

Installation, programming and use manual.

Hi, Comfort T300



Hi, Comfort T300 is compliant with:

- Electromagnetic Compatibility Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU

 These instructions are an integral part of the booklet for the appliances on which the accessory is installed. Please see this booklet for all general warnings and important safety information.

 The T300 must be installed and programmed by professionally qualified personnel.

 At the end of its life, the product must not be disposed of as urban solid waste. Please take it to a waste recycling centre.

NOTE:

If the documentation is lost, a copy can be downloaded by scanning the QR code or visiting www.hi-comfort.com.



 Sections for both the installer and the user

CONNECTION DIAGRAMS EXAMPLE SYSTEM AND WIRING DIAGRAMS

5-9
98-105

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CONNECTION DIAGRAMS

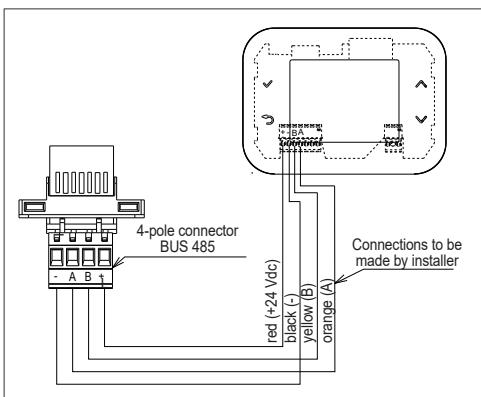
1. CONNECTION DIAGRAMS

WARNINGS

- !** The recommended length for the connection between T300 and the boiler/heat pump is ≤ 30 m.
- !** We recommend using conductors with a wire cross-section between 0,5 and 1,0 mm².
- !** To connect the BUS 485, we recommend using shielded cable in case the signal runs near other electrical conductors or conductors at mains voltage (230V).
- !** The control panel connection cable should have no splices; if splices are needed, they should be tinned and properly protected.
- !** Any ducting of the connection cable must be separate from live cables (230 V.a.c.).

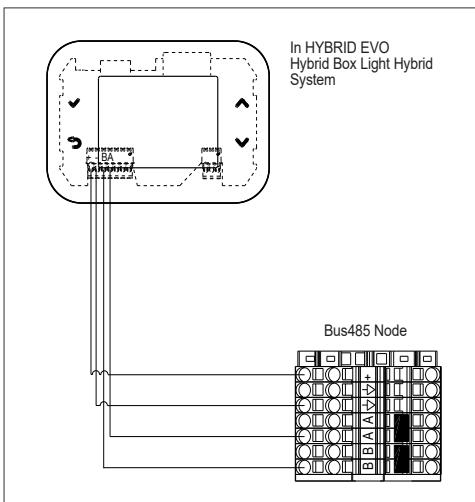
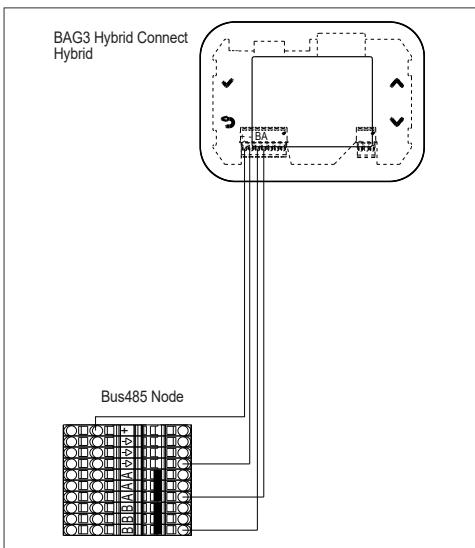
1.1 Wall-hung boilers

Connect terminals A, B, + and – (earth) of the 4 T300-pole connector to the bus node terminal board (see the diagrams below) respecting the polarities (L=max 30m). For other types of connections not shown in the diagrams below, refer to the specific instructions for the product.



1.2 BAG3 Hybrid - In HYBRID EVO - Connect Hybrid - Hybrid Box Light - HYBRID System

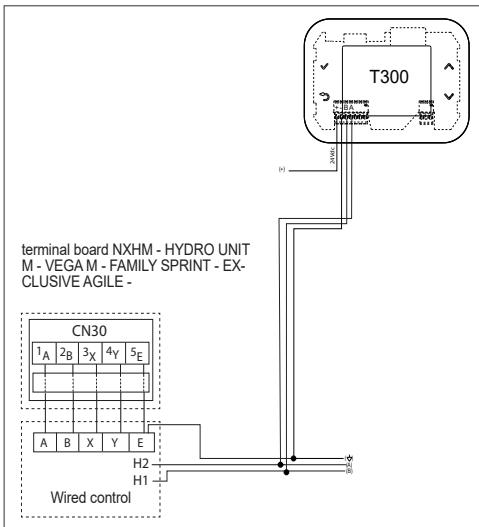
Connect terminals A, B, + and – (earth) of the 4 T300-pole connector to the 485 Bus node terminal board.



1.3 NXHM - HYDRO UNIT M - VEGA M - FAMILY SPRINT - EXCLUSIVE AGILE - Heat pumps (in hybrid configuration)

With NXHM - HYDRO UNIT M - VEGA M - FAMILY SPRINT - EXCLUSIVE AGILE - heat pump - connect the RS485 BUS node to the heat pump's control (wired control)

Wired control	Modbus node
E	-
H2	A
H1	B



NOTE:

! For EXCLUSIVE AGILE - FAMILY SPRINT heat pump, the control and therefore the connection are on the indoor unit.

! On the heat pump's remote control, it is necessary to:

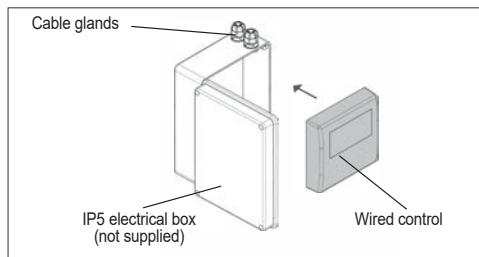
- set the time, date and language when first switching on;
- disable the domestic hot water function as follows:
- access the Menu parameters => for assistance service => PSW (234):
 - select DHW MODE SETTING;
 - set DHW MODE = NO.

For further details, refer to the instruction manual of the NXHM - HYDRO UNIT M - VEGA M - FAMILY SPRINT - EXCLUSIVE AGILE - remote control.

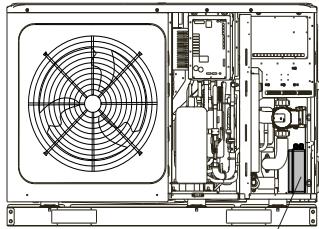
NOTE:

If a connection between the NXHM - HYDRO UNIT M - VEGA M - FAMILY SPRINT - EXCLUSIVE AGILE - heat pump and T300 with 3-core wiring is envisaged, the Wired control can be positioned as described below:

- Cut off the electric power supply to the heat pump;
- Place the Wired control inside a waterproof electrical box (IP5 - **not supplied as standard**);



- Route both the connection cable to the heat pump board and those intended for connecting T300 through the cable glands;
- When first switching on, set the following on the Wired control:
 - time, date and language;
 - disable the domestic hot water function as follows:
 - access the Menu parameters => for assistance service => PSW (234):
 - select DHW MODE SETTING;
 - set DHW MODE = NO.
- Connect the Wired control to the heat pump board, connector CN30 (see drawing below);
- Run the system functional checks;
- At the end of the operations, close the electrical box IP5 and place it in the indicated area.



position of electrical box IP5

1.5 NXHM - HYDRO UNIT M - VEGA M - FAMILY SPRINT - EXCLUSIVE AGILE - Heat pump (in full electric configuration)

- Connect the 230Vac power supply (F-N) to terminal IN of the BE18 power supply.
- Connect the 24Vdc power supply terminals of the 4 T300-pole connector to the OUT terminal of the BE18 power supply, taking care not to reverse the +/- polarity.
- connect terminals A, B and – (earth) of the 4 T300-pole connector to the specific terminals on the Wired control
- Connect the WIRED CONTROL TO THE HEAT PUMP.

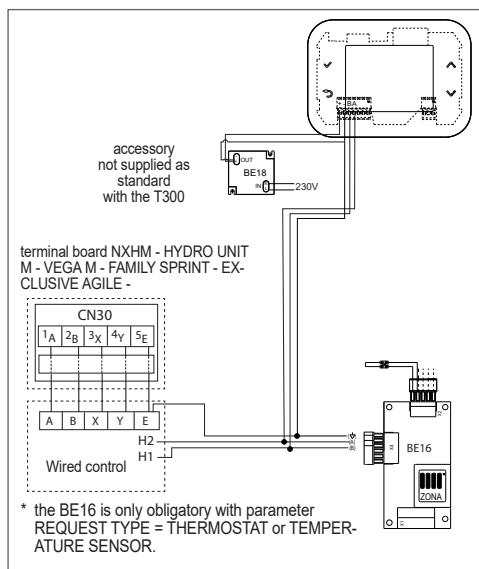
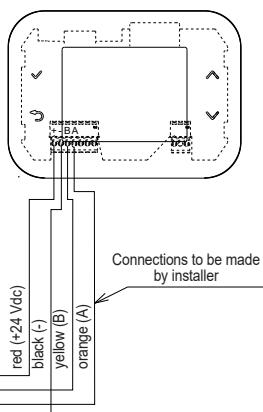
1.4 NXHP - HYDRO UNIT P Heat pump (in hybrid configuration)

This configuration requires the T300 control panel to be wall-mounted (purchased separately).

Install the T300 on the wall.

Electrical connections

- connect terminals A, B, + and – (earth) of the 4 T300-pole connector to the RS485 or to the system Bus node.



⚠ On the heat pump's remote control, it is necessary to:

- set the time, date and language when first switching on;
- disable the domestic hot water function as follows:
- access the Menu parameters => for assistance service => PSW (234):
 - select DHW MODE SETTING;
 - set DHW MODE = NO.

For further details, refer to the instruction manual of the heat pump's remote control.

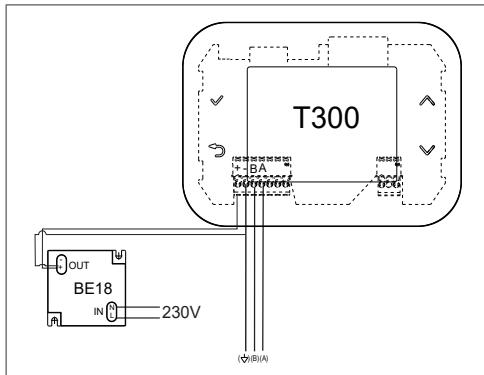
1.6 NXHP - HYDRO UNIT P Heat pump (in full electric configuration)

This configuration requires the T300 control panel to be wall-mounted (purchased separately).

Install the T300 on the wall.

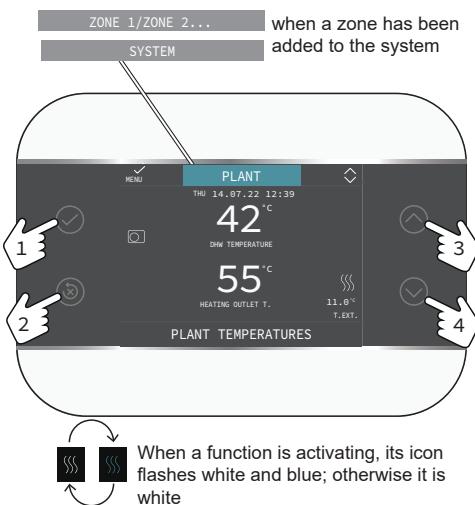
Electrical connections

- Connect the 230Vac power supply (F-N) to terminal IN of the BE18 power supply;
- Connect the 24Vdc power supply terminals of the 4 T300-pole connector to the OUT terminal of the BE18 power supply, taking care not to reverse the +/- polarity;
- connect terminals A, B and – (earth) of the 4 T300-pole connector to the specific terminals on the heat pump (RS485 or to the system Bus node). See the heat pump's installer manual for further details.



GENERAL PART

1. T300 DISPLAY AND FUNCTIONS



The T300 touch interface, icon display and dropdown menus make the product easy to use. Use the 4 buttons described below to navigate, edit and confirm or cancel your choices.

1		Confirm
2		Cancel selection / Return to previous screen / Return to main screen (press > 2 sec.) / Reset alarms.
3		To navigate in the submenus, change values and change pages PLANT - ZONE / E - SYSTEM
4		

ZONE 1 / ZONE...	Shown when one or more zones have been added in addition to the main zone.
	Operating status OFF. Any request to switch on is ignored except for the anti-freeze function.
	HEATING AND HOT WATER operating mode (HEATING function active). The icon flashes if a heating request is in progress from a zone.
	COOLING function active. The icon flashes if a cooling request is in progress from a zone.
	In a hybrid system, it indicates that the boiler DHW is enabled. The icon flashes when a DHW request is in progress. <ul style="list-style-type: none"> Only with boilers for heating with a storage tank: if we are outside the time slots for enabling DHW, the icon is crossed out. Only with a combi boiler: the letter P above the DHW icon indicates that the boiler pre-heating function is enabled; the P flashes when a pre-heating request is in progress.
	When the "heating hourly programme" function is enabled, this icon indicates that the relative zone is heated according to the set hourly programme (AUTOMATIC mode). If we are outside the heating activation time slots, the icon is crossed out.
	When the "heating time programme" function is enabled, this icon indicates that the relative zone is NOT being heated according to the set time programme but is instead always active (MANUAL mode).
	These icons indicate that the relative zone is NOT being heated according to the set time programme. Heating is in MANUAL mode until the next time slot change.
OFF	This icon indicates that the zone, when the "heating time programme" function is not enabled, has been set to HEAT OFF (not active).

	This icon indicates that heat pump management is enabled. When the heat pump is in operation, the icon flashes.
	This icon indicates that solar thermal system management is enabled (if enabled). When the solar thermal system's pump is in operation, the icon flashes.
	This icon indicates that the system detects the presence of flame (boiler enabled).
	Fault detected
	Only with a combi boiler: this icon indicates the presence of a storage tank and a heat pump enabled for domestic hot water. The icon is crossed out when the system operates outside the heat pump's activation time slots for DHW, while it flashes when the heat pump is in operation to fill the storage tank. The letter B below the boiler icon indicates that the DHW BOOST function is enabled (only full electric configurations).
	This icon indicates that photovoltaic management is enabled; if the icon is flashing, it means that the photovoltaic electric productivity is sufficient (contact closed). The system ensures that the available energy is utilised.
	This icon indicates that a heating element is connected to the system to boost the storage tank. The icon flashes when the DHW INTEGRATION TYPE heating element (storage tank) is active.

The configuration MENU is organised in a multi-level tree structure.

- The USER level is always available to allow for quick use of the functions
- The TECHNICAL level is password-protected as it contains parameters inaccessible to the end user.

2. GENERAL INFORMATION

The T300 is the system's user interface and can also be used to control the temperature in the room where it is installed. See the specific section on usage as an ambient controller.

1) Operation as a machine interface

In this use mode, the user interface allows the operation of the system components to be managed.

In this case, the heating and cooling requests are managed using an external ambient thermostat or a room sensor (accessories to be purchased separately) as indicated in the SYSTEM DIAGRAMS with the addition of the dedicated accessory for zone control.

2) Operation as MACHINE INTERFACE + room temperature control

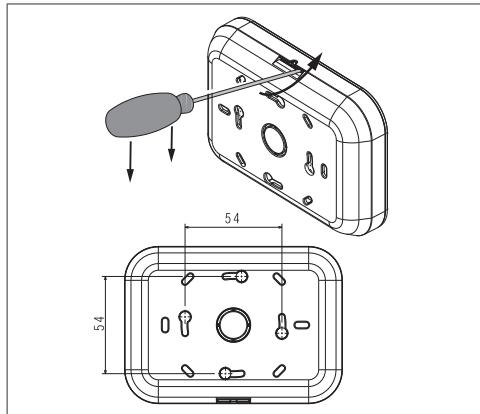
In this use mode, in addition to the system interface functions, the T300 is also able to control the temperature of the room in which it is installed. Refer to the SYSTEM DIAGRAMS. As such, refer to the specific paragraphs based on the function performed by the user interface.



After powering on, the room sensor requires a stabilisation time of about 20 minutes. During this time, the ambient temperature displayed on the T300 may not be correct.

WARNINGS

- The user interface must be installed in the room that is most accessible to you for controlling the ambient temperature.
- For easy reading, the user interface must be installed 1,5 above floor level as required by regulations.
- The user interface is powered by low voltage.
- The user interface must be kept away from heat sources or drafts: these can compromise the accuracy of the readings from the room thermostat built into the panel.



- Do not open the panel for any reason: it does not require any maintenance.
- Do not exert pressure on the liquid crystal display, as this could damage the glass and cause display issues.
- Use a dry cloth only to clean the display: any infiltration could damage the liquid crystal.

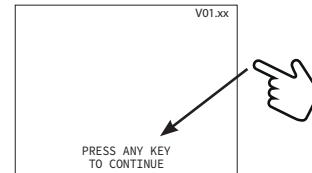
3. INITIAL SETTINGS



The first power-up must be performed by authorised personnel from an authorised service centre.

Before use, ensure that all parts of the system are connected and powered.

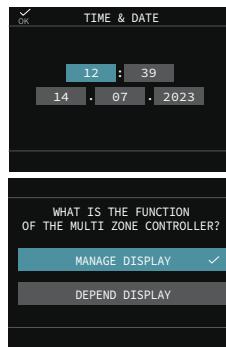
The display will show the start page:



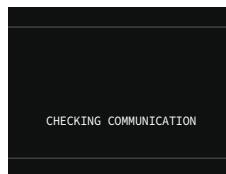
and will then ask for the LANGUAGE - TIME & DATE and the system type to be set



The default language set on the system is ENGLISH. Select your desired language.



After selecting the MANAGE DISPLAY option, wait a few seconds for the T300 to run the communication test.



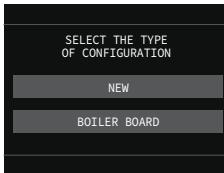
Two conditions are possible:

Condition A

if the communication test with the boiler is successful, the T300 sets up for its configuration.

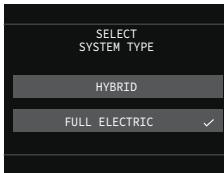
NOTE:

The heat pump is optional and can be added at a later stage (HYBRID system).



Condition B

if the communication test with the boiler is unsuccessful, the T300 prompts you to specify the type of system you wish to configure, providing option HYBRID or FULL ELECTRIC.



By choosing hybrid, you fall into condition A and the boiler is mandatory; otherwise, error COMMUNICATION LOST is displayed.

By choosing FULL ELECTRIC the configuration procedure ends immediately and the system automatically configures itself with a heat pump.

parameter HEAT PUMP TYPE must be set according to the type of heat pump used (see "1. T300" pag. 20).

NOTES

- the boiler can be added at a later stage. In this case, it becomes a hybrid system.
- To add the storage tank or other devices, refer to the specific paragraphs described in this manual.

4. NAVIGATING INSIDE THE T300

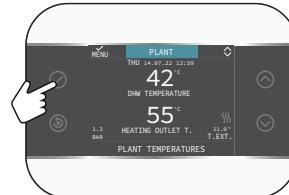
Summary of button functionality		
1		Confirm
2		Cancel selection / Return to previous screen / Return to main screen (press > 2 sec.) / Reset alarms.
3		To navigate in the submenus, change values and change pages PLANT - ZONE / E - SYSTEM
4		

4.1 Setting the password



To access the password setting screen (installer and service) from the main screen:

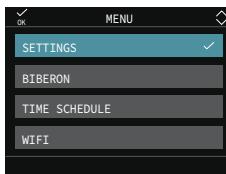
- press and access MENU;



- Select



MENU
└─ SETTINGS



4.2 Accessing a TECHNICAL

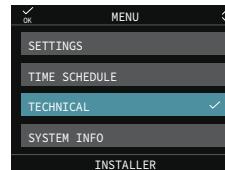


- Select

MENU

└ TECHNICAL

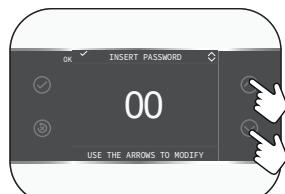
using the buttons as indicated in the summary table



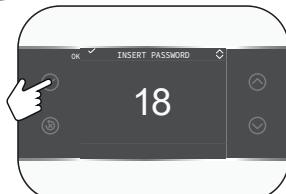
Press and hold buttons and simultaneously to enter the password menu (about 5 secs).



Use the and buttons to set the desired password (INSTALLER - 18 or SERVICE).

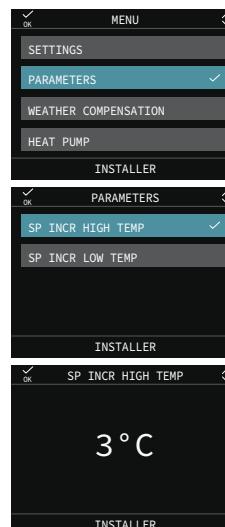


Press to confirm.



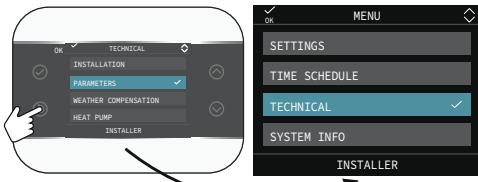
The password-protected parameters are intended solely for qualified technicians. The manufacturer is not responsible for damage caused by improper access/modification of such parameters by the end user.

Choose a menu item.
Example PARAMETERS



4.3 Returning to previous screen - cancelling a selection

it is possible to return to the previous screen or cancel a selection by pressing :



4.4 Returning to main screen

it is possible to return to the main screen at any time by holding down  for at least 2 sec.



NOTE:

 The parameters in the TECHNICAL menu are accessible after setting the password. Refer to the T300 technician menu, "Access level" column to find out the type of password to be set: INSTALLER 18 or SERVICE.

In the paragraphs below, the need to set the password is highlighted by the pictogram.



which indicates the need to follow the procedure described in paragraph "4.1 Setting the password" pag. 14.

4.5 T300

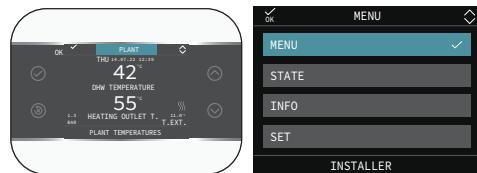
T300 with the integrated gateway connects to the home router to access the Internet and use the Hi, Comfort app.

Type in www.hi-comfort.com or scan the QR code



to access the app page and download the Hi, Comfort app from APP STORE and GOOGLE PLAY.

On the main screen, press  to access MENU:



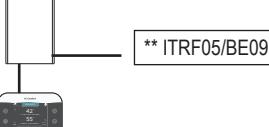
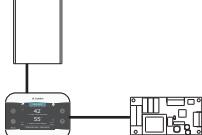
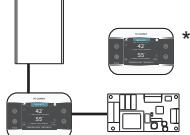
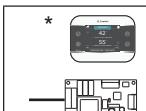
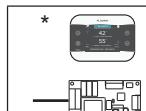
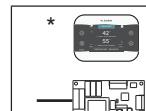
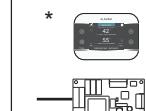
and then



The following parameters are available:

WIFI SERIAL	shows the Wi-Fi ID
WIFI INFO	indicates the Wi-Fi signal percentage
WIFI NOME	(when connected) indicates the name of the connected network
WIFI AP MODE	answer the question "Are you activating AP Mod?" to generate a local Wi-Fi network to pass the home Wi-Fi credentials to.
CERTIFICATES RESET	allows the user to re-initialize the connection to the cloud if communication is not possible. To be used only if all attempts to go online have failed.
CHECK FOR UPDATES	Checks for firmware updates that can be automatically installed remotely

5. T300 - HYBRID

	<p>MAIN ZONE MANAGED BY BOILER + ZONE 1 and ZONE 2 MANAGED BY BE16</p> <p>MAIN ZONE:</p> <ul style="list-style-type: none"> - ACTUATION TYPE: ITRF05 / BOILER - REQUEST TYPE: MANAGE DISPLAY <p>ZONE 1 and ZONE 2:</p> <ul style="list-style-type: none"> - ACTUATION TYPE: BE16 - REQUEST TYPE: DEPEND DISPLAY <p>The MAIN ZONE (direct type) is managed by the boiler; ZONE 1 and ZONE 2 are managed with BE16 with the possibility of managing zone DIRECT ZONE / MIXING ZONE with a pump.</p>	<p>MAIN ZONE + ZONE 1 and ZONE 2 MANAGED BY BE16</p> <p>MAIN ZONE:</p> <p>ACTUATION TYPE= BE16</p> <p>REQUEST TYPE= MANAGE DISPLAY</p> <p>ZONE 1 and ZONE 2:</p> <ul style="list-style-type: none"> - ACTUATION TYPE: BE16 - REQUEST TYPE: DEPEND DISPLAY <p>The MAIN ZONE and ZONE 1 and ZONE 2 are managed with BE16 with the possibility of managing zone DIRECT ZONE / MIXING ZONE with a pump.</p>	<p>MAIN ZONE + ZONE 1 and ZONE 2 MANAGED BY BE16</p> <p>MAIN ZONE:</p> <p>ACTUATION TYPE= BE16</p> <p>REQUEST TYPE= DEPEND DISPLAY</p> <p>ZONE 1 and ZONE 2:</p> <ul style="list-style-type: none"> - ACTUATION TYPE: BE16 - REQUEST TYPE: DEPEND DISPLAY <p>The MAIN ZONE and ZONE 1 and ZONE 2 are managed with BE16 with the possibility of managing zone DIRECT ZONE / MIXING ZONE with a pump.</p>
	<p>MAIN ZONE = DIRECT ZONE</p> <p>ZONE 1 = MIXING ZONE or DIRECT ZONE</p> <p>ZONE 2 = MIXING ZONE or DIRECT ZONE</p> <p>Max 3 zones including main zone</p>	<p>MAIN ZONE = MIXING ZONE or DIRECT ZONE</p> <p>ZONE 1 = MIXING ZONE or DIRECT ZONE</p> <p>ZONE 2 = MIXING ZONE or DIRECT ZONE</p> <p>Max 3 zones including main zone</p>	<p>MAIN ZONE = MIXING ZONE or DIRECT ZONE</p> <p>ZONE 1 = MIXING ZONE or DIRECT ZONE</p> <p>ZONE 2 = MIXING ZONE or DIRECT ZONE</p> <p>Max 3 zones including main zone</p>
MAIN ZONE			
ZONE 1			
ZONE 2			

To manage up to 7 zones, refer to the T200 manual;

* DEPEND DISPLAY

** Direct zone via booster pump, no zone valve management.

6. T300 - FULL ELECTRIC

	<p>MAIN ZONE ACTUATION TYPE= HP REQUEST TYPE= MANAGE DISPLAY</p> <p>The MAIN ZONE (direct type) is managed by the HP</p>	<p>MAIN ZONE + ZONE 1 and ZONE 2 MANAGED BY BE16</p> <p>MAIN ZONE: ACTUATION TYPE= BE16 REQUEST TYPE= MANAGE DISPLAY</p> <p>ZONE 1 and ZONE 2: - ACTUATION TYPE: BE16 - REQUEST TYPE: DEPEND DISPLAY</p> <p>The MAIN ZONE and ZONE 1 and ZONE 2 are managed with BE16 with the possibility of managing zone DIRECT ZONE / MIXING ZONE with a pump.</p>	<p>MAIN ZONE + ZONE 1 and ZONE 2 MANAGED BY BE16</p> <p>MAIN ZONE: ACTUATION TYPE= BE16 REQUEST TYPE= DEPEND DISPLAY</p> <p>ZONE 1 and ZONE 2: - ACTUATION TYPE: BE16 - REQUEST TYPE: DEPEND DISPLAY</p> <p>The MAIN ZONE and ZONE 1 and ZONE 2 are managed with BE16 with the possibility of managing zone DIRECT ZONE / MIXING ZONE with a pump.</p>
		<p>MAIN ZONE = MIXING ZONE or DIRECT ZONE ZONE 1 = MIXING ZONE or DIRECT ZONE ZONE 2 = MIXING ZONE or DIRECT ZONE Max 3 zones including main zone</p>	<p>MAIN ZONE = MIXING ZONE or DIRECT ZONE ZONE 1 = MIXING ZONE or DIRECT ZONE ZONE 2 = MIXING ZONE or DIRECT ZONE Max 3 zones including main zone</p>
MAIN ZONE			
ZONE 1			
ZONE 2			

