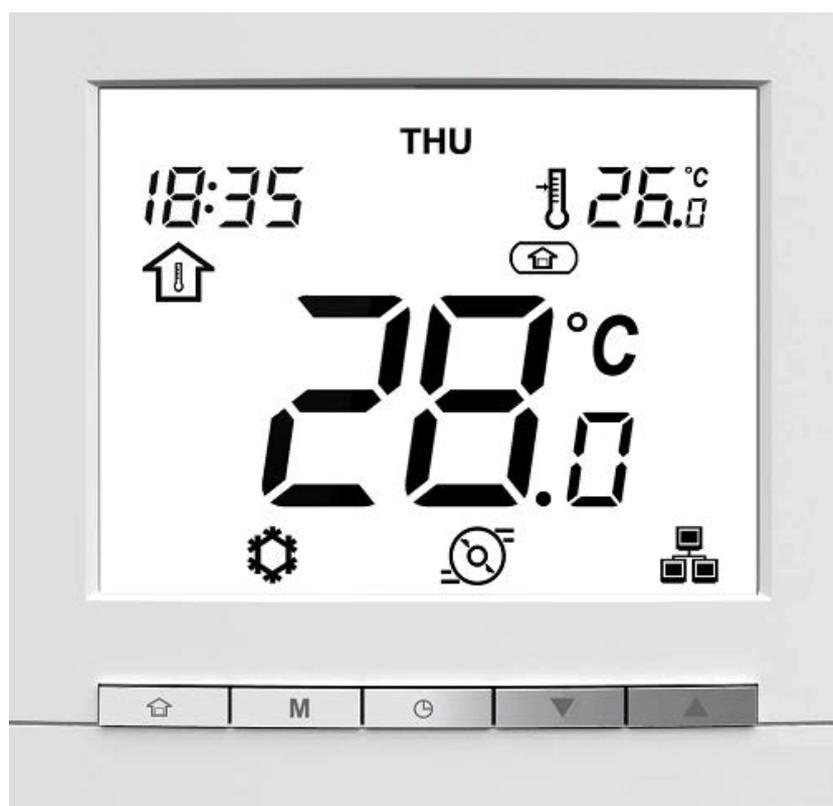


EN Installer manual

WUI Remote control for heat pump



WUI REMOTE CONTROL FOR HEAT PUMP

Dear Technician,

we congratulate you for having proposed a modern product, able to ensure maximum well-being for a long time with high reliability, efficiency, quality and safety.

While your technical skills and knowledge will certainly be more than sufficient, this booklet contains all the information that we have deemed necessary for the device's correct and easy installation.

Thank you again, and keep up the good work.

COMPLIANCE

The appliance complies with the following Regulations:

- Low Voltage Directive 2006/95 EEC
- Direttiva Electromagnetic Compatibility 2004/108 EEC and subsequent variations



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The following symbols are used in this publication:

 **WARNING** = actions requiring special care and appropriate training.

 **DO NOT** = actions that **MUST ON NO ACCOUNT** be carried out.

This booklet cod. Doc-0096187 rev. 0 (09/2019) consists of 47 pages.

1 GENERAL INFORMATION

Preliminary warnings

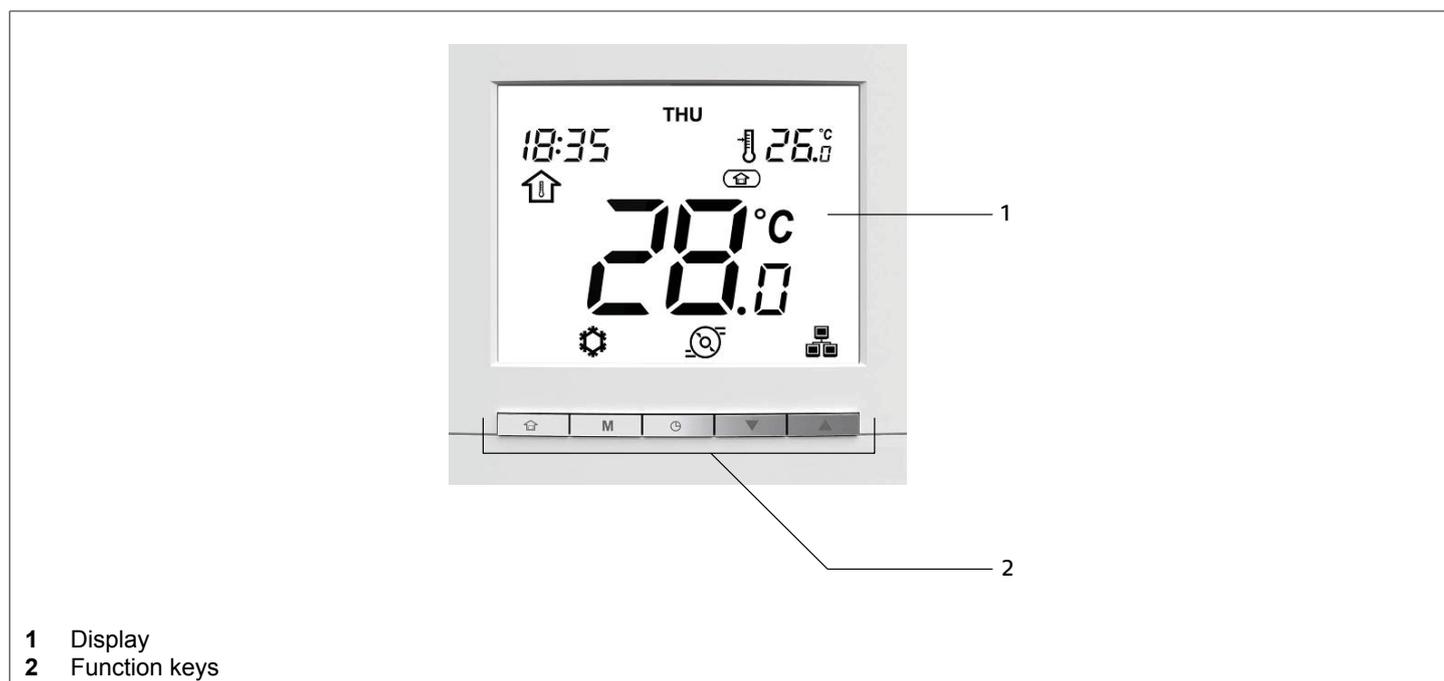
This instruction is an integral part of the manual of the device on which the KIT is installed. Please refer to this manual for the GENERAL WARNINGS and the FUNDAMENTAL SAFETY RULES.

Contro panel WUI

The control panel is the interface for the Installer and the User to carry out all the operations for setting the operating parameters and displaying the status of the components present in the appliance.

Based on the temperatures detected by the probes present in the appliance and by those possibly installed in the domestic hot water tank, in the room and outdoors, the electronics modulate the operation of the appliance and the operating condition can be displayed on the display.

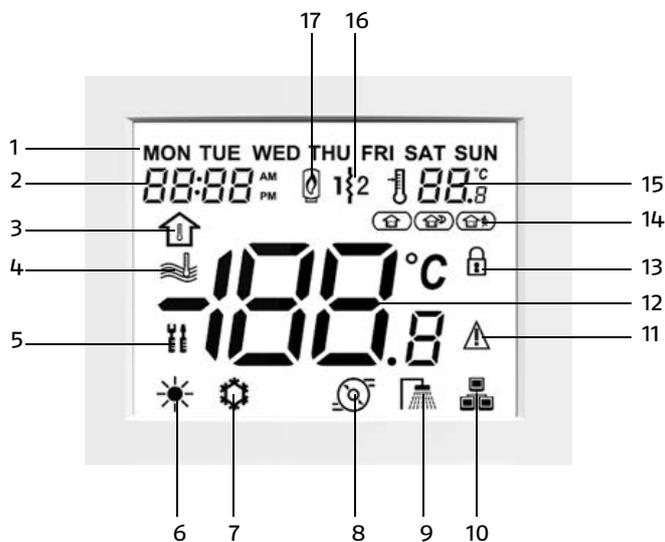
The panel can be used to set the temperature required for the system and for domestic hot water.



Button	Description
	Selection of the mode of occupation between: At home, Night, Away from home
M	Selection of the operating mode from: Off, Heating, Cooling, Domestic hot water
	Setting the date and time Time bands programming
	Scrolling the submenus down Decrease of the value of the selected parameter
	Scrolling the submenus upwards Increase the value of the selected parameter
	Parameter display
	Access to advanced settings
M +	Alarm display Alarm reset

Display

Displays all the information necessary to manage the appliance.



- | | |
|---|-------------------------------|
| 1 Days of the week | 13 Lock settings |
| 2 Clock | 14 Home, Night, Away mode |
| 3 Ambient temperature | 15 Setpoint |
| 4 Water temperature | 16 Electric heaters operation |
| 5 Advanced settings | 17 Boiler operation |
| 6 Heating mode | MON: Monday |
| 7 Cooling mode | TUE: Tuesday |
| 8 Circulation pump operation | WED: Wednesday |
| 9 Domestic Hot Water Mode | THU: Thursday |
| 10 Cascade operation | FRI: Friday |
| 11 Alarm presence | SAT: Saturday |
| 12 Temperature indicator, alarm code and messages | SUN: Sunday |

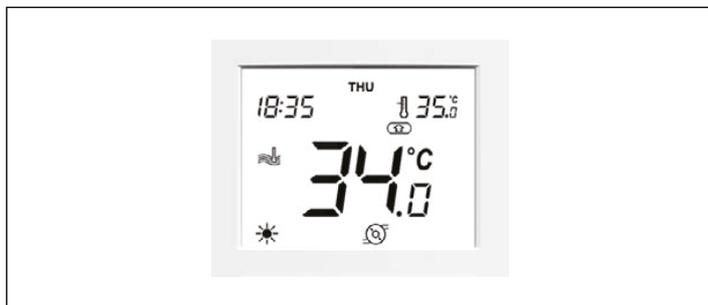
Display indication	Description
FRI	Indication of the current day of the week from Monday (MON) to Sunday (SUN)
88:88^{AM}/_{PM}	Indication of the current time in 12h or 24h format
	Indication that system control is based on ambient temperature. In this case it is necessary to connect a room temperature probe or install the remote control panel available as an accessory
	Indication that system control is based on water temperature
	The icon flashes when the password is required
	Indication that the heating mode is active
	Indication that cooling mode is active
	Indication that the circulation pump is active
	Indication that the domestic hot water mode is active
	Fixed icon: indication of Master unit connected in cascade
	Fast flashing icon: indication of Slave unit connected in cascade

GENERAL INFORMATION

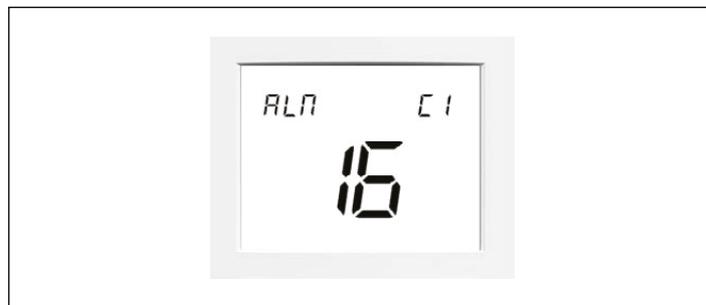
Display indication	Description
	Icon with slow flashing: indication of communication error between master and slave unit
	Temperature indication Ambient temperature Temperatura acqua Indication of parameter number and value Indication of the alarm code
	Indication that the occupation mode is blocked by the user. In this case, the time programming is deactivated.
	Indication that the mode "In casa" is active
	Indication that the mode "Notte" is active
	Indication that the mode "Fuori casa" is active
	Indication of the desired temperature value (setpoint)
	Indication that the integration electric heater is active. Numbers 1 and 2 refer to the activated stage
	Indication that the integration boiler is active
	Fixed icon: indication of intervention of an alarm that stopped the unit
	Flashing icon: indication of intervention of an alarm that has left the unit running

Displaying details

The figures below represent some of the most frequent displays.



Mode: >Heating
Mode home: At home
Control: Water temperature
Water temperature: 34 °C
Setpoint: 35 °C



Alarm : C1
Alarm code: 16

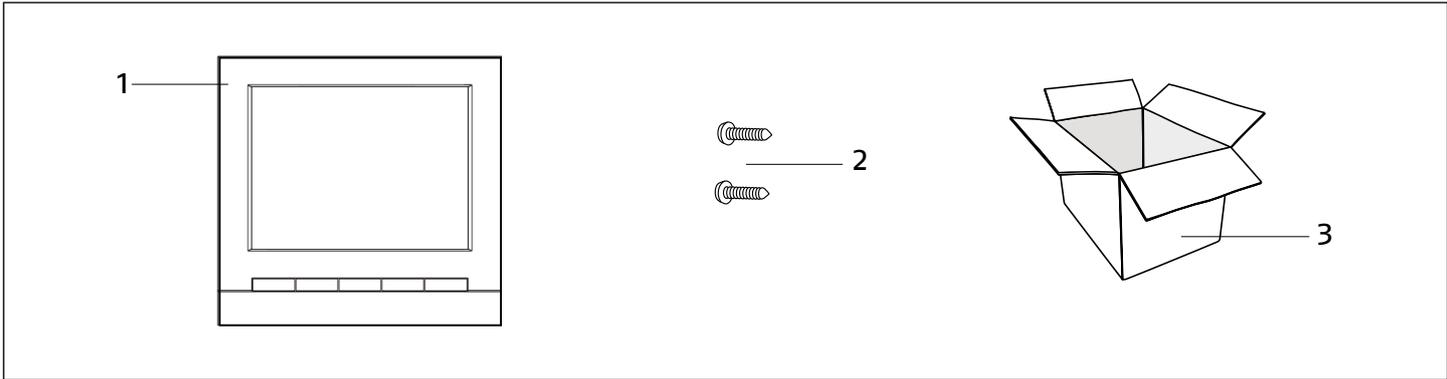


Mode: Off

2 INSTALLATION

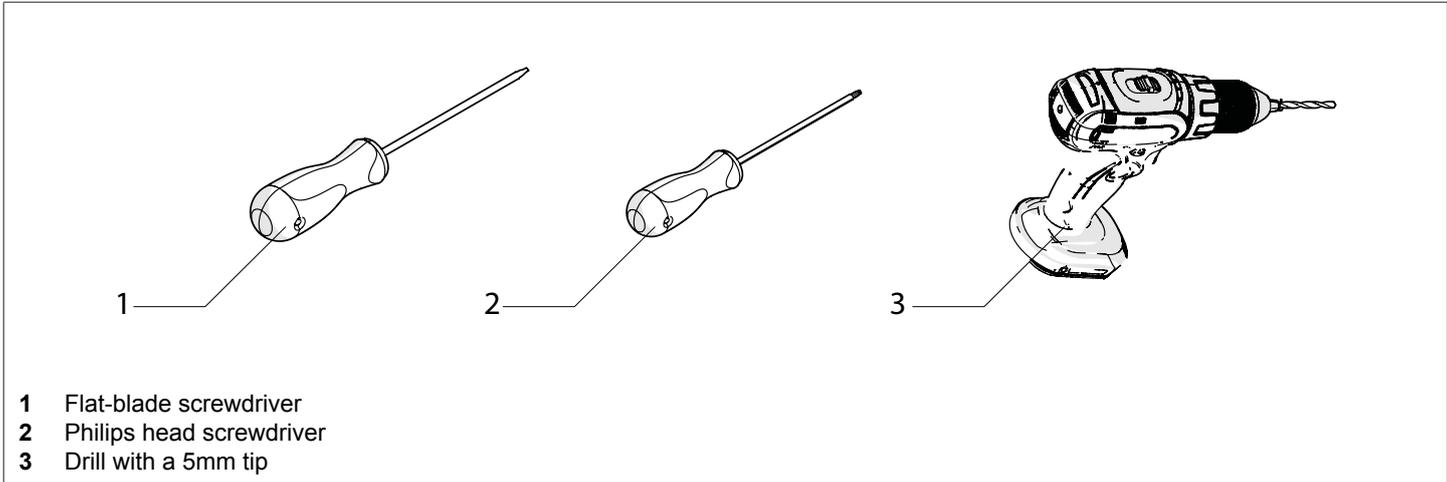
Content

Position	Description	Q.ty
1	Remote control panel	1
2	Fixing screws	2
3	Packaging	1



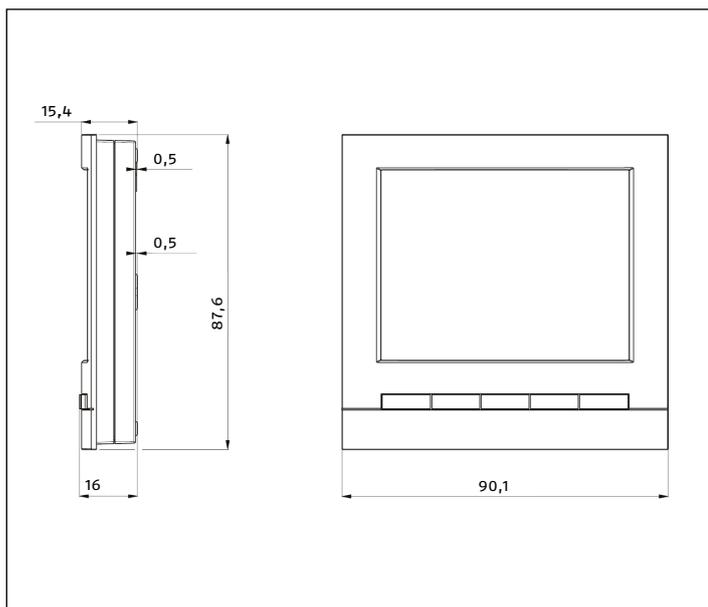
⚠ The WUI remote control manual is supplied with the heat pump to which it must be combined.

