. When ambient temperature > setting temperature: If air outlet temperature ≤ 11ºC for 3 minutes, the system is switched to Thermo-OFF. In this status, if air outlet temperature ≥ 13ºC, the system is switched back to Thermo-ON.
			01	Function enabled	
	Not used Models: RCD-FSN3 RPI-(0.4-3.0)FSN5E RPI-FSN3E(P)E(-f) RCI-FSN4 RPC-FSN3 RCIM-FSN4E RPF(I)-FSN2E RPI-(8~20)FSN3(P)E	O	00	-	Use at 00 conditions
			01		
d5	Prevention of low air outlet temperature in heating mode	O	00	Function disabled (factory setting)	This function prevents the occurrence of an excessively cold air flow in heating mode by decreasing the fan speed during heating operation, also taking into account the setting of function C5.
			01	Function enabled	
d6	Room temperature control for energy saving	O	00	Function disabled (factory setting)	This function saves energy when the outdoor temperature is lower than the air conditioning load. The indoor unit is set to cooling Thermo-OFF when Tout (outside ambient temperature - out of the building) < Tin
			01	Function activated	
d7	Econofresh: Minimum opening angle of the outdoor air (OA) damper	O	00	6º (factory setting)	This function is used to set the minimum opening angle of the damper for fresh outdoor air.
			01	12º	
			02	18º	
			03	24º	
			04	30º	
			05	36º	
			06	42º	
			07	48º	
E1	KPI: Ventilation mode	O	00	Automatic ventilation (factory setting)	This function allows the outdoor air damper to be opened in All Fresh operation mode. This mode allows the full opening of the outdoor air damper (according to the control system).
			01	Ventilation with total heat exchanger	
			02	Ventilation with bypass (no total heat exchange)	
	Econofresh cooling mode		00	Standard process (factory setting)	This function allows the outdoor air damper to be opened in All Fresh operation mode. This mode allows to fully open the outdoor air damper (according to the control system).
			01/02	All Fresh	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
E2	KPI: Increase of air supply volume	O	00	Disabled function (factory setting)	This function is used to increase the air supply pressure in the room.
			01	Enabled function	
	Econofresh enthalpy sensor		00	Disabled function (factory setting)	This function selects the enthalpy sensor input for Econofresh.
			01	Enabled function	
E4	KPI: Pre-cooling / pre-heating period	O	00	Disabled (factory setting)	This function delays unit startup with energy recovery
			01	30 minutes	
			02	60 minutes	
	Econofresh: CO2 sensor		00	Disabled (factory setting)	This function selects the CO_2 gas sensor input for Econofresh.
			01/02	CO2 sensor (required setting E1=00)	
E6	Period of indoor fan operation after cooling operation stoppage	O	00	Disabled function (factory setting)	This function prevents the condensation in the unit by keeping the fan running after the unit operation has been turned OFF.
			01	60 minutes	
			02	120 minutes	
E8	Control for stop of the indoor unit fan during heating Thermo-OFF conditions (with remote sensor THM-R2AE connected to the THM4 connector in the indoor unit PCB)	O	00	Fan operation in Low speed	This function stops the fan to prevent cold draughts or overheating. C8 must be set to 01 to use the E8=01 setting. The connection of a THM-R2AE remote temperature sensor to the THM4 port in the indoor unit PCB is required. The remote sensor shall be installed in a proper place for the correct detection of room temperature. (In case that automatic louver is set, the louver will keep operating in both Thermo-ON and Thermo-OFF condition.)
			01	Fan stop in Thermo-OFF conditions.	
E9	Intermittent fan operation in heating stop Not available for models: RPF(I)-FSN2E	O	00	Function disabled (factory setting)	In case that indoor unit operation is set OFF by the remote control switch, under certain conditions the fan is operated in cycles consisting of 3 minutes of operation at SLow speed and 30 minutes of stoppage.
			01	Function enabled	
Eb	Indoor unit fan control during cooling Thermo- OFF conditions	O	00	Function disabled (factory setting)	This function decreases speed of the indoor unit fan during cooling Thermo-OFF, to reduce the spread of smells and humidity.
			01	Low	
			02	Slow	
EC	Forced Thermo-ON when stopping in cooling operation	O	00	Function disabled (factory setting)	This function is used to force Thermo-ON during 6 minutes when stopping in cooling operation.
			01	Enabled	
EE	Control in “Automatic” indoor fan speed mode	O	00	Function disabled (factory setting)	This function limits the speed of the indoor fan when room temperature is close to the setting temperature.
			01	Enabled	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
EF	Control in “Automatic” indoor fan speed mode (supporting High H) Models: RCI-FSN4 RCIM-FSN4E RCD-FSN3 RPC-FSN3 RPI-FSN5E RPI-FSN3E(P)E(-f) RPIM-FSN4E(-DU) RPK-FSN(H)3M	O	00	Function disabled	This function limits the speed of the indoor fan when room temperature is close to the setting temperature, allowing to reach High H speed.
			01	Function enabled	
F1	Automatic OFF timer setting Models: RCI-FSN4 RPC-FSN3 RPK-FSN3M RPI-FSN5E RPIM-FSN4E(-DU) RCD-FSN3 RCIM-FSN4E RPI-FSN3(P)E	X	00	Function disabled (Factory setting)	This function sets an automatic OFF timer to switch OFF the indoor units controlled by the remote control switch (when the units have been started by remote control). *(Do not set the values "0C"-"0F" when two remote control switches are used in the same remote control group)*
			01	1 hour	
			02	2 hours	
			03	3 hours	
			04-24	(04-24) hours	
			0A	30 minutes	
			0B	90 minutes	
			0C	40 minutes	Do not set these when two wired controllers are used.
			0D	45 minutes	
			0E	50 minutes	
			0F	55 minutes	
	Automatic OFF timer setting Models: RPF(I)-FSN2E	X	00	Function disabled (Factory setting)	This function is used to set the automatic timer to switch off when the unit has been started by remote control.
			01	1 hour	
			02	2 hours	
			03	3 hours	
			04-24	(04-24) hours	
			0A	30 minutes	
			0B	90 minutes	
F2	Remote control main-sub setting	X	00	Main (Master remote control) (Factory setting)	This function is used to define which remote control switch is used as master or slave, when two remote controllers are connected to one indoor unit.
			01	Sub (Slave remote control)	
F3	Automatic reset of setting temperature	X	00	Function disabled (Factory setting)	This function is used to limit unit operation and save energy. The setting temperature is automatically set to the value defined with functions "F5" or "F6", according to the current operation mode, after the time set with function "F4" has passed since the last manual change of setting temperature. In case that the values of "F5" or "F6" are out of the limits set with functions "FC" and "Fd", limitations set by "FC" and "Fd" have priority.
			01	Function enabled	
F4	Automatic reset time	X	00	30 minutes (factory setting)	This function sets the automatic reset time delay for function F3.
			01	15 minutes	
			02	60 minutes	
			03	90 minutes	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
F5	Automatic reset temperature for cooling	X	19	19 °C	This function defines the default temperature set point for the automatic reset function F3 in FAN/COOL/DRY modes.
			20	20 °C	
			21	21 °C	
			. . .	. . .	
			24	24 °C	
			25	25 °C (factory setting)	
			26	26ºC	
			. . .	. . .	
			28	28ºC	
			29	29ºC	
			30	30ºC	
F6	Automatic reset temperature for heating	X	17	17ºC	This function defines the default temperature set point for the automatic reset function F3 in HEAT mode.
			18	18ºC	
			. . .	. . .	
			20	20ºC	
			21	21ºC (factory setting)	
			25	25ºC	
			. . .	. . .	
			28	28ºC	
			29	29ºC	
			30	30ºC	
F7	Prevention of operation stoppage due to wrong operation of the remote controller	X	00	Function disabled (factory setting)	Operation is stopped by pressing the run/stop switch for 3 seconds.
			01	Function enabled	
F8	Lock function for operation mode selection	X	00	Function disabled	This function is used to prevent changes to the operation mode.
			01	Function enabled (factory setting)	
F9	Lock function for temperature setting	X	00	Function disabled	This function is used to prevent changes to the temperature setting.
			01	Function enabled (factory setting)	
FA	Lock function for fan speed selection	X	00	Function disabled	This function is used to prevent changes to the fan speed.
			01	Function enabled (factory setting)	
Fb	Lock function for swing louver operation	X	00	Function disabled	This function is used to prevent changes to the automatic louver operation.
			01	Function enabled (factory setting)	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
FC	Lower limit of setting temperature for cooling (Minimum value of setting temperature allowed in cooling)	X	00	Function disabled 19 °C is the standard minimum set point. (factory setting)	This function defines the lowest temperature setting value for FAN/COOL/DRY modes.
			01	+1ºC (Lower limit 20ºC)	
			02	+2ºC (Lower limit 21ºC)	
			03	+3ºC (Lower limit 22ºC)	
			. . .	. . .	
			08	+8ºC (Lower limit 27ºC)	
			09	+9ºC (Lower limit 28ºC)	
			10	+10ºC (Lower limit 29ºC)	
Fd	Upper limit of setting temperature for heating (Maximum value of setting temperature allowed in heating)	X	00	Function disabled 30ºC is the standard maximum set point. (factory setting)	This function defines the highest temperature setting value for HEATING mode. Models: RPF(I)-FSN2E up to 20ºC (FC=10)
			01	-1ºC (Upper limit 29ºC)	
			02	-2ºC (Upper limit 28ºC)	
			03	-3ºC (Upper limit 27ºC)	
			. . .	. . .	
			10	-10ºC (Upper limit 20ºC)	
			11	-11ºC (Upper limit 19ºC)	
			12	-12ºC (Upper limit 18ºC)	
H1	No indication of maintenance alarm	–	00	Displayed	This function is used to display or hide the maintenance alarm indication.
			01	Hidden	
H2	Indication of hot start (No Indication of operation limitation)	X	00	Displayed	This function is used to display or hide the automatic control indication. Models: RPF(I)-FSN2E Not available, use at 00 conditions
			01	Hidden	
h3	Operation mode change restriction	×	00	Unlimited operation	**NOTE** *"01" is available only when one controller is used. Do not use this setting when two controllers are used.*
			01	Operation mode set by central control equipment + "Fan" mode	
			02	Operation mode change not available (Hide operation mode) (Factory setting)	
J3	Colour of the Run indicator	X	00	Green (factory setting)	–
			01	Red	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
J4	Override of Start/Stop prohibition at the remote controller	X	00	Start/Stop allowed (Factory setting)	When there is a remote control prohibition from a central control device, this function overrides this prohibition allowing the operation of the Run/Stop button of the remote control switch. Models: RPF(I)-FSN2E Not used. Use at 00 conditions
			01	Start/Stop not allowed ⚠ DANGER ***Blocking of Start/Stop shall never be set due to safety concerns.***	
			02	Only Stop allowed	
J7	Enabling steps 6 and 7 for the air louver in COOLING or DRY mode	O	00	Function disabled (factory setting)	When a RPK unit is stopped in louver positions 6 or 7, the louver is set to position 5.
			01	Function enabled	
J8	Eco-operation	X	00	Function disabled (factory setting)	When the unit is restarted by the remote control switch, the temperature automatically changes to the setting temperature of “F5” or “F6”. Models: RPF(I)-FSN2E Not available, use at 00 conditions
			01	Function enabled	
JA	Display of "Simple maintenance display" menu	O	00	Function disabled (factory setting)	Enables the “Simple maintenance display” menu.  Models: RPF(I)-FSN2E Not available, use at 00 conditions
			01	Function enabled	
Jb	Enable automatic fan speed setting	O	00	Function disabled (factory setting)	Models: RPF(I)-FSN2E Not available, use at 00 conditions
			01	Function enabled	
K5	Detection level of the motion sensor kit	O	00	Standard (factory setting)	Models: RPF(I)-FSN2E Not available, use at 00 conditions. This parameter defines the sensitiveness of the motion sensor. The amount of activity in the room is assessed according to a different scale based on this setting. Detailed information about the operation of the motion sensor can be found in the technical documentation of the indoor units.
			01	High	
			02	Low	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
K6	Selection of allowed operation modes when the control sensor of the indoor unit is set by C8 function	O	00	All modes allowed	This function is used to select the operation modes in which the setting of C8 (use of remote control switch sensor or remote sensor on THM4 to control the indoor unit) is enabled.
			01	Only cooling/dry allowed	
			02	Only heating allowed	
			03	All modes allowed	
K8	Control for the prevention of condensation on the louvers.	O	00	Function disabled (factory setting)	Condensation may occur around air outlet during COOL/DRY operation with horizontal air flow or downward air flow for long periods. This function is used to prevent condensation by moving the louver swing angle to the third step automatically for 30 minutes every 1 hour. (In RPK units, this function is activated by means of DSW2-4 instead of the K8 optional function)
			01	Function enabled	
L3	Operation of the louvers in energy-saving Thermo- OFF (Cooling / Dry mode)	O	00	Direct air blow Low (factory setting)	Power save must be ON in order to use this function (L5 must be set to 01). This function is used to establish louver swinging operation ranging from continuous swing to static operation. Low: Continuous louver swing Medium: Louver swing with intermittent stops for 20/40 seconds High: Louver stopped at full opening position, according to the setting of CF.
			01	Direct air blow Medium	
			02	Direct air blow High	
			03	Disabled	
L4	Fan acceleration in energy-saving Thermo- OFF (Cooling mode)	O	00	Function disabled (factory setting)	This function increases fan speed by one step to prevent the loss of comfort due to the forced Thermo-OFF for energy saving during cooling operation.
			01	Function enabled	
L5	Louver swing operation during energy-saving forced Thermo-OFF	O	00	Function disabled (factory setting)	This function is used to enabled the setting of function L3.
			01	Function enabled	
P1	Setting temperature in 0.5ºC steps	X	00	Enabled (0.5ºC steps) (factory setting)	This function is used to define whether setting temperature is adjusted in 0.5ºC steps (when set to “00”) or in 1ºC steps (when set to “01”). This setting also determines whether the resolution of temperature differential of the thermistor is 0.5ºC (when set to “00”) or 1ºC (when set to “01”).
			01	Disabled (1°C steps)	
P3	Temperature sensor displayed	X	00	Inlet air thermistor (Tin)	This function is used to select the thermistor whose temperature is shown when function P4 is set to 01.
			01	Outdoor air thermistor (Tout)	
			02	Remote controller thermistor (RCS)	
			03	Remote sensor (THM4)	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
P4	Display of sensor temperature	X	00	Hidden	This function is used to display the temperature of the sensor selected with function P3.
			01	Shown	
P5	Display of setting temperature when operation mode is Fan	X	00	Shown	This function is used to hide the display of setting temperature during operation in fan mode.
			01	Hidden	
P6	Operation of the ECO button	X	00	ECO button enabled (factory setting)	The operation of ECO button is disabled when P6 is set to 01
			01	ECO button disabled	
P7	Prohibition of menu screen transition	X	00	Function disabled (factory setting)	This function is used to prohibit the access to the menu screens. The text "Display disabled" appears on screen instead.
			01	Function enabled	
PA	Daylight saving time	X	00	1 hour	This function is used to set the amount of adjustment when daylight saving time is applied.
			01	2 hours	
qb	Operation mode with setback	X	00	Disabled	Operation modes in which setback operation is activated to keep a minimum comfort in the room while it is not occupied.
			01	Cooling	
			02	Heating	
			03	Cooling/Heating	
qC	Temperature differential for the setback function	X	00	2.0ºC	Target temperatures for both cooling and heating operation are determined versus a temperature to start setback operation (rE, rF) Target temperature calculation: Target temperature in cooling mode: rF - qC (°C) Target temperature in heating mode: rE + qC (°C)
			01	3.0ºC	
			02	4.0ºC	
			03	5.0ºC	
			04	1.0ºC	
qd	Minimum stop time of setback	X	00	10 minutes	To avoid the frequent activation of setback operation, a minimum off-time shall pass from the end of setback operation until the beginning of the following setback operation. Even if room temperature reaches the setpoint to start setback operation, setback operation does not start until the minimum off-time has expired.
			01	20 minutes	
			02	30 minutes	
			03	40 minutes	
			04	50 minutes	
			05	60 minutes	
			06	70 minutes	
			07	80 minutes	
			08	90 minutes	
			09	100 minutes	
			10	110 minutes	
			11	120 minutes	
r1	Dual setpoint	X	00	Function disabled (factory setting)	This function allows the setting of independent setpoints for cooling and heating in the automatic cooling/heating mode.
			01	Function enabled	
r2	Setting of temperature differential for switching cooling and heating	X	0.5	0.5ºC	This function can only be set when function r1 is set to 01.
			1.0	1.0ºC	
			1.5	1.5ºC	
			2.0	2.0ºC	
			2.5	2.5ºC	
			3.0	3.0ºC	

Element	Optional function	Individual setting	Settings	Setting conditions	Description
r3	Setback temperature compensation	X	0.5	0.5ºC	This setting is the temperature differential value to adjust the setting temperature during Setback operation.
			1.0	1.0ºC	
			1.5	1.5ºC	
			2.0	2.0ºC	
			2.5	2.5ºC	
			3.0	3.0ºC	
			3.5	3.5ºC	
			4.0	4.0ºC	
			4.5	4.5ºC	
			5.0	5.0ºC	
			5.5	5.5ºC	
r9	Remote control prohibition during setback operation	X	00	Start/Stop allowed (Factory setting)	Manual run/stop from the remote controller can be disabled during setback operation. This function is fixed to 00 (Disabled) when function qE is set to 00 (Always).
			01	Start/Stop not allowed ⚠ **DANGER** ***Blocking of Start/Stop shall never be set due to safety concerns.***	
			02	Only Stop allowed	
rb	Minimum operation time to allow the change of operation mode in auto cooling/heating mode with dual set point	X	00	Disabled	This function is used to define a minimum time of operation in a given mode, in order to avoid too frequent changes of operation mode. Operation mode does not change until the minimum transition time passes, even if the room temperature reaches the setpoint to shift to the other operation mode.
			01	10 minutes	
			02	20 minutes	
			03	30 minutes	
			04	40 minutes	
			05	50 minutes	
			06	60 minutes	
			07	70 minutes	
			08	80 minutes	
			09	90 minutes	
			10	100 minutes	
			11	110 minutes	
			12	120 minutes	

6

NOTE

- *O: allows for individual setting.*
- *X: the setting is made for all outdoor units.*
- *–: not used.*

NOTE

- *The changes to the optional function settings must be done after 3 minutes have passed since start-up.*
- *It is recommended to keep track of the changes made to optional function settings, for further reference.*
- *The available optional settings are different depending on the indoor and outdoor unit models. Check the technical documentation of the indoor and outdoor units to ensure whether the optional settings are available for these units.*
- *The optional functions with "X" mark at the individual setting column can change the condition only when "All Rooms" is set.*
- *The following optional functions are disabled when RPI units with Econofresh are installed: b7, Cd, CF, d6, E9, H1, H4, J4, J7, J8, JA, JB, K5.*
- *The listed optional functions are valid for the following models:*

Indoor Unit series	With software number
RCI-(1.0~6.0)FSN4	P-4736
RCIM-(0.4~2.5)FSN4E	P-4729
RCD-(0.8~6.0)FSN3	P-4729
RPK-(0.4~4.0)FSN(H)4M	P-4725
RPI-(0.4~1.5)FSN5E	P-4725
RPI-(2.0~3.0)FSN5E	P-4725
RPI-(4.0~6.0)FSN5E	P-4735
RPIM-(0.6~1.5)FSN4E	P-4735

Indoor Unit series	With software number
RPC-(1.5~6.0)FSN3	P-4736

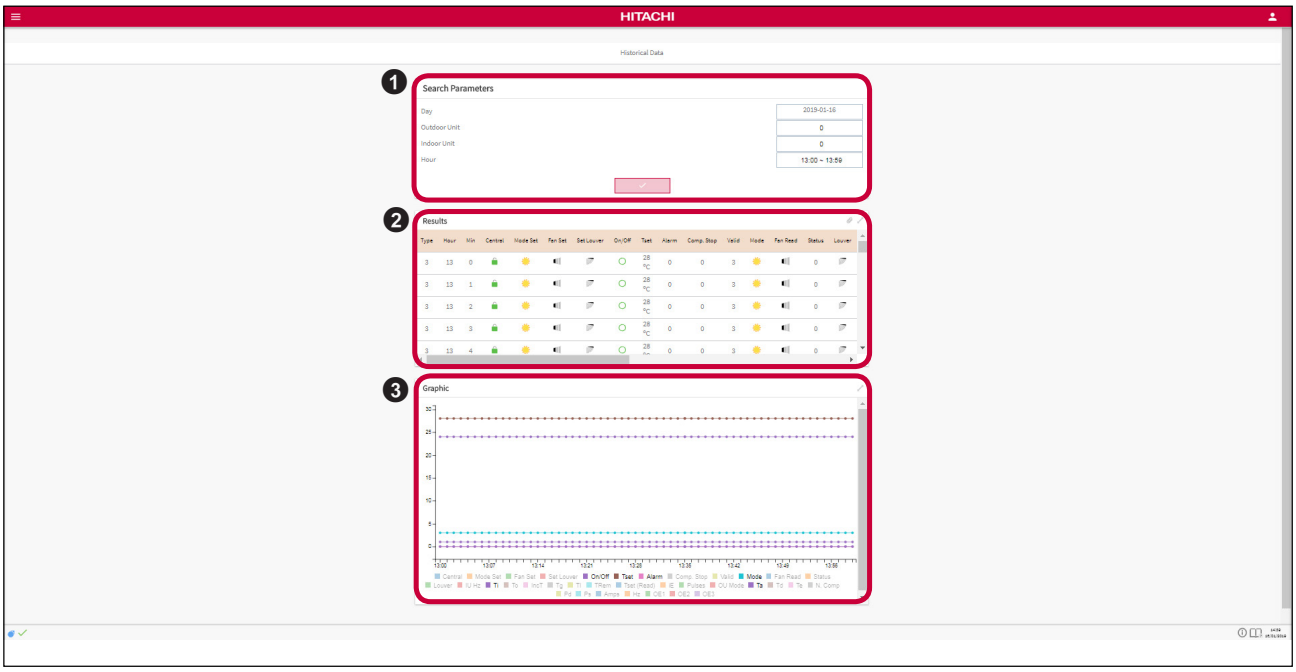
Inputs	
I1 - Input 1 - CN3 1-2	
	00: Not Set
	01: Room thermostat (for Cooling)
	02: Room thermostat (for Heating)
	03: Remote ON/OFF 1 (Level)
	04: Remote ON/OFF 2 (Run)
	05: Remote ON/OFF 2 (Stop)
	06: Forced Stop
	07: Remote Cool/Heat Change
I2 - Input 2 - CN3 2-3	
	00: Not Set
	01: Room thermostat (for Cooling)
	02: Room thermostat (for Heating)
	03: Remote ON/OFF 1 (Level)
	04: Remote ON/OFF 2 (Run)
	05: Remote ON/OFF 2 (Stop)
	06: Forced Stop
	07: Remote Cool/Heat Change

Outputs	
O1 - Output 1 - CN7 1-2	
	00: Not Set
	01: Run
	02: Alarm
	03: Cool
	04: Cool Thermo-ON
	05: Heat
	06: Heat Thermo-ON
	07: Total Heat exchanger
O2 - Output 2 - CN7 1-3	
	00: Not Set
	01: Run
	02: Alarm
	03: Cool
	04: Cool Thermo-ON
	05: Heat
	06: Heat Thermo-ON
	07: Total Heat exchanger
O3 - Output 3 - CN8 1-2	
	00: Not Set
	01: Run
	02: Alarm
	03: Cool
	04: Cool Thermo-ON
	05: Heat
	06: Heat Thermo-ON
	07: Total Heat exchanger

6.1.22 Registered data

6.1.22.1 Historical Data

CSNET software reads unit status every minute and automatically stores the historical data (2 years for CSNET Manager 2 and 1 year for CSNET Lite) for all the units in the system.



❶ **Search parameters:** Select the date, port, outdoor unit and indoor unit number to retrieve historical data.

❷ **Results:** The historical data is shown in a table format, also is possible to copy the data to be exported to a document with .

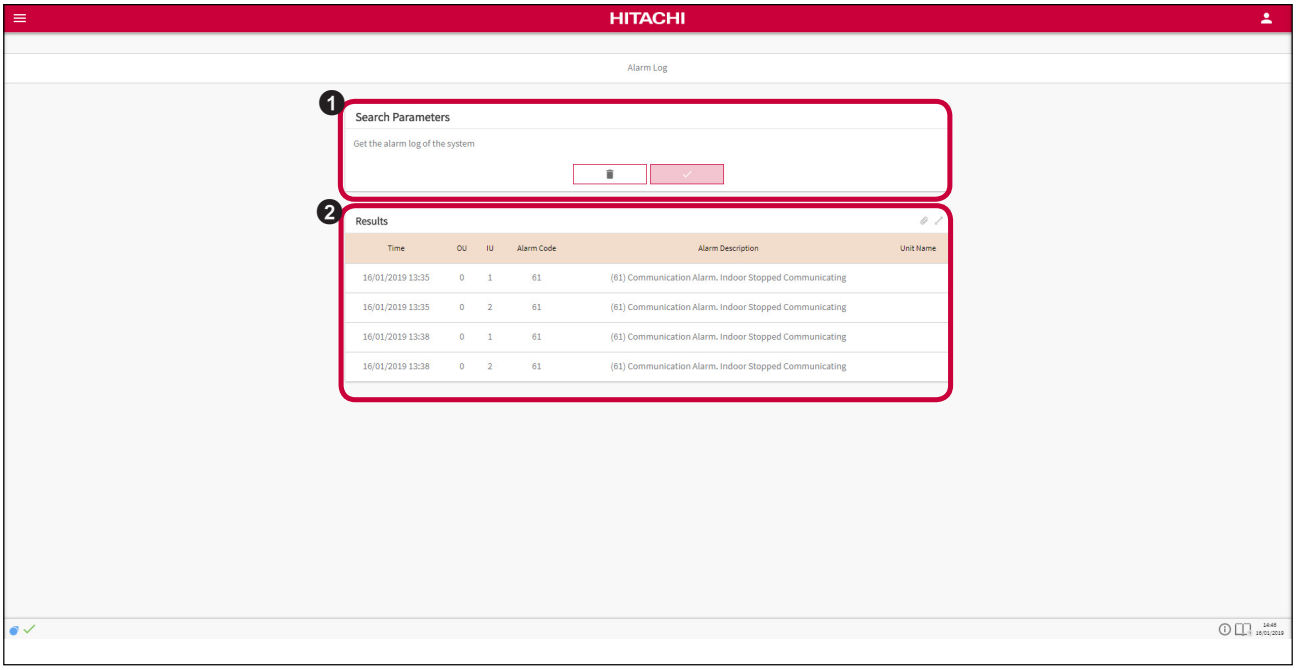
The reported parameter are the following:

Type	Comp. Stop	iE
Date (YYYY/MM/DD)	Valid	Puls
Hour (hh:mm)	Mode	Ou mode
Unit Identification (CS-Port, OU, IU)	Fan	Ta
GW name	Status	Td
OU Name	Swing L	Te
Location	IU Hz	NºComp
Central	Ti	Pd
Set mode	To	Ps
Set Fan	IncT	Amps
Set Swing	Tg	Hz
ON/OFF	TI	OE1
Tset	TRem	OE2
Alarm	TserRead	OE3

❸ **Graphic:** The historical data is shown in a graphical representation.

6.1.22.2 Alarm Log

Alarm log menu allows to retrieve alarm log once port is selected. CSNET software stores up 1 year of alarm log for CSNET Manager 2 and 6 months for CSNET Lite.

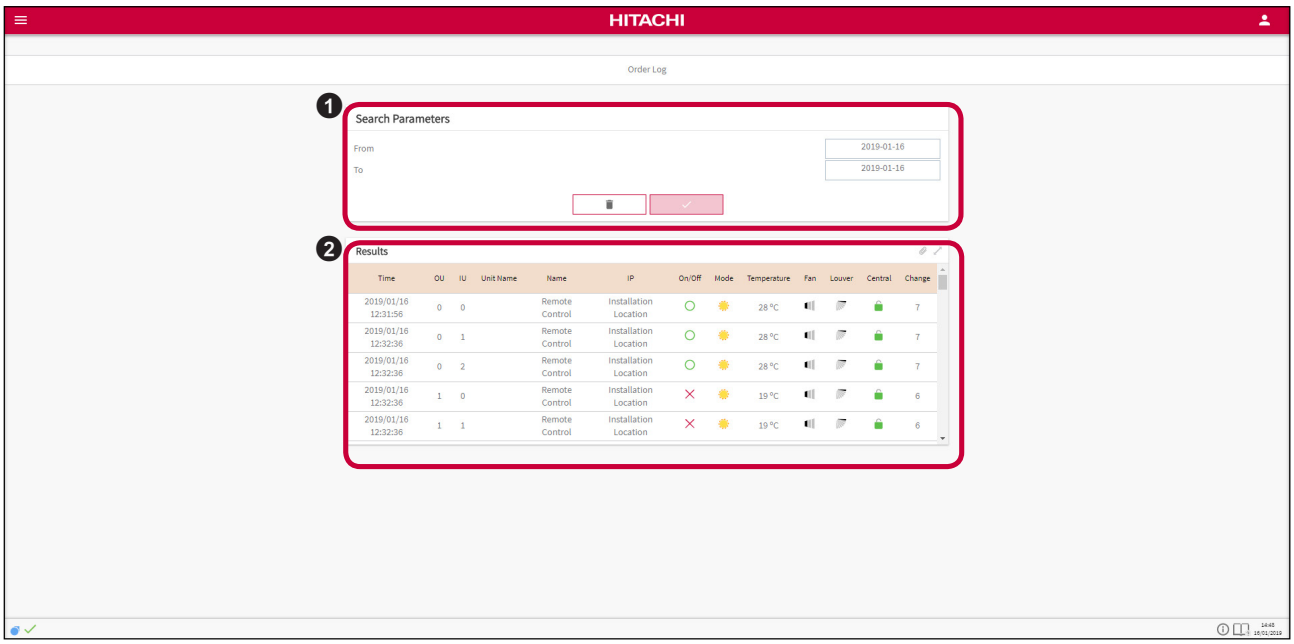


❶ **Search parameters:** Select the port of the unit to search the alarm log.

❷ **Results:** The alarm log is shown in a table format the alarm code with the alarm description, also is possible to copy the data to be exported to a document with .

6.1.22.3 Order Log

Order log menu lets check a register of every order sent to the units on CSNET software or changes applied by its physical remote controller. CSNET software stores up 1 year of order log for CSNET Manager 2 and 6 months for CSNET Lite.



❶ **Search parameters:** Select the period to show the results.

❷ **Results:** The order log is shown in a table format, also is possible to copy the data to be exported to a document with .

The following information is shown:

Time
Port
OU
IU
Unit Name
Name
IP

ON/OFF
Mode
Temperature
Fan
Louver
Central
Change(*)

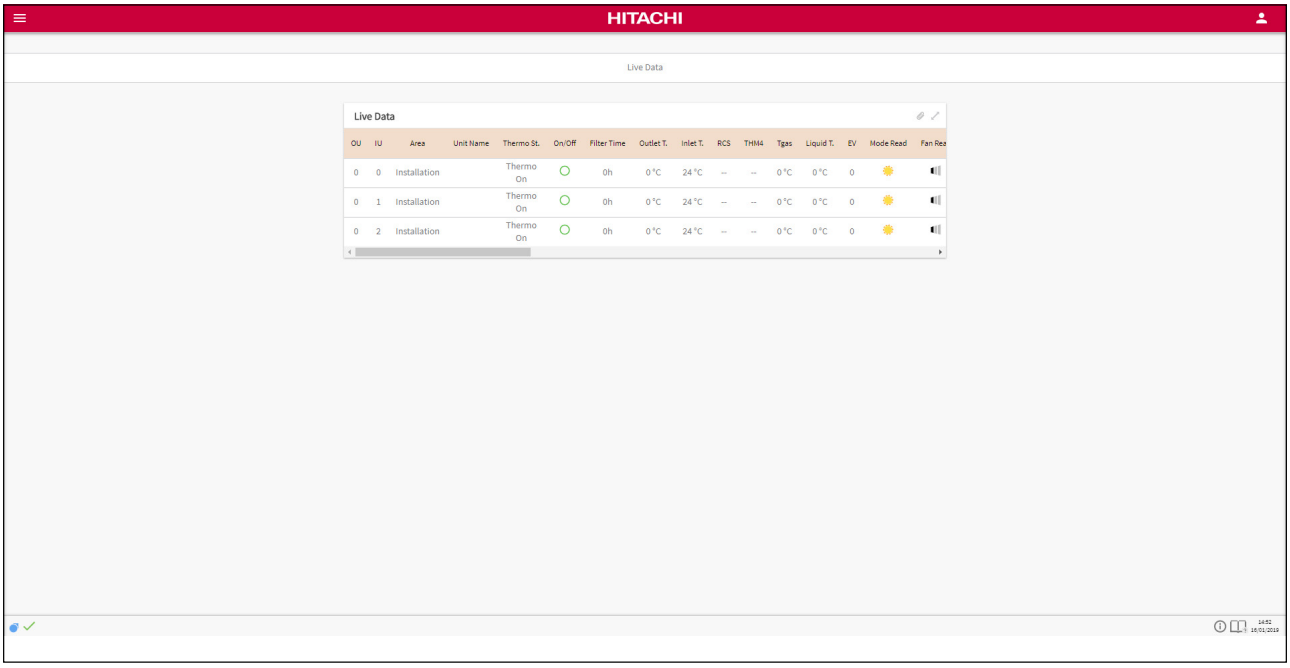
NOTE

(*)Each binary bit of the "Change" parameter indicates which parameter has been modified on that order.

Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Central	Louver	Fan	Setting	Mode	On/off

6.1.22.4 Live Data

Live data menu displays information about all indoor units in real time.



The live data is shown in a table format, also is possible to copy the data to be exported to a document with .

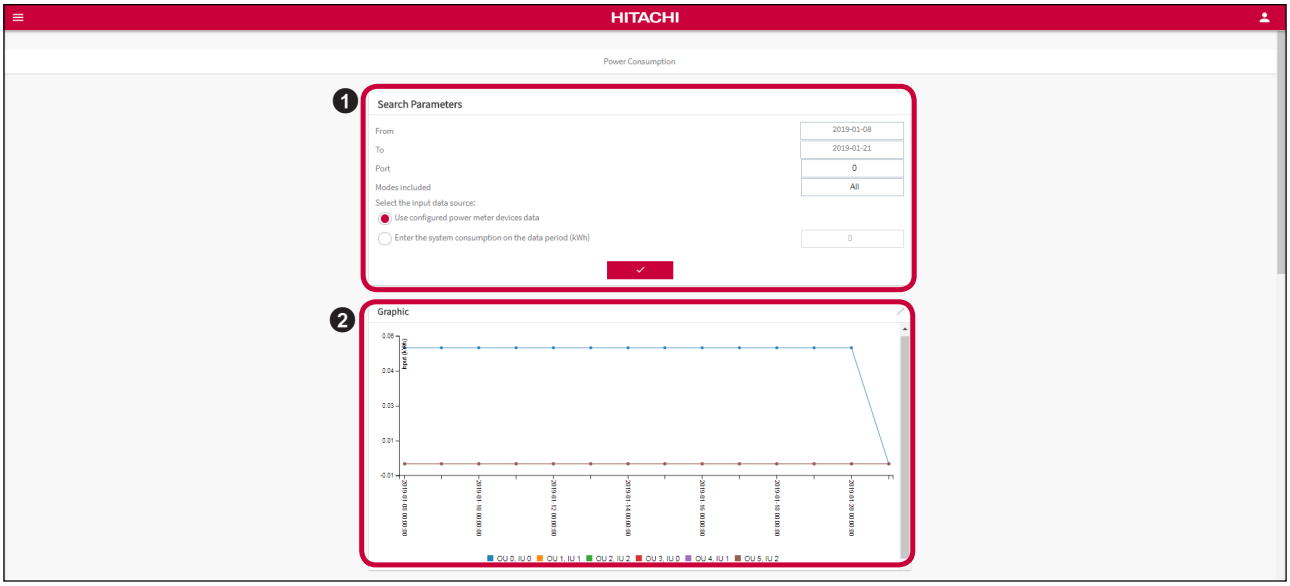
The following information is shown:

Unit Identification (CS-Port, OU, IU)	Discharge gas	Input 2	IncT
Location	Suction Pressure	Energy	Tg
Thermo State	Tdsh	Input	TI
Central	Td	Voltage	TRem
On/Off	Comp Freq	Current	TserRead
Filter Time	Current	Set mode	iE
Outlet T	Cmp Qty	Set Fan	Puls
Inlet T	EV1	Set Swing	Ou mode
RCS	EV2	ON/OFF	Ta
THM4	EV3/EVB	Tset	Td
Tgas	Ambient Temp	Alarm	Te
Liquid T	Alarm	Comp. Stop	NºComp
EV	Compressor Stop Cause	Valid	Pd
Mode read	THM1	Mode	Ps
Fan Read	THM2	Fan	Amps
Tset	PCB1 THM1	Status	Hz
Mode	PCB1 THM2	Swing L	OE1
Fan	Power Control	IU Hz	OE2
Louver	Night Mode	Ti	OE3
	Input 1	To	

6.1.23 Power management

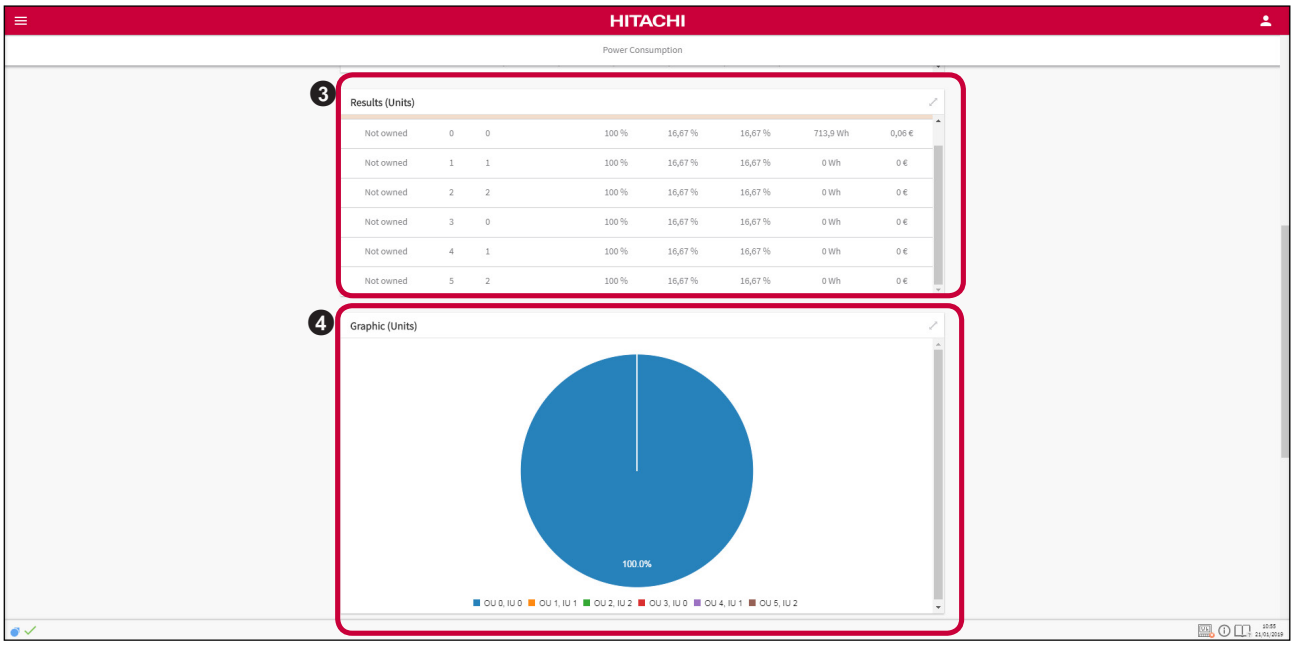
6.1.23.1 Power Consumption

CSNET Manager 2 saves and calculates the percentage of energy consumption of each indoor unit respecting its outdoor units, owner or system, so that the user can consult the level of consumption at any time.



1 Search parameters: Select the range of dates, the port (only for CSNET Manager 2), the modes included (all, cool or heat) and the input data source. The kWh consumed by an indoor unit can be calculated by using the defined power meters (see chapter *"6.1.23.4 Power Meter Data"*) or by entering manually the system consumption on the selected period.

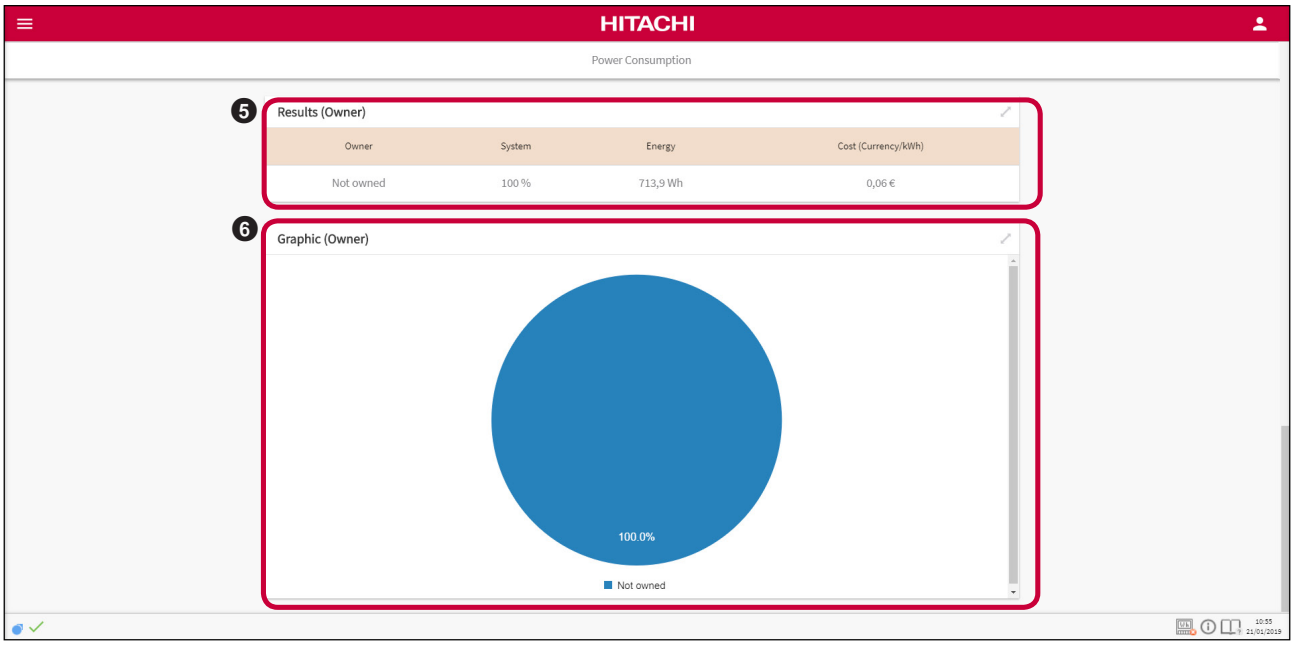
2 Graphic: The chart shows the capacity used by a indoor and outdoor unit every hour on the selected period.



3 Results (units): Table gives information about the consumption percentages by owner, outdoor unit, system and it also gives the kWh consumed and the calculated cost.

The tariff of the kWh must be configured on the settings menu (see chapter *"6.1.23.3 Power Consumption Settings"*).

4 Graphic (units): The pie chart gives information about the consumption percentages for outdoor units and indoor units.



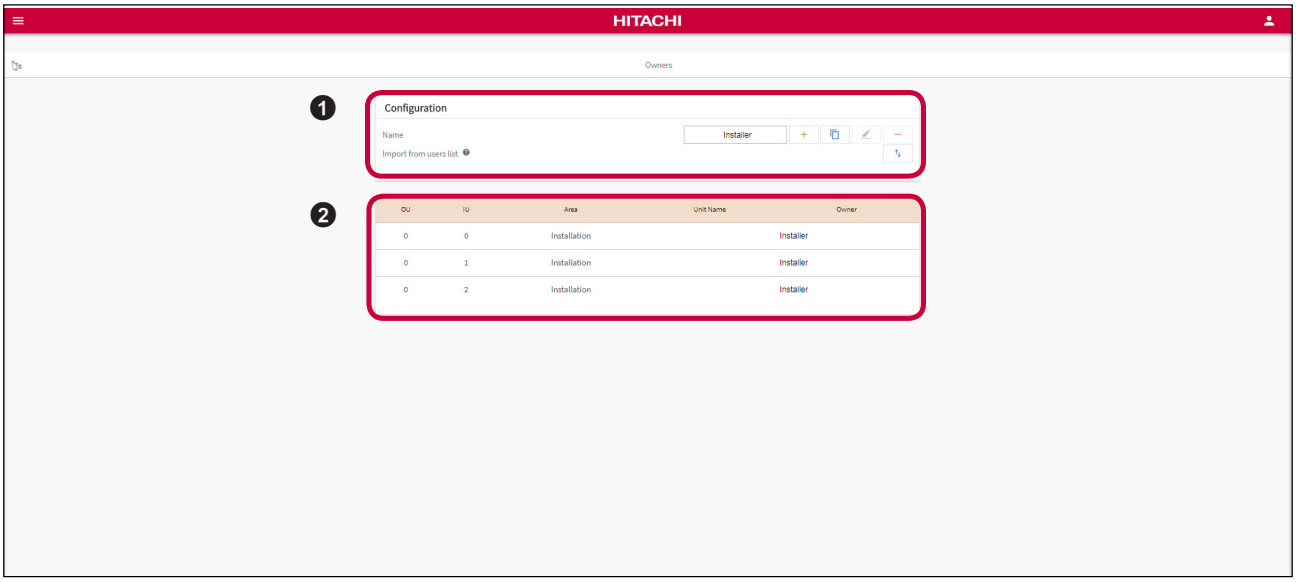
5 Results (owner): The table gives information about the consumption percentages group by owners.

To obtain results by owner is necessary to configure previously the owners at the Owners menu (see chapter *"6.1.23.2 Owners"*)

6 Graphic (owner): The pie chart gives information about the consumption percentages for owners.

6.1.23.2 Owners

To assign an owner to each indoor unit in order to estimate the power consumption per owner.



1 Configuration: Create a new owner for the consumption estimation. Press + to define a name and then press ✓ to accept.

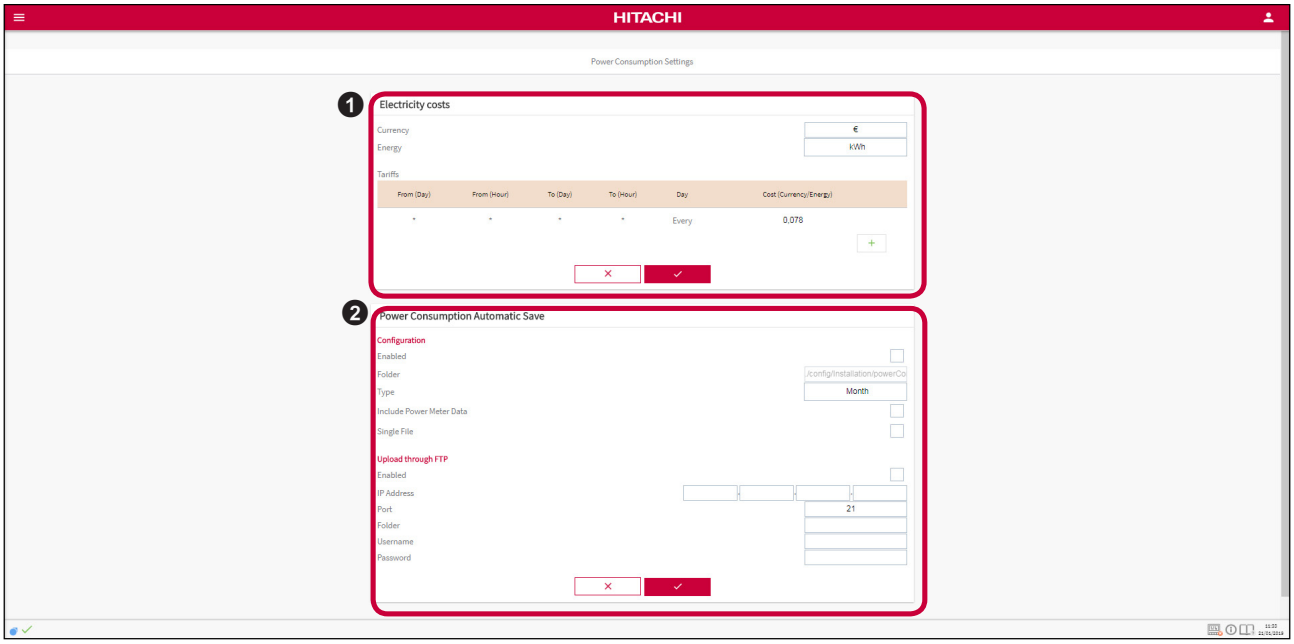
It is possible to edit, delete or copy the owners name.

To import users and assign them according to units assigned to that user defined on User List press ⇅.

2 Owners list: List of owners created with their corresponding units.

6.1.23.3 Power Consumption Settings

Settings menu lets specify the electricity costs within year periods.



❶ **Electricity costs:** Write the currency type and select the energy units from de drop-down list (Wh/ kWh / MWh).

Press + to create a range of dates, hours intervals, days of the week and the electricity cost for each period and then press ✓ to accept. The cost for the row full of "*" is the default cost for the undefined periods.

❷ **Power consumption automatic save:** The power consumption function allows to generate automatically a detailed report of the consumption of the installation.

- **Configuration**

  Enabled: Mark the selection box to activate the automatic save.

  Folder: Indicate the folder to save the file.

  Type: Select the type of power consumption.

  - Month: Each day stores on a monthly file the values accumulated for the units since the first day of the month.
  - Day: Each day stores on a monthly file the values of the power consumption of the current day.

  Include Power Meter Data: To add a column with energy values.

  Single File: Creates a unique file with the power consumption. This file has the power consumption of each day registered. For the single file, the name is power_log.txt.

- **Upload through FTP**

  Enabled: Mark the selection box to activate the upload through FTP.

  IP Address: Insert the IP Address of the FTP.

  Port: Insert the port of the FTP.

  Folder: Insert the folder of the FTP.

  Username: Insert the user name of the FTP.

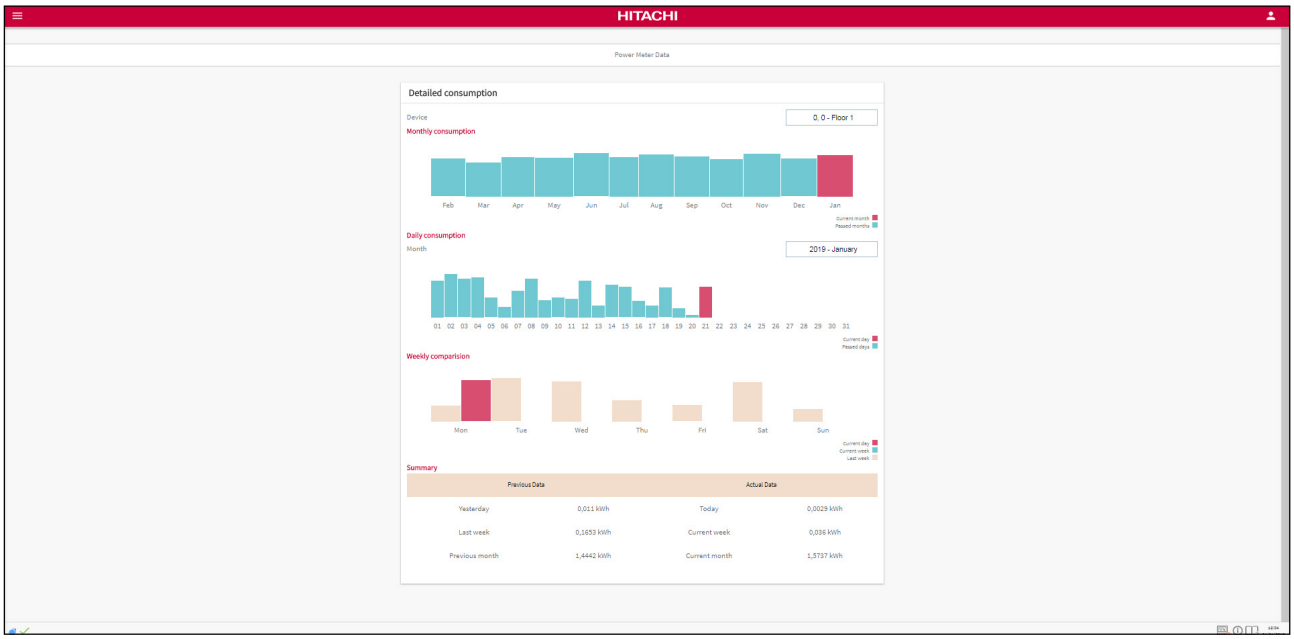
  Password: Insert the password of the FTP.

NOTE

- *File name is m1_YYYYMM.txt. YYYY means the year and MM the month.*
- *The auto save file is created everyday at 00:00. It stores a monthly file with the monthly accumulated or the daily power consumption. It could be automatically upload through FTP to some computer. FTP upload is done at 1:00 AM.*

6.1.23.4 Power Meter Data

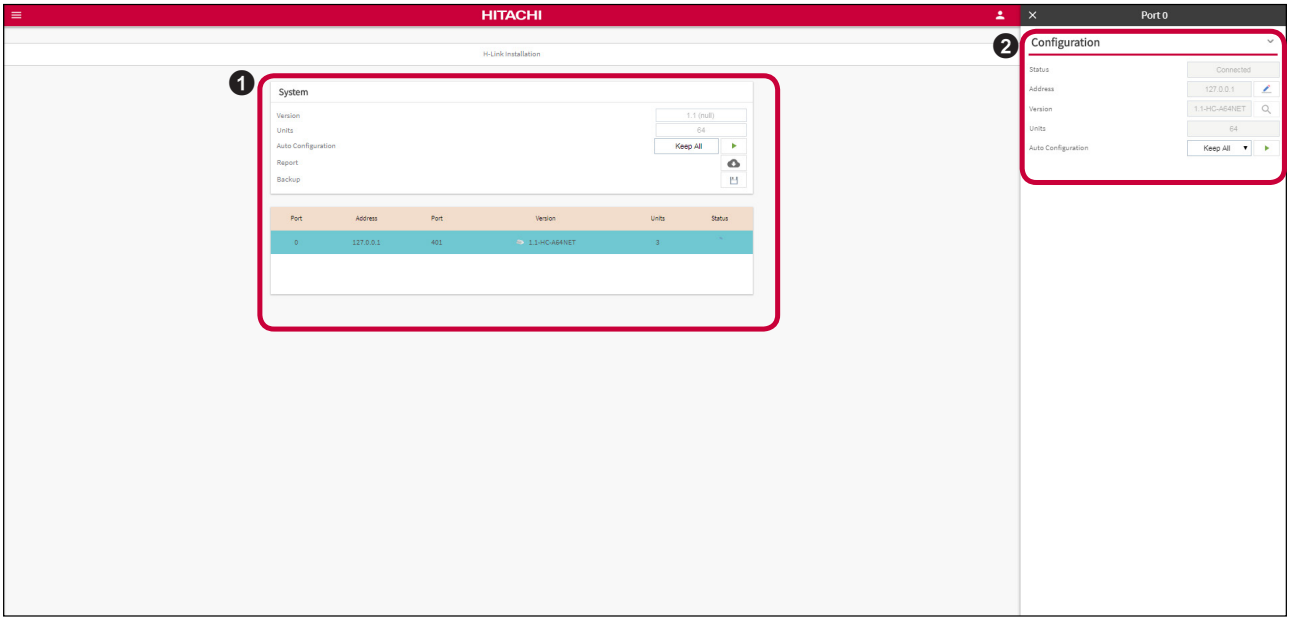
Power meter data menu retrieves the power meter data of the device. CSNET Manager 2 stores 2 years and CSNET Lite stores 1 year of power meter data.



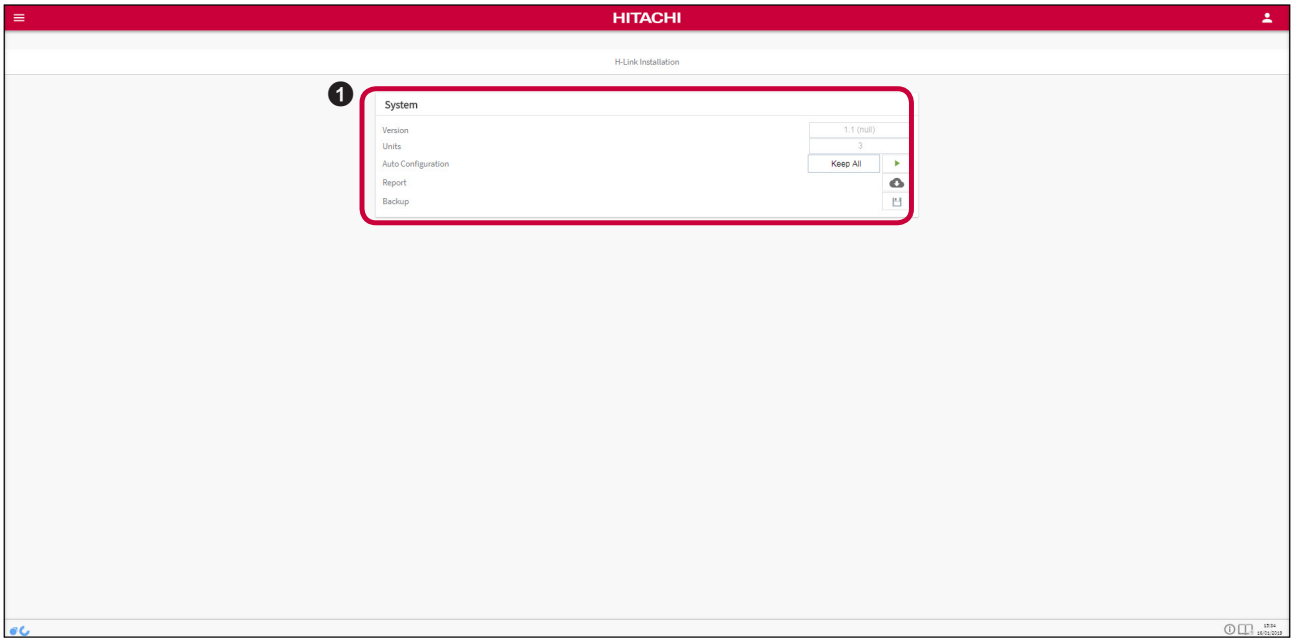
6.1.24 System settings

6.1.24.1 H-LINK installation

H-LINK installation menu allows to manage connected elements and perform auto discovery process.



CSNET Manager 2



CSNET Lite

1 **System:** Press ▶ to force an auto discovery process to all the devices belonging to the CSNET software.

In case Keep All is selected, software shall perform auto discovery process and add new IUs to existing ones for each device.

In case Delete not found is selected, software shall perform auto discovery process, add new units found and delete those units that have not been found for each device.

In case Delete All is selected, software shall delete previous IUs found firstly and then look for new IUs for each device.

- Version: Software shall allow to find the device version.
- Units: Number of indoor units found for this device.
- Press to download a report file of this configuration.
- Press to save a simple or full backup of the system.

❷ **Configuration (for CSNET Manager 2):** When selecting a device from the table, the configuration window is opened.

Press ▶ to force an auto discovery process for the selected device.

In case Keep All is selected, software shall perform auto discovery process and add new IUs to existing ones to the selected device.

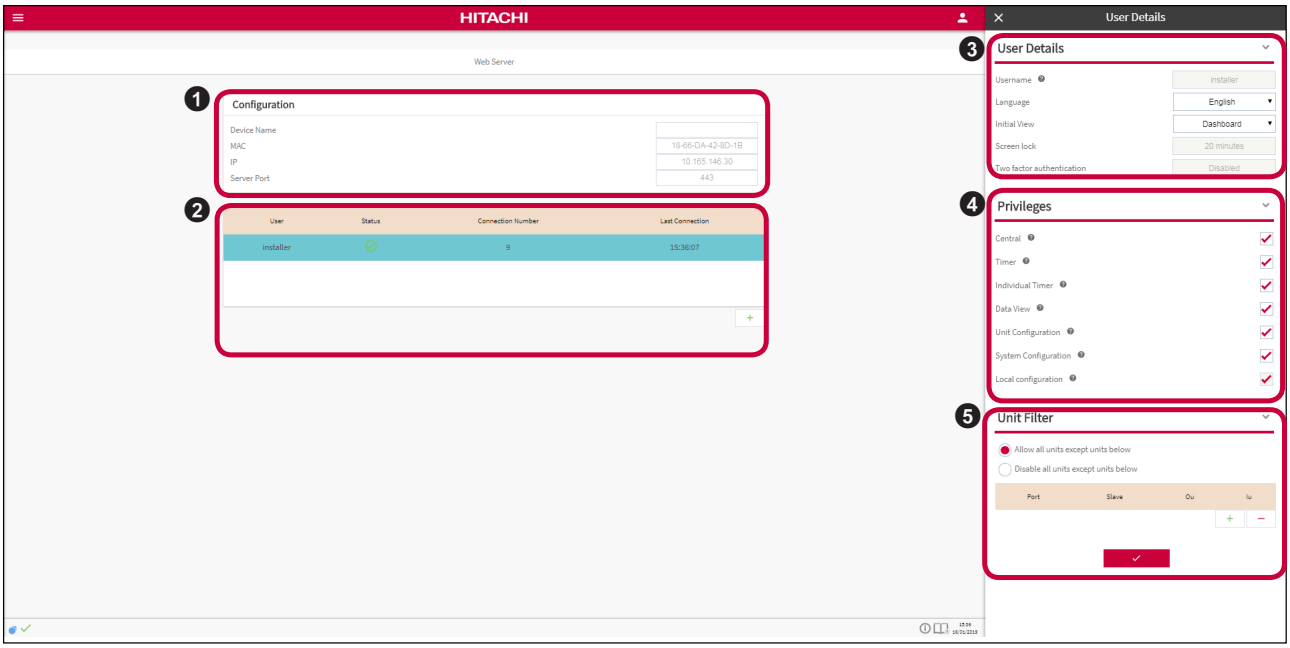
In case Delete not found is selected, software shall perform auto discovery process, add new units found and delete those units that have not been found for the selected device.

In case Delete All is selected, software shall delete previous IUs found firstly and then look for new IUs for the selected device.

- Status: Status of the selected device.
- IP Address of selected device in case device uses static IP. The IP Address is editable.
- Host name of selected device in case device uses DHCP. In this case it is not possible to update IP.
- Version: Software shall allow to find the device version.
- Units: Number of indoor units found for this device.

6.1.24.2 Web Server

The web server menu gives information about user connections.



1 **Configuration:** Information relating the web server (Name, MAC, IP, Server Port).

2 **User list:** List of users created on the installation. Provides information about number of connection and hour of last connection per user. Press + to create a new user. The user details window appears at the right side.

3 **User details:** Information / creation of the user.

