

- EN INSTRUCTION AND OPERATION MANUAL
- ES MANUAL DE INSTALACIÓN Y FUNCIONAMIENTO
- DE INSTALLATIONS- UND BETRIEBSHANDBUCH
- FR MANUEL D'INSTALLATION ET DE FONCTIONNEMENT
- IT MANUALE DI ISTRUZIONI

- PT MANUAL DE INSTALAÇÃO E DE FUNCIONAMENTO
- DA INSTALLATIONS- OG BETJENINGSVEJLEDNING
- NL INSTALLATIE- EN BEDIENINGSHANDLEIDING
- SV INSTALLATION- OCH DRIFTHANDBOK
- EL ΕΓΧΕΙΡΙΔΙΟ ΕΓΚΑΤΑΣΤΑΣΗΣ ΚΑΙ ΛΕΙΤΟΥΡΓΙΑΣ

YUTAKI SERIES



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 CAUTION

This product shall not be mixed with general house waste at the end of its life and it shall be retired according to the appropriated local or national regulations in a environmentally correct way.

Due to the refrigerant, oil and other components contained in heat pump, its dismantling must be done by a professional installer according to the applicable regulations.

Contact to the corresponding authorities for more information.



MODELS CODIFICATION

Important note: Please, check, according to the model name, which is your heat pump system, how it is abbreviated and referred to in this instruction manual. This Installation and Operation Manual is related to YUTAKI Units.

INDEX

- 1 GENERAL INFORMATION
- 2 GENERAL SAFETY NOTES
- 3 GENERAL DATA
- 4 WORKING RANGE
- 5 REFRIGERANT CYCLE AND HYDRAULIC CIRCUIT
- 6 REFRIGERANT AND WATER PIPING
- 7 ELECTRICAL AND CONTROL SETTINGS
- 8 UNIT CONTROLLER
- 9 TROUBLESHOOTING
- 10 MAINTENANCE

EN	English	Original version
ES	Español	Versión traducida
DE	Deutsch	Übersetzte Version
FR	Français	Version traduite
IT	Italiano	Versione tradotta
PT	Português	Versão traduzida
DA	Dansk	Oversat version
NL	Nederlands	Vertaalde versie
SV	Svenska	Översatt version
EL	Ελληνικά	Μεταφρασμένη έκδοση

General Index

1	GENERAL INFORMATION	1
1.1	General information.....	1
1.1.1	General notes.....	1
1.1.2	Introduction	1
1.1.2.1	Overview of YUTAKI system	1
1.1.2.2	Summary of operations	2
1.2	Applied symbols	4
1.3	Product guide	5
1.3.1	Classification of the units.....	5
1.3.1.1	Split system - Outdoor unit.....	5
1.3.1.2	Split system - Indoor unit.....	5
1.3.1.3	Monobloc system	6
1.3.2	Product list.....	7
1.3.2.1	Split system - Outdoor unit.....	7
1.3.2.2	Split system - Indoor unit.....	7
1.3.2.3	Monobloc system	10
1.3.3	Accessory code list.....	11
2	GENERAL SAFETY NOTES.....	15
2.1	ADDITIONAL INFORMATION ABOUT Safety.....	15
2.2	Important notice.....	15
3	GENERAL DATA.....	16
3.1	Capacity tables (PRELIMINARY DATA).....	16
3.1.1	Nominal capacity-performance tables	16
3.1.1.1	Considerations	16
3.1.1.2	Capacity-performance data.....	16
3.2	ERP performance data.....	19
3.2.1	General considerations	19
3.2.2	General ERP data for space heaters	19
3.2.2.1	ERP data - YUTAKI S.....	19
3.2.2.2	ERP data - YUTAKI S COMBI.....	23
3.2.2.3	ERP data - YUTAKI S80.....	26
3.2.2.4	ERP data - YUTAKI M	28
3.2.2.5	ERP additional data - YUTAKI S	30
3.2.2.6	ERP additional data - YUTAKI S COMBI	31
3.2.2.7	ERP additional data - YUTAKI S80	32
3.2.2.8	ERP additional data - YUTAKI M.....	32
3.3	General specifications	33

3.3.1	Considerations	33
3.3.2	Split system - Outdoor unit.....	33
3.3.3	Split system - Indoor unit.....	36
3.3.3.1	YUTAKI S	36
3.3.3.2	YUTAKI S COMBI	39
3.3.3.3	YUTAKI S80	45
3.3.4	Monobloc system - YUTAKI M.....	48
3.4	Component data.....	50
3.4.1	Split system - Outdoor unit.....	50
3.4.2	Split system - Indoor unit.....	52
3.4.2.1	YUTAKI S	52
3.4.2.2	YUTAKI S COMBI	53
3.4.2.3	YUTAKI S80	57
3.4.2.4	DHW tank.....	58
3.5	Electrical data.....	61
3.5.1	Considerations	61
3.5.2	Split system - Outdoor unit.....	61
3.5.3	Split system - Indoor unit.....	62
3.5.3.1	YUTAKI S	62
3.5.3.2	YUTAKI S COMBI	62
3.5.3.3	YUTAKI S80	63
3.5.4	Monobloc system - YUTAKI M.....	64
4	WORKING RANGE.....	65
4.1	Power supply working range	65
4.2	Temperature working range.....	65
4.2.1	Space heating	65
4.2.2	DHW	67
4.2.3	Swimming pool heating	68
4.2.4	Space cooling (Necessary cooling kit)	68
4.3	Hydraulic working range.....	69
4.3.1	Hydraulic data	69
4.3.2	Pump performance curves	70
5	REFRIGERANT CYCLE AND HYDRAULIC CIRCUIT	76
5.1	Refrigerant cycle and hydraulic circuit for Split system.....	76
5.1.1	YUTAKI S	76
5.1.2	YUTAKI S COMBI.....	79
5.1.3	YUTAKI S80	81
5.1.3.1	Indoor unit standalone version.....	81
5.1.3.2	Indoor unit for integrated tank version.....	82

5.2	Refrigerant cycle and hydraulic circuit for Monobloc system - YUTAKI M	83
-----	--	----

6 REFRIGERANT AND WATER PIPING 85

6.1	Refrigerant circuit	85
6.1.1	Refrigerant piping	85
6.1.2	Precautions in the event of gas refrigerant leaks	86
6.1.3	Water piping	87
6.1.4	Water quality (Preliminary information)	90
6.1.5	Water flow control	90

7 ELECTRICAL AND CONTROL SETTINGS..... 91

7.1	General check	91
7.2	Electrical connection (Preliminary data)	94
7.2.1	Wiring size	94
7.2.2	Minimum requirements of the protection devices	96
7.3	Setting of DIP switches and RSW switches	99
7.3.1	Outdoor unit	99
7.3.1.1	Location of DIP switches and rotary switches	99
7.3.1.2	Function of DIP switches and rotary switches	100
7.3.1.3	Jumpers	102
7.3.1.4	LED indication	102
7.4	Terminal board connections	103
7.4.1	Table board 1	103
7.4.2	Table board 2	104

8 UNIT CONTROLLER 110

8.1	DEFINITION OF THE SWITCHES	110
8.2	Description of the icons	111
8.2.1	Common icons	111
8.2.2	Icons for the comprehensive view	112
8.2.3	Icons for the room thermostat view	113
8.3	CONTENTS	114
8.4	MAIN SCREEN	116
8.4.1	Comprehensive view	116
8.4.2	Room thermostat view	117
8.5	WIZARD START-UP CONFIGURATION	118
8.5.1	Configuration Assistant	119
8.5.1.1	General overview	119

8.5.1.2	Questions	120
8.5.1.3	Results	122
8.5.1.4	Examples of possible configurations	124
8.5.1.5	Not allowed configurations	129
8.5.2	Advanced Configuration	129
8.5.2.1	Screen 1	129
8.5.2.2	Screen 2	129
8.5.2.3	Screen 3	130
8.5.2.4	Screen 4	130
8.6	Menu navigation	131
8.6.1	Operation information	131
8.6.1.1	General	132
8.6.1.2	Circuit 1	132
8.6.1.3	Circuit 2	133
8.6.1.4	DHW	133
8.6.1.5	Swimming Pool	133
8.6.1.6	Heat Pump Details 	133
8.6.1.7	Electrical Heater 	134
8.6.1.8	Boiler Combination 	134
8.6.1.9	Solar Combination 	135
8.6.1.10	Alarm History	135
8.6.1.11	Energy data	135
8.6.2	System Configuration	136
8.6.2.1	General Options	136
8.6.2.2	Timer and Schedule	140
8.6.2.3	Water settings	142
8.6.2.4	Space Heating 	144
8.6.2.5	Space Cooling 	147
8.6.2.6	DHW	150
8.6.2.7	Swimming Pool	152
8.6.2.8	Complementary Heating	152
8.6.2.9	Heat Pump 	155
8.6.2.10	Optional Functions	156
8.6.2.11	I/O and Sensor 	158
8.6.3	Controller Settings	161
8.6.3.1	Controller Options	162
8.6.3.2	Room Names	162
8.6.3.3	Date and Time	163
8.6.3.4	Screen Settings	164
8.6.3.5	Language selection	164
8.6.4	Commisioning 	165
8.6.4.1	Air Purge Procedure	165
8.6.4.2	Unit test run 	165
8.6.4.3	Screed Drying 	166

8.6.5 About	166
8.6.5.1 System Information	166
8.6.5.2 Contact Information	166
8.6.6 Factory Reset 	167
8.6.7 Return to user mode 	167
8.7 INDEX OF REFERENCES	168
9 TROUBLESHOOTING	171
10 MAINTENANCE	174
10.1 Maintenance work	174
10.1.1 General maintenance procedure for the outdoor unit	174
10.1.2 General maintenance procedure for the indoor unit	175

1 GENERAL INFORMATION

1.1 GENERAL INFORMATION

1.1.1 General notes

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1.1.2 Introduction

HITACHI proudly announces the newest complete range of air-to-water heat pumps in its award-winning YUTAKI range.

YUTAKI units produce heating and domestic hot water like any oil or gas boiler, but transforming renewable energy from the outside air into heat. Air to water heat pumps extract the free energy present in the air, which is enough to heat a home up to a comfortable temperature, even on the coldest winter day. Every kW of electricity used to power the heat pump can yield up to more than 5 kW of energy for heating; this provides savings of up to 80% on heating expenses compared to a traditional fossil fuel boiler.

The new YUTAKI series, based on state-of-the-art technology, does not only achieve an outstanding performance in space heating but also provides domestic hot water with high efficiency. Additionally, cooling operation for summer can also be provided installing the dedicated "Cooling kit" accessory of HITACHI.

The system is simple to control; its new user controller (PC-ARFHE) improves the acclaimed and successful design used with the existing LCD controller and provides a great deal of new functions like: wizard start-up configuration, auto cool/heat, improved timer, etc.

1.1.2.1 Overview of YUTAKI system

The wide range of YUTAKI products is basically divided in two types of system:

- Split system
- Monobloc system

◆ Split system - YUTAKI S, YUTAKI S COMBI, YUTAKI S80

It consists of one outdoor unit and one indoor unit. The outdoor unit extracts the heat present in the air, increases its refrigerant temperature and transmits it to the water circuit using the plate heat exchanger of the indoor unit where the heat is taken to radiators (fan-coils), underfloor heating components or both (2nd temperature area).

Three types of indoor unit can be used in heating split systems:

YUTAKI S

The indoor unit of YUTAKI S is designed for space heating, in wall-mounted installation. It is convenient for new installations with low capacity requirements (Well isolated installations, high efficiency radiators...).

YUTAKI S COMBI

The indoor unit of YUTAKI S COMBI is conceived as a floor standing unit. It is prepared for heating operation as well as for domestic hot water production. For this purpose, it has a built-in domestic hot water tank available in two sizes (200 or 260 L). In line with YUTAKI S units, it meets the needs of installations with low capacity requirements.

Furthermore, special YUTAKI S COMBI models have been designed with a specific solar tank for the use of solar panels.

Also, new models of YUTAKI S Combi have been specially designed for the UK market that meet the requirements referred in the

UK Building Regulations.

YUTAKI S80

The YUTAKI S80 is a standalone indoor unit that generates hot water up to 80°C; the hottest water temperature in the domestic heating market using renewable energy.

The extra innovation in the YUTAKI S80 lies in that it has two compressors, working in a smart cascade system, with two refrigerant cycles (R-410A and R-134a). To maximize seasonal efficiency, the second refrigerant cycle is only operated as a booster, when very high water temperature is required - the rest of the time, only one cycle is used.

The YUTAKI S80 is ideal for existing properties, in particular older installations where high water supply temperatures may be required to keep the house warm – as well as for new buildings. It is designed for the replacement of boilers, offering heating and sanitary hot water all year round, without boiler back-up.

Two different models have been designed for different purposes: one model for space heating only and the other one for space heating as well as for DHW operation. For DHW operation (optional), HITACHI offers two specific YUTAKI S80 DHW tanks (DHWS200S-2.7H2E and DHWS260S-2.7H2E) which may be placed on top of the indoor unit or besides it, as an integrated unit to provide high-temperature domestic hot water enjoying the benefits of the high efficiency of the heat pump.

◆ Monobloc system - YUTAKI M

YUTAKI M is a monobloc air to water heat pump system, composed by only an special outdoor unit, which carries out the function of an air-to-water heat pump. This results in an excellent solution when installation space available is limited.

YUTAKI M is designed to be installed outdoors, in any kind of dwelling (house, apartment, villa,...), whether in a new construction or in an existing building. Installation work is greatly simplified thanks to the lack of refrigerant piping connections.

1.1.2.2 Summary of operations

Space heating

YUTAKI units are factory-supplied ready for space heating operation. Different heating installation configurations can be selected providing a comfortable atmosphere all year long even in the coldest climates:

- **Mono-valent system**

The air to water heat pump is sized to provide 100% of the heating requirements on the coldest day the year.

- **Mono-energy system**

This is the most popular configuration. The air to water heat pump is sized to provide 80% of the heating requirements on the coldest days of the year. An auxiliary electric heater is used to provide the additional heating required on cold days. This option usually results in an ideal balance between installation costs and future energy consumption, as proven by its popularity in colder climates than ours, such as Sweden and Norway.

- **Alternating Bi-valent system**

For installations with an existing heating system by boiler, and when is needed to heat the supplied water temperature to the circuit up to high temperatures (80°C), the boiler can be configured to alternate with the air to water heat pump.

Selecting the different configuration types it is possible to adapt the system to all customer requirements, providing a wide application range from the simplest configuration to complete configuration: Radiator, heating floor or both (2nd temperature area).

Domestic hot water production

YUTAKI models also give the option of domestic hot water production, allowing the user to benefit from the heat pump's high efficiency and achieve domestic hot water.

This is made possible by a domestic hot water tank. In case of YUTAKI S COMBI, the domestic hot water tank is built in the indoor unit. In YUTAKI S80, a specific DHW tank is designed for combination with the indoor unit. For YUTAKI S and YUTAKI M, the HITACHI accessory "DHWT-(200/300)S-3.0H2E" can be used for the production of DHW.

An electric heater is incorporated inside the tank in order to allow an immediate heating of the domestic hot water in accordance with the user's needs.

Space cooling

YUTAKI units can also be operated in cooling operation. The dedicated "Cooling kit" accessory has been designed for this purpose. Combining the heating only models with these cooling kits, the reversible models become available. In this case, combination with fan-coils, refreshing floor or both (2nd temperature area) can be applied.

Combination with solar panels

YUTAKI system can be combined with solar panels. The solar combination enables to heat up the DHW by means of the sun. The solar combination is designed to transfer the heat from the solar panels (sun radiation) to the heat exchanger of DHW tank.

In case of YUTAKI S COMBI, a specific model with integrated tank for solar combination has been designed, as explained before.

Swimming pool water heating operation

For summer session period, YUTAKI system can be used to heat the water temperature of swimming pools up to a value between 24 and 33°C.

1.2 APPLIED SYMBOLS

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

Situations endangering the safety of those in the surrounding area or to the unit itself are clearly indicated in this manual.

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 requires 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 Classification of the units

1.3.1.1 Split system - Outdoor unit

Unit type: Outdoor unit (Split air system)									
Position-separating hyphen (fixed)									
Compressor power (HP): 2, 2.5, 3, 4, 5, 6, 8, 10.									
For water combination									
Heat pump									
V: Single phase unit (1~ 230V 50Hz)									
—: Three phase unit (3N~ 400V 50Hz)									
R410A refrigerant									
Premium series									
E: Made in Europe									
—: Made in Japan									
RAS	-	X	W	H	(V)	N	P	(E)	

1.3.1.2 Split system - Indoor unit

◆ YUTAKI S

Unit type: YUTAKI S (Split system - Single water module (Indoor unit) - Medium/Low temperature)									
Position-separating hyphen (fixed)									
Compressor power of the combined outdoor unit (HP): 2.0, 2.5, 3.0, 4.0, 5.0, 6.0, 8.0, 10.0.									
—: Heating only									
C: Reversible									
R410A refrigerant									
Made in Europe									
RWM	-	X.X	(X)	N	E				

◆ YUTAKI S COMBI

Unit type: YUTAKI S COMBI (Split system - Dual water module (Indoor unit + Domestic hot water tank) - Medium/Low temperature)										
Position-separating hyphen (fixed)										
Compressor power of the combined outdoor unit (HP): 2.0, 2.5, 3.0, 4.0, 5.0, 6.0.										
R-410A refrigerant										
Water-to-water DHW heat exchanger										
— : Standard model										
S : Model for solar combination										
Made in Europe										
Position-separating hyphen (fixed)										
Tank model: 200/260 L										
Tank material: Stainless steel										
-K: Model for UK market										
RWD	-	X.X	N	W	(X)	E	-	XXX	S	(-K)

◆ YUTAKI S80

Indoor unit

Unit type: YUTAKI S80 (Split system - Single water module (Indoor unit) - High & Very High temperature)								
Position-separating hyphen (fixed)								
Compressor power (HP): 4.0, 5.0, 6.0.								
V: Single phase unit (1~ 230V 50Hz)								
—: Three phase unit (3N~ 400V 50Hz)								
R-410A refrigerant								
R-134a refrigerant								
—: Type1: Version for operation in DHW with a remote tank								
W: Type2: Version for operation with Hitachi DHW tank								
Made in Europe								
RWH	-	X.X	(V)	N	F	(W)	E	

Domestic hot water tank (For combination with YUTAKI S80 indoor unit standalone version)

Unit type: YUTAKI S80 domestic hot water tank								
Model: 200/260 L								
Tank material: Stainless steel								
Position-separating hyphen (fixed)								
Electric heater of 2.7 kW								
Series								
Made in Europe								
DHWS	XXX	S	-	2.7H	2	E		

1.3.1.3 Monobloc system

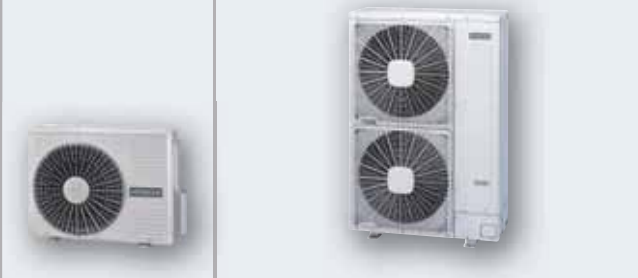
◆ YUTAKI M

Unit type: YUTAKI M (Monobloc system - Single water module (Outdoor unit) - Low/Medium temperature)								
Position-separating hyphen (fixed)								
Compressor power (HP): 3.0, 4.0, 5.0, 6.0.								
V: Single phase unit (1~ 230V 50Hz)								
—: Three phase unit (3N~ 400V 50Hz)								
R410 refrigerant								
Made in Europe								
RASM	-	X.X	(V)	N	E			

1.3.2 Product list

1.3.2.1 Split system - Outdoor unit

1~ 230V 50Hz		3N~ 400V 50Hz
RAS-2WHVNP	-	-
RAS-2.5WHVNP	-	-
RAS-3WHVNP	-	-
-	RAS-4WHVNPE	RAS-4WHNPE
-	RAS-5WHVNPE	RAS-5WHNPE
-	RAS-6WHVNPE	RAS-6WHNPE
-	-	RAS-8WHNPE
-	-	RAS-10WHNPE



1.3.2.2 Split system - Indoor unit

◆ YUTAKI S

     			
1~ 230V 50Hz		3N~ 400V 50Hz	
RWM-2.0NE	-	-	-
RWM-2.5NE	-	-	-
RWM-3.0NE	-	-	-
-	RWM-4.0NE	RWM-4.0NE	-
-	RWM-5.0NE	RWM-5.0NE	-
-	RWM-6.0NE	RWM-6.0NE	-
-	-	-	RWM-8.0NE
-	-	-	RWM-10.0NE


i NOTE

Icons between brackets means possible extra operations to the factory-supplied operations. For cooling operation, refer to the Cooling kit accessory for YUTAKI S units.

◆ YUTAKI S COMBI

i NOTE

Icons between brackets means possible extra operations to the factory-supplied operations. For cooling operation, refer to the Cooling kit accessory for YUTAKI S COMBI units.

Standard model

	
1~ 230V 50Hz	3N~ 400V 50Hz
RWD-2.0NWE-200S	-
RWD-2.0NWE-260S	-
RWD-2.5NWE-200S	-
RWD-2.5NWE-260S	-
RWD-3.0NWE-200S	-
RWD-3.0NWE-260S	-
RWD-4.0NWE-200S	RWD-4.0NWE-200S
RWD-4.0NWE-260S	RWD-4.0NWE-260S
RWD-5.0NWE-200S	RWD-5.0NWE-200S
RWD-5.0NWE-260S	RWD-5.0NWE-260S
RWD-6.0NWE-200S	RWD-6.0NWE-200S
RWD-6.0NWE-260S	RWD-6.0NWE-260S


Model for solar combination

	
1~ 230V 50Hz	3N~ 400V 50Hz
RWD-2.0NWSE-260S	-
RWD-2.5NWSE-260S	-
RWD-3.0NWSE-260S	-
RWD-4.0NWSE-260S	RWD-4.0NWSE-260S
RWD-5.0NWSE-260S	RWD-5.0NWSE-260S
RWD-6.0NWSE-260S	RWD-6.0NWSE-260S



Model for UK market

	
1~ 230V 50Hz	3N~ 400V 50Hz
RWD-2.0NWE-200S-K	-
RWD-2.0NWE-260S-K	-
RWD-2.5NWE-200S-K	-
RWD-2.5NWE-260S-K	-
RWD-3.0NWE-200S-K	-
RWD-3.0NWE-260S-K	-
RWD-4.0NWE-200S-K	RWD-4.0NWE-200S-K
RWD-4.0NWE-260S-K	RWD-4.0NWE-260S-K
RWD-5.0NWE-200S-K	RWD-5.0NWE-200S-K
RWD-5.0NWE-260S-K	RWD-5.0NWE-260S-K
RWD-6.0NWE-200S-K	RWD-6.0NWE-200S-K
RWD-6.0NWE-260S-K	RWD-6.0NWE-260S-K

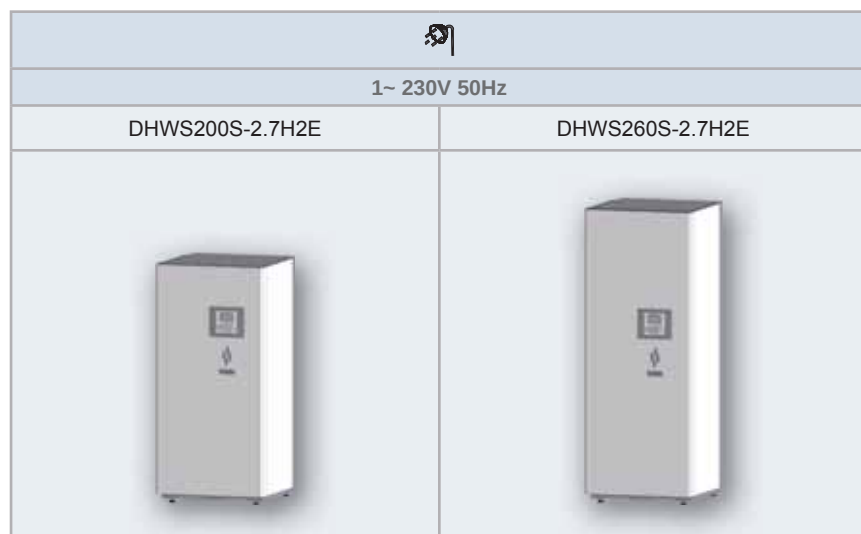


YUTAKI S80

Indoor unit

			
TYPE 1: Version for operation in DHW but with a remote tank (Tank cannot be plugged on top of the unit)		TYPE 2: Version for operation with Hitachi DHW tank (Tank can be plugged on top of the unit or next to it)	
1~ 230V 50Hz	3N~ 400V 50Hz	1~ 230V 50Hz	3N~ 400V 50Hz
RWH-4.0VNFWE	RWH-4.0NFWE	RWH-4.0VNFE	RWH-4.0NFE
RWH-5.0VNFWE	RWH-5.0NFWE	RWH-5.0VNFE	RWH-5.0NFE
RWH-6.0VNFWE	RWH-6.0NFWE	RWH-6.0VNFE	RWH-6.0NFE




YUTAKI S80 domestic hot water tank**i NOTE**

- In "TYPE 1: Version for operation in DHW but with a remote tank", the required unit controller(PC-ARFHE) has to be ordered as accessory.
- In "TYPE 2: Version for operation with Hitachi DHW tank", the domestic hot water tank of model DHWS200S-2.7H2E or DHWS260S-2.7H2E is required. The DHW tank has to be ordered separately. The unit controller (PC-ARFHE) is factory supplied with the DHW tank (integrated in the front cover). The tank can be installed in 2 ways: on top of the indoor unit (integrated installation) or next to it. In this second case, the specific accessory kit installation (ATW-FWP-02, ordered as an accessory) is required.
- Icons between brackets mean possible extra operations to the factory-supplied operations.

1.3.2.3 Monobloc system**◆ YUTAKI M**

     		
1~ 230V 50Hz		3N~ 400V 50Hz
RASM-3VNE	-	-
-	RASM-4VNE	RASM-4NE
-	RASM-5VNE	RASM-5NE
-	RASM-6VNE	RASM-6NE
 		

i NOTE

The unit controller has to be ordered as accessory (PC-ARFHE).

1.3.3 Accessory code list

Model	Ref.
For all series	A
For YUTAKI S units	S
For YUTAKI S COMBI units	SC
For YUTAKI S80 units	S80
For YUTAKI M units	M

◆ Cooling kit accessories

Accessory	Ref.	Name	Figure
NEW ATW-CKS-01	S	Cooling operation kit for YUTAKI S (For 2.0-3.0HP)	To be informed later
NEW ATW-CKS-02	S	Cooling operation kit for YUTAKI S (For 4.0-6.0HP)	
NEW ATW-CKS-03	S	Cooling operation kit for YUTAKI S (For 8.0/10.0HP)	
NEW ATW-CKSC-01	SC	Cooling operation kit for YUTAKI S COMBI	
NEW ATW-CKM-01	M	Cooling operation kit for YUTAKI M	

◆ Control accessories

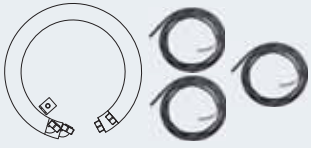
Accessory	Ref.	Name	Figure
NEW PC-ARFHE	A	Unit controller Wired room thermostat for YUTAKI units (Languages EN/ES/DE/FR/IT)	
NEW ATW-RTU-04	A	Wireless ON/OFF thermostat (Receiver + Room thermostat)	
NEW ATW-RTU-05	A	Wireless Intelligent thermostat (Receiver + Room thermostat)	

Accessory	Ref.	Name	Figure
NEW ATW-RTU-06	A	Wireless Intelligent thermostat for 2nd circuit (Only Room thermostat. For Intelligent thermostat application)	
NEW ATW-MBS-02	A	MODBUS gateway for YUTAKI units	
NEW ATW-KNX-02	A	KNX interface for YUTAKI units	
NEW ATW-TAG-02	A	TaHoma gateway for YUTAKI units	
NEW ATW-AOS-02	A	Auxiliary output signal box (Relay board for additional output signals)	
NEW ATW-MAK-01	A	Kit for 4-20 mA application	To be informed later
NEW ATW-YMM-01	M	YUTAKI M remote control box (Slave)	

◆ Temperature sensor accessories

Accessory	Ref.	Name	Figure
NEW ATW-2OS-02	A	2nd. outdoor temperature sensor	
NEW ATW-ITS-01	A	Indoor wired temperature sensor	
ATW-WTS-02Y	A	Universal water temperature sensor	

◆ Water circuit accessories

Accessory	Ref.	Name	Figure
NEW ATW-2KT-03	A	2nd zone mixing kit (Integrable in YUTAKI S COMBI 200 L model)	
NEW ATW-2TK-04	SC	2nd zone mixing kit (Wall mounted model)	
NEW DHWT-200S-3.0H2E	S M	Domestic hot water tank (200 L)	
NEW DHWT-300S-3.0H2E	S M	Domestic hot water tank (300 L)	
NEW ATW-FWP-02	S80	Kit for installation with tank beside the indoor unit	
ATW-HSK-01	A	Hydraulic separator	

Accessory	Ref.	Name	Figure
ATW-AQT-01	A	Aquastat security (for heating floor protection)	
ATW-3WV-01	A	3-way valve (Internal thread and spring return)	
ATW-WCV-01	A	Water check valve	
WEH-6E	S80 M	Water electric heater	
ATW-DPOV-01	A	Differential pressure overflow valve	

2 GENERAL SAFETY NOTES

2.1 ADDITIONAL INFORMATION ABOUT SAFETY

DANGER

- **DO NOT CONNECT THE POWER SUPPLY TO THE INDOOR UNIT PRIOR TO FILLING THE SPACE HEATING CIRCUIT (AND DHW CIRCUIT IF IT WAS THE CASE) WITH WATER AND CHECKING WATER PRESSURE AND THE TOTAL ABSENCE OF ANY WATER LEAKAGE.**
- *Do not pour water over the indoor unit electrical parts. If the electrical components are in contact with water a serious electrical shock will take place.*
- *Do not touch or adjust the safety devices inside the air to water heat pump. If these devices are touched or adjusted, a serious accident can take place.*
- *Do not open the service cover or access inside the air to water heat pump without disconnecting the main power supply.*
- *In case of fire Turn OFF the main switch, put out the fire at once and contact your service contractor.*
- *It must ensure that the air to water heat pump cannot operate accidentally without water neither with air inside hydraulic system.*

CAUTION

- *Do not use any sprays such as insecticide, lacquer, hair spray or other flammable gases within approximately one meter from the system.*
- *If installation circuit breaker or the unit fuse is often activated, stop the system and contact your service contractor.*
- *Do not make service or inspections tasks by yourself. This work must be performed by a qualified service person.*
- *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.*
- *Do not let any foreign body into the water inlet and outlet piping of the air to water heat pump.*

2.2 IMPORTANT NOTICE

- **PLEASE READ THE INSTRUCTION MANUAL AND THE FILES ON THE CD-ROM CAREFULLY BEFORE STARTING TO WORK ON THE INSTALLATION OF THE AIR TO WATER HEAT PUMP SYSTEM.** Failure to observe the instructions for installation, use and operation described in this documentation may result in operating failure including potentially serious faults, or even the destruction of the air to water heat pump system.
- Verify, in accordance with the manuals which appear in the outdoor and indoor units, that all the information required for the correct installation of the system is included. If this is not the case, contact your distributor.
- HITACHI pursues a policy of continuous improvement in product design and performance. The right is therefore reserved to vary specifications without notice.
- HITACHI cannot anticipate every possible circumstance that might involve a potential hazard.
- This air to water heat pump has been designed for standard water heating for human beings only. Do not use this for other purposes such as for drying clothes, heating foods or for any other heating process (except swimming pool).
- No part of this manual may be reproduced without written permission.
- If you have any questions, contact your service contractor of HITACHI.
- Check and make sure that the explanations of each part of this manual correspond to your air to water heat pump model.
- Refer to the models codification to confirm the main characteristics of your system.
- Signal words (NOTE, DANGER and CAUTION) are used to identify levels of hazard seriousness. Definitions for identifying hazard levels are provided in initial pages of this document.
- The operation modes of these units are controlled by the unit controller.
- This manual should be considered as a permanent part of the air to water heat pump. It gives a common description of and information for this air to water heat pump which you operate as well as for other models.
- Keep the water temperature of the system above the freezing temperature.

3 GENERAL DATA

3.1 CAPACITY TABLES (PRELIMINARY DATA)

3.1.1 Nominal capacity-performance tables

3.1.1.1 Considerations

- The heating capacity tables show the capacity and performance data in integrated values (with defrost correction factor included).
- The nominal heating and cooling capacities are based on the EN 14511 standard: Piping length: 7.5 meters; Piping lift: 0 meters.

Keywords:

- CAP: Nominal capacity (kW)
- COP: Coefficient of performance
- EER: Energy efficiency ratio
- DB: Dry bulb; WB: Wet bulb (°C)
- OAT: Outdoor ambient temperature (°C)
- WIT: Water inlet temperature (°C)
- WOT: Water outlet temperature (°C)

3.1.1.2 Capacity-performance data

◆ YUTAKI S

Outdoor unit model				RAS-2 WHVNP	RAS-2.5 WHVNP	RAS-3 WHVNP	RAS-4 WH(V)NPE	RAS-5 WH(V)NPE	RAS-6 WH(V)NPE	RAS-8 WHNPE	RAS-10 WHNPE
Indoor unit model				RWM-2.0 NE	RWM-2.5 NE	RWM-3.0 NE	RWM-4.0 NE	RWM-5.0 NE	RWM-6.0 NE	RWM-8.0 NE	RWM-10.0 NE
OAT (DB/WB)	WIT / WOT	-	Unit	Heating operation							
7 / 6 °C	30 / 35 °C	CAP (Nom./Max.)	kW	4.3/7.0	6.0/9.0	7.5/11.0	11.0/15.2	14.0/16.7	16.0/17.8	20.0/25.5	24.0/32.0
		COP (Nom.)	-	5.25	4.80	4.55	5.00	4.71	4.57	4.30	4.30
	40 / 45 °C	CAP (Nom./Max.)	kW	4.3/6.2	6.0/9.0	7.5/10.0	11.0/14.1	14.0/15.7	16.0/17.3	20.0/25.0	24.0/32.0
		COP (Nom.)	-	3.90	3.59	3.50	3.98	3.61	3.40	3.40	3.30
	47 / 55 °C	CAP (Nom./Max.)	kW	4.3/6.0	6.0/8.0	7.5/9.2	11.0/13.5	14.0/15.2	16.0/17.0	20.0/24.0	24.0/32.0
		COP (Nom.)	-	3.00	2.89	2.57	3.00	2.80	2.50	2.72	2.65
2 / 1 °C	30 / 35 °C	CAP (Nom./Max.)	kW	3.5/5.5	4.5/7.0	5.5/8.9	9.5/12.8	10.5/13.9	11.1/15.0	12.3/20.0	13.0/20.7
		COP (Nom.)	-	4.10	3.65	3.53	3.61	3.55	3.41	3.51	3.41
-7 / -8 °C	30 / 35 °C	CAP (Nom./Max.)	kW	4.3/4.7	5.3/5.7	5.8/6.7	9.7/10.6	11.5/12.0	12.0/13.0	14.2/17.9	16.5/21.0
		COP (Nom.)	-	2.85	2.60	2.57	2.74	2.65	2.57	2.57	2.57
	40 / 45 °C	CAP (Nom./Max.)	kW	4.3/4.6	5.0/5.5	6.0/6.4	10.0/10.0	11.0/11.6	11.5/12.5	15.0/16.6	16.5/18.5
		COP (Nom.)	-	2.45	2.25	2.25	2.45	2.25	2.15	2.08	1.74
	47 / 55 °C	CAP (Nom./Max.)	kW	4.0/4.2	4.6/5.0	5.0/5.5	8.7/9.7	9.7/11.2	10.5/12.0	12.5/14.5	15.5/17.3
		COP (Nom.)	-	1.93	1.82	1.60	1.78	1.85	1.75	1.70	1.50

OAT (DB/WB)	WIT / WOT	-	Unit	Cooling operation (Using cooling kit accessory)							
35 / -- °C	12 / 7 °C	CAP (Nom.)	kW	3.8	5.0	6.0	7.2	9.5	10.5		
		EER (Nom.)	-	3.12	3.15	2.75	3.30	3.22	2.82		
	23 / 18 °C	CAP (Nom.)	kW	4.1	5.5	6.0	10.4	12.9	13.5		
		EER (Nom.)	-	3.81	3.81	3.81	4.50	4.02	3.81		

Blank data: To be informed later.

◆ YUTAKI S COMBI

Outdoor unit model				RAS-2 WHVNP	RAS-2.5 WHVNP	RAS-3 WHVNP	RAS-4 WH(V)NPE	RAS-5 WH(V)NPE	RAS-6 WH(V)NPE
Indoor unit model				RWD-2.0 NW(S)E- (200/260)S(-K)	RWD-2.5 NW(S)E- (200/260)S(-K)	RWD-3.0 NW(S)E- (200/260)S(-K)	RWD-4.0 NW(S)E- (200/260)S(-K)	RWD-5.0 NW(S)E- (200/260)S(-K)	RWD-6.0 NW(S)E- (200/260)S(-K)
OAT (DB/WB)	WIT / WOT	-	Unit	Heating operation					
7 / 6 °C	30 / 35 °C	CAP (Nom./Max.)	kW	4.3/7.0	6.0/9.0	7.5/11.0	11.0/15.2	14.0/16.7	16.0/17.8
		COP (Nom.)	-	5.25	4.80	4.55	5.00	4.71	4.57
	40 / 45 °C	CAP (Nom./Max.)	kW	4.3/6.2	6.0/9.0	7.5/10.0	11.0/14.1	14.0/15.7	16.0/17.3
		COP (Nom.)	-	3.90	3.59	3.50	3.98	3.61	3.40
	47 / 55 °C	CAP (Nom./Max.)	kW	4.3/6.0	6.0/8.0	7.5/9.2	11.0/13.5	14.0/15.2	16.0/17.0
		COP (Nom.)	-	3.0	2.89	2.57	3.00	2.80	2.50
2 / 1 °C	30 / 35 °C	CAP (Nom./Max.)	kW	3.5/5.5	4.5/7.0	5.5/8.9	9.5/12.8	10.5/13.9	11.1/15.0
		COP (Nom.)	-	4.10	3.65	3.53	3.61	3.55	3.41
-7 / -8 °C	30 / 35 °C	CAP (Nom./Max.)	kW	4.3/4.7	5.3/5.7	5.8/6.7	9.7/10.6	11.5/12.0	12.0/13.0
		COP (Nom.)	-	2.85	2.60	2.57	2.74	2.65	2.57
	40 / 45 °C	CAP (Nom./Max.)	kW	4.3/4.6	5.0/5.5	6.0/6.4	10.0/10.0	11.0/11.6	11.5/12.5
		COP (Nom.)	-	2.45	2.25	2.25	2.45	2.25	2.15
	47 / 55 °C	CAP (Nom./Max.)	kW	4.0/4.2	4.6/5.0	5.0/5.5	8.7/9.7	9.7/11.2	10.5/12.0
		COP (Nom.)	-	1.93	1.82	1.60	1.78	1.85	1.75

OAT (DB/WB)	WIT / WOT	-	Unit	Cooling operation (Using cooling kit accessory)					
35 / -- °C	12 / 7 °C	CAP (Nom.)	kW	3.8	5.0	6.0	7.2	9.5	10.5
		EER (Nom.)	-	3.12	3.15	2.75	3.30	3.22	2.82
	23 / 18 °C	CAP (Nom.)	kW	4.1	5.5	6.0	10.4	12.9	13.5
		EER (Nom.)	-	3.81	3.81	3.81	4.50	4.02	3.81

◆ YUTAKI S80

Outdoor unit model				RAS-4WH(V)NPE	RAS-5WH(V)NPE	RAS-6WH(V)NPE
Indoor unit model				RWH-4.0(V)NF(W)E	RWH-5.0(V)NF(W)E	RWH-6.0(V)NF(W)E
OAT (DB/WB)	WIT / WOT	-	Unit	Heating operation		
7 / 6 °C	30 / 35 °C	CAP (Nom./Max.)	kW	11.0/15.2	14.0/16.7	16.0/17.8
		COP (Nom.)	-	5.00	4.71	4.57
	40 / 45 °C	CAP (Nom./Max.)	kW	11.0/14.5	14.0/17.0	16.0/18.0
		COP (Nom.)	-	3.90	3.78	3.60
	47 / 55 °C	CAP (Nom./Max.)	kW	11.0/14.5	14.0/17.0	16.0/18.0
		COP (Nom.)	-	3.32	3.19	3.10
-7 / -8 °C	30 / 35 °C	CAP (Nom./Max.)	kW	11.0/14.5	14.0/17.0	16.0/18.0
		COP (Nom.)	-	2.90	2.88	2.73
	40 / 45 °C	CAP (Nom./Max.)	kW	9.7/10.6	11.5/12.2	12.1/13.0
		COP (Nom.)	-	2.74	2.65	2.57
	47 / 55 °C	CAP (Nom./Max.)	kW	11.0/12.5	14.0/14.5	16.0/16.0
		COP (Nom.)	-	2.40	2.30	2.20
-7 / -8 °C	47 / 55 °C	CAP (Nom./Max.)	kW	11.0/12.5	14.0/14.5	16.0/16.0
		COP (Nom.)	-	2.30	2.20	2.08
	55 / 65 °C	CAP (Nom./Max.)	kW	11.0/12.5	14.0/14.0	16.0/16.0
		COP (Nom.)	-	2.10	2.05	1.95

◆ YUTAKI M

Outdoor unit model				RASM-3VNE	RASM-4VNE	RASM-5VNE	RASM-6VNE
OAT (DB/WB)	WIT / WOT	-	Unit	Heating operation			
7 / 6 °C	30 / 35 °C	CAP (Nom./Max.)	kW	7.5/11.0	11.0/15.2	14.0/16.7	16.0/17.8
		COP (Nom.)	-	4.55	5.00	4.71	4.57
	40 / 45 °C	CAP (Nom./Max.)	kW	7.5/10.0	11.0/14.1	14.0/15.7	16.0/17.3
		COP (Nom.)	-	3.50	3.80	3.61	3.40
	47 / 55 °C	CAP (Nom./Max.)	kW	7.5/9.2	11.0/13.5	14.0/15.2	16.0/17.0
		COP (Nom.)	-	2.70	3.00	2.80	2.50
2 / 1 °C	30 / 35 °C	CAP (Nom./Max.)	kW	5.5/8.9	9.5/12.8	10.5/13.9	11.1/15.0
		COP (Nom.)	-	3.53	3.70	3.55	3.41
-7 / -8 °C	30 / 35 °C	CAP (Nom./Max.)	kW	6.0/6.7	9.7/10.6	11.5/12.0	12.0/13.0
		COP (Nom.)	-	2.57	2.74	2.65	2.57
	40 / 45 °C	CAP (Nom./Max.)	kW	5.5/6.4	10.0/10.3	11.0/11.6	11.5/12.5
		COP (Nom.)	-	2.25	2.45	2.25	2.15
	47 / 55 °C	CAP (Nom./Max.)	kW	5.5/5.5	8.7/9.8	9.7/11.2	10.5/12.0
		COP (Nom.)	-	1.72	1.78	1.85	1.75

OAT (DB/WB)	WIT / WOT	-	Unit	Cooling operation (Using cooling kit accessory)			
35 / -- °C	12 / 7 °C	CAP (Nom.)	kW	6.0	7.2	9.5	10.5
		EER (Nom.)	-	2.75	3.30	3.22	2.82
	23 / 18 °C	CAP (Nom.)	kW	6.0	10.4	12.9	13.5
		EER (Nom.)	-	3.81	4.50	4.02	3.81

3.2 ERP PERFORMANCE DATA

3.2.1 General considerations

- This appliance must be installed, maintained and dismantled by professionals. Do not pour contained refrigerant into the atmosphere since this refrigerant fluid is a fluorinated greenhouse gas regulated under European Regulation (EU) No 517/2014.
- Data with the mark (*) corresponds to the "Energy efficiency contribution (η_s)" due to the use of temperature control.

OTC control (Factory-supplied)		Wired room thermostat (PC-ARFHE)	7E543002(*)
		Wireless room thermostat (ATW-RTU-04)	7E543003
		Wired room sensor (ATW-ITS-01)	7E549932
Temperature control class	II	Temperature control class	VI
Energy efficiency contribution	+2%	Contribution to the nominal energy efficiency	+4%

(*) Factory supplied in case of Yutaki S, SC and S80 DHW Tank

- Data between brackets corresponds only to heating and cooling models ("Cooling kit" accessory needed).

3.2.2 General ERP data for space heaters

3.2.2.1 ERP data - YUTAKI S

◆ AVERAGE climate

RAS-(2-3)WHVNP + RWM-(2.0-3.0)NE

Model		Outdoor unit	RAS-2WHVNP		RAS-2.5WHVNP		RAS-3WHVNP	
		Indoor unit	RWM-2.0NE		RWM-2.5NE		RWM-3.0NE	
Water outlet temperature			35°C	55°C	35°C	55°C	35°C	55°C
Product description	Air to water heat pump	-	Yes					
	Heat pump combination heater	-	No					
	Low temperature heat pump	-	No					
	Complementary heater	-	Yes					
Design capacity (P _{DESIGN})		kW	4.0	4.0	6.0	5.0	7.0	6.0
Nominal energy efficiency (η _s)		%	189 (194)	137 (140)	177 (180)	130 (132)	165 (167)	125 (127)
Nominal energy class		-	A+++	A++	A+++	A++	A++	A++
Data for Packaged Fiche:								
	Energy efficiency with OTC control (η _s) (*)	%	191 (196)	139 (142)	179 (182)	132 (134)	167 (169)	127 (129)
	Energy class with OTC control	-	A+++	A++	A+++	A++	A++	A++
	Energy efficiency with thermostats/sensors (η _s) (*)	%	193 (198)	141 (144)	181 (184)	134 (136)	169 (171)	129 (131)
	Energy class with thermostats	-	A+++	A++	A+++	A++	A++	A++
Supplementary capacity (P _{SUP})		kW	0.0	0.6	0.3	0.7	0.6	0.8
Type of energy used		-	Electricity					
Declared capacity (P _{dh}) and coefficient of performance (COP _d) at partial load under the following outdoor temperatures:								
Outdoor temperature (T _j) = -7°C	P _{dh}	kW	3.54	3.50	4.95	4.42	5.90	5.10
	COP _d	-	3.20	2.20	2.70	1.85	2.50	1.84
Outdoor temperature (T _j) = +2°C	P _{dh}	kW	2.15	2.10	3.01	2.69	3.59	3.10
	COP _d	-	5.20	3.73	4.60	3.45	4.40	3.20
Outdoor temperature (T _j) = +7°C	P _{dh}	kW	1.70	1.60	1.90	1.84	2.31	2.00
	COP _d	-	6.05	4.40	6.00	4.20	5.35	4.45
Outdoor temperature (T _j) = +12°C	P _{dh}	kW	1.75	1.60	1.80	2.06	2.10	2.30
	COP _d	-	6.25	5.00	7.20	6.90	6.15	5.96
Outdoor temperature (T _j) = Bivalent temperature (T _{biv})	P _{dh}	kW	3.54	3.50	4.95	4.42	5.90	5.10
	COP _d	-	3.20	2.30	2.70	1.85	2.50	1.84
Outdoor temperature (T _j) = Limit operation temperature (TOL)	P _{dh}	kW	4.00	3.40	5.30	4.30	6.40	5.20
	COP _d	-	2.75	2.10	2.50	1.80	2.30	1.65
Bivalent temperature (T _{biv})		°C	-7	-7	-7	-7	-7	-7
Limit operation temperature (TOL)		°C	-10	-10	-10	-15	-10	-15
Water limit operation temperature (WTOL)		°C	55	55	55	55	55	55
Degradation coefficient (C _{dh})		-	0.9	0.9	0.9	0.9	0.9	0.9
Annual energy consumption (Q _{HF})		kW·h	1719 (1675)	2341 (2298)	2569 (2525)	3110 (3066)	3286 (3242)	3714 (3671)

RAS-(4-6)WHVNPE + RWM-(4.0-6.0)NE

Model		Outdoor unit	RAS-4WHVNPE		RAS-5WHVNPE		RAS-6WHVNPE		
		Indoor unit	RWM-4.0NE		RWM-5.0NE		RWM-6.0NE		
Water outlet temperature			35°C	55°C	35°C	55°C	35°C	55°C	
Product description	Air to water heat pump	-	Yes						
	Heat pump combination heater	-	No						
	Low temperature heat pump	-	No						
	Complementary heater	-	Yes						
Design capacity (P _{DESIGN})		kW	11.0	10.0	14.0	12.0	16.0	14.0	
Nominal energy efficiency (η _s)		%	187 (189)	136 (137)	175 (176)	133 (134)	153 (153)	125 (126)	
Nominal energy class		-	A+++	A++	A+++	A++	A++	A++	
Data for Packaged Fiche:									
	Energy efficiency with OTC control (η _s) (*)	%	189 (191)	138 (139)	177 (178)	135 (136)	155 (155)	127 (128)	
	Energy class with OTC control	-	A+++	A++	A+++	A++	A++	A++	
	Energy efficiency with thermostats/sensors (η _s) (*)	%	191 (193)	140 (141)	179 (180)	137 (138)	157 (157)	129 (130)	
	Energy class with thermostats	-	A+++	A++	A+++	A++	A++	A++	
Supplementary capacity (P _{SUP})		kW	0.5	1.2	1.9	1.5	1.9	2.3	
Type of energy used		-	Electricity						
Declared capacity (P _{dh}) and coefficient of performance (COP _d) at partial load under the following outdoor temperatures:									
	Outdoor temperature (T _j) = -7°C	P _{dh}	kW	9.60	8.60	12.00	10.25	13.80	11.20
		COP _d	-	2.74	1.80	2.55	1.70	2.40	1.60
	Outdoor temperature (T _j) = +2°C	P _{dh}	kW	5.84	5.23	7.30	6.24	8.40	6.82
		COP _d	-	5.20	3.60	4.70	3.60	3.90	3.35
	Outdoor temperature (T _j) = +7°C	P _{dh}	kW	3.76	3.52	4.70	4.01	5.40	4.38
		COP _d	-	5.80	4.80	5.70	4.60	5.00	4.35
	Outdoor temperature (T _j) = +12°C	P _{dh}	kW	3.70	3.60	3.50	3.50	3.50	3.60
		COP _d	-	6.40	5.80	6.00	5.50	6.00	5.50
	Outdoor temperature (T _j) = Bivalent temperature (T _{biv})	P _{dh}	kW	9.60	8.60	12.00	10.25	13.80	11.20
		COP _d	-	2.74	1.80	2.55	1.70	2.40	1.60
	Outdoor temperature (T _j) = Limit operation temperature (TOL)	P _{dh}	kW	10.50	8.80	12.10	10.50	14.10	11.70
		COP _d	-	2.65	1.90	2.50	1.70	2.30	1.55
Bivalent temperature (T _{biv})		°C	-7	-7	-7	-7	-7	-7	
Limit operation temperature (TOL)		°C	-10	-10	-10	-10	-10	-10	
Water limit operation temperature (WTOL)		°C	55	55	55	55	55	55	
Degradation coefficient (C _{dh})		-	0.9	0.9	0.9	0.9	0.9	0.9	
Annual energy consumption (Q _{HE})		kW·h	4714 (4666)	5786 (5738)	6313 (6265)	7042 (6994)	8287 (8239)	8170 (8122)	

RAS-(4-6)WHNPE + RWM-(4.0-6.0)NE

Model		Outdoor unit	RAS-4WHNPE		RAS-5WHNPE		RAS-6WHNPE		
		Indoor unit	RWM-4.0NE		RWM-5.0NE		RWM-6.0NE		
Water outlet temperature			35°C	55°C	35°C	55°C	35°C	55°C	
Product description	Air to water heat pump	-	Yes						
	Heat pump combination heater	-	No						
	Low temperature heat pump	-	No						
	Complementary heater	-	Yes						
Design capacity (P _{DESIGN})		kW	11.0	10.0	14.0	12.0	16.0	14.0	
Nominal energy efficiency (η _s)		%	186(189)	135(137)	174(176)	133(134)	152(153)	125(126)	
Nominal energy class		-	A+++	A++	A++(A+++)	A++	A++	A++	
Data for Packaged Fiche:									
	Energy efficiency with OTC control (η _s) (*)	%	188(191)	137(139)	176(178)	135(136)	154(155)	127(128)	
	Energy class with OTC control	-	A+++	A++	A+++	A++	A++	A++	
	Energy efficiency with thermostats/sensors (η _s) (*)	%	190(193)	139(141)	178(180)	137(138)	156(157)	129(130)	
	Energy class with thermostats	-	A+++	A++	A+++	A++	A++	A++	
Supplementary capacity (P _{SUP})		kW	0.5	1.2	1.9	1.5	1.9	2.3	
Type of energy used		-	Electricity						
Declared capacity (P _{dh}) and coefficient of performance (COP _d) at partial load under the following outdoor temperatures:									
	Outdoor temperature (T _j) = -7°C	P _{dh}	kW	9.60	8.60	12.00	10.25	13.80	11.20
		COP _d	-	2.74	1.80	2.55	1.70	2.40	1.60
	Outdoor temperature (T _j) = +2°C	P _{dh}	kW	5.84	5.23	7.30	6.24	8.40	6.82
		COP _d	-	5.20	3.60	4.70	3.60	3.90	3.35
	Outdoor temperature (T _j) = +7°C	P _{dh}	kW	3.76	3.52	4.70	4.01	5.40	4.38
		COP _d	-	5.80	4.80	5.70	4.60	5.00	4.35
	Outdoor temperature (T _j) = +12°C	P _{dh}	kW	3.70	3.60	3.50	3.50	3.50	3.60
		COP _d	-	6.40	5.80	6.00	5.50	6.00	5.50
	Outdoor temperature (T _j) = Bivalent temperature (T _{biv})	P _{dh}	kW	9.60	8.60	12.00	10.25	13.80	11.20
		COP _d	-	2.74	1.80	2.55	1.70	2.40	1.60
	Outdoor temperature (T _j) = Limit operation temperature (TOL)	P _{dh}	kW	10.50	8.80	12.10	10.50	14.10	11.70
		COP _d	-	2.65	1.90	2.50	1.70	2.30	1.55
Bivalent temperature (T _{biv})		°C	-7	-7	-7	-7	-7	-7	
Limit operation temperature (TOL)		°C	-10	-10	-10	-10	-10	-10	
Water limit operation temperature (WTOL)		°C	55	55	55	55	55	55	
Degradation coefficient (C _{dh})		-	0.9	0.9	0.9	0.9	0.9	0.9	
Annual energy consumption (Q _{HE})		kW·h	4736 (4666)	5808 (5738)	6335 (6265)	7064 (6994)	8309 (8239)	8192 (8122)	

RAS-(8/10)WHNPE + RWM-(8.0/10.0)NE

Model		Outdoor unit	RAS-8WHNPE		RAS-10WHNPE		
		Indoor unit	RWM-8.0NE		RWM-10.0NE		
Water outlet temperature			35°C	55°C	35°C	55°C	
Product description	Air to water heat pump	-	Yes				
	Heat pump combination heater	-	No				
	Low temperature heat pump	-	No				
	Complementary heater	-	Yes				
Design capacity (P _{DESIGN})		kW	18.0	16.0	20.0	18.0	
Nominal energy efficiency (η _s)		%	150 (152)	120 (122)	141 (142)	116 (118)	
Nominal energy class		-	A++	A+	A+	A+	
Data for Packaged Fiche:							
	Energy efficiency with OTC control (η _s) (*)	%	152 (154)	122 (124)	143 (144)	118 (120)	
	Energy class with OTC control	-	A++	A+	A+	A+	
	Energy efficiency with thermostats/sensors (η _s) (*)	%	154 (156)	124(126)	145 (146)	120 (122)	
	Energy class with thermostats	-	A++	A+	A+	A+	
Supplementary capacity (P _{SUP})		kW	1.6	2.8	1.7	3.1	
Type of energy used		-	Electricity				
Declared capacity (P _{dh}) and coefficient of performance (COP _d) at partial load under the following outdoor temperatures:							
	Outdoor temperature (T _j) = -7°C	P _{dh}	kW	15.60	13.80	17.40	15.60
		COP _d	-	2.50	1.65	2.30	1.65
	Outdoor temperature (T _j) = +2°C	P _{dh}	kW	9.50	8.40	10.77	9.50
		COP _d	-	3.85	3.20	3.60	3.10
	Outdoor temperature (T _j) = +7°C	P _{dh}	kW	6.10	6.00	8.70	8.30
		COP _d	-	5.40	4.50	5.10	4.35
	Outdoor temperature (T _j) = +12°C	P _{dh}	kW	7.00	6.80	8.70	8.50
		COP _d	-	4.65	4.50	4.90	4.60
	Outdoor temperature (T _j) = Bivalent temperature (T _{biv})	P _{dh}	kW	15.60	13.80	17.40	15.60
		COP _d	-	2.50	1.65	2.10	1.65
	Outdoor temperature (T _j) = Limit operation temperature (TOL)	P _{dh}	kW	16.00	12.80	18.00	14.50
		COP _d	-	2.40	1.55	2.30	1.50
	Bivalent temperature (T _{biv})		°C	-7	-7	-7	-7
	Limit operation temperature (TOL)		°C	-10	-10	-10	-10
	Water limit operation temperature (WTOL)		°C	55	55	55	55
	Degradation coefficient (C _{dh})		-	0.9	0.9	0.9	0.9
Annual energy consumption (Q _{HE})		kW·h	9513 (9382)	10439 (10307)	11410 (11278)	12198 (12066)	

3.2.2.2 ERP data - YUTAKI S COMBI

◆ AVERAGE climate

RAS-(2-3)WHVNP + RWD-(2.0-3.0)NW(S)E-(200/260)S(-K)

Model		Outdoor unit		RAS-2WHVNP		RAS-2.5WHVNP		RAS-3WHVNP		
		Indoor unit		RWD-2.0NW(S)E-(200/260)S(-K)		RWD-2.5NW(S)E-(200/260)S(-K)		RWD-3.0NW(S)E-(200/260)S(-K)		
Water outlet temperature			35°C		55°C		35°C		55°C	
Product description	Air to water heat pump		-	Yes						
	Heat pump combination heater		-	No						
	Low temperature heat pump		-	No						
	Complementary heater		-	Yes						
Design capacity (P _{DESIGN})			kW	4.0	4.0	6.0	5.0	7.0	6.0	
Nominal energy efficiency (η _s)			%	189 (194)	137 (140)	177 (180)	130 (132)	165 (167)	125 (127)	
Nominal energy class			-	A+++	A++	A+++	A++	A++	A++	
Data for Packaged Fiche:										
	Energy efficiency with OTC control (η _s) (*)		%	191 (196)	139 (142)	179 (182)	132 (134)	167 (169)	127 (129)	
	Energy class with OTC control		-	A+++	A++	A+++	A++	A++	A++	
	Energy efficiency with thermostats/sensors (η _s) (*)		%	193 (198)	141 (144)	181 (184)	134 (136)	169 (171)	129 (131)	
	Energy class with thermostats		-	A+++	A++	A+++	A++	A++	A++	
Supplementary capacity (P _{SUP})			kW	0.0	0.6	0.3	0.7	0.6	0.8	
Type of energy used			-	Electricity						
Declared capacity (P _{dh}) and coefficient of performance (COP _d) at partial load under the following outdoor temperatures:										
	Outdoor temperature (T _j) = -7°C	P _{dh}	kW	3.54	3.50	4.95	4.42	5.90	5.10	
		COP _d	-	3.20	2.20	2.70	1.85	2.50	1.84	
	Outdoor temperature (T _j) = +2°C	P _{dh}	kW	2.15	2.10	3.01	2.69	3.59	3.10	
		COP _d	-	5.20	3.73	4.60	3.45	4.40	3.20	
	Outdoor temperature (T _j) = +7°C	P _{dh}	kW	1.70	1.60	1.90	1.84	2.31	2.00	
		COP _d	-	6.05	4.40	6.00	4.20	5.35	4.45	
	Outdoor temperature (T _j) = +12°C	P _{dh}	kW	1.75	1.60	1.80	2.06	2.10	2.30	
		COP _d	-	6.25	5.00	7.20	6.90	6.15	5.96	
	Outdoor temperature (T _j) = Bivalent temperature (T _{biv})	P _{dh}	kW	3.54	3.50	4.95	4.42	5.90	5.10	
		COP _d	-	3.20	2.30	2.70	1.85	2.50	1.84	
	Outdoor temperature (T _j) = Limit operation temperature (TOL)	P _{dh}	kW	4.00	3.40	5.30	4.30	6.40	5.20	
		COP _d	-	2.75	2.10	2.50	1.80	2.30	1.65	
Bivalent temperature (T _{biv})			°C	-7	-7	-7	-7	-7	-7	
Limit operation temperature (TOL)			°C	-10	-10	-10	-15	-10	-15	
Water limit operation temperature (WTOL)			°C	55	55	55	55	55	55	
Degradation coefficient (C _{dh})			-	0.9	0.9	0.9	0.9	0.9	0.9	
Annual energy consumption (Q _{HE})			kW·h	1719 (1675)	2341 (2298)	2569 (2525)	3110 (3066)	3286 (3242)	3714 (3671)	