Recommended tools

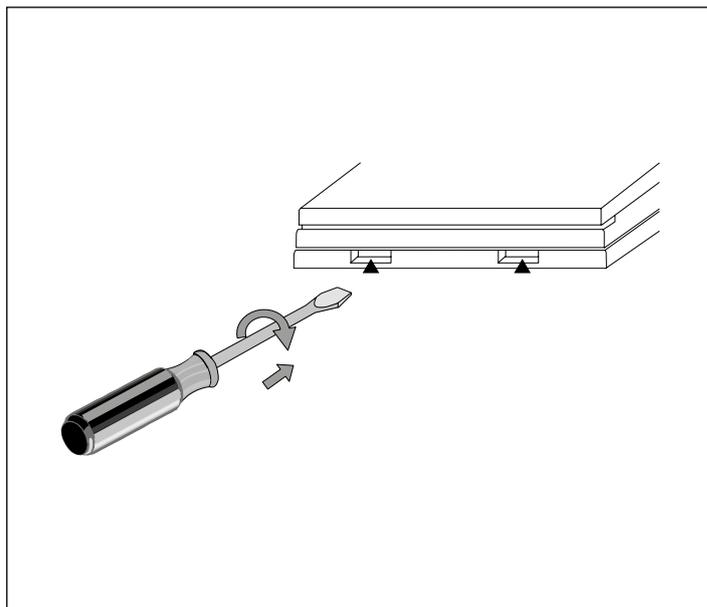


INSTALLATION

Dimensions

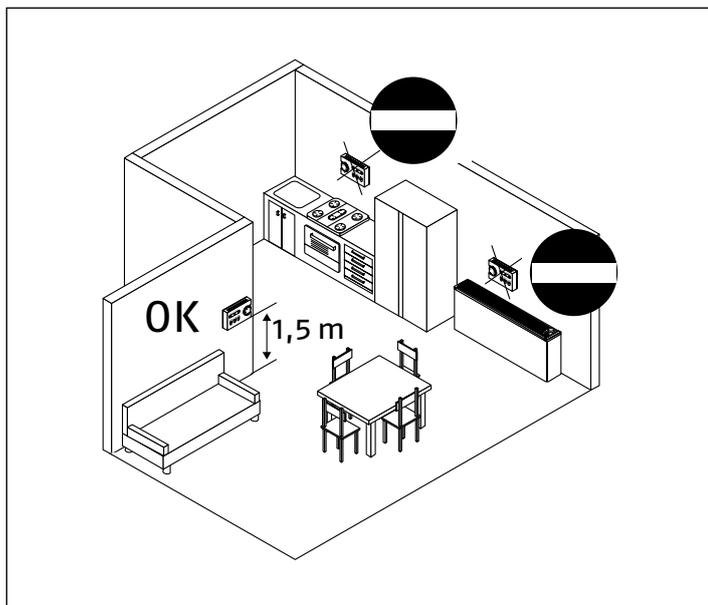


Assembly

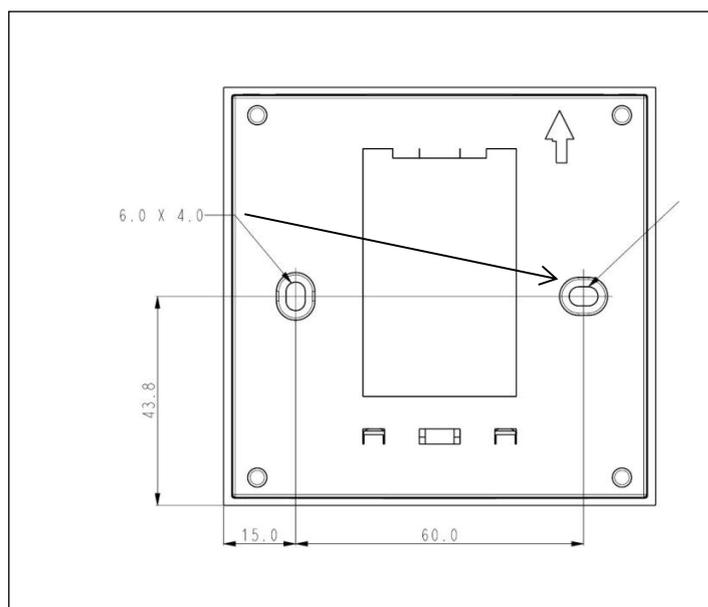


Installation place

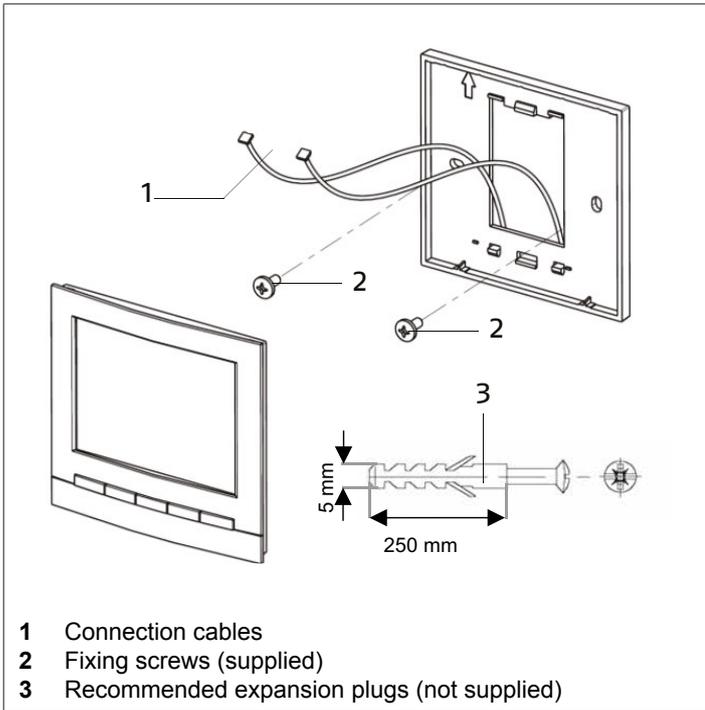
- For correct installation, bear in mind that the control panel:
 - It must be installed on a wall, possibly not perimeter, which is not crossed by hot or cold pipes
 - It must be fixed approximately 1.5m above the ground
 - It must not be installed near doors or windows, cooking appliances, radiators, fan coils or more generally in areas that can generate fluctuations in the temperatures detected.



— Separate the control panel from the base



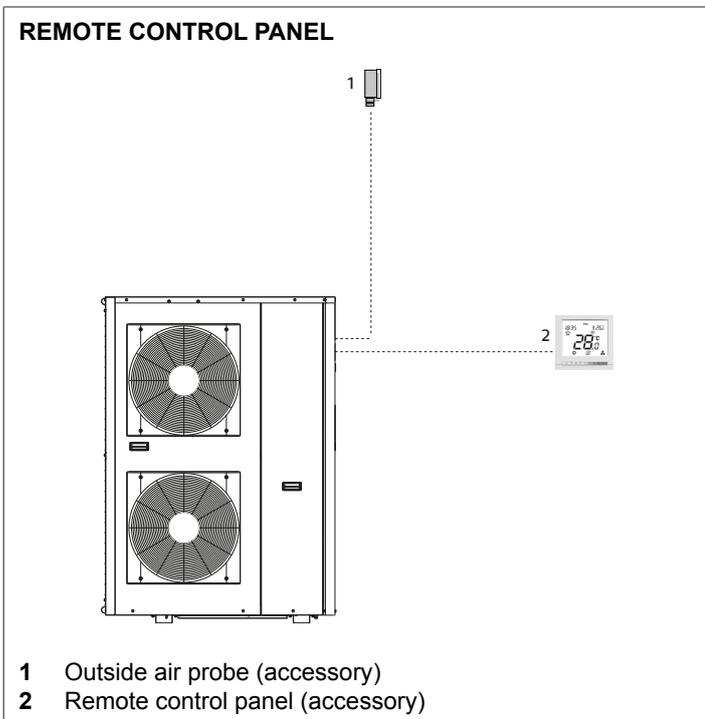
- Mark the fastening points using the base as template
- Drill a hole in the wall for the passage of the connections



- 1 Connection cables
- 2 Fixing screws (supplied)
- 3 Recommended expansion plugs (not supplied)

- Pass the connection cables through the hole in the base
- Fix the base using the fixing screws or suitable anchors to the supporting wall

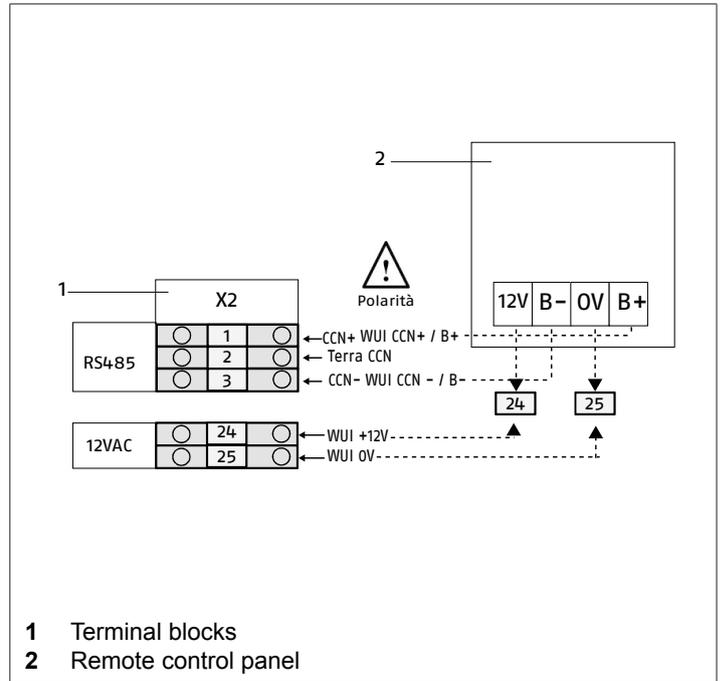
Connections



- 1 Outside air probe (accessory)
- 2 Remote control panel (accessory)

In order to connect correctly, remember that:

- The connection cable must be shielded
- The connection cable must not have any joints; if these are necessary, they must be watertight and suitably protected
- Any ducting of the connection cable must be separated from voltage cables.
- Polarity must be respected.



- 1 Terminal blocks
- 2 Remote control panel

- Connect the cables to the terminals of the control panel
- Connect the cables to the terminals of the appliance

⚠ Respect the polarity.

- Connected finished:
 - Mount the control panel on the base.

Adjustments

To enable the remote control panel:

Parameter 521: 2 remote interface WUI

The water temperature can be controlled in two ways:

- fixed point
- with climatic curves by means of an external air probe

The room temperature (1 zone) is controlled from the remote control panel.

⚠ Per tutte le altre impostazioni e per le modalità di utilizzo dell'accessorio fare riferimento al Libretto istruzioni installatore e al Libretto istruzioni utente.

PARAMETERS

3 USE

3.1 Preparation for first commissioning

The first commissioning must be carried out by the Technical Service.

Prior to commissioning, it is necessary to check that:

- all the safety conditions have been met
- installation distances and gaps have been respected
- the quantity of water in the primary circuit is greater than the minimum volume indicated in the chapter "Plant water content" in the installation manual of the unit being installed, to prevent the risk of ice formation during defrosting operations or continuous modulation of the compressor frequency
- the check valves on the hydronic circuit are opened
- the hydraulic circuit be air purged
- the mesh filter must be installed and carefully cleaned after the system filling up
- the electrical connections have been properly completed
- power supply values are correct.
- the earthing has been carried out correctly
- all the connections have been properly tightened

Subsequently, the following operations must be carried out, acting on the control panel or on the external consents and with the appliance powered electrically:

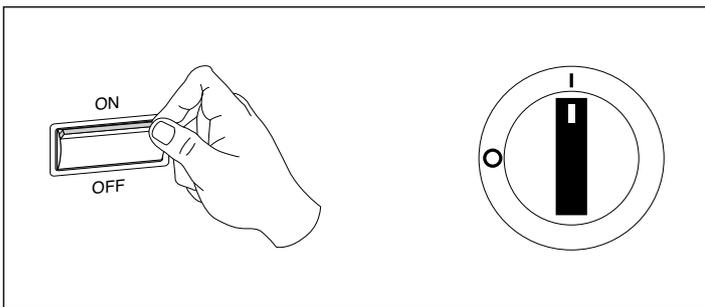
- day and hour setting
- unit's parameters setting

⚠ Always wear the appropriate Personal Protective Equipments.

⚠ The device must always be powered electrically in order to allow for the compressor's oil to be properly pre-heated.

It is mandatory for the equipment to be under voltage (electrical supply) at least for eight hours before the first commissioning.

- put the system main switch on "ON" and the equipment main switch on "I" (on)



Set the following parameters with the control panel:

Day and hour

Before using the control panel, the current day and time must be set:

- press any key to activate the control panel

Setting the day of the week

- keep the key pressed  for 2 seconds

The currently set day of the week flashes on the display.

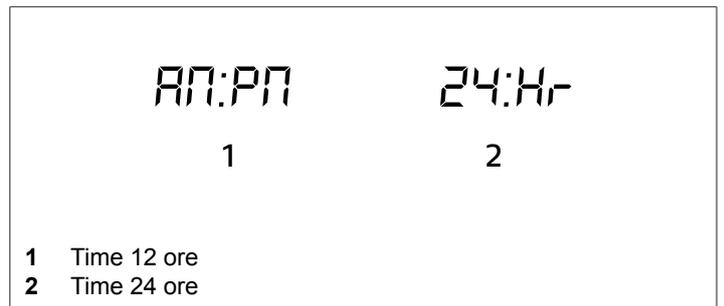


- push  or  to select the current day
- push  to confirm the selection and access the next item

Setting the time format

After setting the day of the week

- push  or  to select the desired time format



- 1 Time 12 ore
- 2 Time 24 ore

- push  to confirm the selection and access the next item

Time setting

After setting the time format.

For the 12 hour format:

- push  or  to select the current time

For the 24 hour format:

- push  or  to select the current time

- push  to confirm the selection and access the next item

- push  or  to select the current minutes

Finish the settings:

- keep the key pressed  for 2 seconds to store
- keep the key pressed  for 2 seconds to exit

Parameters

Through the control panel it is possible to modify the management parameters of the heat pump to adapt its operation to the configuration of the system to which it is connected.

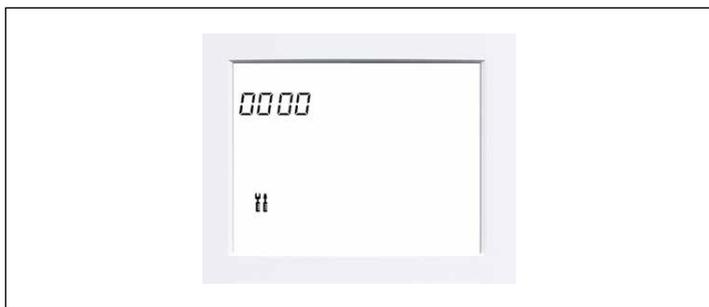
To view the configurations see the chapter "Parameterization based on the system configuration" p. 12.

Proceed as follows to access the filters:

- press any key to activate the control panel

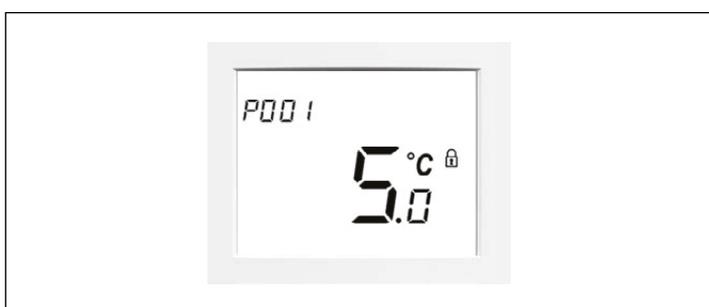
- hold down the keys simultaneously  and  for 2 seconds

The display asks for the password for advanced settings.



Enter your password(0120)

- push ▼ or ▲ per cambiare il valore della cifra
- push ⌚ to confirm the digit and move to the next
- keep the key pressed **M** for 2 seconds to validate the password and log in



To select:

- push ▼ or ▲ to select the desired parameter

To change:

- keep the key pressed ⌚ for 2 seconds
- push ▼ or ▲ to change the value
- push ⌚ to confirm the selection and access the next item
- keep the key pressed **M** for 2 seconds to store the parameter

Finish the settings:

- keep the key pressed ⌚ for 2 seconds to exit

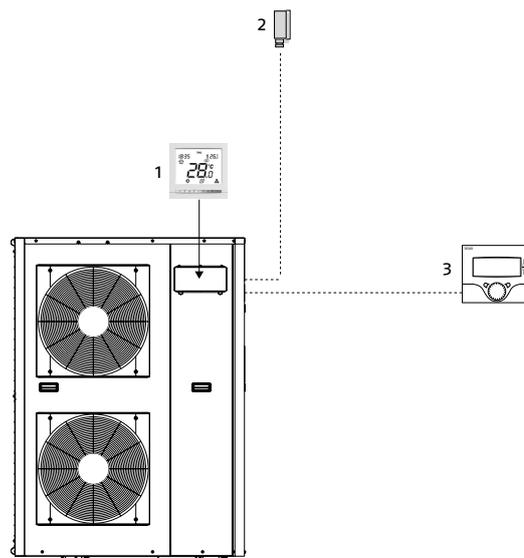
Parameterization based on the control logic

The device is managed by an electronic platform and can be controlled through:

- contro panel WUI (optional)
- of external consents connectable to clean contacts available in the unit terminal board
- the remote control panel installed in the REC10CH environment (accessory)

A specific unit parameter configuration is required depending on the control method used.

EXTERNAL CONSENTS



- 1 Control panel onboard (accessory)
- 2 Outside air probe (accessory)
- 3 External signals (on/off, heating/cooling selector, comfort/eco)

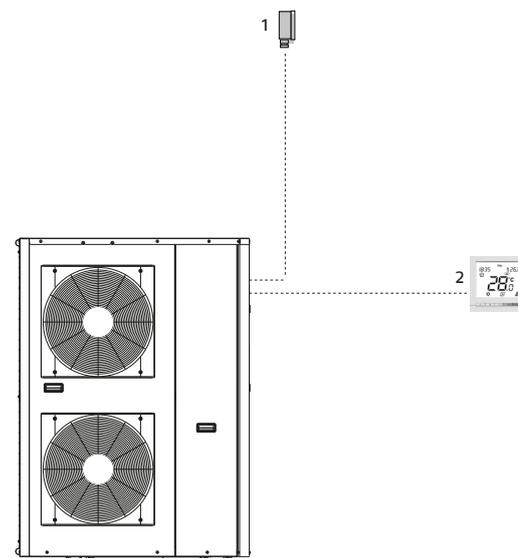
Parameter 521: 1 Remote control by external dry cotacts

The water temperature can be controlled in two ways:

- fixed point
- with the climatic curves (OAT probe needed)

The ambient temperature is controlled by external devices.

REMOTE CONTROL PANEL



- 1 Outside air probe (accessory)
- 2 Remote control panel (accessory)

Parameter 521: 2 remote interface WUI

The water temperature can be controlled in two ways:

- fixed point
- with the climatic curves (OAT probe needed)

The room temperature (1 zone) is controlled from the remote control panel.

PARAMETERS

Parameterization based on the system configuration

indicated below (see chapter).

The parameters to be set according to the system configuration are

Heat pump and DHW production

N°	Operation	Function	Par.	Denomination	Description	Range	Default	Um
1	Configuration of DHW mode	DHW_CONF	701	Type of domestic hot water	0 = DHW not managed 1 = 2-point deviation valve - NO contact (valve energized in DHW position) 2 = 2-point deviation valve - NC contact (valve de-energized in DHW position) 3 = Not used	0 ÷ 3	0	-
			703	Priority DHWS	0 = Automatico 1 = DHW	0 ÷ 1	0	-
			719	DHW tank probe type	0 = DHW thermostat (thermal switch) 1 = Sensor DHW (thermal switch 10 KΩ) 2 = Sensor DHW (thermal switch 5 KΩ) 3 = Sensor DHW (thermal switch 3 KΩ) Note: If no probe is selected ("0"), the request for domestic hot water is always true and the changeover to heating / cooling function is managed by the timer.	0 ÷ 3	0	-
2	DHW setpoint configuration	WAT_STP	406	Setpoint DHW	Setpoint DHW	30 ÷ 60	50	°C
			405	DHW anti-legionella setpoint	Anti-legionella water setpoint	50 ÷ 60	60	°C
3	Impostazione della resistenza di backup	GEN_CONF	507	Configuration DO n. 9 customized	0 = Disable 10 = Electric heater stage n.2 11 = Electric heater stage n.3 1 - 9 e 12 = not used in this configuration	0 ÷ 12	1	-
					BCK_CONF			
		604	OAT booster threshold	The activation of the boobtser is allowed only if the OAT falls below this threshold (with 1 K of hysteresis).		-30 ÷ +15	-7	°C
4	Configuration of the DHW program	DHW_CONF	711	Days of the DHW program	Select the days for DHW mode operation Monday - Tuesday - Wednesday - Thursday - Friday - Saturday - Sunday	Yes / No	Yes	-
			712	DHW start time	Start time of DHW mode	00:00 - 23:59	21:00	hh: mm
			713	DHW stop time	Stop time of DHW mode	00:00 - 23:59	06:00	hh: mm
5	Configuration of the anti-legionella program	DHW_CONF	714	Days of the anti-legionella cycle	Select the days for operation in anti-legionella mode Monday - Tuesday - Wednesday - Thursday - Friday - Saturday - Sunday	Yes / No	No	-
			715	Anti-legionella start time	Time to start anti-legionella mode	00:00 - 23:59	02:00	hh: mm
6	Setting the DHW start-stop criteria	DHW_CONF	721	Delta T DHW tank (start)	DHW mode is requested if the temperature of the water tank drops below the DHW set point [P406] minus Delta T DHW tank [P721] (start).	2,0 ÷ 10,0	5	K
			722	Delta T EWT (stop)	DHW mode is stopped if the EWT goes above the DHW setpoint [P406] minus Delta T EWT [P722] (DHW stop).	0,0 ÷ 20,0	10	K
7	Configuration of the operating time between the DHW mode and the heating + cooling mode	DHW_CONF	704	Minimum operating time SHC	Minimum operating time in SHC mode	0 ÷ 720	20	min
			705	Maximum operating time SHC	Maximum operating time in SHC mode	-1 ÷ 720	60	min
					If this parameter is configured to -1, the maximum SHC or the DHW operating time are ignored. Note: If the maximum operating time is set, the maximum operating time of SHC must also be set. Otherwise, the unit will never return to DHW mode.			
			706	Minimum DHW operating time	Minimum operating time in DHW mode	0 - 720	20	min
					Maximum operating time in DHW mode			
707	Maximum DHW operating time	If this parameter is configured for -1, the maximum SHC or DHW run time is ignored. Note: If the maximum operating time is set, the maximum operating time of SHC must also be set. Otherwise, the unit will never return to DHW mode.	-1 ÷ 720	60	min			