To manage up to 7 zones, refer to the T200 manual;

* DEPEND DISPLAY

FULL ELECTRIC SECTION

1. T300

MENU	Factory-set default value	Minimum value	Maximum value	Notes
TECHNICAL				
INSTALLATION				INSTALLER
ZONES MANAGER				INSTALLER
MODIFY ZONE				INSTALLER
ACTUATION TYPE	MAIN	MAIN / ZONE..		INSTALLER
BE16 / HP (type 2)		HP / BE16 / T200		INSTALLER main zone only
THERMOSTAT		THERMOSTAT		INSTALLER
REQUEST TYPE		TEMPERATURE SENSOR (only if ACTUATION TYPE = BE16)	MANAGE DISPLAY - DEPEND	
DISPLAY - RF				
BE16 ADDRESS	--	1	6	INSTALLER: only zones with ACTUATION TYPE = BE16
HYDRAULIC CONF	DIRECT ZONE	DIRECT ZONE	MIXING ZONE	INSTALLER: only zones with ACTUATION TYPE = BE16
ZONE TYPE	HIGH TEMP	HIGH TEMP	LOW TEMPERATURE	INSTALLER
MIN CH SET	40°C (AT) 20°C (BT) 25°C (HP type 1)		20°C	INSTALLER
MAX CH SET	60°C (type 1) / 75°C (type 2) AT 45°C (BT)	MIN CH SET	60°C (type 1) / 75°C (type 2) AT 45°C (BT)	INSTALLER
CHANGE NAME				INSTALLER
PI - PROPORTIONAL	5	0	99	SERVICE: mix zones only with ACTUATION TYPE = BE16
PI - INTEGRAL	10	0	99	SERVICE: mix zones only with ACTUATION TYPE = BE16
VALVE RUN	120 sec	0 sec	240 sec	SERVICE: mix zones only with ACTUATION TYPE = BE16
CLOSING AT POWER ON	140 sec	0 sec	240 sec	SERVICE: mix zones only with ACTUATION TYPE = BE16
OUTLET OVER	55°C	0°C	100°C	SERVICE: BT zones only with ACTUATION TYPE = BE16
OUTLET OVER TEST TIME	0min	0min	240min	SERVICE: BT zones only with ACTUATION TYPE = BE16
OUTLET OVER WAIT TIME	2min	VALVE RUN	240min	SERVICE: BT zones only with ACTUATION TYPE = BE16
OUTLET OVER REST TIME	2min	0min	240min	SERVICE: BT zones only with ACTUATION TYPE = BE16
FREEZE PROT TEMP	6°C	-10°C	50°C	SERVICE: only zones with ACTUATION TYPE = BE16
FREEZE PROT OFFSET	5°C	1°C	20°C	SERVICE: only zones with ACTUATION TYPE = BE16
FREEZE PROT T EXT	10°C	0°C	100°C	SERVICE: only zones with ACTUATION TYPE = BE16
POR	0	0	1	INSTALLER not available if REQUEST TYPE = MANAGE DISPLAY or room sensor
RF		PAIRING (coupling)/ LEAVE (decoupling)		INSTALLER only available if ACTUATION TYPE = T200 or REQUEST TYPE = RF
DELAY START HEATER	20 sec	0sec	600sec	INSTALLER only available if ACTUATION TYPE = T200
CH HYST ON	0.5°C	0.1°C	2.0°C	INSTALLER
CH HYST OFF	0.5°C	0.1°C	2.0°C	INSTALLER
COOL HYST ON	0.5°C	0.1°C	2.0°C	INSTALLER
COOL HYST OFF	0.5°C	0.1°C	2.0°C	INSTALLER
ADD ZONE				INSTALLER
DELETE ZONE (if more than 1 zone)				INSTALLER
SENSOR CALIBRATION				INSTALLER
SYSTEM RESET				INSTALLER
PARAMETERS				INSTALLER
SP INCR HIGH TEMP	0°C	0°C	10°C	SERVICE if at least one AT zone
SP INCR LOW TEMP	0°C	0°C	6°C	SERVICE if at least one BT zone
DECR COOLING SP	0°C	0°C	10°C	SERVICE if cooling active

MENU	Factory-set default value	Minimum value	Maximum value	Notes
WEATHER COMPENSATION				INSTALLER
CLIMATIC CURVES	MAIN	MAIN / ZONE...		INSTALLER
FIXED SET POINT	60°C (AT) type 1 75°C type 2 45°C (BT)	MIN CH SET	MAX CH SET	INSTALLER when thermoregulation not enabled
NIGHT COMP	FUNCTION NOT ACTIVE	FUNCTION NOT ACTIVE	FUNCTION ACTIVE	INSTALLER when thermoregulation enabled
CURVE SLOPE	2.0	1.0	3.0	INSTALLER: if SEXT connected, REQUEST TYPE TA and AT zone type
AMBENT INFLUENCE	0.4	0.2	0.8	INSTALLER: if SEXT connected, REQUEST TYPE TA and BT zone type
OFFSET	2.0	1.0	5.0	INSTALLER: if REQUEST TYPE room sensor, T300 or T200
COOLING	10	0	20	INSTALLER: if REQUEST TYPE room sensor, T300 or T200
COOLING CURVES	20°C	20°C	40°C	INSTALLER: if REQUEST TYPE room sensor, T300 or T200
BUILDING TYPE	18°C	4°C	25°C	INSTALLER: if REQUEST TYPE room sensor, T300 or T200
OUTDOOR REACTIVITY	5°C (HP type 2)			INSTALLER
ENABLE HEATING CURVES / DISABLE HEATING CURVES	1	1	2	INSTALLER: if cooling curves activated
ENABLE COOLING CURVES / DISABLE COOLING CURVES	5min	5min	20min	INSTALLER: if SEXT connected
ANTILEGIONELLA	20	0	255	INSTALLER: if SEXT connected
TIME	FUNCTION NOT ACTIVE / DAILY FUNCTION / WEEKLY FUNCTION	FUNCTION NOT ACTIVE / DAILY FUNCTION / WEEKLY FUNCTION		INSTALLER: only if DHW enabled
ANTILEGIO TEMP	03:00	00:00	23:30	INSTALLER
ADD WATER TANK	70°C	55°C	T MAX TANK	INSTALLER
WATER TANK HP				INSTALLER.
REMOVE WATER TANK				INSTALLER if HP enabled for USE FOR DHW
WATER TANK SETPOINT	50°C	37.5°C	60°C	INSTALLER if HP enabled for USE FOR DHW
TANK FROST PROTECT	7°C	0°C	100°C	SERVICE: only if HP enabled for USE FOR DHW
TANK FR PROT OFFSET	5°C	1°C	20°C	SERVICE: only if HP enabled for USE FOR DHW
T MAX TANK	60°C	10°C	130°C	INSTALLER
DHW TANK ON HYST	2	1	30	INSTALLER
DHW TANK OFF HYST	0	0	30	INSTALLER
DHW INTEGRATION TYPE	0	0	4	INSTALLER
DHW EH MENU				INSTALLER: only if DHW INTEGRATION TYPE ≠ 0
DHW MAX TEMP EH	70°C	55°C	80°C	INSTALLER
EH MIN ON TIME	60 sec	0 sec	360 sec	INSTALLER
EH MIN HORS TEMPS	60 sec	0 sec	360 sec	INSTALLER
DHW BOOST	0	0	1	INSTALLER: only if HP enabled for USE FOR DHW
ADD SOLAR PLANT				INSTALLER: only if SOLAR PLANT not set
SOLAR				INSTALLER
REMOVE SOLAR PLANT				INSTALLER
DELTA T ON PUMP	8°C	DELTA T OFF PUMP	30°C	INSTALLER
DELTA T OFF PUMP	4°C	4°C	DELTA T ON PUMP	INSTALLER
INTEGRATION DELAY	0 min	0 min	180 min	INSTALLER
COLLECTOR T MIN	(-)	(-)-30°C	-°C	INSTALLER
COLLECTOR T MAX	110°C	COLLECTOR T PROT	180°C	INSTALLER
COLLECTOR T PROT	110°C	80°C	COLLECTOR T MAX	INSTALLER
COLLECTOR T AUTH	40°C	COLLECTOR T LOCK	95°C	INSTALLER

MENU	Factory-set default value	Minimum value	Maximum value	Notes
COLLECTOR T LOCK	35°C	-20°C	COLLECTOR T AUTH	INSTALLER
PWM COLL PUMP	0 min	0 min	30 min	INSTALLER
TANK COOLING	FUNCTION NOT ACTIVE	FUNCTION NOT ACTIVE	FUNCTION ACTIVE	INSTALLER
SOLAR PUMP MODE	OFF	OFF / ON / AUTO		INSTALLER
ADD HEAT PUMP				INSTALLER: only if heat pump not configured
HEAT PUMP TYPE (+)	0	0	0 NA 1 (HP type 1) 2 (HP type 2)	INSTALLER
			(+) for details on type 1 - type 2 see table at end of TECHNICIAN MENU	
HEAT PUMP				INSTALLER
ENABLE COOLING / DISABLE COOLING	DEACTIVATE FUNCTION	FUNCTION ACTIVE	DEACTIVATE FUNCTION	INSTALLER
USE FOR DHW / DON'T USE FOR DHW	FUNCTION NOT ACTIVE	FUNCTION ACTIVE	FUNCTION NOT ACTIVE	SERVICE: only if system has storage tank and sensor without solar
ENABLE NIGHT REDUCT / DISABLE NIGHT REDUCT	FUNCTION NOT ACTIVE	FUNCTION ACTIVE	FUNCTION NOT ACTIVE	SERVICE: only if system has storage tank and sensor without solar
ANTI FREEZE DELTA SET (HP type 2)	1	0	6	SERVICE
REDUCED FREQUENCY	80% 0 (HP type 1)	50% 1 (HP type 1)	100% 0 (HP type 1)	INSTALLER If ENABLE NIGHT REDUCT
NIGHT MODE START TIME	20:00	00:00	23:59	INSTALLER If ENABLE NIGHT REDUCT
NIGHT MODE STOP TIME	09:00	00:00	23:59	SERVICE: if night-time reduction active and system with storage tank and sensor without solar
MIN EMERG OUT T	-10°C	-20°C	10°C and not higher than MIN OUTDOOR TEMP	INSTALLER
WINTER SUMMER DELAY	0h	0h	24h	INSTALLER
WARNING VALIDATION	60sec	1sec	300sec	INSTALLER
DHW HP SETPOINT	60°C	20°C	60°C (type 1) 75°C (type 2) the value must still be < DHW MAX TEMP HP	SERVICE: only if HP enabled for DHW
DHW MAX TEMP HP	55°C	45°C	65°C (type 1) 75°C (type 2)	INSTALLER
ADD PHOTOVOLTAIC				INSTALLER
PHOTOVOLTAIC (if added)				INSTALLER
REMOVE PHOTOVOLTAIC				INSTALLER
BACKUP TYPE (HP type 2)	1	0	1	INSTALLER
BOOSTER OAT THRESHOLD (HP type 2)	-7°C	-20°C	15°C	INSTALLER
INTEGRATION DELAY (HP type 2)	30min	1 min	60 min	INSTALLER
BOOSTER DELTA TEMP (HP type 2)	5°C	1°C	20°C	INSTALLER
MINIMUM PUMP SPEED (HP type 2)	19%	19%	100%	INSTALLER
MAXIMUM PUMP SPEED (HP type 2)	100%	19%	100%	INSTALLER
ZONE PUMP DELAY (HP type 1)	0 min	0 min	255min	SERVICE: only zones with ACTUATION TYPE =BE16
ENABLE ERROR HISTORY (in the first 2 hours of power-on)				SERVICE
ERROR HISTORY (if 2 operating hours have elapsed)				INSTALLER
SCREW HEATING	DEACTIVATE FUNCTION	DEACTIVATE FUNCTION	ACTIVATE FUNCTION	INSTALLER: OFF state and system in BT
FUNCTION NOT ACTIVE				INSTALLER
FUNCTION ACTIVE				INSTALLER
FUNCTION SETTINGS				SERVICE
TFMIN	20°C	15°C	30°C	SERVICE
TFMAX	35°C	30°C	55°C	SERVICE
ADD BOILER				INSTALLER
BOILER				INSTALLER
REMOVE BOILER				INSTALLER: only if a HP and instantaneous boiler present

MENU

HYDRAULIC CONF

SYSTEM INFO

Factory-set default value	Minimum value	Maximum value	Notes
depending on boiler installed* (*) 0 = heating only / 1 = instantaneous with flow switch / 2 = instantaneous with flow meter / 3 = heating only + storage tank with sensor / 4 = heating only + storage tank with thermostat	0	4	INSTALLER
			SERVICE

Description	Heat pump type
Type 0	not applicable
Type 1	NXHM - HYDRO UNIT M - VEGA M - FAMILY SPRINT - EXCLUSIVE AGILE -
Type 2	NXHP - HYDRO UNIT P

2. INSTALLATION TECHNICIAN MENU

2.1 ZONES MANAGER

This menu is used to programme zone parameters.

The main zone is already loaded on the system by default, so if only one zone is being set up only the relative parameters need to be set.

If other zones are to be included in the system, a supplementary zone must be added.

To add a supplementary zone:



Select:

MENU

└ TECHNICAL

└ INSTALLATION

└ ZONES MANAGER

└ ADD ZONE

- assign a name to the new zone by scrolling through the letters on the graphical keyboard using buttons and . Then confirm with .

Then set up the heating zones

└ ZONES MANAGER

└ MODIFY ZONE

by setting the following parameters:

ACTUATION TYPE

System requests can be managed as follows:

1) IF ACTUATION TYPE

HP

└ REQUEST TYPE

└ MANAGE DISPLAY / DEPEND DISPLAY / RF / THERMOSTAT if HEAT PUMP TYPE = 2

2) IF ACTUATION TYPE

BE16

└ REQUEST TYPE

└ THERMOSTAT / TEMPERATURE SENSOR / MANAGE DISPLAY / DEPEND DISPLAY / RF

3) IF ACTUATION TYPE

T200

└ REQUEST TYPE

└ RF (not changeable)

REQUEST TYPE (only if ACTUATION TYPE different from T200)

To specify the type of heat request, you can choose one of the following options:

- THERMOSTAT (only if ACTUATION TYPE= BE16): the heat request is generated with an ON/OFF thermostat;
- TEMPERATURE SENSOR only if ACTUATION TYPE= BE16): the heat request is generated by a room sensor;
- MANAGE DISPLAY: the heat request is generated by the MANAGE DISPLAY; in this case the T300 assumes the dual function of MACHINE INTERFACE and regulator AMBIENT - see paragraph "7. T 300 as AMBIENT CONTROLLER" pag. 45;
- DEPEND DISPLAY: the heat request is generated by the DEPEND DISPLAY.
- RF: the heat request is generated by the T200.

If ACTUATION TYPE = T200 parameter REQUEST TYPE is forced by the system to RF and cannot be changed.

The heat request is generated by the T200 connected to the zone valves.

BE16 ADDRESS

(only if ACTUATION TYPE = BE16. See point 2).

To define the physical address of board BE16 associated with the zones, which must be set in order for the system to operate correctly.

Set the parameter according to the following diagram:

MAIN ZONE	ZONE 1
ON  1 2 3	ON  1 2 3

HYDRAULIC CONFIGURATION

To specify the hydraulic configuration of the zone in question, you can choose one of the following options:

- DIRECT ZONE (factory setting)
- MIXING ZONE.

ZONE TYPE

To specify the type of zone to heat, you can choose one of the following options:

- HIGH TEMP (factory setting);
- LOW TEMPERATURE.

MIN CH SET

This parameter specifies the minimum admissible HEATING setpoint (range 20°C - 60°C (75°C if type 2), default 40°C for high temperature systems - range 20°C - 45°C, default 20°C for low temperature systems).

For type 1 heat pump, the minimum HEATING setpoint (range 25°C - 60°C (75°C if type 2), default 40°C for high temperature systems - range 25°C - 45°C, default 25°C for low temperature systems).

NOTE:

MIN CH SET < MAX CH SET.

MAX CH SET

This parameter specifies the maximum admissible HEATING setpoint (range 20°C - 60°C (75°C if type 2), default 60°C (75°C if type 2) for high temperature systems - range 20°C - 45°C, default 45°C for low temperature systems).

NOTE:

MAX CH SET > MIN CH SET

CHANGE NAME

To assign a specific name to the heating zone.

PI - PROPORTIONAL

Weight of the proportional action of the PID control for the mixing valve MIXING ZONE.

PI - INTEGRAL

Weight of the integral action of the PID control for the mixing valve MIXING ZONE.

VALVE RUN

Mixer valve closure time.

CLOSING AT POWER ON

Mixing valves closure time at power on.

OUTLET OVER

Value of the delivery temperature in the zone beyond which the system shuts down the pump related to the zone.

OUTLET OVER TEST TIME

Time after which the system shuts down the pump related to the zone, after the delivery temperature in the zone has exceeded the OUTLET OVER value.

OUTLET OVER WAIT TIME

Time for which the pump stays off after the delivery temperature in the zone has exceeded the OUTLET OVER value.

After this time, the pump is reactivated.

OUTLET OVER REST TIME

Time after which the control cycle reactivates, after the pump has been reactivated due to OUTLET OVER temperature exceeded.

FREEZE PROT TEMP

Zone delivery temperature below which, if TEXT < FREEZE PROT T EXT, the zone anti-freeze function activates.

FREEZE PROT OFFSET

Offset value to be considered on the anti-freeze temperature to deactivate the zone anti-freeze function.

FREEZE PROT T EXT

Outdoor temperature below which, if ZONE DELIVERY < FREEZE PROT TEMP, the zone anti-freeze function activates.

POR

To enable heating time programming for the zone in question

- **Time programming not enabled = 0.**
When the room thermostat is on call, the heat request is always met without time limitation.
- **Time programming enabled = 1.**
When the room thermostat is on call, the heat request is enabled according to the set time programming.

NOTE:

ensure in this case that the operating mode of the zone is set to AUTO.

RF

When ACTUATION TYPE = T200 or REQUEST TYPE = RF, the heat request is generated by a temperature sensor connected via radio frequency to the T300 (device Hi, Comfort T200).

Use the RF command to complete the association between the two devices:

- PAIRING (coupling) to request the coupling of the T300 to the radio device;
- LEAVE (decoupling) to remove the coupling of the T300 to the radio device.

Complete the PAIRING / LEAVE operations on the T200 device (refer to the relevant instruction manual).

DELAY START HEATER

When ACTUATION TYPE = T200, this parameter is used to set the delay in seconds with which T300 processes the heat request generated by T200 to allow the complete opening of the relevant zone valve.

CH HYST ON

Ignition hysteresis setting for heating request

CH HYST OFF

Shutdown hysteresis setting for heating request

COOL HYST ON

Ignition hysteresis setting for cooling request

COOL HYST OFF

Shutdown hysteresis setting for cooling request

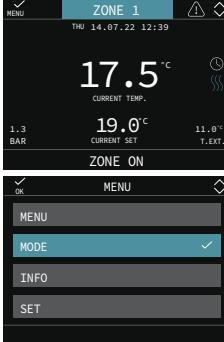
2.1.1 ZONE DEACTIVATION

To deactivate a zone, select it with buttons  and , then indicate the season in which you wish to deactivate the zone

```
MENU
  └ STATE
    └ SYSTEM
      └ HOT WATER ONLY or
        HEATING AND HOT
        WATER
```

and subsequently indicate:

```
MENU
  └ MODE
    └ HEAT OFF
```



The display shows the following information:
ZONE 1
THU 14.07.22 12:39
17.5°C (CURRENT TEMP.)
19.0°C (CURRENT SET)
11.0°C (T.EXT.)
1.3 BAR
ZONE ON
OK MENU
MODE
INFO
SET

2.2 SENSOR CALIBRATION

When the T300 is also used as an AMBIENT CONTROLLER, it may make sense to calibrate its ambient temperature sensor.



Select

```
MENU
  └ TECHNICAL
    └ INSTALLATION
      └ SENSOR CALIBRATION
```

set the desired ambient temperature correction offset.

2.3 SYSTEM RESET



The system configuration operations must be carried out by professionally qualified personnel from the technical support service.

Factory settings can be restored when necessary by resetting the system:



Select

```
MENU
  └ TECHNICAL
    └ INSTALLATION
      └ SYSTEM RESET
```

NOTE:

After resetting, the system must be configured again. The T300 will display a series of screens to allow you to set up

- TIME & DATE
- LANGUAGE
- MANAGE DISPLAY or DEPEND DISPLAY
- HYBRID or FULL ELECTRIC

2.4 PARAMETERS



MENU
└ TECHNICAL
└ PARAMETERS

The following parameters are available:

- SP INCR HIGH TEMP
offset to be applied to the delivery setpoint when a heat request for heating comes from high temperature systems.
- SP INCR LOW TEMP
offset to be applied to the delivery setpoint when a heat request for heating comes from low temperature systems.
- DECR COOLING SP
Allows for the introduction of a programmable negative offset on the zone cooling setpoint calculated before it is sent to the heat pump.

2.5 SETTING HEATING THERMOREGULATION



Select

MENU
└ TECHNICAL
└ WEATHER COMPENSATION

Thermoregulation in HEATING can operate at a fixed point even with an external sensor connected.

The temperature value detected by the external sensor is displayed on the main screen at the bottom right.

When thermoregulation is enabled, the algorithm for the automatic calculation of the delivery setpoint depends on the type of heat request.

In any case, the thermoregulation algorithm will not directly use the measured outdoor temperature value, but rather a calculated outdoor temperature value that takes the building insulation into account: in well-insulated buildings, variations in outdoor temperature have less influence on the ambient temperature compared to those that are less insulated.

Through the T300, it is possible to set the desired climatic curve and adjust the related parameters:

MENU
└ TECHNICAL
└ WEATHER COMPENSATION
└ CLIMATIC CURVES

CLIMATIC CURVES FIXED SET POINT

Heating zone delivery setpoint when thermoregulation not enabled.

NIGHT COMP

Parameter for enabling continuous heating request with night compensation when thermoregulation is enabled and ambient temperature control is not enabled (i.e. when REQUEST TYPE = TA).

CURVE SLOPE

Curve slope value used in the thermoregulation algorithm to calculate the heating delivery setpoint when the external sensor is connected.

AMBIENT INFLUENCE

Influence of the difference between “desired ambient temperature” and “measured ambient temperature” in the thermoregulation algorithm when the external sensor is connected and ambient temperature control is enabled (i.e. when REQUEST TYPE = T300 or T200).

OFFSET

Value to be added to the heating delivery setpoint calculated by the thermoregulation algorithm when ambient temperature control is enabled (i.e. when REQUEST TYPE = T300 or T200).

BUILDING TYPE

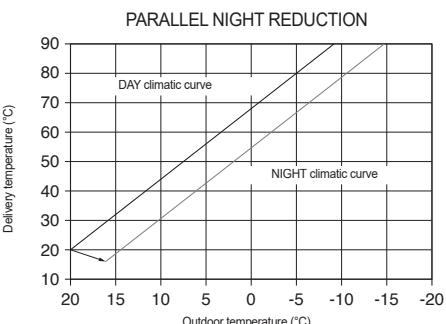
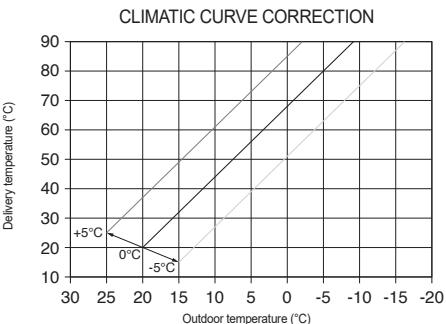
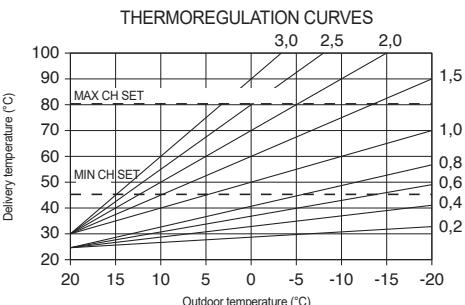
is indicative of the frequency with which the outdoor temperature value calculated for thermoregulation is updated.

A low value is used for poorly insulated buildings.

OUTDOOR REACTIVITY

is indicative of the speed at which variations in the measured outdoor temperature influence the calculated outdoor temperature for thermoregulation.

Low values indicate high speeds.



2.5.1 REQUEST FROM ROOM THERMOSTAT

In this case, the delivery setpoint depends on the outdoor temperature value to achieve a reference temperature in the room of 20°C. There are 2 parameters that contribute to the calculation of the delivery setpoint:

- Slope of the compensation curve (KT);
- Offset on the reference ambient temperature.

CHOOSING THE COMPENSATION CURVE

The heating compensation curve ensures a theoretical temperature of 20°C in the room at outdoor temperatures ranging from +20°C to -20°C. The choice of curve depends on the minimum project outdoor temperature (and thus the geographical location) and the project delivery temperature (and thus the type of system) and must be carefully calculated by the installer, using the following formula:

$$KT = \frac{\text{Project delivery T.} - \text{Tshift}}{20 - \text{Min. project outdoor T}}$$

$$Tshift = \begin{cases} 30^\circ\text{C} & \text{standard systems} \\ 25^\circ\text{C} & \text{standard systems} \end{cases}$$

If the calculation results in an intermediate value between two curves, it is advisable to choose the compensation curve closest to the obtained value.

Example: if the value obtained from the calculation is 1.3, it lies between curve 1 and curve 1.5. In this case, choose the closest curve, i.e. 1.5.

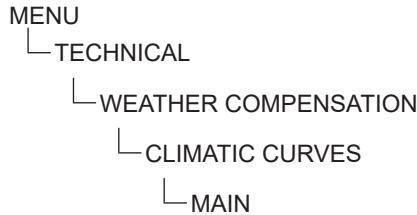
The KT values that can be set are as follows:

- standard system: 1,0÷3,0
- underfloor system 0,2÷0,8.

OFFSET ON THE REFERENCE AMBIENT TEMPERATURE

The user can still indirectly alter the HEATING setpoint value by entering an offset on the reference temperature value within the range -5 ÷ +5 (offset 0 = 20°C).

NIGHT COMP



If a timer is connected to the ROOM THERMOSTAT input, the NIGHT COMP function can be enabled from the path indicated above.

In this case, when the CONTACT is CLOSED, the heat request is made by the delivery sensor, based on the outdoor temperature, to achieve a nominal temperature in the room at DAY level (20°C).

THE OPENING OF THE CONTACT does not determine HEAT OFF, but instead reduces (parallel translation) the climatic curve on the NIGHT level (16°C).

Here too, the user can indirectly alter the HEATING setpoint value by entering an offset on the reference DAY (20°C) or NIGHT (16°C) temperature value within the range [-5 \div +5].

- CURVE SLOPE;
- AMBIENT INFLUENCE;
- FIXED POINT OFFSET;

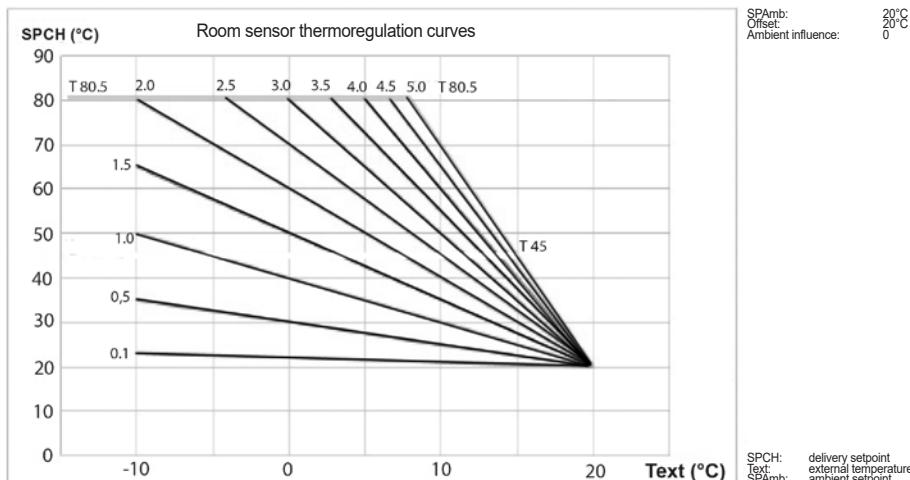
as set out in the following formula

$$SP_{Delivery} = \left\{ \left\{ (SP_{Amb} - T_{Amb}) \cdot Infl_{Amb} \right\} + T_{Amb} \right\} \cdot T_{Ext} + Offset$$

2.5.2 REQUEST FROM MANAGE DISPLAY OR DEPEND DISPLAY OR RF OR WIRED ROOM SENSOR

In this case, the delivery setpoint depends on the outdoor temperature and the ambient temperature.

