

INSTALLATION AND OPERATION MANUAL

WIRED REMOTE CONTROLLER
FOR YUTAKI UNITS

MODELS

PC-ARFH1E



Cooling & Heating

EN

The English version is the original one; other languages are translated from English. Should any discrepancy occur between the English and the translated versions, the English version shall prevail.

ES

La versión en inglés es la original, los demás idiomas se han traducido de la versión inglesa. En el caso de que existan discrepancias entre la versión inglesa y las traducidas, la que debe prevalecer es la inglesa.

DE

Der englische Version ist die Original-Version. Andere Sprachen sind aus dem Englisch übersetzt. Sollte eine Abweichung zwischen der englischen und der übersetzten Version auftreten, hat die englische Version Vorrang.

FR

La version en anglais contient les instructions d'origine, les autres langues sont traduites depuis la version anglaise. En cas de discordance entre la version en anglais et les versions traduites, la version en anglais prévaut.

IT

La versione in inglese è quella originale, le versioni in altre lingue sono una traduzione dall'inglese. In caso di discrepanza tra l'inglese e le versioni tradotte, prevarrà la versione inglese.

PT

A versão inglesa é a original; os outros idiomas são traduzidos do inglês. Se houver uma discrepância entre a versão inglesa e as versões traduzidas, prevalece a primeira.

DA

Den engelske version er den originale, øvrige sprog er oversat fra engelsk. Hvis der opstår uoverensstemmelse mellem den engelske og den oversatte version, vil den engelske version være gældende.

NL

De originele handleiding is in het Engels, de tekst in andere talen is vertaald vanuit het Engels. Mochten er verschillen zijn tussen de Engelse versie en de vertaalde, dan zal de Engelse versie altijd overwinnen.

SV

Den engelska texten är den ursprungliga; andra språk har översatts från engelska. Om det skulle förekomma skillnader mellan den engelska och den översatta versionen, så ska den engelska versionen följas.

EL

Οι πρωτότυπες οδηγίες είναι στα αγγλικά. Οι άλλες γλώσσες είναι μετάφραση από τα αγγλικά. Αν υπάρχει οποιαδήποτε ασυμφωνία ανάμεσα στην αγγλική και τις μεταφράσεις, αυτή που επικρατεί είναι η αγγλική έκδοση.

BG

Версията на английски език е оригиналната; версията на останалите езици са в превод от английски език. При различие между английската версия и преводна версия на друг език за меродавна се счита английската версия.

CS

Originální verze tohoto dokumentu je v angličtině; ostatní jazykové varianty jsou z angličtiny přeložené. Pokud mezi anglickou a jakoukoli jinou jazykovou verzí dojde k rozporu, bude směrodatná anglická verze.

ET

Originaalversioon on ingliskeelne; teised keeled on tõlge inglise keelest. Vastuolude korral ingliskeelse ja tõlkeversioonide vahel kehtib eesõiguslikult ingliskeelne versioon.

HU

Az eredeti változat az angol; az egyéb nyelvű változatok angolról lettek fordítva. Amennyiben az angol és a fordított verziók között bármilyen eltérés mutatkozik, az angol nyelvű változat a mérvadó.

LV

Angļu valodas versija ir oriģinālā; no citām valodām tiek tulkotas uz angļu valodu. Ja starp angļu valodu un tulkoto versiju rodas jebkādas neatbilstības, noteicošais ir angļu valodas variants.

LT

Versija anglų kalba yra originali; versijos kitomis kalbomis yra išverstos iš anglų kalbos. Jei yra neatitikimų tarp versijos anglų kalba ir verstinių versijų, pirmenybė teikiama versijai anglų kalba.

PL

Wersja angielska jest wersją oryginalną - wszystkie pozostałe stanowią jej tłumaczenie na odpowiednie języki. W przypadku stwierdzenia jakichkolwiek rozbieżności między oryginałem a jego tłumaczeniem, rozstrzygająca jest wersja w języku angielskim.

RO

Versiunea originală este cea în limba engleză; versiunile în alte limbi sunt traduse din limba engleză. Dacă există vreo discrepanță între versiunile în limba engleză și versiunea tradusă, prevalează versiunea în limba engleză.

RU

Английская версия является оригинальной; другие языки переведены с английского. В случае любого расхождения между английской и переведенной версиями, английская версия имеет преимущественную силу.

FI

Englanninkielinen versio on alkuperäinen; muut kielet on käännetty englannista. Mikäli englannin ja käännettyjen versioiden välillä ilmenee eroavaisuuksia, englanninkielinen versio on voimassa.

HR

Verzija na engleskom jeziku prvobitna je verzija, a verzije na ostalim jezicima prevedene su s engleskog. U slučaju neslaganja između verzije na engleskom jeziku i prevedenih verzija, verzija na engleskom jeziku ima prednost.

SL

Izvirna različica je v angleškem jeziku; drugi jeziki so prevedeni iz angleščine. Pri razlikah med angleško in prevedeno različico prevlada angleška različica.

SK

Anglická verzia je pôvodná, ďalšie jazyky sú preložené z angličtiny. V prípade akýchkoľvek nezrovnalostí medzi anglickou a preloženou verzou, bude rozhodujúca anglická verzia.

UK

Англійська версія є оригіальною; інші мови переведені з англійської. У разі виникнення розбіжностей між англійською та перекладеною версіями, англійська версія має переважну силу.

TR

İngilizce sürüm orijinal olup diğer diller İngilizce'den çevrilmiştir. İngilizce sürüm ile çevrilen sürümlerin çelişmesi durumunda İngilizce sürüm esas alınacaktır.

SR

Верзија на енглеском је оригинална и са енглеске верзије се преводи на остале језике. Ако постоји нека неусклађеност између енглеске и преведених верзија, енглеска верзија има предност.

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	Ελληνική	Μεταφρασμένη έκδοση
BG	български	Преведена версия
CS	Česky	Přeložená verze
ET	Eesti	Tõlgitud versioon
HU	Magyar	Lefordított változat
LV	Latviešu	Tulkotā versija
LT	Lietuvių	Versta versija
PL	Polski	Tłumaczenie wersji oryginalnej
RO	Română	Versiune tradusă
RU	Русский	Переведенная версия
FI	Suomi	Käännetty versio
HR	Hrvatski	Prevedena verzija
SL	Slovenščina	Prevedena različica
SK	Slovenčina	Preložená verzia
UK	Українська	Перекладена версія
TR	Türkçe	Çevrilmiş sürüm
SR	Српски	Преведена верзија



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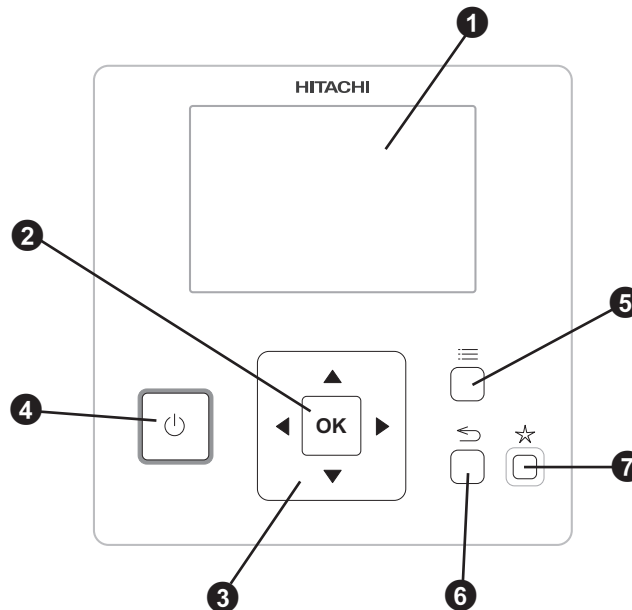
The unit controller for YUTAKI series (PC-ARFH1E) is an user-friendly remote control which ensures a strong and safe communication through H-LINK.

Available for the following unit models:

- RWM-(4.0-10.0)NE(-W)
- RWD-(4.0-6.0)NW(S)E-(200/260)S(-K)(-W)
- RASM-(3-6)(V)NE
- RASM-(2/3)VRE
- RWH-(4.0-6.0)(V)NF(W)E

The following information applies in the case of PC-ARFH1E software of version H-0122 and later used in combination with PCB indoor unit software of version H-0114 and later.

1.1 Definition of the switches



1 Liquid Crystal Display

Screen where controller software is displayed.

2 OK button

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

3 Arrows key

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

4 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.

5 Menu button

It shows the different configuration options of the user controller.

6 Return button

To return to the previous screen.

7 Favourite button

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

1.2 Description of the icons

1.2.1 Common icons

Icon	Name	Explanation
OFF		Circuit I or II is in Demand-OFF
	Status for circuit 1, 2, DHW and swimming pool.	 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	Informs 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

1.2.2 Icons for the comprehensive view

Icon	Name	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/R32 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 mode	- No icon means Comfort mode
		 ECO/Comfort mode for circuits 1 and 2
	Night Shift	Informs about night shift operation
	CASCADE CONTROLLER	Informs about the activation of the "CASCADE" mode.

1.2.3 Icons for the room thermostat view

Icon	Name	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

1.3 Room thermostat 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 				
	Alarm History				
System Configuration					
	General Options				
		Holiday Mode			
		Maximum Setting T. (Air). 			
		Air Eco Offset 			
	Timer and Schedule				
		Circuit 1			
			Heating (Air)	Timer Type	Simple Schedule
			Cooling (Air)	Timer Type	Simple Schedule
		Circuit 2			
			Heating (Air)	Timer Type	Simple Schedule
			Cooling (Air)	Timer Type	Simple Schedule
		Delete All Timer Configuration			
		Space Heating 			
			Circuit 1 		
			Circuit 2 		
		Space Cooling 			
			Circuit 1 		
			Circuit 2 		
		DHW 			
		SWP 			

Menu Contents					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Controller Settings					
	Controller Options				
	Room Names				
	Date and Time				
		Adjust Date and Time			
		European Summer Time			
		UTC Zone			
	Screen settings				
	Language selection				
About					
	System Information				
	Contact Information				
Factory Reset					
Return to user mode					

1.4 Unit controller 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				
	Alarm History				
	Energy data				
System Configuration					
	General Options				
		Room Thermostats			
			Thermostat 1		
			Thermostat 2		
			Wireless Binding ID 1		
			Wireless Binding ID 2		
			Compensation Factors		
			Room Temp Demand OFF		
			Check RT address		
		Central Operation			
	Timer and Schedule				
		Circuit 1			
			Heating (Water)		
				Timer Type	
					Simple
					Schedule
			Cooling (Water)		
				Timer Type	
					Simple
					Schedule
		Circuit 2			
			Heating (Water)		
				Timer Type	
					Simple
					Schedule
			Cooling (Water)		
				Timer Type	
					Simple
		DHW			
			Timer Type		
				Simple	
				Schedule	

Menu Contents					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
		Swimming Pool			
			Timer Type		
				Simple	
				Schedule	
		Delete All Timer Configuration			
	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				
		DHW Heater 			
		Anti Legionella			
	Swimming Pool				
		Status 			
		Setting Temperature			
		Offset Temperature 			
	Complementary Heating				
		Heating Source 			
		Electrical Heater 			
		Boiler Combination 			
		Solar Combination			
			Status		
				Input demand 	
				Total control 	
	Heat Pump 				
		Water Pump Configuration 			
		Night shift			
		Outdoor average Timer 			
		Minimum ON Time 			
		Minimum OFF Time 			
		Seizure Protection 			

Menu Contents					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
			Status 		
			Operation Day 		
			Starting Time 		
	Optional Functions				
		System 			
			Hydraulic Sep. Status 		
			Energy Configuration 		
			Smart Function 		
		Space Functions			
			Heating Auto On/Off		
			Auto Heat/Cool		
		DHW			
			Circuit pump 		
			Recirculation timer 		
			DHW Boost		
		Emergency Operation			
	I/O and Sensors 				
		Inputs 			
		Outputs 			
		Auxiliary sensors 			
Controller Settings					
	Controller Options 				
	Room Names				
	Date and Time				
		Adjust Date and Time			
		European Summer Time			
		UTC Zone			
	Screen settings				
	Language selection				
Commissioning 					
	Air purge procedure 				
		Start Air purge 			
	Unit test run 				
		Start test run 			
	Screed drying 				
		Start Screed Drying 			
About					
	System Information				
	Contact Information				
Factory Reset 					
Return to user mode 					

1.5 Unit + room thermostat controller 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 				
	Alarm History				
	Energy data				
System Configuration					
	General Options				
		Holiday Mode			
		Air Eco Offset 			
		Room Thermostats 			
			Thermostat 1 		
			Thermostat 2 		
			Wireless Binding ID 1 		
			Wireless Binding ID 2 		
			Compensation Factors 		
			Room Temp Demand OFF 		
			Check RT address 		
		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
		DHW			
			Timer Type		

Menu Contents					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
				Simple	
				Schedule	
		Swimming Pool			
			Timer Type		
				Simple	
				Schedule	
		Delete All Timer Configuration			
	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				
		DHW Heater			
		Anti Legionella			
	Swimming Pool				
		Status			
		Setting Temperature			
		Offset Temperature			
	Complementary Heating				
		Heating Source			
		Electrical Heater			
		Boiler Combination			
		Solar Combination			
			Status		
				Input demand	
				Total control	
	Heat Pump				

Menu Contents					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
		Water Pump Configuration 			
		Night shift			
		Outdoor average Timer 			
		Minimum ON Time 			
		Minimum OFF Time 			
		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		
		DHW			
			Circuit pump 		
			Recirculation timer 		
			DHW Boost		
		Emergency Operation			
	I/O and Sensors 				
		Inputs 			
		Outputs 			
		Auxiliary sensors 			
Controller Settings					
	Controller Options 				
	Room Names				
	Date and Time				
		Adjust Date and Time			
		European Summer Time			
		UTC Zone			
	Screen settings				
	Language selection				
Commissioning 					
	Air purge procedure 				
		Start Air purge 			
	Unit 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 password” message is displayed.

The login password for the Installer is:

Right , Down , Left , Right 

Press “OK” to confirm the password.

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

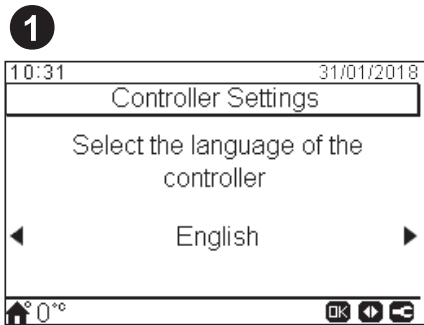


After 30 minutes of inactivity, it is necessary to repeat the log in process. To exit the Installer mode and return to the unit menu, hold down the “↵” button for 3 seconds or go to the “Return to user mode” on the main menu.

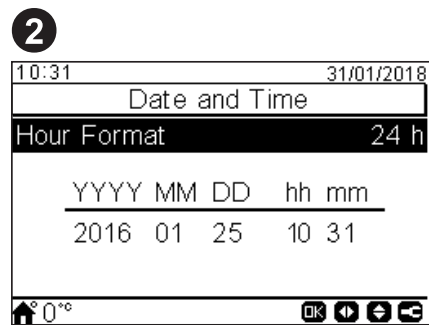
NOTE

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.

1.6 Controller configuration

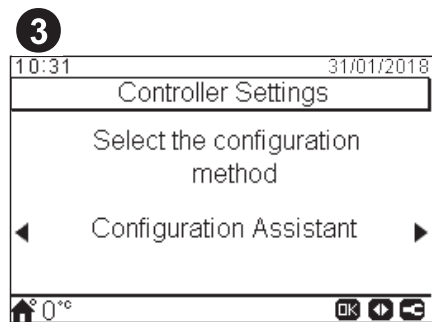


- Select the desired language using the arrow keys.
- Press OK button.

