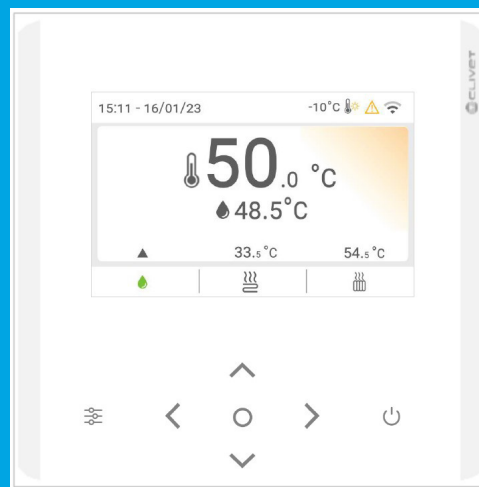


KEYPAD



Operating manual for
the user and installer



Dear Customer,

Congratulations for choosing this product

Clivet has been working for years to offer systems able to assure the maximum comfort for a long time with highly-reliable, efficient, high-quality and safe solutions.

The target of the company is to offer advanced systems, that assure the best comfort and reduce energy consumption as well as the installation and maintenance costs for the entire life-cycle of the system.

With this manual, we want to give you information that are useful for all phases: from reception, installation and use to disposal - so that such an advanced system can provide the best performances during installation and use.

Best regards and have a good read.

CLIVET Spa

The original instructions are written in Italian.

All other languages are translations of the original instructions.

The data contained in this manual is not binding and may be changed by the manufacturer without prior notice. Reproduction, even partial, is FORBIDDEN.

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General

1. About the manual

- The manual ensures proper installation, use and maintenance of the unit
- this manual is an integral and essential part of the product
- keep this manual together with the wiring diagram in an accessible place for the operator. It should always accompany the product, even if it is transferred to another owner or user
- recipients of the instructions in the manual are indicated in the "Recipients" chapter
- the recipient is indicated at the beginning of each section of the manual
- recipients, to the extent of their responsibility, are required to read the instructions and warnings in this manual as they provide important information on safe installation, use and maintenance.

Remember that:

- Clivet accepts no liability for damage to persons or property resulting from failure to observe the rules in this manual
- failure to observe the instructions in this manual will result in forfeiture of the warranty
- Clivet reserves the right to make changes or improvements to this documentary material and to the units without prior notice
- visit the manufacturer's website for up-to-date details
- this manual contains proprietary information, all rights reserved, it may not be reproduced or photocopied, either in whole or in part, without the prior written consent of Clivet.

1.1 Symbols

The symbols in the following chapter can be found in the manual and on the product, and provide quick and clear information for correct and safe use.

1.1.1 Safety symbols

Danger

This symbol indicates warnings, failure to comply may result in serious harm to health and fatal injuries.

Warning

This symbol indicates warnings, failure to comply may result in irreparable damage to the product or harm to the environment.

Prohibition

This symbol indicates operations that must never be

carried out.

Note

This symbol indicates important information.

1.1.2 Editorial symbols

In the texts

Purpose of the action: indicates the purpose of a sequence of actions.

(it is identified by bold text followed by :)

- ▶ this symbol indicates actions that are required
- this symbol indicates the expected result after an action
- this symbol indicates the lists

In the images

1 uniquely indicates a component

A indicates a group of components

1 indicates a sequence of actions

In the images, dimensions are expressed in millimetres unless otherwise indicated.

1.1.3 Symbols on the unit

The following symbols are used in some parts of the product:

Caution flammable material:

The refrigerant gas is flammable and odourless. Do not place it near continuously operating ignition sources (naked flames, gas appliances, electric stoves, lit cigarettes, etc.).

Instructions for the User

Read the User Manual carefully before using the product.

Instructions for the User

Read the Installer Manual carefully before installing the product.

Instructions for the Technical Support Service

Read the Technical Support Service Manual carefully before carrying out any operation on the product.

1.2 Recipients

1.2.1 User

Inexperienced person who is capable of:

- operating the product safely for people, for the product and for the environment
- interpreting elementary diagnostics of faults and abnormal operating conditions
- carrying out simple adjustment, test and maintenance operations.

1.2.2 Installer

Experienced and qualified person able to:

- to put the product in a safe operating condition for people, for the product and for the environment
- to comply with the regulations in force in the country of destination
- to provide the user with basic information on safe use and maintenance in accordance with this manual and current national regulations
- comply with the regulations in force in the country of destination.

1.2.3 Technical support service





Experienced person, qualified and authorised directly by the manufacturer to:


- carry out a diagnosis of product faults and abnormal operation, possibly using information provided by the user
- rectify faults, carrying out the necessary repairs, replacements and adjustments that will restore the product's ability to function correctly and safely for the people, for the product and for the environment
- comply with the regulations in force in the country of destination.


1.3 Document organisation


- The manual is divided into sections, each dedicated to one or more recipients
- the recipient is indicated at the beginning of each section of the manual.

1.4 General safety warnings


-  Read the "About the manual" chapter carefully before proceeding with any operation.
-  Each chapter contains specific warnings for the operations given therein. These warnings should be read before starting any activities.
-  For every operation, always comply with current national regulations.
-  All personnel must be aware of the operations and of the hazardous situations that may arise when starting any operations on the unit.


 Any contractual and non-contractual liability for damage caused to persons, animals or property by installation, adjustment or maintenance errors or improper use is excluded.


 Any uses not expressly indicated in this manual are not permitted.


 Do not change or tamper with the device as this can lead to hazardous situations.


 Use appropriate safety clothing and equipment.


 The manufacturer accepts no liability for failure to comply with current safety and accident prevention regulations.


 The manufacturer reserves the right to make changes to its models at any time to improve its product, subject to the essential characteristics described in this manual.


 The manufacturer is not obliged to add these changes to units previously manufactured, already delivered or being built.


 The unit is suitable for use by children aged 8 years and over and by persons with reduced physical, sensory or mental capabilities or lack of experience or knowledge if they are properly supervised or have received instructions on the safe use of the device and have understood the associated hazardous situations. Children must not play with the device. Cleaning and maintenance operations must not be carried out by children without supervision.


 It is forbidden to touch the device with wet or damp parts of the body.

 It is forbidden to carry out any operation before disconnecting the device from the mains power supply by turning the system's main switch to "off".

 It is forbidden to change the safety or control devices without the device manufacturer's authorisation and instructions.

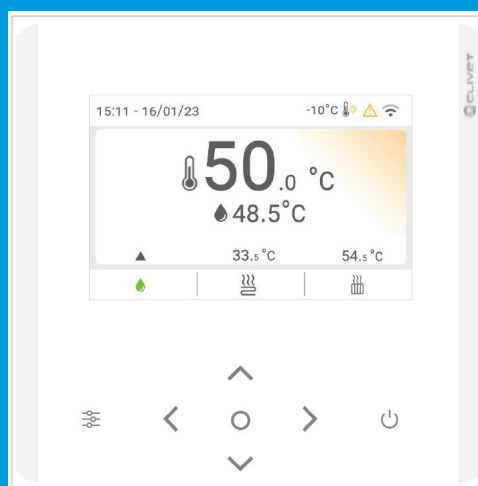
 It is forbidden to pull, unplug or twist the electrical cables coming out of the device, even if it is disconnected from the mains power supply.

 It is forbidden to introduce objects and substances through the air intake and supply grilles.

 It is forbidden to open the access doors to internal parts of the unit without first turning the system's main switch to "off".

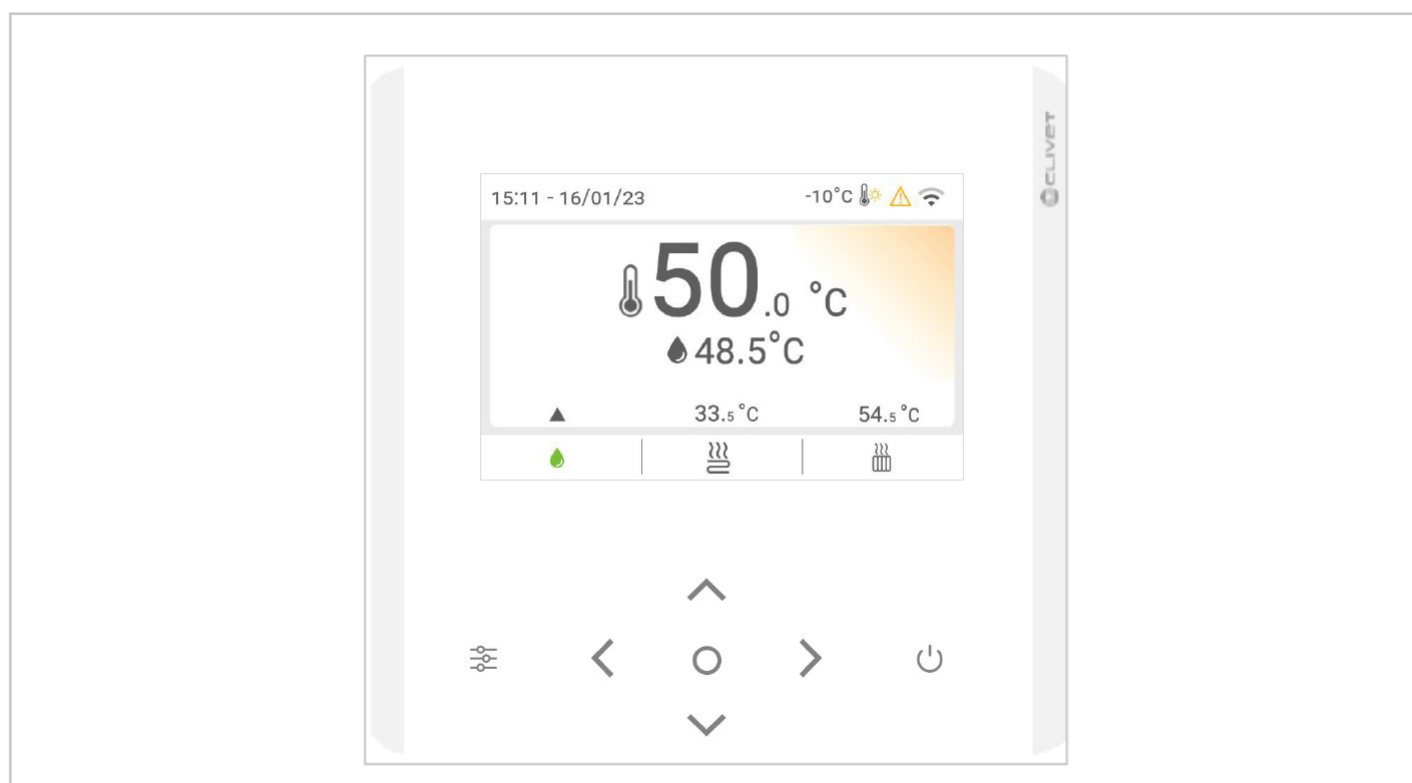
KEYPAD

User section



User section

2. Explanation of buttons















Buttons	Name	Function
	MENU/RETURN	To open the various menus from the HOME page. To return to the previous level or page. Long button press to return straight to the home page.
	OK	To enter a submenu To confirm entered values
	ON/OFF	To switch on/off zone 1/zone 2/DHW Press the button for 3 seconds to switch on/off zone 1/zone 2/DHW
	LEFT - RIGHT DOWN - UP	To move the cursor on the screen/navigate in the menu structure/adjust parameter settings
	UNLOCK	Press the button for 1.5 seconds to Unlock/Lock the keypad

Auto-restart function

The unit has an auto-restart function: in the event of a power failure (e.g. blackout), when the power supply is restored the unit restarts at the last selected settings.

2.1 Explanation of symbols

 -10°C	Outdoor temperature		Silent mode (on)
15:11 - 16/01/23	Date and hour		Wi-Fi (on)
	The temperature does not change		Smart grid (on)
	Keypad lock		Alarm (active)

	Control based on the room temperature		Appliance zone type: radiant panels
	Control based on the water temperature		Appliance zone type: radiator
	Appliance zone type: fan coil		Appliance zone type: domestic hot water




Scheduling information

08:20	Scheduling start time	30°C	Set temperature
	Heating mode		

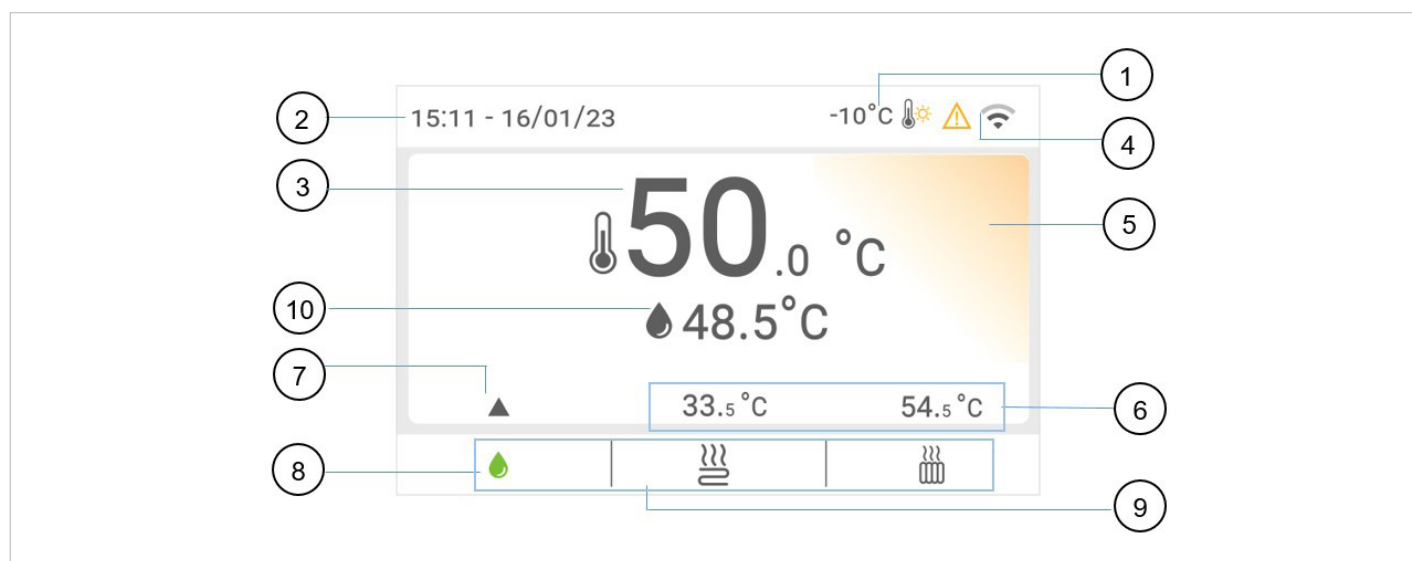
Symbols displayed with modes on

	Auxiliary electric heater		Antifreeze mode
	Daily scheduling		Defrosting
	Silent mode		Auxiliary heat generator
	Holiday mode		Solar
	Compressor		Anti-legionella
	Circulation pump		Weekly scheduling
	Eco mode		

Smart grid

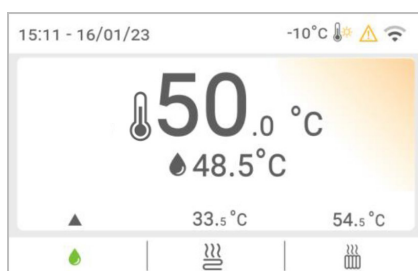
Energy cost	Free	Low	High
Smart grid			
Energy source	Photovoltaics	From the mains	From the mains
Energy absorbed	Average	Average	Peak

2.2 Main screen



- 1 Outdoor air temperature
 - 2 Current date and time
 - 3 Selected function set point
 - 4 Alarms and Wi-Fi operation
 - 5 Different colours indicate the operating modes, Heating (yellow), Cooling (blue) and Stand-by (Grey)
 - 6 Current temperatures of the other functions
 - 7 Selected function indicator
 - 8 Green: function selected
 - 9 Available functions
 - 10 Temperature detected with function2 selected
- The following data can be displayed:
DHW, fan coils, radiant panels and radiators.
- To display:**
- press the **SX** and **DX**

DWH



RADIANT PANELS



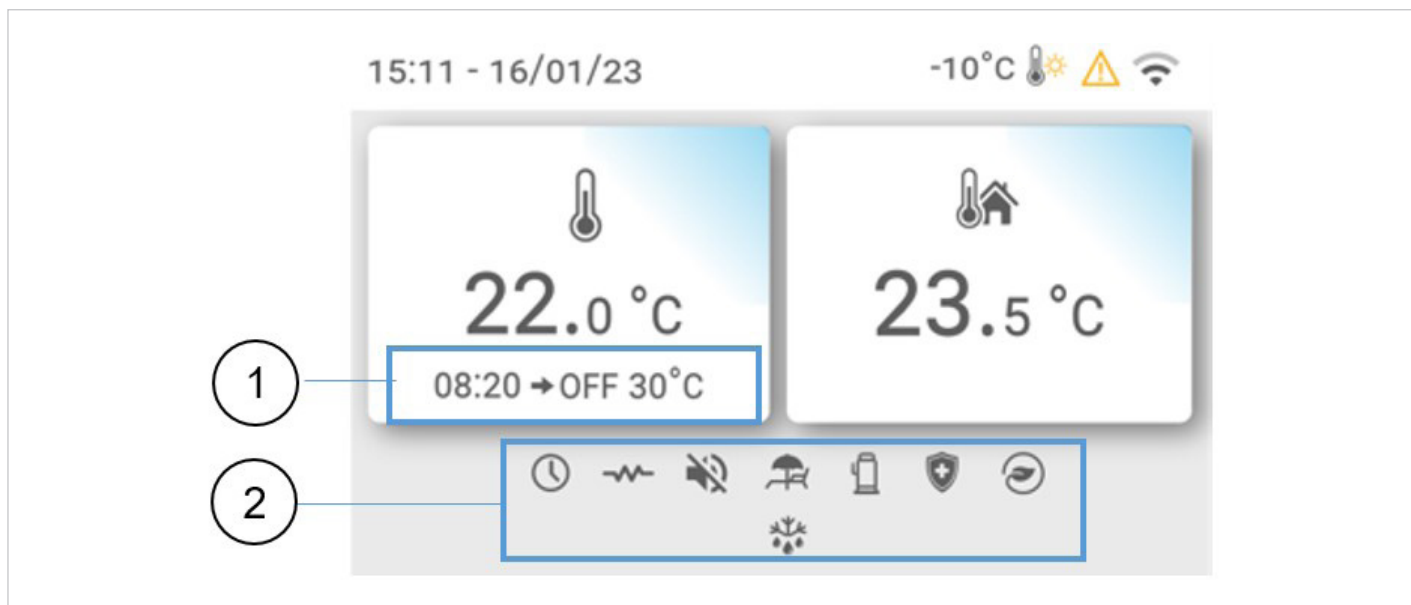
RADIATORS



2.3 Secondary screen


To open the secondary screen:

- ▶ select the zone
- ▶ press OK



1 Scheduling information

2 Modes on


 The other symbols have been described above

3. Basic operations

3.1 Locking and unlocking the keypad

To lock/unlock the keypad:

- ▶ simultaneously press the **SX** + **DX** buttons for 1.5 seconds

 The display will dim if left idle for 30 seconds and it will switch off after a further 10 seconds.

3.2 Function ON/OFF

To switch on/off:

- ▶ select the function
- ▶ press ON/OFF

3.3 Temperature control

To control:

- ▶ select the function
- ▶ press **UP** and **DOWN**
- ▶ set the temperature

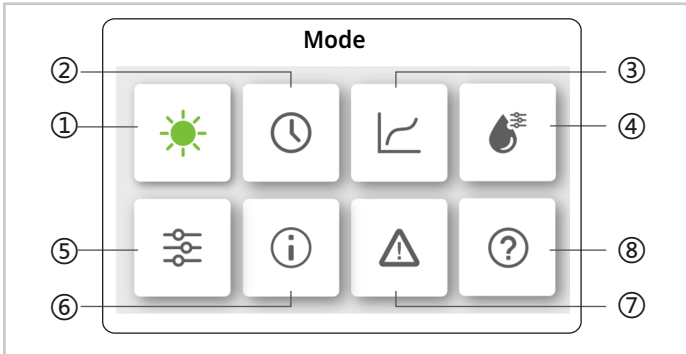
3.4 Terminology used

The terms related to this unit are shown in the table below

	Description
ACS	Domestic hot water
WLAN	Wi-Fi network
FAQ	Information

4. Mode

The modes are set on the Menu screen.



- 1 Operational modes
- 2 Scheduling
- 3 Climatic curves
- 4 DWH
- 5 Settings
- 6 Unit state
- 7 Alarms
- 8 FAQ

To open the Menu screen:

- ▶ press MENU/RETURN

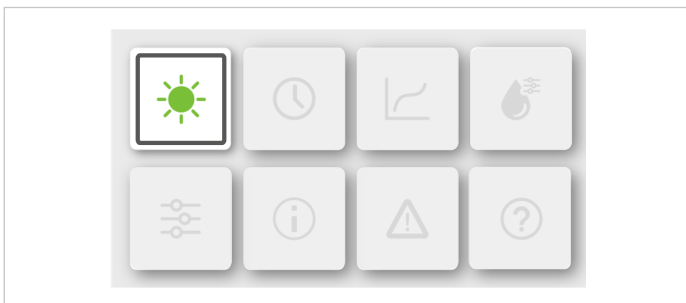
To select the function

- ▶ press DX and SX
- ▶ go on the function
 - the icon turns green
- ▶ press OK

Funzione indicatore

- ▶ press OK to activate
 - the indicator becomes
- ▶ press OK to deactivate
 - the indicator becomes

4.1 Operational modes



Available operating modes:

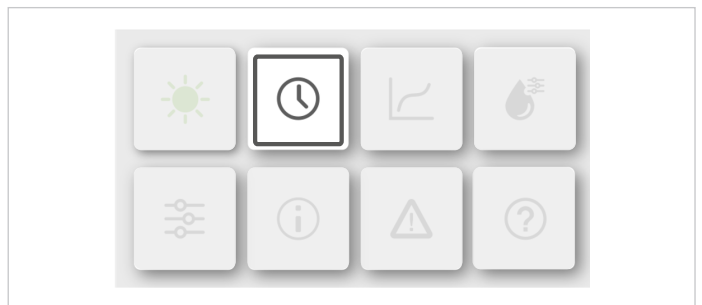
- Cooling
- Heating
- Automatic

i In Automatic mode, the unit automatically selects the operating mode between Cooling and Heating based on the outdoor air temperature and system settings.

To select the operating mode:

- ▶ press DX and SX
- ▶ go on the mode
- ▶ press OK

4.2 Scheduling



The function enables daily and weekly scheduling for each zone.

Schedule	
Zone 1 daily timer	ON >
Zone 2 daily timer	ON >
DHW daily timer	OFF >
Zone 1 weekly schedule	ON >

Schedule	
Zone 2 weekly schedule	ON >
DHW weekly schedule	ON >
Holiday away	OFF >
Holiday home	ON >

Select the scheduling:

- ▶ press UP and DOWN
- ▶ go on the scheduling
- ▶ press OK

4.2.1 Daily scheduling

Up to 6 time slots can be set.
Scheduling is repeated every day.