There are 3 parameters that contribute to the calculation of the delivery setpoint:



Legend	Description
SP _{Delivery}	Delivery setpoint
SP _{Amb}	Ambient setpoint
T _{Amb}	Ambient temperature
Infl _{Amb}	Ambient influence (KORR)
T _{ext}	Outdoor temperature
Elbow	Climatic curve
Offset	Offset

2.6 SETTING DELIVERY TEMPERATURE FOR ZONES IN COOLING (IF HEAT PUMP IS ACTIVATED IN COOLING)

Thermoregulation in COOLING can operate at a fixed point even with an external sensor connected.

To activate/deactivate the thermoregulation curves in cooling



and then

```

MENU
└ TECHNICAL
  └ WEATHER COMPENSATION
    └ ENABLE COOLING CURVES / DISABLE COOLING CURVES
  
```

If the thermoregulation curves in cooling are deactivated, the system operates at a fixed point.

If the thermoregulation curves in cooling are activated, the delivery setpoint in cooling is automatically calculated according to an algorithm that takes account of the set climatic curve and the measured outdoor temperature. Bear in mind that, as for heating, the thermoregulation algorithm for cooling will not directly use the measured outdoor temperature value, but rather a calculated outdoor temperature value that takes the building insulation into account.

NOTE:

The value of the calculated outdoor temperature used by the thermoregulation algorithm can be viewed in the INFO menu under FILTERED OUTDOOR TEMP.

! The above parameters are visible in the technician menu - thermoregulation - climatic curves and heating only if an external sensor is connected.

CURVE SLOPE

The T300 calculates the delivery temperature based on the climatic curve set in parameter "CURVE CHOICE".

As the set value increases, the slope of the climatic curve increases, consequently the delivery temperature rises.

The function uses the outdoor temperature as its input parameter (x-axis).

AMBIENT INFLUENCE (KORR)

Weather compensation with ambient influence is used to correct the value calculated by the climatic curve, taking into account the temperature difference between the ambient setpoint and the room sensor.

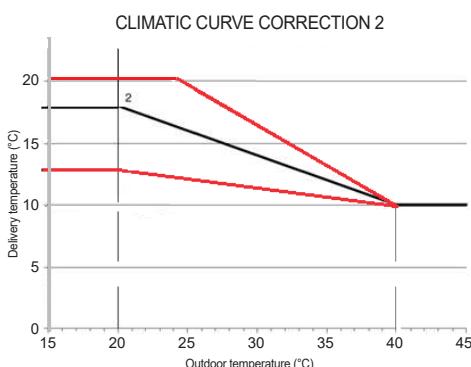
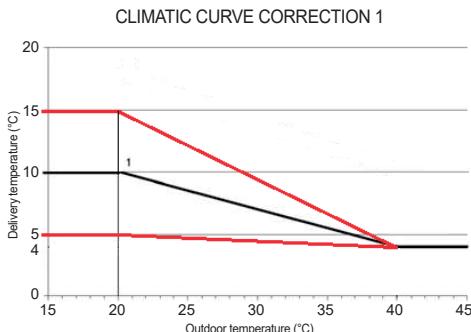
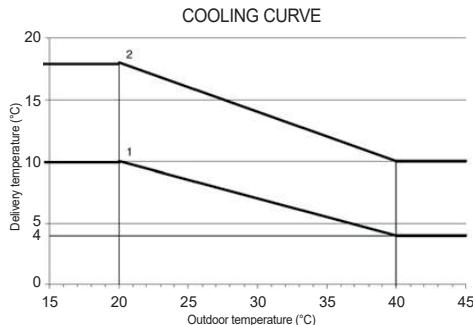
By increasing the parameter towards maximum, the influence of the setpoint deviation on the control is increased.

OFFSET

Value to be added to the heating delivery setpoint calculated by the thermoregulation algorithm.

OFFSET ON THE CALCULATED DELIVERY TEMPERATURE

The user can still directly alter the calculated COOLING setpoint value by changing the slope of the curve (climatic curve correction graphs 1-2), entering an offset within range $-5 \div +5$, which is added to the maximum cooling setpoint envisaged by the curve.



2.7 ADDING DEVICES

If configured as FULL ELECTRIC, the system requires the presence of a heat pump. If necessary, to add other devices:



MENU

TECHNICAL

- ADD WATER TANK
- ADD SOLAR PLANT
- HEAT PUMP → ADD PHOTOVOLTAIC

2.8 ADD WATER TANK

WATER TANK HP

In FULL ELECTRIC the storage tank can be filled only by the heat pump or by the heat pump and a DHW INTEGRATION TYPE element, depending on the system configuration. The heat pump must be enabled for DHW by setting the relevant parameter USE FOR DHW in the HEAT PUMP menu.

The following parameters are available:

REMOVE WATER TANK

This function is used to disable the operation of the domestic hot water tank; by disabling the tank, the related configuration menu is no longer accessible.

WATER TANK SETPOINT

The parameter allows you to set the temperature of the hot water stored in the storage tank; the temperature is reached by the heat provided by the heat pump and if DHW INTEGRATION TYPE $\neq 0$, also by the DHW INTEGRATION TYPE element.

TANK FROST PROTECT

If the BOILER SENSOR < TANK FROST PROTECT, a DHW request is sent to the heat pump until the DHW temperature stored in the storage tank is > TANK FROST PROTECT + TANK FR PROT OFFSET.

T300 displays the scrolling message "TANK FROST PROTECTION IN PROGRESS".

TANK FR PROT OFFSET

Settable difference from the TANK FROST PROTECT value to exit the function.

T MAX TANK

This parameter allows you to set the maximum allowable temperature value in the top of the storage tank in response to a load from the heat pump, DHW INTEGRATION TYPE element or solar thermal.

DHW TANK ON HYST

The request to fill the storage tank activates when the temperature measured by the HOT WATER TANK SENSOR < WATER TANK SETPOINT - DHW TANK ON HYST.

DHW TANK OFF HYST

The request to fill the storage tank deactivates when the temperature measured by the HOT WATER TANK SENSOR > WATER TANK SETPOINT + DHW TANK OFF HYST

DHW INTEGRATION TYPE

The DHW INTEGRATION TYPE parameter defines the availability of a heating element for heating a domestic hot water tank and its operating mode. See "8. Rules for DHW INTEGRATION TYPE, DHW heating element and DHW request system heating element." pag. 54 for further details.

DHW BOOST

This parameter allows you to activate the DHW BOOST function.

DHW EH MENU

On activating the DHW heating element (DHW INTEGRATION TYPE ≠ 0), the following menu activates:

DHW MAX TEMP EH

This parameter is used to set the maximum temperature achievable in the storage tank through the DHW heating element.

DHW MAX TEMP EH cannot be higher than T MAX TANK

When using the DHW heating element, the WATER TANK SETPOINT temperature must not exceed the higher of the temperatures DHW MAX TEMP HP, DHW MAX TEMP EH and 60°C.

EH MIN ON TIME

defines the minimum operating time of the DHW heating element since its activation.

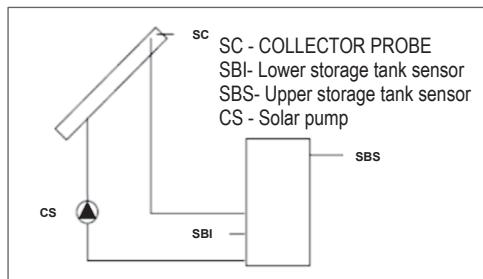
EH MIN HORS TEMPS

defines the minimum time that must elapse between switching off the DHW heating element and switching it back on again.

The  icon flashes to indicate the heating element is operating.

2.9 ADD SOLAR PLANT

- If a boiler is added, it is possible to select ADD SOLAR PLANT.



The value of the following parameters can be changed:

REMOVE SOLAR PLANT (if previously added)

This function is used to disable solar operation; by disabling solar, the related configuration menu is no longer accessible.

DELTA T ON PUMP

Temperature difference between the collector sensor and the bottom storage tank sensor for the storage tank thermal load (activation of the solar pump)

NOTE:

DELTA T ON PUMP > DELTA T OFF PUMP

DELTA T OFF PUMP

Temperature difference between the collector sensor and the bottom storage tank sensor for stopping the storage tank thermal load (stopping the solar pump)

NOTE:

DELTA T OFF PUMP < DELTA T ON PUMP.

COLLECTOR T MIN

Minimum temperature of the collector to activate the solar collector anti-freeze function.

COLLECTOR T MAX

Maximum temperature of collector for solar collector pump block (system protection).

The pump is subsequently enabled as soon as the collector temperature drops below [COLLECTOR T MAX - 10°C]

NOTE:

COLLECTOR T MAX > COLLECTOR T PROT

COLLECTOR T PROT

Maximum temperature of the collector to activate the solar collector cooling function

NOTE:

COLLECTOR T PROT < COLLECTOR T MAX.

COLLECTOR T AUTH

Minimum temperature for enabling solar collector pump

NOTE:

COLLECTOR T AUTH > COLLECTOR T LOCK

COLLECTOR T LOCK

Minimum temperature for disabling solar collector pump

NOTE:

COLLECTOR T LOCK < COLLECTOR T AUTH.

PWM COLL PUMP

Solar pump PWM modulation period

TANK COOLING

Parameter for enabling / disabling the storage tank cooling function; you can choose between the two following options

SOLAR PUMP MODE

Parameter for configuring the solar collector pump operation; you can choose between the three following options

- OFF (factory setting): the solar collector pump is always off;
- ON: the solar collector pump is always on;
- AUTO: the solar collector pump turns on and off according to the solar management rules.

SOLAR THERMAL SYSTEM OPERATION

If the following 4 conditions are all met, the CS solar collector pump is activated with a PWM modulation level as described in the relevant paragraph:

- [SBS] < [T MAX TANK] - 5°C
- [SC] > [SBI] + [DELTA T ON PUMP]
- [SC] > [COLLECTOR T AUTH]
- [SC] < [COLLECTOR T MAX]

The CS solar collector pump deactivates if one of the following 4 conditions is met:

- $[SBI] > [T \text{ MAX TANK}]$
- $[SC] < [SBI] + [\text{DELTAT OFF PUMP}]$
- $[SC] < [\text{COLLECTOR T LOCK}]$
- $[SC] > [\text{COLLECTOR T MAX}]$

The following functions can also be active:

FUNCTION TANK COOLING

if the function is active, the solar collector pump activates to transfer heat from the storage tank to the collector when all of the following conditions are met:

- $[SBS] > [T \text{ MAX TANK}] + 5^\circ\text{C}$
- $[SBI] > [SC]$

the function only operates at night [01:00 ÷ 06:00]

COLLECTOR ANTI-FREEZE FUNCTION

if the function is active, the solar collector pump activates to heat the collector when all of the following conditions are met:

- $[SC] < [\text{COLLECTOR T MIN}]$
- $[SBI] > [SC]$
- $[SBI] > 5^\circ\text{C}$

COLLECTOR COOLING FUNCTION

if the function is active, the solar collector pump activates to cool the collector when all of the following conditions are met:

- $[SBS] < [T \text{ MAX TANK} + 10^\circ\text{C}]$
- $[SC] < [\text{COLLECTOR T MAX}]$
- $[SC] > [\text{COLLECTOR T PROT}]$
- $[SBI] < [SC]$

COLLECTOR PUMP ANTI-BLOCKING FUNCTION

The CS solar collector pump activates for 30" 24h after it was last activated.

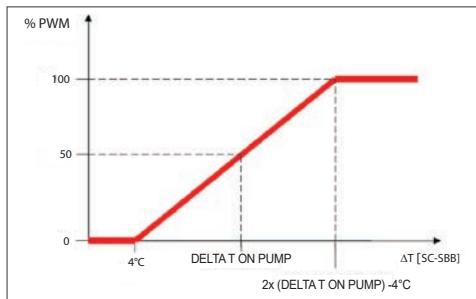
PURGE FUNCTION

If the collector sensor detects an increase in temperature of at least 1°C in 30 minutes, the collector pump activates for 15 seconds if also $[SC] > [SBI]$.

The triggering of an anomaly on the top storage tank sensor SBS, on the bottom storage tank sensor SBI or on the collector sensor SC, in addition to normal anomaly management, also disables solar preparation by stopping the relative solar pump CS.

CS SOLAR COLLECTOR PUMP MODULATING FUNCTION.

If the conditions for activating the solar collector pump are met, it activates with a PWM modulation level that is a function of the difference (SC-SBI) as illustrated in the figure. This PWM modulation acts as a percentage of the ON period of the CS collector pump compared to a time period given by the value of parameter [PWM COLL PUMP]. If parameter [PWM COLL PUMP] = 0, the modulation is deactivated and the collector pump remains constantly active if there is a demand.



2.10 ADD HEAT PUMP / HEAT PUMP

HEAT PUMP TYPE

Identify the type of heat pump connected to the system:

Description	Heat pump type
Type 0	not applicable
Type 1	NXHM - HYDRO UNIT M - VEGA M - FAMILY SPRINT - EXCLUSIVE AGILE -
Type 2	NXHP - HYDRO UNIT P

HEAT PUMP

ENABLE COOLING / DISABLE COOLING

This parameter allows you to activate/deactivate the cooling operation of the heat pump.

USE FOR DHW (IF ADDED HW TANK)

This parameter allows you to enable the filling of the storage tank or heat pump on the domestic hot water tank.

Select USE FOR DHW and confirm the choice for the system diagrams that include the pre-heating of the storage tank from HP.

ENABLE NIGHT REDUCT

This parameter is used to reduce the noise of the heat pump by limiting the maximum operating frequency of the compressor during the time slot set in parameters NIGHT MODE START TIME and NIGHT MODE STOP TIME.

REDUCED FREQUENCY (IF ENABLE NIGHT REDUCT)

Heat pump type 2.

This parameter is available after having activated the night-time reduction and allows the maximum compressor frequency percentage to be set when "night-time reduction" function is active (range from 50% to 100%). Setting a value of 100% for this parameter deactivates the function.

Heat pump type 1.

If HEAT PUMP TYPE = 1 you can only choose between two preset levels of thread reducer: 0 (50%) and 1 (100%).

NIGHT MODE START TIME (IF ENABLE NIGHT REDUCT)

This parameter is used to set the start time of the frequency limitation period of the heat pump compressor when the night reduction function is enabled.

NIGHT MODE STOP TIME (IF ENABLE NIGHT REDUCT)

This parameter is used to set the end time of the frequency limitation period of the heat pump compressor when the night reduction function is enabled.

MIN EMERG OUT T

This parameter is used to set the minimum outdoor temperature value below which only the electric booster heater, if available, can operate.

WINTER SUMMER DELAY

This parameter is used to set the standby time of the heat pump during the transition from HEATING AND HOT WATER to HOT WATER ONLY.

WARNING VALIDATION

This parameter is used to set the validation time for heat pump alarm status before it is signalled by the T300

DHW HP SETPOINT

This parameter is used to set the delivery set-point of the heat pump for DHW purposes. The T300 runs a consistency check to ensure the value of this parameter is not below the value of parameter WATER TANK SET-POINT.

DHW MAX TEMP HP

Parameter used to set the maximum temperature achievable in the storage tank through the heat pump.

Range [45°C - 65°C] (type 1) - 75°C (type 2)
Default 50°C

ADD PHOTOVOLTAIC / REMOVE PHOTOVOLTAIC

This parameter is used to activate/deactivate the PHOTOVOLTAIC menu for managing the photovoltaic input.

BACKUP TYPE heat pump type 2

This parameter allows you to define the type of electric booster heater for the heat pump:

0 = no booster
1 = booster heater

BOOSTER OAT THRESHOLD heat pump type 2

This parameter allows you to set the outdoor temperature threshold below which both the heat pump and the booster heater will be activated, provided that the outdoor temperature is above MIN OUTDOOR TEMP or MIN DHW OUT TEMP.

INTEGRATION DELAY heat pump type 2

This parameter allows you to set the delay time for activating the booster heater; the delay starts counting when: delivery temperature HP < setpoint HEATING - BOOSTER DELTA TEMP.

BOOSTER DELTA TEMP heat pump type 2

This parameter allows you to set the temperature hysteresis for activating the external booster heater.

MINIMUM PUMP SPEED only if HEAT PUMP TYPE = 2

This parameter allows you to set the minimum speed of the heat pump's pump in terms of duty cycle value.

MAXIMUM PUMP SPEED only if HEAT PUMP TYPE = 2

This parameter allows you to set the maximum speed of the heat pump's pump.

ZONE PUMP DELAY (type 1)

This parameter allows you to set a delay for the BE16's pump to start following the heat request.

2.10.1 PHOTOVOLTAIC

ADD PHOTOVOLTAIC

This parameter is used to activate the PHOTOVOLTAIC menu for managing the photovoltaic input with ON/OFF contact.

See paragraph "8. Rules for DHW INTEGRATION TYPE, DHW heating element and DHW request system heating element." pag. 54 for further details.

PHOTOVOLTAIC

REMOVE PHOTOVOLTAIC (if previously added)

PHOTOVOLTAIC management in FULL ELECTRIC configuration is also available outside the DHW ON time programming slots, except when the system is in OFF state.

2.11 ANTILEGIONELLA



MENU

└ TECHNICAL

└ ANTILEGIONELLA

The system has an automatic ANTILEGIONELLA function, which activates so as to destroy any bacterial growth in the domestic hot water tank (where present).

Depending on the heat source that heats the storage tank, the ANTILEGIONELLA function will assume the following characteristics:

The domestic hot water in the storage tank is heated to the value of parameter ANTILEGIO TEMP (but can reach a maximum of DHW MAX TEMP EH, where there is a DHW electric booster heater), maintaining the temperature for the duration specified in table B.

Table B	
ANTILEGIO TEMP	c y c l e duration
ANTILEGIO TEMP < 58°C	180min
58°C < ANTILEGIO TEMP < 62°C	60min
62°C < ANTILEGIO TEMP < 66°C	30min
66°C < ANTILEGIO TEMP < 75°C	15min
ANTILEGIO TEMP > 75°C	1min

The maximum duration of the anti-legionella cycle is 4 hours; if the ANTILEGIONELLA function stops due to exceeding the maximum time, the display shows the error message "ANTI-LEGIONELLA FUNCTION NOT COMPLETED"

The system will attempt to carry out the function again the next day.

 The function is NOT performed in OFF state.

 The INFO menu, parameter NEXT ANTILEGIO indicates the number of days until the next anti-legionella cycle.

The function can be stopped early as follows:

- Turning the system OFF,
- Selecting MENU and then STATE in the DHW ANTILEGIO CUT OFF.

If stopped, the function is repeated at the same the next day, even if weekly programming is set.

Parameters ANTILEGIONELLA.

- FUNCTION NOT ACTIVE, the function is not performed.
- DAILY FUNCTION, the anti-legionella cycle is performed every day at the time set in parameter TIME.
- WEEKLY FUNCTION, the anti-legionella cycle is performed every Wednesday at the time set in parameter TIME.
- TIME for setting the time the function is performed (default 03.00 AM)
- ANTILEGIO TEMP is the storage tank set-point temperature for the anti-legionella function.
- The duration of the anti-legionella cycle varies depending on the temperature set in parameter ANTILEGIO TEMP, as indicated in table B.

2.12 FUNCTION DHW BOOST.



MENU

└ TECHNICAL

└ INSTALLATION

└ HW TANK

└ DHW BOOST

The DHW BOOST function, once activated by the INSTALLER or USER, forces the system to heat the water in the domestic hot water tank, making it available for use as quickly as possible according to the system configuration.

The function is customisable according to the system and the specific needs of the user.

The storage tank setpoint temperature is equivalent to the value set in parameter BOOST SETPOINT. By setting parameter BOOST ACTIVE TIME, it is possible to fix the maximum time for which the DHW BOOST function stays active, after which the setpoint returns to that set in parameter WATER TANK

SETPOINT.

⚠ The function is only available if there is a domestic hot water tank in the system.

When the DHW BOOST function is activated, the letter B is displayed on the screen, and when the function is in progress, both the B and the storage tank icon flash.

⚠ The function is not active in OFF state.

NOTE:

SET and BOOST SETPOINT are included in the BOOST ACTIVE TIME menu.

MENU	Factory-set default value	Minimum value	Maximum value	Notes
SET				
HEATING	60°C (AT) type 1 75°C (AT) type 2 45°C (BT)	MIN CH SET*	MAX CH SET*	
COOLING	0°C	-5°C	+5°C	USER if USER active and REQUEST TYPE = TA
WATER TANK SETPOINT	18°C	7-20°C	18-30°C**	when working with fixed setpoint if COOLING CURVES active and REQUEST TYPE = TA
WATER TANK SETPOINT	0	-5	+5	
BOOST SETPOINT	60°C	37.5°C	60°C	USER (with storage tank)
BOOST ACTIVE TIME	60°C	50°C	80°C	if DHW BOOST active
	15min	1min	30min	if DHW BOOST active

2.13 ALARMS HISTORY



MENU

 └ TECHNICAL

 └ ERROR HISTORY

The ERROR HISTORY function only enables automatically after the system has been powered for at least 2 consecutive hours; during this period any alarms that trigger are not stored in the "alarms history".

Alarms can be displayed in chronological order, from the most recent to the oldest, up to a maximum of 50 alarms.

For each alarm, a sequential number, fault code, and the date and time when the alarm occurred will be displayed.

NOTE:

Once enabled, the ERROR HISTORY function can no longer be disabled; there is also no procedure for resetting the alarms history. If an alarm is triggered several consecutive times, it is only stored once.

2.14 FUNCTION SCREED HEATING



MENU

 └ TECHNICAL

 └ SCREED HEATING

For low temperature zones only, the system has a "SCREED HEATING" function that can be activated as follows:

- set the system status to OFF
- select SCREED HEATING
- (Note: SCREED HEATING is not available if the system is in a state other than OFF)
- select ACTIVATE FUNCTION to activate the function

When active, the SCREED HEATING function is indicated on the main screen by the scrolling message at the bottom SCREED HEATING FUNCTION IN PROGRESS - CH TEMPERATURE, while on the electronic board the red and green LEDs flash alternately at a frequency of 1 sec ON – 1 sec OFF.

The "SCREED HEATING" function has a duration of 168 hours (7 days) during which, in the zones configured as low temperature, a heating request is simulated with an initial zone delivery setpoint of 20°C, subsequently increased according to the adjacent table. By accessing the INFO menu from the T300 main screen, you can view the SCREED HEATING HOURS relative to the number of hours elapsed since the function was last activated.

Once activated, the function takes maximum priority; if the machine is turned off by removing the power supply, when it is switched back on the function resumes from where it was interrupted.

The function can be stopped before its completion by putting the machine in a state other than OFF or by selecting DEACTIVATE FUNCTION from the relevant menu.

NOTE:

The temperature and increment values can only be set to different values by a qualified technician, and only if strictly necessary. The manufacturer declines all responsibility in the event of incorrect parameter settings.

DAY	HOUR	TEMPERATURE
1	0	20°C
	6	22°C
	12	24°C
	18	26°C
2	0	28°C
	12	30°C
3	0	32°C
4	0	35°C
5	0	35°C
6	0	30°C
7	0	25°C

2.15 ADD BOILER

By adding the boiler, it allows the transition from the full electric configuration to the hybrid configuration.



MENU
└ TECHNICAL
 └ ADD BOILER

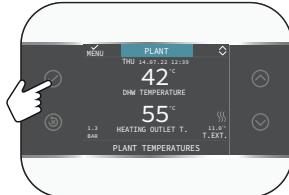
2.16 SYSTEM INFO

The SYSTEM INFO menu gives information on the hydraulic configuration, type and firm-ware revision of the boards in the system.

3. INFO

The INFO button on the T300 display allows you to view a list of information relating to system operation.

On the main screen press and access MENU



and then access

MENU
└ INFO

to view a list of information relating to system operation.

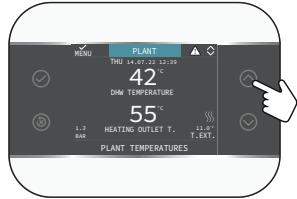


Some Info may not be available depending on system configuration.

- SCREED HEATING HOURS
- HW TANK HIGH
- HW TANK LOW
- COLLECTOR TEMP
- FILTERED OUTDOOR TEMP
- MAIN ZONE OUTLET
- ZONE 1 OUTLET
- ZONE 2 OUTLET
- SET MAIN ZONE
- SET ZONE 1
- SET ZONE 2
- HP OUTLET
- HP RETURN
- HP OUTDOOR TEMP
- LOW PRESS TUBE REFR
- HIGH PRESS TUBE REFR
- CONDENSER REFR
- EXCHANGER REFR
- HP OPERATIVE MODE (HP control panel: MENU > OPERATING PARAMETERS > OPERATING MODE)
- HP FREQUENCY
- HP COMPRESSOR TIME
- HP PUMP TIME (type 2)
- HP FLOW SWITCH
- HP CAPACITY
- ACTUAL HP CAPACITY (type 1)
- Heat pump SETPOINT (type 2)
- WATER CAPACITY (type 2)
- ELECTRIC POWER (type 2)
- COP-EER (type 2)
- NEXT ANTILEGIO
- ENERGY CONSUMPTION

4. ANOMALIES

In the event of an anomaly, the T300 display shows a screen featuring the symbol .



Press the  button until the  symbol is highlighted to access the anomaly description screen.

NOTE:

- See the heat pump installation manual for the list of heat pump faults.
- The T300 only displays the alphanumeric codes relating to the alarm, the description of which can be found in the heat pump's installation manual and/or directly on the Service interface (access restricted to qualified technicians).

List of zone faults

ERROR CODE	DESCRIPTION OF ALARM TYPE
E077	WATER THERMOSTAT MAIN ZONE or ZONE 1 / ZONE 2
E081	AMBIENT PROBE ANOMALY ZONE 1
E082	AMBIENT PROBE ANOMALY MAIN
E082	AMBIENT PROBE ANOMALY ZONE 2
E084	SUPPLY ZONE 1
E086	SUPPLY MAIN ZONE
E086	SUPPLY ZONE 2
--	COMMUNICATION LOST MAIN / ZONE 1 / ZONE 2
-	ZONES CONFIGURATION NOT COMPLETED

List of heat pump and photovoltaic faults

ERROR CODE	DESCRIPTION OF ALARM TYPE
.....	SEE SPECIFIC ALARMS ON HP
--	COMMUNICATION LOST HEAT PUMP
--	COMMUNICATION LOST BE17

List of storage tank and solar faults

ERROR CODE	DESCRIPTION OF ALARM TYPE
E061	FAULT HW TANK LOW
E062	COLLECTOR PROBE SOLAR PLANT
E060	HW TANK HIGH
--	COMMUNICATION LOST SOLAR PLANT

5. UNLOCK FUNCTION

To reactivate operation after an anomaly has occurred, press the  button.

If the error is not resettable or if the unlock attempts do not reactivate the operation, contact the authorised service centre.

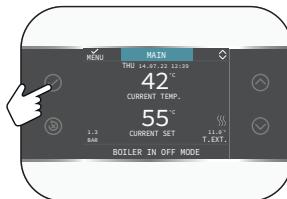
Up to a maximum of 5 consecutive unlocking attempts are possible within a time frame of 15 min from T300, after which operation can be restored by switching the electric power supply off and back on again.

6. SWITCH-OFF

If you are away (e.g. for the weekend or a short trip), set the system status to HEAT OFF by selecting



STATE
└ SYSTEM
 └ OFF



The  symbol is displayed on the screen. With the electric power supply remaining active, the system is protected by the systems:

- anti-freeze zone (only with BE16): the function starts if the temperature detected by the delivery sensor goes below 6°C. In this phase a heat request is generated until the delivery water temperature rises to a value equal to the ANTI-FREEZE ZONE OFFSET.