- User name: To change User name of user.
- Password: To create a password for that user.
- Language: To select default language for that user.
- Initial view: To change initial view for user after login.
- Two factor authentication: This field is informative as two factor authentication is configured by each user at *"6.1.26.1 My Preferences".*

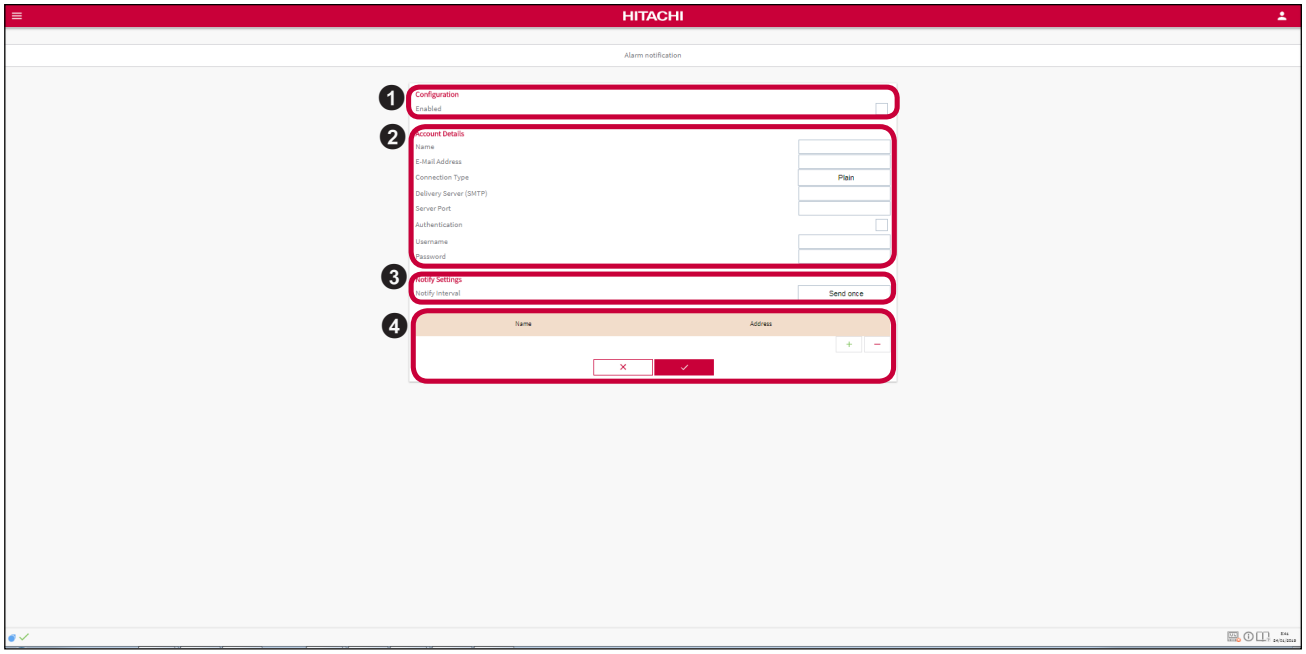
4 **Privileges:** To assign privileges for each user.

- Central: To enable central management.
- Timer: To enable Timer management.
- Individual timer: To enable individual timer management.
- Data view: To enable Data View management.
- Unit Configuration: To enable Unit configuration management.
- System Configuration: To enable System configuration management. User cannot remove its own System Configuration privilege.
- Local configuration: To enable local configuration management.

5 **Unit filter:** To enable or disable units for each user.

6.1.24.3 Alarm Notification

CSNET software is ready to notify alarms to the users. These alarms are notified by e-mail. To configure these notifications you must open the alarm notification panel.



❶ **Configuration:** allows enable or disable alarm notification function.

Enabled: Mark the selection box to activate the alarm notification.

❷ **Account details:** The account details need to specify the next fields:

Name: Installation name.

E-mail: Account installation mail.

Connection type: Select the security method depending the SMTP server.

Delivery Server (SMTP): Mail server address.

Server Port: Mail server port.

Authentication: In case that SMTP server requires authentication, this check box must be selected and password and user name filled.

User name: In case that authentication is selected, a user name must be entered.

Password: In case that authentication is selected, a password must be entered.

❸ **Notify settings:** Configuration about the receivers and the period of the notifications.

Notify Interval: Select the period the email notifications are sent again.

❹ **Devices list:** First line lets configure the local email alarm notification server for CSNET software. Rest of the lines let configure the alarm notification on the different configured devices if they can execute the function.

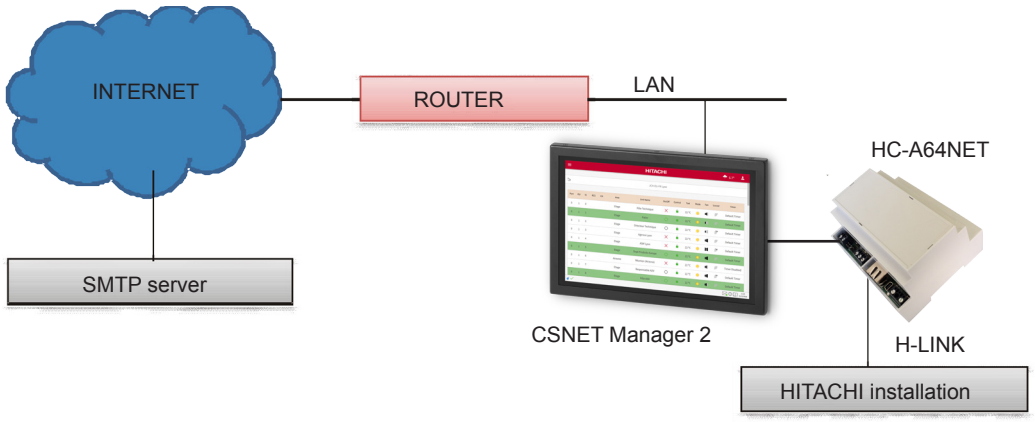
◆ Connection details to a SMTP server

a. Configuring the mail alarms on the CSNET software is used when CSNET Manager 2 / CSNET Lite are on a LAN net that does not pass through a proxy to connect to Internet.

b. The mail alarms are being sent from the CSNET software when CSNET software is running, so that the device cannot be switched-off.

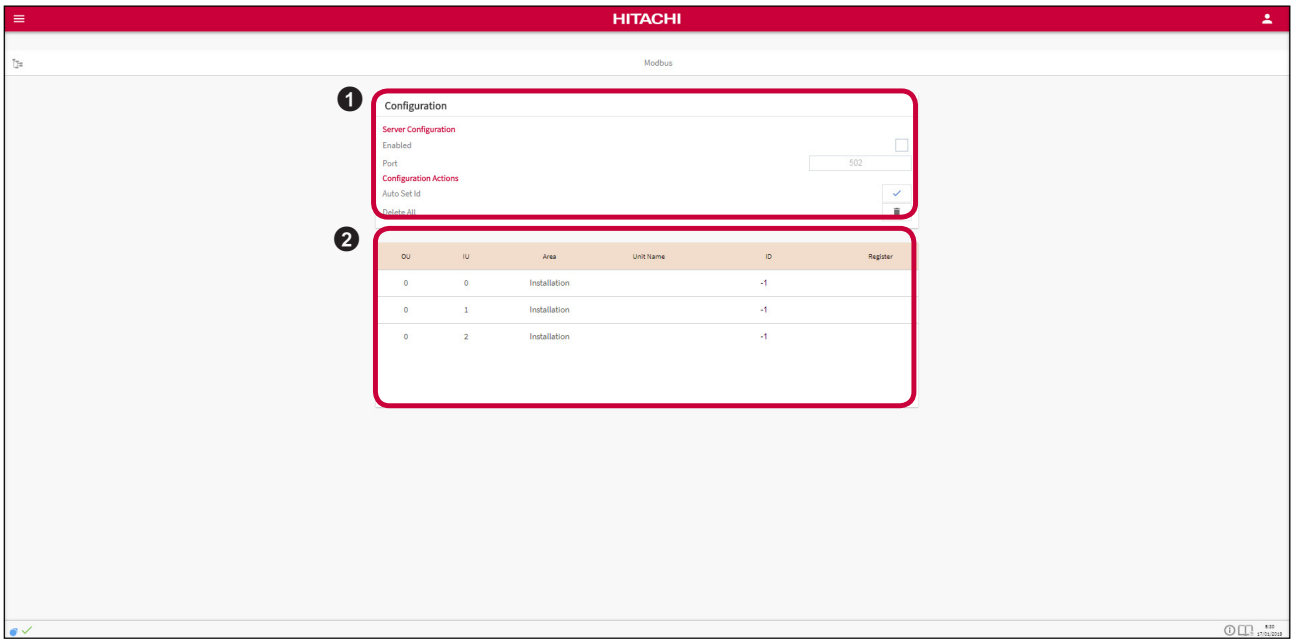
c. That connection allows the use of already existing SMTP servers on the Internet, such as Gmail, Yahoo or others. These are encrypted connections, so they can be used.

d. The e-mail sent has the location information column as it is managed from the computer and it is powerful than CSNET WEB interface.



6.1.24.4 Modbus

CSNET software can work as a Modbus server. This configuration is done on the “Modbus” panel.



❶ **Configuration:**

Server Configuration

Enabled: Mark the selection box to activate the modbus server.

Port: Standard modbus port is fixed to 502.

Configuration actions

Auto Set Id: To put correlative ids to the different units.

Delete all: To delete all registers and ID previously set.

❷ **Units ID and register:** the table displays the different units, where it can be modified the Modbus ID. This Modbus ID modifies the register address for read the data of this unit. It will automatically displayed on the column “register” the number of the register where the unit begin.

◆ Register list

The following table shows the data shared on modbus for each indoor unit.

Address (note 1)	Name	Description	R/W
0	EXIST	0: Not exist 1: Exist	R
1	SYSTEM_ADDRESS	H-LINK I: 0~15	R
2	UNIT_ADDRESS	H-LINK II: 0~63	R
3	SET_ONOFF	ON/OFF setting order: 0: Stop 1: Run	R/W
4	SET_MODE	Mode setting order: 0: Cool 1: Dry 2: Fan 3: Heat 4: (Not used) 5: Auto RCS	R/W
5	SET_FAN	Fan setting order: 0: Low 1: Medium 2: High	R/W
6	SET_TSET	Setting temperature 17ºC ~ 30ºC	R/W
7	SET_LOUVER	Louver setting 0 ~ 7 (7 is Auto)	R/W
8	SET_CENTRAL	Central Setting: Bit 1: Mode Bit 2: Setting temperature Bit 3: Fan	R/W
9	READ_ONOFF	ON/OFF read: 0: OFF 1: ON	R
10	READ_MODE	Mode read: 0: Cool 1: Dry 2: Fan 3: Heat 4: Auto	R
11	READ_FAN	Fan read 0: Low 1: Medium 2: High	R
12	READ_TSET	Setting temperature read (17ºC to 30ºC)	R
13	READ_LOUVER	Louver read 0 ~ 7 (7 is Auto)	R
14	RCS_GROUP	Remote controller group 0 ~ 255	R
15	TIN	Inlet temperature (Note 2)	R
16	TOUT	Outlet temperature (Note 2)	R
17	TGAS	Gas pipe temperature (Note 2)	R
18	TLIQUID	Liquid pipe temperature (Note 2)	R
19 (Note 6)	ERROR_CODE	Alarm code	R
20 (Note 6)	STOP_CAUSE	Compressor stop cause	R
21	VALVE_OPEN	Indoor unit expansion valve opening	R
22	OPER_CONDITION	Unit operation condition 0: OFF 1: Thermo-OFF 2: Thermo-ON 3: Alarm	R
23	DEFROS	Defrost	R
24	AMBIENT_TEM	Ambient temperature (Note 2)	R
25	RCS_TEMP	Remote control switch temperature (Only when available in unit) (Note 2)	R
26	TIMER_DISABLED	Timer disabled 0: Enabled 1: Disabled	R/W
27	OPTIONS	Options setting (Note 4)	R
28	POWER	Calculated power consumption (Note 5)	R
29	COMP_QTY	Running compressor quantity (Note 3)	R
30	COMP_FREQ	Inverter compressor frequency	R
31	REM_TEMP	Remote sensor temperature (Only when accessory is installed) (Note 2)	R

NOTE

1 *Offset position is: 20000 + N*32 + Address as shown in table, where N is unit address. Unit address as set in CSNET Manager 2 BMS configuration dialogue. Be careful because we are using address 0 as first register and in Modbus could be used number 1 as first value. In that case, it will be necessary to add 1 to the address calculation.*

2 *These numbers refer to signed 16-bit value using 2-complement format for negative values.*

3 *Running compressor quantity is only valid for units with more than one compressor. In case of inverter, value showed is 0*

4 *CN3 Input data through Modbus:*
The status of Input 1 & 2 of CN3 can be read through Modbus. This is read from register n° 27 where bit 0 corresponds to Input1 and bit 1 corresponds to Input 2.

Register 27							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Not used	Not used	Not used	Not used	Not used	Not used	CN3 Input 2 0 = Disabled (and/or not available) 1 = Enabled	CN3 Input 1 0 = Disabled (and/or not available) 1 = Enabled

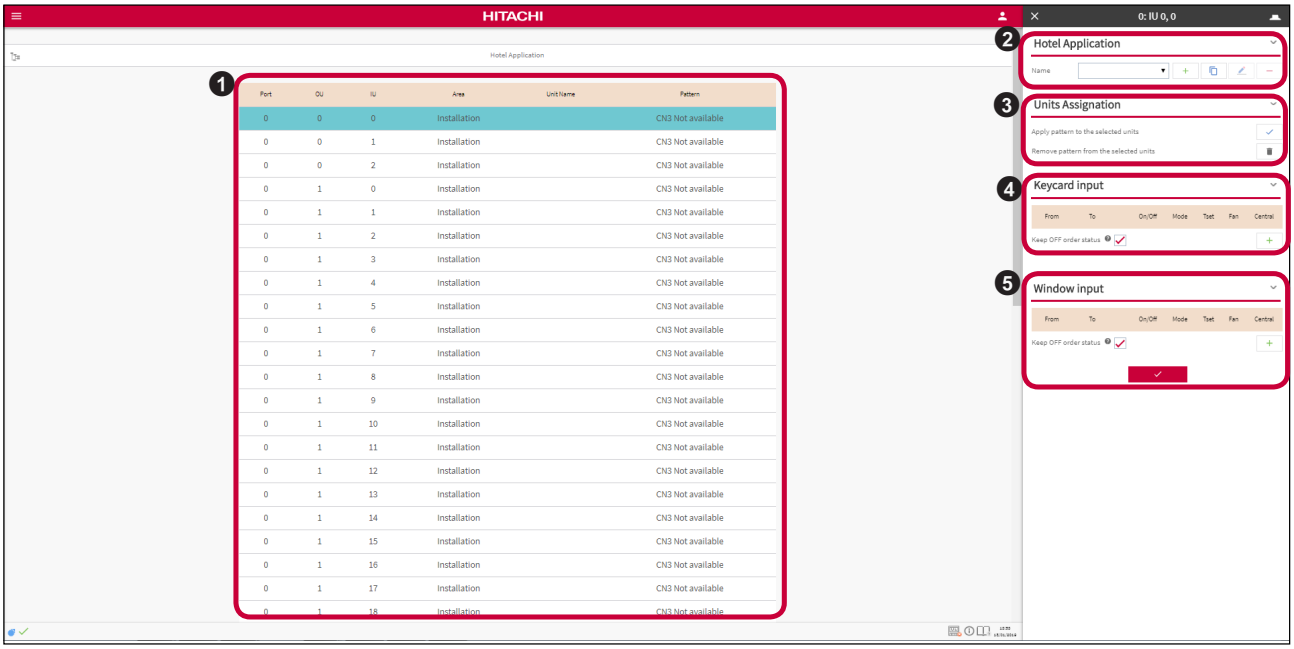
5 *Daily indoor unit percentage in relation to the total power consumption of the installation. The percentage is calculated based on the accumulated capacity of each indoor unit, and dividing the individual value of each indoor unit by the sum of the values of all the units in the system. The value is restarted every day at midnight.*

6 *Modbus registers are integers, to know the code to be checked on the unit documentation, the value should be translated to hexadecimal.*

6.1.24.5 Hotel Application (only for CSNET Manager 2)

Hotel Application links the CN3 Inputs with an order to be sent to the indoor units.

This function is only compatible with the units that give this information on H-LINK, and from the second generation of HC-A64NET.



❶ **Units list:** Select the unit to create a new hotel application.

❷ **Hotel Application:** Press + to create a new name and then press ✓ to accept. It is possible to edit, delete or copy the hotel application name.

Hotel application sends orders to the affected indoor units when there is a change in the status of any of the inputs.

To avoid undesired states, such as switch on of the indoor units when windows are open, Hotel application always gives priority to switch off orders.

❸ **Units assignation:** Apply or remove the pattern to the selected unit.

❹ **Keycard input:** Press + to create a new pattern when for the keycard input and output. Select the range of dates, on/off status, mode, temperature, fan speed and central restrictions.

When the “Keep OFF order status” checkbox is marked, orders are resent even if the status of the unit has been changed from the remote controller or from any other function of CSNET Manager.

❺ **Window input:** Press + to create a new pattern when the window is opened and closed. Select the range of dates, on/off status, mode, temperature, fan speed and central restrictions.

Keep OFF order status” checkbox will resend the order if someone has changed the status of the unit form the remote controller or from any other function of CSNET Manager.

Then press ✓ to save the settings.

6.1.24.6 Fidelio (only for CSNET Manager 2)

CSNET Manager 2 is compatible with a TCP/FIDELIO Gateway.

Each unit can be linked to a Fidelio register to know if there is a check in or check out condition on that room.

For each unit can be assigned a pattern similar to the timer one that describes a condition for check in and another for check out. It also can be specified the data period where that patterns applies.

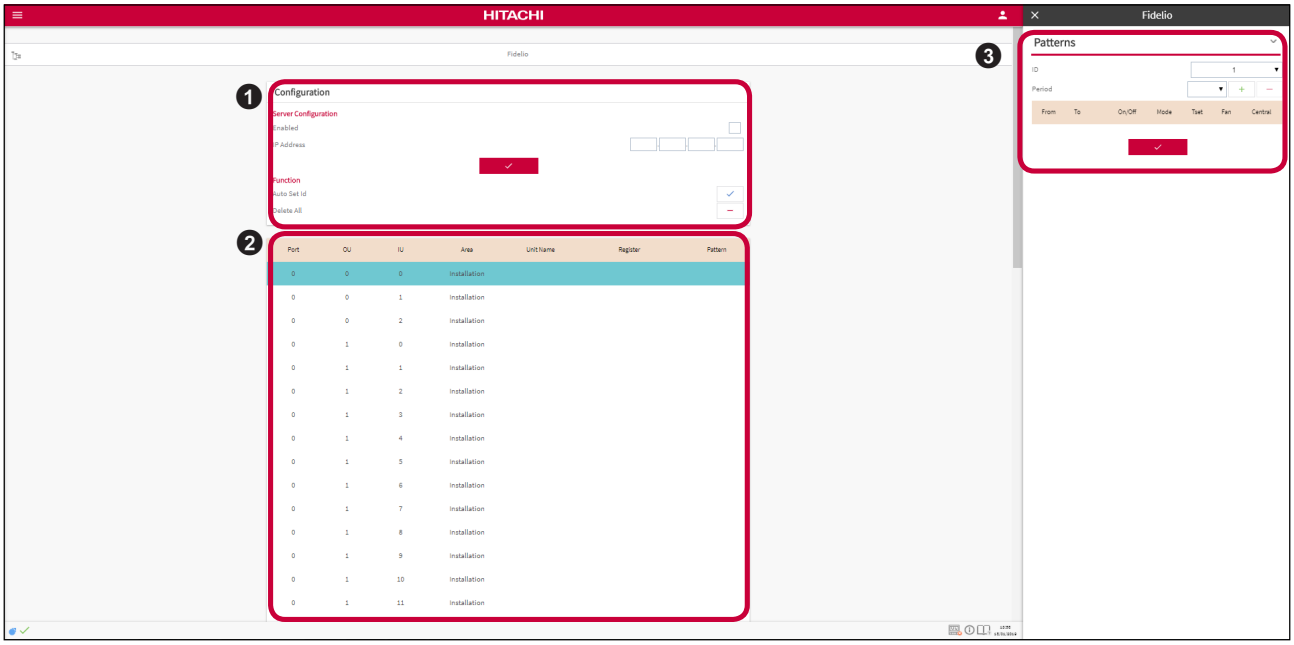
To activate the Fidelio compatibility it must be selected the check box and specified an accessible IP for the HITACHI Fidelio gateway.

CAUTION

Actions configured on the Fidelio dialogue are managed from the CSNET Manager 2 client software, so it is necessary to have the device program running to use the Fidelio compatibility.

NOTE

The compatibility with Fidelio protocol was tested with IBOX-MBS-FIDELIO_IP of INTESIS. HITACHI ensures the compatibility with this and others devices working exactly as the same. To use others devices please contact HITACHI to ensure compatibility.



1 Configuration:

Server Configuration

Enabled: Mark the selection box to activate the Fidelio function.

IP Address: IP Address for the Fidelio gateway

Function:

Auto Set Id: To put correlative ids to the different units.

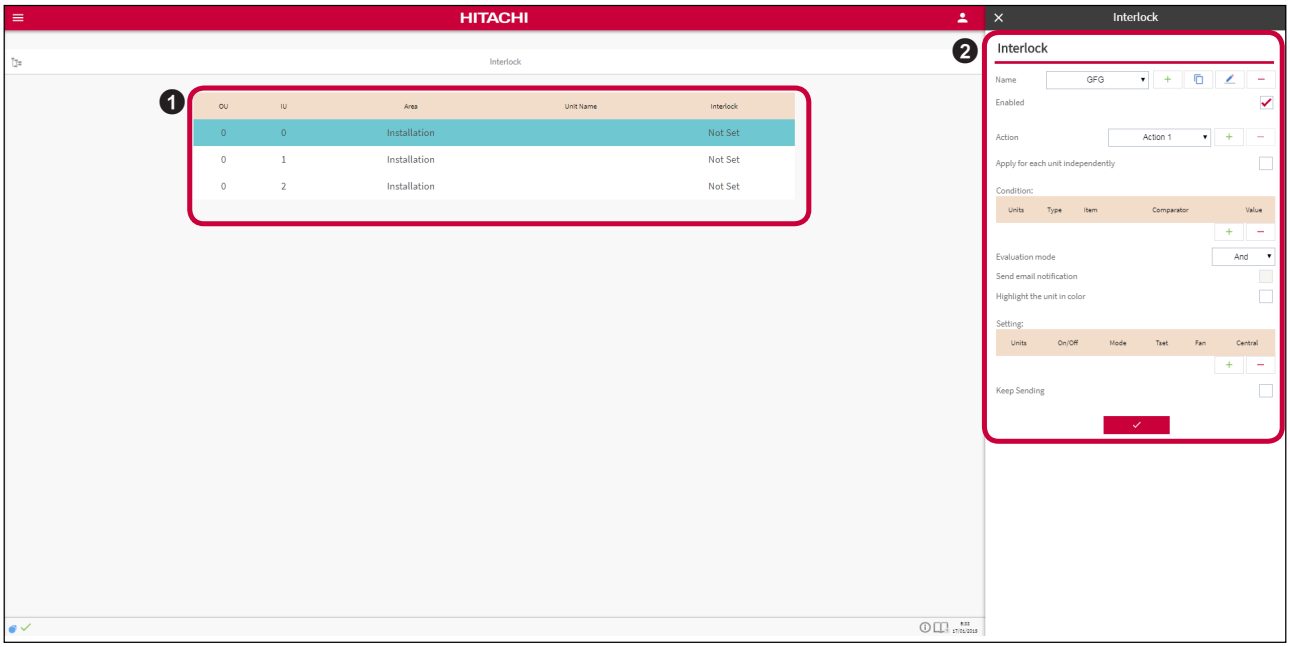
Delete all: To delete all registers and ID previously set.

2 Units list: Select the unit to create a new Fidelio configuration.

3 Patterns: Press + to create a new period for the check in and check out. Select the range of dates, on/off status, mode, temperature, fan speed and central restrictions.

6.1.24.7 Interlock

Interlock function checks the status of an indoor unit parameter, and send an order if the value of the parameter reach a specified condition.



1 **Units list:** Select the unit to create a new interlock condition.

2 **Interlock:** Press + to create a new name and then press ✓ to accept. It is possible to edit, delete or copy the interlock name.

Interlock elements could be easily enabled/disabled.

Press + to create a new interlock action. An action is a pair of:

- **Conditions**: parameters to be checked on a unit or group of units.
- **Setting**: order to be send to a single or group of units.

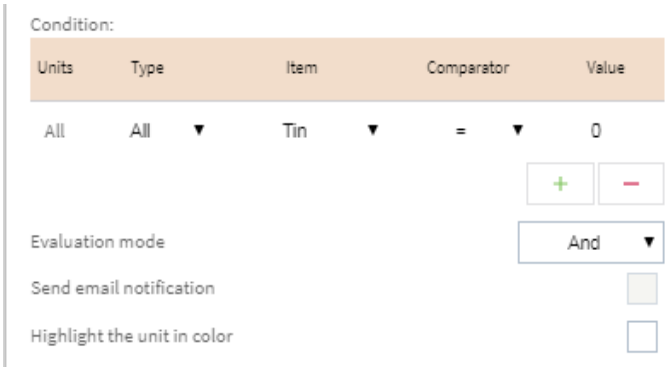
There are 2 ways to notify when conditions are reached on a group of indoor units:

- By highlighting the units with a specified colour on the main units list.
- By email notification. Mail server shall be set up on the panel of the email notification function.

Conditions table let configure:

- **Units:** units were the condition will be checked
  - All: all existing units.
  - Specific: single or group of units specified.
  - CSNET Lite: select CSNET Lite to use the inputs or outputs as a condition.
- **Type:** condition type:
  - All: all the selected units should achieve the condition.
  - Any: some of the selected units should achieve the condition.
  - None: none of the selected units should achieve the condition.
  - Average: the average of all the selected units should achieve the condition.

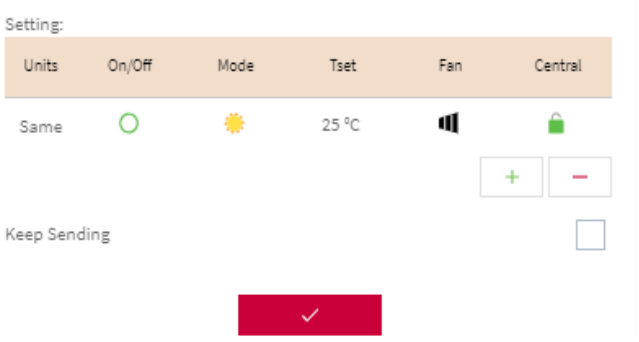
- **Item**: parameter to be checked
  - Tin
  - THM4
  - RCS Sensor
  - Outdoor temperature
  - Alarm
  - On/Off
  - Tset
  - Mode
  - Fan
  - Louver
  - Central
  - Hour
  - Date (Day of the year)
  - CN3 – Input 1 (for compatible units and HC-A64NET second generation)
  - CN3 – Input 2 (for compatible units and HC-A64NET second generation).
  - CSNET Lite Input 1
  - CSNET Lite Input 2
  - CSNET Lite Input 3
  - CSNET Lite Output 1
  - CSNET Lite Output 2
  - CSNET Lite Output 3
- **Comparator**: Boolean comparator type (>, >=, <, <=, =, !=)
- **Value**: value to compare.



Inter-conditions operation specifies if the conditions should be achieved all (AND case) or minimum 1 (OR case).

Setting table let configure:

- Affected units:
  - Same: same units selected on condition table
  - Specific: single or group of units.
  - CSNET Lite: selection of the CSNET Lite output.
- Order to be sent:
  - On/off, mode, Tset (setting temperature), fan and/or central.



Keep sending: In case keep sending is not checked, Application sends the specific order to the unit once at the moment specified conditions are fulfilled. In case keep sending is checked, software ensures to keep the orders defined for that unit as long as condition is fulfilled.

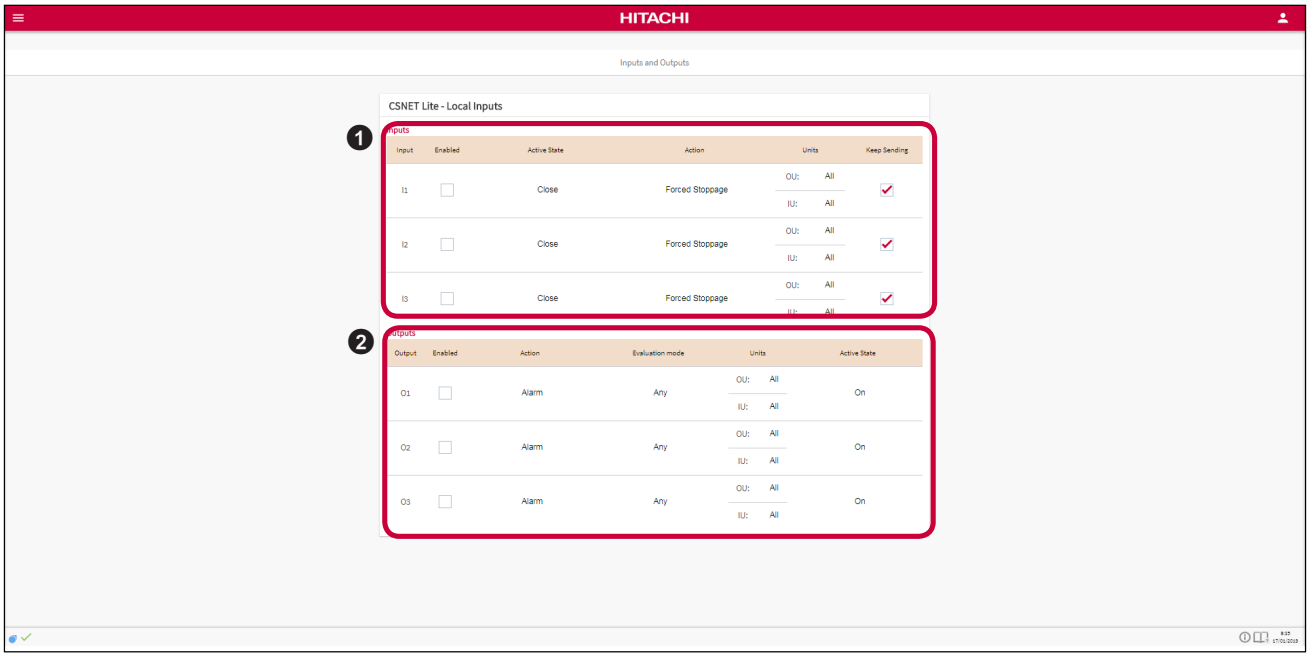
NOTE

An action can had ticked the option of "apply for each unit independently". This option make that for each unit of the specified ones, if the condition is happening, it send the order only to that unit.

6.1.24.8 Inputs and outputs (Only for CSNET Lite)

This function allows user to configure Inputs and Outputs located at CSNET Lite device

CSNET Lite device is equipped with a set of 3 inputs and 3 outputs which can be configured in many different options.



1 **Inputs:** CSNET Lite is equipped with a set of 3 inputs. This functionality allows user to trigger an event at the moment there is input signal.

Following variables shall be configured for each input:

- Enabled: To enable or disable selected input.
- Active State: To determine the nature of the input signal to trigger the action.
  - Close: Action is triggered in case input is closed.
  - Open: Action is triggered in case input is opened.
- Action: To define the action CSNET Lite triggers when there is an input signal.
  - Forced Stoppage: CSNET Lite sets selected unit in OFF state.
  - Forced Switch-On: CSNET Lite sets selected unit in ON state.
  - Operation: CSNET Lite sets selected unit in ON/OFF state in case input is in active/not active state respectively.
  - Heating: CSNET Lite sets selected unit in Heating operation.
  - Cooling: CSNET Lite sets selected unit in Cooling operation.
  - Night Mode: CSNET Lite enables night mode in *"6.1.24.9 Outdoor control"*. Night mode is applied according to configuration in *"6.1.24.9 Outdoor control"*
  - Power Control: CSNET Lite enables Power control in *"6.1.24.9 Outdoor control"*. Power control is applied according to configuration in *"6.1.24.9 Outdoor control"*
- Units: To select units that are affected by "Action". Note that in case "Action" is "Night Mode" or "Power Control", it is only possible to select Outdoor unit
- Keep Sending: In case of enabled, this function allows to keep the desired "Action" meanwhile there is input signal.

Examples:

Input	Enabled	Active state	Action	Units	Keep sending	Result
I1	Checked	Close	Forced ON	OU: 0	Yes	In case input is closed, CSNET Lite switches units to ON state. In case a unit is switched OFF by means RCS button switch/ Timer/Modbus… CSNET Lite resends order to keep that Indoor Unit switched ON. In case input is opened, CSNET Lite does not perform any action.
				IU: All	No	In case input is closed, CSNET Lite switches units to ON state. In case unit is switched OFF by means RCS button switch/Timer/Modbus…, CSNET Lite does not resend order so that specific unit is switched OFF.
I2	Checked	Open	Operation	OU: 1	Yes	In case input is opened, CSNET Lite switches units to ON state. In case input is closed, CSNET Lite switches units to OFF state. In case indoor unit ON/OFF state changes by means RCS button switch/ Timer/Modbus… CSNET Lite changes ON/ OFF state according to input
				IU: All	No	In case input is opened, CSNET Lite switches units to ON state. In case input is closed, CSNET Lite switches units to OFF state. In case indoor unit ON/OFF state changes by means RCS button switch/ Timer/Modbus… CSNET Lite does not perform any change.
I3	Checked	Close	Night Mode	OU: 2	Yes	In case input is closed, CSNET Lite enables Night Mode in Outdoor Control. In case input is opened, CSNET Lite disables Night Mode in Outdoor Control. In case user modifies Night mode, CSNET Lite enables or disables Night Mode according to input state.
				IU: All	No	In case input is closed, CSNET Lite enables Night Mode in Outdoor Control. In case input is opened, CSNET Lite disables Night Mode in Outdoor Control. In case user modifies Night Mode, CSNET Lite does not perform any change.

❷ Outputs:

CSNET Lite is equipped with a set of 3 outputs. This functionality allows to output a signal in case specific conditions are fulfilled within installation.

Following variables shall be configured for each output:

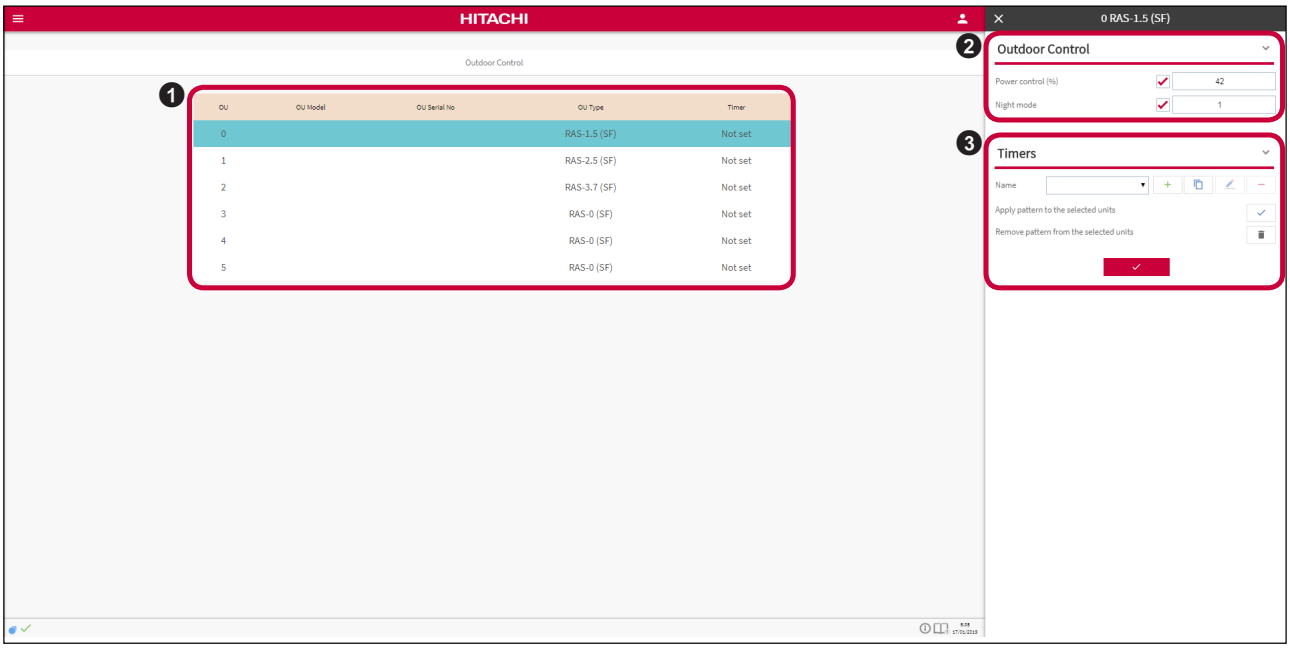
- Enabled: To enable or disable selected output.
- Action: To define the action that triggers the selected output to “Active State”.
  - Alarm: Considers units in alarm.
  - Operation: Considers units in ON state.
- Evaluation Mode: How CSNET Lite evaluates the condition.
  - Any: Condition is true in case any unit selected fulfils action defined.
  - All: Condition is true in case all units selected fulfil action defined.
  - None: Condition is true in case none of units selected fulfil action defined.
- Units: To select units that have to be considered for CSNET Lite.
- Active state: To select active state of the output in case condition is fulfilled:
  - ON: Selected output on CSNET Lite is set to 1 in case condition is fulfilled.
  - OFF: Selected output on CSNET Lite is set to 0 in case condition is fulfilled.

Examples:

Output	Action	Evaluation Mode	Units	Active state	Result
O1	Alarm	Any	OU: 0 IU: All	ON	In case any indoor unit from Outdoor Unit 0 is in alarm, CSNET Lite will set Output 1 to active state.
O2	Operation	All	OU: 1 IU: All	OFF	In case all Indoor Units from Outdoor Unit 1 are in ON state, CSNET Lite will set Output 2 to low state. Otherwise, Output 2 will be in active state.
O3	Alarm	None	OU: 2 IU: All	ON	In case no Indoor Units from Outdoor Unit 2 are in alarm state, CSNET Lite shall set Output 3 to active state. At the moment an Indoor unit from Outdoor unit 2 has an alarm, CSNET Lite sets Output 3 in low state.

6.1.24.9 Outdoor control

CSNET software let user set up “Night mode” and “power control” options on the outdoor. These options can be configured by using an outdoor timer to schedule them.



❶ **Units list:** Select the outdoor unit to modify the night mode and the power control.

❷ **Outdoor control:** Outdoor control panel let user set up the following outdoor functions:

- Power control: limit the power consumption of the outdoor unit.
- Night mode: When Night mode is not applied the fan rotation ratio is 100%. When it is enabled, the rotation ratio is reduced to the selected value from 1 to 9 (10% to 90% of the fan rotation ratio).

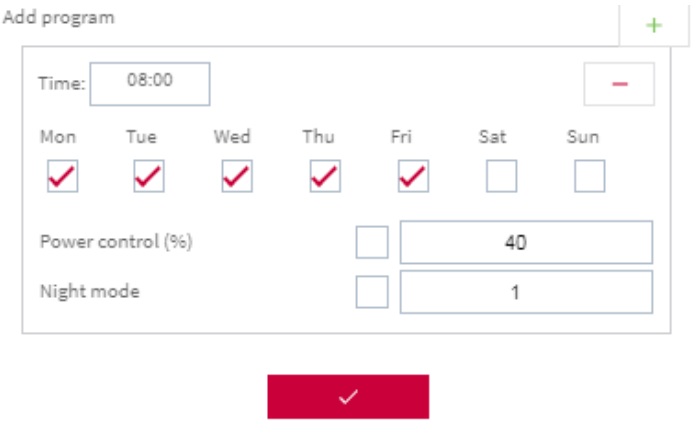
NOTE

The list of outdoor units only shows the outdoor units that supports this type of control.

❸ **Timers:** It can be created multiple timers to Schedule the outdoor control parameters.

Step 1: Press + to create a new timer and then press ✓ to accept. It is possible to edit, delete or copy the timer.

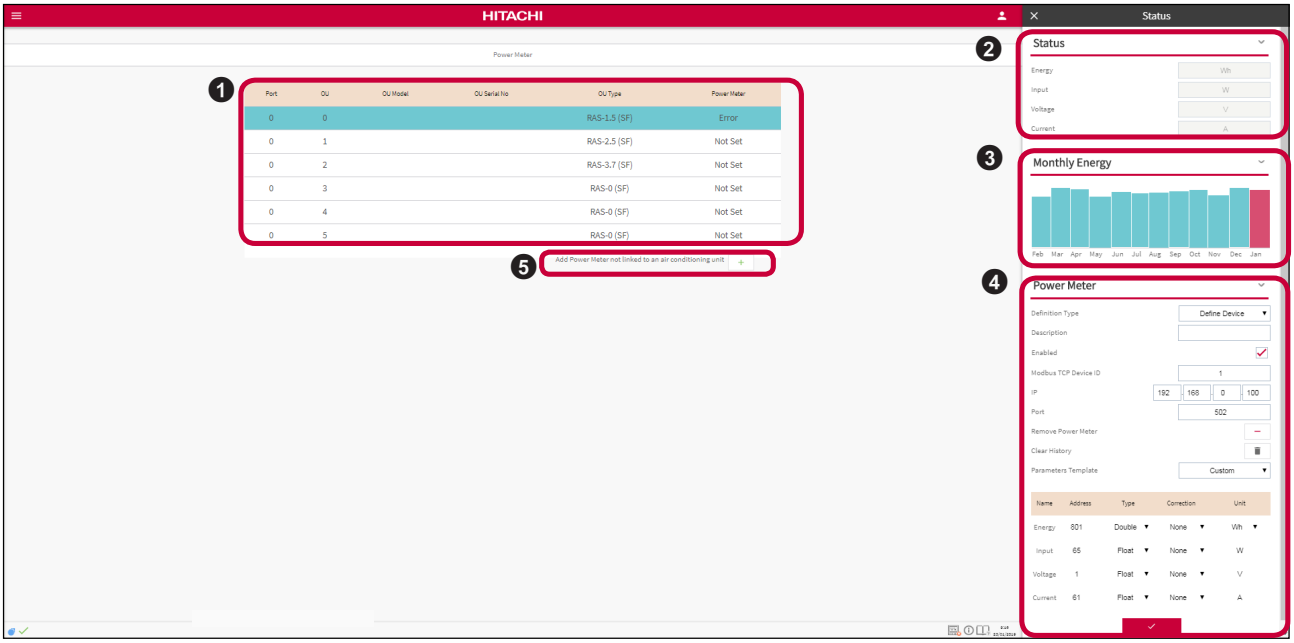
Step 2: Press + to add a new schedule and then press ✓ to save.



Step 3: Press ✓ to apply pattern to the selected units or 🗑 to remove the pattern.

6.1.24.10 Power Meter

Power Meter tab lets the user configure a TCP-MODBUS power meter for each outdoor unit. On modular systems, one power meter per each address of refrigerant cycle.



❶ **Units list:** Select the outdoor unit to modify the power meter settings.

❷ **Status:** Display current values read on the power meter for the configured registers.

❸ **Monthly Energy:** Charts of the consumed energy displayed by months.

❹ **Power Meter:**

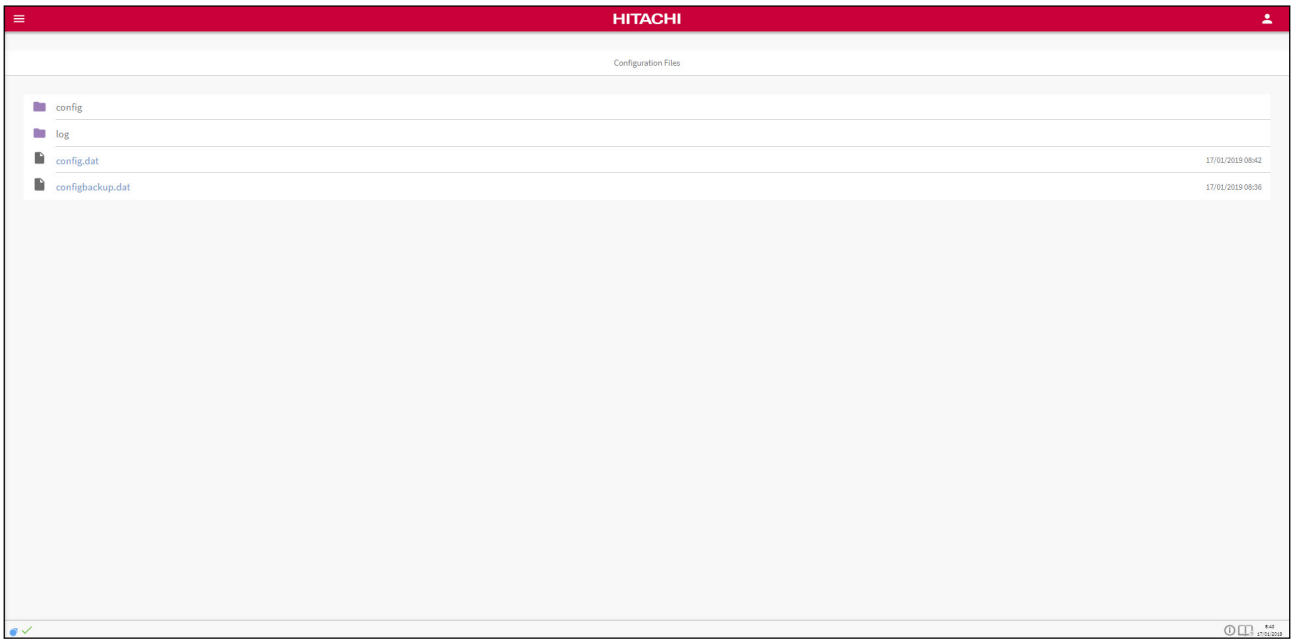
Definition Type:

- Define Device: (Configure a new power meter)
  - Description: Create a name for power meter device.
  - Enabled: Activate the power meter reading.
  - Modbus TCP Device ID: Configure the Modbus ID of the device.
  - IP: Address of the power meter
  - Port: Connection Port of the device
  - Remove Power Meter: Erase a configured power meter
  - Clear history: Clean the recorded monthly energy history
  - Parameters Template:
    - Select an existing configuration for one of the homologated power meters (Siemens 7KM 3200 or Socomec Countis E27/E26).
    - Custom: in case of using a different power meter, configure the registers and format of the used parameters.
  - Parameters used by Power Meter function:
    - Energy: used for power consumption calculations.
    - Input, Voltage & Current: only displayed on system status and power meter status view.
- Share Existing: (If you want to configure a power meter for more than 1 outdoor unit)
  - Select Existing Device: Specify which power meter already configured is being shared by this outdoor unit.

❺ **Add Power Meter not linked to an air conditioning:** This function lets add a power meter not linked to any air conditioning unit. It can be used for power consumption of lights, blinds, etc. All configuration is shared like any other power meter but it is required to add a description name to identify that power meter.

6.1.24.11 Configuration files

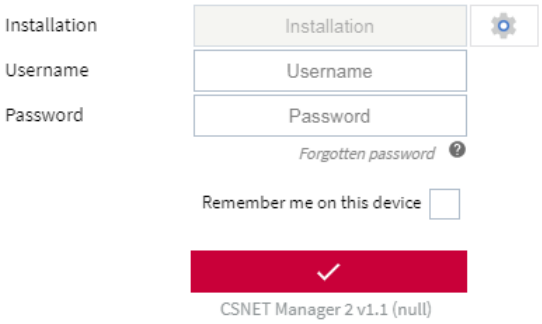
Configuration files menu lets to browse inside the CSNET software configuration folder.



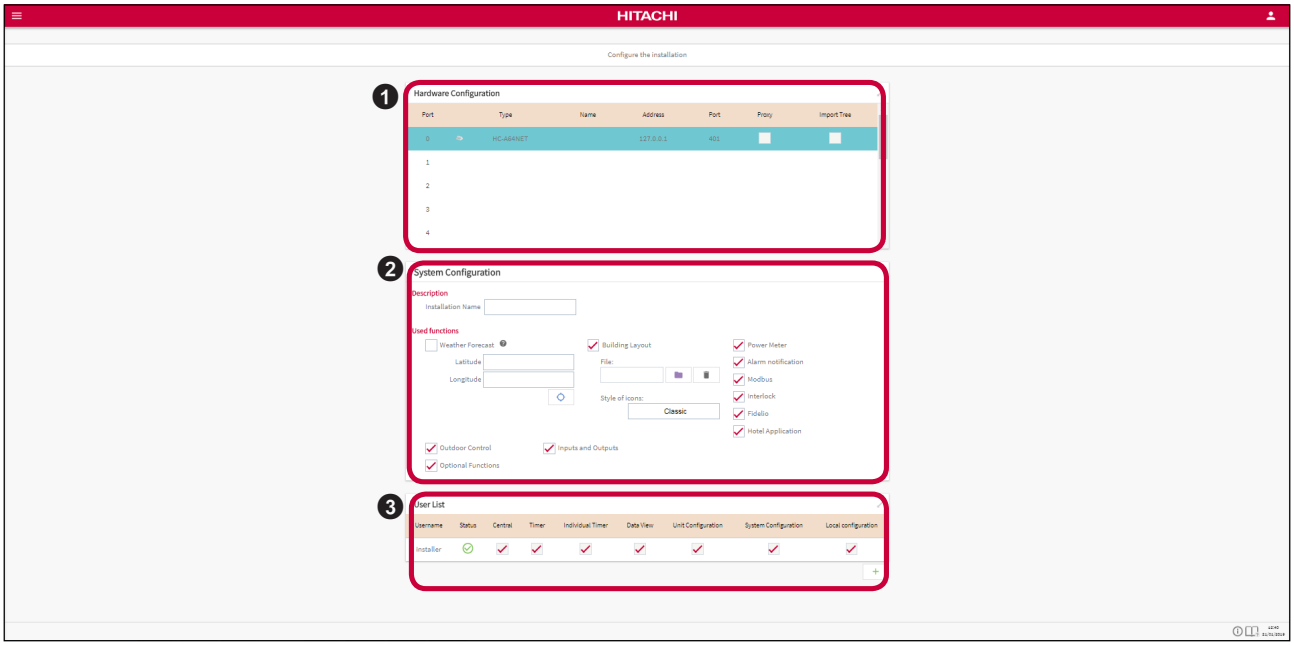
6.1.25 Local configuration

The Local Configuration menu is accessible from the main screen.

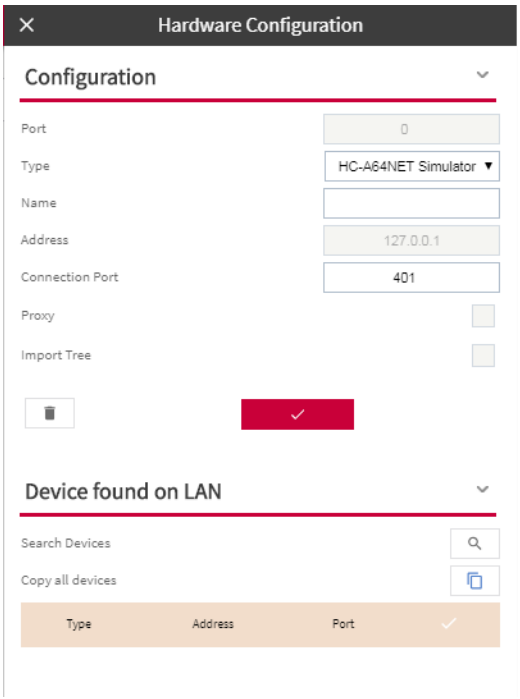
First enter the username and the password, and then press .



6.1.25.1 Installation



❶ **Hardware configuration (for CSNET Manager 2):** Configurable devices list. By clicking on a row the following screen is displayed:

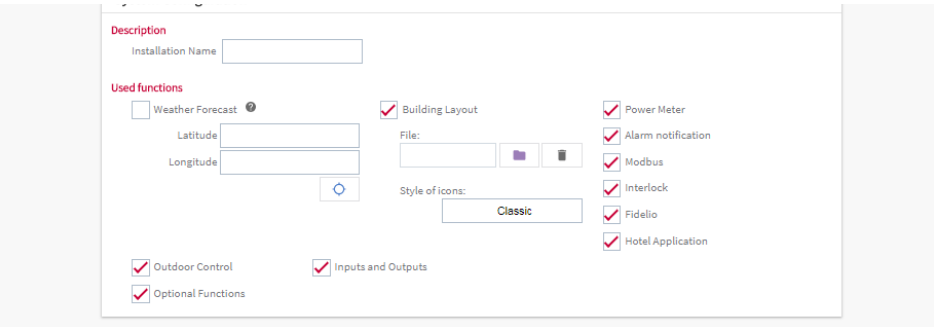


Configuration: Select the type of device to be configure and specify the IP and Port to get connect to that device. In case that connecting password has been changed replace it by the new one.

When configuring another CSNET Manager 2 the area tree can be import by selecting the “import tree” check box.

Device found on LAN: CSNET Manager 2 automatically searches for a connectable devices on each LAN, those devices can be loaded to speed up the configuration procedure by pressing the button. Copy all devices button will configure all devices found on your installation.

❷ **System configuration:** Define the installation name, and the functions used by the system.

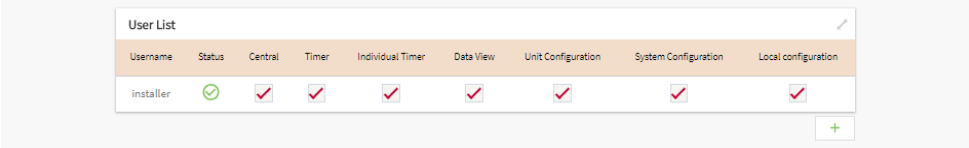


The functions list let show or hide the unused functions inside the software.

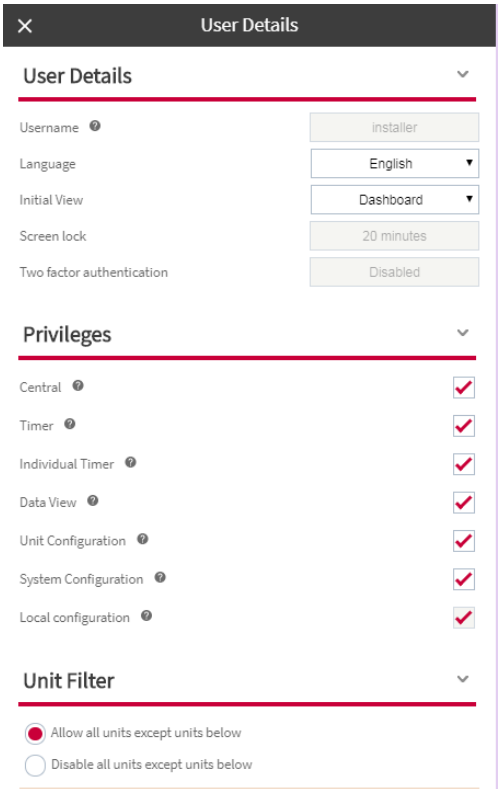
In case of Building Layout a file edited by Building Layout editor can be loaded, or let it in blank to work with the Embedded web editor inside CSNET Manager 2.

To activate Weather Forecast it is required Internet access. CSNET software is able to automatically find the location by pressing the button.

❸ **User List:** List of created users and its privileges. Press + to create a new user.



By clicking on a user the following screen is displayed:

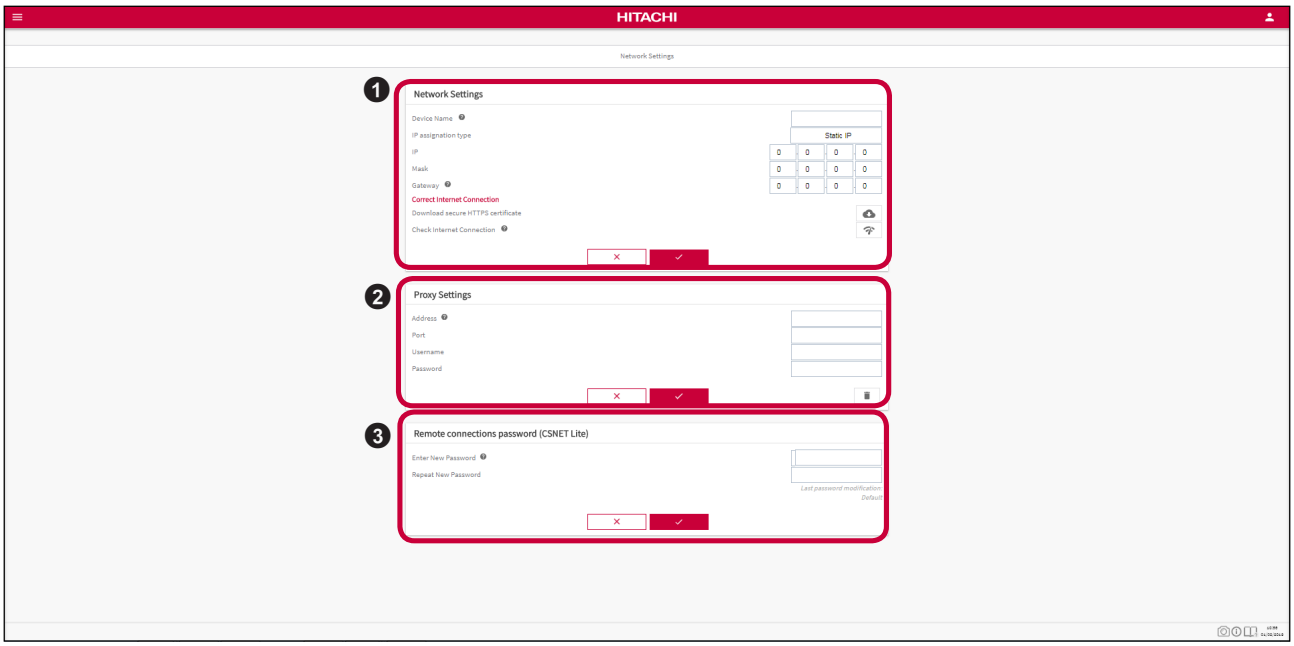


User Details: Specify the name, language and initial view. Two factor authentication configuration status can be viewed.

Privileges: Define which privileges has the selected user. System configuration privilege cannot be removed if selected user is the same that is making the modifications.

Unit Filter: Select which units can be managed by a user.

6.1.25.2 Network Settings



❶ **Network Settings:** allows you to configure your LAN settings. Note that in case of directly connecting to HC-A64NET with a crossed Ethernet cable, Gateway IP should be configured with same value that HC-A64NET.

IP assignation type: DHCP method is an automatic IP assignation procedure. The IP will be assigned by the LAN management and could change. Device will be accessible by using the “Device Name”. By selecting static IP, a fixed IP can be defined.

Check internet connection: Allows to download the secure HTTPS certificate and to check internet connection (internet connection is necessary to keep local time updated and be able to use two factor authentication.

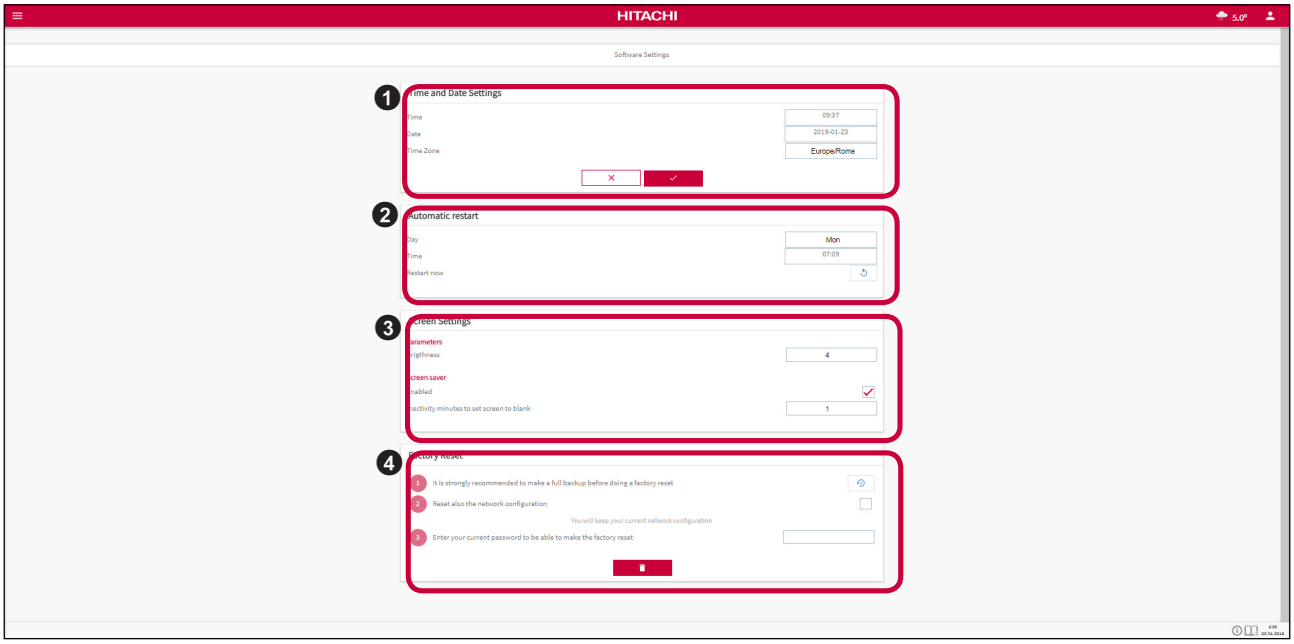
❷ **Proxy settings:** The “Proxy Settings” tab lets you configure the connection through a proxy if necessary. If you have any doubts about the data you need consult your network administrator.

❸ **Remote connections password:** Remote connections password can be configured to use an specific password to let other CSNET Managers 2 connect to this one. By default password is “Installer” and it can be modified.

NOTE

This password is used to authenticates who is connecting to a device. The default password can always be changed locally from ‘local configuration’ of the selected device. Changing the default passwords protects from non-desired connections in case of using a network shared with other CSNET devices and to explicitly avoid a malicious usage.

6.1.25.3 Software Settings



❶ **Time and date settings:** Configure time, date and time zone.

❷ **Automatic restart:** Configure the day and time for a restart of the device.

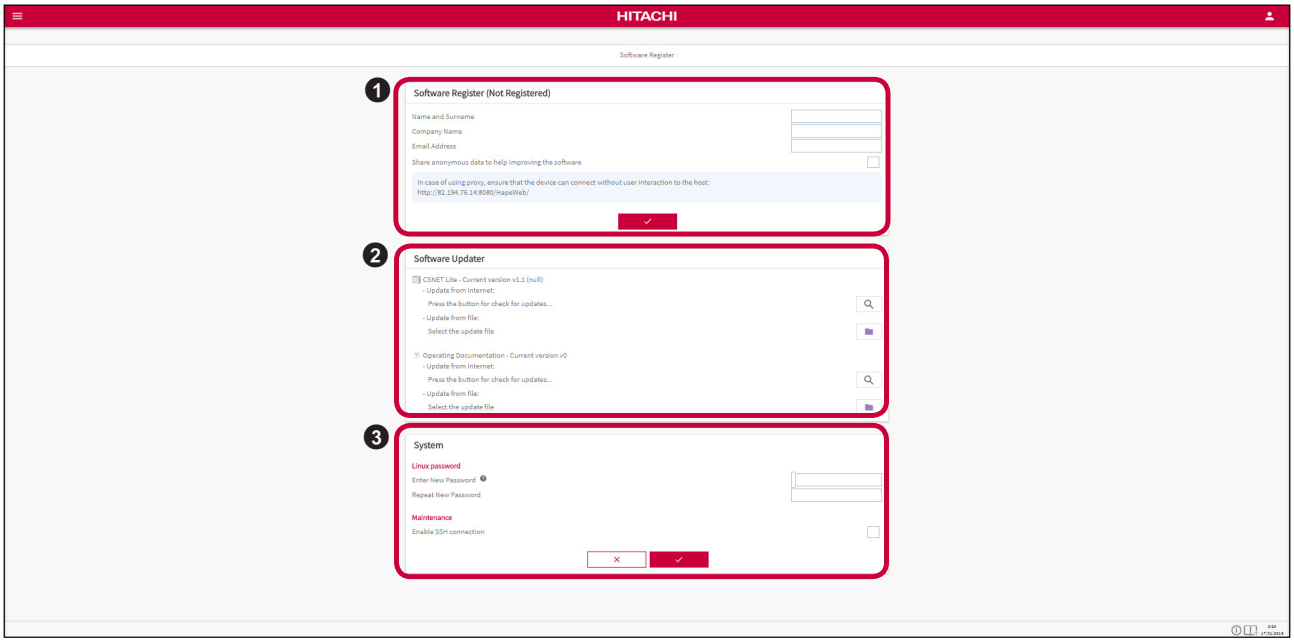
❸ **Screen settings (Only for CSNET Manager 2 T15/T10):** Configure the brightness, screensaver and capture screenshot.

