

Recess Mounted Heat Interface Unit - SATK series

SATK50-60 series

INSTRUCTIONS FOR INSTALLATION, COMMISSIONING AND MAINTENANCE



Function

The SATK series HIU allows independent control of heat regulation and domestic hot water production within centralised heating systems.

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Product range

- SATK50103** Recess mounted heat interface unit for LOW temperature heating, instantaneous domestic hot water production
- SATK50103HE**

- SATK50203** Recess mounted heat interface unit for MEDIUM temperature heating, instantaneous domestic hot water production
- SATK50203HE**

- SATK50303** Recess mounted heat interface unit for HIGH temperature heating, instantaneous domestic hot water production

- SATK60103** Recess mounted indirect heat interface unit for instantaneous domestic hot water production
- SATK60103HE**

SAFETY INSTRUCTIONS

WARNINGS



**These instructions must be read and understood before installing and maintaining the device.
CAUTION! FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN A SAFETY HAZARD!**

- 1 The device must be installed, commissioned and maintained by qualified technical personnel in accordance with national regulations and/or relevant local requirements.
- 2 If the device is not installed, commissioned and maintained correctly in accordance with the instructions provided in this manual, it may not work properly and may endanger the user.
- 3 Clean the pipes of any particles, rust, incrustations, limescale, welding slag and any other contaminants. The hydraulic circuit must be clean.
- 4 Make sure that all connection fittings are watertight.
- 5 When connecting water pipes, make sure that threaded connections are not mechanically overstressed. Over time this may result in breakage, causing water damage and/or personal injury.
- 6 Water temperatures higher than 50°C may cause severe burns. When installing, commissioning and maintaining the device, take the necessary precautions so that these temperatures will not be hazardous for people.
- 7 In the case of particularly hard or impure water, there must be suitable provision for filtering and treating the water before it enters the device, in accordance with current legislation. Otherwise the device may be damaged and will not work properly.
- 8 Any use of the device other than its intended one is prohibited.
- 9 Any coupling of the device with other system components must be made while taking the operational characteristics of both units into consideration.
- 10 An incorrect coupling could compromise the operation of the device and/or system.

NOTE: Risk of electric shock. Live parts. Shut off the electric supply before opening the device box.

- 1 During installation and maintenance operations, always avoid direct contact with live or potentially hazardous parts.
- 2 The device must not be exposed to water drops or humidity, direct sunlight, the elements, heat sources or high intensity electromagnetic fields. This device cannot be used in areas at risk of explosion or fire.
- 3 The device must be connected to an independent bipolar switch. If work has to be done on the device, cut off the electric supply first. Do not use devices with automatic or time reset, or which may be reset accidentally.
- 4 Use suitable automatic protection devices in accordance with the electrical characteristics of the region where the device is installed and in compliance with current legislation.
- 5 The device must always be earthed before it is connected to the electric supply. If the device has to be removed, always disconnect the earth connection after disconnecting the electric supply conductors. Check that the earth connection has been made to the highest of standards under applicable legislation.
- 6 Electrical installation must only be carried out by a qualified technician, in accordance with legal requirements.