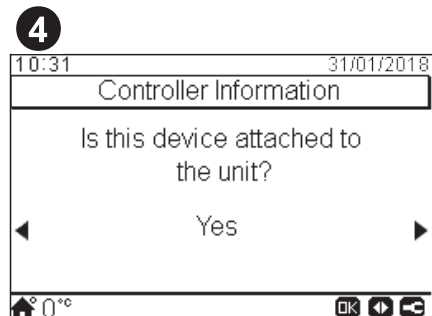


- Select the date and time using the arrow keys.
- Press OK button.

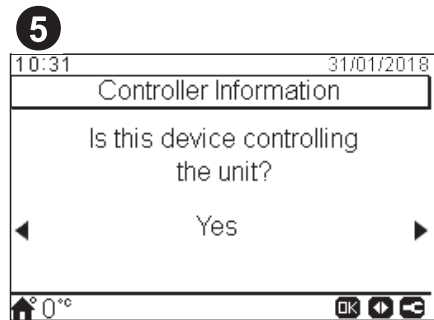
1.6.1 Configuration Assistant



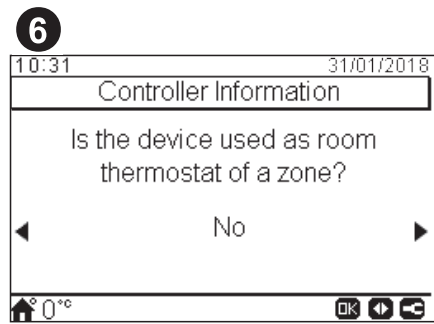
- Select the configuration assistant for an easy configuration.
- Press OK button.



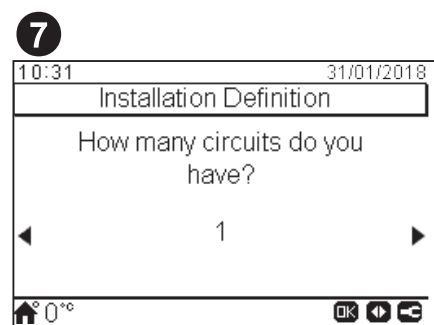
- Select Yes when the device is controlling the unit which it is attached. Jump to screen 6.
- Select No when the device is installed in a different site than the unit.
- Press OK button.



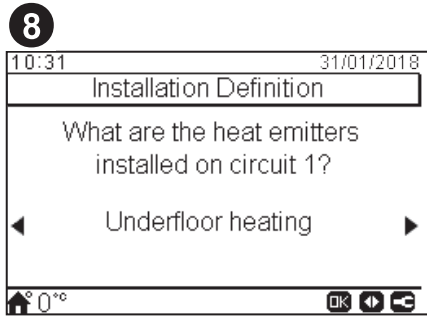
- Select No when the device acts as Room Thermostat only. It does not control the unit.
- Press OK button.



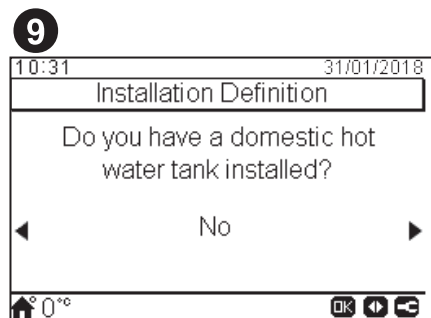
- Select No when the device is not used as a room thermostat.
- Select Yes, in zone 1/ Yes, in zone 2 / Yes, in both zones, depending on the number of circuits controlled.
- When select Yes, in both zones, jump to screen 8.
- Press OK button.



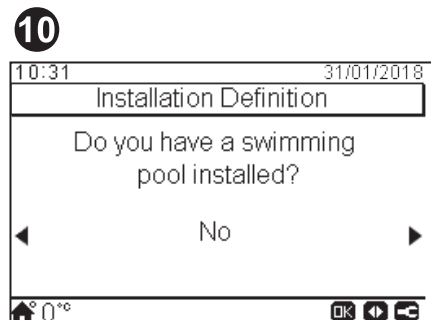
- Select the number of circuits (1 or 2) .
- Press OK button.



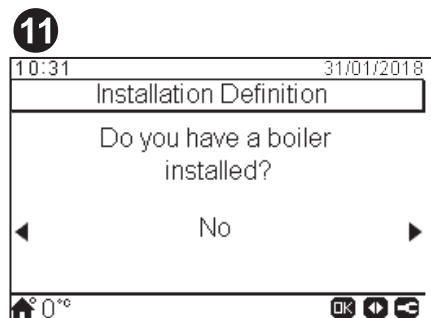
- Select the heat emitters on the circuit 1: Underfloor heating, Fan coils or Radiators.
- Repeat this step in case of circuit 2.
- Press OK button.



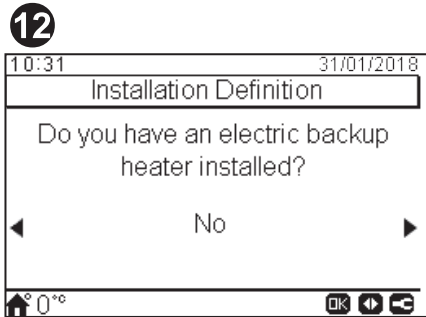
- Select Yes if Domestic Hot Water tank is installed.
- Press OK button.



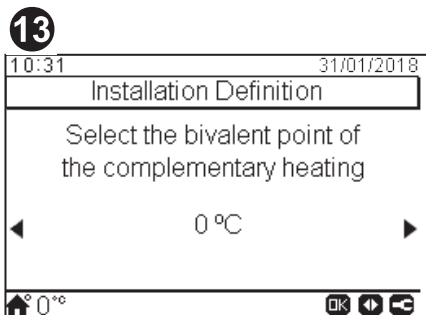
- Select Yes if Swimming Pool is installed.
- Press OK button.



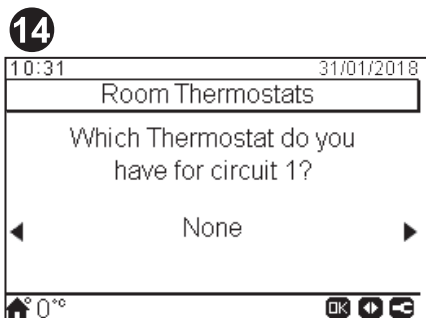
- Select Yes if Boiler is installed.
- Press OK button.



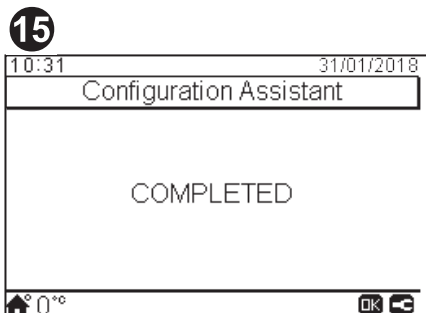
- Select Yes if an electrical backup heater is installed.
- Press OK button.



- Select the bivalent point for boiler or electric backup heater (from -20 °C to 20 °C).
- Press OK button.

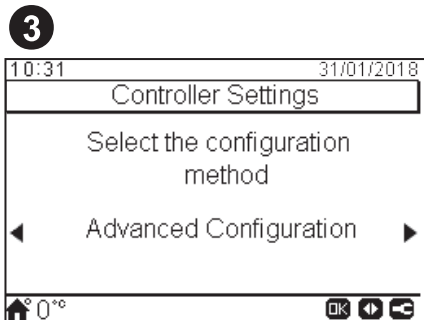


- Select the type of room thermostat installed in circuit 1 or 2 (depending on the previous setting): None, wired or wireless.
- Repeat this step in case of circuit 2.
- Press OK button.



- Configuration assistant is completed.
- Press OK button to go to the main screen.

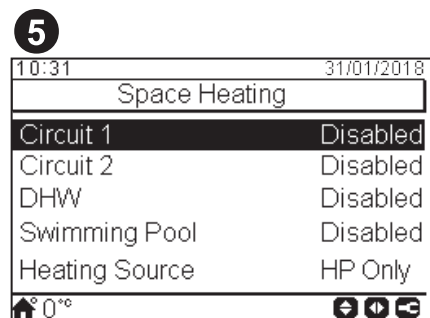
1.6.2 Advanced Configuration



- Select the advance configuration for a complete configuration.
- Press OK button.

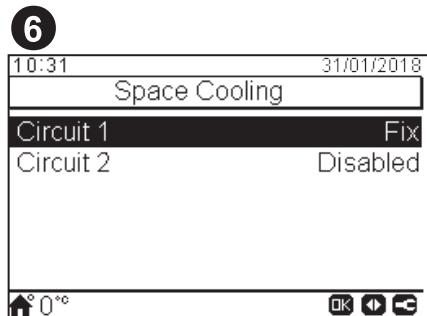


- Select the controller type:
 - ✓ Unit: the device controls the unit.
 - ✓ Room: the device acts as a room thermostat of a zone.
 - ✓ Unit + Room: the device controls the unit and acts as a room thermostat.
- Select controlled circuits by this device: Room C1, Room C2, Room C1+C2
- Select the favourite action: Eco/Confort, Timer, Night shift.
- Select Enabled or Disabled for European summer time.
- Select Next and press OK button .

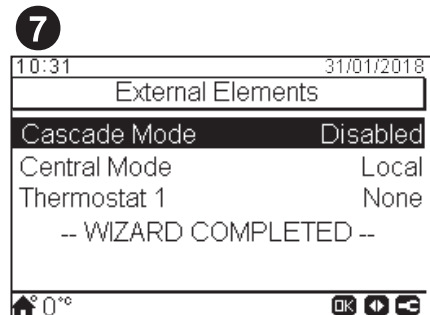


- Configure circuit 1 and circuit 2 OTC: Disabled, Points, Gradient, Fix.
- Enable or disable DHW and Swimming Pool.
- Select the heating source: HP only, HP + EH, HP + Boiler.
- Configure electrical heater use: Starting or Backup.
- Configure Boiler type: Parallel or Serial.

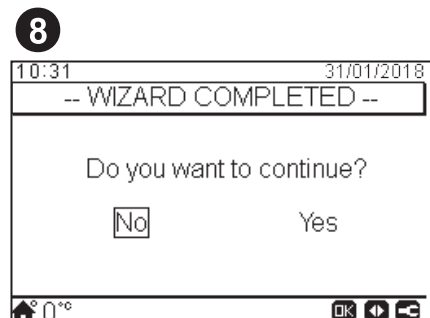
- Configure Solar Combination options: Disabled, Input Demand, Total Control. (only in case DHW is enabled).
- Enable or disable Hydraulic separator status.
- Select Next and press OK button.



- Configure circuit 1 and circuit 2 options: Disabled, Points, Gradient, Fix.
- Only available for cooling mode.



- Enable or disable Cascade Mode.
- Configure Central mode options: Full, water, air or local. Only available when Cascade Mode is disabled.
- Configure thermostat 1 or 2 (depending on previous settings): None, wired or wireless.
- Check RT address if wired is selected.
- Select Wireless binding ID (1 or 2) if wireless is selected.
- Select Wizard complete and press OK button.



- Select Yes to complete the advance configuration.
- Press OK button to go to the main screen.

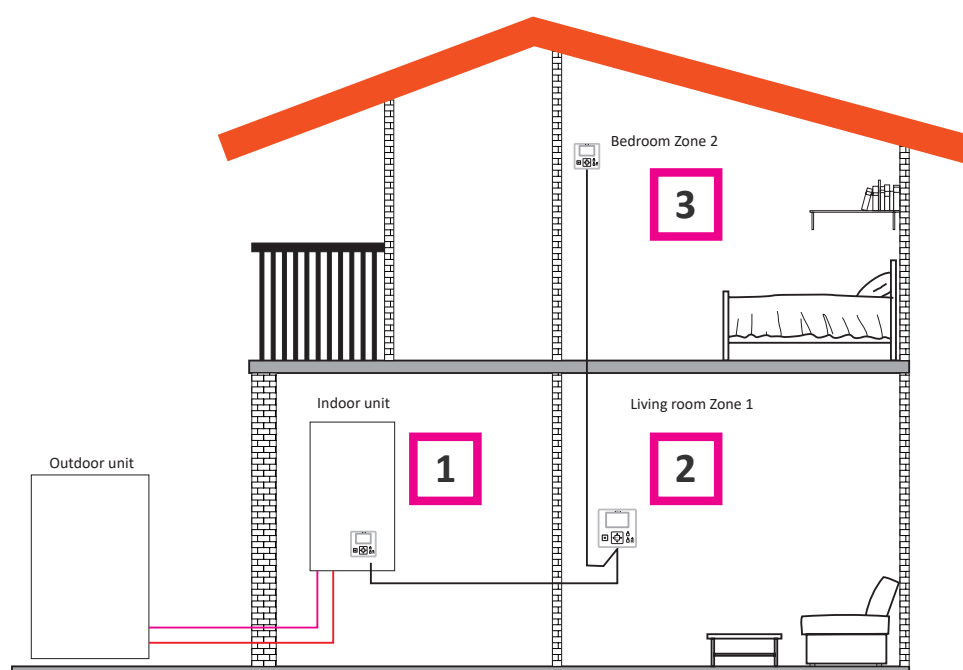
1.6.2.1 Examples of possible configurations

NOTE

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

◆ Example 1

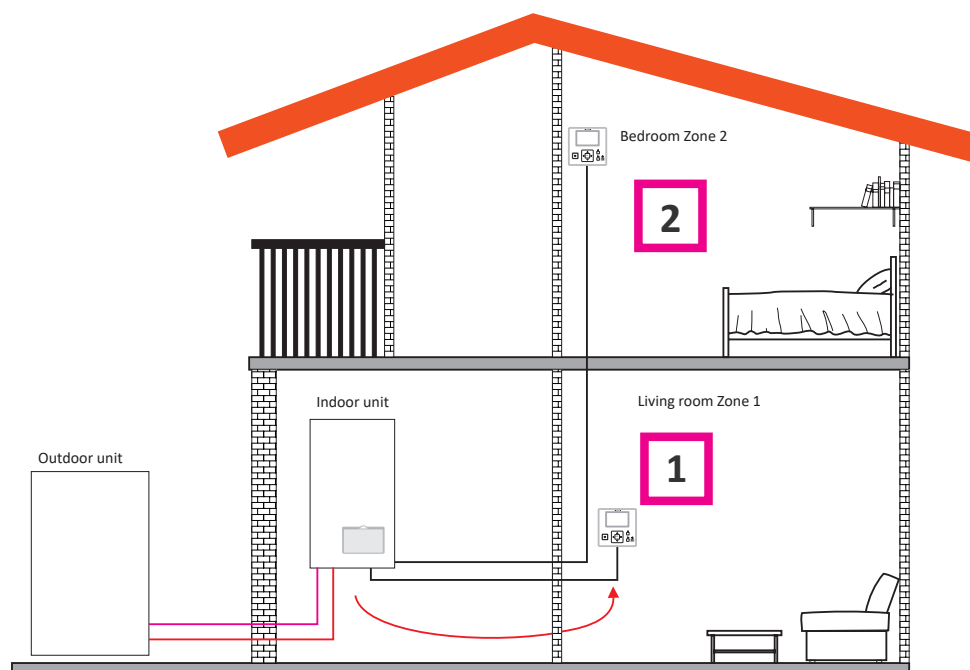
- 1 Master unit controller as unit configuration.
- 2 Slave Unit controller as a room thermostat for Zone 1, as accessory
- 3 Slave Unit controller as a room thermostat for Zone 2, as accessory



Order	FIRST	SECOND	THIRD
Type	Master	Slave	Slave
	Unit	Circuit 1	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	-	-
Which Thermostat do you have for Circuit 1?	Wired	-	-
Which Thermostat do you have for Circuit 2?	Wired	-	-
	COMPLETED	COMPLETED	COMPLETED