PARAMETERS

N°	Operation	Function	Par.	Denomination	Description	Range	Default	Um
8	Configuration of summer mode	DHW_CONF	716	Summer mode OAT threshold	Summer mode is set when the summer mode switch is closed.	15 ÷ 30	20	°C
			717	Summer mode ignition delay	Summer mode is set to "Acceso" if the OAT is higher than the OAT threshold [P716] at least for the summer mode shutdown delay [P718].	0 ÷ 12	5	h
			718	Summer mode shutdown delay	Summer mode is reset if the OAT drops below eight of the OAT threshold [P716] minus 2 K at least for the summer mode shutdown delay.	0 ÷ 12	5	h
9	Setting the limits of the DHW mode	CMP_CONF	543	DHW mode limit value	The compressor frequency is limited to this percentage of the maximum allowed frequency if the unit operates in domestic hot water mode.	50 ÷ 100	100	%

EWT Water inlet temperature
 OAT Outside air temperature

SHC Heating/cooling mode

Integration boiler

N°	Operation	Function	Par.	Denomination	Description	Range	Default	Um
1	Configuration of the DHW mode				Refer to the system diagram for heat pump and DHW production			
2	Boiler setting	BCK_CONF	601	Integration type	0 = none 9 = integration with oil or gas boiler 1 - 8 = not used for this configuration	0 / 9	0	-
			514	OAT threshold in heating	The heat pump cannot operate in heating mode if the OAT falls below this threshold.	-20 / 10	-20	°C
3	Setting up an additional pump	PMP_CONF	573	Additional pump logic	With control panel on the machine This parameter defines the operation of the additional pump in stand-by mode: 0 = No additional pump 1 = Pump always on except in Off mode (off) 3 = Pump always on except in Off mode (off) or when DHW mode is active	0 / 4	0	-
					With remote control panel This parameter defines the operation of the additional pump in stand-by mode: 0 = No additional pump 2 = Based on room temperature: pump off except when demand is derived from room temperature 4 = Pump off, except when demand derives from room temperature and there is no DHW active	0 / 4	0	-

OAT Outside air temperature

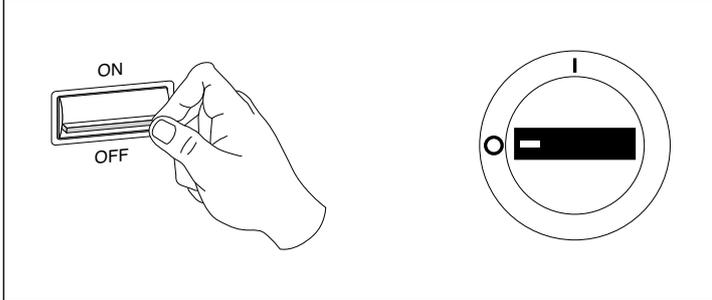
PARAMETERS

Cascade system parameterization

Example of configuration of a system consisting of three units, one master and two slaves.

Preliminary operations

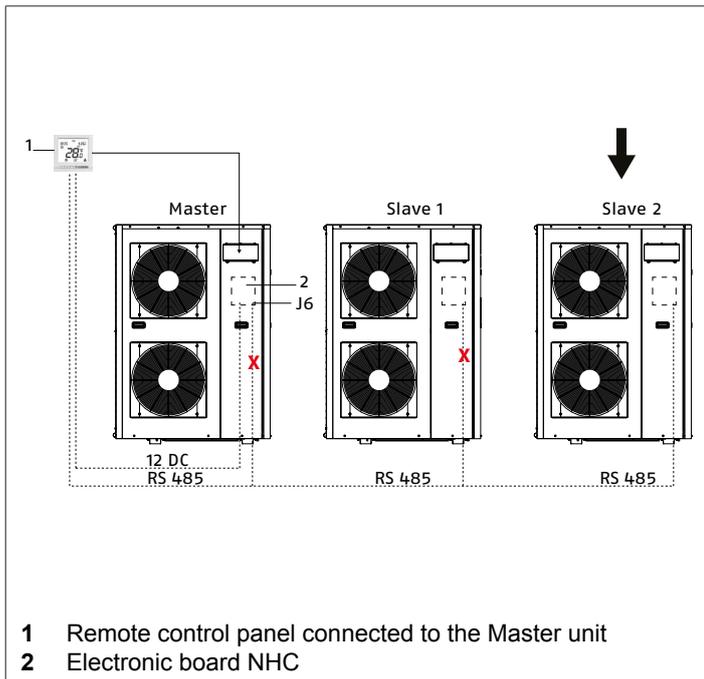
- put the system main switch on "OFF" and the equipment main switch on "0" (off)



- make the bus connection between all the machines (terminals 1, 2 and 3)
- electrically disconnect the control panel on board the Slave units by acting on terminals 24 and 25
- put the system main switch on "ON" and the equipment main switch on "I" (on)

The following operations must be performed in the indicated sequence.

Slave 2 address changing



- disconnect the **green connector J6** on the NHC electronic board of the Master unit and of the Slave unit 1
- leave it connected to the electronic board of the Slave 2 unit
- access the control panel of the Master unit
- press any key to activate the control panel
- access the advanced settings and enter the password **0120**

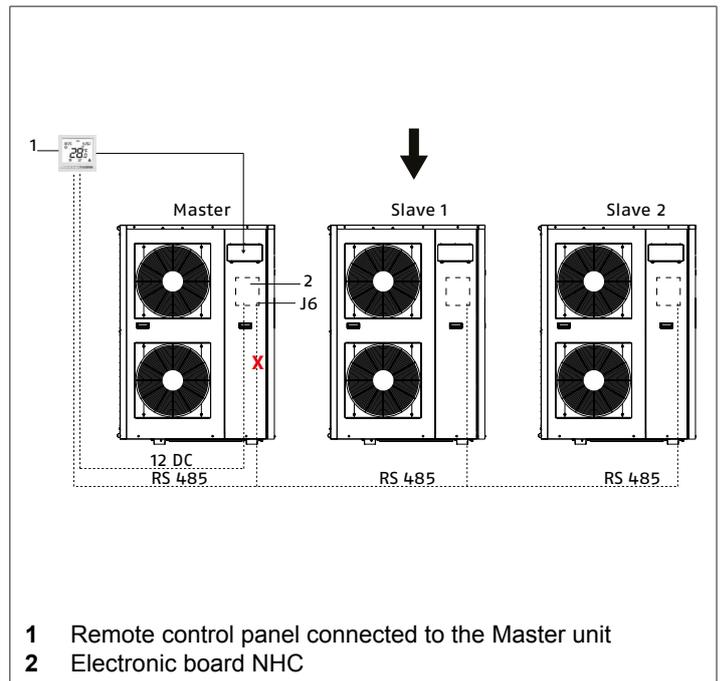
- ⚠ Refer to the chapter "Parameters" p. 10.
- modify according to the following table

Parameter	Parameter description	Range	Default	Value to be entered	Remarks
641	CCN address	1/239	1	3	Parameter that sets the CCN address of the machine. It must be different from that of the other units.

- wait 30 seconds for confirmation of entering the value

- ⚠ During this time, the E1 error may appear which can be ignored.

Slave 1 address changing



- connect the **green connector J6** on the Slave 1

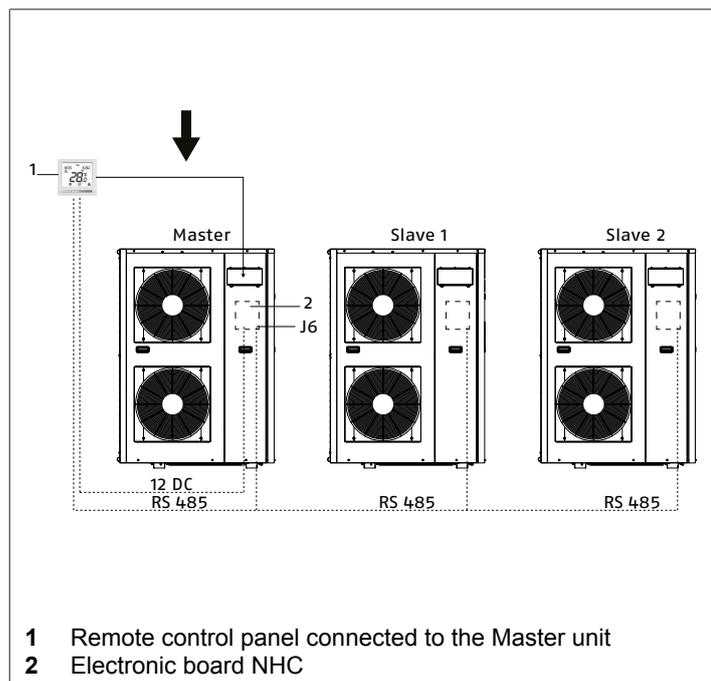
- ⚠ Do not disconnect that of Slave 2.
- modify according to the following table

Parameter	Parameter description	Range	Default	Value to be entered	Remarks
641	CCN address	1/239	1	2	Parameter that sets the CCN address of the machine. It must be different from that of the other units.

- wait 30 seconds for confirmation of entering the value

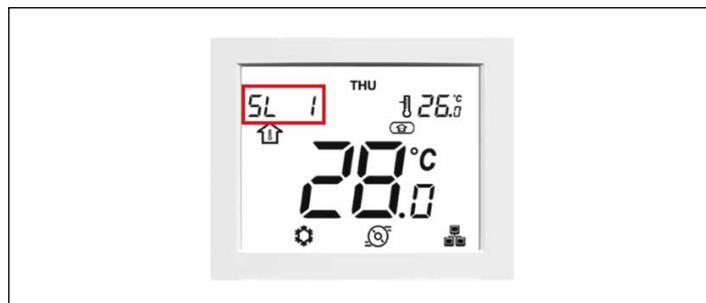
- ⚠ During this time, the E1 error may appear which can be ignored.

Master address changing and unit address configuration



— hold down the keys simultaneously and for 2 seconds

The indication of the unit you are working on appears at the top left.



— preme or to select the Slave unit 1
— modify according to the following table

Parameter	Parameter description	Range	Default	Value to be entered	Remarks
742	Master unit selection	0/2	0	2	Parameter that sets the unit as Master or Slave (0 = Disabled, 1 = Master, 2 = Slave)
521	Interface selection	0/3	0	1	Definition of the type of control (0 = no interface, 1 = remote control with contacts, 2 = control with remote control panel, 3 = control with control panel on the unit).

- 1 Remote control panel connected to the Master unit
- 2 Electronic board NHC

— connect the **green connector J6** on the Master unit

Do not disconnect that of Slave 1 and 2.

— modify according to the following table

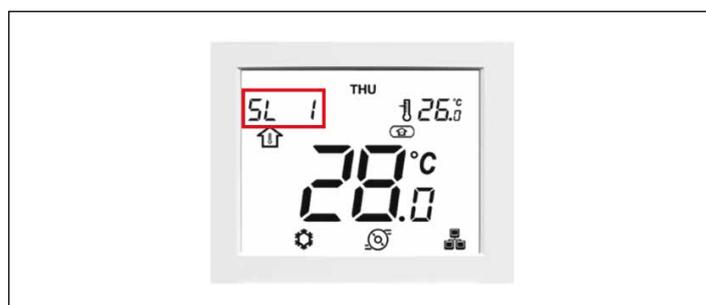
Parameter	Parameter description	Range	Default	Value to be entered	Remarks
743	Slave address 1	1/239	1	2	Address definition for Slave 1
744	Slave address 2	1/239	1	3	Address definition for Slave 2
742	Master unit selection	0/2	0	1	Parameter that sets the unit as Master or Slave (0 = Disabled, 1 = Master, 2 = Slave)

Slave 2 configuration

— access the control panel of the Master unit
— press any key to activate the control panel

— hold down the keys simultaneously and for 2 seconds.

The indication of the unit you are working on appears at the top left.



— push or to select the Slave unit 2
— modify according to the following table

Compressor control mode selection

— modify according to the following table

Parameter	Parameter description	Range	Default	Value to be entered	Remarks
751	Type of cascade	0/2	1	1	0=Master start, then Slave 1 then Slave 2 ... The stop is Slave 2, Slave 1 and Master. 1=Starting of the units according to their wear factor. 2=All units start and stop at the same time (Sequence).
746	% load for Slave start	30/75	75	75	If parameter 751 is set with the values 0 or 1, it is possible to define the % beyond which the next unit starts.

— wait 30 seconds for confirmation of entering the value

Slave 1 configuration

— access the control panel of the Master unit
— press any key to activate the control panel

Parameter	Parameter description	Range	Default	Value to be entered	Remarks
742	Master unit selection	0/2	0	2	Parameter that sets the unit as Master or Slave (0 = Disabled, 1 = Master, 2 = Slave)
521	Interface selection	0/3	0	1	Definition of the type of control (0 = no interface, 1 = remote control with contacts, 2 = control with remote control panel, 3 = control with control panel on the unit).

PARAMETERS

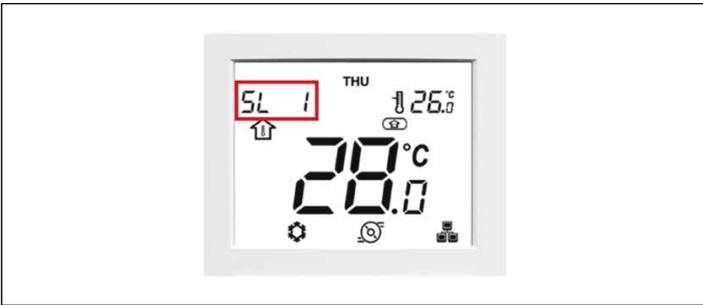
Master unit's pump control mode selection

Before starting the cascade it is necessary to define the control of the pumps, establishing whether the control will be on each pump installed in the individual units or if you want to control a single pump installed on the system or if you don't want to control any pump from the control panel because another control is already present on the system.

The parameter that regulates the above is 758 which must be set on all three units as follows:

- make sure that all pumps except that of the Master unit are off
- access the control panel of the Master unit
- press any key to activate the control panel
- hold down the keys simultaneously  and  for 2 seconds

The indication of the unit you are working on appears at the top left.



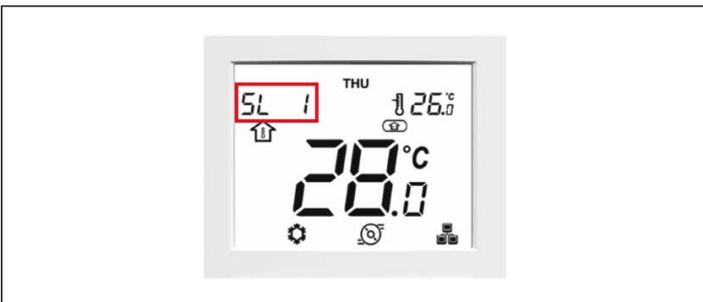
- push  or  to select the Master unit
- modify according to the following table

Parameter	Parameter description	Range	Default	Value to be entered	Remarks
758	Speed control type	0/3	2	2	0=No pump control 1=Control of a single pump (installed on the system) 2=Pump control on the unit (start-up according to parameter 229) 3=Pump control on the unit (stop when the unit has reached the setpoint)

Slave 1 unit's pump control mode selection

- make sure that all pumps except that of Slave 1 are off
- access the control panel of the Master unit
- press any key to activate the control panel
- hold down the keys simultaneously  and  for 2 seconds

The indication of the unit you are working on appears at the top left.



- premere  or  to select the Slave unit 1

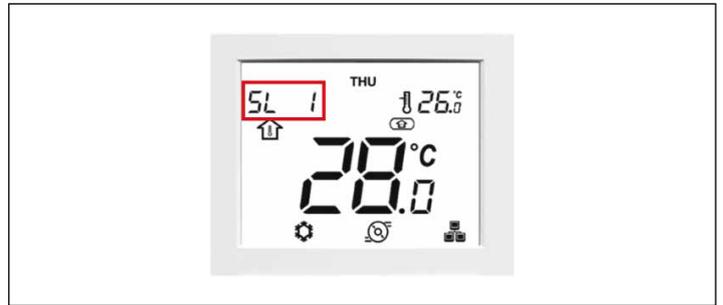
— modify according to the following table

Parameter	Parameter description	Range	Default	Value to be entered	Remarks
758	Speed control type	0/3	2	2	0=No pump control 1=Control of a single pump (installed on the system) 2=Pump control on the unit (start-up according to parameter 229) 3=Pump control on the unit (stop when the unit has reached the setpoint)

Slave 2 unit's pump control mode selection

- make sure that all pumps except that of the Slave 2 unit are off
- access the control panel of the Master unit
- press any key to activate the control panel
- hold down the keys simultaneously  and  for 2 seconds

The indication of the unit you are working on appears at the top left.



- push  or  to select the Slave unit 2
- modify according to the following table

Parameter	Parameter description	Range	Default	Value to be entered	Remarks
758	Speed control type	0/3	2	2	0=No pump control 1=Control of a single pump (installed on the system) 2=Pump control on the unit (start-up according to parameter 229) 3=Pump control on the unit (stop when the unit has reached the setpoint)

Setting and controls of the pump

Carry out the calibrations and checks on each individual unit by acting on the parameters indicated in the table.

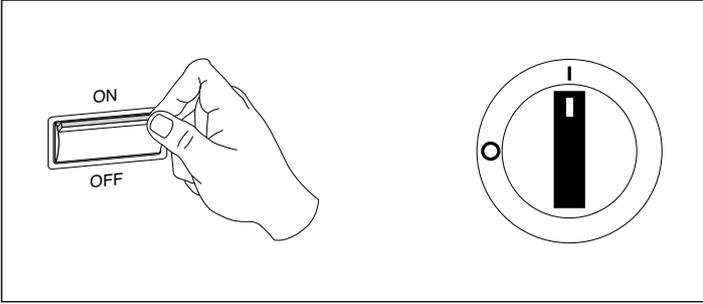
Activities		Table	Par.	Sigla	Description	Field	Default	Es.	Unit	
Cleaning procedure		QCK_TEST	321	Quick test enable	Quick test mode access	0 ÷ 1	0	1	-	
			331	Speed of the pump	Pump activation	0 ÷ 100	0	100	%	
			Wait about 2 hours for the cleaning of the hydraulic circuit							
			331	Speed of the pump	Pump deactivation	0 ÷ 100	0	0	%	
Deaeration procedure		MOD_REQ	321	Quick test enable	Quick test mode output	0 ÷ 1	0	0	-	
			44	System operating mode request	8=Deaeration (the pump runs constantly to vent the circuit) 0 ÷ 6 and 9 = not used	0 ÷ 9	-	8	-	
			Wait for the circuit to be vented							
			44	System operating mode request	To exit the vent mode, change parameter P044 in one of the required modes	0 ÷ 9	-	0/1/2/4	-	
Water flow verification procedure	Fixed speed pump (internal or external)	QCK_TEST	321	Quick test enable	Quick test mode access	0 ÷ 1	0	1	-	
			331	Speed of the pump	Pump activation	0 ÷ 100	0	100	%	
			Use the calibration valve to set the nominal flow rate							
			331	Speed of the pump	Pump deactivation	0 ÷ 100	0	0	%	
			321	Quick test enable	Quick test mode output	0 ÷ 1	0	0	-	

PARAMETERS

3.2 Putting into service

After carrying out the operations of preparation for the first commissioning, to start the appliance it is necessary:

- put the system main switch on "ON" and the equipment main switch on "I" (on)



It is mandatory for the equipment to be under voltage (electrical supply) at least for eight hours before the first commissioning.