RAS-(4-6)WHVNPE + RWD-(4.0-6.0)NW(S)E-(200/260)S(-K)

Model		Outdoor unit	RAS-4WHVNPE		RAS-5WHVNPE		RAS-6WHVNPE	
		Indoor unit	RWD-4.0NW(S)E-(200/260)S(-K)		RWD-5.0NW(S)E-(200/260)S(-K)		RWD-6.0NW(S)E-(200/260)S(-K)	
Water outlet temperature			35°C	55°C	35°C	55°C	35°C	55°
Product description	Air to water heat pump	-	Yes					
	Heat pump combination heater	-	Yes					
	Low temperature heat pump	-	No					
	Complementary heater	-	Yes					
Design capacity (P _{DESIGN})		kW	11.0	10.0	14.0	12.0	16.0	14.0
Nominal energy efficiency (η _s)		%	187 (189)	136 (137)	175 (176)	133 (134)	153 (153)	125 (126)
Nominal energy class		-	A+++	A++	A+++	A++	A++	A++
Data for Packaged Fiche:								
	Energy efficiency with OTC control (η _s) (*)	%	189 (191)	138 (139)	177 (178)	135 (136)	155 (155)	127 (128)
	Energy class with OTC control	-	A+++	A++	A+++	A++	A++	A++
	Energy efficiency with thermostats/sensors (η _s) (*)	%	191 (193)	140 (141)	179 (180)	137 (138)	157 (157)	129 (130)
	Energy class with thermostats	-	A+++	A++	A+++	A++	A++	A++
Supplementary capacity (P _{SUP})		kW	0.5	1.2	1.9	1.5	1.9	2.3
Type of energy used		-	Electricity					
Declared capacity (P _{dh}) and coefficient of performance (COP _d) at partial load under the following outdoor temperatures:								
Outdoor temperature (T _j) = -7°C	P _{dh}	kW	9.60	8.60	12.00	10.25	13.80	11.20
	COP _d	-	2.74	1.80	2.55	1.70	2.40	1.60
Outdoor temperature (T _j) = +2°C	P _{dh}	kW	5.84	5.23	7.30	6.24	8.40	6.82
	COP _d	-	5.20	3.60	4.70	3.60	3.90	3.35
Outdoor temperature (T _j) = +7°C	P _{dh}	kW	3.76	3.52	4.70	4.01	5.40	4.38
	COP _d	-	5.80	4.80	5.70	4.60	5.00	4.35
Outdoor temperature (T _j) = +12°C	P _{dh}	kW	3.70	3.60	3.50	3.50	3.50	3.60
	COP _d	-	6.40	5.80	6.00	5.50	6.00	5.50
Outdoor temperature (T _j) = Bivalent temperature (T _{biv})	P _{dh}	kW	9.60	8.60	12.00	10.25	13.80	11.20
	COP _d	-	2.74	1.80	2.55	1.70	2.40	1.60
Outdoor temperature (T _j) = Limit operation temperature (TOL)	P _{dh}	kW	10.50	8.80	12.10	10.50	14.10	11.70
	COP _d	-	2.65	1.90	2.50	1.70	2.30	1.55
Bivalent temperature (T _{biv})		°C	-7	-7	-7	-7	-7	-7
Limit operation temperature (TOL)		°C	-10	-10	-10	-10	-10	-10
Water limit operation temperature (WTOL)		°C	55	55	55	55	55	55
Degradation coefficient (C _{dh})		-	0.9	0.9	0.9	0.9	0.9	0.9
Annual energy consumption (Q _{HE})		kW·h	4714 (4666)	5786 (5738)	6313 (6265)	7042 (6994)	8287 (8239)	8170 (8122)

RAS-(4-6)WHNPE + RWD-(4.0-6.0)NW(S)E-(200/260)S(-K)

Model		Outdoor unit	RAS-4WHNPE		RAS-5WHNPE		RAS-6WHNPE		
		Indoor unit	RWD-4.0NW(S)E-(200/260)S(-K)		RWD-5.0NW(S)E-(200/260)S(-K)		RWD-6.0NW(S)E-(200/260)S(-K)		
Water outlet temperature			35°C	55°C	35°C	55°C	35°C	55°	
Product description	Air to water heat pump	-	Yes						
	Heat pump combination heater	-	Yes						
	Low temperature heat pump	-	No						
	Complementary heater	-	Yes						
Design capacity (P _{DESIGN})		kW	11.0	10.0	14.0	12.0	16.0	14.0	
Nominal energy efficiency (η _s)		%	186(189)	135(137)	174(176)	133(134)	152(153)	125(126)	
Nominal energy class		-	A+++	A++	A++(A+++)	A++	A++	A++	
Data for Packaged Fiche:									
	Energy efficiency with OTC control (η _s) (*)	%	188(191)	137(139)	176(178)	135(136)	154(155)	127(128)	
	Energy class with OTC control	-	A+++	A++	A+++	A++	A++	A++	
	Energy efficiency with thermostats/sensors (η _s) (*)	%	190(193)	139(141)	178(180)	137(138)	156(157)	129(130)	
	Energy class with thermostats	-	A+++	A++	A+++	A++	A++	A++	
Supplementary capacity (P _{SUP})		kW	0.5	1.2	1.9	1.5	1.9	2.3	
Type of energy used		-	Electricity						
Declared capacity (P _{dh}) and coefficient of performance (COP _d) at partial load under the following outdoor temperatures:									
	Outdoor temperature (T _j) = -7°C	P _{dh}	kW	9.60	8.60	12.00	10.25	13.80	11.20
		COP _d	-	2.74	1.80	2.55	1.70	2.40	1.60
	Outdoor temperature (T _j) = +2°C	P _{dh}	kW	5.84	5.23	7.30	6.24	8.40	6.82
		COP _d	-	5.20	3.60	4.70	3.60	3.90	3.35
	Outdoor temperature (T _j) = +7°C	P _{dh}	kW	3.76	3.52	4.70	4.01	5.40	4.38
		COP _d	-	5.80	4.80	5.70	4.60	5.00	4.35
	Outdoor temperature (T _j) = +12°C	P _{dh}	kW	3.70	3.60	3.50	3.50	3.50	3.60
		COP _d	-	6.40	5.80	6.00	5.50	6.00	5.50
	Outdoor temperature (T _j) = Bivalent temperature (T _{biv})	P _{dh}	kW	9.60	8.60	12.00	10.25	13.80	11.20
		COP _d	-	2.74	1.80	2.55	1.70	2.40	1.60
	Outdoor temperature (T _j) = Limit operation temperature (TOL)	P _{dh}	kW	10.50	8.80	12.10	10.50	14.10	11.70
		COP _d	-	2.65	1.90	2.50	1.70	2.30	1.55
Bivalent temperature (T _{biv})		°C	-7	-7	-7	-7	-7	-7	
Limit operation temperature (TOL)		°C	-10	-10	-10	-10	-10	-10	
Water limit operation temperature (WTOL)		°C	55	55	55	55	55	55	
Degradation coefficient (C _{dh})		-	0.9	0.9	0.9	0.9	0.9	0.9	
Annual energy consumption (Q _{HE})		kW·h	4736 (4666)	5808 (5738)	6335 (6265)	7064 (6994)	8309 (8239)	8192 (8122)	

3.2.2.3 ERP data - YUTAKI S80

◆ AVERAGE climate

RAS-(4-6)WHVNPE + RWH-(4.0-6.0)VNF(W)E

Model		Outdoor unit	RAS-4WHVNPE		RAS-5WHVNPE		RAS-6WHVNPE		
		Indoor unit	RWH-4.0VNF(W)E		RWH-5.0VNF(W)E		RWH-6.0VNF(W)E		
Water outlet temperature			35°C	55°C	35°C	55°C	35°C	55°C	
Product description	Air to water heat pump	-	Yes						
	Heat pump combination heater	-	No						
	Low temperature heat pump	-	No						
	Complementary heater	-	No						
Design capacity (P _{DESIGN})		kW	11.0	11.0	14.0	14.0	16.0	16.0	
Nominal energy efficiency (η _s)		%	187	142	174	131	152	126	
Nominal energy class		-	A+++	A++	A++	A++	A++	A++	
Data for Packaged Fiche:									
	Energy efficiency with OTC control (η _s) (*)	%	189	144	176	133	154	128	
	Energy class with OTC control	-	A+++	A++	A+++	A++	A++	A++	
	Energy efficiency with thermostats (η _s) (*)	%	191	146	178	135	156	130	
	Energy class with thermostats	-	A+++	A++	A+++	A++	A++	A++	
Supplementary capacity (P _{SUP})		kW	0.5	0.0	1.9	0.0	1.9	0.0	
Type of energy used		-	Electricity						
Declared capacity (P _{dh}) and coefficient of performance (COP _d) at partial load under the following outdoor temperatures:									
	Outdoor temperature (T _j) = -7°C	P _{dh}	kW	9.60	9.73	12.00	12.38	13.80	14.15
		COP _d	-	2.74	2.30	2.55	2.19	2.40	2.05
	Outdoor temperature (T _j) = +2°C	P _{dh}	kW	5.84	5.92	7.30	7.54	8.40	8.62
		COP _d	-	5.20	3.60	4.70	3.10	3.90	2.95
	Outdoor temperature (T _j) = +7°C	P _{dh}	kW	3.76	3.81	4.70	4.85	5.40	5.54
		COP _d	-	5.80	4.70	5.70	4.60	5.00	4.60
	Outdoor temperature (T _j) = +12°C	P _{dh}	kW	3.70	3.60	3.50	4.10	3.50	4.10
		COP _d	-	6.40	6.00	6.00	6.40	6.00	6.40
	Outdoor temperature (T _j) = Bivalent temperature (T _{biv})	P _{dh}	kW	9.60	11.00	12.00	14.00	13.80	16.00
		COP _d	-	2.74	2.20	2.55	2.12	2.40	1.90
	Outdoor temperature (T _j) = Limit operation temperature (T _{ol})	P _{dh}	kW	10.50	11.00	12.10	14.00	14.10	16.00
		COP _d	-	2.65	2.20	2.50	1.40	2.30	1.50
	Bivalent temperature (T _{biv})		°C	-7	-10	-7	-10	-7	-10
	Limit operation temperature (TOL)		°C	-10	-10	-10	-10	-10	-10
	Water limit operation temperature (WTOL)		°C	55	55	55	55	55	55
	Degradation coefficient (C _{dh})		-	0.9	0.9	0.9	0.9	0.9	0.9
Annual energy consumption (Q _{HE})		kW·h	4732	6261	6330	8648	8304	10255	

RAS-(4-6)WHNPE + RWH-(4.0-6.0)NF(W)E

Model		Outdoor unit	RAS-4WHNPE		RAS-5WHNPE		RAS-6WHNPE		
		Indoor unit	RWH-4.0NF(W)E		RWH-5.0NF(W)E		RWH-6.0NF(W)E		
Water outlet temperature			35°C	55°C	35°C	55°C	35°C	55°C	
Product description	Air to water heat pump	-	Yes						
	Heat pump combination heater	-	No						
	Low temperature heat pump	-	No						
	Complementary heater	-	No						
Design capacity (P _{DESIGN})		kW	11.0	11.0	14.0	14.0	16.0	16.0	
Nominal energy efficiency (η _s)		%	183	140	171	129	150	125	
Nominal energy class		-	A+++	A++	A++	A++	A++	A++	
Data for Packaged Fiche:									
	Energy efficiency with OTC control (η _s) (*)	%	185	142	173	131	152	127	
	Energy class with OTC control	-	A+++	A++	A++	A++	A++	A++	
	Energy efficiency with thermostats (η _s) (*)	%	187	144	176	134	154	129	
	Energy class with thermostats	-	A+++	A++	A+++	A++	A++	A++	
Supplementary capacity (P _{SUP})		kW	0.5	0.0	1.5	0.0	1.5	0.0	
Type of energy used		-	Electricity						
Declared capacity (P _{dh}) and coefficient of performance (COP _d) at partial load under the following outdoor temperatures:									
	Outdoor temperature (T _j) = -7°C	P _{dh}	kW	9.60	9.73	12.00	12.38	13.80	14.15
		COP _d	-	2.74	2.30	2.55	2.19	2.40	2.05
	Outdoor temperature (T _j) = +2°C	P _{dh}	kW	5.84	5.92	7.30	7.54	8.40	8.62
		COP _d	-	5.20	3.60	4.70	3.10	3.90	2.95
	Outdoor temperature (T _j) = +7°C	P _{dh}	kW	3.76	3.81	4.70	4.85	5.40	5.54
		COP _d	-	5.80	4.70	5.70	4.60	5.00	4.60
	Outdoor temperature (T _j) = +12°C	P _{dh}	kW	3.70	3.60	3.50	4.10	3.50	4.10
		COP _d	-	6.40	6.00	6.00	6.40	6.00	6.40
	Outdoor temperature (T _j) = Bivalent temperature (T _{biv})	P _{dh}	kW	9.60	11.00	12.00	14.00	13.80	16.00
		COP _d	-	2.74	2.20	2.55	2.12	2.40	1.90
	Outdoor temperature (T _j) = Limit operation temperature (TOL)	P _{dh}	kW	10.50	11.00	12.10	14.00	14.10	16.00
		COP _d	-	2.65	2.20	2.50	1.40	2.30	1.50
	Bivalent temperature (T _{biv})		°C	-7	-10	-7	-10	-7	-10
	Limit operation temperature (TOL)		°C	-10	-10	-10	-10	-10	-10
	Water limit operation temperature (WTOL)		°C	55	55	55	55	55	55
	Degradation coefficient (C _{dh})		-	0.9	0.9	0.9	0.9	0.9	0.9
Annual energy consumption (Q _{HE})		kW·h	4828	6360	6426	8747	8401	10355	

3.2.2.4 ERP data - YUTAKI M

◆ AVERAGE climate

RASM-(3-6)VNE

Model			RASM-3VNE		RASM-4VNE		RASM-5VNE		RASM-6VNE	
Water outlet temperature			35°C	55°C	35°C	55°C	35°C	55°C	35°C	55°C
Product description	Air to water heat pump	-	Yes							
	Heat pump combination heater	-	No							
	Low temperature heat pump	-	No							
	Complementary heater	-	No							
Design capacity (P _{DESIGN})		kW	7.0	6.0	11.0	10.0	14.0	12.0	16.0	14.0
Nominal energy efficiency (η _s)		%	164 (167)	125 (127)	187 (189)	136 (137)	175 (176)	133 (134)	153 (153)	125 (126)
Nominal energy class		-	A++	A++	A+++	A++	A+++	A++	A++	A++
Data for Packaged Fiche:										
	Energy efficiency with OTC control (η _s) (*)	%	166 (169)	127 (129)	189 (191)	138 (139)	177 (178)	135 (136)	155 (155)	127 (128)
	Energy class with OTC control	-	A++	A++	A+++	A++	A+++	A++	A++	A++
	Energy efficiency with thermostats (η _s) (*)	%	168 (171)	129 (131)	191 (193)	140 (141)	179 (180)	137 (138)	157 (157)	129 (130)
	Energy class with thermostats	-	A++	A++	A+++	A++	A+++	A++	A++	A++
Supplementary capacity (P _{SUP})		kW	0.6	0.6	0.5	1.2	1.9	1.5	1.9	2.3
Type of energy used		-	Electricity							
Declared capacity (Pd _h) and coefficient of performance (COP _d) at partial load under the following outdoor temperatures:										
Outdoor temperature (T _j) = -7°C	Pd _h	kW	5.90	5.10	9.60	8.60	12.00	10.25	13.80	11.20
	COP _d	-	2.50	1.84	2.74	1.80	2.55	1.70	2.40	1.60
Outdoor temperature (T _j) = +2°C	Pd _h	kW	3.59	3.10	5.84	5.23	7.30	6.24	8.40	6.82
	COP _d	-	4.40	3.20	5.20	3.60	4.70	3.60	3.90	3.35
Outdoor temperature (T _j) = +7°C	Pd _h	kW	2.31	2.00	3.76	3.52	4.70	4.01	5.40	4.38
	COP _d	-	5.35	4.45	5.80	4.80	5.70	4.60	5.00	4.35
Outdoor temperature (T _j) = +12°C	Pd _h	kW	2.10	2.30	3.70	3.60	3.50	3.50	3.50	3.60
	COP _d	-	6.15	5.96	6.40	5.80	6.00	5.50	6.00	5.50
Outdoor temperature (T _j) = Bivalent temperature (T _{biv})	Pd _h	kW	5.90	5.10	9.60	8.60	12.00	10.25	13.80	11.20
	COP _d	-	2.50	1.84	2.74	1.80	2.55	1.70	2.40	1.60
Outdoor temperature (T _j) = Limit operation temperature (T _{oi})	Pd _h	kW	6.40	5.20	10.50	8.80	12.10	10.50	14.10	11.70
	COP _d	-	2.30	1.65	2.65	1.90	2.50	1.70	2.30	1.55
Bivalent temperature (T _{biv})		°C	-7	-7	-7	-7	-7	-7	-7	-7
Limit operation temperature (TOL)		°C	-10	-15	-10	-10	-10	-10	-10	-10
Water limit operation temperature (WTOL)		°C	55	55	55	55	55	55	55	55
Degradation coefficient (Cdh)		-	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Annual energy consumption (Q _{HE})		kW·h	3298 (3242)	3726 (3671)	4714 (4666)	5786 (5738)	6313 (6265)	7042 (6994)	8287 (8239)	8170 (8122)

RASM-(4-6)NE

Model			RASM-4NE		RASM-5NE		RASM-6NE	
Water outlet temperature			35°C	55°C	35°C	55°C	35°C	55°C
Product description	Air to water heat pump	-	Yes					
	Heat pump combination heater	-	No					
	Low temperature heat pump	-	No					
	Complementary heater	-	No					
Design capacity (P _{DESIGN})		kW	11.0	10.0	14.0	12.0	16.0	14.0
Nominal energy efficiency (η _s)		%	186(189)	135(137)	174(176)	133(134)	152(153)	125(126)
Nominal energy class		-	A+++	A++	A++	A++	A++	A++
Data for Packaged Fiche:								
	Energy efficiency with OTC control (η _s) (*)	%	188(191)	137(139)	176(178)	135(136)	154(155)	127(128)
	Energy class with OTC control	-	A+++	A++	A+++	A++	A++	A++
	Energy efficiency with thermostats (η _s) (*)	%	190(193)	139(141)	178(180)	137(138)	156(157)	129(130)
	Energy class with thermostats	-	A+++	A++	A+++	A++	A++	A++
Supplementary capacity (P _{SUP})		kW	0.5	1.2	1.9	1.5	1.9	2.3
Type of energy used		-	Electricity					
Declared capacity (P _{dh}) and coefficient of performance (COP _d) at partial load under the following outdoor temperatures:								
Outdoor temperature (T _j) = -7°C	P _{dh}	kW	9.60	8.60	12.00	10.25	13.80	11.20
	COP _d	-	2.74	1.80	2.55	1.70	2.40	1.60
Outdoor temperature (T _j) = +2°C	P _{dh}	kW	5.84	5.23	7.30	6.24	8.40	6.82
	COP _d	-	5.20	3.60	4.70	3.60	3.90	3.35
Outdoor temperature (T _j) = +7°C	P _{dh}	kW	3.76	3.52	4.70	4.01	5.40	4.38
	COP _d	-	5.80	4.80	5.70	4.60	5.00	4.35
Outdoor temperature (T _j) = +12°C	P _{dh}	kW	3.70	3.60	3.50	3.50	3.50	3.60
	COP _d	-	6.40	5.80	6.00	5.50	6.00	5.50
Outdoor temperature (T _j) = Bivalent temperature (T _{biv})	P _{dh}	kW	9.60	8.60	12.00	10.25	13.80	11.20
	COP _d	-	2.74	1.80	2.55	1.70	2.40	1.60
Outdoor temperature (T _j) = Limit operation temperature (T _{ol})	P _{dh}	kW	10.50	8.80	12.10	10.50	14.10	11.70
	COP _d	-	2.65	1.90	2.50	1.70	2.30	1.55
Bivalent temperature (T _{biv})		°C	-7	-7	-7	-7	-7	-7
Limit operation temperature (TOL)		°C	-10	-10	-10	-10	-10	-10
Water limit operation temperature (WTOL)		°C	55	55	55	55	55	55
Degradation coefficient (C _{dh})		-	0.9	0.9	0.9	0.9	0.9	0.9
Annual energy consumption (Q _{HE})		kW·h	4736 (4666)	5808 (5738)	6335 (6235)	7064 (6994)	8309 (8239)	8192 (8122)

3.2.2.5 ERP additional data - YUTAKI S

RAS-(2-3)WHVNP + RWM-(2.0-3.0)NE

Model	Outdoor unit	RAS-2WHVNP	RAS-2.5WHVNP	RAS-3WHVNP
	Indoor unit	RWM-2.0NE	RWM-2.5NE	RWM-3.0NE
Electrical power input in stand-by mode (Psb)	W	11.9	11.9	11.9
Electrical power input in thermostat-OFF mode (Pto)	W	0.0	0.0	0.0
Electrical power input in OFF mode (Poff)	W	11.9	11.9	11.9
Electrical power input in crankcase heater mode (Pck)	W	0.0	0.0	0.0
Sound power level of indoor unit (L_{WA})	dB(A)	37	37	37
Sound power level of outdoor unit (L_{WA})	dB(A)	61	63	64
Capacity control mode	-	Variable (Inverter)		
Integrated supplementary heater	kW	3.0	3.0	3.0
Nominal outdoor air flow	m ³ /h	2436	2436	2682

RAS-(4-6)WHVNPE + RWM-(4.0-6.0)NE

Model	Outdoor unit	RAS-4WHVNPE	RAS-5WHVNPE	RAS-6WHVNPE
	Indoor unit	RWM-4.0NE	RWM-5.0NE	RWM-6.0NE
Electrical power input in stand-by mode (Psb)	W	13.1	13.1	13.1
Electrical power input in thermostat-OFF mode (Pto)	W	0.0	0.0	0.0
Electrical power input in OFF mode (Poff)	W	13.1	13.1	13.1
Electrical power input in crankcase heater mode (Pck)	W	0.0	0.0	0.0
Sound power level of indoor unit (L_{WA})	dB(A)	39	39	39
Sound power level of outdoor unit (L_{WA})	dB(A)	64	65	67
Capacity control mode	-	Variable (Inverter)		
Integrated supplementary heater	kW	6.0	6.0	6.0
Nominal outdoor air flow	m ³ /h	4800	5400	6000

RAS-(4-6)WHNPE + RWM-(4.0-6.0)NE

Model	Outdoor unit	RAS-4WHNPE	RAS-5WHNPE	RAS-6WHNPE
	Indoor unit	RWM-4.0NE	RWM-5.0NE	RWM-6.0NE
Electrical power input in stand-by mode (Psb)	W	19.1	19.1	19.1
Electrical power input in thermostat-OFF mode (Pto)	W	0.0	0.0	0.0
Electrical power input in OFF mode (Poff)	W	19.1	19.1	19.1
Electrical power input in crankcase heater mode (Pck)	W	0.0	0.0	0.0
Sound power level of indoor unit (L_{WA})	dB(A)	39	39	39
Sound power level of outdoor unit (L_{WA})	dB(A)	64	65	67
Capacity control mode	-	Variable (Inverter)		
Integrated supplementary heater	kW	6.0	6.0	6.0
Nominal outdoor air flow	m ³ /h	4800	5400	6000

RAS-(8/10)WHNPE + RWM-(8.0/10.0)NE

Model	Outdoor unit	RAS-8WHNPE	RAS-10WHNPE
	Indoor unit	RWM-8.0NE	RWM-10.0NE
Electrical power input in stand-by mode (Psb)	W	36	36
Electrical power input in thermostat-OFF mode (Pto)	W	0.0	0.0
Electrical power input in OFF mode (Poff)	W	36	36
Electrical power input in crankcase heater mode (Pck)	W	0.0	0.0
Sound power level of indoor unit (L_{WA})	dB(A)	47	47
Sound power level of outdoor unit (L_{WA})	dB(A)	73	74
Capacity control mode	-	Variable (Inverter)	
Integrated supplementary heater	kW	9.0	9.0
Nominal outdoor air flow	m ³ /h	7620	8040

3.2.2.6 ERP additional data - YUTAKI S COMBI

RAS-(2-3)WHVNP + RWD-(2.0-3.0)NW(S)E-(200/260)S(-K)

Model	Outdoor unit		RAS-2WHVNP	RAS-2.5WHVNP	RAS-3WHVNP
	Indoor unit		RWD-2.0NW(S)E (200/260)S(-K)	RWD-2.5NW(S)E (200/260)S(-K)	RWD-3.0NW(S)E (200/260)S(-K)
Electrical power input in stand-by mode (Psb)		W	11.9	11.9	11.9
Electrical power input in thermostat-OFF mode (Pto)		W	0.0	0.0	0.0
Electrical power input in OFF mode (Poff)		W	11.9	11.9	11.9
Electrical power input in crankcase heater mode (Pck)		W	0.0	0.0	0.0
Sound power level of indoor unit (L _{WA})		dB(A)	37	37	37
Sound power level of outdoor unit (L _{WA})		dB(A)	61	63	64
Capacity control mode		-	Variable (Inverter)		
Integrated supplementary heater		kW	3.0	3.0	3.0
Nominal outdoor air flow		m³/h	2436	2436	2682

RAS-(4-6)WHVNPE + RWD-(4.0-6.0)NW(S)E-(200/260)S(-K)

Model	Outdoor unit		RAS-4WHVNPE	RAS-5WHVNPE	RAS-6WH(V)NPE
	Indoor unit		RWD-4.0NW(S)E (200/260)S(-K)	RWD-5.0NW(S)E (200/260)S(-K)	RWD-6.0NW(S)E (200/260)S(-K)
Electrical power input in stand-by mode (Psb)		W	13.1	13.1	13.1
Electrical power input in thermostat-OFF mode (Pto)		W	0.0	0.0	0.0
Electrical power input in OFF mode (Poff)		W	13.1	13.1	13.1
Electrical power input in crankcase heater mode (Pck)		W	0.0	0.0	0.0
Sound power level of indoor unit (L _{WA})		dB(A)	39	39	39
Sound power level of outdoor unit (L _{WA})		dB(A)	64	65	67
Capacity control mode		-	Variable (Inverter)		
Integrated supplementary heater		kW	6.0	6.0	6.0
Nominal outdoor air flow		m³/h	4800	5400	6000

RAS-(4-6)WHNPE + RWD-(4.0-6.0)NW(S)E-(200/260)S(-K)

Model	Outdoor unit		RAS-4WHNPE	RAS-5WHNPE	RAS-6WHNPE
	Indoor unit		RWD-4.0NW(S)E (200/260)S(-K)	RWD-5.0NW(S)E (200/260)S(-K)	RWD-6.0NW(S)E (200/260)S(-K)
Electrical power input in stand-by mode (Psb)		W	19.1	19.1	19.1
Electrical power input in thermostat-OFF mode (Pto)		W	0.0	0.0	0.0
Electrical power input in OFF mode (Poff)		W	19.1	19.1	19.1
Electrical power input in crankcase heater mode (Pck)		W	0.0	0.0	0.0
Sound power level of indoor unit (L _{WA})		dB(A)	39	39	39
Sound power level of outdoor unit (L _{WA})		dB(A)	64	65	67
Capacity control mode		-	Variable (Inverter)		
Integrated supplementary heater		kW	6.0	6.0	6.0
Nominal outdoor air flow		m³/h	4800	5400	6000

3.2.2.7 ERP additional data - YUTAKI S80

RAS-(4-6)WHVNPE + RWH-(4.0-6.0)VNF(W)E

Model	Outdoor unit	RAS-4WH(V)NPE	RAS-5WH(V)NPE	RAS-6WH(V)NPE
	Indoor unit	RWH-4.0VNF(W)E	RWH-5.0VNF(W)E	RWH-6.0VNF(W)E
Electrical power input in stand-by mode (Psb)	W	17.0	17.0	17.0
Electrical power input in thermostat-OFF mode (Pto)	W	0.0	0.0	0.0
Electrical power input in OFF mode (Poff)	W	17.0	17.0	17.0
Electrical power input in crankcase heater mode (Pck)	W	0.0	0.0	0.0
Sound power level of indoor unit (L _{WA})	dB(A)	57	57	58
Sound power level of outdoor unit (L _{WA})	dB(A)	61	63	64
Capacity control mode	-	Variable (Inverter)		
Integrated supplementary heater	kW	No		
Nominal outdoor air flow	m ³ /h	4800	5400	6000

RAS-(4-6)WHNPE + RWH-(4.0-6.0)NF(W)E

Model	Outdoor unit	RAS-4WHNPE	RAS-5WHNPE	RAS-6WHNPE
	Indoor unit	RWH-4.0NF(W)E	RWH-5.0NF(W)E	RWH-6.0NF(W)E
Electrical power input in stand-by mode (Psb)	W	44.0	44.0	44.0
Electrical power input in thermostat-OFF mode (Pto)	W	0.0	0.0	0.0
Electrical power input in OFF mode (Poff)	W	44.0	44.0	44.0
Electrical power input in crankcase heater mode (Pck)	W	0.0	0.0	0.0
Sound power level of indoor unit (L _{WA})	dB(A)	57	57	58
Sound power level of outdoor unit (L _{WA})	dB(A)	61	63	64
Capacity control mode	-	Variable (Inverter)		
Integrated supplementary heater	kW	No		
Nominal outdoor air flow	m ³ /h	4800	5400	6000

3.2.2.8 ERP additional data - YUTAKI M

RASM-(3-6)VNE

Model		RASM-3VNE	RASM-4VNE	RASM-5VNE	RASM-6VNE
Electrical power input in stand-by mode (Psb)	W	15.0	13.1	13.1	13.1
Electrical power input in thermostat-OFF mode (Pto)	W	0.0	0.0	0.0	0.0
Electrical power input in OFF mode (Poff)	W	15.0	13.1	13.1	13.1
Electrical power input in crankcase heater mode (Pck)	W	0.0	0.0	0.0	0.0
Sound power level of outdoor unit (L _{WA})	dB(A)	64	64	65	67
Capacity control mode	-	Variable (Inverter)			
Integrated supplementary heater	kW	No			
Nominal outdoor air flow	m ³ /h	2682	4800	5400	6000

RASM-(4-6)NE

Model		RASM-4NE	RASM-5NE	RASM-6NE
Electrical power input in stand-by mode (Psb)	W	19.1	19.1	19.1
Electrical power input in thermostat-OFF mode (Pto)	W	0.0	0.0	0.0
Electrical power input in OFF mode (Poff)	W	19.1	19.1	19.1
Electrical power input in crankcase heater mode (Pck)	W	0.0	0.0	0.0
Sound power level of outdoor unit (L _{WA})	dB(A)	64	65	67
Capacity control mode	-	Variable (Inverter)		
Integrated supplementary heater	kW	No		
Nominal outdoor air flow	m ³ /h	4800	5400	6000

3.3 GENERAL SPECIFICATIONS

3.3.1 Considerations

- The sound data is based on the following conditions:
 - Outdoor ambient temperature (DB/WB): 7/6°C.
 - Water inlet/outlet temperature: 47/55°C (mark: *1); 30/35°C (mark: *2).
 - Distance of the unit from the measuring point: At 1 meter from the unit's front surface; 1,5 meter from floor level.
 - The sound pressure level is measured in an anechoic chamber, so reflected sound should be taken into consideration when installing the unit.
 - The sound power level is measured in a reverberant room, in accordance with the standard EN12102. Used environment conditions are the same that specified in EN14511 for performance test.
- The nominal water flow rate is calculated under the following conditions:
 - Outdoor ambient temperature (DB/WB): 7/6°C.
 - Water inlet/outlet temperature: 47/55°C (mark: *1); 30/35°C (mark: *2).
- Regarding data market with (mark: *3), it corresponds to the height of the unit with the minimum mounting foot height. This value can be adjusted up to +30 mm.
- For specific details about data corresponding to the working range, please refer to the chapter [Working range](#).

Keywords:

- DB: Dry bulb
- WB: Wet bulb

3.3.2 Split system - Outdoor unit

Model		RAS-2WHVNP	RAS-2.5WHVNP	RAS-3WHVNP
Power supply	-	1~ 230V 50Hz		
Noise level (sound pressure) (*1)	dB(A)			
Noise level (sound power)	(*1)	dB(A)	61	63
	(*2)	dB(A)	59	60
Air flow	m³/min	40.6	40.6	44.7
Cabinet colour	-	Natural grey (1.0Y 8.5/0.5)		
Dimensions (H x W x D)	mm	600 x 792 x 300		
Net weight	kg	43	43	44
Gross weight	kg	46	46	49
Piping diameter (liquid / gas)	mm (inch)	Ø6.35 (1/4) / Ø12.7 (1/2)	Ø6.35 (1/4) / Ø12.7 (1/2)	Ø9.52 (3/8) / Ø15.88 (5/8)
Minimum piping length	m	5		
Maximum chargeless piping length	m	15		
Maximum piping length (additional refrigerant charge needed)	m (g/m)	50(30)		50(40)
Height difference between OU and IU (higher OU / lower OU)	m	30 / 20		
Working range (cooling // heating // DHW)	°C (DB)	10~46 // -15~25 / -15~35		
Refrigerant	-	R410A		
Refrigerant charge before shipment	kg	1.4	1.5	1.7
Compressor type	-	Scroll DC Inverter driven		

Blank data: To be informed later.

Model		RAS-4WHVNPE	RAS-5WHVNPE	RAS-6WHVNPE
Power supply	-	1~ 230V 50Hz		
Noise level (sound pressure) (*1)	dB(A)			
Noise level (sound power)	(*1)	64	65	67
	(*2)	63	64	65
Air flow	m³/min	80	90	100
Cabinet colour	-	Natural grey (1.0Y 8.5/0.5)		
Dimensions (H x W x D)	mm	1380 x 950 x 370		
Net weight	kg	103	103	103
Gross weight	kg	116	116	116
Piping diameter (liquid / gas)	mm (inch)	Ø9.52 (3/8) / Ø15.88 (5/8)	Ø9.52 (3/8) / Ø15.88 (5/8)	Ø9.52 (3/8) / Ø15.88 (5/8)
Minimum piping length	m	5		
Maximum chargeless piping length	m	15		
Maximum piping length (additional refrigerant charge needed)	m (g/m)	75 (60)		
Height difference between OU and IU (higher OU / lower OU)	m	30 / 20		
Working range (cooling // heating // DHW)	°C (DB)	10~46 // -25~25 / -25~35		
Refrigerant	-	R410A		
Refrigerant charge before shipment	kg	3.3	3.4	3.4
Compressor type	-	Scroll DC Inverter driven		

Blank data: To be informed later.

Model		RAS-4WHNPE	RAS-5WHNPE	RAS-6WHNPE
Power supply	-	3N~ 400V 50Hz		
Noise level (sound pressure) (*1)	dB(A)			
Noise level (sound power)	(*1)	64	65	67
	(*2)	63	64	65
Air flow	m³/min	80	90	100
Cabinet colour	-	Natural grey (1.0Y 8.5/0.5)		
Dimensions (H x W x D)	mm	1380 x 950 x 370		
Net weight	kg	103	103	103
Gross weight	kg	116	116	116
Piping diameter (liquid / gas)	mm (inch)	Ø9.52 (3/8) / Ø15.88 (5/8)	Ø9.52 (3/8) / Ø15.88 (5/8)	Ø9.52 (3/8) / Ø15.88 (5/8)
Minimum piping length	m	5		
Maximum chargeless piping length	m	15		
Maximum piping length (additional refrigerant charge needed)	m (g/m)	75(60)		
Height difference between OU and IU (higher OU / lower OU)	m	30 / 20		
Working range (cooling // heating // DHW)	°C (DB)	10~46 // -25~25 / -25~35		
Refrigerant	-	R410A		
Refrigerant charge before shipment	kg	3.3	3.4	3.4
Compressor type	-	Scroll DC Inverter driven		

Blank data: To be informed later.

Model			RAS-8WHNPE	RAS-10WHNPE
Power supply		-	3N~ 400V 50Hz	
Noise level (sound pressure) (*1)		dB(A)		
Noise level (sound power)	(*1)	dB(A)	73	74
	(*2)	dB(A)	71	72
Air flow		m ³ /min	127	134
Cabinet colour		-	Natural grey (1.0Y 8.5/0.5)	
Dimensions (H x W x D)		mm	1380 x 950 x 370	
Net weight		kg	137	139
Gross weight		kg	152	154
Piping diameter (liquid / gas)		mm (inch)	Ø9.52 (3/8) / Ø25.4 (1")	Ø12.70 (1/2) / Ø25.4 (1")
Minimum piping length		m	5	
Maximum chargeless piping length		m	15	
Maximum piping length (additional refrigerant charge needed)		m (g/m)	70(*)	
Height difference between OU and IU (higher OU / lower OU)		m	30 / 20	
Working range (cooling // heating // DHW)		°C (DB)	10~46 // -25~25 / -25~35	
Refrigerant		-	R410A	
Refrigerant charge before shipment		kg	5.0	5.3
Compressor type		-	Scroll DC Inverter driven	

(*) Need to be calculated

Blank data: To be informed later.

3.3.3 Split system - Indoor unit

3.3.3.1 YUTAKI S

Model			RWM-2.0NE	RWM-2.5NE	RWM-3.0NE
Power supply		-	1~ 230V 50Hz		
Noise level (sound power)		dB(A)	37	37	37
Cabinet	Material	-	Precoated galvanised steel		
	Colour	-	Pure white (RAL 9010)		
Unit dimensions	Height (with connections)	mm	712 (782)		
	Width	mm	450		
	Depth	mm	275		
Packaging dimensions	Height	mm	468		
	Width	mm	905		
	Depth	mm	539		
Packaging volume		m³	0.23		
Packaging materials		-	Wood - Carton - Plastic		
Net weight		kg	45		46
Gross weight		kg	60		61
Refrigerant pipes connection	Connection type	-	Flare nut connection		
	Liquid pipe diameter	mm (in.)	Ø6.35 (1/4")	Ø9.52 (3/8")	
	Gas pipe diameter	mm (in.)	Ø15.88 (5/8")		
Space heating pipes connection	Connection type	-	Screwed connection		
	Shut-off valves	mm (in.)	G 1" (male) - G 1" (male)		
	Inlet pipe diameter	mm (in.)	G 1" (female)		
	Outlet pipe diameter	mm (in.)	G 1" (female)		
Working range (Heating)	Outdoor ambient temperature	°C (DB)	-15~25		
	Outlet water temperature	°C	20~55		
Working range (Cooling)	Outdoor ambient temperature	°C (DB)	10~46		
	Outlet water temperature	°C	5~22		
Working range (DHW)	Outdoor ambient temperature	°C (DB)	-15~35		
	Tank water temperature	°C	30~75		

Model			RWM-4.0NE	RWM-5.0NE	RWM-6.0NE
Power supply		-	1~ 230V 50Hz / 3N~ 400V 50Hz		
Noise level (sound power)		dB(A)	47	47	47
Cabinet	Material	-	Precoated galvanised steel		
	Colour	-	Pure white (RAL 9010)		
Unit dimensions	Height (with connections)	mm	890 (960)		
	Width	mm	520		
	Depth	mm	360		
Packaging dimensions	Height	mm	546		
	Width	mm	1120		
	Depth	mm	610		
Packaging volume		m³	0.37		
Packaging materials		-	Wood - Carton - Plastic		
Net weight		kg	54	56	
Gross weight		kg	69	71	
Refrigerant pipes connection	Connection type	-	Flare nut connection		
	Liquid pipe diameter	mm (in.)	Ø9.52 (3/8")		
	Gas pipe diameter	mm (in.)	Ø15.88 (5/8")		
Space heating pipes connection	Connection type	-	Screwed connection		
	Shut-off valves	mm (in.)	G 1-1/4" (male) - G 1-1/4" (male)		
	Inlet pipe diameter	mm (in.)	G 1-1/4" (female)		
	Outlet pipe diameter	mm (in.)	G 1-1/4" (female)		
Working range (Heating)	Outdoor ambient temperature	°C (DB)	-25~25		
	Outlet water temperature	°C	20~60		
Working range (Cooling)	Outdoor ambient temperature	°C (DB)	10~46		
	Outlet water temperature	°C	5~22		
Working range (DHW)	Outdoor ambient temperature	°C (DB)	-25~35		
	Tank water temperature	°C	30~75		

Model			RWM-8.0NE	RWM-10.0NE
Power supply		-	3N~ 400V 50Hz	
Noise level (sound power)		dB(A)	47	47
Cabinet	Material	-	Precoated galvanised steel	
	Colour	-	Pure white (RAL 9010)	
Unit dimensions	Height (with connections)	mm	890 (960)	
	Width	mm	670	
	Depth	mm	360	
Packaging dimensions	Height	mm	546	
	Width	mm	1120	
	Depth	mm	760	
Packaging volume		m ³	0.46	
Packaging materials		-	Wood - Carton - Plastic	
Net weight		kg	76	80
Gross weight		kg	90	93
Refrigerant pipes connection	Connection type	-	Liquid pipe: Flare nut connection; Gas pipe: Brazed connection	
	Liquid pipe diameter	mm (in.)	Ø9.52 (3/8")	Ø12.7 (3/8")
	Gas pipe diameter	mm (in.)	Ø25.4 (1")	
Space heating pipes connection	Connection type	-	Screwed connection	
	Shut-off valves	mm (in.)	G 1-1/4" (male) - G 1-1/4" (male)	
	Inlet pipe diameter	mm (in.)	G 1-1/4" (female)	
	Outlet pipe diameter	mm (in.)	G 1-1/4" (female)	
Working range (Heating)	Outdoor ambient temperature	°C (DB)	-25~25	
	Outlet water temperature	°C	20~60	
Working range (Cooling)	Outdoor ambient temperature	°C (DB)	10~46	
	Outlet water temperature	°C	5~22	
Working range (DHW)	Outdoor ambient temperature	°C (DB)	-25~35	
	Tank water temperature	°C	30~75	

3.3.3.2 YUTAKI S COMBI

◆ Standard model

Model			RWD-2.0NWE- (200/260)S	RWD-2.5NWE- (200/260)S	RWD-3.0NWE- (200/260)S
Power supply		-	1~ 230V 50Hz		
Noise level (sound power)		dB(A)	37	37	37
Cabinet	Material	-	Precoated galvanised steel		
	Colour	-	Pure white (RAL 9010)		
Unit dimensions	Height (with connections)	mm	1750 (1816) (*3)		
	Width	mm	600		
	Depth	mm	733		
Packaging dimensions	Height	mm	1950		
	Width	mm	651		
	Depth	mm	770		
Packaging volume		m³	0.98		
Packaging materials		-	Wood - Carton - Plastic		
Net weight	Tank model: 200 L	kg	120		121
	Tank model: 260 L		135		136
Gross weight	Tank model: 200 L	kg	131		132
	Tank model: 260 L		146		147
Refrigerant pipes connection	Connection type	-	Flare nut connection		
	Liquid pipe diameter	mm (in.)	Ø6.35 (1/4")	Ø9.52 (3/8")	
	Gas pipe diameter	mm (in.)	Ø15.88 (5/8")		
Space heating pipes connection	Connection type	-	Screwed connection		
	Shut-off valves	mm (in.)	G 1" (male) - G 1" (male)		
	Inlet pipe diameter	mm (in.)	G 1" (female)		
	Outlet pipe diameter	mm (in.)	G 1" (female)		
DHW pipes connection	Connection type	-	Screwed connection		
	Inlet pipe diameter	mm (in.)	G 3/4" (female)		
	Outlet pipe diameter	mm (in.)	G 3/4" (female)		
Working range (Heating)	Outdoor ambient temperature	°C (DB)	-15~25		
	Outlet water temperature	°C	20~55		
Working range (Cooling)	Outdoor ambient temperature	°C (DB)	10~46		
	Outlet water temperature	°C	5~22		
Working range (DHW)	Outdoor ambient temperature	°C (DB)	-15~35		
	Tank water temperature	°C	30~75		

Model			RWD-4.0NWE- (200/260)S	RWD-5.0NWE- (200/260)S	RWD-6.0NWE- (200/260)S
Power supply		-	1~ 230V 50Hz / 3N~ 400V 50Hz		
Noise level (sound power)		dB(A)	39	39	39
Cabinet	Material	-	Precoated galvanised steel		
	Colour	-	Pure white (RAL 9010)		
Unit dimensions	Height (with connections)	mm	1750 (1816) (*3)		
	Width	mm	600		
	Depth	mm	733		
Packaging dimensions	Height	mm	1950		
	Width	mm	651		
	Depth	mm	770		
Packaging volume		m³	0.98		
Packaging materials		-	Wood - Carton - Plastic		
Net weight	Tank model: 200 L	kg	124	126	
	Tank model: 260 L		139	141	
Gross weight	Tank model: 200 L	kg	135	137	
	Tank model: 260 L		150	152	
Refrigerant pipes connection	Connection type	-	Flare nut connection		
	Liquid pipe diameter	mm (in.)	Ø9.52 (3/8")		
	Gas pipe diameter	mm (in.)	Ø15.88 (5/8")		
Space heating pipes connection	Connection type	-	Screwed connection		
	Shut-off valves	mm (in.)	G 1-1/4" (male) - G 1-1/4" (male)		
	Inlet pipe diameter	mm (in.)	G 1-1/4" (female)		
	Outlet pipe diameter	mm (in.)	G 1-1/4" (female)		
DHW pipes connection	Connection type	-	Screwed connection		
	Inlet pipe diameter	mm (in.)	G 3/4" (female)		
	Outlet pipe diameter	mm (in.)	G 3/4" (female)		
Working range (Heating)	Outdoor ambient temperature	°C (DB)	-25~25		
	Outlet water temperature	°C	20~60		
Working range (Cooling)	Outdoor ambient temperature	°C (DB)	10~46		
	Outlet water temperature	°C	5~22		
Working range (DHW)	Outdoor ambient temperature	°C (DB)	-25~35		
	Tank water temperature	°C	30~75		

◆ Model for solar combination

Model			RWD-2.0NWSE-260S	RWD-2.5NWSE-260S	RWD-3.0NWSE-260S
Power supply		-	1~ 230V 50Hz		
Noise level (sound power)		dB(A)	37	37	37
Cabinet	Material	-	Precoated galvanised steel		
	Colour	-	Pure white (RAL 9010)		
Unit dimensions	Height (with connections)	mm	1750 (1816) (*3)		
	Width	mm	600		
	Depth	mm	733		
Packaging dimensions	Height	mm			
	Width	mm			
	Depth	mm			
Packaging volume		m³			
Packaging materials		-	Wood - Carton - Plastic		
Net weight		kg	138		139
Gross weight		kg	149		150
Refrigerant pipes connection	Connection type	-	Flare nut connection		
	Liquid pipe diameter	mm (in.)	Ø6.35 (1/4")	Ø9.52 (3/8")	
	Gas pipe diameter	mm (in.)	Ø15.88 (5/8")		
Space heating pipes connection	Connection type	-	Screwed connection		
	Shut-off valves	mm (in.)	G 1" (male) - G 1" (male)		
	Inlet pipe diameter	mm (in.)	G 1" (female)		
	Outlet pipe diameter	mm (in.)	G 1" (female)		
DHW pipes connection	Connection type	-	Screwed connection		
	Inlet pipe diameter	mm (in.)	G 3/4" (female)		
	Outlet pipe diameter	mm (in.)	G 3/4" (female)		
Solar pipes connection	Connection type	-	Screwed connection		
	Inlet pipe diameter	mm (in.)	G 1/2" (male)		
	Outlet pipe diameter	mm (in.)	G 1/2" (male)		
Working range (Heating)	Outdoor ambient temperature	°C (DB)	-15~25		
	Outlet water temperature	°C	20~55		
Working range (Cooling)	Outdoor ambient temperature	°C (DB)	10~46		
	Outlet water temperature	°C	5~22		
Working range (DHW)	Outdoor ambient temperature	°C (DB)	-15~35		
	Tank water temperature	°C	30~75		

Model		RWD-4.0NWSE-260S	RWD-5.0NWSE-260S	RWD-6.0NWSE-260S
Power supply		1~ 230V 50Hz / 3N~ 400V 50Hz		
Noise level (sound power)		39	39	39
Cabinet	Material	Precoated galvanised steel		
	Colour	Pure white (RAL 9010)		
Unit dimensions	Height (with connections)	1750 (1816) (*3)		
	Width	600		
	Depth	733		
Packaging dimensions	Height	1950		
	Width	651		
	Depth	770		
Packaging volume		0.98		
Packaging materials		Wood - Carton - Plastic		
Net weight		142	144	
Gross weight		153	155	
Refrigerant pipes connection	Connection type	Flare nut connection		
	Liquid pipe diameter	Ø9.52 (3/8")		
	Gas pipe diameter	Ø15.88 (5/8")		
Space heating pipes connection	Connection type	Screwed connection		
	Shut-off valves	G 1-1/4" (male) - G 1-1/4" (male)		
	Inlet pipe diameter	G 1-1/4" (female)		
	Outlet pipe diameter	G 1-1/4" (female)		
DHW pipes connection	Connection type	Screwed connection		
	Inlet pipe diameter	G 3/4" (female)		
	Outlet pipe diameter	G 3/4" (female)		
Solar pipes connection	Connection type	Screwed connection		
	Inlet pipe diameter	G 1/2" (male)		
	Outlet pipe diameter	G 1/2" (male)		
Working range (Heating)	Outdoor ambient temperature	D-25~25		
	Outlet water temperature	20~60		
Working range (Cooling)	Outdoor ambient temperature	10~46		
	Outlet water temperature	5~22		
Working range (DHW)	Outdoor ambient temperature	-25~35		
	Tank water temperature	30~75		

◆ Model for UK market

Model			RWD-2.0NWE-(200/260)S-K	RWD-2.5NWE-(200/260)S-K	RWD-3.0NWE-(200/260)S-K
Power supply		-	1~ 230V 50Hz		
Noise level (sound power)		dB(A)	37	37	37
Cabinet	Material	-	Precoated galvanised steel		
	Colour	-	Pure white (RAL 9010)		
Unit dimensions	Height (with connections)	mm	1750 (1816) (*3)		
	Width	mm	600		
	Depth	mm	733		
Packaging dimensions	Height	mm	1950		
	Width	mm	651		
	Depth	mm	770		
Packaging volume		m³	0.98		
Packaging materials		-	Wood - Carton - Plastic		
Net weight	Tank model: 200 L	kg	120		121
	Tank model: 260 L		135		136
Gross weight	Tank model: 200 L	kg	131		132
	Tank model: 260 L		146		147
Refrigerant pipes connection	Connection type	-	Flare nut connection		
	Liquid pipe diameter	mm (in.)	Ø6.35 (1/4")	Ø9.52 (3/8")	
	Gas pipe diameter	mm (in.)	Ø15.88 (5/8")		
Space heating pipes connection	Connection type	-	Screwed connection		
	Shut-off valves	mm (in.)	G 1" (male) - G 1" (male)		
	Inlet pipe diameter	mm (in.)	G 1" (female)		
	Outlet pipe diameter	mm (in.)	G 1" (female)		
DHW pipes connection	Connection type	-	Screwed connection		
	Inlet pipe diameter	mm (in.)	G 3/4" (female)		
	Outlet pipe diameter	mm (in.)	G 3/4" (female)		
Working range (Heating)	Outdoor ambient temperature	°C (DB)	-15~25		
	Outlet water temperature	°C	20~55		
Working range (Cooling)	Outdoor ambient temperature	°C (DB)	10~46		
	Outlet water temperature	°C	5~22		
Working range (DHW)	Outdoor ambient temperature	°C (DB)	-15~35		
	Tank water temperature	°C	30~75		

Model			RWD-4.0NWE-(200/260)S-K	RWD-5.0NWE-(200/260)S-K	RWD-6.0NWE-(200/260)S-K
Power supply		-	1~ 230V 50Hz / 3N~ 400V 50Hz		
Noise level (sound power)		dB(A)	39	39	39
Cabinet	Material	-	Precoated galvanised steel		
	Colour	-	Pure white (RAL 9010)		
Unit dimensions	Height (with connections)	mm	1750 (1816) (*3)		
	Width	mm	600		
	Depth	mm	733		
Packaging dimensions	Height	mm	1950		
	Width	mm	651		
	Depth	mm	770		
Packaging volume		m³	0.98		
Packaging materials		-	Wood - Carton - Plastic		
Net weight	Tank model: 200 L	kg	124	126	
	Tank model: 260 L		139	141	
Gross weight	Tank model: 200 L	kg	135	137	
	Tank model: 260 L		150	152	
Refrigerant pipes connection	Connection type	-	Flare nut connection		
	Liquid pipe diameter	mm (in.)	Ø9.52 (3/8")		
	Gas pipe diameter	mm (in.)	Ø15.88 (5/8")		
Space heating pipes connection	Connection type	-	Screwed connection		
	Shut-off valves	mm (in.)	G 1-1/4" (male) - G 1-1/4" (male)		
	Inlet pipe diameter	mm (in.)	G 1-1/4" (female)		
	Outlet pipe diameter	mm (in.)	G 1-1/4" (female)		
DHW pipes connection	Connection type	-	Screwed connection		
	Inlet pipe diameter	mm (in.)	G 3/4" (female)		
	Outlet pipe diameter	mm (in.)	G 3/4" (female)		
Working range (Heating)	Outdoor ambient temperature	°C (DB)	-25~25		
	Outlet water temperature	°C	20~60		
Working range (Cooling)	Outdoor ambient temperature	°C (DB)	10~46		
	Outlet water temperature	°C	5~22		
Working range (DHW)	Outdoor ambient temperature	°C (DB)	-25~35		
	Tank water temperature	°C	30~75		

3.3.3.3 YUTAKI S80

◆ Indoor unit

Version for indoor unit alone

Model			RWH-4.0(V)NFE	RWH-5.0(V)NFE	RWH-6.0(V)NFE
Power supply		-	RWH-(4.0-6.0)VNFWE: 1~ 230V 50Hz RWH-(4.0-6.0)NFWE: 3N~ 400V 50Hz		
Noise level (sound power)		dB(A)	57	57	58
Cabinet	Material	-	Precoated galvanised steel		
	Colour	-	Pure white (RAL 9010)		
Unit dimensions	Height (with connections) (*)	mm	751 (802) (*3)		
	Width	mm	600		
	Depth	mm	623		
Packaging dimensions	Height	mm	982		
	Width	mm	675		
	Depth	mm	671		
Packaging volume		m³	0.44		
Packaging materials		-	Wood - Carton - Plastic - Polypropylene bands		
Net weight (1~ / 3N~)		kg	135 / 138	138 / 141	
Gross weight (1~ / 3N~)		kg	146 / 149	149 / 152	
Refrigerant pipes connection	Connection type	-	Flare nut connection		
	Liquid pipe diameter	mm (in.)	Ø9.52 (3/8")		
	Gas pipe diameter	mm (in.)	Ø15.88 (5/8")		
Space heating pipes connection	Connection type	-	Screwed connection		
	Shut-off valves	mm (in.)	G 1-1/4" (male) - G 1-1/4" (male)		
	Inlet pipe diameter	mm (in.)	G 1-1/4" (female)		
	Outlet pipe diameter	mm (in.)	G 1-1/4" (female)		
Working range (Heating)	Outdoor ambient temperature	°C (DB)	-25~25		
	Outlet water temperature	°C	20~80		
Working range (DHW)	Outdoor ambient temperature	°C (DB)	-25~35		
	Tank water temperature	°C	30~75		
Refrigerant		-	R-134a		
Refrigerant charge		kg	1.9		
Compressor type		-	Scroll DC Inverter driven		

Version for combination with DHW tank

Model			RWH-4.0(V)NFW	RWH-5.0(V)NFW	RWH-6.0(V)NFW
Power supply		-	RWH-(4.0-6.0)VNFW: 1~ 230V 50Hz RWH-(4.0-6.0)NFW: 3N~ 400V 50Hz		
Noise level (sound power)		dB(A)	57	57	58
Cabinet	Material	-	Precoated galvanised steel		
	Colour	-	Pure white (RAL 9010)		
Unit dimensions	Height	mm	751 (*3)		
	Width	mm	600		
	Depth (with connections)	mm	623 (680)		
Packaging dimensions	Height	mm	926		
	Width	mm	728		
	Depth	mm	671		
Packaging volume		m³	0.45		
Packaging materials		-	Wood - Carton - Plastic - Polypropylene bands		
Net weight (1~ / 3N~)		kg	143 / 146	150 / 155	
Gross weight (1~ / 3N~)		kg	154 / 157	161 / 166	
Refrigerant pipes connection	Connection type	-	Flare nut connection		
	Liquid pipe diameter	mm (in.)	Ø9.52 (3/8")		
	Gas pipe diameter	mm (in.)	Ø15.88 (5/8")		
Space heating pipes connection	Connection type	-	Screwed connection		
	Shut-off valves	mm (in.)	G 1-1/4" (male) - G 1-1/4" (male)		
	Inlet pipe diameter	mm (in.)	G 1-1/4" (female)		
	Outlet pipe diameter	mm (in.)	G 1-1/4" (female)		
Heating coil pipes connection (*)	Connection type	-	Flexible pipe connection		
	Heating coil inlet diameter (3-way valve)	mm (in.)	Flexible pipe (G 1" male)		
	Heating outlet inlet diameter (T-branch)	mm (in.)	Flexible pipe (G 1" male)		
Working range (Heating)	Outdoor ambient temperature	°C (DB)	-25~25		
	Outlet water temperature	°C	20~80		
Working range (DHW)	Outdoor ambient temperature	°C (DB)	-25~35		
	Tank water temperature	°C	30~75		
Refrigerant		-	R-134a		
Refrigerant charge		kg	1.9		
Compressor type		-	Scroll DC Inverter driven		

(*): These models are ready for combination with YUTAKI S80 DHW tank accessory. In this case, the two flexible water pipes factory-supplied with the DHW tank must be connected to the 3-way valve and T-branch connections of the indoor unit.