- Antifreeze for the domestic hot water tank connected to solar and/or HP: the function starts if the temperature detected by the storage tank sensor goes below 6°C. In this phase a heat request is sent to the HEAT PUMP, which runs until the water temperature reaches 12°C.
- heat pump anti-freeze: the function starts if the temperature detected by the external or delivery sensor is below the trigger threshold. There are two trigger thresholds for this function: a first threshold that only activates the pump and a second threshold that also activates the compressor. A heating request would take priority and would cancel any anti-freeze function in progress; the anti-freeze function is signalled by T300 with a scrolling message at the bottom.

Shutdown for long periods

If the system is not to be used for a long period, the following operations are carried out:

- Set the system status to HEAT OFF by selecting STATE, SYSTEM, OFF in the main menu.
- Set the system's power switch to "HEAT OFF".
- Shut off the water cocks of the heating and DHW system.

In this case, the antifreeze and anti-block systems are disabled.

Drain the heating and DHW system if there is a risk of frost.

7. T300 AS AMBIENT CONTROLLER

AMBIENT CONTROLLER = MACHINE INTERFACE + ambient temperature control and time programming

In addition to the machine interface functions described above, the T300 controls the ambient temperature and time programming.

When the T300 is used as an AMBIENT CONTROLLER, in addition to the main MACHINE INTERFACE screen described previously, an AMBIENT CONTROLLER display for the controlled zone is also activated.

To set the T300 as an ambient controller



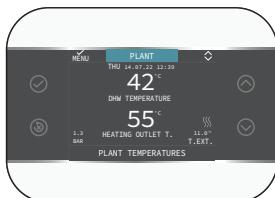
and set parameter ACTUATION TYPE as indicated in paragraph "2.1 ZONES MANAGER" pag. 24 and select REQUEST TYPE=MANAGE DISPLAY.

Depending on the set operating status, the T300 will generate a heating request if the detected ambient temperature is lower than the desired ambient temperature (HEATING AND HOT WATER) or a cooling request if enabled and if the detected ambient temperature is higher than the desired ambient temperature (HOT WATER ONLY).

See paragraph "2.13a Using T300 as ambient controller" pag. 53 for instructions.

1A USER LEVEL ACCESS

The USER level is always available to allow for quick use of the functions



Use the buttons to navigate within the menus



Confirm



CANCEL selection / Return to previous screen /
Return to main screen (press > 2 sec.)
RESET alarms

To navigate in the submenus, change values and
change pages PLANT - ZONE / E - SYSTEM

1.1a PLANT



This item indicates to which zone the data shown on the initial screen refer and to which zone the settings accessible with other functions refer.

The presence of one or two zones in addition to PLANT depends on the installation configuration. For this reason, one or more zones mentioned below may not be included in your configuration or may be identified differently.

To change zone, use the and buttons, the other zones can be selected in the following sequence:

- PLANT
- MAIN ZONE (if managed from T300 or room sensor)
- ZONE 1 - ZONE..... (if configured)

The information given in the INFO menu is independent of the active zone.

Selecting MAIN or ZONE 1/ZONE... no DHW parameter can be set.

2A COMMISSIONING



The installation of the device and any other assistance and maintenance work must be carried out by a qualified technician in accordance with current regulations.

Before programming, ensure that all parts of the system are connected and powered.

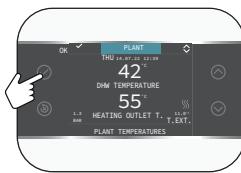
You may be asked to set



NOTE:

The default language is English. Select your desired language using the arrows and confirm with .

On the main screen, press  to access MENU:



and then

MENU
└ SETTINGS

2.1a TIME & DATE

For setting the desired hours, minutes, day, month

NOTE:

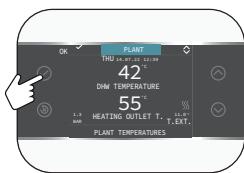
The device automatically changes between GMT and summer time and vice versa

MENU
└ SETTINGS
 └ TIME & DATE
 └ DAYLIGHT SAVINGS TIME
 └ LANGUAGE
 └ BACKLIGHT
└ WIFI
 └ WIFI SERIAL
 └ WIFI INFO
 └ WIFI NOME
 └ WIFI AP MODE
 └ CERTIFICATES RESET
 └ CHECK FOR UPDATES
└ TIME SCHEDULE
 └ MAIN
 └ ZONE 1
 └ DHW HP

Factory-set default value	Minimum value	Maximum value	Notes
FUNCTION ACTIVE	FUNCTION NOT ACTIVE	FUNCTION ACTIVE	
		ENGLISH / ITALIANO /	
5 min	1 min	15 min	
			only if POR = 1
			only if POR = 1 and added zone
			only if parameter DHW

2.7a Setting the operating mode

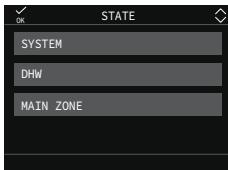
On the PLANT screen, press  and access MENU



Select

MENU
└ STATE

Set parameters SYSTEM, DHW, MAIN ZONE / ZONE 1 / ZONE... (if configured).



MAIN ZONE

On selecting this function, you can set the status of the main zone by selecting one of the following options:

A) If time programming is not enabled

ZONE ON	Zone requests are met.
HEAT OFF	Zone requests are not met.

B) If time programming is enabled, the menu shows

AUTO	Zone requests are met according to TIME SCHEDULE
MANUAL	Zone requests are met.
HEAT OFF	Zone requests are not met.

NOTE:

MAIN ZONE is only visible in this menu if the zone is managed by a room thermostat.

SYSTEM

To select the operating mode

OFF	HEAT OFF
HOT WATER ONLY	Domestic hot water production and cooling if enabled. Heating is not active.
HEATING AND HOT WATER	Domestic hot water production and heating

DHW (if HP enabled for DHW)

Selecting DHW accesses the menu for modifying parameter DHW BOOST. See "2.12 Function DHW BOOST." pag. 40 for details on the BOOST function.

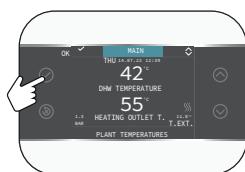
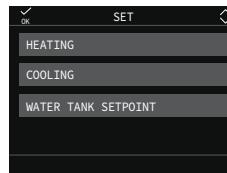
	Factory-set default value	Minimum value	Maximum value	Access level
STATE				
SYSTEM	OFF	OFF / HOT WATER ONLY / HEATING AND HOT WATER available if HP enabled for DHW		USER
DHW				USER
ANTILEGIO CUT OFF				USER
DHW BOOST	0	0	1	USER
MAIN ZONE	AUTO	AUTO / MANUAL / HEAT OFF (if parameter POR=1 - Set by installer)		USER
HEAT PUMP	ZONE ON	ZONE ON / HEAT OFF (if parameter POR=0 Set by installer)		USER
ENABLE NIGHT REDUCT / DISABLE NIGHT REDUCT				USER
NIGHT MODE START TIME	DEACTIVATE FUNCTION	FUNCTION ACTIVE	DEACTIVATE FUNCTION	USER
NIGHT MODE STOP TIME	20:00	00:00	23:59	USER only if night-time reduction active
	09:00	00:00	23:59	USER only if night-time reduction active

2.8a INFO

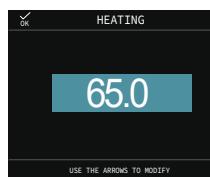
See paragraph "3. INFO" pag. 42 .

2.9a Setting the setpoints

On the PLANT screen, press  and access MENU



HEATING



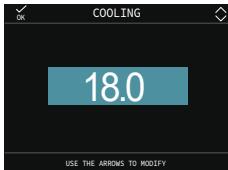
Select

MENU
└ SET

to change the HEATING, COOLING (if activated) and WATER TANK SETPOINT (if storage tank added) and BOOST SETPOINT - BOOST ACTIVE TIME setpoints (if DHW boost activated by installer).

If an external sensor is installed, the delivery temperature is automatically selected by the system based on the thermoregulation curve set in the dedicated parameter, which rapidly adjusts the ambient temperature as the outdoor temperature changes. If you wish to increase or decrease the temperature calculated automatically by the electronic board, change the HEATING setpoint to a value within the desired comfort range (-5 ÷ +5).

COOLING



WATER TANK SETPOINT



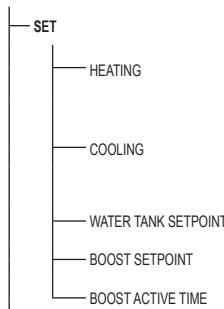
If cooling thermoregulation is active, the delivery temperature is automatically selected by the system based on the set curve, which rapidly adjusts the ambient temperature as the outdoor temperature changes.

If you wish to increase or decrease the temperature calculated automatically by the electronic board, change the COOLING setpoint to a value within the desired comfort range (-5 ÷ +5).

BOOST SETPOINT and BOOST ACTIVE TIME

By setting the BOOST SETPOINT parameter, the storage tank setpoint temperature will be equivalent to the parameter value.

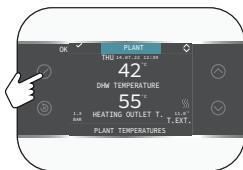
By setting the BOOST ACTIVE TIME parameter, it is possible to fix the maximum time for which the DHW BOOST function stays active.



Factory-set default value	Minimum value	Maximum value	Notes
60°C (AT) type 1 75°C (AT) type 2 45°C (BT)	MIN CH SET*	MAX CH SET*	
0°C	-5°C	+5°C	USER if USER active and REQUEST TYPE = TA
18°C	7÷20°C	18÷30°C**	when working with fixed setpoint
0	-5	+5	if COOLING CURVES active and REQUEST TYPE = TA
60°C	37.5°C	60°C	USER (with storage tank)
60°C	50°C	80°C	if DHW BOOST active
15min	1min	30min	if DHW BOOST active

2.10a Time programming

Accessing



MENU

TIME SCHEDULE

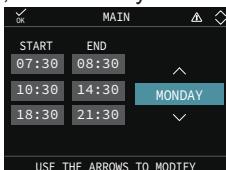
allows you to change the set time programmes according to system configuration:

- MAIN (heating)
- ZONE 1 / ZONE... (heating - if zone(s) configured)
- DHW HP (heat pump DHW)

You can set a time programme for heating and cooling, and for filling the domestic hot water tank based on the system diagram.

! The heating time programme is available if the installer has set parameter POR = 1.

Up to 4 slots can be set, with a start time and an end time, on each day of the week.



Two time programmes are available with the heat pump: one for Winter and one for Summer. Select the desired season (HOT WATER ONLY or HEATING AND HOT WATER) from MENU/STATE/SYSTEM and then programme DHW HP parameter for each season.

If you wish to exclude the heat pump from heating the storage tank, it is possible to remove (DELETE) all TIME SCHEDULE DHW HP time slots for the day in question.

WARNING: in HOT WATER ONLY the parameter is set by default with time programming active every day of the week from 05:00 to 08:00 in order to prevent continuous cycle reversals of the heat pump if the cooling function is active. If you wish to modify this setting, please contact the technical support service.

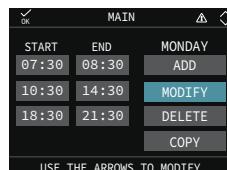
Using the main buttons



	CONFIRM
	DELETE Return to main screen (press > 2 sec.)
	Scroll up
	Scroll down

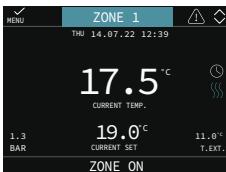
Navigate to the TIME SCHEDULE menu and set up the time slots. The following options are available

ADD	To add a new time slot to the selected day.
MODIFY	To change an existing time slot in the selected day.
DELETE	To delete an existing time slot in the selected day.
COPY	To replicate the TIME SCHEDULE of the selected day to other days.



Example

The main zone is set to a time programme and heating is on - active time slot.



2.12a Switch-off

If you are away (e.g. for the weekend or a short trip), set the system status to HEAT OFF by selecting STATE, SYSTEM in the main menu and then OFF.

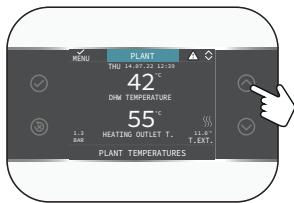
With the electric power supply remaining active, the system is protected by the anti-freeze systems.

If you are away for a long period, the following operations are recommended:

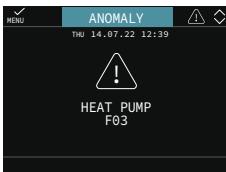
- Set the system status to HEAT OFF by selecting STATE, SYSTEM, OFF in the main menu.
- Set the system's power switch to "HEAT OFF".
- Shut off the water cocks of the heating and DHW system.

In this case, the antifreeze and anti-block systems are disabled.

Have a qualified technician drain the heating and DHW system if there is a risk of frost.



Press to access the anomaly description screen.



Unlock function

Some anomalies can be reset using the button; others are permanent.

If the error is not resettable or if the unlock attempts do not reactivate the operation, contact the authorised service centre.

2.13a Using T300 as ambient controller

AMBIENT CONTROLLER = MACHINE INTERFACE + ambient temperature control and time programming

In addition to the machine interface functions described above, the T300 controls the ambient temperature and time programming.

Depending on the operating status set by the installer, the T300 will generate a HEATING request if the detected ambient temperature is lower than the desired ambient temperature (HEATING AND HOT WATER) or a COOLING request if enabled and if the detected ambient temperature is higher than the desired ambient temperature (HOT WATER ONLY).

The ON-OFF hysteresis value can be changed for heating/cooling requests by setting the parameters under ZONES MANAGER.

CH HYST ON
CH HYST OFF
COOL HYST ON
COOL HYST OFF

See paragraph ZONES MANAGER for a description of these parameters. (See "2.1 ZONES MANAGER" pag. 63).

In AMBIENT CONTROLLER mode, the main screen displays information related to the zone.

Use the  and  buttons to move from one screen to another.

On the MAIN screen, press  to access MENU; the following parameters can be set:
MENU
STATE
INFO
ROOM SETPOINT



MENU

In MENU function, you can access SET BOILER configuration (only if the system is working with a fixed setpoint), SETTINGS and TIME SCHEDULE.

STATE

To set the status of functions DHW (DHW BOOST) and MAIN ZONE (AUTO, MANUAL, HEAT OFF)

AUTO: ambient temperature control follows the set weekly time programme;

- MANUAL: zone control is always active (24h);
- HEAT OFF: a heating request is never activated for the zone, but a minimum ambient temperature of 8°C is guaranteed.

INFO

This page shows the values of the system inputs or other calculated quantities (such as the heating setpoint calculated based on the set climatic curves). The displayed values are refreshed every 5 seconds.

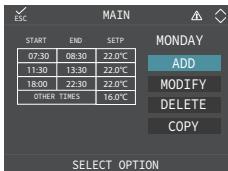
ROOM SETPOINT

ROOM SETPOINT control is activated by selecting COMFORT MODE. This mode allows you to set an ambient temperature value until the next time slot change.

2.14a Time programming T300 set as ambient controller

Time programming follows the same rules as those previously described in paragraph "2.11a Time programming" pag. 92, but in this mode, in addition to setting the start and end times for each time slot, it also includes the setting of an ambient temperature set-point (SETP).

Up to 4 slots can be set, with a start time and an end time, on each day of the week.



NOTE:

If the zone is controlled by a room sensor, the same settings as MANAGE DISPLAY can be set in the screen of the relevant zone.

8. RULES FOR DHW INTEGRATION TYPE, DHW HEATING ELEMENT AND DHW REQUEST SYSTEM HEATING ELEMENT.

DHW requests can be met with the system in HEATING AND HOT WATER or HOT WATER ONLY state; they cannot be met when the system is in OFF state.



Under normal conditions, with the appliance in OFF state, the heat pump may activate due to the activation of an anti-freeze function. In both cases, the activation of the heat pump is indicated by the relevant icon and the scrolling message at the bottom of the T300.

A DHW request always takes priority over a system request, except when DHW INTEGRATION TYPE = 4.

The DHW boost operates as set in MENU/TECHNICAL/HW TANK/DHW INTEGRATION TYPE.

With photovoltaic contact under the following conditions:

- open
- open for at least 30 min after being closed (>1 min)
- not added

follow these rules:

DHW INTEGRATION TYPE = 0

The system does not have a DHW heating element. Storage tank filling, the DHW BOOST function and the ANTILEGIONELLA function are carried out by the heat pump only.

The maximum temperature set in parameter WATER TANK SETPOINT will be less (<) than the temperature set in parameter DHW MAX TEMP HP.

The storage tank is filled with the HP until WATER TANK SETPOINT + DHW TANK OFF HYST is reached.

NOTE FOR DHW INTEGRATION TYPE = 1

The maximum temperature set in parameter WATER TANK SETPOINT will be less (<) than the temperature set in parameter DHW MAX TEMP HP.

DHW INTEGRATION TYPE = 1

The system has a DHW heating element. The storage tank is filled with the heat pump ONLY according to the rule indicated in DHW INTEGRATION TYPE = 0.

The DHW BOOST and ANTILEGIONELLA functions alone are carried out with HP if the setpoints are less (<) than DHW MAX TEMP HP; with the heating element if the setpoints are higher (>) than the value set in parameter DHW MAX TEMP HP.

The heating element stays active until WATER TANK SETPOINT + DHW TANK OFF HYST is reached).

DHW INTEGRATION TYPE = 2

The system has a DHW heating element. The storage tank is filled with the HP until DHW MAX TEMP HP is reached, after which the HP is switched off and the heating element is powered until WATER TANK SETPOINT + DHW TANK OFF HYST is reached.

DHW INTEGRATION TYPE = 3

The system has a DHW heating element. The storage tank is filled simultaneously with the HP and the heating element; on reaching DHW MAX TEMP HP, the HP is switched off and the heating element continues alone until WATER TANK SETPOINT + DHW TANK OFF HYST is reached.

DHW INTEGRATION TYPE = 4

The system has a DHW heating element. The storage tank is filled with the heating element alone until WATER TANK SETPOINT + DHW TANK OFF HYST is reached.

The maximum temperature set in parameter WATER TANK SETPOINT will be less (<) than the temperature set in parameter DHW MAX TEMP EH.

WITH PHOTOVOLTAIC CONTACT UNDER THE FOLLOWING CONDITIONS:

- closed for at least 1 min
- added
- DHW INTEGRATION TYPE ≠ 0

follow these rules:

The closure of the photovoltaic contact indicates a condition in which there is energy production that is not utilised by the system, and therefore a condition under which we are allowed to use heating element R to convert electrical energy into high-temperature DHW accumulation.

In this situation, the system boosts the domestic hot water tank based on the following functional rules.

DHW request with heat pump on standby

The heat pump activates for DHW until temperature DHW MAX TEMP HP in the storage tank is reached, after which the heat pump goes into standby and the DHW INTEGRATION TYPE element activates until temperature DHW MAX TEMP EH

DHW request with heat pump in heating

The heat pump activates for DHW until temperature DHW MAX TEMP HP in the storage tank is reached, after which the heat pump returns to the system and the DHW INTEGRATION TYPE element activates until temperature DHW MAX TEMP EH is reached.

DHW request with heat pump in cooling

The heat pump keeps running on the system in cooling mode while the DHW INTEGRATION TYPE element activates until temperature DHW MAX TEMP EH is reached.

RULES FOR SYSTEM HEATING ELEMENT INTEGRATION

HEAT PUMP TYPE 2: the integration of the heating element can be set up on the T300

Set the following parameters for the operating logic:

BACKUP TYPE - heat pump HEAT PUMP TYPE = 2

- This parameter allows you to define the type of electric booster heater for the heat pump:
- 0 = no booster
- 1 = booster heater

BOOSTER OAT THRESHOLD - heat pump HEAT PUMP TYPE = 2

- This parameter allows you to set the outdoor temperature threshold below which both the heat pump and the booster heater will be activated, provided that the outdoor temperature is above MIN OUTDOOR TEMP or MIN DHW OUT TEMP.

INTEGRATION DELAY - heat pump HP = 2

- This parameter allows you to set the delay time for activating the booster heater; the delay starts counting when: delivery temperature HP < setpoint HEATING - BOOSTER DELTA TEMP.

BOOSTER DELTA TEMP - heat pump HP = 2

- This parameter allows you to set the temperature hysteresis for activating the external booster heater.

HEAT PUMP TYPE 1: the integration of the heating element can be set up on the heat pump's remote control.

See the heat pump manual for the integration logic between HP and heating element.

HYBRID SECTION

MENU	Factory-set default value	Minimum value	Maximum value	Access level
TECHNICAL				INSTALLER
INSTALLATION				INSTALLER
ZONES MANAGER				INSTALLER
MODIFY ZONE	MAIN	MAIN / ZONE...		INSTALLER
ACTUATION TYPE	ITRF05/MAIN PCB	ITRF05/MAIN PCB - BE16 - T200 (if REQUEST TYPE RF)		INSTALLER: main zone only
REQUEST TYPE	THERMOSTAT	THERMOSTAT - TEMPERATURE SENSOR (only if ACTUATION TYPE = BE16)		INSTALLER
BE16 ADDRESS	-	1	6	INSTALLER: only zones with ACTUATION TYPE = BE16
HYDRAULIC CONF	DIRECT ZONE	DIRECT ZONE	MIXING ZONE	INSTALLER: only zones with ACTUATION TYPE = BE16
ZONE TYPE	HIGH TEMP	HIGH TEMP	LOW TEMPERATURE	INSTALLER
MIN CH SET	40°C (AT) 20°C (BT)	20°C	MAX CH SET	INSTALLER
MAX CH SET	80.5°C (AT) 45°C (BT)	MIN CH SET	80.5°C (AT) 45°C (BT)	INSTALLER
CHANGE NAME				INSTALLER
PI - PROPORTIONAL	5	0	99	SERVICE: mix zones only with ACTUATION TYPE = BE16
PI - INTEGRAL	10	0	99	SERVICE: mix zones only with ACTUATION TYPE = BE16
VALVE RUN	120 sec	0 sec	240 sec	SERVICE: mix zones only with ACTUATION TYPE = BE16
CLOSING AT POWER ON	140 sec	0 sec	240 sec	SERVICE: mix zones only with ACTUATION TYPE = BE16
OUTLET OVER	55°C	0°C	100°C	SERVICE: BT zones only with ACTUATION TYPE = BE16
OUTLET OVER TEST TIME	0min	0 min	240min	SERVICE: BT zones only with ACTUATION TYPE = BE16
OUTLET OVER WAIT TIME	2min	VALVE RUN	240min	SERVICE: BT zones only with ACTUATION TYPE = BE16
OUTLET OVER REST TIME	2min	0 min	240min	SERVICE: BT zones only with ACTUATION TYPE = BE16
FREEZE PROT TEMP	6°C	-10°C	50°C	SERVICE: only zones with ACTUATION TYPE = BE16
FREEZE PROT OFFSET	5°C	1°C	20°C	SERVICE: only zones with ACTUATION TYPE = BE16
FREEZE PROT T EXT	10°C	0°C	100°C	SERVICE: only zones with ACTUATION TYPE = BE16
POR	0	0	1	Only if REQUEST TYPE = THERMOSTAT, otherwise POR = 1 (not changeable)
RF	PAIRING (association) / LEAVE (disassociation)			INSTALLER: only available if ACTUATION TYPE = T200 or REQUEST TYPE = RF
DELAY START HEATER	20 sec	0sec	600sec	INSTALLER: only available if ACTUATION TYPE = T200
ADD ZONE				INSTALLER
DELETE ZONE (if more than 1 zone)				INSTALLER
SENSOR CALIBRATION	0.0°C	- 6.0°C	6.0°C	INSTALLER
SYSTEM RESET				INSTALLER
PARAMETERS				INSTALLER
ANTI-CYCLE FUNCTION	3 min	0 min	20 min	INSTALLER
HYST ON HIGH TEMP	5°C	2°C	10°C	SERVICE: if AT zone type
HYST OFF HIGH TEMP	5°C	2°C	10°C	SERVICE: if AT zone type
HYST ON LOW TEMP	3°C	2°C	10°C	SERVICE: if BT zone type
HYST OFF LOW TEMP	3°C	2°C	10°C	SERVICE: if BT zone type
SP INCR HIGH TEMP	5°C (0°C if instantaneous boiler)	0°C	10°C	SERVICE: if AT zone type
SP INCR LOW TEMP	0°C	0°C	6°C	SERVICE: if BT zone type
DECR COOLING SP	0°C	0°C	10°C	SERVICE: if COOLING active
PUMP DUTY CYCLE	85	41	100	INSTALLER

MENU

	Factory-set default value	Minimum value	Maximum value	Access level
RESET CH TIMERS	FUNCTION NOT ACTIVE	FUNCTION NOT ACTIVE	FUNCTION ACTIVE	INSTALLER
SLIDING OUTLET	FUNCTION NOT ACTIVE	FUNCTION NOT ACTIVE	FUNCTION ACTIVE	INSTALLER: if boiler and storage tank with sensor
CH DELAY POST-DHW	0	0	1	SERVICE: if boiler and storage tank with sensor or thermostat
CH DELAY TIME	6 sec	1 sec	255 sec	SERVICE: if CH DELAY POST-DHW = 1
WATER TRANSDUCER	second boiler type	0	1	SERVICE
AUTO WATER FILL ENABLE	0	0	1	SERVICE: only if WATER TRANSDUCER = 1
BEGIN SYSTEM FILLING	0,6	0,4	1	SERVICE: only if AUTO WATER FILL ENABLE = 1
PREHEATING	0	0	3	INSTALLER: only in instantaneous mode and if managed by control board
MAX SETPOINT DHW	60°C	49°C	60°C	INSTALLER: only if envisaged on boiler data sheet
MIN SETPOINT DHW	37,5°C	37,5°C	49°C	INSTALLER: only if envisaged on boiler data sheet
DO_AUX1	0	0	2	INSTALLER: only if boards with OTBus
DHW DELAY TIME	20sec	0 sec	60 sec	SERVICE: (only if DHW DELAY enabled)
ID14	0	0	1	INSTALLER
TYPECOS	0	0	2	SERVICE: only if envisaged on boiler data sheet
EXPIRE	52	0	255	SERVICE: only if envisaged on boiler data sheet
CONFIG OTBUS	1	0	1	SERVICE: only if boards with OTBus
HIGH EFFICIENCY MODE	0	0	1	SERVICE: only if envisaged on boiler data sheet and HP not enabled
SPECIAL FUNCTION DHW				INSTALLER: only if instantaneous boiler
DISABLE ALL				INSTALLER: only if instantaneous boiler
DHW DELAY				INSTALLER: only if instantaneous boiler
SMART_FAN				INSTALLER: only if instantaneous boiler
DHW THERMOSTAT				INSTALLER: only if instantaneous boiler
SWING REDUCTION				INSTALLER: only if instantaneous boiler
ENABLE ALL				INSTALLER: only if instantaneous boiler
WEATHER COMPENSATION				INSTALLER
CLIMATIC CURVES	MAIN	MAIN / ZONE...		INSTALLER
FIXED SET POINT	80,5°C (AT) 45°C (BT)	MIN CH SET	MAX CH SET	INSTALLER: if SEXT not connected or HP enabled
NIGHT COMP	FUNCTION NOT ACTIVE	FUNCTION NOT ACTIVE	FUNCTION ACTIVE	INSTALLER: if SEXT connected
CURVE SLOPE	2.0	1.0	3.0	INSTALLER: if SEXT connected, REQUEST TYPE TA and AT zone type
AMBENT INFLUENCE	0.4	0.2	0.8	INSTALLER: if SEXT connected, REQUEST TYPE TA and BT zone type
OFFSET	2.0	1.0	5.0	INSTALLER: if REQUEST TYPE room sensor, T300 or T200
COOLING	10	0	20	INSTALLER: if REQUEST TYPE room sensor, T300 or T200
COOLING CURVES	20°C	20°C	40°C	INSTALLER: if REQUEST TYPE room sensor, T300 or T200
BUILDING TYPE	18°C	4°C	20°C	INSTALLER: if cooling curves activated
BUILDING TYPE	5°C (HP type 1)	5°C (HP type 1)	25°C (HP type 1)	INSTALLER: if cooling curves activated
OUTDOOR REACTIVITY	1	1	2	INSTALLER: if SEXT connected
ENABLE HEATING CURVES / DISABLE HEATING CURVES	5min	5min	20min	INSTALLER: if SEXT connected
ENABLE COOLING CURVES / DISABLE COOLING CURVES	20	0	255	INSTALLER: if SEXT connected
RANGE RATED	MAX CH	MIN	MAX CH	INSTALLER
CALIBRATION				INSTALLER
MIN		see the technical data table in the boiler manual		INSTALLER
MAX		see the technical data table in the boiler manual		INSTALLER
MAX CH		see the technical data table in the boiler manual		INSTALLER