- **To start the system from the control panel**
 - check that the control panel display is on, indicating the presence of voltage
 - start up as indicated in the User Manual
- **To start the system from the external consents**
 - check that the control panel display is on, indicating the presence of voltage
 - start by placing the remote On / Off switch to On
 - follow the instructions provided with the control you are using

Checks during and after the first commissioning

After starting the heat pump, check that:

- In models with three-phase power supply, the compressor's noise level must not be abnormal (e.g. engine knocking).
- that the suction pressure does not exceed the discharge pressure, if so, invert a phase.
- the current consumed by the compressor is less than the maximum permitted
- the device is operating under the recommended operating conditions
- the unit is able to stop and start up again
- the water flow rate of the circulation pump is within limits
- during the functioning at the maximum capacity (cooling or heating) the delta T between inlet water temperature and outlet water temperature must be about 5 °C

⚠ Should any of the above-listed controls have problems: turn the device off and call the Technical Service immediately.

⚠ If the unit will be controlled by the free potential contacts: turn off the unit when all the terminals are switched off in order to avoid any energy waste.

⊖ It is forbidden to use the heat pump with reversed phase.

3.3 Temporary shutdown

In order to shut down the unit for periods of brief absences:

- turn off the unit only using the selected interface
- close the check valves
- open the by pass valve to allow the anti freeze protection

In this way the anti freeze logics and the compressor electric heater

remain activated.

3.4 Stop for an extended period of time

If the unit is not working for a long period the following operations are compulsory:

- turn off the unit using the selected interface
- put the system main switch on "OFF" and the equipment main switch on "0" (off)
- turn off the terminal units positioning the main switch of each unit on "off"
- close all the check valve on the hydraulic system

⚠ The anti freeze logics and the compressor electric heater are disabled.

⚠ If there is a danger of freezing, empty the entire system or add it with suitable anti-freeze liquids.

Percentage ethylene glycol by weight	0	12	20	28	35	40	%
Freezing temperature	0	-5	-10	-15	-20	-25	°C

⚠ If the unit works in a system with a boiler >(parallel installation) when the boiler is working, make sure that the water temperature inside the heat pump does not exceed 60 °C.

4 PARAMETERS OVERVIEW

This section includes an overview of all parameters that can be read or modified by the user.

The parameters are sorted as follows:

- 001 - 299 Display parameters
- 301 - 399 Maintenance parameters
- 401 - 499 Setpoint parameters
- 501 - 799 Configuration parameters

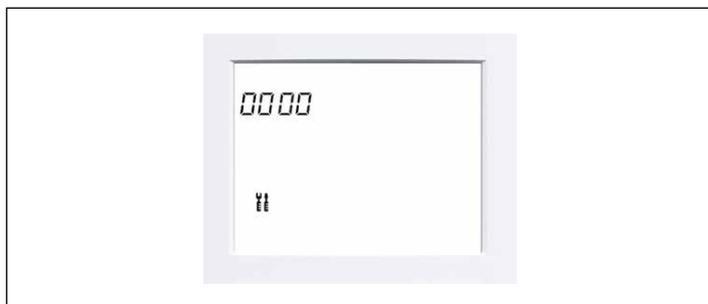
Legend:

No	No access
RO	Reading only
RW	Reading/writing
RO/d	Reading and display on the control panel
RO/F	Parameter reading and forcing via CCN only

- Proceed as follows to access the filters:

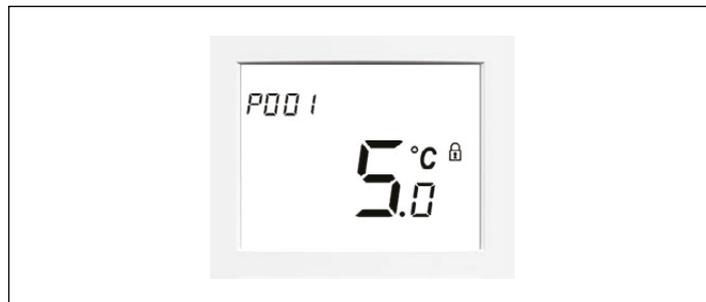
- press any key to activate the control panel
- hold down the keys simultaneously  and  for 2 seconds

The display asks for the password for advanced settings.



Enter your password(0120)

- push  or  to select the first number
- push  to confirm the selection and access the next item
- keep the key pressed **M** for 2 seconds to validate the password and log in



To select:

- push  or  to select the desired parameter

To change:

- keep the key pressed  for 2 seconds
- push  or  to change the value
- push  to confirm the selection and access the next item
- keep the key pressed **M** for 2 seconds to store the parameter

Finish the settings:

- keep the key pressed  for 2 seconds to exit

Displaying parameters

Par.	Modbus	Sigla	Description	Field	Default	Unit	Control panel	CCN	Table
001	0BBAH	OAT	Outdoor Air Temperature	-40.0°115.6			RO	RO/No Force	GENUNIT
002		IAT	Indoor Air Temperature	-40.0°115.6					GENUNIT
003	0BB8H	EWT	(Entering Water Temperature), inlet water temperature	-40.0°115.6		1/10°C	RO	RO/No Force	GENUNIT
004	0BB9H	LWT	(Leaving Water Temperature), outlet water temperature	-40.0°115.6		1/10°C	RO	RO/No Force	GENUNIT
005	189EH	REFR_T	Refrigerant Temperature	-40.0°115.6		1/10°C	RO	RO/No Force	GENUNIT
006		SPARE_TEMP	Replacement temperature	-40.0°115.6		1/10°C			GENUNIT
007		ROOM_TEMP	Ambient temperature	-40.0°115.6		1/10°C			GENUNIT
008		SST	Saturated suction temp			1/10°C			GENUNIT
009	189DH	TS	Suction temperature			1/10°C	RO	RO/No Force	GENUNIT
010	189CH	TD	Discharge temperature			1/10°C	RO	RO/No Force	GENUNIT
011	189FH	TE	Air exchanger lower temperature			1/10°C	RO	RO/No Force	GENUNIT
012		TL	Air exchanger upper temperature			1/10°C			GENUNIT
013	18A0H	TO	Inv. Outdoor air temperature			1/10°C	RO	RO/No Force	GENUNIT
014		TH	Heat sink temperature			1/10°C			GENUNIT
015		SH	Superheating temperature			1/10 K			GENUNIT
016		SH_TARGET	Temp. target superheating			1/10 K			GENUNIT

PARAMETERS

Par.	Modbus	Sigla	Description	Field	Default	Unit	Control panel	CCN	Table
017		INV_DC_VOLTAGE	High voltage CC inverter			V			GENUNIT
018		HV_COMM_STATUS	AT bus communication status	0/1		-			GENUNIT
019		INV_CURRENT_MODE	Current inverter mode	0°22		-			GENUNIT
020		FREQ_MIN	Compressor min. frequency			1/10 Hz			GENUNIT
021	18A1H	FREQ_MAX	Compressor max. frequency			1/10 Hz	RO	RO/No Force	GENUNIT
022	18A2H	FREQ_REQ	Comp. requested frequency	0°120		1/10 Hz	RO	RO/No Force	GENUNIT
023	18A3H	FREQ_CURRENT	Current compressor frequency			1/10 Hz	RO	RO/No Force	GENUNIT
024		PMV_POS	PMV position	0°500		step			GENUNIT
025		2VALV_STAT	Equalization valve status	0/1		-			GENUNIT
026		4VALV_STAT	Reverse cycle valve status	0/1		-			GENUNIT
027		UP_FAN_SPEED	Higher fan speed	0°1000		rpm			GENUNIT
028		LO_FAN_SPEED	Lower fan speed	0°1000		rpm			GENUNIT
029		EXCH_HTR	BPHE heater	0/1		-			GENUNIT
030		BOILER	Boiler output	0/1		-			GENUNIT
031		EHS	Electric heating stages	03		-			STATUS
032		BACK_VLV	By-pass valve backup	0/1		-			STATUS
035		SPARE_PRESSURE	Additional pressure	100°4700		KPa			STATUS
039		TO2	TO inverter correct			1/10°C			STATUS
041	0881H	OCCUPANCY_MODE	Employment mode	02		-	RW	RW/ Supervisor	STATUS
042		SUMMER_MODE	Summer mode	0/1		-			STATUS
043		NIGHT_MODE	Night mode	0/1		-			STATUS
044	07D2H	SYSTEM_MODE_REQUEST	System operating mode required	0°9		-	RW	RW/ Supervisor	STATUS
045	18A5H	SYSTEM_MODE_STATUS	System mode status	0°110		-	RO	RO/No Force	STATUS
046		WUI_STATUS_ICON	WUI sttus icon			-			STATUS
047		SYSTEM_MODE_OVERRIDE	System mode override	0°13		-			O MSL_STAT
048	0BBBH	CURRENT_SETPOINT	Current setpoint	5.0°60.0		1/10°C	RO	RO/No Force	STATUS
049		USER_ADJUST_TEMP	Temperature adjusted by the user	-5.0°5.0		1/10 K			LOADFACT
050		IAT_OFFSET	Offset IAT	-4.0°4.0		1/10 K			LOADFACT
051	1906H	CTRL_PNT	Control point	5.0°60.0		1/10°C	RW	RW/ Supervisor	LOADFACT
052		CTRL_TMP	Control temp.	-40.0°115.6		1/10°C			LOADFACT
053		UI_INIT_REQUEST	User interface initialization required	0.0°1.0		-			LOADFACT
061		COMPR_MODE_REQUEST	Compressor mode request	0°22		-			LOADFACT
062		COMPR_MODE_TO_INV	Rev. compressor mode	0°22		-			LOADFACT
063	0BDEH	COMPR_MODE_STATUS	Compressor mode status	0°110		-	RO	RO/No Force	LOADFACT
064		CAPACITY_OVERRIDE	Capacity override	0°204		-			LOADFACT
065		CAPACITY_TIMER	Capacity timer			s			PMP_STAT
066		CAPACITY_TOTAL	Total capacity	0°100		%			PMP_STAT
067		DEMAND_LIMIT	Demand limit	0°100		%			PMP_STAT
068	1807H	FREQ_RED_MODE	Frequency reduction mode	0/1		-	RO	RO/No Force	PMP_STAT

PARAMETERS

Par.	Modbus	Sigla	Description	Field	Default	Unit	Control panel	CCN	Table
069		UNIT_RUNNING	Unit operating status	0/1		-			PMP_STAT
081		PMP_OVER	Pump override	-1°20		-			INPUT
082		FLOW_ERROR	Water flow failure	0/1		-			INPUT
083		CUR_DT_SETPOINT	Set point current			1/10 K			INPUT
084		WATER_DELTA_T	Water delta T			1/10 K			INPUT
085	0502H	PMP	Speed of the pump	0°100		%	RO	RO/No Force	PMP_STAT
088		ADD_PMP	Additional pump water flow	0/1		-			O INPUT
091		BACKUP_OVERRIDE	Backup override	-1°100		-			INPUT
092		BACKUP_FLAG	Backup authorization flag	0/1		-			INPUT
093		WARMUP_TIME	Heating booster timer	0°1800		s			INPUT
094		BACKUP_CAPACITY	Backup capacity	0°100		%			INPUT
101		ONOFF_SW	Selection switch status on/off	0/1		-			INPUT
102		HC_SW	Heating / cooling switch status	0/1		-			INPUT
103		ECO_SW	Eco switch status	0/1		-			INPUT
104		SAFETY_SW	Safety switch status	0/1		-			INPUT
105	18A6H	FLOW_SW	Flow switch status	0/1		-	RO	RO/No Force	INPUT OR
106	0710H	CUST_DI5_STATUS	Custom DI#5 status	0/1		-	RO	RO/No Force	DHW_STAT
107	0711H	CUST_DI6_STATUS	Custom DI#6 status	0/1		-	RO	RO/No Force	INPUT O
108	0712H	CUST_DI7_STATUS	Custom DI#7 status	0/1		-	RO	RO/No Force	DHW_STAT
109	0713H	CUST_DI8_STATUS	Custom DI#8 status	0/1		-	RO	RO/No Force	INPUT O
110		POWER_LIMITATION_SW	Power limit switch	0/1		-			DHW_STAT
111		OFF_PEAK_SW	Shut-off switch during hours of high energy cost	0/1		-			INPUT OR
112		LOADSHED_SW	Load removal request switch	0/1		-			DHW_STAT
113		SOLAR_SW	Solar input switch	0/1		-			INPUT
114		DHW_REQUEST_SW	DHW request from the tank	0/1		-			DHW_STAT
115		DHW_PRIORITY_SW	DHW priority switch	0/1		-			DHW_STAT
116	0720H	DHW_ANTI_LEG_SW	DHW anti-legionella request	0/1		-	RW	RW/ Supervisor	DHW_STAT
117		SUMMER_SW	Summer switch	0/1		-			DHW_STAT
120		EXTERNAL_ALARM_SW	External alarm switch	0/1		-			DHW_STAT
201	0730H	DHW_MODE	DHW mode	0°2		-	RO	RO/No Force	DHW_STAT
202		DHW_OVERRIDE	Override DHW	-1°100		-			DHW_STAT
203		DHW_DEMAND	DHW request from the tank	0/1		-			DHW_STAT
204		DHW_CONDITIONS	Conditions DHW	0/1		-			DHW_STAT
205		DHW_CONTROL_POINT	DHW control point	30.0°60.0		1/10°C			DHW_STAT
206	0800H	DHW_TT	DHW tank temperature	-40.0°115.6		1/10°C	RO	RO/No Force	DHW_STAT
207		SHC_TIMER	Current SHC runtime			min			DHW_STAT
208		DHW_TIMER	Current DHW runtime			min			MSL_STAT
209		DHW_EXCEPTION_TIMER	DHW exception timer	0°1440		min			MSL_STAT
210	0503H	DHW_VLV	DHW diverter valve	0/1		-	RO	RO/No Force	MSL_STAT
211		DHW_EHS	ACS electric heater stage	0/1		-			MSL_STAT

PARAMETERS

Par.	Modbus	Sigla	Description	Field	Default	Unit	Control panel	CCN	Table
212		DHW_RUNNING	DHW operating status	0/1		-			MSL_STAT
221		CHWSTEMP	Cooler water circuit temp	-40.0°115.6		1/10°C			MSL_STAT
222		MSL_CAPACITY	Overall Master / Slave capacity	0°100		%			
223		MST_REQUEST	Master capacity required	0°100		%			
224		SLV1_REQUEST	Slave capacity request no.1	0°100		%			
225		SLV2_REQUEST	Slave capacity request no.2	0°100		%			
226		SLV3_REQUEST	Slave capacity request no.3	0°100		%			
227		MSL_ICON_STATUS	Master / slave status icons	0°3		-			
228		MSL_ACTIVE_FLAG	Master / slave activation flag	0/1		-			
229		MSL_OVERALL_STATUS	Master / slave status	-1°22		-			
230		MAST_STATUS	Master status	-1°109		-			
231		SLV1_STATUS	Stato Slave #1	-1°109		-			
232		SLV2_STATUS	Stato Slave #2	-1°109		-			
233		SLV3_STATUS	Stato Slave #3	-1°109		-			
234		MSL_DEMAND_LIMIT	Mast / Slv capacity limitation	0°100	100	%			
235		MSL_ACTUAL_PRIORITY	Mast/Slv Priority		0	-			
239		MSL_CTRL_PNT2	2nd Control Point water			°C			

Service parameters

Par.	Jbus	Sigla	Description	Field	Default	Unit	Control panel	CCN	Table
301		INV_MODEL	Model inverter			-		RO	Inverter
302		INV_PROGRAM_VERSION	Inverter program version			-		RO	Inverter
303		INV_PROGRAM_REVISION	Inverter program revision			-		RO	Inverter
304		INV_EEPROM_CODE	EEPROM inverter code			-		RO	Inverter
305		INV_SWITCH_SETTING	Inverter switch setting			-		RO	Inverter
306	050BH	INV_CDU_CAPACITY	Capacity CDU	0°15		-	RO	RO	Inverter
307		INV_MCU_CODE	Code MCU			-		RO	Inverter
308		INV_CDU_CURRENT	CDU corrente			mA			Inverter

PARAMETERS

Par.	Jbus	Sigla	Description	Field	Default	Unit	Control panel	CCN	Table
311		DEF_OVERRIDE	Override defrost	-4 = Not available					Inverter
				-3 = Old version inverter software					
				-2 = Hot optimization not configured					
				-1 = Free defrost disabled					
				0 = No override					
				1 = TO2 too low					
				2 = Conditions not met					
				3 = Waiting for the first mechanical defrost					
				10 = Mechanical defrost not completed					
				11 = Forced mechanical defrost request					
				12 = Mechanical defrost in progress					
				21 = Free defrost start					
				22 = Free Defrost in progress					
				23 = Free Defrost stopped					
24 = Free Defrost mode exit									
312		DEF_DELTA_T_REF_MD	Defrost Delta T (MD)	0.0°30.0		K			Inverter
313		DEF_DELTA_T_REF	Defrost Delta T	0.0°30.0		K			Inverter
314		DEF_DELTA_T	Current defrost delta T			K			Inverter
315		DEF_FROST_FACTOR	Frosting factor			%			Inverter
316		FREE_DEFROST_NB	Free defrost cycle number			-			Inverter
317		DEFROST_DURATION	Free defrost duration			s			Inverter
318		TIME_SINCE_LAST_MD	Time since last MD			min			Inverter
319		TIME_SINCE_LAST_FD	Time since last FD			min			Inverter
321		QCK_ENA	QT: Activation of the quick test mode	0°1 [No/yes]		-		RW/F	QCH_TEST
322		HP_TEST	QT: Test pressure switch AP	0°8				RW/F	QCH_TEST
				0 = No test					
				1 = Test required					
				2 = Test in progress					
				3 = Test OK					
				4 = AP test failed due to timeout					
				5 = AP test failed due to flow switch failure					
				6 = AP test failed due to low water temperature					
7 = AP test failed due to inverter failure									
323		RAT_MOD	QT: Evaluation mode	0°4				RW/F	QCH_TEST
				0 = Evaluation off					
				1 = Cooling evaluation					
				2 = Heating rating					
				3 = Cooling ramp					
4 = Heating ramp									
324		RAT_FRQ	QT: Evaluation frequency	-120°120		1/10 Hz		RW/F	QCH_TEST
325		FAN_LOW	QT: Lower fan speed	0°999		rpm		RW/F	QCH_TEST
326		FAN_UPP	QT: Higher fan speed	0°999		rpm		RW/F	QCH_TEST
327		PMV_POS	QT: PMV position	0°999		-		RW/F	QCH_TEST