◆ Domestic hot water tank

Model			DHWS200S-2.7H2E		DHWS260S-2.7H2E	
Power supply			-	1~ 230V 50Hz		
Cabinet	Material		-	Precoated galvanised steel		
	Colour		-	Pure white (RAL 9010)		
Unit dimensions	Height	Separated tank	mm	1282 (*3)		1591 (*3)
		Integrated tank		1980 (*3)		2289 (*3)
	Width		mm	600		
	Depth (with connections)		mm	648 (675)		
Packaging dimensions	Height		mm	1444		1753
	Width		mm	644		
	Depth		mm	722		
Packaging volume			m³	0.67		0.82
Packaging material			-	Wood - Carton - Plastic - Polypropylene bands		
Net weight			kg	72		87
Gross weight			kg	82		98
Tank	Net water volume		L	190		250
	Material		-	AISI 444		
	Maximum tank working temperature		°C	75		
	Maximum tank water working pressure		bar	10		
	Maximum heating coil water working temperature		°C	75		
	Maximum heating coil water working pressure		bar	3		
Tank insulation	Material		-	NEOPOR		
	Thickness		mm	50		
Heat exchanger	Quantity		-	1		
	Coil surface area		m²	1.6		
Tank's heater	Quantity		-	1		
	Heater rating		kW	2.7		
	Type		-	Immersion heater type		
Piping connections	Heating coil inlet connection		in.	Flexible pipe (G 1" male)		
	Heating coil outlet connection		in.	Flexible pipe (G 1" male)		
	DHW inlet connection		in.	Flexible pipe (G 3/4" male)		
	DHW outlet connection		in.	Flexible pipe (G 3/4" male)		
Mechanical thermostat (adjustable and security)			-	Yes (adjustable 35~85°C ; cut-out: 90°C)		
Protection			-	Anode protection		
Wired remote controller			-	PC-ARFHE		

3.3.4 Monobloc system - YUTAKI M

Model			RASM-3VNE	RASM-4VNE	RASM-5VNE	RASM-6VNE
Power supply			-	1~ 230V 50Hz		
Noise level (sound pressure) (*1)(*2)			dB(A)			
Noise level (sound power)		(*1)	dB(A)	64	64	65
		(*2)	dB(A)	61	63	64
Cabinet	Material		-	Precoated galvanised steel		
	Colour		-	Natural grey (1.0Y 8.5/0.5)		
Unit dimensions	Height		mm	800	1380	
	Width		mm	1252	1252	
	Depth		mm	370	370	
Packaging dimensions	Height		mm	935	1515	
	Width		mm	1312		
	Depth		mm	460		
Packaging volume			m³	0.56	0.91	
Packaging materials			-	Paper + Wood + Plastic		
Net weight			kg	105	125	130
Gross weight			kg	115	135	140
Space heating pipes connection	Connection type		-	Screwed connection		
	Shut-off valves		mm (in.)	G 1" (male) - G 1" (male)	G 1-1/4" (male) - G 1-1/4" (male)	
	Inlet pipe diameter		mm (in.)	G 1" (female)	G 1-1/4" (female)	
	Outlet pipe diameter		mm (in.)	G 1" (female)	G 1-1/4" (female)	
Working range (Heating)	Outdoor ambient temperature		°C (DB)	-25~25		
	Outlet water temperature		°C	20~55	20~60	
Working range (Cooling)	Outdoor ambient temperature		°C (DB)	10~46		
	Outlet water temperature		°C	5~22		
Working range (DHW)	Outdoor ambient temperature		°C (DB)	-25~35		
	Tank water temperature		°C	30~75		
Refrigerant			-	R410A		
Refrigerant charge			kg	2.4	2.8	3.1
Compressor type			-	Scroll DC Inverter driven		

Blank data: To be informed later.

Model			RASM-4NE	RASM-5NE	RASM-6NE
Power supply		-	3N~ 400V 50Hz		
Noise level (sound pressure) (*1)(*2)		dB(A)			
Noise level (sound power) (*1)(*2)		dB(A)	47	47	47
Cabinet	Material	-	Precoated galvanised steel		
	Colour	-	Natural grey (1.0Y 8.5/0.5)		
Unit dimensions	Height	mm	1380		
	Width	mm	1252		
	Depth	mm	370		
Packaging dimensions	Height	mm	1515		
	Width	mm	1312		
	Depth	mm	460		
Packaging volume		m ³	0.91		
Packaging materials		-	Paper + Wood + Plastic		
Net weight		kg	130	135	139
Gross weight		kg	140	145	149
Space heating pipes connection	Connection type	-	Screwed connection		
	Shut-off valves	mm (in.)	G 1-1/4" (male) - G 1-1/4" (male)		
	Inlet pipe diameter	mm (in.)	G 1-1/4" (female)		
	Outlet pipe diameter	mm (in.)	G 1-1/4" (female)		
Working range (Heating)	Outdoor ambient temperature	°C (DB)	-25~25		
	Outlet water temperature	°C	20~60		
Working range (Cooling)	Outdoor ambient temperature	°C (DB)	10~46		
	Outlet water temperature	°C	5~22		
Refrigerant		-	R410A		
Refrigerant charge		kg	3.0	3.1	3.1
Compressor type		-	Scroll DC Inverter driven		

Blank data: To be informed later.

3.4 COMPONENT DATA

3.4.1 Split system - Outdoor unit

MODEL		RAS-2WHVNP	RAS-2.5WHVNP	RAS-3WHVNP
Air heat exchanger	Type	Multi-pass cross-finned tube		
	Pipe material	Copper		
	Outer diameter	mm	8	
	Rows	2		
	Number of tubes in the heat exchanger	44		
	Fin material	Aluminium		
	Fin pitch	1.45		
	Maximum operating pressure	MPa	4.15	
	Total front area	m ²	0.47	
	Number of heat exchanger per unit	1		
Fan	Fan type	Direct drive propeller fan		
	Fans per unit	1		
	Outer diameter	mm	449	
	Revolutions	rpm	770	850
	Nominal air flow	m ³ /min	41	45
Motor	Shell	Drip-proof type enclosure		
	Starting	Direct current control		
	Power	W	40	
	Quantity	1		
	Insulation class	E		
Compressor	Model	EU1114D9	EU140XA2	2YC45KXD
	Oil Type	HAF68D1 or 68HES-H		FVC50K
	Quantity (l)	0.75		0.80

MODEL		RAS-4WH(V)NPE	RAS-5WH(V)NPE	RAS-6WH(V)NPE
Air heat exchanger	Type	Multi-pass Cross finned tube		
	Pipe material	Copper		
	Outer diameter	mm	7	
	Rows	2		
	Number of tubes in the heat exchanger	132		
	Fin material	Aluminium		
	Fin pitch	1.4		
	Maximum operating pressure	MPa	4.15	
	Total front area	m ²	1.35	
	Number of heat exchanger per unit	1		
Fan	Fan type	Direct drive propeller fan		
	Fans per unit	2		
	Outer diameter	mm	544	
	Revolutions	rpm	459/376	516/422
	Nominal air flow	m ³ /min	80	90
Motor	Shell	Drip-proof type enclosure		
	Starting	Direct current control		
	Power	W	100 + 100	
	Quantity	2		
	Insulation class	E		
Compressor	Model	E402HHD-36A2 (1~) / E402HHD-36D2 (3N~)		
	Oil type	FVC68D		
	Quantity	0.90		

MODEL			RAS-8WHNPE	RAS-10WHNPE
Air heat exchanger	Type		Multi-pass cross-finned tube	
	Pipe material		Copper	
	Outer diameter	mm	7	
	Rows		3	
	Number of tubes in the heat exchanger		198	
	Fin material		Aluminium	
	Fin pitch		1.4	
	Maximum Heat exchanger pressure	MPa	4.15	
	Total front area	m ²	1.35	
	Number of evaporators per unit		1	
Fan	Fan type		Direct drive propeller fan	
	Fans per unit		2	
	Outer diameter	mm	544	
	Revolutions	rpm	586/717	644/787
	Nominal air flow	m ³ /min	127	134
Motor	Shell		Drip-proof type enclosure	
	Starting		Direct current control	
	Power	W	138 + 138	
	Quantity		2	
	Insulation class		E	
Compressor	Model		DA50PHD-D1SE2	DA65PHD-D1SE2
	Oil type		FVC68D	
	Quantity		1.90	

3.4.2 Split system - Indoor unit

3.4.2.1 YUTAKI S

Model			RWM-2.0 NE	RWM-2.5 NE	RWM-3.0 NE	RWM-4.0 NE	RWM-5.0 NE	RWM-6.0 NE	RWM-8.0 NE	RWM-10.0 NE	
Water heat exchanger	Type		-	Brazed plate							
	Material		-	Stainless steel							
	Transfer fluids		-	R410A - H ₂ O							
	Quantity		-	1							
	Internal refrigerant volume		L	0.54	0.73	0.81	1.55	2.09	2.09	3.19	3.91
	Internal water volume		L	0.57	0.76	0.84	1.64	2.18	2.18	3.28	4.00
	Insulation material		-	NBR + PVC							
Water pump	Model		-	Yonos PARA RS15/7.0			Yonos PARA RS15/7.5			UPML GEO 25-105	
	Type		-	Inverter							
	Control		-	PWM							
	Power supply		-	1~ 230V 50Hz							
	Maximum lift pressure		mwc	7.2			7.6			10.5	
	Maximum water flow		m³/h	3.3			4.0			5.5	
	Maximum power input		W	45			75			140	
	Piping	Water inlet	(in)	G 1"			G 1"			G 1-1/2"	
		Water outlet	(in)	G 1"			G 1"			G 1-1/2"	
		Inlet/outlet distance	mm	130			130			180	
Water electric heater	Material		-	Stainless steel (Immersion heating element)							
	Power supply		-	1~ 230V 50Hz			1~ 230V 50Hz 3N~ 400V 50Hz			3N~ 400V 50Hz	
	Maximum electric heater power		kW	3.0			6.0			9.0	
	Regulated electric heater power (step 1/ step 2/ step 3)		kW	1.0/2.0/3.0			2.0/4.0/6.0			3.0/6.0/9.0	
	Thermostat security			Yes (Cut-out: 90 °C)							
Expansion vessel	Material		-	Steel (with stainless/galvanized steel connections)							
	Internal water volume		L	6.0					10.0		
	Working pressure		MPa	0.3							
	Pre-loading pressure (Air side)		MPa	0.1							
Water strainer	Type		-	Isolated water strainer (Filter ball)							
	Material		-	Brass							
	Piping connection		(in)	1", DN25					1", DN32		
	Mesh (hole size)		mm	0.7							
	Automatic filter cleaning		-	Yes							
Safety valve			-	Yes (3 bar)							
Low pressure switch			-	Yes (<0.5 bar)							
Shut-off valve			-	Yes (2 factory-supplied valves)							
Air purger			-	Yes							
Manometer			-	Yes							
Unit controller			-	Yes (PC-ARFHE)							

3.4.2.2 YUTAKI S COMBI

◆ Standard model and UK market model

Model				RWD-2.0NWE-(200/260)S(-K)	RWD-2.5NWE-(200/260)S(-K)	RWD-3.0NWE-(200/260)S(-K)	RWD-4.0NWE-(200/260)S(-K)	RWD-5.0NWE-(200/260)S(-K)	RWD-6.0NWE-(200/260)S(-K)
Domestic hot water tank	Casing material			Stainless steel					
	Tank	Nominal water volume	L	RWD-NWE-200S(-K): 200 L RWD-NWE-260S(-K): 260 L					
		Net water volume	L	RWD-NWE-200S(-K): 190L RWD-NWE-260S(-K): 250L					
		Material	-	AISI 444					
		Max. water temperature	°C	75					
		Max. water pressure	bar	10					
		Max. heating coil water temperature	°C	75					
		Max. heating coil water pressure	bar	3					
	Tank insulation	Material	-	NEOPOR					
		Thickness	mm	50					
	Heat ex-changer	Quantity	-	1					
		Coil surface area	m²	1.60					
		Internal coil volume	L	20.37					
	Tank's heater	Quantity	-	1					
		Type	-	Immersion heater type					
		Heater rating	kW	2.7					
	Mechanical thermostat (adjustable and security)		-	Yes (adjustable 35~85°C ; cut-out: 90°C)					
Water heat exchanger	Type		-	Brazed plate					
	Material		-	Stainless steel					
	Transfer fluids		-	R410A - H ₂ O					
	Quantity		-	1					
	Internal refrigerant volume		L	0.54	0.73	0.81	1.55	2.09	2.09
	Internal water volume		L	0.57	0.76	0.84	1.64	2.18	2.18
	Insulation material		-	NBR + PVC					
Water pump	Model		-	Yonos PARA RS15/7.0			Yonos PARA RS15/7.5		
	Type		-	Inverter					
	Control		-	PWM					
	Power supply		-	1~ 230V 50Hz					
	Maximum lift pressure		kPa	7.2			7.6		
	Maximum water flow		m³/h	3.3			4.0		
	Maximum power input		W	45			75		
	Piping	Water inlet	(in)	G 1"			G 1"		
		Water outlet	(in)	G 1"			G 1"		
Inlet/outlet distance		mm	130			130			
Water electric heater	Material		-	Stainless steel (Immersion heating element)					
	Power supply		-	1~ 230V 50Hz			1~ 230V 50Hz / 3N~ 400V 50Hz		
	Maximum electric heater power		kW	3.0			6.0		
	Regulated electric heater power (step 1/ step 2/ step 3)		kW	1.0/2.0/3.0			2.0/4.0/6.0		
	Thermostat security		-	Yes (Cut-out: 90 °C)					

Model			RWD-2.0NWE- (200/260)S(-K)	RWD-2.5NWE- (200/260)S(-K)	RWD-3.0NWE- (200/260)S(-K)	RWD-4.0NWE- (200/260)S(-K)	RWD-5.0NWE- (200/260)S(-K)	RWD-6.0NWE- (200/260)S(-K)
Expansion vessel	Material	-	Steel (with stainless/galvanized steel connections)					
	Internal water volume	L	6.0					
	Working pressure	MPa	0.3					
	Pre-loading pressure (Air side)	MPa	0.1					
Water strainer	Type	-	Isolated water strainer (Filter ball)					
	Material	-	Brass					
	Piping connection	(in)	1", DN25			1", DN32		
	Mesh (hole size)	mm	0.7					
	Automatic filter cleaning	-	Yes					
Pressure and temperature relief valve (1)		bar	7					
		°C	96					
DHWT thermostat (1)		°C	85					
Safety valve		-	Yes (3 bar)					
Low pressure switch		-	Yes (<0.5 bar)					
Unit drain valve		-	Yes					
DHW drain valve		-	Yes					
Shut-off valve		-	Yes (2 factory-supplied valves)					
Air purger		-	Yes					
Manometer		-	Yes					
Unit controller		-	Yes (PC-ARFHE)					

- Blank data: To be informed later.
- (1) Only for UK market.

◆ Model for solar combination

Model				RWD-2.0 NW(S)E- 260S	RWD-2.5 NW(S)E- 260S	RWD-3.0 NW(S)E- 260S	RWD-4.0 NW(S)E- 260S	RWD-5.0 NW(S)E- 260S	RWD-6.0 NW(S)E- 260S
Domestic hot water tank	Casing material			Stainless steel					
	Tank	Nominal water volume	L	RWD-NWE-200S: 200 L RWD-NWE-260S: 260 L					
		Net water volume	L	RWD-NWE-200S: 190L RWD-NWE-260S: 250L					
		Material	-	AISI 444					
		Max. water temperature	°C	75					
		Max. water pressure	bar	10					
		Max. heating coil water temperature	°C	75					
		Max. heating coil water pressure	bar	3					
	Tank insulation	Material	-	NEOPOR					
		Thickness	mm	50					
	Heat ex- changer (Heating coil)	Quantity	-	1					
		Coil surface area	m²	1.60					
		Internal coil volume	L	20.37					
	Heat ex- changer (Solar coil)	Quantity	-	1					
		Coil surface area	m²	0.37					
		Internal coil volume	L	7.90					
	Tank's heater	Quantity	-	1					
		Type	-	Immersion heater type					
		Heater rating	kW	2.7					
	Mechanical thermostat (adjustable and security)			-	Yes (adjustable 35~85°C ; cut-out: 90°C)				
Water heat exchanger	Type		-	Brazed plate					
	Material		-	Stainless steel					
	Transfer fluids		-	R410A - H ₂ O					
	Quantity		-	1					
	Internal refrigerant volume		L	0.54	0.73	0.81	1.55	2.09	2.09
	Internal water volume		L	0.57	0.76	0.84	1.64	2.18	2.18
	Insulation material		-	NBR + PVC					
Water pump	Model		-	Yonos PARA RS15/7.0			Yonos PARA RS15/7.5		
	Type		-	Inverter					
	Control		-	PWM					
	Power supply		-	1~ 230V 50Hz					
	Maximum lift pressure		kPa	7.2			7.6		
	Maximum water flow		m³/h	3.3			4.0		
	Maximum power input		W	45			75		
	Piping	Water inlet	(in)	G 1"			G 1"		
		Water outlet	(in)	G 1"			G 1"		
Inlet/outlet distance		mm	130			130			
Water electric heater	Material		-	Stainless steel (Immersion heating element)					
	Power supply		-	1~ 230V 50Hz			1~ 230V 50Hz / 3N~ 400V 50Hz		
	Maximum electric heater power		kW	3.0			6.0		
	Regulated electric heater power (step 1/ step 2/ step 3)		kW	1.0/2.0/3.0			2.0/4.0/6.0		
	Thermostat security		-	Yes (Cut-out: 90 °C)					

Model			RWD-2.0 NW(S)E- 260S	RWD-2.5 NW(S)E- 260S	RWD-3.0 NW(S)E- 260S	RWD-4.0 NW(S)E- 260S	RWD-5.0 NW(S)E- 260S	RWD-6.0 NW(S)E- 260S
Expansion vessel	Material	-	Steel (with stainless/galvanized steel connections)					
	Internal water volume	L	6.0					
	Working pressure	MPa	0.3					
	Pre-loading pressure (Air side)	MPa	0.1					
Water strainer	Type	-	Isolated water strainer (Filter ball)					
	Material	-	Brass					
	Piping connection	(in)	1", DN25			1", DN32		
	Mesh (hole size)	mm	0.7					
	Automatic filter cleaning	-	Yes					
Safety valve		-	Yes (3 bar)					
Low pressure switch		-	Yes (<0.5 bar)					
Unit drain valve		-	Yes					
DHW drain valve		-	Yes					
Shut-off valve		-	Yes (2 factory-supplied valves)					
Air purger		-	Yes					
Manometer		-	Yes					
Unit controller		-	Yes (PC-ARFHE)					

Blank data: To be informed later.

3.4.2.3 YUTAKI S80

Model				RWH-4.0(V)NF(W)E			RWH-5.0(V)NF(W)E			RWH-6.0(V)NF(W)E		
Compressor	Model	1~ 230V 50Hz	-	H405DHD-64A1			H405DHD-64A1			H405DHD-64A1		
		3N~ 400V 50Hz	-	H405DHD-64D1			H405DHD-64D1			H405DHD-64D1		
	Type		-	Scroll DC Inverter driven								
	Pressure resistance	Discharge	MPa	2.94								
		Suction	MPa	0.15								
	Motor type	Starting method	-	Inverter-driven (I.D.)								
		Poles	-	4								
		Insulation class	-	E								
	Oil type		-	FVC68D								
	Oil quantity		L	1.2								
Water heat exchanger	Type		-	Brazed plate								
	Material		-	Stainless steel								
	Transfer fluids		-	R410A H ₂ O	R134a H ₂ O	R410A R134a	R410A H ₂ O	R134a H ₂ O	R410A R134a	R410A H ₂ O	R134a H ₂ O	R410A R134a
	Quantity		-	1	1	1	1	1	1	1	1	1
	Internal refrigerant volume		L	1.55	1.55	2.09	2.09	2.09	2.09	2.09	2.09	2.09
	Internal water volume		L	1.64	1.64	2.18	2.18	2.18	2.18	2.18	2.18	2.18
	Insulation material		-	NBR + PVC								
Water pump	Model		-	Yonos PARA RS15/7.5								
	Type		-	Inverter								
	Control		-	PWM								
	Power supply		-	1~ 230V 50Hz								
	Maximum lift pressure		kPa	7.6								
	Maximum water flow		m³/h	4.0								
	Maximum power input		W	75								
	Piping	Water inlet	(in)	G 1"								
		Water outlet	(in)	G 1"								
Inlet/outlet distance		mm	130									
Expansion vessel	Material		-	Steel (with stainless/galvanized steel connections)								
	Internal water volume		L	12.0								
	Working pressure		MPa	0.3								
	Pre-loading pressure (Air side)		MPa	0.1								
Water strainer	Type		-	Isolated water strainer (Filter ball)								
	Material		-	Brass								
	Piping connection		(in)	1", DN32								
	Mesh (hole size)		mm	0.7								
	Automatic filter cleaning		-	Yes								
Safety valve			-	Yes (3 bar)								
Unit drain valve			-	Yes								
Shut-off valve			-	Yes (2 factory-supplied valves)								
Air purger			-	Yes								
Manometer			-	Yes								
Unit controller			-	No, available as Accessory								

3.4.2.4 DHW tank

Model				DHWS200S-2.7H2E		DHWS260S-2.7H2E			
Power supply				-	1~230V 50Hz				
Casing	Material			-	Precoated galvanised steel				
	Color			-	Pure white (RAL 9010)				
Dimensions	Unit	Height	Separated tank	mm	1282(*3)		1591(*3)		
			Integrated tank		1980(*3)		2289(*3)		
		Width			mm	600			
		Depth (with connections)			mm	648 (675)			
	Pack- ing	Height			mm	1444		1753	
		Width			mm	644			
		Depth			mm	722			
		Volume			m³	0.67		0.82	
Weight	Net			kg	72		87		
	Gros			kg	82		98		
Packing Material					Carton - Wood - Plastic - Polypropylene bands				
Tank	Net water volume			L	190		250		
	Material			AISI 444					
	Maximum tank working temperature			°C	75				
	Max. tank water working pressure			bar	10				
	Max. heating coil water working temperature			bar	75				
	Max. heating coil water working pressure			bar	3				
Tank insulation	Material			NEOPOR					
	Thickness		mm	50					
Heat exchanger	Quantity			1					
	Coil surface area		m²	1.6					
Tank's heater	Quantity			1					
	Heater rating		kW	2.7					
	Type			Immersion heater type					
Piping connections	Heating coil inlet connection		in.	Flexible pipe (G 1" male)					
	Heating coil outlet connection		in.	Flexible pipe (G 1" male)					
	DHW inlet connection		in.	Flexible pipe (G 3/4" male)					
	DHW outlet connection		in.	Flexible pipe (G 3/4" male)					
Mechanical thermostat (adjustable and security)				Yes (adjustable 35~85°C; cut-out: 90°C)					
Protection				Anode protection					
Wired remote controller				PC-ARFHE					

Monobloc system - YUTAKI M

Model				RASM-3VNE	RASM-4(V)NE	RASM-5(V)NE	RASM-6(V)NE	
Compressor	Model	1~ 230V 50Hz	-	2YC45KXD	E402HHD-36A2			
		3N~ 400V 50Hz	-	-	E402HHD-36D2			
	Type		-	Scroll DC Inverter driven				
	Pressure resistance	Discharge	MPa	4.15				
		Suction	MPa	2.21				
	Motor type	Starting method	-	Direct current control				
		Poles	-	4				
		Insulation class	-	E				
	Oil type		-	FVC50K	FVC68D			
	Oil quantity		L	0.80	0.90			
Air heat exchanger	Type		-	Multi-pass cross-finned tube				
	Pipe material		-	Copper				
	Outer diameter		mm	8	7			
	Rows		-	2				
	Number of tubes in the heat exchanger		-	44	132			
	Fin material		-	Aluminium				
	Fin pitch		mm	1.4				
	Maximum operating pressure		MPa	4.15				
	Total front area		m ²	0.47	1.35			
	Number of heat exchanger per unit		-	1				
	Fan	Fan type		-	Direct drive propeller fan			
		Fans per unit		-	1	2		
		Outer diameter		mm	449	544		
Revolutions		rpm	850	459/376	516/422	573/469		
Nominal air flow		m ³ /min	45	80	90	100		
Motor	Type		-	Drip-proof type enclosure				
	Starting method		-	Direct current control				
	Power		W	40	100 + 100			
	Quantity		-	1	2			
	Insulation class		-	E				
Water heat exchanger	Type		-	Brazed plate				
	Material		-	Stainless steel				
	Transfer fluids		-	R410A - H ₂ O				
	Quantity		-	1				
	Internal refrigerant volume		L	0.81	1.55	2.09	2.09	
	Internal water volume		L	0.84	1.64	2.18	2.18	
	Insulation material		-	NBR + PVC				
Water pump	Model		-	Yonos PARA RS15/7.0	Yonos PARA RS15/7.5			
	Type		-	Inverter				
	Control		-	PWM				
	Power supply		-	1~ 230V 50Hz				
	Maximum lift pressure		kPa	7.2	7.6			
	Maximum water flow		m ³ /h	3.3	4.0			
	Maximum power input		W	45	75			
	Piping	Water inlet	(in)	G 1"				
		Water outlet	(in)	G 1"				
Inlet/outlet distance		mm	130					

Model			RASM-3VNE	RASM-4(V)NE	RASM-5(V)NE	RASM-6(V)NE
Expansion vessel	Material	-	Stainless steel (Immersion heating element)			
	Internal water volume	L	6.0			
	Working pressure	MPa	0.3			
	Pre-loading pressure (Air side)	MPa	0.1			
Water strainer	Type	-	Isolated water strainer (Filter ball)			
	Material	-	Brass			
	Piping connection	(in)	1", DN25			
	Mesh (hole size)	mm	0.7			
	Automatic filter cleaning	-	Yes			
Safety valve		-	Yes (3 bar)			
Shut-off valve		-	Yes (2 factory-supplied valves)			
Air purger		-	Yes			
Manometer		-	No			
Unit controller		-	No, Supplied as accessory			

3.5 ELECTRICAL DATA

3.5.1 Considerations

Key words:

- U: Power supply.
- PH: Phase.
- IPT: Total input power.
- STC: Starting current: Less than maximum current.
- RNC: Running current.
- MC: Maximum current.

NOTE

- Heating conditions: Inlet/outlet water temperature: 30/35 °C ; Outdoor ambient temperature (DB/WB): 7/6 °C
- The compressor data shown in the tables below are based on a combined capacity of 100% of the power supplied.
- The "Maximum current" shown in the above table is the maximum total unit running current at the following conditions:
 - Supply voltage: 90% of the rated voltage.
 - Unit capacity: 100% at maximum operating conditions.
- The power supply cables must be sized to cover this maximum current value.
- Specifications in these tables are subject to change without notice in order that HITACHI may bring the latest innovations to their customers.
- **Please refer to the general information, cautions and notes regarding protective devices (CB, ELB) throughout the "7. Electrical and control settings" chapter.**

3.5.2 Split system - Outdoor unit

RAS-(2-10)WH(V)NP(E)

Model	Power supply	Applicable voltage		Compressor and fan motors				MC (A)	Max. IPT (kW)
		U max. (V)	U min. (V)	PH	STC (A)	RNC (A)	IPT (KW)		
RAS-2WHVNP	1~ 230V 50Hz	253	207	1~	-	4.9	1.13	13.8	3.14
RAS-2.5WHVNP						5.7	1.30	15.8	3.59
RAS-3WHVNP						8.3	1.88	17.8	4.05
RAS-4WHVNPE						8.9	2.02	30.5	6.93
RAS-5WHVNPE						12.8	2.91	30.5	6.93
RAS-6WHVNPE						15.9	3.61	30.5	6.93
RAS-4WHNPE	3N~ 400V 50Hz	440	360	3N~		3.2	2.02	14.0	8.70
RAS-5WHNPE						4.7	2.91	14.0	8.70
RAS-6WHNPE						5.8	3.61	16.0	9.95
RAS-8WHNPE						8.1	5.06	24.0	15.00
RAS-10WHNPE						11.2	7.03	24.0	15.00

3.5.3 Split system - Indoor unit

3.5.3.1 YUTAKI S

RWM-(2.0-10.0)NE

Model	Power supply	Applicable voltage		Operation mode	RNC (A)	IPT (kW)	MC (A)	Max. IPT (kW)
		U max. (V)	U min. (V)					
RWM-(2.0-3.0)NE	1~ 230V 50Hz	253	207	Without electric heater	0.2	0.05	0.2	0.05
				With electric heater	13.2	3.05	15.3	3.20
				With DHW tank heater	13.2	3.05	15.3	3.05
				With electric and DHW tank heaters	26.3	6.05	30.3	6.20
RWM-(4.0-6.0)NE	1~ 230V 50Hz	253	207	Without electric heater	0.3	0.08	0.3	0.08
				With electric heater	26.4	6.08	30.5	6.38
				With DHW tank heater	13.4	3.08	15.4	3.08
				With electric and DHW tank heaters	39.5	9.08	45.5	9.38
	3N~ 400V 50Hz	440	360	Without electric heater	0.1	0.08	0.3	0.08
				With electric heater	8.8	6.08	10.3	6.38
				With DHW tank heater	4.4	3.08	15.4	3.08
				With electric and DHW tank heaters	13.1	9.08	25.4	9.38
RWM-(8.0/10.0)NE	3N~ 400V 50Hz	440	360	Without electric heater	0.1	0.08	0.3	0.08
				With electric heater	13.1	9.08	15.3	9.53
				With DHW tank heater	4.4	3.08	15.4	3.08
				With electric and DHW tank heaters	17.4	12.08	30.4	12.53

i NOTE

The data corresponding to DHW tank heater is calculated in combination with the domestic hot water tank accessory "DHWT-(200/300)S-3.0H2E".

3.5.3.2 YUTAKI S COMBI

RWD-(2.0-6.0)NW(S)E-(200/260)S(-K)

Model	Power supply	Applicable voltage		Operation mode	RNC (A)	IPT (kW)	MC (A)	Max. IPT (kW)
		U max. (V)	U min. (V)					
RWD-(2.0-3.0)NW(S)E-(200/260)S(-K)	1~ 230V 50Hz	253	207	Without electric heater	0.2	0.05	0.2	0.05
				With electric heater	13.2	3.05	15.3	3.20
				With DHW tank heater	11.9	2.75	14.5	3.05
				With electric and DHW tank heaters	25.0	5.75	29.6	6.20
RWD-(4.0-6.0)NW(S)E-(200/260)S	1~ 230V 50Hz	253	207	Without electric heater	0.3	0.08	0.3	0.08
				With electric heater	26.4	6.08	30.5	6.38
				With DHW tank heater	12.1	2.78	14.7	3.08
				With electric and DHW tank heaters	38.2	8.78	44.8	9.38
	3N~ 400V 50Hz	440	360	Without electric heater	0.1	0.08	0.3	0.08
				With electric heater	8.8	6.08	10.3	6.38
				With DHW tank heater	4.0	2.78	14.7	3.08
				With electric and DHW tank heaters	12.7	8.78	24.7	9.38

3.5.3.3 YUTAKI S80

◆ Version for indoor unit alone

RWH-(4.0-6.0)(V)NFE

Model	Power supply	Applicable voltage		RNC (A)	IPT (kW)	MC (A)	Max. IPT (kW)
		U max. (V)	U min. (V)				
RWH-4.0VNFE	1~ 230V 50Hz	253	207	12.1	2.73	24.3	5.49
RWH-5.0VNFE				12.3	2.78	28.3	6.39
RWH-6.0VNFE				14.3	3.23	31.3	7.06
RWH-4.0NFE	3N~ 400V 50Hz	440	360	5.6	2.73	15.3	7.35
RWH-5.0NFE				5.7	2.78	15.3	7.35
RWH-6.0NFE				6.7	3.23	15.3	7.35

◆ Version for combination with DHW tank

RWH-(4.0-6.0)(V)NFWE + DHWS(200/260)S-2.7H2E

Model	Power supply	Applicable voltage		Operation mode	RNC (A)	IPT (kW)	MC (A)	Max. IPT (kW)
		U max. (V)	U min. (V)					
RWH-4.0VNFWE	1~ 230V 50Hz	253	207	Without DHW tank heater	12.1	2.73	24.3	5.49
				With DHW tank heater	23.8	5.43	38.7	8.49
RWH-5.0VNFWE				Without DHW tank heater	12.3	2.78	28.3	6.39
				With DHW tank heater	24.1	5.48	42.7	9.39
RWH-6.0VNFWE				Without DHW tank heater	14.3	3.23	31.3	7.06
				With DHW tank heater	26.1	5.93	45.7	10.06
RWH-4.0NFWE	3N~ 400V 50Hz	440	360	Without DHW tank heater	5.6	2.73	15.3	7.35
				With DHW tank heater	11.2	5.43	29.7	10.35
RWH-5.0NFWE				Without DHW tank heater	5.7	2.78	15.3	7.35
				With DHW tank heater	11.3	5.48	29.7	10.35
RWH-6.0NFWE				Without DHW tank heater	6.7	3.23	15.3	7.35
				With DHW tank heater	12.2	5.93	29.7	10.35

i NOTE

The data corresponding to DHW tank heater is calculated in combination with the YUTAKI S80 domestic hot water tank accessory "DHWS(200/260)S-2.7H2E".

◆ Domestic hot water tank

DHWS(200/260)S-2.7H2E

Model	Power supply	Applicable voltage		RNC (A)	IPT (kW)	MC (A)	Max. IPT (kW)
		U max. (V)	U min. (V)				
DHWS200S-2.7H2E	1~ 230V 50Hz	253	207	11.7	2.70	14.3	3.00
DHWS260S-2.7H2E				11.7	2.70	14.3	3.00

3.5.4 Monobloc system - YUTAKI M

RASM-(3-6)(V)NE

Model	Power supply	Applicable voltage		Operation mode	Compressor and fan motors				MC (A)	Max. IPT (kW)
		U max. (V)	U min. (V)		PH	STC (A)	RNC (A)	IPT (KW)		
RASM-3VNE	1~ 230V 50Hz	253	207	Without DHW tank heater	1~	-	8.5	1.93	18.0	4.09
				With DHW tank heater			21.5	4.93	33.0	7.56
RASM-4VNE				Without DHW tank heater			9.2	2.10	30.8	7.01
				With DHW tank heater			22.3	5.10	45.8	10.47
RASM-5VNE				Without DHW tank heater			13.1	2.98	30.8	7.01
				With DHW tank heater			26.2	5.98	45.8	10.47
RASM-6VNE				Without DHW tank heater			16.2	3.69	30.8	7.01
				With DHW tank heater			29.3	6.69	45.8	10.47
RASM-4NE	3N~ 400V 50Hz	440	360	Without DHW tank heater	3N~		3.4	2.10	14.3	8.77
				With DHW tank heater			12.2	5.10	29.3	12.24
RASM-5NE				Without DHW tank heater			4.9	2.98	14.3	8.77
				With DHW tank heater			14.3	5.98	29.3	12.24
RASM-6NE				Without DHW tank heater			7.2	2.98	24.3	10.02
				With DHW tank heater			17.5	5.98	39.4	13.49

i NOTE

The data corresponding to DHW tank heater is calculated in combination with the domestic hot water tank accessory "DHWT-(200/300)S-3.0H2E".

4 WORKING RANGE

4.1 POWER SUPPLY WORKING RANGE

◆ Nominal power supply

- Single phase: 1~ 230V 50Hz
- Three phase: 3N~ 400V 50Hz

◆ Operating voltage

Between 90 and 110% of the nominal voltage.

◆ Voltage imbalance for nominal power supply 3N~ 400V 50Hz

Up to 3% of each phase, measured at the main terminal of the outdoor unit.

◆ Starting voltage

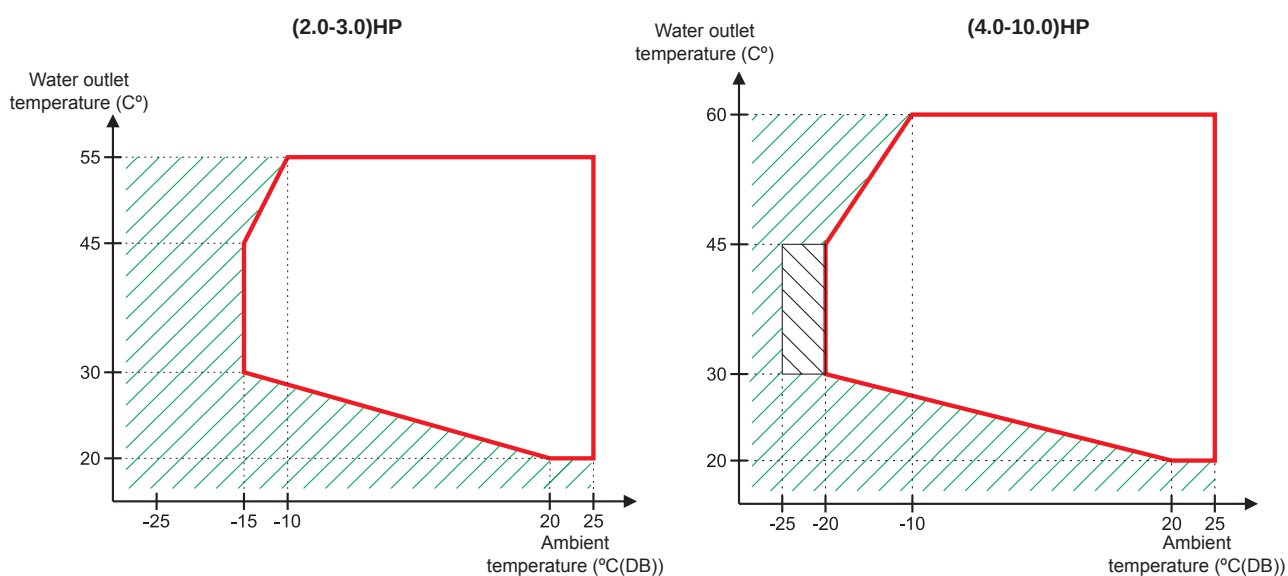
Always higher than 85% of the nominal voltage.

4.2 TEMPERATURE WORKING RANGE

MODEL		2.0HP	2.5HP	3.0HP	4.0HP	5.0HP	6.0HP	8.0HP	10.0HP
Water temperature	°C	Refer to the graphics for each case							
Indoor ambient temperature		5~30							

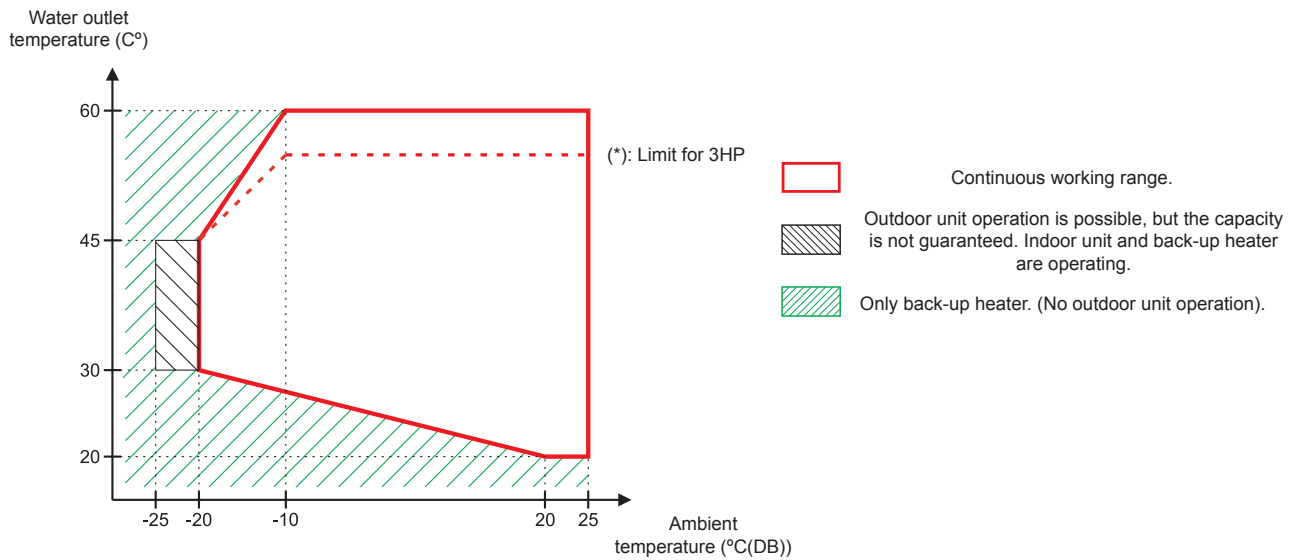
4.2.1 Space heating

◆ YUTAKI (S / S COMBI)

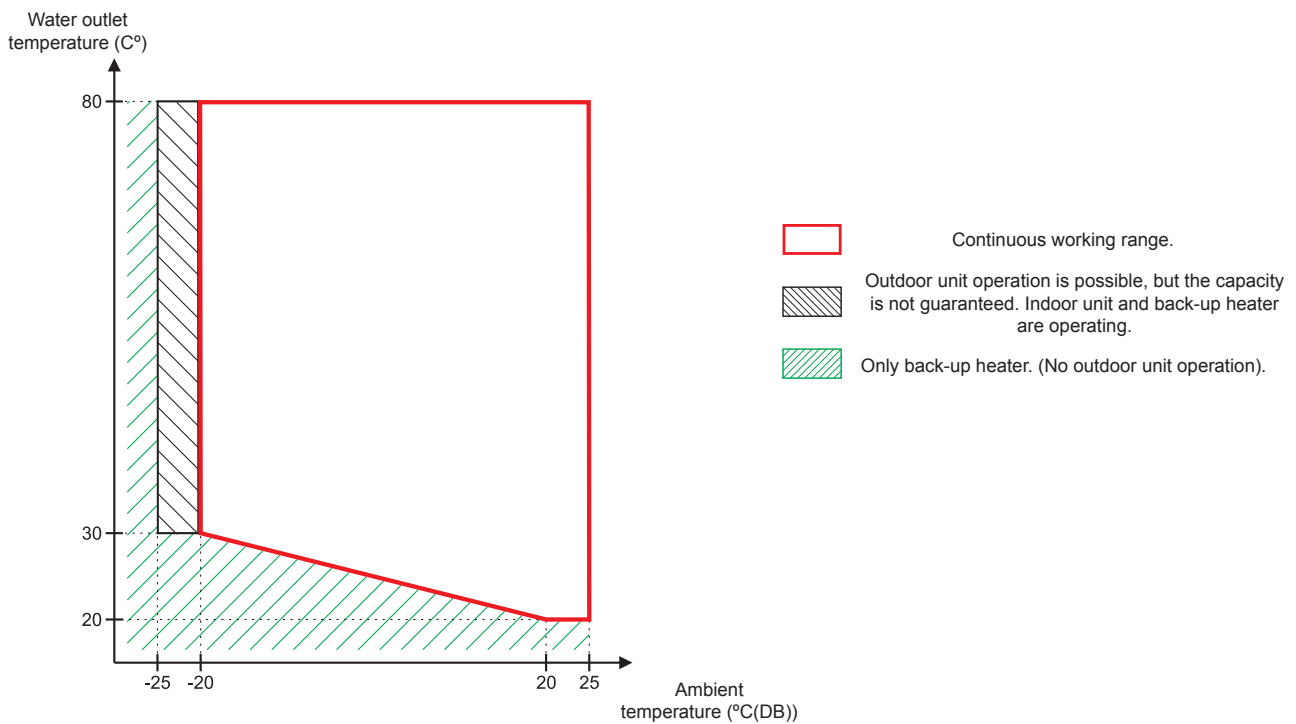


- Continuous working range.
- Outdoor unit operation is possible, but the capacity is not guaranteed.
Indoor unit and back-up heater are operating.
- Only back-up heater. (No outdoor unit operation).

◆ YUTAKI M

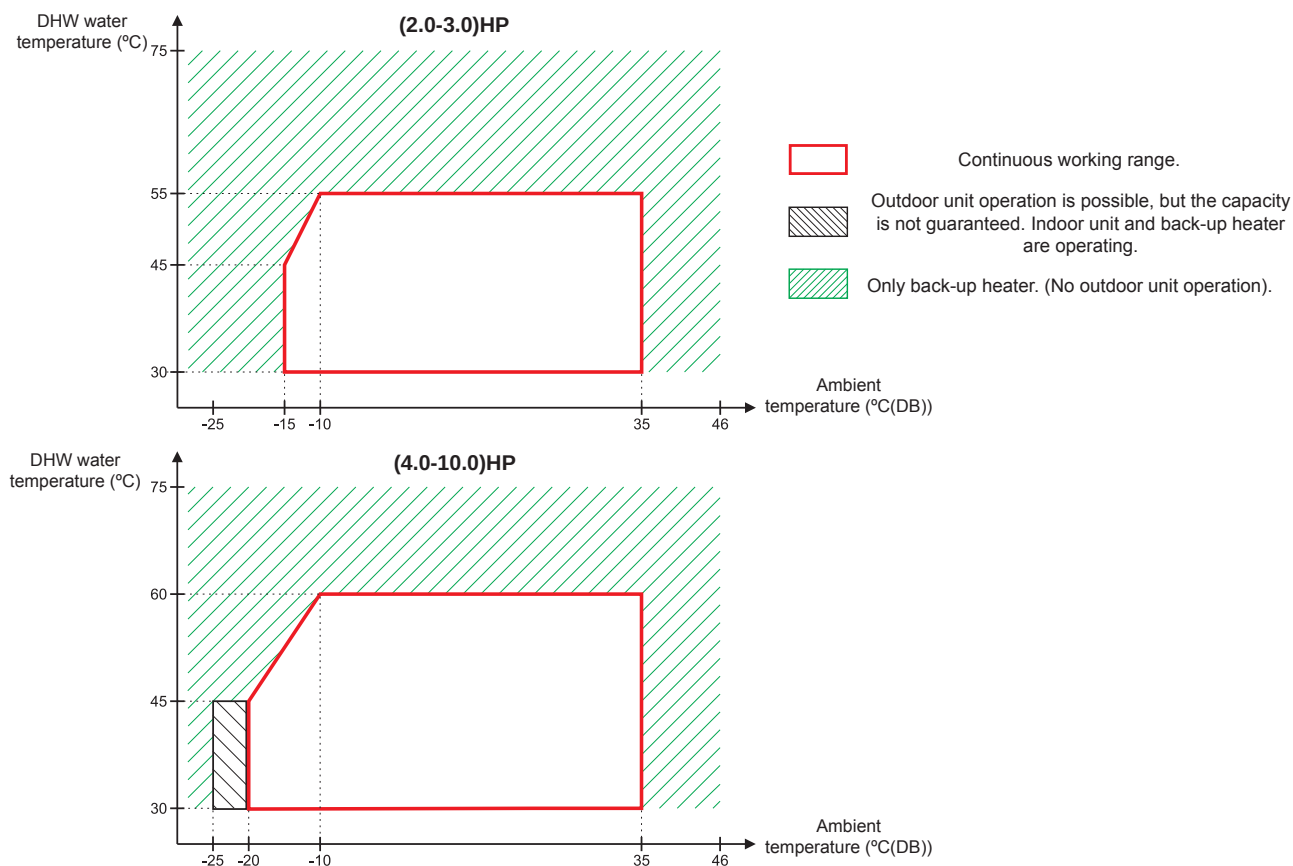


◆ YUTAKI S80



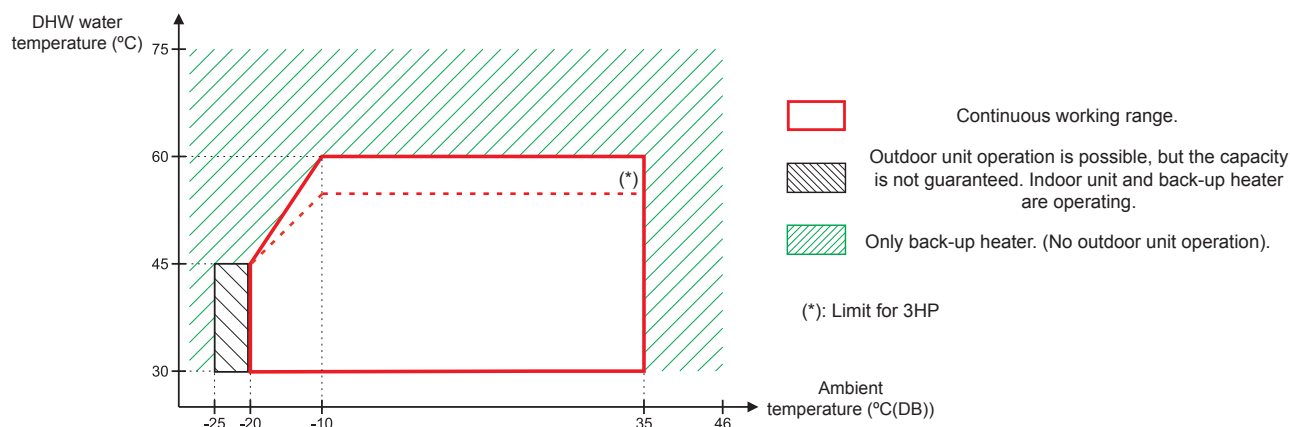
4.2.2 DHW

◆ For YUTAKI (S /S COMBI)

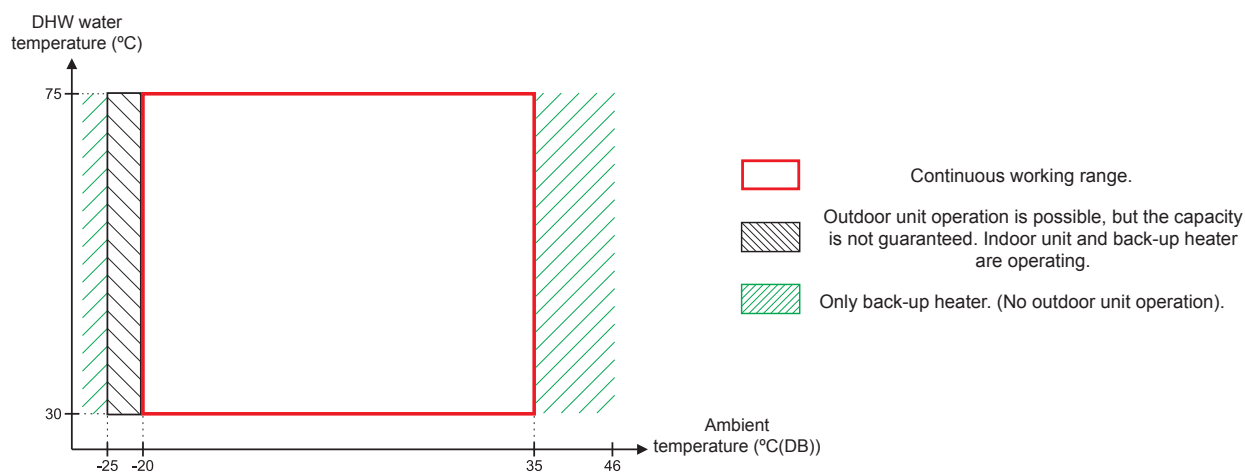
**i** NOTE

The heat pump can produce domestic hot water at 57°C as a maximum (53°C for 2.0/2.5/3.0HP) by itself, but HITACHI recommends to set the temperature of the tank by heat pump only up to 55°C (50°C for 2.0/2.5/3.0HP) and keep Thpoff default value. In case of higher setting, the tank's heater must be used to reach the setting temperature (enabled by optional function).

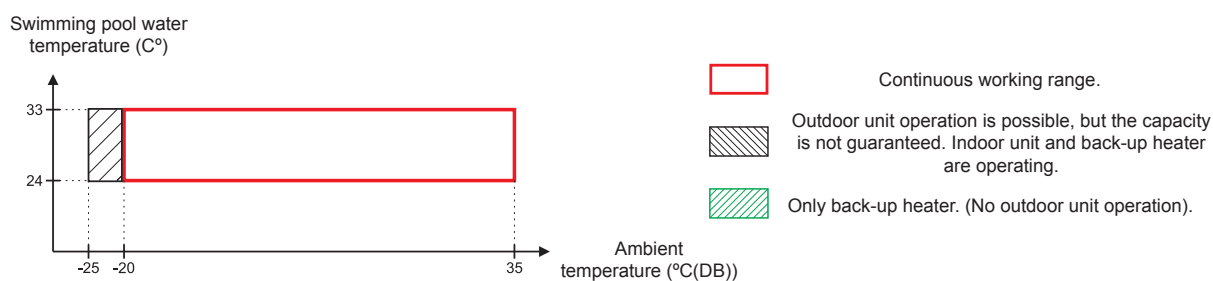
◆ For YUTAKI M



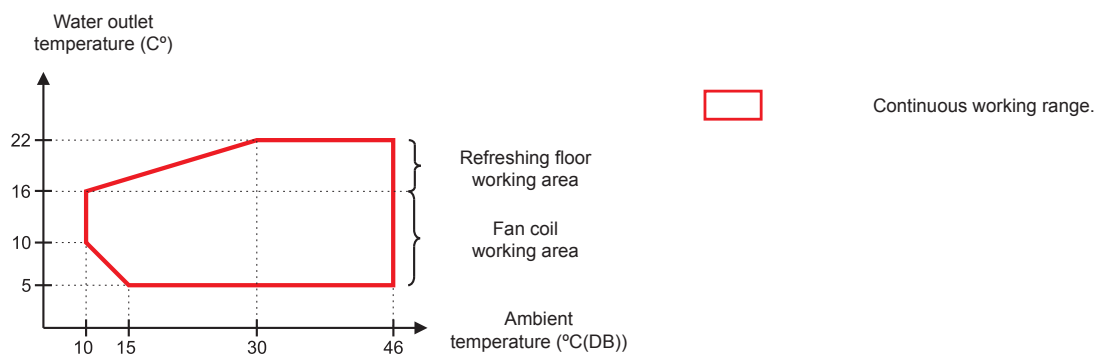
◆ For YUTAKI S80



4.2.3 Swimming pool heating



4.2.4 Space cooling (Necessary cooling kit)



4.3 HYDRAULIC WORKING RANGE

4.3.1 Hydraulic data

◆ YUTAKI S

MODEL		2.0 HP	2.5 HP	3.0 HP	4.0 HP	5.0 HP	6.0 HP	8.0 HP	10.0 HP
Minimum water flow rate (*1)	m³/h	0.5	0.6	0.6	1.0	1.1	1.2	2.0	2.2
Maximum water flow rate (*1)	m³/h	1.9	2.0	2.1	2.9	3.0	3.0	4.5	4.6
Minimum installation water volume (*2)	l	28	28	28	38	46	55	76	79
Minimum allowable water pressure	MPa	0.1							
Maximum allowable water pressure	MPa	0.3							

◆ YUTAKI S COMBI

MODEL		2.0 HP	2.5 HP	3.0 HP	4.0 HP	5.0 HP	6.0 HP
Minimum water flow rate (*1)	m³/h	0.5	0.6	0.6	1.0	1.1	1.2
Maximum water flow rate (*1)	m³/h	1.8	1.9	1.9	2.7	2.8	2.8
Minimum installation water volume (*2)	l	28	28	28	38	46	55
Minimum allowable water pressure	MPa	0.1					
Maximum allowable water pressure	MPa	0.3					

◆ YUTAKI S80

MODEL		4.0 HP		5.0 HP		6.0 HP	
		Version for indoor unit alone	Version for combination with DHW tank	Version for indoor unit alone	Version for combination with DHW tank	Version for indoor unit alone	Version for combination with DHW tank
Minimum water flow rate (*1)	m³/h	1.0		1.1		1.2	
Maximum water flow rate (*1)	m³/h	2.8	2.5	3.2	2.7	3.2	2.7
Minimum installation water volume (*2)	l	40		50		50	
Minimum allowable water pressure	MPa	0.1					
Maximum allowable water pressure	MPa	0.3					

◆ YUTAKI M

MODEL		3.0 HP	4.0 HP	5.0 HP	6.0 HP
Minimum water flow rate (*1)	m³/h	0.6	1.0	1.1	1.2
Maximum water flow rate (*1)	m³/h	2.1	2.8	3.0	3.0
Minimum installation water volume (*2)	l	28	38	46	55
Minimum allowable water pressure	MPa	0.1			
Maximum allowable water pressure	MPa	0.3			

NOTE

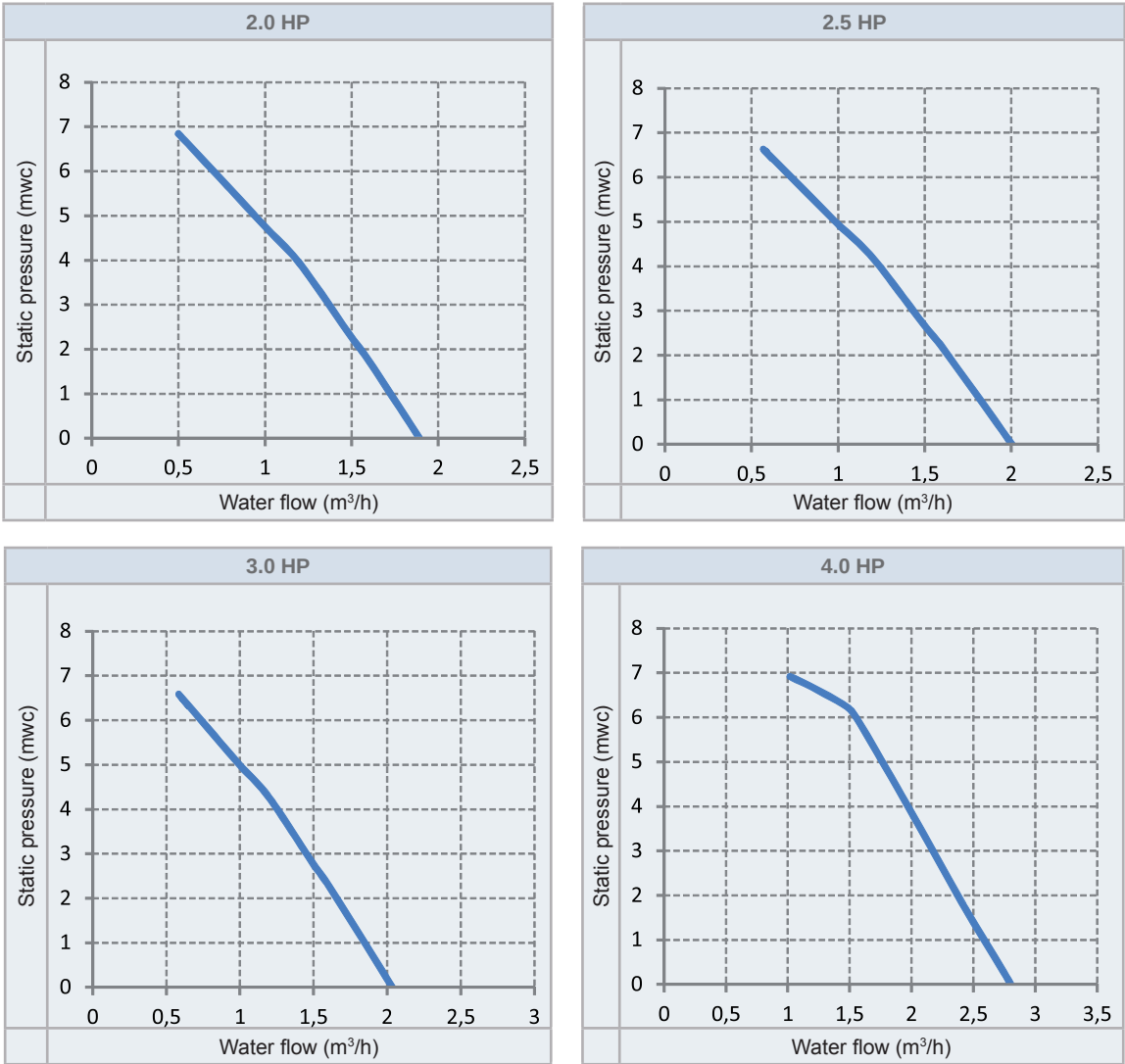
- (*1): Values calculated based on the following conditions:
 - Water inlet/outlet temperature: 30/35 °C
 - Outdoor ambient temperature: (DB/WB): 7/6 °C
- (*2): Values calculated with an ON/OFF temperature differential value of 4 °C.