Key to symbols



Primary circuit flow



Primary circuit return



Domestic hot water outlet



Cold water inlet



Low temperature circuit flow



Low temperature circuit return



Medium temperature circuit flow



Medium temperature circuit return

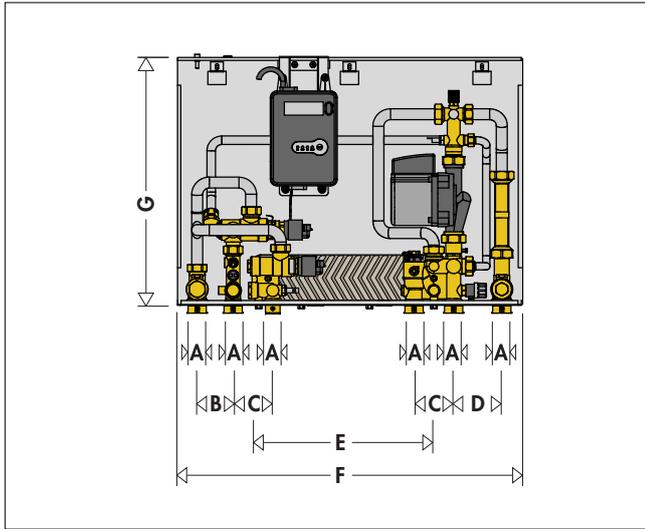


High temperature circuit flow

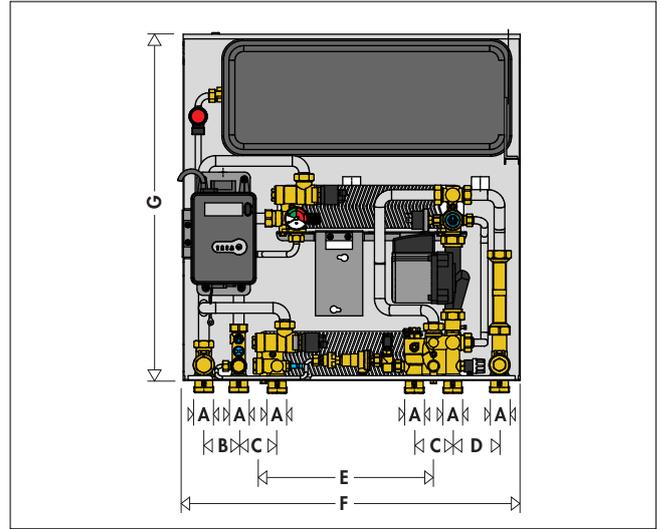


High temperature circuit return

Dimensions



Code	A	B	C	D	E	F	G
SATK50	1"	59	65	79	232	570	387



Code	A	B	C	D	E	F	G
SATK60	1"	59	65	79	232	570	590

SATK50/HE technical specifications

Medium:	water
Maximum percentage of glycol:	30%
Maximum medium temperature:	85°C
Maximum working pressure:	- primary circuit: 10 bar - domestic hot water circuit: 10 bar
Nominal DHW exchanger capacity:	40 kW
Maximum recommended primary circuit flow rate:	1,2 m³/h
DHW circuit maximum flow rate:	18 l/min (0,3 l/s)
Minimum flow to activate domestic water flow meter:	2,7 l/min ±0,3
Maximum differential pressure on domestic water modulating valve:	Δp 0,9 bar
Maximum differential pressure on mixing valve:	Δp 0,9 bar
Power supply:	230 V (ac) ±10% 50Hz
Power consumption:	- SATK50 105 W - SATK50...HE 75 W
Protection class:	IP 40
Pump:	- SATK50 UPS 15-60 - SATK50...HE UPS2 15-60
Pump by-pass setting:	0,45 bar
Actuators:	stepper 24 V
Temperature probes:	NTC 10 kΩ
Safety thermostat:	55°C ±3

Materials

Components:	brass EN12165 CW617N
Fitting pipes:	steel
Frame:	RAL 9010 painted steel
Exchanger:	braze welded stainless steel

SATK60103/HE technical specifications

Medium:	water
Maximum percentage of glycol:	30%
Maximum medium temperature:	85°C
Maximum working pressure:	- primary circuit: 16 bar - secondary circuit: 3 bar - domestic hot water circuit: 10 bar
Nominal heating exchanger capacity:	15 kW
Nominal DHW exchanger capacity:	40 kW
Maximum recommended primary circuit flow rate:	0,9 m³/h
DHW circuit maximum flow rate:	18 l/min (0,3 l/s)
Minimum flow to activate domestic water flow meter:	2,7 l/min ±0,3
Maximum differential pressure on modulating valve:	Δp 0,9 bar
Power supply:	230 V (ac) ±10% 50Hz
Power consumption:	- SATK60 105 W - SATK60...HE 75 W
Protection class:	IP 40
Pump:	- SATK60 UPS 15-60 - SATK60...HE UPS2 15-60
Pump by-pass setting:	0,45 bar
Actuators:	stepper 24 V
Temperature probes:	NTC 10 kΩ
Safety relief valve setting:	3 bar
Safety thermostat:	55°C ±3
Expansion vessel:	7,5 l
Pressure switch:	opening 0,4 bar - closing 0,8 bar