PARAMETERS

Par.	Jbus	Sigla	Description	Field	Default	Unit	Control panel	CCN	Table
328		CMP_HTR	QT: compressor heater	0°1		-			
329		2WAYVLV	QT: equalization valve	0°1		-			
330		4WAYVLV	QT: reverse cycle valve	0°1		-			
331	18CEH	PMP	QT: Water pump speed	0°100		%	RW	RW/F	QCH_TEST
332		EXH_HTR	QT: BPHE heater	0°1 on/off				RW/F	QCH_TEST
333	0701H	ADD_PMP	QT: Additional pump	0°1 on/off			RW	RW/F	QCH_TEST
334	0702H	SPR_REL	QT: Rel□□ (K5)	0°1 on/off			RW	RW/F	QCH_TEST
335		DHW_VLV	QT: Diverter valve DHW	0°1 on/off				RW/F	QCH_TEST
336		BOILER	QT: Boiler or EHS1	0°1 on/off				RW/F	QCH_TEST
320	0703H	CUSTDO5	QT: DO n.5 customized	0°1 on/off		-	RW		
337	0704H	CUSTDO8	QT: DO n.8 customized	0°1 on/off		-	RW	RW/F	QCH_TEST
338	0705H	CUSTDO9	QT: DO n.9 customized	0°1 on/off		-	RW	RW/F	QCH_TEST
339		HP_MAX	Maximum high pressure			KPa			
340		ALMRESET	Alarm reset	0°1 No/s□□		-		RO	QCH_TEST
341		ALM	Alarm status	0°1 Normal/Alarm		-		RW/F	ALARM
342		ALERT	Alert status	0°1 No/s□□		-		RO	ALARM
343		SHUTDOWN	State of arrest	0°1 No/s□□		-		RO	ALARM
344		INV_ERROR_CODE	Inverter error (code)	0°255				RO	ALARM
345		INV_ERROR_ALPHA	Inverter error (Alpha)	0°65535		-		RO	ALARM
346	18A7H	ALM_CODE_BITMAP1	Drive error code 1	0°65535		-	RO	RO	ALARM
347	18A8H	ALM_CODE_BITMAP2	Drive error code 2	0°65535		-	RO	RO	ALARM
348	18A9H	ALM_CODE_BITMAP3	Drive error code 3	0°65535		-	RO	RO	ALARM
349	18AAH	ALM_CODE_BITMAP4	Drive error code 4	0°65535		-	RO	RO	ALARM
350		ALM_01	Current alarm n.1	0°200		-		RO	ALARM
351		ALM_02	Current alarm n.2	0°200		-		RO	ALARM
352		ALM_03	Current alarm n.3	0°200		-		RO	ALARM
353		ALM_04	Current alarm n.4	0°200		-		RO	ALARM
354		ALM_05	Current alarm n.5	0°200		-		RO	ALARM
360		ALM_01P	Previous alarm n.1	0°200		-		RO	ALARM
361		ALM_02P	Previous alarm n.2	0°200		-		RO	ALARM
362		ALM_03P	Previous alarm n.3	0°200		-		RO	ALARM
363		ALM_04P	Previous alarm n.4	0°200		-		RO	ALARM
364		ALM_05P	Previous alarm n.5	0°200		-		RO	ALARM
370		RUNTIME1_KEY	Maintenance runtime key			-			RUNTIME1
371		COMP1_START_NB	Number of starts of the compressor			-		RO	RUNTIME1
372	18A4H	COMP1_RUNTIME	Hours of compressor operation			h	RO	RO	RUNTIME1
373		WATER_PUMP_START_NB	Number of starts of the water pump			-		RO	RUNTIME1
374	0BDAH	WATER_PUMP_RUNTIME	Hours of operation of the water pump			h	RO	RO	RUNTIME1

Par.	Jbus	Sigla	Description	Field	Default	Unit	Control panel	CCN	Table
379		UNIT_WEAR_FACTOR	Wear factor			-			RUNTIME1
381		RUNTIME2_RESET	Restoration of the operating time made by the user	0°3		-		RW	RUNTIME2
382		COMP_RUNTIME	Hours of compressor operation			h		RO	RUNTIME2
383		BACKUP_RUNTIME	Hours of emergency operation			h		RO	RUNTIME2
384		COOLING_RUNTIME	Hours in cooling mode			h		RO	RUNTIME2
385		HEATING_RUNTIME	Hours in heating mode			h		RO	RUNTIME2
386		DHW_RUNTIME	Hours in DHW mode			h		RO	RUNTIME2
387		DEFROST_RUNTIME	Hours in antifreeze mode			h		RO	RUNTIME2
388		ENERGY_IN_HEATING	Energy consumed in heating			kWh		RO	RUNTIME2
389		ENERGY_IN_COOLING	Energy consumed in cooling			kWh		RO	RUNTIME2
391		CHIL_S_S	Start/stop unit <input type="checkbox"/>	0°1		-			
392		HC_SEL	Heating / Cooling selection	0°1		-			
393		EMSTOP	Invalid configuration	0°1		-			
394		CAPACITY_REQUEST	Required capacity	0°100		%			
399		RESETDEV	Device reset	0°1		-			

Setpoint parameters

Par.	Jbus	Sigla	Description	Field	Default	Unit	Control panel	CCN	Table
401		HEAT_OCC_WATER_STP	Home heating setpoint (water)	20,0 - 60,0	45.0	1/10°C	RW		WAT_STP
402		HEAT_UNO_WATER_OFFSE	Night heating offset (water)	=-10-0	0.0	1/10 K	RW		WAT_STP
403		HEAT_ECO_WATER_OFFSE	Offset heating away (water)	=-10-0	-5.0	1/10 K	RW		WAT_STP
404		DHW_ECO_STP	DHW setpoint ECO		45.0	1/10°C			
405		DHW_ANTI_LEGIONELLA	DHW anti-legionella setpoint	50,0 - 60,0	60.0	1/10°C	RW		WAT_STP
406		DHW_STP	Setpoint DHW	30,0 - 60,0	50.0	1/10°C	RW		WAT_STP
407		COOL_OCC_WATER_STP	Home cooling setpoint (water)	5,0 - 18,0	12.0	1/10°C	RW		WAT_STP
408		COOL_UNO_WATER_OFFSE	Night cooling offset (water)	0,0 - 10,0	0.0	1/10 K	RW		WAT_STP
409		COOL_ECO_WATER_OFFSE	Offset cooling away (water)	0,0 - 10,0	5.0	1/10 K	RW		WAT_STP
410		HEAT_HYSTERESIS	Heating hysteresis (water)	0,5 - 2,0	1.0	1/10 K	RW		WAT_STP
411		COOL_HYSTERESIS	Cooling hysteresis (water)	0,5 - 2,0	2.0	1/10 K	RW		WAT_STP
412		HEAT_CURV_MAX_STP_OF	Maximum heating curve setpoint offset	=-5-5	0.0	1/10 K	RW		WAT_STP
413		COOL_CURV_MIN_STP_OF	Minimum cooling curve setpoint offset	=-5-5	0.0	1/10 K	RW		WAT_STP
421		HEAT_OCC_AIR_STP	Home heating setpoint (air)	12,0 - 34,0	19.0	1/10°C	RW		AIR_STP
422		HEAT_UNO_AIR_OFFSET	Night heating offset (air)	=-10-0	-2.0	1/10 K	RW		AIR_STP
423		HEAT_ECO_AIR_OFFSET	Offset heating outside the home (air)	=-10-0	-4.0	1/10 K	RW		AIR_STP
424		COOL_OCC_AIR_STP	Home cooling setpoint (air)	20,0 - 38,0	26.0	1/10°C	RW		AIR_STP

PARAMETERS

Par.	Jbus	Sigla	Description	Field	Default	Unit	Control panel	CCN	Table
425		COOL_UNO_AIR_OFFSET	Night cooling offset (air)	0,0 - 10,0	2.0	1/10 K	RW		AIR_STP
426		COOL_ECO_AIR_OFFSET	Offset cooling away from home (air)	0,0 - 10,0	4.0	1/10 K	RW		AIR_STP
427		HOME_ANTI_FREEZE_STP	Home antifreeze setpoint	6,0 - 12,0	6.0	1/10°C	RW		AIR_STP
428		AIR_DELTA_STP	Air delta setpoint	0,2 - 1,0	0.5	1/10 K	RW		AIR_STP
429		IAT_RESET_FACTOR	IAT recovery factor	0,0 - 2,0	0.0		RW		AIR_STP

Configuration parameters

Par.	Jbus	Mnemonic	Description	Field	Default	Unit	Control panel	CCN	Table
500	01F4H	CUST_DO5_TYPE	Config DO#5 customized	0°13 0 = Disabilitato 1 = Unit in alarm (ancora funzionante) 2 = Unit in alarm (not running) 3 = Unit in Standby (request satisfied) 4 = Unit running (Cool, Heat, DHW, defrost) 5 = Unit running in cooling 6 = Unit running in heating 7 = Unit running DHW 8 = Unit in defrost 9 = IAT reached (FCU) 10 = Electric heater #2 (EH2) 11 = Electric heater #3 (EH3) 12 = Pool diverter valve 13 = User controlled output (via JBus/Modbus)	4	-	RW	RW/No Force	GEN_CONF
501		SAFETY_SW_TYPE	Type of safety switch	1°3 1 = Off contact: unit stopped with open contact 2 = Safety switch for underfloor heating system: heating not allowed if the contact is open 3 = Safety switch for underfloor cooling: cooling not allowed if the contact is open	1	-	RW		GEN_CONF
502		CUST_DI5_TYPE	Config DI#5 customized	-15°15 0 = Disabilitato	1	-	RW		GEN_CONF
503		CUST_DI6_TYPE	Config DI#6 customized	1 or -1 = Capacity limitation switch 2 or -2 = High consumption band operation switch	0	-	RW		GEN_CONF
504		CUST_DI7_TYPE	Config DI#7 customized	3 or -3 = Loadshed Request Switch 4 or -4 = Solar input switch	0	-	RW		GEN_CONF
505		CUST_DI8_TYPE	Config DI#8 customized	5 or -5 = DHW request from the DHW tank 6 or -6 = Priority button ACS 7 or -7 = Anti-Legionella cycle request button 8 or -8 = Summer switch 9 or -9 = Pool priority button 10 or -10 = Contact on swimming pool pump 11 or -11 = Energy Meter Input (1 kWh/pulse) 12 or -12 = Energy Meter Input (0.5 kWh/pulse) 13 or -13 = Energy Meter Input (0.2 kWh/pulse) 14 or -14 = Energy Meter Input (0.1 kWh/pulse) 15 or -15 = External alarm	0	-	RW		GEN_CONF
506	01FAH	CUST_DO8_TYPE	Config DO#8 customized		1	-	RW	RW/No Force	GEN_CONF
507	01FBH	CUST_DO9_TYPE	Config DO#9 customized		2	-	RW	RW/No Force	GEN_CONF
508		TR_TYPE	Type of coolant temperature	0°2 0 = Mounted on the plate exchanger 1 = Mounted after the PMV less than 10m 2 = Mounted after the PMV at more than 10m	0	-	RW		GEN_CONF
509		EWT_TYPE	Type of sensor EWT	0/1 0 = No sensor EWT 1 = Sensor EWT present	1	-	RW		GEN_CONF

PARAMETERS

Par.	Jbus	Mnemonic	Description	Field	Default	Unit	Control panel	CCN	Table
510		IAT_TYPE	Type of sensor IAT	0°3 0 = No sensor IAT 1 = 10 KOHms Thermistor (accessory) 2 = 5 KOHms Thermistor 3 = 3 KOHms Thermistor	0	-	\		GEN_CONF
511	1933H	OAT_TYPE	Type of sensor OAT	0°3 0 = No OAT additional 1 = 10 KOHms Thermistor 2 = 5 KOHms Thermistor 3 = 3 KOHms Thermistor (accessorio)	0	-	RW	RW/No Force	GEN_CONF
512		IAT_BIAS	Type of sensor IAT	-5.0°5.0	0.0	1/10 K	RW		GEN_CONF
513		OAT_BIAS	Bias sensor OAT	-5.0°5.0	0.0	1/10 K	RW		GEN_CONF
514	0894H	OAT_MIN_HEATING	OAT minimum for heating	-20.0°10.0	-20.0	1/10°C	RW	RW/No Force	GEN_CONF
515		OAT_MAX_HEATING	OAT maximum for heating	5.0°99.0	99.0	1/10°C	RW		GEN_CONF
516		OAT_MIN_COOLING	OAT minimum for cooling	-10.0°40.0	0.0	1/10°C	RW		GEN_CONF
517	086DH	ANTI_FREEZE_DELTA_ST	Heat exchanger antifreeze setpoint	0.0°6.0	0.0	1/10 K	RW	RW/No Force	GEN_CONF
518		NIGHT_MODE_START	Night mode start time	00:00°23:59	00:00	hh:mm	RW		GEN_CONF
519		NIGHT_MODE_STOP	Night mode end time	0:00°23:59	00:00	hh:mm	RW		GEN_CONF
520		SPARE_SENSOR_TYPE	Replacement sensor type	0°5 0 = No 1 = 10 KOHms Thermistor 2 = 5 KOHms Thermistor 3 = 3 KOHms Thermistor 4 = Low pressure transducer 5 = High pressure transducer	0	-	RW		GEN_CONF
521	17D6H	UI_TYPE	Type of user interface	0°3 0 = No 1 = Clean contacts 2 = WUI remote control (Air Temp) 3 = command on board WUI (Water Temp)	0	-	RW	RW/No Force	UI_CONF
522		UI_ACCESS	Access to parameters from the UI	0°3 0 = Not allowed 1 = User parameters only 2 = User and service parameters 3 = All parameters	3	-	RW		UI_CONF
523		UI_COMM_TIMEOUT	Interface communication timeout	0°240	60	s	RW		UI_CONF
524		UI_BACKLIGHT_TIMEOUT	Backlight timeout	0°7 0 = Backlight always off 1 = 15 seconds 2 = 30 seconds 3 = 1 minute 4 = 2 minutes 5 = 5 minutes 6 = 30 minutes 7 = Always on	2	-	RW		UI_CONF
525		UI_BUZZER_ENABLE	Buzzer at the push of a button	0/1 [No/Yes]	No	-	RW		UI_CONF
526		UI_TIME_BROADCAST	Time transmission interface	0/1 [No/Yes]	Yes	-	RW		UI_CONF
527		SERVICE_PASSWORD	Service password	0°9999	120	-	RW		UI_CONF
528		USER_PASSWORD	User password	0°9999	0	-	RW		UI_CONF
541	1934H	POWER_LIMIT	Power limitation value	50°100	75	%	RW	RW/No Force	CMP_CONF
542		NIGHT_LIMIT	Night limitation value	50°100	75	%	RW		CMP_CONF
543		DHW_LIMIT	DHW limitation value	50°100	100	%	RW		CMP_CONF

PARAMETERS

Par.	Jbus	Mnemonic	Description	Field	Default	Unit	Control panel	CCN	Table
560		FLUID_TYPE	Fluid type	1 ² 1 = Water (minimum set point in cooling 5°C) 2 = Medium Brine (minimum set point in cooling 0°C)	1	-			
561		EXTERNAL_PUMP_CTRL	External main pump control	0/1 [No/Yes]	0 [No]	-	RW		PMP_CONF
562		FLOW_CHEK_PUMP_OFF	Flow controlled if pump off	0/1 [No/Yes]	1 [Yes]	-	RW		PMP_CONF
563		PUMP_ANTI_STICKING	Anti-adhesive function	0/1 [No/Yes]	1 [Yes]	-	RW		PMP_CONF
564		PUMP_SAMPLE_TIME	Standby pump sampling time	5°240	15	min	RW		PMP_CONF
565		MAIN_PUMP_LOGIC	Main pump logic	1 ³ 1 = Always on 2 = Sampling (WUI local, On/Off vs IAT) 3 = In accordance with the indoor ambient temperature (remote WUI / IAT sensor)	1	-	RW		PMP_CONF
566		VAR_SPEED_PUMP_LOGIC	Variable speed pump logic	0/1 0 = Variable speed (according to the vsp_max parameter) 1 = Speed in accordance with the Delta T	1	-	RW		PMP_CONF
567	0237H	MIN_SPEED_PUMP	Minimum pump speed	19°100	19	%	RW	RW/No Force	PMP_CONF
568	0238H	MAX_SPEED_PUMP	Maximum pump speed	19°100	100	%	RW	RW/No Force	PMP_CONF
569		WATER_DELTA_T_SETPOI	Setpoint Delta T	2.0°20.0	5.0	1/10 K	RW		PMP_CONF
570		PUMP_KP	Proportional Delta T Gain	-10000°-0.001	-6000	-	RW		PMP_CONF
571		PUMP_TI	Integral time Delta T	10°120	20	s	RW		PMP_CONF
572		PUMP_TS	Delta T sampling time	10°120	10	s	RW		PMP_CONF
573		ADD_PUMP_LOGIC	Additional pump logic	0°4 0 = No additional pump 1 = Always on 2 = In accordance with the ambient temperature (remote WUI) 3 = Always on, off when DHW mode is activated 4 = In accordance with room temperature (remote WUI), but off when in DHW mode	0	-	RW		PMP_CONF
581	0870H	HEAT_CURV	Heating climatic curve selection	-1 0 = Custom curve Par.582/Par.585 1 = Heating curve #1 2 = Heating curve #2 3 = Heating curve #3 4 = Heating curve #4 12 = Heating curve #12	-1	-	RW	RW/No Force	CLIMCURV
582	0876H	CUST_HEAT_MIN_OAT	Minimum OAT heating	-30.0°10.0	-7.0	1/10°C	RW	RW/No Force	CLIMCURV
583	0877H	CUST_HEAT_MAX_OAT	Maximum OAT heating	10.0°30.0	20.0	1/10°C	RW	RW/No Force	CLIMCURV
584	1902H	CUST_MIN_TEMP_HEAT	Minimum heating water setpoint	20.0°40.0	20.0	1/10°C	RW	RW/No Force	CLIMCURV
585	1904H	CUST_MAX_TEMP_HEAT	Maximum heating water setpoint	30.0°60.0	38.0	1/10°C	RW	RW/No Force	CLIMCURV
586	0875H	COOL_CURV	Cooling climatic curve selection	-1 ² -1 = No curve, fixed setpoint 0 = Custom curve Par.587/Par.590 1 = Cooling curve #1 2 = Cooling curve #2	-1	-	RW	RW/No Force	CLIMCURV
587	087BH	CUST_COOL_MIN_OAT	Minimum cooling OAT	0.0°30.0	20.0	1/10°C	RW	RW/No Force	CLIMCURV
588	087AH	CUST_COOL_MAX_OAT	Maximum cooling OAT	24.0°46.0	35.0	1/10°C	RW	RW/No Force	CLIMCURV

PARAMETERS

Par.	Jbus	Mnemonic	Description	Field	Default	Unit	Control panel	CCN	Table
589	1903H	CUST_MIN_TEMP_COOL	Minimum cooling water setpoint	5.0°20.0	10.0	1/10°C	RW	RW/No Force	CLIMCURV
590	1905H	CUST_MAX_TEMP_COOL	Maximum cooling water setpoint	5.0°20.0	18.0	1/10°C	RW	RW/No Force	CLIMCURV
595		DRYING_START_SETPOIN	Drying start setpoint	20.0°40.0	20.0	1/10°C	RW		DRYING
596		DRYING_WARM_UP_DAYS	Heating drying days	0°99	3	-	RW		DRYING
597		DRYING_RAMP_UP_DAYS	Days ramp upward drying	0°99	4	-	RW		DRYING
598		DRYING_HOLD_UP_DAYS	Drying ramp maintenance days	0°99	4	-	RW		DRYING
599		DRYING_HOURS	Drying operation time		0.0		RW		DRYING
601	186AH	BCK_TYPE	Type of emergency addition	0°10 0 = No backup 1 = Booster con 1 stage electrical heater 2 = Booster con 2 stage electrical heater 3 = Booster con 3 stage electrical heater with 2 output 4 = Booster con 3 stage electrical heater with 3 output 5 = Backup DHW 6 = Booster con 1 stage electrical heater + Backup DHW 7 = Booster con 2 stage electrical heater + Backup DHW 8 = Booster con 3 stage electrical heater with 2 output + Backup DHW 9 = Backup with boiler 10 = Backup with boiler + Backup DHW	0	-	RW	RW/No Force	BCK_CONF
602	186DH	BCK_WARMUP_TIME	Heating time of the additional heater	0°120	30	min	RW	RW/No Force	BCK_CONF
603	1937H	BCK_DELTA_TEMP	Auxiliary delta temperature	1.0°20.0	5.0	1/10°C	RW	RW/No Force	BCK_CONF
604	186CH	BCK_OAT	Additional heater OAT threshold	-20.0°15.0	-7.0	1/10°C	RW	RW/No Force	BCK_CONF
605		EHS_PROP_GAIN	Proportional EHS Earnings	0.001°10000	2000	-	RW		BCK_CONF
606		EHS_INTEG_TIME	Integral time EHS	10°60	20	s	RW		BCK_CONF
607		EHS_SAMP_TIME	EHS sampling time	10°120	30	s	RW		BCK_CONF
611		DEFROST_TYPE	Free defros enabled	0/1	1				BCK_CONF
612		DEF_OAT_THRESHOLD	Minimum OAT defrost threshold	2.0°10.0	2.0				BCK_CONF
613		MAX_FD_NUMBER	Maximum number of free defrosts	1°20	6				BCK_CONF
614		MAX_TIME_BETWEEN_MD	Maximum time between two mechanical defrosts	1°18	6				BCK_CONF
615		MD_RECOVERY_SELECT	MD defrost recovery mode	0/1 Disabled/Enabled	1				BCK_CONF
641		CCN_ADDRESS	CCN element address	1°239	1	-	RW		30RBVRQV
642		CCN_BUS	Bus element CCN	0°239	0	-	RW		30RBVRQV
643		CCN_DEVICE_TYPE	CCN device	0°3 0 = Non-Bridge 1 = Bridge 2 = Building Supervisor 3 = Broadcast Acknowledger	0				30RBVRQV