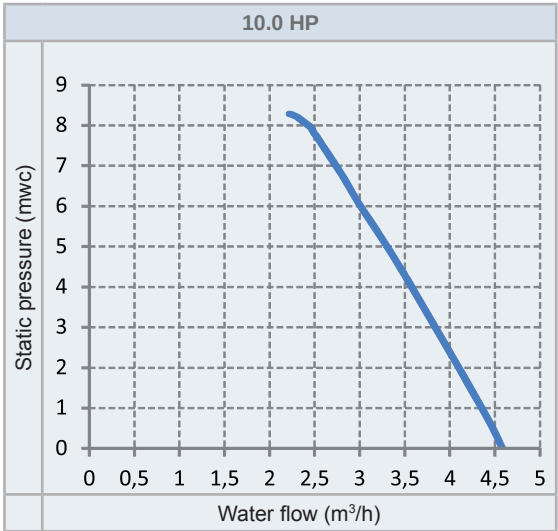
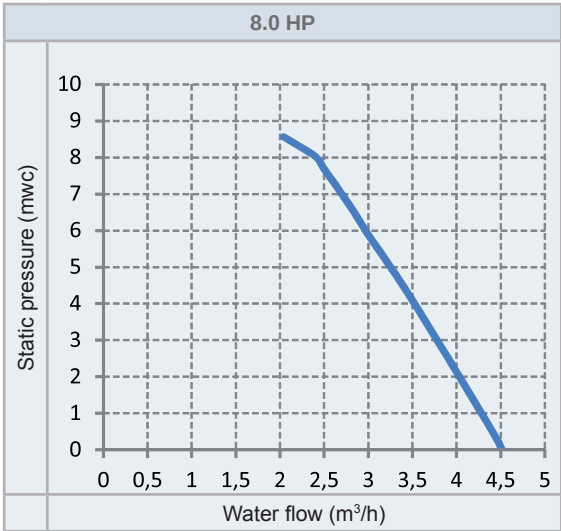
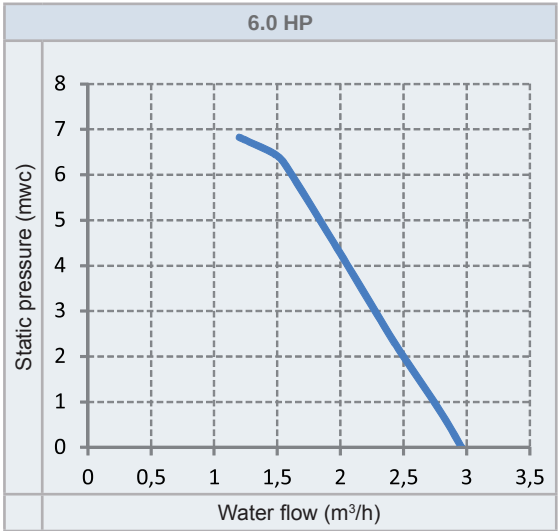
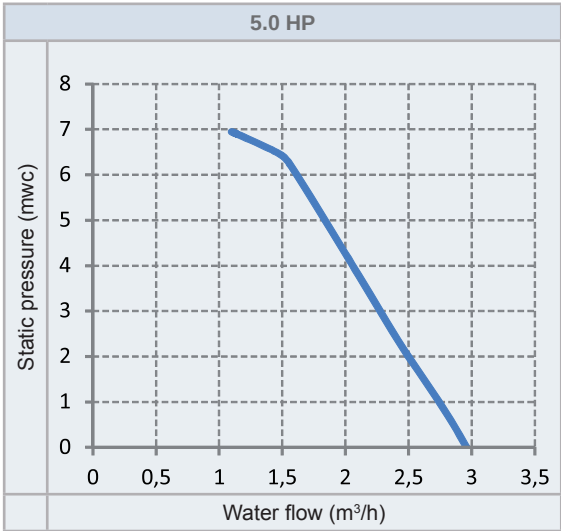
4.3.2 Pump performance curves

i NOTE

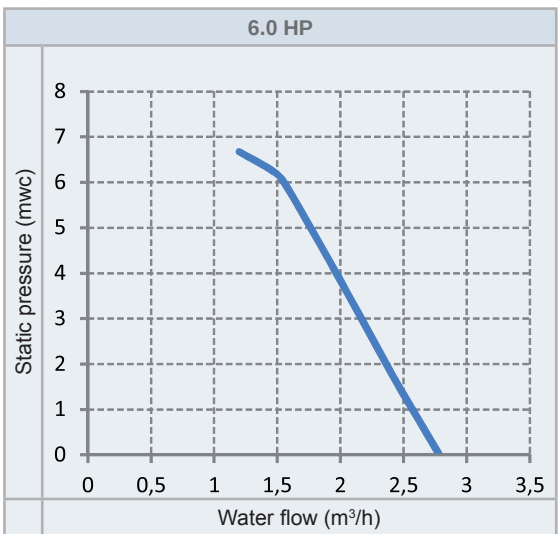
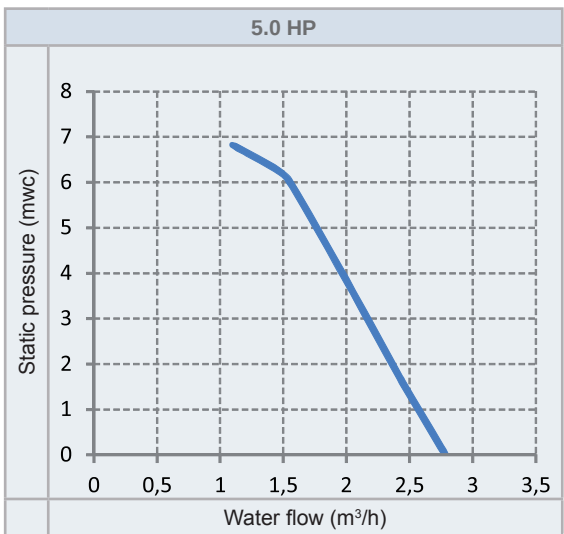
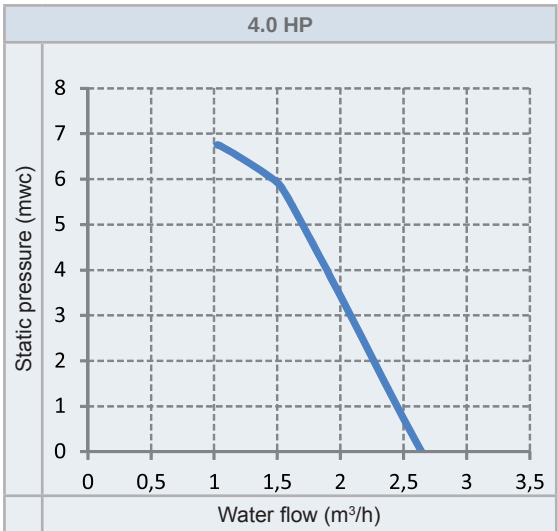
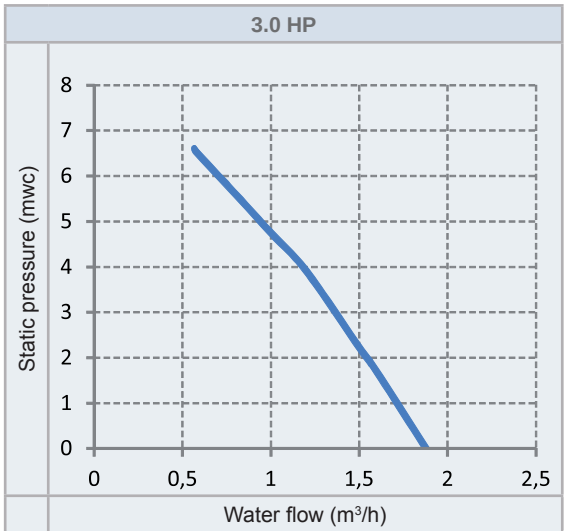
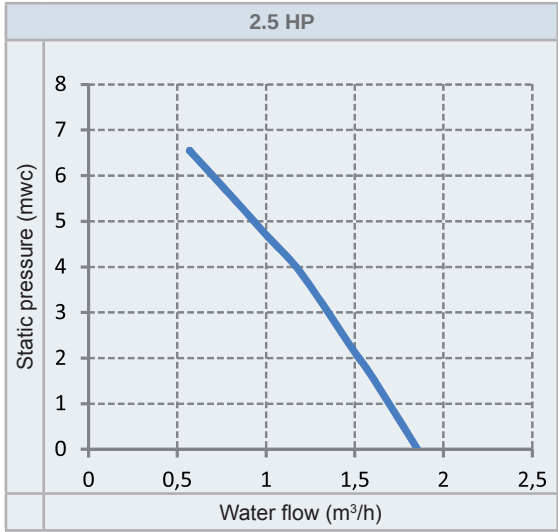
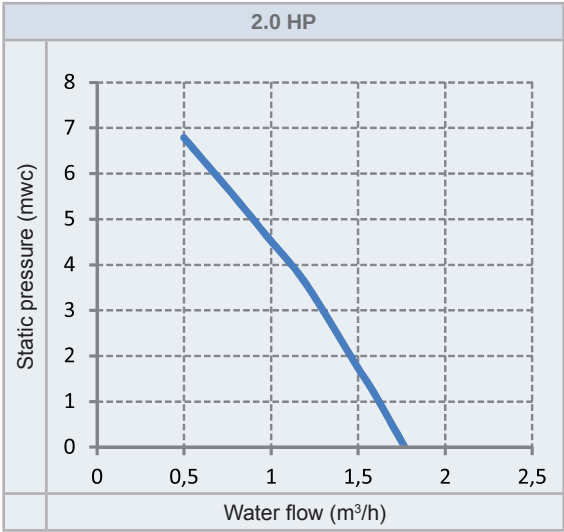
If a water flow rate is selected out of the working range of the unit, it can cause malfunction on the unit. Please, try to operate the pump within the minimum and maximum water flow of the indoor unit.

◆ YUTAKI S



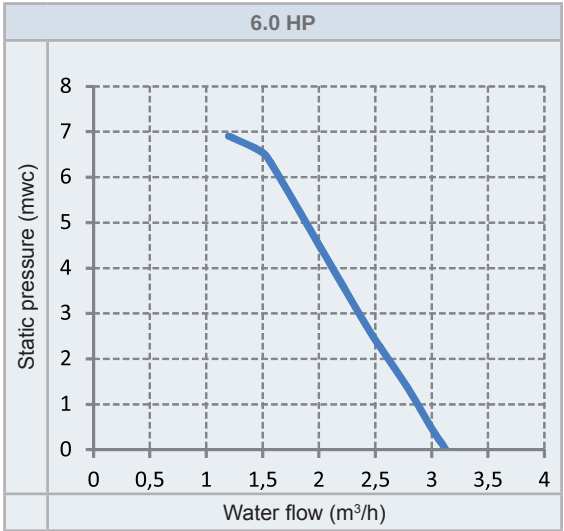
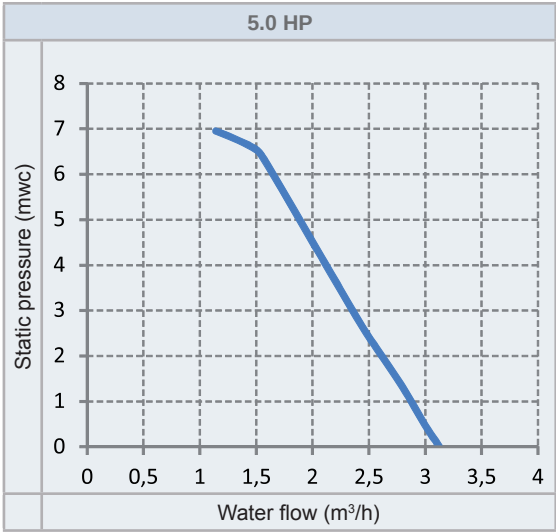
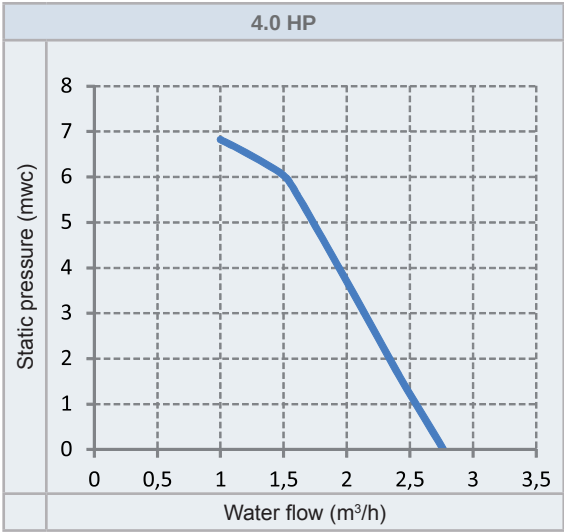


◆ YUTAKI S COMBI

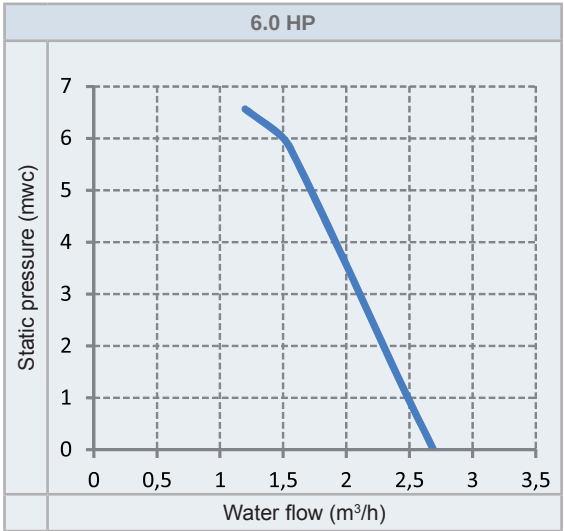
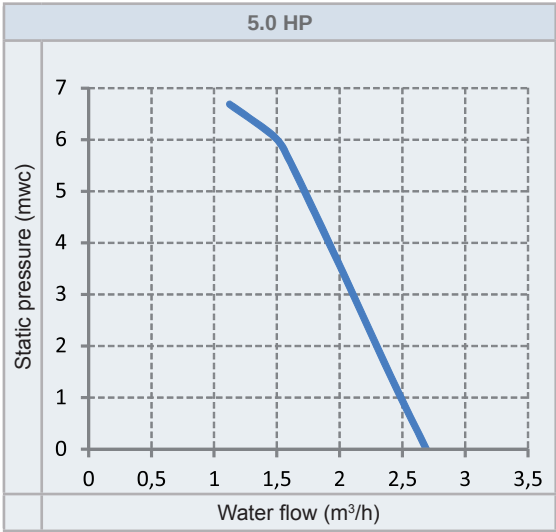
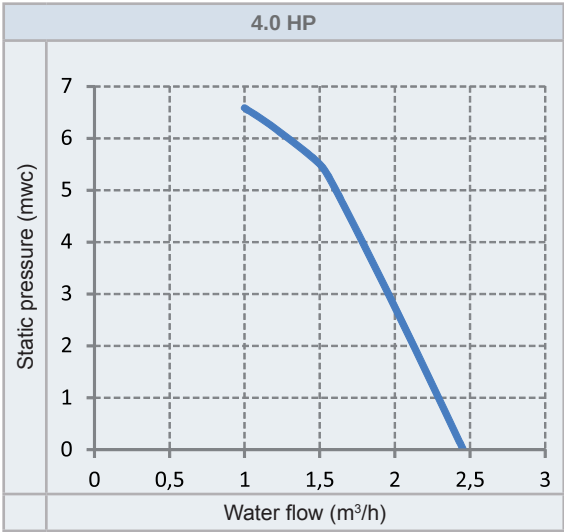


◆ YUTAKI S80

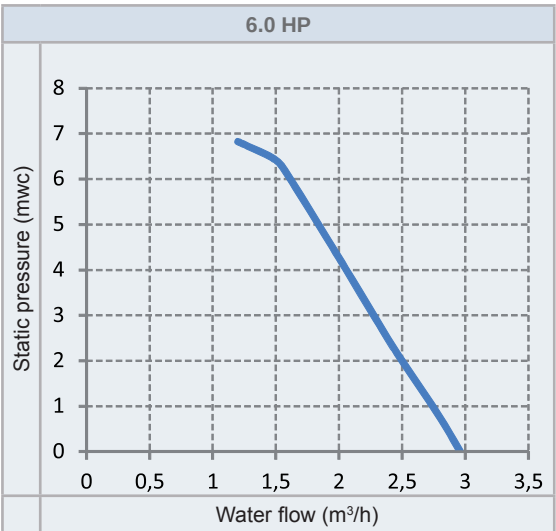
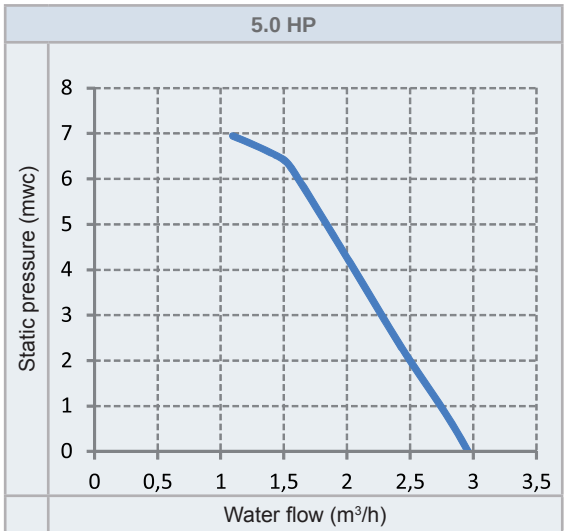
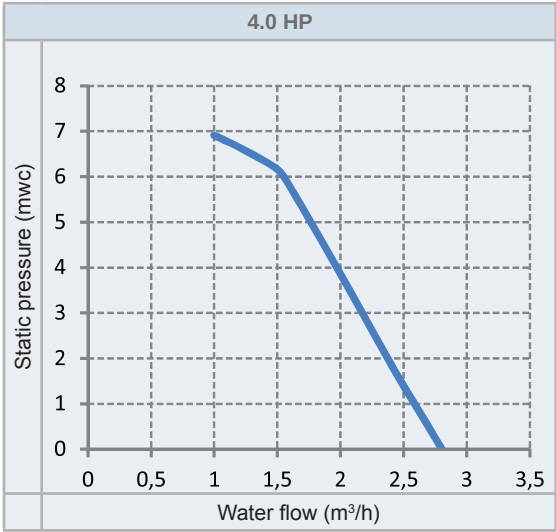
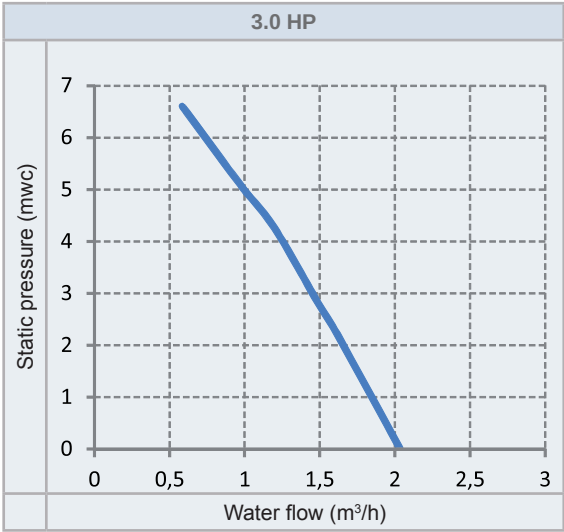
Version for indoor unit alone



Version for combination with DHW tank



◆ YUTAKI M

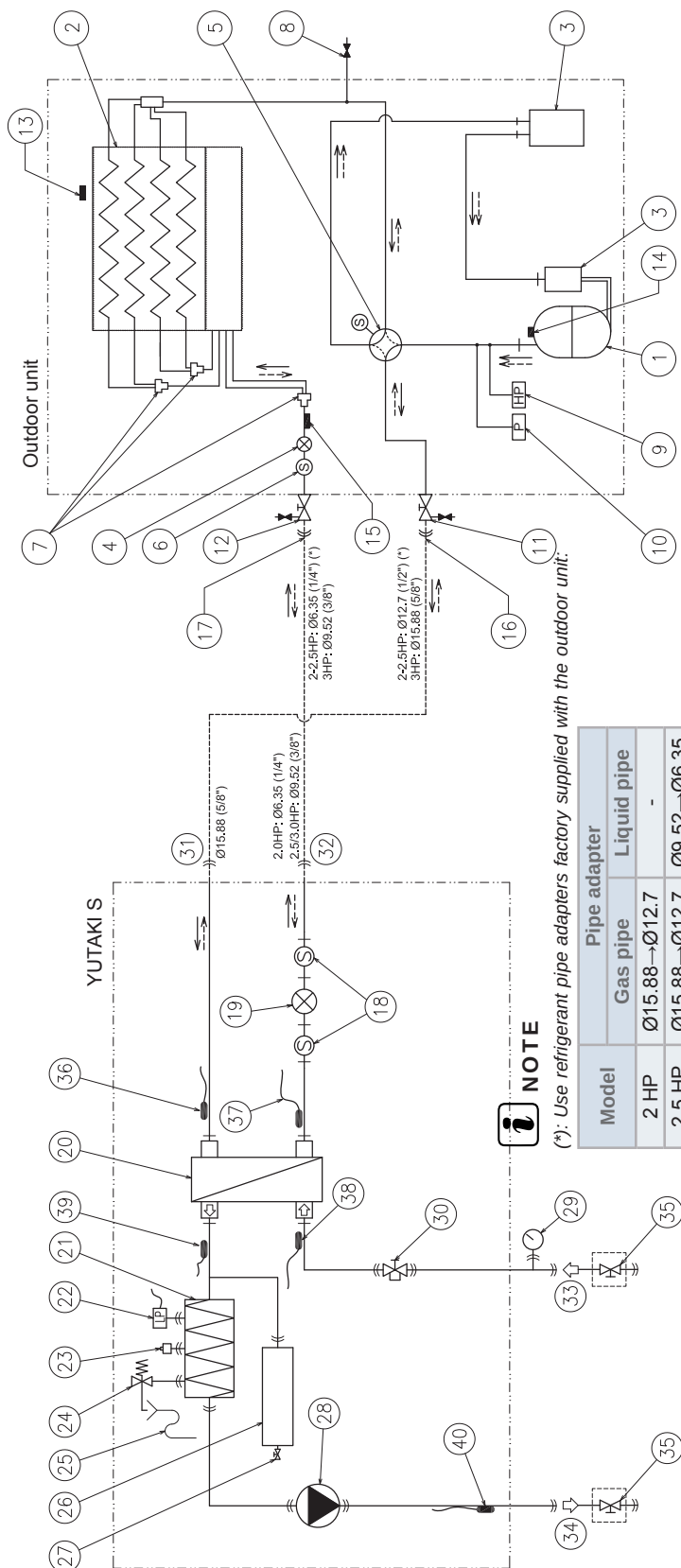


5 REFRIGERANT CYCLE AND HYDRAULIC CIRCUIT

5.1 REFRIGERANT CYCLE AND HYDRAULIC CIRCUIT FOR SPLIT SYSTEM

5.1.1 YUTAKI S

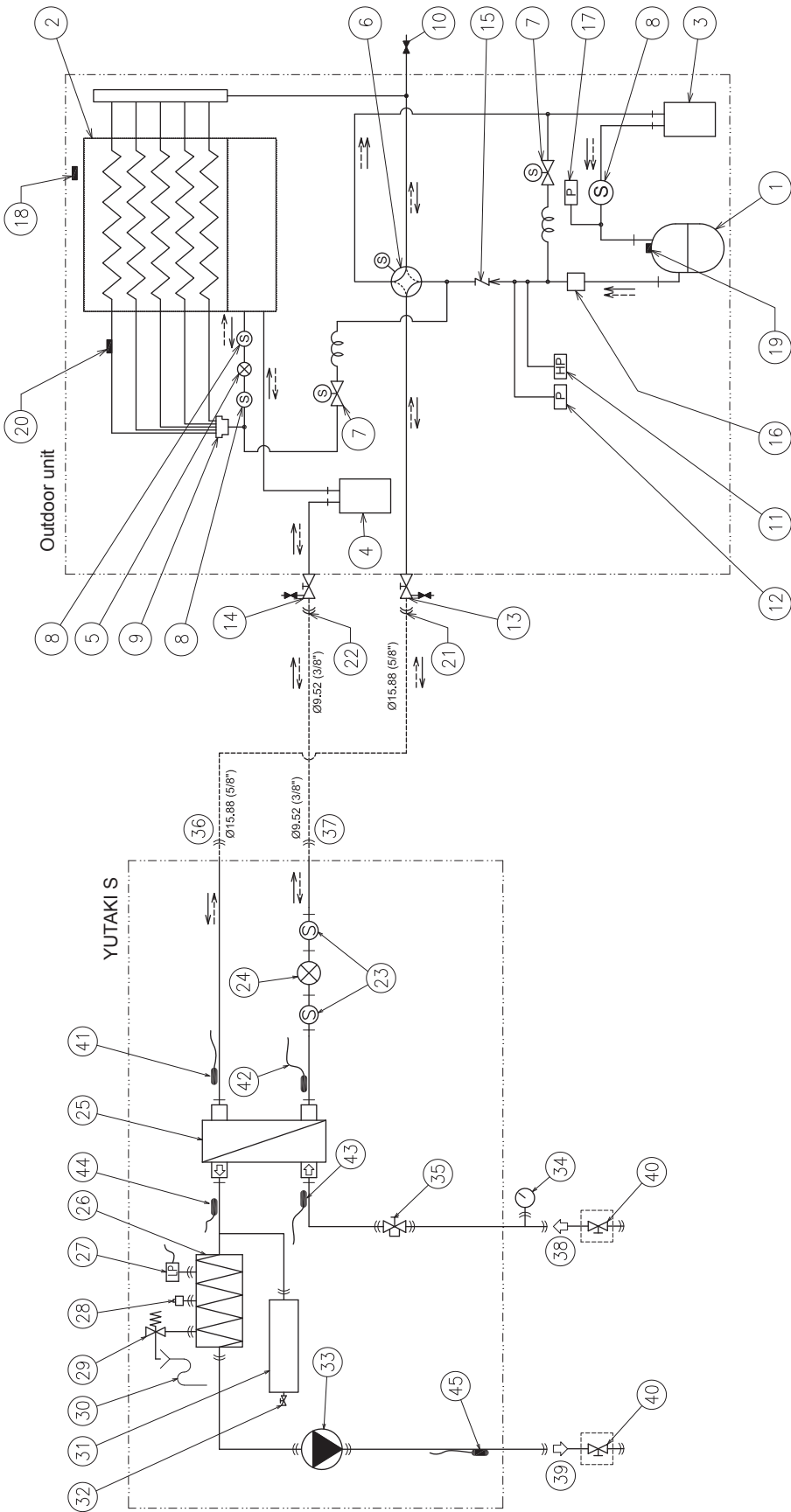
◆ RAS-(2-3)WHVNP + RWM-(2.0-3.0)NE



Heating refrigerant flow	Cooling refrigerant flow	Water flow (Heating/Cooling)	Field supplied piping line	Flare nut connection	Brazed connection	Refrigerant
→	←	⇄	---	→)	—+—	R410A

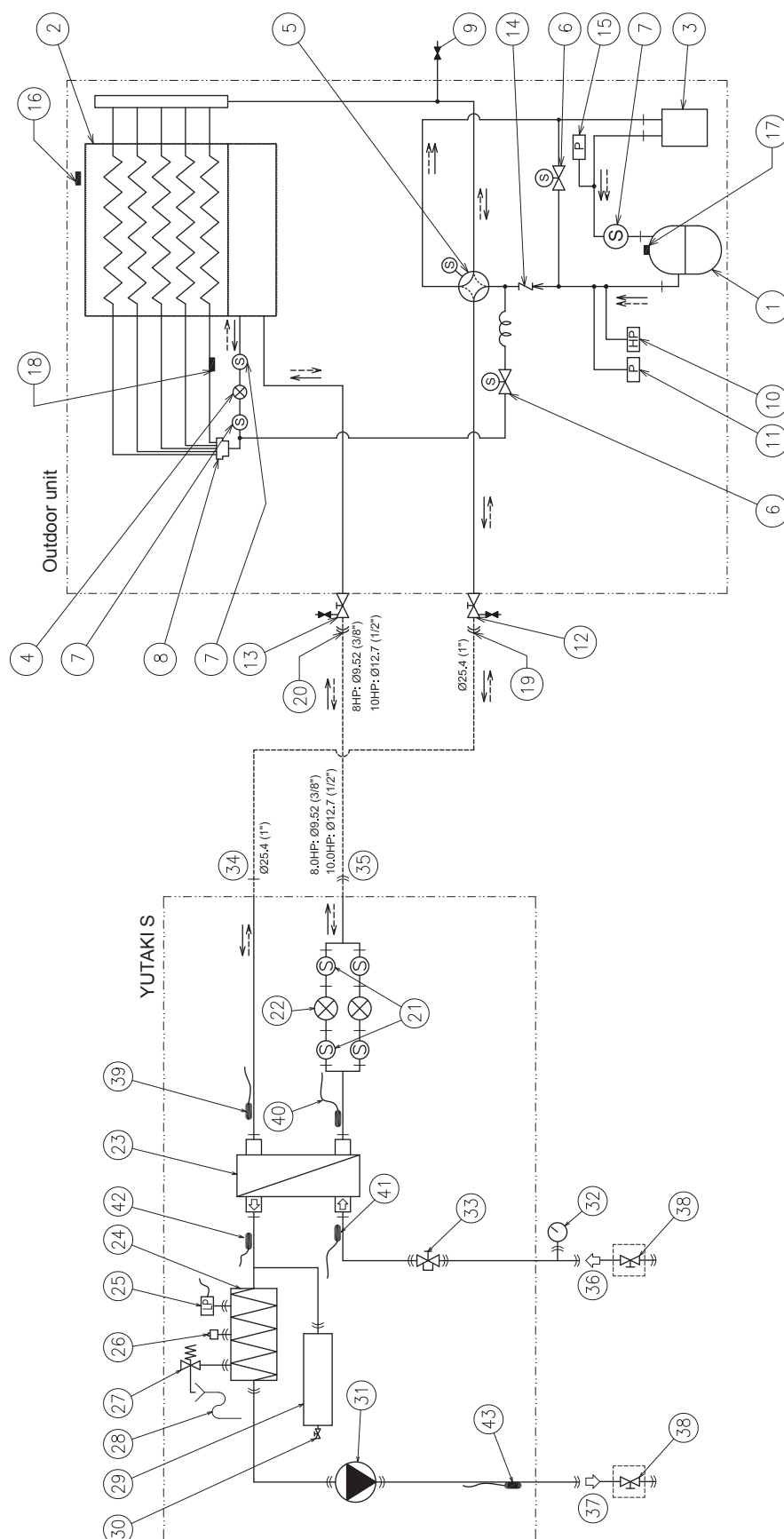
No.	Part name	No.	Part name	No.	Part name
1	Compressor	11	Stop valve for gas line	21	Water electric heater
2	Air side heat exchanger	12	Stop valve for liquid line	22	Low pressure switch
3	Accumulator	13	Ambient thermistor	23	Air purger
4	OU electronic expansion valve	14	Discharge gas thermistor	24	Safety valve
5	4-way valve	15	Pipe thermistor	25	Drain pipe
6	OU refrigerant strainer	16	OU refrigerant gas connection	26	Expansion vessel
7	Distributor	17	OU refrigerant liquid connection	27	Air valve for pressure regulation of expansion vessel
8	Refrigerant check joint	18	IU refrigerant strainer	28	Water pump
9	High pressure switch for protection	19	IU electronic expansion valve	29	Manometer
10	Pressure switch for control	20	Water side heat exchanger	30	Water strainer
31	IU refrigerant gas connection				
32	IU refrigerant liquid connection				
33	Water inlet connection				
34	Water outlet connection				
35	Shut-off valve (Accessory)				
36	Gas pipe thermistor (Heating)				
37	Liquid pipe thermistor (Heating)				
38	Water inlet thermistor				
39	PHEX water outlet thermistor				
40	Water outlet thermistor				

◆ RAS-(4-6)WH(V)NPE + RWM-(4.0-6.0)NE



Heating refrigerant flow		Cooling refrigerant flow		Water flow (Heating/Cooling)		Field supplied piping line		Flare nut connection		Brazed connection		Refrigerant	
No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	Compressor	10	Refrigerant check joint	19	Discharge gas thermistor	28	Air purger	37	IU refrigerant liquid connection	37	IU refrigerant liquid connection		
2	Air side heat exchanger	11	High pressure switch for protection	20	Pipe thermistor	29	Safety valve	38	Water inlet connection	38	Water inlet connection		
3	Accumulator			21	OU refrigerant gas connection	30	Drain pipe	39	Water outlet connection	39	Water outlet connection		
4	Receiver	12	Sensor for refrigerant pressure	22	OU refrigerant liquid connection	31	Expansion vessel	40	Shut-off valve (Accessory)	40	Shut-off valve (Accessory)		
5	OU electronic expansion valve	13	Stop valve for gas line	23	IU refrigerant strainer	32	Air valve for pressure regulation of expansion vessel	41	Gas pipe thermistor (Heating)	41	Gas pipe thermistor (Heating)		
6	4-way valve	14	Stop valve for liquid line	24	IU electronic expansion valve	33	Water pump	42	Liquid pipe thermistor (Heating)	42	Liquid pipe thermistor (Heating)		
7	Solenoid gas for by-pass	15	Check valve	25	Water side heat exchanger	34	Manometer	43	Water inlet thermistor	43	Water inlet thermistor		
8	OU refrigerant strainer	16	Silencer	26	Water electric heater	35	Water strainer	44	PHEx water outlet thermistor	44	PHEx water outlet thermistor		
9	Distributor	17	Pressure switch for control	27	Low pressure switch	36	IU refrigerant gas connection	45	Water outlet thermistor	45	Water outlet thermistor		
		18	Ambient thermistor										

◆ RAS-(8/10)WHNPE + RWM-(8.0-10.0)NE

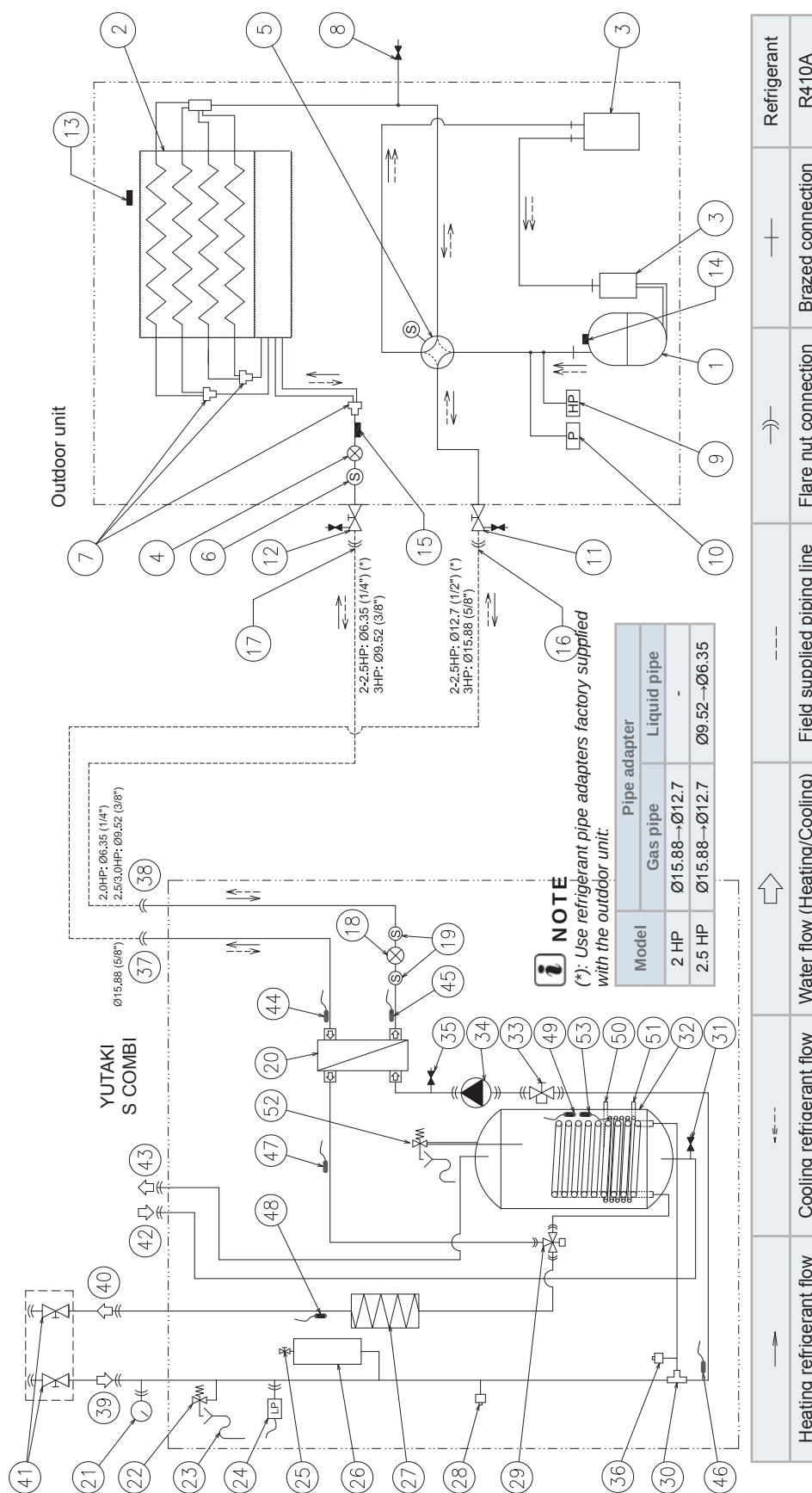


Heating refrigerant flow	Cooling refrigerant flow	Water flow (Heating/Cooling)	Field supplied piping line	Flare nut connection	Brazed connection	Refrigerant
→	←	↑	---	→	+	R410A

No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	Compressor	10	High pressure switch for protection	19	OU refrigerant gas connection	28	Drain pipe	38	Shut-off valve (Accessory)
2	Air side heat exchanger					29	Expansion vessel	39	Gas pipe thermistor (Heating)
3	Accumulator	11	Sensor for refrigerant pressure	20	OU refrigerant liquid connection	30	Expansion vessel drain port	40	Liquid pipe thermistor (Heating)
4	OU electronic expansion valve	12	Stop valve for gas line	21	IU refrigerant strainer	31	Water pump	41	Water inlet thermistor
5	4-way valve	13	Stop valve for liquid line	22	IU electronic expansion valve	32	Manometer	42	PHEX water outlet thermistor
6	Solenoid gas for by-pass	14	Check valve	23	Water side heat exchanger	33	Water strainer	43	Water outlet thermistor
7	OU refrigerant strainer	15	Pressure switch for control	24	Water electric heater	34	IU refrigerant gas connection		
8	Distributor	16	Ambient thermistor	25	Low pressure switch	35	IU refrigerant liquid connection		
9	Refrigerant check joint	17	Discharge gas thermistor	26	Air purger	36	Water inlet connection		
		18	Pipe thermistor	27	Safety valve	37	Water outlet connection		

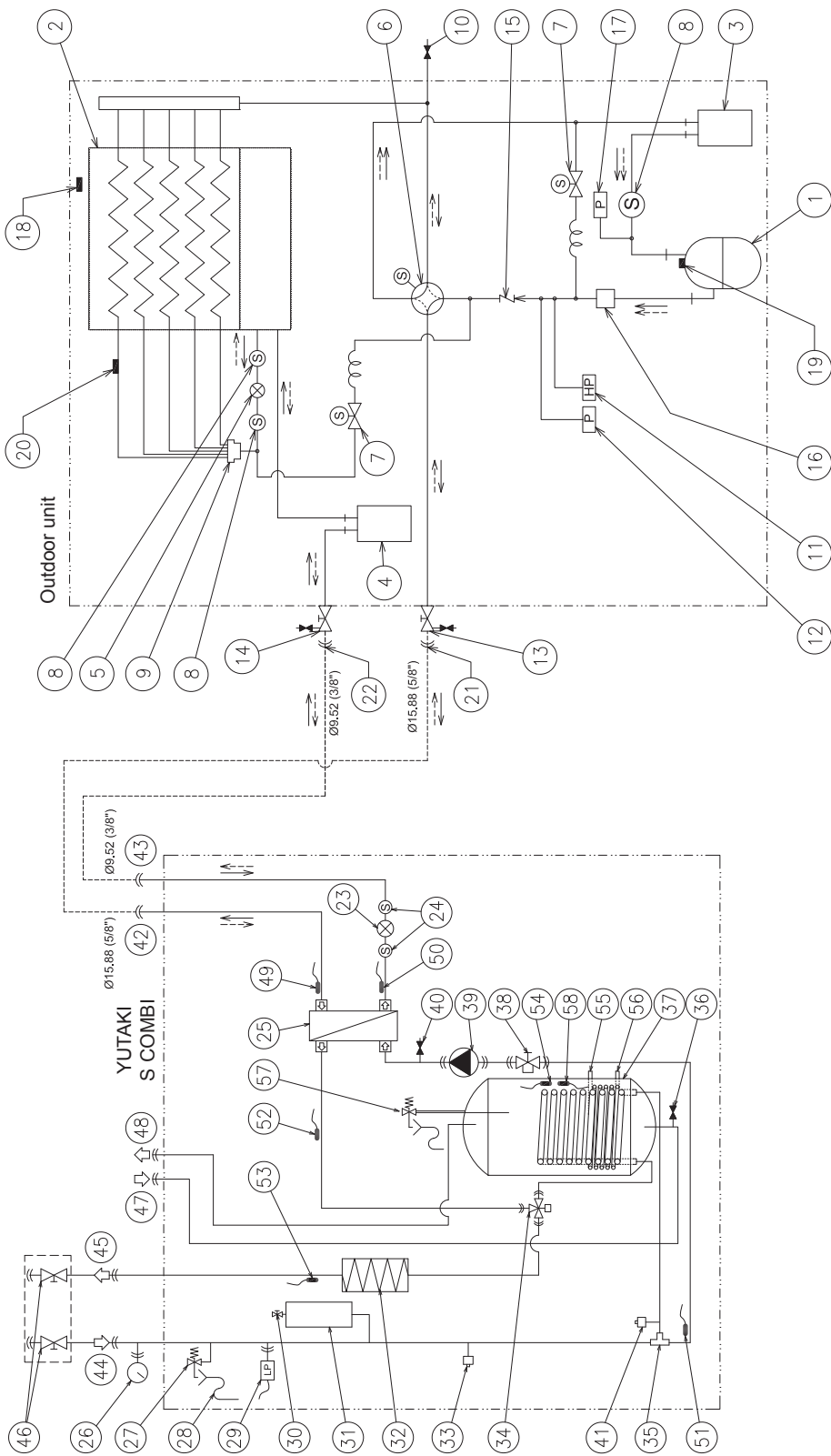
5.1.2 YUTAKI S COMBI

◆ RAS-(2-3)WHVNP + RWD-(2.0-3.0)NW(S)E-(200/260)S(-K)



No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	Compressor	12	Stop valve for liquid line	23	Drain pipe	32	Domestic hot water tank	43	Shut-off valve (Accessory)
2	Air side heat exchanger	13	Ambient thermostat	24	Low pressure switch	33	Water strainer	44	IU refrigerant gas pipe thermostat
3	Accumulator	14	Discharge gas thermostat	25	Air valve for pressure regulation of expansion vessel	34	Water pump	45	IU refrigerant liquid pipe thermostat
4	OU electronic expansion valve	15	Pipe thermostat	26	Expansion vessel	35	Drain port (For indoor unit water)	46	Water inlet thermostat
5	4-way valve	16	OU refrigerant gas connection	27	Water electric heater	36	Manual air purger	47	PHEX water outlet thermostat
6	OU refrigerant	17	OU refrigerant liquid connection	28	Air purger	37	IU refrigerant gas connection	48	Water outlet heat pump thermostat
7	Distributor	18	IU electronic expansion valve	29	3-way valve	38	IU refrigerant liquid connection	49	DHW thermostat
8	Refrigerant check joint	19	IU refrigerant strainer	30	T-branch	39	Water inlet (DHW)	50	Solar coil inlet (For solar models)
9	High pressure switch for protection	20	Water side heat exchanger	31	Drain port (For DHW)	40	Water outlet (DHW)	51	Solar coil outlet (For solar models)
10	Pressure switch for control	21	Manometer			41	Water inlet (Space heating)	52	P & T relief valve (For UK market)
11	Stop valve for gas line	22	Safety valve			42	Water outlet (Space heating)	53	DHWT sensor (For UK market)

◆ RAS-(4-6)WHVNP + RWD-(4.0-6.0)NW(S)E-(200/260)S(-K)



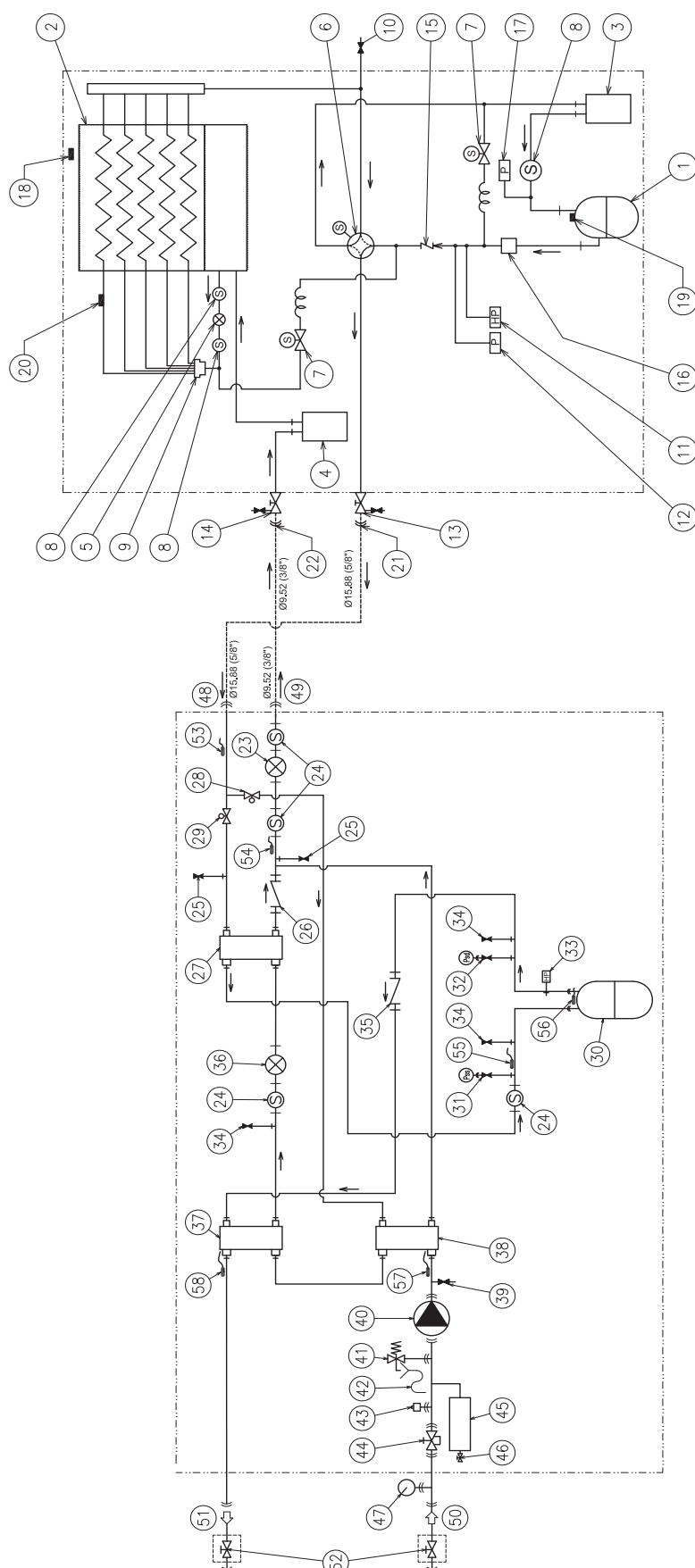
Heating refrigerant flow	Cooling refrigerant flow	Water flow (Heating/Cooling)	Field supplied piping line	Flare nut connection	Brazed connection	Refrigerant
→	←	↑	---	→	+	R410A

No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	Compressor	25	Water side heat exchanger	36	Drain port (For DHW)	48	Shut-off valve (Accessory)
2	Air side heat exchanger	26	Manometer	37	Domestic hot water tank	49	IU refrigerant gas pipe thermistor
3	Accumulator	27	Safety valve	38	Water strainer	50	IU refrigerant liquid pipe thermistor
4	Receiver	28	Drain pipe	39	Water pump	51	Water inlet thermistor
5	OU electronic expansion valve	29	Low pressure switch	40	Drain port (For indoor unit water)	52	PHEX water outlet pump thermistor
6	4-way valve	30	Air valve for pressure regulation of expansion vessel	41	Manual air purger	53	Water outlet heat pump thermistor
7	Solenoid gas for by-pass	31	Expansion vessel	42	IU refrigerant gas connection	54	DHW thermistor
8	OU refrigerant strainer	32	Water electric heater	43	IU refrigerant liquid connection	55	Solar coil inlet (For solar models)
9	Distributor	33	Air purger	44	Water inlet (DHW)	56	Solar coil outlet (For solar models)
10	Refrigerant check joint	34	3-way valve	45	Water outlet (DHW)	57	P & T relief valve (For UK market)
11	High pressure switch for protection	35	T-branch	46	Water inlet (Space heating)	58	DHWT sensor (For UK market)
12	Sensor for refrigerant pressure			47	Water outlet (Space heating)		

5.1.3 YUTAKI S80

5.1.3.1 Indoor unit standalone version

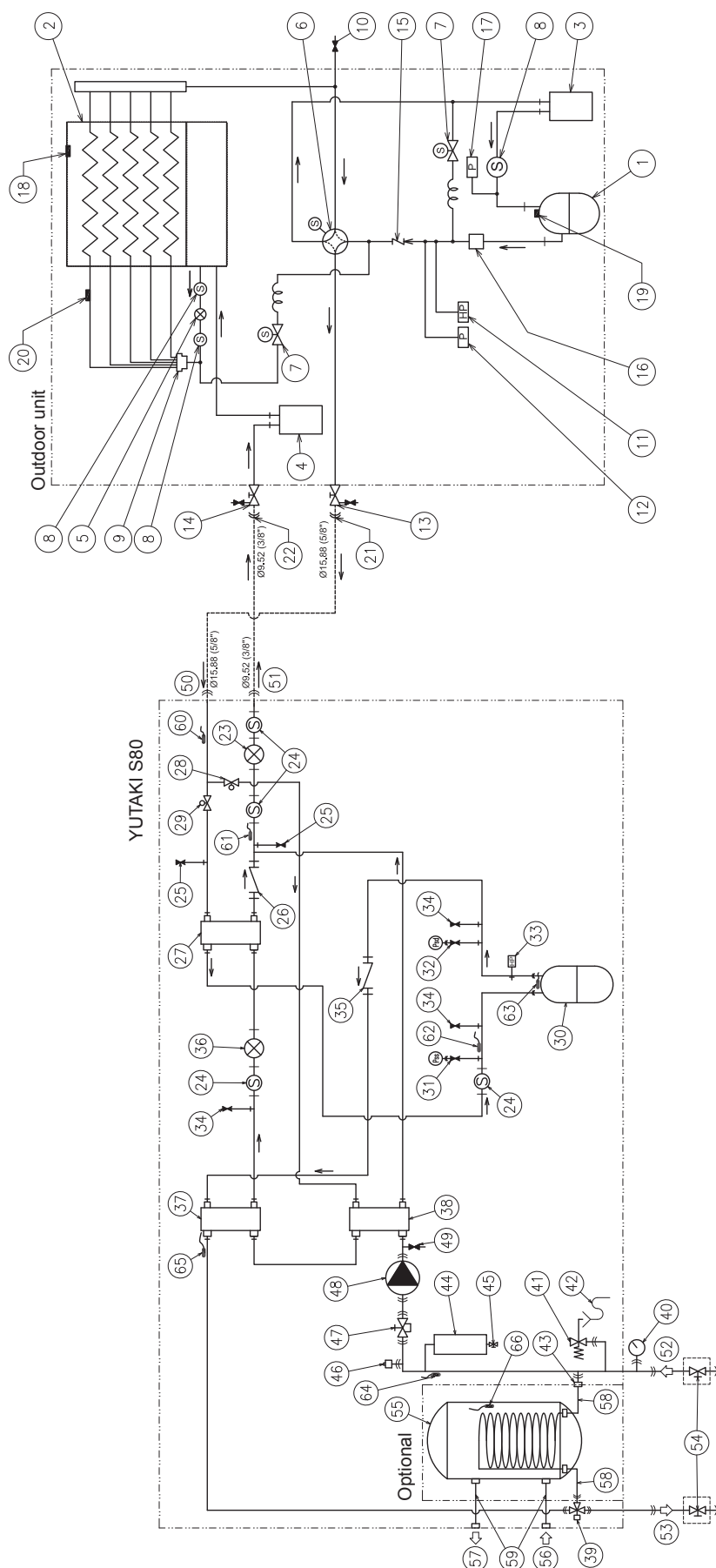
◆ RAS-(4-6)WHVNP + RWH-(4.0-6.0)(V)NFE



					Refrigerant 1	Refrigerant 2
Heating refrigerant flow	Water flow	Field supplied piping line	Flare nut connection	Brazed connection	R-410A	R-134a

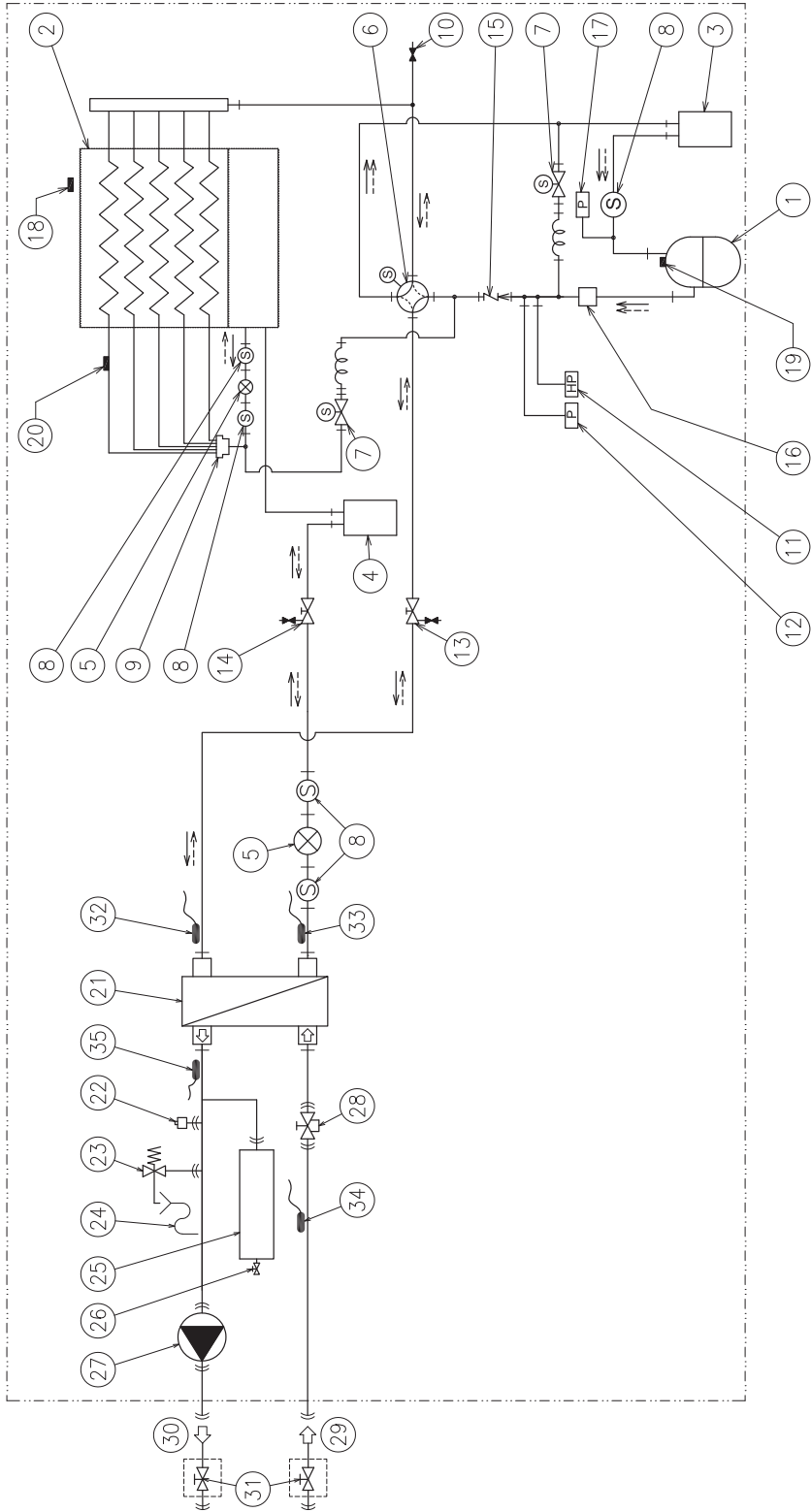
No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	OU compressor	14	Stop valve for liquid line	26	Check valve for R-410A	38	IU heat exchanger (R410A-H2O)	50	Water inlet connection
2	Air side heat exchanger	15	OU check valve	27	IU heat exchanger (R410A-R134a)	39	Water pressure port	51	Water outlet connection
3	Accumulator	16	Silencer	28	Solenoid valve 1 (For 1 cycle)	40	Water pump	52	Shut-off valve (Accessory)
4	Receiver	17	Pressure switch for control	29	Solenoid valve 2 (For 2 cycles)	41	Safety valve	53	IU gas pipe thermistor
5	OU electronic expansion valve	18	Ambient thermistor	30	IU compressor	42	Drain pipe	54	IU liquid pipe thermistor
6	4-way valve	19	OU comp. discharge gas thermistor	31	Low pressure sensor (Ps)	43	Air purger	55	IU comp. suction gas thermistor
7	Solenoid gas for by-pass	20	OU pipe thermistor	32	High pressure sensor (Pd)	44	Water strainer	56	IU comp. discharge gas thermistor
8	OU refrigerant strainer	21	OU refrigerant gas connection	33	IU high pressure switch (protection)	45	Expansion vessel	57	Water inlet thermistor
9	Distributor	22	OU refrigerant liquid connection	34	R-134a check joint	46	Air valve for pressure regulation of expansion vessel	58	Water outlet thermistor
10	OU R-410A check joint			35	Check valve for R-134a				
11	High pressure switch for protection	23	IU electronic expansion valve (R-410A)						
12	Sensor for refrigerant pressure	24	IU refrigerant strainer	36	IU electronic expansion valve (R-134a)	47	Manometer		
13	Stop valve for gas line	25	IU R-410A check joint	37	IU heat exchanger (R134a-H2O)	48	IU refrigerant gas connection		
						49	IU refrigerant liquid connection		

◆ RAS-(4-6)WHVNP + RWH-(4.0-6.0)(V)NFWE



Heating refrigerant flow		Water flow		Field supplied piping line		Flare nut connection		Braze connection		Refrigerant 1		Refrigerant 2	
No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	OU compressor	15	OU check valve	27	IU heat exchanger (R410A-R134a)	40	Manometer	53					
2	Air side heat exchanger	16	Silencer	28	Solenoid valve 1 (For 1 cycle)	41	Safety valve	54					
3	Accumulator	17	Pressure switch for control	29	Solenoid valve 2 (For 2 cycles)	42	Drain pipe	55					
4	Receiver	18	Ambient thermistor	30	IU compressor	43	Connection for DHW tank (outlet)	56					
5	OU electronic expansion valve	19	OU comp. discharge gas thermistor	31	Low pressure sensor (Ps)	44	Expansion vessel	57					
6	4-way valve	20	OU pipe thermistor	32	High pressure sensor (Pd)	45	Air valve for pressure regulation of expansion vessel	58					
7	Solenoid gas for by-pass	21	OU refrigerant gas connection	33	IU high pressure switch (protection)	46	Air purger	59					
8	OU refrigerant strainer	22	OU refrigerant liquid connection	34	R-134a check joint	47	Water strainer	60					
9	Distributor	23	IU electronic expansion valve (R-410A)	35	Check valve for R-134a	48	Water pump	61					
10	OU R-410A check joint	24	OU refrigerant strainer	36	IU heat exchanger (R134a-H2O)	49	Water pressure port	62					
11	High pressure switch for protection	25	IU R-410A check joint	37	IU heat exchanger (R410A-H2O)	50	IU refrigerant gas connection	63					
12	Sensor for refrigerant pressure	26	Check valve for R-410A	38	IU R-410A check joint	51	IU refrigerant liquid connection	64					
13	Stop valve for gas line			39	3-way valve	52	Water inlet connection	65					
14	Stop valve for liquid line							66					

◆ RAS-(4-6)WH(V)NE



Heating refrigerant flow		Cooling refrigerant flow		Water flow (Heating/Cooling)		Field supplied piping line		Flare nut connection		Brazed connection		Refrigerant	
No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name	No.	Part name
1	Compressor	10	Refrigerant check joint	19	Discharge gas thermistor	28	Water strainer	29	Water inlet connection	30	Water outlet connection	31	Shut-off valve (Accessory)
2	Air side heat exchanger	11	High pressure switch for protection	20	Pipe thermistor	29	Pipe thermistor	30	Water side heat exchanger	31	Shut-off valve (Accessory)	32	Gas pipe thermistor (Heating)
3	Accumulator	12	Sensor for refrigerant pressure	21	Water side heat exchanger	20	Water side heat exchanger	31	Shut-off valve (Accessory)	32	Gas pipe thermistor (Heating)	33	Liquid pipe thermistor (Heating)
4	Receiver	13	Stop valve for gas line	22	Air purger	22	Air purger	31	Shut-off valve (Accessory)	32	Gas pipe thermistor (Heating)	34	Water inlet thermistor
5	Electronic expansion valve	14	Stop valve for liquid line	23	Safety valve	23	Safety valve	32	Gas pipe thermistor (Heating)	33	Liquid pipe thermistor (Heating)	35	Water outlet thermistor
6	4-way valve	15	Check valve	24	Drain pipe	24	Drain pipe	33	Liquid pipe thermistor (Heating)	34	Water inlet thermistor		
7	Solenoid valve for gas by-pass	16	Silencer	25	Expansion vessel	25	Expansion vessel	34	Water inlet thermistor				
8	Refrigerant strainer	17	Pressure switch for control	26	Expansion vessel drain port	26	Expansion vessel drain port	35	Water outlet thermistor				
9	Distributor	18	Ambient thermistor	27	Water pump	27	Water pump						

6 REFRIGERANT AND WATER PIPING

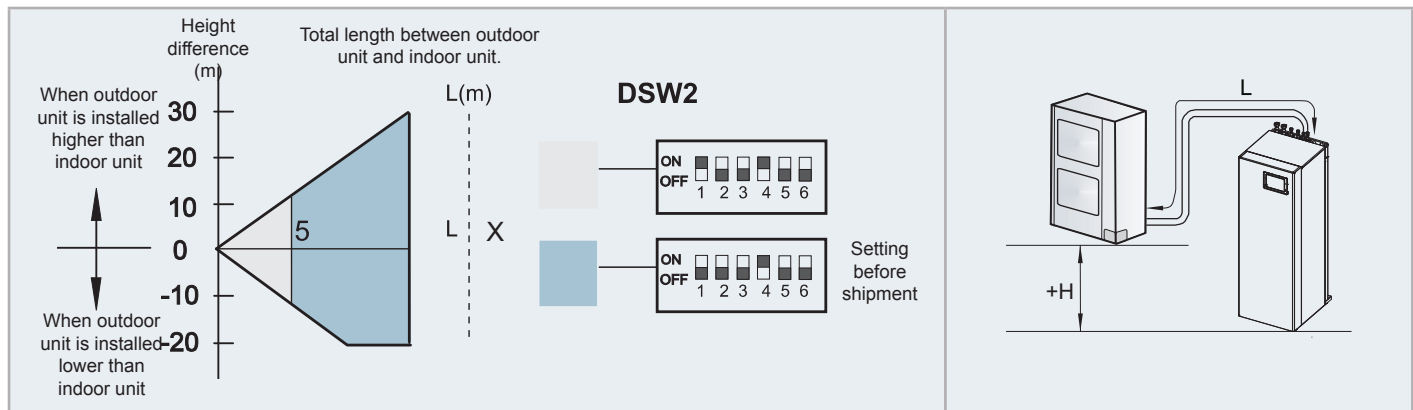
6.1 REFRIGERANT CIRCUIT

6.1.1 Refrigerant piping

◆ Refrigerant piping length between indoor unit and outdoor unit (For YUTAKI (S/S COMBI/S80))

The refrigerant piping length between indoor unit and outdoor unit should be designed using the following chart.