◆ Example 2

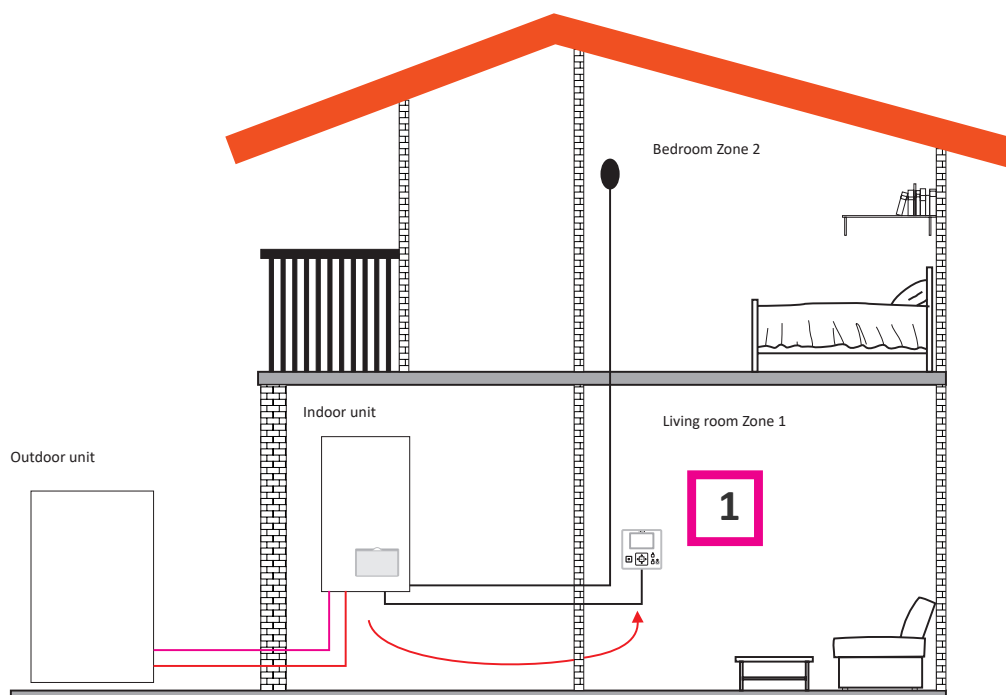
- 1 Move Unit controller to the living room (use as Unit controller + Room Thermostat)
- 2 Master unit controller moved to living room Zone 1
- 3 Slave Unit controller as a room thermostat for Zone 2



Order	FIRST	SECOND
Type	Master	Slave
	Unit	Circuit 2
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 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	-
Which Thermostat do you have for Circuit 2?	Wired	-
	COMPLETED	COMPLETED

◆ Example 3

- 1 Move Unit controller to the living room (use as Unit controller + Room Thermostat)
- 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

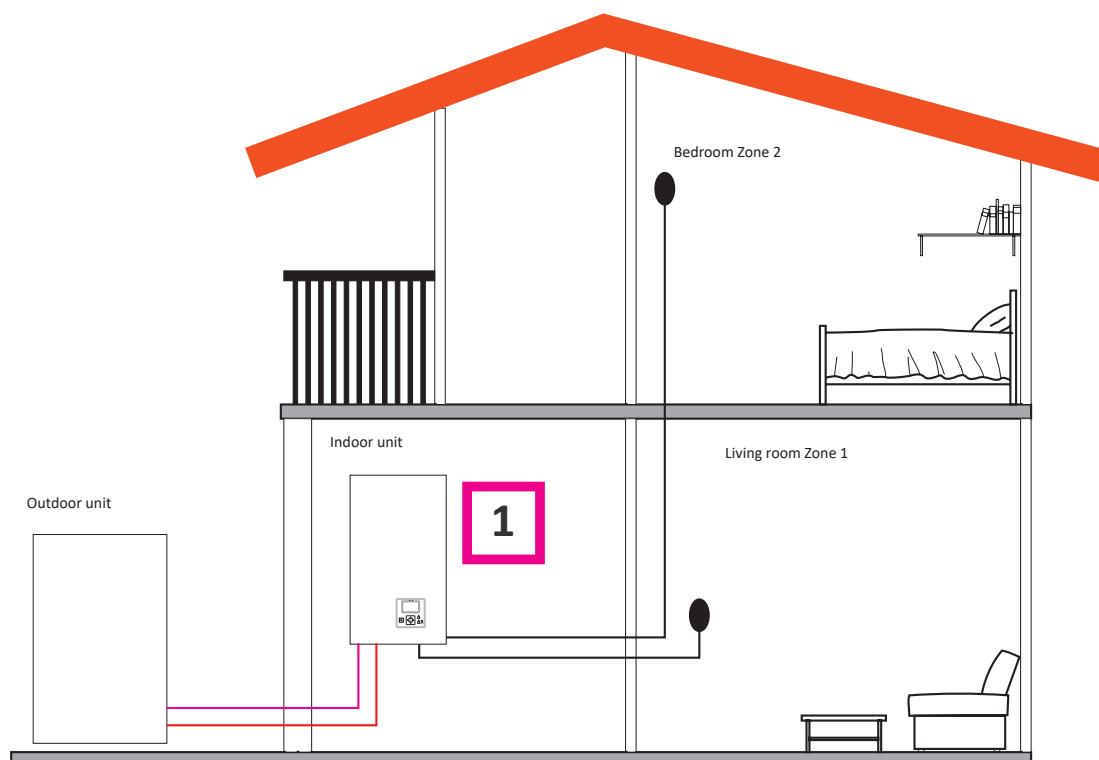
NOTE

- After finishing Configuration assistant, go to Input&Outputs&Sensor menu and select which auxiliary sensor do you want to use for ambient temperature in Zone 2.
- Example: Sensor 1 : C2 Ambient

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

◆ Example 4

- 1 PC-ARFH1E attached into the unit and used as unit controller and room thermostat for both zones.
- 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?	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

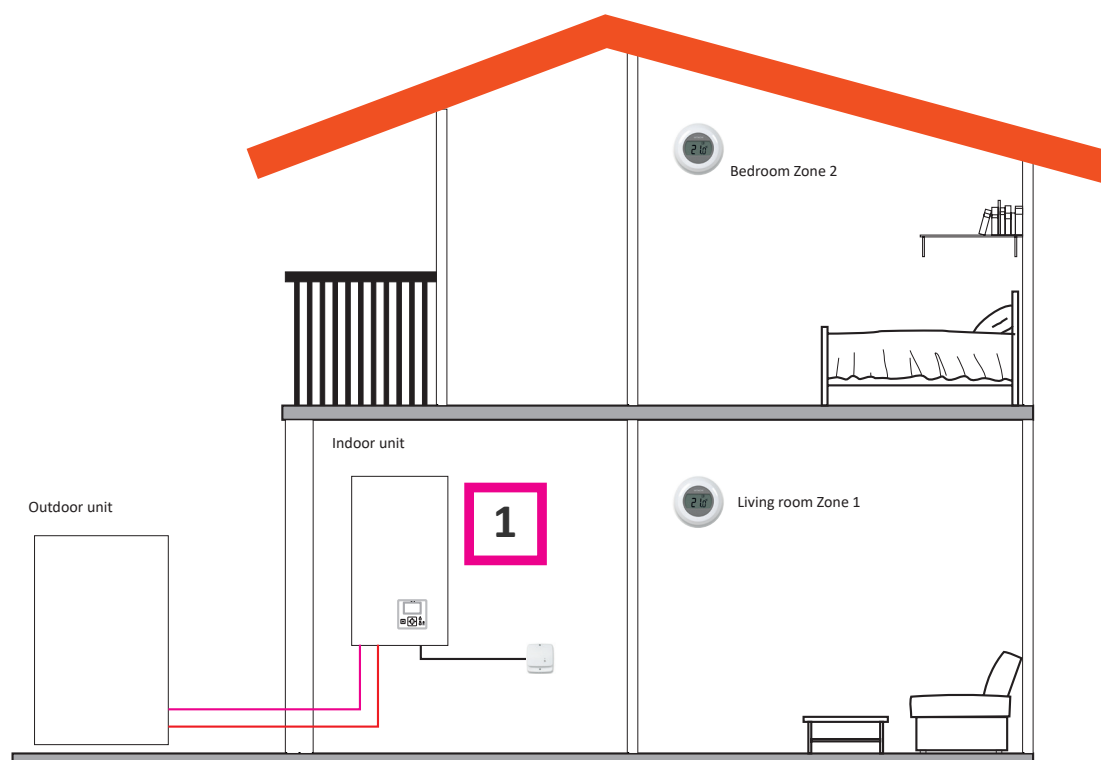
NOTE

- After finishing Configuration assistant, go to Input&Outputs&Sensor menu and select which auxiliary sensor do you want to use for ambient temperature in each zone.
- Example:

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-07) (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?	YES
Is this device used as a Room Thermostat of a zone?	NO
How many circuits do you have?	2

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
Which Thermostat do you have for Circuit 1?	Wireless
Which Thermostat do you have for Circuit 2?	Wireless
COMPLETED	

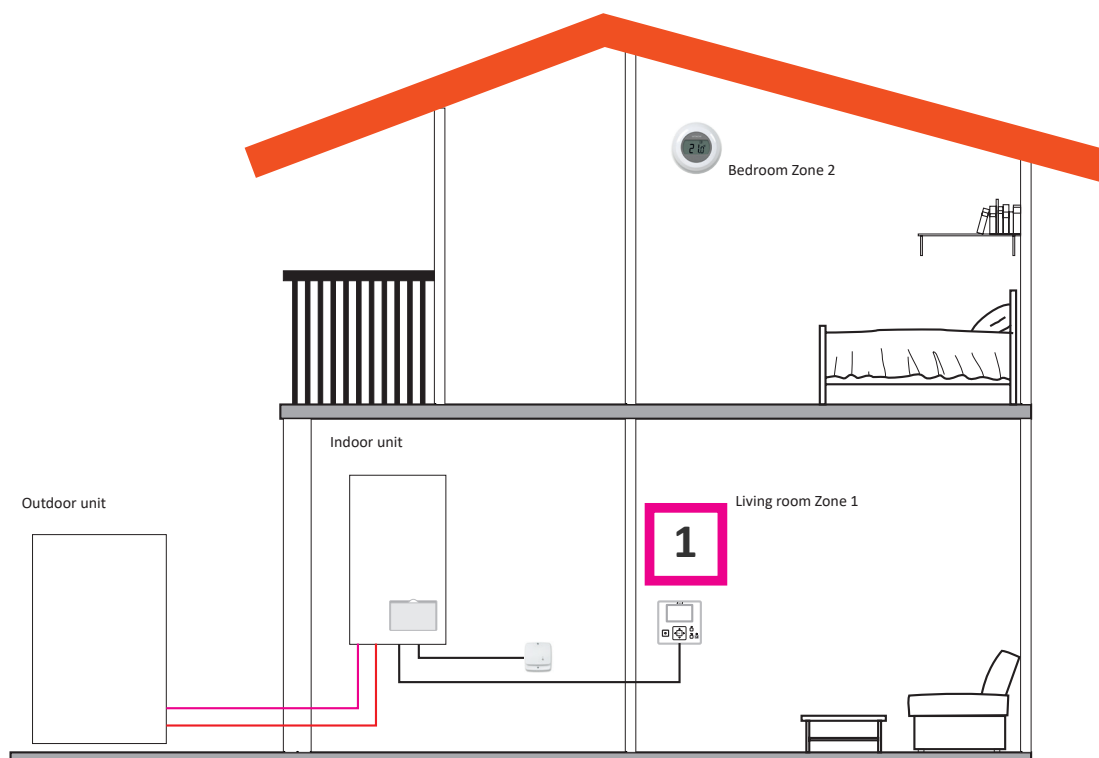
NOTE

- After finishing Configuration assistant proceed to wireless room thermostat binding procedure. (Refer to installation manual of room thermostat)
- If necessary, change Wireless Binding ID to the selected thermostat by using room thermostat menu in general options:

Description	Default Value	Range	Selected value
Wireless Binding ID (for C1)	1	1 2	1
Wireless Binding ID (for C2)	2	1 2	2

◆ Mixed configurations (Wireless + Wired)

- 1 Move Unit controller to the living room (use as Unit controller + Room Thermostat)
- 2 Master unit controller moved to living room Zone 1
- 3 Wireless intelligent thermostat for zone 2 (ATW-RTU-07) (Receiver + Room thermostat)

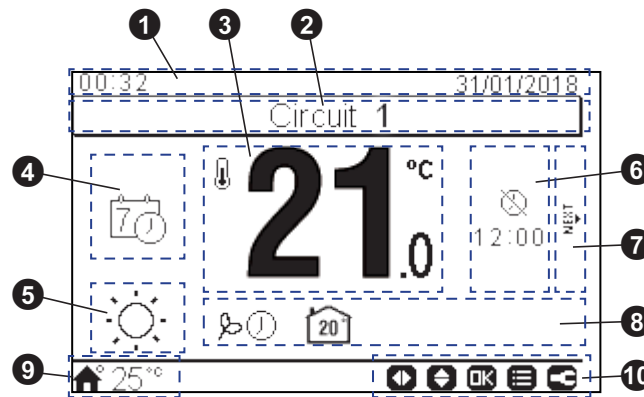


Order	FIRST
Type	Master Unit
Questions	Answers
Is this device attached to the unit?	NO
Is this device controlling the unit?	YES
Is this device installed on a controlled zone?	YES, ZONE 1
How many circuits do you have?	2
Which are the emitters of circuit 1?	Underfloor heating
Which are the emitters of circuit 2?	Underfloor heating
Do you have swimming pool?	NO
Do you have boiler?	NO
Do you have electric backup heater?	NO
Which Thermostat do you have for Circuit 2?	Wireless
	COMPLETED

1.7 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.

1.7.1 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.

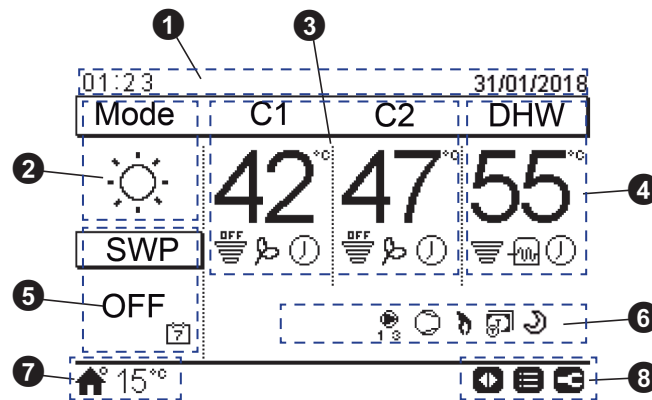
When Installer mode is enabled, its icon appears on the right side of this view.

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.

1.7.2 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, Night shift, Test run...