❹ **Factory reset:** It is possible to make a backup of the system before the factory reset by clicking on the button.

Press the reset also the network configuration check box to delete the IP address.

Enter the current password to make the factory reset and press to start the reset.

6.1.25.4 Register And Updater



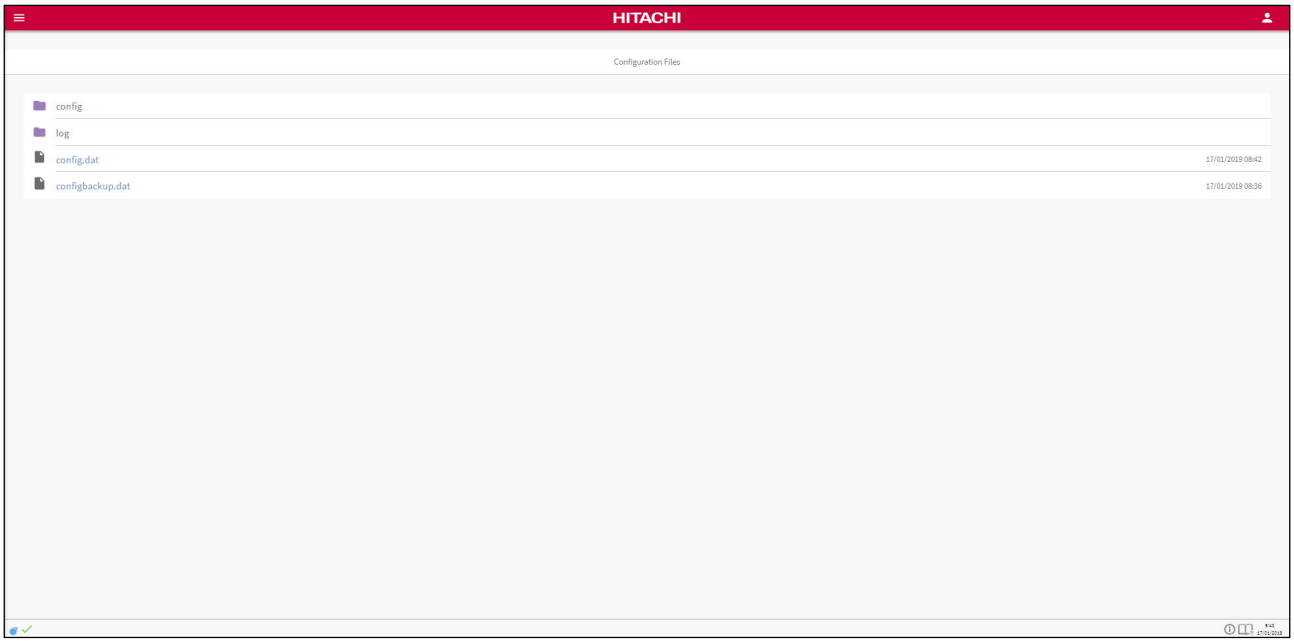
❶ **Software register:** Software register tab let the user register its software due to be able of having access to the updates server. It is possible to share anonymous data with HITACHI to help improving the software.

❷ **Software updater:** CSNET software and its documentation can be updated by using an HITACHI update file. To update directly from HITACHI servers, it is necessary to register the software. Then automatic search for updates will work and new updates will be able of being applied just by clicking the check button.

❸ **System:** To have a secure access to the operative system, the default password can be changed. In case of need to interact with the system, SSH can be activated.

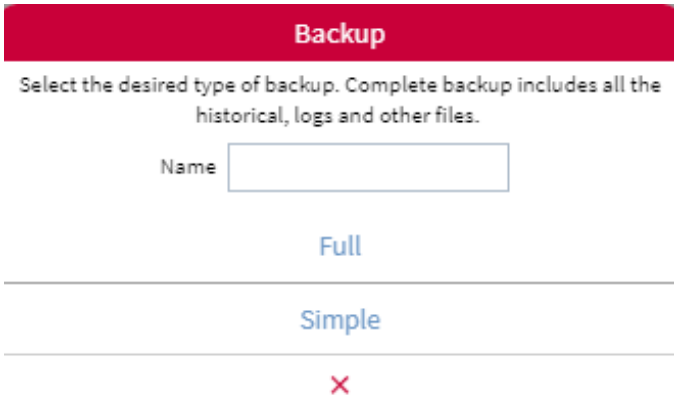
6.1.25.5 Configuration Files

Configuration files menu lets to browse inside the CSNET software configuration folder. This menu is accessible to from Local configuration menu.



6.1.25.6 Backup

Backup dialogue allows to make a full or simple backup.

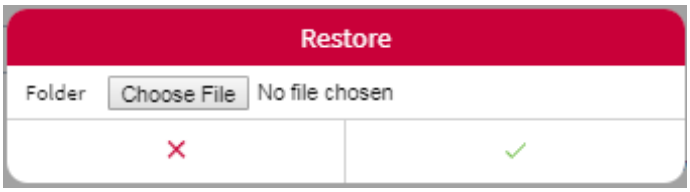


Full backup: Copy all the files including historical data, power consumption, power meter data, logs... File could have big size in case of old or big installations. The full backup is an exact copy of the CSNET Manager 2 status.

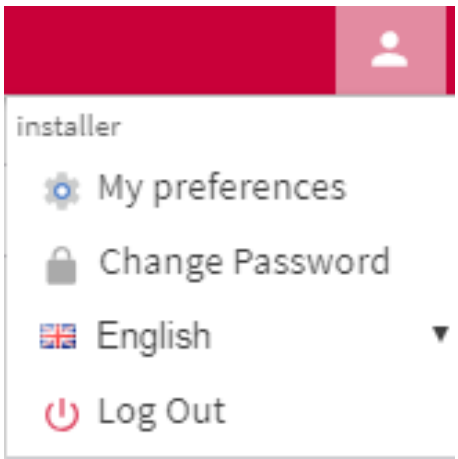
Simple backup: Copy only the configuration files of the CSNET Manager 2.

6.1.25.7 Restore

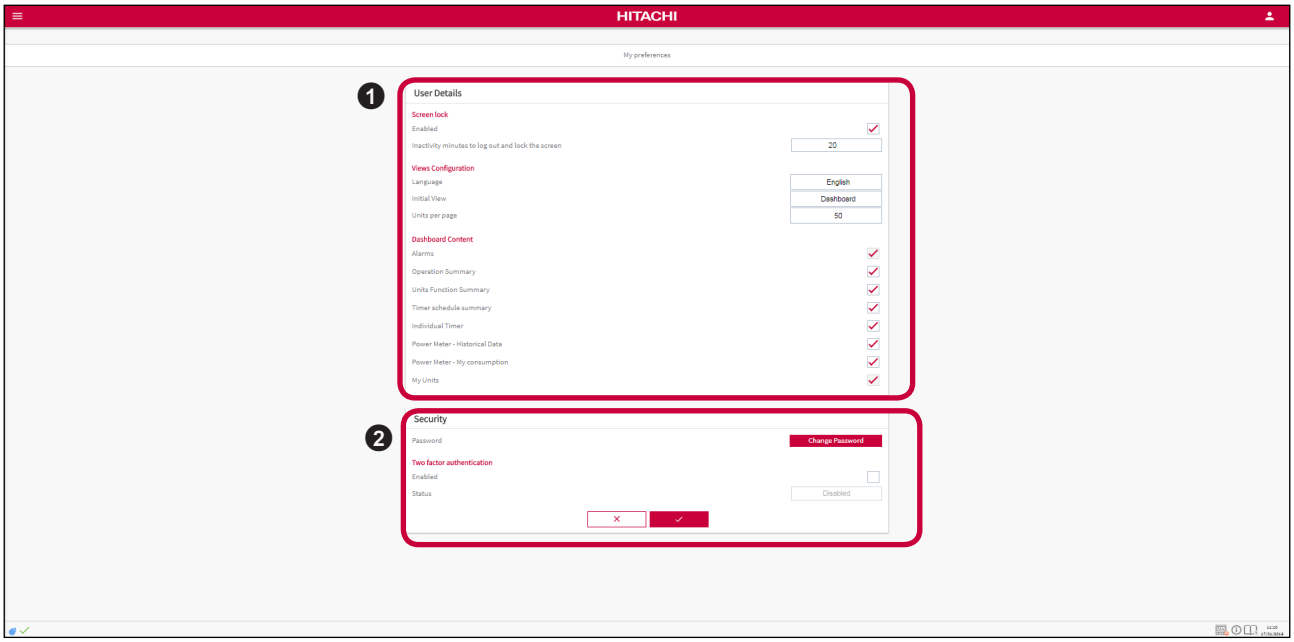
Restore dialogue allows to load a backup file to re-establish the configuration stored in the specified file.



6.1.26 User menu



6.1.26.1 My Preferences

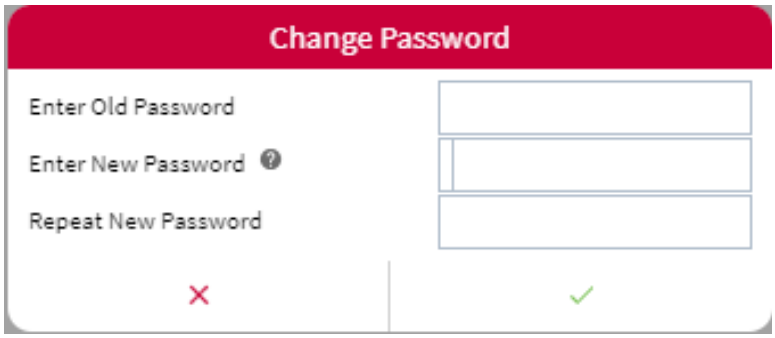


❶ **User Details:** Selection of log out and lock screen time, language, initial view, units per page and dashboard content.

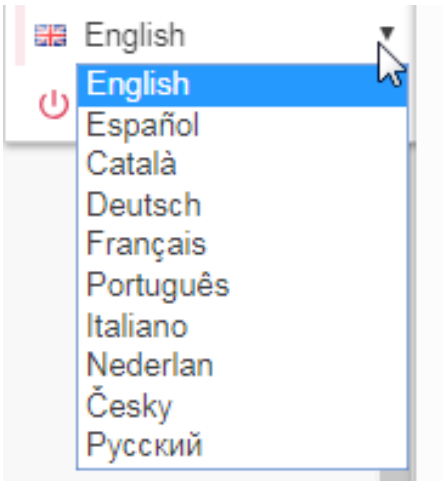
❷ **Security:** To change the password. Enable to use two factor authentication at the login time where a token number will be required.
It requires external mobile application like Google Authenticator, Microsoft Authenticator or Authy (recommended).

6.1.26.2 Change Password

Change password dialogue allows to change the old password.



6.1.26.3 Language Selection



CSNET Manager 2 is available in the following languages:

- English
- Español
- Català
- Deutsch
- Français
- Português
- Italiano
- Nederlands
- Česky
- Русский

6.1.26.4 Logout

Log out will return to the login window.

6.1.27 SECURITY

CAUTION

- *CSNET Manager 2 is designed to work in local area network, when connecting through internet, the client is responsible to ensure and apply all necessary security layers.*
- *In case of working on a local area network, the owner has taken all the actions to make its network safe against undesired Access.*

6.1.27.1 User credentials

It is recommended to avoid the most typical passwords, and it is recommended to use complex rules to define a password.

It is also recommended to avoid generic user names such as “admin” or “installer”.

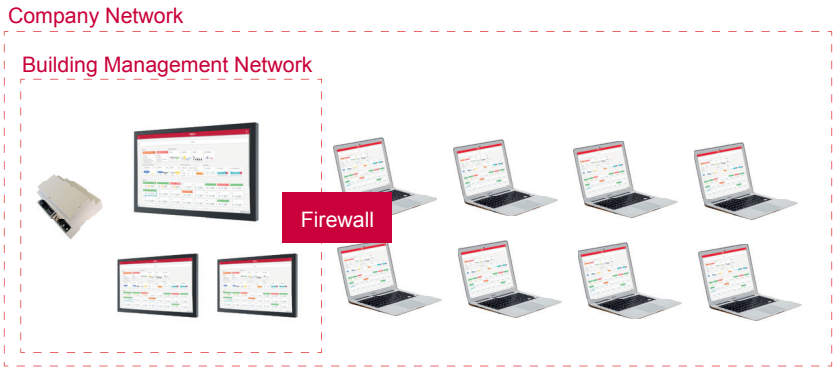
6.1.27.2 CSNET Manager 2 credentials

In order to connect a CSNET Manager 2 to another CSNET Manager 2 a default password is used.

It is recommended to change that password when configuring the installation.

6.1.27.3 Local area network case

In case that CSNET Manager 2 devices are not connected to Internet, it is recommended to virtually divide the network, creating a dedicated network for building management devices (CSNET Manager 2, HC-A64NET, Power Meters…).

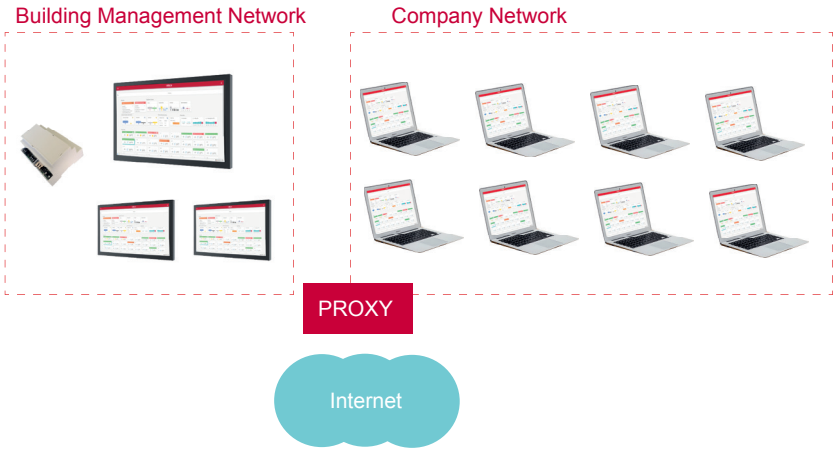


The connection between building management network and the computers connected on the normal network should be done through a firewall or router.

6.1.27.4 Connecting to Internet

When the network access to Internet, it must be used a reverse proxy.

That proxy must work in HTTPS and use perfect security.



6.1.27.5 Used ports

The ports to be opened on a firewall when we want to access from outside (Internet or other local network) are:

- 80 and 443 to connect from outside to CSNET Manager 2.
- 8080 to connect from outside to a CSNET Manager, CSNET Manager 2 or CSNET Lite.
- In case of using a CSNET WEB, the configured port on of the device. (by default 8080)
- Depending on function used:
  - 22 for SSH connection if it has been enabled. It is recommended to have it always closed except if maintenance cannot be done from inside the network.
  - 502 for Modbus. It is not recommended to let access Modbus from outside as it is not a protocol with security layer. The correct concept must be having all Modbus communication inside the local network and the port closed.
  - 8000 if another CSNET Manager, CSNET Manager 2 or CSNET Lite needs to access to a local CSNET Manager, CSNET Manager 2 or CSNET Lite from outside the network.

6.2 HC-A64NET

6.2.1 Safety summary

DANGER

- ***Read carefully this manual before performing the installation work.***
- ***Do not install this device in places accessible to the general public. Install it in electrical enclosures, which are only accessible by the usage of a tool and also provide protection to eventual electromagnetic disturbances.***
- ***Do not connect power supply before the device installation is correctly done. Always disconnect power supply from the device before any maintenance or servicing action.***

CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle properly and safely this appliance.*
- *Children should be supervised to ensure that they do not play with the appliance.*
- *This is a Class A product. In a domestic environment this product may cause radio interferences in which case the user may be required to take adequate measures.*
- *Check to ensure that the field supplied electrical components (mains power switches, circuit breakers, wires, connectors and wire terminals) have been properly selected according to the electrical data indicated on this document and they comply with national and local codes. If it is necessary, contact with your local authority in regards to standards, rules, regulations, etc.*
- *Do not install Network gateways in places:*
  - *Where any vapour, oil or other dispersed liquids could affect the device.*
  - *Where accumulation, generation or leaks of inflammable gases has been detected.*
  - *Near to any heat sources or electromagnetic noise sources.*
  - *That they are near to the sea, in saline, acid or alkaline surroundings.*

6.2.2 Installation

6.2.2.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

Cable section	0.3 mm²	≥ 0.75 mm²
Cable length	30 m	500 m

6.2.2.2 Components list

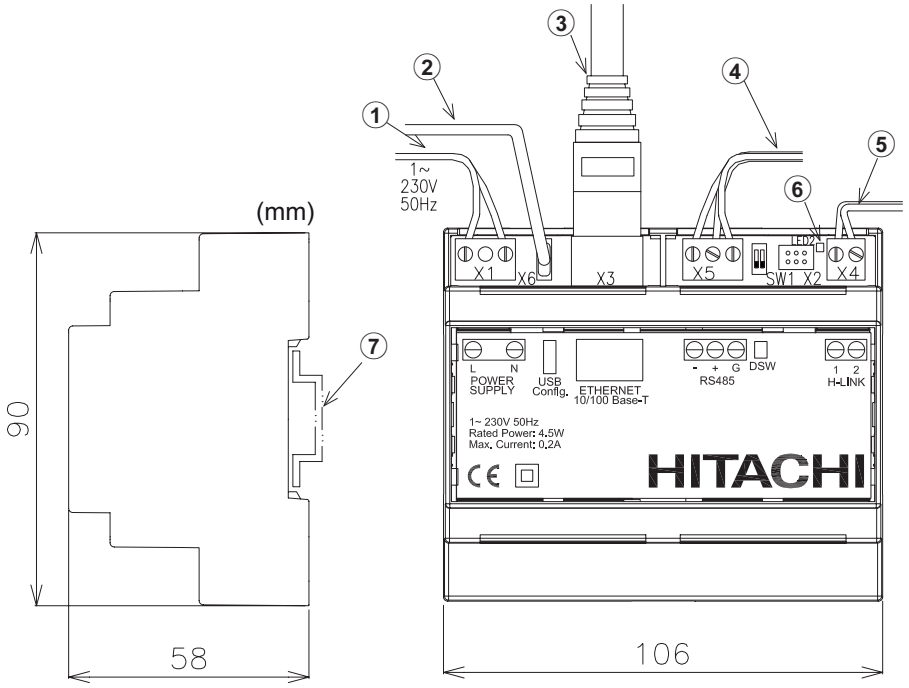
Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quant.	Comments
Gateway device		1	To control the system operation
USB Pen Drive Memory		1	To configure the gateway device
Installation and operation manual		1	Installation and operation unit instructions.

6.2.2.3 Description of the parts



No.	Description
①	External power supply
②	USB cable at configuration time only
③	RJ45 Ethernet: TCP/IP connection
④	RS485: Not available
⑤	H-LINK Communication bus with HITACHI units
⑥	Operation led indicator
⑦	Rail DIN 35 mm for assembly inside the electrical box

6.2.2.4 General data

◆ Hardware specifications

Item	Specifications
Power supply	1~ 230 V ±10% 50 Hz
Consumption	4.5W (maximum)
Outer dimensions	Width: 106 mm, Depth: 90 mm, Height: 58 mm
Weight	165 g
Assembling conditions	Indoors (installation inside an enclosure with restricted access by a tool)
Ambient temperature	0~60ºC
Humidity	20~85% (Without condensation)

◆ Communication

Ethernet

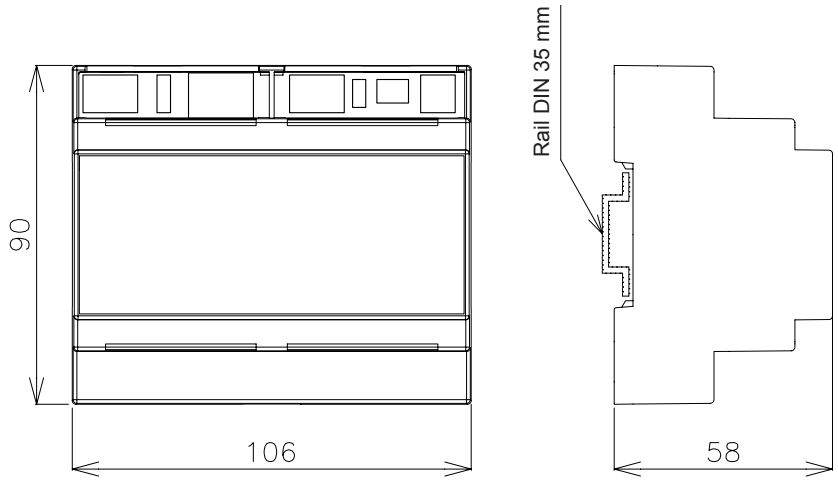
Item	Specifications
Type	TCP/IP communication
Connector	Ethernet (RJ45)
Communication line	Two twisted pair cable CAT5 or better (T-568A/T-568B)
Communication system	Full-duplex
Length	Max 100 m according IEEE 802.3

H-LINK

Item	Specifications
Communication with	HITACHI Air Conditioning series: SET FREE, UTOPIA and CENTRIFUGAL systems
Communication line	Twisted pair shielded cable, non-polarity
Communication system	Half-duplex
Communication method	Asynchronous
Speed of transmission	9600 Bauds
Length of wiring	1000 m maximum (total length of H-LINK I/O bus)
Maximum number of gateways	1 Gateway / H-LINK SYSTEM
Maximum number of indoor units	HC-A64NET → up to 64 indoor units

6.2.2.5 Dimensional data

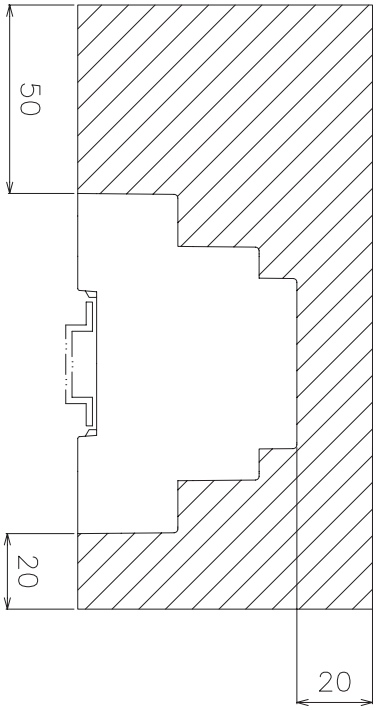
(mm)



6.2.2.6 Installation space

Keep free the grey area for the correct operation of the device.

(mm)



6.2.2.7 Installation procedure

DANGER

- ***Do not install this device in places accessible to the general public. Install it in enclosures or other places which are accessible only by the usage of a tool.***
- ***Do not connect power supply before the device installation is correctly done. Always disconnect power supply from the device before any maintenance or servicing action.***

CAUTION

- *Check to ensure that the field supplied electrical components (mains power switches, circuit breakers, wires, connectors and wire terminals) have been properly selected according to the electrical data indicated on this document and they comply with national and local codes.*
- *Any unit that is not connected or is not under power when turning on Network gateways, will not be recognized and will have to be configured later.*
- *Before power supply and turning on the Network gateways, you must ensure that:*
  - *1. All circuits to be connected are correctly applied.*
  - *2. All H-LINK connections have been set up.*
  - *3. Modbus connection has been properly done.*
- *The signals' cables should be as short as possible. Keep a distance of more than 150 mm from other power cables. Do not wire them together (although they may intersect). If they must necessarily be installed together, take the following measures to avoid noise disturbances:*
  - *For communications, use shielded wire which is earthed at one side.*

6.2.2.8 Network configuration

A computer software tool, Net configuration Tool, is supplied inside the USB stick memory for an easy and friendly configuration.

NOTE

The installation of this device requires an USB cable and Ethernet cable. HITACHI offers the accessory "Net configuration kit" which includes USB cable, Ethernet cable and an USB memory stick with the same software tool. Refer to its specific section for more information.

◆ Computer requirements

It is required to use a personal computer with Microsoft Windows 7 or higher, a free USB port and Java.

◆ Parameters under configuration

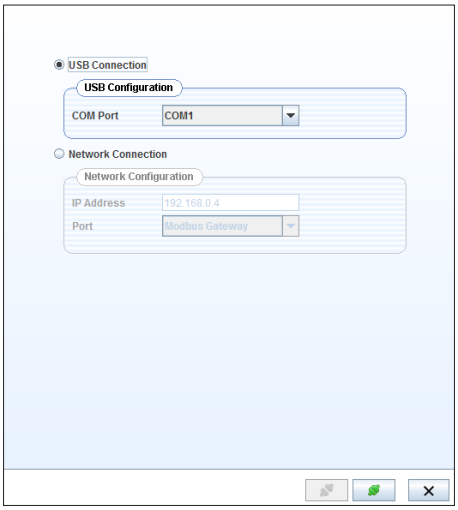
- Parity: Odd/Even/Disabled
- Communication speed: 9600/19200 Bps
- Modbus address
- Modbus TCP IP

◆ Configuration procedure

Configuration through USB port

This method is required when the device IP is unknown.

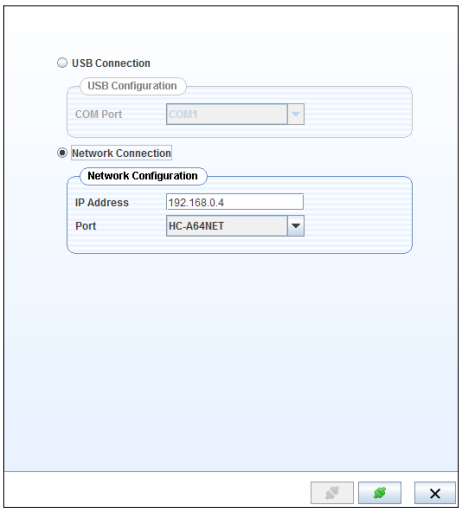
1 Connect the network device to a computer by a USB cable (field supplied or available with the Net Configuration Kit).
2 Select the communication port of the computer.
3 Press the button at screen



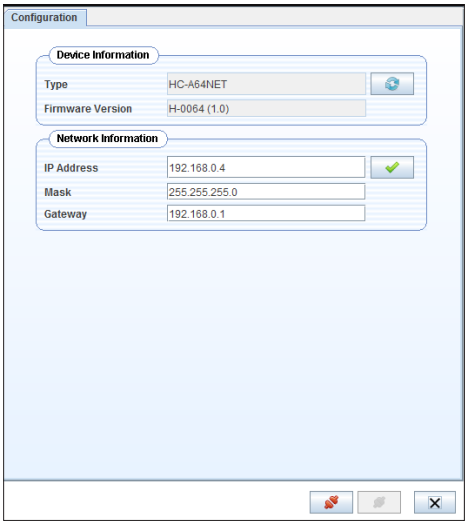
Configuration through Ethernet port

1 Connect the Network device to a computer by a ethernet cable (field supplied, or factory supplied with CSNET Manager 2 or available with the Net Configuration Kit).
2 Input the following parameters:
- IP Address: 192.168.0.4
- Port: HC-A64NET

3 Press the button at screen



Configuration of device and communication



Device information

Check that the network device is correctly displayed at the “Device information” table. Press refresh button if necessary.

Configuration of Network information

When the network device is integrated to the LAN / Modbus net by Ethernet, configure the following parameters:

- IP Address: Allow to modify the IP of the Network device port (“192.168.0.4” by default).
- Mask: Ask to your IT technician for the proper value (“255.255.255.0” by default).
- Gateway: LAN gateway address (“192.168.0.1” by default).

6.2.3 Electrical wiring

Name	Connection	Cable specification
X1	Power supply (1)	Use 0.75 mm² wires which are not lighter than the polychloroprene sheathed flexible cord (code designation 60245 IEC 57)
X3	Ethernet (1)	Category 5 or higher LAN cables PC connection: Use a crossed cable (1 cable set available in Net configuration Kit, model code 7E513206) for direct connection. LAN connection: Use a direct cable (field-supplied) for connection to a commercial distributor (Hub).
X4	H-LINK (1)	Twisted pair shielded cable 0.75 mm². Shield must be grounded in one side only.
X5	RS485 (1)	3 cores cable harness 0.75 mm² grounded in one side only. Use different colour for each cable.
X6	USB (1)	USB Mini-B plug cable (1 cable set available in Net configuration Kit, model code 7E513206)

NOTE

(1): These cables must be field supplied.

◆ DIP switch setting

Name	Function	Factory setting	Description
SW1	Configuration		SW1-1: Not used (keep always “OFF”) SW1-2: Not used (keep always “ON”)

6.2.4 Compatibility

The new HC-A64NET is compatible with all SET FREE, UTOPIA and CENTRIFUGAL units using H-LINK communication protocol.

This device is not compatible with any of the following HITACHI controllers:

- Centralised remote controls
- Building air conditioning controls
- Other HITACHI BMS gateways (LONWORKS, BACnet, KNX, FIDELIO)
- Other units of the same model

6.2.5 Alarm code

Address 19 indicates alarm code as shown in indoor unit. Refer to Service Manual for the alarm explanation and repair procedure in case of Indoor Unit or Outdoor Unit alarm.

6.2.6 Troubleshooting

Alarm codeCODE	Description	Countermeasure
LED2 is flickering	Abnormal operation	Shut down the device power supply and restore it after 5 seconds. If LED2 is still flickering contact to the HITACHI customer service

7. Gateways for building management systems

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7.1 HC-A(8/64)MB

7.1.1 Safety summary

DANGER

- ***Read carefully this manual before performing the installation work.***
- ***Do not install this device in places accessible to the general public. Install it in electrical enclosures, which are only accessible by the usage of a tool and also provide protection to eventual electromagnetic disturbances.***
- ***Do not connect power supply before the device installation is correctly done. Always disconnect power supply from the device before any maintenance or servicing action.***

CAUTION

- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle properly and safely this appliance.*
- *Children should be supervised to ensure that they do not play with the appliance.*
- *This is a Class A product. In a domestic environment this product may cause radio interferences in which case the user may be required to take adequate measures.*
- *Check to ensure that the field supplied electrical components (mains power switches, circuit breakers, wires, connectors and wire terminals) have been properly selected according to the electrical data indicated on this document and they comply with national and local codes. If it is necessary, contact with your local authority in regards to standards, rules, regulations, etc.*
- *Do not install Network / Modbus gateways in places:*
  - *Where any vapour, oil or other dispersed liquids could affect the device.*
  - *Where accumulation, generation or leaks of inflammable gases has been detected.*
  - *Near to any heat sources or electromagnetic noise sources.*
  - *That they are near to the sea, in saline, acid or alkaline surroundings.*

7.1.2 Installation

7.1.2.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

Cable section	0.3 mm^2	≥ 0.75 mm^2
Cable length	30 m	500 m

7.1.2.2 Components list

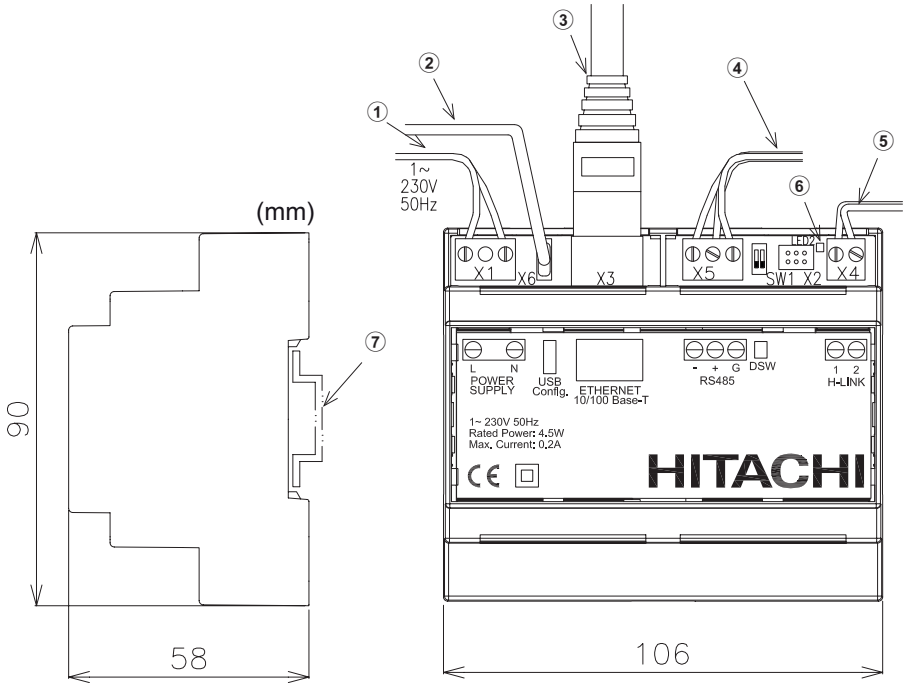
Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quant.	Comments
Gateway device		1	To control the system operation
USB stick memory		1	To configure the gateway device
Installation and operation manual		1	Installation and operation unit instructions.

7.1.2.3 Description of the parts



No.	Description
①	External power supply
②	USB cable at configuration time only
③	RJ45 Ethernet: Modbus TCP
④	RS485: Modbus RTU
⑤	H-LINK Communication bus with HITACHI units
⑥	Operation led indicator
⑦	Rail DIN 35 mm for assembly inside the electrical box

7.1.2.4 General data

◆ Hardware Specifications

Item	Specifications
Power supply	1~ 230 V ±10% 50 Hz
Consumption	4.5W (maximum)
Outer dimensions	Width: 106 mm, Depth: 90 mm, Height: 58 mm
Weight	165 g
Assembling conditions	Indoors (installation inside an enclosure with restricted access by a tool)
Ambient temperature	0~60ºC
Humidity	20~85% (Without condensation)

◆ Communication

RS485

Item	Specifications
Type	Modbus RTU
Connector	Serial Port RS485 (3 screw terminals)
Communication line	Shielded twisted pair cable, with third wire (for the common), with polarity.
Communication system	Half-duplex, multipoint serial connection
Communication method	Non parity or odd/even parity selection. Data length: 8 bits – 1 stop bit
Baud rate transmission	19200/9600 Baud
Length	Max 1200 m according EIA-485

Ethernet

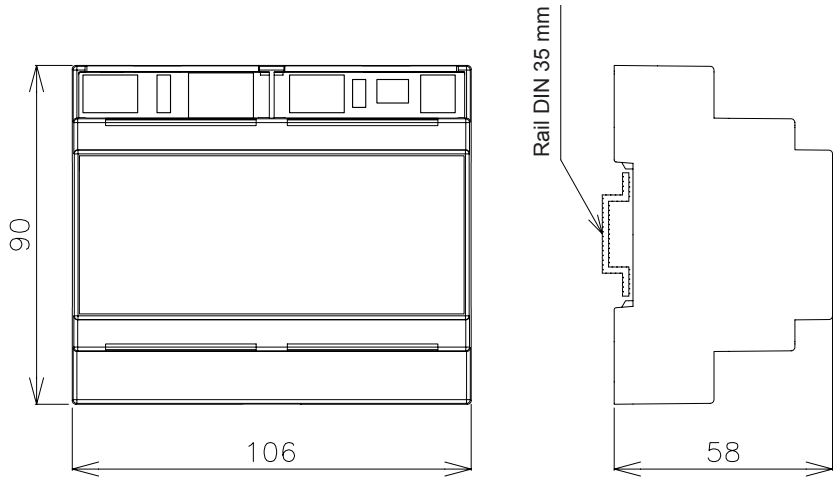
Item	Specifications
Type	Modbus TCP
Connector	Ethernet (RJ45)
Communication line	Two twisted pair cable CAT5 or better (T-568A/T-568B)
Communication system	Full-duplex
Length	Max 100 m according IEEE 802.3

H-LINK

Item	Specifications
Communication with	HITACHI Air Conditioning series: SET FREE, UTOPIA and CENTRIFUGAL systems
Communication line	Twisted pair shielded cable, non-polarity
Communication system	Half-duplex
Communication method	Asynchronous
Speed of transmission	9600 Bauds
Length of wiring	1000 m maximum (total length of H-LINK I/O bus)
Maximum number of gateways	1 Gateway (HC-A8MB,HC-A64MB)/H-LINK SYSTEM
Maximum number of indoor units	HC-A64MB → up to 64 indoor units
	HC-A8MB → up to 8 indoor units

7.1.2.5 Dimensional data

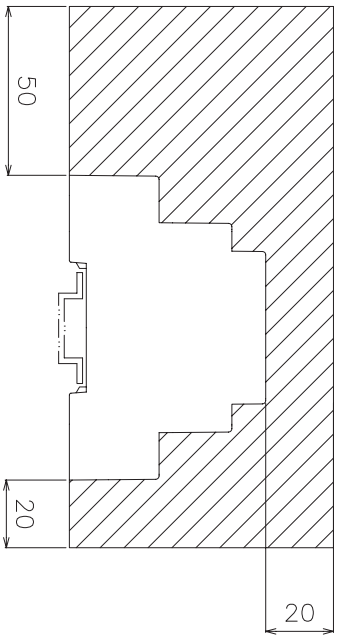
(mm)



7.1.2.6 Installation space

Keep free the grey area for the correct operation of the device.

(mm)



7.1.2.7 Installation procedure

DANGER

- ***Do not install this device in places accessible to the general public. Install it in enclosures or other places which are accessible only by the usage of a tool.***
- ***Do not connect power supply before the device installation is correctly done. Always disconnect power supply from the device before any maintenance or servicing action.***

CAUTION

- *Check to ensure that the field supplied electrical components (mains power switches, circuit breakers, wires, connectors and wire terminals) have been properly selected according to the electrical data indicated on this document and they comply with national and local codes*
- *Any unit that is not connected or is not under power when turning on Network / Modbus gateways, will not be recognized and will have to be configured later.*
  - *Before power supply and turning on the Network / Modbus gateways, you must ensure that:*
    - *1. All circuits to be connected are correctly applied.*
    - *2. All H-LINK connections have been set up.*
    - *3. Modbus connection has been properly done.*
- *The signals' cables should be as short as possible. Keep a distance of more than 150 mm from other power cables. Do not wire them together (although they may intersect). If they must necessarily be installed together, take the following measures to avoid noise disturbances:*
  - *For communications, use shielded wire which is earthed at one side.*

7.1.2.8 Network configuration

A computer software tool, Net configuration Tool, is supplied inside the USB stick memory for an easy and friendly configuration.

NOTE

The installation of this device requires an USB cable and Ethernet cable. HITACHI offers the accessory "Net configuration kit" which includes USB cable, Ethernet cable and an USB memory stick with the same software tool. Refer to its specific section for more information.

◆ Computer requirements

It is required to use a personal computer with Microsoft Windows 7 or higher, a free USB port and Java.

◆ Parameters under configuration

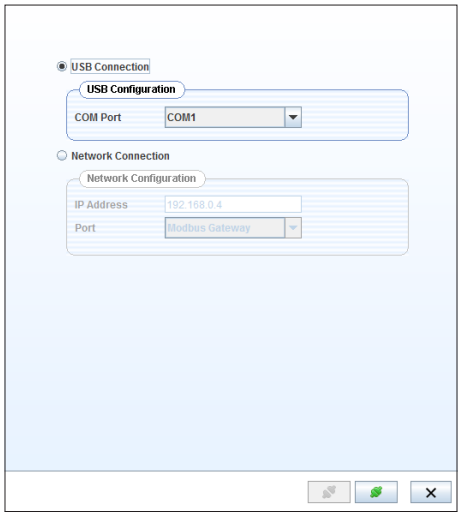
- Parity: Odd/Even/Disabled
- Communication speed: 9600/19200 Bps
- Modbus address
- Modbus TCP IP

◆ Configuration procedure

Configuration through USB port

This method is required when the device IP is unknown.

1 Connect the network device to a computer by a USB cable (field supplied or available with the Net Configuration Kit).
2 Select the communication port of the computer.
3 Press the button at screen.

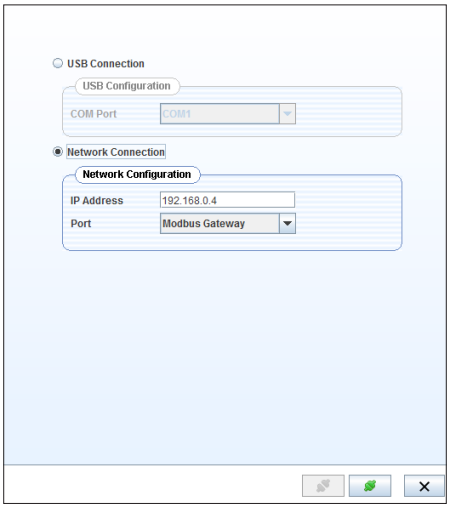


Configuration through Ethernet port

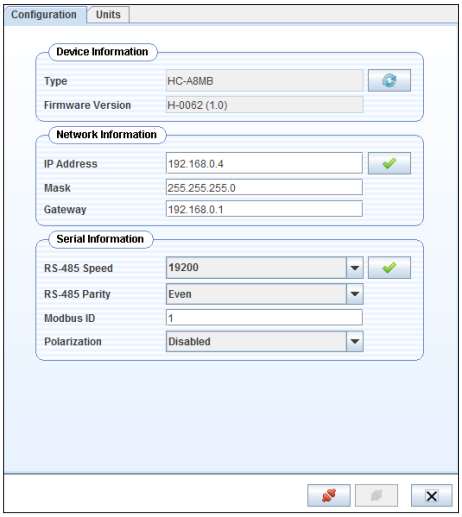
1 Connect the Network device to a computer by a ethernet cable (field supplied, or factory supplied with CSNET Manager or available with the Net Configuration Kit).
2 Input the following parameters:

- IP Address: 192.168.0.4
- Port: Modbus Gateway

3 Press the button at screen.



Configuration of device and communication



Device information

Check that the network device is correctly displayed at the “Device information” table. Press refresh button if necessary.

Configuration of Network information

When the network device is integrated to the LAN / Modbus net by Ethernet, configure the following parameters:

- IP Address: Allow to modify the IP of the Network device port (“192.168.0.4” by default).
- Mask: Ask to your IT technician for the proper value (“255.255.255.0” by default).
- Gateway: LAN gateway address (“192.168.0.1” by default).

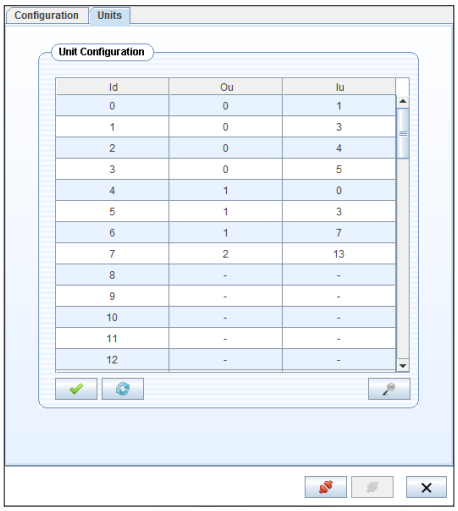
Configuration of Serial Information

When the network device is integrated to the Modbus net by serial port RS485, configure the following parameters:

- RS-485 Speed: 9600 / 19200 Bps (“19200” Bps by default)
- RS-485 Parity: None / Even / Odd parity (“Even” by default)
- Modbus Id: 1~128 (“1” by default)
- Polarization: Communication polarization (“Disabled” by default)

Units Id Configuration

- Automatic address can be done by pushing 
- Manual address configuration can be done by the assignation of each Id to a specific H-LINK address
  - Outdoor unit address (Ou) and Indoor unit address (Iu)



- Confirm the configuration by pressing 
- Refresh button shall be pressed when modify the units connected to the net 

7.1.3 Electrical wiring

Name	Connection	Cable specification
X1	Power supply (1)	Use 0.75 mm^2 wires which are not lighter than the polychloroprene sheathed flexible cord (code designation 60245 IEC 57)
X3	Ethernet (1)	Category 5 or higher LAN cables PC connection: Use a crossed cable (1 cable set available in Net configuration Kit, model code 7E513206) for direct connection. LAN connection: Use a direct cable (field-supplied) for connection to a commercial distributor (Hub).
X4	H-LINK (1)	Twisted pair shielded cable 0.75 mm^2. Shield must be grounded in one side only.
X5	RS485 (1)	3 cores cable harness 0.75 mm^2 grounded in one side only. Use different colour for each cable.
X6	USB (1)	USB Mini-B plug cable (1 cable set available in Net configuration Kit, model code 7E513206)

NOTE

(1): These cables must be field supplied.

◆ DIP switch setting

Name	Function	Factory setting	Description
SW1	Configuration		SW1-1: Modbus end resistance. SW1-2: Not used (keep always “ON”)

7.1.4 Operation

7.1.4.1 Compatibility

The new HC-A(8/64)MB is compatible with all SET FREE, UTOPIA and CENTRIFUGAL units using H-LINK communication protocol.

This device is not compatible with any of the following HITACHI controllers:

- Centralised remote controls
- Building air conditioning controls
- Other HITACHI BMS gateways (LONWORKS, BACnet, KNX, FIDELIO)
- Other units of the same model

7.1.4.2 Available data

Offset (1)	Name	Description	Values	Read/Write
0	EXIST	Exist	0: No exist 1: Exist	Read
1	SYSTEM_ADDRESS	System address	0~63	Read
2	UNIT_ADDRESS	Unit address		
3	SET_ONOFF	ON/OFF setting order	0: Stop 1: Run	Read/Write
4	SET_MODE	Mode setting order	0: Cool 1: Dry 2: Fan 3: Heat 4: Auto	Read/Write
5	SET_FAN	Fan setting order	0: Low 1: Medium 2: High 3: High2 4: Auto	Read/Write
6	SET_TSET	Setting temperature	17ºC ~ 30ºC	Read/Write
7	SET_LOUVER	Louver setting	0 ~ 7 (7 is Auto)	Read/Write
8	SET_CENTRAL	Central setting (3)	Bit 0: ON/OFF (always can be stopped) Bit 1: Mode Bit 2: Setting Temp Bit 3: Fan Bit 4: Louver	Read/Write
9	READ_ONOFF	ON/OFF status	0: OFF 1: ON	Read
10	READ_MODE	Mode status	0: Cool 1: Dry 2: Fan 3: Heat 4: Auto	Read
11	READ_FAN	Fan status	0: Low 1: Medium 2: High 3: High2 4: Auto	Read
12	READ_TSET	Setting temperature status	17ºC ~ 30ºC	Read
13	READ_LOUVER	Louver status	0 ~ 7 (7 is Auto)	Read
14	(Not used)	(Not used)	(Not used)	(Not used)
15	TIN	Inlet temperature reading (2)	-63ºC ~ 63ºC	Read
16	TOUT	Outlet temperature reading (2)	-63ºC ~ 63ºC	Read
17	TGAS	Gas pipe temperature reading (2)	-63ºC ~ 63ºC	Read
18	TLIQUID	Liquid pipe temperature reading (2)	-63ºC ~ 63ºC	Read
19	ERROR_CODE	Alarm code	Alarm unit from 7-segment	Read
20	STOP_CAUSE	Compressor stop cause	(Read unit service manual)	Read
21	VALVE_OPEN	Indoor unit expansion valve opening	0~100	(Not used)

Offset (1)	Name	Description	Values	Read/Write
22	OPER_CONDITION	Unit operation condition	0: OFF 1: Thermo-OFF 2: Thermo-ON 3: Alarm	Read
23	(Not used)	(Not used)	(Not used)	(Not used)
24	AMBIENT TEMPERATURE	Ambient temperature (2)	-63ºC ~ 63ºC	Read
25	RCS_TEM	Remote control switch temperature (only when available in the unit) (2)	-63ºC ~ 63ºC	Read
26	RCS_CONFIG	Remote control switch configuration	b0: 0 Master / 1 Slave b1: 0 wih RCS / 1 Without RCS	Read/Write
27	RCS_GROUP	Remote control switch group	0: No group 1~255	Read/Write
28~30	(Not used)	(Not used)	(Not used)	(Not used)
31	REM_TEM	Remote sensor temperature (2)	-63ºC ~ 63ºC	Read

NOTE

- *(1): Register address is calculated as: "N + (Address * 32) + Offset" where:*
  - *N: Data table position is 2000, position 20000 is also available to maintain compatibility with old Modbus gateway.*
  - *Address: Indoor unit address as configured by configuration software.*
- *(2): These numbers refer to signed 16-bit value using 2-complement format for negative values.*
- *(3): Bit 0 (ON/OFF) and Bit 4 (Louver) selectable only when all centrals are activated. In order to full lock setting from RCS (Central shown in RCS) set this register to 31.*

7.1.5 Alarm code

Address 19 indicates alarm code as shown in indoor unit. Refer to Service Manual for the alarm explanation and repair procedure in case of Indoor Unit or Outdoor Unit alarm.

7.1.6 Troubleshooting

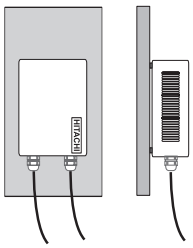
Alarm code	Description	Countermeasure
LED2 is flickering	Abnormal operation	Shut down the device power supply and restore it after 5 seconds. If LED2 is still flickering contact to the HITACHI customer service.

7.2 HC-A16KNX

7.2.1 Safety summary

⚠ CAUTION

- *Do not connect voltage input to the control system before preparation for test run has been correctly completed.*
- *Read this manual carefully before performing installation work.*
- *Read this manual in order to configure the HC-A16KNX.*
- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle properly and safely this appliance.*
- *Children should be supervised to ensure that they do not play with the appliance.*
- *Do not install HC-A16KNX in places:*
  - *With vapour, oil or dispersed liquids.*
  - *With heat sources nearby (sulphuric surroundings).*
  - *Where accumulation, generation or leaks of inflammable gases has been detected.*
  - *That are near the sea, in saline, acid or alkaline surroundings.*
- *Install HC-A16KNX away from possible sources of electromagnetic waves.*
- *Respect local electrical standards.*
- *Use a power circuit that is not subject to peak demands.*
- *Ensure that there is enough free space around the HC-A16KNX so that the heat may dissipate adequately (refer to "7.2.2.7 Installation procedure").*
- *If you install the HC-A16KNX in vertical position, install the power supply in the lower part and the temperature control outputs in the upper part.*



7.2.2 Installation

7.2.2.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

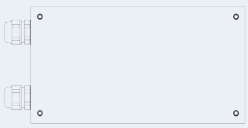
Cable section	0.3 mm²	≥ 0.75 mm²
Cable length	30 m	500 m

7.2.2.2 Components list

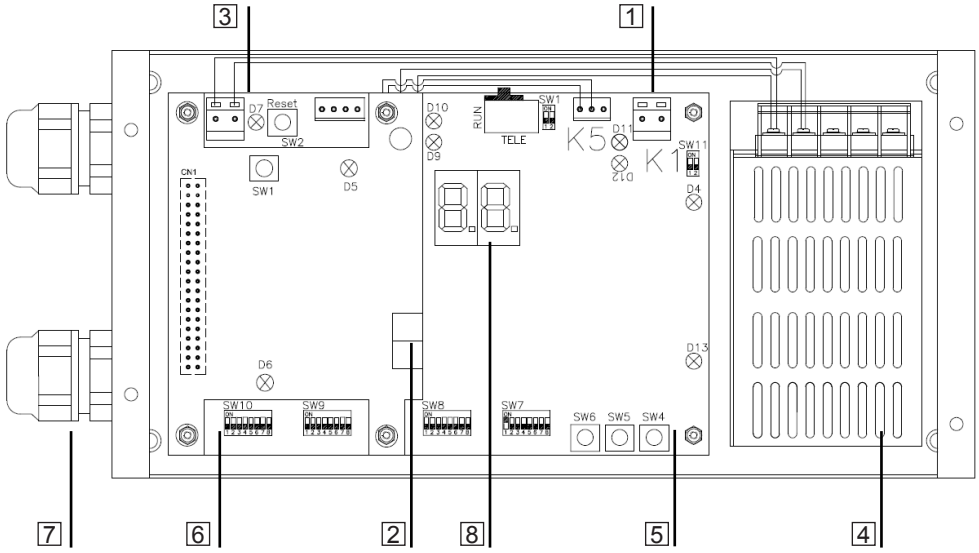
Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quant.	Comments
HC-A16KNX		1	To control the system operation using this KNX gateway.
Installation and operation manual		1	Installation and operation unit instructions.

7.2.2.3 Description of the parts



1 K1: H-LINK Connector

2 KNX port

3 K3: +5V DC Power connection

4 Power source: 230V AC / 5V DC

5 H-LINK PCB

6 KNX PCB

7 Packing glands (x2)

8 7-segments

7.2.2.4 General data

◆ Hardware Specifications

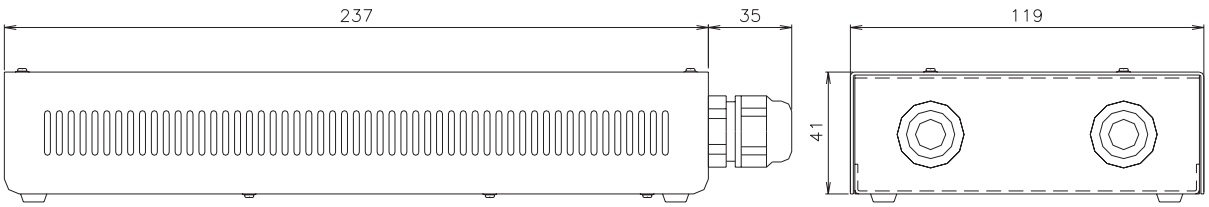
Item	Specifications
Power supply	1~230 V ±10% 50Hz
Consumption	25 W (maximum)
Outer dimensions	Width: 143 mm, Depth: 302 mm, Height: 76 mm
Weight	1.75 kg
Assembling conditions	Indoors (in a control panel or desktop)
Ambient temperature	0~40°C
Humidity	20~85% (Without condensation)

H-LINK

Item	Specifications
Communication with	HITACHI PACKAGED
Communication line	Twisted pair shielded cable, non polarity
Communications system	Half-duplex
Communication method	Asynchronous
Speed of transmission	9600 Bauds
Length of wiring	1000 m maximum (total length of H-LINK I/O bus)
Maximum number of HC-A16KNX	8 HC-A16KNX/H-LINK SYSTEM (PACKAGED)

7.2.2.5 Dimensional data

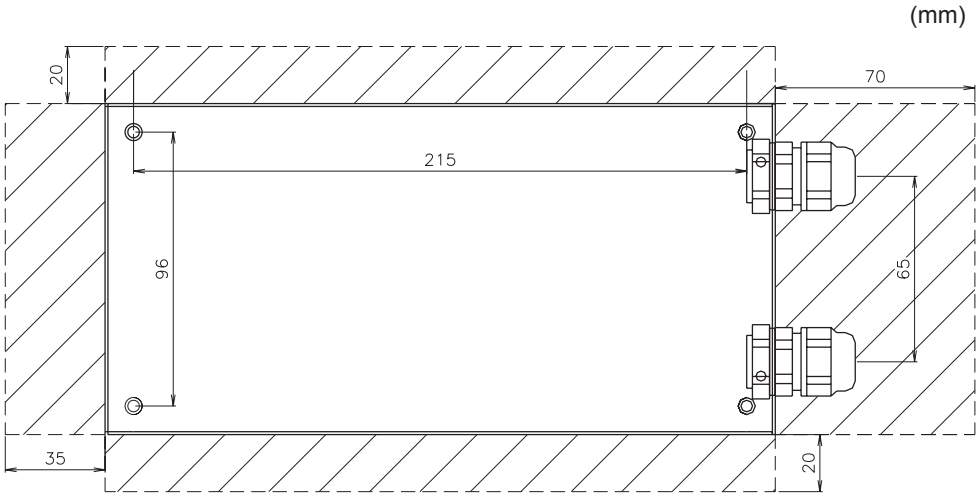
(mm)



7.2.2.6 Installation space

Keep free grated area for ventilation and cable connection.

(mm)



7.2.2.7 Installation procedure

Perform the following procedure:

1 Remove the rubber supports.

2 Unscrew the 4 screws from the top cover and remove it.

3 Attach the box to the rear vertical board from the inside with M4 screws (not provided) and place 3 mm washers on the outside to separate the box from the wall.

4 Reinstall the top cover. Be careful to position it correctly.

DANGER

- ***Always disconnect the power supply for HC-A16KNX when handling the machine, in order to avoid electrical discharges.***
- ***Do not connect the interface to the power supply until the installation has been completed.***
- ***Comply strictly with local security codes and regulations when connecting the machine to the electric network.***
- ***You will need a three-wire cable (two cores and earth) with a suitable plug at one end.***

CAUTION

The signals' cables should be as short as possible. Keep a distance of more than 150 mm from other power cables. Don't wire them together (although they may intersect). If they must necessarily be installed together, take the following measures to avoid noise:

- *Protect the signal cable with a metal tube which is earthed at one end.*
- *For communications, use shielded wire which is earthed at one end.*

NOTE

- *Before applying power and turning on HC-A16KNX you must ensure that:*
  - *All circuits to be connected are correctly applied.*
  - *All H-LINK connections have been set up.*
  - *Follow the local regulations for the electrical installation of HC-A16KNX and associated circuits.*
- *Any unit that is not connected or is not under power when turning on HC-A16KNX, will not be recognised and will have to be configured later.*

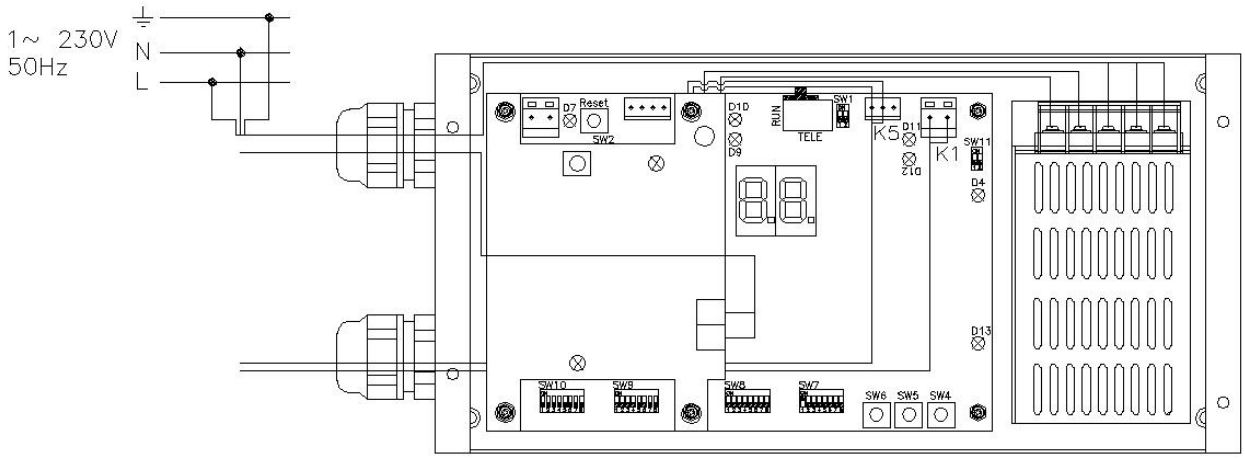
7.2.3 Electrical wiring

In order to run, HC-A16KNX must be connected to the corresponding input and output signals, power supply cables and H-LINK.

No.	Connection	Cable specifications
1	Power supply circuit 1~ 230V 50Hz 25W (With protection circuit)	Select wires according local regulations (Recommended minimum 1.5 mm² H05RN-F)
2	KNX	2 cables harness 0.75 mm² (H05RN-F type). Use different colour for each cable. (KNX Port)
3	H-LINK	Communication cables for the connection of HC-A16KNX to an HITACHI installation, via CSNET WEB or any HITACHI unit using same H-LINK terminals. Twisted pair shielded cable 0.75 mm² (H05RN-F type). Shield must be grounded in one side only.
4	PCBs Power supply +5V DC. Imax.= 5 A DC	Pair cable 0.75 mm² (H05RN-F TYPE)

NOTE

All cables, except 4 are field supplied.