Zone 1 daily timer				
No.	Time	Mode	Temp.	
01	01:00	☀	26°C	<input checked="" type="checkbox"/>
02	20:00	☀	26°C	<input checked="" type="checkbox"/>
03	00:30	OFF	0°C	<input checked="" type="checkbox"/>
04	00:30	☀	26°C	<input checked="" type="checkbox"/>

Zone 1 weekly schedule	
Weekly schedule	<input checked="" type="checkbox"/>
Day	Every day >
Control	>

Time: sets the command activation time
 Mode: sets the operating mode. If it is OFF, the zone switches off at the set time.
 Temp: sets the desired temperature
 State: enables or disables the command

- i* Use the same logic to set Zone 2 and DHW.
- i* If the Zone 2 and DHW functions are disabled, they will not be visible on the screens.

4.2.2 Weekly scheduling

Scheduling is repeated every week.
 Up to 4 schedules can be set.

Zone 1 weekly schedule		
Schedule 1	ON	>
Schedule 2	ON	>
Schedule 3	OFF	>
Schedule 4	ON	>

Select the scheduling:

- ▶ press **UP** and **DOWN**
- ▶ go on the scheduling
- ▶ press **OK**

Zone 1 weekly schedule	
Weekly schedule	<input checked="" type="checkbox"/>

To switch on:

- ▶ press **OK**

To select the day:

- ▶ press **UP** and **DOWN**
- ▶ go on the day
- ▶ press **OK**

Zone 1 daily timer	
Sunday	<input checked="" type="checkbox"/>
Monday	<input type="checkbox"/>
Tuesday	<input type="checkbox"/>
Wednesday	<input type="checkbox"/>

To select the daily scheduling:

- ▶ press **UP** and **DOWN**
- ▶ go on the Command (N.)
- ▶ press **OK**

Zone 1 daily timer				
No.	Time	Mode	Temp.	
01	01:00	☀	26.5°C	<input checked="" type="checkbox"/>
02	20:00	☀	26.5°C	<input checked="" type="checkbox"/>
03	00:30	☀	26.5°C	<input checked="" type="checkbox"/>
04	00:30	☀	26.5°C	<input checked="" type="checkbox"/>

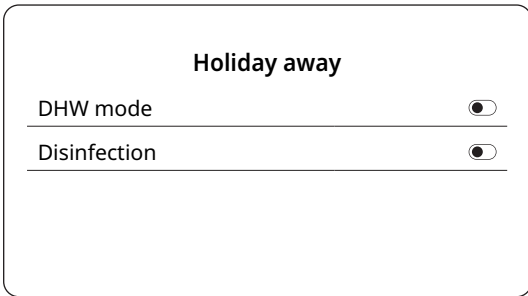
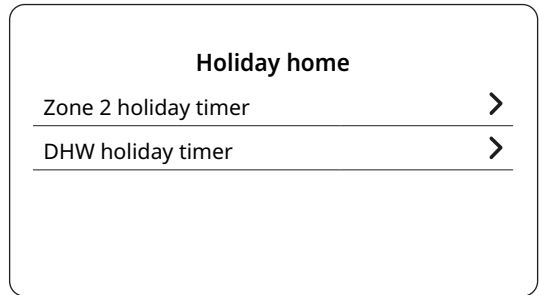
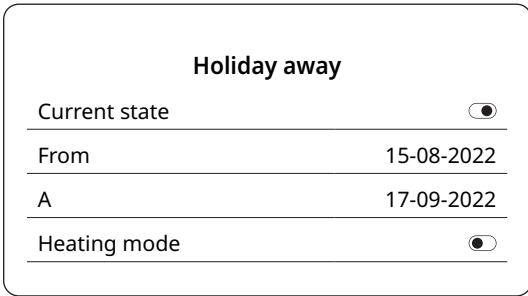
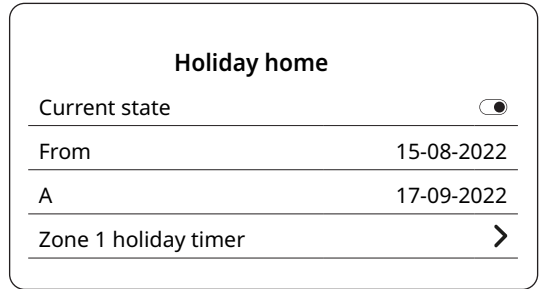
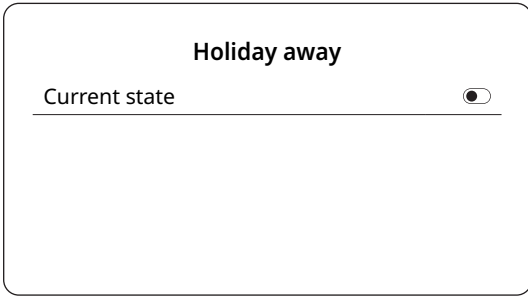
- i* Use the same logic to set Zone 2 and DHW.

4.2.3 Holiday away

This function prevents the system from freezing during winter holidays away from home and restarts the unit before returning home, while at the same time limiting consumption of the unit when not in use.

To activate the function:

- ▶ press **OK**



To set:

- ▶ press **UP** and **DOWN**
- ▶ go on the function
- ▶ press **OK**

Current state: function state
 From: sets the command activation date
 To: sets the command deactivation date

i If Holiday home is disabled, the functions will not be visible on the screens.

To set:

- ▶ press **UP** and **DOWN**
- ▶ go on the function
- ▶ press **OK**

Current state: function state
 From: sets the command activation date
 To: sets the command deactivation date

i If the Heating mode, DHW mode and Disinfect functions are disabled, they will not be visible on the screens.

4.2.4 Holiday home

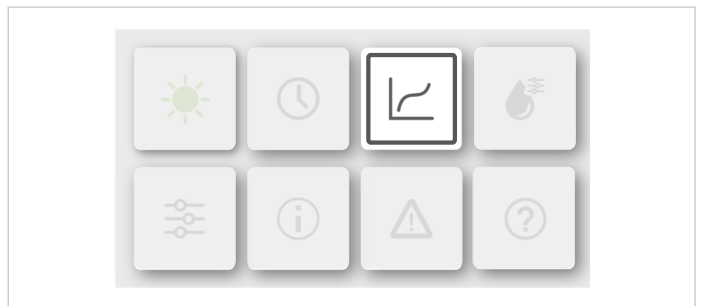
When you are in the house, this function allows you to override the normal schedule without changing it.

To activate the function:

- ▶ press **OK**



4.3 Climatic curves



The function is used to automatically set the water temperature of the system according to the outdoor temperature. As the outdoor temperature increases, the request for room heating is reduced.

To activate the function:

- ▶ press **OK**

Weather temp. settings	
Weather temp. settings introduction	>
Zone 1 heating mode	ON >
Zone 1 cooling mode	OFF >
Zone 2 heating mode	OFF >

Weather temp. settings	
Zone 2 cooling mode	OFF >

- i** If climatic curves are selected, it is not possible to control the temperature set (on the main screen).
- i** The function is not available in Holiday away and Holiday home mode.

Select the Climate zone:

- ▶ press **UP** and **DOWN**
- ▶ go on the Zone
- ▶ press **OK**

Zone 1 heating mode	
Temperature curve	<input checked="" type="checkbox"/>

To switch on:

- ▶ press **OK**

Zone 1 heating mode	
Temperature curve	<input checked="" type="checkbox"/>
Temperature curve type	Standard
Temperature level	4
Temperature offset	0°C

- Temperature curve: function state
- Temp curve type: select between Standard, Customised ECO
- Temperature level: 8 preset curves are available
- Temperature offset: curve temperature control

Standard function:

- 8 preset curves
- curve temperature control

ECO function:

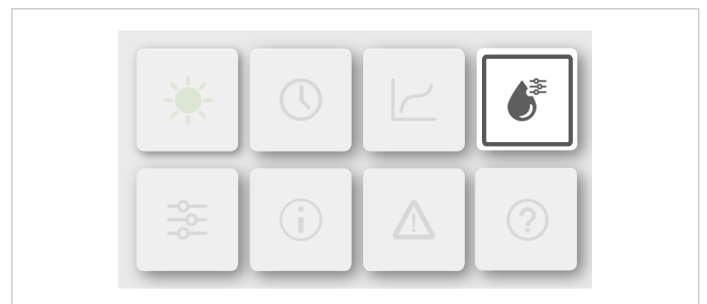
- 8 preset curves
- if the ECO timer is on, the unit always operates in ECO mode.
- if the ECO timer is on, the unit operates in ECO mode according to the start and finish time

Customised function (installer use):

- operating parameter control
- curve temperature control

- i** The ECO function is only on for Zone 1 heating mode for one zone.
- i** If the Temperature curve function is disabled, it will not be visible on the screen.
- i** Use the same logic to set Zone 1 cooling mode, Zone 2 heating mode and Zone 2 cooling mode.
- i** If the DOUBLE ZONE function is disabled, the Zone 2 heating/cooling mode setting will not be visible on the screens.

4.4 DWH

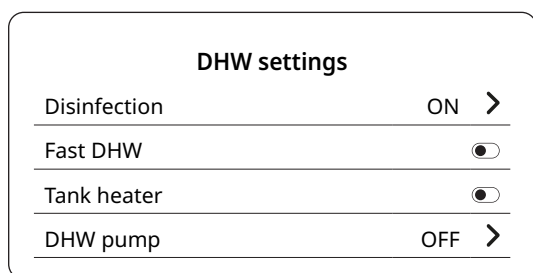


DHW mode for domestic hot water production includes the following functions:

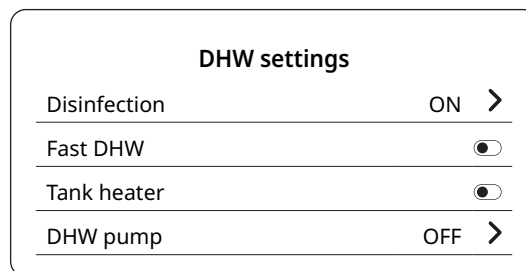
- DISINFECT (anti-legionella)
- Fast DHW
- Tank heating
- DHW pump (DHW circulation)

To activate the function:

- ▶ press **OK**



▶ press **OK**



Disinfect (anti-legionella)

The DISINFECT function is used to eliminate legionella bacteria by raising the storage tank temperature to 65 - 70°C.

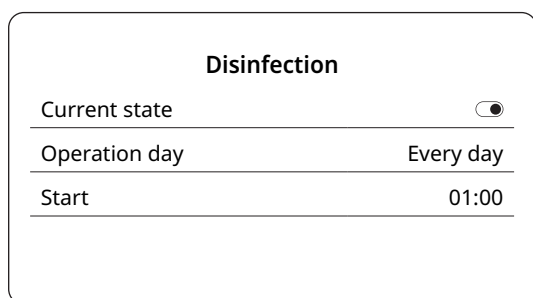
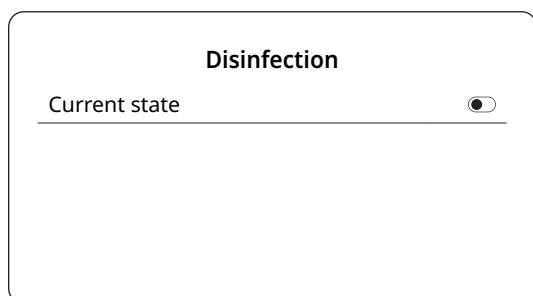
i During the disinfect function, if DHW scheduling is on, disinfection will be interrupted without any prior notice.

i The function is used to activate other auxiliary sources available for DHW heating.

i The function stops automatically when the temperature is achieved.

Select Disinfect:

- ▶ press **UP** and **DOWN**
- ▶ go on the function
- ▶ press **OK**



To set:

- ▶ press **UP** and **DOWN**
- ▶ go on the function
- ▶ press **OK**

Current state: function state

Operation day: sets the operation day or week.

Start: sets the command activation time

Fast DHW

The function is used to force DHW mode for domestic hot water production.

Select Fast DHW:

- ▶ press **UP** and **DOWN**
- ▶ go on the function

Tank heating

The Tank heating function forces the water heating in the water tank (using auxiliary sources).

Select Tank heater:

- ▶ press **UP** and **DOWN**
- ▶ go on the function
- ▶ press **OK**

DHW settings	
Disinfection	ON >
Fast DHW	<input checked="" type="checkbox"/>
Tank heater	<input checked="" type="checkbox"/>
DHW pump	OFF >

DHW pump

The DHW Pump function recirculates the water in the water system.

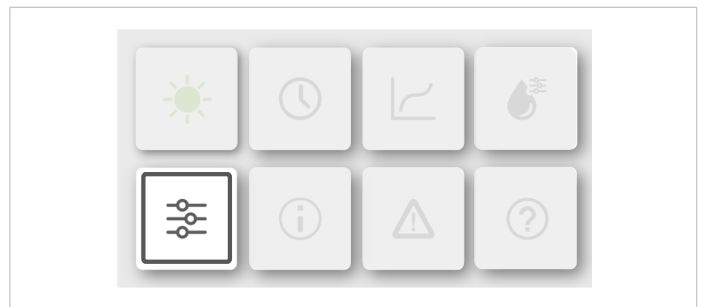
There are 12 settings available lasting 5 minutes each.

Select DHW Pump:

- ▶ press **UP** and **DOWN**
- ▶ go on the function
- ▶ press **OK**

DHW pump		
No.		Time
01	<input checked="" type="checkbox"/>	01:00
02	<input checked="" type="checkbox"/>	20:00
03	<input type="checkbox"/>	00:30
04	<input type="checkbox"/>	00:30

4.5 Settings



Setting modes available:

- Silent mode
- Backup heater
- Display setting
- WLAN setting
- Force defrost

To select:

- ▶ press **DX** and **SX**
- ▶ go on the function
- ▶ press **OK**

Settings	
Silent mode	ON >
Backup heater	<input checked="" type="checkbox"/>
Display setting	>
WLAN setting	>

Settings	
Force defrost	<input checked="" type="checkbox"/>
Operation level	>

Silent mode

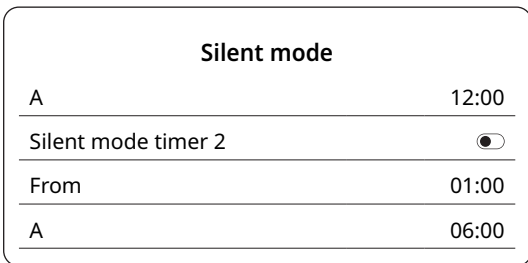
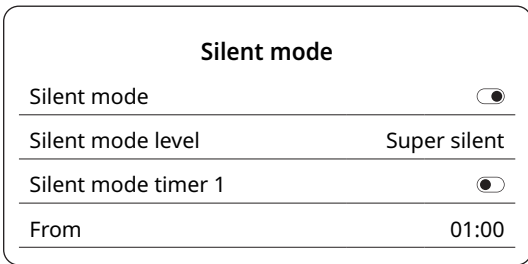
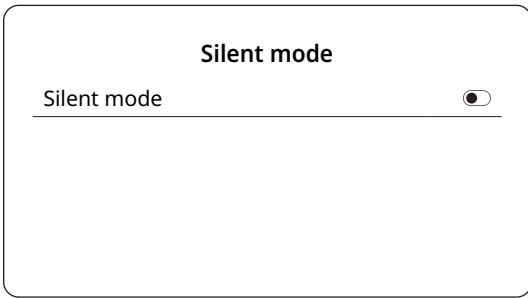
Silent Mode enables quieter operation of the unit.

There are 2 Silent Mode levels:

- Silent
- Super silent

To switch on:

- ▶ press **OK**



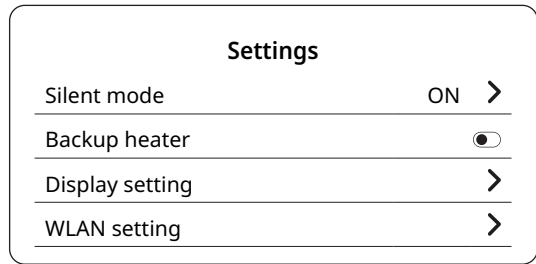
- To set:**
- ▶ press **UP** and **DOWN**
 - ▶ go on the function
 - ▶ press **OK**

Silent mode: function state
 Silent mode level: select the level
 From: sets the command activation date
 To: sets the command deactivation date

- i* Use the same logic to set Silent mode timer 2.
- i* If neither of the time slots are selected, Silent mode is always on, whereas if it is enabled, it follows the time schedule.
- i* If the start time is later than the finish time, Silent mode will run all day.

Backup heater

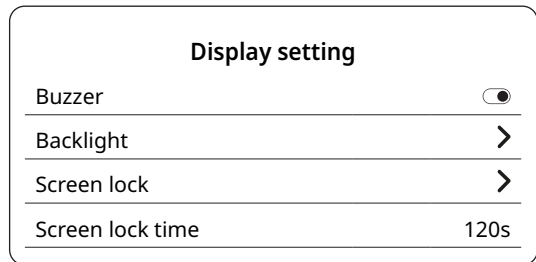
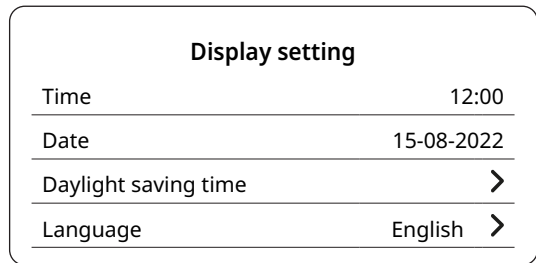
Available as an accessory or configuration.
 The Backup heater function forces the backup heater on.



- To set:**
- ▶ press **UP** and **DOWN**
 - ▶ go on the function
 - ▶ press **OK**

Display setting

The function is used to set the interface.

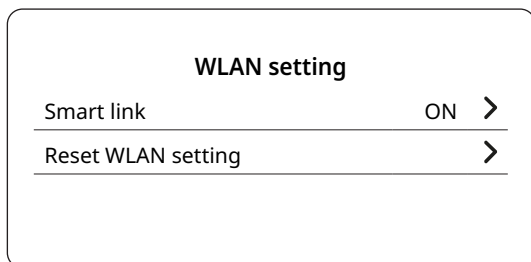



- To set:**
- ▶ press **UP** and **DOWN**
 - ▶ go on the function
 - ▶ press **OK**
- Time: sets the current time
 Date: sets the current date
 Daylight saving time: sets the daylight saving start time and finish time
 Buzzer: sets the buzzer
 Backlight: sets the screen backlight
 Screen lock: sets the screen lock
 Screen lock time: sets the screen lock time
 Decimal separator: sets the type of decimal separator

WLAN setting

The unit can be controlled and managed through the SmartHome App via a Wi-Fi module built into the HMI, which provides various features.
 Before connecting the WLAN, check that the router is switched on and the HMI is in a position to receive the wireless signal.
 The router must have a 2.4GHz bandwidth.

It is advised against using special characters (e.g. punctuation, spaces, etc.) in the WLAN name.
If the router or network password is changed, it may be necessary to delete the units linked to the App and pair them again.



 Check the keypad code on the SN screen.

To set:

- ▶ press **UP** and **DOWN**
- ▶ go on the function
- ▶ press **OK**

Smart link

Every time Smart link is used, the WLAN connection is activated for 5 minutes.
Start the app to connect to the unit.

Reset WLAN setting

If the network is reset, the unit will no longer be connected to the app.
Repeat the WLAN set-up procedure.

Force defrost

When the defrosting function is finished, the indicator automatically switches back to OFF.



To switch on:


- ▶ press **OK**

Operation mode

Operation level	
Heating operation level	1
Cooling operation level	0

To set:

- ▶ press **UP** and **DOWN**
- ▶ go on the function
- ▶ press **OK**

 Function only available for a specific unit.

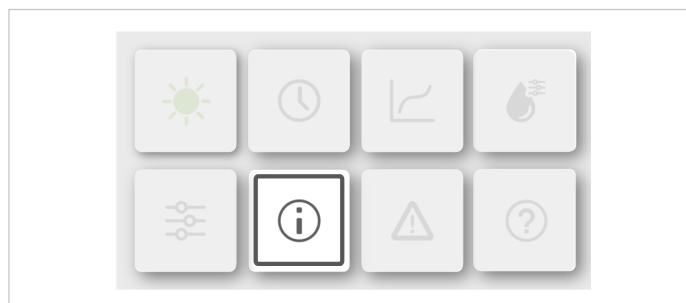
Heating operation level

Adjusts the heating mode operation level.
The higher the level, the greater the unit's heating capacity.
The noise level and power consumption may be higher.
The default setting is 0 (standard level).

Cooling operation level

Adjusts the cooling mode operation level.
The mode is the same as for heating.

4.6 Unit state



The Unit status menu displays the following functions:

- Operation parameter: operating parameter control
- Energy metering: energy consumption control
- Device info.: displays the code paired with the master or slave unit
- Service call: displays the contacts needed to call for assistance

To select:

- ▶ press **UP** and **DOWN**
- ▶ go on the function
- ▶ press **OK**

Unit state	
Operation parameter	>
Energy metering	>
Device info.	>
Service call	>

Energy metering	
Heating energy data	>
Cooling energy data	>
DHW energy	>

Operation parameter

The Operation parameter menu is used by the installer or the support technician to check the operation parameters. The values shown on the pages are only indicative.

Operation parameter			
Unit	No.		
00	1	Online unit number	
00	2	ODU model	
00	3	Operation mode	Heating
00	4	Operation status	ON

To display:

- ▶ press **UP** and **DOWN**

Energy metering


The function enables the production, power and efficiency of the unit to be checked.


Immediate information:

- Heating energy data *
- Cooling energy data *
- DHW energy *

To display the data:

- Energy data: to check daily, weekly, monthly or yearly data or total data
- Data log: to check the data from different years

 * If - - is displayed, the function is disabled.

 COP/EER is calculated under normal operating conditions of the unit.

To select:

- ▶ press **UP** and **DOWN**
- ▶ go on the function
- ▶ press

Heating energy data

Heating energy data	
Energy data	>
Historical data	>

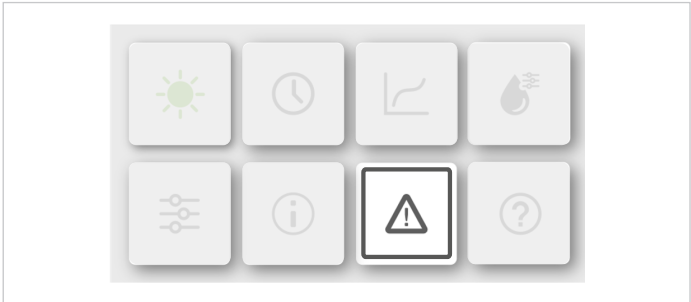
Energy data

Thermal energy: now	
Production	
RE production	
Consumption	
COP	

Historical data

Thermal energy: now	
Total	⏴ <>
Production	
RE production	
Consumption	
COP	

4.7 Alarms



The alarm code displays the meaning of error codes in case of failure or malfunction.