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

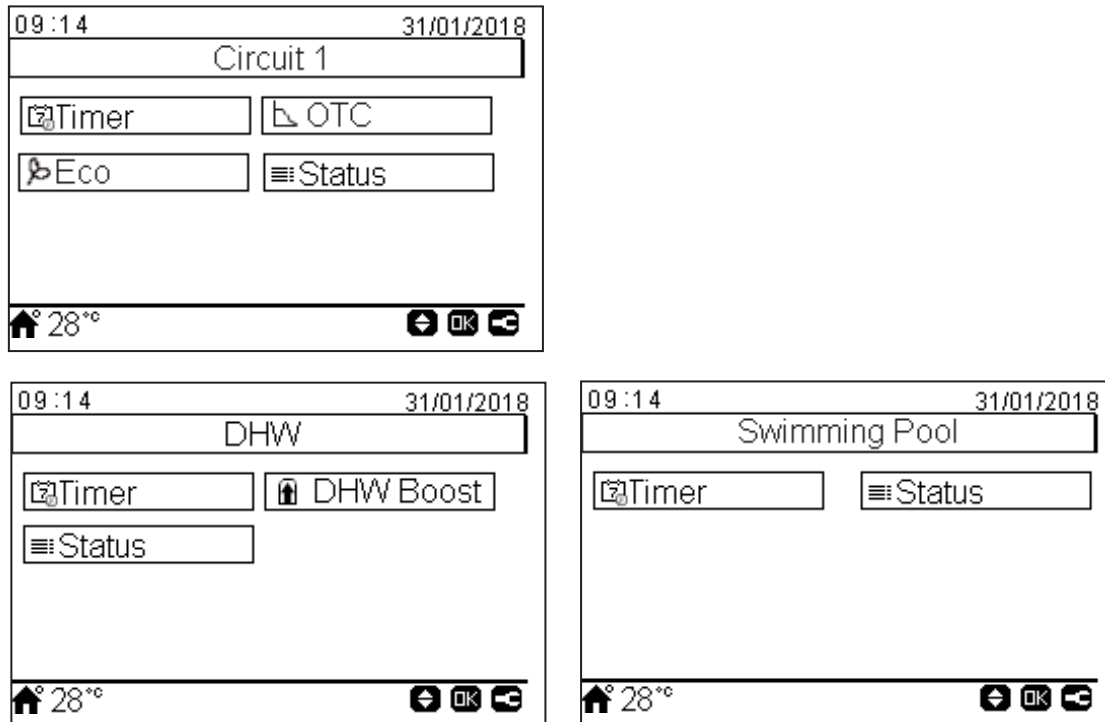
It indicates the buttons of the user controller which can be used in this moment.

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

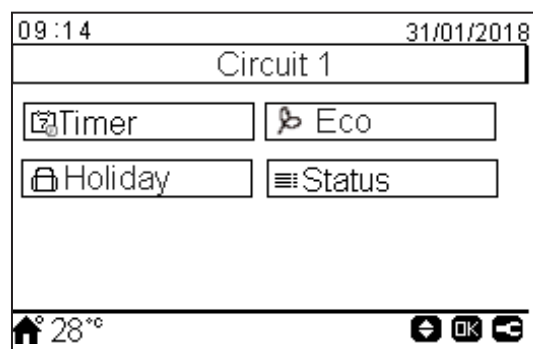
1.7.3 Quick action function

The following quick actions are shown when pressing the OK button at the selected zone in comprehensive view or room thermostat view:

◆ Comprehensive view quick actions



◆ Room thermostat view quick actions

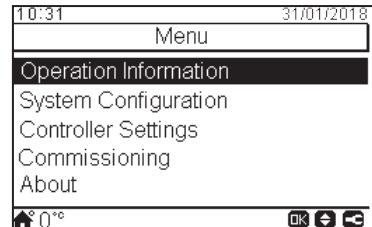


- ✓ **⌚ Timer:** Menu for the selection and configuration of simple timer and schedule timer.
- ✓ **△ OTC:** Menu for the OTC selection. Only available for circuit 1 and circuit 2 in Comprehensive view.
- ✓ **🌿 Eco / 🏠 Comfort:** Activation of the Eco/Comfort Mode. Only available for circuit 1 and circuit 2.
- ✓ **☰ Status:** Display of information related to current operation conditions
- ✓ **🔥 DHW Boost:** Activation of the auxiliary DHW heater and Heat Pump (if operation is possible, to speed up DHW heating operation). Only available for DHW.
- ✓ **📅 Holiday:** Selection of a holiday period until the configured returning date and time. Only available for circuit 1 and circuit 2 in Room Thermostat view.

1.8 Menu

1.8.1 Operation information

In operation information menu it is possible to find the most important setting parameters of the system besides the information of the operation conditions.



Detailed information about:

- Operation status
- Water inlet temperature
- Water outlet temperature
- Water setting temperature
- Outdoor ambient temperature
- Outdoor ambient 2 temperature
- Outdoor ambient average temperature
- Second ambient average temperature
- 24h average temperature

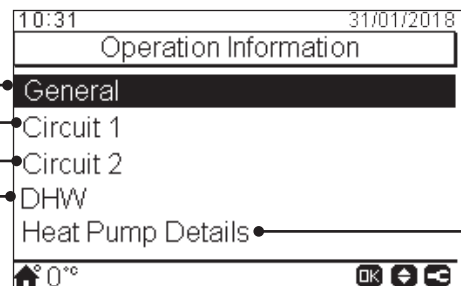
Detailed information about Circuit 1-2:

- Operation (Demand ON/OFF)
- Mode (Eco/Confort)
- Room temperature
- Room setting temperature
- Current water temperature
- Water setting temperature
- Water OTC setting temperature
- Mixing valve position (only for circuit 2)

Detailed information about DHW:

- Operation
- Current temperature
- Setting Temperature
- Electrical Heater Status
- Electrical Heater Operation
- Legionella Status
- Legionella Operation

1 / 3



Detailed information about Heat Pump:

- Water Outlet PHEX Temperature
- Two3
- Water Flow Level
- Water Pump Speed
- Outdoor Ambient temperature
- Outdoor Ambient 2 temperature.
- Gas temperature
- Liquid T
- Discharge Gas temperature
- Discharge Gas temperature (R134a)
- Evaporation Gas temperature
- Suction Gas temperature (R134a)
- Discharge Pressure
- Discharge Pressure (R134a)
- Suction Pressure (R134a)
- Ind. Exp. Valve Open.
- Ind. Exp. Valve 2 Open.
- Out. Exp. Valve Open.
- Inverter Op. Freq.
- Inverter Op. Freq. (R134a)
- Defrosting
- Cause Of Stoppage
- Compressor Curr.
- Compressor Curr. (R134a)
- Unit Capacity
- Unit Type

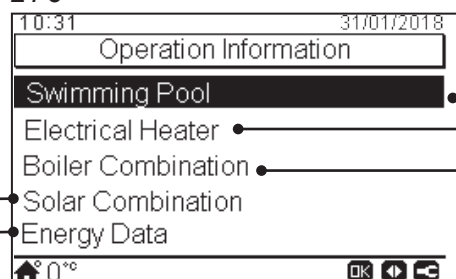
Detailed information about Solar combination:

- Operation (Demand ON/OFF)
- Solar Panel temperature

Detailed information about Energy Data:

- Input Power (Total / month by month)
- Capacity (Total / month by month)
- Reset values

2 / 3



Detailed information about Swimming pool:

- Operation (Demand ON/OFF)
- Current temperature
- Setting temperature

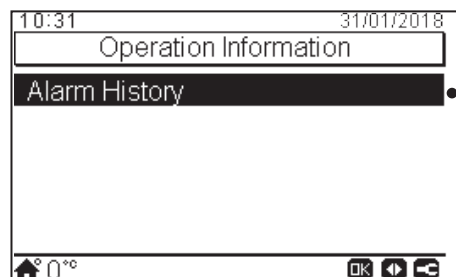
Detailed information about Electrical Heater:

- Operation (Demand ON/OFF)
- Current temperature
- Setting temperature
- Load Factor
- Step

Detailed information about Boiler combination:

- Operation (Demand ON/OFF)
- Current temperature
- Setting temperature

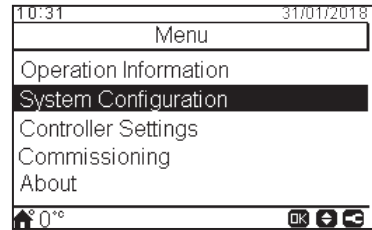
3 / 3



Shows a list of the alarm history of the system

1.8.2 System configuration

In system configuration menu it is possible to configure all the system settings.



General configuration:

- Holiday Mode
- Air Eco Offset
- Room Thermostats
- Central Operation

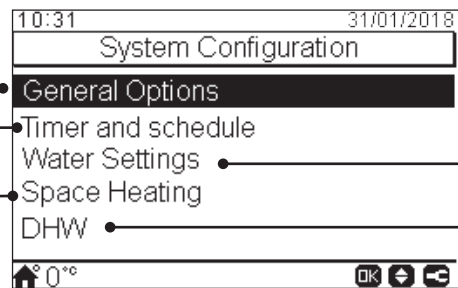
Timer and schedule configuration:

- Circuit 1
- Circuit 2
- DHW
- Swimming Pool
- Delete all timers configuration

Space Heating / Cooling configuration:

- Circuit 1
- Circuit 2

1 / 2



Water settings:

(Screen visible only for room thermostats)

- Space Heating
- Space Cooling
- DHW
- Swimming Pool

DHW configuration:

- Status
- Mode
- Control
- Setting temperature
- HP control
- HP control setting
- Maximum setting temperature
- Differential temperature
- HP OFF differential temperature
- HP ON differential temperature
- Maximum time
- Cycle Time
- Space Priority status
- Space Priority temperature
- DHW Heater
- Anti Legionella

Swimming Pool configuration:

- Status
- Setting temperature
- Offset temperature

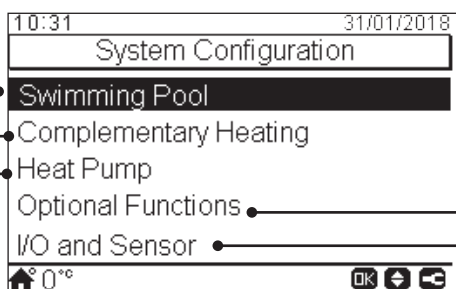
Complementary Heating configuration:

- Heating Source (HP Only, HP+Boiler, HP+Heater, HP+Heater+Boiler)
- Electrical heater
- Boiler combination
- Solar combination

Heat pump configuration:

- Water Pump Configuration
- Night Shift
- Outdoor Average Timer
- Minimum ON Time
- Minimum OFF Time
- Seizure Protection

2 / 2



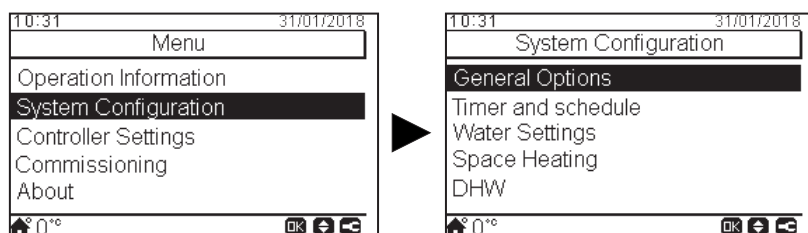
Optional functions configuration:

- System
- Space functions
- DHW
- Emergency Operation

I/O and Sensor configuration:

- Inputs
- Outputs
- Auxiliary sensors

1.8.2.1 General options configuration



Holiday Mode:

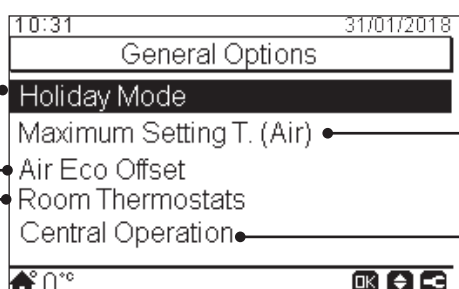
Configure holiday come back

- Year
- Month
- Day
- Returning time
- Setting temperature
- Start/Stop Holiday Mode

Air Eco Offset for Circuit 1-2:

Configure the offset air temperature for the ECO mode.

Current air temperature setting is reduced by the indicated parameter (from 1 to 10 °C)



Maximum Setting T. (Air):

- Circuit 1
- Circuit 2

Central operation:

- **Control type selection:** Local, air, water or full. Only available when Cascade Mode is disabled.
- Enable or disable **Cascade Mode**, when the system is connected to a CASCADE CONTROLLER.

Room Thermostats:

Configure the wired or wireless room thermostats:

- **Thermostat 1:** None, wired or wireless
- **Wireless Binding ID** for Thermostat 1: (1 or 2)
- **Thermostat 2:** None, wired or wireless
- **Wireless Binding ID** for Thermostat 2: (1 or 2)
- **Compensation factors** (See Compensation factors section below)
- **Room Temperature Demand OFF:** Offset value between setting temperature and thermostat temperature to switch the system to Demand OFF; this parameter refers to a positive difference in heating operation and a negative difference in cooling operation.
- **Check RT Address:** validation procedure of the wireless thermostats configuration

◆ Compensation factors for Heating / Cooling

The temperature of the water supplied by the YUTAKI unit to the circuits is determined by means of OTC (See *“Water calculation mode”*).

This control determines water temperature according to the outdoor temperature. The higher the outdoor temperature, the lower the building demand is, and in consequence the temperature of the water supplied to the circuits is lower. Conversely, the thermal demand of the building rises in the case of low outdoor temperature, and therefore the temperature of the supplied water becomes higher.

The room temperature compensation control allows to modify the water temperature determined by OTC control according to the setting room temperature and the actual room temperature.

In the case of heating, if the difference between room temperature and setting temperature is large, then water temperature is increased by the YUTAKI unit in order to achieve the desired room temperature in a faster way, thus compensating the thermal difference between setting temperature and actual temperature.

In this manner, given two identical rooms, the YUTAKI unit determines the same room temperature according to OTC control. On the other hand, for a room in which there is a wider difference between setting temperature and actual temperature, the YUTAKI unit will increase the temperature of the pumped water in order to ensure a similar heating up time until reaching the setting temperature.

Compensation has no effect if Compensation factor is 0 or when OTC is Fix, and water temperature is determined according to OTC in chapter *“Water calculation mode”* in such case.

The more the factor is increased, the more is water temperature increased by the YUTAKI unit according to the difference between setting temperature and the current temperature.

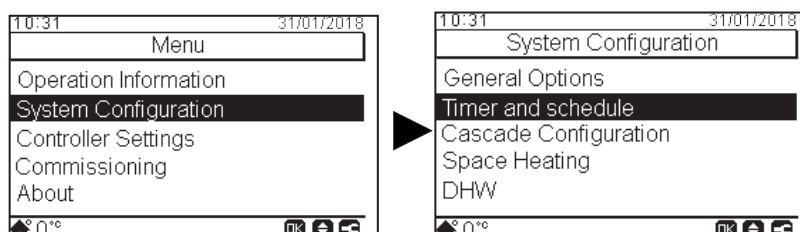
Maximum compensation factor heat + and - : Maximum difference between room temperature and setting temperature. In case that the difference between room temperature and setting temperature is higher than this value, the YUTAKI unit takes the selected value as the maximum.

1.8.2.2 Timer and schedule configuration

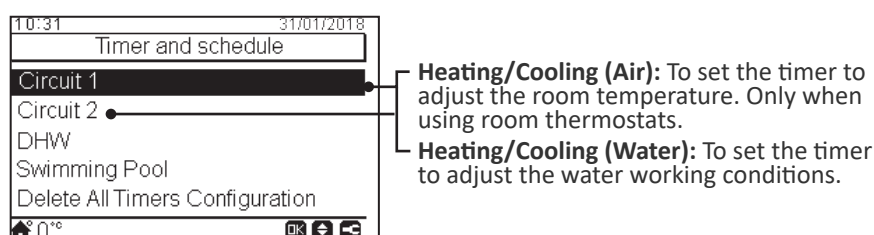
NOTE

Timer settings are only valid if the corresponding zone is in ON state at the time of execution of the respective timer program.

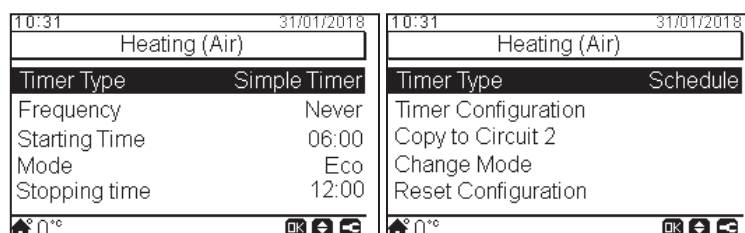
The LCD controller must be set to the correct date and time before using the timer function.