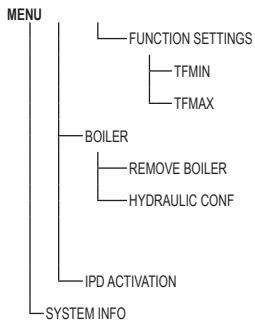
MENU

- COMBUSTION ANALYSIS
 - ACTIVATE FUNCTION
 - DEACTIVATE FUNCTION
 - MAX SPEED
 - RANGE RATED SPEED
 - MIN SPEED
 - CHANGE FAN SPEED
- ANTILEGIONELLA
 - ANTILEGIO FLOW
 - TIME
 - ANTILEGIO TEMP
- AIR PURGING CYCLE
 - FUNCTION NOT ACTIVE
 - FUNCTION ENABLED
 - STOP FUNCTION
- EXHAUST PROBE RESET
- ADD WATER TANK
- HW TANK or WATER TANK HP
 - REMOVE WATER TANK
 - TANK TYPE
 - TANK FLOW TEMP
 - WATER TANK SETPOINT
 - DHW TANK ON HYST
 - DHW TANK OFF HYST
 - TANK FROST PROTECT
 - TANK FR PROT OFFSET
- ADD SOLAR PLANT
- SOLAR
 - REMOVE SOLAR PLANT
 - T MAX TANK
 - DELTA T ON PUMP
 - DELTA T OFF PUMP
 - INTEGRATION DELAY
 - COLLECTOR T MIN
 - COLLECTOR T MAX
 - COLLECTOR T PROT
 - COLLECTOR T AUTH
 - COLLECTOR T LOCK
 - PWM COLL PUMP
 - TANK COOLING
 - SOLAR PUMP MODE
- ADD HEAT PUMP

Factory-set default value	Minimum value	Maximum value	Access level
			INSTALLER
			INSTALLER
			INSTALLER
MAX			INSTALLER
RANGE RATED			INSTALLER
MIN			INSTALLER
CURRENT SPEED	MIN SPEED	MAX SPEED	INSTALLER
WEEKLY FUNCTION	FUNCTION NOT ACTIVE / DAILY FUNCTION / WEEKLY FUNCTION		INSTALLER: only if configuration is storage tank with sensor
80°C	65°C	85°C	INSTALLER
03:00	00:00	23:30	INSTALLER
70: if boiler + storage tank with sensor	55°C	70°C if boiler and storage tank with sensor	INSTALLER
ACTIVATE FUNCTION	ACTIVATE FUNCTION	DEACTIVATE FUNCTION	SERVICE
			SERVICE
			SERVICE
			INSTALLER: only if VENTING in progress
			INSTALLER
			INSTALLER: only if instantaneous and HP
			INSTALLER: only if non-instantaneous boiler
			INSTALLER
REMOVE WATER TANK			INSTALLER: only if heat only boiler
TANK TYPE	0	0	INSTALLER: only if boiler with storage tank
TANK FLOW TEMP	80°C	50°C	INSTALLER: only if DHW and instantaneous boiler
WATER TANK SETPOINT	50°C	37,5°C	INSTALLER: only if HP enabled for USE FOR DHW and instantaneous boiler
DHW TANK ON HYST	2	1	INSTALLER: boiler with storage tank with sensor
DHW TANK OFF HYST	0	0	INSTALLER: boiler with storage tank with sensor
TANK FROST PROTECT	7°C	0°C	SERVICE: only if HP enabled for USE FOR DHW and instantaneous boiler
TANK FR PROT OFFSET	5°C	1°C	SERVICE: only if HP enabled for USE FOR DHW and instantaneous boiler
			INSTALLER: only if SOLAR PLANT not set. Not available if boiler and storage tank with sensor or thermostat + HP for dhw use
ADD SOLAR PLANT			INSTALLER
			INSTALLER: if added
COLLECTOR T MIN	60°C	10°C	INSTALLER
COLLECTOR T MAX	8°C	DELTA T OFF PUMP	INSTALLER
COLLECTOR T PROT	4°C	DELTA T ON PUMP	INSTALLER
COLLECTOR T AUTH	0 min	0 min	INSTALLER
COLLECTOR T LOCK	(-)	(-)/-30°C	INSTALLER
COLLECTOR T MAX	110°C	COLLECTOR T PROT	INSTALLER
COLLECTOR T PROT	110°C	80°C	INSTALLER
COLLECTOR T AUTH	40°C	COLLECTOR T MAX	INSTALLER
COLLECTOR T LOCK	35°C	COLLECTOR T LOCK	INSTALLER
PWM COLL PUMP	35°C	95°C	INSTALLER
TANK COOLING	0 min	-20°C	INSTALLER
SOLAR PUMP MODE	FUNCTION NOT ACTIVE	FUNCTION ACTIVE	INSTALLER
	OFF	OFF / ON / AUTO	INSTALLER
ADD HEAT PUMP			INSTALLER: only if heat pump not configured

MENU

	Factory-set default value	Minimum value	Maximum value	Access level
HEAT PUMP TYPE (+)	0	0	0 NA 1 (HP type 1) 2 (HP type 2)	INSTALLER
HEAT PUMP			(+) for details on type 1, type 2 see table at end of TECHNICIAN MENU	INSTALLER
REMOVE PDC				INSTALLER: only if heat pump configured
USE FREE CONTACTS / USE BUS	USE BUS	USE BUS	USE FREE CONTACTS	SERVICE
ENABLE COOLING / DISABLE COOLING	DEACTIVATE FUNCTION	FUNCTION ACTIVE	DEACTIVATE FUNCTION	INSTALLER
USE FOR DHW / DON'T USE FOR DHW	DHW FUNCTION NOT ACTIVE	DHW FUNCTION ACTIVE	DHW FUNCTION NOT ACTIVE	SERVICE: only if system has storage tank and sensor without solar
ANTI FREEZE DELTA SET	1°C	0°C	6°C	SERVICE
ENABLE NIGHT REDUCT / DISABLE NIGHT REDUCT	DEACTIVATE FUNCTION	FUNCTION ACTIVE	DEACTIVATE FUNCTION	INSTALLER
REDUCED FREQUENCY	80% 0 (HP type 1)	50% 1 (HP type 1)	100% 0 (HP type 1)	INSTALLER: If ENABLE NIGHT REDUCT INSTALLER: If ENABLE NIGHT REDUCT INSTALLER: If ENABLE NIGHT REDUCT
NIGHT MODE START TIME	20:00	00:00	23:59	INSTALLER: If ENABLE NIGHT REDUCT
NIGHT MODE STOP TIME	09:00	00:00	23:59	INSTALLER: If ENABLE NIGHT REDUCT
MIN OUTDOOR TEMP	5°C	-5°C	20°C	INSTALLER
MIN DHW OUT TEMP	5°C	-5°C	20°C	INSTALLER: only if HP enabled for DHW
MIN EMERG OUT T	-10°C	-20°C	10°C and not higher than MIN OUTDOOR TEMP	INSTALLER
BOILER INTEGR DELAY	30 min	1 min	240 min	INSTALLER
HP INTEGR DELAY	30 min	1 min	240 min	INSTALLER
BOILER WAITING	2 min	1 min	60 min	INSTALLER
HEAT PUMP WAITING	2 min	1 min	60 min	INSTALLER
INTEGRATION OFFSET	5°C	0°C	10°C	INSTALLER
WINTER SUMMER DELAY	0 h	0 h	24 h	INSTALLER
WARNING VALIDATION	60sec	1sec	300sec	INSTALLER
ENABLE CIRC ON MODE / ENABLE CIRC AUTO MODE (*) (HP type 2)	AUTO	ON	AUTO	INSTALLER: if boiler in OFF and vent cycle not running
DHW HP SETPOINT	60°C	20°C	60°C (type 1) 75°C (type 2) the value must still be < DHW MAX TEMP HP	SERVICE: only if HP enabled for DHW
DHW OFFSET	10°C	0°C	25°C	SERVICE: only if boiler with storage tank and HP enabled for DHW
ADD PHOTOVOLTAIC				INSTALLER
PHOTOVOLTAIC				INSTALLER
REMOVE PHOTOVOLTAIC				INSTALLER
ELECTRIC CONVENIENCE	2	0	+10	INSTALLER
BACKUP TYPE (HP type 2)	1	0	1	INSTALLER
BOOSTER OAT THRESHOLD (HP type 2)	-7°C	-20°C	15°C	INSTALLER
INTEGRATION DELAY (HP type 2)	30min	1 min	60 min	INSTALLER
BOOSTER DELTA TEMP (HP type 2)	5°C	1°C	20°C	INSTALLER
MINIMUM PUMP SPEED (HP type 2)	19%	19%	100%	INSTALLER
MAXIMUM PUMP SPEED (HP type 2)	100%	19%	100%	INSTALLER
ZONE PUMP DELAY (HP type 1)	0 sec	0 sec	255sec	SERVICE: only zones with ACTUATION TYPE =BE16
ENABLE ERROR HISTORY (in the first 2 hours of power-on)				SERVICE
ERROR HISTORY (if 2 operating hours have elapsed)				INSTALLER
SCREED HEATING	DEACTIVATE FUNCTION	DEACTIVATE FUNCTION	ACTIVATE FUNCTION	INSTALLER: OFF state and system in BT
FUNCTION NOT ACTIVE				INSTALLER
FUNCTION ACTIVE				INSTALLER



Factory-set default value	Minimum value	Maximum value	Access level
20°C	15°C	30°C	SERVICE
35°C	30°C	55°C	SERVICE
			INSTALLER
depending on boiler installed*	0	4	INSTALLER
(*) 0 = heating only / 1 = instantaneous with flow switch / 2 = instantaneous with flow meter / 3 = heating only + storage tank with sensor / 4 = heating only + storage tank with thermostat			
"instantaneous Power Detection" for measuring the instantaneous heat output value of the boiler			SERVICE: if managed by the boiler board
			SERVICE: if managed by the boiler board

2 INSTALLATION TECHNICIAN MENU

2.1 ZONES MANAGER

This menu is used to programme zone parameters.

The main zone is already loaded on the system by default, so if only one zone is being set up only the relative parameters need to be set.

If other zones are to be included in the system, a supplementary zone must be added.

To add a supplementary zone:



Select:

MENU
└ TECHNICAL
└ INSTALLATION
└ ZONES MANAGER
└ ADD ZONE

- assign a name to the new zone by scrolling through the letters on the graphical keyboard using buttons and . Then confirm with .

Then set up the heating zones.

└ MODIFY ZONE
└ MODIFY ZONE

by setting the following parameters:

ACTUATION TYPE (main zone only)

Water distribution in the system can be managed as follows:

1) IF ACTUATION TYPE

└ ITRF05/MAIN PCB
└ REQUEST TYPE
└ THERMOSTAT - MAN-
AGE DISPLAY
DEPEND DISPLAY -
RF

Single zone distribution carried out by the boiler's main pump, the HP.

2) IF ACTUATION TYPE

└ BE16
└ REQUEST TYPE
└ MASTER REQUEST
TYPE
DEPEND DISPLAY -
RF

Multi-zone distribution carried out by supplementary pumps with the aid of board BE16.

3) IF ACTUATION TYPE

└ T200
└ REQUEST TYPE
└ T200 (value forced by
system, not changeable)

Multi-zone distribution carried out by the boiler's main pump or by the HP, with or without the aid of the zone valves.

Depending on the value set in parameter REQUEST TYPE, the heat request is generated as follows:

- **THERMOSTAT (factory setting)**

The heat request is generated by the closure of the ambient thermostat contact (ON/OFF) of the boiler or BE16.

- **TEMPERATURE SENSOR (only if ACTUATION TYPE = BE16)**

The heat request is generated by the room sensor connected to the BE16.

- **MANAGE DISPLAY**

The heat request is generated by the MANAGE DISPLAY.

in this case the T300 assumes the dual function of MACHINE INTERFACE and regulator AMBIENT - see paragraph "7. T300 as AMBIENT CONTROLLER".

- **DEPEND DISPLAY**

The heat request is generated by the DEPEND DISPLAY.

- **RF**

The heat request is generated by the T200 connected in RF (radio frequency) to the MANAGE DISPLAY.

If ACTUATION TYPE = T200 parameter REQUEST TYPE is forced by the system to RF and cannot be changed.

The heat request is generated by the T200 connected to the zone valves.

BE16 ADDRESS (only if ACTUATION TYPE = BE16 (see point 2).

To define the physical address of board BE16 associated with the zones, which must be set in order for the system to operate correctly. Set the parameter according to the following diagram:

MAIN ZONE	ZONE.....
ON 	ON 

HYDRAULIC CONFIGURATION

To specify the hydraulic configuration of the zone in question, you can choose one of the following options:

- DIRECT ZONE (factory setting)
- MIXING ZONE.

ZONE TYPE

To specify the type of zone to heat, you can choose one of the following options:

- HIGH TEMP (factory setting)
- LOW TEMPERATURE.

MIN CH SET

To specify the minimum admissible HEATING setpoint (range 20°C - 80,5°C, default 40°C for high temperature systems - range 20°C - 45°C, default 20°C for low temperature systems).

NOTE:

MIN CH SET < MAX CH SET.

MAX CH SET

This parameter specifies the maximum admissible HEATING setpoint (range 20°C - 80,5°C, default 80,5°C for high temperature systems - range 20°C - 45°C, default 45°C for low temperature systems).

NOTE:

MAX CH SET > MIN CH SET

CHANGE NAME

To assign a specific name to the heating zone.

PI - PROPORTIONAL

Weight of the proportional action of the PID control for the mixing valve MIXING ZONE.

PI - INTEGRAL

Weight of the integral action of the PID control for the mixing valve MIXING ZONE.

VALVE RUN

Mixing valves closure time.

CLOSING AT POWER ON

Mixing valves closure time at power on.

OUTLET OVER

Value of the delivery temperature in the zone beyond which the system shuts down the pump related to the zone.

OUTLET OVER TEST TIME

Time after which the system shuts down the pump related to the zone, after the delivery temperature in the zone has exceeded the OUTLET OVER value.

OUTLET OVER WAIT TIME

Time for which the pump stays off after the delivery temperature in the zone has exceeded the OUTLET OVER value.

After this time, the pump is reactivated.

OUTLET OVER REST TIME

Time after which the control cycle reactivates, after the pump has been reactivated due to OUTLET OVER temperature exceeded.

FREEZE PROT TEMP

Zone delivery temperature below which, if TEXT < FREEZE PROT T EXT, the zone anti-freeze function activates.

FREEZE PROT OFFSET

Offset value to be considered on the anti-freeze temperature to deactivate the zone anti-freeze function.

FREEZE PROT T EXT

Outdoor temperature below which, if ZONE DELIVERY < FREEZE PROT TEMP, the zone anti-freeze function activates.

RF

When ACTUATION TYPE = T200 or REQUEST TYPE = RF, the heat request is generated by a temperature sensor connected via radio frequency to the T300 (device Hi, Comfort T200).

Use the RF command to complete the association between the two devices:

- PAIRING (coupling) to request the coupling of the T300 to the radio device
- LEAVE (decoupling) to remove the coupling of the T300 to the radio device

Complete the PAIRING / LEAVE operations on the T200 device (refer to the relevant instruction manual).

DELAY START HEATER

When ACTUATION TYPE = T200, this parameter is used to set the delay in seconds with which T300 processes the heat request generated by T200 to allow the complete opening of the relevant zone valve.

2.1.1 ZONE DEACTIVATION

To deactivate a zone, indicate the season in which you wish to deactivate the zone

MENU
└ STATE

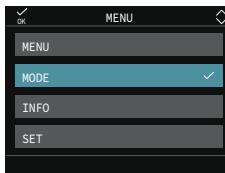
└ SYSTEM

└ HOT WATER ONLY or
HEATING AND HOT
WATER

and subsequently indicate:

MENU
└ MODE
└ HEAT OFF





POR

To enable heating time programming for the zone in question

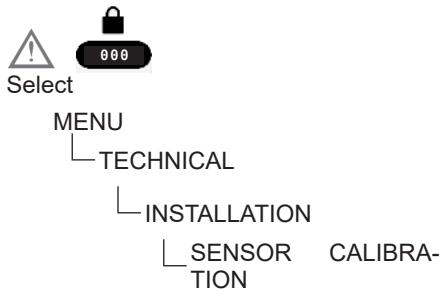
- Time programming not enabled = 0.
When the room thermostat contact is closed, the heat request is always met without time limitation.
- Time programming enabled = 1.
When the room thermostat is closed, the heat request is enabled according to the set time programming.

NOTE:

Ensure in this case that the operating mode of the zone is set to AUTO.

2.2 SENSOR CALIBRATION

When the T300 is also used as an AMBIENT CONTROLLER, it may make sense to calibrate its ambient temperature sensor.



set the desired ambient temperature correction offset.

2.3 SYSTEM RESET

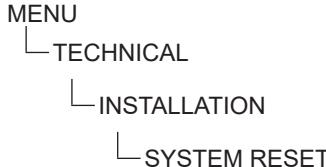


The system configuration operations must be carried out by professionally qualified personnel from the technical support service.

Factory settings can be restored when necessary by resetting the system:



Select

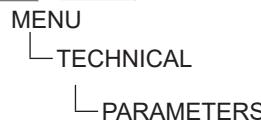


NOTE:

After resetting, the system must be configured again. The T300 will display a series of screens to allow you to set up

- TIME & DATE
- LANGUAGE
- MANAGE DISPLAY or DEPEND DISPLAY
- HYBRID or FULL ELECTRIC

2.4 PARAMETERS



The following parameters are available:

• ANTI-CYCLE FUNCTION

In heating mode, this parameter is used to set the minimum waiting time for the gas boiler to restart after being turned off due to reaching temperature.

- **HYST ON HIGH TEMP**

Temperature to be subtracted from the boiler delivery setpoint to obtain the trigger temperature of the “heating thermostat ON” in high temperature systems.

- **HYST OFF HIGH TEMP**

Temperature to be added to the boiler delivery setpoint to obtain the trigger temperature of the “heating thermostat OFF” in high temperature systems.

- **HYST ON LOW TEMP**

Temperature to be subtracted from the boiler delivery setpoint to obtain the trigger temperature of the “heating thermostat ON” in low temperature systems.

- **HYST OFF LOW TEMP**

Temperature to be added to the boiler delivery setpoint to obtain the trigger temperature of the “heating thermostat OFF” in low temperature systems.

- **SP INCR HIGH TEMP**

Offset to be applied to the boiler delivery setpoint when a heat request for heating comes from high temperature systems.

- **SP INCR LOW TEMP**

Offset to be applied to the boiler delivery setpoint when a heat request for heating comes from low temperature systems.

- **DECRR COOLING SP**

Allows for the introduction of a programmable negative offset on the zone cooling setpoint calculated before it is sent to the heat pump.

- **PUMP DUTY CYCLE**

This parameter allows you to set the boiler pump management mode.

- **RESET CH TIMERS**

Activating this function resets the REDUCED MAXIMUM HEATING OUTPUT and FORCED HEATING OFF timers on the gas boiler (see the boiler manual for further information).

- **SLIDING OUTLET (available with heating only boiler)**

This parameter allows you to activate the SLIDING OUTLET function to modify the delivery setpoint used by the boiler when a DHW request is active. In this case, the delivery setpoint to the storage tank is automatically calculated by the boiler based on the difference between the desired temperature and the temperature detected by the hot water tank sensor. The default value for this parameter is DEACTIVATE FUNCTION.

NOTE:

It is not advisable to activate this function for a storage tank with a capacity greater than 100 litres, as it would take too long to fill the storage tank.

- **CH DELAY POST-DHW**

Through this value it is possible to enable/disable the DHW post-circulation function with heating start inhibition.

- **CH DELAY TIME**

When CH DELAY POST-DHW = 1 the duration of DHW post-circulation can be set.

- **WATER TRANSDUCER**

Allows you to set the type of water pressure transducer:

0 = water pressure switch

1 = pressure transducer

- **AUTO WATER FILL ENABLE**

This parameter must be set according to the boiler configuration and is used to enable the “semi-automatic filling” function when a pressure transducer and a filling solenoid valve are installed in the boiler.

- **BEGIN SYSTEM FILLING**

Only if AUTO WATER FILL ENABLE = 1

- **PREHEATING (available with combi boiler):**

Setting the parameter to = 1 activates the boiler's DHW pre-heating function. This function allows the water contained in the domestic hot water exchanger to be kept warm in order to reduce waiting times during use. When the pre-heating function is enabled, the P symbol is lit steady above the DHW icon. During the ignition of the burner following a pre-heating request, the P symbol starts flashing.

To deactivate the pre-heating function, set parameter PREHEATING = 0 again, the P symbol will turn off.

The function is not active with BOILER IN OFF MODE.

Setting the parameter to = 2 activates the TOUCH & GO function. If you do not wish to keep the PREHEATING function always active and need hot water ready immediately, it is possible to pre-heat the DHW just a few moments before use. This function opens and closes the cock to activate instant pre-heating, which prepares the hot water only for that use.

Setting the parameter to = 3 activates the SMART pre-heating function.

When the function is active, post-circulation for the end of the heating request occurs with the three-way valve set to DHW until one of the following conditions is met:

- DT (CH SENSOR - return) < 2°C
- Post-circulation duration > 20 sec

- **MAX SETPOINT DHW**

Through this value, it is possible to set the maximum DHW setpoint.

- **MIN SETPOINT DHW**

Through this value, it is possible to set the minimum DHW setpoint.

- **DO_AUX1**

Through this value, it is possible to configure the functions associated with the digital output used to manage the supplementary pump/zone valve.

- **DHW DELAY TIME (only with instantaneous boiler)**

Through this value, it is possible to set a delay on the activation of the burner in case of DHW request.

- **ID14:**

Through this value it is possible to enable cascade management when a OT+ programmable thermostat is connected.

- **TYPECOS**

This parameter allows the boiler to be periodically checked according to an operating period preset in parameter EXPIRE.

TYPECOS = 0 function not active

TYPECOS = 1 SFS (Stop for service) active

TYPECOS = 2 CFS (Call for service) active

To reset the counter to the default value after a CFS/SFS signal, the installer must set TYPECOS = 0, confirm, and then set TYPECOS back to the desired value and confirm.

This way the counter reloads the EXPIRE value.

When SFS/CFS is processed (after the weeks set in parameter EXPIRE), the days since the function expired are displayed in the INFO menu > EXCHANGE SERVICE

- **EXPIRE**

EXPIRE indicates the number of weeks (0 - 52 weeks) remaining until the CFS/SFS signal.

The EXPIRE counter does not decrease as the weeks pass; it always shows the set value.

• CONFIG OTBUS



Parameter not available if heat pump present. An OT+ programmable thermostat cannot be connected if a heat pump is present.

This parameter is used to enable remote boiler management using an OpenTherm device:

1 = FACTORY-SET VALUE. With the OT+ functionality enabled, the display shows "OPENTHERM CONNECTED" when an OT+ device is connected.

0 = OT+ functionality disabled. Setting this parameter to 0 instantly interrupts any OT+ connection.

• HIGH EFFICIENCY MODE

The boiler is equipped with an automatic function that activates when first powering on or after 60 days of non-use (electrically powered boiler). In this mode, the boiler limits the heat output and the maximum temperature for DHW to 60°C for 55 minutes. The activation of the chimney sweeper temporarily disables this function. When the function is running, the scrolling message HIGH EFFICIENCY MODE is displayed.

• SPECIAL FUNCTION DHW

This menu enables the following functions to be activated

• DHW DELAY

Through this value, it is possible to set a delay on the activation of the burner in case of DHW request (only for boilers in instantaneous configuration)

• SMART_FAN:

This parameter allows you to activate the "smart fan" function, which maintains the minimum power-on speed of the fan (MIN) in case the burner switches off due to overheating in DHW mode (with a request still present).

• DHW THERMOSTATS (available with instantaneous boiler)

This parameter allows you to set the type of DHW THERMOSTATS. The default value for this parameter is RELATED, i.e. in DHW mode the boiler turns off at SetPoint +5°C and turns back on at SetPoint +4°C. To choose the ABSOLUTE value, where the boiler in DHW will always turn off at 65°C and turn back on at 63°C, use "+" and "-" confirming the choice to reset the timers.

• SWING REDUCTION

This parameter allows you to activate the "SWING REDUCTION" function, which enables the boiler to set its own ABSOLUTE THERMOSTATS and maintain minimum fan speed in case the burner switches off due to overheating in DHW mode (with a request still present).

• DISABLE ALL AND ENABLE ALL

For enabling or disabling all the above comfort functions. In this case it is not possible to select the DHW comfort parameters individually.

2.5 Setting heating thermoregulation



Select

MENU

└ TECHNICAL

└ WEATHER COMPENSATION

Thermoregulation in HEATING can operate at a fixed point even with an external sensor connected.

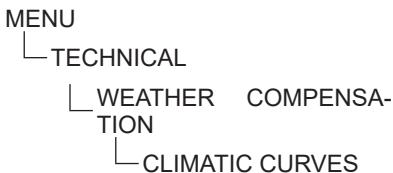
The temperature value detected by the external sensor is displayed on the main screen at the bottom right.

When thermoregulation is enabled, the algorithm for the automatic calculation of the delivery setpoint depends on the type of heat request.

In any case, the thermoregulation algorithm will not directly use the measured outdoor temperature value, but rather a calculated outdoor temperature value that takes the building insulation into account: in well-in-

sulated buildings, variations in outdoor temperature have less influence on the ambient temperature compared to those that are less insulated.

Through the T300, it is possible to set the desired climatic curve and adjust the related parameters:



CLIMATIC CURVES

FIXED SET POINT

Heating zone delivery setpoint when thermoregulation not enabled.

NIGHT COMP

Parameter for enabling continuous heating request with night compensation when thermoregulation is enabled and ambient temperature control is not enabled (i.e. when REQUEST TYPE = TA).

CURVE SLOPE

Curve slope value used in the thermoregulation algorithm to calculate the heating delivery setpoint when the external sensor is connected.

AMBIENT INFLUENCE

Influence of the difference between "desired ambient temperature" and "measured ambient temperature" in the thermoregulation algorithm when the external sensor is connected and ambient temperature control is enabled (i.e. when REQUEST TYPE = ROOM SENSOR - T300 or T200).

OFFSET

Value to be added to the heating delivery setpoint calculated by the thermoregulation algorithm when ambient temperature control is enabled (i.e. when REQUEST TYPE = ROOM SENSOR - T300 or T200).

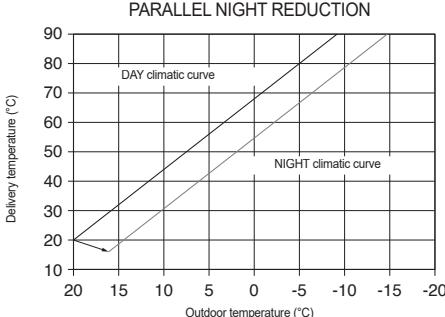
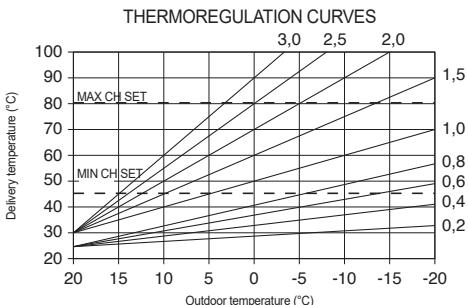
BUILDING TYPE

is indicative of the frequency with which the outdoor temperature value calculated for thermoregulation is updated. A low value is used for poorly insulated buildings.

OUTDOOR REACTIVITY

is indicative of the speed at which variations in the measured outdoor temperature influence the calculated outdoor temperature for thermoregulation.

Low values indicate high speeds.