Error info.			
Unit	Code	Time	Date
00	E8(70%)	11:27	19-12-2022
02	E0(50%)	16:27	19-12-2022
01	E2	10:27	24-12-2022
00	E8(70%)	11:27	19-10-2022

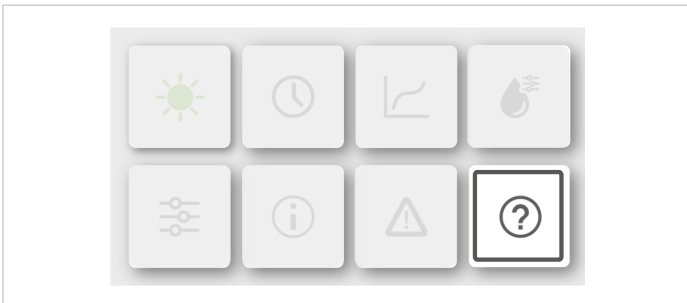
To display:

- ▶ press **UP** and **DOWN**
- ▶ go on the line
- ▶ press

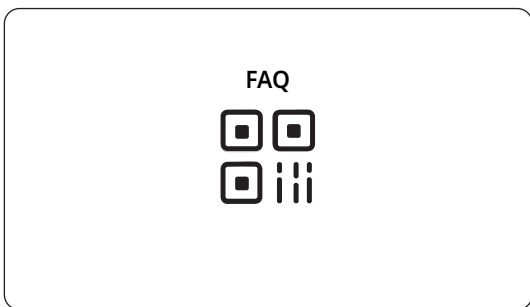
Error info.			
Unit	Code	Time	Date
01	E1	11:27	19-12-2022

Press OK to scroll through the list of all recorded faults.

4.8 FAQ



Scan the QR code for more information.



5. Menu structure

► Mode

- Heating
 - Cooling
 - Auto
-

► Scheduling

- Zone 1 daily timer
 - |..... Time slots from 1 to 6
 - Zone 2 daily timer
 - |..... Time slots from 1 to 6
 - DHW daily timer
 - |..... Time slots from 1 to 6
 - Zone 1 weekly timer
 - |..... Schedule from 1 to 4
 - Zone 2 weekly timer
 - |..... Schedule from 1 to 4
 - DHW weekly timer
 - |..... Schedule from 1 to 4
 - Holiday away
 - |..... Current state
 - |..... Start date
 - |..... Finish date
 - |..... Heating mode (enabled/disabled)
 - |..... DHW mode (enabled/disabled)
 - |..... Anti-legionella (enabled/disabled)
 - Holiday home
 - |..... Current state
 - |..... Start date
 - |..... Finish date
 - |..... Zone 1 holiday home timer
 - |..... Zone 2 holiday home timer
 - |..... DHW holiday timer
-

► Climatic curves

- Zone 1 heating mode
 - |..... Climatic curve (enabled/disabled)
 - |..... Climatic curve type
 - |..... Temperature level
 - |..... Temperature offset
- Zone 1 cooling mode
 - |..... As above
- Zone 2 heating mode
 - |..... As above

- Zone 2 cooling mode
|..... As above

► DHW settings

- Anti-legionella
|..... State (enabled/disabled)
|..... Operation day
|..... Start-up time
- Fast DHW mode (enabled/disabled)
- Tank heating (enabled/disabled)
- DHW pump
|..... Time settings from 1 to 12

► Settings

- Silent mode
|..... State (enabled/disabled)
|..... Silent mode level
|..... Silent mode timer 1
|..... Silent mode timer 2
- Additional/backup electric heater
|..... State (enabled/disabled)
- Display setting
|..... Time
|..... Date
|..... Language
|..... Backlight
|..... Buzzer
|..... Screen lock
|..... Screen lock time
- WLAN
|..... Smart link (enabled/disabled)
|..... Reset WLAN settings
- Force defrost (enabled/disabled)

► Unit state

- Operation parameters
|..... See Parameters table
- Energy metering
|..... Heating energy data
|..... Cooling energy data
|..... DHW energy data
- SN Display
- Service call

► Alarm info


- See Alarms table

► FAQ

6. Operation parameters


The OPERATION PARAMETER menu is used by the installer or the support technician to check the operation parameters.

To access:

- ▶ press 
- ▶ select Unit status
- ▶ select Operation parameter
- ▶ press OK

The operation parameters are displayed on the following screens.

Press Down, Up to scroll.

 The energy consumption parameter is calculated, not

measured.

If a parameter is not available for the system, the corresponding value will be "--"

The heat pump capacity is indicative and should not be used as a measure of the unit's power.

The accuracy of the sensor is $\pm 1^\circ\text{C}$.

The flow-rate parameters are calculated according to the pump operation parameters, the deviation is different at different flow-rates, the maximum deviation is 15%.

Operation parameter		
Unit	NO.	
00	1	Online unit number
00	2	ODU model
00	3	Operation mode
00	4	Operation status

Operation parameter		
Unit	NO.	
00	17	T2B plate F-in temp.
00	18	T2 plate F-out temp.
00	19	Tw_in plate water inlet temp.
00	20	Tw_out plate water outlet temp.

Operation parameter		
Unit	NO.	
00	5	Frequency limited type
00	6	Comp. run time
00	7	Comp. frequency
00	8	Fan speed

Operation parameter		
Unit	NO.	
00	21	T1 leaving water temp.
00	22	Tw2 circuit2 water temp.
00	23	Ta room temp.
00	24	RH room humidity

Operation parameter		
Unit	NO.	
00	9	Expansion valve
00	10	Tp comp. discharge temp.
00	11	Th comp. suction temp.
00	12	T3 outdoor exchanger temp.

Operation parameter		
Unit	NO.	
00	25	T5 water tank temp.
00	26	T5_2 water tank temp.
00	27	TBt buffer tank temp.
00	28	Tsolar

Operation parameter		
Unit	NO.	
00	13	T4 outdoor air temp.
00	14	TF module temp.
00	15	P1 comp. pressure
00	16	P2 comp. pressure

Operation parameter		
Unit	NO.	
00	29	T1S_C1 CLI. curve temp.
00	30	T1S2_C2 CLI. curve temp.
00	31	Water pressure
00	32	Water flow

Operation parameter		
Unit	NO.	
00	33	Heat pump capacity
00	34	ODU current
00	35	ODU voltage
00	36	DC voltage

Operation parameter		
Unit	NO.	
00	53	Pump_I total run time
00	54	IBH total run time
00	55	IBH2 total run time
00	56	TBH total run time

Operation parameter		
Unit	NO.	
00	37	DC current
00	38	Power consump.
00	39	SV1
00	40	SV2

Operation parameter		
Unit	NO.	
00	57	AHS total run time
00	58	IDU software
00	59	ODU software
00	60	HMI software

Operation parameter		
Unit	NO.	
00	41	SV3
00	42	Pump_I
00	43	Pump_O
00	44	Pump_C


Operation parameter		
Unit	NO.	
00	61	Pump_I PWM

Operation parameter		
Unit	NO.	
00	45	Pump_S
00	46	Pump_D
00	47	IBH1
00	48	IBH2

Operation parameter		
Unit	NO.	
00	49	TBH
00	50	AHS
00	51	Comp. total run time
00	52	Fan total run time


7. Alarms

In the event of malfunctions, alarms are indicated by the appearance of the “Active alarm” symbol on the multifunction keypad.

To display an alarm, select 

To reset an alarm, remove the cause of the alarm and reset the active alarm.

 Before resetting an alarm identify and remove the cause that generate it.

 Repeated resets can cause irreversible damage. If in doubt, contact a service centre.

Error code	Description	Display
E0	Water flow interruption (E8 10 times)	Wired controller and main PCB
bA	T4 sensor protection our of operating range	Wired controller and main PCB
C7	Over-temperature protection for the IPM module	Wired controller and main PCB
E1	Line-to-line phase or zero phase fault	Wired controller and main PCB For three-phase units
E2	Communication fault between user interface and hydraulic module	Wired controller and main PCB
E3	T1 water outlet temperature sensor failure	Wired controller and main PCB
E4	T5 water tank water temperature sensor failure	Wired controller and main PCB
E5	T3 unit temperature sensor failure	Wired controller and main PCB
E6	T4 room temperature sensor failure	Wired controller and main PCB
E7	Inertial tank Tbt sensor failure	Wired controller and main PCB
E8	Water flow failure	Wired controller and main PCB
E9	Th temperature sensor failure	Wired controller and main PCB
EA	Discharge temperature sensor failure	Wired controller and main PCB
Eb	Tsolar sensor failure	Wired controller and main PCB
EC	DHW additional tank T5_2 sensor failure (reserved)	Wired controller and main PCB
Ed	Tw_in water inlet temperature sensor failure	Wired controller and main PCB
F1	DC bus low voltage protection	Wired controller and main PCB
FC1	Outdoor unit TL outlet temperature sensor failure	Wired controller and main PCB
H0	Main control PCB communication fault	Wired controller and main PCB
H1	Communication fault between main control board and inverter board	Wired controller and main PCB
H2	Gas side refrigerant T2 temperature sensor failure	Wired controller and main PCB
H3	Liquid side refrigerant T2B temperature sensor failure	Wired controller and main PCB
H4	3 (L1) warnings in 1 hour	Wired controller and main PCB
H5	Ta temperature sensor failure	Wired controller and main PCB
H6	DC fan failure	Wired controller and main PCB
H7	Abnormal power supply voltage	Wired controller and main PCB
H8	H-SEN high pressure sensor failure	Wired controller and main PCB
H9	Tw2 sensor failure	Wired controller and main PCB
HA	Tw_out plate exchanger outlet temperature sensor failure	Wired controller and main PCB
Hb	Three consecutive PP protection and Twout < 7°C faults; reset due to power failure	Wired controller and main PCB
Hd	Slave and master communication fault	Wired controller and main PCB
HE	Communication fault between hydraulic module and hydraulic module adapter board	Wired controller and main PCB
HF	Unit EEPROM failure	Wired controller and main PCB
HH	H6 failure 10 consecutive times in 120 minutes (reset after shut down)	Wired controller and main PCB
HP	Cooling mode low pressure protection	Wired controller and main PCB

Error code	Description	Display
J11	Instantaneous phase current control protection	Main PCB
J12	30 s continuous phase current control protection	Main PCB
J1E	Hardware overcurrent protection	Main PCB
J2E	Overheating protection	Main PCB
J31	Bus voltage too high fault	Main PCB
J32	Bus voltage too high fault	Main PCB
J3E	Bus voltage too low fault	Main PCB
J43	Abnormal phase current sampling bias	Main PCB
J45	Fan motor code mismatch fault	Main PCB
J46	IPM PROTECTION (FO)	Main PCB
J47	Module type mismatch (after testing module resistance)	Main PCB
J52	Motor stall protection	Main PCB
J5E	The motor failed to start	Main PCB
J61	Fan terminal short-circuit protection	Main PCB
J65	IPM short-circuit protection	Main PCB
J6E	Phase loss protection	Main PCB
L11	Instantaneous phase current control protection	Main PCB
L12	30 s continuous phase current control protection	Main PCB
L1E	Hardware overcurrent protection	Main PCB
L2E	Overheating protection	Main PCB
L31	Bus voltage too high fault	Main PCB
L32	Bus voltage too high fault	Main PCB
L34	Three-phase power supply phase loss fault	Main PCB For three-phase units
L3E	Bus voltage too low fault	Main PCB
L43	Abnormal phase current sampling bias	Main PCB
L45	Fan motor code mismatch fault	Main PCB
L46	IPM Protection (FO)	Main PCB
L47	Module type mismatch	Main PCB
L52	Motor stall protection	Main PCB
L5E	The motor failed to start	Main PCB
L61	Compressor terminal short-circuit protection	Main PCB
L65	IPM short-circuit protection	Main PCB
L6E	Phase loss protection	Main PCB
LB7	PEDbH fault	Main PCB
LBE	High pressure switch action	Main PCB
LC1	Instantaneous PFC software protection overcurrent	Main PCB For three-phase units
LC2	30 s continuous PFC software control protection	Main PCB For three-phase units
LC3	PFC low voltage protection	Main PCB For three-phase units

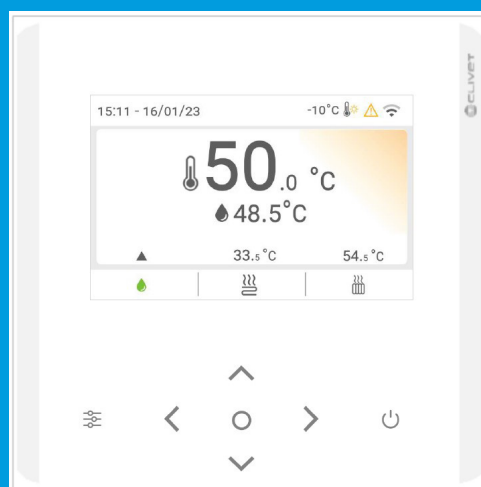
Error code	Description	Display
LC4	The PFC power factor is below 0.8	Main PCB For three-phase units
LC5	Overcurrent protection with valid PFC value	Main PCB For three-phase units
LC6	Hardware overcurrent protection of PFC1 channel	Main PCB For three-phase units
LC7	Hardware overcurrent protection of PFC2 channel	Main PCB For three-phase units
LC8	Hardware overcurrent protection of PFC3 channel	Main PCB For three-phase units
LC9	PFC module overheating protection	Main PCB For three-phase units
LCA	PFC module CBC overcurrent fault protection	Main PCB For three-phase units
LCB	PFC bus or PFC semibus overvoltage	Main PCB For three-phase units
LCC	PFC IGBT short circuit	Main PCB For three-phase units
LCD	Abnormal PFC announcement sampling distortion	Main PCB For three-phase units
LCE	PFC hardware overcurrent protection	Main PCB For three-phase units
P0	Low pressure protection	Wired controller and main PCB
P1	High pressure switch protection	Wired controller and main PCB
P3	Compressor overcurrent protection	Wired controller and main PCB
P4	Compressor overheating protection	Wired controller and main PCB
P5	Twin-Twout, Twout-Twin protection or water supply temperature too high	Wired controller and main PCB
Pb	Antifreeze	Main PCB
Pd	Condensing overheating protection	Wired controller and main PCB
PP	Abnormal temperature difference between water inlet and outlet	Wired controller and main PCB



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KEYPAD

Installer section



Installer section

8. User interface installation

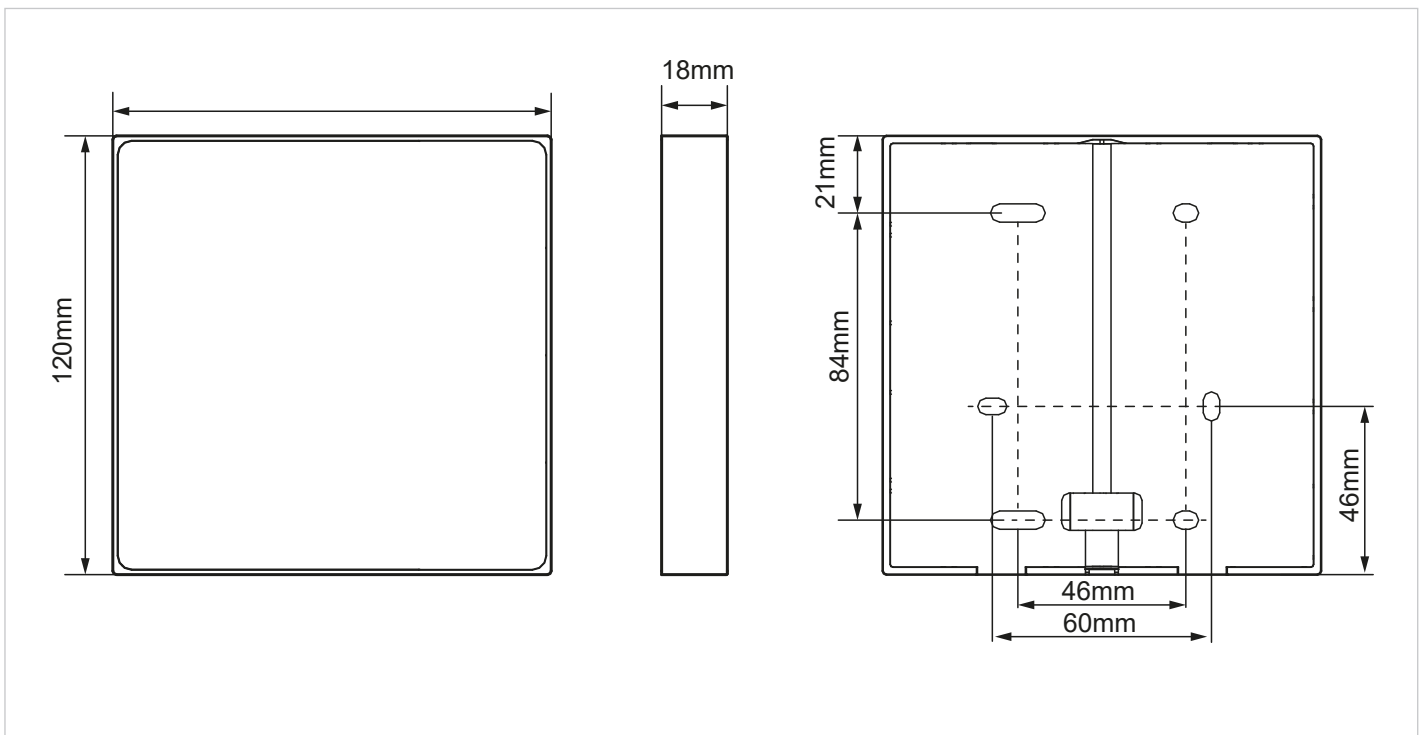
8.1 Prerequisites

Do not install:

- ⊖ Near to heat sources.
- ⊖ In points exposed to direct solar radiation.
- ⊖ In a position exposed to air coming through openings or diffusers.
- ⊖ Behind curtains or furniture.
- ⊖ Next to doors and windows to the outside.
- ⊖ On walls crossed by chimneys or heating pipes.
- ⊖ On outdoor walls.
- ⊖ In environments with a strong presence of oil, steam or

gaseous sulphides.

- ⚠ Failure to do so may result in damage to the controller and malfunction.
- ⚠ The wired remote controller circuit is low voltage.
- ⚠ Do not connect to a normal 220V/380V circuit, nor place it in the same wiring conduit as such a circuit.



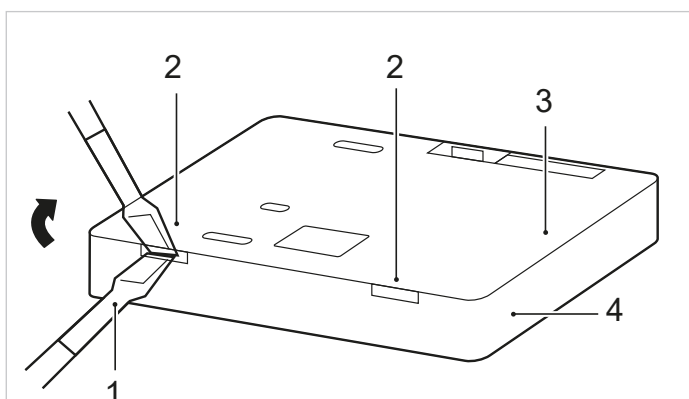
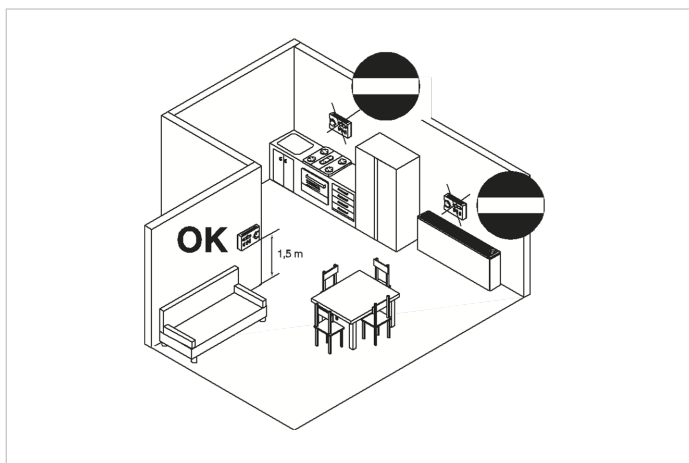
Num.	Name	Quantity	Notes
1	Wired controller	1	
2	Round head screw	4	For wall assembly
3	Phillips round head screw	2	For electrical box assembly
4	Phillips screw, M4 x 25	2	For electrical box assembly
5	Plastic support bar	4	For wall assembly

Check that:

- the choice of installation point is crucial for environmental comfort and power consumption

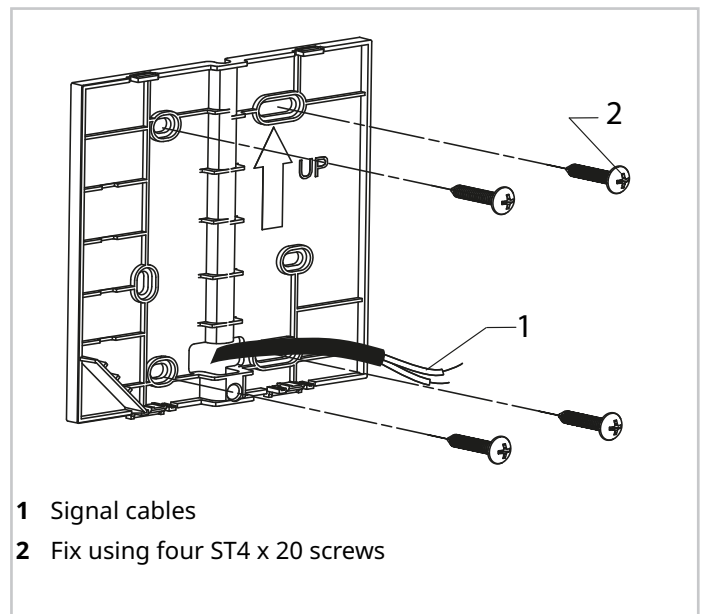
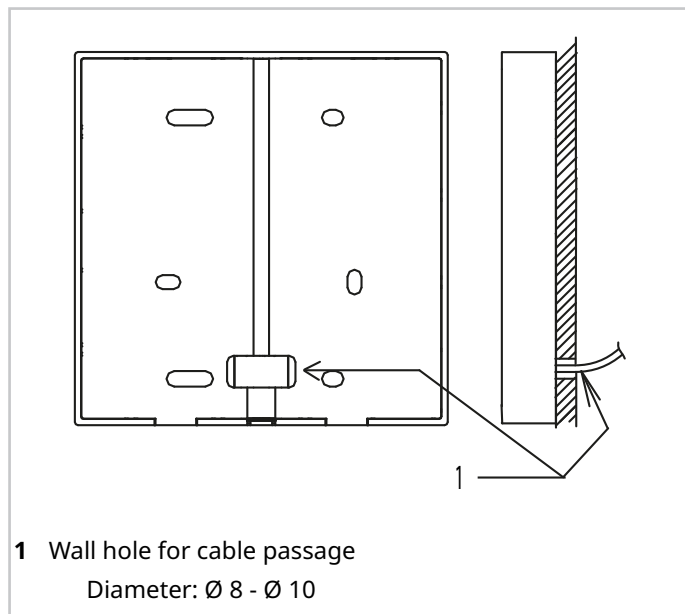
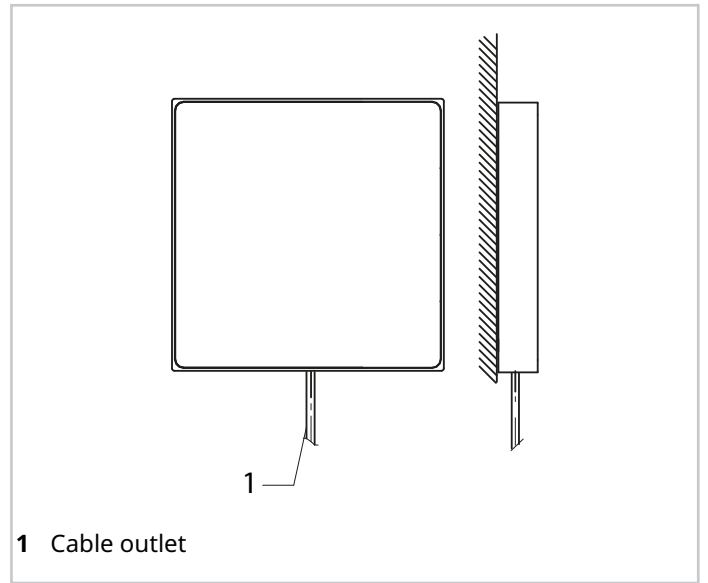
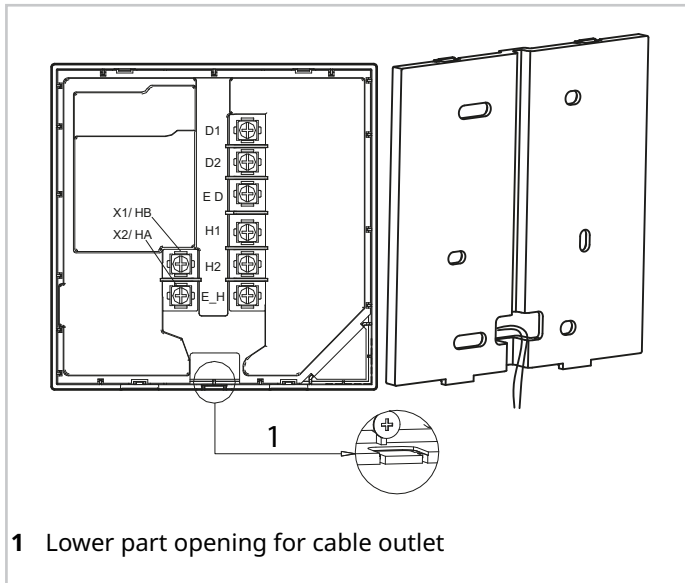
⚠ The thermostat must be fitted:

- in a room with average temperature and humidity conditions, representative of the other rooms
- 150 cm high
- preferably on an internal wall

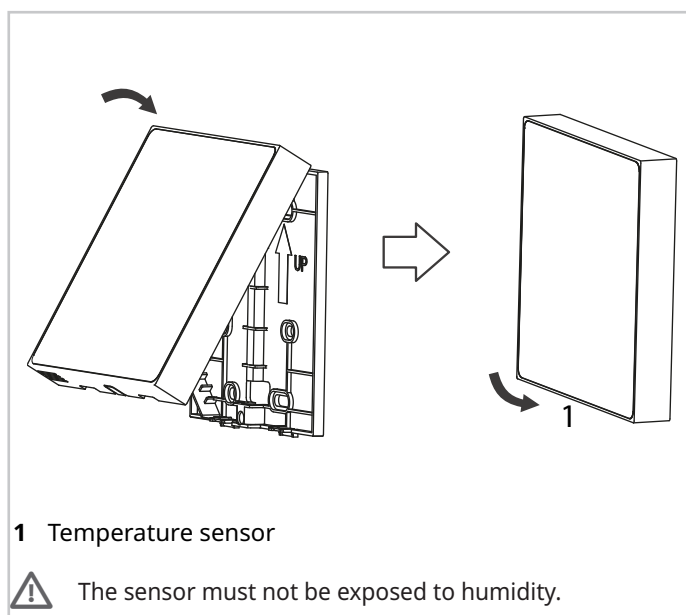
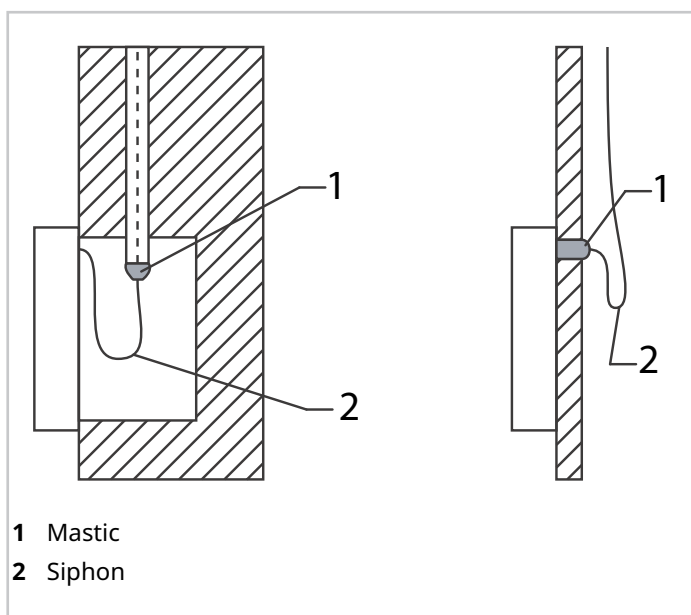
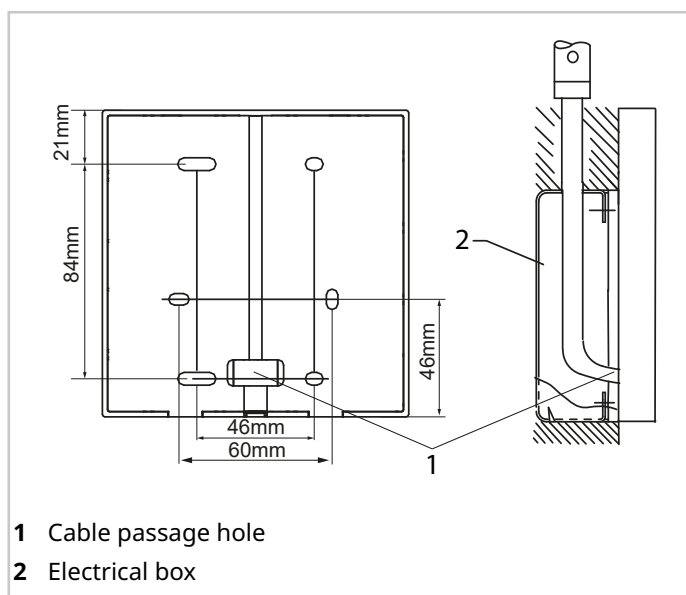
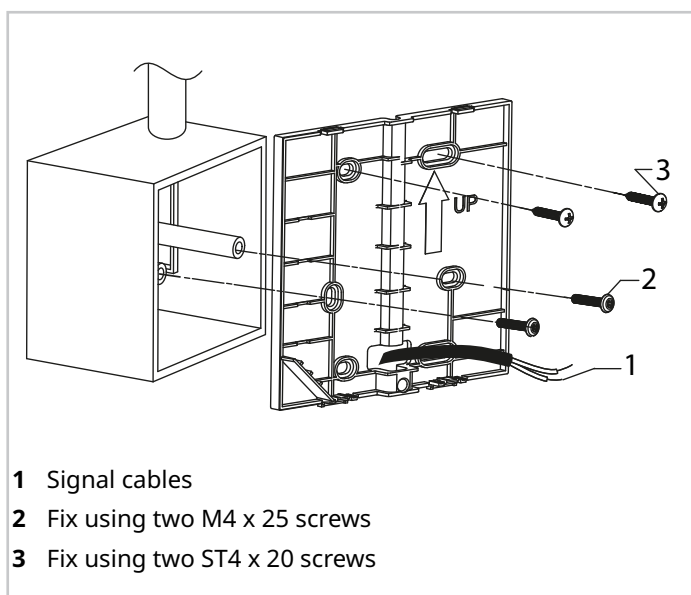


- 1 Flat screwdriver
- 2 Leverage point
- 3 Back cover
- 4 Front cover

8.2 Wall-mounted installation

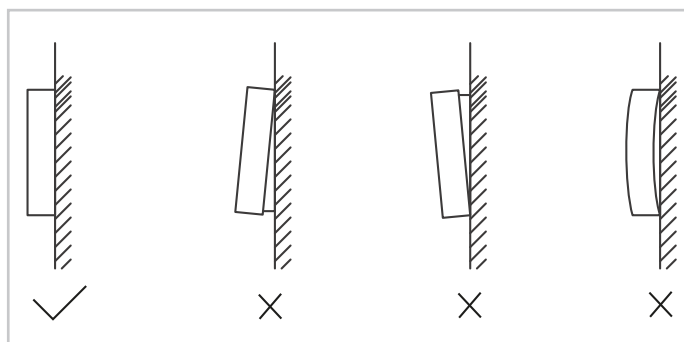


8.3 Installation in an uncased box



⚠ Prevent water from entering the wired controller, use siphons and mastic to seal the wire connectors during installation.

⚠ Do not crush the communication wire during installation.



⚠ Over-tightening the screw will buckle the back cover.

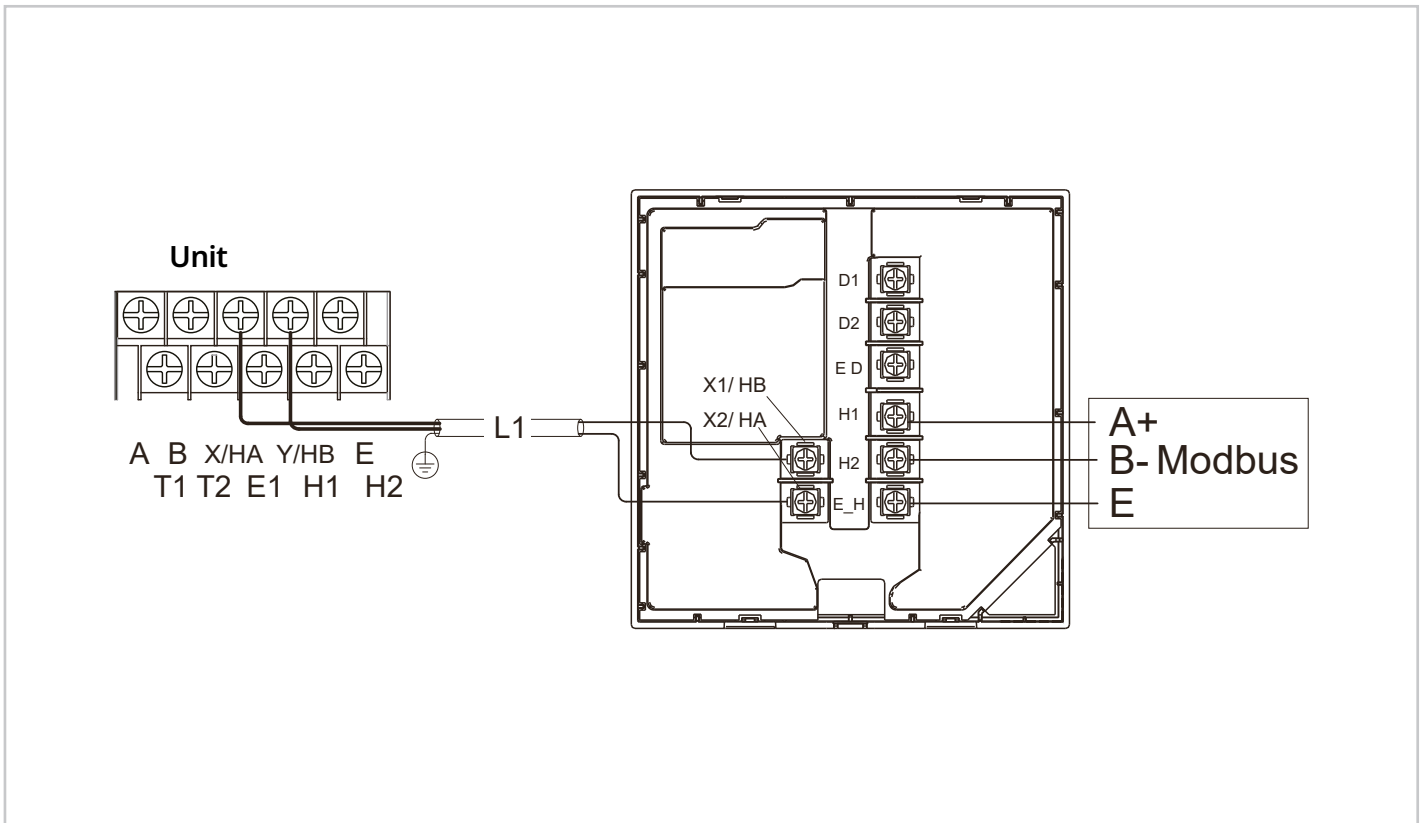
8.4 Electrical connections

The user interface can also be used as a room thermostat.

i Use a shielded wire and connect to earth. This appliance supports the MODBUS RTU communication protocol.


Check that:


- all components are present
- the shielded cable is firmly connected to earth, otherwise transmission problems will occur
- the shielded cable is not cut to connect it to an extension cord, use a terminal block if necessary
- a megger is not used to check the insulation of the signal wire when the connection is completed



Component	Type
Cable	2-wire shielded
Cable section (mm2)	0,75
Maximum cable length (m)	50
Input voltage (HA/HB)	18 VAC

9. Configuration

 The unit must be configured for optimal operation before it can be put into service.


 Configuration entails a Technician adjusting the settings and parameters according to the type of system, climatic conditions, accessories installed and the Customer's usage preferences.


The unit is equipped with a user interface (hereafter also called HMI) to be installed on site and used to manage the functions.


The user interface has a built-in temperature probe for possible use as a thermostat.

It is designed to have different login levels according to the settings to be controlled:

- open-login functions are designed for customer-specific settings
- protected login for setup by a specialised technician

 It is advised against using special characters (e.g. punctuation, spaces, etc.) in the WLAN name.

 If the router or network password is changed, it may be necessary to delete the units linked to the App and pair them again.

 The appearance and functions of the App may differ from how they are in this document depending on the release of post-publication updates.

9.1 Switch-on and language selection

When the unit is switched on for the first time, the HMI will initialize the system and display the percentage of completion (1%~99%): the HMI cannot be used during this process. The HMI then prompts you to select the system language from those available:

EN	FR	IT	ES	PL	PT
GE	NL	RO	RU	TR	GR
SE	SI	CS	SK		

9.2 Date and hour

Set the current date and time on the keypad.



9.3 Terminology used

The terms related to this unit are shown in the table below


Parameter	Description
ACS	Domestic hot water
AHS	Backup boiler
HMI	User interface
IBH	Backup electric heater
OFN	Oxygen-Free-Nitrogen
P _i	Unit pump or Zone 1 pump (for double zone systems)
P _o	Secondary circuit pump (or Zone 1 pump for double zone systems)
P _c	Zone 2 pump (for double zone systems)
P _d	DHW recirculation pump
P _s	Solar circuit pump
P _x	Defrosting status or alarm status
Pe	Evaporation pressure in Cooling or Condensation pressure in Heating
SV1	3-way circuit/DHW diverter valve
SV2	3-way diverter valve for direct double zone systems
SV3	3-way mixing valve for mixed circuit
TBH	Backup electric heater for DHW tank
T1	Water supply temperature from additional heating source (with IBH heater or AHS boiler)
T2	Refrigerant temperature entering the user side exchanger (plate heat exchanger) in Cooling mode (or leaving in Heating mode)
T3	Refrigerant temperature leaving the source exchanger (coil) in Cooling mode (or entering in Heating mode)
T4	Outdoor air temperature
T5	DHW tank temperature
T1S	Water supply temperature setpoint
Ta	Room air temperature, detected by the probe in the HMI
Tbt1	Temperature of the upper part of the inertial storage tank
TBH	Backup electric heater for DHW (Domestic Hot Water) storage tank
Th	Compressor suction refrigerant temperature
Tp	Compressor discharge refrigerant temperature
Tsolar	Water temperature in the solar thermal circuit
Tw2	Water supply temperature for the mixed zone (for double zone systems)
TWin	Unit water return temperature
TWout	Unit water supply temperature

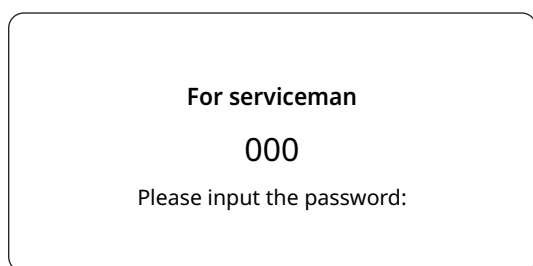
9.4 Opening the “For serviceman” menu

To access:

- ▶ press  +  for 3 seconds
- ▶ enter the password and confirm

After modifications:

- ▶ press 
- the confirmation page is displayed
- ▶ select YES



9.5 Menu structure

1 DHW settings

- 1.1 DHW mode
- 1.2 Disinfection
- 1.3 DHW priority
- 1.4 Pump_D
- 1.5 DHW priority time set
- 1.6 dT5_ON
- 1.7 dT1S5
- 1.8 T4DHWMAX
- 1.9 T4DHWMIN
- 1.10 t_INTERVAL_DHW
- 1.11 T5S_DISINFECT
- 1.12 t_DI_HIGHTEMP
- 1.13 t_DI_MAX
- 1.14 t_DHWHP_RESTRICT
- 1.15 t_DHWHP_MAX
- 1.16 PUMP_D TIMER
- 1.17 PUMP_D RUNNING TIME
- 1.18 PUMP_D DISINFECT
- 1.19 ACS function

2 Cooling setting

- 2.1 Cooling mode
- 2.2 t_T4_FRESH_C
- 2.3 T4CMAX
- 2.4 T4CMIN

- 2.5 dT1SC
- 2.6 dTSC
- 2.7 t_INTERVAL_C
- 2.8 Zone 1 C-emission
- 2.9 Zone 2 C-emission

3 Heating setting

- 3.1 Heating mode
- 3.2 t_T4_FRESH_H
- 3.3 T4HMAX
- 3.4 T4HMIN
- 3.5 dT1SH
- 3.6 dTSH
- 3.7 t_INTERVAL_H
- 3.8 Zone 1 H-emission
- 3.9 Zone 2 H-emission
- 3.10 Force defrost

4 Auto mode setting

- 4.1 T4AUTOCMIN
- 4.2 T4AUTOHMAX

5 Temp. type setting

- 5.1 Water flow temp.
- 5.2 Room temp.
- 5.3 Double zone

6 Room thermostat setting

- 6.1 Room thermostat
- 6.2 Mode set priority

7 Other heat source

- 7.1 IBH function
- 7.2 Check IBH
- 7.3 dT1_IBH_ON
- 7.4 t_IBH_DELAY
- 7.5 T4_IBH_ON
- 7.6 P_IBH1
- 7.7 P_IBH2
- 7.8 AHS FUNCTION
- 7.9 AHS_PUMPI CONTROL
- 7.10 dT1_AHS_ON
- 7.11 t_AHS_DELAY
- 7.12 T4_AHS_ON
- 7.13 EnSwitchPDC
- 7.14 GAS-COST
- 7.15 ELE-COST

- 7.16 MAX-SETHEATER
 - 7.17 MIN-SETHEATER
 - 7.18 MAX-SIGHEATER
 - 7.19 MIN-SIGHEATER
 - 7.20 TBH FUNCTION
 - 7.21 dT5_TBH_OFF
 - 7.22 t_TBH_DELAY
 - 7.23 T4_TBH_ON
 - 7.24 P_TBH
 - 7.25 Funzione solare
 - 7.26 Controllo solare
 - 7.27 Deltatsol
-

8 Holiday away setting

- 8.1 T1S_H.A_H
 - 8.2 T5S_H.A_DHW
-

9 Service call

- 9.1 Phone number
 - 9.2 Mobile number
-

10 Restore factory settings

11 Test run

12 Special functions

- 12.1 Preheating for floor T1S
 - 12.2 Floor drying up
-

13 Auto restart

- 13.1 Auto restart cooling/heating mode
 - 13.2 Auto restart DHW mode
-

14 Power input limitation

- 14.1 Power input limitation
-

15 Auto restart

- 15.1 M1M2
 - 15.2 Smart grid
 - 15.3 T1T2
 - 15.4 Tbt
 - 15.5 P_X PORT
-

16 Cascade setting

- 16.1 PER_START
 - 16.2 TIME_ADJUST
-

17 HMI address setting

- 17.1 HMI setting
 - 17.2 HMI address for BMS
 - 17.3 Stop BIT
-

18 Common setting

- 18.1 t_DELAY PUMP
 - 18.2 POM.ANTIBL_t1
 - 18.3 t2_ANTILOCK PUMP RUN
 - 18.4 SV ANTIBL_t1
 - 18.5 t2-ANTILOCK SV
 - 18.6 Ta-regol.
 - 18.7 F-PIPE LENGTH
 - 18.8 PUMP_I SILENT OUTPUT
 - 18.9 Energy metering
 - 18.10 Pump_O
-

19 Clear energy data

20 Intelligent function settings


- 20.1 Energy correction
-

21 C2 fault restore

9.6 Parameters

The unit leaves the factory with the unit parameters set by default to values capable of fulfilling most installation situations. For detailed customisation of the system, however, it is possible to make changes; a list of all the unit parameters, with the available settings, is given below.

Depending on the configuration of the unit, some parameters are visible and others are not.