Field supplied Protections:

CB/EF: 5A

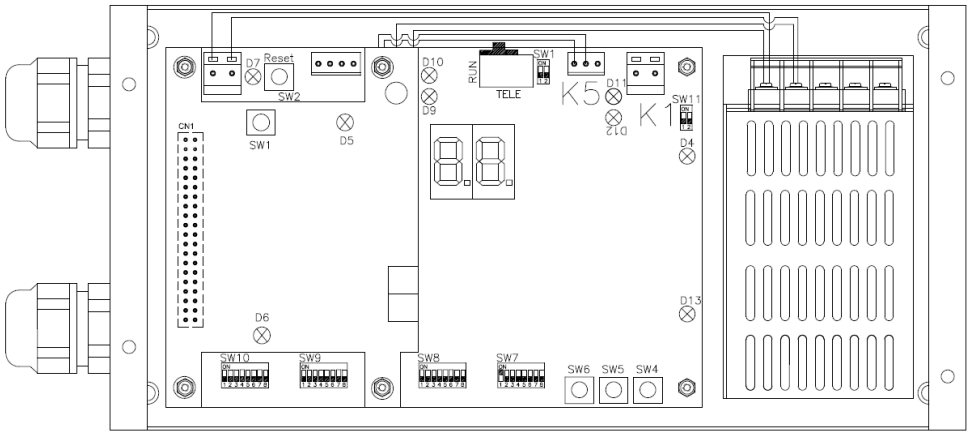
ELB: 2/40A/30mA

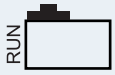
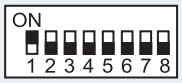
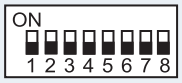
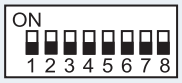
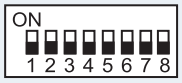
CB: Circuit Breaker

EF: Electric Fuse

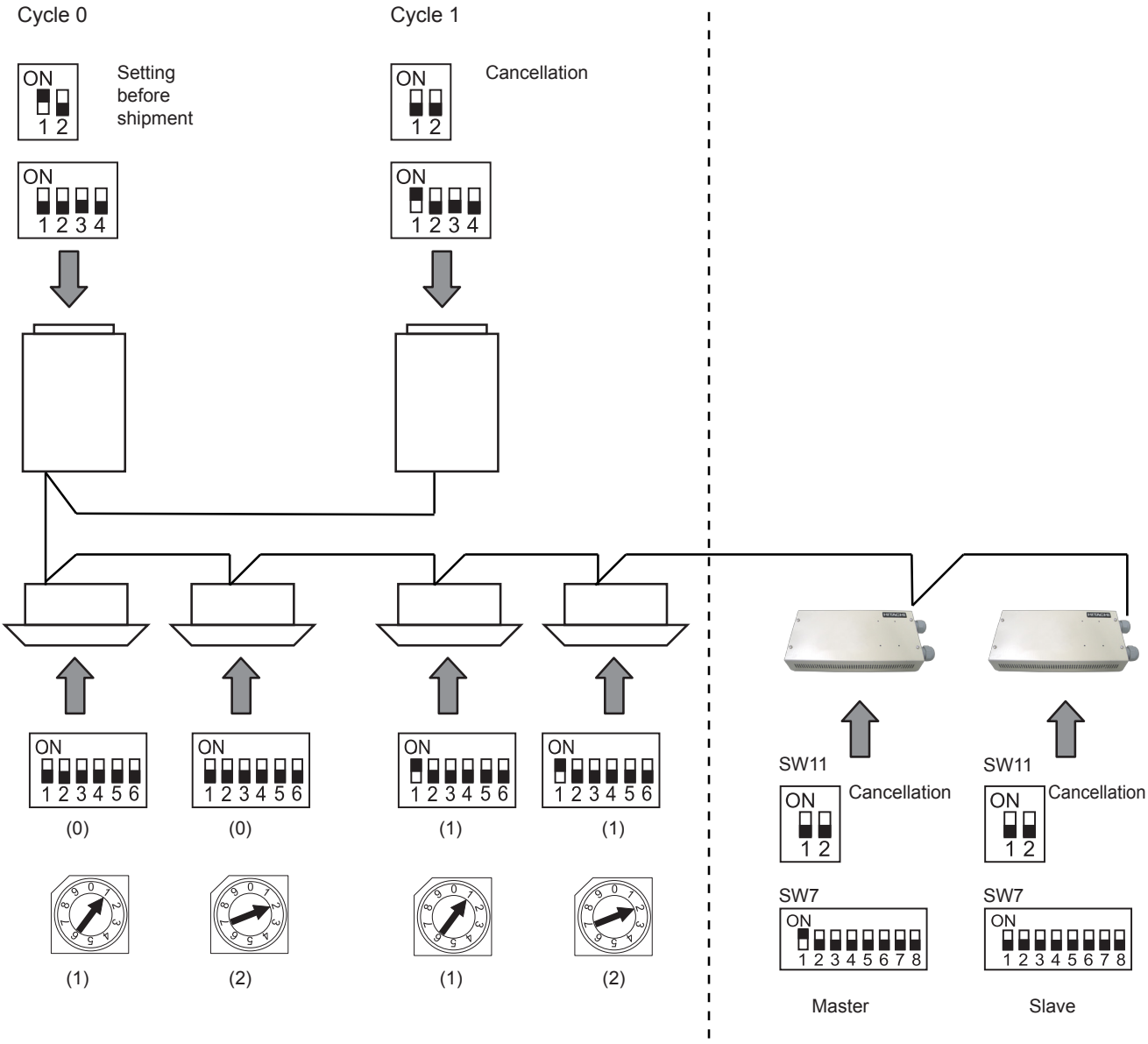
ELB: Earth Leakage Breaker

◆ DIP switch setting



Name	Function	Factory setting	Description
SW1	Reset KNX PCB	–	Reset button. To be used in case of KNX communication has been locked.
SW2	Reset	–	Reset button. To be used in case of program has been locked.
SW3 (TELE)	Not available		Factory purposes. Never change it.
SW4	Configuration	–	Setting functions
SW5	Configuration	–	Setting functions
SW6	Configuration	–	Setting functions
SW7	Options 2		Configuration as MASTER HC-A16KNX: SW7-1=ON. Only one HC-A16KNX can be set as a MASTER HC-A16KNX. Setting by default. Configuration as SLAVE HC-A16KNX: SW7-1= OFF. It should be 1 HC-A16KNX configured as MASTER, all the rest of HC- A16KNX must be configured as SLAVE.
SW8	Options 1 (Application type)		All in off (no function)
SW9	Not available		All in off (no function)
SW10	Not available		All in off (no function. Do not change)
SW11	H-LINK DSW		SW11-1: H-LINK end resistance SW11-2: Not used
D4, D11	H-LINK	–	H-LINK transmission
D5	Not used	-	
D6	Units configuration alarm	–	ON- No alarms OFF- Units not configured
D7	Power	–	Power supply ON/OFF
D9/D10	Not used	-	-
D12	KNX	-	Internal communication between the KNX PCB and the H-LINK PCB.
D13	Operation	-	Normal software operation

◆ Example



Checking procedure

Checking of HC-A16KNX consist in disconnect and connect the HC-A16KNX and check that in the 7-segments display appears the current software value.

NOTE

Ask your HITACHI distributor what check value has the last version of firmware.

7.2.4 Operation

7.2.4.1 KNX Address

KNX Default address for this device is 1.1.1, it can later be modify using ETS software from KNX Association.

7.2.4.2 Available data

The maximum numbers of units that can be controlled using HC-A16KNX are 16. Each unit has 15 communication objects. These objects are explained as follows:

Address	Name	Length	Description	Values	Read/Write
0	Unit-N On/Off	1 bit	ON / OFF order.	0-ON 1-OFF	Read/Write
1	Unit-N Mode	1 byte	Mode setting order.	0 = Auto 1 = Heat 2 = Dry 3 = Fan 4 = Cool	Read
2	Unit-N Fan	1 byte	Fan setting order.	0~30%= Low 31~60%= Medium 61~100%= High	Read/Write
3	Unit-N Louver Scale	1 byte	Louver position setting.	0~15% = Pos0 16~30% = Pos1 31~45% =Pos2 46~60% = Pos3 61~75% =Pos4 76~90% = Pos5 91~100% = Pos6	Read/Write
4	Unit-N Louver Auto	1 bit	Automatic Louver Setting.	1 = Louver Automatic active	Read/Write
5	Unit-N Set Temperature	2 bytes	Setting temperature.	17~30ºC	Read/Write
6	Unit-N Ambient Temperature	2 bytes	Ambient Temperature.	17~30ºC	Read
7	Unit-N Alarm	1 bit	Alarm notification.	1 = alarm on unit N	Read
8	Unit-N Alarm Code	1 byte	Alarm code.	See errors table from HC-A16KNX	Read
9	Unit-N Mode Cool	1 bit	Cool mode order.	1 = Mode Cool Active	Read/Write
10	Unit-N Mode Dry	1 bit	Dry mode order.	1 = Mode Dry Active	Read/Write
11	Unit-N Mode Fan	1 bit	Fan mode order.	1 = Mode Fan Active	Read/Write
12	Unit-N Mode Heat	1 bit	Heat mode order.	1 = Mode Heat Active	Read/Write
13	Unit-N Mode Auto	1 bit	Auto mode order.	1 = Mode Auto Active	Read/Write
14	Unit-N Prohibit	1 bit	On Yes works only with KNX orders, on No, the unit could receive local orders and from KNX too.	0 = No 1 = Yes	Read/Write

NOTE

Address from 9 to 13 will work together. They are used to set the function mode. Only one of them could be activated at the same time. When one of these bits will be set as 1, the rest will be changed at 0.

◆ **Global objects**

Address	Name	Length	Description	Values
1~16	Unit-1~16	1 bit per unit	Shows if HC-A16KNX used the communication with the H-LINK PCB for unit N where N is the address to read.	1=Communication works
240	Communication alarm	1 bit	With value is 1 means that is not possible to communicate with the H-LINK PCB. On 0, communication is working properly.	1=Communication Alarm

◆ Error code list

Code (in Hexadecimal)	Description
0	No Error
1~98	See HITACHI documentation
99	Unit not configured

7.2.4.3 Configuration method

Every HC-A16KNX can control up to 16 indoor units, considering that in the same H-LINK can be connected up to 160 indoor units, it must be set which indoor units are selected for each HC-A16KNX.

Setting concept consist in an “Id” table listing up to 16 numbers for the assignation of each OU+IU addresses as shows the following example.

Id	Refrigerant cycle address	Indoor unit address
00	00	00
01	00	01
02	00	02
03	00	03
04	00	04
05	00	05
06	00	06
07	00	07
08	00	08
09	00	09
10	00	10
11	00	11
12	00	12
13	00	13
14	12	02
15	25	61

NOTE

- *KNX software (ETS) is using indoor units from 1 to 16, corresponding to the ID from 0 to 15, so BMS is using indoor unit Id+1. For example, in case you have 6 indoor units, declared as unit 1 to 6 on ETS, Ids have to be set from 0 (unit 1) to 5 (unit 6).*
- *It can be selected for 1 HC-A16KNX up to 16 indoor units from 16 different refrigerant cycles or 16 indoor units from the same refrigerant cycle.*

CAUTION

Be sure not to set same Indoor Unit to more than one HC-A16KNX. This error is undetectable and can cause undesired operations.

Switch configuration for the previous example

Step number	Action	7 segments (display)	Remarks
			For "id" 14:
1	Press SW4 for 3 seconds	id	Configuration mode selected
2	Press SW4	00	Id selection (IU No.) From 0 to 15 (By pushing SW5 ▲ and SW6 ▼)
3	Press SW4	oU	Refrigerant cycle address
4	Press SW4	--→00	Refrigerant cycle address selection from 0 to 63 (By pushing SW5 ▲ and SW6 ▼)
5	Press SW4	iU	Indoor unit address
6	Press SW4	--→00	Indoor unit address selection from 0 to 63 (By pushing SW5 ▲ and SW6 ▼)
			For "id" from 01 to 13 repeat steps 1 to 6
7	Press SW4 for 3 seconds	id	Configuration mode selected
8	Press SW4	00→01	Id selection (IU No.) from 0 to 15 (By pushing SW5 ▲ and SW6 ▼)
9	Press SW4	oU	Refrigerant cycle address
10	Press SW4	--→00	Refrigerant cycle address selection from 0 to 63 (By pushing SW5 ▲ and SW6 ▼)
11	Press SW4	iU	Indoor unit address
12	Press SW4	--→01	Indoor unit address selection from 0 to 63 (By pushing SW5 ▲ and SW6 ▼)
			For "id" 14:
85	Press SW4 for 3 seconds	id	Configuration mode selected
86	Press SW4	00→ 14	Id selection (IU No.) from 0 to 15 (By pushing SW5 ▲ and SW6 ▼)
87	Press SW4	oU	Refrigerant cycle address
88	Press SW4	--→ 12	Refrigerant cycle address selection from 0 to 63 (By pushing SW5 ▲ and SW6 ▼)
89	Press SW4	iU	Indoor unit address
90	Press SW4	--→02	Indoor unit address selection from 0 to 63 (By pushing SW5 ▲ and SW6 ▼)
			For "id" 15:
91	Press SW4 for 3 seconds	id	Configuration mode selected
92	Press SW4	00→ 15	Id selection (IU No.) from 0 to 15 by pushing SW5 ▲ or SW6 ▼
93	Press SW4	oU	Refrigerant cycle address
94	Press SW4	--→25	Refrigerant cycle address selection from 0 to 63 (By pushing SW5 ▲ and SW6 ▼)
95	Press SW4	iU	Indoor unit address
96	Press SW4	--→61	Indoor unit address selection from 0 to 63 (By pushing SW5 ▲ and SW6 ▼)

7.2.5 Troubleshooting

Nº	Alarm code	Description	Countermeasure
1	EE⟶61	Indoor Units have not communicated with HC-A16KNX for more than 10 min.	**1** Ensure that H-LINK connection is correctly done in HARC (K1) and also Indoor Units **2** Ensure that Power are supplied to Air Conditioners
2	EE⟶63	Indoor Units have never communicated with HC-A16KNX	**1** Ensure that H-LINK connection is correctly done in HARC (K1) and also in Indoor Units **2** Ensure that Power are supplied to Air Conditioners
3	D7 is always OFF	No LED is flickering on PCB and 7 segments are OFF	**1** Ensure that 230 are supplied to Power Source **2** Ensure that +5V DC is supplied to K3 **NOTE** • *Power source output DC signal has a rotary switch that must be correctly set to get +5V DC.* • *D7 must be in ON*
4	D12 is never flickering	HC-A16KNX is not reading/sending data (D12 is never flickering)	Check connection between MODBUS devices and K5
5	D12 is not flickering	HC-A16KNX is not operating (D13 flickering means normal communication)	Check that KNX is connected and KNX power supply is ON.
6	D4 and D11 are not flickering	There is no H-LINK communication from HC-A16KNX	**1** D4 is flickering but D11 is not flickering. ⟶ See line Nº1, countermeasure 1 **2** D4 neither D11 are not flickering. ⟶ See line Nº1, countermeasure 2

7.3 KNX001

7.3.1 Safety summary

CAUTION

- *This interface KNX001 must be installed by skilled personal (electrician, EIB installer or other skilled technician).*
- *Do not connect voltage input to the control system before installation has been correctly completed.*
- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle properly and safely this appliance.*
- *Children should be supervised to ensure that they do not play with the appliance.*
- *Install KNX001 away from possible sources of electromagnetic waves.*
- *Respect local electrical standards.*
- *Use a power circuit that is not subject to peak demands.*
- *Ensure that there is enough free space around the KNX001 so that the heat may dissipate adequately (refer to "7.3.3.2 Installation space").*
- *If you install the KNX001 in vertical position, install the power supply in the lower part and the temperature control outputs in the upper part.*

Do not install KNX001 in places...:

- *outdoor.*
- *with vapour, oil or dispersed liquids.*
- *exposed to sun radiation.*
- *with heat sources nearby (sulphuric surroundings).*
- *where accumulation, generation or leaks of inflammable gases has been detected.*
- *that are near the sea, in saline, acid or alkaline surroundings.*
- *with wet environment.*

NOTE

- *Read this technical information carefully before performing installation and configuration works.*
- *This technical document introduces the new CSNET WEB / CSNET Manager accessory KNX001 For additional information concerning programming and software operation, please refer to the Technical Catalogue in CD ROM of CSNET WEB / CSNET Manager.*

7.3.2 The KNX System Description

This section gives a general description of the KNX perspective.

KNX001 is connected directly to the KNX bus, and behaves as one more part of the KNX system with the same configuration and operation characteristics.

Internally, the electronic circuit that is connected to the KNX bus is optoisolated from the power supply and from the rest of the equipment's electronics.

KNX001 receives, manages and sends all the messages from the KNX bus that refer to its configuration and operation.

On receiving messages sent to addresses of the KNX group, it sends the corresponding messages to CSNET WEB / CSNET Manager, in order to keep both systems synchronized.

When a change in the signal from CSNET WEB / CSNET Manager is detected, the message is sent to the KNX bus of the associated KNX group address, in order to keep both systems synchronized.

The status of the KNX bus is checked continuously. If loss of bus is detected, due for example to a power failure in the KNX bus, when the KNX bus is restored KNX001 will detect it and will perform the *Updates* of the groups marked with this property, i.e it will make read requests for the group addresses. This behaviour can be disabled.

◆ Definition of signals

Each signal from the external system uses the following KNX properties:

Property	Description
Signal	Signal description Only for information. Permits a signal to be identified easily.
EIS (DataPoint)	The type of KNX data item used to express the value of the signal. Depends on the type of external system signal in each case. In some integrations it can be selected, while in others it is fixed, given the intrinsic nature of signals.
Group	The KNX group with which the signal is associated. It is also the group to which reading (R), writing (W), transmission (T) and updating (U) are applied. It is the sending group.
Listening addresses	Addresses that will act on the signal apart from the Group.
R	Read If enabled, it will permit read messages from this Group.
W	Write. If enabled, it will permit write messages from this Group.
T	Transmission. If enabled, when the value of the signal changes due to a change in the value of the external system, a write message will be sent from the Group to the KNX bus.
U	Update. If enabled, on starting KNX001 or after the KNX bus falls over, read messages will be sent to the KNX bus of the sending group. The value received will be sent to the external system as if it had been received by written message. If U2 is selected, instead of using the address of the sending group, the first listening address will be used.
Enable	If enabled, the signal is enabled in IntesiBox, otherwise it behaves as if the signal has not been defined or does not exist. Permits signals to be disabled, without having to delete them.

◆ Limitations

Element	Maximum	Notes
Number of Packaged	128	Number of IU A/C
Number of KNX Groups	5920	Total number of KNX Groups that can be used in KNX001
Number of listening addresses	1000	Number of KNX groups that can be used as listening addresses
Number of listening addresses per KNX Group	255	Number listening addresses that can be associated with a KNX group

7.3.2.1 Components list

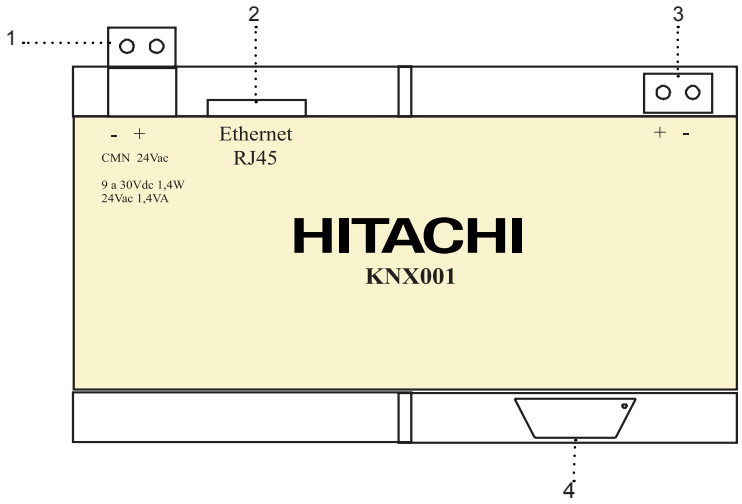
Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quant.	Comments
KNX001 device		1	To control the system operation using this KNX gateway.
Console cable		1	DB9 male - DB9 female (1,8 m length).
CD ROM		1	Software configuration, compatible with OS Windows® and user manual.
Power adaptor		1	12 V DC, 300 mA
Installation and operation manual		1	Installation and operation unit instructions.

7.3.2.2 Description of the parts



1. Power Supply Terminals
2. CSNET WEB / CSNET Manager Port
3. KNX TP-1 Port
4. PC-Console

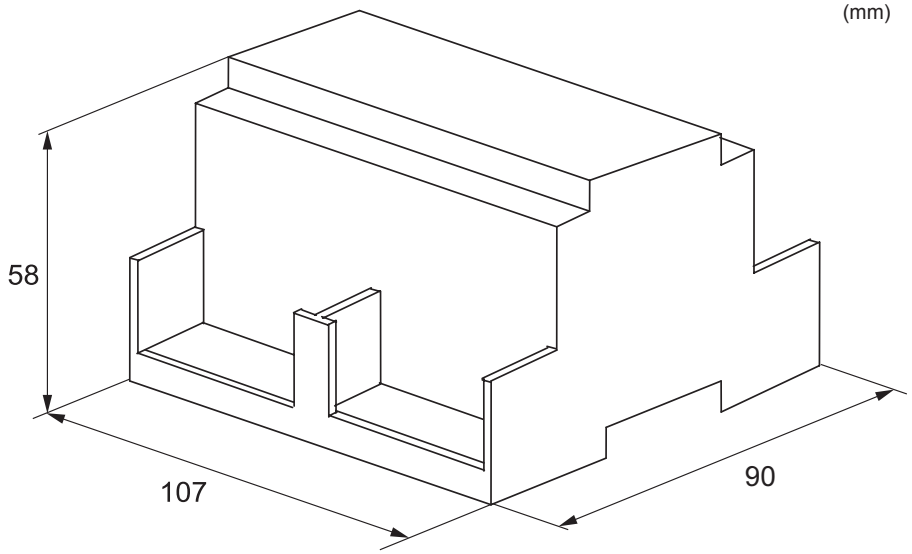
7.3.2.3 General data

Cover	PC plastic type (UL 94 V-0). Grey. RAL 7035.	
Dimensions	Width 107mm - Height 90 mm - Depth 58 mm	
Weight	2 kg	
Power Supply	9 a 30 VDC ±10% 1.4W. 24 VAC ±10% 1.4VA. Terminal: Screw type removable (2 poles) for 2.5 mm2 (12 AWG) cable.	
Assembly	Surface, Wall and over rail DIN EN60715 TH35.	
CSNET WEB Port	1 x Ethernet 10BT RJ45. - (TCP/IP Modbus protocol)	
KNX Port	1 x KNX TP1 (EIB) Opto insulated. Screw type removable (2 poles) for 2.5 mm^2 (12 AWG) cable	
Indicators LED	1 x Power Supply. 2 x Ethernet Port activity (LNK, ACT).	2 x KNX Port activity (Tx, Rx) 1 x programming/bus KNX [1]
Push button	1 x programming KNX.[1]	
Port type	RS232. DB9 female (DCE) connector DB9.	
Configuration	By RS232 port.	
Firmware	Updates allowed by RS232 port	
Temperature range	-40°C a +70°C	
Relative Humidity	5% a 95%, without condensation	
Protection	IP20 (IEC60529).	
RoHS Conformity	RoHS compliance according, directive 2002/95/EC.	
Certification	CE	

[1] For servicing purposes. Not avalaible.

7.3.2.4 Dimensional data

(mm)



7.3.3 Installation

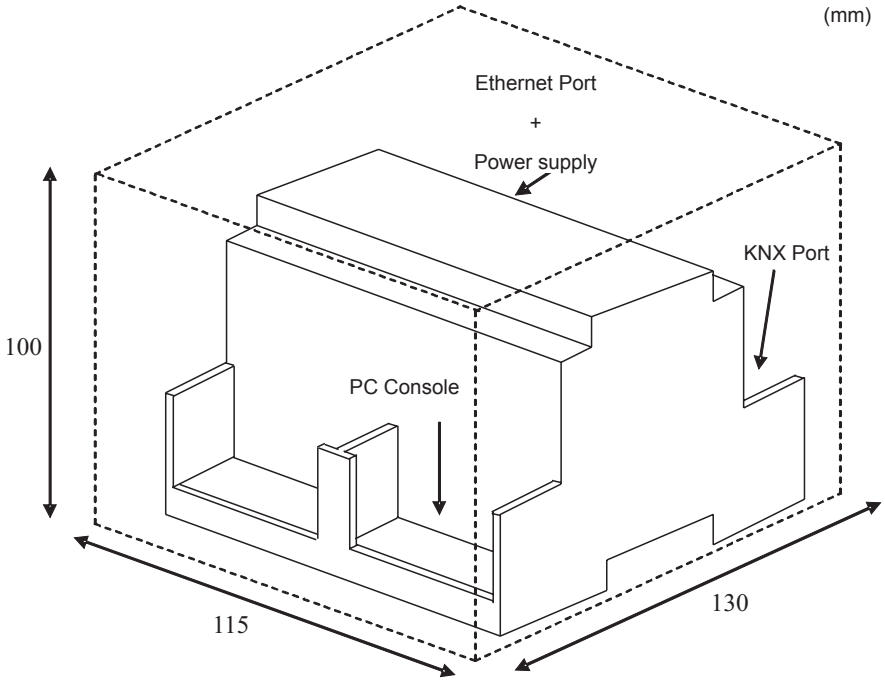
7.3.3.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

Cable section	0.3 mm^2	≥ 0.75 mm^2
Cable length	30 m	500 m

7.3.3.2 Installation space

Minimum space recommended for the interface and its external connections.



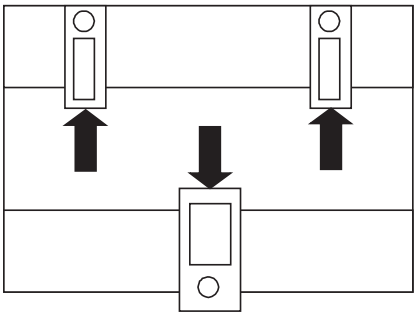
7.3.3.3 Installation procedure

1. Ensure that there is no power supply connected to any part of KNX001 (power terminals and EIB bus).
2. Install the device following the detailed explanations in *"4.1.1 Safety summary"* and *"4.1.2 Installation"* It is recommended to install KNX001 inside an electrical box.
3. Connect current adaptor to the KNX001 keeping right polarity (see technical characteristics for power supply connections).
4. Connect CSNET WEB / CSNET Manager 2 to KNX001 by ETH connector. CSNET WEB / CSNET Manager 2 connection can be done directly by ethernet crossed cable CAT5 or directly from LAN installation of the building. In the last case used non crossed ethernet CAT5 cable in order to connect KNX001. Consult to computer net administrators for TCP connection. KNX001 is connected to CSNET WEB / CSNET Manager by port 502.
5. Connect EIB bus to KNX TP1 (EIB) and keep correctly polarity.
6. Connect current adaptor to the power net.
7. Provide power to EIB bus.
8. Follow the instructions in inside of CD ROM for KNX001 configuration and start up.

◆ Wall Assembly

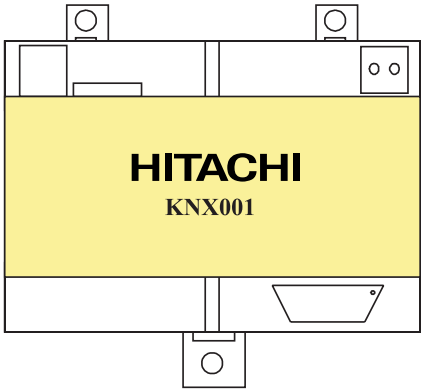
Pull the upper plastic parts and lower plastic part outside until fixing holes are visible from front side and a ‘click’ is heard (see right figure below).

Back side view



Plastic parts positioned for rail DIN assembly

Front side view



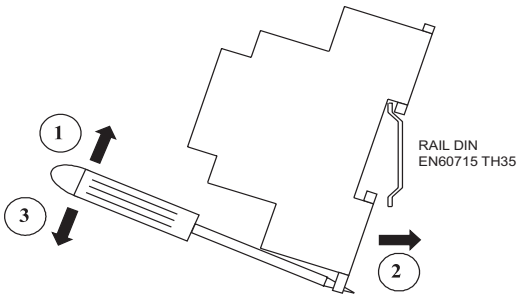
Plastic parts ready for wall assembly

Use the holes of the plastic parts for wall mounting.

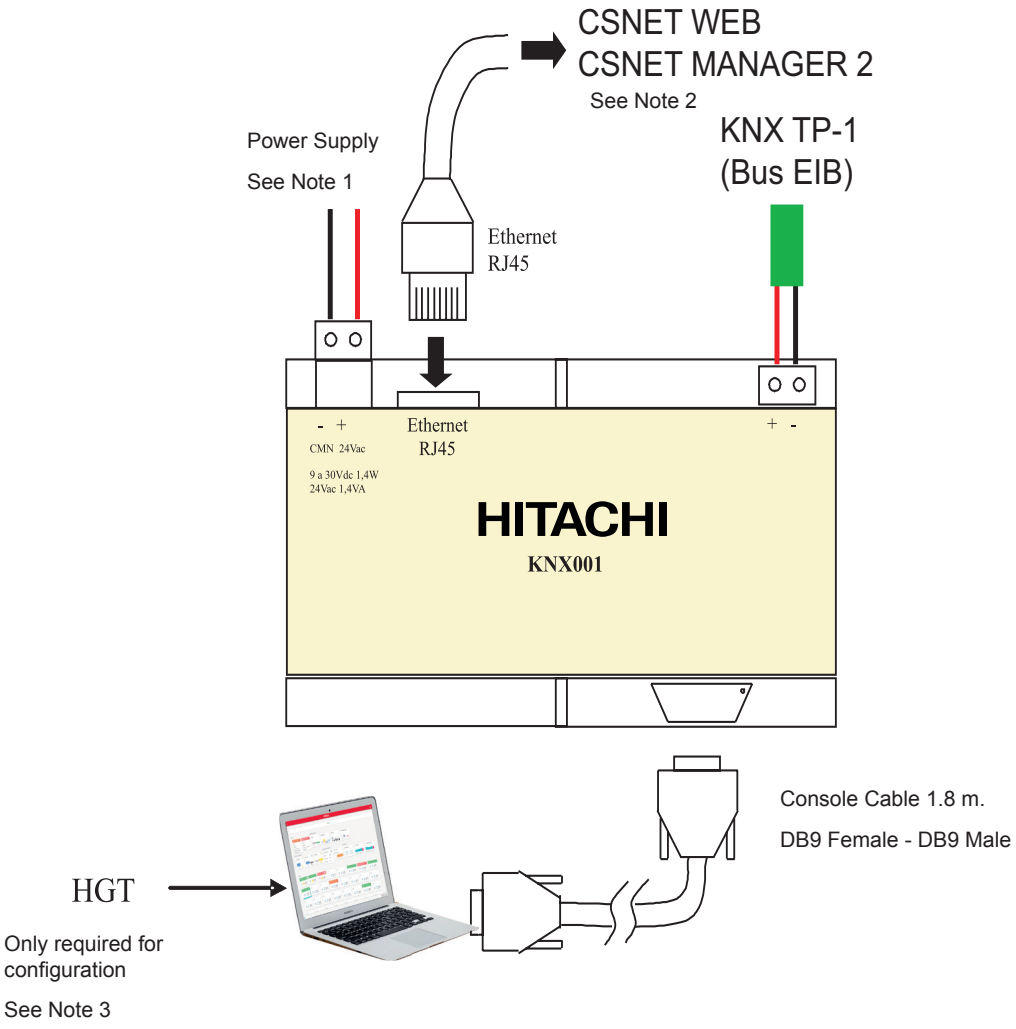
◆ Rail DIN Assembly

Hang upper side of the device from the upper side of DIN profile. Using a screwdriver pull the lower plastic part (see drawing) and push the lower side of the device against the profile.

Side view



7.3.4 Electrical wiring



NOTE

1. Use always a DC Power Supply:

- *Keep correctly polarity in terminals + and -. Ensure that supplied voltage are between allowed limits (9 a 30 VDC). If power source is grounded, connect - terminal only to ground circuit, never + terminal.*

If a AC Current is used:

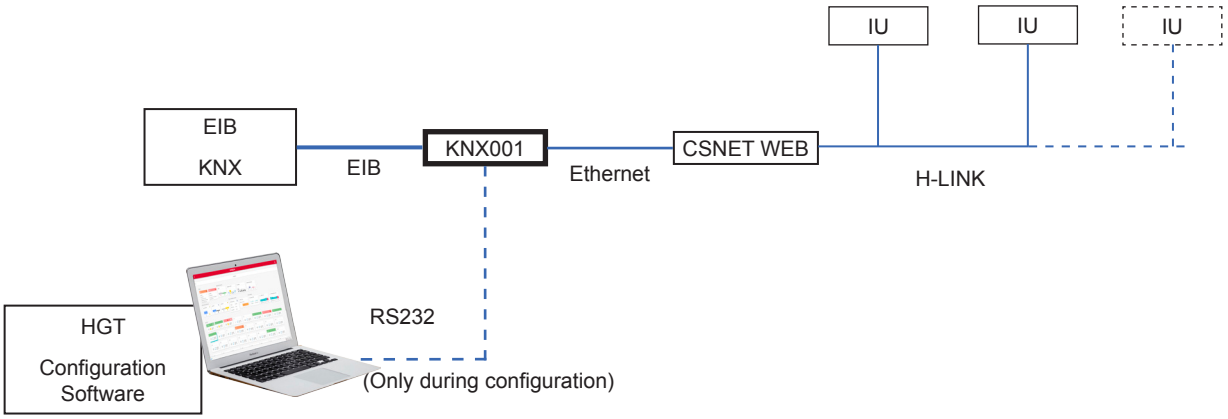
- *Ensure that power supply is 24 VAC. Do not connect any terminal to ground circuit and do not connect any other device that could suffer any earth leakage current in their terminals.*

2. CSNET WEB / CSNET Manager 2 connection can be done directly by ethernet crossed cable CAT5 or directly from LAN installation of the building. In the last case used non crossed ethernet CAT5 cable in order to connect KNX001. Consult to computer net administrators for TCP connection. KNX001 is connected to CSNET WEB / CSNET Manager 2 by port 502.

3. Use HGT software for KNX001 configuration. Check HGT user manual for details.

7.3.5 KNX001 Compatibility with CSNET WEB

Each of the previous signals must be associated with an address of Group KNX, so that the whole set behaves as one more part of the KNX system with the same configuration and operation characteristics.



KNX001 performs continuous polling (reading) of all the signals configured in CSNET WEB and keeps their status updated in order to serve as information to the KNX system.

When a change of status is detected in a signal, a written message is sent to the KNX bus of the associated KNX Group.

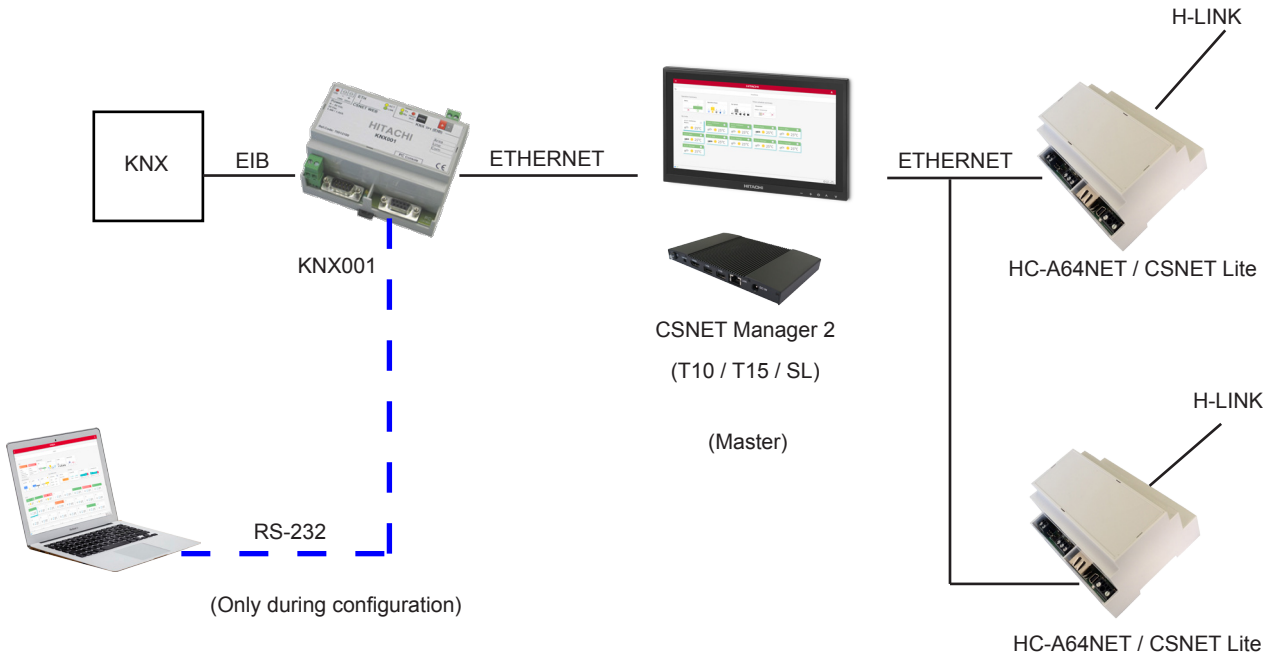
When a written message is received from the KNX bus to a KNX Group that is associated with the signal, the corresponding message is sent immediately to CSNET WEB so that is can perform the appropriate action.

In the initial process after start-up of KNX001, a search is performed for the configured units (machines). If no unit is detected, this is indicated by the communication error signal associated with each unit.

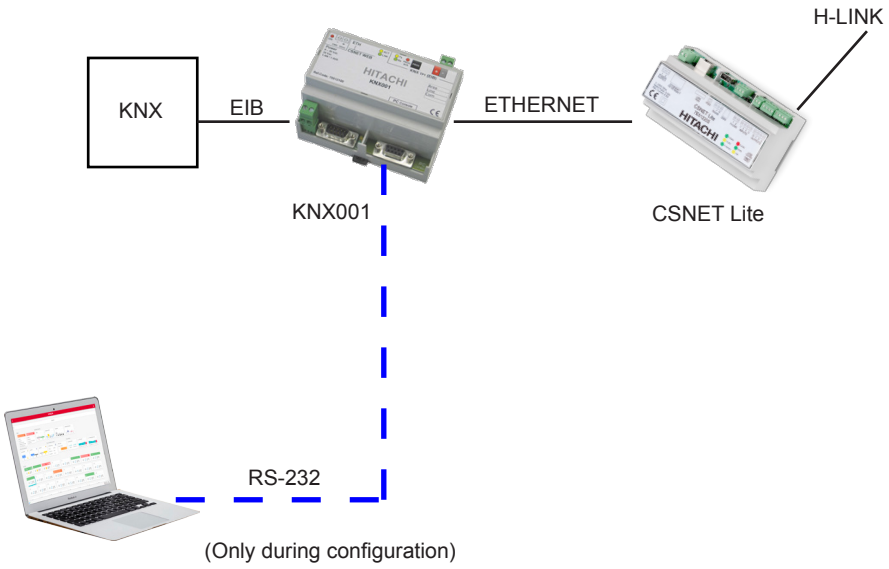
7.3.6 KNX001 Compatibility with CSNET Manager 2

A HITACHI Air-Conditioning system can be integrated with a KNX system by using CSNET Manager 2 / CSNET Lite and the KNX001 device:

Option 1:



Option 2:



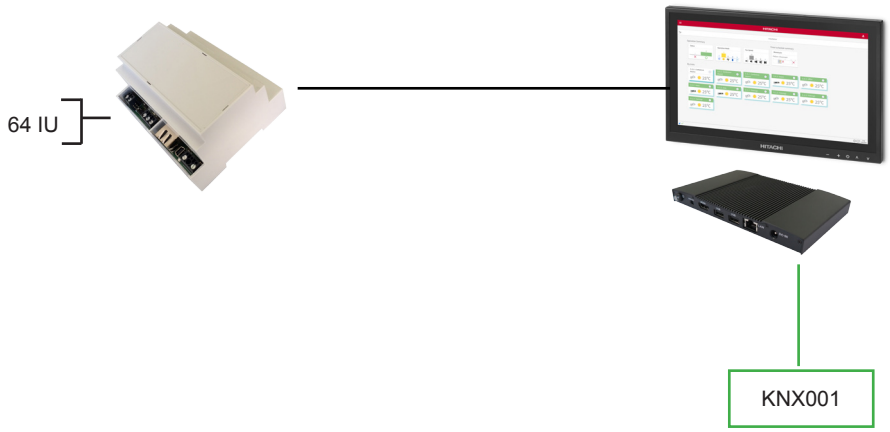
KNX001 communicates through Modbus/TCP with CSNET Manager 2 / CSNET Lite, where Modbus server option must be configured and running.

After that, KNX001 performs continuous polling (reading) of all the signals configured in CSNET Manager 2 / CSNET Lite and keeps their status updated in order to serve as information to the KNX system.

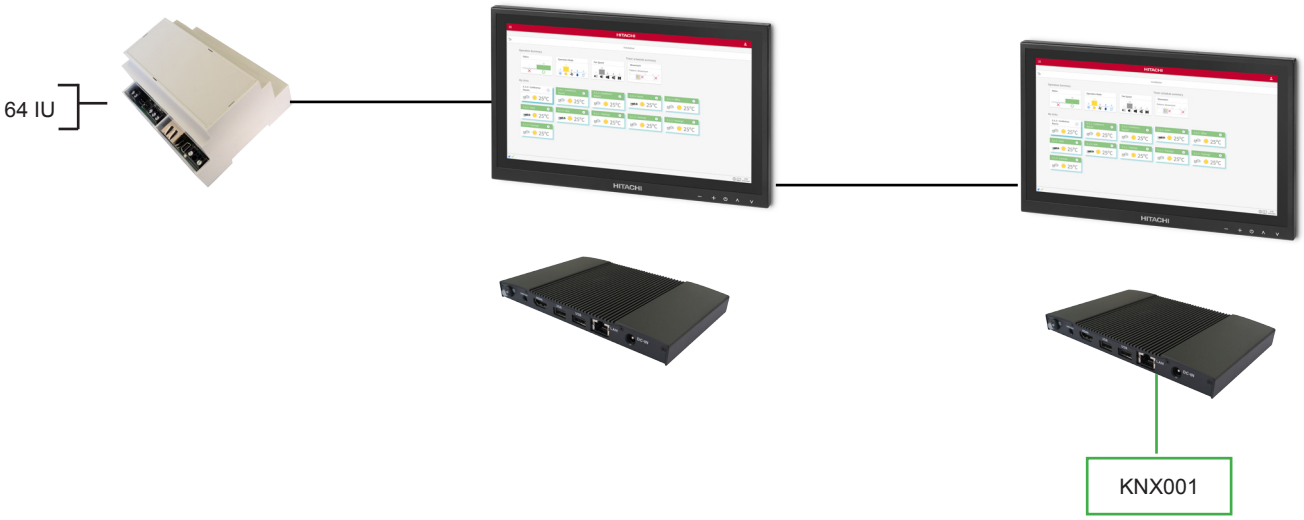
CSNET Lite is 100% compatible with KNX001.

CSNET Manager 2 is compatible with KNX001 with some restrictions.

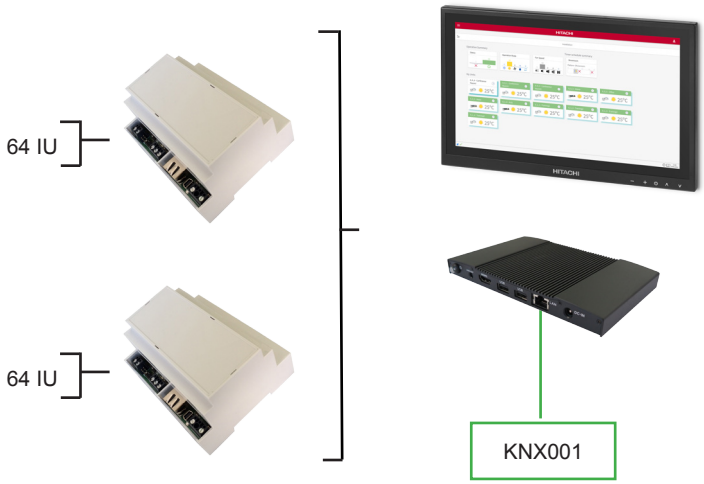
System is 100% compatible when CSNET Manager 2 has only 1 HC-A64NET.



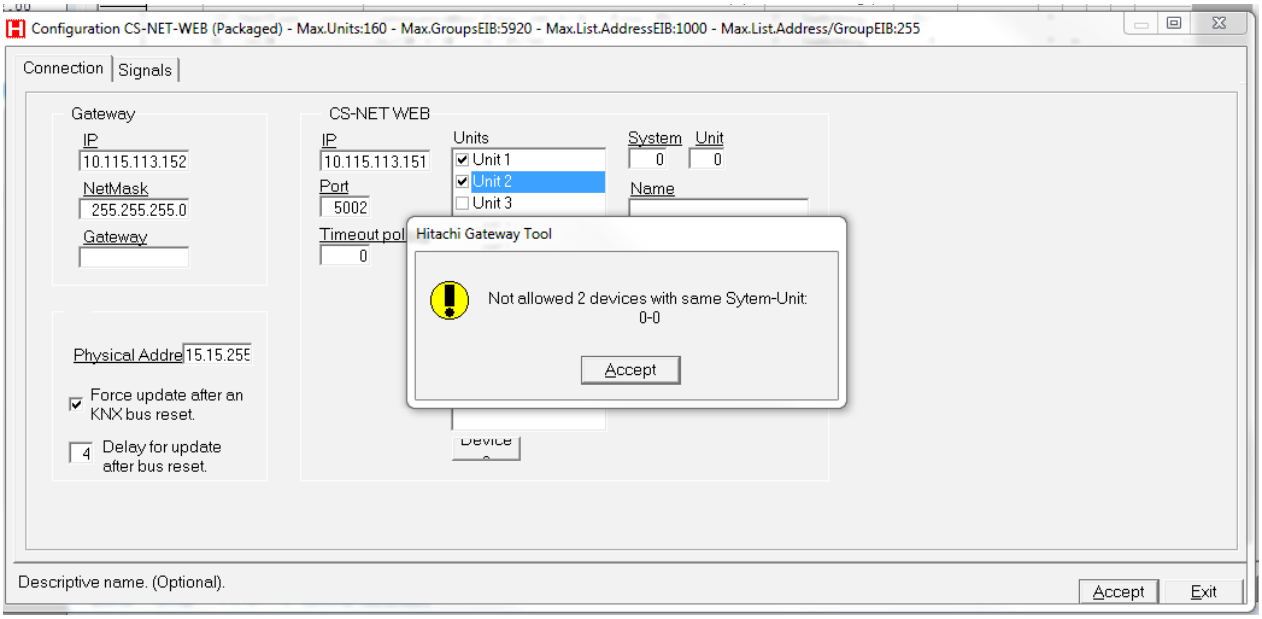
It also works if KNX001 is connected to a slave CSNET Manager 2:



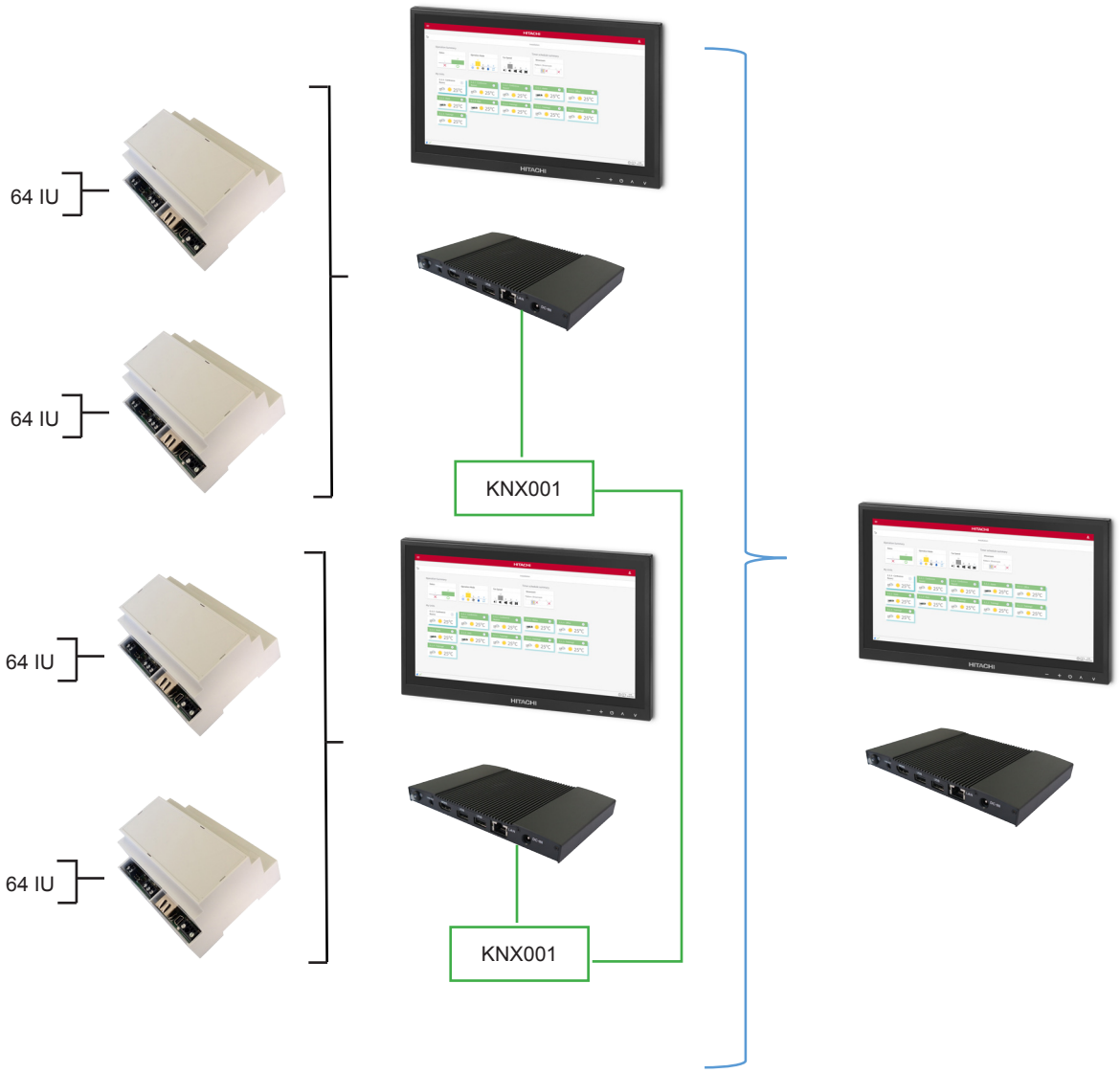
With more than one HC-A64NET, it is compatible when OU-IU addresses are not repeated.



OU-IU address cannot be repeated because HGT software does not allow configuration of repeated OU-IU address:



In case repeated OU-IU addresses are required, it is necessary to add another CSNET Manager 2 + KNX001 for each repeated addressing.



7.3.7 Operation

7.3.7.1 Introduction

A HITACHI Air-Conditioning system is integrated with a KNX system using CSNET Manager 2 / CSNET Lite and the KNX001 device.

Name	Description/State
OnOff	On/Off setting order Read/Write: ON,OFF
Mode	Mode Setting order Read/Write: COOL, DRY, FAN, HEAT, AUTO
Fan	Fan Setting order Read/Write: LOW, MED, HIGH
TempSet	Setting Temperature Read/Write: 17ºC ~ 30ºC
Louver	Louver Setting Read/Write: 8 positions: 0 ~ 7 and AUTO
Central	Central Setting Read/Write: ONOFF, Mode, TempSet, Fan
TIn	Inlet Temperature Read:ºC
TOut	Outlet Temperature Read:ºC
TGas	Gas Pipe Temperature Read:ºC
TLiquid	Liquid Pipe Temperature Read:ºC
ErrorCode	Alarm Code Read: 0 ~ 100
StopCause	Compressor Stop Cause Read: 0 ~ 200
ValveOpen	Indoor Unit Expansion Valve Opening Read: 0 ~ 100
OperCondition	Unit Operation Condition Read: OFF, Thermo-ON, Thermo-OFF, ALARM
Defrost	Defrost Read: ON, OFF
ExtAmbTemp	Ambient Temperature Read:ºC
Timer	Timer disabled Read/Write: Enabled/Disabled
Error Communications	Error Communication Unit It's a signal generated to indicate that the machine is not set into CSNET Manager 2.

NOTE

- *CSNET Manager 2 is a device that acts as an interface or gateway between the H-LINK bus and an Ethernet connection.*
- *The H-LINK bus interconnects Packaged units with CSNET Manager 2 /CSNET Lite. The Ethernet connection is used by the KNX001 gateway to access the machines. As a previous step to the configuration of KNX001, CSNET Manager 2 must be configured, along with the machines or A/C units themselves.*
- *For more information refer to the CSNET Manager 2 documentation.*

7.3.7.2 KNX001 configuration

◆ Introduction

HGT software is a tool for configuring and monitoring operation of KNX001 equipment via a serial cable and RS232 port of the PC. It works in any Microsoft Windows® operating system.

KNX001 configuration is divided in 2 parts: Connection and Signals. This information is stored in 2 or more text files. Once the desired configuration is completed, a binary file is generated and sent to the KNX001.

It is not necessary to be connected to the KNX001 in order to configure the integration. Instead this can be done in the office and later downloaded to the KNX001 in the installation.

Once KNX001 has a power supply and is connected with a serial cable to the PC where HGT is run, enable the On Line check box. Information about the equipment will appear in the viewfinder of the Communication Console. Once the configuration is completed, press the Send File button and the configuration will be downloaded. After a few seconds KNX001 will restart and will use the new configuration.

The HGT software has a user interface in a number of languages. Select the most suitable language from the Configuration menu – Languages.

◆ Projects

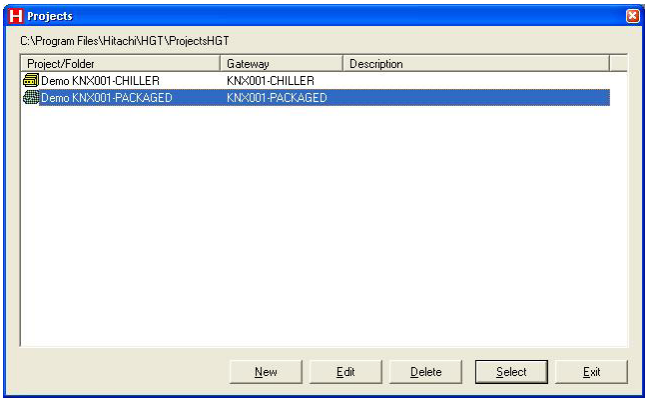
The first step in making a new installation is to create a new project. A new project consists of a project name, project description (optional) and the type of HITACHI machines to be used.

When a new project is created, a new directory is created with the name of the project. It contains the configuration files necessary for the KNX001.

In order to avoid overwriting the configuration of other existing projects, it is highly recommended that a new project be created for each new installation. If a KNX001 configuration is lost, there is no way of recovering it from inside the KNX001.

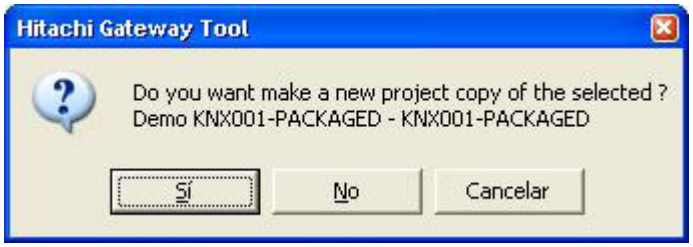
The folder where the projects are created is FolderApplication\ProjectsHGT, where FolderApplication is the folder in which HGT is installed (by default C:\Program Files\Hitachi\HGT). Within the projects folder, a new folder is created for each new project with the files that contain the project configuration.

When HGT is opened the project selection window appears, permitting a project to be selected or created. Two Demo projects appear, one for each type of machine. A new project can be created empty, or a new project can be created based on an existing one. In this case, the new project will be a copy of the original, which in certain cases may save configuration work.

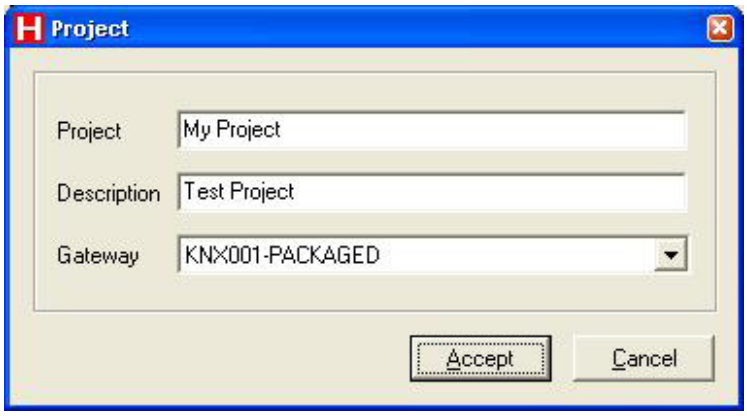


Project selection window

To create a new project, select a project with the same external protocol as the one you want to use and press New. You will be asked whether a copy of a selected project or a new one is to be created.



If you select Yes, you will be able to specify the name and description of the new project, based on the same external protocol selected. If you select No, you will also be able to select the type of machines to use in the new project.



When you accept, a new folder will be created within the project folder, with the name of the project. If you select new project without copying from another, the configuration by default will be that defined in the template files. Otherwise, it will be the same as that of the copied project.

◆ Connection with KNX001

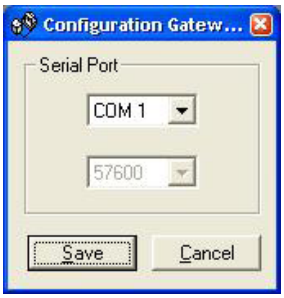
Even if there is no connection with KNX001 (OFF-line), it is possible configure KNX001 easily in the office.

Before you can download the configuration and monitor KNX001, connection must be established between HGT and KNX001 (On-line). This is done with the following steps:

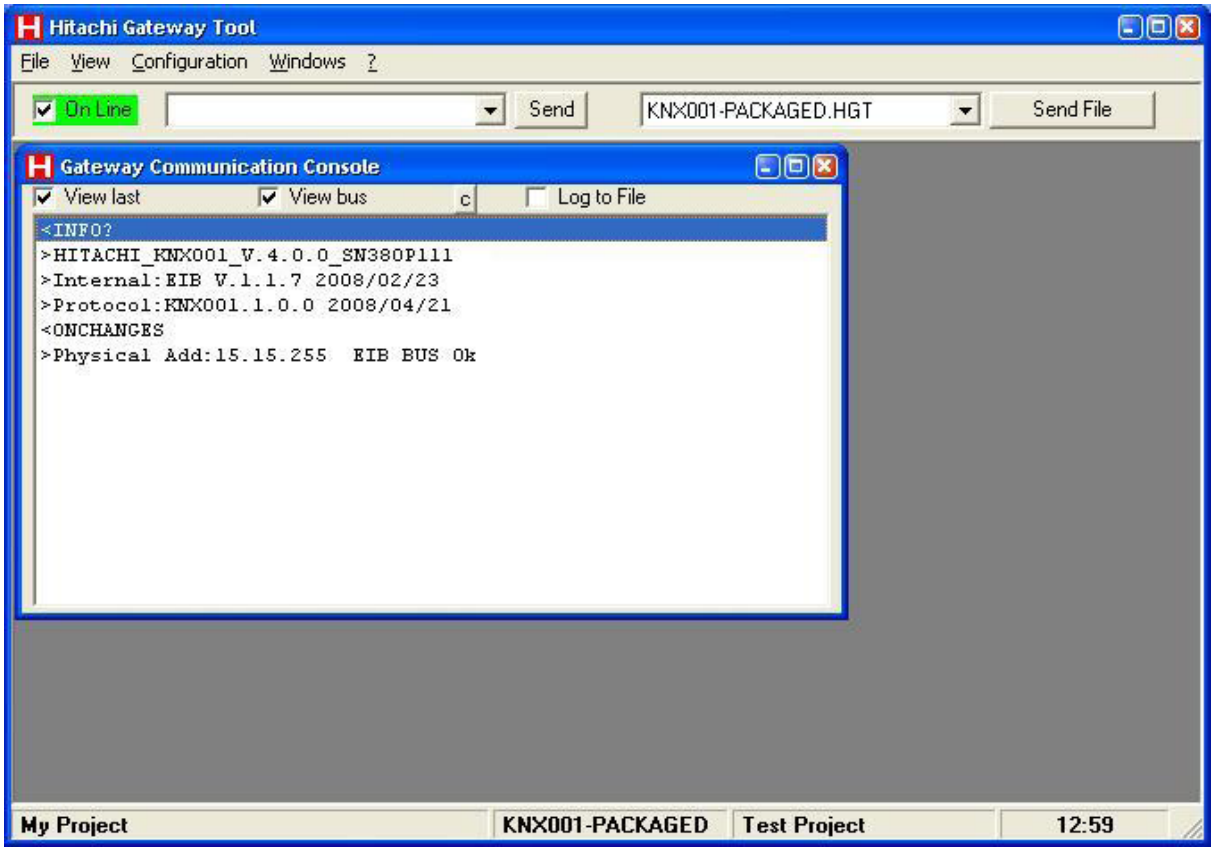
1 Ensure that KNX001 is powered and correctly connected to the KNX bus and the external system.

2 Connect HGT, using the connector marked PC, to a serial port of the PC. USB-RS232 adaptors can be used.

3 In HGT select the serial port to be used for the connection, via Configuration Menu -> Connection.

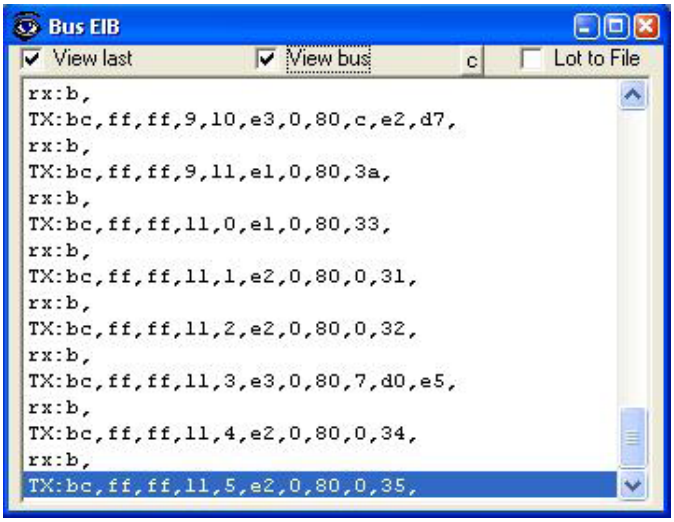


4 Enable the check box *off-line* under the menu bar (it will change to *on-line*) and HGT will ask for INFO from KNX001. If the connection is correct, KNX001 will respond with its identification (this can be supervised via the console window of communication with KNX001, as shown in the image). This window shows information messages where the KNX groups appear with their value when changes in their status occur.

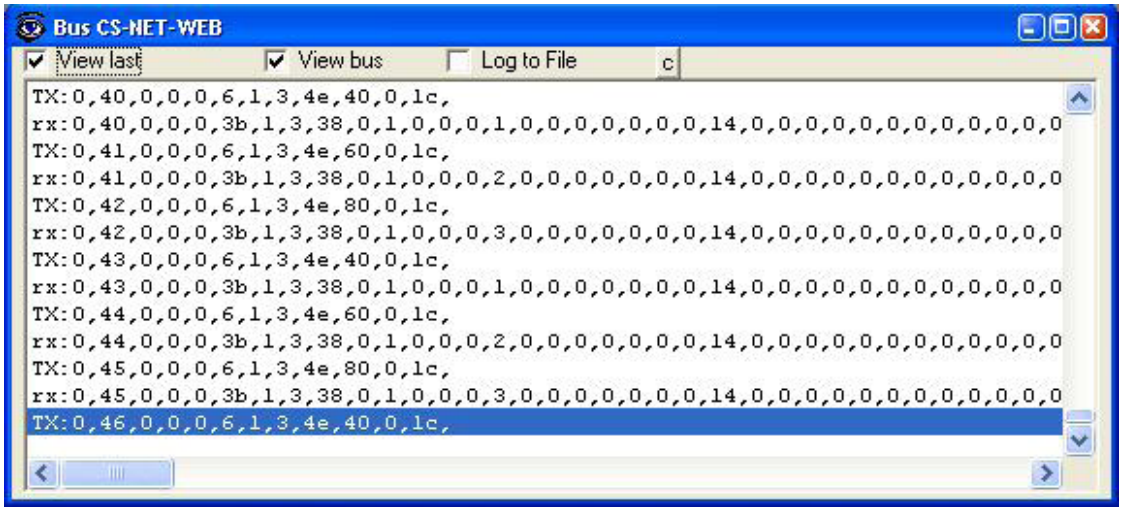


Once connected, all HGT's supervision and monitoring options are available.

To monitor communication between KNX001 and the KNX Bus, select the menu *See -> Bus -> EIB*. The window of the *Communication viewfinder* of KNX will be opened. This window shows in real time the communication links with the KNX bus, along with information messages.



To monitor communication between KNX001 and CSNET WEB / CSNET Manager, select the menu *See -> Bus -> CSNET WEB / CSNET Manager*. The window of the *Communication viewfinder of the external system* will be opened. This window shows in real time the communication links with the external system, along with information messages.



Both windows permit communications to be recorded in a text file with extension ".log". This function will only be used for the resolution of problems for technical service. To use it, enable the check box *Log to File*.

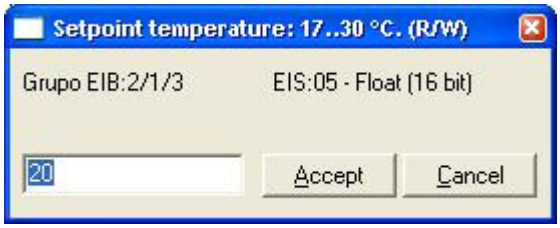
To supervise the status of the signals configured, select the menu *See -> Signals*. The window of the *Signals viewfinder* will be opened. This window shows in real time the status of the signals configured. After a reset of KNX001, or after sending a configuration file, all the signals are updated automatically. If connecting to a KNX001 that is already in operation, you must press the button, *Refresh*, once only to update the status of all signals. While you maintain the connection the signals will be kept updated.