PARAMETERS

Par.	Jbus	Mnemonic	Description	Field	Default	Unit	Control panel	CCN	Table
645		PRIMARY_BAUDRATE	Primary transmission speed	0°2 0 = 9600 Baud 1 = 19200 Baud 2 = 38400 Baud	2 [38400]	-	RW		30RBVRQV
646		SECONDARY_BAUDRATE	Secondary transmission speed	0°2 0 = 9600 Baud 1 = 19200 Baud 2 = 38400 Baud	2 [38400]	-	RW		30RBVRQV
648		LOCATION_DESCRIPTION	Location description			24 char			30RBVRQV
650		SERIAL_NB	Sedrial number		0	-	RO		30RBVRQV
651		REFERENCE_NB	Code number		0				30RBVRQV
653	050DH	PIC_TYPE	PIC type		"30RV"	-	RO	RO/No Force	30RBVRQV
654		SOFT_VERSION_NB	Software number		0	-	RO		30RBVRQV
661		HOUR	Time	0°23	0	-	RW		Time
662		MINUTE	Minute of the hour	0°59	0	-	RW		Time
663		DAY_OF_WEEK	Day of the week	1°7 1 = Monday 2 = Tuesday 3 = Wednesday 4 = Thursday 5 = Friday 6 = Saturday 7 = Sunday	0	-	RW		Time
664		HOLIDAY_FLAGS	Flag vacancy	0°11111110 Bitmap:b7 : Monday b6 : Tuesday b5 : Wednesday b4 : Thursday b3 : Friday b2 : Saturday b1 : Sunday b0 : unused	0	-	RW		Time
665		DAY_OF_MONTH	Day of the month	1°31	0	-	RW		Time
666		MONTH	Month	1°12 1 = January ☐☐☐ 12 = December	0	-	RW		Time
667		YEAR	Year	0°99	0	-	RW		Time
701		DHW_TYPE	Type of domestic hot water	0°3 0 = No DHW 1 = NO 2-point diverter valve 2 = 2-point NC diverter valve 3 = Dedicated DHW circulator	0	-	RW		DHW_CONF
702		DWH_VALVE_RUNTIME	DHW 3-way valve operating time	0°240	30	s	RW		DHW_CONF
703		DHW_PRIORITY	Priority DHWS	0/1 0 = Automatico 1 = DHW	0	-	RW		DHW_CONF
704		SHC_MIN_RUNTIME	Minimum operating time SHC	0°720	20	min	RW		DHW_CONF
707		DHW_MAX_RUNTIME	Maximum DHW operating time	-1°720	240	min	RW		DHW_CONF
708		DHW_EXCEPTION_TIME	DHW exception time	1°24	2	Time	RW		DHW_CONF
710		DHW_VSP_SPEED	Maximum pump speed in DHW mode	19°100	100	%	RW		DHW_CONF

PARAMETERS

Par.	Jbus	Mnemonic	Description	Field	Default	Unit	Control panel	CCN	Table
711		DHW_SCHEDULE_DAYS	DHW program days	0°11111110 Bitmap: b7 : Monday b6 : Tuesday b5 : Wednesday b4 : Thursday b3 : Friday b2 : Saturday b1 : Sunday b0 : unused	11111110	-	RW		DHW_CONF
712		DHW_START_TIME	DHW start time	00:00°23:59	21:00	hh: mm	RW		DHW_CONF
713		DHW_STOP_TIME	DHW stop time	00:00°23:59	06:00	hh: mm	RW		DHW_CONF
714		LEG_SCHEDULE_DAYS	Anti-legionella DHW start	0°11111110 Bitmap: b7 : Monday b6 : Tuesday b5 : Wednesday b4 : Thursday b3 : Friday b2 : Saturday b1 : Sunday b0 : unused	0	-	RW		DHW_CONF
715		LEG_STRT_TIME	Anti-legionella DHW start time	00:00°23:59	02:00	hh: mm	RW		DHW_CONF
716		SUM_MODE_OAT	Summer mode OAT threshold	15.0°30.0	20.0	1/10°C	RW		DHW_CONF
717		SUM_MODE_ON	Summer mode ignition delay	0°12	0	h	RW		DHW_CONF
718		SUM_MODE_OFF	Summer mode shutdown delay	0°12	0	h	RW		DHW_CONF
719		DHW_TT_SENSOR_TYPE	Type of DHW tank sensor	0°3 0 = DHW Thermostat (thermal switch) 1 = DHW Sensor (thermistor 10 K□□) 2 = DHW Sensor (thermistor 5 K□□) 3 = DHW Sensor (thermistor 3 K□□)	0	-	RW		DHW_CONF
720		DHW_TT_BIAS	Bias DHW tank sensor	-5.0°5.0	0.0	1/10 K	RW		DHW_CONF
721		DHW_DT_TO_START	Delta T AC tankS	2.0°10.0	5.0	1/10 K	RW		DHW_CONF
722		DHW_DT_TO_STOP	Delta T EWT (DHW shutdown)	0.0°5.0	1.0	1/10 K	RW		DHW_CONF
741		MSL_CODE_ACTIVATION	Activation code master/slave		0				MSL_CONF
742		MSL_SELECT	Master / slave enabling	0°2 0 = Disabilitato 1 = Master 2 = Slave	0	-	RW		MSL_CONF
743		SLAVE1_ADDR	Slave address n.1	0°239	0	-	RW		MSL_CONF
744		SLAVE2_ADDR	Slave address n.2	0°239	0	-	RW		MSL_CONF
745		SLAVE3_ADDR	Slave address n.3	0°239	0	-	RW		MSL_CONF
746		MSL_CAPACITY_START	Power to start the next unit at	30°75	75				MSL_CONF
747		MSL_CAPACITY_STOP	Power to stop the next unit at	1°25	25				MSL_CONF
750		CHWSTEMP_TYPE	Tipo CHWSTEMP	0°3 0 = No CHWSTEMP sensor 1 = 10 KOHms Thermistor 2 = 5 KOHms Thermistor 3 = 3 KOHms Thermistor	2				MSL_CONF

PARAMETERS

Par.	Jbus	Mnemonic	Description	Field	Default	Unit	Control panel	CCN	Table
751		CASCADE_TYPE	Cascade tipe	0°2 0 = Start master and follow slaves. Stop from the last slave to the master. 1 = Start and stop according to the operating hours (leveling) 2 = All units start and stop simultaneously.	1	-	RW		MSL_CONF
752		MSL_HEAT_KP	Proportional heating M / S Gain	0.001°10000	6000	-	RW		MSL_CONF
753		MSL_HEAT_TI	Tempo integrale riscaldamento M/S	10°120	30	s	RW		MSL_CONF
754		MSL_HEAT_TS	Heating sampling time M / S	10°120	30	s	RW		MSL_CONF
755		MSL_COOL_KP	Proportional cooling M / S Gain	-10000°0.001	-6000	-	RW		MSL_CONF
756		MSL_COOL_TI	Integral time cooling M / S	10°120	30	s	RW		MSL_CONF
757		MSL_COOL_TS	Cooling sampling time M / S	10°120	30	s	RW		MSL_CONF
758		MSL_PUMP_TYPE	Pump type Master / slave	0°3 0 = No pump control 1 = Common pump 2 = Internal pump: operation in accordance with the master and slave logic(Par.229) 3 = Internal plunger: stops when the unit is not on call	2	-	RW		MSL_CONF
761	02F9H	JBUS_SELECTION	Enable JBus control	0°3 0 = JBus/Modbus disabled 1 = JBus enabled 2 = Modbus enabled 3 = JBus specific for user interface	3	-	RW	RW/No Force	JBUSCONF
762	0086H	JBUS_ADDRESS	Slave address JBus	1°255	11	-	RW	RW/No Force	JBUSCONF
763	0085H	JBUS_BAUD_RATE	Jbus communication speed	0°2 0 = 9600 Baud 1 = 19200 Baud 2 = 38400 Baud	0			RW/No Force	JBUSCONF
764	0087H	JBUS_FRAME_TYPE	JBus structure type	0°5 0 = No parity, 1 stop bit 1 = Odd parity, 1 stop bit 2 = Even parity, 1 stop bit 3 = No parity, 2 stop bits 4 = Odd parity, 2 stop bits 5 = Even parity, 2 stop bits	0	-	RW	RW/No Force	JBUSCONF
765		JBUS_ACTIVATION_CODE			0				JBUSCONF
766	0600H	JBUS_COMM_TIMEOUT		0°600	600			RW/No Force	JBUSCONF
767		MODBUS_DISPLAY_OFFSE		0°61440	16384				JBUSCONF
768		MODBUS_SETPOINT_OFFS		0°61440	32768				JBUSCONF
769		MODBUS_CONFIG_OFFSET		0°61440	28672				JBUSCONF
770		MODBUS_SERVICE_OFFSE		0°61440	36864				JBUSCONF

5 FUNCTIONS

5.1 Acronyms

IAT	Indoor Air Temperature
BPHE	Plate heat exchanger
CHWS	(Chiller Water System), system water circuito
DHW	Domestic Hot Water
EHS	Electric heater stage
EWT	Entering Water Temperature
FCU	(Fan Coil Unit), Fan Coil Unit
LWT	Leaving Water Temperature
NHC	New Hydronic Control
OAT	Outdoor Air Temperature
PMV	Pulse Modulating Valve
SHC	Space Heating/Cooling Control
TR	Refrigerant Temperature
UFC	Underfloor Cooling
UFH	Underfloor Heating
CHWSTEMP	DHW: (DHW) Domestic hot water
WUI	User Interface (Wall-mounted User Interface)

5.2 Setpoint

Depending on the unit configuration, the system control can be based on the water or air setpoint control.

To achieve greater comfort, you can adjust the room temperature setpoint (remote user interface) or the water temperature setpoint (local user interface) according to your needs. Please note that the temperature value can only be adjusted within the range defined for each occupation mode.

Possible configurations

Setpoint	WUI local	WUI remote
Room air probe	Water	Air

The calculation of the water setpoint can be based on:

Predefined climatic curves based on the OAT: climatic curves already defined in the control logic.

Fixed water setpoint: by entering a fixed value for each occupation mode.

Custom climatic curve based on the OAT: defines climatic curves customized according to the application.

Offset on climatic curves (predefined and user-defined)

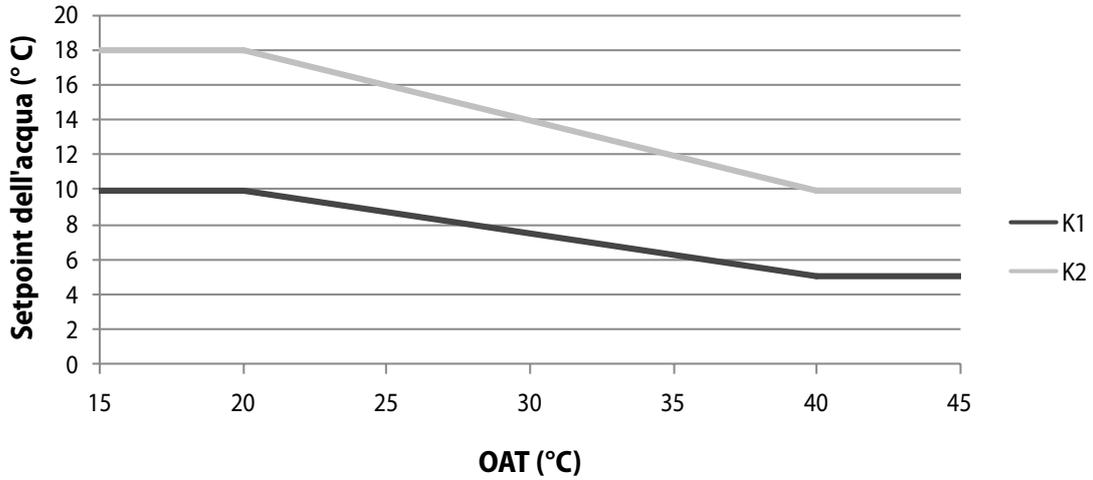
Default climatic curves

RAFFREDDAMENTO: If the climatic cooling curve[P586] impostata su "0", "1" o "2", the water set point will be calculated based on the selected cooling climatic curve.

Two predefined cooling climatic curves are available:

Climatic curve	OAT min.	OAT max.	Temp. water min.	Temp. water max.
K1	20°C	40°C	5°C	10°C
K2	20°C	40°C	10°C	18°C

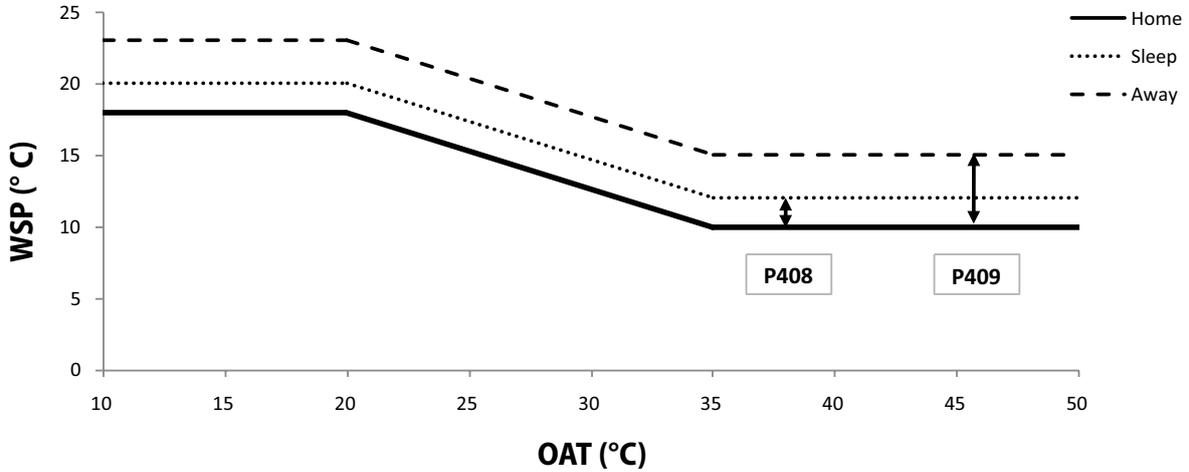
COOLING CLIMATIC CURVES



- If the OAT is valid (not transmitted by the inverter, value out of range, etc.), the water setpoint is equal to the current minimum water temperature.
- If the OAT is above the maximum current OAT threshold, the water setpoint is equal to the maximum current water temperature.

The climatic curve corresponds to the water setpoint for the Home mode. To define the other occupancy modes, it is necessary to configure the Night cooling offset [P408] and the Away cooling offset [P409]:

COOLING CLIMATIC CURVES RELATED TO WORKING MODE HOME



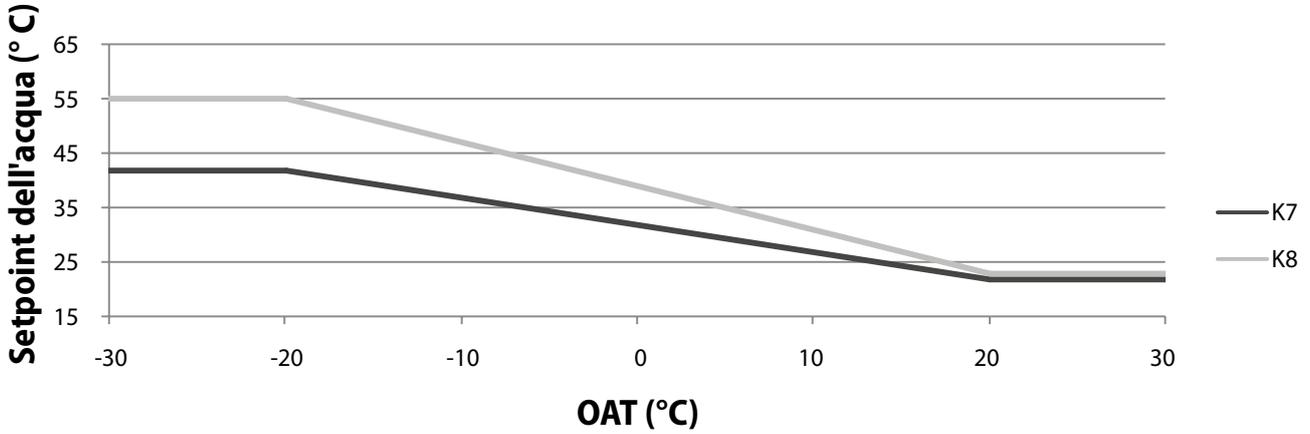
RISCALDAMENTO: If the climatic heating curve [P581] is configured from "0" to "12", the water set point will be calculated on the basis of the selected heating climatic curve.

Twelve predefined heating climatic curves are available:

Climatic curve	OAT min.	OAT max.	Temp. water min.	Temp. water max.
K1	-7°C	20°C	20°C	38°C
K2	-5°C	20°C	20°C	33°C
K3	-9°C	20°C	20°C	45°C
K4	-8°C	20°C	40°C	50°C
K5	-5°C	20°C	40°C	55°C
K6	0°C	20°C	40°C	60°C
K7	-20°C	20°C	22°C	42°C
K8	-20°C	20°C	23°C	55°C
K9	-12,7°C	20°C	24°C	60°C
K10	-5,9°C	20°C	25°C	60°C
K11	-1,5°C	20°C	26°C	60°C

Climatic curve	OAT min.	OAT max.	Temp. water min.	Temp. water max.
K12	3,5°C	20°C	27°C	60°C

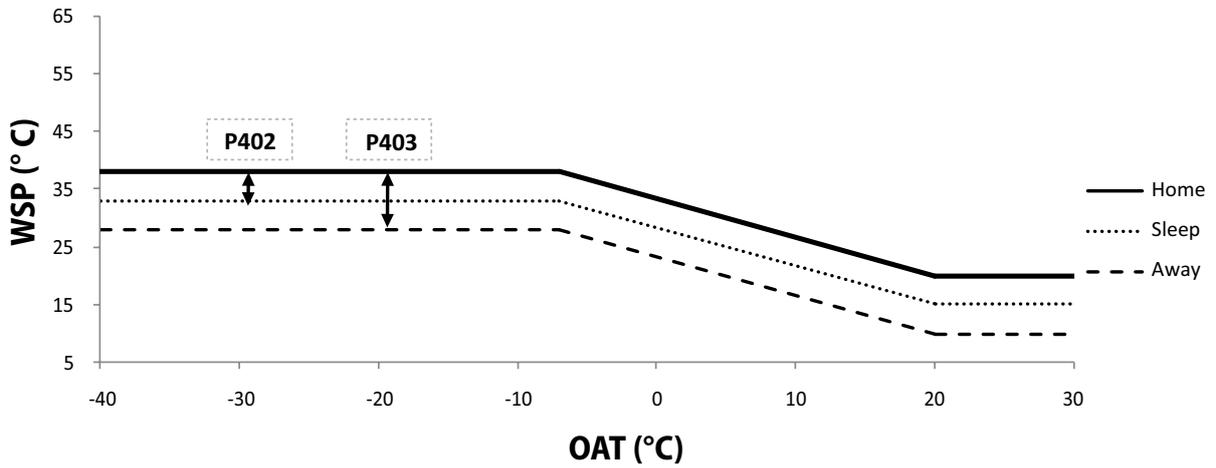
HEATING CLIMATIC CURVES (K7 AND K8)



- If the OAT is valid (not transmitted by the inverter, value out of range, etc.), the water setpoint is equal to the maximum current water temperature.
- If the OAT is above the maximum current OAT threshold, the water setpoint is equal to the minimum current water temperature.

ature. The climatic curve corresponds to the water setpoint for the Home mode. To define the other occupation modes, it is necessary to configure the Night heating offset [P402] and the Away heating offset [P403]:

HEATING CLIMATIC CURVES RELATED TO WORKING MODE HOME



FUNCTIONS

Fixed water setpoint

If the cooling climate curve [P586] or the heating climate curve [P581] are configured to "-1", the water control point will be determined based on the occupation mode, with direct access to the

control panel.