2.5.1 REQUEST FROM ROOM THERMOSTAT

In this case, the delivery setpoint depends on the outdoor temperature value to achieve a reference temperature in the room of 20°C. There are 2 parameters that contribute to the calculation of the delivery setpoint:

- Slope of the compensation curve (KT);
- Offset on the reference ambient temperature.

CHOOSING THE COMPENSATION CURVE

The heating compensation curve ensures a theoretical temperature of 20°C in the room at outdoor temperatures ranging from +20°C to -20°C. The choice of curve depends on the minimum project outdoor temperature (and thus the geographical location) and the project delivery temperature (and thus the type of system) and must be carefully calculated by the installer, using the following formula:

$$KT = \frac{\text{Project delivery T.} - \text{Tshift}}{20 - \text{Min. project outdoor T}}$$

Tshift = 30°C standard systems

Tshift = 25°C underfloor systems

If the calculation results in an intermediate value between two curves, it is advisable to choose the compensation curve closest to the obtained value.

Example: if the value obtained from the calculation is 1.3, it lies between curve 1 and curve 1.5. In this case, choose the closest curve, i.e. 1.5.

The KT values that can be set are as follows:

- standard system: 1,0÷3,0
- underfloor system 0,2÷0,8.

OFFSET ON THE REFERENCE AMBIENT TEMPERATURE

The user can still indirectly alter the HEATING setpoint value by entering an offset on the reference temperature value within the range -5 ÷ +5 (offset 0 = 20°C).

NIGHT COMP

If a timer is connected to the ROOM THERMOSTAT input, the NIGHT COMP function can be enabled from the path indicated above. In this case, when the CONTACT is CLOSED, the heat request is made by the delivery sensor, based on the outdoor temperature, to achieve a nominal temperature in the room at DAY level (20°C).

MENU

└ TECHNICAL

└ WEATHER COMPENSATION

└ CLIMATIC CURVES

└ MAIN

THE OPENING OF THE CONTACT does not determine HEAT OFF, but instead reduces (parallel translation) the climatic curve on the NIGHT level (16°C).

Here too, the user can indirectly alter the HEATING setpoint value by entering an offset on the reference DAY (20°C) or NIGHT (16°C) temperature value within the range [-5 ÷ +5].

2.5.2 REQUEST FROM T300 OR ROOM SENSOR

In this case, the delivery setpoint depends on the outdoor temperature and the ambient temperature.

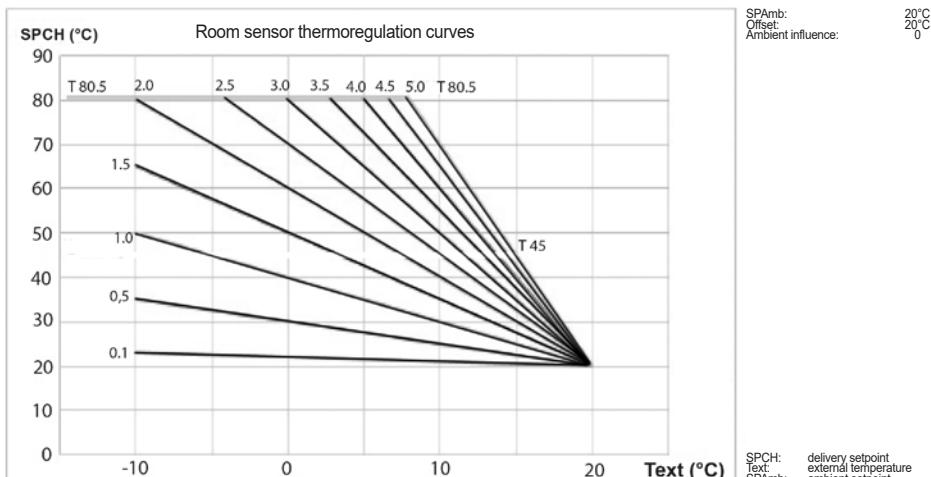
There are 3 parameters that contribute to the calculation of the delivery setpoint:

- CURVE SLOPE;
- AMBIENT INFLUENCE;
- FIXED POINT OFFSET;

as set out in the following formula

$$SP_{Delivery} = \left\{ \left[\left(SP_{Amb} - T_{Amb} \right) \cdot Infl_{Amb} \right] + T_{Amb} \right\} \cdot T_{Ext} + Offset$$

Legend	Description
SP _{Delivery}	Delivery setpoint
SP _{Amb}	Ambient setpoint
T _{Amb}	Ambient temperature
Infl _{Amb}	Ambient influence (KORR)
T _{ext}	Outdoor temperature
Elbow	Climatic curve
Offset	Offset



! The above parameters are visible in the technician menu - thermoregulation - climatic curves and heating only if an external sensor is connected.

CURVE SLOPE

The T300 calculates the delivery temperature based on the climatic curve set in parameter "CURVE CHOICE".

As the set value increases, the slope of the climatic curve increases, consequently the delivery temperature rises.

The function uses the outdoor temperature as its input parameter (x-axis).

AMBIENT INFLUENCE (KORR)

Weather compensation with ambient influence is used to correct the value calculated by the climatic curve, taking into account the temperature difference between the ambient setpoint and the room sensor.

By increasing the parameter towards maximum, the influence of the setpoint deviation on the control is increased.

OFFSET

Value to be added to the heating delivery setpoint calculated by the thermoregulation algorithm.

2.6 Setting delivery temperature for zones in cooling (if heat pump is activated in cooling)

Thermoregulation in COOLING can operate at a fixed point even with an external sensor connected.

To activate/deactivate the thermoregulation curves in cooling



and then

MENU
└ TECHNICAL
└ INSTALLATION
└ WEATHER COMPENSATION
└ ENABLE COOLING CURVES / DISABLE COOLING CURVES

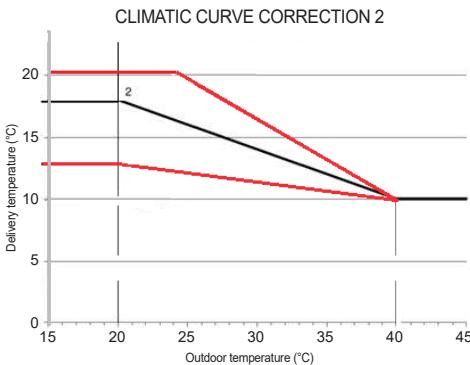
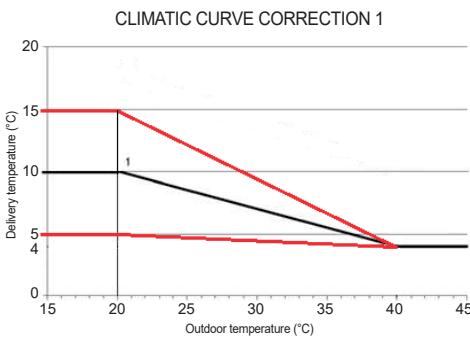
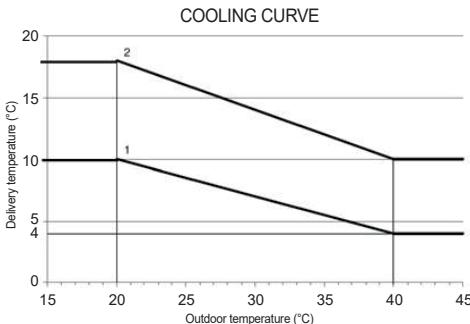
- If the thermoregulation curves in cooling are deactivated, the system operates at a fixed point.
- If the thermoregulation curves in cooling are activated, the delivery setpoint in cooling is automatically calculated according to an algorithm that takes account of the set climatic curve and the measured outdoor temperature. Bear in mind that, as for heating, the thermoregulation algorithm for cooling will not directly use the measured outdoor temperature value, but rather a calculated outdoor temperature value that takes the building insulation into account.

NOTE:

The value of the calculated outdoor temperature used by the thermoregulation algorithm can be viewed in the INFO menu under FILTERED OUTDOOR TEMP.

OFFSET ON THE CALCULATED DELIVERY TEMPERATURE

The user can still directly alter the calculated COOLING setpoint value by changing the slope of the curve (climatic curve correction graphs 1-2), entering an offset within range $-5 \div +5$, which is added to the maximum cooling setpoint envisaged by the curve.



2.7 RANGE RATED



Select

MENU

 └ TECHNICAL

 └ RANGE RATED

To set the number of boiler fan revolutions from T300. The T300 also runs a consistency check on the value of these parameters, ensuring that they are set within their respective acceptable ranges.

2.8 COMBUSTION ANALYSIS



Select

MENU

 └ TECHNICAL

 └ COMBUSTION ANALYSIS

The chimney sweep function can be activated with the boiler in OFF.

On activating the function, T300 sends a request to the boiler to operate in chimney sweeper mode, in this case sending the desired fan rpm setpoint rather than the temperature setpoint.

2.9 ANTILEGIONELLA



Select

MENU

 └ TECHNICAL

 └ ANTILEGIONELLA

The system has an automatic ANTILEGIONELLA function, which activates so as to destroy any bacterial growth in the domestic hot water tank (where present).

Depending on the heat source that heats the storage tank, the ANTILEGIONELLA function will assume the following characteristics:

- **If a heat only boiler is connected:**

The domestic hot water in the storage tank is heated to the value of parameter ANTILEGIO TEMP, with a delivery temperature set under ANTILEGIO FLOW, maintaining the temperature for the duration specified in table A.

The function is not carried out if the temperature in the storage tank has remained above ANTILEGIO TEMP for the duration indicated in table A over the last 24 hours, in the case of daily programming, or over the last 7 days, in the case of weekly programming.

- **If a heat pump is connected:**

The domestic hot water in the storage tank is heated to the value of parameter ANTILEGIO TEMP, with a delivery temperature set under DHW HEAT PUMP SET, maintaining the temperature for the duration specified in table A.

The function is not carried out if the temperature in the storage tank has remained above ANTILEGIO TEMP for the duration indicated in table A over the last 24 hours, in the case of daily programming, or over the last 7 days, in the case of weekly programming.

The maximum duration of the anti-legionella cycle is 4 hours; if the ANTILEGIONELLA function stops due to exceeding the maximum time, the display shows the error message "ANTI-LEGIONELLA FUNCTION NOT COMPLETED"

The system will attempt to carry out the function again the next day.



The function CANNOT be performed in OFF state.



The INFO menu, parameter NEXT ANTILEGIO indicates the number of days until the next anti-legionella cycle.

The function can be stopped early as follows:

- turning the boiler OFF,
- selecting MENU and then STATE in the DHW ANTILEGIO CUT OFF.

If stopped, the function is repeated at the same the next day, even if weekly programming is set.

The duration of the anti-legionella cycle varies depending on the temperature set in parameter ANTILEGIO TEMP, as indicated in the table.

table A	
ANTILEGIO TEMP	Cycle duration
ANTILEGIO TEMP < 58°C	180min
58°C < ANTILEGIO TEMP < 62°C	60min
62°C < ANTILEGIO TEMP < 66°C	30min
66°C < ANTILEGIO TEMP < 75°C	15min
ANTILEGIO TEMP > 75°C	1min

Parameters ANTILEGIONELLA.

FUNCTION NOT ACTIVE, the function is not performed.

DAILY FUNCTION, the anti-legionella cycle is performed every day at the time set in parameter TIME.

WEEKLY FUNCTION, the anti-legionella cycle is performed every Wednesday at the time set in parameter TIME.

ANTILEGIO FLOW, only available if a heating-only boiler and storage tank sensor are connected to the storage tank; this allows you to set the delivery temperature of the boiler during the function.

TIME for setting the time the function is performed (default 03.00 AM)

ANTILEGIO TEMP is the storage tank set-point temperature for the anti-legionella function.

2.10 AIR PURGING CYCLE



Select

MENU
 └ TECHNICAL
 └ AIR PURGING CYCLE

The AIR PURGING CYCLE function only activates at power on or after resetting a water alarm and is entirely managed by the boiler board. Through the relevant menu on T300, the function can be stopped early or excluded so that it does not run even when the conditions for its activation are met.

2.11 EXHAUST PROBE RESET



Select

MENU
 └ TECHNICAL
 └ EXHAUST PROBE RESET

The EXHAUST PROBE RESET function allows you to reset the relevant counter, used by the boiler board to store the number of heat exchanger operating hours in condensing mode.

2.12 Adding devices in Hybrid system

If configured as HYBRID, the system requires the presence of a boiler.

If necessary, to add other devices:



MENU
└ TECHNICAL

└ ADD WATER TANK
└ ADD SOLAR PLANT
└ HEAT PUMP → ADD PHOTOVOLTAIC COOLING CURVES

2.13 ADD WATER TANK

HW TANK/WATER TANK HP

With an instantaneous or heating only boiler, a storage tank for domestic hot water production (accessory) can be combined.

 The ANTILEGIONELLA function is available when a storage tank is fitted (see paragraph "2.9 ANTILEGIONELLA" pag. 74).

With a HW TANK in the system, the relative parameters can be set:

TANK TYPE

This parameter allows you to set the type of storage tank (with thermostat rather than sensor).

TANK FLOW TEMP

Parameter for setting the boiler's delivery temperature on the domestic hot water tank.

WATER TANK SETPOINT

The parameter allows you to set the temperature of the hot water stored in the storage tank; the temperature is reached by the heat provided by the heat pump.

DHW TANK ON HYST

The request to fill the storage tank activates when the temperature measured by the HOT WATER TANK SENSOR < WATER TANK SETPOINT - DHW TANK ON HYST.

DHW TANK OFF HYST

The request to fill the storage tank deactivates when the temperature measured by the HOT WATER TANK SENSOR > WATER TANK SETPOINT + DHW TANK OFF HYST

TANK FROST PROTECT

If the BOILER SENSOR < TANK FROST PROTECT, a DHW request is sent to the heat pump until the DHW temperature stored in the storage tank is > TANK FROST PROTECT + TANK FR PROT OFFSET.

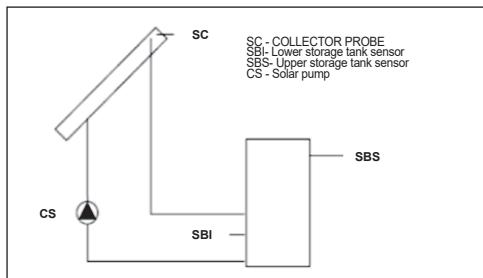
T300 displays the scrolling message "TANK FROST PROTECTION IN PROGRESS".

TANK FR PROT OFFSET

Settable difference from the TANK FROST PROTECT value to exit the function.

2.14 ADD SOLAR PLANT

- If a boiler is added to the system, it is possible to select ADD SOLAR PLANT.



The value of the following parameters can be set:

REMOVE SOLAR PLANT (if previously added)

This function is used to disable solar operation; by disabling solar, the related configuration menu is no longer accessible.

T MAX TANK

This parameter allows you to set the maximum allowable temperature value in the top of the storage tank in response to a load from the heat pump, DHW INTEGRATION TYPE element or solar thermal.

DELTA T ON PUMP

Temperature difference between the collector sensor and the bottom storage tank sensor for the storage tank thermal load (activation of the solar pump)

NOTE:

DELTA T ON PUMP > DELTA T OFF PUMP

DELTA T OFF PUMP

Temperature difference between the collector sensor and the bottom storage tank sensor for stopping the storage tank thermal load (stopping the solar pump)

NOTE:

DELTA T OFF PUMP < DELTA T ON PUMP

COLLECTOR T MIN

Minimum temperature of the collector to activate the solar collector anti-freeze function.

COLLECTOR T MAX

Maximum temperature of collector for solar collector pump block (system protection).

The pump is subsequently enabled as soon as the collector temperature drops below [COLLECTOR T MAX - 10°C]

NOTE:

COLLECTOR T MAX > COLLECTOR T PROT

COLLECTOR T PROT

Maximum temperature of the collector to activate the solar collector cooling function

NOTE:

COLLECTOR T PROT < COLLECTOR T MAX

COLLECTOR T AUTH

Minimum temperature for enabling solar collector pump

NOTE:

COLLECTOR T AUTH > COLLECTOR T LOCK

COLLECTOR T LOCK

Minimum temperature for disabling solar collector pump

NOTE:

COLLECTOR T LOCK < TANK AUTHORIS T

PWM COLL PUMP

Solar pump PWM modulation period

TANK COOLING

Parameter for enabling / disabling the storage tank cooling function; you can choose between the two following options

SOLAR PUMP MODE

Parameter for configuring the solar collector pump operation; you can choose between the three following options

- OFF (factory setting): the solar collector pump is always off
- ON: the solar collector pump is always on;
- AUTO: the solar collector pump turns on and off according to the solar management rules.

SOLAR THERMAL SYSTEM OPERATION

If the following 4 conditions are all met, the CS solar collector pump is activated with a PWM modulation level as described in the relevant paragraph:

- [SBS] < [T MAX TANK] - 5°C
- [SC] > [SBI] + [DELTAT ON PUMP]
- [SC] > [COLLECTOR T AUTH]
- [SC] < [COLLECTOR T MAX]

The CS solar collector pump deactivates if one of the following 4 conditions is met:

- [SBI] > [T MAX TANK]
- [SC] < [SBI] + [DELTAT OFF PUMP]
- [SC] < [COLLECTOR T LOCK]
- [SC] > [COLLECTOR T MAX]

The following functions can also be active:

FUNCTION TANK COOLING

if the function is active, the solar collector pump activates to transfer heat from the storage tank to the collector when all of the following conditions are met:

- [SBS] > [T MAX TANK] + 5°C
- [SBI] > [SC]

the function only operates at night [01:00 ÷ 06:00]

COLLECTOR ANTI-FREEZE FUNCTION

if the function is active, the solar collector pump activates to heat the collector when all of the following conditions are met:

- [SC] < [COLLECTOR T MIN]
- [SBI] > [SC]
- [SBI] > 5°C

COLLECTOR COOLING FUNCTION

if the function is active, the solar collector pump activates to cool the collector when all of the following conditions are met:

- [SBS] < [T MAX TANK + 10°C]
- [SC] < [COLLECTOR T MAX]
- [SC] > [COLLECTOR T PROT]
- [SBI] < [SC]

COLLECTOR PUMP ANTI-BLOCKING FUNCTION

The CS solar collector pump activates for 30" 24h after it was last activated.

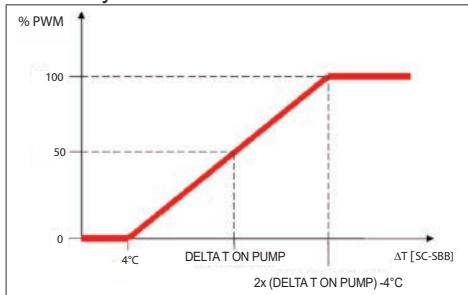
PURGE FUNCTION

If the collector sensor detects an increase in temperature of at least 1°C in 30 minutes, the collector pump activates for 15 seconds if also [SC] > [SBI].

The triggering of an anomaly on the top storage tank sensor SBS, on the bottom storage tank sensor SBI or on the collector sensor SC, in addition to normal anomaly management, also disables solar preparation by stopping the relative solar pump CS.

CS SOLAR COLLECTOR PUMP MODULATION FUNCTION.

If the conditions for activating the solar collector pump are met, it activates with a PWM modulation level that is a function of the difference (SC-SBI) as illustrated in the figure. This PWM modulation acts as a percentage of the ON period of the CS collector pump compared to a time period given by the value of parameter [PWM COLL PUMP]. If parameter [PWM COLL PUMP] = 0, the modulation is deactivated and the collector pump remains constantly active if there is a demand.



2.15 Add heat pump

After setting ADD HEAT PUMP, the following parameters are available:

HEAT PUMP

HEAT PUMP TYPE

Identify the type of heat pump connected to the system:

Description	Heat pump type
Type 0	NA
Type 1	NXHM - HYDRO UNIT M - VEGA M - FAMILY SPRINT - EXCLUSIVE AGILE -
Type 2	NXHP - HYDRO UNIT P

REMOVE PDC

This function is used to disable the operation of the heat pump; by disabling the heat pump, the related configuration menu is no longer accessible.

USE FREE CONTACTS/USE BUS

This function is used to set the communication protocol between the T300 and the heat pump. The contact communication occurs simply through the closing or opening of 4 dry contacts, managed with the aid of the BE1 board. In the bus version, communication takes place via RS485 bus.

ENABLE COOLING / DISABLE COOLING

This parameter allows you to activate/deactivate the cooling operation of the heat pump.

USE FOR DHW (IF ADDED HW TANK)

This parameter allows you to enable the pre-heating of the heat pump on the storage tank.

ANTI FREEZE DELTA SET

This parameter allows you to set an offset on the temperature used by the heat pump for activating the anti-freeze function.

ENABLE NIGHT REDUCT / DISABLE NIGHT REDUCT

This parameter is used to reduce the noise of the heat pump by limiting the maximum operating frequency of the compressor during the time slot set in parameters NIGHT MODE START TIME and NIGHT MODE STOP TIME.

REDUCED FREQUENCY (IF ENABLE NIGHT REDUCT)

This parameter is available after having activated night-time reduction and allows the maximum compressor frequency percentage to be set when the "night-time reduction" function is active. Setting a value of 100% for this parameter deactivates the function.

NIGHT MODE START TIME (IF ENABLE NIGHT REDUCT)

This parameter is used to set the start time of the frequency limitation period of the heat pump compressor when the night reduction function is enabled.

NIGHT MODE STOP TIME (IF ENABLE NIGHT REDUCT)

This parameter is used to set the end time of the frequency limitation period of the heat pump compressor when the night reduction function is enabled.

MIN OUTDOOR TEMP

This parameter is used to set the minimum outdoor temperature value below which the heat pump does not operate, except in the case where the boiler is experiencing a fault.

MIN DHW OUT TEMP

This parameter is used to set the minimum outdoor temperature value below which the heat pump does not operate for DHW purposes, except in the case where the boiler is experiencing a fault.

MIN EMERG OUT T

This parameter is used to set the minimum outdoor temperature value above which the heat pump can operate when the boiler is faulty and therefore not available.

BOILER INTEGR DELAY

This parameter is used to set the heat pump minimum operating period before it can be switched off to switch on the boiler.

HP INTEGR DELAY

This parameter is used to set the boiler minimum operating period before it can be switched off to switch on the heat pump.

BOILER WAITING

This parameter is used to set the waiting period for switching on the boiler after the heat pump is switched off.

HEAT PUMP WAITING

This parameter is used to set the waiting period for switching on the heat pump after the boiler is switched off.

INTEGRATION OFFSET

This parameter is used to set the value to be subtracted from the HEATING setpoint, to determine the delivery temperature below which, after the time set in parameter BOILER INTEGR DELAY has elapsed, the heat pump switches off in favour of integration by the boiler.

WINTER SUMMER DELAY

This parameter is used to set the standby time of the heat pump during the transition from HEATING AND HOT WATER to HOT WATER ONLY.

WARNING VALIDATION

This parameter is used to set the validation time for heat pump alarm status before it is signalled by the T300

ENABLE CIRC ON MODE / ENABLE CIRC AUTO MODE

This parameter allows you to activate the pump of the heat pump (ON). The pump can only be activated when the system is in OFF state and if the chimney sweep, venting or antifreeze, heating or DHW functions are not active.

The 3-way electronic valve is set to heating.

DHW HP SETPOINT

This parameter is used to set the delivery setpoint of the heat pump when domestic hot water production is enabled. The T300 runs a consistency check to ensure the value of this parameter is not <DHW SETPOINT. DHW HP SETPOINT > DHW SETPOINT – DHW OFFSET or DHW HP SETPOINT > WATER TANK SETPOINT must be guaranteed.

DHW OFFSET

This parameter is used to set the value to be subtracted from the DHW setpoint, to determine the temperature below which a heat request is sent to the heat pump to heat the bottom of the storage tank.

2.15.1 PHOTOVOLTAIC

• ADD PHOTOVOLTAIC

This parameter is used to activate the PHOTOVOLTAIC menu for managing the photovoltaic input with ON/OFF contact.

See paragraph "9 RULES FOR BOILER AND HEAT PUMP INTEGRATION IN HYBRID SYSTEMS" for further details.

• PHOTOVOLTAIC

• REMOVE PHOTOVOLTAIC (if previously added)

• ELECTRIC CONVENIENCE

When the contact coming from the photovoltaic closes and stays closed for at least 1 minute, the values of MIN OUTDOOR TEMP and MIN DHW OUT TEMP decrease by the value set in ELECTRIC CONVENIENCE in order to prioritise the contribution of the heat pump.

This condition remains until the contact opens for at least 30 min, after which MIN OUTDOOR TEMP and MIN DHW OUT TEMP return to their original values.

BACKUP TYPE - heat pump type 2

This parameter allows you to define the type of electric booster heater for the heat pump:
0 = no booster
1 = booster heater

BOOSTER OAT THRESHOLD - heat pump type 2

This parameter allows you to set the outdoor temperature threshold below which both the heat pump and the booster heater will be activated, provided that the outdoor temperature is above MIN OUTDOOR TEMP or MIN DHW OUT TEMP.

INTEGRATION DELAY - heat pump type 2

This parameter allows you to set the delay time for activating the booster heater; the delay starts counting when: delivery temperature HP < setpoint HEATING - BOOSTER DELTA TEMP.

BOOSTER DELTA TEMP - heat pump type 2

This parameter allows you to set the temperature hysteresis for activating the external booster heater.

MINIMUM PUMP SPEED

This parameter allows you to set the minimum speed of the heat pump's pump in terms of duty cycle value.

MAXIMUM PUMP SPEED

This parameter allows you to set the maximum speed of the heat pump's pump.

ZONE PUMP DELAY (type 1)

This parameter allows you to set a delay for the BE16's pump to start following the heat request.

2.16 ERROR HISTORY



The ERROR HISTORY function only enables automatically after the system has been powered for at least 2 consecutive hours; during

this period any alarms that trigger are not stored in the “alarms history”.

Alarms can be displayed in chronological order, from the most recent to the oldest, up to a maximum of 50 alarms.

NOTE:

once enabled, the ERROR HISTORY function can no longer be disabled; there is also no procedure for resetting the alarms history. If an alarm is triggered several consecutive times, it is only stored once.

2.17 FUNCTION SCREED HEATING



MENU
└ TECHNICAL
└ SCREED HEATING

For low temperature zones only, the system has a “SCREED HEATING” function that can be activated as follows:

NOTE:

SCREED HEATING is not available if the boiler is in a state other than OFF.

The “screed heater” function has a duration of 168 hours (7 days) during which, in the zones configured as low temperature, a heating request is simulated with an initial zone delivery setpoint of 20°C, subsequently increased according to the adjacent table.

By accessing the INFO menu from the T300 main screen, you can view the SCREED HEATING HOURS relative to the number of hours elapsed since the function was last activated.

Once activated, the function takes maximum priority; if the machine is turned off by removing the power supply, when it is switched back on the function resumes from where it was interrupted.

The function can be stopped before its completion by putting the machine in a state other than OFF or by selecting DEACTIVATE FUNCTION from the relevant menu.

NOTE:

The temperature and increment values can only be set to different values by a qualified technician, and only if strictly necessary. The

manufacturer declines all responsibility in the event of incorrect parameter settings.

2.18 BOILER



MENU
└ TECHNICAL
└ BOILER
└ HYDRAULIC CONF

In a hybrid system, the BOILER menu allows you to modify the hydraulic configuration of the boiler without necessarily having to go through a SYSTEM RESET.

The HYDRAULIC CONF parameter can be set between 0 and 4 as follows:

- 0 heating only boiler
- 1 instantaneous boiler with flow switch
- 2 instantaneous boiler with flow meter
- 3 heating only boiler with storage tank and storage tank sensor
- 4 heating only boiler with storage tank and storage tank thermostat

In a hybrid system with a boiler and heat pump, the REMOVE BOILER parameter in the BOILER menu allows you to disable the boiler and switch to managing a fully electric system.

2.19 IPD ACTIVATION



MENU
└ TECHNICAL
└ IPD ACTIVATION

If managed by the control board, when in OFF state parameter IPD ACTIVATION allows the activation of “Instantaneous Power Detection” for measuring the boiler’s instantaneous heat

output.

The function is fully managed by the boiler control board and, when running, the T300 displays the calculated instantaneous heat output in kW/h on the main screen and the scrolling message at the bottom "IPD FUNCTION IN PROGRESS".

The parameter for activating the function is not available when OT+ is connected.