Materials

Components:	brass EN12165 CW617N
Fitting pipes:	steel
Frame:	RAL 9010 painted steel
Exchanger:	braze welded stainless steel

Installation

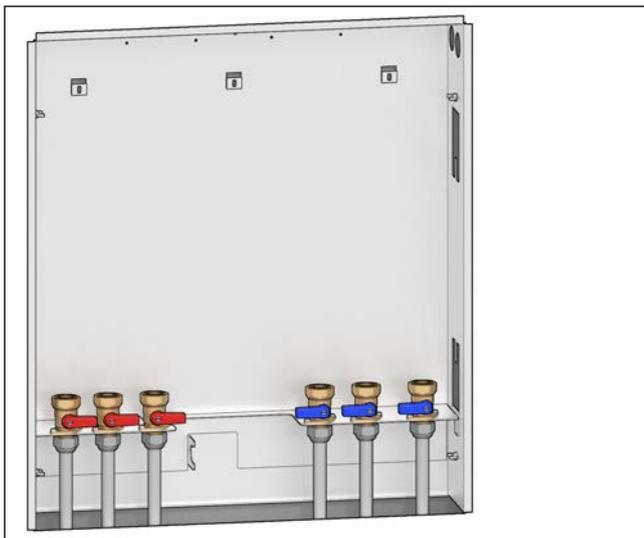
The SATK series HIU is designed for installation in a sheltered domestic environment (or similar), therefore it cannot be installed or used outdoors, i.e. in areas directly exposed to the effects of the weather.

Outdoor installation may cause malfunctioning and hazards. If this advice is not heeded, the manufacturer cannot be held responsible for any resulting damage.

In the event of a malfunction, fault or incorrect operation, the device should be deactivated; contact a qualified technician for assistance.

Installation of the template box

The hydraulic connections must be made using template boxes code 794950 (for SATK50 series) or 794960 (for SATK60 series). Positioning of the template box is a necessary and essential prerequisite for installation of SATK50 - 60 series heat interface units. After fitting the box in the wall recess proceed with the installation of the following lines:



Hydraulic:

1. connection to the central system line
2. heating circuit connection

The SATK50103/HE HIU is equipped with an outlet for supplying a high temperature heating circuit (e.g. towel warmers).

This connection, which is upstream the mixing valve, is not controlled by the electronic regulator, we therefore recommend installing thermostatic or thermo-electric valves controlled by a dedicated chrono-thermostat in order to avoid continuous water circulation.

We also recommend installing a flow regulator (maximum 120 l/h) to avoid to penalize DHW production.

3. domestic hot water circuit connection (if installation of the domestic hot water template code 794540 is required, comply with the associated documentation).
4. conveyance of safety relief valve and charging unit backflow preventer discharge (SATK60103/HE only)

Electrical:

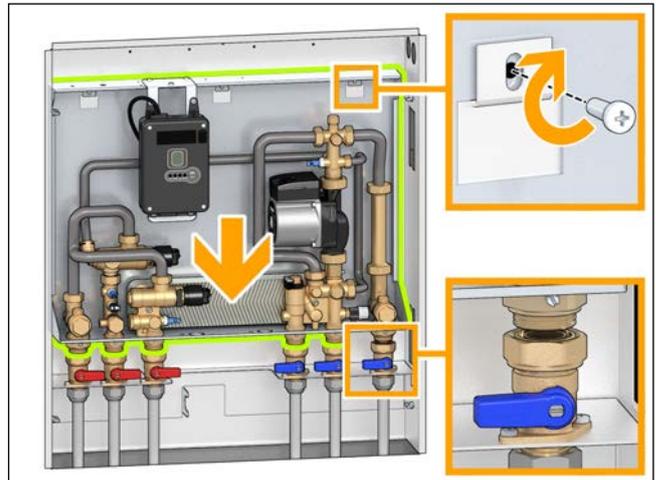
1. electricity mains supply 230 V (ac) – 50 Hz
2. chrono-thermostat/thermostat line (potential-free)
3. centralised bus line for heat meter data transmission (if required)
4. centralised electric supply line for heat meter (if required).

Heat Interface Unit Installation

Before installation of the heat interface unit it is recommended to carry out accurate flushing of all the pipes of the system in order to remove any residue or impurities that could impair correct operation.