Keep the design point within the area of the chart, which is showing the applicable height difference according to piping length.



		OU Model		
		2-3 HP	4-6 HP	8/10 HP
Maximum piping length between outdoor unit and indoor unit (Lmax)	Actual piping length (L)	50 m	75 m	70 m
	Equivalent piping length (X)	70 m	95 m	90 m
Minimum piping length between outdoor unit and indoor unit (Lmin)	Actual piping length	5 m (*)		
Maximum height difference between indoor and outdoor unit (H)	Outdoor unit higher than indoor unit	30 m		
	Indoor unit higher than outdoor unit	20 m		

i NOTE

(*): If the actual piping length between outdoor and indoor unit needs to be less than 5m, contact with your dealer.

◆ Refrigerant piping size

Piping connection size of outdoor unit & indoor unit

			Indoor unit		
Model	Pipe size		Model	Pipe size	
	Gas pipe	Liquid pipe		Gas pipe	Liquid pipe
2 HP	Ø 12.7 (1/2") (*)	Ø 6.35 (1/4")	2.0 HP	Ø 15.88 (5/8") (*)	Ø 6.35 (1/4")
2.5 HP		Ø 6.35 (1/4") (*)	2.5 HP		Ø 9.52 (3/8") (*)
(3-6) HP	Ø 15.88 (5/8")	Ø 9.52 (3/8")	(3.0-6.0) HP	Ø 15.88 (5/8")	Ø 9.52 (3/8")
8 HP	Ø 25.4 (1")	Ø 9.52 (3/8")	8 HP	Ø 25.4 (1")	Ø 9.52 (3/8")
10 HP		Ø 12.7 (1/2")	10 HP		Ø 12.7 (1/2")

i NOTE

(*): The refrigerant gas piping size for 2/2.5 HP and the refrigerant liquid piping size of 2.5 HP are different between outdoor and indoor unit. Therefore, refrigerant pipe adapters are required to connect these units. Pipe size must be installed according to the outdoor units. These pipe adapters are factory supplied with the outdoor unit.

Model	Pipe adapter	
	Gas pipe	Liquid pipe
2 HP	Ø15.88→Ø12.7	-
2.5 HP	Ø15.88→Ø12.7	Ø9.52→Ø6.35

6.1.2 Precautions in the event of gas refrigerant leaks

The installers and those responsible for drafting the specifications are obliged to comply with local safety codes and regulations in the case of refrigerant leakage.

CAUTION

- Check for refrigerant leakage in detail. If a large refrigerant leakage occurred, it would cause difficulty with breathing or harmful gases would occur if a fire were in the room.
- If the flare nut is tightened too hard, it may crack over time and cause refrigerant leakage.

◆ Maximum permitted concentration of HFCs

The refrigerant R410A (charged in the outdoor unit) and the refrigerant R134a (in case of YUTAKI S80 indoor unit) are incombustible and non-toxic gases. However, if leakage occurs and gas fills a room, it may cause suffocation.

The maximum permissible concentration of HFC gas according to EN378-1 is:

Refrigerant	Maximum permissible concentration (kg/m ³)
R410A	0.44
R134a	0.25

The minimum volume of a closed room where the system is installed to avoid suffocation in case of leakage is:

System combination		Minimum volume (m ³)
YUTAKI (S / SCOMBI)	2 HP	3.2
	2.5 HP	3.5
	3 HP	3.9
	4 HP	7.5
	5/6 HP	7.8
YUTAKI S	8 HP	11.4
	10 HP	12.1
YUTAKI S80	4-6 HP	7.6

The formula used for the calculation of the maximum allowed refrigerant concentration in cases of refrigerant leakage is the following:

$\frac{R}{V} = C$	R: Total quantity of refrigerant charged (kg) V: Room volume (m ³) C: Refrigerant concentration
-------------------	---

If the room volume is below the minimum value some effective measure must be taken into account after installing to prevent suffocation in case of leakage.

◆ Countermeasure in the event of possible refrigerant leakage

The room must have the following features to prevent suffocation in case a refrigerant leakage occurs:

- 1 Provide a shutterless opening which will allow fresh air to circulate into the room.
- 2 Provide a doorless opening of 0.15% or more size to the floor area.
- 3 There must be a ventilator fan connected to a gas leak detector, with a ventilator capacity of 0.4 m³/min or higher per Japanese refrigeration ton (= compressor displacement volume / (5.7 m³/h (R410A) or 14.4 m³/h (R134a)) of the air conditioning system using the refrigerant.

Model	Tonnes
RAS-2WHVNP	0.88
RAS-2.5WHVNP	1.14
RAS-3WHVNP	1.35
RAS-(4-6)WH(V)NPE	2.27
RAS-8WHNPE	3.16
RAS-10WHNPE	4.11

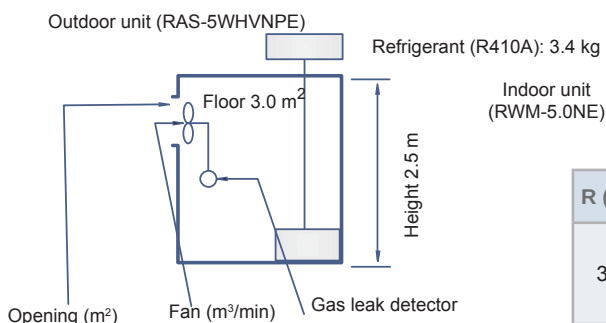
Model		Tonnes	
		R410A	R134a
Outdoor unit	RAS-(4-6)WH(V)NPE	2.27	-
Indoor unit	RWH-(4.0-6.0)(V)NF(W)E	-	1.61

i NOTE

Always take the maximum value between the R410A and R134a.

- 4 Pay special attention to the place, such as a basement, etc., where the refrigerant can stay, since refrigerant is heavier than air.

Example:



R (kg)	V (m ³)	C (kg/m ³)	Countermeasure
3.4	7.5	0.46	1.0 m ³ /min fan linked with gas leak detector or 0.5 m ² opening

6.1.3 Water piping

◆ Water piping length

Consider the following guidelines when designing the water circuit.

Item	YUTAKI S	YUTAKI S COMBI	YUTAKI S80		YUTAKI M
			DHW tank above the indoor unit	DHW tank beside the indoor unit	
Maximum water piping length between indoor unit and DHW tank					
Maximum water piping length between indoor unit and 3-way valve					
Maximum water piping length between 3-way valve and DHW tank					

Blank data: To be informed later.

◆ Water piping size

YUTAKI S

(inches)

Model	Space heating pipes connection		
	Inlet connection	Outlet connection	Shut-off valves
(2.0-3.0)HP	G 1" (female)	G 1" (female)	G 1" (male) - G 1" (male)
(4.0-10.0)HP	G 1-1/4" (female)	G 1-1/4" (female)	G 1-1/4" (male) - G 1-1/4" (male)

YUTAKI S COMBI

(inches)

Model	Space heating connection			DHW connection			Solar connection (*)	
	Inlet connection	Outlet connection	Shut-off valves	Inlet connection	Outlet connection	P & T relief valve (**)	Inlet connection	Outlet connection
(2.0-3.0)HP	G 1" (female)	G 1" (female)	G 1" (male) - G 1" (male)	G 3/4" (female)	G 3/4" (female)	Ø15 mm	G 1/2" (female)	G 1/2" (female)
(4.0-6.0)HP	G 1-1/4" (female)	G 1-1/4" (female)	G 1-1/4" (male) - G 1-1/4" (male)	G 3/4" (female)	G 3/4" (female)	Ø15 mm	G 1/2" (female)	G 1/2" (female)

(*): Only for models for solar combination.

(**): Only for models for UK market

YUTAKI S80 indoor unit

Type 1: Version for operation in DHW but with a remote tank (RWH-(4.0-6.0)(V)NFE)

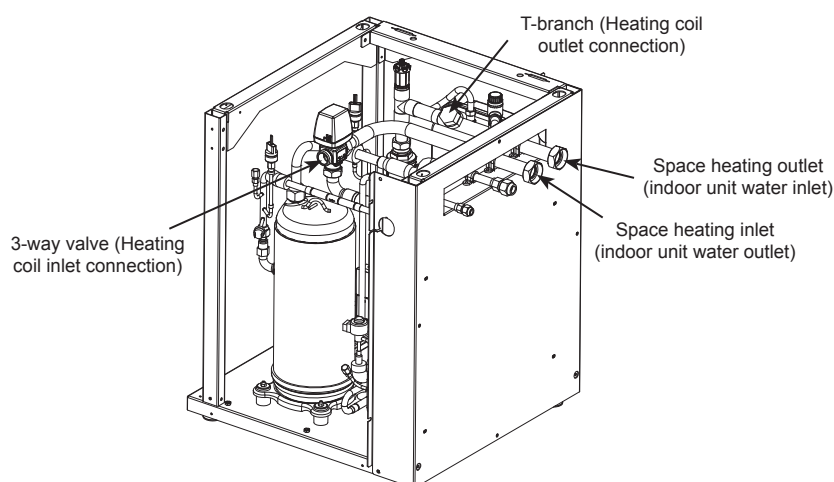
(inches)

Model	Space heating connection		
	Inlet connection	Outlet connection	Shut-off valves
(4.0-6.0)HP	G 1-1/4" (female)	G 1-1/4" (female)	G 1-1/4" (male) - G 1-1/4" (male)

Type 2: Version for operation with an HITACHI DHW tank (RWH-(4.0-6.0)(V)NFWE)

(inches)

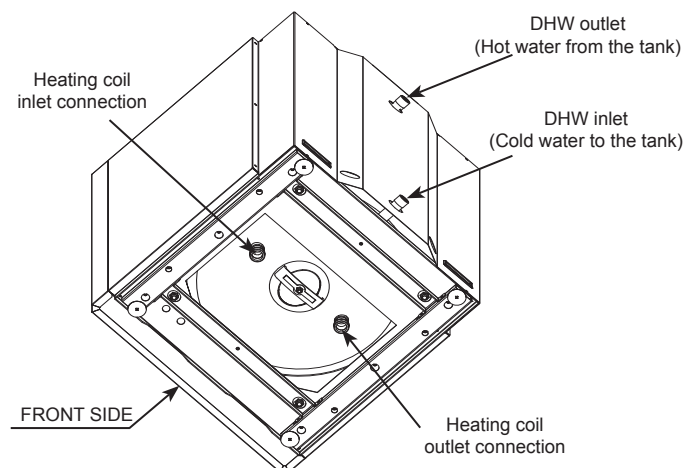
Model	Space heating connection			Heating coil connection	
	Inlet connection	Outlet connection	Shut-off valves	Inlet connection (3-way valve)	Outlet connection (T-branch)
(4.0-6.0)HP	G 1-1/4" (female)	G 1-1/4" (female)	G 1-1/4" (male) - G 1-1/4" (male)	G 1" (female)	G 1" (female)



YUTAKI S80 Domestic hot water tank accessory (DHWS(200/260)S-2.7H2E)

(inches)

Model	Heating coil connection		DHW connection	
	Inlet connection	Outlet connection	Inlet connection	Outlet connection
DHWS(200/260)S-2.7H2E	G 1" (male)	G 1" (male)	G 3/4" (male)	G 3/4" (male)

**Heating coil pipes (Factory-supplied with the DHW tank accessory (DHWS(200/260)S-2.7H2E))**

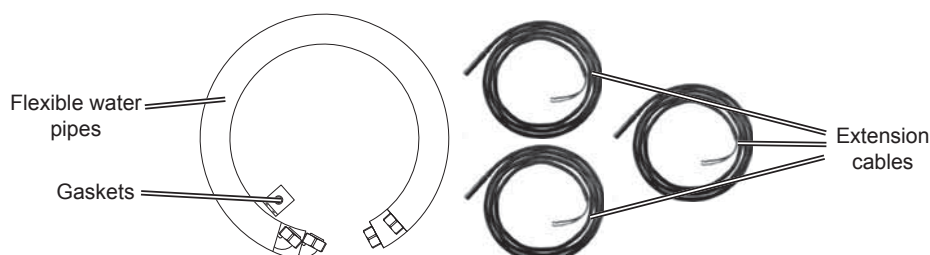
The domestic hot water tank accessory for combination with YUTAKI S80 indoor unit is factory-supplied with two flexible water pipes for the connection between the indoor unit and the heating coil of the domestic hot water tank, **when the DHW tank is installed integrated above the indoor unit.**

Heating coil pipes	
Item	Connection
	One pipe for the connection between 3-way valve connection and heating coil inlet connection of the tank. The other one for the connection between T-branch connection and heating coil outlet connection of the tank.

Flexible water pipe kit (ATW-FWP-02) - For domestic hot water tank installed beside the indoor unit

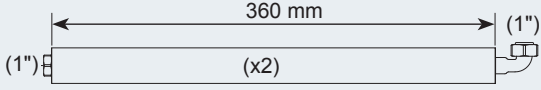
For DHW tank beside the indoor unit (both right or left side), the heating coil pipes factory-supplied with the DHW tank accessory are not required. In this case, the dedicated HITACHI flexible water pipe kit (ATW-FWP-02 accessory) is needed. This kit is provided with the following items:

- 4 flexible water pipes:
 - ♦ 2 pipes to connect to the indoor unit (3-way valve and T-branch)
 - ♦ 2 pipes to connect to the heating coil inlet/outlet connections of the DHW tank accessory (DHWS(200/260)S-2.7H2E).
- 9 gaskets (2 gaskets for each flexible water pipe end and 1 spare gasket).
- 3 extension cables (1 for the tank's electric heater, 1 for the tank's thermistor and 1 for the unit controller).



It is necessary to identify the function of each water pipe.

Heating coil pipes for the indoor unit	
Item	Connection
~500 mm	To connect to the 3-way valve heating coil inlet connection.
~400 mm	To connect to the T-branch heating coil outlet connection.

Heating coil pipes for the DHW tank accessory	
Item	Connection
	One pipe to connect to the heating coil inlet connection of the tank accessory. The other one to connect to the heating coil outlet connection of the tank accessory.

YUTAKI M

(inches)

Model	Space heating pipes connection		
	Inlet connection	Outlet connection	Shut-off valves
3.0HP	G 1" (female)	G 1" (female)	G 1" (male) - G 1" (male)
(4.0-6.0)HP	G 1-1/4" (female)	G 1-1/4" (female)	G 1-1/4" (male) - G 1-1/4" (male)

6.1.4 Water quality (Preliminary information)

CAUTION

- Water quality must be according to EU council directive 98/83 EC.
- Water should be subjected to filtration or to a softening treatment with chemicals before application as treated water.
- It is also necessary to analyse the quality of water by checking pH, electrical conductivity, ammonia ion content, sulphur content, and others. Should the results of the analysis be not good, the use of industrial water would be recommended.
- No antifreeze agent shall be added to the water circuit.
- To avoid deposits of scale on the heat exchangers surface it is mandatory to ensure a high water quality with low levels of CaCO_3 .

Recommendations for the DHW circuit

The following is the recommended standard water quality.

Item	DHW space	Tendency ⁽¹⁾	
	Water supplied ⁽³⁾	Corrosion	Deposits of scales
Electrical Conductivity (mS/m) (25°C) { $\mu\text{S}/\text{cm}$ } (25 °C) ⁽²⁾	100~2000	●	●
Chlorine Ion (mg Cl^-/l)	max. 250	●	
Sulphate (mg/l)	max. 250	●	
Combination of chloride and sulphate (mg/l)	max. 300	●	●
Total Hardness (mg CaCO_3/l)	60~150		●

NOTE

- (1): The mark "●" in the table means the factor concerned with the tendency of corrosion or deposits of scales.
- (2): The value shown in "{" are for reference only according to the former unit.
- (3): Water range will be according s/UNE 112076:2004 IN.

6.1.5 Water flow control

YUTAKI pumps can estimate the water flow by electronic calculation. Therefore, there is no need to install a water flow switch with the new YUTAKI pumps.

However, if a secondary pump is installed or glycol is used (in the case of YUTAKI M), it is necessary to install a water flow control, as the electronic calculation may be affected.

7 ELECTRICAL AND CONTROL SETTINGS

7.1 GENERAL CHECK

- Make sure that the following conditions related to power supply installation are satisfied:
 - The power capacity of the electrical installation is large enough to support the power demand of the YUTAKI system (outdoor unit + indoor unit + DHW tank (if apply)).
 - The power supply voltage is within $\pm 10\%$ of the rated voltage.
 - The impedance of the power supply line is low enough to avoid any voltage drop of more than 15% of the rated voltage.
- Following the Council Directive 2004/108/EC, relating to electromagnetic compatibility, the table below indicates the Maximum permitted system impedance $Z_{\max}$ at the interface point of the user's supply, in accordance with EN61000-3-11.

◆ Split system - Outdoor unit

Model	Power supply	Zmax (Ω)
RAS-2WHVNP	1~ 230V 50Hz	-
RAS-2.5WHVNP		-
RAS-3WHVNP		0.42
RAS-4WHVNPE		0.25
RAS-5WHVNPE		0.25
RAS-6WHVNPE		0.25
RAS-4WHNPE	3N~ 400V 50Hz	-
RAS-5WHNPE		-
RAS-6WHNPE		-
RAS-8WHNPE		-
RAS-10WHNPE		-

◆ Split system - Indoor unit

YUTAKI S

Model	Power supply	Operation mode	Zmax (Ω)
RWM-(2.0-3.0)NE	1~ 230V 50Hz	Without electric heater	-
		With electric heater	-
		With DHW tank heater	-
		With electric and DHW tank heaters	0.25
RWM-(4.0-6.0)NE	1~ 230V 50Hz	Without electric heater	-
		With electric heater	0.25
		With DHW tank heater	-
		With electric and DHW tank heaters	0.17
	3N~ 400V 50Hz	Without electric heater	-
		With electric heater	-
		With DHW tank heater	-
		With electric and DHW tank heaters	-
RWM-(8.0/10.0)NE	3N~ 400V 50Hz	Without electric heater	-
		With electric heater	-
		With DHW tank heater	-
		With electric and DHW tank heaters	0.25

NOTE

The data corresponding to DHW tank heater is calculated in combination with the domestic hot water tank accessory "DHWT-(200/300)S-3.0H2E".

YUTAKI S COMBI

Model	Power supply	Operation mode	Zmax (Ω)
RWD-(2.0-3.0) NW(S)E-(200/260)S	1~ 230V 50Hz	Without electric heaters	-
		With electric heater	-
		With DHW tank heater	-
		With electric and DHW tank heaters	0.26
RWD-(4.0-6.0) NW(S)E-(200/260)S	1~ 230V 50Hz	Without electric heaters	-
		With electric heater	0.25
		With DHW tank heater	-
		With electric and DHW tank heaters	0.17
	3N~ 400V 50Hz	Without electric heaters	-
		With electric heater	-
		With DHW tank heater	-
		With electric and DHW tank heaters	-

YUTAKI S80

Indoor unit alone

Model	Power supply	Zmax (Ω)
RWH-4.0VNFE	1~ 230V 50Hz	0.31
RWH-5.0VNFE		0.26
RWH-6.0VNFE		0.24
RWH-4.0NFE	3N~ 400V 50Hz	-
RWH-5.0NFE		-
RWH-6.0NFE		-

Indoor unit in combination with DHW tank

Model	Power supply	Operation mode	Zmax (Ω)
RWH-4.0VNFWE	1~ 230V 50Hz	Without DHW tank heater	0.31
		With DHW tank heater	0.19
RWH-5.0VNFWE		Without DHW tank heater	0.26
		With DHW tank heater	0.17
RWH-6.0VNFWE		Without DHW tank heater	0.24
		With DHW tank heater	0.26
RWH-4.0NFWE	3N~ 400V 50Hz	Without DHW tank heater	-
		With DHW tank heater	0.18
RWH-5.0NFWE		Without DHW tank heater	-
		With DHW tank heater	0.18
RWH-6.0NFWE		Without DHW tank heater	-
		With DHW tank heater	0.18

i NOTE

The data corresponding to DHW tank heater is calculated in combination with the YUTAKI S80 domestic hot water tank accessory "DHWS(200/260) S-2.7H2E".

◆ Monobloc system - YUTAKI M

Model	Power supply	Operation mode	Zmax (Ω)
RASM-3VNE	1~ 230V 50Hz	Without DHW tank heater	0.42
		With DHW tank heater	0.23
RASM-4VNE		Without DHW tank heater	0.24
		With DHW tank heater	0.16
RASM-5VNE		Without DHW tank heater	0.24
		With DHW tank heater	0.16
RASM-6VNE		Without DHW tank heater	0.24
		With DHW tank heater	0.16
RASM-4NE	3N~ 400V 50Hz	Without DHW tank heater	-
		With DHW tank heater	0.16
RASM-5NE		Without DHW tank heater	-
		With DHW tank heater	0.16
RASM-6NE		Without DHW tank heater	0.19
		With DHW tank heater	0.10

i NOTE

The data corresponding to DHW tank heater is calculated in combination with the domestic hot water tank accessory "DHWT-(200/300)S-3.0H2E".

- The status of Harmonics for each model, regarding compliance with IEC 61000-3-2 and IEC 61000-3-12, is as follows:

Status regarding compliance with IEC 61000-3-2 and IEC 61000-3-12	Models				
	Split system				Monobloc system
	Outdoor unit	Indoor unit			YUTAKI M
		YUTAKI S	YUTAKI S COMBI	YUTAKI S80	
Equipment complying with IEC 61000-3-2 (*): Professional use	RAS-2WHVNP RAS-2.5WHVNP RAS-3WHVNP RAS-4WHNPE (*) RAS-5WHNPE (*) RAS-6WHNPE (*)	RWM-2.0NE RWM-2.5NE RWM-3.0NE RWM-4.0NE (3N~) RWM-5.0NE (3N~) RWM-6.0NE (3N~) RWM-8.0NE RWM-10.0NE	-	RWH-4.0NFE RWH-5.0NFE RWH-6.0NFE	RASM-4NE RASM-5NE RASM-6NE
Equipment complying with IEC 61000-3-12	RAS-4WHVNPE RAS-5WHVNPE RAS-6WHVNPE	RWM-4.0NE (1~) RWM-5.0NE (1~) RWM-6.0NE (1~)	RWD-2.0NWE-200S RWD-2.0NW(S)E-260S RWD-2.5NWE-200S RWD-2.5NW(S)E-260S RWD-3.0NWE-200S RWD-3.0NW(S)E-260S RWD-4.0NWE-260S RWD-4.0NW(S)E-260S RWD-5.0NWE-260S RWD-5.0NW(S)E-260S RWD-6.0NWE-260S RWD-6.0NW(S)E-260S	RWH-4.0VNFE RWH-5.0VNFE RWH-6.0VNFE RWH-4.0VNFWE RWH-5.0VNFWE RWH-6.0VNFWE RWH-4.0NFWE RWH-5.0NFWE RWH-6.0NFWE	RASM-3VNE RASM-4VNE RASM-5VNE RASM-6VNE
Installation restrictions may be applied by supply authorities in relation to harmonics	RAS-8WHNPE RAS-10WHNPE	-	-	-	-

- Check to ensure that existing installation (main power switches, circuit breakers, wires, connectors and wire terminals) already complies with the national and local regulations.
- The use of the DHW tank heater is disabled as factory setting. If it is desired to enable the DHW tank heater operation during normal indoor unit operation, adjust the DSW4 pin 3 of the PCB1 to the ON position and use the adequate protections. Refer to the section "[Electrical connection](#)" for the detailed information.

7.2 ELECTRICAL CONNECTION (Preliminary data)

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 chapter and they comply with national and local codes. If it is necessary, contact with your local authority in regards to standards, rules, regulations, etc.
- Use a dedicated power circuit for the indoor unit. Do not use a power circuit shared with the outdoor unit or any other appliance.

7.2.1 Wiring size

Use wires which are not lighter than the polychloroprene sheathed flexible cord (code designation 60245 IEC 57).

◆ Split system - Outdoor unit

Model	Power supply	Max. current (A)	Power supply cables	Transmitting cables	Actuator cables
			EN60335-1	EN60335-1	EN60335-1
RAS-2WHVNP	1~ 230V 50Hz	13.8	2 x 2.5 mm ² + GND	2 x 0.75 mm ² (*Shielded cable)	2 x 0.75 mm ² + GND
RAS-2.5WHVNP		15.8	2 x 4.0 mm ² + GND		
RAS-3WHVNP		17.8	2 x 4.0 mm ² + GND		
RAS-4WHVNPE		30.5	2 x 10.0 mm ² + GND		
RAS-5WHVNPE		30.5	2 x 10.0 mm ² + GND		
RAS-6WHVNPE		30.5	2 x 10.0 mm ² + GND		
RAS-4WHNPE	3N~ 400V 50Hz	14.0	4 x 4.0 mm ² + GND		
RAS-5WHNPE		14.0	4 x 4.0 mm ² + GND		
RAS-6WHNPE		16.0	4 x 4.0 mm ² + GND		
RAS-8WHNPE		24.0	4 x 6.0 mm ² + GND		
RAS-10WHNPE		24.0	4 x 6.0 mm ² + GND		

◆ Split system - Indoor unit

YUTAKI S

Model	Power supply	Operation mode	Max. current (A)	Power supply cables	Transmitting cables	Actuator cables
				EN60335-1	EN60335-1	EN60335-1
RWM-(2.0-3.0)NE	1~ 230V 50Hz	Without electric heaters	0.2	2 x 1.5 mm ² + GND	2 x 0.75 mm ²	2 x 0.75 mm ² + GND
		With electric heater	15.3	2 x 2.5 mm ² + GND		
		With DHW tank heater	15.3	2 x 2.5 mm ² + GND		
		With electric and DHW tank heaters	30.3	2 x 6.0 mm ² + GND		
RWM-(4.0-6.0)NE	1~ 230V 50Hz	Without electric heaters	0.3	2 x 1.5 mm ² + GND		
		With electric heater	30.5	2 x 6.0 mm ² + GND		
		With DHW tank heater	15.4	2 x 2.5 mm ² + GND		
		With electric and DHW tank heaters	45.5	2 x 10.0 mm ² + GND		
	3N~ 400V 50Hz	Without electric heaters	0.3	4 x 1.5 mm ² + GND		
		With electric heater	10.3	4 x 2.5 mm ² + GND		
		With DHW tank heater	15.4	4 x 4.0 mm ² + GND		
		With electric and DHW tank heaters	25.4	4 x 6.0 mm ² + GND		
RWM-(8.0/10.0)NE	3N~ 400V 50Hz	Without electric heaters	0.3	4 x 1.5 mm ² + GND		
		With electric heater	15.3	4 x 4.0 mm ² + GND		
		With DHW tank heater	15.4	4 x 4.0 mm ² + GND		
		With electric and DHW tank heaters	30.4	4 x 10.0 mm ² + GND		



NOTE

The data corresponding to DHW tank heater is calculated in combination with the domestic hot water tank accessory "DHWT-(200/300)S-3.0H2E".

YUTAKI S COMBI

Model	Power supply	Operation mode	Max. current (A)	Power supply cables	Transmitting cables	Actuator cables
				EN60335-1	EN60335-1	EN60335-1
RWD-(2.0-3.0) NW(S)E-(200/260)S(-K)	1~230V 50Hz	Without electric heaters	0.2	2 x 1.5 mm ² + GND	2 x 0.75 mm ²	2 x 0.75 mm ² + GND
		With electric heater	15.3	2 x 2.5 mm ² + GND		
		With DHW tank heater	14.5	2 x 2.5 mm ² + GND		
		With electric and DHW tank heaters	29.6	2 x 6.0 mm ² + GND		
RWD-(4.0-6.0) NW(S)E-(200/260)S(-K)	1~230V 50Hz	Without electric heaters	0.3	2 x 1.5 mm ² + GND		
		With electric heater	30.5	2 x 6.0 mm ² + GND		
		With DHW tank heater	14.7	2 x 2.5 mm ² + GND		
		With electric and DHW tank heaters	44.8	2 x 10.0 mm ² + GND		
	3N~400V 50Hz	Without electric heaters	0.3	4 x 1.5 mm ² + GND		
		With electric heater	10.3	4 x 2.5 mm ² + GND		
		With DHW tank heater	14.7	4 x 4.0 mm ² + GND		
		With electric and DHW tank heaters	24.7	4 x 6.0 mm ² + GND		

YUTAKI S80

Indoor unit alone

Model	Power supply	Max. current (A)	Power supply cables	Transmitting cables	Actuator cables
			EN60335-1	EN60335-1	EN60335-1
RWH-4.0VNFE	1~ 230V 50Hz	24.3	2 x 6.0 mm ² + GND	2 x 0.75 mm ²	2 x 0.75 mm ² + GND
RWH-5.0VNFE		28.3	2 x 6.0 mm ² + GND		
RWH-6.0VNFE		31.3	2 x 10.0 mm ² + GND		
RWH-4.0NFE	3N~ 400V 50Hz	15.3	4 x 4.0 mm ² + GND		
RWH-5.0NFE		15.3	4 x 4.0 mm ² + GND		
RWH-6.0NFE		15.3	4 x 4.0 mm ² + GND		

Indoor unit in combination with DHW tank

Model	Power supply	Operation mode	Max. current (A)	Power supply cables	Transmitting cables	Actuator cables
				EN60335-1	EN60335-1	EN60335-1
RWH-4.0VNFWE	1~ 230V 50Hz	Without DHW tank heater	24.3	2 x 6.0 mm ² + GND	2 x 0.75 mm ²	2 x 0.75 mm ² + GND
RWH-5.0VNFWE		With DHW tank heater	38.7	2 x 10.0 mm ² + GND		
		Without DHW tank heater	28.3	2 x 6.0 mm ² + GND		
RWH-6.0VNFWE		With DHW tank heater	42.7	2 x 10.0 mm ² + GND		
		Without DHW tank heater	31.3	2 x 10.0 mm ² + GND		
RWH-4.0NFWE		With DHW tank heater	45.7	2 x 10.0 mm ² + GND		
	3N~ 400V 50Hz	Without DHW tank heater	15.3	4 x 4.0 mm ² + GND		
With DHW tank heater		29.7	4 x 10.0 mm ² + GND			
RWH-5.0NFWE		Without DHW tank heater	15.3	4 x 4.0 mm ² + GND		
		With DHW tank heater	29.7	4 x 10.0 mm ² + GND		
RWH-6.0NFWE		Without DHW tank heater	15.3	4 x 4.0 mm ² + GND		
		With DHW tank heater	29.7	4 x 10.0 mm ² + GND		



NOTE

The data corresponding to DHW tank heater is calculated in combination with the YUTAKI S80 domestic hot water tank accessory "DHWS(200/260)S-2.7H2E".

◆ Monobloc system - YUTAKI M

Model	Power supply	Operation mode	Max. current (A)	Power supply cables	Transmitting cables	Actuator cables
				EN60335-1	EN60335-1	EN60335-1
RASM-3VNE	1~ 230V 50Hz	Without DHW tank heater	18.0	2 x 4.0 mm ² + GND	2 x 0.75 mm ²	2 x 0.75 mm ² + GND
		With DHW tank heater	33.0	2 x 10.0 mm ² + GND		
RASM-4VNE		Without DHW tank heater	30.8	2 x 6.0 mm ² + GND		
		With DHW tank heater	45.8	2 x 10.0 mm ² + GND		
RASM-5VNE		Without DHW tank heater	30.8	2 x 6.0 mm ² + GND		
		With DHW tank heater	45.8	2 x 10.0 mm ² + GND		
RASM-6VNE		Without DHW tank heater	30.8	2 x 6.0 mm ² + GND		
		With DHW tank heater	45.8	2 x 10.0 mm ² + GND		
RASM-4NE	3N~ 400V 50Hz	Without DHW tank heater	14.3	4 x 4.0 mm ² + GND		
		With DHW tank heater	29.3	4 x 10.0 mm ² + GND		
RASM-5NE		Without DHW tank heater	14.3	4 x 4.0 mm ² + GND		
		With DHW tank heater	29.3	4 x 10.0 mm ² + GND		
RASM-6NE		Without DHW tank heater	24.3	4 x 6.0 mm ² + GND		
		With DHW tank heater	39.4	4 x 10.0 mm ² + GND		

**NOTE**

The data corresponding to DHW tank heater is calculated in combination with the domestic hot water tank accessory "DHWT-(200/300)S-3.0H2E".

7.2.2 Minimum requirements of the protection devices

**CAUTION**

- Ensure specifically that there is an Earth Leakage Breaker (ELB) installed for the units (outdoor and indoor unit).
- If the installation is already equipped with an Earth Leakage Breaker (ELB), ensure that its rated current is large enough to hold the current of the units (outdoor and indoor unit).

**NOTE**

- Electric fuses can be used instead of magnetic Circuit Breakers (CB). In that case, select fuses with similar rated values as the CB.
- The Earth Leakage Breaker (ELB) mentioned on this manual is also commonly known as Residual Current Device (RCD) or Residual Current Circuit Breaker (RCCB).
- The Circuit Breakers (CB) are also known as Thermal-Magnetic Circuit Breakers or just Magnetic Circuit Breakers (MCB).

◆ Split system - Outdoor unit

Model	Power supply	Applicable voltage		MC (A)	CB (A)	ELB (no. of poles/A/mA)
		U max. (V)	U min. (V)			
RAS-2WHVNP	1~ 230V 50Hz	253	207	13.8	2.5	2/40/30
RAS-2.5WHVNP				15.8	4	
RAS-3WHVNP				17.8	4	
RAS-4WHVNPE				30.5	10	
RAS-5WHVNPE				30.5	10	
RAS-6WHVNPE				30.5	10	
RAS-4WHNPE	3N~ 400V 50Hz	440	360	14.0	4	4/40/30
RAS-5WHNPE				14.0	4	
RAS-6WHNPE				16.0	4	
RAS-8WHNPE				24.0	6	
RAS-10WHNPE				24.0	6	

MC: Maximum current; CB: Circuit breaker; ELB: Earth leakage breaker

◆ Split system - Indoor unit

YUTAKI S

Model	Power supply	Applicable voltage		Operation mode	MC (A)	CB (A)	ELB (no. of poles/A/mA)
		U max. (V)	U min. (V)				
RWM-(2.0-3.0)NE	1~ 230V 50Hz	253	207	Without electric heaters	0.2	5	2/40/30
				With electric heater	15.3	16	
				With DHW tank heater	15.3	16	
				With electric and DHW tank heaters	30.3	32	
RWM-(4.0-6.0)NE	1~ 230V 50Hz	253	207	Without electric heaters	0.3	5	2/40/30
				With electric heater	30.5	32	
				With DHW tank heater	15.4	16	
				With electric and DHW tank heaters	45.5	63	
	3N~ 400V 50Hz	440	360	Without electric heaters	0.3	5	4/40/30
				With electric heater	10.3	15	
				With DHW tank heater	15.4	20	
				With electric and DHW tank heaters	25.4	30	
RWM-(8.0/10.0)NE	3N~ 400V 50Hz	440	360	Without electric heaters	0.3	5	4/40/30
				With electric heater	15.3	20	
				With DHW tank heater	15.4	20	
				With electric and DHW tank heaters	30.4	40	

**NOTE**

The data corresponding to DHW tank heater is calculated in combination with the domestic hot water tank accessory "DHWT-(200/300)S-3.0H2E".

YUTAKI S COMBI

Model	Power supply	Applicable voltage		Operation mode	MC (A)	CB (A)	ELB (no. of poles/A/mA)
		U max. (V)	U min. (V)				
RWD-(2.0-3.0) NW(S)E-(200/260)S(-K)	1~ 230V 50Hz	253	207	Without electric heaters	0.2	5	2/40/30
				With electric heater	15.3	16	
				With DHW tank heater	14.5	16	
				With electric and DHW tank heaters	29.6	32	
RWD-(4.0-6.0) NW(S)E-(200/260)S(-K)	1~ 230V 50Hz	253	207	Without electric heaters	0.3	5	2/40/30
				With electric heater	30.5	32	
				With DHW tank heater	14.7	16	
				With electric and DHW tank heaters	44.8	63	
	3N~ 400V 50Hz	440	360	Without electric heaters	0.3	5	4/40/30
				With electric heater	10.3	15	
				With DHW tank heater	14.7	20	
				With electric and DHW tank heaters	24.7	30	

YUTAKI S80

Version for indoor unit alone

Model	Power supply	Applicable voltage		MC (A)	CB (A)	ELB (no. of poles/A/mA)
		U max. (V)	U min. (V)			
RWH-4.0VNFE	1~ 230V 50Hz	253	207	24.3	32	2/40/30
RWH-5.0VNFE				28.3	32	
RWH-6.0VNFE				31.3	40	
RWH-4.0NFE	3N~ 400V 50Hz	440	360	15.3	20	4/40/30
RWH-5.0NFE				15.3	20	
RWH-6.0NFE				15.3	20	

Version for combination with DHW tank

Model	Power supply	Applicable voltage		Operation mode	MC (A)	CB (A)	ELB (no. of poles/A/mA)
		U max. (V)	U min. (V)				
RWH-4.0VNFWE	1~ 230V 50Hz	253	207	Without DHW tank heater	24.3	32	2/40/30
				With DHW tank heater	38.7	40	
RWH-5.0VNFWE				Without DHW tank heater	28.3	32	
				With DHW tank heater	42.7	63	2/63/30
RWH-6.0VNFWE				Without DHW tank heater	31.3	40	2/40/30
				With DHW tank heater	45.7	63	2/63/30
RWH-4.0NFWE	3N~ 400V 50Hz	440	360	Without DHW tank heater	15.3	20	4/40/30
				With DHW tank heater	29.7	40	
RWH-5.0NFWE				Without DHW tank heater	15.3	20	
				With DHW tank heater	29.7	40	
RWH-6.0NFWE				Without DHW tank heater	15.3	20	
				With DHW tank heater	29.7	40	



NOTE

The data corresponding to DHW tank heater is calculated in combination with the YUTAKI S80 domestic hot water tank accessory "DHWS(200/260)S-2.7H2E".

◆ Monobloc system - YUTAKI M

Model	Power supply	Applicable voltage		Operation mode	MC (A)	CB (A)	ELB (no. of poles/A/mA)
		U max. (V)	U min. (V)				
RASM-3VNE	1~ 230V 50Hz	253	207	Without DHW tank heater	18.0	20	2/40/30
				With DHW tank heater	33.0	40	
RASM-4VNE				Without DHW tank heater	30.8	32	
				With DHW tank heater	45.8	63	2/63/30
RASM-5VNE				Without DHW tank heater	30.8	32	2/40/30
				With DHW tank heater	45.8	63	2/63/30
RASM-6VNE				Without DHW tank heater	30.8	32	2/40/30
				With DHW tank heater	45.8	63	2/63/30
RASM-4NE	3N~ 400V 50Hz	440	360	Without DHW tank heater	14.3	20	4/40/30
				With DHW tank heater	29.3	40	
RASM-5NE				Without DHW tank heater	14.3	20	
				With DHW tank heater	29.3	40	
RASM-6NE				Without DHW tank heater	24.3	20	
				With DHW tank heater	39.4	63	4/63/30



NOTE

The data corresponding to DHW tank heater is calculated in combination with the domestic hot water tank accessory "DHWT-(200/300)S-3.0H2E".

7.3 SETTING OF DIP SWITCHES AND RSW SWITCHES

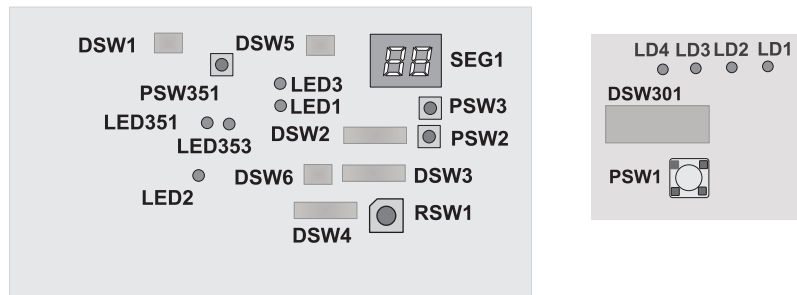
7.3.1 Outdoor unit

7.3.1.1 Location of DIP switches and rotary switches

The PCB in the outdoor unit is operating with DIP switches and push switches. The location is as follows:

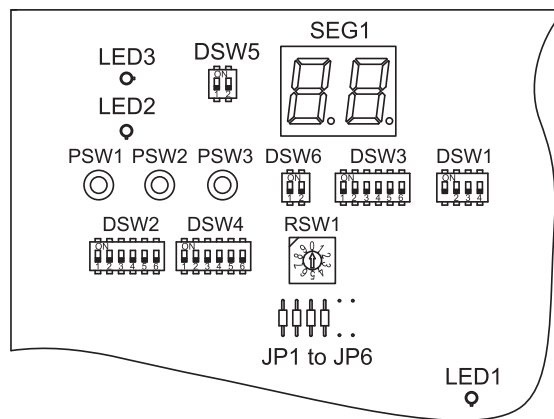
RAS-(2/2.5)WHVNP

PCB1



RAS-(3-10)WH(V)NPE

PCB



i NOTE

DIP-IPM or PCB2 (depending on model) has a DSW1. When pin number 1 is set to ON position, the electrical current detections is cancelled. Pin number 1 should be to OFF position after electrical work.

7.3.1.2 Function of DIP switches and rotary switches

i NOTE

- The mark “■” indicates the position of dips switches.
- No mark “■” indicates pin position is not affecting.
- The figures show the settings before shipment or after selection.

⚠ DANGER

Before setting dips switches, first turn the power source off and then set the position of the dips switches. In case of setting the switches without turning the power source off, the contents of the setting are invalid.

◆ DSW301 (Only RAS-(2/2.5)WHVNP): Test run mode

Setting before shipment	
Test run for pump down	
Test run for heating	
Forced stoppage of compressor	

◆ DSW1 (Only RAS-(2/2.5)WHVNP): No setting is required

When set pin number 1 to ON, the electric current detection is cancelled. Pin number 1 should be set back to OFF after electrical work	
--	--

◆ DSW1 (RAS-(3-10)WH(V)NPE): For Test run

Factory setting	
Test run for pump down	
Test run for heating	
Test run for cooling intermediate season	
Test run for heating for intermediate season	
Forced stoppage of compressor	

i NOTE

- This operation is reset once the compressor is in Thermo-ON mode.
- During the test run operation the units will operate continuously during 2 hours without Thermo-OFF and the 3-minute guard for compressor protection will be effective.
- Test run will start within 20 seconds after setting DSW1 pin 1 to ON position

◆ DSW2: Piping length/selection function

Setting before shipment		
Piping length	5 m < Lt	
	5 m < Lt < 30 m	
	Lt < 30 m	
Control to support existing pipes. When using Ø19,05 gas pipe (soft-annealed), switch ON DSW2 pin 4 in the outdoor unit PCB)		
Optional function setting mode (The optional function selection mode becomes available)		
External input/output setting mode (The input / output signals selection mode becomes available).		

◆ DSW3: Capacity setting (No setting is required)

Factory setting

◆ DSW4 / RSW1: Refrigerant cycle number setting (Setting is required)

In case of using an H-Link II net it is required to set the refrigerant cycle number.

Setting for the ten digit (Factory setting)	
Setting for the last digit Set by inserting slotted screwdriver into the groove	

i NOTE

Rotary switche's positions (RSW1) are set by inserting a screw driver into the groove.

◆ DSW5: End terminal resistance (No setting is required)

Before shipment, No. 1 pin of DSW5 is set at ON.

No setting is required.

Setting before shipment	
-------------------------	---

◆ DSW6: Additional setting (No setting is required)

Setting before shipment	
-------------------------	---

7.3.1.3 Jumpers

Jumper lead setting (JP1~6)

Setting before shipment:

System	JP1	JP2	JP3	JP4	JP5	JP6
Single phase (1~)	0	1	1	1	0	0
Three-phase (3N~)	1	1	0	1	0	0
Only RAS-(2/2.5)WHVNP	1	1	1	1	0	0

NOTE

- 0: Open
- 1: Short circuit

The function selection using the jumper lead setting is shown in the tables below:

RAS-(2-3)WHVNP		
Setting	Function	Details
JP1	Not used	—
JP2	Not used	—
JP3	Not used	—
JP4	Not used	—
JP5	Self-diagnosis	For function test of the outdoor unit control PCB.
JP6	Phase detection release	Phase detection abnormality not detected. Release of the Momentary Power Failure between S and T phases

RAS-(4-10)H(V)NPE		
Setting	Function	Details
JP1	230V power source voltage	When JP1 is set to "open", current protection parameters are set for a 230 V power source voltage.
JP2	Not used	—
JP3	400V power source voltage	When JP3 is set to "open", current protection parameters are set for a 400 V power source voltage. However, in single phase units it becomes 200V power source voltage.
JP4	Not used	—
JP5	Selfdiagnosis	For function test of the outdoor unit control PCB. Factory default setting is open. When power ON in short condition it enters selfdiagnosis.
JP6	Phase detection release	Phase detection abnormality not detected. When short, doesn't affect phase detection.

7.3.1.4 LED indication

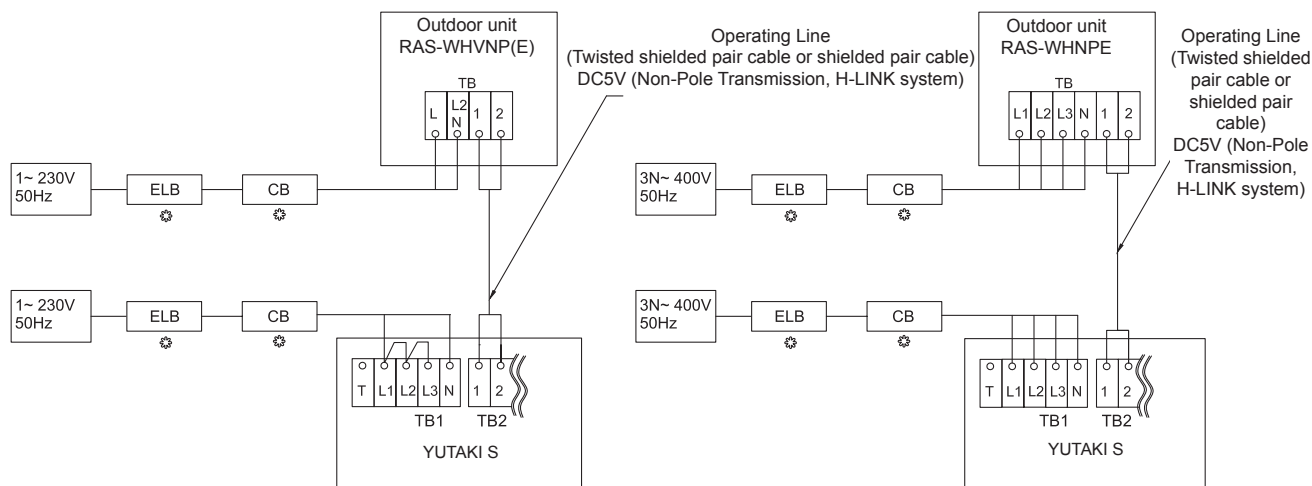
LED Indication		
LED1	Red	This LED indicates the transmission status between the indoor unit and the unit controller
LED2	Yellow	This LED indicates the transmission status between the indoor unit and the outdoor unit
LED3	Green	Power source for the PCB

7.4 TERMINAL BOARD CONNECTIONS

7.4.1 Table board 1

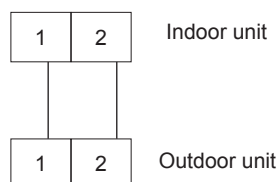
◆ Main power supply

The main power supply connection is wired to the Terminal board (TB1) as follows:



◆ Indoor/outdoor communication wiring (TB2)

- The transmission is wired to terminals 1-2.
- The H-LINK II wiring system requires only two transmission cables that connect the indoor unit and the outdoor unit.



- Use twist pair wires (0.75 mm²) for operation wiring between outdoor unit and indoor unit. The wiring must consist of 2-core wires (Do not use wire with more than 3 cores).
- Use shielded wires for intermediate wiring to protect the units from noise interference, with a length of less than 300 m and a size in compliance with local codes.
- In the event that a conduit tube for field-wiring is not used, fix rubber bushes to the panel with adhesive.

⚠ CAUTION

Ensure that the transmission wiring is not wrongly connected to any live part that could be damaged the PCB.

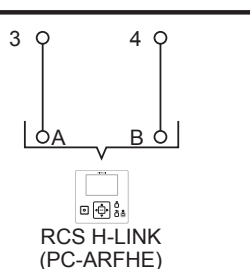
7.4.2 Table board 2

Input and output terminals give the possibility to configure the installation according to the needs of the user. The default settings and I/O terminals reach most of the options necessary for an optimal performance of the system. Additionally, the settings can be modified through the unit controller, and input/output terminals can be used, if required, to have additional options.

Input terminals (Default input functions)

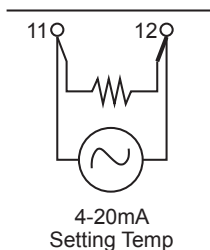
◆ PC-ARFHE connection

In those cases where the unit controller is ordered as a required accessory (YUTAKI S80 or YUTAKI M), or those cases where another PC-ARFHE must be connected as a second thermostat, the connections between PC-ARFHE and the indoor unit must be done in terminals 3 and 4, as it is shown in the next picture:



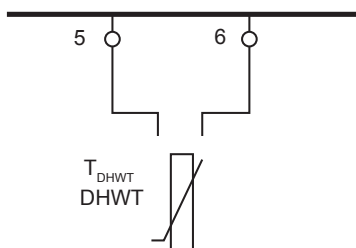
◆ 4-20mA Setting Temperature

It is possible to connect an external controller to the terminals 11 and 12 to provide a manual water temperature setting. The input current (4-20 mA) will be transformed into voltage by means of the ATW-MAK-01 accessory connected to these terminals. Settings in Unit controller and in PCB have to be in Local mode (Enabled manual operation) to enable this function.



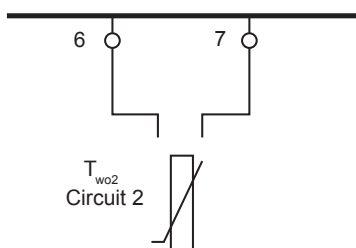
◆ DHWT Thermistor (TDHWT)

For those cases in which a tank is installed as accessory, a thermistor must be installed to control the water temperature. The connection for this thermistor must be done between terminals 5 and 6 of the TB2.



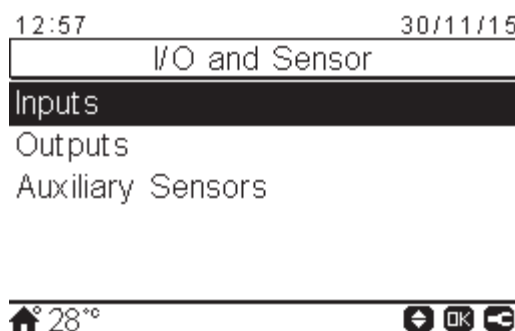
◆ Water outlet thermistor for circuit 2 (TWO2)

When the installation is configured with a second circuit the thermistor for the water outlet temperature have to be connected between terminals 6 and 7 of the terminal board 2.



Input terminals (Optional input functions)

Additionally to the factory-set functions, YUTAKI series allow to other configurations depending on the needs of the customer. All those inputs are configurable from the "I/O and sensor" menu of Unit controller are the following:



Inputs: Demand ON/OFF, Smart act., Swimming pool input, Solar, Operation mode, DHW boost, Power Meter 1, Demand ON/OFF C1, Demand ON/FF C2, Forced heating, Forced cooling, Power meter 2, ECO mode C1 and C2, ECO mode C1, ECO mode C2, Forced OFF, SG 2.

◆ Room thermostat communication cables

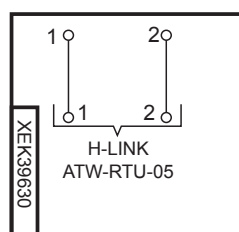
There are two different room thermostat types as accessory

Optional wireless intelligent room thermostat (TB2)

Only for wireless room thermostat accessory: the receiver is connected to the polarity-free terminals 1 and 2.

The Wireless room thermostat and the Intelligent receiver are already configured to communicate with each other. If the Wireless room thermostat or the Intelligent receiver is replaced or an additional second temperature circuit thermostat is added, it is necessary to rebind them as explained in the manual of the Wireless intelligent room thermostat (PMML0412A).

The Intelligent receiver is connected to the indoor unit table board as shown in the next picture:

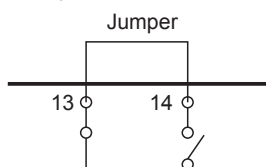


Optional wireless ON/OFF room thermostat

The heat pump system has been designed to allow the connection of a remote ON/OFF thermostat to effectively control the home temperature. Depending on the room temperature, the thermostat will turn the system to ON or OFF.

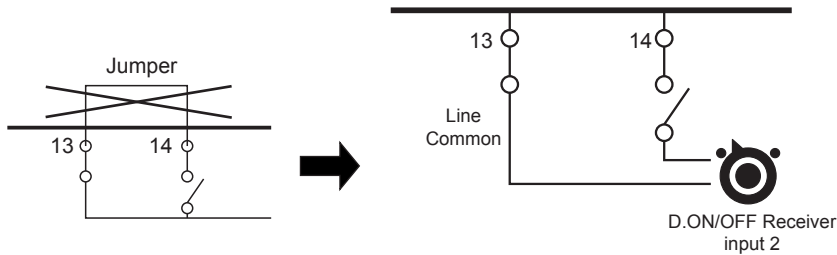
a. If no thermostat is installed

Terminals 13 and 14 are jumped if there is no ON/OFF receiver connected. When no remote thermostat is installed the operating condition for the unit (Thermo ON/OFF) will be controlled by the "water calculation" control system.



b. Installation of the ATW-RTU-04

In case of setting an installation with 2 circuits (circuit 1 and circuit 2) and the same demand ON/OFF is used for both of them, remove the jumper between terminals 13 and 14 of the Terminal board 2 and connect the RF receiver as shown in the following picture.



Thermostat requirements:

- Power supply: 230V AC
- Contact voltage: 230V

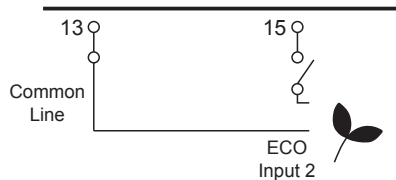
i NOTE

- If wireless intelligent thermostat is selected, optional ON/OFF thermostat has no effect.
- Set the configuration in the user's control. See chapter 8. Unit controller for more information.
- In case of setting an installation with 2 circuits (Circuit 1 and Circuit 2) and a different Demand ON/OFF is used for each of them, please refer to Optional Inputs section in this chapter.