 Access to parameters or modifications are only allowed to a qualified serviceman who assumes all responsibility, in case of doubt contact Clivet. For any changes not permitted or not approved by Clivet, Clivet declines any responsibility for malfunctions and/or damage to the unit/system and to people

Parameter	Description	Default	Min.	Max	UM
DHW mode	Enable or disable DHW mode: 0=NON, 1=YES	1	0	1	/
Disinfection	Enable or disable the disinfect mode: 0=NON, 1=YES	1	0	1	/
DHW priority	Enable or disable DHW priority mode: 0=NON, 1=YES	1	0	1	/
Pump_D	Enable or disable DHW pump mode: 0=NON, 1=YES	0	0	1	/
DHW priority time set	Enable or disable DHW priority time setting: 0=NON, 1=YES	0	0	1	/
dT5_ON	The temperature difference for starting DHW mode	10	1	30	°C
dT1S5	The difference value between Twout and T5 in DHW mode	10	5	40	°C
T4DHWMAX	The maximum ambient temperature at which the heat pump can operate for domestic water heating	43	35	43	°C
T4DHWMIN	The minimum ambient temperature at which the heat pump can operate for domestic water heating	-10	-25	30	°C
t_INTERVAL_DHW	The start time interval of the compressor in DHW mode	5	5	5	Minutes
T5S_DISINFECT	The target temperature of water in the domestic hot water tank in DISINFECT mode	65	60	70	°C
t_DI_HIGHTEMP	The time for which the highest temperature of water in the domestic hot water tank in DISINFECT mode lasts	15	5	60	Minutes
t_DI_MAX	The maximum time for which disinfection lasts	210	90	300	Minutes
t_DHWHP_RESTRICT	The operating time for heating/cooling	30	10	600	Minutes
t_DHWHP_MAX	The maximum continuous operating time of the heat pump in DHW PRIORITY mode	90	10	600	Minutes
PUMP_D TIMER	Enable or disable the DHW pump to run as scheduled and to keep running for PUMP RUNNING TIME: 0=NON, 1=YES	1	0	1	/
PUMP_D RUNNING TIME	The certain time for which the DHW pump keeps running	5	5	120	Minutes
PUMP_D DISINFECT	Enable or disable the DHW pump to operate when the unit is in DISINFECT mode and T5 is larger than or equal to T5S_DI-2: 0=NON, 1=YES	1	0	1	/
ACS function	Enable or disable the cooling mode:0=NON,1=YES	0	0	1	/
Cooling mode	Enable or disable the cooling mode:0=NON,1=YES	1	0	1	/
t_T4_FRESH_C	The refresh time of climate-related curves in cooling mode	0,5	0,5	6	Hours
T4CMAX	The highest ambient operating temperature in cooling mode	52	35	52	°C
T4CMIN	The lowest ambient operating temperature in cooling mode	10	-5	25	°C
dT1SC	The temperature difference for starting the heat pump (T1)	5	2	10	°C
dTSC	The temperature difference for starting the heat pump (Ta)	2	1	10	°C
t_INTERVAL_C	Compressor operation delay in cooling mode	5	5	5	Minuti
Zone 1 C-emission	The type of Zone 1 terminal for cooling mode: 0=FCU (fan coil unit), 1=RAD. (radiator), 2=FLH (floor heating)	0	0	2	/
Zone 2 C-emission	The type of Zone 2 terminal for cooling mode: 0=FCU (fan coil unit), 1=RAD. (radiator), 2=FLH (floor heating)	0	0	2	/
Heating mode	Enable or disable the heating mode: 0=NON, 1=YES	1	0	1	/
t_T4_FRESH_H	The refresh time of climate-related curves in heating mode	0,5	0,5	6	Ore
T4HMAX	The maximum ambient operating temperature in heating mode	25	20	35	°C

Configuration

Parameter	Description	Default	Min.	Max	UM
T4HMIN	The minimum ambient operating temperature in heating mode	-15	-25	30	°C
dT1SH	The temperature difference for starting the unit (T1)	5	2	20	°C
dTSH	The temperature difference for starting the unit (Ta)	2	1	10	°C
t_INTERVAL_H	Compressor operation delay in heating mode	5	5	5	Minuti
Zone 1 H-emission	The type of Zone 1 terminal for heating mode: 0=FCU (fan coil unit), 1=RAD. (radiator), 2=FLH (floor heating)	1	0	2	/
Zone 2 H-emission	The type of Zone 2 terminal for heating mode: 0=FCU (fan coil unit), 1=RAD. (radiator), 2=FLH (floor heating)	2	0	2	/
Force defrost	Enable or disable the force defrost: 0=NON, 1=YES.	0	0	1	/
T4AUTOCMIN	The minimum operating ambient temperature for cooling in auto mode	25	20	29	°C
T4AUTOHMAX	The maximum operating ambient temperature for heating in auto mode	17	10	17	°C
Water flow temp.	Enable or disable the WATER FLOW TEMR.: 0=NON, 1=YES	1	0	1	/
Room temp.	Enable or disable the ROOM TEMP.: 0=NON, 1=YES	0	0	1	/
Double zone	Enable or disable the DOUBLE ZONE: 0=NON, 1=YES	0	0	1	/
Room thermostat	The style of room thermostat: 0=NON, 1=MODE SET, 2=ONE ZONE, 3=DOUBLE ZONE	0	0	3	/
Mode set priority	Select the priority mode in ROOM THERMOSTAT: 0=HEAT, 1=COOL"	0	0	1	/
IBH function	Select the mode of IBH (BACKUP HEATER): 0=HEAT+DHW, 1=HEAT	0 (ACS=abilitata) 1 (ACS=non abilitata)	0	1	/
Check IBH	IBH/AHS installation location: 0=pipe loop	0	0	0	/
dT1_IBH_ON	The temperature difference between T1S and T1 for starting the backup heater	5	2	10	°C
t_IBH_DELAY	The time for which the compressor has run before startup of the first step backup heater	30	15	120	Minuti
T4_IBH_ON	The ambient temperature for starting the backup heater	-5	-15	30	°C
P_IBH1	Power input of IBH1	0,0	0,0	20.0	kW
P_IBH2	Power input of IBH2	0,0	0,0	20.0	kW
AHS FUNCTION	Enable or disable the AHS (AUXILIARY HEATING SOURCE) function: 0=NON,"1=HEAT, 2=HEAT+DHW	0	0	2	/
AHS_PUMPI CONTROL	Select the pump operating status when only AHS runs: 0=RUN, 1=NOT RUN	0	0	1	/
dT1_AHS_ON	The temperature difference between T1S and T1 for starting the auxiliary heating source	5	2	20	°C
t_AHS_DELAY	The time for which the compressor has run before startup of the additional heating source	30	5	120	Minutes
T4_AHS_ON	The ambient temperature for starting the additional heating source	-5	-15	30	°C
EnSwitchPDC	Enable or disable automatic switch of heat pump and auxiliary heating source based on running cost: 0=NON, 1=YES	0	0	1	/
GAS-COST	Price of gas	0,85	0,00	5.00	price/m ³
ELE-COST	Price of electricity	0,20	0,00	5.00	price/kWh
MAX-SETHEATER	Maximum set temperature of additional heating source	80	0	80	°C
MIN-SETHEATER	Minimum set temperature of additional heating source	30	0	80	°C
MAX-SIGHEATER	The voltage corresponding to the maximum set temperature of additional heating source	10	0	10	V

Parameter	Description	Default	Min.	Max	UM
MIN-SIGHEATER	The voltage corresponding to the minimum set temperature of additional heating source	3	0	10	V
FUNZIONE TBH	Enable or disable the TBH (TANK BOOSTER HEATER) function: 0=NON, 1=YES	1	0	1	/
dT5_TBH_OFF	The temperature difference between T5 and T5S (the set water tank temperature) for turning the booster heater off	5	0	10	°C
t_TBH_DELAY	The time for which the compressor has run before startup of the booster heater	30	0	240	Minutes
T4_TBH_ON	The ambient temperature for starting the tank booster heater	5	-5	50	°C
P_TBH	Power input of TBH	2	0	20	kW
Solar function	Enable or disable the SOLAR function: 0=NON, 1=ONLY SOLAR, 2=SOLAR+HP (HEAT PUMP)	0	0	2	/
Solar control	Solar pump (pump_s) control: 0=Tsolar, 1=SL1SL2	0	0	1	/
Deltatsol	The temperature deviation for enabling SOLAR	10	5	20	°C
T1S_H.A_H	The target outlet water temperature for space heating in HOLIDAY AWAY mode	25	20	25	°C
T5S_H.A_DHW	The target temperature for heating domestic hot water in HOLIDAY AWAY mode	25	20	25	°C
Preheating for floor	Enable or disable floor preheating: 0=NON, 1=YES	0	0	1	/
T1S	The set outlet water temperature during first floor preheating	25	25	35	Hours
t_ARSTH	Running time for first floor preheating	72	48	96	/
Floor drying up	Enable or disable floor drying: 0=NON, 1=YES	0	0	1	/
t_Dryup	Temp-up days for floor drying	8	4	15	Day
t_Highpeak	Days for floor drying	5	3	7	Day
t_Drydown	Temp-down days for floor drying	5	4	15	Day
t_Drypeak	Outlet water temperature for floor drying	45	30	23:30	hours/ min
Start time	The start time of floor drying	00:00	00:00	23:30	hours/ min
Start date	The start date of floor drying	Current date+1	Current date+1	31/12/2099	gg/mm/ aaaa
Auto restart cooling/heating mode	Enable or disable the auto restart of cooling/heating mode: 0=NON, 1=YES	1	0	1	/
Auto restart DHW mode	Enable or disable the auto restart of DHW mode: 0=NON, 1=YES	1	0	1	/
Power input limitation	The type of power input limitation	1	1	8	/
M1M2	Define the function of the M1M2 switch: 0=REMOTE ON/OFF, 1=TBH ON/OFF, 2=AHS ON/OFF	0	0	2	/
Smart grid	Enable or disable the SMART GRID: 0=NON, 1=YES	0	0	1	/
T1T2	Control options of Port T1T2: 0=NON, 1=RT/Ta_PCB	0	0	1	/
Tbt	Enable or disable the TBT: 0=NON, 1=YES	0	0	1	/
P_X PORT	Select the function of P_X PORT: 0=DEFORST, 1=ALARM	0	0	1	/
PER_START	Percentage of operating units among all units	10	10	100	%
TIME_ADJUST	Time interval for determining the necessity of unit loading/unloading	5	1	60	Minutes
HMI setting	Choose the HMI: 0=MASTER	0	0	0	/
HMI address for BMS	Set the HMI address code for BMS	1	1	255	/
Stop BIT	Upper computer stop bit: 1=STOP BIT1, 2=STOP BIT2	1	1	2	/

Configuration

Parameter	Description	Default	Min.	Max	UM
t_DELAY PUMP	The time for which the compressor has run before startup of the pump	2.0	0,5	20	Minutes
POM.ANTIBL_t1	The pump anti-lock interval	24	5	48	Hours
t2_ANTILOCK PUMP RUN	The pump anti-lock running time	60	0	300	Seconds
SV ANTIBL_t1	The valve anti-lock interval	24	5	48	Hours
t2-ANTILOCK SV	The valve anti-lock running time	30	0	120	Seconds
Ta-regol.	The corrected value of Ta inside the wired controller	-2	-10	10	°C
F-PIPE LENGTH	Select the total length of the liquid pipe (F-PIPE LENGTH): 0=F-PIPE LENGTH<10m, 1=F-PIPE LENGTH>=10m	0	0	1	/
PUMP_I SILENT OUTPUT	The Pump_I max output limitation	100	50	100	%
Energy metering	Enable or disable the energy analysis: 0=NON, 1=YES	1	0	1	/
Pump_O	Additional circulation pump P_o operation: 0=ON (keep running) 1=Auto (controlled by the unit)	0	0	1	/
Energy correction (heating/DHW)	Energy correction for heating and DHW	0	-50	50	%
Energy correction (cooling)	Energy correction for cooling	0	-50	50	%

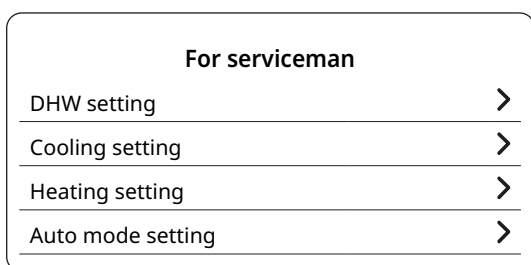
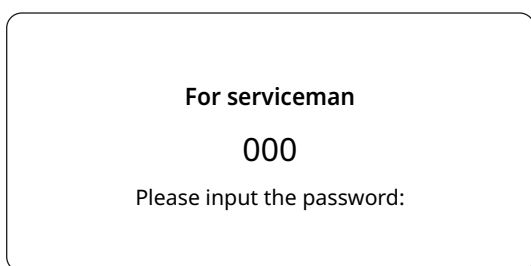
9.7 Opening the "For serviceman" menu

To access:

- ▶ press + for 3 seconds
- ▶ enter the password and confirm

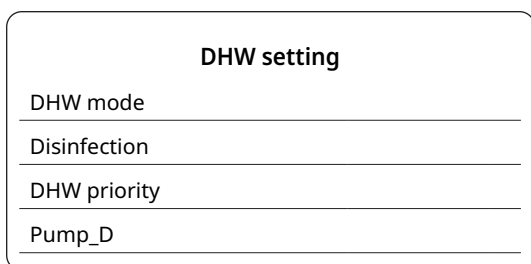
After modifications:

- ▶ press
- the confirmation page is displayed
- ▶ select YES



9.8 DHW (Domestic Hot Water) mode settings

MENU > FOR SERVICEMAN > 1. DHW MODE SETTING



1.1 DHW MODE (standard: 1 - settable: 1/0)

Enables/disables Domestic Hot Water mode

1.2 DISINFECT (standard: 1 - settable: 1/0)

Enables/disables the anti-legionella cycle

1.3 DHW PRIORITY (standard: 1 - settable: 1/0)

Defines whether DHW mode has priority over operation in Heating/Cooling mode

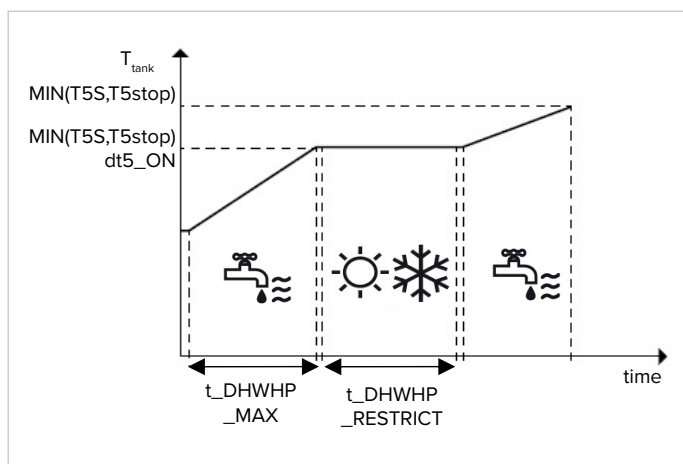
1.4 PUMP_D (standard: 0 - settable: 1/0)

Enables DHW recirculation management by the unit

1.5 DHW PRIORITY TIME SET (standard: 0 - settable: 1/0)

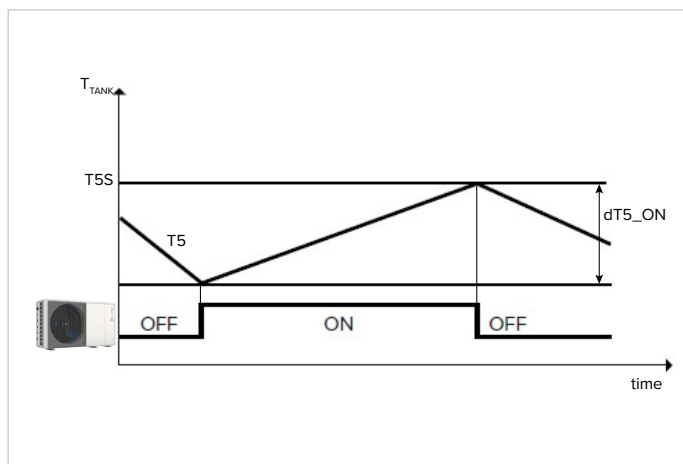
Enables two controls and their respective parameters:

- in the presence of a DHW request, it defines a maximum operating time in Heating/Cooling mode before switching to DHW (managed with parameter $t_{\text{DHWHP_RESTRICT}}$);
- in the presence of a system request, it defines a maximum operating time in DHW before switching to Heating/Cooling mode (managed with parameter $t_{\text{DHWHP_MAX}}$).



1.6 dt5_ON (standard: 10 - settable: 1/30)

Controls activation of the DHW request, defining the temperature range between DHW setpoint (T5S) and DHW storage tank temperature (T5) beyond which the heat pump is to be activated.



DHW is requested when $T5S - T5 \geq dt5_ON$

- A DHW request ends when $T5 \geq T5S$ or when T5 reaches the maximum temperature for DHW in the heat pump T5stop, which is parameterised according to the outdoor temperature T4.

Size	T4 [°C]						
	65÷40	40÷35	35÷30	30÷25	25÷20	20÷15	15÷10
2.1÷8.1	45	48	50	55	56	57	

Size	T4 [°C]						
	10÷5	5÷0	0÷-5	-5÷-10	-10÷-15	-15÷-20	<-20
2.1÷8.1	56	55	52	50	40	35	

i If there is a further request for DHW beyond T5stop, the unit can activate the TBH boiler heater until setpoint T5S is achieved.

1.7 dT1S5 (standard: 10 - settable: 5/40)

Defines the range between the water supply temperature (Twout) and the DHW storage tank temperature (T5). The heat pump in DHW mode will deliver water at $Twout = T5 + dT1S5$.

i If the DHW setpoint (T5S) > 55°C, change the parameter according to the formula $dT1S5 = 65 - T5S$. Setting dT1S5 higher than this criterium makes the unit work faster and less efficient in charging cycles but also means that the unit will go into normal protection before reaching the setpoint with subsequent restart and loss of the benefits of the faster ramp.

1.8 T4DHWMAX (standard: 43 - settable: 35/43)

Defines the maximum outdoor air temperature for which the unit can operate in DHW with heat pump

1.9 T4DHWMIN (standard: -10 - settable: -25/30)

Defines the minimum outdoor air temperature for which the unit can operate in DHW with heat pump.

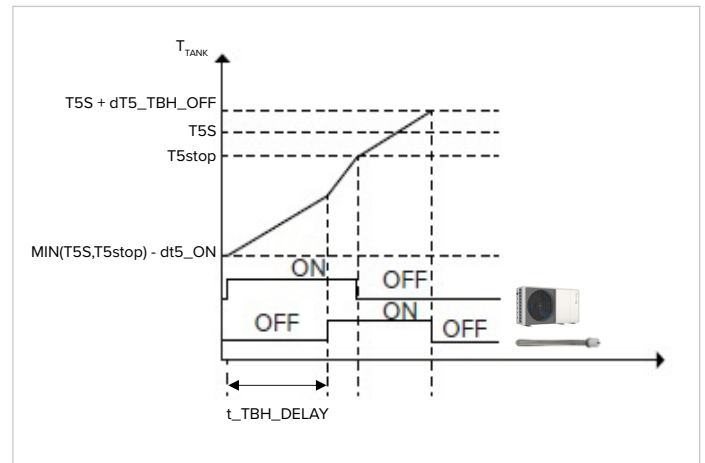
i Below T4DHWMIN, if within the operating range, the unit can produce DHW with the DHW storage tank heater (TBH).

1.10 t_INTERVAL_DHW (standard: 5 - not adjustable)

Defines the minimum minutes between compressor shut-down and subsequent restart in DHW mode. Activation logic of heat pump and TBH storage tank heater in DHW mode.

i The activation logics of the DHW storage tank heater (TBH) are automatically managed by the unit.

Activation logic of the DISINFECT (anti-legionella) function.

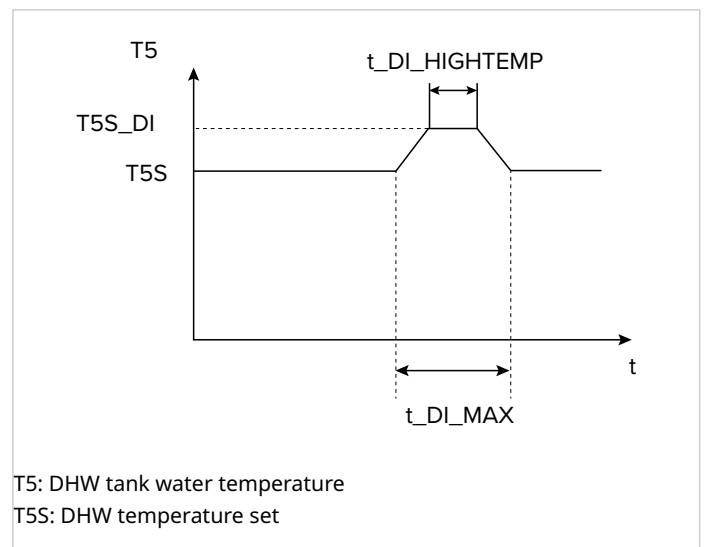


1.11 T5S_DISINFECT (standard: 65 - settable: 60/70)

Defines the temperature to which the unit brings the DHW storage tank in the DISINFECT (anti-legionella) function.

1.12 t_DI_HIGHTEMP (standard: 15 - settable: 5/60)

Defines the minutes for which the unit should keep the DHW tank at temperature T5S_DISINFECT in the DISINFECT (anti-legionella) function.



1.13 t_DI_MAX (standard: 210 - settable: 90/300)

Defines the maximum minutes for which the unit can keep the DISINFECT (anti-legionella) function on.

1.14 t_DHWHP_RESTRICT (standard: 30 - settable: 10/600)

In the presence of a DHW request, it defines the maximum operating minutes of the heat pump in Heating/Cooling mode before switching to DHW mode. Clearly, the parameter only applies if priority has been given to the system.

i During operation in Heating/Cooling mode, the heat pump switches to DHW mode once the system setpoint has been reached or after the minutes in t_DHWHP_RESTRICT have elapsed.

1.15 t_DHWHP_MAX (standard: 90 - settable: 10/600)

In the presence of a Heating/Cooling request, it defines the maximum operating minutes in DHW mode before switching to Heating/Cooling mode. Clearly, the parameter only applies if priority has been given to DHW.

i During operation in DHW mode, the heat pump switches to Heating/Cooling mode once the DHW setpoint has been reached or after the minutes in t_DHWHP_MAX have elapsed.

1.16 TIMER PUMP_D (standard: 1 - settable: 0/1)

Enables hourly scheduling of the DHW circulation pump. The pump schedule can be set by the user.

i The recirculation pump requires a dedicated power supply.

1.17 PUMP_D RUNNING TIME (standard: 5 - settable: 5/120)

Defines the operating minutes of the circulation pump when it is started.

1.18 PUMP_D DISINFECT RUN (standard: 1 - settable: 0/1)

Enables activation of the recirculation pump even during the anti-legionella cycle. Activation of the function is recommended. It becomes mandatory if T5 is located below the additional heater (TBH).

1.19 DWH funcrion (standard: 0 - settable: 1/0)

Reserved parameter, do not change.

9.8.1 Cooling mode settings

MENU > FOR SERVICEMAN > 2. COOLING MODE SETTING

Cooling setting	
Cooling mode	
t_T4_FRESH_C	
T4CMAX	
T4CMIN	

2.1 COOL MODE (standard: 1 - settable: 1/0)

Enables/disables Cooling mode.

2.2 t_T4_FRESH_C (standard: 0.5 - settable: 0.5/6)

Sets the time when the unit updates the climatic curve, adjusting it according to the outdoor air temperature.

2.3 T4CMAX (standard: 52 - settable: 35/52)

Defines the maximum outdoor air temperature for which the unit can operate in Cooling mode. This value should clearly be changed if the unit is used for process cooling. This value should clearly be changed if the unit is used for process cooling.

2.4 T4CMIN (standard: 10 - settable: -5/25)

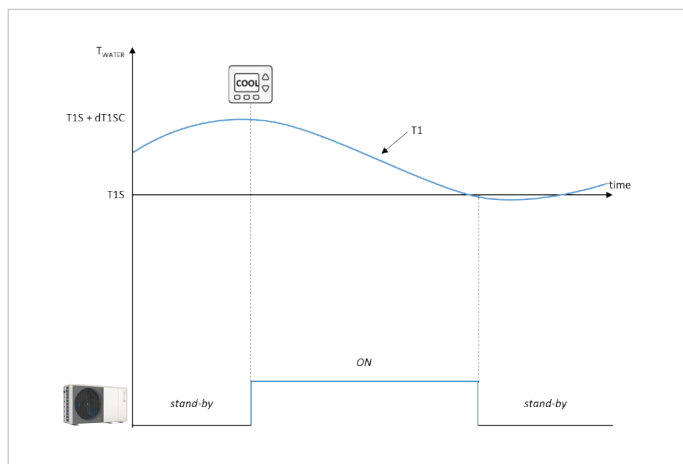
Defines the minimum outdoor air temperature for which the unit can operate in Cooling mode.

This value should clearly be changed if the unit is used for process cooling.

2.5 dt1SC (standard: 5 - settable: 2/10)

Defines the range between the water supply temperature (T1) and the setpoint (T1S) within which the unit starts to operate in Cooling mode.

The heat pump starts when $T1 \geq T1S + dt1SC$ and stops when $T1 \leq T1S$.