The water setpoint with direct access to the control panel (refer to the user manual of the control panel)

COOLING

Control panel occupation	Water setpoint with direct access to the control panel	Field	Water setpoint from the parameter menu	Field
	Cooling setpoint home	5 - 18°C	Cooling setpoint home [P407]	5 - 18°C
	Cooling setpoint night	5 - 18°C	Cooling setpoint home [P407] + night cooling offset [P408]	0 - 10°C
	Cooling setpoint away	5 - 18°C	Cooling setpoint home [P407] + away cooling offset [P409]	0 - 10°C

HEATING

Control panel occupation	Water setpoint with direct access to the control panel	Field	Water setpoint from the parameter menu	Field
	Heating setpoint home	20 - 60°C	Heating setpoint home [P401]	20 - 60°C
	Heating setpoint night	20 - 60°C	Heating setpoint home [P401] + Offset heating night [P402]	-10 a 0°C
	Heating setpoint away	20 - 60°C	Heating setpoint home [P401] + Offset heating away [P403]	-10 a 0°C

Only DHW ACS (setpoints defined under the change, also setpoints for DHW mode)

Control panel occupation	Water setpoint with direct access to the control panel	Field	Water setpoint from the parameter menu	Field
	Setpoint DHW	30 - 60°C	Heating setpoint home [P401]	30 - 60°C
	DHW anti-legionella setpoint	50 - 60°C	Heating setpoint home [P401] + Offset heating night [P402]	50 - 60°C

Customized climatic curve

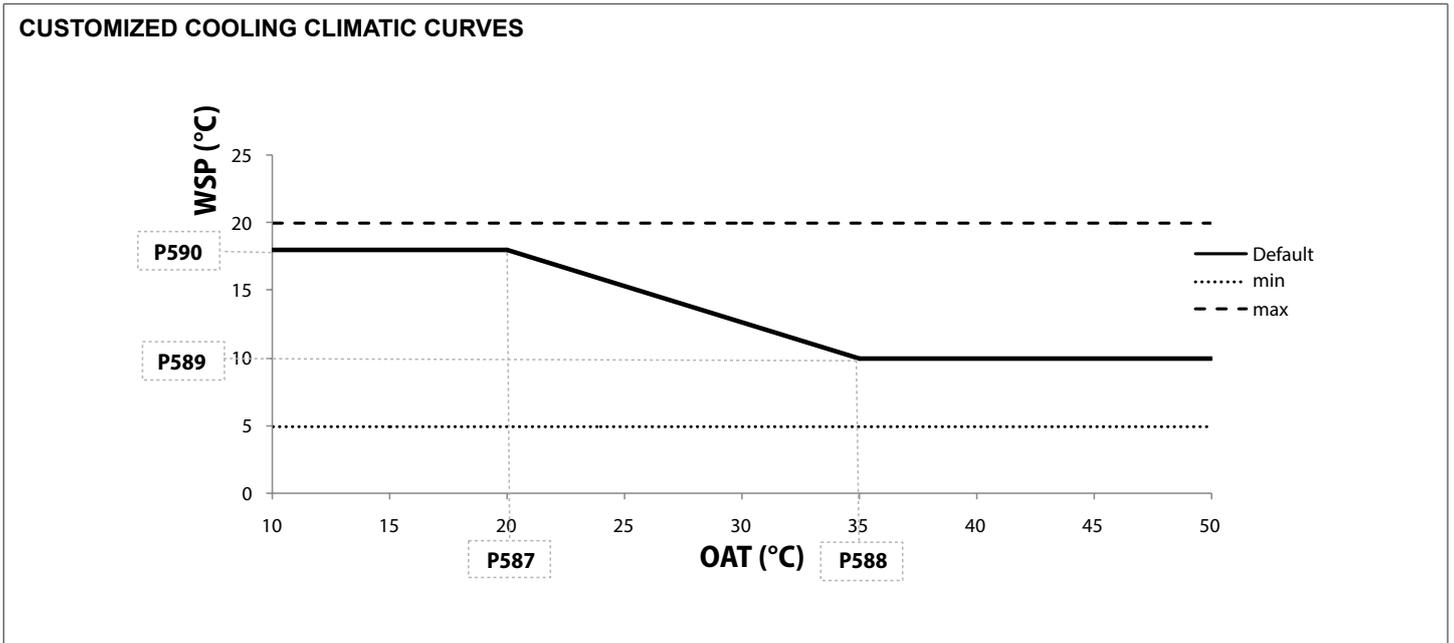
COOLING

If the cooling climate curve [P586] is configured to "0", the water setpoint will be calculated based on the customized cooling climate curve.

The customized cooling climate curve can be defined using the following parameters:

Parameter	Description	Default	Min.	Max.
P587	OAT min customized	20°C	0°C	30°C
P588	OAT max customized	35°C	24°C	46°C
P589	Personalized minimum water temperature	10°C	5°C	18°C
P590	Customized maximum water temperature	18°C	5°C	18°C

Example:



- If the OAT is not valid, the water setpoint is equal to the minimum personalized water temperature [P589].
- If the OAT is above the maximum current OAT threshold, the water setpoint is equal to the maximum personalized water

temperature [P590].

- If the minimum OAT is greater than or equal to the maximum current OAT threshold, the water setpoint is equal to the maximum customized water temperature [P590].

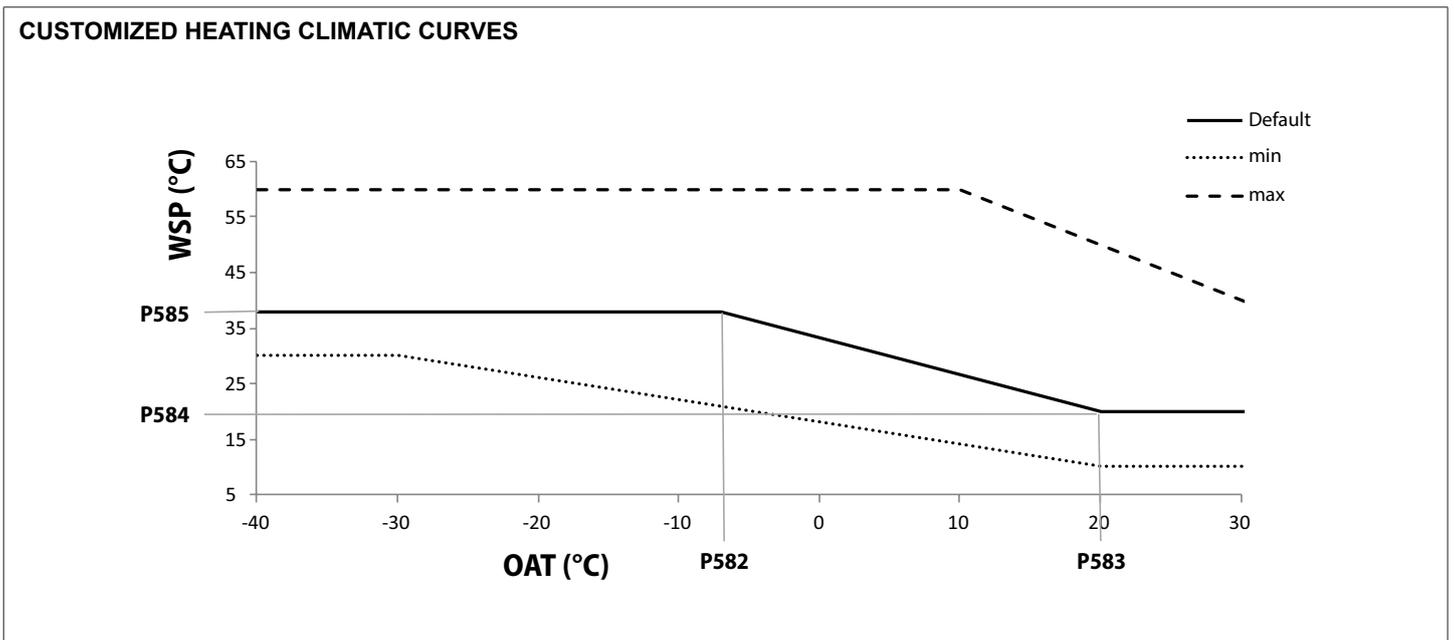
HEATING

If the climatic curve heating [P581] configured on " 0 ", the water set point will be calculated based on the customized heating climate curve.

The customized heating climate curve can be defined using the following parameters:

Parameter	Description	Default	Min.	Max.
P582	OAT min customized	-7°C	-30°C	10°C
P583	OAT max customized	20°C	10°C	30°C
P584	Personalized minimum water temperature	20°C	20°C	40°C
P585	Customized maximum water temperature	38°C	30°C	60°C

Example:



- If the OAT is not valid, the water setpoint is equal to the maximum personalized water temperature [P585].
- If the OAT is above the maximum current OAT threshold, the water setpoint is equal to the minimum personalized water temperature [P584].

- If the minimum OAT is greater than or equal to the current maximum OAT threshold, the water setpoint is equal to the customized minimum water temperature [P584].

FUNCTIONS

Climatic curve offset (default and customized)

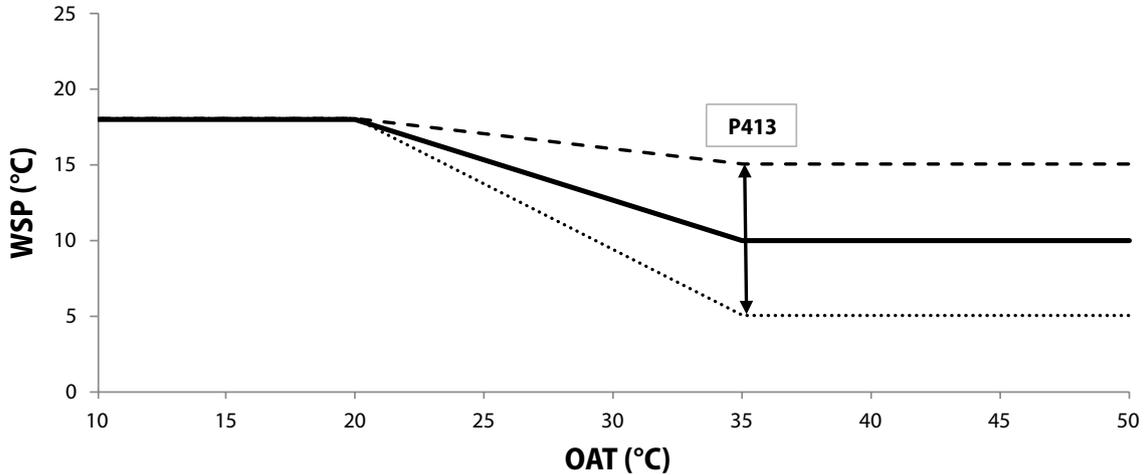
Two other parameters are configurable to adjust the water setpoint according to customer needs:

- for the cooling curve, the minimum cooling water setpoint [P589] can be changed by an offset at the foot of the curve (minimum cooling curve setpoint offset [P413])

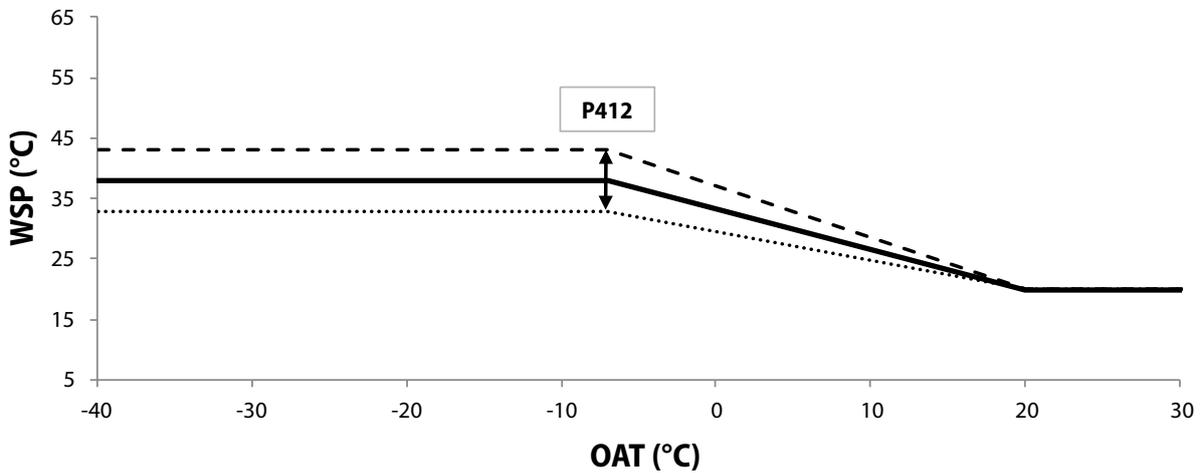
— and for the heating curve, the maximum heating water setpoint [P585] can be changed by an offset at the foot of the curve (maximum heating curve setpoint offset [P412])

Example:

COOLING CLIMATIC CURVES WITH OFFSET ON THE LOWER SIDE



HEATING CLIMATIC CURVES WITH OFFSET IN THE UPPER PART



Remote control panel installation

When the appliance is equipped with a remote user interface, the **COOLING**

control can be based on the air setpoint. Depending on the occupancy and the heating / cooling / DHW mode, the air setpoint varies as indicated below.

Control panel occupation	Water setpoint with direct access to the control panel	Field	Water setpoint from the parameter menu	Field
	Cooling setpoint home	20 - 38°C	Cooling setpoint In the house [P424]	20 - 38°C
	Cooling setpoint night	20 - 38°C	Home cooling setpoint [P424] + Night cooling offset[P425]	0 - 10°C
	Cooling setpoint away	20 - 38°C	Home cooling setpoint [P424] + Away cooling offset[P426]	0 - 10°C

HEATING

Control panel occupation	Water setpoint with direct access to the control panel	Field	Water setpoint from the parameter menu	Field
	Heating setpoint home	21 - 34°C	Heating setpoint In the house[P421]	21 - 34°C
	Heating setpoint night	21 - 34°C	Heating set point In the house [P421] + Night heating offset [P422]	-10 a 0°C
	Away at home heating setpoint	21 - 34°C	Heating setpoint In the house [P421] + Offset heating Away from home[P423]	-10 a 0°C

Once the air set points have been defined, the water set points must be configured.

5.3 House water frost protection

This protection is used in units with remote user interface only, in order to maintain a minimum default ambient temperature of 6 °C. When the room temperature drops below the house antifreeze set

point [P427], the unit will start in heating mode until the room temperature increases: [P427] + 2 °C.

Passage	Table	Par.	Designation	Description	Field	Default	Es.	Unit
Set the minimum room temperature	AIR_STP	427	Home antifreeze setpoint	This is the minimum allowable room temperature. If the room temperature drops below this nominal value, the unit will start operating in heating mode.	6,0 - 12,0	6	10	°C

! Never switch off the unit, otherwise home freeze protection cannot be guaranteed. For this reason the circuit breaker of the main machine or the customer must always be left closed.

5.4 Water frost protection

When the OAT is low (and the pump is stopped), the risk of freezing the water exchanger and the water pipes is high. The pump must be turned on regularly or continuously to circulate the water and reduce this risk. Similarly, in some cases the BPHE and the pipes of the electric heaters on the hydronic kit are activated.

The pump is checked as follows:

- If the OAT falls below the heat exchanger setpoint * [P517] + 3 °C, the pump starts at minimum speed for 1 minute every 15 minutes.
- If the OAT falls below the heat exchanger setpoint * [P517] + 3 °C and the EWT or LWT falls below the heat exchanger setpoint * [P517], the pump runs continuously at minimum speed.
- To get out of these two conditions, a hysteresis of 1K is applied.

plied.

Electric heaters are managed as follows:

- Electric heaters are energized during defrost and for 1 minute after defrost ends.
- Electric heaters are energized if the OAT is below the heat exchanger setpoint * [P517] and if the EWT or LWT is below the heat exchanger setpoint * [P517].
- Electric heaters are de-energized if the OAT is above the heat exchanger setpoint * [P517] + 0.5 °C and if both the EWT (if configured) and the LWT are above the heat exchanger setpoint * [P517] + 0.5°C.

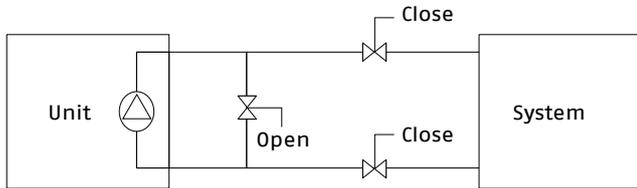
*** Changing the configurable value is the responsibility of the user.**

Passage	Table	Par.	Designation	Description	Field	Default	Es.	Unit
It defines the criteria for activating the water frost protection	GEN_CONF	517	Heat exchanger setpoint	Criteria according to which the outside air temperature triggers the water frost protection	0.0 - 6.0	0	3	°C

! Never switch off the unit, otherwise the frost protection cannot be guaranteed. For this reason the circuit breaker of the main machine or the customer must always be left closed.

! If a shut-off valve is installed, a bypass must also be installed as shown below.

5.10 WINTER POSITION UNIT WITH HYDRONIC MOD.



⚠ When the unit switches to winter operation, depending on the weather conditions in your area, the following should be done:

- Add ethylene or propylene glycol with an adequate concentration to protect the system down to a temperature below 10 K at the lowest temperature likely to occur at the installation site.
- If the unit will not be used for a long time, it is advisable to empty it and load ethylene or propylene glycol into the heat exchanger as a safety precaution, using the water inlet impurity drain valve connection.
- At the start of the next season, fill the unit with water and add an inhibitor.
- For the installation of auxiliary equipment, the installer must comply with the basic standards, in particular with regard to the minimum and maximum flow rates, which must be included in the values °°indicated in the operating limit table (application data).
- To avoid corrosion by differential ventilation, the entire drained heat transfer circuit must be charged with nitrogen for one month. If the heat transfer fluid does not comply with the manufacturer's recommendations, the nitrogen load must be added immediately.

⚠ Please note that "antifreeze protection of the water" and "home frost protection" they are two different modes. The water freeze protection is used to reduce the risk of freezing of the water exchanger and the water pipes, while the house freeze protection is used to maintain the minimum room temperature.

5.5 Domestic Hot Water Mode

The main components necessary for the production of domestic hot water are:

a. DHW diverter valve

The units can drive a diverter valve to manage a domestic hot water tank type application. In the event of a request for domestic hot water, the operating logic controls a diverter valve that directs the hot water into the storage tank.

For the characteristics of the valve and the electrical connections, refer to the instructions supplied with the accessory.

b. DHW temperature sensor or thermostat

Depending on the configuration, the DHW option can be controlled with a temperature sensor or a thermostat.

DHW production is possible when:

- DHW only mode is selected and there is no DHW requirement (temperature conditions)
- The DHW program is active and there are DHW needs (temperature conditions) and the operating time in this mode is less than the maximum DHW operating time [P707]

c. DHW electric heater

When the unit is required to operate in DHW mode, if configured, the DHW electric heater can be used to supply domestic hot water. The discrete output is capable of controlling a contactor (not supplied with the unit).

The electric heater starts when the tank temperature is below the DHW set point and one of the following conditions occurs:

- the OAT is below the OAT addition threshold [P604]
- the OAT is above the maximum OAT for heating[P515]
- The anti-legionella mode is active
- The defrost mode is active
- In case of unit failure

⚠ Electric heating is disabled when high energy cost or load shedding modes are active or if the DHW thermistor fails.

d. Sanitary water tank protection

The water inside the domestic water tank must be constantly monitored in order to minimize the risk of contamination, including the bacteria responsible for legionella. It is therefore essential to inform the user about the importance of controlling the water temperature.