◆ ECO (input 2)

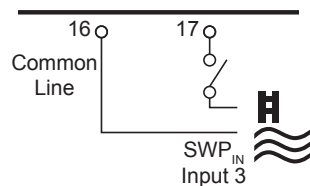
When enabled at Unit controller, both for circuit 1 and Circuit 2, also for heating and cooling, this input switches the unit to the temperature configured.

The input can come from a push button, a thermostat or any other external device with that purpose.



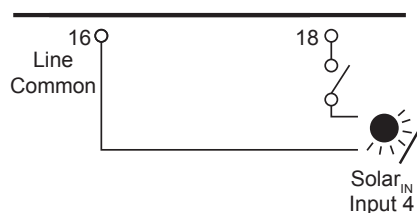
◆ Swimming pool (input 3)

When it is necessary to control the temperature of the swimming pool water, a connection between the heat pump and the corresponding sensor must be done on terminals 16 and 17 at the Terminal board (input 4).



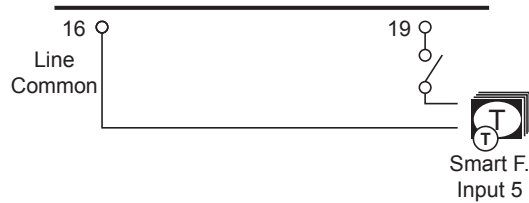
◆ Solar (input 4)

This input comes from a solar panel sensor. The solar combination by input demand allows HSW to be heated by solar system when there is enough solar energy available. The connection of this input signal has to be done between terminals 16 and 18 at TB2.



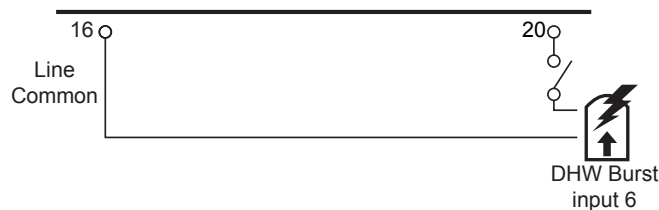
◆ Smart tariff (input 5)

This function can be used to block or limit the heat pump. It allows an external *Smart* switch device to switch off or limit the heat pump during a period of peak electricity demand. Terminals 16 and 19 of the TB2.



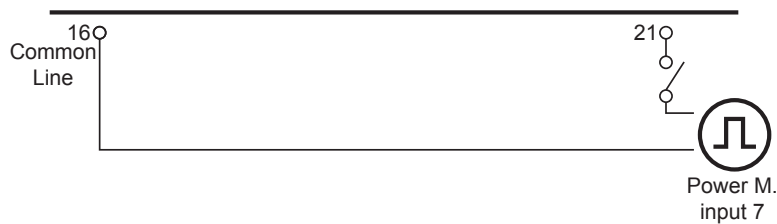
◆ DHW burst (input 6)

This function allows a request for a one-time heating up of the domestic hot water temperature. The input can be sent by a push button, a NC contact and a NO contact. This input is switched on terminals 16 and 20 of the TB2.



◆ P. Meter (input 7)

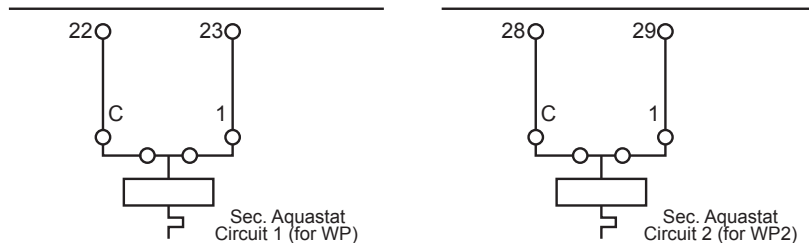
This function is used to limit the heat pump which is controlled by an external power meter device. The calculation method is done by measuring real consumption of the whole installation with one power meter device or 2 separate power meter (one for indoor unit and another one for outdoor unit).



◆ Aquastat for Circuit 1 and circuit 2 (for WP and WP2)

Aquastat is a security accessory to control the water temperature of circuit 1 and circuit 2 usually enabled for the control of the temperature of the radiant floor.

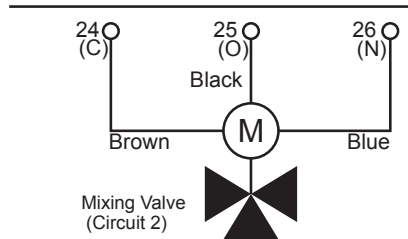
Only for UK market, terminals 22 and 23 are for the connection of the limit thermostat.



Output terminals (Default output functions)

◆ Mixing valve for Circuit 2

The mixing valve is controlled to maintain the second heating temperature at the second heating temperature set point. The control system decides how much to open or close the mixing valve to achieve the desired position of the valve.



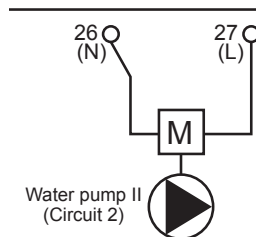
Terminal	Name	Description
24	C	Close
25	O	Open
26	N	Neutral

Valve requirements:

- Power supply: 230V AC 50Hz
- Maximum running current: 100mA

◆ Water pump 2 Circuit 2

In case of a second circuit installation (second temperature level) the secondary pump is the circulating pump for the second heating temperature

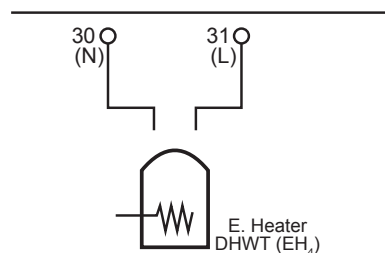


Pump requirements:

- Power supply: 230V AC 50Hz
- Maximum running current: 500mA (An auxiliary relay must be installed in case of high consumption of the water pump).

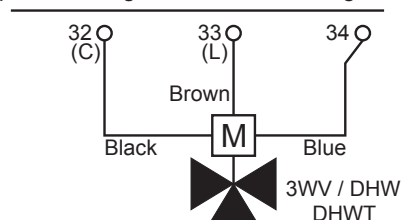
◆ Electrical heater DHWT output

In those cases where a DHW tank is installed with an electrical heater, the Air to Water heat pump can activate the electric heater of the tank when the heat pump cannot achieve the required DHW temperature by itself.



◆ 3Way valve for DHW tank output

Yutaki units can be used to heat DHW. The signal is used on a 3-way motorized diverting valve and to provide control of supply water flow (water flow for space heating when there is no signal, and water flow for DHW when signal is ON)



Valve requirements:

- Power supply: 230V AC 50Hz
- Maximum running current: 100mA

CAUTION

Only 3-way type valve can be connected:

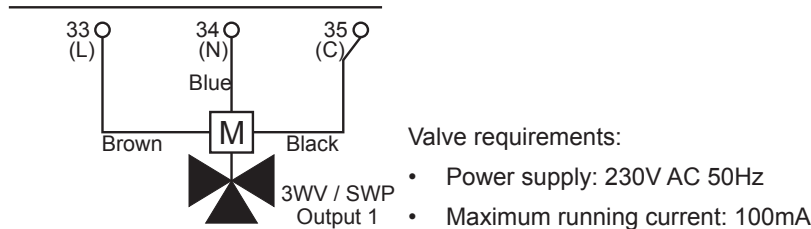
- Spring return 2-wire type 3-way valve: the 3-way valve should be fitted when normally working (not power to the valve). Normally diverts to heating circuit side.
- When using SPST 3-wire valve, HITACHI is not responsible for its operation.

Output terminals (Optional output functions)

◆ 3 Way valve for Swimming pool (Output 1)

YUTAKI units can be used to heat the water of a swimming pool. The signal is used on a 3-way motorized diverting valve and to provide control of supply water flow (water flow for space heating when there is no signal, and water flow for swimming pool when signal is ON). This output is available when the function is enabled from the Unit controller.

Using the appropriate wiring, connect the valve cables as shown in the previous picture.



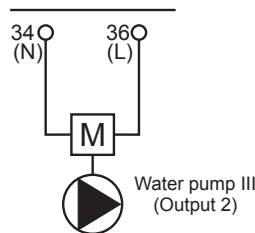
⚠ CAUTION

Only 3-way type valve can be connected:

- Spring return 2-wire type 3-way valve: the 3-way valve should be fitted when normally working (not power to the valve). Normally diverts to heating circuit side.
- When using SPST 3-wire valve, HITACHI is not responsible for its operation.

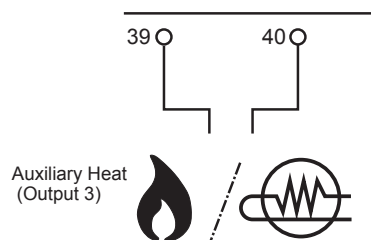
◆ Water pump 3 (Output 2)

When the boiler is configured with the heat pump or needs an additional pump for the system, a hydraulic separator or buffer tank must be used to ensure a correct hydraulic balance



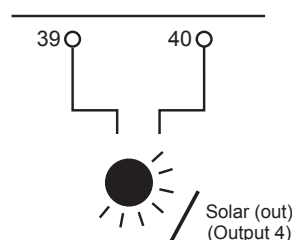
◆ Auxiliary boiler or heater (Output 3)

The auxiliary boiler or heater can be used when the heat pump cannot achieve the require temperature by itself. A water electric heater (as accessory) can be used to provide the additional heating required on coldest days of the year.



◆ Solar (output 4)

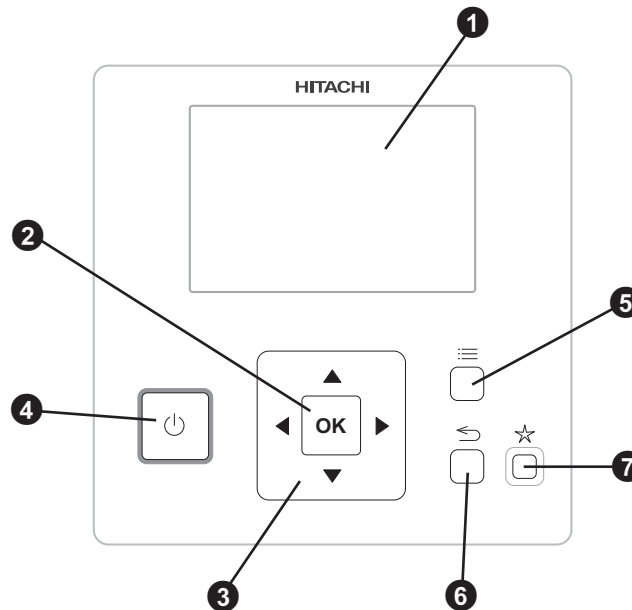
This output is used when solar mode is enabled (from Unit controller) and the temperature in the solar panel rises above the water temperature in the domestic hot water tank (DHWT). Connection between terminals 39 and 40 are switched ON to activate the water pump dedicated to the solar panels combination.



8 UNIT CONTROLLER

The new unit controller for YUTAKI series (PC-ARFHE) is an user-friendly remote control which ensures a strong and safe communication through H-LINK.

8.1 DEFINITION OF THE SWITCHES



❶ Liquid Crystal Display

Screen where controller software is displayed.

❷ OK button

To select the variables to be edited and to confirm the selected values.

❸ Arrows key

It helps the user to move through the menus and views.

❹ Run/Stop button

It works for all zones if none of the zones is selected or only for one zone when that zone is selected.

❺ Menu button

It shows the different configuration options of the user controller.

❻ Return button

To return to the previous screen.

❼ Favourite button

When this button is pressed, the selected favourite action (ECO/Comfort, Holiday, Simple timer or DHW boost) is directly executed.

8.2 DESCRIPTION OF THE ICONS

8.2.1 Common icons

Icon	Name	Values	Explanation
OFF	Status for circuit 1, 2, DHW and swimming pool.		Circuit I or II is in Demand-OFF
			Circuit I or II is on Thermo-OFF
			Circuit I or II is working between $0 < X \leq 33\%$ of the desired water outlet temperature
			Circuit I or II is working between $33 < X \leq 66\%$ of the desired water outlet temperature
			Circuit I or II is working between $66 < X \leq 100\%$ of the desired water outlet temperature
	Mode		Heating
			Cooling
			Auto
	Setting temperatures	Value	Displays the setting temperature of the circuit 1, circuit 2, DHW and swimming pool
		OFF	Circuit 1, Circuit 2, DHW or Swimming Pool are stopped by button or timer
	Alarm		Existing alarm. This icon appears with the alarm code
	Timer		Simple timer
			Weekly timer
	Derogation		When there is a derogation from the configured timer
	Installer mode		Inform that user controller is logged on the installer mode which has special privileges
	Menu lock		It appears when menu is blocked from a central control. When indoor communication is lost, this icon disappears
	Outdoor temperature		The ambient temperature is indicated at the right side of this button

8.2.2 Icons for the comprehensive view

Icon	Name	Values	Explanation
	Pump		This icon informs about pump operation. There are three available pumps on the system. Each one is numbered, and its corresponding number is displayed below to the pump icon when it is operating
	Heater step		Indicates which of the 3 possible heater steps is applied on space heating
	DHW Heater		Informs about DHW Heater operation. (If it is enabled)
	Solar		Combination with solar energy
	Compressor		Compressor enabled (For YUTAKI S, S COMBI and M)
			Compressors enabled. 1: R410A / 2: R-134a (For YUTAKI S80)
	Boiler		Auxiliary boiler is working
	Tariff		Tariff signal informs about some cost conditions of the consumption of the system
	Defrost		Defrost function is active
	Central/Local	-	No icon means local mode
			Central mode (Three types of control: Water, Air or Full)
	Forced OFF		When forced off Input is configured and its signal is received, all the configured items on the comprehensive view (C1, C2, DHW, and/or SWP) are shown in OFF, with this small icon below
	Auto ON/OFF		When daily average is over auto summer switch-off temperature, circuits 1 and 2 are forced to OFF (Only if Auto ON/OFF enabled)
	Test Run		Informs about the activation of the "Test Run" function
	Anti- Legionella		Activation of the Anti-Legionella operation
	DHW boost		It activates the DHW heater for an immediate DHW operation
	ECO/Comfort mode for circuits 1 and 2	-	No icon means Comfort mode
			ECO mode

8.2.3 Icons for the room thermostat view

Icon	Name	Values	Explanation
	Manual/Auto mode		Manual mode
			Auto mode with timer setting
			Auto mode without timer setting
	Setting/Room temperature		Setting temperature
			Room temperature
	End of timer period		The end hour of the timer period is indicated below this icon
	End of holiday period		The end hour of the holiday period is indicated below this icon
	Setting temperature		This icon appears while the setting temperature is being changed, and indicates the actual temperature
	Next screen		When room thermostat has been configured for both circuit 1 and 2, this icon appears at the right side of the screen to indicated that there is a 2nd room thermostat view

8.3 CONTENTS

Menu Contents					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Operation Information					
	General				
	Circuit 1				
	Circuit 2				
	DHW				
	Swimming Pool				
	Heat Pump Details				
	Electrical Heater				
	Boiler Combination				
	Solar Combination				
	Energy data				
	Alarm History				
System Configuration					
	General Options				
	Holiday Mode				
	Air Eco Offset				
	Room Thermostats				
	Thermostat type				
	Compensation Factors				
	Circuit 1				
	Circuit 2				
	Room Temp Demand OFF				
	Circuit 1				
	Circuit 2				
	Check RT address				
	Detected circuits				
	Thermostat 1				
	Thermostat 2				
	Central Operation				
	Timer and Schedule				
	Circuit 1				
	Heating (Air / Water)				
	Timer Type				
	Simple				
	Schedule				
	Cooling (Air / Water)				
	Timer Type				
	Simple				
	Schedule				
	Circuit 2				
	Heating (Air / Water)				
	Timer Type				
	Simple				
	Schedule				
	Cooling (Air / Water)				
	Timer Type				
	Simple				
	Schedule				
	DHW				

Menu Contents					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Timer Type				
	Simple				
	Schedule				
	Swimming Pool				
	Timer Type				
	Simple				
	Schedule				
	Delete All Timer Configuration				
	Water settings				
	Space Heating				
	Circuit 1				
	Circuit 2				
	Space Cooling				
	Circuit 1				
	Circuit 2				
	DHW				
	SWP				
	Space Heating				
	Circuit 1				
	Water Calculation Mode				
	Eco offset				
	Working limits				
	Circuit 2				
	Water Calculation Mode				
	Eco offset				
	Working limits				
	Mixing valve				
	Space Cooling				
	Circuit 1				
	Water Calculation Mode				
	Eco offset				
	Working limits				
	Circuit 2				
	Water Calculation Mode				
	Eco offset				
	Working limits				
	Mixing valve				
	DHW				
	Anti Legionella				
	Swimming Pool				
	Status				
	Setting Temperature				
	Offset Temperature				
	Complementary Heating				

Menu Contents					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
		Heating Source 			
		Electrical Heater 			
		Boiler Combination 			
		Solar Combination			
			Status		
				Input demand 	
				Total control 	
	Heat Pump 				
		Water Pump Configuration 			
		Outdoor average Timer 			
		Minimum ON Time 			
		Minimum OFF Time 			
		Emergency Operation 			
		Seizure Protection 			
			Status 		
			Operation Day 		
			Starting Time 		
	Optional Functions				
		System 			
		Hydraulic Sep. Status 			
		Energy Configuration 			
		Smart Function 			
		Space Functions			
			Heating Auto On/Off		
			Auto Heat/Cool		

Menu Contents					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
		DHW 			
	I/O and Sensors 				
		Inputs 			
		Outputs 			
		Auxiliary sensors 			
Controller Settings					
	Controller Options 				
	Room Name				
	Date and Time				
		Adjust Date and Time			
		European Summer Time			
		UTC Zone			
	Screen settings				
	Language selection				
Commisioning 					
	Air purge 				
		Start Air purge 			
	Test run 				
		Start test run 			
	Screed drying 				
		Start Screed Drying 			
About					
	System Information				
	Contact Information				
Factory Reset 					
Return to user mode 					

◆ Installer mode

Icon  means that this menu is available only for installer, a special user with higher access privileges to configure the system. In order to access the controller as Installer, “OK” and “↶” buttons must be pressed for 3 seconds.



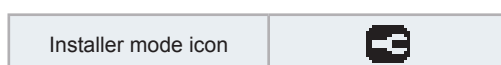
After that, the “Enter the login password” message is displayed.

The login password for the Installer is:



Press “OK” to confirm the password.

If the correct access code is entered, the installer mode icon appears on the notifications bar (bottom line).



After 30 minutes of inactivity, it is necessary to repeat the log in process. To exit the Installer mode and return to the unit menu, hold down the “↶” button for 3 seconds or go to the “Return to user mode” on the main menu.

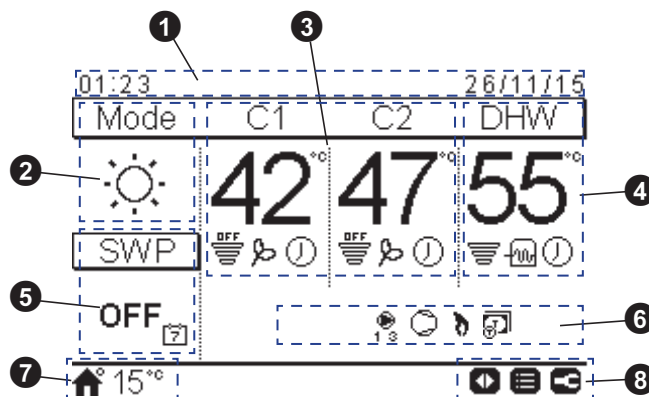
NOTE

The following chapters explain the special settings the Installer can edit. It is important to understand that the Installer can also perform all the actions available for the typical user.

8.4 MAIN SCREEN

Depending on the working mode of the user controller, the main screen is shown in a different way. When the user controller is working as a master unit controller, a comprehensive view with all the elements is shown, whereas when the user controller is working as a room thermostat (located in one of the controlled zones), the main screen appears with simplified information.

8.4.1 Comprehensive view



1 Time and date

The current time/date information is displayed. This information can be changed on the configuration menu.

2 Operation mode (Heating/Cooling/Auto)

This icon shows the unit's mode of operation status. It has to be edited by pressing the OK button, and it can be switched between Heating, Cooling and Auto mode. (If available option).

3 Control of circuits 1 and 2

It displays the setting temperature calculated for each circuit and a throughput icon indicating the percentage of the actual temperature with respect to the setting temperature. It can also show the ECO mode and timer activation if they are enabled.

The setting temperature can be modified using the arrows keys over this view (if water calculation mode is set as fix).

Pressing the OK button, the following quick actions are shown:

- Timer: In this menu, simple timer or schedule timer can be selected and configured.
- OTC: OTC Setting temperature (User can only refer to the OTC mode and its setting temperature value)
- ECO/Comfort: Selection between ECO and Comfort mode.
- Status: Some working conditions can be consulted.

4 DHW control

It displays the setting temperature for DHW and a throughput icon indicating the percentage of the actual temperature with respect to the setting temperature. It can also show the operation of the electrical heater of the DHW, the timer activation and the DHW boost if they are enabled.

The setting temperature can be modified using the arrows keys over this view.

Pressing the OK button, the following quick actions are shown:

- Timer: In this menu, simple timer or schedule timer can be selected and configured.
- DHW boost: It activates the DHW heater for an immediate DHW operation
- Status: Some working conditions can be consulted.

If anti-legionella operation is working, its icon appears below the setting temperature.

5 Swimming pool control

It gives information about the swimming pool setting temperature and displays a throughput icon indicating the percentage of the actual temperature with respect to the setting temperature.

The setting temperature can be modified using the arrows keys over this view.

Pressing the OK button, the following options are shown:

- Timer: In this menu, simple timer or schedule timer can be selected and configured.
- Status: Some working conditions can be consulted.

6 Unit status signals

This part of the screen displays all the notification icons that offer general knowledge on the unit's situation

Some of these icons can be: Defrost operation, Water pumps, Compressor/s, Boiler working, Tariff input, Test tun...

7 Outdoor temperature / Alarm indication

In normal operation, the outdoor temperature is displayed besides the home icon signal.

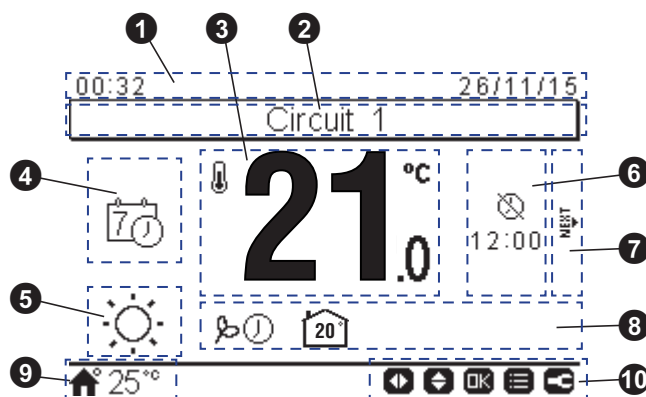
In abnormal operation, the alarm icon is indicated with its corresponding alarm code.

8 Available buttons / Installer mode

It indicates the buttons of the user controller which can be used in this moment.

When Installer mode is enabled, its icon appears on the right side of this view.

8.4.2 Room thermostat view

**1 Time and date**

The current time/date information is displayed. This information can be changed on the configuration menu.

2 Definition of the circuit

It informs about which circuit is being indicated (1 or 2).

3 Actual/Setting room temperature

It displays the actual room temperature. The setting temperature can be adjusted using the up/down arrows keys. In this case, while the setting temperature is being modified, the icon of the actual room temperature is indicated below the setting temperature (house icon).

4 Room thermostat mode

In this part of the screen, the room thermostat mode can be selected between Manual and Auto. If Auto is selected, two possible icons can be displayed: one if a timer period has been selected and the other one if not.

5 Operation mode (Heating / Cooling / Auto)

The current operation mode is displayed. To configure it press OK to enter in quick actions.

6 Next operation

In this area, the end hour of the simple timer or holiday or next schedule action is indicated below its respective icon.

7 Next circuit

It informs that there is a room thermostat view for a second circuit and it is possible to access by pressing the right key.

8 Icons notification

This part of the screen displays all the notification icons that offer general knowledge on the unit's situation

Some of these icons can be: ECO mode, Timer operation, throughput icon...

9 Outdoor temperature / Alarm indication

In normal operation, the outdoor temperature is displayed besides the home icon signal.

In abnormal operation, the alarm icon is indicated with its corresponding alarm code.

10 Available buttons / Installer mode

It indicates the buttons of the user controller which can be used in this moment.

When Installer mode is enabled, its icon appears on the right side of this view.

OK button

Pressing the OK button, the quick actions are shown:

- Timer: In this menu, simple timer or schedule timer can be selected and configured.
- Operation mode: It allows to select the unit operation between Heating, Cooling and Auto mode.
- ECO/Comfort: Selection between ECO and Comfort mode.
- Holiday: It allows to start a holiday period until the configured returning date and time.
- Status: Some working conditions can be consulted.

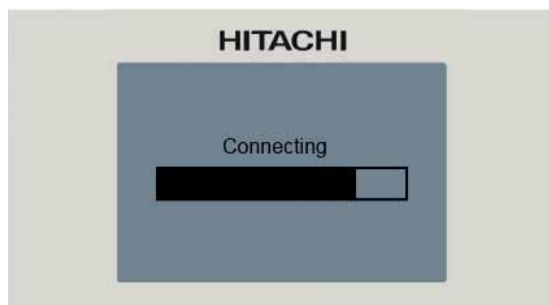
8.5 WIZARD START-UP CONFIGURATION

Once the design and installation of the system has been carried out, please set the controller following the wizard indication.

After starting-up the system for the first time, the controller remains in a “Connecting” state, waiting for the indoor unit to send the following parameters:

- Operation mode: Heating only or heating and cooling
- Model type: YUTAKI S, S COMBI, S80 or M.

This waiting state takes 25 seconds roughly:



After this “Connecting state” is finished, the LCD wizard makes the following questions:

CODE	Description	Default Value	Range				Steps	Units	Application				Notes
Controller Configuration									S	SC	S80	M	
Current Language	Select the language of the controller	English	PC-ARFHE	PC-ARFHE-01	PC-ARFHE-02								
			English Spanish French Italian German	English Portuguese Danish Dutch Greek	English	-	-	o	o	o	o	-	
-	Adjust Date and Time	-	-				-	-	o	o	o	o	-
assistant Type	Select the configuration method	Configuration Assistant	Configuration Assistant Advanced Configuration				-	-	o	o	o	o	-

If the selected Assistant type is “Configuration Assistant” it starts the Assistant questions, if “Advanced Configuration” is selected it jumps to the detailed list of parameters that can be configured.

8.5.1.1 General overview

8.5.1.2 Questions

In case of executing the Configuration Assistant, each line is a screen with a question:

Questions	Description	Default Value	Range	Steps	Units	Application				Notes
Controller Configuration						S	SC	S80	M	
Question 1	Is this device attached to the unit?	Yes	No	-	-	○	○	○	○	When the device is installed in a different site than the unit.
			Yes							If "Yes" is selected, it jumps to question 3, since it means that the device is controlling the unit to which it is attached.
Question 2	Is this device controlling the unit?	Yes	No	-	-	○	○	○	○	If "No" is selected, it means that the device acts as a Room thermostat only. It does not control the unit.
			Yes							
Question 3	Is this device used as a Room thermostat of a zone?	No	No Yes, in zone 1 Yes, in zone 2 Yes, in both zones	-	-	○	○	○	○	If questions 1 and 2 have been answered as "No", the option "No" in question 3 is not available and after answering the question 3, the Configuration Assistant task will have finished. If "Yes, in both zones" is selected, it jumps to question 5, since it means that there are 2 circuits.
Question 4	How many circuits do you have?	1	1	-	-	○	○	○	○	Select the total water circuits of the system.
			2							
Question 5	What are the heat emitters installed on circuit 1?	Underfloor heating	Underfloor heating	-	-	○	○	○	○	-
			Fan coils							
			Radiators							
Question 5B	What are the heat emitters of installed on circuit 2?	Underfloor heating	Underfloor heating	-	-	○	○	○	○	If questions 4 have been answered as "1", this question is not available and it jumps directly to question 6.
			Fan coils							
			Radiators							
Question 6	Do you have a domestic hot water tank installed?	No	No	-	-	○	○	○	○	-
			Yes							
Question 7	Do you have a swimming pool installed?	No	No	-	-	○	○	○	○	-
			Yes							
Question 8	Do you have a boiler installed?	No	No	-	-	○	○	○	○	In case of YUTAKI S80 and M, if "Yes" is selected, it jumps to question 10 since these units cannot work with a boiler and an electric heater simultaneously.
			Yes							
Question 9	Do you have an electric backup heater installed?	No	No	-	-	○	○	○	○	If "No" is selected, depending on the selected answers in questions 3 and 4, the Configuration Assistant task will have finished after this question.
			Yes							
Question 10	Select the bivalent point:	0	-20 to 20	1	°C	○	○	○	○	Only available if question 8 or 9 has been answered as "Yes". Depending on the selected answers in questions 3 and 4, the Configuration Assistant task will have finished after this question.

Questions	Description	Default Value	Range	Steps	Units	Application				Notes
Controller Configuration						S	SC	S80	M	
Question 11	How many thermostats are installed?	0	0	1	-	○	○	○	○	If question 3 has been answered with a different answer than "No", Configuration Assistant task will have finished after this question, since the room thermostats have to be connected as "Wired" (Mixed configuration (Wireless + Wired) is not allowed). The number of possible installed thermostats depends on the answers of question 3.
			1							
			2							
Question 12	How are they connected?	Wired	Wired	-	-	○	○	○	○	Only available when question 11 has been answered with "1" or "2" and if one of the following conditions: - question 1 answered as "Yes" and question 3 as "No" - question 1 answered as "No" and question 3 as "No"
			Wireless							

IMPORTANT:

- Always start the configuration from the Master. In case of using "advanced configuration", Room PC-ARFH should be configured before start the "check RT address" procedure.
- After the question 3, information is send between the PC-ARFH, so for example:
 - If first PC-ARFH has been configured as Master, the other PC-ARFH cannot be Master and it is blocked to answer only the Question 3.
- After the question 4, information is send between the PC-ARFH, so for example:
 - If first PC-ARFH has only 1 circuit, the other PC-ARFH cannot control zone 2.

8.5.1.3 Results

Question	Description	Answers	Action
Question 1	Is this device attached to the unit?	No	-
		Yes	It jumps to the question3 and selects automatically "Yes" for the question 2.
Question 2	Is this device controlling the unit?	No	-
		Yes	-
Question 3	Is this device used as a Room thermostat of a zone?	No	If question 2 is answered as "Yes": - Controller type (LCDM) = "Unit" - Operation view (LCDUop) = "Unit"
		Yes, in zone 1	If question 2 is answered as "Yes": - Controller type (LCDM) = "Unit" - Operation view (LCDUop) = "Unit" If question 2 is answered as "No": - Controller type (LCDM) = "Room" - Operation view (LCDUop) = "Room" Controlled circuits (LCDL) = "C1" Question 11: Minimum "1" Question 12: Answer forced as "Wired"
		Yes, in zone 2	If question 2 is answered as "Yes": - Controller type (LCDM) = "Unit" - Operation view (LCDUop) = "Unit" If question 2 is answered as "No": - Controller type (LCDM) = "Room" - Operation view (LCDUop) = "Room" Controlled circuits (LCDL) = "Room C2" Question 11: Minimum "1" Question 12: Answer forced as "Wired"
Question 4	How many circuits do you have?	1	Water calculation mode for circuit 1 heating (C1WC) = "Gradient" Water calculation mode for circuit 1 cooling (CC1WC) = "Fix" Water calculation mode for circuit 2 heating (C2WC) = "Disabled" Water calculation mode for circuit 2 cooling (CC2WC) = "Disabled"
		2	Water calculation mode for circuit 1 heating (C1WC) = "Gradient" Water calculation mode for circuit 1 cooling (CC1WC) = "Fix" Water calculation mode for circuit 2 heating (C2WC) = "Gradient" Water calculation mode for circuit 2 cooling (CC2WC) = "Fix"

Question	Description	Answers	Action
Question 5a	Which are the emitters of circuit 1?	Underfloor heating	Water calculation mode for circuit 1 heating (C1WC) = "Gradient" Gradient curve for circuit 1 (C1OTC) = "0.4"
		Fan coils	Water calculation mode for circuit 1 heating (C1WC) = "Fix" Fixed T for circuit 1 (C1TF) = "45"
		Radiators	Water calculation mode for circuit 1 heating (C1WC) = "Gradient" Gradient curve for circuit 1 (C1OTC) = "1.2"
Question 5b	Which are the emitters of circuit 2?	Underfloor heating	Water calculation mode for circuit 2 heating (C2WC) = "Gradient" Gradient curve for circuit 2 (C2OTC) = "0.4"
		Fan coils	Water calculation mode for circuit 2 heating (C2WC) = "Fix" Fixed T for circuit 2 (C2TF) = "45"
		Radiators	C2WC = "Gradient" Gradient curve for circuit 2 (C2OTC) = "1.2"
Question 6	Do you have domestic hot water tank installed?	No	Status (DHWs) = "Disabled"
		Yes	Status (DHWs) = "Enabled"
Question 7	Do you have swimming pool installed?	No	Status (SWP) = "Disabled"
		Yes	Status (SWP) = "Enabled"
Question 8	Do you have boiler installed?	No	-
		Yes	-
Question 9	Do you have electric backup heater installed?	No	If question 8 has been answered as "Yes": - Heating source (HES) = "HP+Boiler" If question 8 has been answered as "No": - Heating source (HES) = "HP Only"
		Yes	If question 8 has been answered as "Yes": - Heating source (HES) = "HP+EH+Bo." If question 8 has been answered as "No": - Heating source (HES) = "HP+Heater"
Question 10	Select the bivalent point:	-20 to 20	If questions 8 and 9 have been answered as "Yes": a) If value is <"-15": - Bivalent point (BOBP) = Value - Bivalent point (HEBP) = Value + 5 b) If value is ≥"-15": - Bivalent point (HEBP) = Value - Bivalent point (BOBP) = Value - 5 If question 8 has been answered as "Yes" and question 9 as "No": - Bivalent point (BOBP) = Value If question 8 has been answered as "No" and question 9 as "Yes": - Bivalent point (HEBP) = Value
Question 11	How many thermostats are installed?	0	Thermostat type (RTType) = "None"
		1	-
		2	-
Question 12	How are they connected?	Wired	If question 11 has been answered with a value different than "0", "Check RT address" is launched.
		Wireless	If question 11 has been answered as "1": - Thermostat 1 (otC1) = "C1" - Thermostat 2 (otC2) = "None" If question 11 has been answered as "2": - Thermostat 1 (otC1) = "C1" - Thermostat 2 (otC2) = "Room C2"

8.5.1.4 Examples of possible configurations

i NOTE

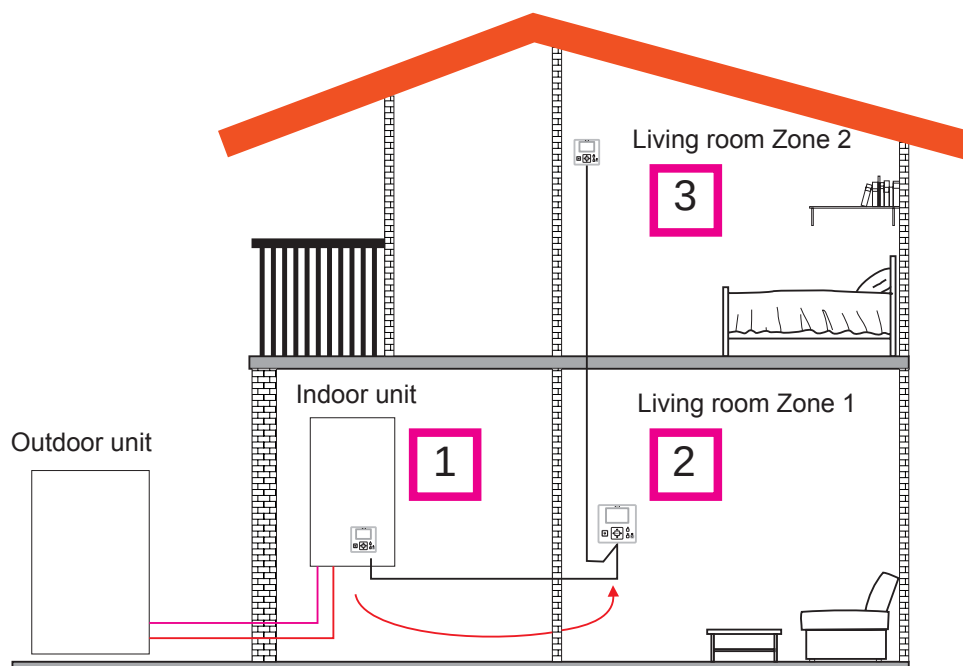
- Other installation configurations are possible. These are examples only for illustration purposes.
- It is recommended to set firstly the Master device so as to ease the configuration of the slave devices.

◆ Example 1

1- Master unit controller as unit configuration with possibility to move to a living room.

2- Slave Unit controller as a room thermostat for Zone 1, as accessory

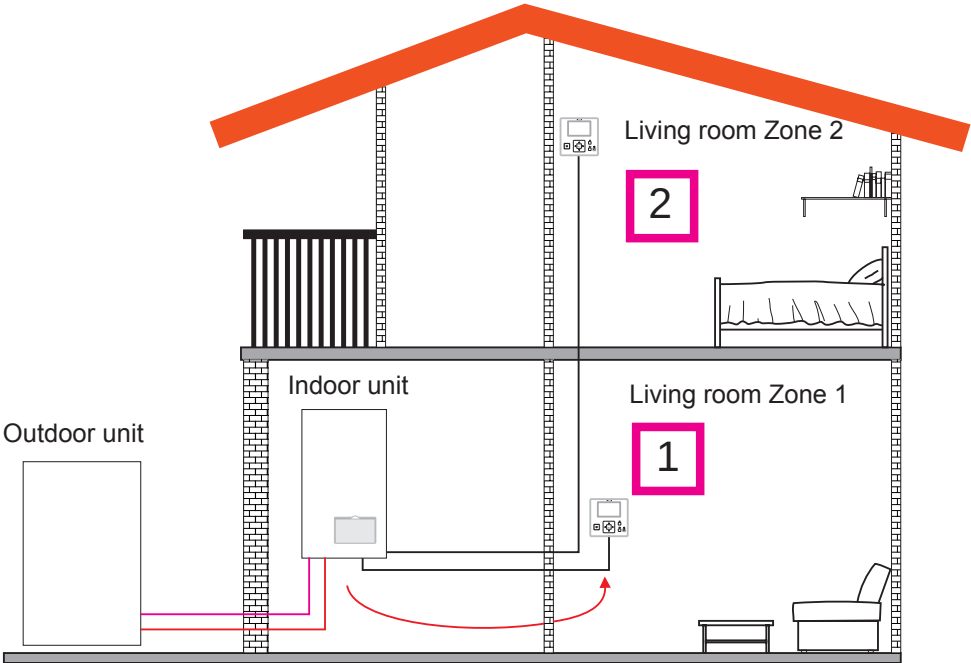
3- Slave Unit controller as a room thermostat for Zone 2, as accessory



Order	FIRST	SECOND	THIRD
Type	Master Unit	Slave Circuit 1	Slave Circuit 2
Questions	Answers		
Is this device attached to the unit?	YES	-	-
Is this device used as a Room Thermostat of a zone?	NO	YES, IN ZONE 1	YES, IN ZONE 2
How many circuits do you have?	2	-	-
Which are the emitters of circuit 1?	Underfloor heating	-	-
Which are the emitters of circuit 2?	Underfloor heating	-	-
Do you have domestic hot water tank?	NO	-	-
Do you have swimming pool?	NO	-	-
Do you have boiler?	NO	-	-
Do you have electric backup heater?	NO	-	-
How many thermostats are installed?	2	-	-
How are they connected?	Wired	-	-
	COMPLETED	COMPLETED	COMPLETED

◆ Example 2

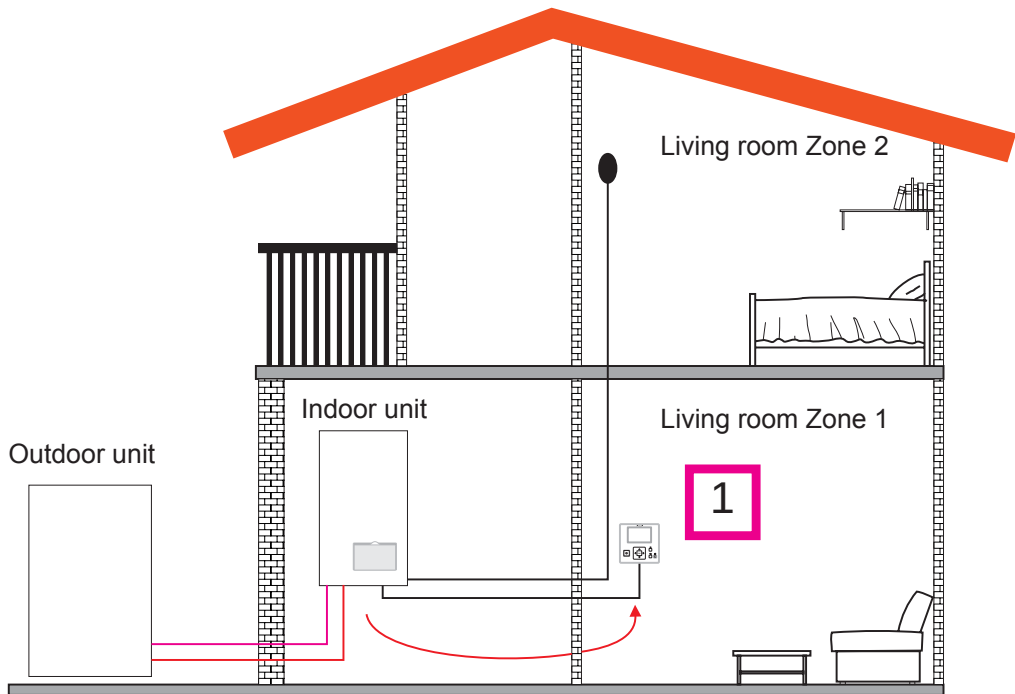
- 1- No unit controller in the unit
- 2- Master unit controller moved to living room Zone 1
- 3- Slave Unit controller as a room thermostat for Zone 2, as accessory



Order	FIRST	SECOND
Type	Master	Slave
	Unit	Circuit 1
Questions	Answers	
Is this device attached to the unit?	YES	-
Is this device controlling the unit?	YES	-
Is this device used as a Room Thermostat of a zone?	YES, IN ZONE 1	YES, IN ZONE 1
How many circuits do you have?	2	-
Which are the emitters of circuit 1?	Underfloor heating	-
Which are the emitters of circuit 2?	Underfloor heating	-
Do you have domestic hot water tank?	NO	-
Do you have swimming pool?	NO	-
Do you have boiler?	NO	-
Do you have electric backup heater?	NO	-
How many thermostats are installed?	2	-
	COMPLETED	COMPLETED

◆ Example 3

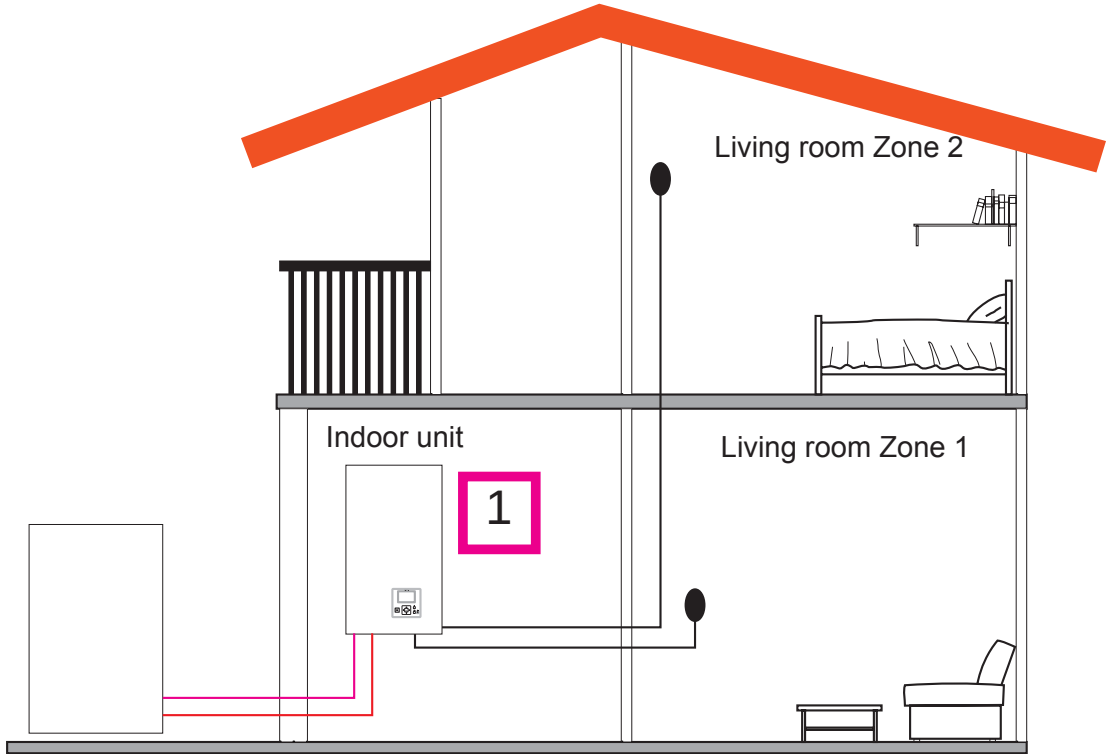
- 1- Master unit controller as unit configuration
- 2- Wired unit controller as a Room Thermostat for Zone 1
- 3- Wired room sensor for Zone 2



Order	FIRST
Type	Master
	Unit + Circuits
Questions	Answers
Is this device attached to the unit?	NO
Is this device controlling the unit?	YES
Is this device used as a Room Thermostat of a zone?	YES, IN BOTH ZONES
Which are the emitters of circuit 1?	Underfloor heating
Which are the emitters of circuit 2?	Underfloor heating
Do you have domestic hot water tank?	NO
Do you have swimming pool?	NO
Do you have boiler?	NO
Do you have electric backup heater?	NO
	COMPLETED

◆ Example 4

- 1- Master unit controller as unit configuration
- 2- Wired room sensor for Zone 1
- 3- Wired room sensor for Zone 2

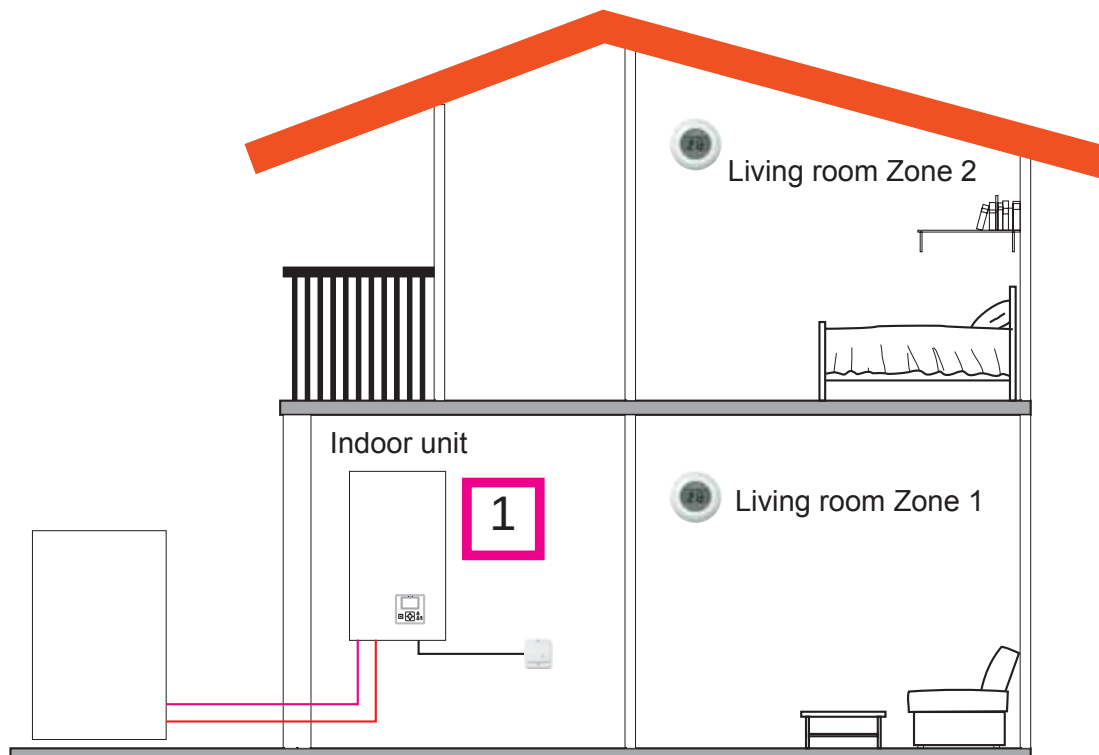


Order	FIRST
Type	Master
	Unit + Circuits
Questions	Answers
Is this device attached to the unit?	NO
Is this device used as a Room Thermostat of a zone?	YES, IN BOTH ZONES
Which are the emitters of circuit 1?	Underfloor heating
Which are the emitters of circuit 2?	Underfloor heating
Do you have domestic hot water tank?	NO
Do you have swimming pool?	NO
Do you have boiler?	NO
Do you have electric backup heater?	NO
	COMPLETED

REF	Access	Description	Default Value	Selected value
Auxiliary Sensors				
Taux1		Sensor 1 (Taux1)	Two3 (if Boiler)	C1 Ambient
Taux2		Sensor 2 (Taux2)	Swimming pool (if SWP existing)	C2 Ambient
Taux3		Sensor 3 (Taux3)	Outdoor Sensor	-

◆ Example 5

- 1- Master unit controller as unit configuration
- 2- Wireless intelligent thermostat for zone 1 (ATW-RTU-04) (Receiver + Room thermostat)
- 3- Wireless intelligent thermostat for zone 2 (ATW-RTU-06) (Only Room thermostat)



Order	FIRST
Type	Master
	Unit + Circuits
Questions	Answers
Is this device attached to the unit?	NO
Is this device used as a Room Thermostat of a zone?	YES, IN BOTH ZONES
Which are the emitters of circuit 1?	Underfloor heating
Which are the emitters of circuit 2?	Underfloor heating
Do you have domestic hot water tank?	NO
Do you have swimming pool?	NO
Do you have boiler?	NO
Do you have electric backup heater?	NO
	COMPLETED

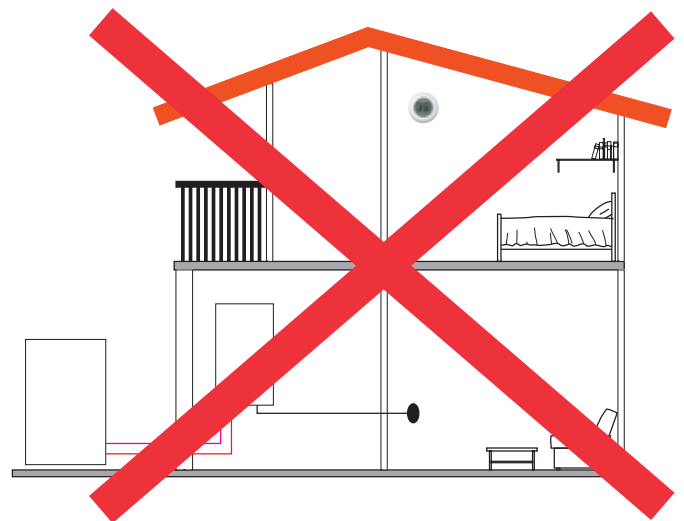
CODE	Description	Default Value	Range	Selected value
Thermostat 1 (otC1)	Thermostat 1	-	None C1 C2 C1+C2	C1
Thermostat 2 (otC2)	Thermostat 2 Circuit	-	None C1 C2 C1+C2	C2

8.5.1.5 Not allowed configurations

Mixed configurations (Wireless + Wired) are not allowed for YUTAKI systems.



Mix Wireless + Wired



Mix Wireless + Wired sensor

8.5.2 Advanced Configuration

In case of executing the Advanced Configuration, the following screens are displayed.

8.5.2.1 Screen 1

CODE	Description	Default Value	Range	Steps	Units	Application				Notes
						S	SC	S80	M	
Controller										
LCDM	Controller Type	Unit	Unit Room Unit + Room	-	-	☐	☐	☐	☐	
LCDL	Controlled Circuits	C1	C1 Room C2 C1+C2	-	-	☐	☐	☐	☐	If LCDM(Controller type (LCDM)) "Room" or "Unit+Room"
buttonAction	Favourite Action	Eco	Eco Holyday Timer DHW Boost	-	-	☐	☐	☐	☐	Holiday only if LCDM(Controller type (LCDM)) "Room" To enable "DHW Boost" option, go to the next screen and select Status (DHWs)="Enabled"
euSumerTime	European Summer Time	Disabled	Enabled / disabled	-	-	☐	☐	☐	☐	
UTC	UTC Zone	0	-12 +14	1	-	☐	☐	☐	☐	If European summer time (euSumerTime) is "Enabled"

8.5.2.2 Screen 2

CODE	Description	Default Value	Range	Steps	Units	Application				Notes
						S	SC	S80	M	
Space Heating										If LCDM(Controller type (LCDM)) is selected "Room" or "Unit+Room"
C1WC	Circuit 1	Gradient	Disabled Points Gradient Fix	-	-	☐	☐	☐	☐	
C2WC	Circuit 2	Disabled	Disabled Points Gradient Fix	-	-	☐	☐	☐	☐	
DHWs	DHW	Disabled	Disabled / Enabled	-	-	☐	☐	☐	☐	Forced to “Enabled” and hidden for YUTAKI S COMBI and YUTAKI S80 integrated

CODE	Description	Default Value	Range	Steps	Units	Application				Notes
						S	SC	S80	M	
Space Heating										If LCDM(Controller type (LCDM)) is selected "Room" or "Unit+Room"
SWP	Swimming Pool	Disabled	Disabled / Enabled	-	-	○	○	○	○	
HES	Heating source	HP Only	HP Only HP + Heater HP + Boiler HP + Heat. + Boil.	-	-	○	○	○	○	“HP+Heat+Boil” is not available for YUTAKI S80
SOLStSet	Solar Combination	Disabled	Disabled Input demand Total control	-	-	○	○	○	○	If Status (DHWs) is “Disabled” this parameter is forced to “Disabled” and it is not displayed

8.5.2.3 Screen 3

This screen is displayed only when the unit is enabled to operate in heating and cooling modes.

CODE	Description	Default Value	Range	Steps	Units	Application				Notes
						S	SC	S80	M	
Space Cooling										If LCDM(Controller type (LCDM)) is selected "Room" or "Unit+Room"
C1WC	Circuit 1	Fix	Disabled Points Fix	-	-	○	○	-	○	
C2WC	Circuit 2	Disabled	Disabled Points Gradient Fix	-	-	○	○	-	○	

8.5.2.4 Screen 4

CODE	Description	Default Value	Range	Steps	Units	Application				Notes
						S	SC	S80	M	
External Elements										If Controller type (LCDM) is selected as “Unit” or “Unit + Room”
COT	Central Mode	Not installed	Local/ Air / Water/ Full	-	-	○	○	○	○	
RTType	Thermostats Type	-	None Wired Wireless	-	-	○	○	○	○	Visible only if Controller type (LCDM)= “Unit”. Wireless available only when LCDM(Controller type (LCDM))= “Unit”. If LCDM(Controller type (LCDM))= “Unit+Room”, RTType is forced to “Wired”
-	Check RT Address	-	-	-	-	○	○	○	○	Only available if RTType= “Wired”
DetectedRTh	Detected Circuits	-	-	-	-	○	○	○	○	Only available if RTType= “Wired”
Thermostat 1 (otC1)	Thermostat 1	-	None C1 C2 C1+C2	-	-	○	○	○	○	Only available if LCDM(Controller type (LCDM))= “Unit” and RTType= “Wireless”
Thermostat 2 (otC2)	Thermostat 2	-	None C1 C2 C1+C2	-	-	○	○	○	○	Only available if LCDM(Controller type (LCDM))= “Unit” and RTType= “Wireless”

This start-up flag should be removable from some place or have the option of launching it by a menu or by a key combo only if Installer has logged in as Installer mode.



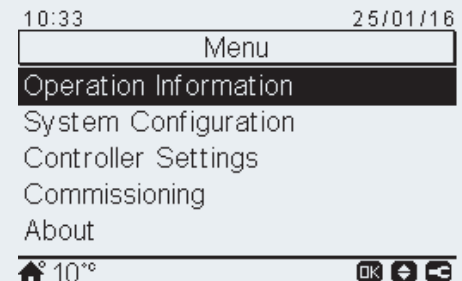
Wizard can be re-launched by doing a factory reset (available only for Installer mode).

8.6 MENU NAVIGATION

NOTE

This chapter explains navigation through the menus of the controller. For more specific information about particular options in these menus, refer to the chapters [Control system](#) and [Optional functions](#) at the Service Manual.

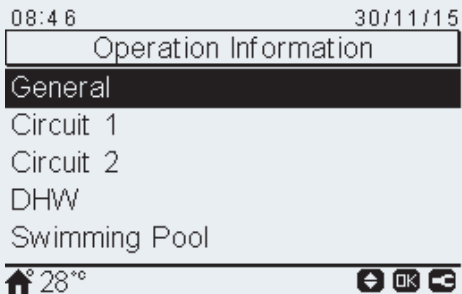
In order to access to the main menu, press  the button.

The main menu contains the following features: • Operation information • System configuration • Controller settings • Commissioning  • About • Factory reset  • Return to user mode 	 10:33 25/01/16 Menu Operation Information System Configuration Controller Settings Commissioning About 10°C OK  
--	---

: Available only for installer.

8.6.1 Operation information

In this sub-menu, the current information about the performance of the unit is displayed.

"Operation information" contains the following features: • General • Circuit 1 (*1) • Circuit 2 (*2) • DHW (*3) • Swimming Pool (*4) • Heat Pump • Electrical Heater (*5) • Boiler Combination (*6) • Solar Combination (*7) • Alarm History • Energy Data (*8)	 08:46 30/11/15 Operation Information General Circuit 1 Circuit 2 DHW Swimming Pool 28°C  OK 
--	--

NOTE

- (*1): If Water calculation mode for circuit 1 heating (C1WC) or Water calculation mode for circuit 1 cooling (CC1WC) not "Disabled".
- (*2): If Water calculation mode for circuit 2 heating (C2WC) or Water calculation mode for circuit 2 cooling (CC2WC) not "Disabled".
- (*3): If Status (DHWs)= "Enabled".
- (*4): If Status (SWP)= "Enabled".
- (*5): If Heating source (HES)= "HP+EH" or "HP+EH+Bo.".
- (*6): If Heating source (HES)= "HP+Boiler" or "HP+EH+Bo.".
- (*7): If Solar combination (SOLStSet)= "Input demand" or "Total".
- (*8): If (Status (PMConf)= "Enabled" or Capacity configuration (CAPCo.)= "Enabled") and the controller Controller type (LCDM) = "Unit" or "Unit + Room" in the wizard configuration.

The next list shows the parameters that can be consulted on the display. All of them are read-only. Most of these variables are the same ones that can be consulted by 7-segment, taking information from the outdoor and indoor unit.

NOTE

All the operation parameters are able to be displayed by the installer but normal user can only display the basic ones.