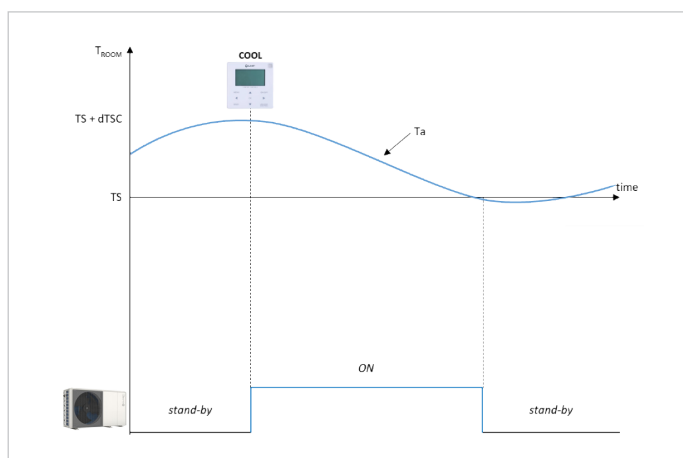


This value is strongly related to the minimum permissible water content of the circuit. A narrower control band can be accepted with a high water volume.

2.6 dtSC (standard: 2 - settable: 1/10)

Defines the range between the room air temperature (Ta) and the setpoint (TS) within which the unit starts to operate in Cooling mode.

The heat pump starts when $Ta \geq TS + dtSC$ and stops when $Ta \leq TS$.



i The parameter is only used if the unit's Cooling mode control is on room air temperature.

2.7 t_INTERVAL_C (standard: 5 - not adjustable)

Defines the minimum minutes between compressor shut-down and subsequent restart in Cooling mode. Among the climate curves that can be set for Cooling mode, a customisable one can be set with logic as shown in the graph.

2.8 ZONE1 C-EMISSION (standard: FLH (2.1-8.1) - settable: FHL/CVC/RAD)

Sets the type of distribution system in Cooling mode of the system's zone 1.

FHL = radiant / FCU = fan coils / RAD = radiators.

2.9 ZONE1 H-EMISSION (standard: FLH (2.1-8.1) - settable: FHL/CVC/RAD)

Sets the type of distribution system in Cooling mode of the system's zone 2.

FHL = radiant / FCU = fan coils / RAD = radiators.

9.9 Heating mode settings

MENU > FOR SERVICEMAN > 3. HEATING SETTING

Heating setting	
Heating mode	
t_T4_FRESH_H	
T4HMAX	
T4HMIN	

3.1 HEAT MODE (standard: 1 - settable: 1/0)

Enables/disables Heating mode.

3.2 t_T4_FRESH_H (standard: 0.5 - settable: 0.5/6)

Sets the time when the unit updates the climatic curve, adjusting it according to the outdoor air temperature.

3.3 T4HMAX (standard: 25 - settable: 20/35)

Defines the maximum outdoor air temperature for which the unit can operate in Heating mode.

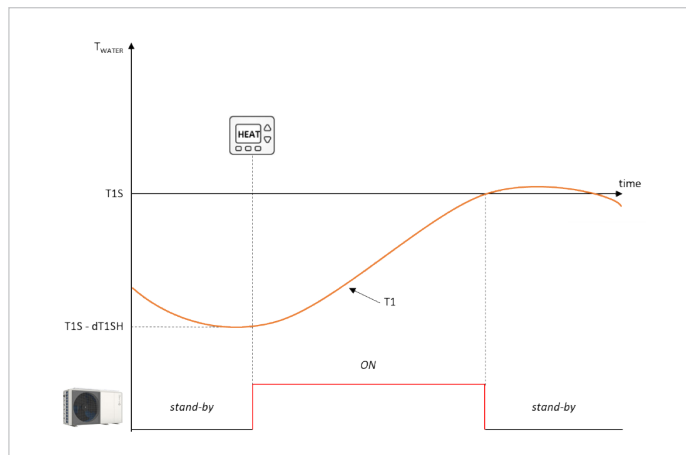
3.4 T4HMIN (standard: -15 - settable: -25/30)

Defines the minimum outdoor air temperature for which the unit can operate in Heating mode.

3.5 dT1SH (standard: 5 - settable: 2/10)

Defines the range between the water supply temperature (T1) and the setpoint (T1S) within which the unit starts to operate in Heating mode.

The heat pump starts when $T1 \leq T1S - dT1SH$ and stops when $T1 \geq T1S$.

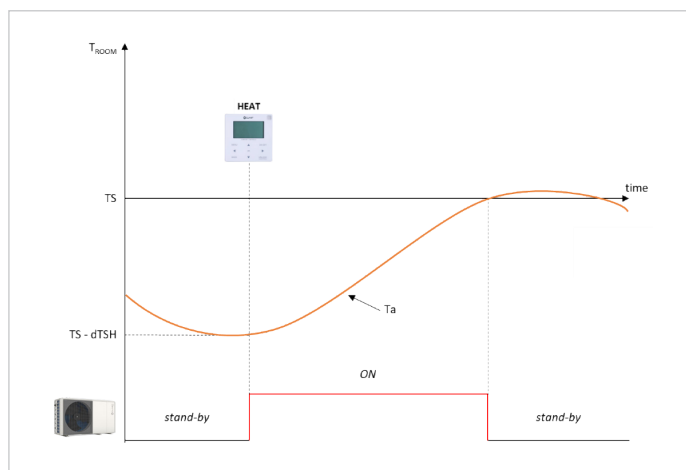


This value is strongly related to the minimum permissible water content of the circuit. A narrower control band can be accepted with a high water volume.

3.6 dTSH (standard: 2 - settable: 1/10)

Defines the range between the room air temperature (Ta) and the setpoint (TS) within which the unit continues to operate in Heating mode.

The heat pump starts when $Ta \leq TS - dTSH$ and stops when $Ta \geq TS$.



The parameter is only used if the unit's Heating mode control is on room air temperature.

3.7 t_INTERVAL_H (standard: 5 - not adjustable)

Defines the minimum minutes between compressor deactivation and subsequent restart in Heating mode.

3.8 ZONE1 H-EMISSION (standard: FLH (2.1-8.1) - settable: FHL/CVC/RAD)

Sets the type of distribution system in Heating mode of the system's zone 1.

FHL = radiant / FCU = fan coils / RAD = radiators.

3.9 ZONE2 H-EMISSION (standard: FLH (2.1-8.1) - settable: FHL/CVC/RAD)

Sets the type of distribution system in Heating mode of the system's zone 2.

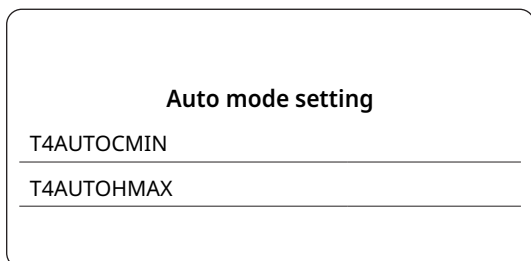
FHL = radiant / FCU = fan coils / RAD = radiators.

3.10 FORCE DEFROST (standard: 0 - settable: 0/1)

Sets the heat pump in defrosting mode with manual command, it runs for 10 minutes and the outlet temperature of the air side exchanger $T3 < 0^{\circ}\text{C}$ lasts for more than 6 minutes.

9.9.1 Automatic mode settings

MENU > FOR SERVICEMAN > 4. AUTO MODE SETTING



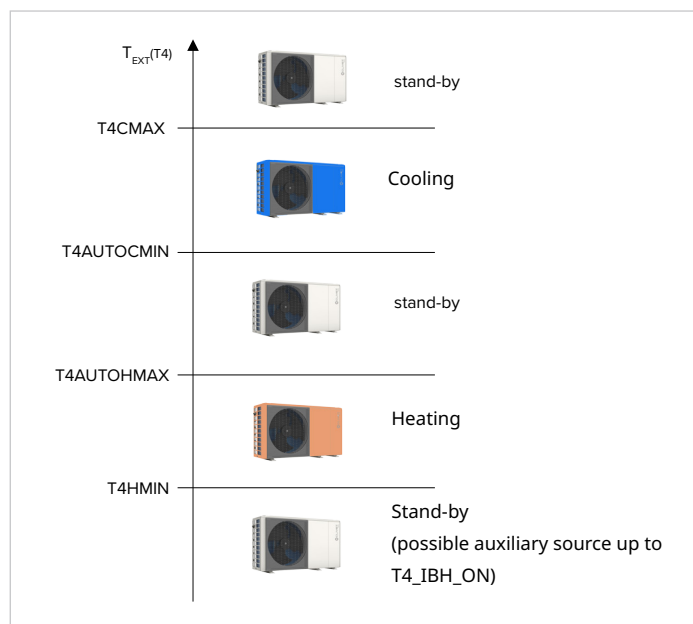
7.21 T4AUTOCMIN (standard: 25 - settable: 20/29)

Defines the minimum outdoor temperature below which the heat pump will not work in automatic Cooling mode.

7.21 T4AUTOHMAX (standard: 17 - settable: 10/17)

Defines the maximum outdoor temperature beyond which the heat pump will not work in automatic Heating mode.

In combination with a possible additional electric heater and the previously set parameters, AUTO mode operation follows this pattern:



9.9.2 Control settings

During the initial start-up phase, the type of control required for the system can be selected.

The unit can be managed with control on:

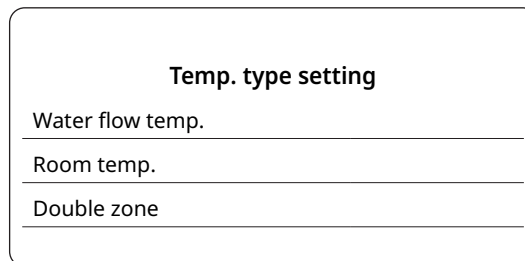
- supply water temperature (T1), which has two options:
 - fixed setpoint, set from the user interface
 - auto control setpoint, calculated from a preselected climatic curve

- room temperature (Ta)

MENU > FOR SERVICEMAN > TEMP. TYPE SETTING

The request to the unit can be made from the user interface (thanks to the built-in temperature sensor) or from the electro-mechanical thermostat.

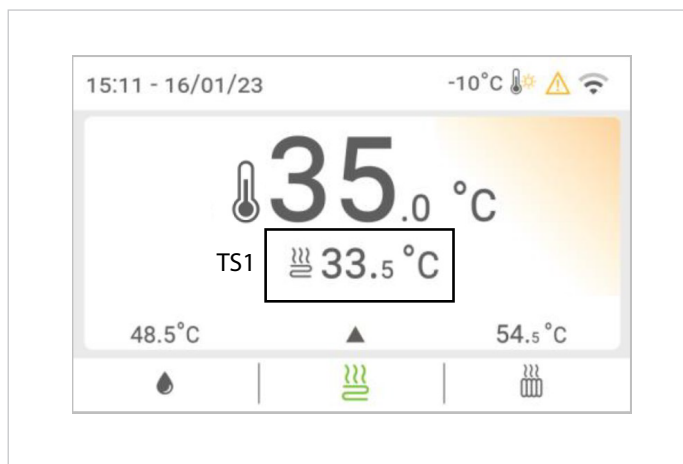
In the second case, the zone thermostat can only control the Heating/Cooling mode change if it has a double relay, otherwise it must be managed from the HMI.



5.1 WATER FLOW TEMP. (standard: 0 - settable: 0/1)

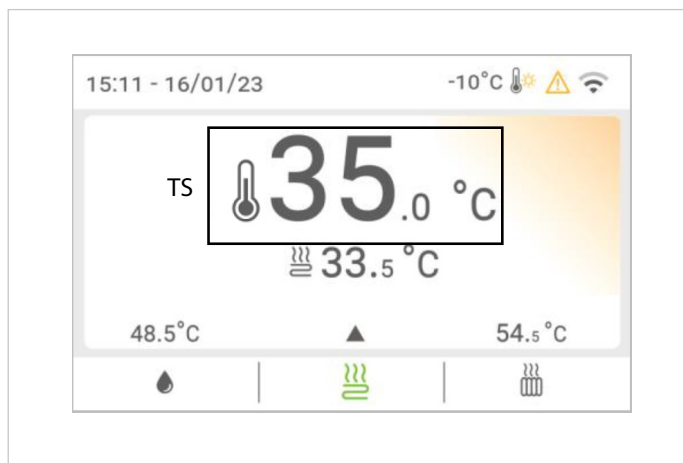
Enables/disables control of the unit according to the supply water temperature ($T1$).

The user can set the system water temperature ($T1S$) from the HMI.



5.2 ROOM TEMP. (standard: 0 - settable: 0/1)

Enables/disables control of the unit according to the room air temperature (Ta). The user can set the desired temperature in the room (TS) from the HMI.



- i** The supply water temperature is automatically controlled according to the climatic curve.

5.3 DOUBLE ZONE (standard: 0 - settable: 0/1)

Enables/disables management of a second system zone: a second menu dedicated to management of Zone 2 appears on the HMI display.

- i** Parameters 5.1 and 5.2 are set to One, 5.3 will be automatically changed to One.

The two zones can be controlled in different ways:

Zone 1 and Zone 2

Both are controlled according to the supply water temperature (T1).

it will be necessary to set these parameters:

5.1 WATER FLOW TEMP. = 1

5.2 ROOM TEMP. = 0

Zone 1

With control based on the supply water temperature (T1) and Zone 2 with control based on the room air temperature (Ta).

it will be necessary to set these parameters:

5.1 WATER FLOW TEMP. = 1

5.2 ROOM TEMP. = 1

5.2 Room Temp. to 1.

Zone 1 will have setpoint T1S and Zone 2 will have setpoint T1S2.

- i** Zone 2 has automatically controlled supply water temperature according to the climatic curve. In 2-zone systems, Zone 1 cannot have control based on the room air temperature.

- i** Both zones can be equipped with an electro-mechanical thermostat to manage the request.

9.9.3 Zone thermostat settings

MENU > FOR SERVICEMAN > 6. ROOM THERMOSTAT SETTING

A zone thermostat can be used to manage the request to the unit.

Room thermostat setting

Room thermostat

- i** The HMI must still be connected to the unit in order to manage its internal parameters.

6.1 ROOM THERMOSTAT (standard: 0 - settable: 0/3 / MODE SET/ONE ZONE/DOUBLE ZONE)

Enables/disables the request to the unit from zone thermostats other than the HMI.

0 = no zone thermostat.

1 = MODE SETTING = single zone system with double relay zone thermostat, for managing the request to the unit and seasonal mode change (see type A connection in the Installation manual).

2 = ONE ZONE = single zone system with zone thermostat, for managing the request to the unit (see type B connection in the Installation manual).

The seasonal mode change can be managed from the HMI.

3 = TWO ZONES = two zone system with zone thermostat, for managing the request to the unit (see type C connection in the Installation manual).

The seasonal mode change of both zones can be managed from the HMI.

6.2 MODE SET PRIORITY (standard: 0 - settable: 0/1)

If the room thermostat is set to **MODE SETTING**, the following screen is displayed:

Room thermostat setting

Room thermostat

Mode set priority

The Mode set priority defines the priority of operation in cooling or heating mode.

9.9.4 Auxiliary heat source settings

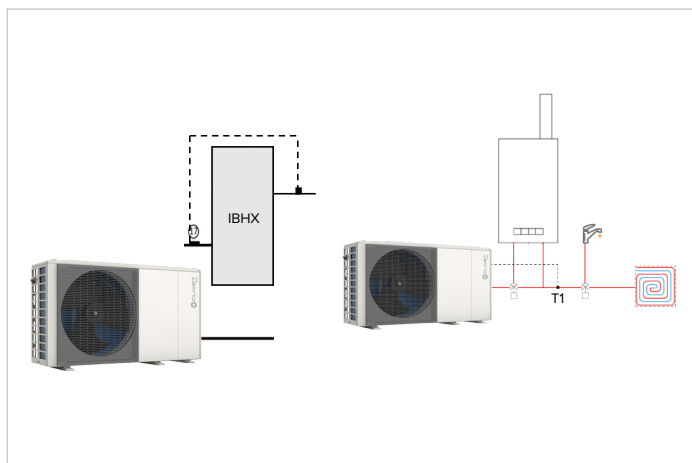
MENU > FOR SERVICEMAN > 7. OTHER HEAT SOURCE

Other heat source	
IBH function	
Check IBH	
dT1_IBH_ON	
t_IBH_DELAY	

This section is used to control the parameters of an additional/backup electric heater on the system (IBH), a boiler (AHS) or a solar thermal system.

i These sources are optional and can be supplied separately. Only one auxiliary Heat source, either electric heater or boiler, can be managed at the same time.

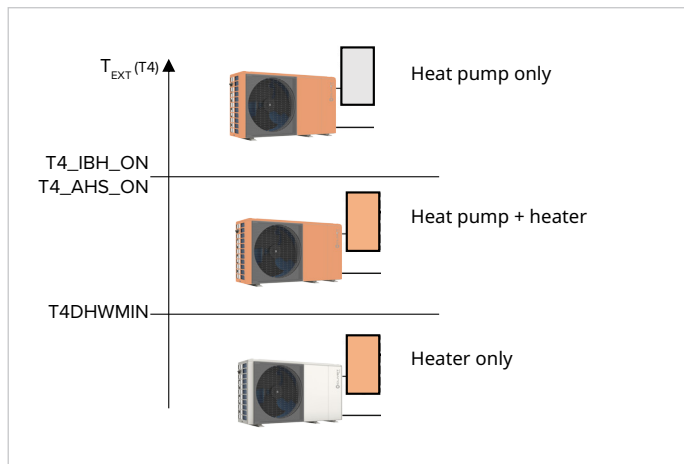
The connection and control of an electric heater in a system or boiler requires a dedicated water temperature probe, to be fitted on the downstream water supply branch:



The activation operating mode (in Heating, DHW production or both) must be selected with the dip-switches on the board during installation.

Activation of the auxiliary source is linked to the simultaneous presence of 3 conditions, each of which is associated with a parameter:

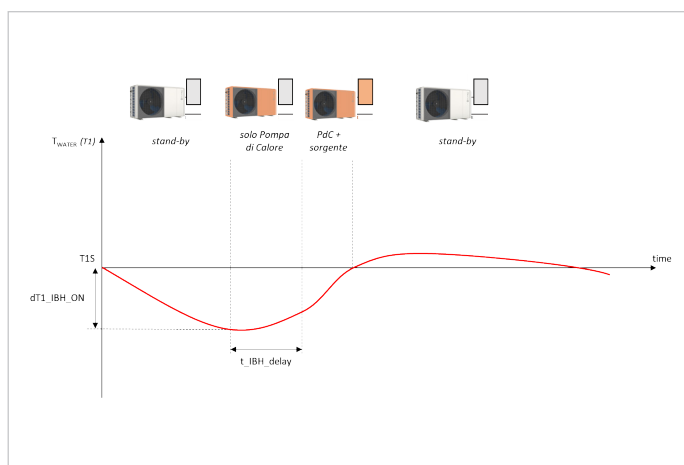
- very low outdoor temperature: parameter T4_IBH_ON or T4_AHS_ON: the minimum outdoor air temperature for heat pump operation only



i To make the auxiliary source work only as a replacement for the unit, set the parameter to the same value as T4HMIN (the minimum outdoor temperature at which the heat pump can operate).

Supply temperature too far from the setpoint: parameter dT1_IBH_ON or dt1_AHS_ON: the minimum ΔT between water setpoint TS1 and unit supply T1.

Too long to reach the setpoint: parameter t_IBH_DELAY or t_AHS_DELAY: the maximum waiting time between compressor start-up and auxiliary source activation.



i The BACKUP HEATER function allows start-up of the auxiliary source to be forced from the HMI.

7.1 IBH function (standard: 0 - settable: 0/1)

Defines the backup heater function.

7.2 IBH locate (settable 0)

Defines the installation position of the backup heater/auxiliary heating source.

7.3 dT1_IBH_ON (standard: 5 - settable: 2/10)

Defines the range between the water supply temperature (T1) and the setpoint (T1S) beyond which the heater is switched on. When $T1 \leq T1S - dT1S_IBH_O$ the heater is switched on.

7.4 t_TBH_DELAY (standard: 30 - settable: 15/120)

Defines the minimum minutes between compressor start-up and heater start-up.

7.5 T4_IBH_ON (standard: -5 - settable: -15/30)

Defines the outdoor temperature below which the heater can be used. If the outdoor temperature is higher than T4_IBH_ON, the heater cannot be used.

7.6 P_IBH1 (standard: 0 - settable: 0/20)

Defines the electric power of the heater, if present: the value set here is used to calculate the heat output and efficiency of the unit.

IBH1 must be set to the power of the first stage. The parameters do not count the power of external elements because the supply port is different.

7.7 P_IBH2 (standard: 0 - settable: 0/20)

Reserved for factory settings.

7.8 AHS function (standard: 0 - settable: 0/1/2)

Defines the auxiliary heating source function.

7.9 AHS_PUMP_I CONTROL (standard: 0 - settable: 0/1)

Sets the operation state of Pump_I when only the auxiliary heating source is running.

7.10 dT1_AHS_ON (standard: 5 - settable: 2/20)

Defines the range between the water supply temperature (T1) and the setpoint (T1S) beyond which the boiler is switched on. When $T1S - T1 \geq dT1S_AHS_O$, the boiler is switched on.

7.11 t_AHS_DELAY (standard: 30 - settable: 5/120)

Defines the minimum minutes between compressor start-up and boiler start-up.

7.12 T4_AHS_ON (standard: -5 - settable: -15/30)


Defines the outdoor temperature below which the boiler can be used. If the outdoor temperature is higher than T4_AHS_ON, the heater cannot be used.

7.13 EnSWITCHPDC (standard: 0 - settable: 0/1)

Enables/disables the intelligent function for hybrid € switch heat pumps.

The € switch function analyses the operating conditions of the unit and uses an algorithm to calculate the minimum efficiency that the heat pump must have in order to continue to operate more economically than the boiler. Should the heat pump operate below this efficiency, the unit switches off the heat pump and only uses the boiler.

The € switch function uses the cost of fuel gas (€/Smc from a bill, to be entered in parameter GAS_COST) and the cost of electricity (€/kWh from a bill, to be entered in parameter ELE_COST).

 The logics that activate the boiler to supplement the capacity of the heat pump remain unchanged even with the € switch function on.

7.14 GAS_COST (standard: 0.85 - settable: 0/5)


Defines the cost of fuel gas used to power the boiler (in €/Smc, from a bill).

 In the absence of this value, it can be estimated with data

retrieved from the last bills using the simplified formula: Energy cost = (Total amount of bills [€]) / (Total amount of consumption [Smc]). In reality, the method is simplified because there are a number of fixed costs in the bill that are independent of actual fuel consumption. The precise calculation is beyond the scope of this manual.

7.15 ELE_COST (standard: 0.20 - settable: 0/5)

Defines the cost of electricity used to power the unit (in €/kWh, from a bill).

 In the absence of this value, it can be estimated with data retrieved from the last bills using the simplified formula: Energy cost = (Total amount of bills [€]) / (Total amount of consumption [Smc]). In reality, the method is simplified because there are a number of fixed costs in the bill that are independent of actual fuel consumption. The precise calculation is beyond the scope of this manual.

The unit manages the AHS setpoint dynamically with a 0-10V signal, through the maximum and minimum setpoint parameters set in the boiler.