Select the desired area to apply the timer function or delete all timers configuration:



The timer function allows the selection of **simple** and **scheduled** timers, as shown in the figures below:



◆ Setting of Simple timer

Setting of temperature or operation mode (ECO or Comfort) to be applied during operation for a defined period, after which operation returns to the previous settings. This type of timer cannot be used to modify the operation state from ON to OFF, which can be accomplished with a Schedule timer.

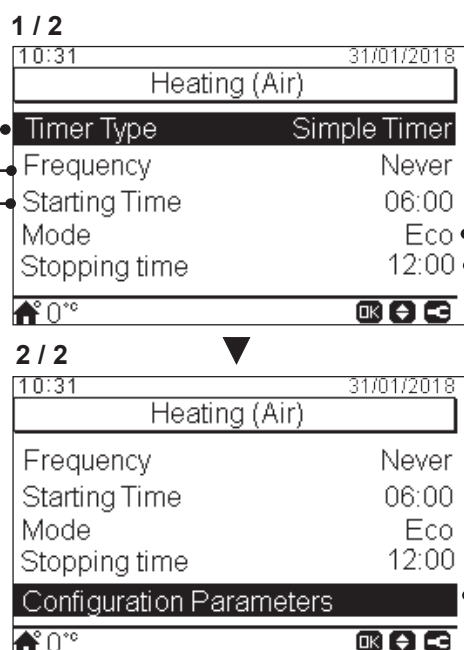
Timer type: Selection of the timer type

- Disable
- Simple timer
- Schedule

Frequency: Selection of the timer frequency

- Never
- Once
- Everyday
- Weekend
- Work day

Starting time: Use the arrow keys to select the starting time of the timer



Mode: Selection of the working mode

- Eco
- Comfort
- Setting temperature: when this option is selected is possible to configure the temperature using the arrow keys. (Only when OTC is Fix)

Stopping time: Use the arrow keys to select the stopping time of the timer

Configuration parameters: Configure the temperature for the Eco or Comfort Mode. Only available for Air settings (Circuit 1 or 2).

◆ Setting of Schedule timer

Setting of temperature, operation mode (ECO or Comfort) or change of operation state from ON to OFF for a defined period, after which operation returns to the previous settings. Manual operation of the unit controller has priority over schedule settings.

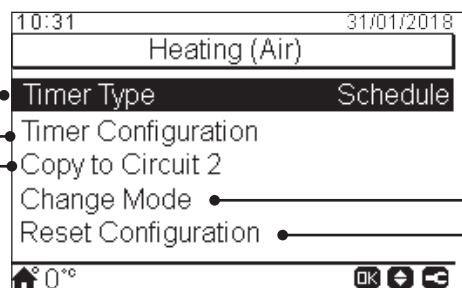
Timer type: Selection of the timer type

- Disable
- Simple timer
- Schedule

Timer configuration: New screen appears to configure a schedule timer. See explanation below.

Copy to circuit 2:

It is possible to copy the schedule timer to circuit 2.



Change Mode: Selection of the working mode (Only for Circuit 1 or Circuit 2). In Water mode only when circuit is Fix.

- Mode (uses Eco/Comfort configurations)
- Setting temperature.

Reset configuration:

Press OK button to reset scheduled timers.

Pressing the OK button with “Timer Configuration” being selected displays the detailed schedule screen. The active schedule timers are shown in a weekly calendar.

13:42		31/01/2018			
Circuit 1					
	0	6	12	18	24
Mon	Off			51°C	Off
Tue	Off			51°C	Off
Wed	Off			51°C	Off
Thu	Off			51°C	Off
Fri	Off			51°C	Off
Sat	Off	Off			
Sun	Off	Off			

OK



Up to five timer events can be defined for each weekday, and these can be used for turning the operation ON or OFF, to change the setting temperature or the working mode (Eco/Comfort). Pressing the OK key with one of the weekdays being selected in the weekly calendar screen displays the detailed schedule for the weekday.

13:42		31/01/2018	
Monday			
0	6	12	18 24
Off		45°	
From	To	Status	Setting
<12:00>	(06:00)	<On>	45
-	-	-	-

Timer configuration as Setting temperature

13:42		31/01/2018	
◀ Monday ▶			
0	6	12	18 24
Off			
From	To	Status	Mode
◀ 12:00 ▶	(06:00)	◀ On ▶	◀ Eco ▶
-	-	-	-

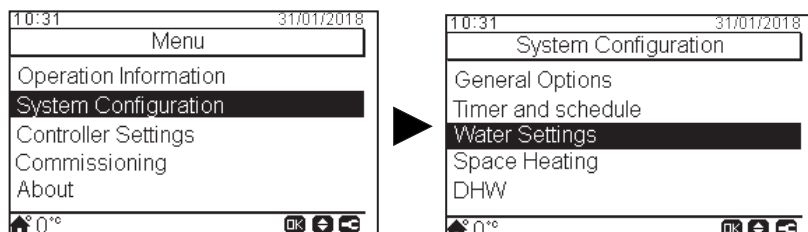


Timer configuration as Mode

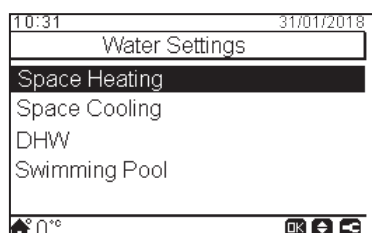
Pressing the “Menu” button during the edition of the timer events for a given weekday displays a menu to copy the daily pattern to other weekdays or to suppress the selected timer event.

1.8.2.3 Water settings configuration

This menu is only visible for a room thermostat if the controller is not controlling the unit.



Select the desired area to apply the water settings configuration:



◆ Space Heating or Space Cooling water settings

Fixed temperature:

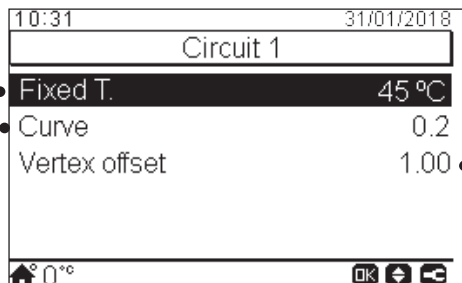
Selection of the temperature for Circuit 1 or Circuit 2 (heating or cooling mode).

- Only when water calculation mode is Fix.
- Circuit 1 or Circuit 2 must be ON to configure this setting.

Curve:

Selection of the gradient curve for Circuit 1 or Circuit 2 (only for heating mode).

- Only when water calculation mode is Gradient.
- Range: 0.2 ~ 2.2
- Circuit 1 or Circuit 2 must be ON to configure this setting.

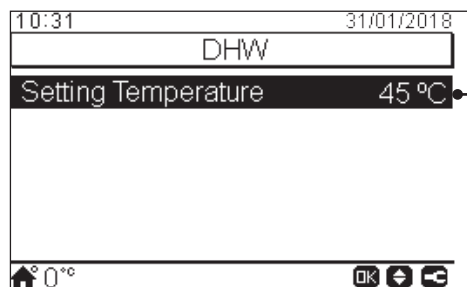


Vertex offset:

To modify the curve vertex for Circuit 1 or Circuit 2 (only for heating mode).

- Only when water calculation mode is Gradient or Points.
- Range: -10 ~ 10
- Circuit 1 or Circuit 2 must be ON to configure this setting.

◆ DHW or Swimming pool water settings



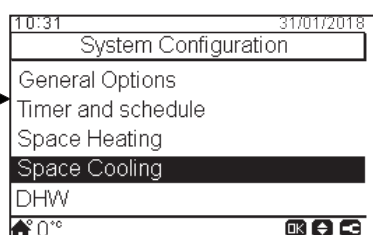
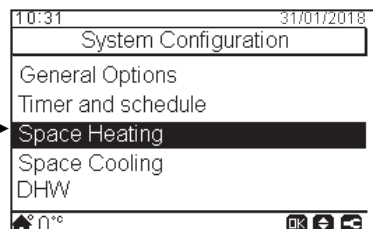
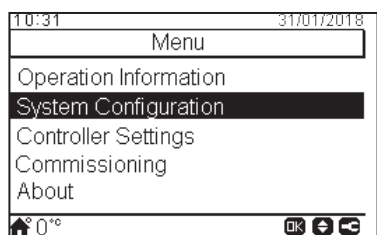
Setting temperature:

Selection of the temperature for DHW or Swimming Pool.

- DHW or Swimming pool must be ON to configure this setting
- Range:
 - ✓ DHW: 30 °C ~Max. setting temperature
 - ✓ Swimming pool: 24 ~33 °C

1.8.2.4 Space Heating / Space Cooling configuration

Control the temperature for Space Heating or Space Cooling by configuring the following parameters.



Water calculation mode:

Selection of the water set point for Circuit 1 or Circuit 2 (Space Heating or Space Cooling).

- Disabled
- Points
- Gradient (only in heating mode)
- Fix

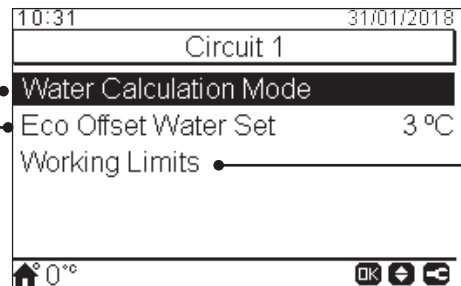
See detailed explanation below.

Eco Offset Water setting:

Configure the offset water temperature for the ECO mode for Space Heating or Space Cooling.

By using this function, current water temperature setting is reduced by the indicated parameter.

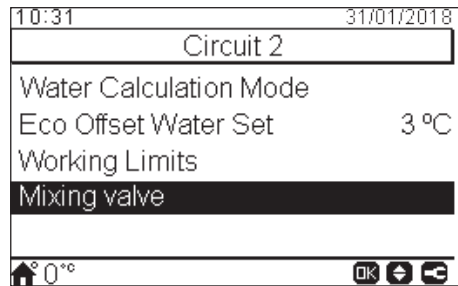
- Range: -10 ~ 10



Working Limits:

Limit for the temperature set-point to prevent high or low temperatures at Space Heating or Space Cooling:

- Maximum supply temperature
- Minimum supply temperature



Mixing valve:

To control the second water temperature (only for circuit 2).

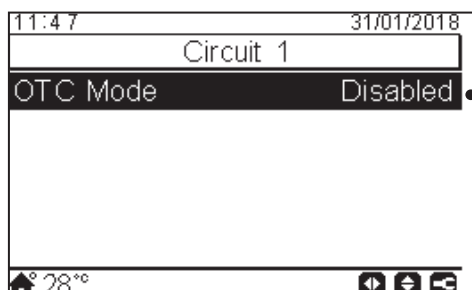
Values are adjusted for the use with the 2nd zone mixing kit accessory ATW-2KT-05. It is highly recommended not to change these values.

In case of using a mixing kit different from the ATW-2KT-05 configure the following parameters:

- Proportional band: 0 ~20 K (6.0 K by default).
- Integral reset factor: 0.0 ~20 % (2.5 % by default).
- Running time factor: 10 ~250 sec (140 sec by default).
- Over temperature offset protection: OFF, 3 ~10 °C (5 °C by default).

◆ Water calculation mode

Disabled



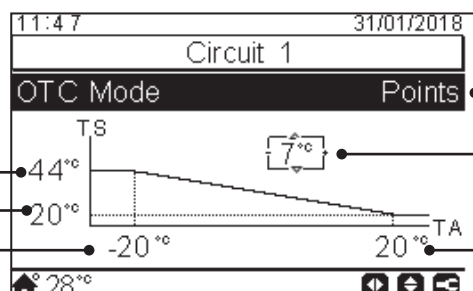
The "Disabled" option sets the circuit as disabled.

Points

Set point at high ambient temperature

Set point at low ambient temperature

Low ambient temperature



Points is the most versatile calculation type.

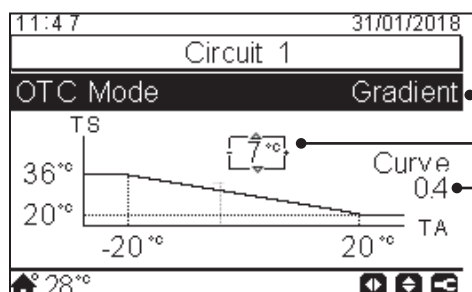
Set 4 points and one vertex point, to create a line representing the function that the air to water heat pump will use to give the temperature setting according to the current ambient temperature.

Use the down arrow key to select the parameter to modify. Then modify the value using the left and right arrow keys.

Vertex offset

High ambient temperature

Gradient



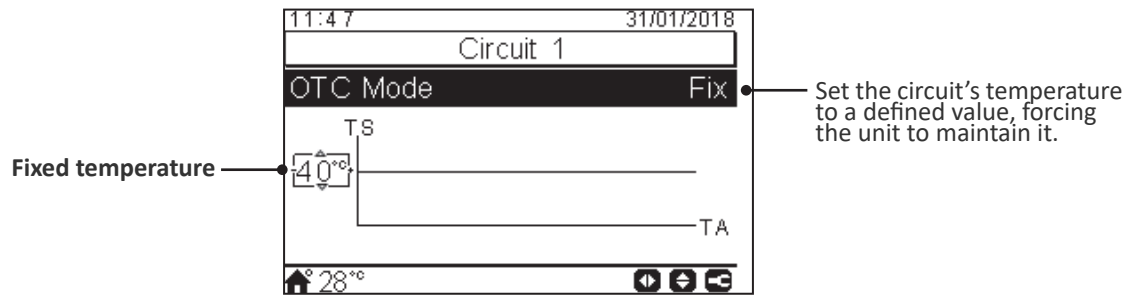
Configure the same variables as in the "Points" view, but automatically. User can only edit the gradient variable and it will automatically set the values for the other 4 variables on the chart.

Use the down arrow key to select the parameter to modify. Then modify the value using the left and right arrow keys.

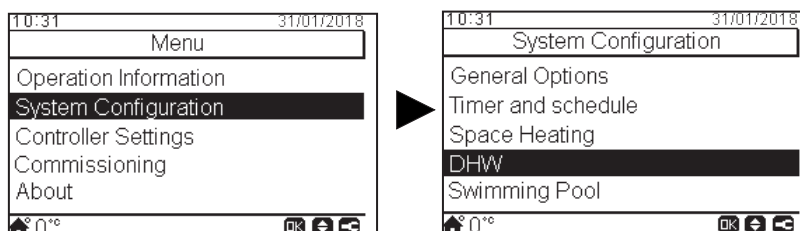
Vertex offset

Gradient curve

Fix



1.8.2.5 Domestic Hot Water (DHW) configuration



Setting temperature:

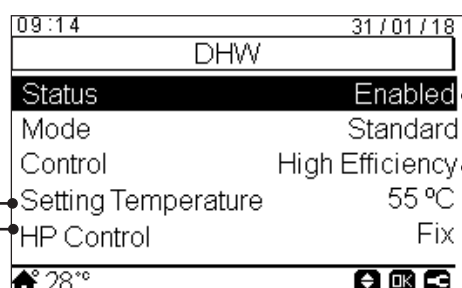
Setting for domestic hot water temperature selected by the user. The maximum value of this setting depends on the Maximum setting temperature set by the installer. (Between 30 to maximum setting temperature.)

HP Control:

To achieve the DHW setting temperature it is possible to select between two different modes of control:

- **ΔT:** The most efficient way to achieve the setting temperature. The outlet water temperature is 15° higher than the tank temperature, increasing gradually until achieve the target water outlet temperature (setting temperature).
- **Fix:** This is the fastest way to achieve setting temperature. The outlet water temperature is set to HP Control setting. HP Control setting can be only adjusted in case HP Control is Fix.

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Status of DHW:

- Disabled
- Enabled.