8.6.1.1 General

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
General							S	SC	S80	M	
OPST	✓	Operation Status	OFF	Cool D-OFF Cool T-OFF Cool ON Heat D-OFF Heat T-OFF Heat ON DHW OFF DHW ON SWP OFF SWP ON Alarm	-	-	○	○	○	○	-
HPTi		Water Inlet T	-	-	-	°C	○	○	○	○	-
HPTo		Water Outlet T	-	-	-	°C	○	○	○	○	-
OPst	✓	Water Setting T	-	-	-	°C	○	○	○	○	-
OPTa	✓	Outdoor Ambient T	-	-	-	°C	○	○	○	○	-
OPTa2	✓	Outdoor Ambient 2 T	-	-	-	°C	○	○	○	○	-
OPTav	✓	Outdoor Ambient Aver. T	-	-	-	°C	○	○	○	○	-
OPTa2v	✓	Second Ambient Aver. T	-	-	-	°C	○	○	○	○	-
av24Sw Off	✓	24h average T	-	-	-	°C	○	○	○	○	(*1)

NOTE

(*1): If (Status (AutoST) or Status (AHC) "Enabled") and Controller type (LCDM)= "Unit" or "Unit + Room" in the Wizard Configuration.

8.6.1.2 Circuit 1

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Circuit 1							S	SC	S80	M	
C1Op	✓	Operation	-	Demand ON/OFF	-	-	○	○	○	○	-
C1Mo	✓	Mode	-	Comfort/ECO	-	-	○	○	○	○	-
C1Rt	✓	Room T	-	-	-	°C	○	○	○	○	(*1)
C1Rs	✓	Room setting T	-	-	-	°C	○	○	○	○	(*1)
HPTo		Current Water T	-	-	-	°C	○	○	○	○	-
C1TC		Water Setting T	-	-	-	°C	○	○	○	○	-
C1OTCs		Water OTC Setting T	-	-	-	°C	○	○	○	○	-

NOTE

(*1): Only available if one of the following conditions is satisfied:

- If (Controller type (LCDM))= "Unit" or "Unit+Room" and:
 - When (Thermostat type (RTType))= "Wireless": Thermostat 1 (otC1)= "C1" or "C1+C2" or Thermostat 2 (otC2)= "C1" or "C1+C2".
 - When (Thermostat type (RTType))= "Wired": "Check RT address" function found a PC-ARFHE with Controlled circuits (LCDL) (Controlled Circuits)= "C1" or "C1+C2".
- If (Central mode (COT))= "Air" or "Full" and "Room Thermostat" for C1 configured on central device.
- If (Controller type (LCDM))= "Room" or "Unit+Room" and (Controlled circuits (LCDL))= "C1" or "C1+C2".

8.6.1.3 Circuit 2

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Circuit 2							S	SC	S80	M	
C2Op	✓	Operation	-	Demand ON/OFF	-	-	○	○	○	○	-
C2Mo	✓	Mode	-	Comfort/ECO	-	-	○	○	○	○	-
C2Rt	✓	Room T	-	-	-	°C	○	○	○	○	(*1)
C2RS	✓	Room Setting T	-	-	-	°C	○	○	○	○	(*1)
C2Two	⚙	Current Water T	-	-	-	°C	○	○	○	○	-
C2TC	⚙	Water Setting T	-	-	-	°C	○	○	○	○	-
C2OTCs	⚙	Water OTC Setting T	-	-	-	°C	○	○	○	○	-
C2MVP	⚙	Mixing Valve Position	-	-	-	%	○	○	○	○	-

 NOTE

(*1): Only available if one of the following conditions is satisfied:

- If Controller type (LCDM)= "Unit" or "Unit+Room" and:
 - When (Thermostat type (RTType))= "Wireless": Thermostat 1 (otC1)= "C2" or "C1+C2" or Thermostat 2 (otC2)= "C2" or "C1+C2".
 - When (Thermostat type (RTType))= "Wired": "Check RT address" function found a PC-ARFHE with (Controlled circuits (LCDL))= "C2" or "C1+C2".
- If (Central mode (COT))= "Air" or "Full" and "Room Thermostat" for C2 configured on central device.
- If (Controller type (LCDM))= "Room" or "Unit+Room" and (Controlled circuits (LCDL))= "C2" or "C1+C2".

8.6.1.4 DHW

Available if Status (DHWs)= "Enabled" in "DHW" option of the "System Configuration" menu.

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
DHW							S	SC	S80	M	
DHWOp	✓	Operation	-	Demand ON/OFF	-	-	○	○	○	○	-
DHWt	✓	Current Temperature	-	-	-	°C	○	○	○	○	-
DHWst	✓	Setting Temperature	-	-	-	°C	○	○	○	○	-
DHWSHst	✓	El. Heater Status	-	Enabled/Disabled	-	-	○	○	○	○	-
DHWHOp	✓	El. Heater Op	-	Demand ON/OFF	-	-	○	○	○	○	-
DesFun	✓	Legionella Status	-	Enabled/Disabled	-	-	○	○	○	○	-
DHWAOp	✓	Legionella Op.	-	Demand ON/OFF	-	-	○	○	○	○	-

8.6.1.5 Swimming Pool

Available if Status (SWP)= "Enabled" in "Swimming Pool" option of the "System Configuration" menu.

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Swimming Pool							S	SC	S80	M	
swpOp	✓	Operation	-	Demand ON/OFF	-	-	○	○	○	○	-
SWPt	✓	Current Temperature	-	-	-	°C	○	○	○	○	-
SWPst	✓	Setting Temperature	-	-	-	°C	○	○	○	○	-

8.6.1.6 Heat Pump Details

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Heat Pump							S	SC	S80	M	
HPTohp	⚙	Water Outlet PHEX T	-	-	-	°C	○	○	-	○	-
HPWF	⚙	Water Flow Level	-	-	-	m3/h	○	○	○	○	-
HPWP	⚙	Water Pump Speed	-	-	-	%	○	○	○	○	-
OPTa	⚙	Outdoor Ambient T	-	-	-	°C	○	○	○	○	-
OPTa2	⚙	Outdoor Ambient 2 T.	-	-	-	°C	○	○	○	○	-
HPTg	⚙	Gas T (R410A)	-	-	-	°C	○	○	○	○	-

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Heat Pump							S	SC	S80	M	
HPTI		Liquid T (R410A)	-	-	-	°C	☐	☐	☐	☐	-
HPTd		Discharge Gas T (R410A)	-	-	-	°C	☐	☐	☐	☐	-
HPTd2		Discharge Gas T (R134a)	-	-	-	°C	☐	☐	☐	☐	-
HPTe		Evaporation Gas T (R410A)	-	-	-	°C	☐	☐	☐	☐	-
HPTs		Suction Gas T (R134a)	-	-	-	°C	☐	☐	☐	☐	-
HPPd		Discharge Pressure (R410A)	-	-	-	MPa	☐	☐	☐	☐	-
HPPd2		Discharge Pressure (R134a)	-	-	-	MPa	☐	☐	☐	☐	-
HPPs		Suction Pressure (R134a)	-	-	-	MPa	☐	☐	☐	☐	-
HPEVI		Ind. Exp. Valve Open.	-	-	-	%	☐	☐	☐	☐	-
HPEVI2		Ind. Exp. Valve 2 Open.	-	-	-	%	☐	☐	☐	☐	-
HPEVO		Out. Exp. Valve Open.	-	-	-	%	☐	☐	☐	☐	-
HPH4		Inverter Op. Freq. (R410A)	-	-	-	Hz	☐	☐	☐	☐	-
HPH42		Inverter Op. Freq. (R134a)	-	-	-	Hz	☐	☐	☐	☐	-
HPDEF		Defrosting	-	-	-	-	☐	☐	☐	☐	-
HPDI		Cause Of Stoppage	-	-	-	-	☐	☐	☐	☐	-
HPP1		Compressor Curr. (R410A)	-	-	-	A	☐	☐	☐	☐	-
HPP1r134		Compressor Curr. (R134a)	-	-	-	A	☐	☐	☐	☐	-
Uspec		Unit capacity	-	-	-	HP	☐	☐	☐	☐	-
Utype		Unit Type	-	-	-	-	☐	☐	☐	☐	-

8.6.1.7 Electrical Heater

Available if Heating source (HES)= “HP+Heater” or “HP+Heat.+Boil.” In the “Complementary Heating” option of the “System Configuration” menu.

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Electrical Heater							S	SC	S80	M	
EHOOp		Operation	-	Demand ON/OFF	-	-	☐	☐	☐	☐	-
EHT		Current Temperature	-	-	-	°C	☐	☐	☐	☐	-
EHSt		Setting Temperature	-	-	-	°C	☐	☐	☐	☐	-
EHLF		Load Factor	-	0~100%	-	%	☐	☐	☐	☐	-
EHstp		Step	-	0/1/2/3	-	-	☐	☐	☐	☐	-

8.6.1.8 Boiler Combination

Available if Heating source (HES)= “HP+Boiler” or “HP+Heat.+Boil.” In the “Complementary Heating” option of the “System Configuration” menu.

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Boiler Combination							S	SC	S80	M	
BOOp		Operation	-	Demand ON/OFF	-	-	☐	☐	☐	☐	-
BOt		Current Temperature	-	-	-	°C	☐	☐	☐	☐	-
BOst		Setting Temperature	-	-	-	°C	☐	☐	☐	☐	-

8.6.1.9 Solar Combination

Available if Solar combination (SOLStSet)= "Input demand" or "Total" In the "Complementary Heating" option of the "System Configuration" menu.

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Solar Combination							S	SC	S80	M	
SOLOp		Operation	-	Demand ON/OFF	-	-	o	o	o	o	-
SOIPt		SOL Panel T	-	-	-	°C	o	o	o	o	(*1)

NOTE

(*1): If Solar combination (SOLStSet)= "Total control"

8.6.1.10 Alarm History

It shows the alarms of the system. To clear the selected alarms press .

8.6.1.11 Energy data

Available if Status (PMConf) or Capacity configuration (CAPCo.)= "Enabled" in "Optional functions" option of the "System Configuration" menu and Controller type (LCDM)= "Unit" or "Unit + Room".

- Input Power (*1)
- Capacity (*2)
- Reset Values

14:12 30/11/15

Energy Data

Input Power

Capacity

Reset Values

 28°C




NOTE

- (*1): If Status (PMConf)= "Enabled" in the "Optional functions" option of the "System Configuration" menu.
- (*2): If Capacity configuration (CAPCo.)= "Enabled" in the "Optional functions" option of the "System Configuration" menu.

◆ Input Power

The following parameters can be displayed by each month selecting the specified month or for all the months selecting "Total".

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Input Power							S	SC	S80	M	
IpSH		Space Heating	-	-	-	kWh	o	o	o	o	-
IpSC		Space Cooling	-	-	-	kWh	o	o	o	o	-
IpDHW		DHW	-	-	-	kWh	o	o	o	o	-
IpSWP		Swimming pool	-	-	-	kWh	o	o	o	o	-
IpTot		Total	-	-	-	kWh	o	o	o	o	-

◆ Capacity

The following parameters can be displayed by each month selecting the specified month or for all the months selecting "Total".

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Capacity							S	SC	S80	M	
CpSH		Space Heating	-	-	-	kWh	o	o	o	o	-
CpSC		Space Cooling	-	-	-	kWh	o	o	o	o	-
CpDHW		DHW	-	-	-	kWh	o	o	o	o	-
CpSWP		Swimming pool	-	-	-	kWh	o	o	o	o	-
CpTot		Total	-	-	-	kWh	o	o	o	o	-

8.6.2 System Configuration

"System configuration" contains the following features:

- General Options
- Timer and Schedule
- Water settings (*)
- Space Heating
- Space Cooling
- DHW
- Swimming Pool
- Complementary Heating
- Heat Pump
- Optional Functions
- I/O and Sensors

09:14 30/11/15

System Configuration

General Options

Timer and schedule

Space Heating

Space Cooling

DHW

28°C

NOTE

(*) This option is available only when the controller is set as "Room Thermostat".

8.6.2.1 General Options

"General Options" menu is not visible while "Screed drying" operation is being carried out.

- Holiday Mode (*1)
- Air Eco Offset (*2)
- Room Thermostats (*3)
- Central Operation (*3)

09:15 30/11/15

General Options

Holiday Mode

Air Eco Offset

Room Thermostats

Central Operation

28°C

NOTE

- (*1): If Controller type (LCDM) = "Room" or "Unit + Room" and (Thermostat 1 (otC1) = "C1" or "C1+C2" when circuit 1 is ON) or (Thermostat 2 (otC2) = "C2" or "C1+C2" when circuit 2 is ON).
- (*2): If Controller type (LCDM) = "Room" or "Unit + Room".
- (*3): If Controller type (LCDM) = "Unit" or "Unit + Room".

◆ Holiday Mode

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Holiday Mode							S	SC	S80	M	
absentYear	✓	Year	2015	-	-	-	○	○	○	○	-
absentMonth	✓	Month	1	1-12	1	Months	○	○	○	○	-
absentDay	✓	Day	1	1-31	1	Days	○	○	○	○	-
absentTime	✓	Returning time	0:00	0:00 ~23:50	00:10	Min.	○	○	○	○	-
absentSetting	✓	Setting Temperature	21	5 - 35	1	°C	○	○	○	○	-
-	✓	Start holiday mode	No	No/Yes	-	-	○	○	○	○	(*1)
-	✓	Stop holiday mode	No	No/Yes	-	-	○	○	○	○	(*2)

i NOTE

- (*1): If "Holiday mode" is not operating.
- (*2): If "Holiday mode" is operating.

◆ Air Eco Offset

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Air Eco Offset							S	SC	S80	M	
c1RTEcoOffset		Circuit 1	3	1-10	1	-	○	○	○	○	(*1)
C2RTEcoOffset		Circuit 2	3	1-10	1	-	○	○	○	○	(*2)

i NOTE

- (*1): If Controlled circuits (LCDL)= "C1" or "C1+C2".
- (*2): If Controlled circuits (LCDL)= "Room C2" or "C1+C2".

◆ Room Thermostats

Available if Controller type (LCDM)= "Unit" or "Unit + Room" .

• Thermostats Type  (*1) • Compensation Factors  (*2) • Room Temp Demand OFF  (*2) • Check RT Address  (*3) • Detected Circuits  (*3) • Thermostat 1  (*4) • Thermostat 2  (*4)	09:44 30/11/15 Room Thermostats Thermostats Type Wireless Compensation Factors Room Temp Demand OFF Thermostat 1 Circuit None Thermostat 2 Circuit None 28°C   
--	--

i NOTE

- (*1): Visible only if Controller type (LCDM)= "Unit". Wireless not available only if Controller type (LCDM)= "Unit", If "Unit+Room" forced to wired.
- (*2): If Water calculation modes (Water calculation mode for circuit 1 heating (C1WC)) or (Water calculation mode for circuit 1 cooling (CC1WC)) or (Water calculation mode for circuit 2 heating (C2WC)) or (Water calculation mode for circuit 2 cooling (CC2WC)) as not "Disabled" and (Thermostat type (RTType)= "Wireless" or "Wired" or Central mode (COT)= "Air" or "Full").
- (*3): If Thermostat type (RTType)= "Wired" and Controller type (LCDM)= "Unit" or "Unit + Room".
- (*4): If Controller type (LCDM)= "Unit" and Thermostat type (RTType)= "Wireless".

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Room Thermostats							S	SC	S80	M	
RTType		Thermostats Type	None	None Wired Wireless	-	-	☐	☐	☐	☐	-
-		Compensation factors	-	1-12	-	-	☐	☐	☐	☐	-
-		Room Temperature Demand OFF	-	-	-	-	☐	☐	☐	☐	-
-		Check RT Address	-	-	-	-	☐	☐	☐	☐	-
detectedRTh		Detected Circuits	-	-	-	-	☐	☐	☐	☐	-
Thermostat 1 (otC1)		Thermostat 1	-	None C1 C2 C1+C2	-	-	☐	☐	☐	☐	-
Thermostat 2 (otC2)		Thermostat 2	-	None C1 C2 C1+C2	-	-	☐	☐	☐	☐	-

Compensation Factors

- Circuit 1 (*1)
- Circuit 2 (*2)

09:32
30/11/15

Compensation Factors

Circuit 1

Circuit 2

28°C

NOTE

- (*1): If Water calculation mode for circuit 1 in Heating (Water calculation mode for circuit 1 heating (C1WC)) or in Cooling (Water calculation mode for circuit 1 cooling (CC1WC)) is not "Disabled".
- (*2): If Water calculation mode for circuit 2 in Heating (Water calculation mode for circuit 2 heating (C2WC)) or in Cooling (Water calculation mode for circuit 2 cooling (CC2WC)) is not "Disabled".

Circuit 1

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Circuit 1							S	SC	S80	M	
Rfacth1		Compen.Factor Heat	2	OFF / 1~5	1	-	☐	☐	☐	☐	(*1)
Maxfacthp1		Max Compen.Factor Heat +	10	0-10	1	°C	☐	☐	☐	☐	(*1)
Maxfacthn1		Max Compen.Factor Heat -	-10	-10-0	1	°C	☐	☐	☐	☐	(*1)
Rfactc1		Compen.Factor Cool	OFF	OFF / 1~5	1	-	☐	☐	☐	☐	(*2)
Maxfactcp1		Max Compen.Factor Cool +	5	0-10	1	°C	☐	☐	☐	☐	(*2)
Maxfactcn1		Max Compen.Factor Cool -	-5	-10-0	1	°C	☐	☐	☐	☐	(*2)

NOTE

- (*1): If Water calculation mode for circuit 1 heating (C1WC)=Not "Disabled".
- (*2): If Water calculation mode for circuit 1 cooling (CC1WC)=Not "Disabled".

Circuit 2

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Circuit 2							S	SC	S80	M	
Rfacth1		Compen.Factor Heat	2	OFF / 1~5	1	-	○	○	○	○	(*1)
Maxfacthp1		Max Compen.Factor Heat +	10	0-10	1	°C	○	○	○	○	(*1)
Maxfacthn1		Max Compen.Factor Heat -	-10	-10-0	1	°C	○	○	○	○	(*1)
Rfactc1		Compen.Factor Cool	OFF	OFF / 1~5	1	-	○	○	○	○	(*2)
Maxfactcp1		Max Compen.Factor Cool +	5	0-10	1	°C	○	○	○	○	(*2)
Maxfactcn1		Max Compen.Factor Cool -	-5	-10-0	1	°C	○	○	○	○	(*2)

i NOTE

- (*1): If Water calculation mode for circuit 2 heating (C2WC)=Not "Disabled".
- (*2): If Water calculation mode for circuit 2 cooling (CC2WC)=Not "Disabled".

Room Temperature Demand OFF

- Circuit 1  (*1)
- Circuit 2  (*2)

09:35
30/11/15

Room Temp Demand OFF

Circuit 1

Circuit 2

 28°
  

i NOTE

- (*1): If Water calculation mode for circuit 1 in Heating (Water calculation mode for circuit 1 heating (C1WC)) or in Cooling (Water calculation mode for circuit 1 cooling (CC1WC)) is not "Disabled".
- (*2): If Water calculation mode for circuit 2 in Heating (Water calculation mode for circuit 2 heating (C2WC)) or in Cooling (Water calculation mode for circuit 2 cooling (CC2WC)) is not "Disabled".

Circuit 1

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Circuit 1							S	SC	S80	M	
RoffhC1		Room Demand OFF Heat	3	OFF/1~5	1	°C	○	○	○	○	(*1)
RoffcC1		Room Demand OFF Cool	3	OFF/1~5	1	°C	○	○	○	○	(*2)

i NOTE

- (*1): If Water calculation mode for circuit 1 heating (C1WC)=Not "Disabled".
- (*2): If Water calculation mode for circuit 1 cooling (CC1WC)=Not "Disabled".

Circuit 2

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Circuit 2							S	SC	S80	M	
RoffhC2		Room Demand OFF Heat	3	OFF/1~5	1	°C	o	o	o	o	(*1)
RoffcC2		Room Demand OFF Cool	3	OFF/1~5	1	°C	o	o	o	o	(*2)

i NOTE

- (*1): f Water calculation mode for circuit 2 heating (C2WC)=Not "Disabled".
- (*2): If Water calculation mode for circuit 2 cooling (CC2WC)=Not "Disabled".

◆ Central Operation

Available if Controller type (LCDM)= "Unit" or "Unit + Room" .

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Central Operation							S	SC	S80	M	
COT	✓	Control Type	Local	Local/ Air / Water/ Full	-	-	o	o	o	o	

8.6.2.2 Timer and Schedule

- Circuit 1 (*1) - Circuit 2 (*2) - DHW (*3) - Swimming Pool (*4) - Delete All Timer Configuration	11:13 30/11/15
	Timer and schedule Circuit 1 Circuit 2 DHW Swimming Pool Delete All Timer Configuration 28°

i NOTE

- (*1): If (Controller type (LCDM)= "Room" or "Unit Room" and (Controlled circuits (LCDL)= "C1" or "C1+C2") or (Controller type (LCDM)= "Unit" or "Unit +Room" and (Water calculation mode for circuit 1 heating (C1WC) or Water calculation mode for circuit 2 heating (C2WC) are not "Disabled").
- (*2): If (Controller type (LCDM)= "Room" or "Unit Room" and (Controlled circuits (LCDL)= "Room C2" or "C1+C2") or (Controller type (LCDM)= "Unit" or "Unit +Room" and (Water calculation mode for circuit 1 cooling (CC1WC) or Water calculation mode for circuit 2 cooling (CC2WC) are not "Disabled").
- (*3): If Controller type (LCDM)= "Unit" or "Unit Room" and Status (DHWs)= "Enabled" .
- (*4): If Controller type (LCDM)= "Unit" or "Unit Room" and Status (SWP)= "Enabled".

◆ Circuit 1

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Circuit 1							S	SC	S80	M	
-	✓	Heating (Air)	-	-	-	-	o	o	o	o	(*1)
-	✓	Cooling (Air)	-	-	-	-	o	o	x	o	(*2)
-	✓	Heating (Water)	-	-	-	-	o	o	o	o	(*3)
-	✓	Cooling (Water)	-	-	-	-	o	o	x	o	(*4)

i NOTE

- (*1): If Controller type (LCDM)= "Room" or "Unit Room" and Controlled circuits (LCDL)= "C1" or "C1+C2".
- (*2): If cooling operation is enabled and if Controller type (LCDM)= "Room" or "Unit Room" and Controlled circuits (LCDL)= "C1" or "C1+C2".
- (*3): If Controller type (LCDM)= "Unit" or "Unit Room" and Water calculation mode for circuit 1 heating (C1WC) is not "Disabled".
- (*4): If cooling operation is enabled and if Controller type (LCDM)= "Room" or "Unit Room" and Water calculation mode for circuit 1 cooling (CC1WC) is not "Disabled".

◆ Circuit 2

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Circuit 2							S	SC	S80	M	
-	✓	Heating (Air)	-	-	-	-	o	o	o	o	(*1)
-	✓	Cooling (Air)	-	-	-	-	o	o	x	o	(*2)
-	✓	Heating (Water)	-	-	-	-	o	o	o	o	(*3)
-	✓	Cooling (Water)	-	-	-	-	o	o	x	o	(*4)

i NOTE

- (*1): If Controller type (LCDM)= "Unit" or "Unit Room" and Controlled circuits (LCDL)="Room C2" or "C1+C2").
- (*2): If cooling operation is enabled and if Controller type (LCDM)= "Room" or "Unit Room" and Controlled circuits (LCDL)="Room C2" or "C1+C2".
- (*3): If Controller type (LCDM)= "Unit" or "Unit Room" and Water calculation mode for circuit 2 heating (C2WC) is not "Disabled".
- (*4): If cooling operation is enabled and if Controller type (LCDM)= "Unit" or "Unit Room" and Water calculation mode for circuit 2 cooling (CC2WC) is not "Disabled".

◆ Timer and Schedule 'any of the previous views'

Each of the following submenus share these parameters shown on the table

- Circuit 1 Heating (Air)
- Circuit 1 Cooling (Air)
- Circuit 1 Heating (Water)
- Circuit 1 Cooling (Water)
- Circuit 2 Heating (Air)
- Circuit 2 Cooling (Air)
- Circuit 2 Heating (Water)
- Circuit 2 Cooling (Water)
- DHW
- SWP

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Common							S	SC	S80	M	
-	✓	Timer Type	Disabled	Disabled Simple Schedule			o	o	o	o	
-	✓	Timer configuration (*)	-	-	-	-	o	o	o	o	(*1)
-	✓	Copy to Circuit 2 (*)	-	-	-	-	o	o	o	o	(*2)
-	✓	Copy to Circuit 1 (*)	-	-	-	-	o	o	o	o	(*3)
-	✓	Frequency (*)	Never Once Everyday Weekend Workday	-	-	o	o	o	o		(*4)
-	✓	Starting time	06:00	00:00 to Stopping – 00:10	°C	00:10	o	o	o	o	(*4)
-	✓	Mode	Eco	Eco Comfort Setting Temperature	-	-	o	o	o	o	(*4)
-	✓	Setting Temperature	(*)	(*)	°C	1	o	o	o	o	(*5)
-	✓	Stopping time	12:00	Starting +00:10 to 24:00	-	00:10	o	o	o	o	(*4)
-	✓	Configuration Parameters	-	-	-	-	o	o	o	o	(*6)
-	✓	Change Mode	-	-	-	-	o	o	o	o	(*1)
-	✓	Reset configuration	-	-	-	-	o	o	o	o	(*1)

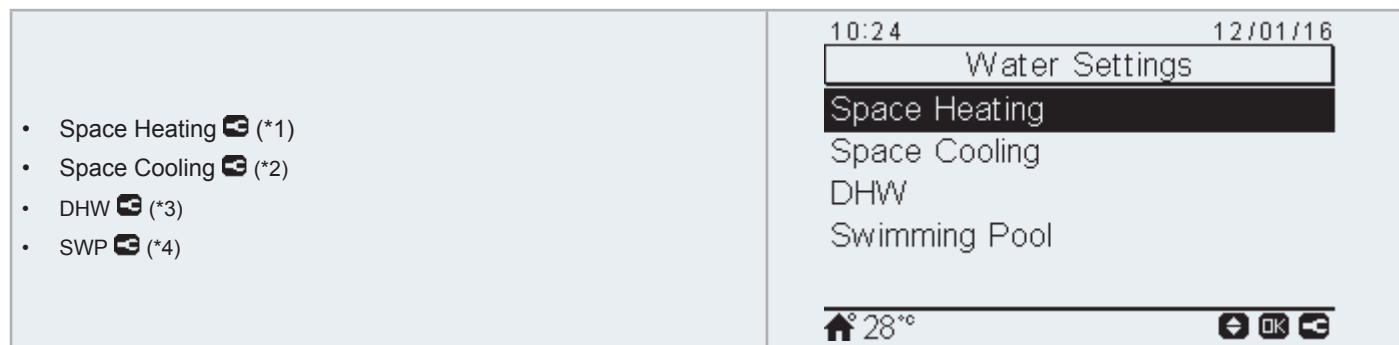
i NOTE

- (*1): If timer type= "Schedule".
- (*2): If time type= "Schedule" and if the selected timer is "Circuit 1" (Air/Water) and if exist 2 circuits in the same controller and the timer mode is the same between them.

- (*3): If time type= "Schedule" and if the selected timer is "Circuit 2" (Air/Water) and if exist 2 circuits in the same controller and the timer mode is the same between them.
- (*4): If timer type= "Simple".
- (*5): If timer type= "Simple" and Mode= "Setting".
- (*6): If it is Air timer and (Timer type= "Simple" and mode= "Eco" or "Comfort") or (Timer type= "Schedule" and "Timer mode" in the "Change mode" submenu is set as "Mode").

8.6.2.3 Water settings

Only available when the system is configured as "Room Thermostat".



i NOTE

- (*1): If circuit 1 or circuit 2 are operating and Water calculation mode for circuit 1 heating (C1WC) or Water calculation mode for circuit 2 heating (C2WC)= "Fix" or "Gradient".
- (*2): If circuit 1 or circuit 2 are operating and Water calculation mode for circuit 1 cooling (CC1WC) or Water calculation mode for circuit 2 cooling (CC2WC)= "Fix".
- (*3): If Status (DHWs)= "Enabled" and DHW is operating.
- (*4): If Status (SWP)= "Enabled" and the swimming pool is operating.

◆ Space Heating

Available if Controller type (LCDM)= "Unit" or "Unit + Room" .



i NOTE

- (*1): If circuit 1 is operating and Water calculation mode for circuit 1 heating (C1WC)= "Fix" or "Gradient".
- (*2): If circuit 2 is operating and Water calculation mode for circuit 2 heating (C2WC)= "Fix" or "Gradient".

Circuit 1 and circuit 2

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Circuit 1 and Circuit 2							S	SC	S80	M	
roomC1FT		Fixed T. (Circuit 1)	-	(C1Tmin) ~ (C1Tmax)	1	°C	o	o	o	o	(*1)
roomC1Grad		Curve (Circuit 1)	-	0.2~2.2	0.1	-	o	o	o	o	(*2)
roomC2FT		Fixed T. (Circuit 2)	-	(C2Tmin) ~ (C2Tmax)	1	°C	o	o	o	o	(*3)
roomC2Grad		Curve (Circuit 2)	-	0.2~2.2	0.1	-	o	o	o	o	(*4)

i NOTE

- (*1): If Water calculation mode for circuit 1 heating (C1WC)= "Fix".
- (*2): If Water calculation mode for circuit 1 heating (C1WC)= "Gradient".
- (*3): If Water calculation mode for circuit 2 heating (C2WC)= "Fix".
- (*4): If Water calculation mode for circuit 2 heating (C2WC)= "Gradient".

◆ Space Cooling

- Circuit 1 (*1)
- Circuit 2 (*2)

10:27 12/01/16

Space Cooling

Circuit 1

Circuit 2

28°C

i NOTE

- (*1): If circuit 1 is operating and Water calculation mode for circuit 1 cooling (CC1WC)= "Fix".
- (*2): If circuit 2 is operating and Water calculation mode for circuit 2 cooling (CC2WC)= "Fix".

Circuit 1 and circuit 2

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Circuit 1 and Circuit 2							S	SC	S80	M	
roomCC1FT		Fixed T. (Circuit 1)	-	(CC1Tmin) ~ (CC1Tmax)	1	°C	o	o	o	o	-
roomCC2FT		Fixed T. (Circuit 2)	-	(CC2Tmin) ~ (CC2Tmax)	1	°C	o	o	o	o	-

◆ DHW and Swimming Pool

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Circuit 1 and Circuit 2							S	SC	S80	M	
roomDHW		Setting Temperature (DHW)	45	30 ~ (TDHWmax)	1	°C	o	o	o	o	-
roomSWP		Setting Temperature (Swimming Pool)	24	24~33	1	°C	o	o	o	o	-

8.6.2.4 Space Heating

If Controller type (LCDM)= "Unit" or "Unit+Room".

- Circuit 1 
- Circuit 2 

11:44
30/11/15

Space Heating

Circuit 1

Circuit 2

🏠 28°C
⬆️ ⬆️ ⬆️

◆ Circuit 1 and Circuit 2

- Water Calculation Mode 
- Eco offset 
- Working Limits 
- Mixing Valve 

11:53
30/11/15

Circuit 2

Water Calculation Mode

Eco offset 3 °C

Working Limits

Mixing Valve

🏠 28°C
⬆️ ⬆️ ⬆️

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Circuit 1 and Circuit 2							S	SC	S80	M	
C1WC		Water Calculation Mode (Circuit 1)	Gradient	Disabled Point Gradient Fix	1	-	☐	☐	☐	☐	(*4)
C1ECO		ECO offset water set (Circuit 1)	3	1~10	1	°C	☐	☐	☐	☐	(*1)
C2WC		Water Calculation Mode (Circuit 2)	Disabled	Disabled Point Gradient Fix	1	-	☐	☐	☐	☐	-
C2ECO		ECO offset water set (Circuit 2)	3	1~10	1	°C	☐	☐	☐	☐	(*2)
-		Working Limits (Circuit 1 and 2)	-	-	-	-	☐	☐	☐	☐	(*3)
-		Mixing Valve (Circuit 2)	-	-	-	-	☐	☐	☐	☐	(*2)

 NOTE

(*1): If Water calculation mode for circuit 1 heating (C1WC) is not set as "Disabled".

(*2): If Water calculation mode for circuit 2 heating (C2WC) is not set as "Disabled".

(*3): If Water calculation mode for circuit 1 heating (C1WC) or Water calculation mode for circuit 2 heating (C2WC) are not set as "Disabled".

(*4): For YUTAKI S80 with DSW enabled for cooling, water calculation mode (Circuit 1) is set as "Fix".

Water Calculation Mode

The main parameter for configuration of space heating is the water calculation temperature.

The water calculation mode establishes the temperature setting for each circuit, selecting a function to assign each temperature setting depending on the ambient temperature.

Each circuit has its own Water Calculation type for heating. Both circuits may be configured as:

- Disabled
- Points
- Gradient
- Fix

To switch between them the variable type must be edited.

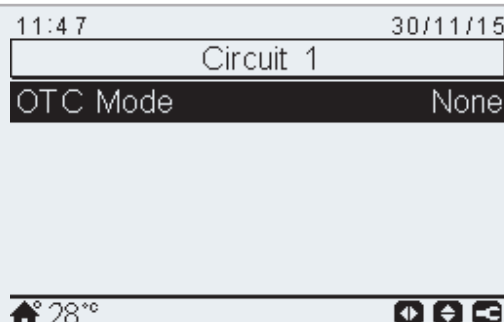


i NOTE

- Setting a space heating circuit at “Disabled” does not deactivate it for space cooling. They are independent circuits.
- Installer may ban the possibility of switching between water calculation modes. In that case the user is not be able to edit the water calculation variable type.

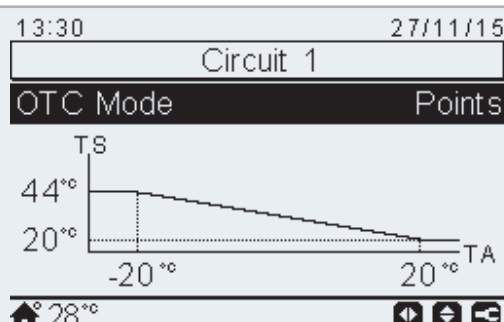
Disabled

The “Disabled” option sets the circuit as disabled.



Points

Points is the most versatile calculation type. The user sets four points that creates a line representing the function that the Air to water heat pump will use to give the temperature setting according to the current ambient temperature.

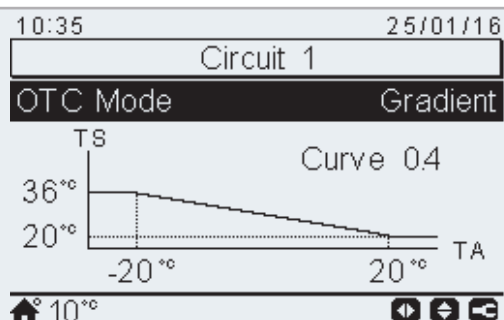


Gradient

It calculates the temperature setting using a gradient configured by the installer. In this view the user may configure the same variables as in the “Points” view, but automatically. User can only edit the gradient variable and it will automatically set the values for the other 4 variables on the chart.

i NOTE

The unique editable variable on that view is “Curve”.



Fix

This calculation mode sets the circuit's temperature setting to a defined value, forcing the unit to maintain it.

13:32
27/11/15

Circuit 1

OTC Mode
Fix

TS

40°C

TA

78°C

↶
↷
↺

Variables used in these views are displayed in the following table.

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Points							S	SC	S80	M	
C1TA1L		Low ambient T (Circuit 1)	-20	-20~6	1	°C	☐	☐	☐	☐	-
C1TA1H		High ambient T (Circuit 1)	20	7~25	1	°C	☐	☐	☐	☐	-
C1TS1L		Set point at low ambient T (Circuit 1)	A	(C1Tmin) ~ (C1Tmax)	1	°C	☐	☐	☐	☐	(*1)
C1TS1H		Set point at high ambient T (Circuit 1)	B	(C1Tmin) ~ (C1Tmax)	1	°C	☐	☐	☐	☐	(*1)
C2TA2L		Low ambient T (Circuit 2)	-20	-20~6	1	°C	☐	☐	☐	☐	-
C2TA2H		High ambient T (Circuit 2)	20	7~25	1	°C	☐	☐	☐	☐	-
C2TS2L		Set point at low ambient T (Circuit 2)	A	(C2Tmin) ~ (C2Tmax)	1	°C	☐	☐	☐	☐	(*1)
C2TS2H		Set point at high ambient T (Circuit 2)	B	(C2Tmin) ~ (C2Tmax)	1	°C	☐	☐	☐	☐	(*1)

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Gradient							S	SC	S80	M	
C1OTC		Gradient Curve (Circuit 1)	C	0.2~2.2	0.1	-	☐	☐	☐	☐	(*1)
C2OTC		Gradient Curve (Circuit 2)	0.6	0.2~2.2	0.1	-	☐	☐	☐	☐	

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Fix							S	SC	S80	M	
C1TF		Fixed T (Circuit 1)	D	(C1Tmin) ~ (C1Tmax)	1	°C	☐	☐	☐	☐	(*1)
C2TF		Fixed T (Circuit 2)	40	(C2Tmin) ~ (C2Tmax)	1	°C	☐	☐	☐	☐	-

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Working Limits							S	SC	S80	M	
C1Tmax		Maximum Supply T(Circuit 1)	E	35~F	1	°C	☐	☐	☐	☐	(*1)
C1Tmin		Minimum Supply T(Circuit 1)	20	20~34	1	°C	☐	☐	☐	☐	
C2Tmax		Maximum Supply T(Circuit 2)	E	35~F	1	°C	☐	☐	☐	☐	(*1)
C2Tmin		Minimum Supply T(Circuit 2)	20	20~34	1	°C	☐	☐	☐	☐	

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Working Limits							S	SC	S80	M	
C2PBMV		Proportional Band (Circuit 2)	6.0	0~20	0.2	K	☐	☐	☐	☐	-
C2IRFMV		Integral Reset Fact. (Circuit 2)	2.5	0.0~20	0.1	%	☐	☐	☐	☐	-
C2RTMV		Running Time Factor (Circuit 2)	140	10~250	10	sec	☐	☐	☐	☐	-
C2OTO		Over-T Offset protection (Circuit 2)	5	OFF, 3~10	1	°C	☐	☐	☐	☐	(*2)

NOTE

- (*1): Table:

CODE	SandSC		S80	M		Units
	2-3HP	REST	ALL	3HP	REST	
A	44	44	70 (**)	44		°C
B	20	20	20	20		°C
C	0.6	0.6	1.4	0.6		-
D	40	40	70 (**)	40		°C
E	55	60	80 (**)	60		°C
F	55(*)	60(*)	80 (**)	55 (*)	60 (*)	°C

- (*) In case of Boiler combination complementary heating activation (Heating source (HES) = Boiler or Boiler + Heater) maximum supply temperature range can be setting up to 80°C:
- (**): If R134a compressor disabled (DSW4#1: ON) setting must be 60°C.
- (*2) OFF means "Disabled".

8.6.2.5 Space Cooling

If Controller type (LCDM)= "Unit" or "Unit + Room".

◆ Circuit 1 and Circuit 2

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Working Limits							S	SC	S80	M	
CC1WC		Water Calculation Mode (Circuit 1)	Gradient	Disabled Point Fix	1	-	○	○	-	○	-
CC1ECO		ECO offset water set.(Circuit 1)	3	1~10	1	°C	○	○	-	○	(*1)
CC2WC		Water Calculation Mode (Circuit 2)	Disabled	Disabled Point Fix	1	-	○	○	-	○	-
CC2ECO		ECO offset water set. (Circuit 2)	3	1~10	1	°C	○	○	-	○	-
-		Working Limits (Circuit 1 and 2)	-	-	-	-	○	○	-	○	(*3)
-		Mixing Valve (Circuit 2)	-	-	-	-	○	○	-	○	(*2)

NOTE

- (*1): If Water calculation mode for circuit 1 cooling (CC1WC) is not set as "Disabled".
- (*2): If Water calculation mode for circuit 2 cooling (CC2WC) is not set as "Disabled".
- (*3): If Water calculation mode for circuit 1 cooling (CC1WC) or Water calculation mode for circuit 2 cooling (CC2WC) are not set as "Disabled".

Water Calculation Mode

The main parameter for configuration of space cooling is the water calculation temperature.

The water calculation establishes the temperature setting for each circuit, selecting a function to assign each temperature setting depending on the ambient temperature.

Each circuit has its own Water Calculation Mode for cooling. Both circuits may be configured as:

- Disabled
- Points
- Fix

To switch between them the variable type must be edited.

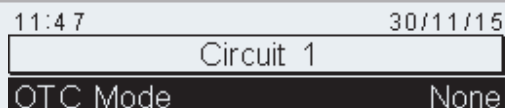


NOTE

- Setting a space cooling circuit at "Disabled" does not deactivate it for space heating. They are independent circuits.
- Installer may ban the possibility of switching between water calculation modes. In that case the user is not be able to edit the water calculation variable type.

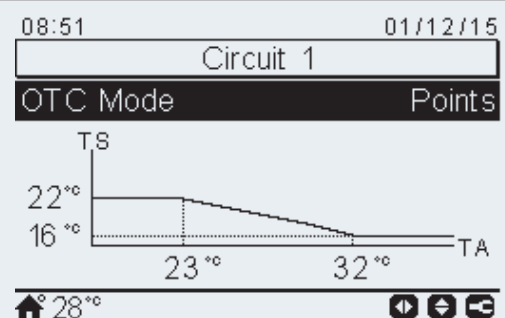
Disabled

The "Disabled" option sets the circuit as disabled.



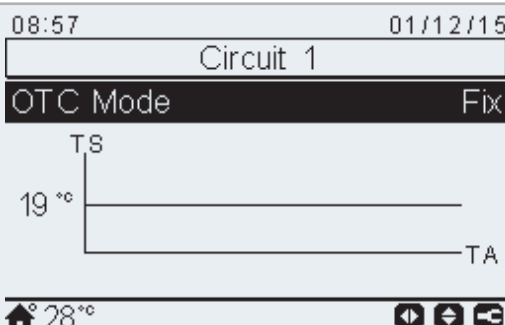
Points

Points is the most versatile calculation type. The user sets four points that will create line representing the function the Air to water heat pump will be use to give the temperature setting according to the current ambient temperature.



Fix

This calculation mode sets the circuit's temperature setting to a defined value, forcing the unit to maintain it.



Variables used in these views are displayed in the following table.

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Points							S	SC	S80	M	
C1TA1L		Low ambient T (Circuit 1)	23	17~30	1	°C	○	○	-	○	-
C1TA1H		High ambient T (Circuit 1)	32	31~45	1	°C	○	○	-	○	-
C1TS1L		Set point at low ambient T (Circuit 1)	22	(CC1Tmin) ~ (CC1Tmax)	1	°C	○	○	-	○	-
C1TS1H		Set point at high ambient T (Circuit 1)	16	(CC1Tmin) ~ (CC1Tmax)	1	°C	○	○	-	○	-
C2TA2L		Low ambient T (Circuit 2)	23	17~30	1	°C	○	○	-	○	-
C2TA2H		High ambient T (Circuit 2)	32	31~45	1	°C	○	○	-	○	-
C2TS2L		Set point at low ambient T (Circuit 2)	22	(CC2Tmin) ~ (CC2Tmax)	1	°C	○	○	-	○	-
C2TS2H		Set point at high ambient T (Circuit 2)	16	(CC2Tmin) ~ (CC2Tmax)	1	°C	○	○	-	○	-

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Fix							S	SC	S80	M	
C1TF		Fixed T (Circuit 1)	19	(CC1Tmin) ~ (CC1Tmax)	1	°C	○	○	-	○	(*1)
C2TF		Fixed T (Circuit 2)	19	(CC2Tmin) ~ (CC2Tmax)	1	°C	○	○	-	○	-

NOTE

For YUTAKI S80 with DSW enabled for cooling, "Fixed T" is set as 5.

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Working Limits							S	SC	S80	M	
CC1Tmax		Maximum Supply T (Circuit 1)	22	19~22	1	°C	○	○	-	○	-
CC1Tmin		Minimum Supply T (Circuit 1)	16	5~18	1	°C	○	○	-	○	(*1)
CC2Tmax		Maximum Supply T (Circuit 2)	22	19~22	1	°C	○	○	-	○	-
CC2Tmin		Minimum Supply T (Circuit 2)	16	5~18	1	°C	○	○	-	○	-

NOTE

For YUTAKI S80 with DSW enabled for cooling, "Fixed T" is set as 5.

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Mixing Valve							S	SC	S80	M	
C2PBMV		Proportional Band (Circuit 2)	6.0	0~20	0.2	K	○	○	-	○	-
C2IRFMV		Integral Reset Fact. (Circuit 2)	2.5	0.0~20	0.1	%	○	○	-	○	-
C2RTMV		Running Time Factor (Circuit 2)	140	10~250	10	sec	○	○	-	○	-
C2OTO		Over-T Offset protection (Circuit 2)	5	OFF, 3~10	1	°C	○	○	-	○	(*1)

NOTE

(*1): OFF means "Disabled".

8.6.2.6 DHW

Available if Controller type (LCDM)= "Unit" or "Unit + Room".

• Status • Mode • Control • Setting Temperature • Maximum Setting T • Differential T • HP OFF Differential T • HP ON Differential T • Maximum Time • Cycle Time • EH Waiting Time • Space Priority Status • Space Priority T • Anti Legionella • Performance Test	12:0130/11/15 DHW StatusEnabled ModeStandard ControlHigh Speed Setting Temperature45 °C Maximum Setting T.55 °C 28°
---	--

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
DHW							S	SC	S80	M	
DHWs		Status	Disabled	Disabled / Enabled	1	-	☐	☐	☐	☐	(*1)
DHWm	☒	Mode	Standard	Standard / High D.	1	-	☐	☐	☐	☐	(*2)
DHWr		Control	H.Eff	H.eff / H.Speed	-	-	☐	☐	☐	☐	(*3)
TDHWS	☒	Setting Temperature	45	30 ~ (TDHWmax)	1	°C	☐	☐	☐	☐	(*2)(*)
TDHWmax		Maximum Setting T	55	40~A	1	°C	☐	☐	☐	☐	(*2)
TDHWON		Differential T	6	2~15	1	°C	☐	☐	☐	☐	(*4)
THPOFF		HP OFF Differential T	5	3~10	1	°C	☐	☐	☐	☐	(*5)
THPON		HP ON Differential T	10	5~30	1	°C	☐	☐	☐	☐	(*2)
TDHWMAXtime		Maximum Time	45	OFF 5~250	5	min	☐	☐	☐	☐	(*6)
DHWCDHW		Cycle Time	1	0~24	1	hour	☐	☐	☐	☐	(*7)
DHWEH		El. Heater Wait Time	45	OFF- 1~60	1	min	☐	☐	☐	☐	(*5)
SHPTs		Space Priority Status	Disabled	Disabled / Enabled	1	-	☐	☐	☐	☐	(*7)
SHPT		Space Priority T	-5	-20~0	1	°C	☐	☐	☐	☐	(*8)
DHWLEG	☒	Anti Legionella	-	-	-	-	☐	☐	☐	☐	(*2)

NOTE

- (*1): "Enabled" if default in case of YUTAKI S COMBI or S80.
- (*2): If Status (DHWs)= "Enabled".
- (*3): If Status (DHWs)= "Enabled" and Mode (DHWm)= "Standard". It is forced to "H.Speed" when Mode (DHWm)= "High.D".
- (*4): If Status (DHWs)= "Enabled" and Mode (DHWm)= "High.D".
- (*5): If Status (DHWs)= "Enabled" and DSW4-3: ON.
- (*6): If Status (DHWs)= "Enabled" and Mode (DHWm)= "High D." and Control (DHWr)= "H.Speed".
- (*7): If Status (DHWs)= "Enabled" and Mode (DHWm)= "Standard".
- (*8): If Status (DHWs)= "Enabled" and Mode (DHWm)= "Standard" and Space priority status (SHPTs)= "Enabled".
- (*) Refer to the table:

Model	YUTAKI S & COMBI		YUTAKI S80	YUTAKI M	
	(2.0-3.0)HP	REST	(4.0-6.0)HP	3HP	REST
A	50 °C (1)	55 °C (1)	75 °C (2)	50 °C (1)	55 °C (2)

- (1): 75 °C when DHW tank's heater is enabled (DSW4-3: ON) or Combination mode (BOCM)= "Parallel" and DHW by boiler (BODHW) "Enabled" in "Boiler combination" option of the "Complementary heating" menu.
- (2): If the conditions of (1) are not satisfied and the R-134a compressor is disabled (DSW4-1: ON) the setting must be 55 °C.

◆ DHW Anti Legionella

- Status - Operation Day - Starting Time - Setting Temperature - Duration	12:04	30/11/15
	Anti Legionella	
	Status	Enabled
	Operation Day	Sunday
	Starting Time	01:00
	Setting Temperature	70 °C
	Duration	10 min
↑ 28°C		

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Anti Legionella							S	SC	S80	M	
DesFun	✓	Status	Disabled	Disabled / Enabled	-	-	○	○	○	○	-
OpInt		Operation Day	Sunday	Daily / Mon ~ Sun	-	day	○	○	○	○	(*1)
StTim		Starting Time	01:00	(00:00~ 23:50)	00:10	time	○	○	○	○	(*1)
SHWTS		Setting Temperature	70 (*2)	50~A	-	°C	○	○	○	○	(*1)(*)
KeepP		Duration	10	10~60	-	min	○	○	○	○	(*1)

NOTE

- (*1): If Status (DesFun)= "Enabled".
- (*2): 70 or "A" if "A"<70.
- (*) Refer to the table:

Model	YUTAKI S & COMBI		YUTAKI S80	YUTAKI M	
	(2.0-3.0)HP	REST	(4.0-6.0)HP	3HP	REST
A	50 °C (1)	55 °C (1)	75 °C (2)	50 °C (1)	55 °C (2)

- (1): 75 °C when DHW tank's heater is enabled (DSW4-3: ON) or Combination mode (BOCM)= "Parallel" and DHW by boiler (BODHW) "Enabled" in "Boiler combination" option of the "Complementary heating" menu.
- (2): If the conditions of (1) are not satisfied and the R-134a compressor is disabled (DSW4-1: ON) of the "Complementary heating" menu, the setting must be 55 °C.

8.6.2.7 Swimming Pool

Available if Controller type (LCDM)= "Unit" or "Unit + Room".

- Status
- Setting Temperature
- Offset Temperature

12:10
30/11/15

Swimming Pool

Status
Enabled

Setting Temperature
27 °C

Offset Temperature
15 °C

28°

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Swimming Pool							S	SC	S80	M	
SWP		Status	Disabled	Disabled / Enabled	-	-	☐	☐	☐	☐	-
SWPs	☒	Setting Temperature	24	24~33	1	°C	☐	☐	☐	☐	(*1)
SWoff		Offset Temperature	15	10~A	1	°C	☐	☐	☐	☐	(*1)(*)

NOTE

- (*1): If Status (SWP)= "Enabled".
- (*) Refer to the table:

Model	YUTAKI S & COMBI		YUTAKI S80	YUTAKI M	
	(2.0-3.0)HP	REST	(4.0-6.0)HP	3HP	REST
A	A	31	36	56 (1)	36

- (1) If R134a compressor disabled (DSW4#1:ON) the setting must be 36°C.

8.6.2.8 Complementary Heating

Available if Controller type (LCDM)= "Unit" or "Unit + Room".

- Heating Source
- Electrical Heater (*1)
- Boiler Combination (*2)
- Solar Combination

12:13
30/11/15

Complementary Heating

Heating Source
HP + EH + Bo.

Electrical Heater

Boiler Combination

Solar Combination

28°

NOTE

- (*1): Available if Heating source (HES)= "HP+Heater" or "HP+Heat.+Boil.".
- (*2): Available if Heating source (HES)= "HP+Boiler" or "HP+Heat.+Boil.".

◆ Heating Source

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Heating Source							S	SC	S80	M	
HES		Heating source	HP Only	HP Only HP + Heater HP + Boiler HP + Heat. + Boil.	-	-	○	○	○	○	(*1)

 NOTE

(*1): "HP+Heat+Boil" is not available for YUTAKI S80 and M.

◆ Electrical Heater

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Electrical Heater							S	SC	S80	M	
HEBP		Bivalent Point	0	-20~20	1	°C	○	○	○	○	(*1)
HEksco		Supply Setting Offset	4	0 ~10	1	K	○	○	○	○	
HEPB		Proportional Band	6.0	0~20	0.2	°C/100%	○	○	○	○	
HEIRF		Reset Factor	2.5	0~20	0.1	%/°Cmin	○	○	○	○	
HEISWT		Inter Stage Time	5	1~10	1	min	○	○	○	○	
HEWTEH		Waiting Time	30	5~90	5	min	○	○	○	○	

 NOTE

(*1): If Heating source (HES)= "HP+Heat.+Boil.", the bivalent point for electric heater must be equal or higher than the bivalent point for boiler + 5 °C of offset (Bivalent point (HEBP) ≥ Bivalent point (BOBP) + 5 °C)

◆ Boiler Combination

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Boiler Combination							S	SC	S80	M	
BOBP		Bivalent Point	-5	-20~20	1	°C	○	○	○	○	(*1) (*2)
BOCM		Combination mode	Parallel	Parallel / Serie	-	-	○	○	○	○	
BOksco		Supply Setting Offset	4	0~10	1	°C	○	○	○	○	
BOon		Minimum ON Time	2	1~30	1	min	○	○	○	○	
BOoff		Minimum OFF Time	5	1~30	1	min	○	○	○	○	
BOWt		Waiting Time	30	5~90	5	min	○	○	○	○	
BODHW		DHW by Boiler	Disabled	Disabled / Enabled	-	-	○	-	○	○	(*3)
BODWt		Wait Time for DHW	45	OFF, 5~120	5	min	○	-	○	○	(*3)

 NOTE

- (*1): If Heating source (HES)= "HP+Heat.+Boil.", Bivalent point (BOBP) has a range withing -15 and 20°C.
- (*2): If Heating source (HES)= "HP+Heat.+Boil.", the bivalent point for electric heater must be equal or higher than the bivalent point for boiler + 5 °C of offset (Bivalent point (HEBP) ≥ Bivalent point (BOBP) + 5 °C).
- (*3): If Status (DHWs)= "Enabled". This parameter is not displayed in case of YUTAKI S80 (Version for combination with DHW).

◆ Solar Combination

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Solar combination							S	SC	S80	M	
SOLStSet	✓	Status	Disabled	Disabled Input demand Total control	-	-	○	○	○	○	(*1)

i NOTE

(*1): Forced to disabled if Status (DHWs)= "Disabled".

Input demand

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Input demand							S	SC	S80	M	
SOLHy		DHW Hysteresis	10	1-30	5	min	○	○	○	○	(*1)
SOLmxt		DHW Maximum Time	60	30~240	5	min	○	○	○	○	(*1)

i NOTE

(*1): Available if Solar combination (SOLStSet) = "Input Demand" and Status (DHWs) = "Enabled".

Total control

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Total control							S	SC	S80	M	
SOLmxt		DHW Maximum Time	60	30~240	5	min	○	○	○	○	-
TDHWTMAX		DHWT Max storage T	60	30-90	1	°C	○	○	○	○	-
SOLSdTc		ΔT Connexion	10	1~30	1	°C	○	○	○	○	-
SOLSdTc		ΔT Disconnection	5	1~30	1	°C	○	○	○	○	-
Solarmin		Panel Minimum T	15	1~60	1	°C	○	○	○	○	-
SOLOver		Panel Overheat T	80	80~120	1	°C	○	○	○	○	-
SOLAnz		Panel antifreeze T	4	-20~10	1	°C	○	○	○	○	(*1)

i NOTE

(*1): 0 means OFF.

8.6.2.9 Heat Pump

Available if Controller type (LCDM)= "Unit" or "Unit + Room".

- Water Pump Configuration 
- Outdoor average Timer 
- Minimum ON Time 
- Minimum OFF Time 
- Emergency Operation 
- Seizure Protection 

12:22
30/11/15

Heat Pump

Water Pump Configuration

Outdoor average timer
4 h

Minimum ON Time
6 min

Minimum OFF Time
6 min

Emergency Operation
Manual

🏠 28°C
⬆️ ⬆️ ⬆️

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Heat Pump							S	SC	S80	M	
HPWP1		Water Pump Configuration	-	-	-	-	☐	☐	☐	☐	-
HPOUt		Outdoor average Timer	4	0~24	1	hour	☐	☐	☐	☐	-
Rton		Minimum ON Time	6	0~15	1	min	☐	☐	☐	☐	-
Rtoff		Minimum OFF Time	6	0~15	1	min	☐	☐	☐	☐	-
HPEO		Emergency Operation	Manual	Manual/ Automatic	-	-	☐	☐	☐	☐	-
-		Seizure Protection	-	-	-	-	☐	☐	☐	☐	-

◆ Water Pump Configuration

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Water Pump Configuration							S	SC	S80	M	
WPOp		Operation Mode	Fix	ΔT/Fix	-	-	☐	☐	☐	☐	-
WPSS		Space Speed	100	50~100	5	%	☐	☐	☐	☐	(*1)
WPDS		DHW Speed	100	50~100	5	%	☐	☐	☐	☐	(*2)
WPWS		SWP Speed	100	50~100	5	%	☐	☐	☐	☐	(*3)
WPMInf		Minimum OFF Time	40	0~120	10	min	☐	☐	☐	☐	-
WPMIno		Minimum ON Time	10	0~120	10	min	☐	☐	☐	☐	-
WPOvr		Overrun Time	10	0~120	5	min	☐	☐	☐	☐	-
WPSc		Stop conditions	Standard	Standard/Thermo OFF	-	-	☐	☐	☐	☐	-

 NOTE

- (*1): If Operation mode (WPOp) = "Fix".
- (*2): If Status (DHWs) = "Enabled".
- (*3): If Status (SWP) = "Enabled".

◆ Seizure Protection

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Seizure Protection							S	SC	S80	M	
HPWP1		Status	Disabled	Disabled / Enabled	-	-	☐	☐	☐	☐	-
HPOUt		Operation Day	Monday	Mon ~ Sun	-	day	☐	☐	☐	☐	(*1)
Rton		Starting Time	01:00	(00:00~ 23:50)	00:10	time	☐	☐	☐	☐	(*1)

 NOTE

- (*1): If Status (HPWP1) = "Enabled".

8.6.2.10 Optional Functions

Available if Controller type (LCDM)= "Unit" or "Unit + Room".

- System
- Space functions
- DHW (*1)

12:44
30/11/15

Optional functions

System

Space Functions

DHW

🏠 28°C
⬅️ ⏹️ ➡️

NOTE

(*1) Available if Status (DHWs)= "Enabled".