	Dev.	Ident.	Signal	EIS	Group	Listening adc	R	W	T	U	Value
30	1	11 - ErrorCode	Error Code: 0..100. (R)	14 - Counter (8 bit)	1/1/11		R		T		0
31	1	12 - StopCause	Stop Cause: 0..200. (R)	14 - Counter (8 bit)	1/1/12		R		T		0
32	1	13 - Valve	Indoor Unit Expansion Valve Opening: 0..100%. (R)	06 - Scaling (8 bit)	1/1/13		R		T		0
33	1	14 - Operation	Unit Operation Condition: 0-Off, 1-Thermo-On, 2-ThermoOff, 3-	14 - Counter (8 bit)	1/1/14		R		T		0
34	1	33 - OFF (0)	Unit Operation Condition:OFF. (R)	01 - Switching (1 bit)	1/6/1		R		T		1
35	1	34 - THERMO-OFF (1)	Unit Operation Condition:THERMO OFF. (R)	01 - Switching (1 bit)	1/6/2		R		T		0
36	1	35 - THERMO-ON (2)	Unit Operation Condition:THERMO ON. (R)	01 - Switching (1 bit)	1/6/3		R		T		0
37	1	36 - ALARM (3)	Unit Operation Condition:ALARM. (R)	01 - Switching (1 bit)	1/6/4		R		T		0
38	1	15 - Defrost	Defrost: 0-No, 1-Yes. (R)	01 - Switching (1 bit)	1/1/15		R		T		0
39	1	16 - TAmbient	External Ambient Temperature: ºC. (R)	05 - Float (16 bit)	1/1/16		R		T		25
40	1	17 - TimerDis	Timer Enabled: 0-Disabled, 1-Enabled. (R/W)	01 - Switching (1 bit)	1/1/17		R	W	T		0
41	2	101-Not Exist	Communication Error Unit: 0-Ok, 1-Error. (R)	01 - Switching (1 bit)	2/0/1		R		T		0
42	2	00 - OnOff	On/Off: 0-Off, 1-On. (R/W)	01 - Switching (1 bit)	2/1/0		R	W	T		1
43	2	01 - Mode	Mode: 0-Cool, 1-Dry, 2-Fan, 3-Heat, 4-Auto. (R/W)	14 - Counter (8 bit)	2/1/1		R	W	T		3
44	2	02 - Fan	Fan speed: 0-Low, 1-Med, 2-High. (R/W)	14 - Counter (8 bit)	2/1/2		R	W	T		0
45	2	03 - TSet	Setpoint temperature: 17..30 ºC. (R/W)	05 - Float (16 bit)	2/1/3		R	W	T		20
46	2	04 - Louver	Louver: 0..7, 8-Auto. (R/W)	14 - Counter (8 bit)	2/1/4		R	W	T		0
47	2	05 - Central	Prohibition of local control: bit0-On/Off, bit1-Mode, bit2-SetTer	14 - Counter (8 bit)	2/1/5		R	W	T		0
48	2	06 - Group	Remote group controller: 0..255. (R)	14 - Counter (8 bit)	2/1/6		R		T		0

The signals viewfinder can be used even if only one of the two systems is connected, *KNX* or *CSNET WEB / CSNET Manager*. It is very useful for supervision and tests.

Double-clicking on any cell of a row, allows the status of a signal to be modified. If the signal has T enabled, its value will be updated and a message will be sent to KNX with this value, in the same way as if it had been written from CSNET WEB / CSNET Manager. If the signal has W enabled, its value will also be sent to CSNET WEB / CSNET Manager, in the same way as if it had been written from KNX.

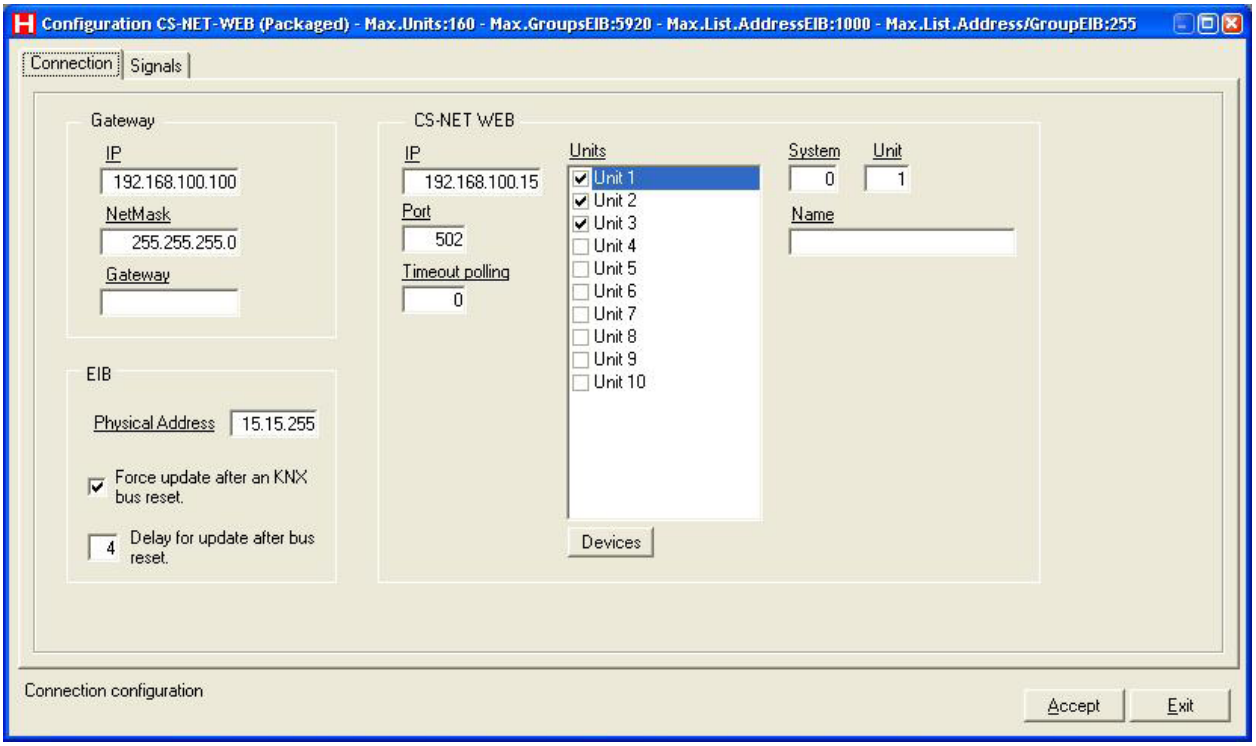


This functionality is very useful for testing both the KNX system and CSNET WEB / CSNET Manager, without having to act on the real signals of the machines.

The window has a button to copy all the content of the window, in text format separated by tabs, to the Windows clipboard.

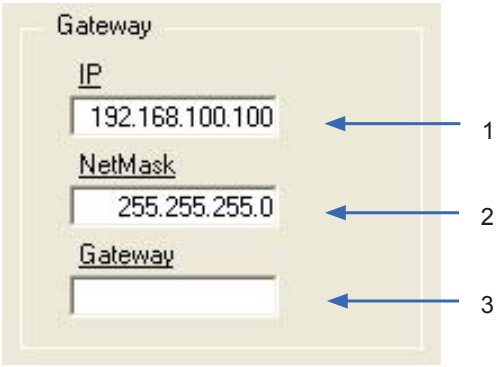
◆ Configuration of KNX001

To configure KNX001, select the menu Configuration -> HITACHI Gateway. The configuration window will be opened. This window has two tabs: Connection and Signals, which are explained below.



◆ Connection settings

In this window 3 types of information are configured, the KNX001 TCP/IP configuration, the KNX connection configuration and the CSNET WEB / CSNET Manager connection configuration.

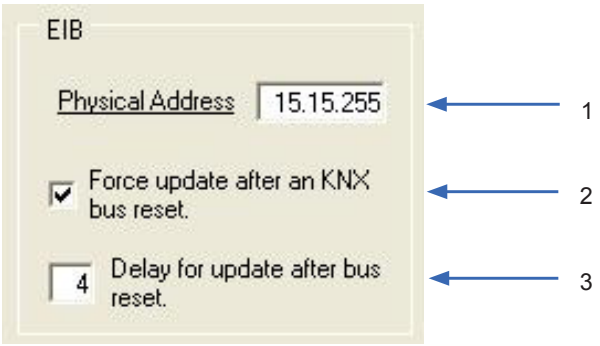


KNX001 TCP/IP configuration

1 KNX001 IP address. It must be in the same network segment as CSNET WEB / CSNET Manager if it does not use the IP gateway.

2 Network mask. Determine the network segment.

3 If KNX001 is in another network segment different from CSNET WEB / CSNET Manager, enter the IP address of the router, without leaving it blank.

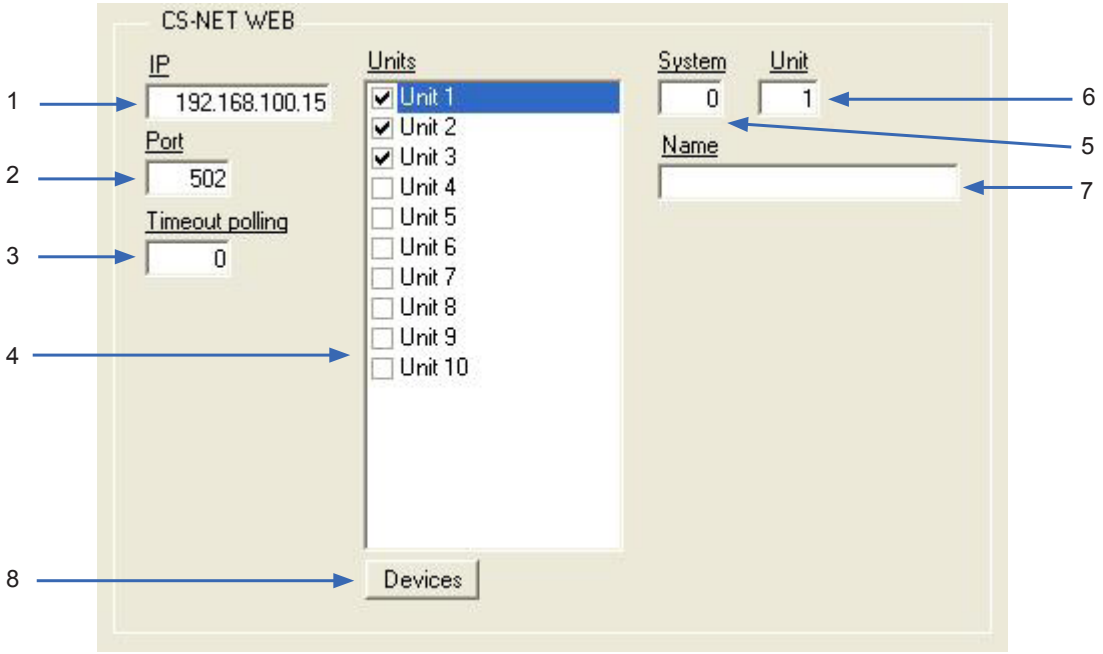


KNX configuration

1 Selection of the physical address of the KNX device that KNX001 will have.

2 Indicates whether, after a reset of KNX001 or recovery of the KNX bus, read requests will be made to the KNX bus for the group addresses with flag U or U2 enabled.

3 Indicates the time in seconds that these requests will be delayed to prevent overload in the KNX bus, due to other KNX devices behaving in the same way.



CSNET WEB settings

1 CSNET WEB / CSNET Manager IP address.

2 CSNET WEB / CSNET Manager TCP port, normally 502.

3 Time out between data requests to CSNET WEB / CSNET Manager.

4 List of devices to use. For a device to be used in the KNX, it must be selected in the check box in the list. Each device has the following properties:

5 System No., identifies each HITACHI refrigeration system (*).

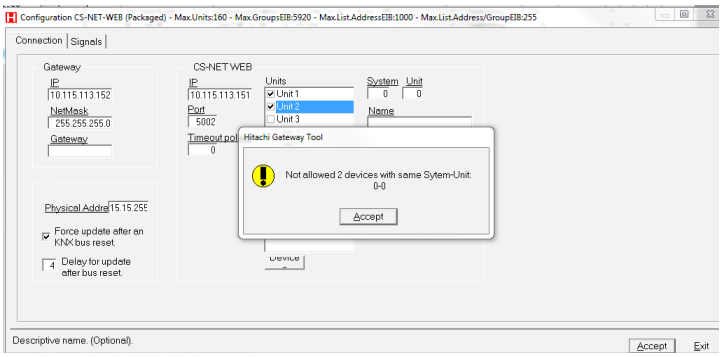
6 Unit No., identifies each HITACHI unit (*).

7 Descriptive name of the device. An optional field.

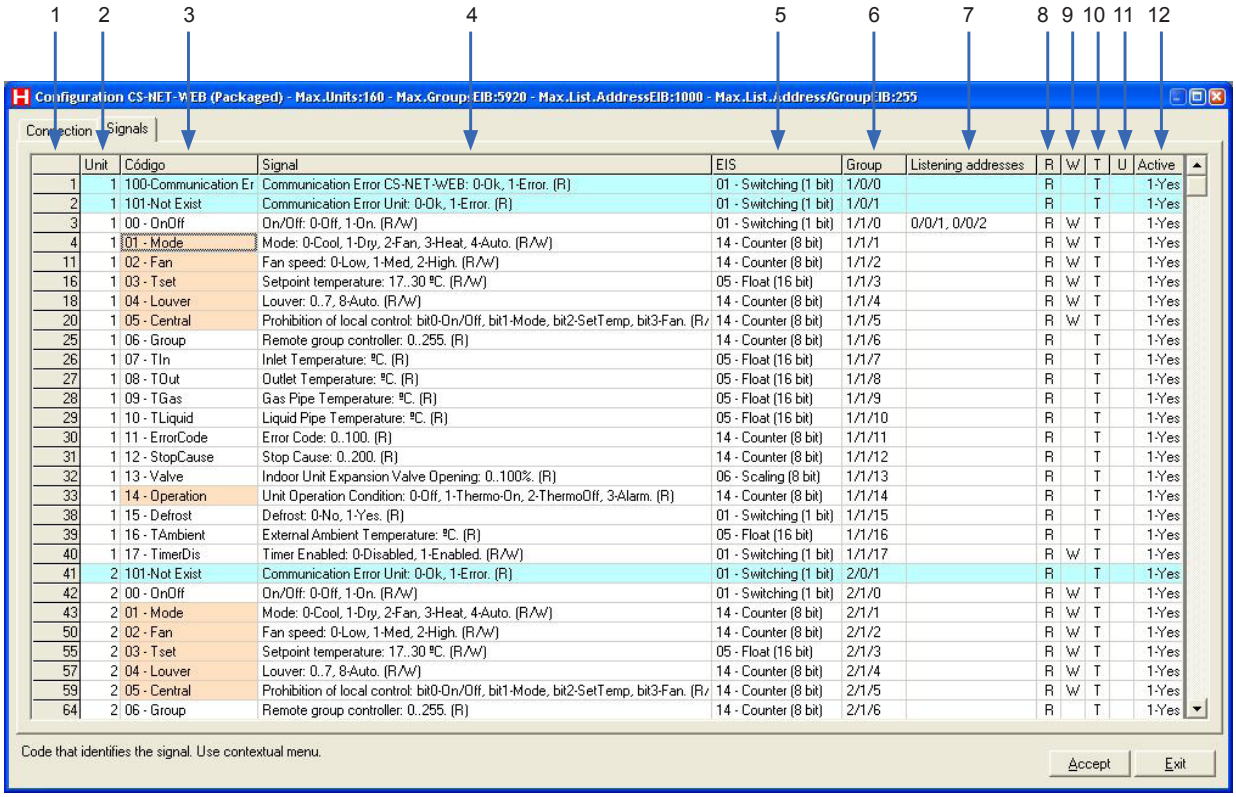
8 Permits selection of the number of devices to be used in the installation. On changing this parameter the configuration window closes. When it is opened again, the number of devices selected will appear in the list. Up to 128 devices are allowed.

NOTE

- *(*) Pay attention that every indoor unit in the system must be identified with a unique number regardless of the HC-A64NET group to which they belong, in case that two or more HC-A64NET devices are connected to the same CSNET Manager system.*
- *OU-IU address cannot be repeated because HGT software does not allow configuration of repeated OU-IU address:*



◆ Configuration of the signals



	Unit	Código	Signal	EIS	Group	Listening addresses	R	W	T	U	Active
1	1	100-Communication Er	Communication Error CS-NET-WEB: 0-Ok, 1-Error. (R)	01 - Switching (1 bit)	1/0/0		R		T		1-Yes
2	1	101-Not Exist	Communication Error Unit: 0-Ok, 1-Error. (R)	01 - Switching (1 bit)	1/0/1		R		T		1-Yes
3	1	00 - OnOff	On/Off: 0-Off, 1-On. (R/W)	01 - Switching (1 bit)	1/1/0	0/0/1, 0/0/2	R	W	T		1-Yes
4	1	01 - Mode	Mode: 0-Cool, 1-Dry, 2-Fan, 3-Heat, 4-Auto. (R/W)	14 - Counter (8 bit)	1/1/1		R	W	T		1-Yes
11	1	02 - Fan	Fan speed: 0-Low, 1-Med, 2-High. (R/W)	14 - Counter (8 bit)	1/1/2		R	W	T		1-Yes
16	1	03 - Tset	Setpoint temperature: 17..30 ºC. (R/W)	05 - Float (16 bit)	1/1/3		R	W	T		1-Yes
18	1	04 - Louver	Louver: 0..7, 8-Auto. (R/W)	14 - Counter (8 bit)	1/1/4		R	W	T		1-Yes
20	1	05 - Central	Prohibition of local control: bit0-On/Off, bit1-Mode, bit2-SetTemp, bit3-Fan. (R/	14 - Counter (8 bit)	1/1/5		R	W	T		1-Yes
25	1	06 - Group	Remote group controller: 0..255. (R)	14 - Counter (8 bit)	1/1/6		R		T		1-Yes
26	1	07 - TIn	Inlet Temperature: ºC. (R)	05 - Float (16 bit)	1/1/7		R		T		1-Yes
27	1	08 - TOut	Outlet Temperature: ºC. (R)	05 - Float (16 bit)	1/1/8		R		T		1-Yes
28	1	09 - TGas	Gas Pipe Temperature: ºC. (R)	05 - Float (16 bit)	1/1/9		R		T		1-Yes
29	1	10 - TLiquid	Liquid Pipe Temperature: ºC. (R)	05 - Float (16 bit)	1/1/10		R		T		1-Yes
30	1	11 - ErrorCode	Error Code: 0..100. (R)	14 - Counter (8 bit)	1/1/11		R		T		1-Yes
31	1	12 - StopCause	Stop Cause: 0..200. (R)	14 - Counter (8 bit)	1/1/12		R		T		1-Yes
32	1	13 - Valve	Indoor Unit Expansion Valve Opening: 0..100%. (R)	06 - Scaling (8 bit)	1/1/13		R		T		1-Yes
33	1	14 - Operation	Unit Operation Condition: 0-Off, 1-Thermo-On, 2-ThermoOff, 3-Alarm. (R)	14 - Counter (8 bit)	1/1/14		R		T		1-Yes
38	1	15 - Defrost	Defrost: 0-No, 1-Yes. (R)	01 - Switching (1 bit)	1/1/15		R		T		1-Yes
39	1	16 - TAmbient	External Ambient Temperature: ºC. (R)	05 - Float (16 bit)	1/1/16		R		T		1-Yes
40	1	17 - TimerDis	Timer Enabled: 0-Disabled, 1-Enabled. (R/W)	01 - Switching (1 bit)	1/1/17		R	W	T		1-Yes
41	2	101-Not Exist	Communication Error Unit: 0-Ok, 1-Error. (R)	01 - Switching (1 bit)	2/0/1		R		T		1-Yes
42	2	00 - OnOff	On/Off: 0-Off, 1-On. (R/W)	01 - Switching (1 bit)	2/1/0		R	W	T		1-Yes
43	2	01 - Mode	Mode: 0-Cool, 1-Dry, 2-Fan, 3-Heat, 4-Auto. (R/W)	14 - Counter (8 bit)	2/1/1		R	W	T		1-Yes
50	2	02 - Fan	Fan speed: 0-Low, 1-Med, 2-High. (R/W)	14 - Counter (8 bit)	2/1/2		R	W	T		1-Yes
55	2	03 - Tset	Setpoint temperature: 17..30 ºC. (R/W)	05 - Float (16 bit)	2/1/3		R	W	T		1-Yes
57	2	04 - Louver	Louver: 0..7, 8-Auto. (R/W)	14 - Counter (8 bit)	2/1/4		R	W	T		1-Yes
59	2	05 - Central	Prohibition of local control: bit0-On/Off, bit1-Mode, bit2-SetTemp, bit3-Fan. (R/	14 - Counter (8 bit)	2/1/5		R	W	T		1-Yes
64	2	06 - Group	Remote group controller: 0..255. (R)	14 - Counter (8 bit)	2/1/6		R		T		1-Yes

Table listing signals

1 Signal number. Each line of the table corresponds to a signal. Signals cannot be added or deleted, because the signals available are fixed and can only be enabled or disabled. Serves only to number the rows.

2 Device number in the list of devices of the Connection tab to which the signal belongs. Not editable.

3 Code. Identifies each signal. A code appears beside each name to identify it. Section *"1.1 General information"* gives the meaning of each signal. The right button makes a contextual menu appear showing all the possible codes. Not editable.

4 Long description of the signal. This description corresponds to the Code. It indicates if the signal is read R and/or write W.

5 The KNX EIS type (Data point), the format in which the signal value is transmitted. The right button makes a contextual menu appear showing all the possible types. Not editable.

6 Group. It is the KNX group with which the signal is associated and to which reading (R), writing (W), transmission (T) and updating (U) are applied. It is the sending group. Editable.

7 Listening addresses. KNX group addresses that will act on the signal, apart from the Group.

8 R. Read. If enabled, it will permit read messages from this Group.

9 W. Write. If enabled, it will permit write messages from this Group.

10 T. Transmission. If enabled, when the value of the signal changes due to a change in the value of the external system, a write message will be sent from the Group to the KNX bus.

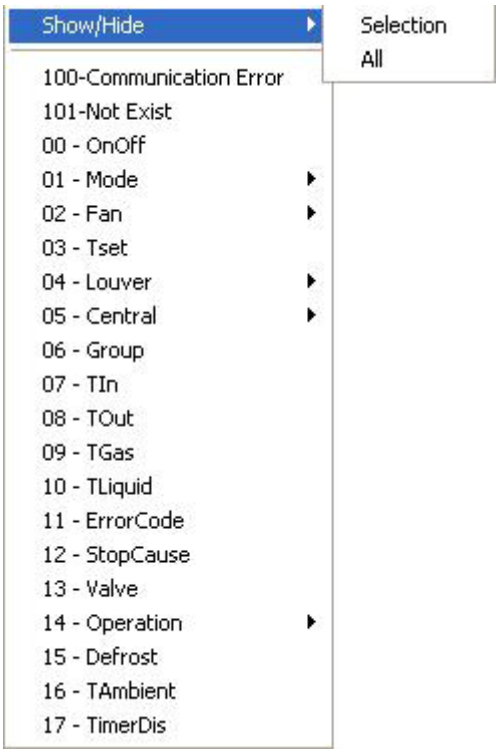
11 U. Update. If enabled, on starting KNX001 or after the KNX bus falls over, read messages will be sent to the KNX bus of the sending group. The value received will be sent to the external system as if it had been received by written message. If U2 is selected, instead of using the address of the sending group, the first listening address will be used.

12 Active. Permits the use of each signal to be enabled or not. Enabled signals must have a valid KNX configuration. Only signals that are going to be used from KNX should be enabled.

The R, W, T, U and Active columns can be modified by double-clicking on the cell, marking one or more cells of the same column and using the contextual menu with the right button, or pressing the key of the first letter of the word.

The R, W, T, U columns appear by default with a correct selection. Do not modify the selection if you are not sure how it will affect the integration.

Some cells of column Code appear in an orange color. Using the right button of the mouse pointer to make the contextual menu appear, permits *Show/Hide* the *Selection* or *All*.

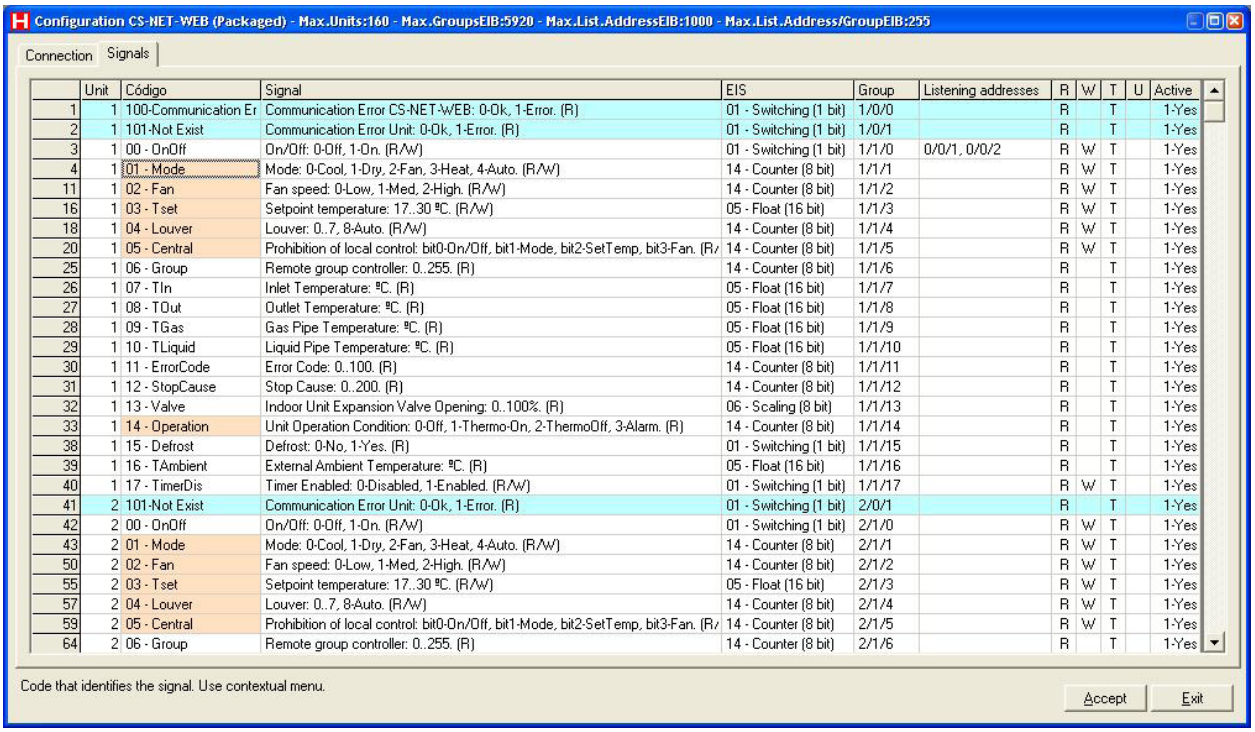


If *Show/Hide* is selected *Selection*, the new signals appear or disappear. These signals are the ones called Multibit, and have the following use. There are signals that have a limited number of possible values, for example, 0-1-2-3-4, which can be used with EIS6 (8 bits value). However, it may be necessary or helpful to act on this from simpler objects, such as an EIS1 switch (switching). The new signals that appear marked in yellow allow a specific value of the signal to be acted via an EIS1.

Show/Hide Selection this can also be done by double-clicking on the orange cells.

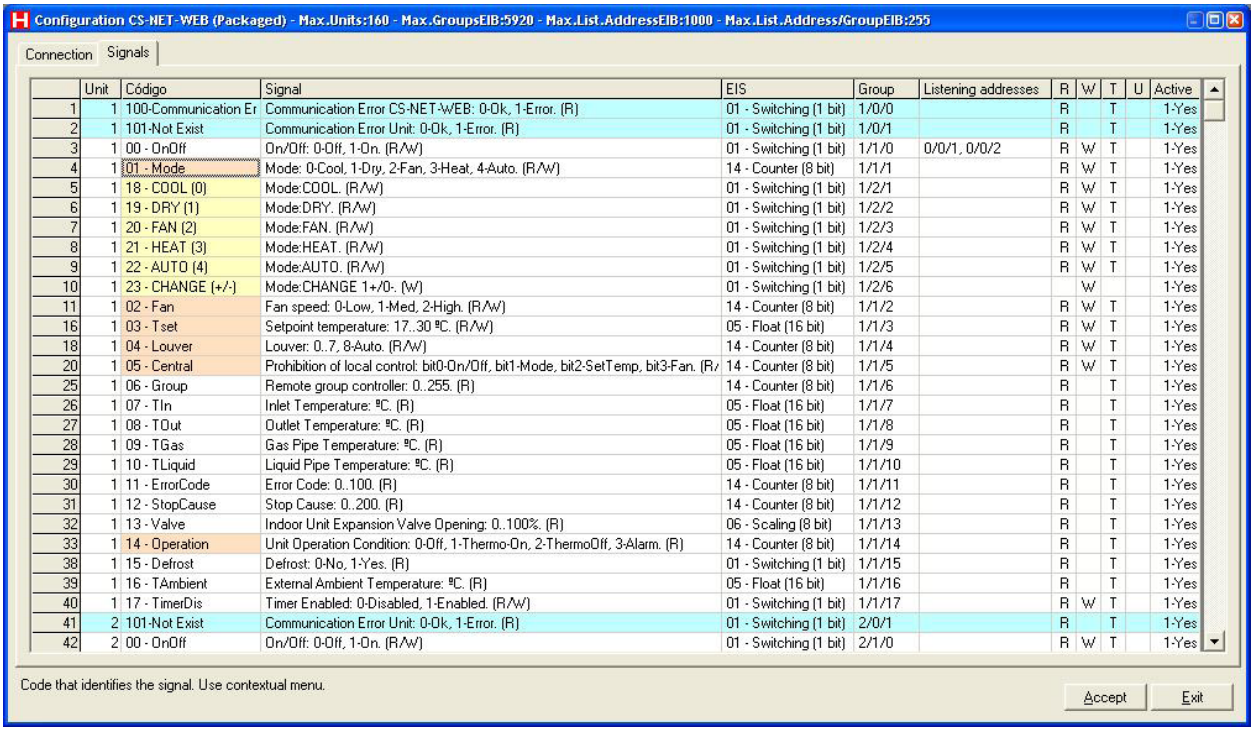
Show/Hide All affects all the orange colored cells in the table. Although the multibit signals are shown, they will not be used until they are enabled in the column Active.

The following image shows the table without pulling down to view the multibit signals.



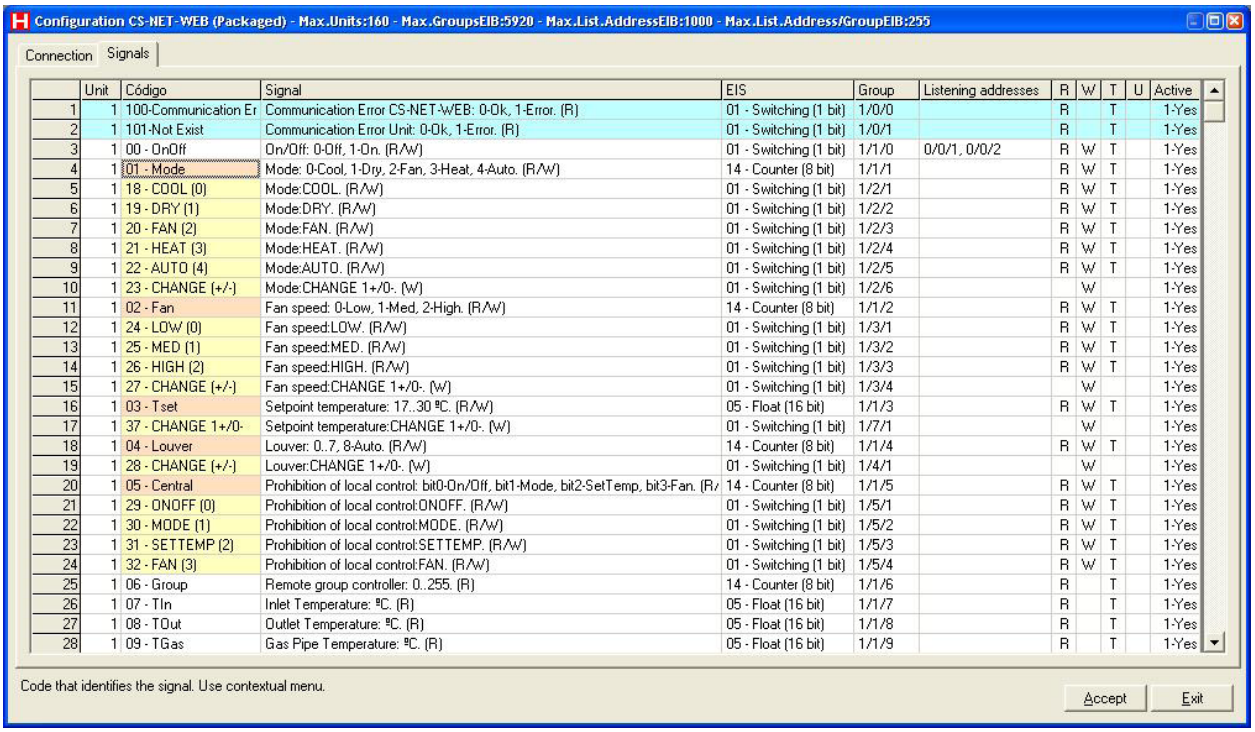
	Unit	Código	Signal	EIS	Group	Listening addresses	R	W	T	U	Active
1	1	100-Communication Er	Communication Error CS-NET-WEB: 0-Ok, 1-Error. (R)	01 - Switching (1 bit)	1/0/0		R		T		1-Yes
2	1	101-Not Exist	Communication Error Unit: 0-Ok, 1-Error. (R)	01 - Switching (1 bit)	1/0/1		R		T		1-Yes
3	1	00 - OnOff	On/Off: 0-Off, 1-On. (R/W)	01 - Switching (1 bit)	1/1/0	0/0/1, 0/0/2	R	W	T		1-Yes
4	1	01 - Mode	Mode: 0-Cool, 1-Dry, 2-Fan, 3-Heat, 4-Auto. (R/W)	14 - Counter (8 bit)	1/1/1		R	W	T		1-Yes
11	1	02 - Fan	Fan speed: 0-Low, 1-Med, 2-High. (R/W)	14 - Counter (8 bit)	1/1/2		R	W	T		1-Yes
16	1	03 - Tset	Setpoint temperature: 17..30 ºC. (R/W)	05 - Float (16 bit)	1/1/3		R	W	T		1-Yes
18	1	04 - Louver	Louver: 0..7, 8-Auto. (R/W)	14 - Counter (8 bit)	1/1/4		R	W	T		1-Yes
20	1	05 - Central	Prohibition of local control: bit0-On/Off, bit1-Mode, bit2-SetTemp, bit3-Fan. (R/	14 - Counter (8 bit)	1/1/5		R	W	T		1-Yes
25	1	06 - Group	Remote group controller: 0..255. (R)	14 - Counter (8 bit)	1/1/6		R		T		1-Yes
26	1	07 - TIn	Inlet Temperature: ºC. (R)	05 - Float (16 bit)	1/1/7		R		T		1-Yes
27	1	08 - TOut	Outlet Temperature: ºC. (R)	05 - Float (16 bit)	1/1/8		R		T		1-Yes
28	1	09 - TGas	Gas Pipe Temperature: ºC. (R)	05 - Float (16 bit)	1/1/9		R		T		1-Yes
29	1	10 - TLiquid	Liquid Pipe Temperature: ºC. (R)	05 - Float (16 bit)	1/1/10		R		T		1-Yes
30	1	11 - ErrorCode	Error Code: 0..100. (R)	14 - Counter (8 bit)	1/1/11		R		T		1-Yes
31	1	12 - StopCause	Stop Cause: 0..200. (R)	14 - Counter (8 bit)	1/1/12		R		T		1-Yes
32	1	13 - Valve	Indoor Unit Expansion Valve Opening: 0..100%. (R)	06 - Scaling (8 bit)	1/1/13		R		T		1-Yes
33	1	14 - Operation	Unit Operation Condition: 0-Off, 1-Thermo-On, 2-ThermoOff, 3-Alarm. (R)	14 - Counter (8 bit)	1/1/14		R		T		1-Yes
38	1	15 - Defrost	Defrost: 0-No, 1-Yes. (R)	01 - Switching (1 bit)	1/1/15		R		T		1-Yes
39	1	16 - TAmbient	External Ambient Temperature: ºC. (R)	05 - Float (16 bit)	1/1/16		R		T		1-Yes
40	1	17 - TimerDis	Timer Enabled: 0-Disabled, 1-Enabled. (R/W)	01 - Switching (1 bit)	1/1/17		R	W	T		1-Yes
41	2	101-Not Exist	Communication Error Unit: 0-Ok, 1-Error. (R)	01 - Switching (1 bit)	2/0/1		R		T		1-Yes
42	2	00 - OnOff	On/Off: 0-Off, 1-On. (R/W)	01 - Switching (1 bit)	2/1/0		R	W	T		1-Yes
43	2	01 - Mode	Mode: 0-Cool, 1-Dry, 2-Fan, 3-Heat, 4-Auto. (R/W)	14 - Counter (8 bit)	2/1/1		R	W	T		1-Yes
50	2	02 - Fan	Fan speed: 0-Low, 1-Med, 2-High. (R/W)	14 - Counter (8 bit)	2/1/2		R	W	T		1-Yes
55	2	03 - Tset	Setpoint temperature: 17..30 ºC. (R/W)	05 - Float (16 bit)	2/1/3		R	W	T		1-Yes
57	2	04 - Louver	Louver: 0..7, 8-Auto. (R/W)	14 - Counter (8 bit)	2/1/4		R	W	T		1-Yes
59	2	05 - Central	Prohibition of local control: bit0-On/Off, bit1-Mode, bit2-SetTemp, bit3-Fan. (R/	14 - Counter (8 bit)	2/1/5		R	W	T		1-Yes
64	2	06 - Group	Remote group controller: 0..255. (R)	14 - Counter (8 bit)	2/1/6		R		T		1-Yes

The following image shows the table with a signal with the multibit signals option pulled down.



	Unit	Código	Signal	EIS	Group	Listening addresses	R	W	T	U	Active
1	1	100-Communication Er	Communication Error CS-NET-WEB: 0-Ok, 1-Error. (R)	01 - Switching (1 bit)	1/0/0		R		T		1-Yes
2	1	101-Not Exist	Communication Error Unit: 0-Ok, 1-Error. (R)	01 - Switching (1 bit)	1/0/1		R		T		1-Yes
3	1	00 - OnOff	On/Off: 0-Off, 1-On. (R/W)	01 - Switching (1 bit)	1/1/0	0/0/1, 0/0/2	R	W	T		1-Yes
4	1	01 - Mode	Mode: 0-Cool, 1-Dry, 2-Fan, 3-Heat, 4-Auto. (R/W)	14 - Counter (8 bit)	1/1/1		R	W	T		1-Yes
5	1	18 - COOL (0)	Mode:COOL. (R/W)	01 - Switching (1 bit)	1/2/1		R	W	T		1-Yes
6	1	19 - DRY (1)	Mode:DRY. (R/W)	01 - Switching (1 bit)	1/2/2		R	W	T		1-Yes
7	1	20 - FAN (2)	Mode:FAN. (R/W)	01 - Switching (1 bit)	1/2/3		R	W	T		1-Yes
8	1	21 - HEAT (3)	Mode:HEAT. (R/W)	01 - Switching (1 bit)	1/2/4		R	W	T		1-Yes
9	1	22 - AUTO (4)	Mode:AUTO. (R/W)	01 - Switching (1 bit)	1/2/5		R	W	T		1-Yes
10	1	23 - CHANGE (+/-)	Mode:CHANGE 1+/0-. (W)	01 - Switching (1 bit)	1/2/6			W			1-Yes
11	1	02 - Fan	Fan speed: 0-Low, 1-Med, 2-High. (R/W)	14 - Counter (8 bit)	1/1/2		R	W	T		1-Yes
16	1	03 - Tset	Setpoint temperature: 17..30 ºC. (R/W)	05 - Float (16 bit)	1/1/3		R	W	T		1-Yes
18	1	04 - Louver	Louver: 0..7, 8-Auto. (R/W)	14 - Counter (8 bit)	1/1/4		R	W	T		1-Yes
20	1	05 - Central	Prohibition of local control: bit0-On/Off, bit1-Mode, bit2-SetTemp, bit3-Fan. (R/	14 - Counter (8 bit)	1/1/5		R	W	T		1-Yes
25	1	06 - Group	Remote group controller: 0..255. (R)	14 - Counter (8 bit)	1/1/6		R		T		1-Yes
26	1	07 - TIn	Inlet Temperature: ºC. (R)	05 - Float (16 bit)	1/1/7		R		T		1-Yes
27	1	08 - TOut	Outlet Temperature: ºC. (R)	05 - Float (16 bit)	1/1/8		R		T		1-Yes
28	1	09 - TGas	Gas Pipe Temperature: ºC. (R)	05 - Float (16 bit)	1/1/9		R		T		1-Yes
29	1	10 - TLiquid	Liquid Pipe Temperature: ºC. (R)	05 - Float (16 bit)	1/1/10		R		T		1-Yes
30	1	11 - ErrorCode	Error Code: 0..100. (R)	14 - Counter (8 bit)	1/1/11		R		T		1-Yes
31	1	12 - StopCause	Stop Cause: 0..200. (R)	14 - Counter (8 bit)	1/1/12		R		T		1-Yes
32	1	13 - Valve	Indoor Unit Expansion Valve Opening: 0..100%. (R)	06 - Scaling (8 bit)	1/1/13		R		T		1-Yes
33	1	14 - Operation	Unit Operation Condition: 0-Off, 1-Thermo-On, 2-ThermoOff, 3-Alarm. (R)	14 - Counter (8 bit)	1/1/14		R		T		1-Yes
38	1	15 - Defrost	Defrost: 0-No, 1-Yes. (R)	01 - Switching (1 bit)	1/1/15		R		T		1-Yes
39	1	16 - TAmbient	External Ambient Temperature: ºC. (R)	05 - Float (16 bit)	1/1/16		R		T		1-Yes
40	1	17 - TimerDis	Timer Enabled: 0-Disabled, 1-Enabled. (R/W)	01 - Switching (1 bit)	1/1/17		R	W	T		1-Yes
41	2	101-Not Exist	Communication Error Unit: 0-Ok, 1-Error. (R)	01 - Switching (1 bit)	2/0/1		R		T		1-Yes
42	2	00 - OnOff	On/Off: 0-Off, 1-On. (R/W)	01 - Switching (1 bit)	2/1/0		R	W	T		1-Yes

The following image shows all the multibit signals pulled down.



	Unit	Código	Signal	EIS	Group	Listening addresses	R	W	T	U	Active
1	1	100-Communication Er	Communication Error CS-NET-WEB: 0-Ok, 1-Error. (R)	01 - Switching (1 bit)	1/0/0		R		T		1-Yes
2	1	101-Not Exist	Communication Error Unit: 0-Ok, 1-Error. (R)	01 - Switching (1 bit)	1/0/1		R		T		1-Yes
3	1	00 - OnOff	On/Off: 0-Off, 1-On. (R/W)	01 - Switching (1 bit)	1/1/0	0/0/1, 0/0/2	R	W	T		1-Yes
4	1	01 - Mode	Mode: 0-Cool, 1-Dry, 2-Fan, 3-Heat, 4-Auto. (R/W)	14 - Counter (8 bit)	1/1/1		R	W	T		1-Yes
5	1	18 - COOL (0)	Mode:COOL. (R/W)	01 - Switching (1 bit)	1/2/1		R	W	T		1-Yes
6	1	19 - DRY (1)	Mode:DRY. (R/W)	01 - Switching (1 bit)	1/2/2		R	W	T		1-Yes
7	1	20 - FAN (2)	Mode:FAN. (R/W)	01 - Switching (1 bit)	1/2/3		R	W	T		1-Yes
8	1	21 - HEAT (3)	Mode:HEAT. (R/W)	01 - Switching (1 bit)	1/2/4		R	W	T		1-Yes
9	1	22 - AUTO (4)	Mode:AUTO. (R/W)	01 - Switching (1 bit)	1/2/5		R	W	T		1-Yes
10	1	23 - CHANGE (+/-)	Mode:CHANGE 1+/0-. (W)	01 - Switching (1 bit)	1/2/6			W			1-Yes
11	1	02 - Fan	Fan speed: 0-Low, 1-Med, 2-High. (R/W)	14 - Counter (8 bit)	1/1/2		R	W	T		1-Yes
12	1	24 - LOW (0)	Fan speed:LOW. (R/W)	01 - Switching (1 bit)	1/3/1		R	W	T		1-Yes
13	1	25 - MED (1)	Fan speed:MED. (R/W)	01 - Switching (1 bit)	1/3/2		R	W	T		1-Yes
14	1	26 - HIGH (2)	Fan speed:HIGH. (R/W)	01 - Switching (1 bit)	1/3/3		R	W	T		1-Yes
15	1	27 - CHANGE (+/-)	Fan speed:CHANGE 1+/0-. (W)	01 - Switching (1 bit)	1/3/4			W			1-Yes
16	1	03 - Tset	Setpoint temperature: 17..30 ºC. (R/W)	05 - Float (16 bit)	1/1/3		R	W	T		1-Yes
17	1	37 - CHANGE 1+/0-	Setpoint temperature:CHANGE 1+/0-. (W)	01 - Switching (1 bit)	1/7/1			W			1-Yes
18	1	04 - Louver	Louver: 0..7, 8-Auto. (R/W)	14 - Counter (8 bit)	1/1/4		R	W	T		1-Yes
19	1	28 - CHANGE (+/-)	Louver:CHANGE 1+/0-. (W)	01 - Switching (1 bit)	1/4/1			W			1-Yes
20	1	05 - Central	Prohibition of local control: bit0-On/Off, bit1-Mode, bit2-SetTemp, bit3-Fan. (R/	14 - Counter (8 bit)	1/1/5		R	W	T		1-Yes
21	1	29 - ONOFF (0)	Prohibition of local control:ONOFF. (R/W)	01 - Switching (1 bit)	1/5/1		R	W	T		1-Yes
22	1	30 - MODE (1)	Prohibition of local control:MODE. (R/W)	01 - Switching (1 bit)	1/5/2		R	W	T		1-Yes
23	1	31 - SETTEMP (2)	Prohibition of local control:SETTEMP. (R/W)	01 - Switching (1 bit)	1/5/3		R	W	T		1-Yes
24	1	32 - FAN (3)	Prohibition of local control:FAN. (R/W)	01 - Switching (1 bit)	1/5/4		R	W	T		1-Yes
25	1	06 - Group	Remote group controller: 0..255. (R)	14 - Counter (8 bit)	1/1/6		R		T		1-Yes
26	1	07 - TIn	Inlet Temperature: ºC. (R)	05 - Float (16 bit)	1/1/7		R		T		1-Yes
27	1	08 - TOut	Outlet Temperature: ºC. (R)	05 - Float (16 bit)	1/1/8		R		T		1-Yes
28	1	09 - TGas	Gas Pipe Temperature: ºC. (R)	05 - Float (16 bit)	1/1/9		R		T		1-Yes

By default, all multibit signals are shown pulled down. If they are not going to be used you can do *Hide-All* to have a table with fewer signals in order to work more comfortably.

It is permitted to enable byte and multibit signals simultaneously. The bits will be updated according to the status they represent. Only one of the multibit signals will be enabled at any time, except in the case of the ***Central*** signal, since in this case various bits can be enabled simultaneously.

◆ Reminder

- If T is not enabled, changes in the external system will not be transmitted to KNX nor to its links.
- If R is not enabled, signals cannot be read via Read requests from KNX.
- If W is not enabled, it will not be possible to act on the signal, nor the external system, nor group links.
- If U is enabled, on starting up KNX001, READ requests will be made to the KNX of the sending group.
- If U2 is enabled, on starting KNX001, READ requests will be made to the KNX of the first listening address.
- Groups that are defined only as links will take the EIS type from the first linked group.
- The group data read from KNX as a result of READ requests between other KNX devices will be treated as Writes on groups (standard BCU1 behavior).
- Signals marked as read R must be configured: Fixed:T, Optional:R
- Signals marked as write W must be configured: Fixed:W, Optional:U o U2
- Signals marked as read/write RW must be configured: Fixed:W-T, Optional:R or U or U2
- Types are converted automatically, i.e. if an EIS5 arrives at an EIS1 group, an EIS1=(EIS5<>0) is made, or EIS5=EIS9 and EIS9=EIS5, EIS6=EIS5(0..255), etc.
- It is recommendable that the listening addresses associated with different groups maintain the same EIS type in all groups, otherwise unwanted conversions may occur.
- A write from KNX is propagated to the external system via the group address and the listening addresses.
- A write from the external system DOES NOT propagate to KNX via the listening addresses, but DOES update the status of the local send groups that are used as listening addresses.
- If a send group is used as the listening address with other local send groups, a write from the external system will update these groups but not their listening addresses.
- In case of Resetting the KNX bus, if this behavior is enabled, updating of groups marked as U or U2 is forced.

◆ Restrictions

- P/I/S, P/S group numbers are permitted, or the coded group no. directly
- Repeated send groups are not permitted (Group column).
- Group 0 is not permitted, This is used for signals without a send group.
- Signals are not permitted if R-W-T-U is not enabled.
- Empty Groups are not permitted if only W is enabled and it has listening addresses.
- Repeated groups are not permitted in the same listening addresses field.
- It is not permitted for a send group to be in the listening addresses (circular reference).
- Listening addresses are not permitted if W is not enabled, otherwise the listening addresses will not function.

◆ Preliminary specifications

- Multibit properties are executed only with a write of 1. The 0 stays in the send Group but does not perform any function, except for the ***Central*** signal, which permits bits to be enabled and disabled without distinction.
- Multibit properties of type CHANGE 1+/0-, permit the status of a byte signal with only one bit to be changed. On writing a 1 on this signal, the byte value will increase by one unit. On writing a 0 it will decrease by one unit. On reaching the maximum or minimum value limits of the signal, this will be adjusted to the correct value at the other extreme; for example, in the Mode signal, it will go from 4 to 0 on increasing by 1, and from 0 to 4 on decreasing by 1. In the case of the SetPoint signal, this behaviour does not occur, i.e. on reaching the top or bottom limits the extreme value is kept without being turned around.

◆ Files

KNX001 saves the configuration of each project in the following files:

<TYPE>.INI	A text file that saves information regarding the connection and other special adjustments.
<TYPE>.DAT	A text file with values separated by tabs, with information corresponding to the signals.
<TYPE>.HGT	A binary file created from the files mentioned above. It is the one really sent to KNX001.

These files, once installation is completed, must be backed-up for future modifications. It is not permitted to obtain the KNX001 configuration, only Upload is permitted, not Download.

In the file <TYPE>.INI the following adjustment variables are found:

[<TYPE>]

TmConnectCSNET_s=10, Timeout for connection with CSNET WEB / CSNET Manager (seconds)

TmResponseCSNET_s=2, Timeout for CSNET WEB / CSNET Manager response (seconds)

[EIB]

tS_ChekEIB=60, Rate of EIB electronic supervision (seconds)

tMS_WaitUpdate=2000, Timeout for Read request responses (milisec)

tMS_WaitInConect=6000, Timeout in Connect status (milisec)

NOTE

Do not touch these variables if you are not sure how they work. Their maladjustment may cause KNX001 not to operate or to operate incorrectly.

7.4 HARC-BX E

7.4.1 Safety summary

DANGER

ELECTRIC SHOCK

- ***DO NOT handle the remote control with wet hands.***
- ***DO NOT spill water on the remote control. This may cause an electric shock.***
- ***If the safety devices should be activated too often or the buttons do not work properly, turn off the unit at the mains and contact your HITACHI service provider.***
- ***In the event of other incidents of an electrical nature, turn off the system, switch it off at the mains and contact your HITACHI service provider.***

CAUTION

- *DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:*
  - *Where there are oil vapours and the oil is dispersed.*
  - *In the proximity of hot water or heat sources or in sulphuric environments.*
  - *In locations prone to the generation, accumulation, leakage or flow of flammable gas.*
  - *Close to the sea (saline atmospheres).*
  - *In acidic or alkaline environments.*
  - *Within the reach of children.*
  - *Directly in front of the air-conditioning system outlet.*
- *To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m of strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.*
- *If electrical noise should be generated at the indoor unit power source, install a noise filter.*
- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle properly and safely this appliance.*
- *Children should be supervised to ensure that they do not play with the appliance.*

7.4.2 Installation

7.4.2.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

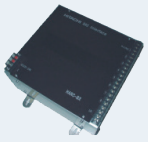
Cable section	0.3 mm^2	≥ 0.75 mm^2
Cable length	30 m	500 m

7.4.2.2 Components list

Unpack the unit and check that:

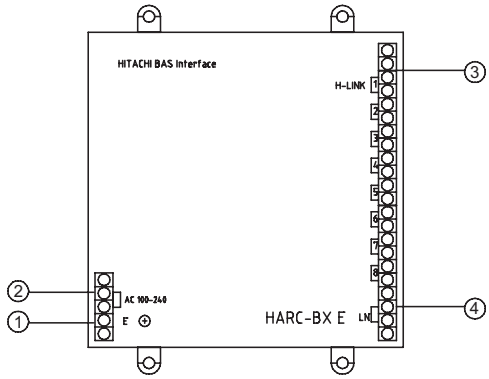
- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quant.	Comments
HARC-BX E (A/B)		1	To control the system operation
Installation and operation manual		1	Installation and operation unit instructions.

7.4.2.3 Description of the parts

◆ HARC-BX E unit components



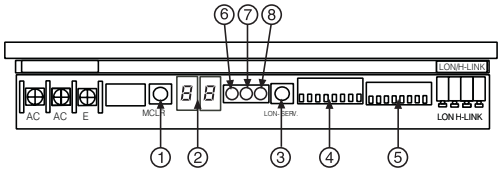
① Power supply terminal to connect a AC220~240V power supply

② Earthing terminal.

③ Terminal board for the transmission of the unit to connect the H-LINK

④ Terminal board for the upper system, to connect the transmission cable for the upper monitoring system

◆ Control panel components



① PSW (Push Switch) number 1 (M.CLR): Press the button to check the quantity of connected units.

② 7-segment display (1*): This indicates the current HARC-BX E status.

③ PSW number 2 (LON-SERV): Press the button (PSW) to transmit the Neuron ID. (Service pin)

④ 8P DSW (DIP Switch) number 1 (S201) (2*): Setting the system of HARC-BX E DIP switches.

⑤ 8P DSW number 2 (S202) (3*): DIP switch (DSW) for setting the functions of the HARC-BX E.

⑥ Power supply LED (PWR): The light is ON when electricity is supplied.

⑦ Transmission LED (H-L): Transmission status with H-LINK

⑧ Upper monitoring system transmission LED (LON): Transmission status with the upper monitoring equipment

(1) 7-segment display: Read the "7.4.4 Test run" and "7.4.5.3 Indication of abnormal conditions" sections for details on the 7-segment display.*

(2) 8P DSW number 1 S201: Read the "7.4.3.4 DIP switch adjustment" section for further information and for HARC-BX E functions.*

(3) 8P DSW number 2.S202: Read the "7.4.3.4 DIP switch adjustment" section. 8P DSW number 1 and number 2 are used for the self-check. For further details, refer to the "7.4.5.2 HARC-BX E self-check" section.*

7.4.2.4 General data

◆ HARC-BX E specifications

Hardware specifications

Element	Specification
Power supply	AC240V±10% (50/60Hz)
Energy consumption	30 W (max)
External dimensions	Width: 240 mm, height: 285 mm, depth: 128.5 mm (Installed inside the box)
Weight	2.3 kg
Installation conditions	Indoor
Temperature conditions	0~45°C
Humidity conditions	10~80% (No dew)

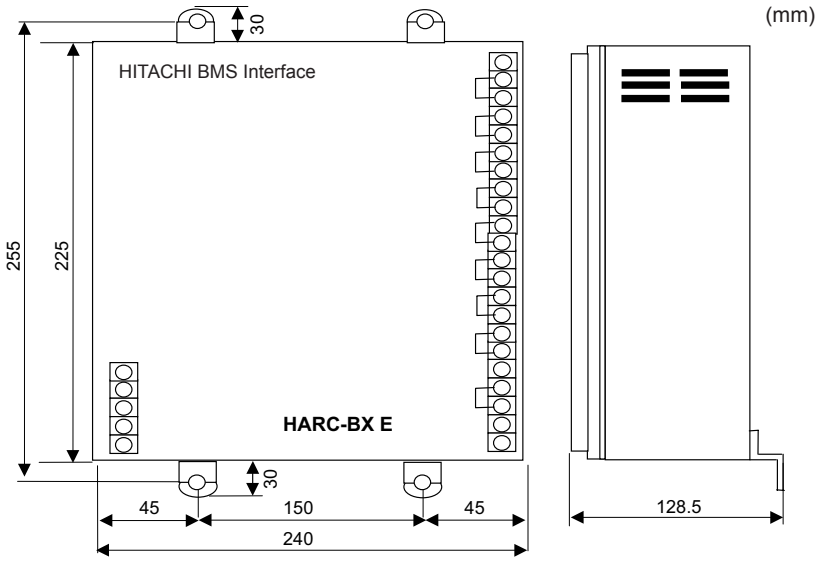
Telecommunication specifications for monobloc air conditioning

Element	Specification
Communication unit	Monobloc air conditioning
Communications cable	Non-polar, 2 wire system
Telecommunications system	Half-duplex telecommunications
Synchronous system	Asynchronous communication system
Telecommunications speed	9,600 bps
Cable length	1,000 m (total length)
Connection quantity	Option Type A: Max amount of units: 64 Option Type A: Max amount of units: 32

Telecommunication specifications for the upper system

Element	Specification
Communication unit	Upper monitoring equipment
Transmission protocol	LonTalk (*) protocol
Access method	Persistent CSMA/CD system planned
Coding system	Differential Manchester Code
Telecommunications speed	78,000 bps
Maximum cable length	500 m (total bus length)
(*) “LonTalk” is an “Echelon Corporation” trademark in the USA and other countries.	

7.4.2.5 Dimensional data



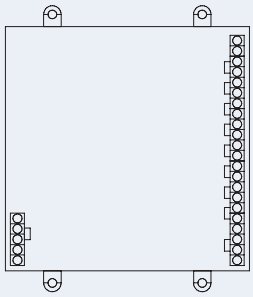
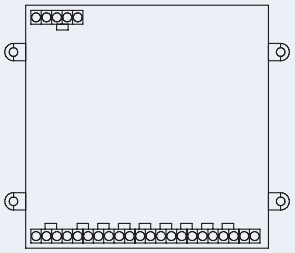
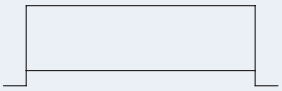
7.4.2.6 Installation space

NOTE

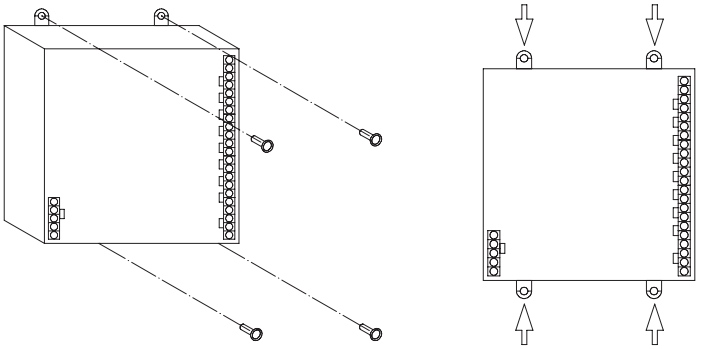
- *Bear in mind the safety summary warnings when selecting the installation site.*
- *The installation site should be located in a place with an earthing connection.*

7.4.2.7 Installation procedure

1 Install the HARC-BX E, placing the screwed terminal board on the right-hand side.

Upper view		Side view
		
Lower		Horizontal installation
OK	X	OK
Correct	Incorrect	Correct

2 Fix the HARC-BX E to the wall with 4 M4 field supply screws.



7.4.3 Electrical wiring

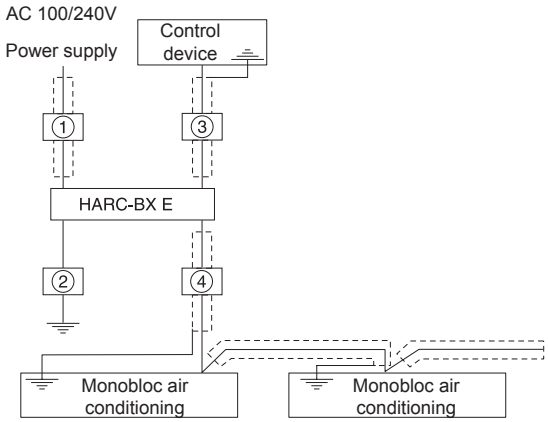
⚠ CAUTION

- *All wiring work must be done in accordance with local regulations and the instructions of the electricity company.*
- *A qualified electrician should carry out the electrical wiring.*
- *Adjust the electrical leakage detector switch in accordance with local regulations.*

7.4.3.1 Type of wiring

1 The wiring for the HARC-BX E depends on the components connected. The HARC-BX E should be installed between the power supply, the monitoring equipment, the mono bloc air conditioning and the earthing connection.

2 Wiring method



No.	Connection equipment	Wiring specifications
①	Power supply wiring	AC 100/240V 2 mm² shielded with 2 cores
②	Earthing cable	According to local regulations
③	Monitoring equipment wiring	LonWork* network cable
④	Signal cable between units	1P-0.75 mm² shielded pair or twisted and shielded pair cable

NOTE

** LonWork network cable: Use the cable recommended by Echelon Co., Ltd and follow the monitoring equipment manufacturer's instructions. For further information, consult the manual supplied by Echelon Co., Ltd "FTT·10A transceiver user guide".*

By way of a reference for the user, the following table describes the types of signal cables and their characteristics.

Cable	Cable diameter/ AWG	Electrical resistance Ω/Km	Capacitance µF/Km	% Vprop of the speed of light
Belden 85102, one/twisted pair, number of cores 19/29, without shielding, 150ºC	1.3 mm/16	28	56	62
Belden 8471, one/twisted pair, number of cores 19/29, without shielding, 60ºC	1.3 mm/16	28	72	55
Level VI 22AWG, twisted pair, one core, without shielding	0.65 mm/22	106	49	67
JY(St)Y2×2×0.8, one core, shielded, spiral 4 cable twisted	0.8 mm/20.4	73	98	41
TIA568A Category 5, 24AWQ, twisted pair	0.51 mm/24	168	46	58

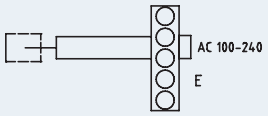
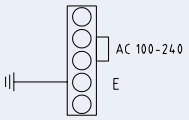
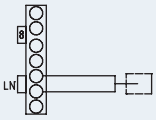
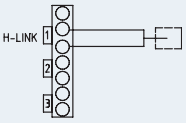
NOTE

If a shielded cable is used, it should be connected via a metal film resistor, with a rating of 470 kΩ 1/4 W, and a tolerance of less than 10% to prevent the generation of static charges.