7.16 MAX_SETHEATER (standard: 75 - settable: 0/75)

Defines the maximum setpoint value that can be reached by the boiler, which is used to control the 0-10V signal.

7.17 MIN_SETHEATER (standard: 30 - settable: 0/80)

Defines the minimum setpoint value that can be reached by the boiler, which is used to control the 0-10V signal.

7.18 MAX_SIGHEATER (standard: 10 - settable: 0/10)

Defines the signal voltage associated with the maximum setpoint value that can be set in the boiler.

7.19 MIN_SIGHEATER (standard: 3 - settable: 0/10)


Defines the signal voltage associated with the minimum setpoint value that can be set in the boiler.

7.20 TBH FUNCTION (standard: 0 - settable: 0/1)

Defines whether the tank heating function is on.

7.21 dT5_TBH_OFF (standard: 5 - settable: 0/10)

Defines how many degrees above the DHW setpoint (T5S) the water tank heater (TBH) must be brought to. When TBH is activated, the DHW storage tank will be brought to temperature T5S + dT5_TBH_OFF.

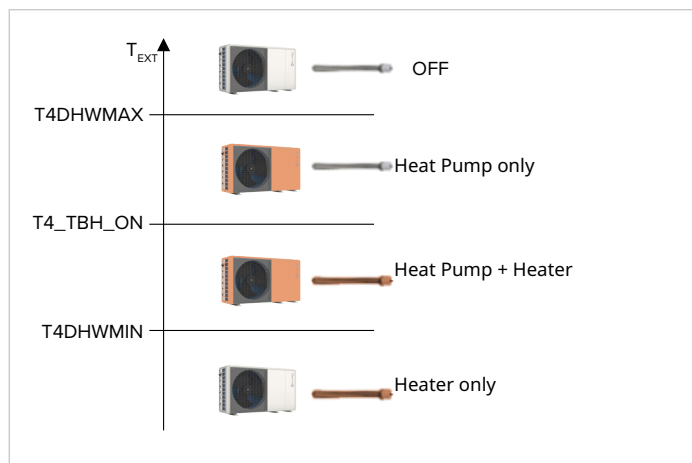
 When the temperature of the DHW storage tank (T5) reaches T5stop, the heat pump stops and the DHW storage tank heater (TBH) can continue to operate. The TBH heater is switched off when the DHW storage tank temperature is $T5 > T5S + dT5_TBH_OFF$ or $T5 > 65^{\circ}\text{C}$. Any protection of the heating element built into the storage tank should be set to T5S+dT5_TBH_OFF.

7.22 t_TBH_DELAY (standard: 30 - settable: 0/240)

Defines the minimum minutes of compressor operation beyond which, if the unit fails to bring the DHW storage tank to the setpoint, the TBH heater can be activated.

7.23 T4_TBH_ON (standard: 5 - settable: -5/50)

Defines the maximum outdoor air temperature at which the TBH heater can be activated.



7.24 P_TBH (standard: 2 - settable: 0/20)

Defines the electric power of the DHW tank heater, if present: the value set here is used to calculate the heat output and efficiency of the unit.

7.25 Solar function (standard: 0 - settable: 0/1/2)

Defines whether the heating system has a solar function.

7.26 Solar control (standard: 0 - settable: 0/1)

Defines the type of solar pump control.

7.27 DELTASOL (standard: 10 - settable: 5/20)

Defines the range between the solar circuit temperature (Tsol) and the DHW storage tank temperature (T5) which, if the solar function is activated, starts the Pump_s pump. The pump is switched on when DELTASOL < Tsol - T5.

9.10 Holiday Away function settings

MENU > FOR SERVICEMAN > 8. HOLIDAY AWAY SETTING

The Holiday Away function can be used during long periods of absence from home and prevents the system from freezing and activating before returning home.

Holiday away setting

T1S_H.A_H _____

T5S_H.A_DHW _____

8.1 T1S_H.A._H (standard: 25 - settable: 20/25)

Defines the water supply temperature setpoint (T1S) for the Holiday Away function.

8.2 T5S_H.A._DHW (standard: 25 - settable: 20/25)

Defines the DHW storage tank temperature setpoint (T5S) for the Holiday Away function.

9.11 Service call contact settings

MENU > FOR SERVICEMAN > 9. SERVICE CALL

Service call contacts can be stored so that they are always at hand in case of need.

Service call

Phone _____

Mobile _____

PHONE

Stores a phone number.

MOBILE

Stores a mobile phone number.

i To change numbers from the keypad, use the ^v buttons. The maximum number of characters is 13.

9.12 Restore factory settings

MENU > FOR SERVICEMAN > 10. RESTORE FACTORY SETTINGS

The parameters can be restored to the factory settings.

All default settings will be restored.

Restore factory settings?

NO Yes

9.13 Test mode settings

MENU > FOR SERVICEMAN > 11. TEST RUN

The test mode is used to check operation of the valves, air purge, pumps, Heating, Cooling and DHW.

i In this mode, the keypad is disabled with the exception of the **OK** button. You can exit the test at any time by pressing this button.

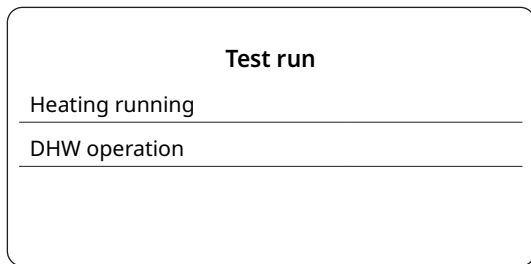
Test run

Point check _____

Air purge _____


Circulated pump running _____


Cooling running _____



POINT CHECK

Used to check the operation of a number of components. By selecting the component from the menu, it can be forcibly started: if it does not work, check its electrical connection.

 Before activating the function, make sure the DHW tank and the system are filled with water and the air has been discharged, otherwise the unit could be damaged.

 Navigate through the components to be tested with the \wedge/\vee buttons. Force activation of the component by setting it to ON and pressing OK.

The components that can be activated are:

SV1: 3-way DHW switching valve

SV2: 3-way 2-zone switching valve for unmixed 2-zone systems

PUMP_I: primary circuit pump (P_i)

PUMP_O: secondary circuit pump (P_o)

PUMP_C: mixed circuit pump (P_c)

PUMP_S: solar circuit pump (P_s)


PUMP_D: DHW recirculation pump (P_d)

IBH: built-in electric heater (IBH - only for applicable configurations)

TBH: DHW storage tank heater (TBH)

AHS: back-up boiler (AHS)

SV3: 3-way 2-zone valve for unmixed zone 2 (SV3)

 In 2-zone systems with one mixed zone, SV2 is not available.


AIR PURGE

Starts the purge cycle, which eliminates air in the water circuit that can cause the unit to malfunction.

 Before activating the function, open the relief valve.

The logic establishes that:

- the 3-way valve (SV1) opens and the 2-way valve (SV2) closes
- after 60 seconds, the flow switch switches off and the unit pump (P_i) switches on for 10 minutes
- the pump stops, the 3-way valve closes and the 2-way valve opens
- after 60 seconds, the unit pump (P_i) and the secondary pump (P_o) switch on
- the pumps stay on for 20 minutes

 Check the cause of any errors shown on the display during the procedure.


CIRCULATION PUMP RUNNING

Starts the unit's circulation pump.

The logic establishes that:

- all running components are stopped
- after 60 seconds, the 3-way valve (SV1) opens and the 2-way valve (SV2) closes
- after 60 seconds, if the flow switch detects adequate water flow, the unit's pump switches on (P_i)
- after 30 seconds, the flow switch checks the water flow: if it is adequate, the pump runs for 3 minutes
- the pump stops, after 60 seconds the 3-way valve closes and the 2-way valve opens
- after 60 seconds, the unit pump (P_i) and the secondary pump (P_o) switch on
- after 2 minutes the flow switch checks the water flow again:
 - if it is adequate, the pumps stay on until the next keypad command
 - if it is inadequate for at least 15 seconds, the pumps stop and error E8 is displayed; the pumps stay on for 10 minutes

NOTE


 Check the cause of any errors shown on the display during the procedure.

COOLING MODE RUNNING

Starts the unit in Cooling mode, so that system operation can be checked.

The logic establishes that:

- the unit switches on in Cooling mode, with water supply setpoint at 7°C
- the actual water supply temperature is shown on the HMI display
- the unit continues to operate until the setpoint is reached or for 10 minutes

 Check the cause of any errors shown on the display during the procedure.

HEATING MODE RUNNING

Starts the unit in Heating mode, so that system operation can be checked.

The logic establishes that:

- the unit switches on in Heating mode, with water supply setpoint at 35°C
- the actual water supply temperature is shown on the HMI display after 10 minutes:
 - if present, the backup boiler (AHS) starts in support of the heat pump. If the conditions for exiting the function are not reached, the boiler continues to operate for 10 minutes, then switches off.
 - if present, the backup electric heater (IBH) starts in support of the heat pump. If the conditions for exiting the function are not reached, the heater continues to operate for 3 minutes, then switches off.
- the unit continues to operate until the setpoint is reached or for 30 minutes

i Check the cause of any errors shown on the display during the procedure.

DHW RUNNING

Starts the unit in DHW mode, so that system operation can be checked.

The logic establishes that:

- the unit starts in DHW mode, with a DHW setpoint of 55°C
- the actual water and DHW tank supply temperatures are shown on the HMI display
- after 10 minutes, if present, the water tank electric heater (TBH) starts in support of the heat pump. If the conditions for exiting the function are not reached, the heater continues to operate for 3 minutes, then switches off
- the unit continues to operate until the setpoint is reached or for 20 minutes

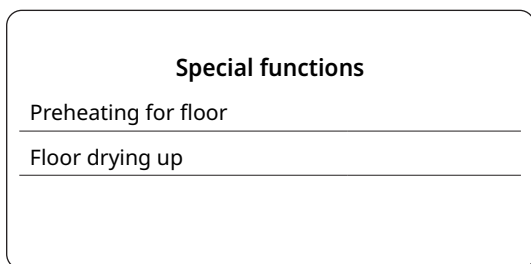
i Check the cause of any errors shown on the display during the procedure.

9.14 Special function settings

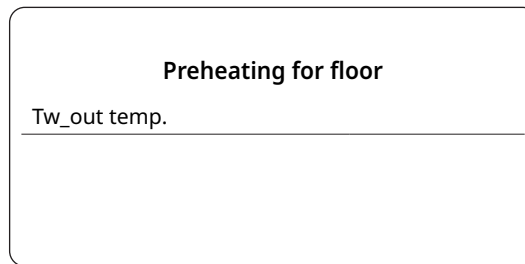
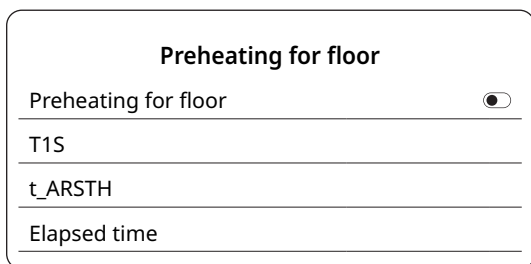
MENU > FOR SERVICEMAN > 12. SPECIAL FUNCTIONS

Special functions can be used during installation or maintenance to better manage or access the system, e.g. on first start-up to run a radiant floor drying up cycle or when the unit is restarted after being OFF for a long period.

i In this mode, the keypad is disabled.



12.1 PREHEATING FOR FLOOR T1S

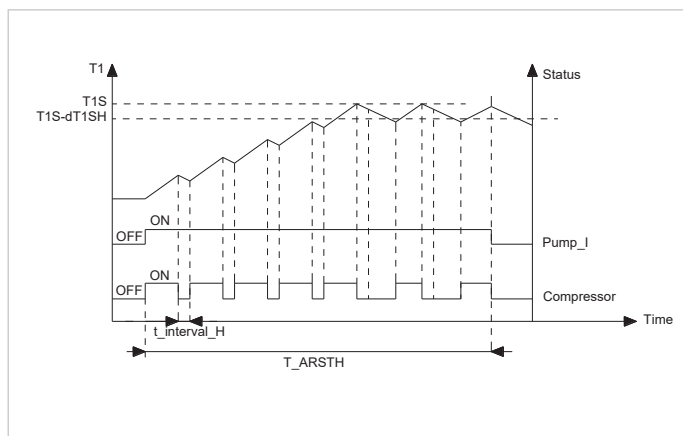


The function can be useful when the distribution system consists of a radiant floor: if Heating mode is activated on a floor that still contains a considerable amount of water, there is a risk that it will warp or crack.

To protect the floor, a preheating cycle must be carried out, during which the temperature of the water supplied to the floor is gradually raised.

i If this is the first time the unit has been started up, before activating this function run the air purge function (indicated in this paragraph), in order to avoid malfunctions or damage to the system.

The operating logic is shown in the following diagram:



The parameters that can be set for this function are:

T1S (standard: 25 - settable: 25/35)

Defines the water supply setpoint temperature for the floor preheating function.

T_ARSTH (standard: 72 - settable: 48/96)

Defines how long the floor preheating function runs for. The HMI display shows the water supply temperature and the operating time of the function.

Elapsed time

This is the elapsed time after the floor preheating function.

Tw_out temp.

This is the current outlet water temperature.

12.2 FLOOR DRYING UP

Floor drying up

Floor drying up

t_Dryup

t_Highpeak

t_Drydown

Floor drying up

t_Drypeak

Start time

Start date

Floor drying up

Floor drying up is on.

Tw_out

Floor preheating is on for...

the function continues using the boiler or backup electric heater, if present and enabled.

Floor drying up

Floor drying up

t_Dryup

t_Highpeak

t_Drydown

Floor drying up

t_Drypeak

Start time

Start date

The parameters that can be set for this function are:

HEATING TIME (t_DRYUP) (standard: 8 - settable: 4/15)
 Defines the number of days over which the water supply temperature is gradually increased.

DURATION (t_HIGHPEAK) (standard: 5 - settable: 3/7)
 Defines the number of days over which the water supply temperature is kept constant.

DOWN TIME TEMP. (t_DRYDOWN) (standard: 5 - settable: 4/15)
 Defines the number of days over which the water supply temperature is gradually decreased.

PEAK TEMPERATURE (T_DRYPEAK) (standard: 45 - settable: 30/55)
 Defines the maximum water supply temperature of the function.

START TIME (standard: current time - settable: 00:00/23:30)
 Defines the start time of the function.

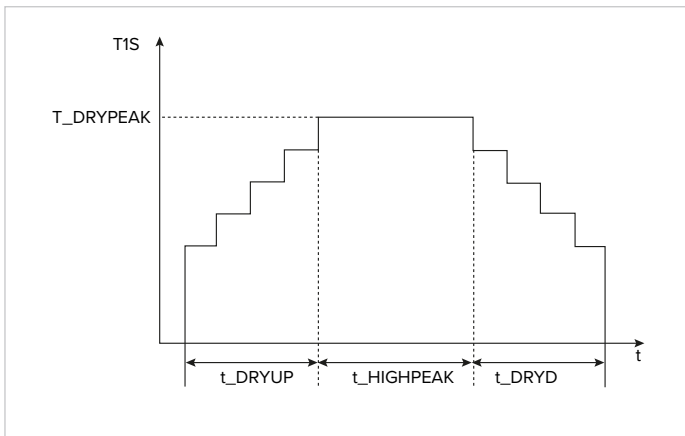
START DATE (standard: today - settable: 1-1-2000/31-12-2099)
 Defines the start date of the function.
 The HMI display shows the water supply temperature and the operating time of the function.

EMPTY AHS CIRCUIT
 Reserved parameter, do not change.

9.15 Automatic restart settings

MENU > FOR SERVICEMAN > 13. AUTO RESTART

The function can be useful for newly installed radiant floor distribution systems: during the first start-up in Heating mode, condensate can form in the floor slab or under the floor, which may cause the floor to warp or break. To protect the floor, a drying cycle must be carried out at the first start-up, during which the temperature of the water supplied to the floor is adjusted as shown in the diagram:



i If this is the first time the unit has been started up, before activating this function run the air purge function (indicated in this paragraph), in order to avoid malfunctions or damage to the system. If the heat pump is out of service,

Auto restart

Auto restart cooling/heating mode

Auto restart DHW mode

The unit stores the user settings even after the power supply has been cut off.

This function sets whether the unit should automatically restart or remain on stand-by when the power supply is restored after a power failure.

The parameters that can be set for this function are:

13.1 COOLING/HEATING MODE (standard: 0 - settable: 0/1)

Defines whether the automatic restart function is switched on for Cooling and Heating modes.

13.2 DHW MODE (standard: 0 - settable: 0/1)

Defines whether the automatic restart function is switched on for DHW mode.

9.16 Unit's power supply limitation settings

MENU > FOR SERVICEMAN > 14. POWER INPUT LIMITATION

Power input limitation

Power input limitation

This function is used to limit the current consumed by the unit according to predefined profiles.

Maximum current limitation [A] according to the selected profile:

Size				
	2.1-3.1	4.1-5.1	6.1M-8.1M	6.1T-8.1T
1	13.5	17.5	28	9.5
2	12	16	26	8.5
3	11	15	24	7.5
4	10	14	22	7
5	9	13	20	6.5
6	8	12	18	6
7	8	12	18	6
8	8	12	18	6

The settable parameter for this function is:

14.1 POWER INPUT LIMITATION (standard: 0 - settable 0/1+8)

Enables the function and defines the maximum consumption profile.

i By enabling the function, unit performance will be less than nominal.

9.17 Unit input signal settings

MENU > FOR SERVICEMAN > 15. INPUT DEFINITION

This function is used to adjust and set the unit input signal and probe functions according to the requirements of the system.

Input definition

M1 M2

Smart grid

T1T2

Tbt

The parameters that can be set for this function are:

M1 M2 (standard: 0 - settable: 0/1/2)

Defines what the potential-free contact M1M2 should control (0 = remote ON/OFF; 1 = boiler electric heater

(TBH); 2 = backup boiler).

SMART GRID (standard: 0 - settable: 0/1)

Enables/disables the Smart Grid function (see the SMART GRID Management paragraph)

Tw2 (standard: 0 - settable: 0/1)

Enables/disables reception of the signal from the secondary circuit supply water temperature probe (Tw2).

Tbt1 (standard: 0 - settable: 0/1)

Enables/disables reception of the signal from the inertial storage tank temperature probe Tbt1.

Tbt2 (standard: 0 - settable: 0/1)

Reserved parameter, do not change.

Ta (standard: NO - settable: SI/NO)

Enables/disables reception of the signal from the room air temperature probe in the HMI (Ta).

INPUT SOL. (standard: 0 - settable: 0/1/2)

In the presence of a solar thermal system, it defines how this should be managed by the unit.

- 0 = disabled
- 1 = the unit detects the temperature of the water in the solar circuit (Tsolar) and controls the solar pump according to its own logic
- 2 = the unit receives an external ON/OFF signal (contacts SL1 / SL2, e.g. from the solar controller) and controls the solar pump

RT/Ta_PCB (standard: 0 - settable: 0/1)

Reserved, do not use.

DFT1/DFT2 (standard: 0 - settable: 0/1)

Defines what type of signal contacts DFT1/DFT2 should manage (0 = defrosting; 1 = alarm state)

9.18 Cascade system settings

MENU > FOR SERVICEMAN > 16. CASCADE SETTING

Used to set the unit as part of a cascade system.

Cascade setting	
PER_START	
TIME_ADJUST	

The parameters that can be set for this function are:

16.1 PER_START (standard: 10% - settable: 10%/100%)

Defines the percentage of units that are activated at system start-up.

NOTE


The percentage refers to the total number of units in the cascade system, including both Master and Slave units.

16.2 TIME_ADJUST (standard: 5 - settable: 1/60)

Defines the minutes after which the Master unit checks whether a Slave unit is switched on/off.

16.3 ADDRESS RESET (standard: FF - settable: 0/15)

Sets the unit address, for Slave units only.

 Slave units are auto-addressing and do not require manual address setting. FF is equivalent to setting an invalid address.

If necessary, set the address manually.

9.19 Other HMI settings

MENU > FOR SERVICEMAN > 17. HMI ADDRESS SETTING

If the unit is controlled with home automation or BMS systems, it is possible to limit access from the HMI to only certain parameters.

HMI address setting	
HMI setting	
HMI address for BMS	
Stop BIT	

The parameters that can be set for this function are:

17.1 HMI SET (standard: 0 - settable: 0/1)

Defines whether the HMI has limited settings (parameter = 1); in this case it can only manage ON/OFF, mode change and setpoint.

17.2 HMI ADDRESS FOR BMS (standard: 1 - settable: 1/16)

Defines the unit address for management with BMS systems.

 This parameter is only manageable if the unit has not

been limited in point 17.1.

17.3 STOP BIT (standard: 1 - settable: 1/2)

Defines the data exchange protocol between the BMS software and the HMI (it must be the same for both).

9.20 Common system settings

MENU > FOR SERVICEMAN > 18. COMMON SETTING

This function is used to adjust and set the functions according to the requirements of the system.

Common setting
t_DELAY PUMP
POM.ANTIBL_t1
t2_ANTILOCK PUMP RUN
SV ANTIBL_t1

18.1 t_DELAY_PUMP (standard: 2 - settable: 0.5/20)

Sets the minutes of delay between compressor switch-off and pump switch-off.

18.2 POM.ANTIBL_t1

Sets the time range in which pump_I, pump_O and pump_C run for antilock control.

18.3 t2_ANTILOCK PUMP RUN

Sets the antilock operating time of Pump_I, Pump_O and Pump_C

18.4 SV ANTIBL_t1

Sets the time range for valves SV1, SV2 and SV3 for antilock control.

18.5 t2_ANTILOCK SV RUN

Sets the antilock operating time of valves SV1, SV2 and SV3

18.6 Ta-adj (standard: -2 - settable: -10/10)

Sets a correction value to be considered on the value detected by the Ta probe.

18.7 F-PIPE LENGTH (standard: 0 - settable: 0/1)

Reserved, do not use.

18.8 PUMP_I SILENT OUTPUT (standard: 0 - settable: 1/0)

Enables/disables the silent function for the unit's pump, which reduces the pump output by 5% to make the unit quieter.

18.9 ENERGY METERING (standard: 0 - settable: 0/1)

Energy metering allows the user to check energy data for the day, week, month and year.


18.10 PUMP_O (standard: 0 - settable: 0/1)


Sets the type of zone 1 pump control (Pump_O).


10. Network configuration settings

10.1 Network configuration (WLAN)

The unit can be controlled and managed through the SmartHome App via a Wi-Fi module built into the HMI, which provides various features.

 Before connecting the WLAN, check that the building's router is switched on and the HMI is in a position to receive the wireless signal well. The router must have a 2.4GHz bandwidth.

 It is advisable not to connect more than 10 units to one router, as the network signal may be too weak or unstable.

 It is advised against using special characters (e.g. punctuation, spaces, etc.) in the WLAN name.

If the router or network password is changed, it may be necessary to delete the units linked to the App and pair them again.

The appearance and functions of the App may differ from how they are in this document depending on the release of post-publication updates.