◆ System

- Hydraulic Sep. Status
- Energy Configuration
- Smart Function

12:47
30/11/15

System

Hydraulic Sep. Status Enabled

Energy Configuration

Smart Function

🏠 28°C
⬅️ ⏹️ ➡️

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
System							S	SC	S80	M	
hsb		Hydraulic Sep. Status	Disabled	Disabled / Enabled	-	-	☐	☐	☐	☐	-
-		Energy Configuration	-	-	-	-	☐	☐	☐	☐	-
-		Smart Function	-	-	-	-	☐	☐	☐	☐	-

Energy Configuration

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Energy Configuration							S	SC	S80	M	
PMConf		Status	Disabled	Disabled / Enabled	-	-	☐	☐	☐	☐	-
PM1		Power meter 1	Disabled	Disabled 0.1 1 10 100 1000	x10 ¹	pulse/ kWh	☐	☐	☐	☐	(*1)
PM2		Power meter 2	Disabled	Disabled 0.1 1 10 100 1000	x10 ¹	pulse/ kWh	☐	☐	☐	☐	(*1)
CAPCo.		Capacity Configuration	Disabled	Disabled / Enabled	-	-	☐	☐	☐	☐	

NOTE

(*1): If Status (PMConf) ("Status")= "Enabled"

Smart Function

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Smart Function							S	SC	S80	M	
TarSt		Status	Disabled	Disabled / Enabled	-	-	o	o	o	o	-
TarAct		Smart Action	HP blocked	(0) HP Block (1) HP Limited (A) (2) SM Grid Ready (3) DHW Block (4) DHW Only	-	-	o	o	o	o	(*1)
noNc		Trigger Type	Closed	Open (NA) Closed (NC)	-	-	o	o	o	o	(*2)
B-SMART		Start Boiler	Disabled	Disabled / Enabled	-	-	o	o	o	o	(*3)
DHW-SMART		Start DHW Heater	Disabled	Disabled / Enabled	1	A	o	o	o	o	(*3)
Ku		Limitation by Ampere	50	3~60	-	-	o	o	o	o	(*4)

 NOTE

- (*1): If Status (TarSt)= "Enabled". "DHW Block" and "DHW Only" parameters are only shown if Status (DHWs)= "Enabled".
- (*2): If Status (TarSt)= "Enabled". If Smart action (TarAct)="Sm. Grid Ready", this parameter is hidden and forced to "Closed (NC)".
- (*3): if Status (TarSt)= "Enabled" and Smart action (TarAct)= "HP Block".
- (*4): If Status (TarSt) = "Enabled" and Smart action (TarAct) ="HP. Limited (A)".

◆ Space Function

• Heating Auto On/Off • Auto Heat/Cool (*1)	10:46	25/01/16
	Space Functions	
	Heating Auto On/Off	
	Auto Heat/Cool	
	 10°C OK  	

 NOTE

(*1): Available if cooling operation is enabled (DSW1-4:ON) and Water Calculation Modes (Water calculation mode for circuit 1 heating (C1WC) or Water calculation mode for circuit 1 cooling (CC1WC) or Water calculation mode for circuit 2 heating (C2WC) or Water calculation mode for circuit 2 cooling (CC2WC)) are not set as "Disabled". Not available for YUTAKI S80.

Heating Auto On / Off

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Heating Auto On/Off							S	SC	S80	M	
AutoST	✓	Status	Disable	Disable / Enabled	1	-	o	o	o	o	
AutoT		Switch-Off T	22	10~25	1	°C	o	o	o	o	(*1)
AutoDiff		Switch-On Differential	1	1~3	1	°C	o	o	o	o	(*1)

 NOTE

(*1): If Status (AutoST) ("Status")= "Enabled"

Auto Heat / Cool

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Auto Heat / Cool							S	SC	S80	M	
AHC	✓	Status	Disable	Disabled /Enabled	1	-	○	○	-	○	(*1)
Hoff	⏮	Switch to Heat T	22	10~23	1	°C	○	○	-	○	(*2)
Coff	⏭	Switch to Cool T	25	24~35	1	°C	○	○	-	○	(*2)

 NOTE

- (*1): If Status (AHC) ("Status")= "Disabled", the operation mode is automatically set to "Heat".
- (*2): If Status (AHC) ("Status")= "Enabled"

◆ DHW

Available if Status (DHWs)= "Enabled".

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
DHW							S	SC	S80	M	
AutoST	⏮	Circuit pump	Disabled	Disabled, Enabled, Anti-Legionella	-	-	○	○	○	○	-
AutoT	⏮	DHW Boost	Push	Disabled, Push, Open, Closed	-	-	○	○	○	○	-
AutoDiff	⏮	Boost setting	50	30 ~ (TDHWmax)	-	-	○	○	○	○	(*1)

 NOTE

(*1): If DHW Boost (AutoT) is not set as "Disabled".

8.6.2.11 I/O and Sensor

Available if Controller type (LCDM)= "Unit" or "Unit+Room"

- Inputs 
- Outputs 
- Auxiliary Sensors 

12:57
30/11/15

I/O and Sensor

Inputs

Outputs

Auxiliary Sensors

🏠 28°
⬆️ ⬆️ ⬆️

◆ Inputs

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Inputs							S	SC	S80	M	
I1	⏮	Input 1	Demand ON/ OFF	*See "Inputs range visualization and constraints table" below	-	-	○	○	○	○	-
I2	⏮	Input 2	Eco C1 (if C1)		-	-	○	○	○	○	-
I3	⏮	Input 3	SWP (if SWP)		-	-	○	○	○	○	-
I4	⏮	Input 4	Solar (if Solar)		-	-	○	○	○	○	-
I5	⏮	Input 5	Smart function (if Enabled)		-	-	○	○	○	○	-
I6	⏮	Input 6	DHW Boost (if DHW)		-	-	○	○	○	○	-
I7	⏮	Input 7	Power Meter 1 (If Enabled)		-	-	○	○	○	○	-

Inputs range visualizations and constraints table:

Value		Available at							Constraints
		1	2	3	4	5	6	7	Visibility
0	Disabled	O	O	O	O	O	O	O	Always
1	Demand On/Off	O	O	O	O	O	O	O	Available if some of the Water Calculation modes (Water calculation mode for circuit 1 heating (C1WC) or Water calculation mode for circuit 1 cooling (CC1WC) or Water calculation mode for circuit 2 heating (C2WC) or Water calculation mode for circuit 2 cooling (CC2WC)) are not set as "Disabled". It is not shown if Demand On/Off C1 or Demand On/Off C2 are configured.
2	Smart Act / SG 1	X	X	X	X	O	X	X	Available if 8-200 ("Status" of Smart function in Optional functions menu) is "Enabled"
3	Swimming Pool input	X	X	O	X	X	X	X	Available if Status (SWP) ("Status" of Swimming pool menu) is "Enabled"
4	Solar	X	X	X	O	X	X	X	Available if Solar combination (SOLStSet) ("Status" of Solar combination in Complementary Heating menu) is "Enabled"
5	Operation Mode	O	O	O	O	O	O	O	Available if cooling operation is enabled (DSW1-4: ON). Not available for YUTAKI S80
6	DHW Boost	X	X	X	X	X	O	X	Available if DHW Boost (AutoT) ("DHW Boost" in DHW of the Optional functions menu) is set as "Open" or "Closed" and Status (DHWs) is set as "Enabled"
7	Power Meter 1	X	X	X	X	X	X	O	Available if 8-102 ("Power meter 1" in Energy configuration of the Optional functions menu) is not "Disabled" and Status (PMConf) ("Status" in Energy configuration of the Optional functions menu) is "Enabled"
8	Demand On/Off C1	O	O	O	O	O	O	O	Available if Water Calculation modes for circuit 1 (Water calculation mode for circuit 1 heating (C1WC) for heating or Water calculation mode for circuit 1 cooling (CC1WC) for cooling) are not set as "Disabled". It is not shown if Demand On/Off is configured.
9	Demand On/Off C2	O	O	O	O	O	O	O	Available if Water Calculation modes for circuit 2 (Water calculation mode for circuit 2 heating (C2WC) for heating or Water calculation mode for circuit 2 cooling (CC2WC) for cooling) are not set as "Disabled". It is not shown if Demand On/Off is configured.
10	Forced Heating	O	O	O	O	O	O	O	Available if cooling operation is enabled (DSW1-4: ON). Not available for YUTAKI S80
11	Forced Cooling	O	O	O	O	O	O	O	Available if cooling operation is enabled (DSW1-4: ON). Not available for YUTAKI S80
12	Power Meter 2	O	O	O	O	O	O	O	Available if 8-103 ("Power meter 3" in Energy configuration of the Optional functions menu) is not "Disabled" and Status (PMConf) ("Status" in Energy configuration of the Optional functions menu) is "Enabled"
13	ECO Mode C1&C2 (*1)	O	O	O	O	O	O	O	Available if some of the Water Calculation modes (Water calculation mode for circuit 1 heating (C1WC) or Water calculation mode for circuit 1 cooling (CC1WC) or Water calculation mode for circuit 2 heating (C2WC) or Water calculation mode for circuit 2 cooling (CC2WC)) are not set as "Disabled". It is not shown if ECO Mode C1 or ECO Mode C1 are configured.
14	ECO Mode C1 (*1)	O	O	O	O	O	O	O	Available if Water Calculation modes for circuit 1 (Water calculation mode for circuit 1 heating (C1WC) for heating or Water calculation mode for circuit 1 cooling (CC1WC) for cooling) are not set as "Disabled". It is not shown if ECO Mode C1&C2 is configured.
15	ECO Mode C2 (*1)	O	O	O	O	O	O	O	Available if Water Calculation modes for circuit 2 (Water calculation mode for circuit 2 heating (C2WC) for heating or Water calculation mode for circuit 2 cooling (CC2WC) for cooling) are not set as "Disabled". It is not shown if ECO Mode C1&C2 is configured.
16	Forced OFF	O	O	O	O	O	O	O	Always
17	SG 2	O	O	O	O	O	O	O	Available if 8-200 ("Status" of Smart function in Optional functions menu) is "Enabled" and 8-201 ("Smart Action" in System option of the Optional functions menu) is set as "SM Grid Ready"

NOTE

- (*1) When ECO Mode input function is used and a timer is configured with Eco periods take into account that configuration could be overwritten.
- These options cannot be repeated.

◆ Outputs

REF	Access	Description	Default Value								
Outputs											
O1		Output 1	SWP 3WV (if SWP)								
O1		Output 2	Water Pump3 (if boiler or hydraulic separator)								
O3		Output 3	Boiler (if boiler / Relay 1 (If Heater and YUTAKI S80/M)								
O4		Output 4	Solar Pump (if solar) /Relay 2 (If Heater and YUTAKI S80/M)								
O5		Output 5	Alarm signal								
O6		Output 6	Operation signal								
O7		Output 7	Cooling signal (if no cooling only)								
O8		Output 8	Demand ON C1 (if C1)								

Outputs range visualizations and constraints table:

Value		Available at							Constraints	
		1	2	3	4	5	6	7	Visibility	
0	SWP 3WV	O	O	O	O	O	O	O	Always	
1	Water Pump 3	O	X	X	X	X	X	X	Available if Status (SWP) ("Status" of Swimming pool) is "Enabled"	
2	Boiler	X	O	X	X	X	X	X	Available if 8-020 ("Hydraulic Sep. Status" in System option of the Optional functions menu) is set as "Enabled" or Heating source (HES) ("Heating source" in the Complementary Heating menu) is set as "HP + Boiler" or "HP + Heat. + Boil."	
3	Solar Pump	X	X	O	X	X	X	X	Available if Heating source (HES) ("Heating source" in the Complementary Heating menu) is set as "HP + Boiler" or "HP + Heat. + Boil."	
4	Alarm	X	X	X	O	X	X	X	Available if Solar combination (SOLStSet) ("Status" of Solar combination in Complementary Heating menu) is not "Disabled"	
5	Operation	O	O	O	O	O	O	O	Always	
6	Cooling	O	O	O	O	O	O	O	Always	
7	Demand-On C1	O	O	O	O	O	O	O	Available if Water Calculation modes for cooling (Water calculation mode for circuit 1 cooling (CC1WC) for circuit 1 or Water calculation mode for circuit 2 cooling (CC2WC) for circuit 2) are not set as "Disabled"	
8	Heating	O	O	O	O	O	O	O	Available if Water Calculation modes for circuit 1 (Water calculation mode for circuit 1 heating (C1WC) for heating or Water calculation mode for circuit 1 cooling (CC1WC) for cooling) are not set as "Disabled"	
9	DHW	O	O	O	O	O	O	O	Always	
10	Not used	O	O	O	O	O	O	O	Available if Status (DHWs) is set as "Enabled"	
11	Defrost	X	X	X	X	X	X	X	Not shown	
12	DHW Re-circulation	O	O	O	O	O	O	O	Always	
13	Heater Relay 1	O	O	O	O	O	O	O	Available if Status (DHWs) and 8-310 ("Circuit Pump" in DHW of the Optional functions menu) is not set as "Disabled"	
14	Heater Relay 2	X	X	O	X	X	X	X	Available if Heating source (HES) ("Heating source" in the Complementary Heating menu) is set as "HP + Heater" for YUTAK S80 or M	
15	Heater Relay 2	X	X	X	O	X	X	X	Available if Heating source (HES) ("Heating source" in the Complementary Heating menu) is set as "HP + Heater" for YUTAK S80 or M	

i NOTE

These options cannot be repeated.

◆ Auxiliary Sensors

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Auxiliary Sensors							S	SC	S80	M	
Taux1		Sensor 1	Two3 (if Boiler)	*See "Inputs range visualization and constraints table" below	-	-	○	○	○	○	
Taux2		Sensor 2	Swimming pool (if SWP existing)		-	-	○	○	○	○	
Taux3		Sensor 3	Outdoor Sensor		-	-	○	○	○	○	

Sensors range visualization and constraints table:

Value		Available at			Constraints
		1(*)	2	3	Visibility
0	Disabled	○	○	○	Always
1	Two3	○	X	X	Always (*)
2	Swimming Pool	X	○	X	Available if Status (SWP) ("Status" of Swimming pool) is "Enabled".
3	Solar Panel Sensor	○	○	○	Available if Solar combination (SOLStSet) ("Status" of Solar combination in Complementary Heating menu) is set as "Total control".
4	C1& C2 Ambient	○	○	○	Available if some of the Water Calculation modes (Water calculation mode for circuit 1 heating (C1WC) or Water calculation mode for circuit 1 cooling (CC1WC) or Water calculation mode for circuit 2 heating (C2WC) or Water calculation mode for circuit 2 cooling (CC2WC)) are not set as "Disabled". It is not shown if C1 Ambient or C2 Ambient are configured.
5	C1 Ambient	○	○	○	Available if Water Calculation modes for circuit 1 (Water calculation mode for circuit 1 heating (C1WC) for heating or Water calculation mode for circuit 1 cooling (CC1WC) for cooling) are not set as "Disabled". It is not shown if C1& C2 Ambient is configured.
6	C2 Ambient	○	○	○	Available if Water Calculation modes for circuit 2 (Water calculation mode for circuit 2 heating (C2WC) for heating or Water calculation mode for circuit 2 cooling (CC2WC) for cooling) are not set as "Disabled". It is not shown if C1& C2 Ambient is configured.
7	Outdoor Sensor (NTC)	○	○	○	Always

NOTE

- These options cannot be repeated.
- (*) The sensor 1 is forced to Two3 in case of Boiler installed and also in case of Heater installed for YUTAKI S80 or M.

8.6.3 Controller Settings

"Controller settings" contains different configuration options for the control. Those options are explained in the following items.

- Controller Options - Room Names - Date and Time - Screen Settings - Language selection	13:09 30/11/15 Controller Settings Controller Options Room Names Date and Time Screen Settings Language selection English 28°C	

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
DHW							S	SC	S80	M	
-		Controller Options		-	-	-	○	○	○	○	-
-		Room Name	-	-	-	-	○	○	○	○	(*)
-		Date and Time	-	-	-	-	○	○	○	○	-
-		Screen settings	-	-	-	-	○	○	○	○	-

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
DHW							S	SC	S80	M	
currentLanguage	✓	Language selection	English	-	-	-	o	o	o	o	-

NOTE

(*1): Special screen

8.6.3.1 Controller Options

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Controller Options							S	SC	S80	M	
LCDUop		Operation view	Unit (*4)	Unit Room	-	-	o	o	o	o	(*1)
ButtonAction		Favourite Action	Eco	Holiday Eco / Comfort Timer DHW Boost	-	-	o	o	o	o	(*2)
tempOffset		Temperature Sensor Offset	0	-5 to 5	1	°C	o	o	o	o	(*3)

NOTE

- (*1): Available if Controller type (LCDM) has been selected as "Unit+Room".
- (*2): Holiday only if Controller type (LCDM) has been selected as "Room". To enable "DHW boost" option, the Status (DHWs) has to be set as "Enabled".
- (*3): if Controller type (LCDM) = "Room" or "Unit+Room".
- (*4): The default value depends on LCDM (Controller type (LCDM))

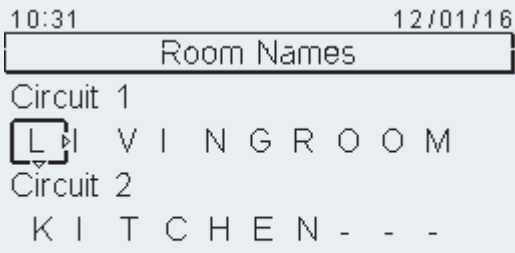
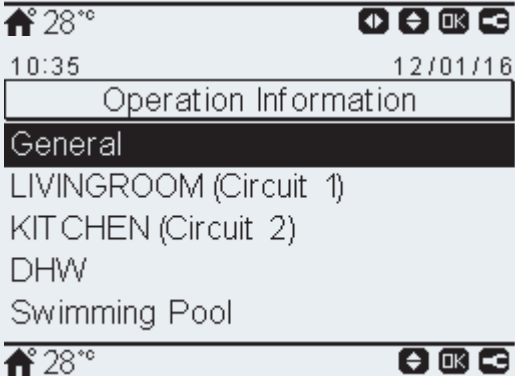
LCDM (Controller type (LCDM): Controller type)	LCDUop default value
Unit	Unit
Room	Room
Unit + Room	Room

8.6.3.2 Room Names

PC-ARFHE controller allows the option to type the name of the different circuits (Circuit 1 and Circuit 2).

When this description has been changed in this menu, the name is automatically changed in anywhere it appears.

After changing the name, a broadcast message is sent to the rest of slave devices so that they can be synchronised.

8.6.3.3 Date and Time

- Adjust Date and Time
- European Summer Time
- UTC Zone

13:15
30/11/15

Date and Time

Adjust Date and Time

European Summer Time
Enabled

UTC Zone
0

🏠 28°C
⬆️ ⬇️ ⬆️

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Date and Time							S	SC	S80	M	
-	✓	Adjust Date and Time	-	-	-	-	○	○	○	○	-
euSumerTime	✓	European Summer Time	Disabled	Enabled / Disabled	1	-	○	○	○	○	-
UTC	✓	UTC Zone	0	0 to 12	1	-	○	○	○	○	(*1)

 NOTE

(*1): If European summer time (euSumerTime)= "Enabled".

◆ Adjust Date and Time

In this screen the date and time can be set in one of the available hour formats (12h (AM/PM) or 24h).

 **NOTE**

After getting out of the Date and Time menu, the slave devices will be synchronized with the master device.

10:31
25/01/16

Date and Time

Hour Format

24 h

YYYY MM DD
hh mm

2016 01 25
10 31

🏠 0°C
OK ⬅️ ➡️

◆ European Summer Time

This screen allows to activate automatically the summer time. When this function is "Enabled" the UTC Zone is displayed and has to be set.

◆ UTZ Zone

When European Summer time is selected as “Enabled”.

Europe spans 7 primary time zones (5 of them can be seen on the map in this article, while 2 other zones contain the European part of Kazakhstan and some very eastern territories of European Russia). Most of European countries use daylight saving time and switch to it at the same moment, which is ‘harmonise’ their summer time adjustments. Select a particular time zone for details.

Country	Time zone	Setting value
United Kingdom Portugal	GMT	00
Spain Germany France Italy Denmark Netherlands Sweden Slovenia Czech	GMT +01:00	01
Greece Finland	GMT +02:00	02

8.6.3.4 Screen Settings

The main characteristics of the screen can be set through this menu.

“Backlight time” is the time for reducing the brightness of the screen in order to reduce the energy consumed. Any button has to be touch during the specified time.

“ON LED Bright” is the light intensity of the Run/Stop button colour.

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Screen Settings							S	SC	S80	M	
LCDBrightness	✓	Brightness	5	0 - 6	1	-	○	○	○	○	
backlightTime	✓	Backlight Time	15	0 - 30	1	sec	○	○	○	○	
LCDContrast	✓	Contrast	17	1 - 30	1	-	○	○	○	○	
onOffBright	✓	ON LED Bright	15	0 - 15	1	-	○	○	○	○	

8.6.3.5 Language selection

YUTAKI controller has 5 available languages.

PC-ARFHE
English (EN)
Spanish (ES)
French (FR)
Italian (IT)
German (GR)

Language selection English

🏠 28°C 🔽 🔼 OK ↺

8.6.4 Commisioning

- Air Purge Procedure 
- Unit Test Run 
- Screed Drying 

10:47
25/01/16

Commissioning

Air Purge Procedure

Unit Test Run
Screed Drying

🏠 10°C
OK ⬆ ⬇ ⬆

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Unit Test Run							S	SC	S80	M	
-		Air purge procedure	-	-	-	-	o	o	o	o	-
-		Unit test run	-	-	-	-	o	o	o	o	-
-		Screed drying	-	-	-	-	o	o	o	o	-

8.6.4.1 Air Purge Procedure

- Duration 
- Start air purge 

12:40
30/11/15

Air Purge Procedure

Duration 00:20

Start Air Purge

🏠 28°C
⬆ ⬇ ⬆

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Air Purge Procedure							S	SC	S80	M	
-		Duration	00:20	00:20 ~00:30	00:10	min	o	o	o	o	-
-		Start Air Purge	-	-	-	-	o	o	o	o	-

8.6.4.2 Unit test run

- Duration 
- Mode 
- Start test run 

10:51
25/01/16

Unit Test Run

Duration 00:30

Mode Heating
Start Test Run

🏠 10°C
⬆ ⬇ ⬆

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Unit Test Run							S	SC	S80	M	
-		Duration	00:30	00:30 ~12:00	00:10	min	o	o	o	o	-
-		Mode	Heating	Cooling ~ Heating	-	-	o	o	o	o	-
-		Start Test Run	-	-	-	-	o	o	o	o	-

8.6.4.3 Screed Drying

REF	Access	Description	Default Value	Range	Steps	Units	Application				Notes
Screed Drying							S	SC	S80	M	
SDC1		Circuit 1 Setting T	55	Limits installer	1	°C	o	o	o	o	(*1)
SDC2		Circuit 2 Setting T	55	Limits installer	1	°C	o	o	o	o	(*2)
-		Start Screed Drying	-	-	-	-	o	o	o	o	

 NOTE

- (*1): If Water calculation mode for circuit 1 heating (C1WC) or Water calculation mode for circuit 1 cooling (CC1WC) are not set as "Disabled".
- (*2): If Water calculation mode for circuit 2 heating (C2WC) or Water calculation mode for circuit 2 cooling (CC2WC) are not set as "Disabled".

8.6.5 About

In this menu, it is possible to consult some useful information. There are two main options:

- System Information
- Contact Information

13:1930/11/15

About

System Information

Contact Information

 28°
  

8.6.5.1 System Information

System information view will give the version number of the Yutaki and the PC-ARFHE. It will be done in a view as the following one:

In this view, nothing can be edited.

It will appear:

- Unit Type (S/SC/S80/M)
- Unit Capacity
- Controller Firmware: is the H-0XX software name of the LCD
- IU PCB Firmware: ROM Number is a variable read from H-LINK, it is the 11-302 variable and transformed to H-00XX
- Language Package: group of available languages

10:3425/01/16

System Information

Unit Type Yutaki-S80

Unit Capacity 10 HP

Controller Firmware H-0102

Indoor PCB Firmware H-2009

Language Package 1

 10°
 

8.6.5.2 Contact Information

In the contact information, it can be entered:

- Name: every character could be entered from HAPE Ascii character map
- Phone: every number can be from 0 to 9 and "-"

These variables are only editable in the installer mode.

13:22 30/11/15

Contact Information

Name
H i t a c h i - - -

Phone Number
- - - - -

28°C

◀ ▶ OK ↶

After changing a letter a broadcast message is set at informing to all the slave devices the new text to have all of them synchronized.

8.6.6 Factory Reset

This function is only visible for the installer. It asks for removing all the settings and returns to the factory setting configuration.

13:22 30/11/15

Factory Reset

Do you want to continue?

Yes

28°C

◀ ▶ OK ↶

8.6.7 Return to user mode

This function allows to getting out of the "Installer mode".

13:23 30/11/15

Return to user mode

Do you want to continue?

Yes

28°C

◀ ▶ OK ↶

8.7 INDEX OF REFERENCES

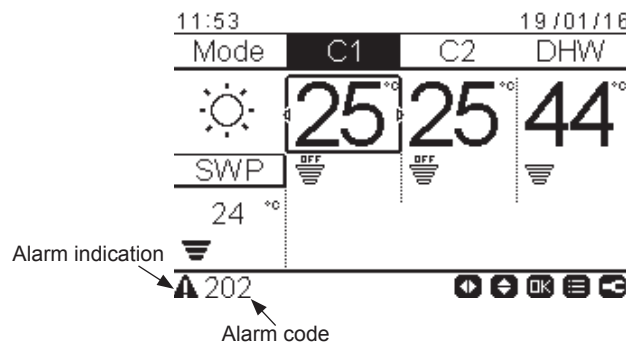
REFERENCE	PAGE		PAGE
absentDay	137	C2PBMV	146
absentMonth	137	C2PBMV	149
absentSetting	137	C2RS	133
absentTime	137	C2Rt	133
absentYear	137	C2RTEcoOffset	137
AHC	158	C2RTMV	146
AutoDiff	157	C2RTMV	149
AutoDiff	158	C2TA2H	146
AutoST	157	C2TA2H	149
AutoST	158	C2TA2L	146
AutoT	157	C2TA2L	149
AutoT	158	C2TC	133
av24SwOff	132	C2TF	146
backlightTime	164	C2TF	149
BOBP	153	C2Tmax	146
BOCM	153	C2Tmin	146
BODHW	153	C2TS2H	146
BODWt	153	C2TS2H	149
BOksco	153	C2TS2L	146
BOoff	153	C2TS2L	149
BOon	153	C2Two	133
BOOp	134	C2WC	129
BOst	134	C2WC	130
BOt	134	C2WC	144
BOWt	153	CAPCo	156
B-SMART	157	CC1ECO	147
buttonAction	129	CC1Tmax	149
ButtonAction	162	CC1Tmin	149
C1ECO	144	CC1WC	147
C1OTC	146	CC2ECO	147
c1RTEcoOffset	137	CC2Tmax	149
C1TA1H	146	CC2Tmin	149
C1TA1H	149	CC2WC	147
C1TA1L	146	Coff	158
C1TA1L	149	COT	130
C1TF	146	COT	140
C1TF	149	CpDHW	136
C1Tmax	146	CpSC	136
C1Tmin	146	CpSH	136
C1TS1H	146	CpSWP	136
C1TS1H	149	CpTot	136
C1TS1L	146	currentLanguage	162
C1TS1L	149	DesFun	151
C1WC	129	detectedRTh	138
C1WC	130	DetectedRTh	130
C1WC	144	DHWCDHW	150
C2ECO	144	DHWEH	150
C2IRFMV	146	DHWLEG	150
C2IRFMV	149	DHWm	150
C2Mo	133	DHWr	150
C2MVP	133	DHWs	129
C2Op	133	DHWs	150
C2OTC	146	DHW-SMART	157
C2OTCs	133	EHLF	134
C2OTO	146	EHOOp	134
C2OTO	149	EHst	134

EHstp	134	LCDUop.....	162
Eht	134	Maxfactcn1	138
euSumerTime	129	Maxfactcn1	139
euSumerTime	163	Maxfactcp1	138
HEBP	153	Maxfactcp1	139
HEIRF	153	Maxfacthn1	138
HEISWT.....	153	Maxfacthn1	139
HEksco	153	Maxfacthp1	138
HEPB	153	Maxfacthp1	139
HES	130	noNc	157
HES	153	O1	160
HEWTEH.....	153	O1	160
Hoff	158	O3	160
HPDEF	134	O4	160
HPDI	134	O5	160
HPEO	155	O6	160
HPEVI	134	O7	160
HPEVI2.....	134	O8	160
HPEVO.....	134	onOffBright	164
HPH4	134	OpInt	151
HPH42	134	OPst	132
HPOut	155	OPST	132
HPOut	155	OPTa	132
HPP1	134	OPTa	133
HPP1r134.....	134	OPTa2	132
HPPd	134	OPTa2	133
HPPd2	134	OPTa2v.....	132
HPPs	134	OPTav	132
HPTd	134	PM1	156
HPTd2	134	PM2	156
HPTe	134	PMConf.....	156
HPTg	133	Rfactc1	138
HPTi	132	Rfactc1	139
HPTI	134	Rfacth1	138
HPTo	132	Rfacth1	139
HPTohp.....	133	RoffcC1.....	139
HPTs	134	RoffcC2.....	140
HPWF	133	RoffhC1	139
HPWP	133	RoffhC2	140
HPWP1.....	155	roomC1FT	143
HPWP1.....	155	roomC1Grad.....	143
hsb	156	roomC2FT	143
I1	158	roomC2Grad.....	143
I2	158	roomCC1FT.....	143
I3	158	roomCC2FT.....	143
I4	158	roomDHW.....	143
I5	158	roomSWP	143
I6	158	Rtoff	155
I7	158	Rton	155
IpDHW	135	Rton	155
IpSC	135	RTType.....	130
IpSH	135	RTType.....	138
IpSWP	135	SDC1	166
IpTot	135	SDC2	166
KeepP	151	SHPT	150
Ku	157	SHPTs	150
LCDBrightness	164	SHWTS.....	151
LCDContrast.....	164	SOLAnz	154
LCDL	129	Solarmin	154
LCDM	129	SOLHy	154

SOLmxt.....	154
SOLmxt.....	154
SOLOp	135
SOLOver.....	154
SOIPt	135
SOLSdTc	154
SOLSdTc	154
SOLStSet.....	130
SOLStSet.....	154
StTim	151
SWoff	152
SWP	130
SWP	152
swpOp	133
SWPs	152
SWPst	133
SWPt	133
TarAct	157
TarSt	157
Taux1	161
Taux2	127
Taux2	161
Taux3	127
Taux3	161
TDHWmax.....	150
TDHWMAXtime	150
TDHWON	150
TDHWS	150
TDHWTMAX.....	154
tempOffset.....	162
Thermostat 1	128
Thermostat 1 (otC1)	130
Thermostat 1 (otC1)	138
Thermostat 2 Circuit.....	128
Thermostat 2 (otC2)	130
Thermostat 2 (otC2)	138
THPOFF	150
THPON.....	150
Uspec	134
UTC	129
UTC	163
Utype	134
WPDS	155
WPMInf.....	155
WPMIno.....	155
WPOp	155
WPOvr	155
WPSc	155
WPSS	155
WPWS	155

9 TROUBLESHOOTING

Alarm code indication on remote control switch:



◆ Alarms for Indoor units:

Alarm Code	Retry Stop Code	Yutaki S/SC	Yutaki S80	Yutaki M	Origin	Detail of Abnormality	Main Factors
3	-	o	o	o	Communication	Transmission Alarm (Not outdoor unit detected)	Loose, disconnected, broken or short-circuited connector
11	-	o	o	o	Indoor	Water inlet thermistor abnormally (THMwi)	Loose, disconnected, broken or short-circuited connector
12	-	o	o	o	Indoor	Water outlet thermistor abnormally (THMwo)	Loose, disconnected, broken or short-circuited connector
13	-	o	o	o	Indoor	Indoor Liquid Pipe Temp Thermistor Abnormality (THMI)	Loose, disconnected, broken or short-circuited connector
14	-	o	o	o	Indoor	Indoor Gas Pipe Temp. Thermistor Abnormality (THMg)	Loose, disconnected, broken or short-circuited connector
15	-	(o)	(o)	(o)	Indoor	Water Circuit 2 thermistor abnormally (THMwo2)	Loose, disconnected, broken or short-circuited connector
16	-	(o)	(o)	(o)	Indoor	Water DHW thermistor abnormally (THMdhwt)	Loose, disconnected, broken or short-circuited connector
17	-	(o)	(o)	(o)	Indoor	Auxiliary sensor 2 thermistor abnormally (THMaux2)	Loose, disconnected, broken or short-circuited connector
18	-	(o)	(o)	(o)	Indoor	Auxiliary sensor 1 thermistor abnormally (THMaux1)	Loose, disconnected, broken or short-circuited connector
19	-	o	-	-	Indoor	Water Plate HEX pipe thermistor abnormally (THMwohp)	Loose, disconnected, broken or short-circuited connector
19	-	-	o	-	Indoor	Suction R134a pipe thermistor abnormally (THMs)	Loose, disconnected, broken or short-circuited connector
23	-	-	o	-	Indoor	Discharge R134a pipe thermistor abnormally (THMd)	Loose, disconnected, broken or short-circuited connector
25	-	(o)	(o)	(o)	Indoor	Auxiliary sensor 3 thermistor abnormally (THMaux3)	Loose, disconnected, broken or short-circuited connector
40	-	o	o	o	Indoor	Incorrect LCD setting	Current LCD configuration does not allow proper operation
63	-	(o)	(o)	(o)	Communication	Transmission error between Central and indoor communication	Indoor fuse meltdown, Indoor/central connection wiring (breaking, wiring error, etc.)
70	P70	o	o	o	Indoor	Hydraulic alarm flow & Water Pump malfunction	Water flow is not detected in the hydraulic cycle or Pump defective
83	P83	o	o	o	Indoor	Hydraulic alarm pressure	Water pressure is not detected in the hydraulic cycle
72	-	o	-	-	Indoor	Thermostat Heater Alarm	High temperature is detected in Electric Heater
73	-	o	o	o	Indoor	Mixing over-temperature limit protection for Mixed circuit.	Circuit 2 supply temperature > Target temperature + offset
74	P74	o	o	o	Indoor	Unit over-temperature limit protection	Two > Tmax +5K

Alarm Code	Retry Stop Code	Yutaki S/SC	Yutaki S80	Yutaki M	Origin	Detail of Abnormality	Main Factors
75	-	o	o	o	Indoor	Freeze Protection by Cold water inlet, outlet temperature detection	
76	-	o	o	o	Indoor	Freeze Protection Stop by indoor liquid temperature thermistor	
77	-	o	o	o	Indoor-LCD	Receiver Communication failure	No Opentherm/Hlink communication for a continuous period of 10 minutes.
78		o	o	o	Indoor-LCD	RF Communication failure	There is no communication for 1 hour with on or two RF receives which are bound to the RF-Bridge.
79	-	o	o	o	Indoor -outdoor	Unit Capacity setting Error	There is no concordance between indoor outdoor unit capacity
80	-	o	o	o	Indoor-	LCD H-link RCS transmission error	No H-link communication for a continuous period of 1 minute between Indoor and LCD User control by connection wiring (breaking, wiring error, etc.)
					LCD	(if no H-LINK RCS has no power)	
81		o	o	o	Indoor	"Monetary Power interruption" or "Low voltage detected"	
101		-	o	-	Indoor	Activation of high pressure switch	
102	P12	-	o	-	Indoor	Activation of protection control for excessively high pressure	Stop after P12 retry due to discharge pressure $P_d \geq 2.78$ MPa continued for 10 seconds.
104	P06	-	o	-	Indoor	Activation of low control	Stop after P06 retry due to $P_s \leq 0.15$ MPa continued for 90 seconds
104	P06	-	o	-	Indoor	Activation of low control	Immediate stop with $P_s \leq 0.1$ MPa
105	P11	-	o	-	Indoor	Excessively low pressure difference	Stop after P11 retry due to pressure ratio $\epsilon < 1.8$ continued for 3 minutes.
106		-	o	-	Indoor	Excessively high discharge gas temperature	$T_d \geq 120$ °C continued for 10 minutes, $T_d \geq 140$ °C continued for 5 seconds
129		-	o	-	Indoor	Failure of discharge gas pressure sensor	Loose, disconnected, broken or short-circuited connector
130		-	o	-	Indoor	Failure of suction gas pressure sensor	Loose, disconnected, broken or short-circuited connector
132		-	o	-	Indoor	Transmission error between Inverter PCB and Main PCB	Described in inverter abnormal stop control
134		-	o	-	Indoor	Abnormality of Power Supply Phase	Reverse/Open Phase
135		-	o	-	Indoor	Incorrect PCB Setting	Wrong DSW setting in the case of Co041
151		-	o	-	Indoor	Excessively low voltage or excessively high voltage for the inverter	Described in inverter abnormal stop control
152		-	o	-	Indoor	Abnormal operation of the current sensor	Described in inverter abnormal stop control
153		-	o	-	Indoor	Activation of protection for inverter instantaneous over current	Described in inverter abnormal stop control
154		-	o	-	Indoor	Transistor module protection activation	Described in inverter abnormal stop control
155		-	o	-	Indoor	Increase in the inverter fin temperature or abnormality	Described in inverter abnormal stop control
156		-	o	-	Indoor	Inverter non operation	Described in inverter abnormal stop control
157		-	o	-	Indoor	Inverter Communication abnormality	Described in inverter abnormal stop control

◆ Alarms for Outdoor units

Code number	Category	Type of abnormality	Main cause
2	Outdoor unit	Activation of protection device (high pressure cut)	Activation of PSH, locked motor, abnormal operation in the power supply phase. Failure of fan motor, drain discharge, PCB, relay, float switch activated. (Pipe clogging, excessive refrigerant, inert gas mixing, fan motor locking at cooling operation)
3	Transmission	Abnormal transmission between outdoor and indoor units	Incorrect wiring. Loose terminals, Failure of PCB. Tripping of fuse. Power supply OFF.
4		Abnormal transmission between inverter PCB and RASC unit PCB	Transmission failure between inverter PCBs. (Loose Connector, Wire Breaking, Blowout of Fuse).
5	Power supply	Reception of abnormal operation code for detection of power source phase	Power source with abnormal wave pattern. Main power supply phase is reversely connected or one phase is not connected.
6	Voltage	Excessively low voltage or excessively high voltage for the inverter	Voltage drop in power supply. Incorrect wiring or insufficient capacity of power supply wiring.
7	Cycle	Decrease in discharge gas superheat	Excessive Refrigerant Charge, Failure of Thermistor, Incorrect Wiring, Incorrect Piping Connection, Expansion Valve Locking at Opened Position (Disconnected Connector).
8		Excessively high discharge gas temperature at the top of compressor	Insufficient refrigerant charge, refrigerant leakage. Expansion valve closed or clogged.
19	Fan motor	Activation of the protection device for the indoor fan motor	Failure of fan motor.
20	Outdoor unit sensor	Thermistor for discharge gas temperature (THM9)	Incorrect wiring, disconnected wiring, broken cable, short circuit.
21		High pressure sensor	
22		Thermistor for outdoor ambient temperature (THM7)	
24		Thermistor for evaporating temperature (THM8)	Incorrect Wiring, Disconnected Wiring, Wire Breaking, Short Circuit, Fan Motor Locking at Heating Operation.
31	System	Incorrect capacity setting or combined capacity between outdoor and indoor units	Incorrect Capacity Code Setting, Excessive or Insufficient Indoor Unit Total Capacity Code.
35		Incorrect indoor unit number setting	Duplication of indoor unit number, number of indoor units over specifications.
36		Incorrect of Indoor Unit Combination.	
38		Abnormality of picking up circuit for protection (Outdoor unit)	Failure of indoor unit PCB, incorrect wiring, connection to PCB in indoor unit.
45	Protection device	Activation of the safety device from excessively high discharge pressure	Overload (obstruction of HEX, short circuit) mixture of inert gas, Excessive Refrigerant.
47		Activation of the safety 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		Activation of overcurrent protection	Overload, overcurrent. Failure of Inverter PCB, heat exchanger clogged, locked compressor. EVI/EVO failure.
51	Inverter	Abnormal operation of the current sensor	Incorrect wiring of current sensor. Failure of control PCB or Inverter PCB.
53		Inverter fin temperature increase	Inverter module (IPM, DIP-IPM) and Inverter PCB abnormality. Failure of compressor, clogging of heat exchanger.
54		Abnormality of inverter fin temperature	Heat Exchanger Clogging. Fan Motor Failure.
55		Abnormality of inverter module	Failure of DIP-IPM, IPM or Inverter PCB.
EE	Compressor	Compressor protection	"Compressor failure. This alarm code appears when the following alarms 02, 07, 08, 45, 47 occur three times within 6 hours."
b0	Indoor unit model setting	Incorrect setting of unit model	No setting of unit capacity or incorrect setting of unit capacity.

Code number	Category	Type of abnormality	Main cause
b1	Number setting	Incorrect setting address or refrigerant cycle	Over 64 indoor units setting by number or indoor unit address.
b5		Incorrect setting of indoor unit number for H-LINK type	The number of indoor units connected to the H-LINK II of one system is 17 or higher.

◆ Alarms for LCD

Alarm Code	Retry Stop Code	Yutaki S/SC	Yutaki S80	Yutaki M	Origin	Detail of Abnormality	Main Factors
202		(o)	(o)	(o)	LCD	Wrong settings of PC-ARFHE	
203		(o)	(o)	(o)	LCD	Slave PC-ARFHE stops answering to Master PC-ARFHE	Loose, disconnected, broken or short-circuited connector
204		(o)	(o)	(o)	LCD	Indoor unit stops answering to Master PC-ARFH	Loose, disconnected, broken or short-circuited connector
205		(o)	(o)	(o)	LCD	Central Alarm, no Central message	Loose, disconnected, broken or short-circuited connector

10 MAINTENANCE

10.1 MAINTENANCE WORK

CAUTION

- All inspections and checks have to be carried out by a licensed technician and never by the user itself.
- Before any inspection and check the unit main power supply has to be switched OFF.
- Wait a minimum off 10 minutes from all power supply have been turned OFF.
- Take care with the crankcase heater. It could operate even when compressor is OFF.
- Take care with the electrical box components. Some of them could remain hot after switching OFF the unit.

NOTE

All these maintenance operations must be done with appropriate materials and following this manual.

10.1.1 General maintenance procedure for the outdoor unit

1 Fan and fan motor

- Lubrication: All the fan motors are pre-lubricated and sealed at factory. Therefore no lubrication maintenance is required.
- Sound and vibration: Check for abnormal sounds and vibrations.
- Rotation: Check the clockwise rotation and the rotating speed.
- Insulation: Check the electrical insulation resistance.

2 Heat exchanger

- Clog: Inspect the heat exchanger at regular intervals and remove any accumulated dirt and any accumulated dust from the heat exchanger. Other obstacles must be removed such as the growing grass and the pieces of paper which might restrict the airflow.

3 Refrigerant piping connection

- Leakage: Check for the refrigerant leakage at the piping connection between the outdoor and the indoor unit.
- Pressure: On split system, check the R-410A refrigerant pressure using the check joints of the outdoor unit.

4 Cabinet

- Stain: Check for any stain and remove it cleaning if it is the case.
- Fixing screw: Check for any loosened screw or any lost screw. Fix the loosened screws and the lost screws.
- Insulation material: Check for any peeled thermal insulator on the cabinet. Repair the thermal insulator.

5 Electrical equipment

- Activation: Check for an abnormal activation of the magnetic contactor, the auxiliary relay, the PCB and others.
- Line condition: Pay attention to the working voltage, the working amperage and the working phase balance. Check for any faulty contact that is caused by the loosened terminal connections, the oxidized contacts, the foreign matter and other items.

Check the electrical insulation resistance.

6 Control device and protection device

- Setting: Do not readjust the setting in the field unless the setting is maintained at a point that is different from the point listed in the Technical Documentation.

7 R410A compressor

- Sound and vibration: Check for abnormal sounds and vibrations.
- Activation: Check that the voltage drop of the power supply line is within 15% at the start and within 2% during the operation.

8 Reverse valve

- Activation: Check for any abnormal activation sound.

9 Strainer

- Clog: Check that there is no temperature difference between both ends.

10 Ground wire

- Ground line: Check for the continuity to earth.

11 Oil heater (Crankcase heater of the R-410A compressor)

- Activation: The oil heater should be activated at least twelve hours before the start-up by turning ON the main switch.

10.1.2 General maintenance procedure for the indoor unit

To ensure good operation and reliability of the indoor unit, main parts and field wiring have to be checked periodically.

The following checks have to be done by qualified technicians at least once a year:

1 Cabinet

- Stain: Check for any stain and remove it cleaning if it is the case.
- Fixing screw: Check for any loosened screw or any lost screw. Tighten the loosened screws and replace the lost screws.
- Insulation material: Check for any peeled thermal insulator on the indoor part of the covers. Repair the thermal insulator.

2 Water piping connection

- Leakage: Check there are no water leakages neither in the inlet and outlet water connections (space heating and DHW if used), nor in the main water circuit nor the tank connections. Check all the joints, connections and circuit elements.

NOTE

- If leakage is detected in the inlet/outlet water connections, repair it and remember to replace the gaskets.
- Pay special attention to the water pipe connection placed over the electrical box.

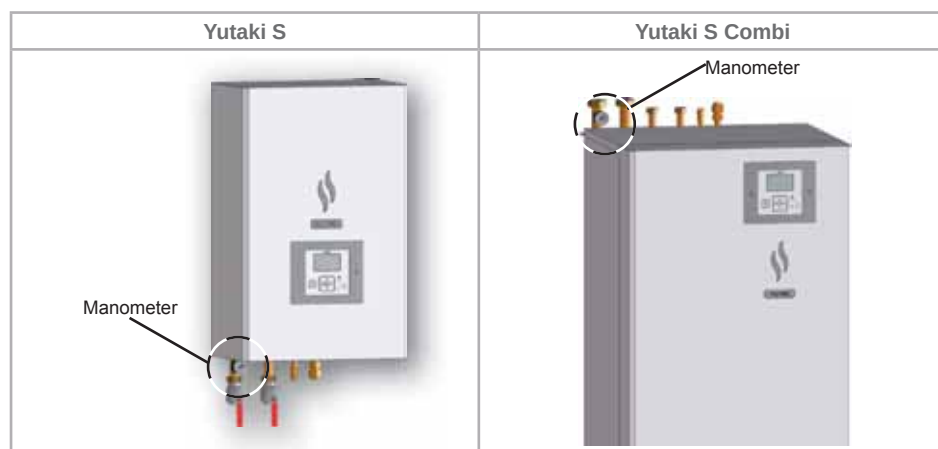
3 Water flow and pressure:

- Water flow:
 - Space heating: Check the water flow (m³/h) through the unit controller in the “Heat Pump Details” of the “Operation Information” menu.
 - DHW (if used): Check whether the water circulation is correct along all the DHW circuit.
- Pressure checking:
 - Space heating: Check the water pressure using the manometer in the indoor unit (In YUTAKI M units, this manometer is field supplied). This value shall be between 1.5 and 2.0 bars approximately (1.8 bars is a proper value).

The manometer is placed at different positions according to each unit model

Yutaki S / SCombi

In Yutaki S and SCombi models, the manometer is installed factory supplied as it is shown:

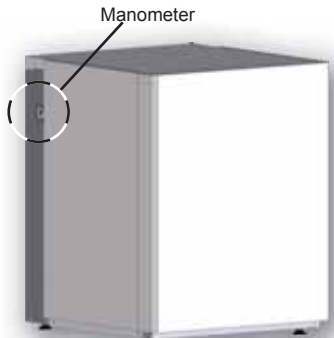
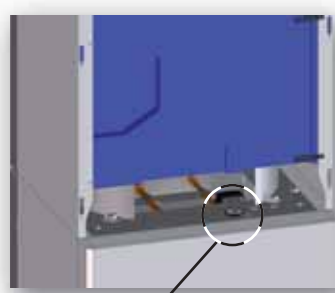
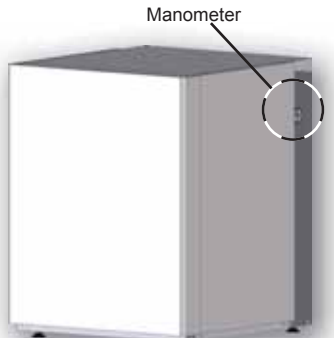


Yutaki M

For the Yutaki M series it is highly recommended to install, field supplied, a manometer gauge attached to the water inlet pipe and after the shut-off valve.

Yutaki S80

Yutaki S 80 has special configurations for the position of the manometer. While it is factory supplied in only one position (left side), it can be moved by the installer to the right side or to the front of the unit. For example, in case of a wall at the left side or at both sides of the YUTAKI S80 unit, respectively.

Manometer at Left side (factory supplied)	Manometer at Front side	Manometer at Right side
 i NOTE This is the factory supplied location of the manometer	 i NOTE This configuration requires removing the front panel, both for mounting and to display the gauge.	 i NOTE Installer can change the location of the manometer gauge

i NOTE

The water pressure must remain above 1 bar in order to prevent air from entering the circuit, and below 3.0 bars (safety valve opening value).

- DHW (if used): Check there is no loss of pressure and ensure that DHW pressure is not higher than 6 bars. Connect a gauge to the DHW drain port for this purpose.

4 Security water valve for DHW (if used):

- Operation: Check the correct operation of the security water valve (pressure and temperature relief valve) at the DHW inlet connection. Remember that this element must ensure that the following functions are provided (Pressure protection, non-return function, shut-off valve, filling and draining).

5 DHWTank inspection hatch

The DHW tank has an inspection hatch at the bottom. This hatch allows the inspection of the interior of the tank.

DANGER

Be careful when using this inspection hatch. There are high temperature and high pressure inside the tank. Before open it wait a reasonable time for the water to cool.

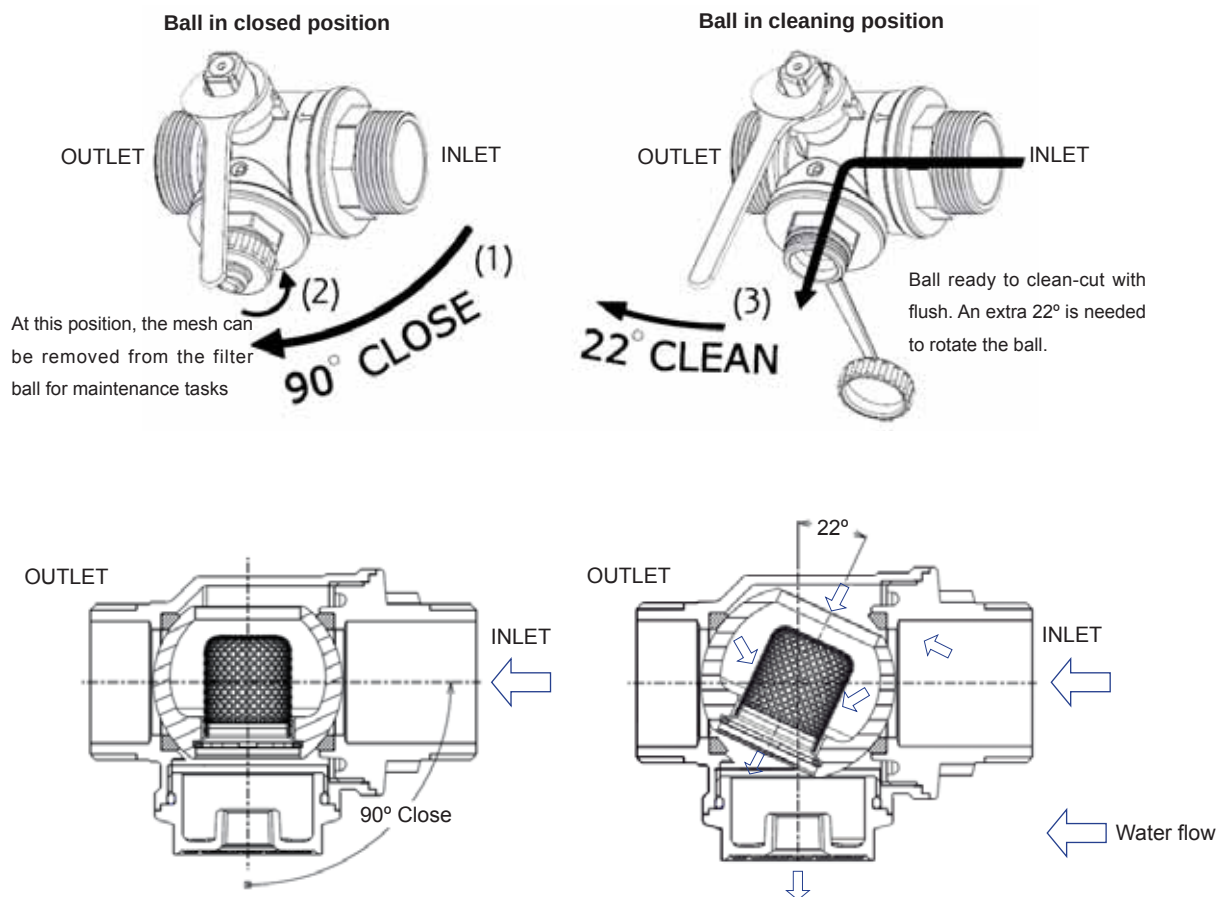
For a safe operation using the inspection hatch, proceed as it is explained in the manual of the specific unit.

Additional hydraulic elements are necessary in the DHW circuit. Refer to chapter "Refrigerant and water piping" in section "4.3.2 Additional hydraulic necessary elements for DHW".

6 Filter +:

The Filter + valve is an on-off ball valve containing an interchangeable cylindrical filter which is easy to inspect and remove for normal maintenance operations. Normally, Filter + ball valve it is used as a shut-off valve by turning the handle 90° clockwise (1).

Filter+ ball valve makes the maintenance operations easier. Once the valve is in closed position, open the draining port tap(2) and, by turning the handle up to 22° clockwise, the water from the inlet is guided behind the filter and runs in opposite direction through the draining port(3). The water circuit can be cleaned even under full pressure, avoiding the need to drain the unit prior the cleaning process. After cleaning, simply close the draining port tap(2), and open the valve again.



NOTE

The draining port must be connected to the sewage system by means of a hose or a pipe.

CAUTION

- Take care when draining the unit. Ensure the connection of the hose or drain pipe in order to avoid water leakage on any electrical component.
- The expelled water could be hot and could keep in pressure. Take care with this draining.

7 Safety valve:

- Operation: Check the correct operation of the indoor unit safety valve (pressure relief valve) on the space heating circuit. Open it manually and some water should be expelled by its connected drain pipe.

8 Air purger:

- Excessive air: Check the correct operation of the indoor unit air purger. Turn it twice at least, since there may be air in the water circuit, which needs to be expelled by this air purger.

9 Water pump:

- Pump performance curves: Check as explained in point 3 that water flow and pressure is in accordance with the Pump performance curves.
- Electrical connection: Check the correct connection of the electrical wiring of the water pump. If moisture is detected in the pump surface, revise the water pipes, since a water leakage could have been occurred.

10 Fixing points tightening:

- Check the fixing points of the indoor unit. Check the indoor unit wall support. The indoor unit has to be always in a vertical position.

11 Refrigerant piping connection

- Leakage: Check for the refrigerant leakage at the refrigerant piping connections in the indoor unit. Check the different connections of the plate heat exchanger.

12 Electrical equipment

- Activation: Check for an abnormal activation of the magnetic contactor, the relay, the PCBs and others.
- Line condition: Pay attention to the working voltage, the working amperage and the working phase balance. Check for any faulty contact that is caused by the loosened terminal connections, the oxidized contacts, the foreign matter and other items. Check the electrical insulation resistance.

13 Control device and protection device

- Setting: Do not readjust the setting in the field unless the setting is maintained at a point that is different from the point listed in the Service Manual.

14 Ground wire

- Ground line: Check for the continuity to earth in the main electrical components.

◆ Descaling (S/SCombi)

Water quality and set temperature can affect the scale production and it can deposit on the surface of the plate heat exchanger, restricting the heat exchange and the good operation of the unit.

** NOTE**

Descaling should be necessary periodically at certain intervals depending on the supplied water quality.

Check the scale level when proceeding maintenance to ensure reliability of the unit.

If necessary, proceed with descaling:

- 1 Switch OFF the main power supply of the indoor unit.
- 2 Empty the indoor unit water as explained in "Draining" procedure.
- 3 Proceed with descaling of the plate heat exchangers.
- 4 Ensure that the water quality remains compliant with the EU council directive 98/83 EC.

◆ Draining

i NOTE

Draining operation is unique for each model. Refer to the service manual of the specific unit for drain operation procedure.

Draining operation for YUTAKI S

YUTAKI S models have no drain port factory supplied. It must be considered the installation of a drain port after the shut-off valve (factory supplied) and before the water inlet of the unit when proceeding to the installation of the unit.

Draining operation for YUTAKI SCombi

Draining of the indoor unit (27)

- 1 Switch OFF the main power supply of the indoor unit.
- 2 Close the 2 shut-off valves (factory-supplied) installed at the space heating connections (Water inlet and outlet connections).
- 3 Open manually the drain port for indoor unit water (27) and collect the water into a bucket.
- 4 Once all the water has been drained, close again the drain port for indoor unit water.

! CAUTION

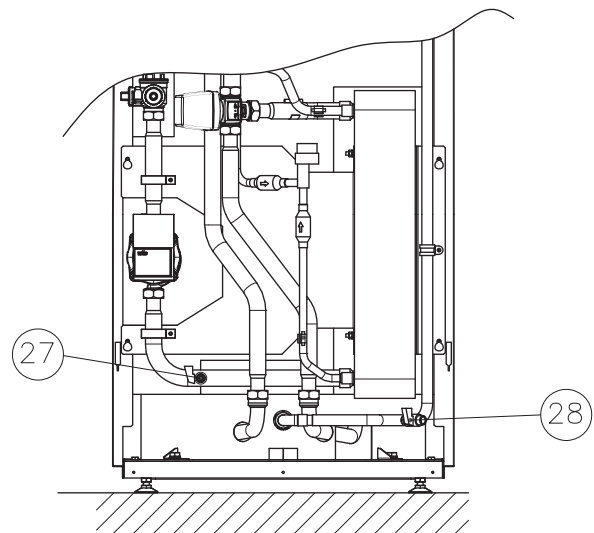
When draining the indoor unit water from its drain port, the leaved water could be hot and could keep in pressure. Perform the draining procedure carefully.

Draining of the DHW circuit (28)

- 1 Switch OFF the main power supply of the indoor unit.
- 2 Close the main DHW inlet valve (water inlet shut-off valve) in order to avoid the tank filling.
- 3 Close the shut-off valve of the DHW outlet.
- 4 Connect a drain hose to the drain port for DHW (28) and lead the other end to the general draining.
- 5 Open manually the drain port for DHW (28) and wait a long time until all the water has been removed.

! CAUTION

When draining the DHW from its drain port, the leaved water could be hot and could keep in pressure. Perform the draining procedure carefully.



Draining operation for YUTAKI S80

To drain the indoor unit follow the next procedure:

- 1 Switch OFF the main power supply of the indoor unit.
- 2 Close the 2 shut-off valves (factory-supplied) installed at the space heating connections (Water inlet and outlet connections).
- 3 Connect a drain pipe to the drain port of the shut-off valves and lead it to the general draining system.
- 4 Open manually the drain port of the shut-off valves and collect the water into a bucket.
- 5 Once all the water has been drained, close again the drain port of the shut-off valves and open the main shut-off valve to restart the normal operation.

! CAUTION

When draining the indoor unit water from its drain port, the leaved water could be hot and could keep in pressure. Perform the draining procedure carefully.

Draining operation for YUTAKI M

YUTAKI M has no drain port factory supplied. It is highly recommended to install a drain port valve attached to the water outlet of the YUTAKI M unit in order to ease the operation of draining. When the drain port is installed the draining procedure for the YUTAKI M follows the next steps:

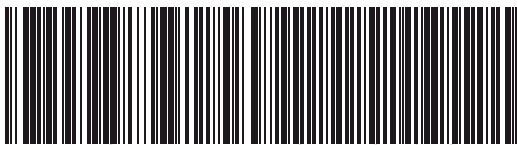
- 1 Switch OFF the main power of the unit.
- 2 Close the shut-off valve installed at the water inlet connection (field supplied).
- 3 Connect a pipe or a drain hose to the drain port (field supplied) placed in the water outlet pipe of the unit.
- 4 Open manually the drain port of the shut-off valve (field supplied), and collect the water into a bucket (or to a sewage system)
- 5 Once all the water has been drained, and all maintenance operations have been finished, close again the drain port and open again the valve of the water inlet pipe to restart the normal operation of the unit.

HITACHI

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