7.4.3.2 Electrical wiring connection

1 Turn off the main electric switch connected to the cable of the HARC-BX E in order to connect the cable.

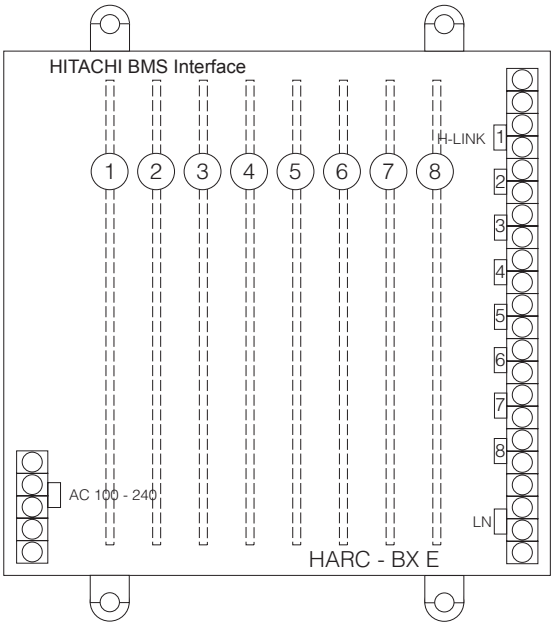
2 Wire in accordance with the following table.

Section		No. *	Wiring method	Comments
Electric power line	100/240V HARC-BX E power supply	①		-
	Earthing wire	②		-
Control circuit	HARC-BX E upper monitoring equipment	③		Non polar
	HARC-BX E Monobloc air conditioning	④		Non polar
* “No.” indicates the cable for the "Wiring type”.				

7.4.3.3 Installation of the PCB plates and the H-LINK terminals

There are 8 PCBs in each HARC-BX E that correspond to the unit’s H-LINK terminals as shown in the following figure.

So that the PCBs can communicate and control the assigned units, they should be connected to the H-LINK corresponding to the circuit where the unit is.



7.4.3.4 DIP switch adjustment

The DIP switches are inside the central HARC-BX E control between the terminal board and the PCBs. The first column of DIP switches (S201) are used to programme the numbers of the outdoor units and indoor units, and the second column of DIP switches (S202) are used to programme the master and slave controls.

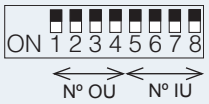
There are two group of 8 DIP switches, which relate to the PCBs, the first line of DIPs with the first PCB and so on.

NOTE

The DIP switches are all deactivated before they are sent from the factory.

1. Configure the DIP switches before turning the power supply on.
2. Remove the front board to the configure the DIP switches.
3. Each board's DIP switch configuration is different.
4. Set the 8 pin DIP switch (S201). The first four pins of the 8 pin DIP switch (S201) are used to set the outdoor unit and the second four pins are used to set the indoor units controlled by the PCB.

The setting procedure for the outdoor unit number and indoor unit number can be seen in the following table.

8 pin DIP switch setting (S201)	Description
	The 8 pin DIP switch (S201) setting is determined by the numbers of the outdoor units (OU) and the numbers of the corresponding indoor units (IU) controlled by the PCB.

The following table explains how to programme the outdoor unit numbers. Up to 16 numbers can be programmed:

OU Nº	Pin setting	OU Nº	Pin setting	OU Nº	Pin setting	OU Nº	Pin setting
0		4		8		12	
1		5		9		13	
2		6		10		14	
3		7		11		15	

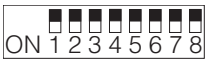
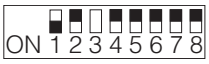
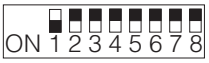
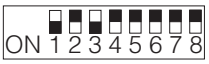
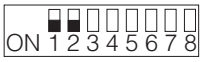
The following table explains how to programme the numbers of the indoor units controlled for each board:

HARC-BX (A)		HARC-BX (B)	
Indoor units	Pin setting	Indoor units	Pin setting
from 0 to 7 (8 IU)		from 0 to 3 (4 IU)	
		from 4 to 7 (4 IU)	
from 8 to 15 (8 IU)		from 8 to 11 (4 IU)	
		from 12 to 15 (4 IU)	

The position of the switch indicates the address of the first indoor unit for this group of 8 units in the case of the HARC- BX(A) or the first indoor unit for the group of 4 units in the case of the HARC-BX(B).

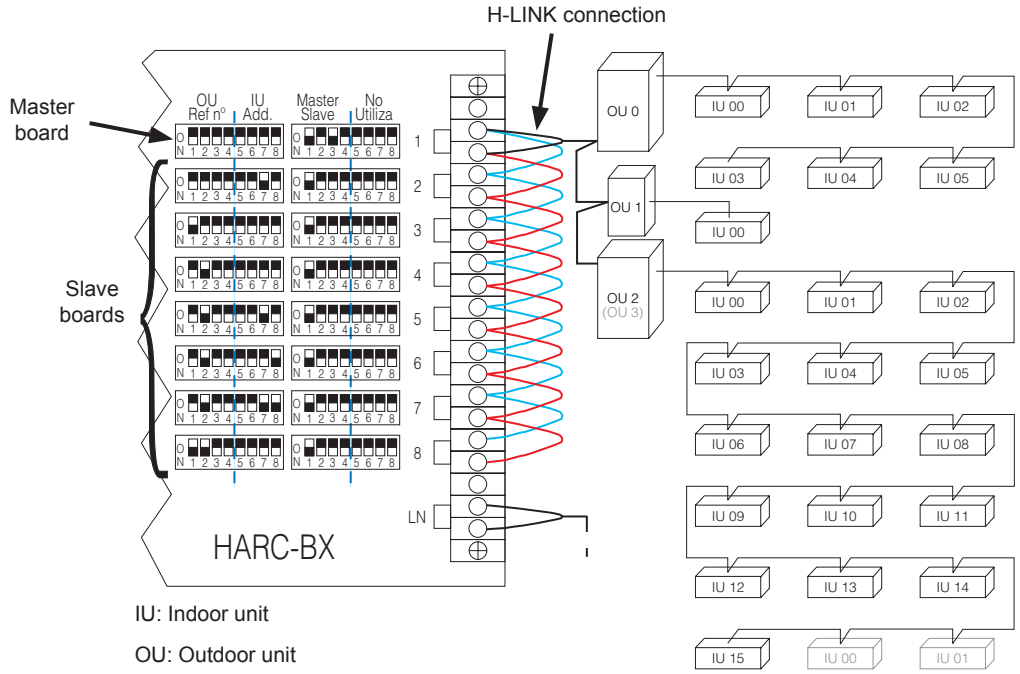
Only the address indicated in the table above can be used for each group.

5 Set the 8 pin DIP switch (S202). The 8 pin DIP switch (S202) is used as follows:

Board not activated	
Activate the board to control a given number of indoor units based on S201	
Board active as slave	
Board active master (only one board can be a master board on each H-LINK line)	
Test run for the activated board (see section *"7.4.4 Test run"* for further details)	

DIP programming example

The following diagram shows an example for connecting a HARC-BX(B) on an installation:



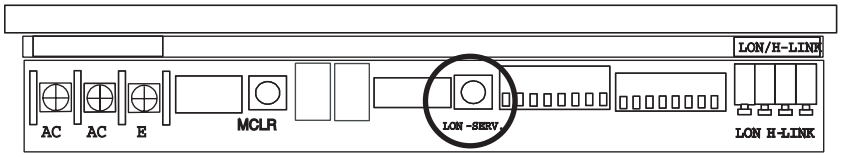
IU: Indoor unit

OU: Outdoor unit

7.4.3.5 BMS connection

Take the following points into account for the correct connection of the BMS:

- The correct electric wiring as indicated in previous sections.
- The BMS protocol:
- The BMS should update its hardware via LonWorks as shown previously.
- BMS start up:
- Press the LON.SERV button:



- When this button is pressed, the HARC-BX E sends the "Neuron Chip ID" identification.
- The communication starts at that moment and the BMS can read and receive orders.
- BMS troubleshooting is the responsibility of the BMS itself.

7.4.4 Test run

1 Check that all the *"7.4.3.2 Electrical wiring connection"* and *"7.4.3.4 DIP switch adjustment"* procedures have been carried out.

2 Turn the power supply by following the procedure below:

- Plug in the mono bloc air conditioning.
- Plug the HARC-BX E in.

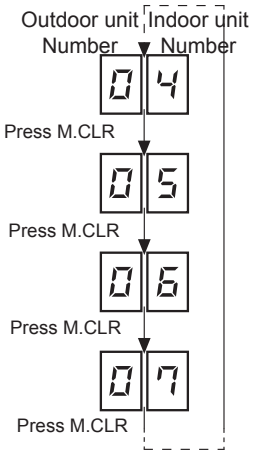
3 Check the HARC-BX E connection.

The 7-segment display will change, as shown in the following table, when the HARC-BX E has been plugged in. Check the 7-segment display.

Step	7-segment display	Status
1	-	OFF
2	88	End of system initialization
3	22	Checking the monobloc air conditioning, number of connected remote controls
4	00	Normal transmission between the HARC-BX E and the monobloc air conditioning.

4 Check the number of identified Indoor Units. The number of Indoor Units identified by the HARC-BX E will be shown on the 7-segment display after pressing the (PSW [M.CLR]) button on the HARC-BX E. With the 7-segment display indicating "00". (Check if this number is the same as the actual number of Indoor Units).

5 When the recognisable indoor units have been located, check the Indoor Unit system numbers and the unit numbers that the HARC-BX E has identified. Only put the 8 pin DIP switch (201) pin no. 1 in the ON position. All the system and unit numbers of the recognisable Indoor Units will be shown in the 7-segment display after pressing the (PSW[M. CLR] button on the HARC-BX E. If multiple Indoor Units are identified, the system and unit numbers for the identified Indoor Units will be shown sequentially every time the (PSW[CLR]) button is pressed. The system numbers will appear on the left-hand side of the 7-segment display and the unit numbers on the right-hand side. (Check if this number is the same as the actual number of Indoor Units).



8 pin DIP switch setting (S202)



7-segment display	Description	7-segment display	Description	7-segment display	Description	7-segment display	Description
0	OU number 01 or IU number 01	4	OU number 05 or IU number 05	8	OU number 09 or IU number 09	C	OU number 13 or IU number 13
1	OU number 02 or IU number 02	5	OU number 06 or IU number 06	9	OU number 10 or IU number 10	d	OU number 14 or IU number 14
2	OU number 03 or IU number 03	6	OU number 07 or IU number 07	A	OU number 11 or IU number 11	E	OU number 15 or IU number 15
3	OU number 04 or IU number 04	7	OU number 08 or IU number 08	b	OU number 12 or IU number 12	F	OU number 16 or IU number 16

6 Put pin no. 2 of the 8 pin DIP switch (S202) in the OFF position when all the checks are completed.

The test mode is complete.

8 pin DIP switch setting (S202)


7.4.5 Operation

7.4.5.1 Variables list

◆ Communication with LonWorks interface

HARC-BX(A)

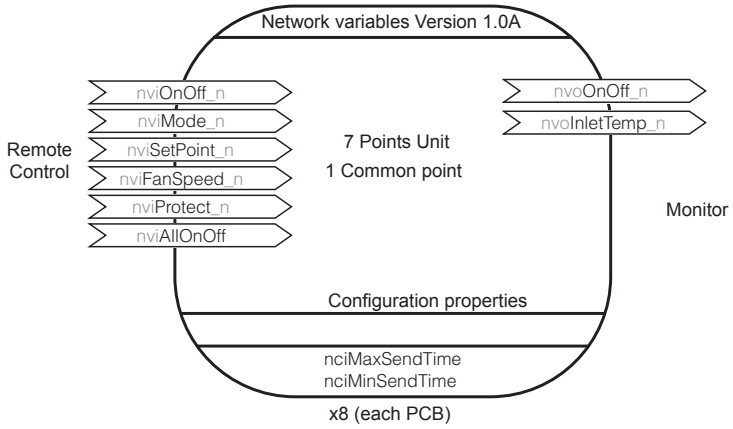
The HARC-BX(A) is a LonWorks interface designed for cases where only the control of the units is required and there is no need for unit operation monitoring.

This interface allows the control of:

- Up to 64 indoor units and 8 outdoor units
- Up to 8 interfaces per H-LINK

a. HARC-BX(A) communication mode:

The following variables can be controlled and monitored in each of the interface's 8 PCBs:



b. XIF file variables

SVNT number	Unit number	Variable number	Type	LONMARK SNVT Number	Description	Condition	Note
0	0	nviOnOff_0	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	Allow an interval of at least 5 sec. between 2 consecutive orders to any unit on a H-LINK
1	0	nviMode_0	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
2	0	nviSetPoint_0	SNVT_temp_p	105	Temperature setting	2 Bytes: 1700~3000 = 17~30ºC	
3	0	nviFanSpeed_0	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
4	0	nviProtect_0	SNVT_switch	95	Remote control order enabled	Byte 1: Value 0 (Fixed) Byte 2: State 0: RCS enabled State 1: RCS disabled	
5	0	nvoOnOff_0	SNVT_state	83	ON/OFF state and alarm notification	32 bits: bit 0: 0 (STOP)/1 (RUN) bit 1: 0 (Normal) /1 (Alarm)	Approximate update time of 80 sec.
6	0	nvoInletTemp_0	SNVT_temp_p	105	Indoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
7	1	nviOnOff_1	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	Allow an interval of at least 5 sec. between 2 consecutive orders to any unit on a H-LINK
8	1	nviMode_1	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
9	1	nviSetPoint_1	SNVT_temp_p	105	Temperature setting	2 Bytes: 1700~3000 = 17~30ºC	
10	1	nviFanSpeed_1	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
11	1	nviProtect_1	SNVT_switch	95	Remote control order enabled	Byte 1: Value 0 (Fixed) Byte 2: State 0: RCS enabled State 1: RCS disabled	
12	1	nvoOnOff_1	SNVT_state	83	ON/OFF state and alarm notification	32 bits: bit 0: 0 (STOP)/1 (RUN) bit 1: 0 (Normal) /1 (Alarm)	Approximate update time of 80 sec.
13	1	nvoInletTemp_1	SNVT_temp_p	105	Indoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	

SVNT number	Unit number	Variable number	Type	LONMARK SNVT Number	Description	Condition	Note
14	2	nviOnOff_2	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	Allow an interval of at least 5 sec. between 2 consecutive orders to any unit on a H-LINK
15	2	nviMode_2	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
16	2	nviSetPoint_2	SNVT_temp_p	105	Temperature setting	2 Bytes: 1700~3000 = 17~30ºC	
17	2	nviFanSpeed_2	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
18	2	nviProtect_2	SNVT_switch	95	Remote control order enabled	Byte 1: Value 0 (Fixed) Byte 2: State 0: RCS enabled State 1: RCS disabled	
19	2	nvoOnOff_2	SNVT_state	83	ON/OFF state and alarm notification	32 bits: bit 0: 0 (STOP)/1 (RUN) bit 1: 0 (Normal) /1 (Alarm)	Approximate update time of 80 sec.
20	2	nvoInletTemp_2	SNVT_temp_p	105	Indoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
21	3	nviOnOff_3	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	Allow an interval of at least 5 sec. between 2 consecutive orders to any unit on a H-LINK
22	3	nviMode_3	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
23	3	nviSetPoint_3	SNVT_temp_p	105	Temperature setting	2 Bytes: 1700~3000 = 17~30ºC	
24	3	nviFanSpeed_3	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
25	3	nviProtect_3	SNVT_switch	95	Remote control order enabled	Byte 1: Value 0 (Fixed) Byte 2: State 0: RCS enabled State 1: RCS disabled	
26	3	nvoOnOff_3	SNVT_state	83	ON/OFF state and alarm notification	32 bits: bit 0: 0 (STOP)/1 (RUN) bit 1: 0 (Normal) /1 (Alarm)	Approximate update time of 80 sec.
27	3	nvoInletTemp_3	SNVT_temp_p	105	Indoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	

SVNT number	Unit number	Variable number	Type	LONMARK SNVT Number	Description	Condition	Note
28	4	nviOnOff_4	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	Allow an interval of at least 5 sec. between 2 consecutive orders to any unit on a H-LINK
29	4	nviMode_4	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
30	4	nviSetPoint_4	SNVT_temp_p	105	Temperature setting	2 Bytes: 1700~3000 = 17~30ºC	
31	4	nviFanSpeed_4	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
32	4	nviProtect_4	SNVT_switch	95	Remote control order enabled	Byte 1: Value 0 (Fixed) Byte 2: State 0: RCS enabled State 1: RCS disabled	
33	4	nvoOnOff_4	SNVT_state	83	ON/OFF state and alarm notification	32 bits: bit 0: 0 (STOP)/1 (RUN) bit 1: 0 (Normal) /1 (Alarm)	Approximate update time of 80 sec.
34	4	nvoInletTemp_4	SNVT_temp_p	105	Indoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
35	5	nviOnOff_5	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	Allow an interval of at least 5 sec. between 2 consecutive orders to any unit on a H-LINK
36	5	nviMode_5	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
37	5	nviSetPoint_5	SNVT_temp_p	105	Temperature setting	2 Bytes: 1700~3000 = 17~30ºC	
38	5	nviFanSpeed_5	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle,Value 3: HighByte 2: State 0 (Fixed)	
39	5	nviProtect_5	SNVT_switch	95	Remote control order enabled	Byte 1: Value 0 (Fixed) Byte 2: State 0: RCS enabled State 1: RCS disabled	
40	5	nvoOnOff_5	SNVT_state	83	ON/OFF state and alarm notification	32 bits: bit 0: 0 (STOP)/1 (RUN) bit 1: 0 (Normal) /1 (Alarm)	Approximate update time of 80 sec.
41	5	nvoInletTemp_5	SNVT_temp_p	105	Indoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
42	6	nviOnOff_6	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	Allow an interval of at least 5 sec. between 2 consecutive orders to any unit on a H-LINK
43	6	nviMode_6	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
44	6	nviSetPoint_6	SNVT_temp_p	105	Temperature setting	2 Bytes: 1700~3000 = 17~30ºC	
45	6	nviFanSpeed_6	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
46	6	nviProtect_6	SNVT_switch	95	Remote control order enabled	Byte 1: Value 0 (Fixed) Byte 2: State 0: RCS enabled State 1: RCS disabled	

SVNT number	Unit number	Variable number	Type	LONMARK SNVT Number	Description	Condition	Note
47	6	nvoOnOff_6	SNVT_state	83	ON/OFF state and alarm notification	32 bits: bit 0: 0 (STOP)/1 (RUN) bit 1: 0 (Normal) /1 (Alarm)	Approximate update time of 80 sec.
48	6	nvoInletTemp_6	SNVT_temp_p	105	Indoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
49	7	nviOnOff_7	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	Allow an interval of at least 5 sec. between 2 consecutive orders to any unit on a H-LINK
50	7	nviMode_7	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
51	7	nviSetPoint_7	SNVT_temp_p	105	Temperature setting	2 Bytes: 1700~3000 = 17~30ºC	
52	7	nviFanSpeed_7	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
53	7	nviProtect_7	SNVT_switch	95	Remote control order enabled	Byte 1: Value 0 (Fixed) Byte 2: State 0: RCS enabled State 1: RCS disabled	
54	7	nvoOnOff_7	SNVT_state	83	ON/OFF state and alarm notification	32 bits: bit 0: 0 (STOP)/1 (RUN) bit 1: 0 (Normal) /1 (Alarm)	Approximate update time of 80 sec.
55	7	nvoInletTemp_7	SNVT_temp_p	105	Indoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
56	Outdoor	nviAllOnOff	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	
57		nciMaxSendTime		107			The use of standard values is recommended (do not change)
58		nciMinSendTime		107			
59		nciPwrUp		107			
HARC-BX(A) XIF file variables list							

◆ HARC-BX(B)

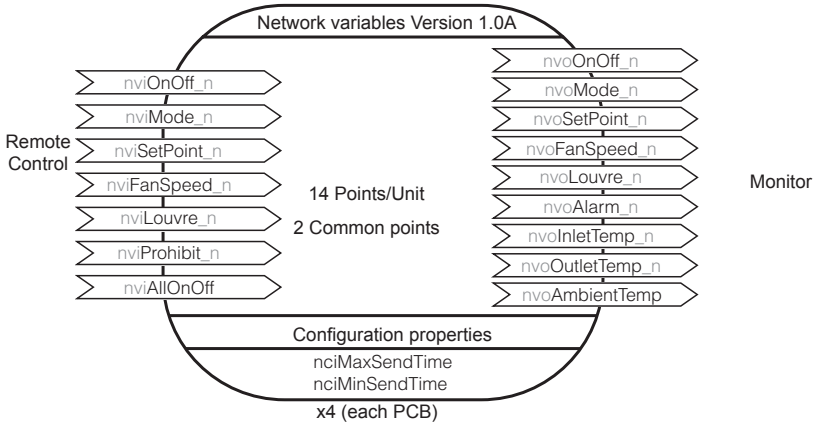
The HARC-BX(B) is a LonWorks interface designed for cases that require a more detailed control of the units, in addition to complete unit operation monitoring functions.

This interface allows us to:

- Control up to 32 indoor units and 8 outdoor units
- Connect up to 8 interfaces per H-LINK

a. HARC-BX(B) communication mode:

The following variables can be controlled and monitored in each of the interface's 8 PCBs:



b. XIF file variables

SVNT number	Unit number	Variable name	Type	LONMARK SNVT Number	Description	Condition	Note
0	0	nviOnOff_0	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	Allow an interval of at least 5 sec. between 2 consecutive orders to any unit on a H-LINK
1	0	nviMode_0	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
2	0	nviSetPoint_0	SNVT_temp_p	105	Temperature setting	2 Bytes: 1700~3000 = 17~30ºC	
3	0	nviFanSpeed_0	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
4	0	nviLouver_0	SNVT_switch	95	Louver setting	Byte 1: Value 0: 20, 1: 25, 2: 30, 3: 35, 4: 45, 5: 55, 6: 70, 7: Auto Byte 2: State 0 (Fixed)	
5	0	nviProtect_0	SNVT_switch	95	Remote control order enabled	Byte 1: Value 0 (Fixed) Byte 2: State 0: RCS enabled State 1: RCS disabled	

SVNT number	Unit number	Variable name	Type	LONMARK SNVT Number	Description	Condition	Note
6	0	nvoOnOff_0	SNVT_state	83	ON/OFF state and alarm notification	32 bits: bit 0: 0 (STOP)/1 (RUN) bit 1: 0 (Normal) /1 (Alarm)	Approximate update time of 80 sec.
7	0	nvoMode_0	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
8	0	nvoSetPoint_0	SNVT_temp_p	105	Temperature reading setting	2 Bytes: 1700~3000 = 17~30ºC	
9	0	nvoFanSpeed_0	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
10	0	nvoLouver_0	SNVT_switch	95	Louver setting	Byte 1: Value 0: 20, 1: 25, 2: 30, 3: 35, 4: 45, 5: 55, 6: 70, 7: Auto Byte 2: State 0 (Fixed)	
11	0	nvoAlarmDe-scr_0	SNVT_str_asc	36	Alarm description	31 Bytes: First 2 byte alarm description. 3rd byte 0.	
12	0	nvoInletTemp_0	SNVT_temp_p	105	Indoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
13	0	nvoOut-letTemp_0	SNVT_temp_p	105	Outdoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
14	1	nviOnOff_1	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	Allow an interval of at least 5 sec. between 2 consecutive orders to any unit on a H-LINK
15	1	nviMode_1	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
16	1	nviSetPoint_1	SNVT_temp_p	105	Temperature setting	2 Bytes: 1700~3000 = 17~30ºC	
17	1	nviFanSpeed_1	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: HighByte 2: State 0 (Fixed)	
18	1	nviLouver_1	SNVT_switch	95	Louver setting	Byte 1: Value 0: 20, 1: 25, 2: 30, 3: 35, 4: 45, 5: 55, 6: 70, 7: Auto Byte 2: State 0 (Fixed)	
19	1	nviProtect_1	SNVT_switch	95	Remote control order enabled	Byte 1: Value 0 (Fixed) Byte 2: State 0: RCS enabled State 1: RCS disabled	

SVNT number	Unit number	Variable name	Type	LONMARK SNVT Number	Description	Condition	Note
20	1	nvoOnOff_1	SNVT_state	83	ON/OFF state and alarm notification	32 bits: bit 0: 0 (STOP)/1 (RUN) bit 1: 0 (Normal) /1 (Alarm)	Approximate update time of 80 sec.
21	1	nvoMode_1	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
22	1	nvoSetPoint_1	SNVT_temp_p	105	Temperature reading setting	2 Bytes: 1700~3000 = 17~30ºC	
23	1	nvoFanSpeed_1	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
24	1	nvoLouver_1	SNVT_switch	95	Louver setting	Byte 1: Value 0: 20, 1: 25, 2: 30, 3: 35, 4: 45, 5: 55, 6: 70, 7: Auto Byte 2: State 0 (Fixed)	
25	1	nvoAlarmDescr_1	SNVT_str_asc	36	Alarm description	31 Bytes: First 2 byte alarm description. 3rd byte 0.	
26	1	nvoInletTemp_1	SNVT_temp_p	105	Indoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
27	1	nvoOutletTemp_1	SNVT_temp_p	105	Outdoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
28	2	nviOnOff_2	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	Allow an interval of at least 5 sec. between 2 consecutive orders to any unit on a H-LINK
29	2	nviMode_2	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
30	2	nviSetPoint_2	SNVT_temp_p	105	Temperature setting	2 Bytes: 1700~3000 = 17~30ºC	
31	2	nviFanSpeed_2	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
32	2	nviLouver_2	SNVT_switch	95	Louver setting	Byte 1: Value 0: 20, 1: 25, 2: 30, 3: 35, 4: 45, 5: 55, 6: 70, 7: Auto Byte 2: State 0 (Fixed)	
33	2	nviProtect_2	SNVT_switch	95	Remote control order enabled	Byte 1: Value 0 (Fixed) Byte 2: State 0: RCS enabled State 1: RCS disabled	

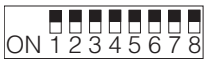
SVNT number	Unit number	Variable name	Type	LONMARK SNVT Number	Description	Condition	Note
34	2	nvoOnOff_2	SNVT_state	83	ON/OFF state and alarm notification	32 bits: bit 0: 0 (STOP)/1 (RUN) bit 1: 0 (Normal) /1 (Alarm)	Approximate update time of 80 sec.
35	2	nvoMode_2	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
36	2	nvoSetPoint_2	SNVT_temp_p	105	Temperature reading setting	2 Bytes: 1700~3000 = 17~30ºC	
37	2	nvoFanSpeed_2	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
38	2	nvoLouver_2	SNVT_switch	95	Louver setting	Byte 1: Value 0: 20, 1: 25, 2: 30, 3: 35, 4: 45, 5: 55, 6: 70, 7: Auto Byte 2: State 0 (Fixed)	
39	2	nvoAlarmDescr_2	SNVT_str_asc	36	Alarm description	31 Bytes: First 2 byte alarm description. 3rd byte 0.	
40	2	nvoInletTemp_2	SNVT_temp_p	105	Indoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
41	2	nvoOutletTemp_2	SNVT_temp_p	105	Outdoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
42	3	nviOnOff_3	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	Allow an interval of at least 5 sec. between 2 consecutive orders to any unit on a H-LINK
43	3	nviMode_3	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
44	3	nviSetPoint_3	SNVT_temp_p	105	Temperature setting	2 Bytes: 1700~3000 = 17~30ºC	
45	3	nviFanSpeed_3	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
46	3	nviLouver_3	SNVT_switch	95	Louver setting	Byte 1: Value 0: 20, 1: 25, 2: 30, 3: 35, 4: 45, 5: 55, 6: 70, 7: Auto Byte 2: State 0 (Fixed)	
47	3	nviProtect_3	SNVT_switch	95	Remote control order enabled	Byte 1: Value 0 (Fixed) Byte 2: State 0: RCS enabled State 1: RCS disabled	

SVNT number	Unit number	Variable name	Type	LONMARK SNVT Number	Description	Condition	Note
48	3	nvoOnOff_3	SNVT_state	83	ON/OFF state and alarm notification	32 bits: bit 0: 0 (STOP)/1 (RUN) bit 1: 0 (Normal) /1 (Alarm)	Approximate update time of 80 sec.
49	3	nvoMode_3	SNVT_hvac_mode	108	Operation mode setting	1 byte: 1 = HVAC_HEAT (Heating) 3 = HVAC_COOL (Cooling) 5 = HVAC_PRE_COOL (Dehumidification) 9 = HVAC_FAN_ONLY (Ventilation)	
50	3	nvoSetPoint_3	SNVT_temp_p	105	Temperature reading setting	2 Bytes: 1700~3000 = 17~30ºC	
51	3	nvoFanSpeed_3	SNVT_switch	95	Fan speed setting	Byte 1: Value 1: Low, Value 2: Middle, Value 3: High Byte 2: State 0 (Fixed)	
52	3	nvoLouver_3	SNVT_switch	95	Louver setting	Byte 1: Value 0: 20, 1: 25, 2: 30, 3: 35, 4: 45, 5: 55, 6: 70, 7: Auto Byte 2: State 0 (Fixed)	
53	3	nvoAlarmDescr_3	SNVT_str_asc	36	Alarm description	31 Bytes: First 2 byte alarm description 3rd byte 0.	
54	3	nvoInletTemp_3	SNVT_temp_p	105	Indoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
55	3	nvoOutletTemp_3	SNVT_temp_p	105	Outdoor temperature reading	2 Bytes: -6200~12700 = -62~127ºC	
56	Outdoor	nvoAmbientTemp	SNVT_temp_p	105	Temperature reading setting	2 Bytes: -6200~12700 = -62~127ºC	
57	Outdoor	nviAllOnOff	SNVT_switch	95	ON/OFF order	Byte 1: Value 0 (Fixed) Byte 2: State 0 = STOP State 1 = RUN	
58		nciMaxSendTime		107			The use of standard values is recommended (do not change)
59		nciMinSendTime		107			
60		nciPwrUp		107			
HARC-BX(B) XIF file variables list							

7.4.5.2 HARC-BX E self-check

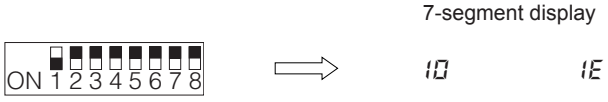
The self-check, used to identify any abnormal conditions which may occur in the HARC-BX E, can be carried out with the following procedures:

1 Connect the power supply leaving the 8 pin DIP switch (S202) in the OFF position. "88" appears on the 7-segment display and turns off).



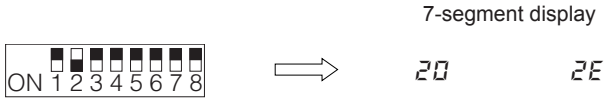
8 pin DSW (S202)

2 Only put the 8 pin DIP switch (201) pin no. 1 in the ON position.



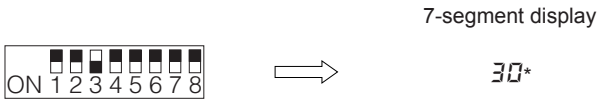
8 pin DSW (S201) Normal Abnormal

3 Put 8 pin DIP switch (201) pin no. 1 in the OFF position and then place only pin no. 2 in the ON position. (This action should be carried out whilst also configuring the termination resistance of the terminal on the H-LINK).



8 pin DSW (S201) Normal Abnormal

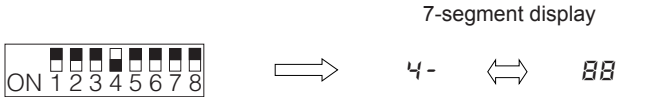
4 Put 8 pin DIP switch (201) pin no. 2 in the OFF position and then place only pin no. 3 in the ON position.



8 pin DSW (S201)

* The total number of pins in the ON position out of pin numbers 1 to 5 of the 8 pin DIP switch (S202) will be shown on the right-hand side of the display, and a number "3" will appear on the left-hand side of the display.

5 Put 8 pin DIP switch (201) pin no. 3 in the OFF position and then place only pin no. 4 in the ON position.



8 pin DSW (S201) Normal Abnormal

7.4.5.3 Indication of abnormal conditions

1 Abnormal conditions will be displayed on the 7-segment display of the HARC-BX E.

7-segment display	Phenomenon	Type of abnormal condition
11	Abnormal initial connection.	No remote control has been found (connection fault).
44	Abnormal transmission on the remote control.	There has been no response 70 seconds after the attempted transmission to the remote control.
61	Abnormal transmission on the remote control.	There has been no response 180 seconds after the attempted transmission to the remote control.

7.4.6 Troubleshooting

The following table shows the possible troubleshooting actions to be carried out in the event of unit malfunction.

Make sure that the power supply is disconnected before starting any check.

No.	Phenomenon	Check points	Action
1	The HARC-BX E does not start up although the power supply is turned on. (No indication in the 7-segment display).	Check that the electricity cable is connected.	Connect the electricity cable.
		Check that it supplies electricity.	Measure the power supply voltage. If the voltage measurement exceeds the normal range of 100~240±10%[V], the wiring systems and procedures should be inspected and examined.
		Check if the power supply is turned on (PWRs ON).	If the pilot light is off there may be a fault in the internal power supply. Contact your nearest service centre.
		Check whether the screws on the power supply are loose.	Tighten them.
		Check if the LED (PWR or transmission display) is on.	Check the transmission circuit of the air conditioning systems with the self-check function. Then check if the monobloc air conditioning transmission circuit is operating normally.
		Check if the LED (LON or transmission display) is on.	Check the upper transmission circuit with the self-check function. Then check if the upper transmission circuit is operating normally.
		Check if the LED (LON or transmission display) is flashing at regular intervals (from 1 to 2 sec.).	The flashing indicates that there could be a fault in the internal power supply. Contact your nearest service centre.
2	The HARC-BX E does not identify the air conditioning even though the power supply is on. (“ ” appears on the 7-segment display). After the “00” indication on the 7-segment screen with test mode, the actual amount of air conditioning units does not match with these addresses.	Check if the HARC-BX E (OP) DIP switches are correctly configured.	The DIP switch must be configured again following the installation and maintenance manual and operation manual on how to configure the HARC-BX E DIP switch.
		Check if the air conditioning system and address are correctly configured.	The address should be configured again as indicated in the installation and maintenance manual and the operation manual.
		Check if the transmission cable to the air conditioning units is disconnected.	Examine the cable connection.
		Check if the transmission cable specified by the manufacturer has been used to connect to the air conditioning units.	Use a shielded cable or twisted and shielded pair cable (0.75 mm2).
		Check if the transmission cable connected to the air conditioning is connected to the power supply cable.	Leave a minimum space of 150 mm between cables.
		Check if the termination resistance of the terminal and the number of the transmission cable to the air conditioning unit is correctly configured.	Only one termination resistance should only be configured on one system. (The resistance between cables is approx. 150 Ω).
		Check if the transmission circuit operates normally with the self-check function.	The termination resistance should be configured in relation to the air conditioning transmission cable.
		Check if the air conditioning's power supply is ON.	The air conditioning should be in the ON position.
		Check if the transmission cable between the air conditioning units is disconnected.	Examine the cable connection.
		Check if the LED (H-L) of the transmission display is on.	Check the transmission circuit of the air conditioning system with the self-check function. Then check if the air conditioning transmission circuit is operating normally.
		Check if the LED (H-L) of the transmission display is off.	Check the transmission circuit of the air conditioning system with the self-check function. Then check if the air conditioning transmission circuit is operating normally.

No.	Phenomenon	Check points	Action
3	The 7-segment display shows "44".	Check if the transmission cable specified by the manufacturer has been used to connect to the air conditioning units.	Use a shielded cable or twisted and shielded pair cable (0.75 mm2).
		Check if the transmission cable connected to the air conditioning is connected to the power supply cable.	Leave a minimum space of 150 mm between cables.
		Check if the termination resistance of the terminal and the number of the transmission cable between the air conditioning units is correctly configured.	Only one termination resistance should only be configured on one system. (The resistance between cables is approx. 150 Ω).
		Check if the transmission circuit operates normally with the self-check function.	The termination resistance should be configured in relation to the air conditioning transmission cable.
		Check if the air conditioning's power supply is ON.	The air conditioning unit should be set to the ON position.

7.4.7 Maintenance

The unit should be periodically inspected with the aim of guaranteeing a reliable performance and long-lasting operation.

1 Ambient conditions:
- Make sure that the internal temperature of the housing panel is not too high.
- Make sure that the temperature of the unit housing is not too high.
- Check if there is any dust or fine metal powder and, if so, remove it. Check the lubrication.

2 Displays:
- Check if the run indicator LED of the power supply (PWR) is on.
- Check that the run indicator for the transmission display (H-L, LON) indicates ON/OFF.
- Check if the 7-segment display shows digits other than "00".

3 Assembly and connection parts:
- Check that the screws for the assembly, power supply, transmission cable and all other screws are correctly tightened.

⚠ CAUTION

Do not use acidic cleaning agents, such as solvents, to clean the units. They could remove the colour from the coating surfaces and melt the plastic box.

8. Control support devices

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8.1 PSC-A1T

8.1.1 Safety summary

DANGER

ELECTRIC SHOCK

- ***DO NOT handle the remote control with wet hands.***
- ***DO NOT spill water on the remote control. This may cause an electric shock.***
- ***If the safety devices should be activated too often or the buttons do not work properly, turn off the unit at the mains and contact your HITACHI service provider.***
- ***In the event of other incidents of an electrical nature, turn off the system, switch it off at the mains and contact your HITACHI service provider.***

CAUTION

DO NOT install the indoor unit, outdoor unit, remote control or any wiring in the following locations:

- *Where there are oil vapours and the oil is dispersed.*
- *In the proximity of hot water or heat sources or in sulphuric environments.*
- *In locations prone to the generation, accumulation, leakage or flow of flammable gas.*
- *Close to the sea (saline atmospheres).*
- *In acidic or alkaline environments.*
- *Within the reach of children.*
- *Directly in front of the air-conditioning system outlet.*

To avoid electromagnetic compatibility problems, DO NOT install the indoor unit, outdoor unit, remote control or any wiring within 3m of strong sources of electromagnetic radiation (e.g. waves generated by medical equipment). If the system should be installed in a location where electromagnetic waves are produced, protect the remote control and wiring by covering them with the steel casing and passing the cable through the metal duct.

If electrical noise should be generated at the indoor unit power source, install a noise filter.

This appliance must be used only by adult and capable people, having received the technical information or instructions to handle properly and safely this appliance.

Children should be supervised to ensure that they do not play with the appliance.

8.1.2 Installation

8.1.2.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

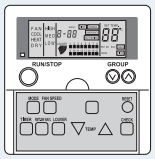
Cable section	0.3 mm^2	≥ 0.75 mm^2
Cable length	30 m	500 m

8.1.2.2 Components list

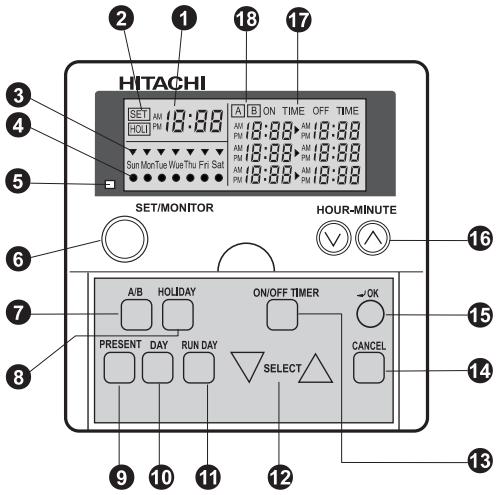
Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quantity	Comments
Control timer		1	For controlling system operation.
M4x16L screws		2	For fixing the bracket to the wall
Cable (1 m)		1	For remote control-timer connection.
Installation and operation manual		1	Installation and operation unit instructions.

8.1.2.3 Description of the parts



Model: PSC-A1T

❶ Current time indicator.

❷ Time setting and holiday indication
This indicates the operation mode, “SET” or “MONITOR”, and the holiday day “HOLI” if it is selected.

❸ Current day indications.

❹ Run day indication.

This indicator appears when a day is set.

❺ Run indicator (green pilot light).

❻ “SET/MONITOR” operation mode selection button

When this button is pressed, the remote control timer switches to setting mode, the "SET" indication will appear and the ▼ symbol will flash. If pressed again, "SET" mode will switch off and the system will change from setting mode to monitor mode.

❼ A/B setting mode selection button.

Press this button to select the mode you wish to switch on (A or B).There are two (2) modes (A and B) set for the weekly schedule. Each mode can be set to “ON”/“OFF” three (3) times a day, seven days a week.

❽ Holiday setting button.

By pressing this button, with the timer in setting mode ("SET"), the "HOLI" indication will appear and the selected day will be set as a holiday. Pressing the button again cancels the holiday setting.

❾ Current time setting button.

By pressing this button, the "SET" indicator and ▼ symbol will flash, allowing the user to set the current time.

❿ Weekday setting button.

With the timer in setting mode ("SET"), use this button to select the weekday. By pressing this button, the ▼ symbol moves in the order “Sun > Moon > ... > Sat”. Pressing "DAY" after "Sat" will select all ▼ marks. If pressed again, the ▼ symbol will return to Sun.

⓫ "RUN DAY" setting button.

Pressing “RUN DAY”, will set the selected day as the run day and the ● symbol will appear.

If pressed again, it will switch off and cancel the selected day.

⓬ “SELECT” setting selection button.

By pressing “SELECT”, the user can select element 1, 2 or 3 for both "ON TIME" and "OFF TIME".

⓭ “ON/OFF TIMER” setting selection button.

When the timer is in "SET" mode, pressing "ON/OFF TIMER", will switch the timer to the "ON/OFF" setting mode and the "ON TIME" indication will flash.

⓮ Setting time “CANCEL” button.

By pressing this button when the timer is set, the "ON TIME" or "OFF TIME" indication will disappear.

⓯ “OK” button.

Pressing this button accepts the selected setting process.

⓰ “HOUR-MINUTE” setting button.

Pressing ⌃ or ⌄ with the timer in setting mode ("SET") adjusts the hours and minutes.

⓱ “ON TIME” and “OFF TIME” setting indication.

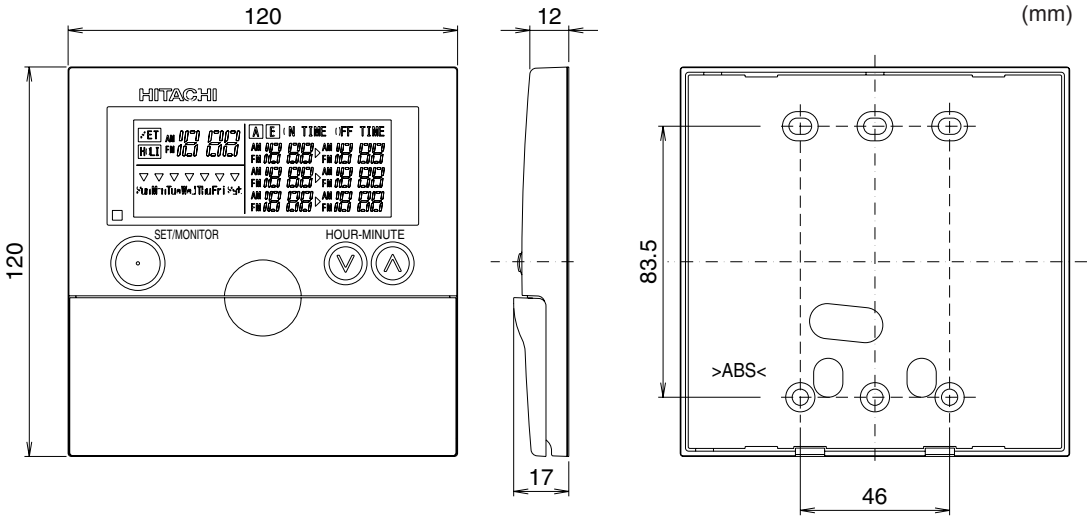
Indicates the setting conditions for the selected day.

⓲ Indication of weekly schedule mode (A or B).

NOTE

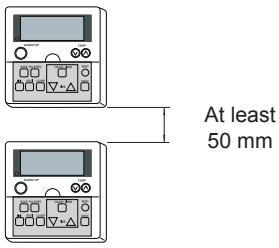
The present time and the ON/OFF setting time are indicated by 12 hours units (AM 0:00 – 11:59 /PM 0:00 – 11:59).

8.1.2.4 Dimensional data



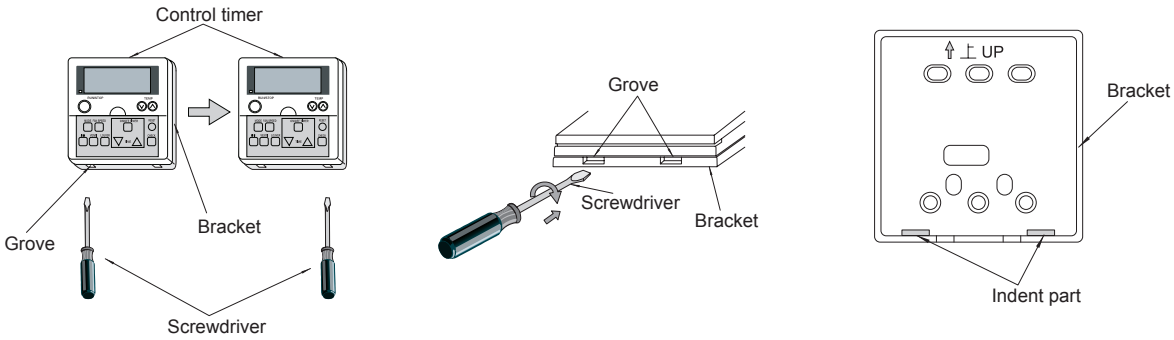
8.1.2.5 Installation space

If several control units are to be installed in a vertical position, leave a distance of at least 50 mm between them to allow the front cover to be opened and to insert the tool for removing the control from its housing.



8.1.2.6 Installation procedure

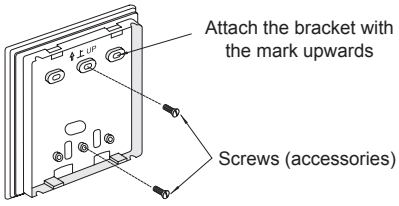
1 Using a flat-head screwdriver, separate the control unit bracket from the front section, as indicated below:



2 Secure the timer to the bracket and connect the cable as illustrated below.

◆ In cases where the remote control cable is exposed

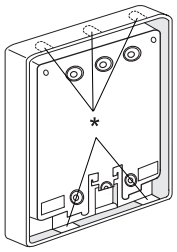
1 Fix the bracket to the wall using the screws supplied



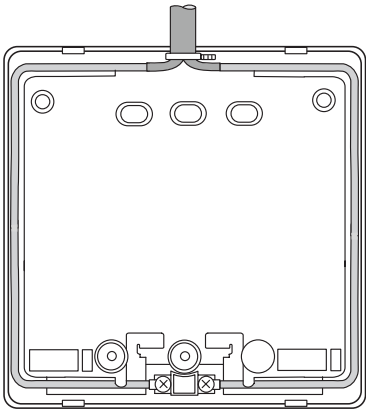
2 Select and cut the knockout hole through which to pass the cable.

Determine the position of the wiring and drill one of the holes marked with * in the diagram.

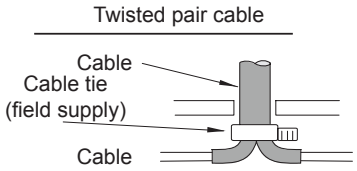
If using an accessory cable, drill a hole on the bottom.

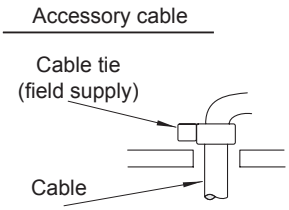


3 Insert the cable through the hole/s.



Attach the band to the cable inside the knockout hole

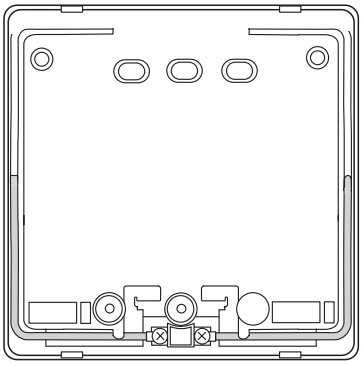


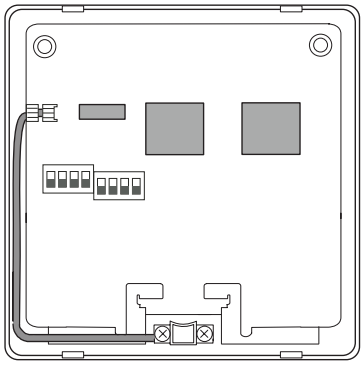


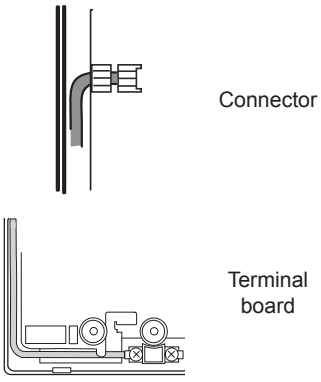
NOTE

Strip the protective insulation from the accessory cable supplied, if used.

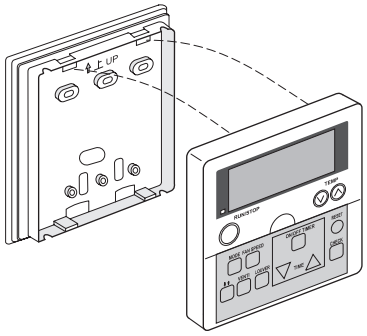
4 Connect the cable to the PCB plate connector or to the terminal.







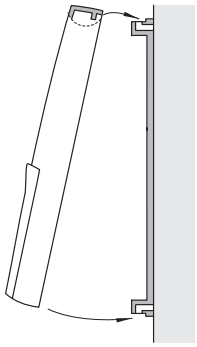
5 Fix the timer to the bracket.



a. Insert the hooks of the timer into the holes on the top of the bracket.

b. Push the bottom part of the timer towards the bracket.

c. The timer will click when it is secured in place. Check that the four hooks are correctly inserted.



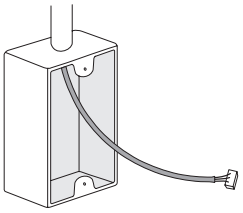
◆ If using an electrical box

There are different types of electrical boxes available on the market that can be used for this installation, for example:

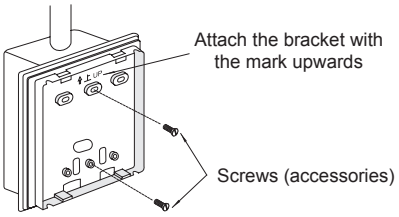
- Electrical box for one remote control unit (without cover).
- Electrical box for 2 remote control units (without cover).
- Electrical box for one remote control unit (with cover).
- Electrical box for 2 remote control units (with cover).
- Output box (with cover).

1 Prepare the electrical box.

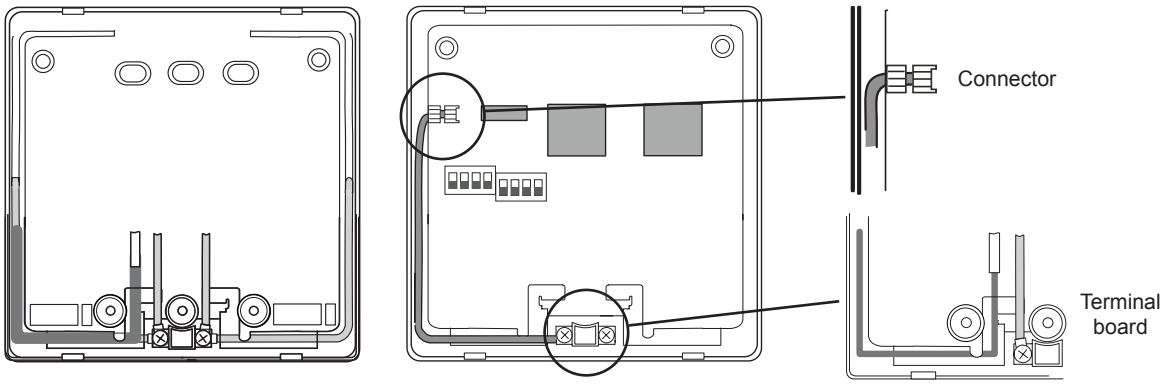
2 Pass the cable through the wall duct.



3 Attach the bracket to the electrical box.



4 Connect the cable to the PCB connector or to the terminals.

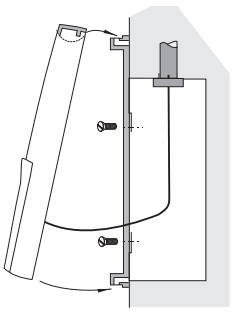


5 Fix the timer to the bracket

a. Insert the hooks of the timer into the holes on the top of the bracket.

b. Push the bottom part of the timer towards the bracket.

c. The timer will click when it is secured in place. Check that the four hooks are correctly inserted.



8.1.3 Electrical wiring

8.1.3.1 Electrical connection of PSC-A1T timer combined with individual or central controllers

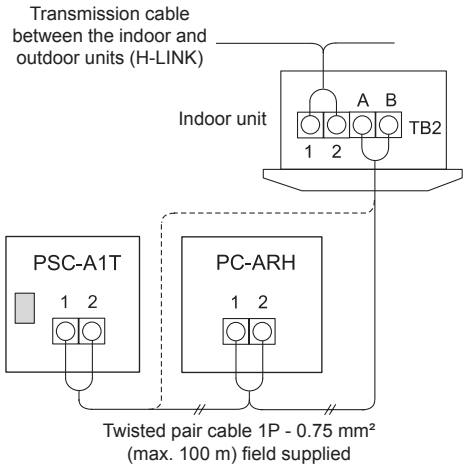
This section explains how to electrically connect the timer to another remote controls or central stations.

⚠ CAUTION

- *Use a twisted pair cable (1P - 0.75 mm²) as a transmission cable to avoid possible communication errors. If the cable exceeds 30 m in length, use:*
  - *Shielded pair cable (connected to earth protection on one side).*
  - *Normal pair cable.*
- *The transmission cable and the remote control cable must be kept at least 30 cm apart.*
- *When installing the timer on an RPK unit, first disable the wireless remote control and then connect a different remote control. The timer can then be connected to the other remote.*

◆ PSC-A1T timer combined with PC-ARH1E or wireless remote control receivers

Set DSW1-4 pin and DSW2-2 pin to ON position on the PSC-A1T.

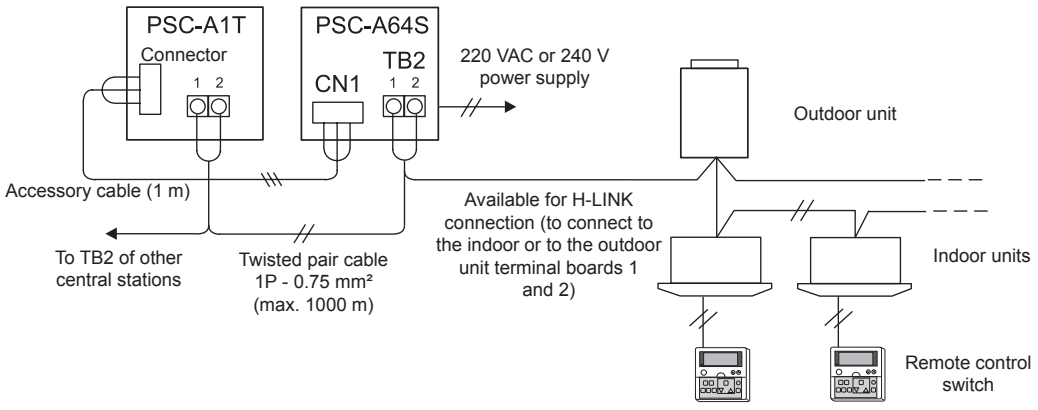


◆ PSC-A1T timer combined with PSC-A64S central control

Set DSW1-4 and DSW2-2 pins to OFF position on the PSC-A1T.

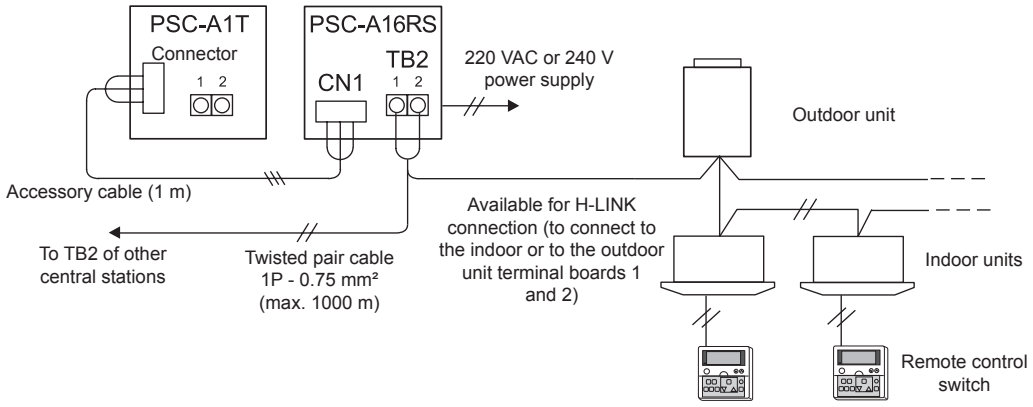
NOTE

Up to 8 PSC-A64S central control units and one PSC-A1T timer can be connected to one H-LINK.



◆ PSC-A1T timer combined with PSC-A16RS centralised ON/OFF controller

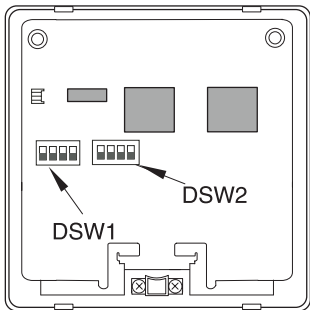
Set DSW1-4 pin OFF and DSW2-2 pin to ON position on the PSC-A1T.



8.1.3.2 DIP switch setting

NOTE

The switches settings are all in OFF position before shipment.



Pin number		Setting content	DSW setting		Comments
			OFF	ON	
DSW1	1	Set address	Consult the following table		The setting needs only be made when the central station (PSC-A64S) is used in combination. Set the address of the central station that you wish to control.
	2				
	3				
	4	For use in conjunction with another remote control	PSC-A64S and PSC-A16RS	PC-ARH1E and Wireless receivers	Set pin number 4 to ON if using the PC-ARH1E remote control or the wireless receiver kits in combination.
DSW2	1	Set the remote control functional limit after the scheduled stoppage time	Setting unavailable	Setting available	This setting is only available when used in conjunction with PSC-A64S, PC-ARH1E or wireless receiver kit. The remote controls will not run after the scheduled stoppage time is set, and will only become available after the start-up command.
	2	For use in conjunction with another remote control	PSC-A64S	PC-ARH1E, wireless receivers and PSC-A16RS	Set pin number 2 according to the remote control used together.
	3	No function	-	-	Do not change the “OFF” setting.
	4	No function	-	-	Do not change the “OFF” setting.

◆ Address setting with DSW1

Address 1	Address 2	Address 3	Address 4	Address 5	Address 6	Address 7	Address 8
							

8.1.4 Test run

Perform the test running according to the procedure described below.

Preparation:

Set the operation schedule according to the section *"8.1.5 Operation"*.

1 In the case where the present time indication is ON TIME (The "RUN" lamp of the control timer is ON).
   - **a.** Set the present time at the time one minute before the OFF time.
   - **b.** One minute later, check to ensure that the target indoor unit is stopped.
   - **c.** After checking, set the present time at the time one minute before the ON time.
   - **d.** One minute later, check to ensure that the target indoor unit is operated.

2 In the case where the present time indication is OFF time (The "RUN" lamp of the control timer is OFF)
   - **a.** Set the present time at the time one minute before the ON time.
   - **b.** One minute later, check to ensure that the target indoor unit is operated.
   - **c.** After checking, set the present time at the time one minute before the OFF time.
   - **d.** One minute later, check to ensure that target indoor unit is stopped.

NOTE

After the test run, set the present time at the correct time again.

When using the PSC-A16RS centralised ON/OFF controller together, the first setting after the test running is not available in the following cases.

- *When the first setting after the test running (1) is ON time*
- *When the first setting after the test running (2) is OFF time*
- *When the "RUN" lamp of the control timer flickers, and there is a failure in transmission. In this case, check for the condition of wiring and the setting of the DIP switch.*

8.1.5 Operation

◆ Setting the current date and time

NOTE

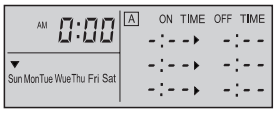
- *During the setting mode or the timer pause mode, the setting of the present time is not available when pressing the "PRESENT" switch more than 3 seconds.*
- *The control timer contains the battery, therefore, the clock keeps on working for 2 weeks after the power failure. If the power failure continues for more than 2 weeks, set the present time again.*

<Example> Condition / Present Day: Friday, Present Time: 5:15PM

Supplying power to the unit.

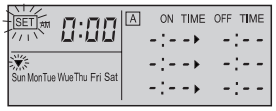
CAUTION

- *The unit should be powered for at least 12 hours before starting it up to protect the compressor.*
- *Do not interrupt the electrical current while the air conditioning system is in use.*



The diagram on the right shows the current time set to 0:00 AM on "Sunday". (When the power is switched on, the current time is not set).

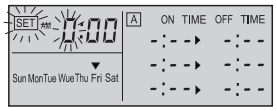
Press and hold the "PRESENT" button for at least 3 seconds.



The screen will switch to the current hour setting mode, and the SET indicator and ▼ symbol will flash.

The diagram on the right shows a case in which neither the "ON" time nor "OFF" time are set.

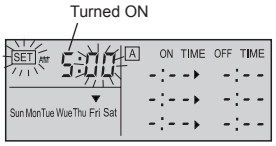
Set the current day by pressing the "DAY" button.



Press the "OK" button after setting the current day; the ▼ sign will switch on and the time indication will flash.

The diagram on the right will show the day setting as Friday.

Set the current time by pressing "HOUR/MINUTE" ⌃ or ⌄.



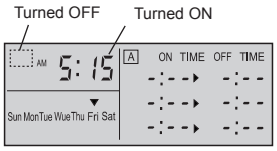
Press the "OK" button after setting the current time; the minute indication will flash.

The diagram on the right shows the hour set to 5 PM.

NOTE

12:00 AM is shown as 00:00 PM

Set the current minutes by pressing "HOUR/MINUTE" ⌃ or ⌄.



Press "OK" after setting the current minutes; the current day and time will be set and the time setting mode will switch to monitor mode. The minute indication will switch on and "SET" will go off.

The diagram on the right shows the minute setting at 15.

◆ Changing weekly schedule mode (A or B)

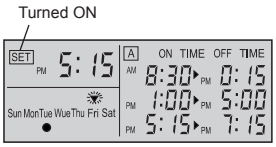
There are 2 modes (A and B) set for the weekly schedule. For each mode, three run times and three stoppage times can be set per day.

They are used for selecting the mode to be set and used.

Modes A and B can be used to set weekly or seasonal operating schedules.

Press the “SET/MONITOR” button.

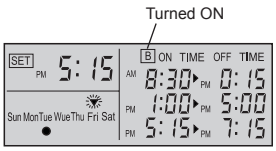
The remote control timer will switch to setting mode and the "SET” indication will appear.



Press the “A/B” button.

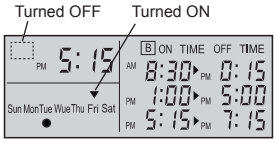
Setting mode is changed (from A to B) by pressing A/B button.

The diagram on the right shows the selection of setting mode B.



Press the “SET/MONITOR” button.

"SET" mode is switched off and setting mode switches to monitor mode.