Mode: Only available when DHW heater is activated (DSW4 pin 3 ON).

- **Standard:** DHW heating operation starts when the temperature of the water in the tank is low enough to start up the heat pump. DHW is heated up with the heat pump or the electrical heater (if electrical heater is enabled).
- **High Demand:** DHW heating operation starts if water temperature and setting temperature difference is larger than differential temperature. DHW can be heated up using the heater, the heat pump or a combination of both.

Control:

- **High Efficiency:** Compressor operation is adjusted to optimal efficiency for lower power consumption. Electrical heater only works when the maximum working temperature of the heat pump is achieved.
- **High Speed:** The heat pump is switched to maximum operation capacity to heat up the tank in the shortest time.

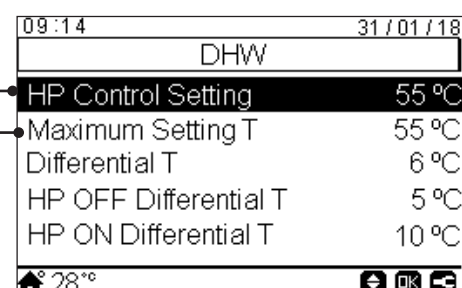
HP Control setting:

Selection of the DHW temperature for the Fix HP Control.

Maximum setting temperature:

Maximum value of DHW setting temperature permitted by the installer.

2 / 4



Differential temperature:

Value that the unit restart heating operation of the tank.

- Only available if DHW is in High demand mode.

HP OFF differential temperature:

Hysteresis for the stop of DHW heating operation with the heat pump.

HP ON differential temperature:

Hysteresis for the start of DHW heating operation with the heat pump.

Maximum time:

Maximum time that DHW operation can work using heat pump mode. When the heat pump is stopped by this function, DHW is still heated by DHW heater when it is enabled, until other conditions request stoppage.

- Range: OFF, 5 ~250 min
- Only in High Speed control and Standard mode.

Cycle time:

Defines the minimum time between 2 heat pump cycles of domestic hot water.

DHW will be able to operate again after wait in Thermo off the specified cycle time.

- Range: 0 ~24 hour
- Only available in Standard mode.

3 / 4

09:14	31/01/18
DHW	
Maximum Time	45 min
Cycle Time	1 hour
Space Priority Status	Disabled
Space Priority T	-5 °C
DHW Heater	
28°C	

Space priority status:

If space priority function is enabled, Heat Pump operation by DHW mode stops (and continue with DHW heater, if necessary). This function is only performed if space heating or space cooling can be done. If it is not possible, operation will continue in DHW normally.

- Only available in Standard mode.

Space priority temperature:

Threshold value of outdoor ambient temperature for the activation of the space priority function.

- Range: -20~0 °C
- Only available in Standard mode.

DHW Heater: Only available when DHW heater is activated (DSW4 pin 3 ON).

- **Waiting time:** Enable or disable waiting time for DHW heater.
- **Electrical Heater waiting time:** Waiting time for the beginning of electrical heater operation since compressor start-up.
- Only available in High Speed control.

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09:14	31/01/18
DHW	
Anti Legionella	
28°C	

Anti Legionella:

In order to help prevent against Legionella in the DHW system, the DHW set point can be raised to a higher than normal temperature.

The Legionella protection only makes sense if there is a DHW electric heater to raise the DHW temperature to this high temperature.

See the possible configurable parameters below.

◆ Anti Legionella function

12:04	31/01/2018
Anti Legionella	
Status	Enabled
Operation Day	Sunday
Starting Time	01:00
Setting Temperature	70 °C
Duration	10 min
28°C	

— Status of anti legionella operation (enabled/disabled)

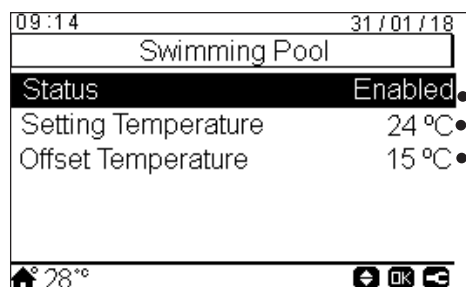
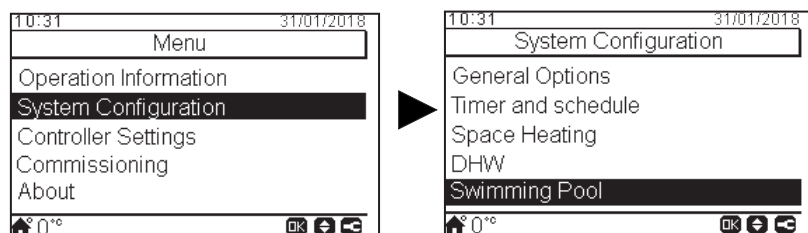
— Specified day for anti legionella operation

— Specified time of the day for anti legionella operation

— Setting for domestic hot water temperature in anti legionella operation.

— Duration of shock treatment. Between 10 to 60 minutes.

1.8.2.6 Swimming Pool configuration



Status:

Enable or disable swimming pool.

Set input 3, output 1 and sensor 2. (see section *"1.8.2.10 Inputs, Outputs and Sensors configuration"*).

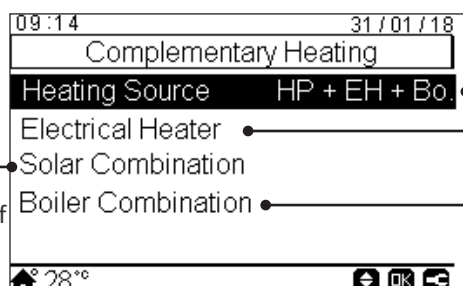
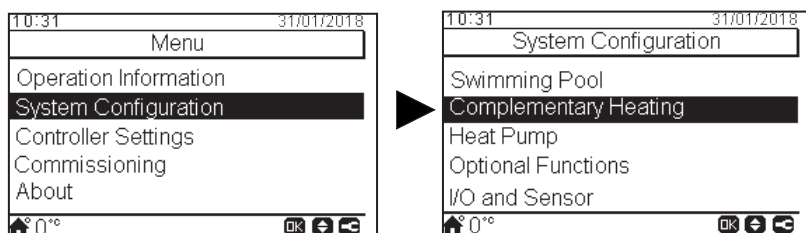
Setting temperature:

Adjustment of the swimming pool water temperature setting.

- Range: 24~33 °C

Offset temperature: The setting temperature is increased by the indicated parameter.

1.8.2.7 Complementary Heating configuration



Solar combination:

The solar combination will enable you to heat up your domestic water by means of the sun whenever the sun is available.

Set input 4, output 4 and sensor (see section *"1.8.2.10 Inputs, Outputs and Sensors configuration"*).

- **Disabled:** No solar Kit is installed.
- **Input Demand:** Alternative DHW tank operation is done by solar system or YUTAKI unit. Solar input can disable DHW operations done by YUTAKI unit.
 - ✓ DHW Hysteresis (OFF, 35 ~ 240 min)
 - ✓ DHW Maximum Time (5 ~ 240 min)
- **Total Control:** YUTAKI units controls the solar operation for the system, based on different temperatures: DHWT is heated by either the hot water that comes from the solar panels or the hot water that comes from the heat pump, depending on the solar temperature. See detailed information in *"Solar combination - Total control"*.

Heating Source:

- HP Only
- HP + Heater
- HP + Boiler
- HP + Heater + Boiler (Only for YUTAKI S and YUTAKI S COMBI)

Electrical heater: (Only when heating source is configured as HP+Heater or HP+Heater + Boiler) . See detailed information in *"Electrical heater"*.

Boiler combination: Boiler will only operate if unit is in Space Heating or Hot Sanitary Water modes. It will always be disabled in any other mode (Swimming Pool and Cooling mode). Set output 3 and sensor 1 for boiler (see section *"1.8.2.10 Inputs, Outputs and Sensors configuration"*). See detailed information in *"Boiler combination"*.

◆ Electrical heater

Proportional band:

- Control to determine how fast setting temperature is going to be reached. Higher values imply fast achievement of water setting point and therefore higher utilization of heater.

Reset factor:

- Used to guarantee setting temperature achievement without surpassing its value. Higher values imply less utilization of heater.

09:14	31/01/18
Electrical Heater	
Operation	Backup
Bivalent Point	0 °C
Supply Setting Offset	4 K
Proportional Band	6.0 °C/100%
Reset Factor	2.5%/°Cmin
28°	

Operation:

- Starting:** Space Heating electric Heater is switched ON in case of low water temperature and low ambient temperature to provide extra capacity to HP.
- Backup:** Space Heating Electric Heater is switched ON in case of low ambient temperature (below Bivalent point) in order to provide extra capacity to HP at coldest days of winter.

Bivalent point:

- Electric heater is enabled to operate in case ambient temperature goes below this value. Only in case of Backup option.

Supply setting offset:

- Setting offset for electric Heater. Higher values imply earlier stoppage of electric heater and vice versa. Only in case of Backup option.



Waiting time:

- Delay time to start Electric Heater in case all conditions allow Electric Heater to start after HP has been started. Only in case of Backup option.

09:14	31/01/18
Electrical Heater	
Inter Stage Time	5 min
Waiting Time	30 min
28°	

Inter stage time:

- Time of Electric Heater phase overlapping when there is switch ON/OFF transition from/to phase 1 to/from phase 2. Only in case of Backup option.

◆ Solar combination - Total control

ΔT connection:

- Allows to specify a difference temperature between tank and Panel temperature to allow solar operation. Solar operation is allowed in case Panel temperature is "ΔT connection" °C above tank temperature.

ΔT disconnection:

- Allows to specify a difference temperature between tank and Panel temperature to stop solar operation. Solar operation is not allowed in case Panel temperature is "ΔT connection" °C below tank temperature

Panel antifreeze temperature:

- Minimum Solar panel temperature at which Solar Pump is switched ON in order to protect system against frost formation at pipes due to low ambient temperature.

09:14	31/01/18
Total Control	
DHW Maximum Time	Off
DHW Minimum Time	5 min
DHWT Max storage T	60 °C
ΔT Connection	10 °C
ΔT Disconnection	5 °C
28°	

DHW maximum time:

- Maximum time YUTAKI allows to heat tank by means Solar. At the end of this time Solar pump is stopped regardless temperature conditions at Solar Panel.

DHW minimum time:

- Minimum Time solar operation cannot be performed once it has been stopped due to DHW Maximum Time or due to low temperature at solar panel.

DHWT maximum storage temperature:

- Maximum DHW temperature that allows Solar operation.

Panel minimum temperature:

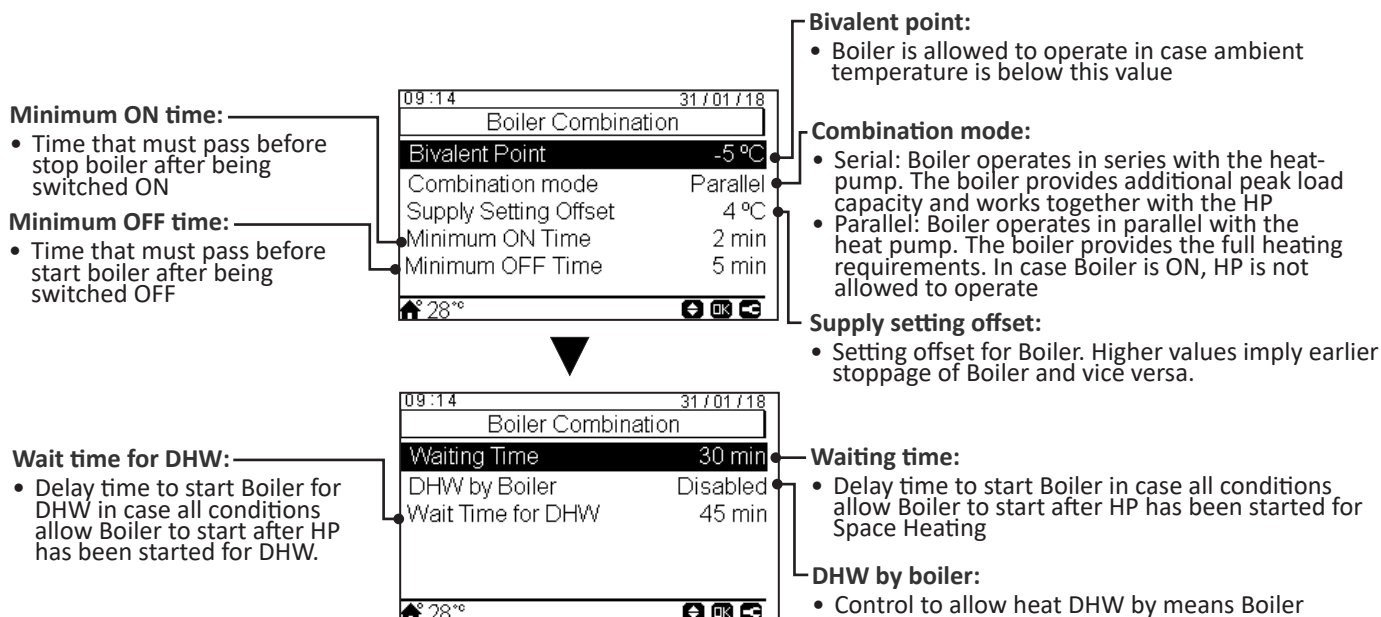
- Minimum temperature of the solar Panel to allow Solar operation

Panel overhear temperature:

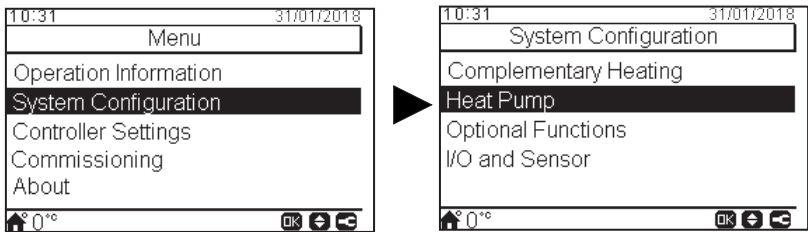
- Maximum panel operation temperature at which Solar Pump is set to off in case Panel sensor reads a temperature above this value in order to protect system.
- In case that the solar pump is stopped due to panel overhear temperature, the YUTAKI unit sets solar overhear output to high state provided that this function has been setup as described in *"1.8.2.10 Inputs, Outputs and Sensors configuration"*

09:14	31/01/18
Total Control	
Panel Minimum T	15 °C
Panel Overheat T	80 °C
Panel antifreeze T	4 °C
28°	

◆ Boiler combination



1.8.2.8 Heat Pump configuration

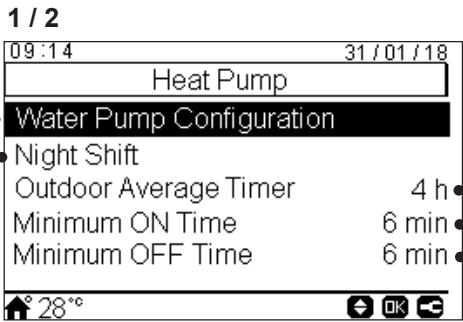


Water pump configuration:

Configure the water pump of the heat pump.
See detailed information in the next page.

Night shift:

Reduces compressor load in order to reduce environmental noise, preferably at night.
See detailed information in the next page.