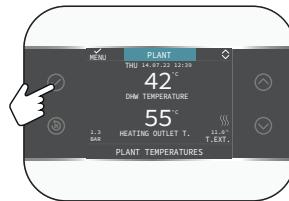
2.20 SYSTEM INFO

The SYSTEM INFO menu gives information on the hydraulic configuration, type and firmware revision of the boards in the system.

3 INFO

The INFO button on the T300 display allows you to view a list of information relating to system operation.

On the main screen press  and access MENU



and then access

 MENU
 INFO

to view a list of information relating to system operation.

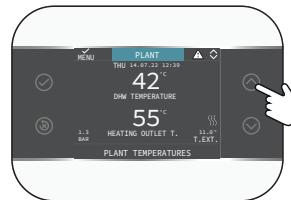
 Some Info may not be available depending on system configuration.

- SCREED HEATING HOURS
- CH SENSOR
- RETURN SENSOR
- DHW SENSOR
- HW TANK HIGH
- HW TANK LOW
- HW TANK LOW
- COLLECTOR TEMP
- EXHAUST SENSOR
- OUTDOOR TEMP PROBE
- FILTERED OUTDOOR TEMP
- FLOW METER / DHW SETPOINT OT+
- FAN SPEED
- MAIN ZONE OUTLET
- ZONE 1 OUTLET
- ZONE 2 OUTLET
- EXHAUST SENSOR HOURS
- SET MAIN ZONE
- SET ZONE 1
- SET ZONE 2
- WATER PRESSURE
- HP OUTLET
- HP RETURN
- HP OUTDOOR TEMP
- LOW PRESS TUBE REFR
- HIGH PRESS TUBE REFR
- CONDENSER REFR

- EXCHANGER REFR
- HP OPERATIVE MODE (HP control panel: MENU > OPERATING PARAMETERS > OPERATING MODE)
- HP FREQUENCY
- HP COMPRESSOR TIME
- HP PUMP TIME (type 2)
- HP FLOW SWITCH
- HP CAPACITY
- SETPOINT HP (type 2)
- WATER CAPACITY (type 2)
- ELECTRIC POWER (type 2)
- COP-EER (type 2)
- ACTUAL HP CAPACITY (type 1)
- EXCHANGE SERVICE
- NEXT ANTILEGIO
- ENERGY CONSUMPTION (type 1)
- DHW HOURS
- CH HOURS
- DHW MODULATION
- CH MODULATION
- CH SUPPLY SENSOR AVG
- DHW SUPPLY SENSOR AVG
- CH RETURN SENSOR AVG
- DHW RETURN SENSOR AVG
- GAS VALVE ON CYCLE
- HIGH EFFICIENCY

4 FAULTS

In the event of an anomaly, the T300 display shows a screen featuring the symbol .



Press the  button until the  symbol is highlighted to access the anomaly description screen.

NOTE:

- See the heat pump installation manual for the list of heat pump faults.
- The T300 only displays the alphanumeric codes relating to the alarm, the description of which can be found in the heat pump's installation manual and/or directly on the Service interface (access restricted to qualified technicians).

List of zone faults

ERROR CODE	DESCRIPTION OF ALARM TYPE
E077	WATER THERMOSTAT MAIN ZONE or ZONE 1 / ZONE 2
E081	AMBIENT PROBE ANOMALY ZONE 1
E082	AMBIENT PROBE ANOMALY MAIN
E082	AMBIENT PROBE ANOMALY ZONE 2
E084	SUPPLY ZONE 1
E086	SUPPLY MAIN ZONE
E086	SUPPLY ZONE 2
--	COMMUNICATION LOST MAIN / ZONE 1 / ZONE 2
-	ZONES CONFIGURATION NOT COMPLETED

List of heat pump and photovoltaic faults

ERROR CODE	DESCRIPTION OF ALARM TYPE
.....	SEE SPECIFIC ALARMS ON HP

ERROR CODE	DESCRIPTION OF ALARM TYPE	
--	COMMUNICATION HEAT PUMP	LOST
--	COMMUNICATION BE17	LOST

List of storage tank and solar faults

ERROR CODE	DESCRIPTION OF ALARM TYPE
E061	FAULT HW TANK LOW
E062	COLLECTOR PROBE SOLAR PLANT
E060	HW TANK HIGH
--	COMMUNICATION LOST SOLAR PLANT

NOTE:

- Refer to the heat pump manual for the meaning of the anomalies related to it. If the anomaly is related to the heat pump, please note that most alarms concerning the heat pump reset automatically, while others require manual intervention from the technical support service (refer to the installation, use and maintenance manual of the heat pump for more details on this aspect). If communication with the heat pump is lost, check the integrity of the three connection wires between the heat pump and the boiler.
- Refer to the boiler manual for the meaning of the anomalies related to it.

5 UNLOCK FUNCTION

To reactivate operation after an anomaly has occurred, press the  button.

If the error is not resettable or if the unlock attempts do not reactivate the operation, contact the authorised service centre.

Up to a maximum of 5 consecutive unlocking attempts are possible from T300, after which boiler operation can be restored by switching the electric power supply off and back on again.

6 SWITCH-OFF

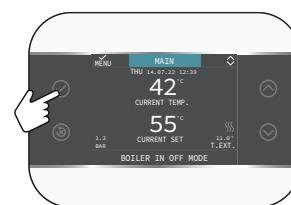
If you are away (e.g. for the weekend or a short trip), set the system status to HEAT OFF by selecting



STATE

BOILER/SYSTEM

OFF



The  symbol is displayed on the screen. With the electric power supply remaining active, the system is protected by the systems:

- Heating anti-freeze: The function starts if the temperature detected by the delivery sensor goes below 6°C. In this phase a heat request is generated until the delivery water temperature rises to a value equal to the ANTI-FREEZE ZONE OFFSET.
- Antifreeze for the domestic hot water tank connected to solar and/or HP



and set parameter ACTUATION TYPE as described in paragraph "2.1 ZONES MANAGER" pag. 63 and select MANAGE DISPLAY.

Depending on the set operating status, the T300 will generate a heating request if the detected ambient temperature is lower than the desired ambient temperature (HEATING AND HOT WATER) or a cooling request if enabled and if the detected ambient temperature is higher than the desired ambient temperature (HOT WATER ONLY).

See paragraph "2.14a Using T300 as ambient controller" pag. 93 for instructions.

8 REPLACING MANAGE DISPLAY



The system configuration operations must be carried out by professionally qualified personnel from the technical support service.

After the T300 is replaced, when switching on it displays an initial screen with the firmware version.

Press the button to start the system configuration wizard.



Configuring from BOILER BOARD allows you to retrieve all previously set programmes except for those related to the WATER TANK HP and HEAT PUMP; these setpoints must be set again.

7 T300 AS AMBIENT CONTROLLER

AMBIENT CONTROLLER = MACHINE INTERFACE + ambient temperature control and time programming

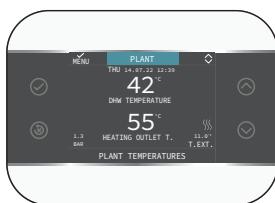
In addition to the machine interface functions described above, the T300 controls the ambient temperature and time programming.

When the T300 is used as an AMBIENT CONTROLLER, in addition to the main MACHINE INTERFACE screen described previously, an AMBIENT CONTROLLER display for the controlled zone is also activated.

To set the T300 as an ambient controller

1A USER LEVEL ACCESS

The USER level is always available to allow for quick use of the functions



Use the buttons to navigate within the menus



Confirm



CANCEL selection / Return to previous screen /
Return to main screen (press > 2 sec.)
RESET alarms

To navigate in the submenus, change values and
change pages PLANT - ZONE / E - SYSTEM

1.1a PLANT



This item indicates to which zone the data shown on the initial screen refer and to which zone the settings accessible with other functions refer.

The presence of one or two zones in addition to PLANT depends on the installation configuration. For this reason, one or more zones mentioned below may not be included in your configuration or may be identified differently.

To change zone, use the and buttons, the other zones can be selected in the following sequence:

- PLANT
- MAIN ZONE (if managed from T300 or room sensor)
- ZONE 1..... (if configured)

The information given in the INFO menu is independent of the active zone.

Selecting MAIN or ZONE 1, no DHW parameter can be set.

2A COMMISSIONING



The installation of the device and any other assistance and maintenance work must be carried out by a qualified technician in accordance with current regulations.

Before programming, ensure that all parts of the system are connected and powered.

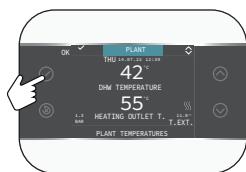
You may be asked to set



NOTE:

The default language is English. Select your desired language using the arrows and confirm with .

To set the values, press to access MENU



and then

└ MENU
└ SETTINGS

2.1a TIME & DATE

For setting the desired HOURS, MINUTES,
DAY, MONTH.

NOTE:

The device automatically changes between
GMT and summer time and vice versa

2.2a DAYLIGHT SAVINGS TIME

Select **FUNCTION ACTIVE** to enable the automatic change between GMT and summer time and vice versa.

2.3a LANGUAGE

To select the desired language. The default language is English.

2.4a BACKLIGHT

If no button is pressed on the display for a certain period, it will enter screen saver mode. The display shutdown time can be set in parameter BACKLIGHT.

2.5a WIFI

See paragraph "4.5 T300" pag. 16.

2.6a TIME SCHEDULE

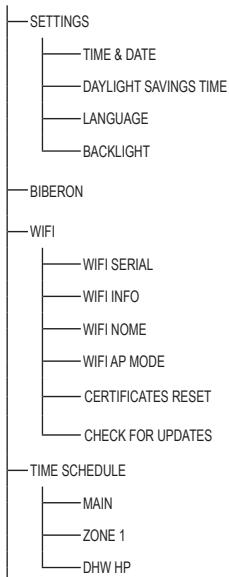
See dedicated paragraph

2.7a FUNCTION BIBERON

Child safe mode locks the DHW setpoint, preventing it from being inadvertently changed. To activate Child safe mode, select

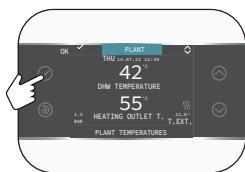
└ MENU
└ BIBERON

set to 1.



2.8a Setting the operating mode

On the PLANT screen, press  and access MENU

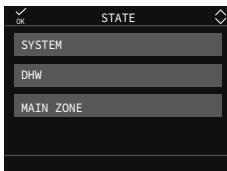


Select

```

  └─ MENU
    └─ STATE
  
```

Set parameters SYSTEM, DHW, MAIN ZONE / ZONE 1 / ZONE... (if configured).



NOTE:

MAIN ZONE is only visible in this menu if the zone is managed by a room thermostat.

BOILER/SYSTEM

To select the operating mode

```

  └─ STATE
    └─ BOILER / SYSTEM
    └─ DHW
      └─ ANTILEGIO CUT OFF
    └─ MAIN ZONE
    └─ HEAT PUMP
      └─ ENABLE NIGHT REDUCT / DISABLE NIGHT REDUCT
      └─ NIGHT MODE START TIME
      └─ NIGHT MODE STOP TIME
  
```

OFF	HEAT OFF
HOT WATER ONLY	Domestic hot water production and COOLING if hybrid system with enabled heat pump. Heating is not active.
HEATING AND HOT WATER	Domestic hot water production and heating

DHW

To manage the DHW operating mode (time programming).

MAIN ZONE

On selecting this function, you can set the status of the main zone by selecting one of the following options:

A) If time programming is not enabled

ZONE ON	Zone requests are met.
HEAT OFF	Zone requests are not met.

B) If time programming is enabled, the menu shows

AUTO	Zone requests are met according to TIME SCHEDULE
MANUAL	Zone requests are always met.
HEAT OFF	Zone requests are not met.

Factory-set default value	Minimum value	Maximum value	Access level
OFF	OFF / HOT WATER ONLY / HEATING AND HOT WATER		USER
AUTO	AUTO / MANUAL		USER
AUTO ZONE ON	AUTO / MANUAL / HEAT OFF (if POR=0) ZONE ON / HEAT OFF (if POR=1)		USER when ANTILEGIONELLA in progress
DEACTIVATE FUNCTION	FUNCTION ACTIVE	DEACTIVATE FUNCTION	USER
20:00	00:00	23:59	USER only if night-time reduction active
09:00	00:00	23:59	USER only if night-time reduction active

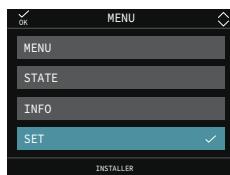
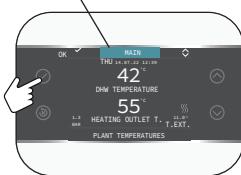
2.9a INFO

See paragraph "3 INFO" pag. 83.

2.10a Setting the setpoints

On the PLANT screen, press  and access MENU

or ZONE

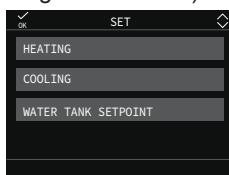


with 1 zone and REQUEST TYPE THERMO-STAT

Select

└ MENU
└ SET

to change the HEATING, COOLING setpoints (if activated) and DHW/WATER TANK SET-POINT (if storage tank added)

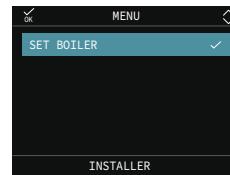
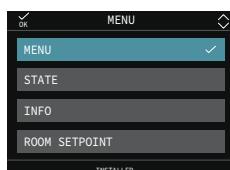
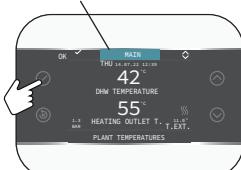


With multiple zones, if thermoregulation is not active, and REQUEST TYPE MANAGE DISPLAY / DEPEND DISPLAY / RF, the heating or cooling delivery setpoint can be set as follows:

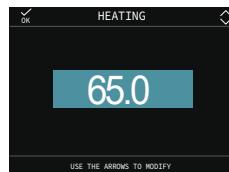
Select

└ MENU
└ SET BOILER

or ZONE



HEATING



If an external sensor is installed, the delivery temperature is automatically selected by the system based on the thermoregulation curve set in the dedicated parameter, which rapidly adjusts the ambient temperature as the outdoor temperature changes. If you wish to increase or decrease the temperature calculated automatically by the electronic board, change the HEATING setpoint to a value within the desired comfort range (-5 ÷ +5).

COOLING (if heat pump configured)



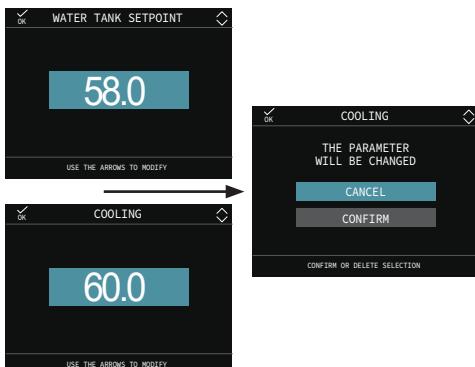
If cooling thermoregulation is active, the delivery temperature is automatically selected by the system based on the set curve, which rapidly adjusts the ambient temperature as the outdoor temperature changes.

If you wish to increase or decrease the temperature calculated automatically by the electronic board, change the COOLING setpoint to a value within the desired comfort range (-5 ÷ +5).

DHW and WATER TANK SETPOINT

This parameter performs a different function depending on the type of system available:

- with a combi boiler, the parameter refers to the temperature of the domestic hot water produced by the boiler.
- with a heating only boiler or a heat pump connected to a storage tank, the parameter refers to the temperature of the domestic hot water stored in the tank (WATER TANK SETPOINT).



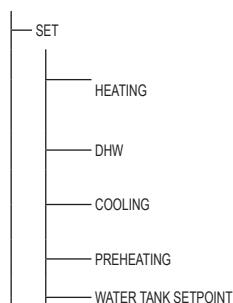
PREHEATING

This function allows the water contained in the domestic hot water exchanger to be kept warm in order to reduce waiting times during use. When the pre-heating function is enabled, the P symbol is lit steady above the DHW icon. During the ignition of the burner following a pre-heating request, the P symbol starts flashing.

PREHEATING function is accessed by selecting SET on the T300 main screen.

Setting the parameter to PREHEATING = 1 activates the boiler's DHW pre-heating function. To deactivate the function, set parameter PREHEATING = 0 again, the P symbol will turn off.

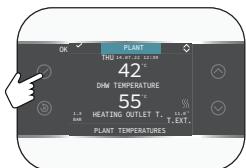
The function is not active with BOILER IN OFF MODE.



Factory-set default value	Minimum value	Maximum value	Access level
80,5 (AT) - 45°C (BT)	MIN CH SET	MAX CH SET	USER
0°C	-5°C	+5°C	if SEXT connected and TA REQUEST TYPE
60,0°C	37,5°C	60°C	USER
18°C 0	4°C -5	20°C +5	if working with fixed setpoint if working with climatic curves
0	0	2	USER only instantaneous boiler
60°C	37,5°C	60°C	USER with boiler

2.11a Time programming

Accessing



└ MENU

└ TIME SCHEDULE

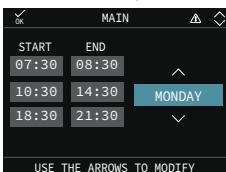
allows you to change the set time programmes according to system configuration:

- MAIN (heating)
- ZONE 1 (heating - if zone 1 configured)
- DHW HP (heat pump DHW)

You can set a time programme for heating and cooling, and for filling the domestic hot water tank based on the system diagram.

! The heating time programme is available if the installer has set parameter POR = 1.

Up to 4 slots can be set, with a start time and an end time, on each day of the week.



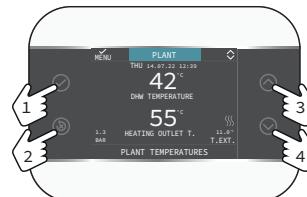
Two time programmes are available with the heat pump: one for Winter and one for Summer. Select the desired season (HOT WATER ONLY or HEATING AND HOT WATER) from MENU/STATE/SYSTEM and then programme DHW HP parameter for each season.

If you wish to exclude the heat pump from heating the storage tank, it is possible to remove (DELETE) all TIME SCHEDULE DHW HP time slots for the day in question.

WARNING:

In HOT WATER ONLY the parameter is set by default with time programming active every day of the week from 05:00 to 08:00 in order to prevent continuous cycle reversals of the heat pump if the cooling function is active. If you wish to modify this setting, please contact the technical support service.

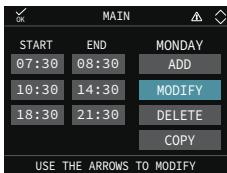
Using the main buttons



	Confirm
	Cancel. Return to main screen (press > 2 sec.)
	Scroll up
	Scroll down

Navigate to the TIME SCHEDULE menu and set up the time slots. The following options are available

ADD	To add a new time slot to the selected day.
MODIFY	To change an existing time slot in the selected day.
DELETE	To delete an existing time slot in the selected day.
COPY	To replicate the time programming of the selected day to other days.



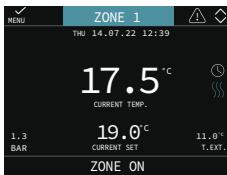
2.13a Switch-off

If you are away (e.g. for the weekend or a short trip), set the system status to HEAT OFF by selecting STATE, SYSTEM in the main menu and then OFF.

With the electric power supply remaining active, the system is protected by the anti-freeze systems.

If you are away for a long period, the following operations are recommended:

- Set the system status to HEAT OFF by selecting STATE, SYSTEM, OFF in the main menu.
- Set the system's power switch to "HEAT OFF".
- Shut off the water cocks of the heating and DHW system.

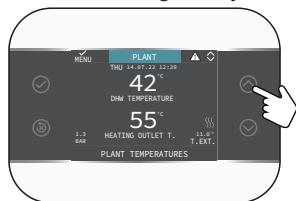


Example

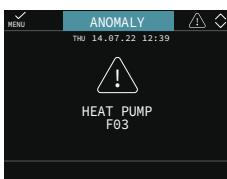
The main zone is set to a time programme and heating is on - active time slot.

2.12a Faults

In the event of an anomaly, the T300 display shows a screen featuring the symbol .



Press the  button until the  symbol is highlighted to access the anomaly description screen.



Unlock function

Some anomalies can be reset using the  button; others are permanent.

 If the error is not resettable or if the unlock attempts do not reactivate the operation, contact the authorised service centre.

Up to a maximum of 5 consecutive unlocking attempts are possible from T300, after which operation can be restored by switching the electric power supply off and back on again.

In this case, the antifreeze and anti-block systems are disabled.

Have a qualified technician drain the heating and DHW system if there is a risk of frost.

2.14a Using T300 as ambient controller

AMBIENT CONTROLLER = MACHINE INTERFACE + ambient temperature control and time programming

In addition to the machine interface functions described above, the T300 controls the ambient temperature and time programming.

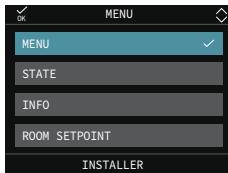
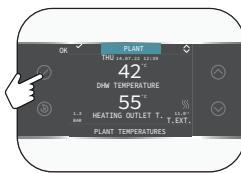
Depending on the operating status set by the installer, the T300 will generate a HEATING request if the detected ambient temperature is lower than the desired ambient temperature (HEATING AND HOT WATER) or a COOLING request if enabled and if the detected ambient temperature is higher than the desired ambient temperature (HOT WATER ONLY).

In AMBIENT CONTROLLER mode, the main screen displays information related to the zone.

Use the  and  buttons to move from one screen to another.

On the MAIN screen, press  to access MENU; the following parameters can be set:

MENU
STATE
INFO
ROOM SETPOINT



MENU

In MENU function, you can access SET BOILER configuration (only if the system is working with a fixed setpoint), SETTINGS and TIME SCHEDULE.

STATE

To set the status of functions DHW (DHW BOOST) and MAIN ZONE (AUTO, MANUAL, HEAT OFF)

- AUTO: ambient temperature control follows the set weekly time programme;
- MANUAL: zone control is always active (24h);
- HEAT OFF: a heating request is never activated for the zone, but a minimum ambient temperature of 8°C is guaranteed.

INFO

This page shows the values of the system inputs or other calculated quantities (such as the heating setpoint calculated based on the set climatic curves). The displayed values are refreshed every 5 seconds.

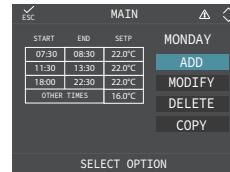
ROOM SETPOINT

ROOM SETPOINT control is activated by selecting COMFORT MODE. This mode allows you to set an ambient temperature value for a given time period, after which the mode returns to that previously set.

2.15a Time programming T300 set as ambient controller

Time programming follows the same rules as those previously described in paragraph "2.11a Time programming" pag. 92, but in this mode, in addition to setting the start and end times for each time slot, it also includes the setting of an ambient temperature setpoint (SETP).

Up to 4 slots can be set, with a start time and an end time, on each day of the week.



NOTE:

If the zone is controlled by a room sensor, the same settings as MANAGE DISPLAY can be set in the screen of the relevant zone.

9 RULES FOR BOILER AND HEAT PUMP INTEGRATION IN HYBRID SYSTEMS

DHW Request

DHW requests can be met with the system in HEATING AND HOT WATER or HOT WATER ONLY state; they cannot be met when the system is in OFF state.



Under normal conditions, with the appliance in OFF state, the boiler or the heat pump may activate due to the anti-freeze function or the combustion analysis function. In both cases, the presence of flame and the activation of the heat pump are indicated by the relevant icon and the type of function in progress scrolling at the bottom of the T300 page.

Configuration with domestic hot water tank (solar and/or heat pump) + combi boiler

The storage tank's domestic hot water is integrated by solar (if available) and/or by the heat pump if the required conditions are met. If the water coming out of the storage tank is not sufficiently hot, (< 48°C if the solar diverting mixing valve kit is present), the boiler would provide heat integration based on the setpoint set. In any case, it is the mixing valve present in the system and installed downstream of the domestic hot water circuit that defines the final temperature of the DHW sent to the utilities.

The heat pump cannot be used for DHW if the detected outdoor temperature is lower than that set in parameter MIN DHW OUT TEMP. In the event of simultaneous requests, the boiler will meet the DHW request while the heat pump can meet any heating or cooling request.

Configuration with domestic hot water tank (heat only boiler and heat pump)

The storage tank's domestic hot water is integrated by the boiler and by solar if the required conditions are met.

The storage tank's domestic hot water is integrated by the boiler and by solar if the required conditions are met. For the boiler, a DHW request always takes priority over a heating request; the system can meet a DHW request with the boiler and with the heat pump.

The boiler fills the upper part of the storage tank in such a way as to keep its temperature above the DHW SETPOINT value set by the user.

The heat pump fills the lower part of the storage tank in such a way as to keep its temperature above the DHW SETPOINT value set by the user, less an offset value programmable in parameter DHW OFFSET (factory setting 10°C).

The heat pump cannot be used for DHW if the detected outdoor temperature is lower than that set in parameter MIN DHW OUT TEMP. Solely if the boiler is faulty, the detected outdoor temperature must be above that set in parameter MIN EMERG OUT T.

In the event of simultaneous requests (DHW and heating or cooling), the boiler will meet the DHW request while the heat pump manages the heating or cooling request, which takes priority for the heat pump.

Configuration with DHW HW TANK (HEATING only boiler and solar)

The storage tank's domestic hot water is integrated by the boiler and by solar if the required conditions are met.

For the boiler, a DHW request always takes priority over a heating or cooling request; the system can meet a DHW request SOLELY with the boiler. In the event of simultaneous requests, the boiler will meet the DHW request while the heat pump can meet any heating or cooling request.

HEATING Request

Heating requests can be met with the system in HEATING AND HOT WATER state; they cannot be met when the system is in HOT WATER ONLY or OFF state.

In principle, in response to a heating request, the system prioritises the use of the heat pump after the outdoor temperature values and the desired water temperature (setpoint) have been verified.

If (FILTERED OUTDOOR TEMP > MIN OUTDOOR TEMP) and (setpoint + SP INCR HIGH TEMP \leq 60°C (heat pump type 0 and 1) \leq 75°C (heat pump type 2)), the heat pump switches on; if the heat pump's delivery sensor does not reach a temperature $>$ setpoint - BOILER INTEGR DELAY within a certain time (set in parameter INTEGRATION OFFSET), the heat pump switches off and the boiler switches on. To prevent the heat pump and boiler continuously switching on and off, the boiler is kept on for a minimum period (set in parameter HP INTEGR DELAY) after which, if the boiler delivery sensor detects a temperature $>$ setpoint (setpoint + parameter SP INCR HIGH TEMP or SP INCR LOW TEMP, if the latter is set to a value other than 0), the boiler switches off and the heat pump switches on.

There is a waiting time in the transition from one heat generator to another (parameter BOILER WAITING and HEAT PUMP WAITING TIME, factory setting 2 min), during which both generators are turned off to allow for the completion of any ongoing post-circulation.

The delivery temperature of the generator working at that moment is displayed on the T300 main screen.

If (FILTERED OUTDOOR TEMP < MIN OUTDOOR TEMP) or (setpoint + SP INCR HIGH TEMP $>$ 60°C (heat pump type 0 and 1) $>$ 75°C (heat pump type 2)) or the heat pump has a permanent fault, the system switches on the boiler after the time set in WARNING VALIDATION+BOILER WAITING.

If the boiler has a fault, the heat pump can be switched on after the time set in HEAT PUMP WAITING (default 2 min) if (FILTERED OUTDOOR TEMP $>$ MIN EMERG OUT T) and (setpoint + SP INCR HIGH TEMP \leq 60°C (heat pump type 0 and 1) \leq 75°C (HP type 2)).

COOLING Request

Cooling requests can be met with the system in HOT WATER ONLY state if the heat pump is enabled for cooling; they cannot be met when the system is in HEATING AND HOT WATER or OFF state.

Cooling requests can only be met by the heat pump.

COOLING HEAT PUMP

During heating mode, the heat pump may activate a COOLING cycle to eliminate any ice formed on the external battery due to outdoor temperature conditions.

Under these conditions, the heat pump cannot guarantee the required water temperature, which will be met by the boiler (if present). COOLING status is indicated with a scrolling message at the bottom of the page on MANAGE DISPLAY

The zones with a heat request are kept open to ensure the circulation of the minimum water flow required by the heat pump for proper COOLING.