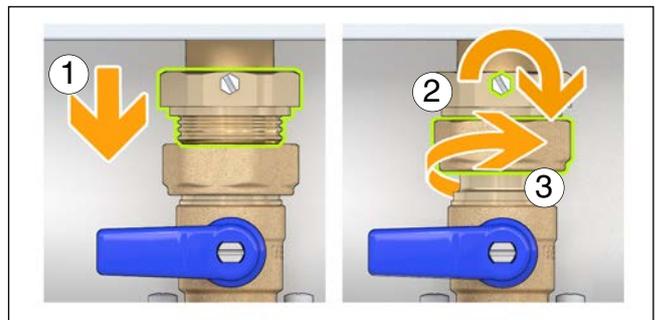
After closing the shut-off valves proceed with fitting the heat interface unit in the template box in accordance with the following instructions.

- 1) Position the heat interface unit, hooking it with the tabs on the bottom of the template box. Secure the unit mechanically using the screws provided.
- 2) Lock the nuts to the telescopic connection joints in such a way as

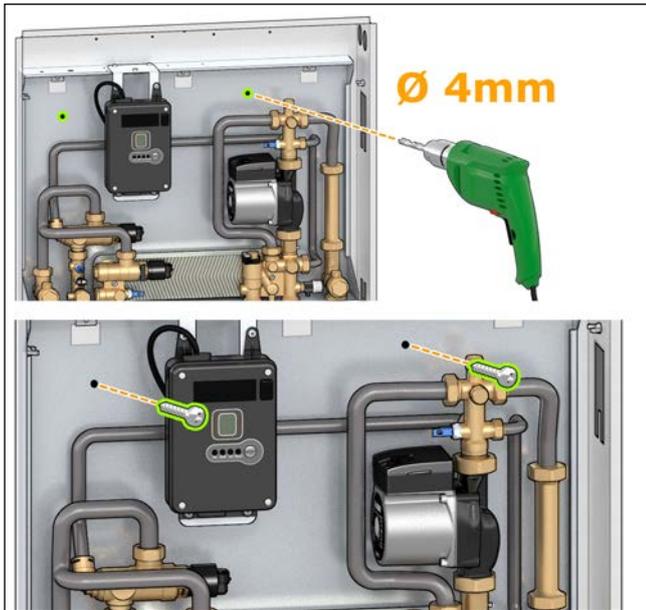


to ensure the connection is watertight. To facilitate free sliding movement of the fittings loosen the screws with which they are fitted.

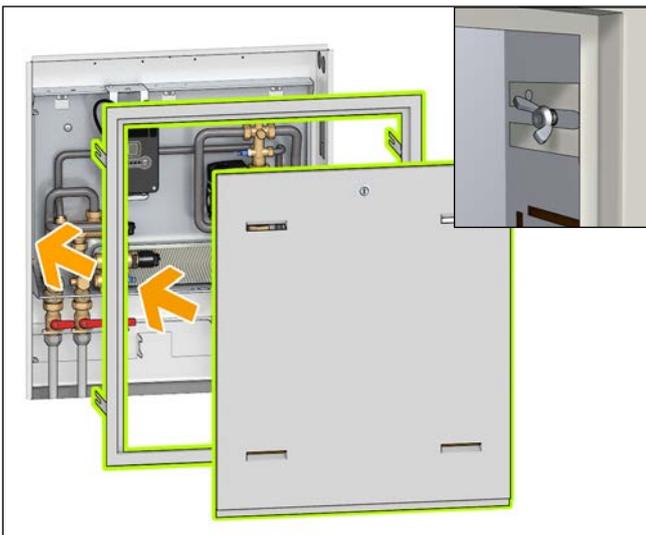
Once you have made the connection and checked that it is watertight, retighten the previously loosened screws.



- 3) Drill a Ø 4 mm thru-hole between the two sheet metal bases and insert the two self-tapping screws provided.



- 4) Fit the frame so it is flush with the wall surface and secure it to the template box using wing screws. Now fit the cover.