Procedure for management via the App:

- with a smartphone or table
- the App is available for Android and IOS systems
- download from the App Store
- install the App on the device that will control the unit

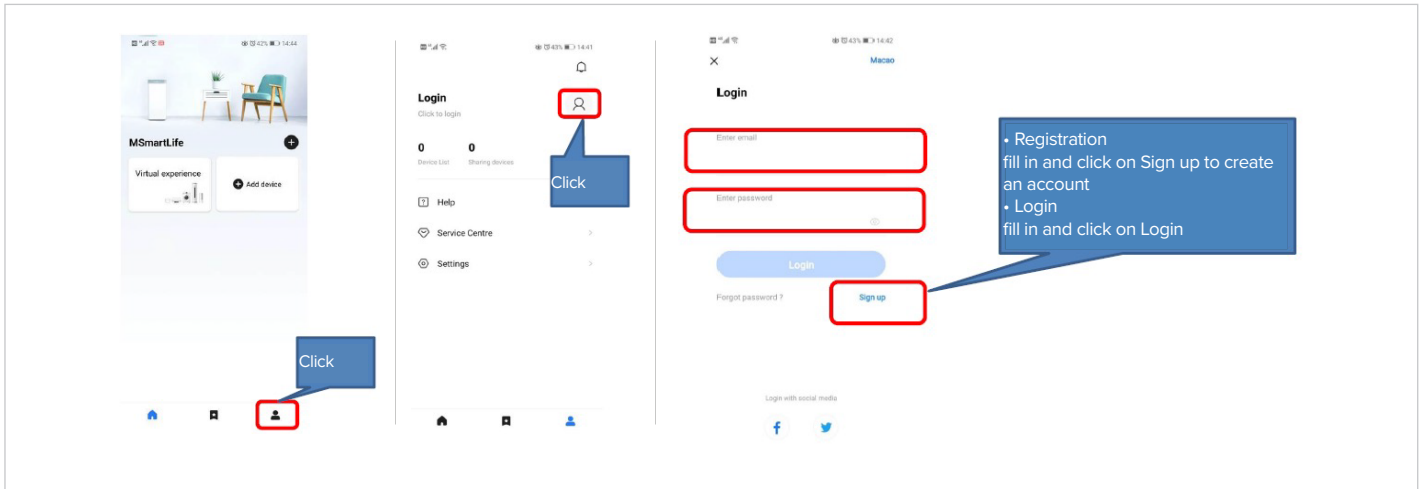
For quick access to the App download page, scan this QR code



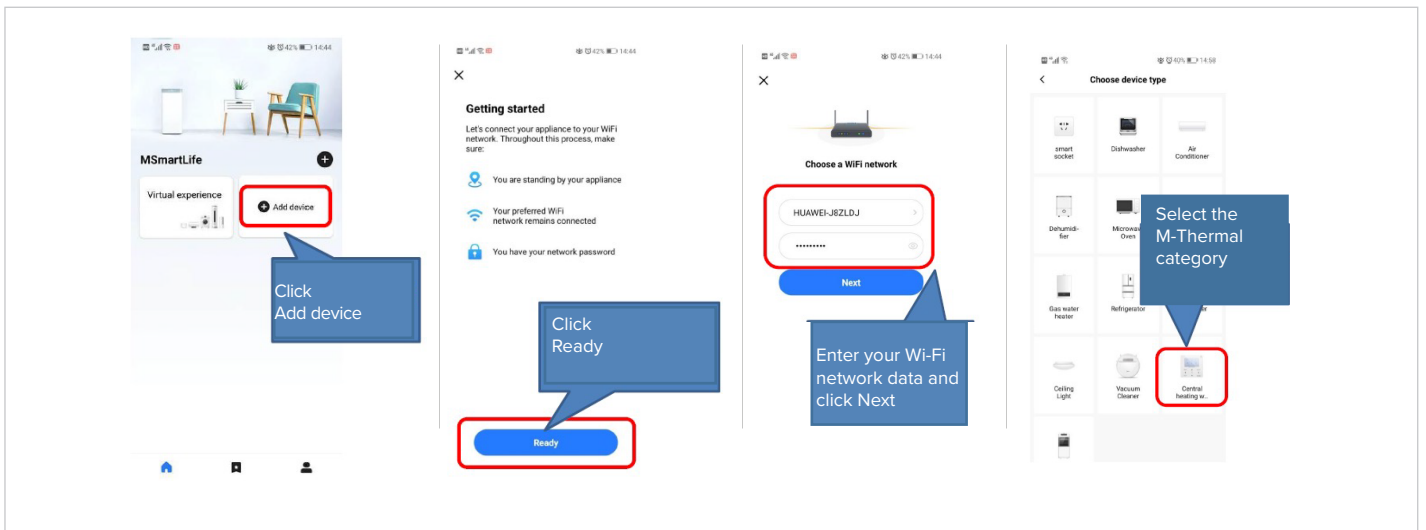
Network configuration settings

Sign up/Log in

Open the App and create a new account on the home page or log in:

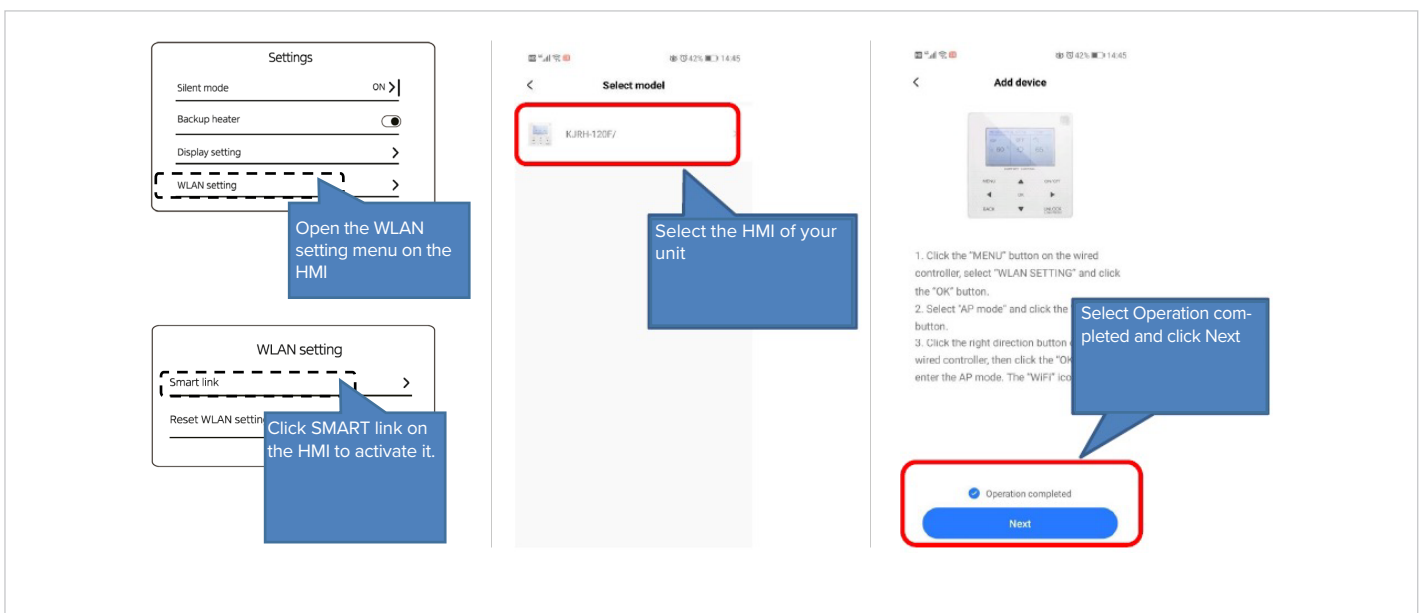


Adding a device and a Wi-Fi network



On the unit

Activating the unit's Wi-Fi module



On a smartphone

Connecting to the Wi-Fi network

The App prompts you to connect the device to the Wi-Fi network XXX_c3_xxxx
Note: xxxx is a specific number for each unit

From the device settings, select the Wi-Fi network XXX_c3_xxxx
Password: 12345678

Click on Connect your device to the Wi-Fi

Connect your appliance to WiFi

Connect successfully
The Central heating water heater0007 has been successfully added

Complete

Management via the App

After successfully connecting the unit, the Wi-Fi icon on the HMI remains on the display

The unit will appear on the App home page and can be managed

i If the connection fails, reset the settings and repeat the procedure.

WLAN setting

Smart link >

Reset WLAN setting >

If connection to the App fails, click Reset WLAN setting on the HMI and repeat the procedure

11. MODBUS registers

11.1 MODBUS communication specification

Interface: RS-485

XYE = communication port for connecting to the hydraulic module.

H1 / H2 = Modbus communication ports.

Communication parameters:

Baud rate: 9600

Data length: 8 bit

Control: no control

Stop bit: 1 bit

Communication protocol: RTU Modbus (ASCII Modbus is not supported)

11.2 Controls

Address register	Meaning	Description	
0	ON/OFF	bit15	Reserved
		bit14	Reserved
		bit13	Reserved
		bit12	Reserved
		bit11	Reserved
		bit10	Reserved
		bit9	Reserved
		bit8	Reserved
		bit7	Reserved
		bit6	Reserved
		bit5	Reserved
		bit4	Reserved
		bit3	0= off (T2S); 1= on (T2S) (WATER FLOW TEMP control - zone 2)
		bit2	0= DHW (T5S) off; 1= DHW (T5S) on
		bit1	0= off (T1S); 1= on (T1S) (WATER FLOW TEMP control - zone 1)
bit0	0= off (TS) 1= on (TS) (ROOM TEMP thermostat control)		
1	Operation mode	1: auto; 2: Cooling; 3: heating; other value: invalid	
2	Set water temp. T1s	bit8-bit15	Water temp. T1s setting for ZONE 2
		bit0-bit7	Water temp. T1s setting for ZONE 1
3	Set air temperature Ts	Room temperature setting, when a valid Ta is present, 17°C ~ 30°C transmission value equal to actual value * 2; 35 is transmitted, e.g.17.5°C	
4	T5s	Storage tank water temperature setting, 20°C ~ 60/75°C (EDGE A with AHS can be set at 75°C, other unit at 60°C) Default =50°C	

Address register	Meaning	Description	
5	Function settings	bit15	Reserved
		bit14	Reserved
		bit13	1 = ZONE 2 curve on; 0 = ZONE 2 curve disabled
		bit12	1 = ZONE 1 curve on; 0 = ZONE 1 curve disabled
		bit11	DHW pump operating with return water at constant temperature
		bit10	ECO mode
		bit9	Reserved
		bit8	Holiday home (read only, cannot be changed)
		bit7	0= silent level1; 1= silent level2
		bit6	Silent mode
		bit5	Going on holiday (read only, cannot be changed)
		bit4	Sterilization (disinfect)
		bit3	Reserved
		bit2	Reserved
		bit1	Reserved
6	Curve selection	bit8-bit15	ZONE 2 Curves 1- 9
		bit0-bit7	ZONE 1 Curves 1- 9
7	Forced hot water	0 invalid	TBH is the electric heater inside the water tank, IBH is the heating backup electric heater TBH and IBH cannot be forced together
8	Forced TBH	1 forced ON	
9	Forced IBH	2 forced OFF	
10	SG operation time	0-24hrs	
11	Set the water temperature T1s zone1	Water temperature T1s setting for ZONE 1	
12	Set the water temperature T1s zone2	Water temperature T1s setting for ZONE 2	

11.3 States

Address register	Meaning	Description
100	Operating frequency	Compressor operating frequency in Hz. Value read = current value
101	Operation mode	Unit's operation mode, 0: shut down 2: cooling, 3: heating,
102	Fan speed	Fan speed, unit: rpm. Value read = current speed value
103	PMV	ODU electronic expansion valve opening, unit: P. Value read = current value (shows only 8 multiples. Only multiples of 8 will be shown)
104	Inlet water temperature	TW_in, unit:°C; value read = current value
105	Outlet water temperature	TW_out, unit:°C; value read = current value
106	T3 temperature	Condenser temperature in °C. Value read = current value
107	T4 temperature	Outdoor temperature, unit: °C. Value read = current value
108	Discharge gas temperature	Compressor discharge temperature Tp, unit: °C. Value read = current value
109	Intake gas temperature	Compressor suction temperature Th, unit: °C. Value read = current value
110	T1	Total outlet water temperature, unit: °C. Value read = current value
111	T1B	Total outlet water temperature (after auxiliary heat source), unit: °C. Value read = current value
112	T2	Liquid refrigerant temperature, unit: °C. Value read = current value
113	T2B	Gas refrigerant temperature, unit: °C. Value read = current value
114	Ta	Room temperature, unit: °C value, read = current value
115	T5	DHW tank water temperature
116	Pressure value 1	ODU high pressure value, unit: kPa. Value read = current value
117	Pressure value 2	ODU low pressure value, unit: kPa. Value read = current value (reserved)
118	ODU current	Current ODU running current value, unit A, Value read = current value
119	ODU voltage	ODU power supply voltage value, unit: V. Value read = current value (reserved)
120	Tbt1	Tbt1 unit: °C. Value read = current value
121	Tbt2	Tbt2 unit: °C. Value read = current value
122	Compressor running time	Compressor running time, unit: hour, value read = current value
123	Unit capacity	Register 200 is reserved for type 0702 and the value for type 071X represents the capacity of type 4-30 represents 4-30KW

Address register	Meaning	Description	
124	Current error code	Specific error code, refer to the code table.	
125	Error code 2		
126	Error code 2		
127	Error code 3		
128	State bit: 1	BIT15	Ask for installation parameter, 1: ask; 0: don't ask
		BIT14	Software version, 1: ask; 0: don't ask
		BIT13	Load SN, 1: ask; 0: don't ask
		BIT12	Reserved
		BIT11	EVU state
		BIT10	SG state
		BIT9	Water tank water antifreeze
		BIT8	Solar signal input
		BIT7	Room thermostat in cooling mode
		BIT6	Room thermostat in heating mode
		BIT5	ODU test mode
		BIT4	Remote ON-OFF
		BIT3	Oil return
		BIT2	Antifreeze
		BIT1	Defrosting
		BIT0	Pump in forced operation
129	Load output	BIT15	Defrosting
		BIT14	External heat source
		BIT13	Run
		BIT12	ALARM
		BIT11	Solar pump Pump_S
		BIT10	HEAT4
		BIT9	SV3
		BIT8	Mixing pump P_c
		BIT7	Recirculation pump P_d
		BIT6	External pump P_o
		BIT5	SV2
		BIT4	SV1
		BIT3	Standard unit pump Pump_I
		BIT2	TBH
BIT1	IBH2		
BIT0	IBH		
130	IDU software version	0 - 99 Indicates the software version of the indoor unit	
131	HMI software version	0 - 99 Indicates the software version of the user interface	
132	Unit target frequency	Compressor target frequency in Hz. Send value = actual value	
133	DC bus current	Unit: Amps	
134	DC bus voltage	Return value = actual value / 10 (Unit: Volts)	

Address register	Meaning	Description
135	TF module temperature	Unit (°C) - ODU feedback to IDU
136	Curve 1T1S	Value read = current value
137	Curve 2T1S	Value read = current value
138	Water flow	Value read = current value* 100 [unit: m ³ /hour]
139	ODU frequency limitation	Diagram value ----- ODU feedback 174
140	IDU capacity	Value read = current value* 100 unit: kW
141	Solar T	
142	Number of units in cascade	BIT1-BIT15 represents the online/offline state of 1-1 5 units BIT0 Reserved
143	Total power consumed For master unit high bit	Value read = current value
144	Total power consumed For master unit low bit	Value read = current value
145	Total energy produced For master unit high bit	Value read = current value
146	Total energy produced For master unit low bit	Value read = current value
147	AHS power supply output to EDGE series	Value read = current value* 10 (unit: V)
148	Real-time heating energy produced for master unit	Value read = current value* 100
149	Real-time heating re energy produced for master unit	Value read = current value* 100
150	Real-time COP in heating mode for master unit	Value read = current value* 100
151	Real-time heating power consumed for master unit	Value read = current value* 100
152	Total heating energy produced for system high bit	Value read = current value
153	Total heating energy produced for system low bit	Value read = current value
154	Total heating re energy produced for system high bit	Value read = current value
155	Total heating re energy produced for system low bit	Value read = current value
156	Total heating power consumed for system high bit	Value read = current value
157	Total heating power consumed for system low bit	Value read = current value
158	Total heating energy produced for master unit high bit	Value read = current value
159	Total heating energy produced for master unit low bit	Value read = current value
160	Total heating re energy produced for master unit high bit	Value read = current value
161	Total heating re energy produced for master unit low bit	Value read = current value
162	Total heating power consumed for master unit high bit	Value read = current value
163	Total heating power consumed for master unit low bit	Value read = current value

Address register	Meaning	Description
164	Total COP in heating mode for master unit	Value read = current value* 100
165	Total cooling energy produced for master unit high bit	Value read = current value
166	Total cooling energy produced for master unit low bit	Value read = current value
167	Total cooling re energy produced for master unit high bit	Value read = current value
168	Total cooling re energy produced for master unit low bit	Value read = current value
169	Total cooling power consumed for master unit high bit	Value read = current value
170	Total cooling power consumed for master unit low bit	Value read = current value
171	Total cooling re energy produced for master unit low bit	Value read = current value* 100
172	Total cooling power consumed for master unit high bit	Value read = current value
173	Total cooling power consumed for master unit low bit	Value read = current value
174	Total DHW re energy produced for master unit high bit	Value read = current value
175	Total DHW re energy produced for master unit low bit	Value read = current value
176	Total DHW power consumed for master unit high bit	Value read = current value
177	Total DHW power consumed for master unit low bit	Value read = current value
178	Total COP in DHW mode for master unit	Value read = current value* 100
179	Real-time cooling energy produced for master unit	Value read = current value* 100
180	Real-time cooling re energy produced for master unit	Value read = current value* 100
181	Real-time cooling power consumed for master unit	Value read = current value* 100
182	Real-time EER in cooling mode for master unit	Value read = current value* 100
183	Real-time DHW energy produced for master unit	Value read = current value* 100
184	Real-time DHW re energy produced for master unit	Value read = current value* 100
185	Real-time DHW power consumed for master unit	Value read = current value* 100
186	Real-time COP in DHW mode for master unit	Value read = current value* 100

11.4 States of units in cascade

Address register	Meaning	Description	
1000	Operation mode	Operation mode, 2: cool, 3: heat; 0: OFF	
1001	Com. Rps	Comp.freq., unit: Hz, (value read = current value)	
1002	TwI	TW_in, unit:°C entering water temperature; (value read = current value)	
1003	Two	TW_out, unit:°C leaving water temperature; (value read = current value)	
1004	Tsolar	Tsolar, unit:°C solar temperature; (value read = current value)	
1005	Salve unit error code	Specific error code, refer to the code table.	
1006	P6 error	Reserved	
1007	IDU status 1	Bit3~7	Reserved
		Bit2	Oil return
		Bit1	Antifreeze
		Bit0	Defrosting
1008	IDU status 2		Reserved
			Reserved
			Reserved
			Reserved
		Bit4	T1 enabled: 1- enabled; 0- disabled
		Bit3	IBH enabled: 1- enabled; 0- disabled
		Bit2	DWH
1009	IDU load	Bit1	Heat
		Bit0	Cool
		Bit7	HEAT 4 compressor heater 1- on; 0- off
			Reserved
		Bit5	Defrosting 1- on; 0- off
		Bit4	RUN 1- on; 0- off
		Bit3	PUMP_I 1- on; 0- off
1010	IDU load output - Reserved		Reserved
			Reserved
			Reserved
			Reserved
			Reserved
			Reserved
			Reserved
			Reserved
1011	T1	Total outlet water temperature, unit:°C, (value read = current value); invalid: 0x7F	
1012	T1B	Total outlet water temperature (after auxiliary heat source), unit:°C. (value read = current value); invalid: 0x7F	
1013	T2	Refrigerant liquid temperature, unit:°C. (value read = current value); invalid: 0x7F	
1014	T2B	Refrigerant gas temperature, unit:°C. (value read = current value); invalid: 0x7F	
1015	T5	DHW tank temperature, unit:°C. (value read = current value); invalid: 0x7F	
1016	Ta	Room temperature, unit:°C. (value read = current value); invalid: 0x7F	
1017	Tbt1	Upper storage tank temperature, unit:°C. (value read = current value); invalid: 0x7F	
1018	Tbt2	Lower storage tank temperature, unit:°C. (value read = current value); invalid: 0x7F	

Address register	Meaning	Description
1019	Water flow	(value read = current value)* 100, unit: M3/H
1020	Unit type	10-18 : means 10-18KW
1021	Unit target frequency	
1022	Software version	1-99 means IDU software version
1023	High bit of capacity	
1024	Low bit of capacity	
1025	IDU capacity	(value read = current value) *100, unit: KW
1026	Fan speed	Fan speed, (value read = current value)
1027	PMV	ODU EXV opening, unit: P. value read = current value (Only multiples of 8 will be shown)
1028	T3	Coil temperature, unit:°C
1029	T4	Outdoor temperature, unit:°C
1030	Tp	Discharge temperature Tp, unit: °C
1031	Th	Suction temperature, unit:°C
1032	TF	Unit (°C) ---- External unit feedback invalid value 0x7F
1033	Pressure 1	ODU high pressure, unit: kPA. (value read = current value)
1034	Pressure 2	ODU low pressure, unit: kPA. (value read = current value) (reserved)
1035	DC bus current	Unit: A (value read = current value)
1036	DC bus voltage	Unit: V (value read = current value)
1037	ODU current	Unit: A (value read = current value)
1038	ODU voltage	Unit: V (value read = current value)
1039	ODU frequency limitation solution	Solution read from ODU 174
1040		Total power consumed for master unit high bit
1041		Total power consumed for master unit low bit
1042	ODU software version	

12. Disposal

WEEE INFORMATION

The manufacturer is registered on the EEE National Register, in compliance with implementation of Directive 2012/19/ EU and relevant national regulations on waste electrical and electronic equipment.

This Directive requires electrical and electronic equipment to be disposed of properly.

Equipment bearing the crossed-out wheelee bin mark must be disposed of separately at the end of its life cycle to prevent damage to human health and to the environment.

Electrical and electronic equipment must be disposed of together with all of its parts.

To dispose of "household" electrical and electronic equipment, the manufacturer recommends you contact an authorised dealer or an authorised ecological area.

"Professional" electrical and electronic equipment must be disposed of by authorised personnel through established waste disposal authorities around the country.

In this regard, here is the definition of household WEEE and professional WEEE.

WEEE from private households: WEEE originating from private households and WEEE which comes from commercial, industrial, institutional and other sources which, because of its nature and quantity, is similar to that from private households. Subject to the nature and quantity, where the waste from EEE was likely to have been used by both a private household and users of other than private households, it will be classed as private household WEEE;

Professional WEEE: all WEEE which comes from something other than private households.

This equipment may contain:

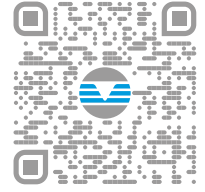
- refrigerant gas, the entire contents of which must be recovered in suitable containers by specialised personnel with the necessary qualifications
- lubrication oil contained in compressors and in the refrigeration circuit to be collected
- mixtures with antifreeze in the water circuit, the contents of which are to be collected
- mechanical and electrical parts to be separated and disposed of as authorised

When machine components to be replaced for maintenance purposes are removed or when the entire unit reaches the end of its life and needs to be removed from the installation, waste should be separated by its nature and disposed of by authorised personnel at existing collection centres.



A series of horizontal lines for writing. The top line is blue and features a small notch on the left side. The remaining lines are thin and grey.

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