NOTE

- *In the case where the ON TIME or OFF TIME comes during the setting mode, there is no operation or stoppage. After setting, ensure to change the mode of the control timer to the monitor mode. (For more than 3 minutes without setting operation at the setting mode, the mode of the control timer is automatically changed to the monitor mode.)*
- *During the timer pause mode, the mode is not changed to the setting mode by pressing the “SET/ MONITOR” switch.*

◆ Time settings for: ON/OFF

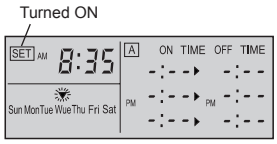
NOTE

- *In case that the centralised ON/OFF controller (PSC-A16RS) is used together, both setting of ON TIME and OFF TIME are required for setting 1, 2 and 3. (The setting of ON TIME (or OFF TIME) only is not available).*
- *In case that the other controller is used together, the setting of ON TIME (or OFF TIME) only is available.*
- *During the timer pause mode, the mode is not changed to the setting mode by pressing the “SET/MONITOR” switch.*

<Example> “A” pattern, Friday, Setting 2, PM 1:00 (ON) / PM 5:00 (OFF)

Press the “SET/MONITOR” button.

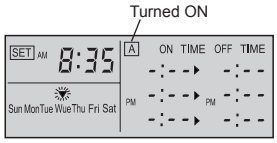
The remote control timer switches to setting mode, the "SET" indication will appear and the ▼ symbol will flash.



The diagram on the right shows an example of the switch to setting mode.

Select schedule mode A or B by pressing "A/B".

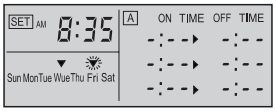
Refer to the previous point *“Changing weekly schedule mode (A or B)”* for changing the pattern.



The diagram on the right shows the case of selecting the set pattern “A”.

Select the day of the week on which to set the “ON/OFF” control

When "DAY" is pressed, the flashing symbol ▼ will move in the following sequence:
“Sun > Moon > ... > Sat”
By pressing "DAY" after "Sat", all ▼ symbols will flash (from Sun to Sat). In this case, the setting is the same for all days of the week. By pressing the "DAY" button once more, the flashing symbol ▼ will return to “Sun”.

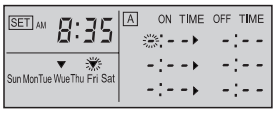


The diagram on the right shows the case of selecting the day “Friday”. The flashing “▼” mark of the present day is turned ON. (In case of selecting the present day, the “▼” mark flashes.)

Press the "ON/OFF TIME" button.

The timer will switch to "ON/OFF" time setting mode and the "ON TIME" indication will flash.

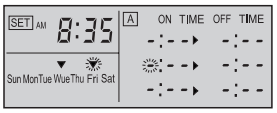
The diagram on the right shows the switch to "ON/OFF" time setting mode.



Select setting 1, 2 or 3 by pressing "SELECT".

When "SELECT" is pressed, the time indication will flash.

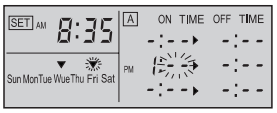
The diagram on the right shows the selection of setting 2.



Set the "ON TIME" hour by pressing the "HOUR/MINUTE" button ⌃ or ⌄.

After setting the time indication, press "OK"; the "ON TIME" minute indication will flash.

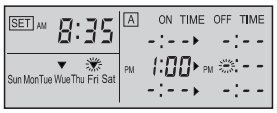
The diagram on the right shows the time set to 1 PM:--



Set the "ON TIME" minutes by pressing "HOUR/MINUTE" ⌃ or ⌄.

After setting the minute indication, press "OK"; the "OFF TIME" time indication will flash.

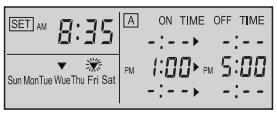
The diagram on the right shows the time set to 1:00 PM.



Set the "OFF TIME".

Follow the same procedure as that used to set the ON time.

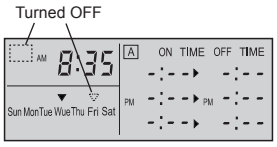
The diagram on the right shows the time set to 5:00 PM.



Press the "SET/MONITOR" button.

The "SET" indication will go off and the remote control timer will switch to monitor mode.

The diagram on the right shows the current day setting condition.



NOTE

- *Depressing the "CANCEL" switch when setting ON time (procedure 6) or OFF time (procedure 8), the indication of ON TIME or OFF TIME is changed to "- : - -". Depressing the "OK" switch in this condition, the setting is cancelled.*
- *In case of using the Timer together with other controller than the remote control switch PC-ARH1E and the central station PSC-A64S, the setting of ON time and OFF time is required.*
- *Depending on the controller to be used with, it may take approximately 15 seconds that the air conditioner starts (or stops) operation after the ON time (or OFF time).*

◆ Setting the Run day

To set the day for actual operation of the running schedule set before. (Though the ON time and OFF time are set, the schedule operation is not available unless the running day is set.)

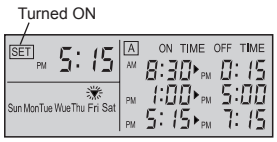
NOTE

- *In case where the central station (PSC-A64S) is used together, the group setting for schedule operation is required by the central station. Refer to the manual of the central station for details.*
- *During the timer pause mode, the mode is not changed to the setting mode by pressing the "SET/ MONITOR" switch.*

<Example> "B" pattern, Tuesday

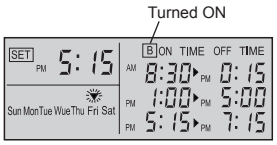
Press the "SET/MONITOR" button.

The timer switches to setting mode, the "SET" indication will appear and the ▼ symbol will flash.



Select mode A or B by pressing "A/B".

The diagram on the right shows the selection of setting mode B.



Set the run day by pressing the "DAY" button.

Refer to the previous *"Time settings for: ON/OFF"* for the indication of the "▼" mark.

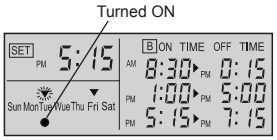
In the diagram on the right, the selection is set to "Tuesday".



Press the "RUN DAY" button

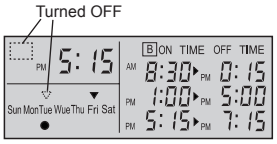
The selected day will be set as the run day and the ● symbol will switch on for the selected day. By pressing "RUN DAY" again, the run day setting will be cancelled and the ● symbol will switch off.

In the diagram on the right, the selection is set to "Tuesday".



Press the "SET/MONITOR" button.

The "SET" indication will go off and the remote control timer will switch to monitor mode.



◆ Holiday setting

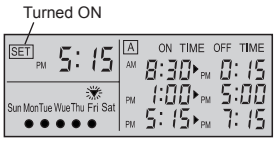
<Example> “B” pattern, Tuesday

NOTE

- *This setting temporarily cancels the operating schedule.*
- *The scheduled operation will be cancelled only for the day set as a holiday, afterwards the scheduled operation will once again be available. This function is used in the event of an irregular holiday.*

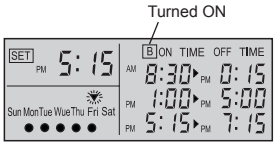
Press the "SET/MONITOR" button.

The timer switches to setting mode, the "SET" indication will appear and the ▼ symbol will flash.



Select schedule mode A or B by pressing "A/B".

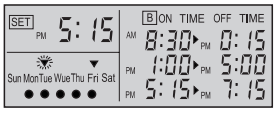
The diagram on the right shows the selection of setting mode B.



Select the day to be set as a holiday by pressing the "DAY" button.

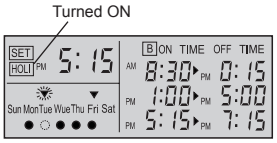
Refer to the previous *“Time settings for: ON/OFF”* for the indication of the “▼” mark.

In the diagram on the right, the selection is set to "Tuesday".



Press the "HOLIDAY" button.

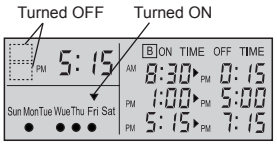
The "HOLI" indication will switch on and the selected day will be set as a holiday. In the case that the selected day is not set as running day the “▼” mark is turned off. The holiday setting is not available for the day. (In case that all days of a week are selected, only the running day is set as “holiday”).



By pressing "HOLIDAY" again, the holiday setting is cancelled.

Press "SET/MONITOR".

The "SET" indication will go off and the remote control timer will switch to monitor mode.



CAUTION

- *If the current day is set as a holiday, the holiday setting will be active from that moment on and the programmed mode is cancelled until the following day. In this case, the same day of the subsequent week will not be a holiday.*
- *During the timer pause mode, the mode is not changed to the setting mode by pressing the “SET/ MONITOR” switch.*

◆ Checking the setting content

Press the "DAY" button in monitor mode

The ▼ symbol moves and the day setting content is indicated with the ▼ symbol.

In the diagram on the right, the selection is set to "Tuesday".



NOTE

During the timer pause mode, checking the contents of setting cannot be performed.

◆ Setting timer pause

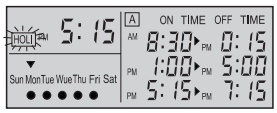
<Function>

This function is for cancelling the running schedule.

During the timer pause setting, the ON time setting is invalid and the schedule operation is cancelled.

This function is used in case that there are any long-term holidays.

Press the "HOLIDAY" switch for 3 seconds during the monitor mode.



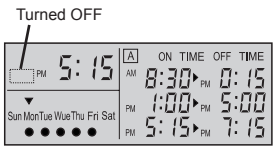
The mode of the control timer is changed to the timer pause mode, the "HOLI" indication is flickered.

The diagram on the right shows the selection of the timer pause mode.

⚠ CAUTION

- *The timer pause function is not available for the day when the setting is performed. This function is available from the next day and continued until the cancellation of this setting. In this mode, the unit operation is stopped according to OFF time setting.*
- *During the setting mode, the timer pause setting is not available by pressing "HOLIDAY" switch for more than 3 seconds.*
- *During the timer pause mode, the input of only the "HOLIDAY" switch is valid. To input from other switches for setting, the timer pause mode is required to be cancelled.*
- *When the timer pause mode and the holiday setting day is overlapped, the priority is given to the holiday setting.*

Cancellation for Timer Pause Mode.



Press the "HOLIDAY" switch for 3 seconds during the timer pause mode. The control timer is changed to the monitor mode, the "HOLI" indication turns OFF.

The diagram on the right shows the case of returning to the monitor mode.

NOTE

- *After cancellation of the timer pause mode, the schedule running is performed by judging ON/OFF time setting.*
- *In the case where the day, when the timer pause mode is cancelled, is set as holiday, the state of "HOLI" indication is changed from flickering to turning ON.*

⚠ CAUTION

- *The remote control has a built-in backup battery, making the clock function available for 2 weeks in the event of power failure. If the power failure should last for more than 2 weeks, the current time will need to be reset.*
- *The "RUN" indicator will switch on at the "ON" time and switch off at the "OFF" time. If the indoor unit is switched on or off from the control station or remote control used in conjunction with the timer, the "RUN" indicator will not change.*
- *If the "RUN" indicator is flashing, this indicates an abnormal condition on the timer. Check that the cable connections and DIP switch settings are correct. If the "RUN" indicator continues to flash after the check, contact your dealer or HITACHI supplier.*

NOTE

- *When an on or off order is sent from the timer, it may take around 15 seconds for the order to take effect.*
- *During setting mode, on/off orders cannot be sent to the units.*
- *Once the setting is complete, activate the timer monitor mode. (After remaining in setting mode for 3 minutes, the timer will switch automatically to monitor mode).*
- *When using the central station timer (PSC-A64S), the settings made through the central station are required.*

8.2 PSC-6RAD

8.2.1 Safety summary

DANGER

- ***DO NOT pour water into the remote control switch (hereafter called "controller"). This product is equipped with electrical parts.***
- ***If poured, it will cause a serious electrical shock.***

CAUTION

- *DO NOT perform installation work and electrical wiring connection by yourself. Contact your distributor or dealer of HITACHI and ask them for installation work and electrical wiring by service person.*
- *The specified cable should be used to connect room air-conditioner and adapter, and controller and adapter. If not it may result in an electrical shock or a fire.*

DO NOT install the indoor unit, outdoor unit, controller and cable at such places as;

- *Where there is oil vapour and the oil is dispersed*
- *Where the hot springs are near (in a sulphuric environment)*
- *Where generation, flowing, staying or leaking of flammable gas is detected*
- *Where the sea is near (in the salty environment)*
- *An acid or alkaline environment*

DO NOT install the indoor unit, outdoor unit, controller and cable within approximately 3 meters from strong electromagnetic wave radiators such as medical equipment. In case that the controller is installed in a place where there is electromagnetic wave direct-radiation, shield the controller and cables by covering with the steel box and running the cable through the metal conduit tube.

In case that there is electric noise at the power source for the indoor unit, provide a noise filter.

This appliance must be used only by adult and capable people, having received the technical information or instructions to handle properly and safely this appliance.

Children should be supervised to ensure that they do not play with the appliance.

8.2.2 Installation

8.2.2.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

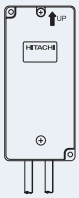
Cable section	0.3 mm^2	≥ 0.75 mm^2
Cable length	30 m	500 m

8.2.2.2 Components list

Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

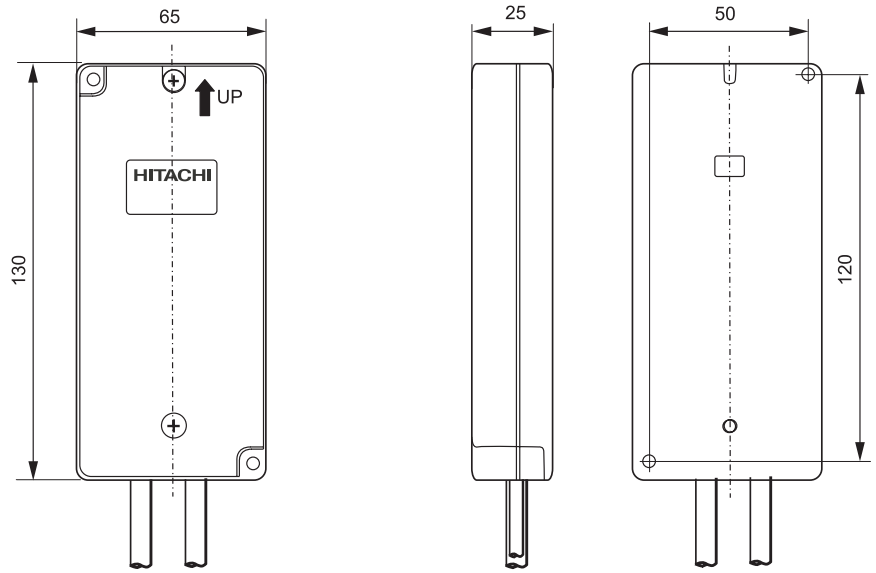
Name		Quantity	Comments
Adapter		1	With 1.8 m cable
Wiring cover		1	For hiding the wiring
Double face tape		1	110 x 40 x 3 mm For attaching to the adapter
Connector		2	For H-LINK connection
Tapping screw		2	Ø3.0 x 10mm For attaching to the wall
Screw		2	Ø3.1 x 16mm For attaching to the wooden wall
Installation and operation manual		1	Installation and operation unit instructions.

8

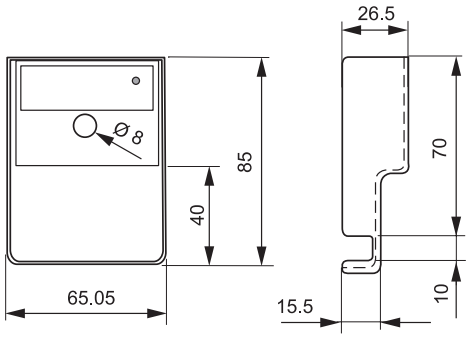
8.2.2.3 Dimensional data

All dimensions are in mm.

◆ **Adaptor**

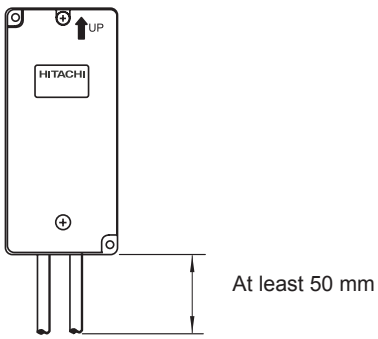


◆ **Wiring cover**



8.2.2.4 Installation space

Keep a distance of at least 50 mm under the lower side of PSC-6RAD to enable bending the cables easily.



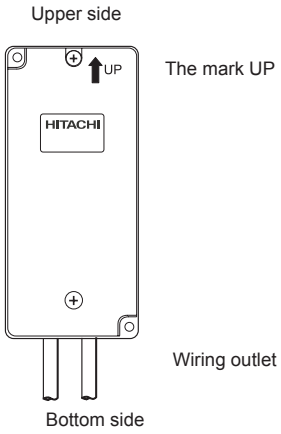
8.2.2.5 Installation procedure

⚠ CAUTION

- *Read carefully "Installation Manual" attached with the RAC adaptor and follow the information provided for installation and maintenance.*
- *If a wiring is performed when the power is ON, the equipment may be damaged. Ensure that the power is turned OFF before a wiring.*
- *Do not install all the transmission cables or signal cables along with the power line or other signal cables. It may cause of malfunction by the noise. If it is required to run the cable along with, keep a distance more than 15cm for H-LINK (more than 30cm for other cables), or insert the cables for each transmission system into the conduit tube and earth one end of the conduit tube. Ensure that the case must be earthed.*

1 RAC adapter can be installed to the wall as well as on the air-conditioner itself.

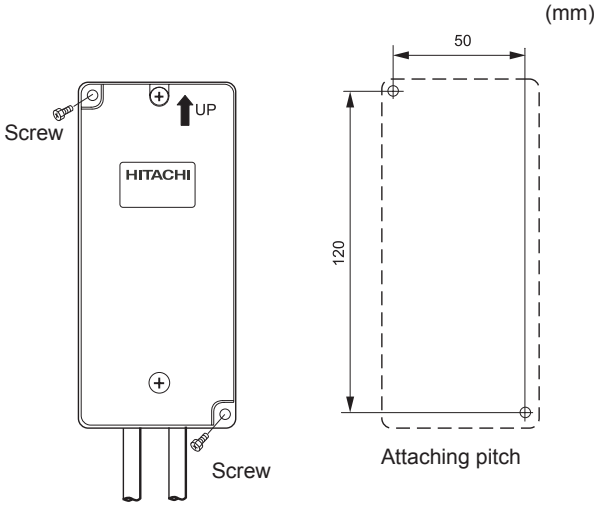
2 Install RAC adapter in the vertical surface as shown below.



3 Installation procedure

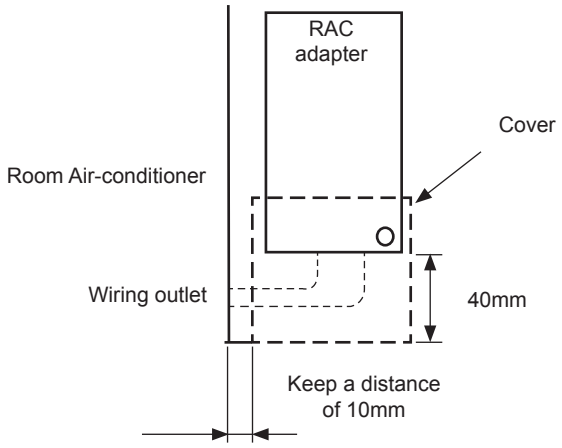
a. When installing to the wall.

i. Fix the adapter with 2 screws. Tapping screw is for metal surface, and other screw is for wooden surface.



ii. When using the cover. It can be installed at the right and left side of room air-conditioner. Double-face tape fixes the cover and RAC adapter.

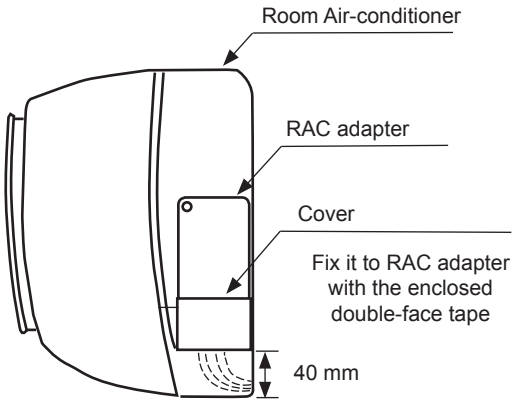
Example of installation:



b. In case that it cannot be installed to the wall due to the space or material problem, double-face tape is used for installation on the room air-conditioner.

i. Confirm if the piping cover of the Unit can be removed when performing the service maintenance, and then fix RAC adapter in the side of room air-conditioner with double-face tape. (Available at the right as well as left side).

ii. Clean with a dry cloth the surface to be installed.



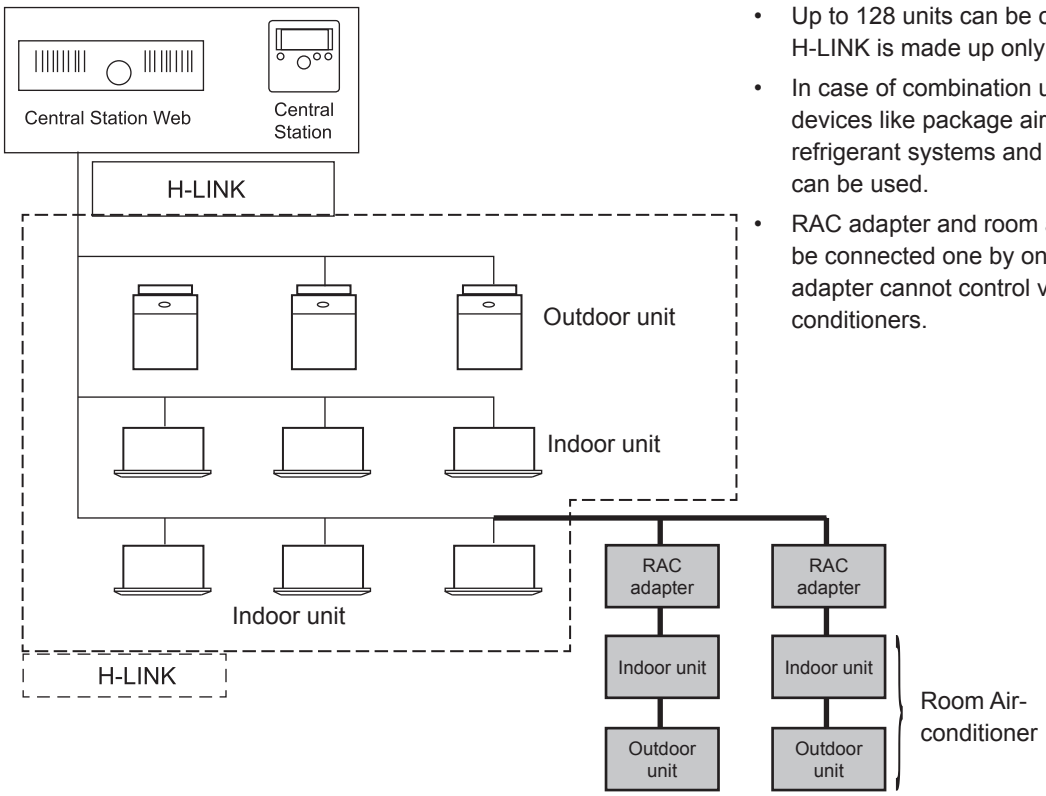
NOTE

Consider the following points since the adhesivity changes according to the environmental conditions (temperature, humidity etc).

- *The adhesivity is decreased in the humidity or oil.*
- *Warm the adhesive part and installation place of Double-face tape to avoid the decrease of the adhesivity in case that ambient temperature is low.*
- *Do not touch the adhesive part by fingers nor re-use it many times.*
- *Any forced power shall not be added in 24 hours after the installation.*

8.2.3 Electrical wiring

8.2.3.1 System composition



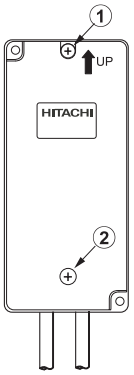
- Up to 128 units can be connected in case that H-LINK is made up only by RAC adapter.
- In case of combination use with H-LINK devices like package air-conditioner, 16 refrigerant systems and up to 128 indoor units can be used.
- RAC adapter and room air-conditioner shall be connected one by one. Only one RAC adapter cannot control various room air-conditioners.

⚠ CAUTION

- *Turn OFF the power supply of the room air-conditioner or the central control device when performing the wiring work.*
- *DO NOT run all the H-LINK cable or power supply cable along the other signal cable, or malfunction may occur due to the noise, etc. If it is required to run along the other transmission cable, separate the cable more than 30cm, or run the cable through the metal tube and earth the tube.*
- *Follow local codes and regulations when performing electrical wiring and earth wiring.*
- *Transmission cable used in H-LINK shall be 2 cores cable (0.75mm² to 1.25mm²) (Model: VCTF, VCT, CVV, MVVS, CVVS, VVR, VVF) or 2 cores twist pair cable (Model: KPEV, KPEV-Spec). Total length of cable shall be below 1000m.*
- *Do not use wire with more than 3 cores*

8.2.3.2 Access to internal components

Open the cover by removing the ① and ② screws



8.2.3.3 Connection with room air-conditioner

1 Remove the front cover of room air-conditioner and the cover of electrical box.

2 The cable attached with the connector of RAC adapter shall be connected with the connector of indoor PCB.

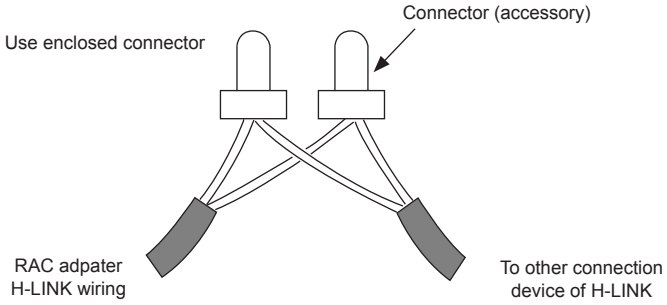
3 Install the electrical box cover paying attention not to clamp the cable. See an installation manual of each room air-conditioner for confirming how to connect and how to assemble the cable of RAC adapter.

⚠ CAUTION

- *Disconnect the power plug before performing this work.*
- *Turn OFF a breaker power source in case that the power comes from outdoor unit.*

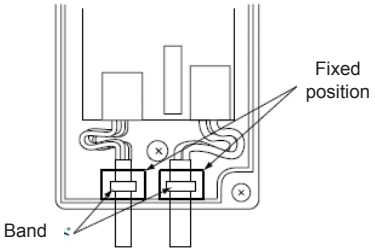
8.2.3.4 Connection of transmission cable

H-LINK transmission cable connecting to RAC adapter shall be connected to H-LINK.



⚠ CAUTION

- *Incorrect wiring may cause a failure of RAC adapter. Especially pay attention not to apply the high voltage like AC400/230V.*
- *Do not perform the wiring work with power of the central station or RAC adapter being supplied. It may cause the malfunction. Turn OFF devices when performing the wiring work.*
- *The RAC adapter side cable should not overload to the connector.*
- *Do not clamp the cable when attaching the RAC adapter cover.*
- *Band should be in the fixed position.*

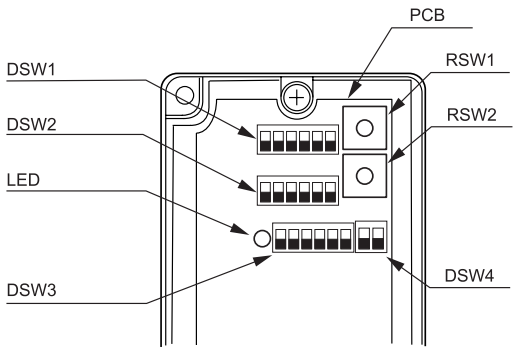


8.2.3.5 DIP Switch setting

1 Dip Switch setting should be performed with the power of room air-conditioner OFF. The setting contents are invalid if it is performed with the power ON.

2 Installation position of Dip Switch is as below.

DSW1	Refrigerant cycle Number setting
DSW2	Unit Number setting
LED	H-LINK transmission
DSW3	Sub setting
DSW4	Fuse recovery, terminal resistance setting
RSW1	Refrigerant cycle Number setting
RSW2	Unit Number setting

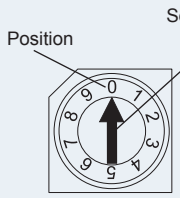
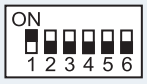


⚠ CAUTION

Do not turn ON various pins of DSW1 and DSW2.

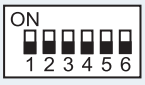
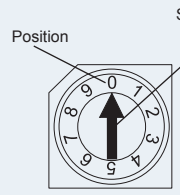
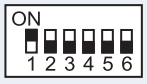
3 Refrigerant cycle number is set by RSW1 and DSW1.

Refrigerant cycle number setting

DSW1 (tens digit)	RSW1 (units digit)	Example: Setting cycle number to 15	
		DSW1	RSW1
			
DSW1 and RSW1 are set to 0 before shipment. Up to 15 cycle numbers can be set		Pin number 1 is ON	The set position is 5

4 Unit number is set by RSW2 and DSW2.

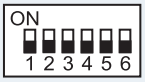
Unit number setting

DSW2 (tens digit)	RSW2 (units digit)	Example: Setting unit to 15	
		DSW1	RSW1
			
DSW2 and RSW2 are set to 0 before shipment. Up to 15 units number can be set		Pin number 1 is ON	The set position is 5

5 Sub Setting

In case of setting various RAC adapters in the same refrigerant cycle, set the RAC adapter with smallest Unit Number as a main.

In case of only one RAC adapter in a refrigerant system, this adapter should be a main. Set by changing DSW3.

Main setting	Setting before shipping (Sub setting)
DSW3	DSW3
	

● : Main setting

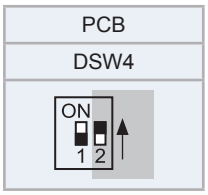
○ : Setting before shipping

Refrigerant cycle	0	1	2	3	4	5	6	7		
0	●	○	○	○	○					
1			●	○	○					
2				●	○	○	○	○		
3		●								
4										

⚠ CAUTION

Do not set various main adapters in the same refrigerant cycle.

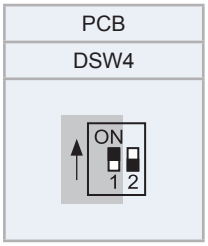
6 In case of wrongly applying high voltage to H-LINK wiring, fuse installed in a transmission circuit on PCB is cut. In this case, after wiring correctly, turn ON Number2 pin of DSW4 on PCB and then transmission circuit is recovered. (If you make this error again, the transmission circuit is not recovered.)



7 Terminal resistance is set in whole H-LINK.

a. If H-LINK connection devices like package air-conditioner is connected besides RAC adapter, set the terminal resistance by package air-conditioner. The terminal resistance should be ON in only one position in whole H-LINK.

b. In case that H-LINK is made up only by RAC adapter, set the terminal resistance by RAC adapter. The terminal resistance should be ON in only one position in whole H-LINK.



8.2.4 Test run

Test run should be performed in the following way after finishing the installation, wiring and setting.

See installation manual enclosed with each central control devices for the detail.

1 Connection State Confirmation

- Confirm if RAC adapter connection is recognised in the central control device. In case that it is not confirmed, check the transmission cable, refrigerant cycle number, indoor unit number, terminal resistance setting etc.

2 Registration

- Confirm if RAC adapter connection is recognised.

3 Confirmation of Run/Stop Order

- Confirm if room air-conditioners work correctly by run/stop operation from the central control devices. Check also if air-conditioner state changes correctly by each setting.

8.2.5 Maintenance and repair

◆ Alarm code table

Code number	Content of abnormality
1A	RAC IU Alarm Code (0010) Ventilation Fan Failure
1B	RAC IU Alarm Code (0011) Smutch Sensor Failure
1C	RAC IU Alarm Code (0012) Cleaning Unit Failure
71	RAC IU Alarm Code (0001) Reversing Valve Malfunction
73	RAC IU Alarm Code (0003) Indoor Transmission Circuit Failure
75	RAC IU Alarm Code (0005) Power Relay Contact Depositing
76	RAC IU Alarm Code (0006) Abnormal Water Level
79	RAC IU Alarm Code (0009) Thermistor Failure
7A	RAC IU Alarm Code (000A) Indoor Fan Failure
7B	RAC IU Alarm Code (000B) Ion Generator Failure
7C	RAC IU Alarm Code (000C) Outdoor Transmission Circuit Failure
7D	RAC IU Alarm Code (000D) EEPROM Read Error
7E	RAC IU Alarm Code (000E) Heat Exchanger Thermistor Failure
7F	RAC IU Alarm Code (000F) Room Temperature Thermistor Failure
82	RAC OU Alarm Code (0102) Stoppage by Peak Current Control
83	RAC OU Alarm Code (0103) Abnormal Low Speed of the Compressor
84	RAC OU Alarm Code (0104) Compressor Changeover Failure
85	RAC OU Alarm Code (0105) Lower Limit of Compressor Overload
86	RAC OU Alarm Code (0106) Stoppage by OH Thermistor High Temperature
87	RAC OU Alarm Code (0107) Thermistor Failure
88	RAC OU Alarm Code (0108) Failure of Compressor Speed Increasing Control
89	RAC OU Alarm Code (0109) Stoppage by Transmission Error
8A	RAC OU Alarm Code (010A) Power Supply Voltage Error
8B	RAC OU Alarm Code (010B) Fin Stoppage
8C	RAC OU Alarm Code (010C) Fan Lock Stoppage
8D	RAC OU Alarm Code (0010) EEPROM Read Error
8E	RAC OU Alarm Code (010E) ACT Abnormal Stoppage
8F	RAC OU Alarm Code (010F) Discharge Error

8.3 PC-A1IO

8.3.1 Safety summary

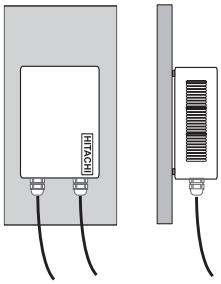
⚠ CAUTION

- *Do not connect voltage input to the control system before installation is correctly done.*
- *Read this manual carefully before performing installation work.*
- *Read this manual in order to configure the PC-A1IO.*
- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle properly and safely this appliance.*
- *Children should be supervised to ensure that they do not play with the appliance.*

NOTE

Do not install PC-A1IO in places...

- *with vapour, oil or dispersed liquids.*
- *with heat sources nearby (sulphuric surroundings).*
- *where accumulation, generation or leaks of inflammable gases has been detected.*
- *that are near the sea, in saline, acid or alkaline surroundings.*
- *Install PC-A1IO away from possible sources of electromagnetic waves.*
- *Respect local electrical standards.*
- *Use a power circuit that is not subject to peak demands.*
- *Ensure that there is enough free space around the PC-A1IO (see figure) so that the heat may dissipate adequately (refer to "8.3.2 Installation").*
- *If you install the PC-A1IO in vertical position, install the power supply in the lower part and the temperature control outputs in the upper part.*



8.3.2 Installation

8.3.2.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

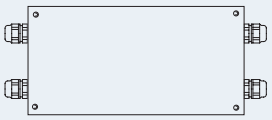
Cable section	0.3 mm²	≥ 0.75 mm²
Cable length	30 m	500 m

8.3.2.2 Components list

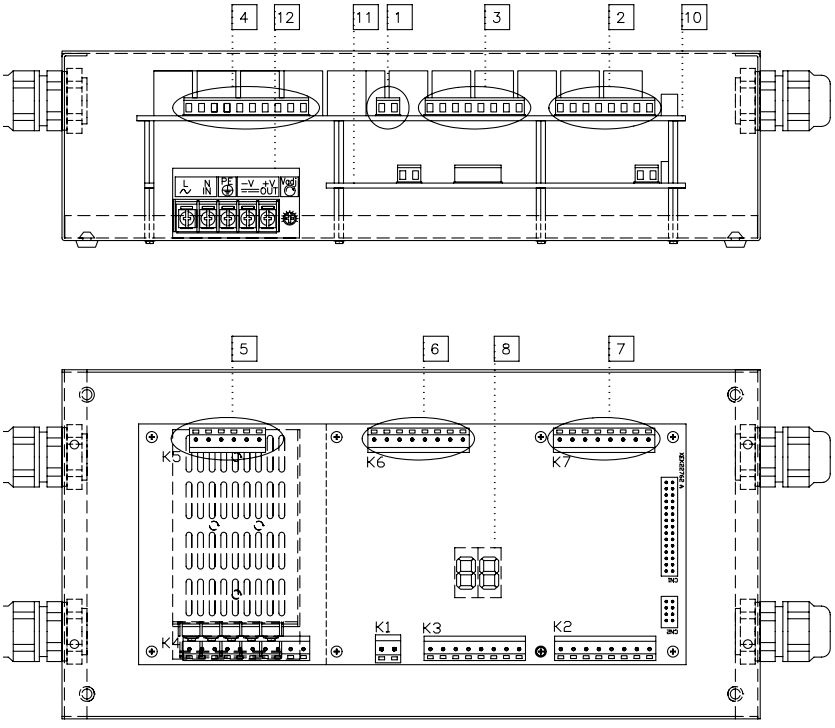
Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name	Figure	Quantity	Comments
PC-A1IO		1	To control the system operation using this I/O gateway
Installation and operation manual		1	Installation and operation unit instructions.

8.3.2.3 Description of the parts



1. K1: H-LINK Connector: Connected to CSNET Manager 2 / CSNET Lite
2. K2: AI1~AI4: Analog input signals 1 to 4
3. K3: AI5~AI8: Analog input signals 5 to 8
4. K4: DI1~DI5: Digital input signals 1 to 5
5. K5: DI6~DI8: Digital input signals 6 to 8
6. K6: O1~O4: Output signals 1 to 4
7. K7: O5~O8: Output signals 5 to 8
8. 7 segments display
9. Packing glands (4)
10. Relays PCB
11. H-LINK PCB
12. Power source: 230V AC / 5V DC

8.3.2.4 General data

◆ Hardware specifications

Item	Specifications
Power supply	1~ 230V ±10% 50Hz
Consumption	25 W (maximum)
Outer dimensions	Width: 143 mm, Depth: 302 mm, Height: 76 mm
Weight	2 kg
Assembling conditions	Indoor (in a control panel or desktop)
Ambient temperature	0~40°C
Humidity	20~85% (Without condensation)

◆ Inputs and Outputs restrictions

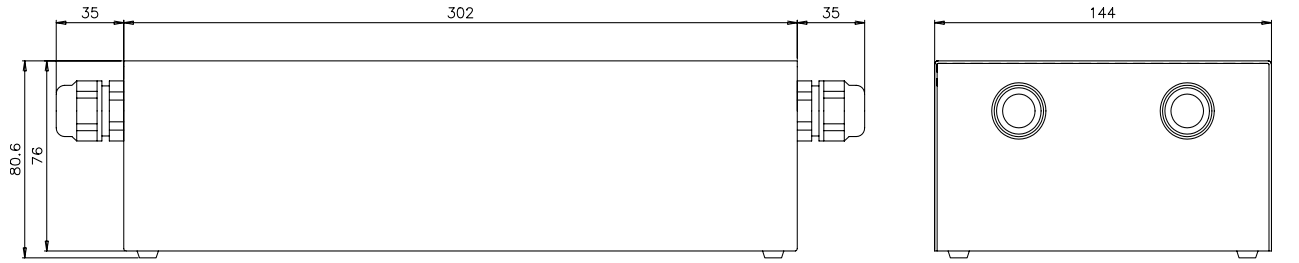
Item	Specifications
Analog Inputs AI1~AI8	V: 0~5 V DC, 0.5 A
Digital Inputs DI1~DI8	V: 5V DC, 1.9 A
Outputs: O1~O8	V: 0~24V DC, 1.9A

◆ Communication

Item	Specifications
Communication with	CSNET Manager 2 / CSNET Lite
Communication line	Twisted pair shielded cable, non polarity
Communications system	Half-duplex
Communication method	Asynchronous
Speed of transmission	9600 Bauds
Length of wiring	1000 m maximum (total length of H-LINK I/O bus)
Maximum number of PC-A1IO	16 x PC-A1IO per OU address in a H-LINK / H-LINK II systems

8.3.2.5 Dimensional data

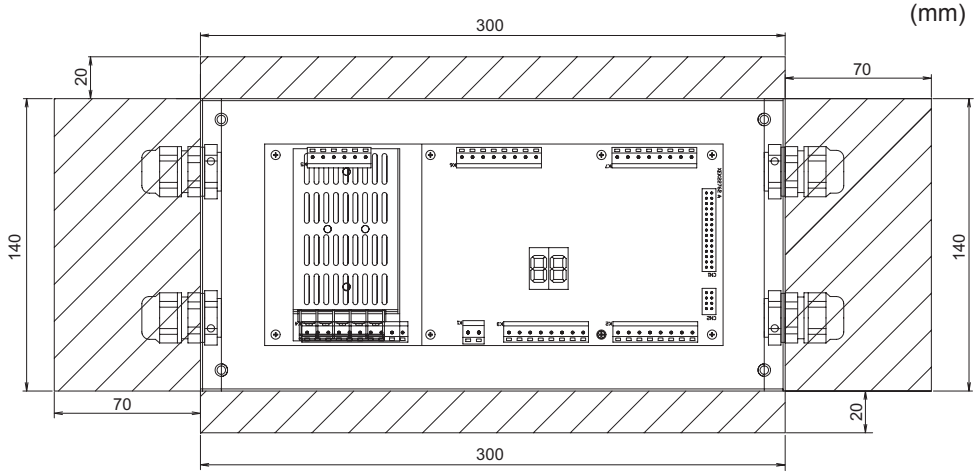
(mm)



8.3.2.6 Installation space

Keep free grated area for ventilation and cable connection.

(mm)



8.3.2.7 Installation procedure

8

⚠ CAUTION

Before applying power and turning on PC-A1IO you must ensure that:

- *All circuits to be connected are correctly applied.*
- *All H-LINK connections have been set up.*
- *Follow the local regulations for the electrical installation of PC-A1IO and associated circuits.*

Any unit that is not connected or is not under power when turning on PC-A1IO, will not be recognised and will have to be configured later.

The signals' cables should be as short as possible. Keep a distance of more than 150 mm from other power cables. Don't wire them together (although they may intersect). If they must necessarily be installed together, take the following measures to avoid noise:

- *Protect the signal cable with a metal tube which is earthed at one end.*
- *For communications, use shielded wire which is earthed at one end.*

⚠ DANGER

- ***Always disconnect the power supply for PC-A1IO when handling the machine, in order to avoid eletrical discharges.***
- ***Do not connect the interface to the power supply until the installation has been completed.***
- ***Comply strictly with local security codes and regulations when connecting the machine to the electric network.***
- ***You will need a three-wire cable (two cores and earth) with a suitable plug at one end.***

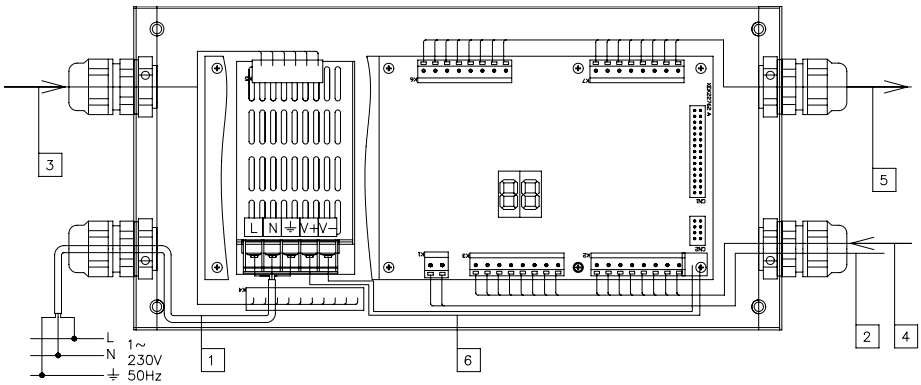
◆ Procedure

1. Remove the rubber supports
2. Unscrew the 4 screws from the top cover and remove it
3. Attach the box to the rear vertical board from the inside with M4 screws (not provided) and place 3 mm washers on the outside to separate the box from the wall.
4. Reinstall the top cover. Be careful to position it correctly.

8.3.3 Electrical wiring

In order to run, PC-A1IO must be connected to the corresponding input and output signals, power supply cables and H-LINK.

Number	Connection	Cable Specifications
1	Power supply circuit 1~ 230V 50Hz 25W (With protection circuit)	Select wires accordiong local regulatrions (Recommended minimum 1.5 mm² H05RN-F)
2	H-LINK	Communication cables for the connection of PC-A1IO to an HITACHI installation, via CSNET WEB or any HITACHI unit using same H-LINK terminals. Twisted pair shielded cable 0.75 mm² H05RN-F. Shield must be grounded in one side only.
3	DI1~8: Digital input signals +5V DC. Imax.=0.5 A	Pair cable 0.75 mm² H05RN-F. Use different colour for each cable.
4	AI1~8: Analog input signals 0~5V DC. Imax.= 1.9 A	Pair cable 0.75 mm² H05RN-F. Use different colour for each cable.
5	DO1~8: Output signals (relay) +5V DC, Imax.= 1.9A	Pair cable 0.75 mm². Use different colour for each cable. Do no apply directly output signals to the main circuit. Apply some switch, relay or contactor for the correct use of output signal.
6	PCBs power supply +5V DC. Imax.= 5 A DC	Pair cable 0.75 mm² H05RN-F. V:0~5V DC. Imax.= 1.9 A



Field supplied Protections:

CB/EF:5A

ELB: 2 / 40A / 30m A

CB: Circuit Breaker

EF: Electric Fuse

ELB: Earth Leakage Breaker

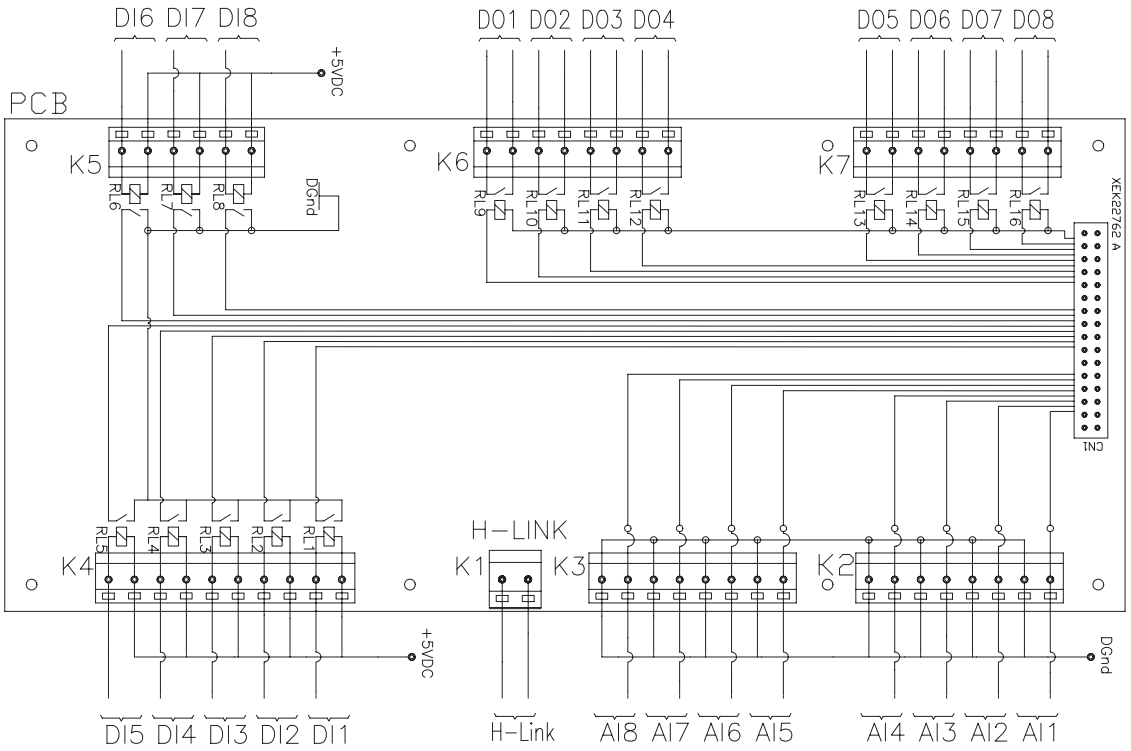
Checking procedure

Checking of PC-A1IO consist in disconnect and connect the PC-A1IO and check that in the 7-segments display appears the current software value.

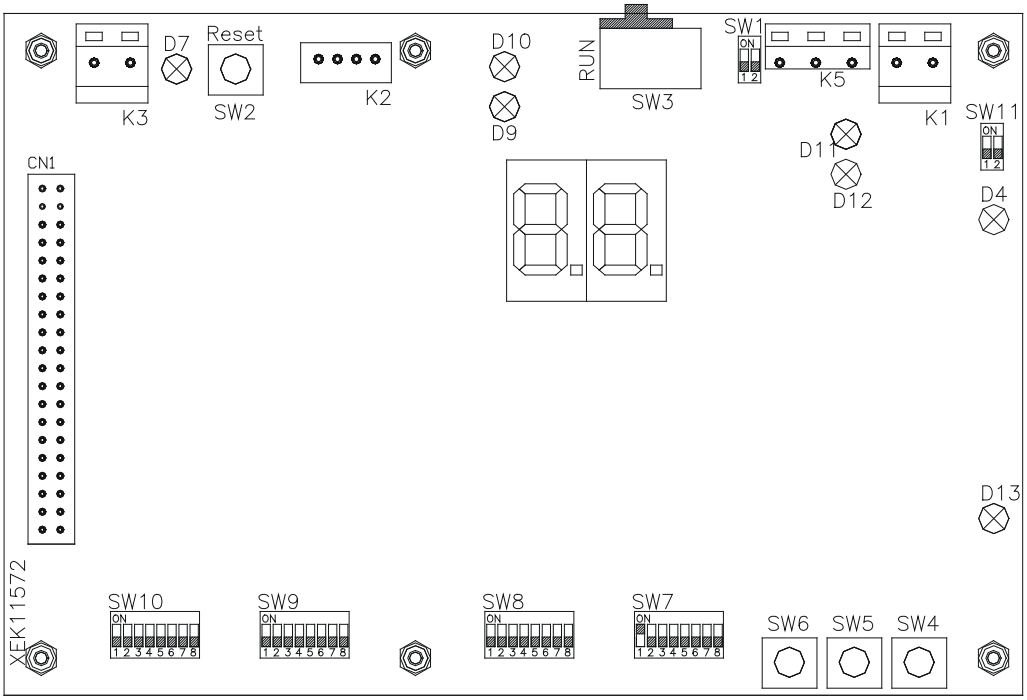
NOTE

Ask your HITACHI distributor what check value has the last version of firmware.

8.3.3.1 Relay PCB

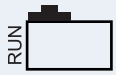
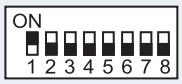
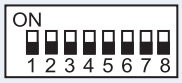
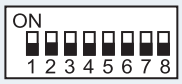
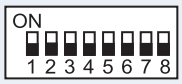


8.3.3.2 Control PCB



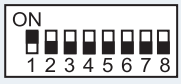
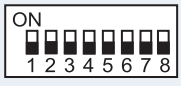
8.3.3.3 Configuration

◆ Factory Setting

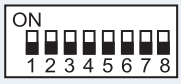
Name	Function	Factory setting	Description
SW1	Not available		–
SW2	Reset	–	Reset button. To be used in case of program has been locked
SW3 (TELE)	Not available		Factory purposes. Never change it
SW4	Not available	–	–
SW5	Not available	–	–
SW6	Not available	–	–
SW7	Options 2		SW7-1: OFF=SLAVE / ON=MASTER. SW7-2~8: Not used
SW8	Options 1 (Application type)		0 (All OFF): A.C IU Parameters 1~255 (Other configurations): Not available
SW9	Indoor unit address		Same concept than HITACHI IU address Each PC-A1IO must use free IU and OU address
SW10	Outdoor unit address		In case of several PC-A1IO, thay can use the same OU address, following same limitations than IU (64 IU/OU). These addresses must be free (not used by any other OU)
SW11	H-LINK DSW		2-Pins DSW SW11-1: H-LINK end resistance SW11-2: Not used
D4, D11	H-LINK	–	H-LINK transmission
D7	Power	–	Power supply ON/OFF
D9, D10 D12, D13	Not used	–	–

◆ Configuration options

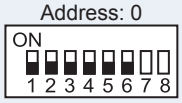
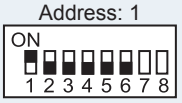
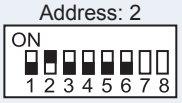
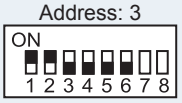
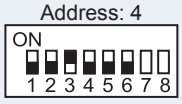
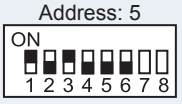
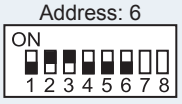
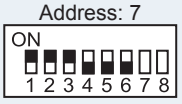
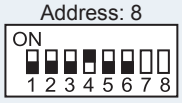
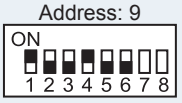
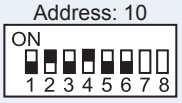
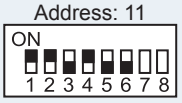
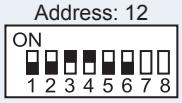
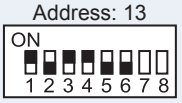
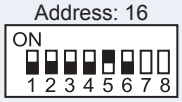
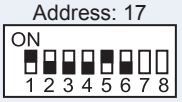
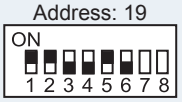
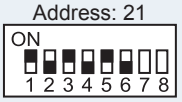
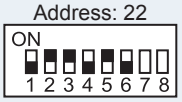
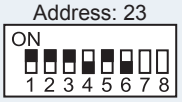
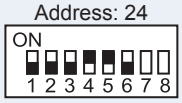
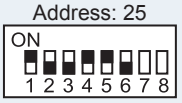
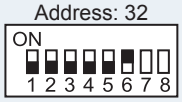
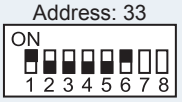
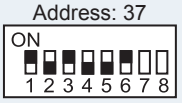
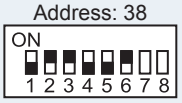
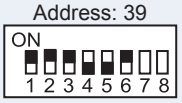
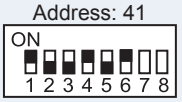
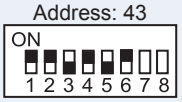
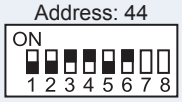
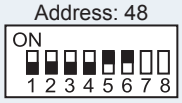
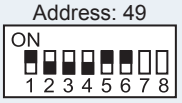
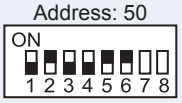
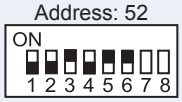
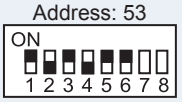
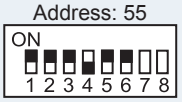
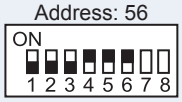
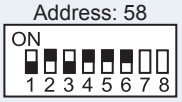
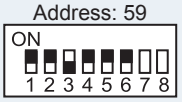
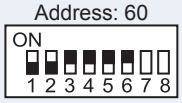
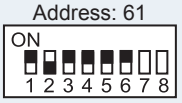
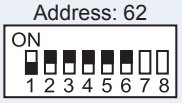
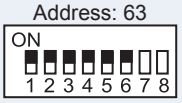
SW7 – MASTER / SLAVE configuration

SW7	Description
	Configuration as MASTER PC-A1IO: SW7-1=ON. All the rest of the pins are set to OFF Only one PC-A1IO can be set as a Master PC-A1IO
	Configuration as SLAVE PC-A1IO : All SW7 pins are set to OFF Only one PC-A1IO can be set as a MASTER PC-A1IO. All the rest of PC-A1IO uni ts must be configured as SLAVE

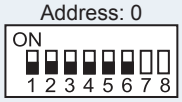
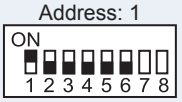
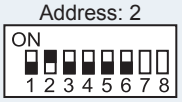
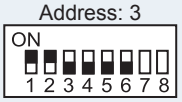
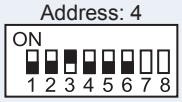
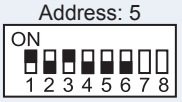
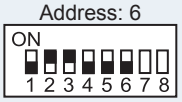
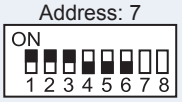
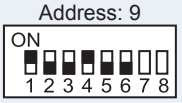
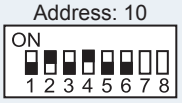
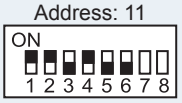
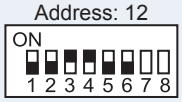
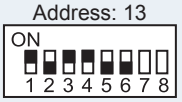
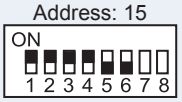
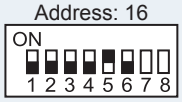
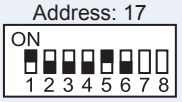
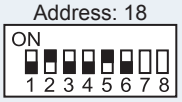
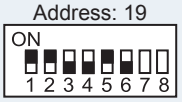
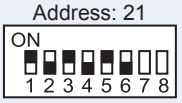
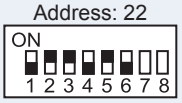
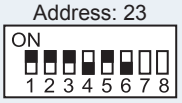
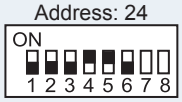
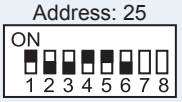
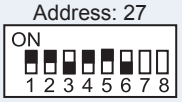
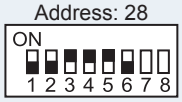
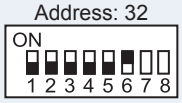
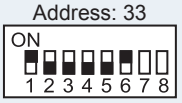
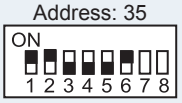
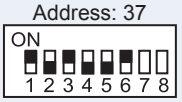
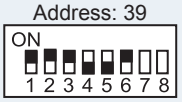
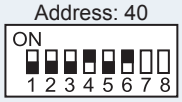
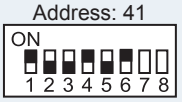
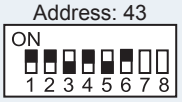
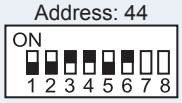
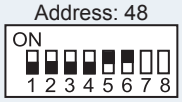
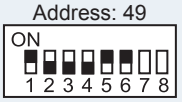
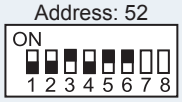
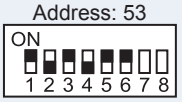
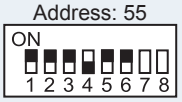
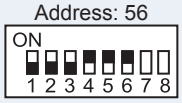
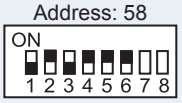
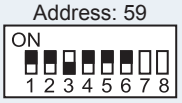
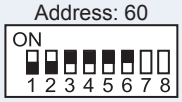
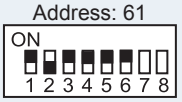
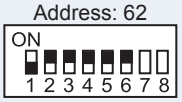
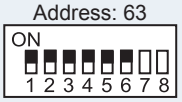
SW8 – PARAMETERS configuration

SW8	Description
	Configuration of parameters as normal Air-Conditioner IU: All SW8 pins to OFF Other configurations are not available

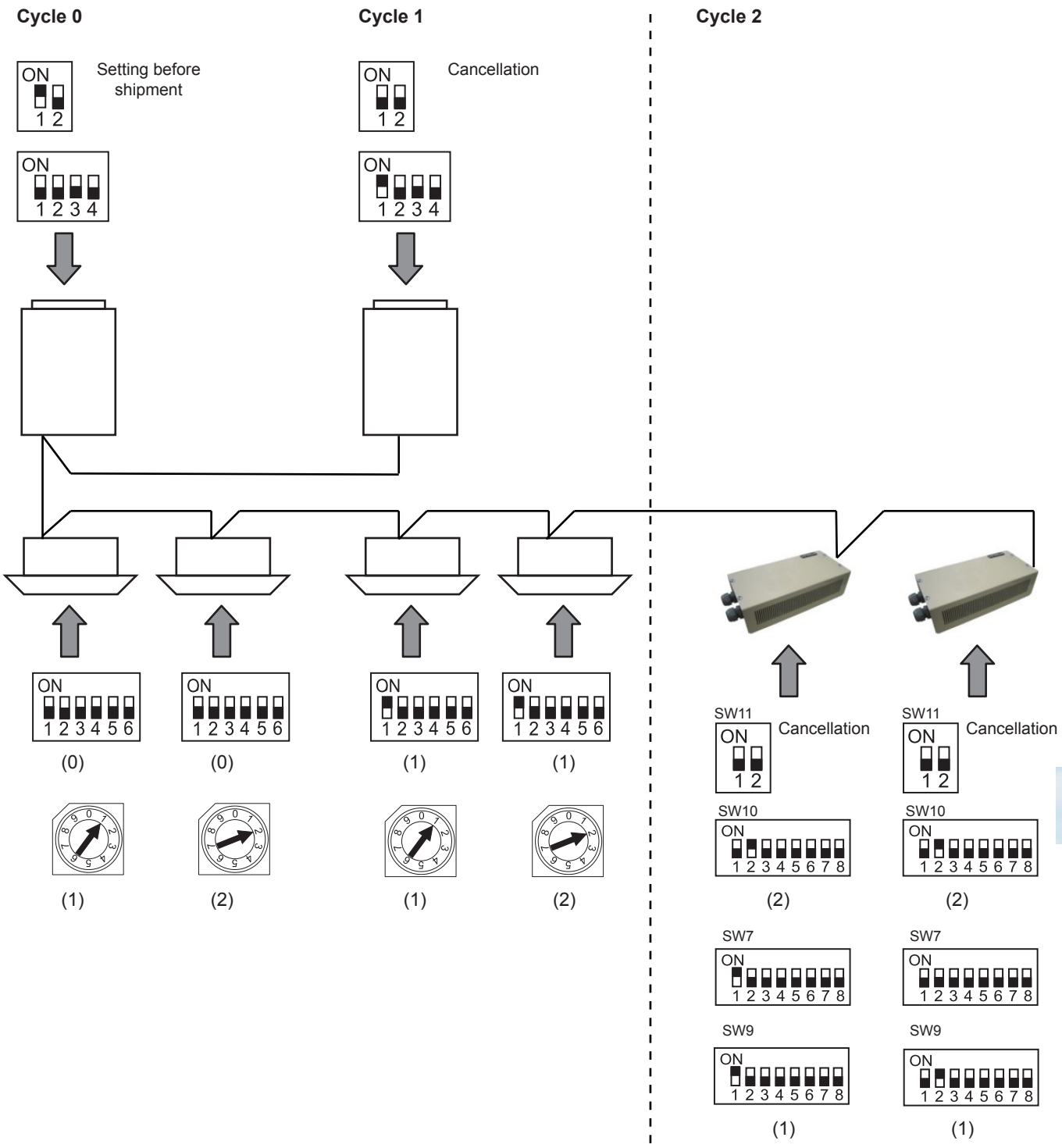
SW9 – PC-A1IO address in H-LINK (Same concept of IU address)

SW9				Description
Address: 0 	Address: 1 	Address: 2 	Address: 3 	Configuration of PC-A1IO Address: SW9 pins 1~6 must be set according to the corresponding drawing of the desired address. SW9 pins 7~8 must be kept in OFF
Address: 4 	Address: 5 	Address: 6 	Address: 7 	
Address: 8 	Address: 9 	Address: 10 	Address: 11 	
Address: 12 	Address: 13 	Address: 14 	Address: 15 	
Address: 16 	Address: 17 	Address: 18 	Address: 19 	
Address: 20 	Address: 21 	Address: 22 	Address: 23 	
Address: 24 	Address: 25 	Address: 26 	Address: 27 	
Address: 28 	Address: 29 	Address: 30 	Address: 31 	
Address: 32 	Address: 33 	Address: 34 	Address: 35 	
Address: 36 	Address: 37 	Address: 38 	Address: 39 	
Address: 40 	Address: 41 	Address: 42 	Address: 43 	
Address: 44 	Address: 45 	Address: 46 	Address: 47 	
Address: 48 	Address: 49 	Address: 50 	Address: 51 	
Address: 52 	Address: 53 	Address: 54 	Address: 55 	
Address: 56 	Address: 57 	Address: 58 	Address: 59 	
Address: 60 	Address: 61 	Address: 62 	Address: 63 	

SW10 – OU address H-LINK (Same concept of OU/Refrigerant cycle address)

SW10				Description
Address: 0 	Address: 1 	Address: 2 	Address: 3 	Configuration of O.U Address: It can be associated up to 64 PC-A1I/O to the same OU address, considering that this address is free in the rest of installation. SW10 pins 1~6 must be set according to the corresponding drawing of the desired address. SW10 pins 7~8 must be kept in OFF
Address: 4 	Address: 5 	Address: 6 	Address: 7 	
Address: 8 	Address: 9 	Address: 10 	Address: 11 	
Address: 12 	Address: 13 	Address: 14 	Address: 15 	
Address: 16 	Address: 17 	Address: 18 	Address: 19 	
Address: 20 	Address: 21 	Address: 22 	Address: 23 	
Address: 24 	Address: 25 	Address: 26 	Address: 27 	
Address: 28 	Address: 29 	Address: 30 	Address: 31 	
Address: 32 	Address: 33 	Address: 34 	Address: 35 	
Address: 36 	Address: 37 	Address: 38 	Address: 39 	
Address: 40 	Address: 41 	Address: 42 	Address: 43 	
Address: 44 	Address: 45 	Address: 46 	Address: 47 	
Address: 48 	Address: 49 	Address: 50 	Address: 51 	
Address: 52 	Address: 53 	Address: 54 	Address: 55 	
Address: 56 	Address: 57 	Address: 58 	Address: 59 	
Address: 60 	Address: 61 	Address: 62 	Address: 63 	

Example


Cycle 0
Cycle 1
Cycle 2
ON
1 2
Setting before shipment
Cancellation
1 2 3 4
1 2 3 4 5 6
(0)
(0)
(1)
(1)
(1)
(2)
(1)
(2)
SW11
Cancellation
SW10
1 2 3 4 5 6 7 8
(2)
SW7
SW9
(1)

8.3.4 Operation

8.3.4.1 Parameters list

(SW8 setting: All in OFF)

Code	Description	Connection	Remarks	Local	Central
AI1	Not available	–	–	–	–
AI2					
AI3					
AI4					
AI5					
AI6					
AI7					
AI8					
DI1	Fan unit ON/OFF	From local remote controller	OFF: Open ON: Closed	Applicable	Monitoring
DI2	Fan HIGH speed	From local remote controller	Selector switch: Selected switch is closed circuit (1)	Applicable	Monitoring
DI3	Fan MEDIUM speed	From local remote controller			
DI4	Fan LOW speed	From local remote controller			
DI5	Alarm code	From local remote controller	Alarm OFF: Open Alarm ON: Closed	Applicable	Monitoring
DI6	ON/OFF status	From fan unit (feedback signal)	OFF: Open ON: Closed	Applicable	Monitoring
DI7	Not available	–	–	–	–
DI8	Not available				
DO1	Fan unit ON/OFF	Unit fan: ON/OFF terminals	OFF: Open ON: Closed	Applicable	Control
DO2	Fan HIGH speed	Unit fan: HIGH speed terminals	OFF: Disabled ON: Activated	Applicable (2)	Control
DO3	Fan MEDIUM speed	Unit fan: MEDIUM speed terminals			
DO4	Fan LOW speed	Unit fan: LOW speed terminals			
DO5	Heat/Cool mode	Unit fan: Operation mode terminals	COOL: Open HEAT: Closed	Applicable (2)	Control
DO6	Central/Local mode	Local Remote Controller: Lamp	OFF: Local ON: Central	Applicable	Control
DO7	Alarm signal	To Local Remote Controller	OFF: Alarm OFF ON: Alarm ON	Applicable	Control
DO8	Not available	-	-	-	-

1) If some of DI2~4 are activated at the same time, the lower speed is selected.