• Water tank protection system

The system is programmed to heat the water in the domestic hot water tank in order to eliminate the possibility of legionella proliferation or kill existing bacteria.

Legionella does not survive temperatures above 50 °C. The risk of contamination is practically non-existent when the water temperature is set at 60 °C.

• Water tank protection settings

To protect the domestic water tank against legionella bacteria, the following parameters must be set:

- Anti-legionella start day of the week [P714]
- Anti-legionella start time [P715]
- Anti-legionella water setpoint[P405] (the anti-legionella protection is interrupted when the water temperature reaches the preset temperature)

e. DHW limiting mode

The DHW limitation mode [P543] improves acoustic comfort by reducing the compressor frequency when the DHW mode is active.

5.6 Master/slave up to 4 units

a. Installation

The master / slave installation allows you to connect up to four units in parallel: a master unit can control from one to three slave units.

This type of installation must be made with units of the same type and the same size. The master / slave operation is incompatible with the production of domestic hot water.

The remote control panel can only be connected to the master unit.

⚠ The remote control panel can only be connected to the master unit.

⚠ An RS485 communication cable (not supplied) must be connected to each unit.

b. Control

All units installed in the same master / slave group share the same operating mode and the same setpoint.

The master unit is connected to a user interface which can be installed locally or remotely. The " master " user interface is a point

where decisions are made for all other units in the same master / slave group, which means that the operating mode (cooling / heating) and water setpoint defined on the master will be distributed to the other units "slave".

If the control panel display is connected to a slave unit, any modification of the operating mode or setpoint will be ignored.

When there are at least two units configured in the master / slave assembly, it is possible to define how compressors are started. There are three methods of compressor control.

• **The compressors can be started:**

Based on the address configuration: The master unit starts up first. Subsequently, the slave units are started in sequence (starting with slave # 1 and ending, for example, with slave # 3). When

stopped, the units are stopped starting with the last available slave on the network - the master is the last unit to be stopped.

Based on wear factor: Units are started up sequentially based on wear factor. When capacity is increased, the unit with the lowest wear factor is started first, while when capacity is decreased, the unit with the highest wear factor is stopped first.

Simultaneously: Simultaneously.

For more details on displaying the master / slave icon on the operator panel, refer to the operator panel manual.

⚠ In the event of a master / slave communication error, the master unit will operate in standalone mode or will continue to operate with the other slave units remaining connected. The affected slave unit will stop any operation.

5.7 Pump configuration

As for the hydraulic pump in the circuit, different configurations are possible:

- Unit with hydronic module (internal main pump included),
- Unit without hydronic module, it is necessary to add an external main pump,

- If there is a secondary water circuit on the installation, an additional pump can be mounted on this circuit.

Possible pump configurations	Main internal pump	Main external pump (not supplied)	Additional pump (not supplied)
	Fixed speed pump	Fixed speed pump	Fixed speed pump
Main internal pump		no	yes
Main external pump	no		yes
Installation DHW	yes	yes	yes
Installation master/slave	yes	no	yes (only on master unit)

⚠ The installer is responsible for ensuring the protection of the auxiliary pump against low water flow (no flow switches can be managed by the unit control).

The status of the main pump (on / off) differs according to the type

of installation (options, accessories, applications). In the compatibility table below, the different main pump control logics are presented according to the installation:

Main pump logic [P565]	Local control panel	Remote control panel	Off mode	Cooling/heating mode		Boiler	
				Request fulfilled	Request	On	Off
1. Always on	yes	yes	Off	On	On	Off	N.A.
2. Water sampling	yes	N.A.	Off	Off (on for sampling)	On	Off	N.A.
3. Based on the ambient temperature	N.A.	yes	Off	According to IAT vs air setpoint	On	Off	N.A.

The status of the additional pump (on / off) differs according to the type of installation (options, accessories, applications). In the compatibility table below, the different main pump control logics are

presented according to the installation:

Auxiliary pump logic [P573]	Local control panel	Remote control panel	Off mode	Cooling/heating mode		Boiler		DHW	
				Request fulfilled	Request	On	Off	Active	inactive
0. No auxiliary pump	yes	yes	Off	Off	Off	Off	N.A.	N.A.	N.A.
1. Always on	yes	yes	Off	On	On	On	N.A.	N.A.	N.A.
2. Based on the ambient temperature	N.A.	yes	Off	According to IAT vs air setpoint	On	On	N.A.	N.A.	N.A.
3. Always on, except when ACS is active	yes	yes	Off	On	On	On	N.A.	Off	N.A.
4. According to room temperature, but off when ACS is on	N.A.	yes	Off	According to IAT vs air setpoint	On	On	N.A.	Off	N.A.

5.8 Electric heaters

⚠ The installer is responsible for ensuring that the system complies with the applicable legislation on electrical and thermal safety.

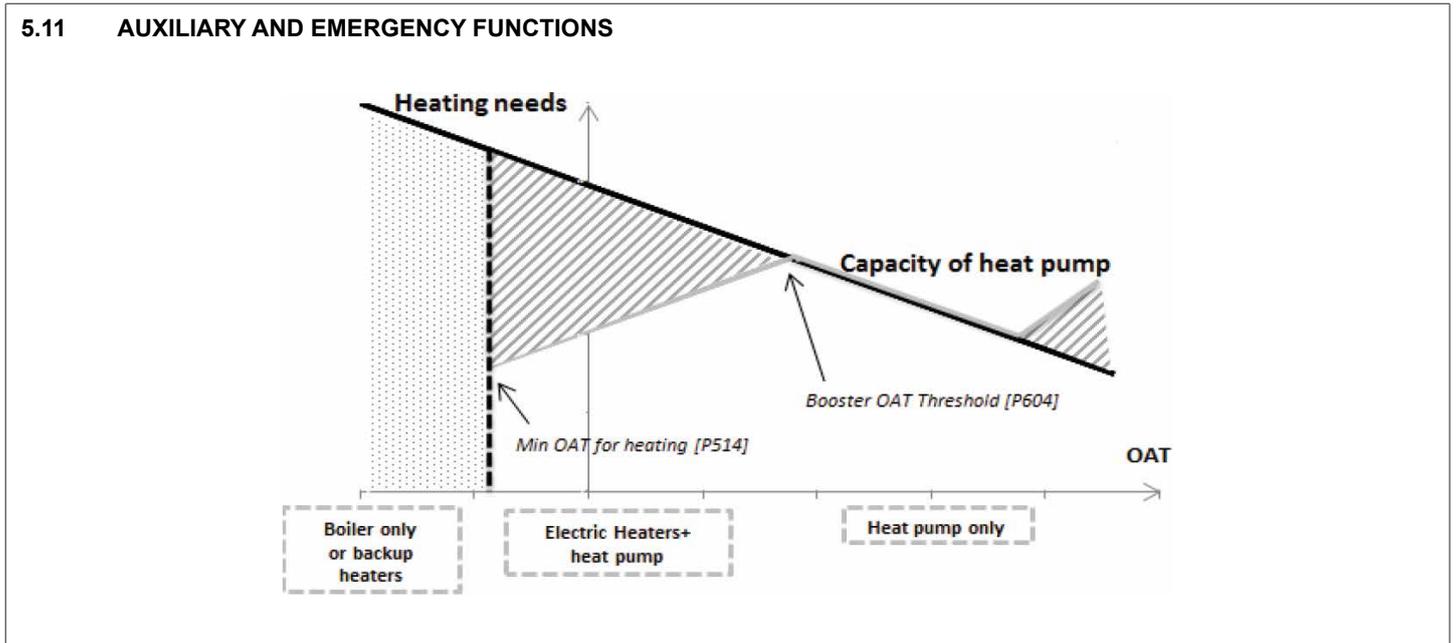
Electric heaters can be set on the water circuit to ensure heating in the event of low OAT or heat pump failure.

When the OAT is below the addition threshold [P604], the auxiliary electric heaters can be activated. The auxiliary electric heaters can operate in conjunction with the heat pump.

When the OAT is below the minimum threshold for heating [P514], the heat pumps are stopped and the auxiliary electric heaters can

FUNCTIONS

be activated.



After configuration, up to three electric heaters or three electric heating stages can be controlled:

- An electric heating stage with a single customized output: EH1
- Two electric heating stages, with two customized outputs: EH1 e EH2
- Two electric heating stages, with two customized outputs: EH1 e EH2
- Three electric heating stages, with three discrete outputs: EH1, EH2 e EH3. This configuration cannot be activated if a DHW heater is present.

5.9 Boiler

To meet the requirement for very low ambient heating capacity, a boiler can be installed. The boiler is considered an emergency device: when activated, the heat pump cannot operate. The boiler is activated when the OAT is lower than the minimum OAT for heating

5.11 Capacity control on night working mode

The night period is defined by a start time and an end time that can be set by the user. Night mode allows users to configure the unit to operate with specific parameters within a specified time period,

[P514] or in the event of a heat pump failure.

5.10 Defrost cycle

When the outside air temperature is low and the ambient humidity is high, the likelihood of ice forming on the surface of the external coils increases. Frost covering the external coil can reduce the flow of air through the coil and result in lower unit performance. To remove the frost from the coil, the control starts the defrost cycle when necessary.

During the defrost cycle, the circuit is forced into cooling mode. To prevent the water circuit from cooling down, BPHEs and electrical piping heaters can be started.

⚠ Please note that " defrost " and " home frost protection " they are two different modes. Defrosting is used to remove the frost that covers the external coil, while the house antifreeze protection is used to maintain the minimum temperature inside the rooms.

Passage	Table	Par.	Designation	Description	Field	Default	Es.	Unit
Night mode setting	CMP_CONF	541	Power limitation value	The compressor frequency is limited to this percentage of the maximum allowed frequency	50 - 100	75	50	%
	GEN_CONF	518	Night mode start time	Time of night mode start	00:00 - 23:59	0:00	23:00	hh: mm
		519	Night mode end time	Time of night mode stop	00:00 - 23:59	0:00	7:00	hh: mm

such as night time. In particular, this mode allows to decrease the compressor frequency during a certain period.

6 FAULT CODES

Operating anomalies are signaled on the control panel display.

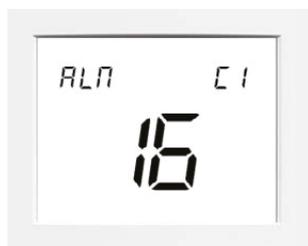
 Fixed icon: indication of intervention of an alarm that has stopped the unit

 Flashing icon: indication of intervention of an alarm that has left the unit in operation

- Faults are represented with error codes.
- To display the codes:
 - press any key to activate the control panel
 - hold down the keys simultaneously **M** and  for 2 seconds
 - push  or  to scroll through the codes
- Two types of alarms are displayed:

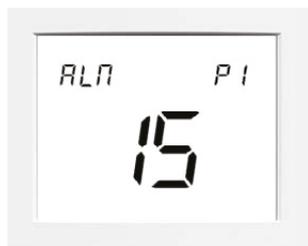
— keep the key pressed  for 2 seconds to exit

CURRENT ALARM



Alarm : C1
Alarm code: 16

PREVIOUS ALARM



Previous alarm: P1
Alarm code: 15

- To reset the alarms:
 - hold down the keys simultaneously **M** and  for 2 seconds



— push  or  to select **YES**

— hold down the keys simultaneously **M** and  for 2 seconds to confirm the selection

7 FAULT SIGNALS DESCRIPTION

The following tables include lists of alarm signals, their probable cause, effect on the unit and the type of reset.

Alarm Inverter	Alarm [P350] - [P354] or [P360] - [P364]	Description	Unit status	Reset type			Verifications
				Automatic	Feeding cycle	Comment	
-	1	EWT sensor failure	Continue	X		When the operating values return to the correct range.	1. Check the EWT sensor (EWT). 2. Check NHC card.
-	2	LWT sensor failure	Stop	X		When the operating values return to the correct range.	1. Check the LWT sensor (LWT). 2. Check NHC card.
-	3	Coolant temperature sensor (TR) failure	Stop cpr	X		When the operating values return to the correct range.	1. Check the TR sensor (TR). 2. Check NHC card.
-	4	OAT sensor failure	Continue	X		When the operating values return to the correct range.	1. Check the auxiliary OAT sensor (OAT). 2. Check NHC card.
-	5	DHW_TT sensor failure	DHW failure	X		When the operating values return to the correct range.	1. Check the DHW sensor (DHW). 2. Check NHC card.
-	6	CHWSTEMP sensor failure		X		When the operating values return to the correct range.	1. Check the CHWSTEMP sensor (CHWSTEMP). 2. Check NHC card.
-	7	IAT sensor failure	Continue	X		When the operating values return to the correct range.	1. Check the IAT sensor (IAT). 2. Check NHC card.
-	8	Internal IU temperature faults	Continue	X		When the operating values return to the correct range.	1. Check the internal temperature sensor UI. 2. Check NHC card.
-	9	Replacement sensor failure	Continue	X		When the operating values return to the correct range.	1. Check the replacement sensor. 2. Check NHC card.
	10	Inverter discharge temperature sensor failure (TD)	Stop cpr		X	This error becomes permanent after 4 attempts to complete the operation.	1. Check the discharge temperature sensor (TD).
102	11	Inverter air exchanger temperature sensor failure(TE)	Stop cpr		X	This error becomes permanent after 4 attempts to complete the operation.	1. Check the temperature sensor (TE).
103	12	Inverter liquid temperature sensor failure (TL)	Stop cpr		X	This error becomes permanent after 4 attempts to complete the operation.	1. Check the temperature sensor (TL).
104	13	TO inverter sensor failure	Continue		X	The operation of the unit continues in emergency mode. The sensor value is set at 30 ° C in cooling, 10 ° C in heating the emergency mode is canceled when any other value is detected by the TO sensor.	1. Check the outdoor temperature sensor (TO).
108	14	Inverter suction temperature sensor failure (TS)	Stop cpr		X	This error becomes permanent after 4 attempts to complete the operation.	1. Check the suction temperature sensor (TS).
109	15	Inverter heatsink temperature failure	Stop cpr		X	This error becomes permanent after 8 attempts to complete the operation.	1. Check the correct functioning of the fan
111	16	TE and TS inverter sensors incorrectly connected	Stop cpr		X	This error becomes permanent after 4 attempts to complete the operation.	1. Check the temperature sensor (TE, TS).
-	20	Loss of communication with user interface	Continue	X		When a new message is received from the user interface	
-	21	Communication loss with inverter	Stop cpr	X		When a new message is received from the user interface	
221	22	Communication error between the inverter boards	Stop cpr		X	Simple delay in communication.	
-	23	Loss of communication with the slaves	Continue	X		Only the Master unit continues to work.	
-	24	Loss of communication with the Master	Stop	X			
-	25	Loss of communication with the Master	Stop	X		When a new message is received from the Master	
-	31	Security entrance	Stop O Stop heating OR Stop cooling	X		When the security entrance is closed	
-	32	Flow switch failure	Stop cpr		X	This error becomes permanent after 5 attempts to complete the operation.	
-	50	Exchanger antifreeze protection based on water temperature (in cooling)	Cooling down	X		Ignition of antifreeze heaters, if present, when the alarm is active. The pump is forced to start.	
-	51	Exchanger frost protection based on the temperature of the refrigerant (in cooling)	Cooling down		X	Ignition of antifreeze heaters, if present, when the alarm is active. The pump is forced to start until the manual reset of the alarm is possible. The alarm becomes blocking when it is repeated 12 times in 2 hours.	

Alarm Inverter	Alarm [P350] - [P354] or [P360] - [P364]	Description	Unit status	Reset type			Verifications
				Automatic	Feeding cycle	Comment	
243	60	Reverse valve protection	Stop cpr		X	This error becomes permanent after 4 attempts to complete the operation.	<ol style="list-style-type: none"> 1. Check the operation of the 4-way valve. 2. Check the intake temperature sensor (TE) of the air heat exchanger. 3. Check the BPHE sensor (TR). 4. Check the coil of the 4-way valve. 5. Check the PMV (pulse motor valve).
246	61	Fan error	Stop cpr		X		<ol style="list-style-type: none"> 1. Check the blocking of the fan motor. 2. Check the supply voltage between L2 and N.
250	62	Compressor short-circuit protection intervention	Stop cpr		X	<p>This error becomes permanent after 8 attempts to complete the operation.</p> <p>Error detected in the following conditions: Compressor IPM short circuit at start-up Compressor IPM short circuit during oil heating</p>	
253	63	Compressor motor position detection error	Stop cpr		X	<p>This error becomes permanent after 8 attempts to complete the operation.</p> <p>Compressor motor position detection error Error detected when the voltage value of the current probe is abnormal before starting the compressor</p>	
129	64	Compressor breakdown	Stop cpr		X	<p>This error becomes permanent after 8 attempts to complete the operation.</p> <p>Error detected in the following conditions: Compressor overcurrent Compressor IPM short circuit Compressor motor control malfunction</p>	<ol style="list-style-type: none"> 1. Check the supply voltage. 2. Overload operation of the refrigeration cycle
130	65	The compressor does not rotate	Stop cpr		X	<p>This error becomes permanent after 8 attempts to complete the operation.</p> <p>Error detected in the following conditions: Compressor motor locking IPM compressor overcurrent at start-up</p>	<ol style="list-style-type: none"> 1. Compressor problems (lockout, etc.): Replace the compressor. 2. Compressor wiring error (open phase)
132	70	Failure to release compressor thermal switch	Stop cpr		X	<p>This error becomes permanent after 10 attempts to complete the operation.</p>	<ol style="list-style-type: none"> 1. Check the frame and connector of the thermostat. 2. Check for gas leaks, refill 3. Check the PMV (pulse motor valve). 4. Check for any broken pipes.
134	71	Suction pressure too low	Stop cpr		X	<p>This error becomes permanent after 8 attempts to complete the operation.</p>	<ol style="list-style-type: none"> 1. Check the external PMV for clogging. 2. Check the coil of the 2-way valve. 3. Check the Ps sensor error(LP). 4. Check the refrigerant filter for clogging. 5. Check the refrigerant pipe for clogging. 6. Check the fan operation. (Heating mode) 7. Check for coolant decrease.
-	72	System high pressure error (pressure switch, compressor casing temperature, power supply)	Stop		X	<p>This error becomes permanent after 10 attempts to complete the operation.</p>	<ol style="list-style-type: none"> 1. Check the temperature sensor (TL). 2. Check fan 3. Check the PMV (pulse motor valve). 4. Check external air exchanger clogging and air recirculation 5. Refrigerant overload
-	73	Current detection circuit malfunction	Stop cpr		X	<p>This error becomes permanent after 8 attempts to complete the operation.</p> <p>Error detected in the following conditions: 1) Compressor current probe malfunction</p>	
227	74	Discharge temperature too high	Stop cpr		X	<p>This error becomes permanent after 4 attempts to complete the operation.</p>	<ol style="list-style-type: none"> 1. Check the refrigeration cycle (gas leak) 2. Electronic expansion valve problems 3. Check the discharge temperature sensor (TD).

FAULT CODES

Alarm Inverter	Alarm [P350] - [P354] or [P360] - [P364]	Description	Unit status	Reset type			Verifications
				Automatic	Feeding cycle	Comment	
229	75	Phase missing in the power cable	Stop cpr		X	This error becomes permanent after 8 attempts to complete the operation.	1. Check the supply voltage.
231	76	Inverter heatsink temperature too high	Stop cpr		X	This error becomes permanent after 4 attempts to complete the operation.	1. Check the explosion path of the heatsink.
-	78	Other Inverter errors	Continue		X		
-	79	Unknown errors Inverter	Continue		X		
-	80	RTC fault on NHC board	Continue	X			
-	81	EEPROM damaged on board NHC	Continue		X		
127	82	EEPROM inverter not readable or EEPROM number out of range	Stop		X	Simple delay in communication.	
-	90	Invalid configuration	Stop	X			
-	100	Invalid configuration	Stop	X		Automatic when [P055] is reset.	
-	200	External alarm	Continue	X		When the contact is closed	

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As the manufacturer is constantly improving its products, the aesthetic or dimensional features, the technical data, the equipment and accessories indicated could be subject to variations.