HEAT PUMP ANTI-FREEZE

This function operates during cooling mode and protects the pump's heat exchanger from the risk of freezing. If activated, it is signalled by T300 with a scrolling message at the bottom.

The heat pump cannot guarantee the required water temperature in this condition.

PHOTOVOLTAIC

The photovoltaic input is considered closed if it is detected in this state for longer than PV ON VALIDATION (1min), while it is considered open if it is detected in this state for longer than PV OFF VALIDATION (30min).

If the contact is considered closed:

- the icon on the main screen flashes, the icon also appears (not flashing) on the standby screen.
- the MIN OUTDOOR TEMP value is reduced by ELECTRIC CONVENIENCE, ensuring it does not go below the limit MIN EMERG OUT T.
- the MIN DHW OUT TEMP value is reduced by ELECTRIC CONVENIENCE, ensuring it does not go below the limit MIN EMERG OUT T.

If the photovoltaic input is considered open:

- the PHOTOVOLTAIC icon stops flashing;
- the original convenience points are restored.

2. EXAMPLE SYSTEM AND WIRING DIAGRAMS

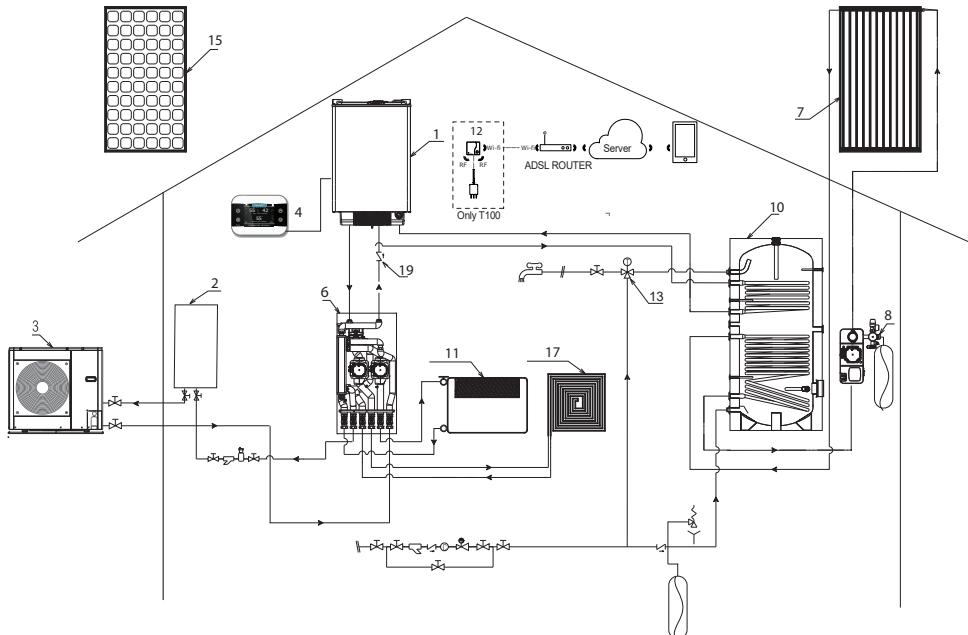
For further details on the terminal board of the indoor unit, refer to its installation manual.

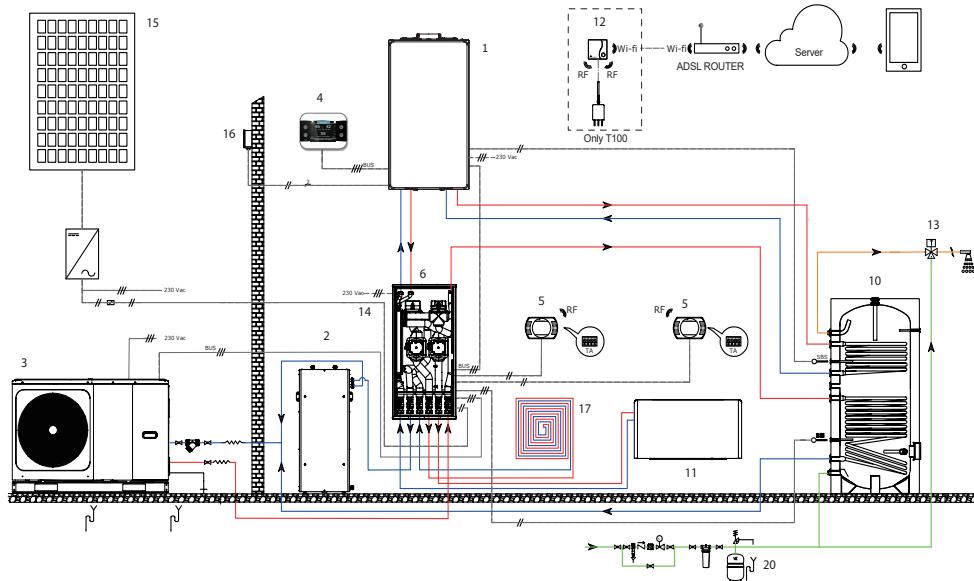
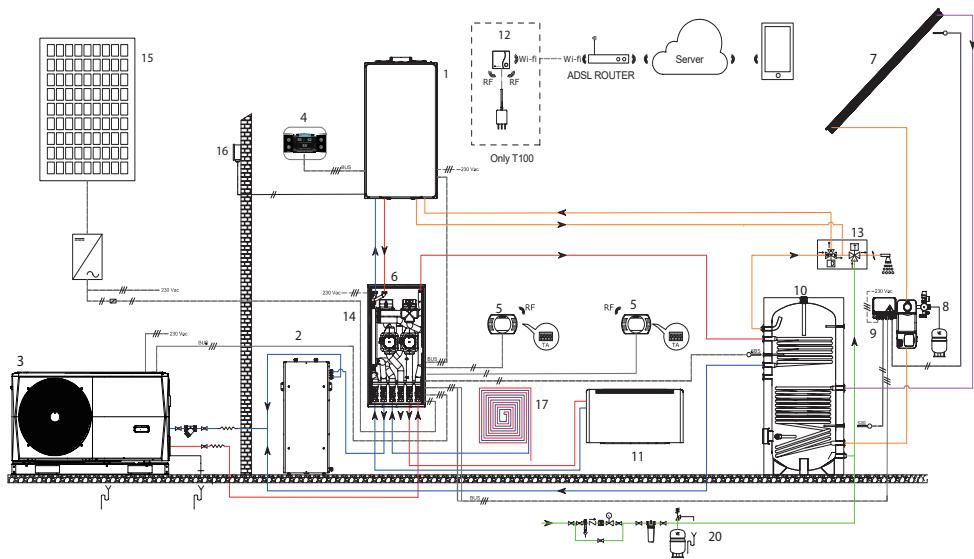
⚠ The diagrams shown below are examples and do not represent the full range of the applications.

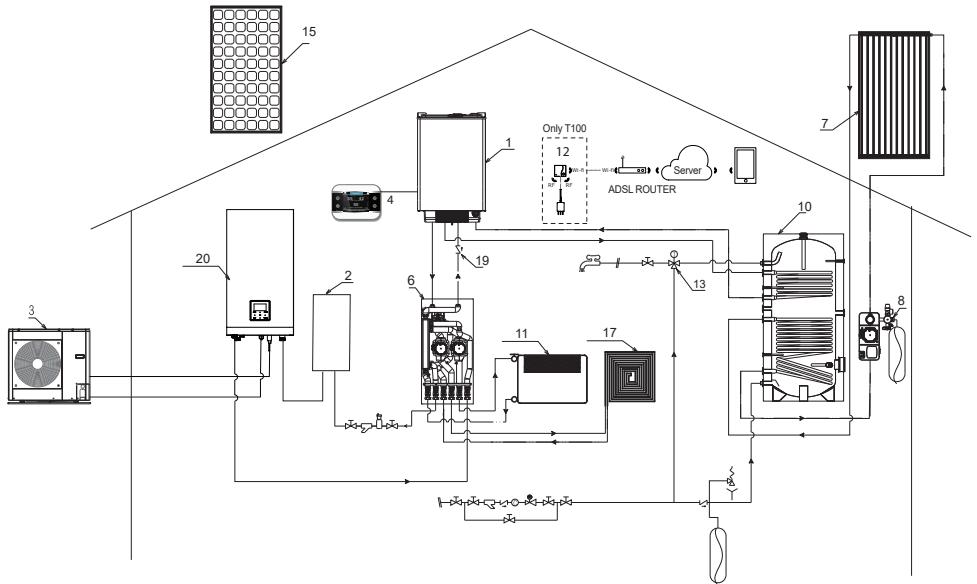
Legend of hydraulic diagrams

1. boiler
2. Inertia tank (install on the return)
3. Heat pump with RS485 BUS
4. MANAGE DISPLAY
5. T300/T200/T100/room sensor/room thermostat
6. Hybrid distributor kit (available in versions 1 direct, 2 direct and 1 direct + 1 mixed)
7. Solar collector
8. Return only solar module assembly, comprising solar hydraulic module kit + solar interface kit + solar expansion tank kit
9. Solar management board
10. Double coil domestic hot water tank
11. Fan coil/direct zone
12. Wi-fi module
13. Diverter mixing valve
14. Photovoltaic input board
15. Photovoltaic with inverter
16. External sensor
17. Mixed zone
18. Electrical Heating Element
19. Check valve (available with the hybrid distributor - to be inserted in the boiler's return connection)
20. DHW expansion tank (accessory)
21. Split heat pump indoor unit

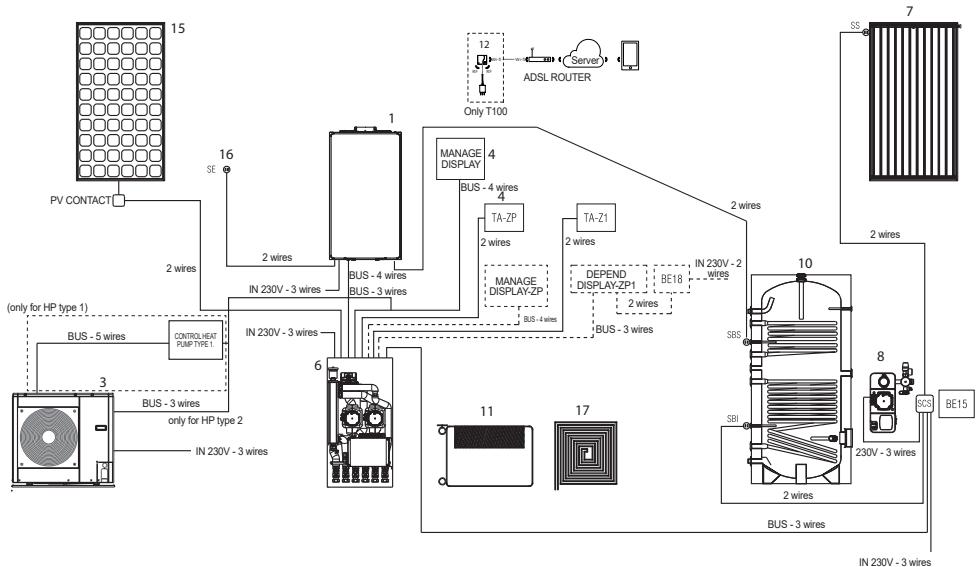
1.1 Examples of system diagrams for hybrid systems

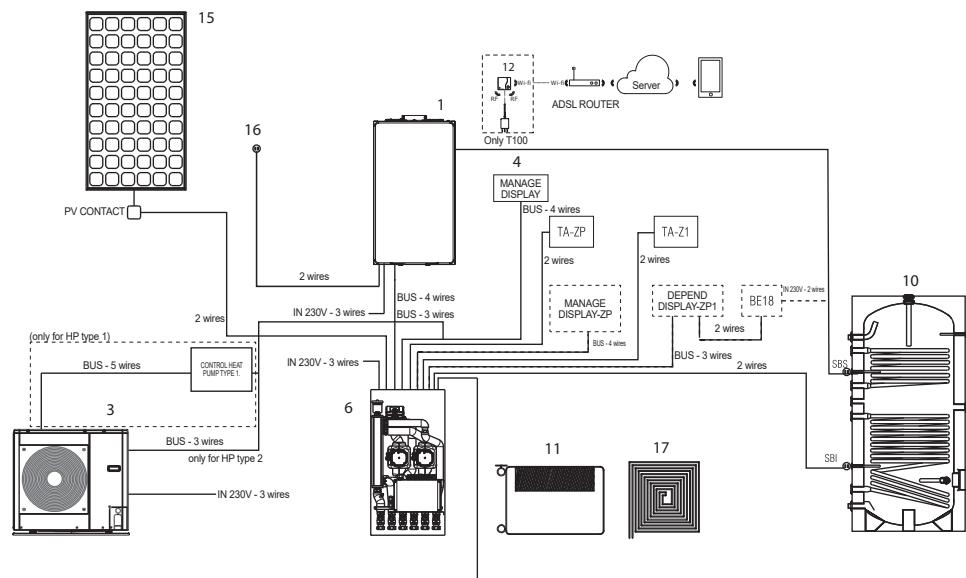
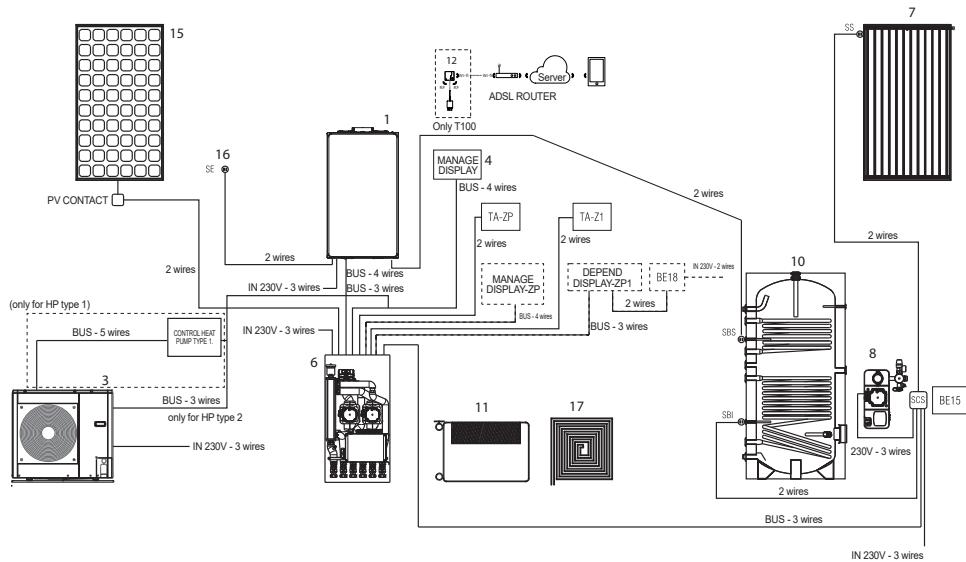


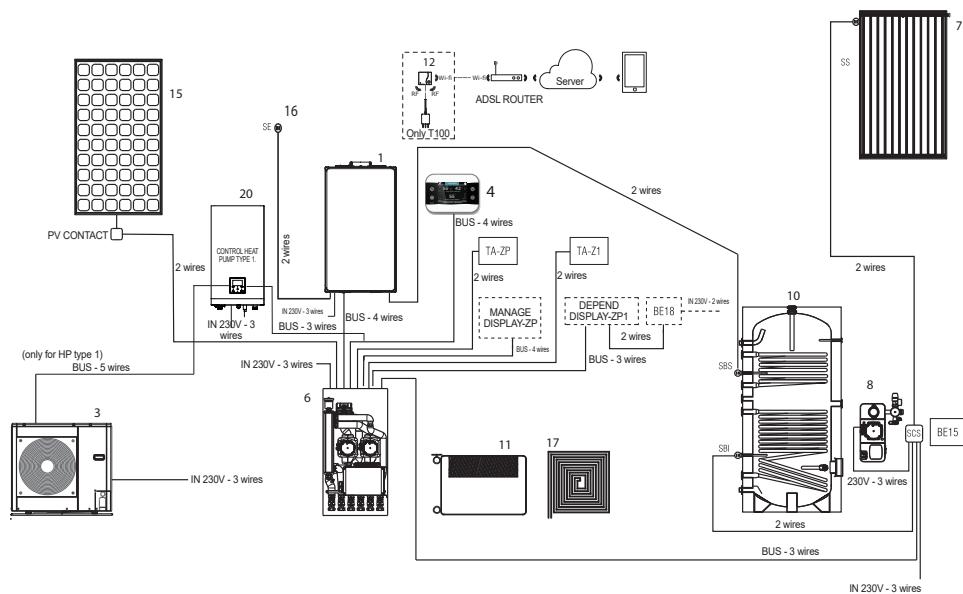




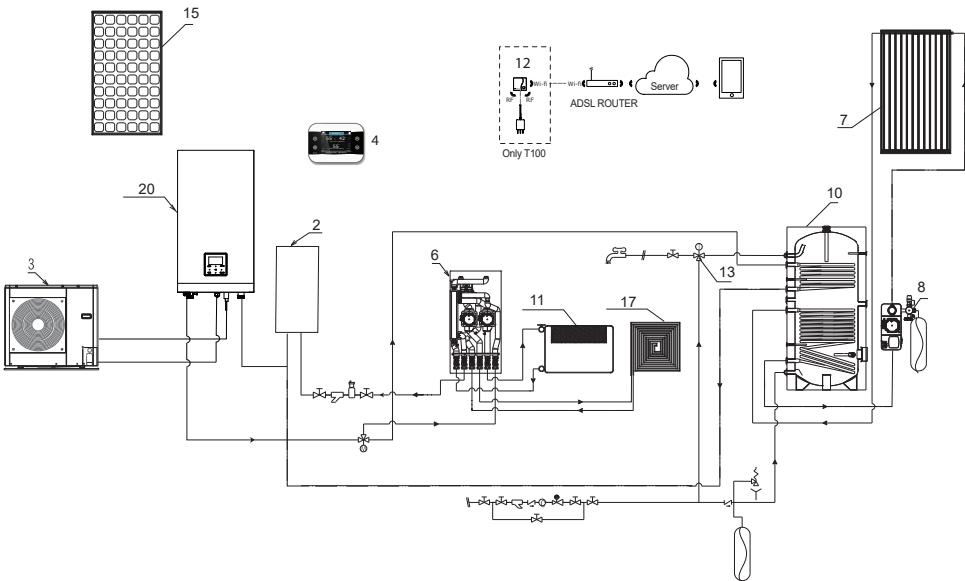
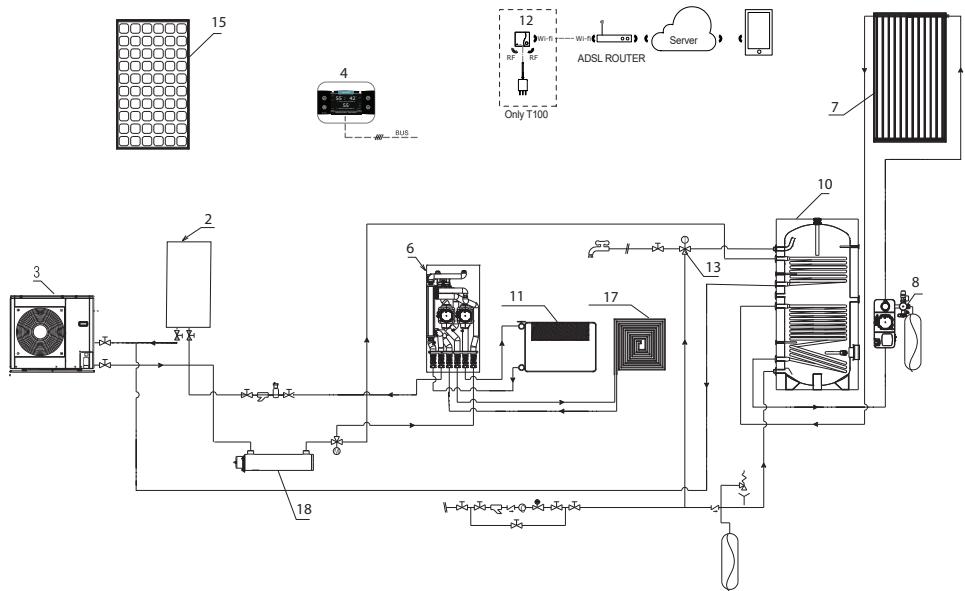
1.2 Examples of wiring diagrams for HYBRID systems

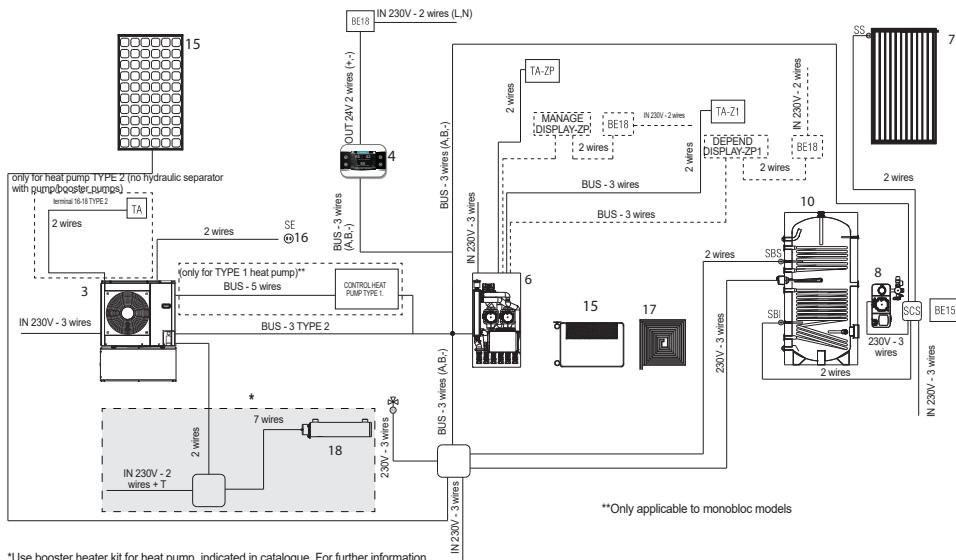






1.3 Examples of wiring diagrams for FULL ELECTRIC systems





****Only applicable to monobloc models**

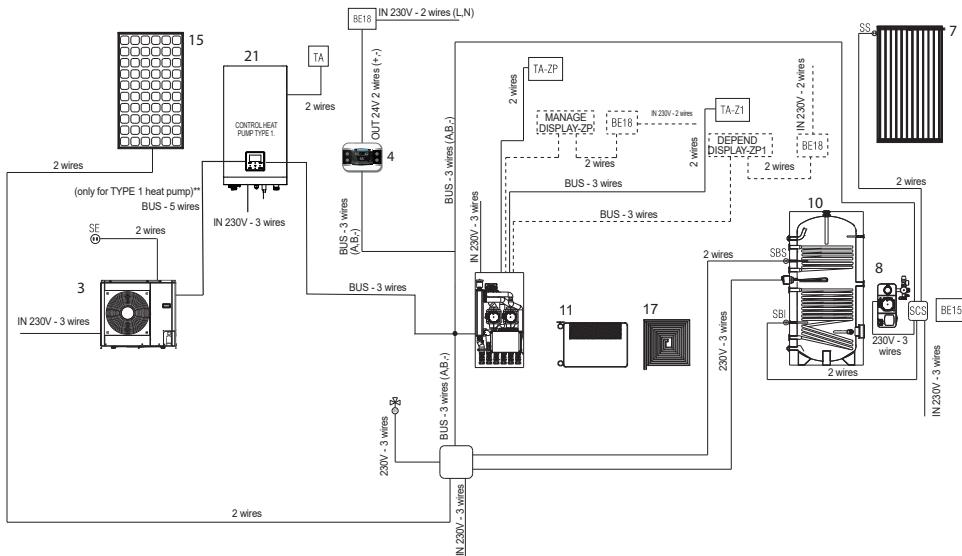
*Use booster heater kit for heat pump, indicated in catalogue. For further information,

Use booster heater kit for heat pump, indicated refer to the instruction sheet of the kit for this function.

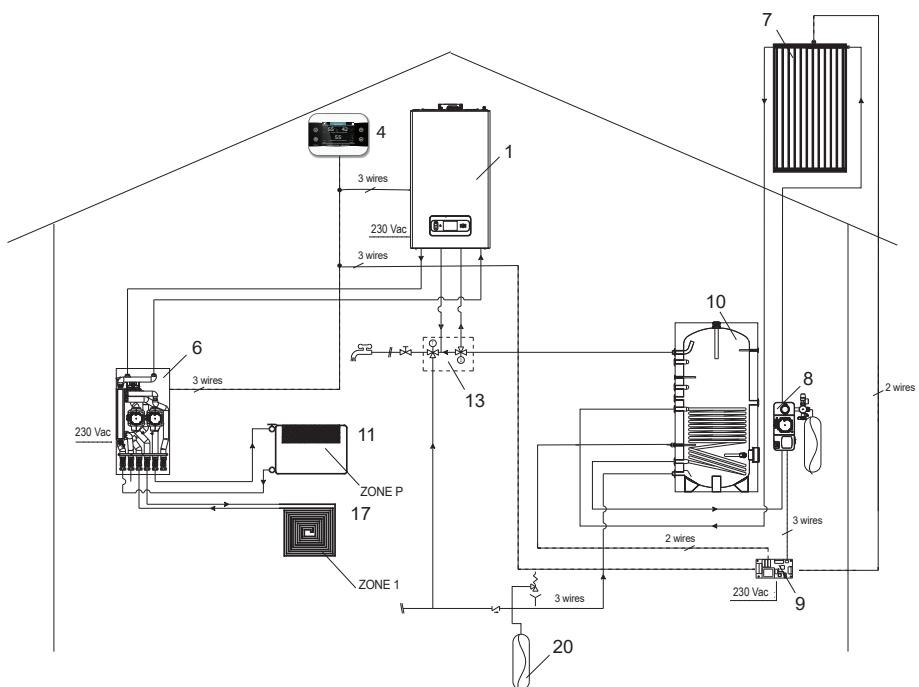
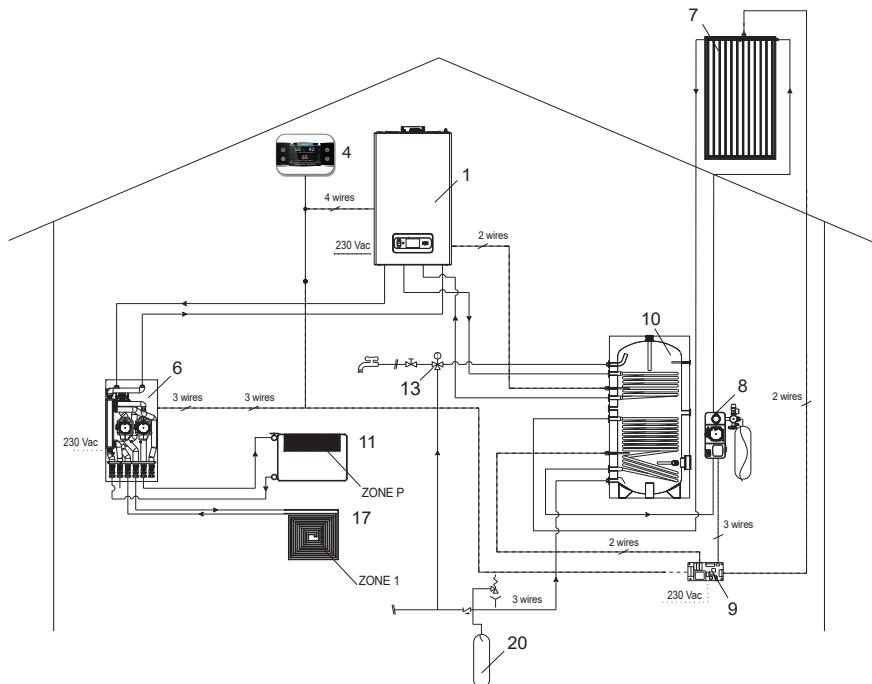
For TYPE 2 HEAT PUMP, use 30-31 terminals.

For TYPE 1 HEAT PUMP, use the heat pump's 14-17 terminals. The function is the same as the heat pump's control terminals.

The function is managed by the heat pump, see its installer manual for further details.



1.4 Examples of system and wiring diagrams for boilers



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The company is constantly striving to perfect its entire production range, so the design and size characteristics, technical data, equipment and accessories may vary.