Commissioning

Filling the central heating system

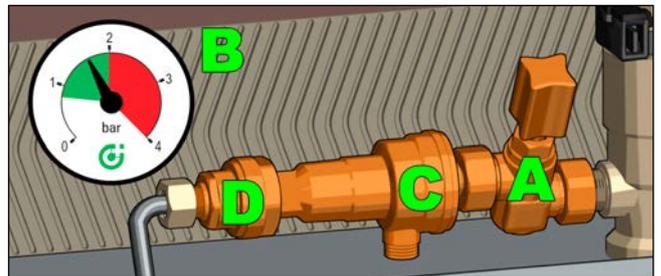
Open the shut-off valves and, in the central heating system, proceed with charging the system to the design pressure. Once these procedures are complete, vent the system and check its pressure again (repeat the filling process if necessary)

Filling the secondary circuit (SATK60103/HE only)

SATK60103/HE series HIU are fitted with a filling unit complete with backflow preventer (C), check valve (D) and cock (A).

The first time the system is filled, or for subsequent top-up procedures following a heating circuit pressure switch fault indication, restore system pressure (1,2 - 2 bar) by opening the cock (A) and monitoring the value using the pressure gauge (B).

Once the correct pressure has been reached, close the cock (A), vent the system and check its pressure again (repeat the filling process if necessary).



System start-up

Before starting the HIU, visually check that the hydraulic connection is watertight and the electric wiring.

After finishing the check, activate the electric supply to the HIU and check for the presence of any error signals.

If there are any, eliminate the fault indicated (see page 7) and proceed as described on the following pages, setting the set point of the domestic water and heating cycles, programming the thermostat/chrono-thermostat according to the desired temperatures and times, and checking the operating cycles.

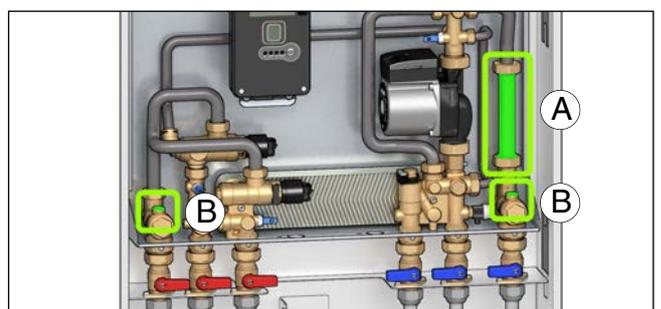
Heat meter installation

The HIU is designed to house a compact, 130mm long, heat meter with 1" threaded connections.

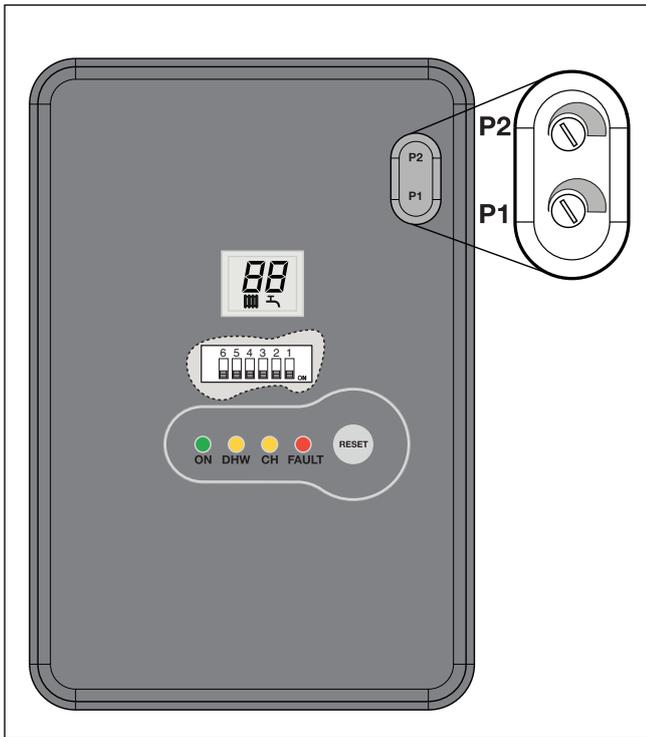
Before carrying out any maintenance, repair or part replacement work, proceed as follows:

- cut off the electric supply
- remove the cover
- close the shut-off valves
- empty the HIU using the drain cocks provided
- remove the template (A) located on the return pipe
- remove the caps (B)
- install the probes in the 1/4" pockets (B) provided
- install the flow meter on the return pipe.