2) If some of those terminals are not available or accessible from fan unit, then those functions are not available.

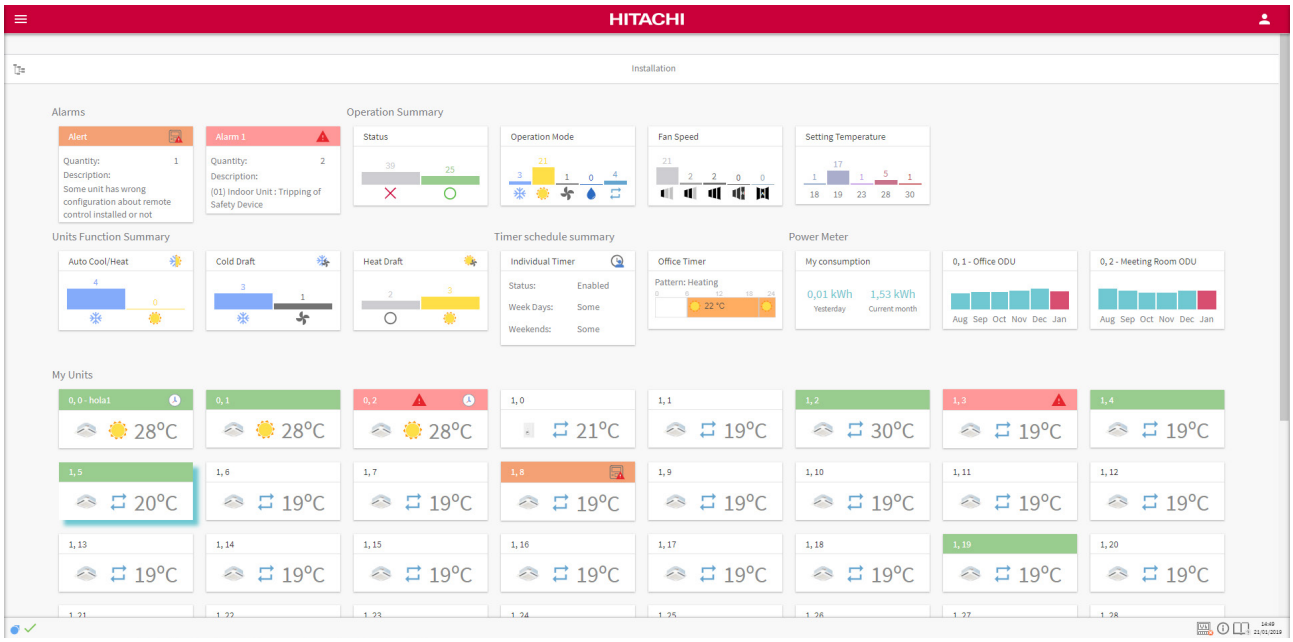
Some functions activated by local Remote Controller (ON/OFF and FAN SPEED).

All these parameters can be used for other purposes different from those indicated in the previous table. In that case, it is recommended to keep in local mode, just to avoid the undesired performance of that parameter in case of central control.

Those functions in central mode can be operated from CSNET WEB as normal HITACHI indoor unit

8.3.4.2 Operation procedure

All central control is made from CSNET Manager 2 / CSNET Lite as normal Indoor Unit. It can be controlled / monitored with the same parameters than any Indoor Unit by using next screen, provided that these parameters are available on the connected unit.



These parameters can be controlled by timer as normal Indoor Unit.

Historical data of these units are available as any Indoor Unit.

For more control and monitoring details, see CSNET Manager 2 / CSNET Lite manual.

8.3.5 Troubleshooting

Nº	Alarm Code	Description	Countermeasure
1	D7 is always OFF	No LED is flickering on PCB and 7 segments are OFF	Ensure that 230 are supplied to Power Source. Ensure that +5V DC is supplied to K3. **NOTE** • *Power source output DC signal has a rotary switch that must be correctly set to get +5V DC.* • *D7 must be in ON.*
2	D4 and D11 are not flickering	There is no H-LINK communication	D4 neither D11 are not flickering. → See line Nº1, countermeasure 1.

8.4 PSC-5HR

8.4.1 Safety summary

⚠ CAUTION

- *DO NOT TURN ON the power source of the H-LINK Relay, control system, unless the preparation for the test running is completed.*
- *Read this manual carefully before installation work for correct performance.*
- *Read this manual together with the "Installation & Operation Manuals" for the controller and air conditioning equipment.*
- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle properly and safely this appliance.*
- *Children should be supervised to ensure that they do not play with the appliance.*
- *DO NOT install PSC-5HR at a place such as follows:*
  - *where there is oil vapour and the oil is dispersed.*
  - *where the hot springs are near(in a sulphuric environment)*
  - *where generation, flowing, staying or leaking of flammable gas is detected.*
  - *where the sea is near (in the salty environment) , an acid or alkaline environment, it causes biting of the acid.*
- *Install the unit to the place that is not facing to transmission face of electromagnetic waves:*
- *DO NOT install the indoor unit, controller and cable within approximately 3 meters from strong electromagnetic wave radiators by such as medical equipment.*
- *Attach Noise Filter if there is noise generation in the unit.*
- *Follow the local electrical standards.*
- *Use an independent circuit to avoid the capacity shortage for power supply, otherwise it will cause electric shock or fire disaster.*

8.4.2 Installation

8.4.2.1 Components list

Unpack the unit and check that:

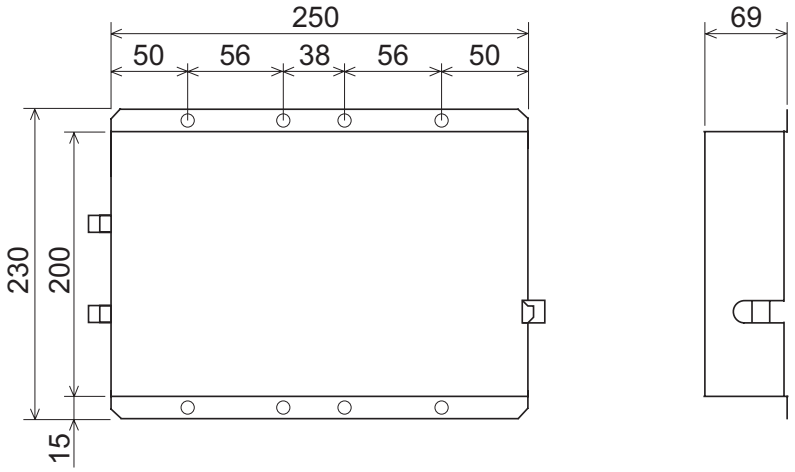
- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quantity	Comments
PSC-5HR		1	-
Clamp		1	-
Clamp		2	-
Screw		2	-
Screw for wood		5	M4 x 16 mm
Installation and operation manual		1	Installation and operation unit instructions.

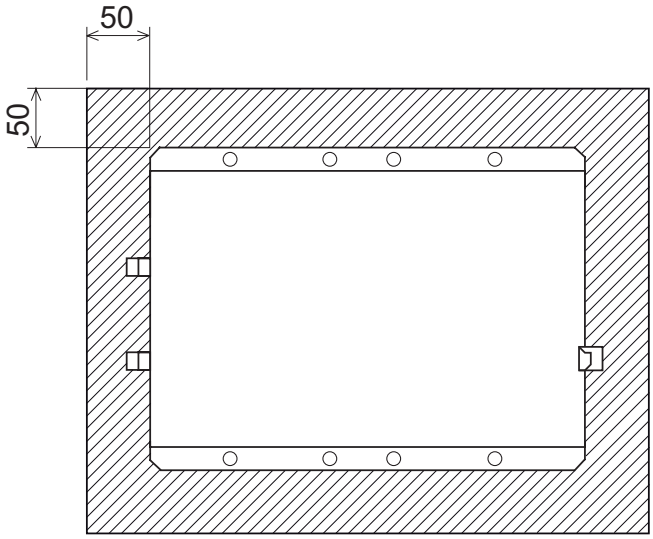
8.4.2.2 Dimensional data

Units in mm.



8.4.2.3 Installation space

Units in mm.

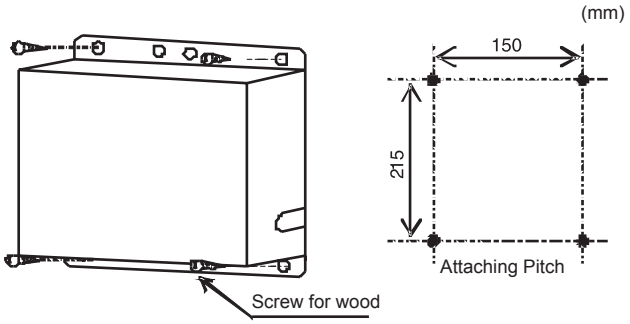


8.4.2.4 Installation procedure

There are two attachment methods.

Attaching on the Wall

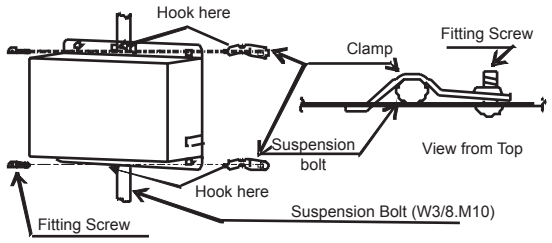
Attach the PSC-5HR on the wall by using screw for wood as follows.



Mounting on suspension bolt

Attach the PSC-5HR on the suspension bolts using clamps and screws.

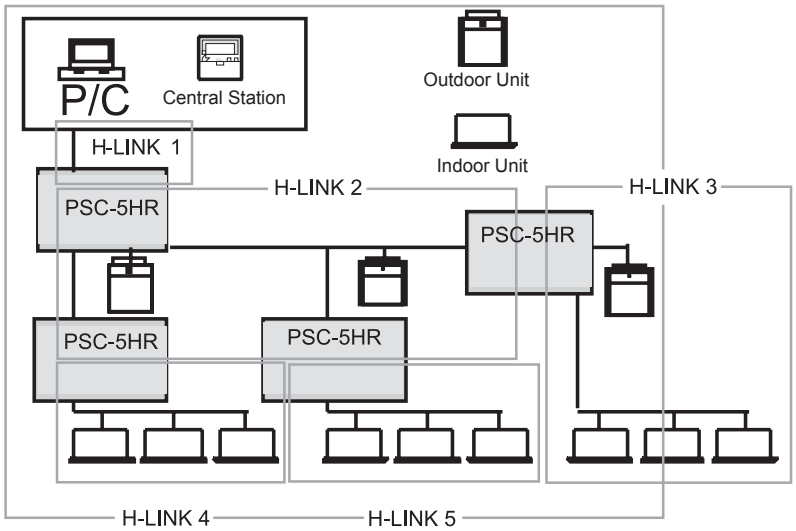
Fasten screws fixing the hook of the clamp into the attaching holes.



8.4.3 Electrical wiring

8.4.3.1 Wiring connection

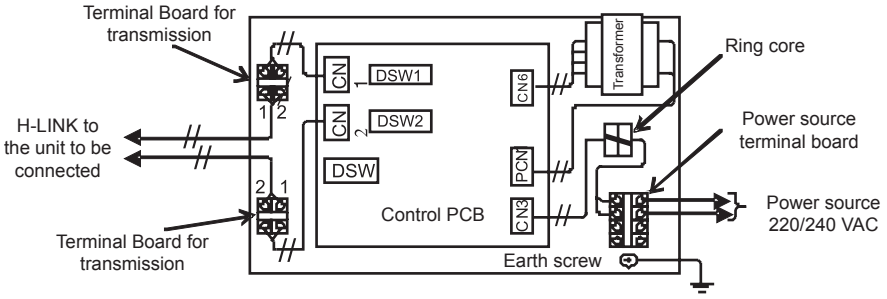
◆ **System**



NOTE

- *Four PSC-5HR can be installed as a maximum in one system.*
- *Ensure the quantity of connections of the following:*
  - *Refrigerant system quantity: within 16*
  - *Indoor unit quantity: within 128*
  - *Total Length of each divided H-LINK: up to 1000 m.*
- *In the case of H-LINK is divided into five blocks as beside figure: Set End Terminal Resistance in each PSC-5HR (For details, see "8.4.3.3 DSW setting".)*

◆ Internal layout

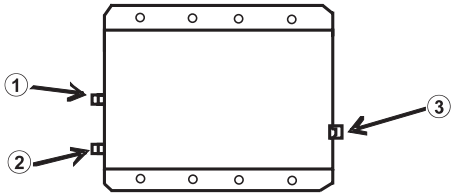


⚠ CAUTION

- *Check to ensure the power source voltage is correct.*
- *Incorrect wiring will cause a breakdown of the Transformer or H-LINK Relay.*
- *Especially, DO NOT connect power source to the Terminal Board for transmission.*
- *DO NOT install the H-LINK wires along the power line, other signal wires, etc. If installed, it may cause malfunction due to electrical noise. If it is needed to install the wire near them, provide a space of 15cm or more. Or, insert the wires into the steel pipe and ground one end of the pipe.*

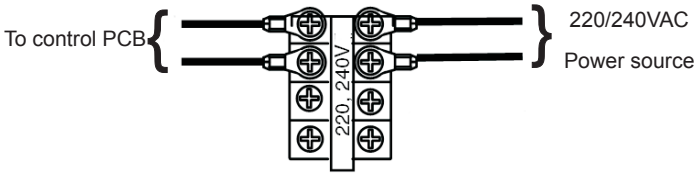
◆ How to open the cover

Loosen the screws ① to ③ and open the cover.



◆ Wiring connection

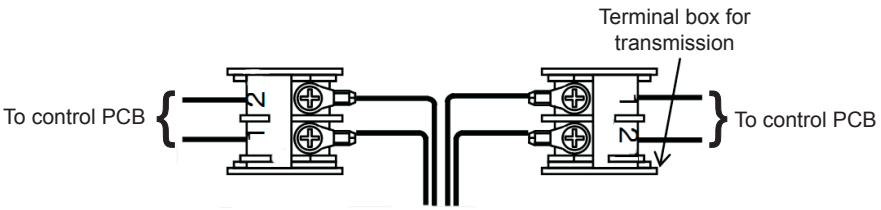
Connect the wires to the power source terminal board Power source is 220/240 VAC



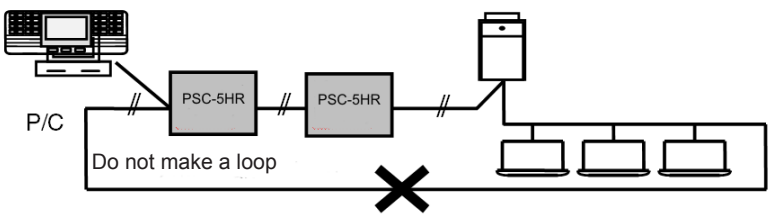
Power source Terminal Board

◆ Transmission wires

Connect the H-LINK terminal board for transmission.



Do not make a loop in each H-LINK.



8.4.3.2 Wiring type and length

Select the wire as shown below.

- It is recommended that the cable should be twist pair cable (1P-0.75 mm^2). The cable type is as shown in the table.
- If the twist cable is used, the maximum length in each divided H-LINK is 1000m.
- It is possible to use shielded or not shielded cable.

Type	HITACHI cable
without shield	KPEV
with shield (copper foil)	KPEV-S

8.4.3.3 DSW setting

◆ Setting of End Terminal Resistance

Set the end terminal by using Dip Switch, DSW1 (at CN1 side) and DSW2 (at CN2 side) on the control PCB. As each H-LINK is divided by using the PSC-5HR, it is required to set the end resistance in each H-LINK.

Perform the following.

- In the case that outdoor units exist in the divided H-LINK, set the end terminal resistance at one of the Outdoor Units (See the end terminal resistance setting method for Outdoor Unit)
- In case that Outdoor Units do not exist in the divided H-LINK, refer to items 1 to 3.

1 If there is a centralised controller, set end terminal resistance at the centralised controller.

Set Number 1 pin at the ON side on DSW1 or DSW2, it depends if it is connected to CN1 or CN2.

DSW3


2 If there are indoor units only, set the end terminal resistance at the PSC-5HR.

DSW1	DSW2
	
(CN1 Side)	(CN2 Side)

3 In the case that PSC-5HR is directly connected to each other, set end terminal resistance at one of the PSC-5HR devices. Set Number1 pin at the ON side on DSW1 or DSW2, it depends if it is connected to CN1 or CN2.

◆ Fuse Recovery

In the case that the fuse is blown out, it is possible to recover by turning No 2 pin of Dip Switch 1 (at CN1 side) or Dip Switch 2 (at CN2 side) at ON side.

DSW1	DSW2
	
(CN1 Side)	(CN2 Side)

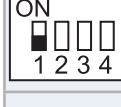
◆ Setting of Main/Sub

Set Main/Sub Relays by Number1 pin of DSW 3 (2~4 are not used) on control PCB (See beside).

Setting depends on the number of H-LINK Relay, set it as follows,

1 Installation number of PSC-5HR devices is only one: Main (No setting is required)

2 Installation number of PSC-5HR devices is more than one: One: Main / Others: Sub

DSW3	DSW3
	
Main	Sub

8.4.3.4 Test run

Test run shall be performed after Installation, wiring and other setting.

Refer to the Installation and operation manual of each central control system and check the detail.

1 Check connection condition of Air conditioners.
- Check the model name and connected unit quantity by using remote control switch.
- In the case that control equipment is used, perform connection check at the central control equipment.

2 Check transmission Alarm.
- Perform RUN/STOP by the central control equipment or remote control switch.
- Check to ensure that no transmission alarm such as 03.32.35.60.61 (60 and 61 are only with central control equipment) occurs.

3 Check of Activation State Monitoring
- Monitor activation state from the LED on control PCB.
- Check to ensure that LED1 is not keeping ON due to continuous collision. The cause of continuous LED ON is as follows. Incorrect Setting of Master or Slave H-LINK Relays, end terminal resistance, looped wiring, etc. Check to ensure that setting and wiring are correctly performed.
- Check to ensure that LED2, 3 and 4 are flicking. If not, check to ensure that transmission is performed by checking LED on PCB in the other unit. In the case that the above LED on the H-LINK Relay does not flick despite sending signal from the other unit. Check the wiring connection, end terminal resistance setting, type of wires and wiring length. If the fuse in the transmitting circuit is melted due to incorrect wiring, use Fuse Recovery setting.

8.5 PC-AMTB

8.5.1 Safety summary

NOTE

- *HITACHI cannot anticipate every possible circumstance that might involve a potential hazard.*
- *Read carefully this document before performing the installation work.*

DANGER

- ***Do not install this device in places accessible to the general public. Install it in enclosures or other places which not are accessible.***
- ***Do not connect power supply before the device installation is correctly done. Always disconnect power supply from the device before any maintenance or servicing action.***

CAUTION

- *The device installation must be performed by qualified professionals.*
- *Check to ensure that the field supplied electrical components (mains power switches, circuit breakers, wires, connectors and wire terminals) have been properly selected according to the electrical data indicated on this document and they comply with national and local codes. If it is necessary, contact with your local authority in regards to standards, rules, regulations, etc.*
- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle properly and safely this appliance.*
- *Children should be supervised to ensure that they do not play with the appliance.*

8.5.2 Installation

8.5.2.1 Installation site selection

Take note of the maximum admissible cable length between units and the control as well as between the units themselves, as shown in the following table:

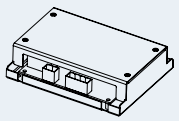
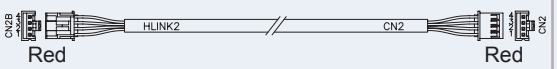
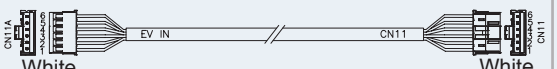
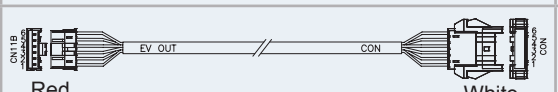
Cable section	0.3 mm²	≥ 0.75 mm²
Cable length	30 m	500 m

8.5.2.2 Components list

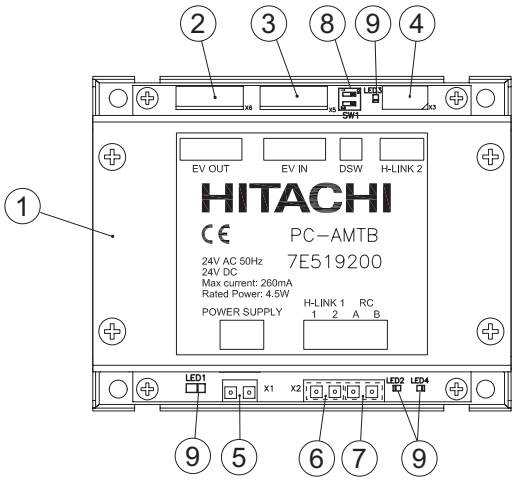
Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Item	Description	Qty.	Purpose
Multitenant Box		1	For allowing individual shutdown of indoor units in a multiple indoor unit installation.
Connector wire <1>		1	For the electrical connection between “H-LINK II” connector of PC-AMTB and the “CN2” connector of Indoor unit PCB.
Connector wire <2>		1	For the electrical connection between “EV IN” connector of PC-AMTB and the “CN11” connector of Indoor unit PCB.
Connector wire <3>		1	For the electrical connection between “EV OUT” connector of PC-AMTB and the EVI wire-end previously connected to the “CN11” connector of indoor unit PCB.
Installation and operation manual		1	Installation and operation unit instructions.

8.5.2.3 Description of the parts



No.	Description
①	Case
②	Expansion valve outlet connector
③	Expansion valve inlet connector
④	Internal H-LINK connector
⑤	Power supply terminals
⑥	External H-LINK connector
⑦	Remote control communication terminals
⑧	DIP switch (SW1)
⑨	LED indicators

8.5.2.4 General data

Item	Units	Description
Power supply	V	24 VDC/VAC ±10%
Rated power	W	2.3
Peak power consumption		
1) Connected to type A models (*)	W	4.7
2) Connected to type B models (*)	W	7
Dimensions (HxWxD)	mm	92 x 115 x 29
Weight (Gross/Net)	g	450/250
Mounting conditions	-	Indoor
Working range		
Temperature	ºC	0-60ºC
Humidity	%	20-85% RH
Maximum number of PC-AMTB devices per H-LINK bus	-	64

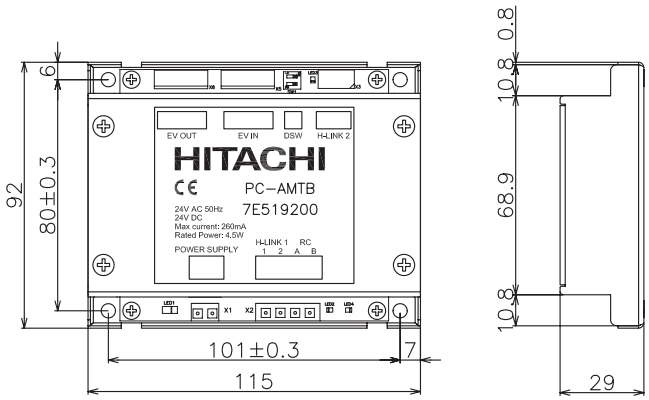
NOTE

(*):

- *Indoor unit models type A: All indoor units except B and C type.*
- *Indoor unit models type B: RPI-(8.0/10.0)FSN3E.*
- *Indoor unit models type C: RPI-(16.0/20.0)FSN3PE-f, which cannot be used with PC-AMTB.*

8.5.2.5 Dimensional data

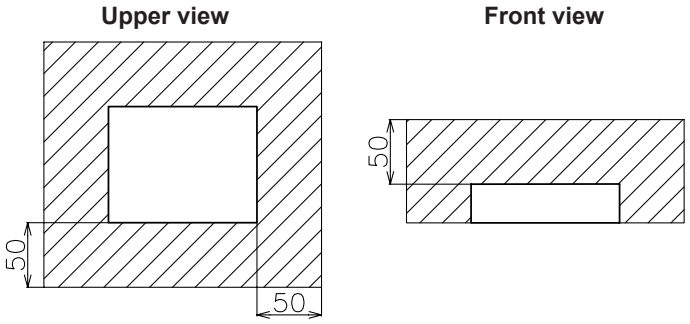
Units: mm



8.5.2.6 Installation space

Please consider that installation space must be wide enough for wiring connection.

Units: mm



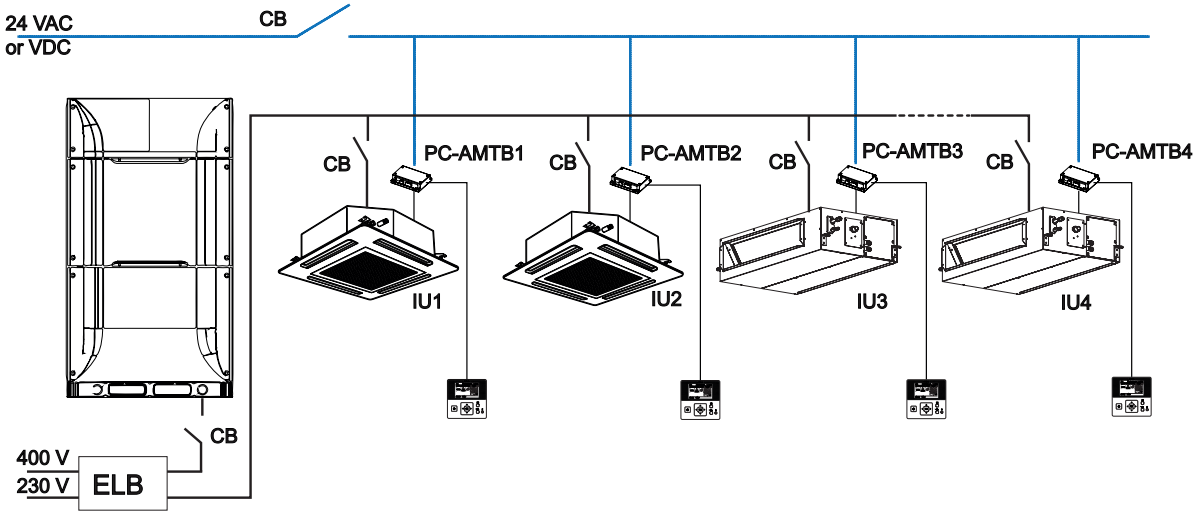
8.5.2.7 Installation procedure

PC-AMTB enclosure is furnished with side bored flanges in order to easily screw it to a wall or vertical surface by using 4 screws M4 or 4 mm diameter, tapping type (field-supplied).

It can also be left lying on a flat surface such as a false ceiling.

8.5.3 Electrical wiring

8.5.3.1 Connection scheme



◆ Power supply installation

The installation must be provided with an independent low voltage power supply circuit of 24 V AC or DC type. Power supply cable sizes must be designed considering that max. voltage dropped is not exceeding the 10%.

NOTE

- *It is recommended to use 0.75mm² wires as minimum cable size, not lighter than the polychloroprene sheathed flexible cord (code designation 60245 IEC 57) type.*
- *Do not connect more than 8 devices in serial or increase power supply cable size accordingly.*

The power supply must be capable enough to supply the necessary power required base on the following formula:

$$P_{power\ supply}\ (watt) \geq (NAtype*4.7 + NBtype*7)$$

Where:

- NAtype: Number of multitenant devices installed to A type indoor units.
- NBtype: Number of multitenant devices installed to B type indoor units.

The installation must be equipped with disconnection devices permitting any servicing operation without power.

◆ Maximum wiring length

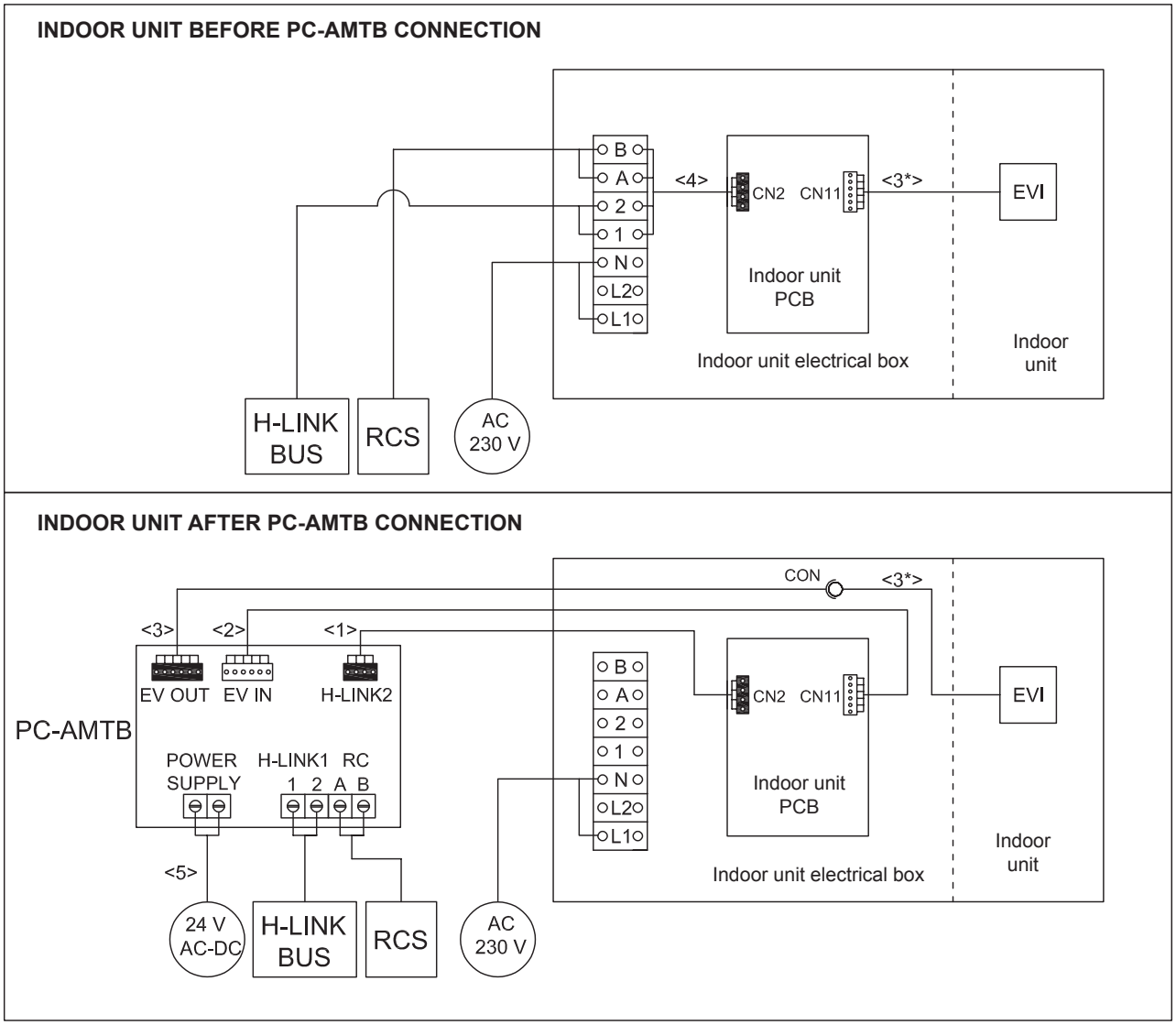
Information table indicating the maximum wiring length for the power supply wiring, according to the cable size and the quantity of PC-AMTB devices per wire branch.

	Number of PC-AMTB on the wire branch		
Cable size	2 devices	4 devices	8 devices
0.75 mm²	114 m	57 m	28 m
1.00 mm²	152 m	76 m	38 m
1.50 mm²	228 m	114 m	57 m
2.50 mm²	381 m	190 m	95 m

The power supply wiring must be selected according to the above selection table to enforce that the maximum allowed voltage drop is 4 % of the nominal voltage.

8.5.3.2 Electrical wiring

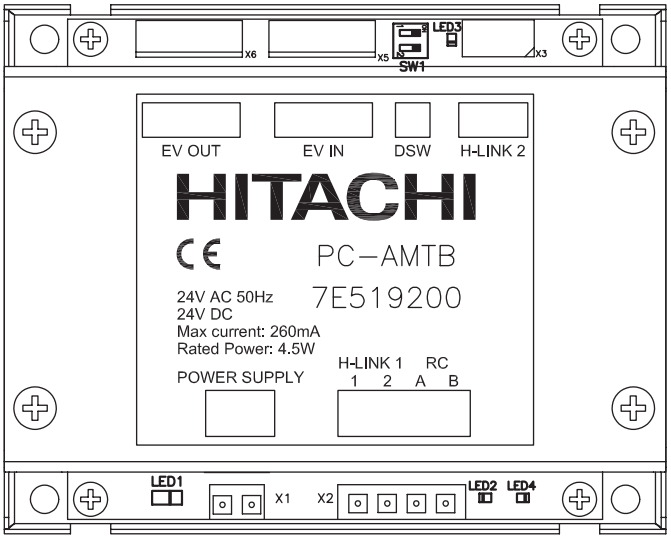
1. Make sure that indoor unit is switched off, and then, open the electrical box.
2. Disconnect the Remote Control (RCS) cable from the electrical box terminals of the indoor unit and connect it into the PC-AMTB screw terminals “RC-A,B”.
3. Disconnect the H-LINK cable from the electrical box terminals of the indoor unit and connect it into the PC-AMTB screw terminals “H-LINK1-1,2”.
4. Remove wire <4> from IU electrical box (from terminal box and “CN2” connector).
5. Connect wire <1> from PC-AMTB ”H-LINK II” connector to IU PCB “CN2”.
6. Disconnect EVI wire <3*> from IU PCB “CN11” and switch it to connector wire <3>. The other ending of wire <3> must be switched to PC-AMTB “EV OUT”.
7. Connect wire <2> between PC-AMTB “EV IN” and IU PCB “CN11”.
8. Connect power wires <5> to PC-AMTB screw terminals “POWER SUPPLY”.



NOTE

- *PCB: Printed circuit board.*
- *EVI: Indoor unit expansion valve.*
- *Connectors in wires named after connectors in PC-AMTB and IU PCB.*

8.5.3.3 DSW Setting and led indication



◆ Setting of DIP switches

DSW1: Not used Factory setting (Do not change)	

◆ LED indication

- Monitor led 1 is ON while PC-AMTB is power supplied.
- Monitor led 2 flickers from time to time when there is traffic at H-LINK bus 1.
- Monitor led 3 flickers from time to time when IU is ON and there is traffic at H-LINK bus 2.
- Monitor led 4 is used for system diagnosis.

8.5.4 Troubleshooting

The indoor unit is not recognized by the outdoor unit despite being powered ON.

Check that PC-AMTB is power-supplied by checking monitor LED1. If it is OFF, please check fuse state, and in case it is fused, replace it by a 5x20 mm, 250 mA, 250V compatible fuse.

8.6 THM-R2AE

8.6.1 Installation

8.6.1.1 Installation site selection

The thermistor for detecting room temperature is installed inside the remote sensor.

The installation position of the remote sensor should be determined in consideration with the following conditions:

- where the average room temperature can be detected.
- where is not exposed to the sun.
- where a heat source is not located near the remote sensor.
- where the discharge air from the air conditioner does not blow directly.
- where is not affected by the outdoor air when opening /closing the door, etc.

8.6.1.2 Components list

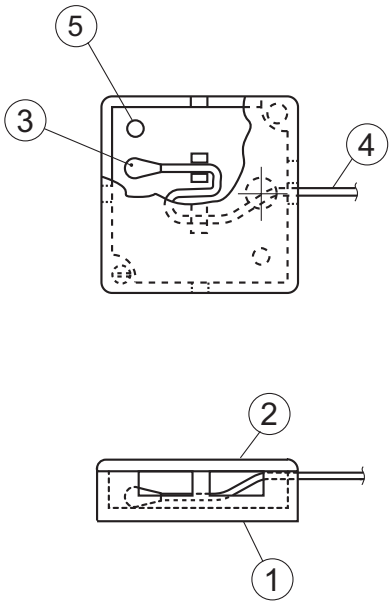
Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name		Quantity	Comments
Thermistor		1	-
Thermistor case		1	-
Thermistor case cover		2	-
Fixing screw		2	For fixing the accessory to the wall
Installation and operation manual		1	Installation and operation unit instructions.

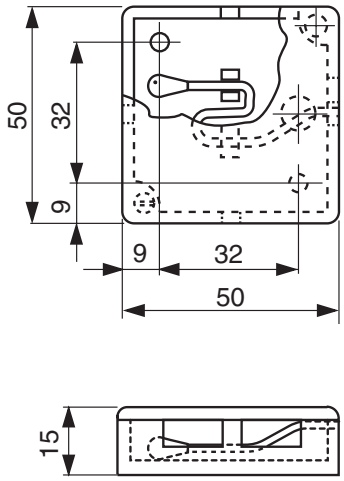
8.6.1.3 Description of the parts



No.	Description
①	Thermistor base
②	Thermistor case
③	Thermistor
④	Cord for thermistor
⑤	Holes for fixing device to wall (2-Φ4.5)

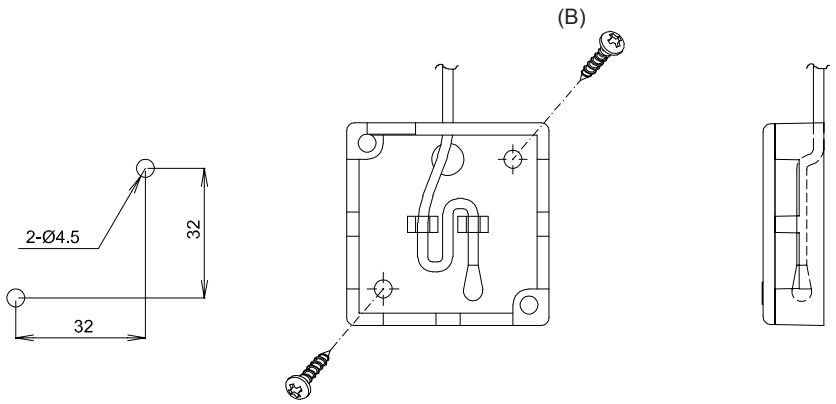
8.6.1.4 Dimensional data

Units in mm.



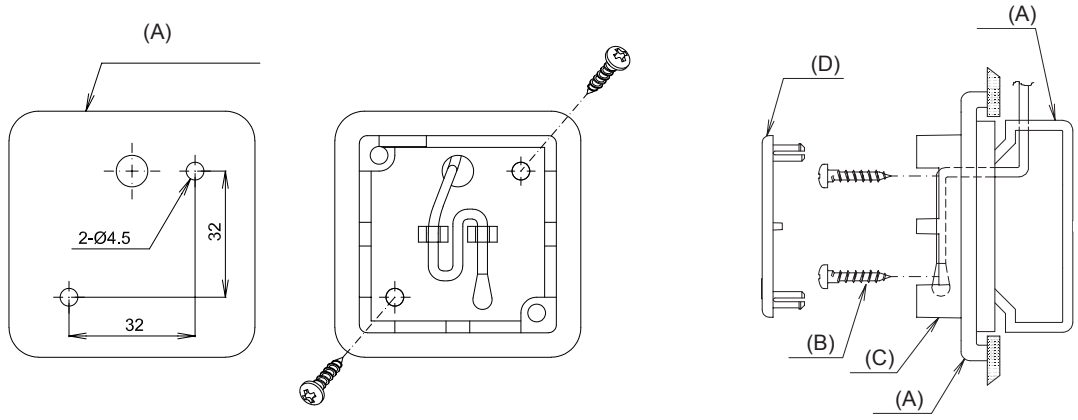
8.6.1.5 Installation procedure

◆ **In case of mounting onto the wall**



- Make the wiring on the sensor box, and let the wires for sensor through the box slot.
- Fix the sensor box onto the wall with 2 screws (B).
- In the case that the sensor box can not be fixed onto the wall with screws, fix it onto the wall by using the double-side adhesive tapes, etc.

◆ In case of mounting onto electric switch box



- Make the holes for fixing sensor box on the Switch Box Cover (A) (field-supplied) as shown on the figure, and fix the sensor box to the plate with screws (B).
- Pay attention that the hole for air intake on the sensor box (C). may not be shut.

8.6.2 Electrical wiring

Connect the cord (8 m) of the remote sensor to THM4 of the indoor printed circuit board.

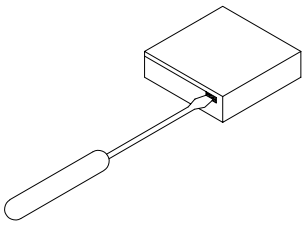


◆ In case of extending the cord

- In the case that the cord is required to be extended, cut the cord in the middle, connect the extension cord (field-supplied; with wire size over 0.3 mm) and use it.
- When using extension cord, connect and extension cord with solder and the soldering part should be isolated electrically so that contact failure may not occur.
- The total length of the cord (including extension cord) should be within 15 m.

⚠ CAUTION

- *When removing the cover of the sensor box, insert the tip of the flat head screwdriver between the upper recess part of the sensor box and the cover, and remove it.*



- *Run the sensor cord on a place where the power line or noise will not cause any abnormal operation.*
- *Check to ensure that the wiring is correctly performed.*
- *The contact failure may cause incorrect temperature sensing and an abnormal operation.*

9. Control accessories

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9.1 Wall and stand mounted support for CSNET Manager 2 T10/T15

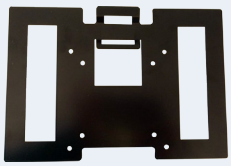
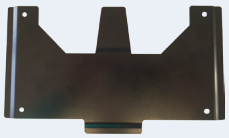
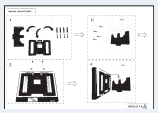
9.1.1 Components list

Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

◆ Wall mounted support

Name	Figure	Quantity	Comments
Wall support part 1		1	Wall support part to be fixed on CSNET Manager 2 (T10 / T15).
Wall support part 2		1	Wall support part to be fixed on the wall.
Screw		4	For fixing the support device on the wall.
Plug		4	-
Instruction sheet		1	Instructions for the installation work.

(*): All the data regarding Stand support are preliminary data, and therefore, they are subject to changes.

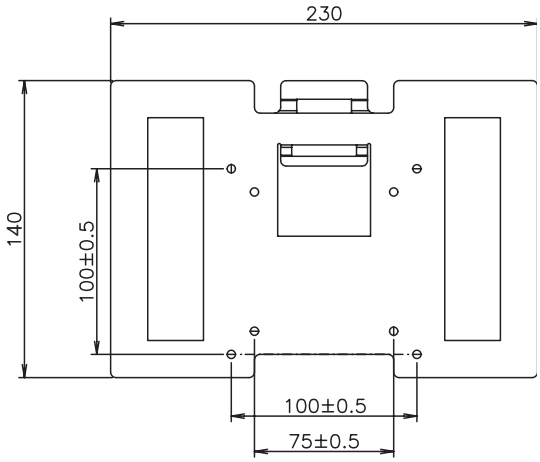
◆ Stand mounted support

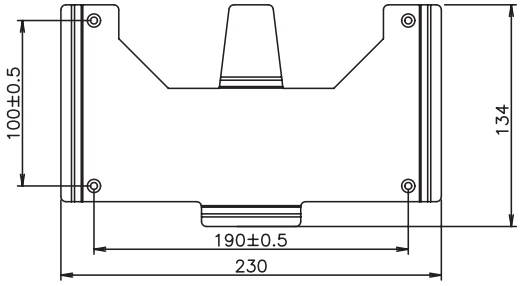
Name	Figure	Quantity	Comments
Stand support base		1	Base for holding the stand support arm and the CSNET Manager 2.
Stand support arm			Stand support part to be fixed on CSNET Manager 2.
Screw		4	For fixing the stand support arm on CSNET Manager 2.
Rear support screw		1	For fixing the stand support base.
Instruction sheet		1	Instructions for the installation work.

9.1.2 Dimensional data

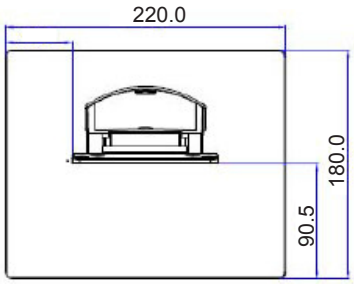
Units in mm.

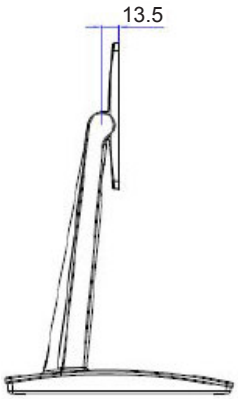
◆ **Wall mounted support**

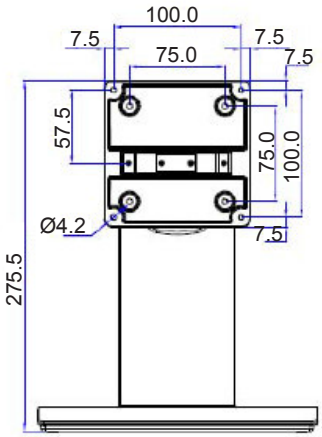




◆ **Stand mounted support**







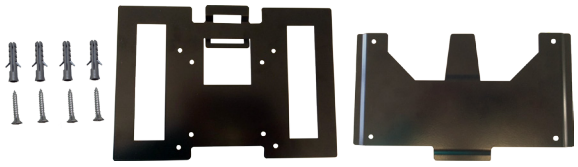
9.1.3 Installation procedure

◆ Wall mounted support

⚠ CAUTION

- *Do not install the device in places where the ambient temperature may exceed 40ºC.*
- *Place the support on a resistant wall.*
- *Install always the screen in vertical position to allow proper ventilation*

CSNET Manager 2 (T10 / T15) can be wall mounted by using any standard VESA 75 / 100 mm wall mounted support. HITACHI proposes the following wall mounted accessory, model code 7E512302.



◆ Stand mounted support

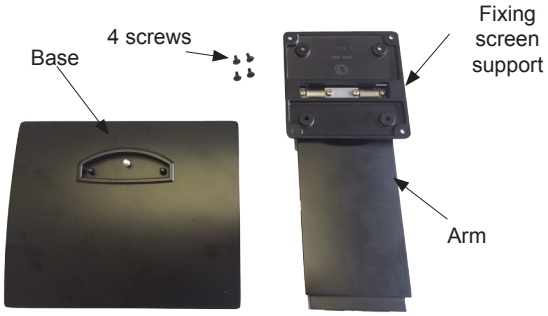


⚠ CAUTION

Do not install the device in places where the ambient temperature may exceed 40ºC.

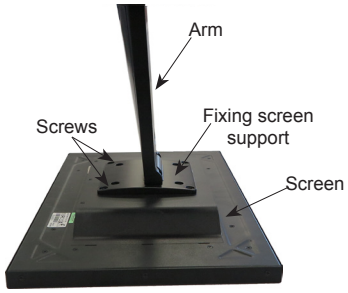
CSNET Manager 2 (T10 / T15) can be stand mounted by using any standard VESA 75/100 mm stand mounted support. HITACHI proposes the following stand mounted accessory VESA 75/100 mm, model code 7E512301.

The stand comes disassembled in 2 parts:



1 Place the fixing screen support 90 degrees with respect to its arm.

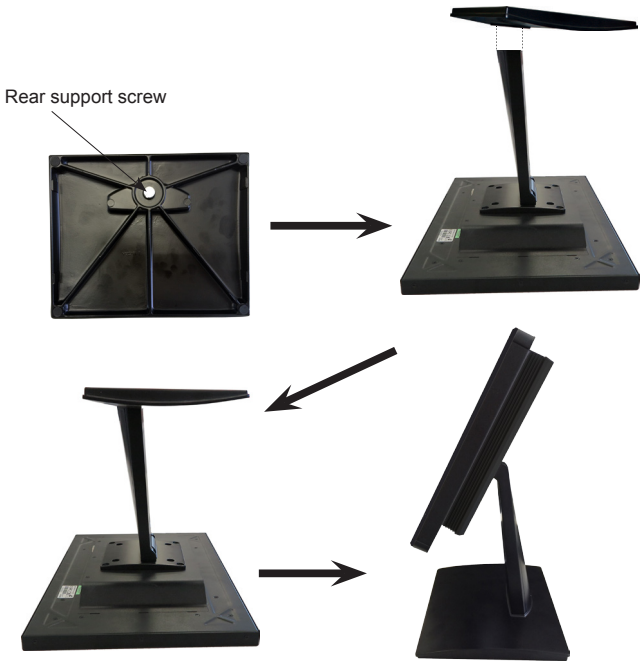
2 Put the screen upside down and insert the 4 stand screws on the rear of the screen (the power source connector will be at the bottom of the screen). There are 8 holes on the support, 4 for the T10 screen and the other 4 for the T15 screen.



⚠ CAUTION

In order to avoid damage to the screen, protect it before setting it upside down.

3 Screw the rear support screw to the arm and the stand will be completely mounted.



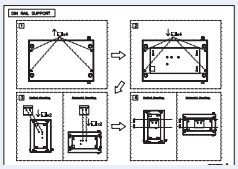
4 Finally, connect the power supply and LAN cable to the CSNET Manager 2.

5 Press down the power switch.

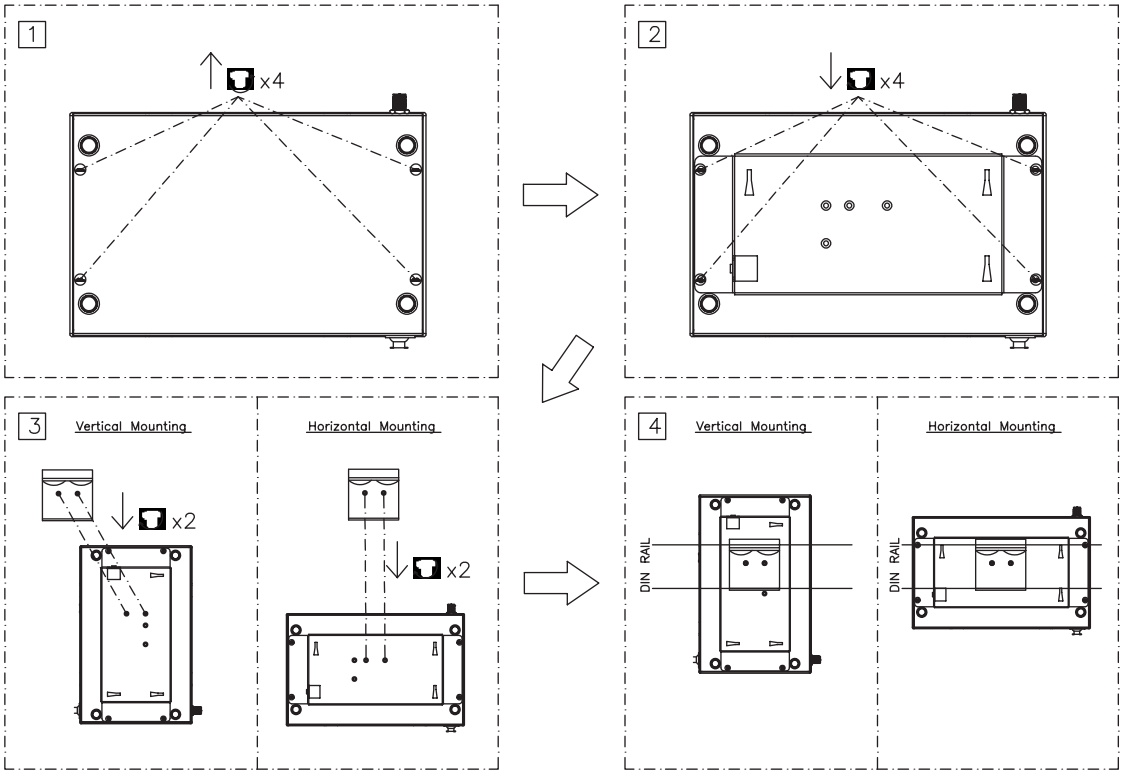
6 CSNET Manager 2 program starts automatically.

9.2 DIN rail support for CSNET Manager 2 SL

9.2.1 Components list

Name	Figure	Quantity	Comments
Din rail support		1	DIN rail support for CSNET Manager 2 SL
Instruction sheet		1	Instructions for the installation work.

9.2.2 Installation procedure



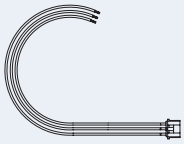
9.3 PCC-1A

9.3.1 Components list

Unpack the unit and check that:

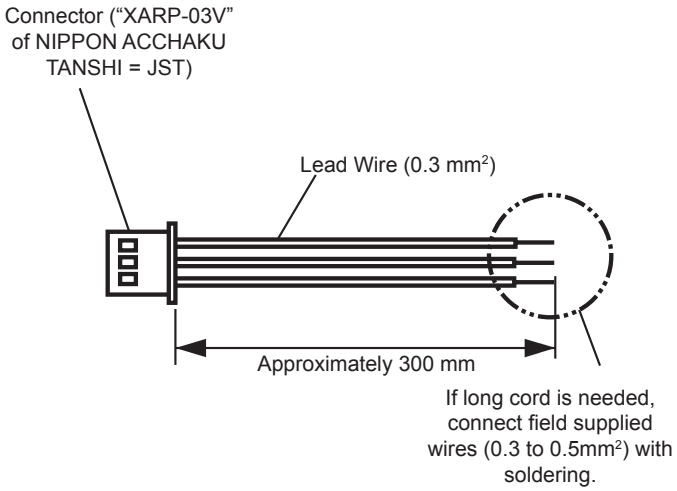
- The package contains all the components (see next table).
- All components are in perfect condition.

Otherwise, contact the manufacturer.

Name	Figure	Quantity	Comments
PCC-1A connector cord		5	For connection of external input/output signals
Cable tie		5	For securing the cables
Connector caps		15	-
Vinyl tape roll		1	-
Instruction sheet		1	Device instructions

9.3.2 System description

The PCC-1A is a 3P connector cable used when the remote ON/OFF device is connected or signals are taken out on the printed circuit board. One set contains five 3P connector cables.



9.4 PRC-(10-30)E1

9.4.1 Components list

Unpack the unit and check that:

- The package contains all the components (see next table).
- All components are in perfect condition.

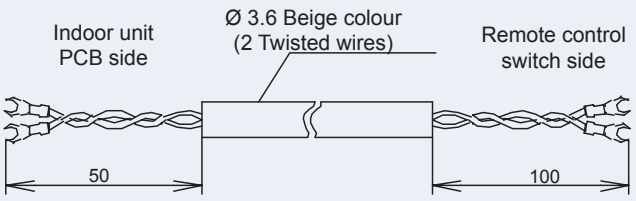
Otherwise, contact the manufacturer.

Name	Figure	Quantity	Comments
PCC-1A connector cord		1	For extending the length of individual and central remote controllers
Installation manual		1	Installation unit instructions.

9.4.2 System description

The PRC-(10/15/20/30)E1 is a 2P extension cable intended for individual remote controllers or central extensions whose cables need to be extended up to more than 30 m. When the total cable length is not higher than 30 m, other type cable (more than 0.3 mm^2) can be used.

For the details of the optional 2P extension cable, refer to the table:

Model	Length (m)	Specification
PRC-10E1	10	
PRC-15E1	15	
PRC-20E1	20	
PRC-30E1	30	

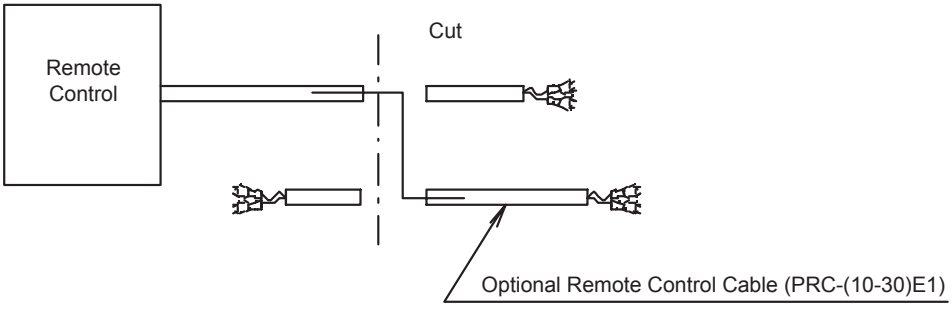
9.4.3 Installation procedure

If the remote control cable requirement is longer than 30 m, connect a control cable (2 x 0.75mm^2) in the field, by soldering, or use an optional extension remote control cable.

- The remote control cable can be extended to a maximum of 500 m.
- Extend the Remote Control Cable as shown in the figure

NOTE

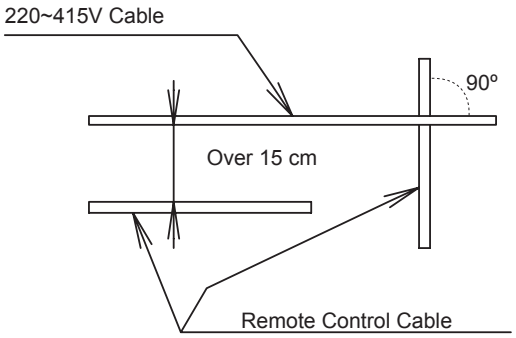
Cut, connect each wire by twisting, and then solder it. Insulate each wire with a vinyl tape.



◆ Remote Control Cable Utilization Method

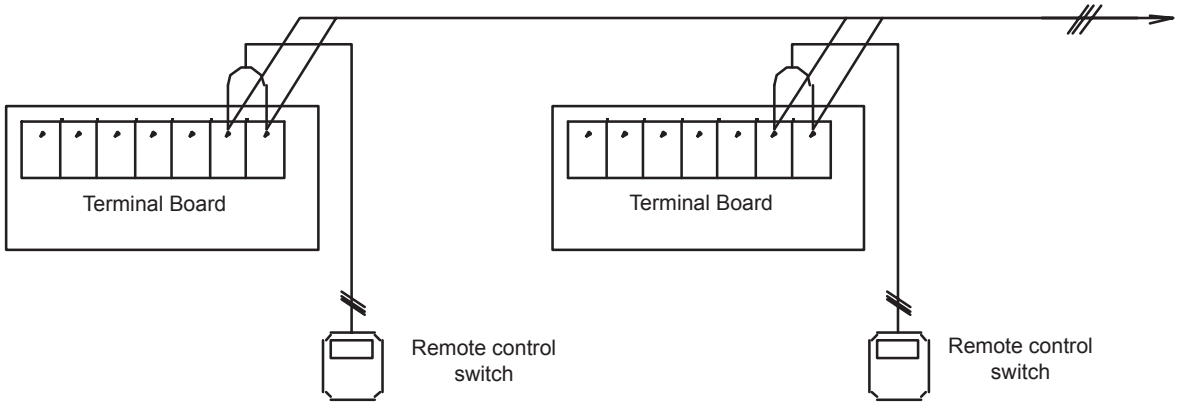
Do not install the control cable parallel to the power source wires (220V to 415V)

If the control cable is required to be installed parallel to the power source wires, separate the control cable by at least 15 cm. If cannot be separated, put either the control wire or the power source in a steel pipe and connect an earth wire to the pipe. Crossing at right angles of the control wire and power source wire is permitted.



◆ Utilization for connecting indoor units

When the indoor units are controlled by one remote control switch, use the remote control cable as connecting cables between indoor units, as shown in the figure.



⚠ CAUTION

If the remote control switch is disassembled, the following problems can occur:

- *Dust can enter into the remote control switch and cause remote control switch parts malfunction.*
- *Static electricity may occur and the electronic parts on the printed circuit board can be damaged.*
- *The total length of the remote controller cable and the control cable between the indoor units shall be 500m or less.*

9.5 Net Configuration Kit

This accessory provides all the necessary devices for HITACHI installers when commissioning a Modbus installation.

Name	Figure	Quantity	Comments
USB cable		1	For configuring the device (network parameters)
Ethernet cable		1	For a quick connection with a laptop for the Modbus communication check.
USB stick memory		1	It includes a software tool for Modbus communication check when commissioning

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