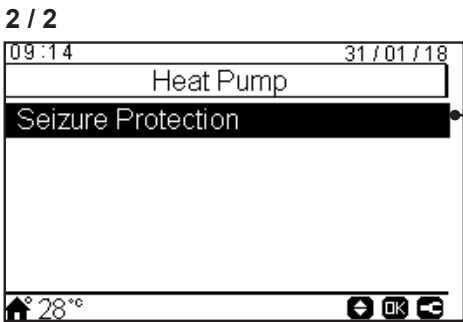


Outdoor average temperature:

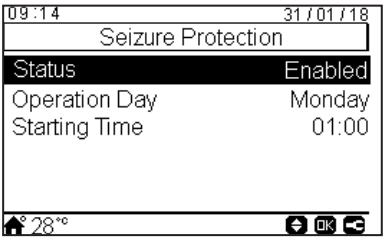
OTC average is used to neutralise the effect of occasional temperature variations. The average value of outdoor temperature sampled over a selected period (between 1 and 24 hours) is used for the calculation of weather-dependent set point temperature.

Minimum ON time: In order to reduce a possible compressor damage, demand ON cycles can be reduced by determining the time that must pass before accepting new Demand OFF.

Minimum OFF time: In order to reduce a possible compressor damage, demand OFF cycles can be reduced by determining the time that must pass before accepting new Demand ON.



Seizure protection: The pump seizure protection function prevents sticking of components due to long periods of inactivity, by running the components during a short period every week. Mixing valves and pumps are fully opened and then fully closed (time depends on Mixing valve Run Time Factor).



◆ Water pump configuration

Swimming pool speed:
Selection of the % for the pump speed when using Swimming pool.

Minimum OFF Time:
Minimum time of the water pump OFF.
• Only when Economic mode is active (DSW)

Stop conditions:
• **Standard**
• **Thermo OFF:** The water pump stops after Thermo OFF. (DSW5 pin 4 ON).

1 / 2

09:14 31/01/18	
Water Pump Configuration	
Operation Mode	Fix
Space Speed	100 %
DHW Speed	100 %
SWP Speed	100 %
Minimum OFF Time	40 min
28°C	

▼

2 / 2

09:14 31/01/18	
Water Pump Configuration	
Minimum ON Time	10 min
Overrun Time	10 min
Stop Conditions	Standard
28°C	

Operation mode:
• **ΔT:** To control the pump speed to guarantee the ΔT between Two and Twi.
• **Fix:** The water pump works at the specified speed % at the space speed menu.

Space speed:
Selection of the % for the pump speed when fix mode is selected.

DHW speed:
Selection of the % for the pump speed when using DHW.

Minimum ON Time:
Minimum time of the water pump ON.
• Only when Economic mode is active (DSW)

Overrun Time:
Added operation time of water pump after Demand OFF.

◆ Night Shift

09:14 31/01/18	
Night Shift	
Capacity	75 %
Timer	Enabled
Starting Time	20:00
Stopping Time	08:00
28°C	

Ratio of reduction in heat pump capacity

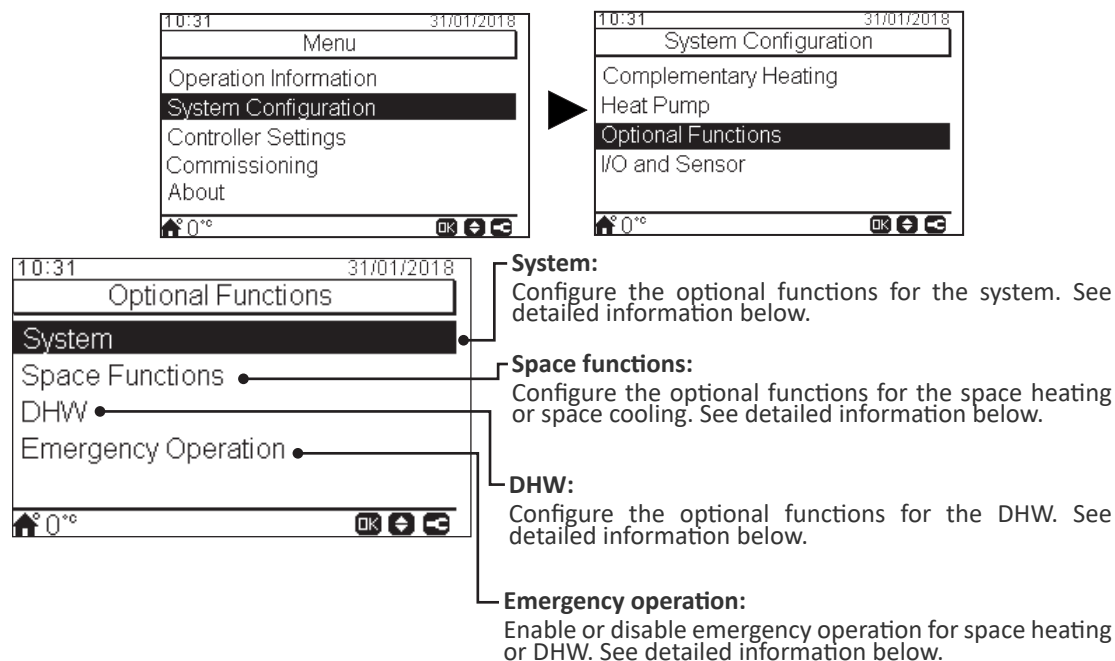
Status of activation of Night Shift (reduction of compressor load in order to reduce operation noise during the night hours).

Starting time of Nigh Shift operation

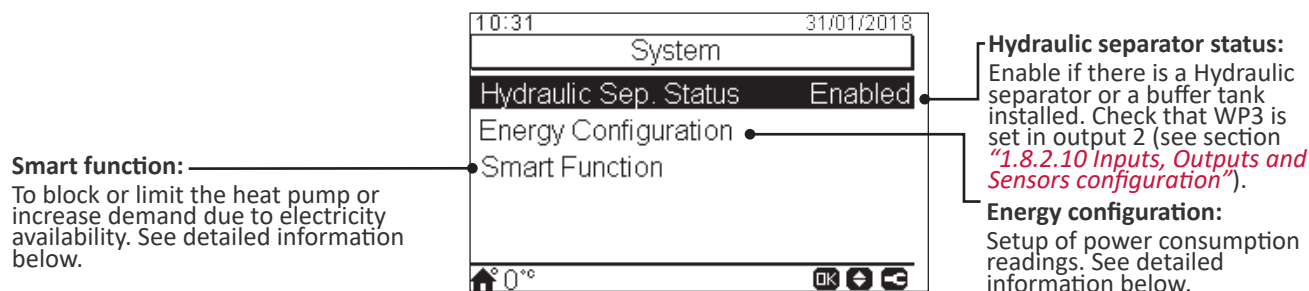
Ending time of Night Shift operation

1.8.2.9 Optional functions configuration

This menu allows to configure the optional functions for system, space heating or space cooling, DHW and Emergency operation.



◆ System optional functions



Energy configuration

Capacity configuration:

Due to usage of water temperature inlet and outlet + water flow level, an estimation of capacity can be checked through the Operation information - Energy data menu.

09:14 31/01/18

Energy Configuration

Status	Enabled
Power Meter 1	0.1 pulse/kWh
Power Meter 2	0.1 pulse/kWh
Capacity Configuration	Enabled

28°C OK

Status:

Enable or disable energy configuration options

Power meter 1 or 2:

- The power meter does a real measuring of the power consumption.
- If the power meter is enabled, it is possible to see the information collected through the Operation information - Energy data menu.
- If "power meter" is disabled the YUTAKI software does an estimate consumption of the system.
- In case of using power meter 1 or 2 input must be configured at the Inputs menu (see section **"1.8.2.10 Inputs, Outputs and Sensors configuration"**).

Smart Function

Status:

Enable or disable smart function.

Trigger type:

- Closed: Action when input is closed
- Open: Action when input is open

Start boiler:

Permission to use the boiler in case that the system has been blocked due to HP Block.

Start DHW Heater:

Permission to use the DHW heater in case that the system has been blocked due to HP Block..

1 / 2

09:14 31/01/18

Smart Function

Status	Enabled
Smart Action	HP Block
Trigger Type	Open (NO)
Start Boiler	Disabled
Start DHW Heater	Disabled

28°C OK

Smart Action:

Check that Smart Act/SG1 is set in input 5 (see section **"1.8.2.10 Inputs, Outputs and Sensors configuration"**)

- **HP Block:** Heat Pump is forbidden in any condition (Space Heating, Cooling, DHW) when signal is active.
- **HP Limited (A):** Limitation of power consumption up to a limit of "x" amperes (to be set up in Limitation of amperage).
- **SG Ready:** The SG Grid is awarded to heat pump series. This control technology integrates the system in a smart grid by using two digital inputs establishing an unidirectional connection Service Manual for detailed information. It is necessary to configure an input for SG2.
- **DHW Block:** DHW Operation is forbidden when signal is active.
- **DHW only:** Heat pump operation for any condition except DHW is forbidden when signal is active. DHW operation is allowed normally.

2 / 2

09:14 31/01/18

Smart Function

Limitation by Ampere	50 A
----------------------	------

28°C OK

Limitation by ampere:

Configure the ampere consumption limitation. Only visible when smart action is set as HP Limited (A).

MENU

1

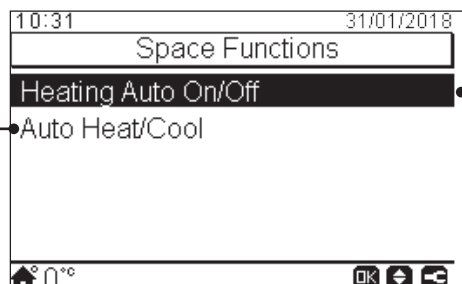
PC-ARFH1E FUNCTIONALITIES

◆ Space optional functions

Auto Heat/Cool:

Only available in units capable of heating and cooling operation, and when cooling operation is enabled. Allows to set automatic switch over to heating and cooling operation using the same daily average outdoor temperature of the previous day as in Heating auto ON/OFF.

- **Status:** Enable or disable auto heat/cool.
- **Switch to Heat temperature:** operation switches to heating in case that the measured outdoor temperature value is lower than the threshold for switching to heating.
- **Switch to Cool temperature:** Operation switches to cooling in case that the measured outdoor temperature value is higher than the threshold for switching to cooling.



Heating Auto On/Off:

To stop automatically stop heating operation when the daily average outdoor temperature of the previous day is higher than the defined Switch-OFF temperature

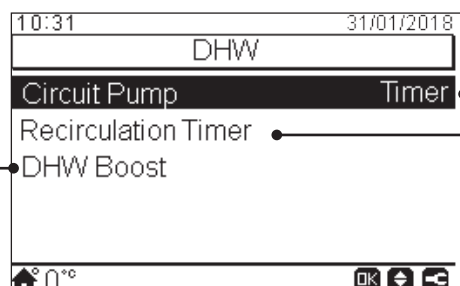
- **Status:** Enable or disable heating auto on/off function.
- **Switch Off temperature:** System is stopped in case that the outdoor temperature is higher than the Switch-OFF temperature.
- **Switch On differential:** Differential temperature between average outdoor temperature of the previous day and the Switch Off temperature.

◆ DHW optional functions

DHW Boost:

To force a one-time heating of the DHW tank up to the temperature set as DHW Boost temperature. This feature is useful to cover exceptional demand of DHW.

- **Trigger type:** Push (favourite button), Open (NC) or Closed (NO). Set input 6 for DHW Boost (for trigger type open/closed). (see section *"1.8.2.10 Inputs, Outputs and Sensors configuration"*).
- **Boost setting:** DHW temperature setting for the Boost function.



Circuit Pump: By using this output, user can heat all the water inside DHW piping system. Output must be configured at the I/O and sensors menu. (see section *"1.8.2.10 Inputs, Outputs and Sensors configuration"*).

- Disabled.
- Demand: Enable DHW recirculation.
- Anti Legionella: Allows DHW recirculation while anti legionella is active.
- Timer: A timer can be programmed in order to start or stop the water recirculation.

Recirculation timer:

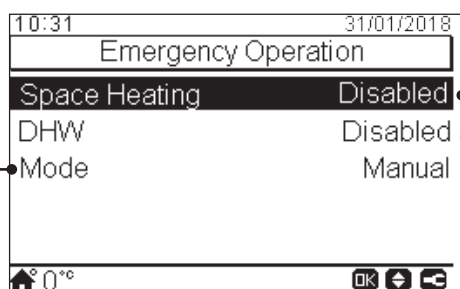
- **Frequency:** Allows to select when timer is applied (Everyday, weekend, weekday)
- **Starting Time:** When the water pump circulation starts.
- **Stopping Time:** When the water pump circulation stops.
- **Operation:** In case of ON, means that water pump is always ON between "Starting Time" and "Stopping Time". In case it is set to Timer, Recirculation pump is ON during "ON Time" after being OFF during "OFF Time" within Starting Time and Stopping Time.
- **ON Time:** On time period of Recirculation pump.
- **OFF Time:** Off time period of Recirculation pump.

◆ Emergency Operation

Mode:

Selection of the emergency operation mode:

- **Manual:** Emergency operation is active when is manually enabled (by DSW4 pin 4 ON). The emergency mode uses the heater (space heating or DHW) to provide the required heating.
- **Automatic:** Emergency mode operates when there is an event of outdoor unit failure and Demand ON of space heating (enabled) or DHW (enabled).



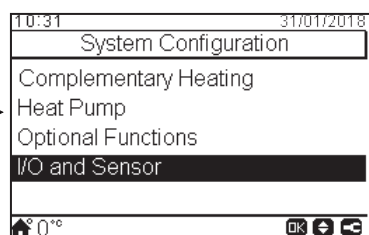
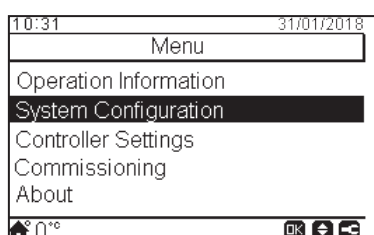
Space Heating:

Enable or disable emergency operation for space heating. Only available in case "Heating source" on "1.8.2.7 Complementary Heating configuration" contains "Electrical heater or boiler" option

DHW:

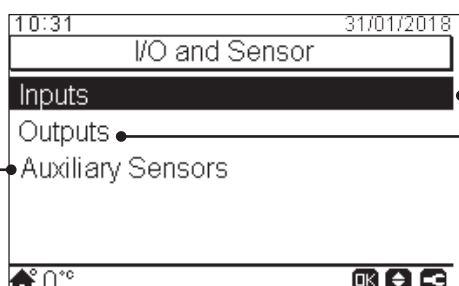
Enable or disable emergency operation for DHW. Only available when electrical heater for DHW is enabled (by DSW).

1.8.2.10 Inputs, Outputs and Sensors configuration



Auxiliary sensors:

There are 7 available auxiliary sensors to set.



Inputs:

The system allows to set 7 inputs depending on the operations and preferences of the installation

Outputs:

There are 8 available outputs to set. There are conditions of setting depending on the installation.

◆ List of available inputs:

- **Disabled**
- **Demand ON/OFF** (by default in input 1): Consider both Circuit 1 and Circuit 2 in Demand ON when the signal is ON.
- **Demand ON/OFF C1:** Consider Circuit 1 in Demand ON when the signal is ON.
- **Demand ON/OFF C2:** Consider Circuit 2 in Demand ON when the signal is ON.
- **Power Meter 2:** To count any pulse received from the power meter 2 and sent to central control energy consumption calculation.
- **ECO C1 + C2:** Switch both Circuit 1 and Circuit 2 to ECO mode when input is closed.
- **ECO C1** (by default in input 2, if there is circuit 1 in the installation): Switch Circuit 1 to ECO mode when input is closed.
- **ECO C2:** Switch Circuit 2 to ECO mode when input is closed.
- **Forced Off:** Forbid DHW, space heating and space cooling.
- **Smart Act / SG1** (Fixed in input 5 if smart action is enabled): To active Smart Function.

- **Swimming Pool** (Fixed in input 3 if swimming pool is enabled): Consider Swimming pool in Demand ON when the signal is ON.
- **Solar** (Fixed in input 4 if solar is enabled): To let YUTAKI know that external Solar management system is ready to provide Solar energy.
- **Operation:** To switch between space cooling and space heating.
- **DHW Boost** (Fixed in input 6 if DHW Boost is enabled): If it is set to open (NC), boost signal ON if circuit is open. If it is set to close (NO), boost signal ON if circuit is closed.
- **Power Meter 1** (Fixed in input 7 if Power Meter 1 is enabled): To count any pulse received from the power meter 1 and sent to central control energy consumption calculation.
- **Forced Heating:** Force mode heating when input is closed
- **Forced Cooling:** Force mode cooling when input is closed.
- **SG2:** To active the different estates of Sm Grid Ready.

◆ List of available outputs:

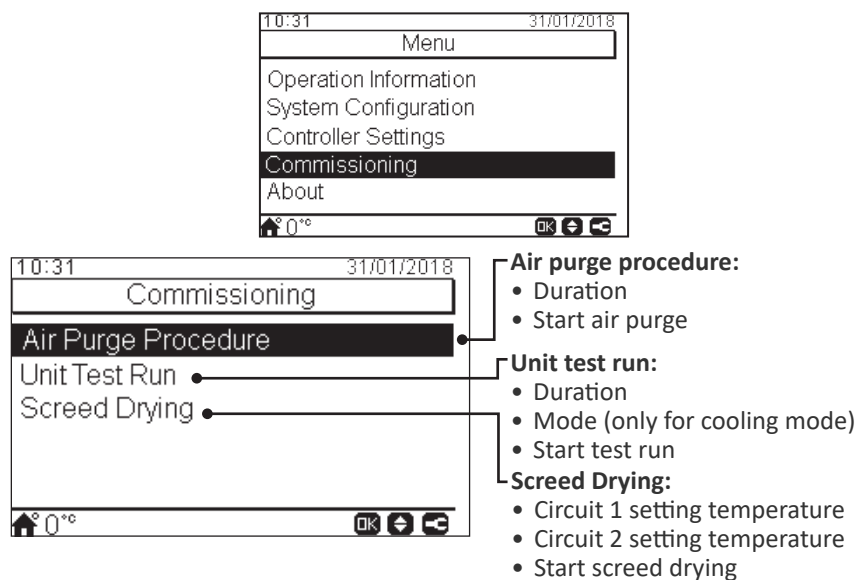
- **Disabled**
- **SWP 3WV:** (Fixed in output 1 if swimming pool is enabled): Signal control of the 3-way valve of the swimming pool.
- **Water pump 3:** (Fixed in output 2 if hydraulic separator or buffer tank is installed): Signal control of the water pump for hydraulic separator or buffer tank.
- **Boiler:** (Fixed in input 3 if boiler is enabled): Signal control of the boiler.
- **Solar Pump:** (Fixed in input 4 if solar pump is enabled): Signal control of the solar pump.
- **Alarm:** (By default in output 5): Signal is active if there is an alarm.
- **Operation:** (By default in output 6): Signal active in case Thermo ON in any condition.
- **Cooling:** (By default in output 7): Signal active when space cooling is operating.
- **Dem-ON C1:** (By default in output 8): Signal active when there is Demand in circuit 1.
- **Heating:** Signal active when space heating is operating.
- **DHW:** Signal active when DHW is operating.
- **Solar overheat:** Signal is active when solar overheat (only when solar combination status is total control)
- **Defrost:** Signal active when outdoor unit is defrosting.
- **DHW Re-circulation:** Signal active depending on option selected at chapter Circuit pump.
- **Heater relay 1:** Signal control of the Space heating heater 1 (Only for YUTAKI S80 or YUTAKI M units)
- **Heater relay 2:** Signal control of the Space heating heater 2 (Only for YUTAKI S80 or YUTAKI M units)

◆ List of available sensors:

- **Disabled**
- **Two3:** (Fixed in sensor 1 if boiler is installed): Use this sensor to monitor water temperature when boiler is used.
- **Swimming Pool:** (Fixed in sensor 2 if swimming pool is installed): Use this sensor when swimming pool is used in order to monitor swimming pool temperature.
- **Solar panel sensor:** Use this sensor when Total control is configured to monitor Solar Panel temperature.
- **C1 + C2 Ambient:** Use this sensor when auxiliary ambient temperature sensor is used for C1 and C2.
- **C1 Ambient:** Use this sensor when auxiliary ambient temperature sensor is used for C1.
- **C2 Ambient:** Use this sensor when auxiliary ambient temperature sensor is used for C2.
- **Outdoor sensor (NTC):** (By default sensor 3) To connect to the controller an auxiliary outside temperature sensor in case the heat pump is located in a position not suitable for this measurement.

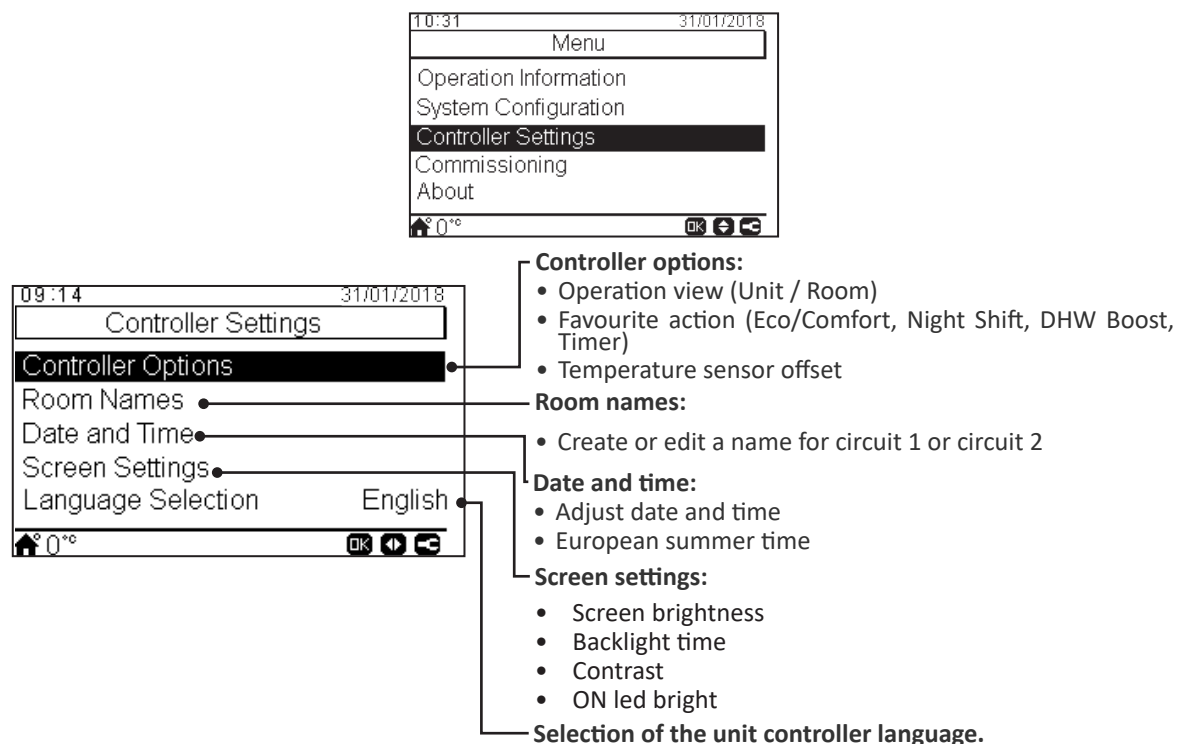
1.8.3 Commissioning

Under the commissioning menu it is possible to adjust the several parameters:



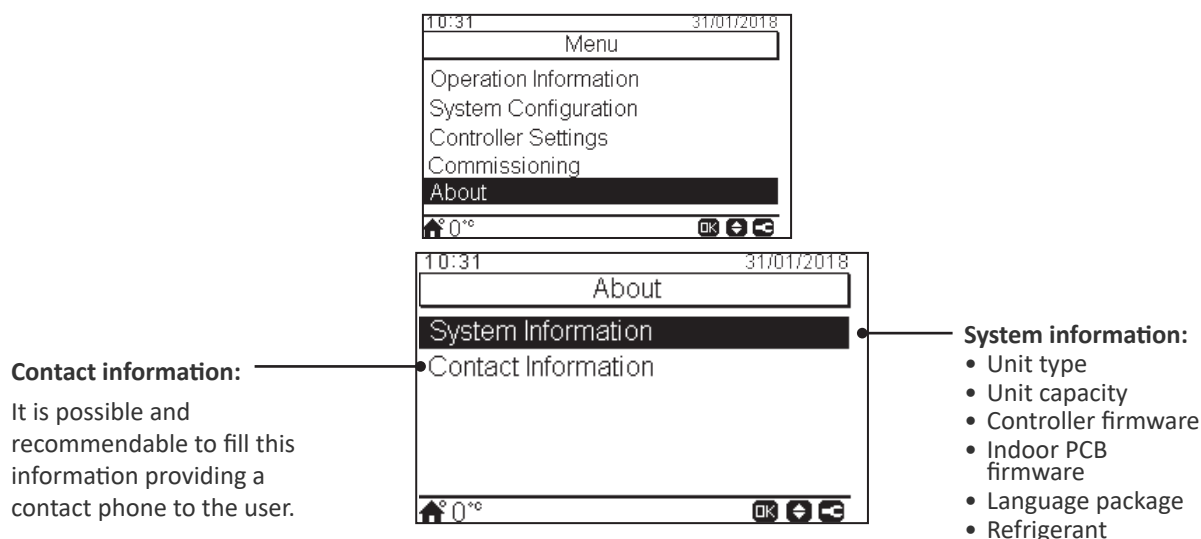
1.8.4 Controller settings

Under the controller settings menu it is possible to adjust the several parameters:



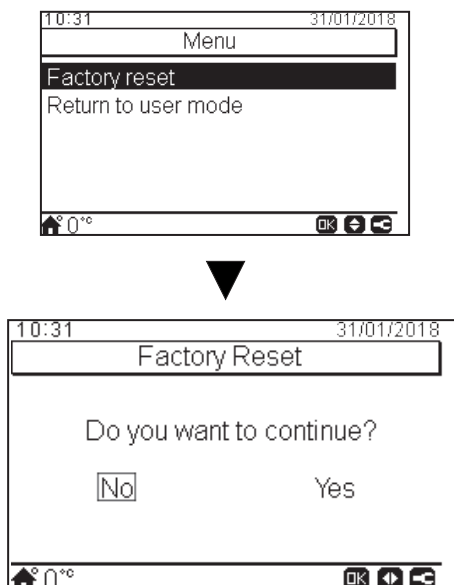
1.8.5 About

In this section of the LCD controller it is possible to find the following information:



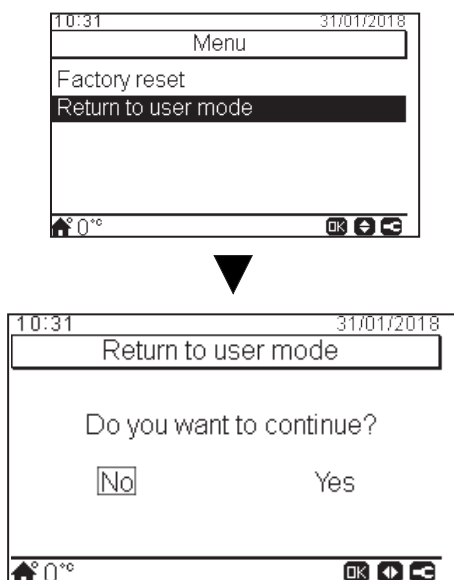
1.8.6 Factory reset

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



1.8.7 Return to User Mode

This function allows to getting out of the “Installer mode”.

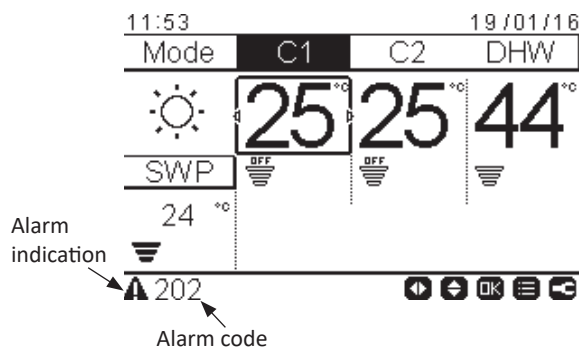




Troubleshooting

2.1 Alarm code indication on remote control switch	65
2.1.1 Alarm codes description.....	66

2.1 Alarm code indication on remote control switch



2.1.1 Alarm codes description



NOTE

- (o): Option configurable from Unit controller. This alarm will be displayed if the system has been configured.
- o: Default. This alarm will be displayed in the Unit controller.
- –: No applicable.

	Alarm Code	Retry Stop Code	YUTAKI S/SC	YUTAKI S80	YUTAKI M	Origin	Detail of Abnormality	Main Factors
Alarms generated by PCB	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 Temperature 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
	61	-	(o)	(o)	(o)	Indoor	No Cascade Messages. Triggered in case unit is configured to work against cascade control and: - No messages have been received for 180 seconds. - No messages have been received from beginning of operation. In case this alarm appears, software stops Indoor and Outdoor operations until communication is restored.	Loose, disconnected, broken or short-circuited connector
	62	-	(o)	(o)	(o)	Indoor	Central mismatch. Triggered in case YUTAKI CASCADE CONTROLLER is configured and they are received central messages or central control is configured and they are received messages form YUTAKI CASCADE CONTROLLER. In case this alarm appears, software stops Indoor and Outdoor operations until system is properly configured	Loose, disconnected, broken or short-circuited connector
	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
	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.

	Alarm Code	Retry Stop Code	YUTAKI S/SC	YUTAKI S80	YUTAKI M	Origin		Detail of Abnormality	Main Factors
Alarms generated by PCB	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		“Momentary Power interruption” or “Low voltage detected”	
	100	-	o	o	o	Indoor-LCD		Compressor protection	"Compressor failure. This alarm code appears when the following alarms 02, 07, 08, 45, 47 occur three times within 6 hours."  NOTE This alarm is shown in the outdoor unit with alarm code “EE”.
	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 Pd ≥ 2.78 MPa continued for 10 seconds.
	104	P06	-	o	-	Indoor		Activation of low control	Stop after P06 retry due to Ps ≤ 0.15 MPa continued for 90 seconds
	104	P06	-	o	-	Indoor		Activation of low control	Immediate stop with Ps ≤ 0.1 MPa
	105	P11	-	o	-	Indoor		Excessively low pressure difference	Stop after P11 retry due to pressure ratio ε < 1.8 continued for 3 minutes.
	106		-	o	-	Indoor		Excessively high discharge gas temperature	Td ≥ 120 °C continued for 10 minutes, Td ≥ 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
	202	-	(o)	(o)	(o)	LCD		Wrong settings of PC-ARFH1E	
	203	-	(o)	(o)	(o)	LCD		Slave PC-ARFH1E stops answering to Master PC-ARFH1E	Loose, disconnected, broken or short-circuited connector
	204	-	(o)	(o)	(o)	LCD		Indoor unit stops answering to Master PC-ARFH1E	Loose, disconnected, broken or short-circuited connector
	205	-	(o)	(o)	(o)	LCD		Central Alarm, no Central message	Loose, disconnected, broken or short-circuited connector

Alarm code	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	System	Thermistor for evaporating temperature (THM8)	Incorrect Wiring, Disconnected Wiring, Wire Breaking, Short Circuit, Fan Motor Locking at Heating Operation.
31		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	Protection device	Abnormality of picking up circuit for protection (Outdoor unit)	Failure of indoor unit PCB, incorrect wiring, connection to PCB in indoor unit.
45		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	Inverter	Activation of overcurrent protection	Overload, overcurrent. Failure of Inverter PCB, heat exchanger clogged, locked compressor. EVI/EVO failure.
51		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.
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 from outdoor unit

Cooling & Heating

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