Please refer to the heat meter technical data sheets for further information.



Electronic regulator



Operating principle

All heating and domestic hot water functions offered by SATK50 and SATK60 series HIUs are controlled by a digital regulator.

Automatic controller functions

Reset diverter/modulating valve to zero

Immediately after the power supply has been switched on, the position of the installed diverter/modulating valves is reset to zero.

Pump anti-clog

When the pump is not in use, it is powered for a period of 5 seconds every 24 hours.

Diverter/modulating anti-clogging cycle

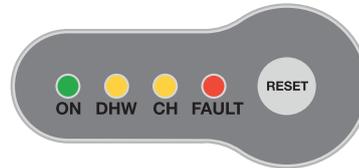
The anti-clogging cycle for the diverter/modulating valve is run every 24 hours.

User interface

The user interface, built into the PCB, consists of the following devices:

• LED indicator

The various functions and faults are signalled by either flashing or permanent illumination of the LEDs.



- ON** - Electric supply 230 V (ac)
- DHW** - Domestic hot water cycle
- CH** - Heating cycle
- FAULT** - Fault detected

• RESET key

It allows restoration of normal function after the safety thermostat has been triggered and activation/deactivation of the floor slab heating function.



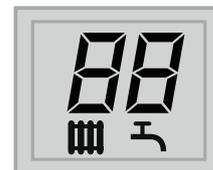
• Trimmers for set-point settings

These allow setting of the temperature set-point of the operating cycles with the associated value shown on the display.



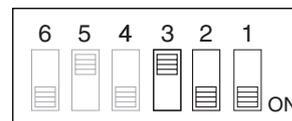
• LCD display

It shows the programmed set-point temperatures and the error codes.



• Dip switches

They allow setup of the various models and enabling the optional functions



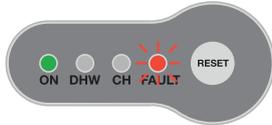
Safety and alarms

Error codes associated with faults signalled by the lighting up of the FAULT LED are shown on the display.

Heating circuit pressure switch fault

SATK60103/HE

Error code 4



For the SATK60103/HE series indirect HIU the regulator continuously monitors the **status of the pressure switch controlling the pressure of the water** in the heating circuit.

In case the pressure falls in the secondary circuit, the pressure switch is activated, the pump shuts down and the heating modulating valve closes.

This fault does not affect the production of DHW.

Domestic water drawing requests will continue to be served normally. N.B.: A low expansion vessel pre-charge value can cause a pressure switch fault (see page 14).

Removing a fault

In order to resume the operating mode, the correct water pressure in the heating circuit must be restored (see page 5).

Probe fault

If a temperature probe fails, the associated cycle will be stopped immediately and disabled.

Any requests to run cycles not associated to the previous one will continue to run normally.

Heating probe fault

Error code: 5



Domestic water probe fault

Error code: 6



Compensation probe fault

SATK50103/HE

SATK50203/HE

SATK60103/HE

Error code: 15



Removing a fault

Normal operating conditions are restored automatically once the faulty probe is working properly again (see page 14).

Safety thermostat cutout

SATK50103/HE

SATK60103/HE - at LOW temperature setting

Error code 69



The HIUs configured to support low temperature heating continuously monitor the safety thermostat controlling the flow temperature.

If the safety thermostat is activated during a general cycle, the heating circulation pump immediately comes to a stop and the modulating/mixing valve is completely closed. The thermal safety valve (SATK50103/HE) is closed.

In the event of a power failure, the thermal safety valve prevents hot water from entering the heating system.

After the user has reset the safety thermostat, the thermal safety valve can only be re-enabled when the mixing/modulating valves are completely closed.

This means that if a domestic water cycle is in progress, the activation of the shut-off valve will be postponed until the end of that domestic water cycle.

Removing a fault

To restore the operating mode the manual reset button will need to be pressed.



Thermal safety valve fault

SATK50103/HE

Error code 76



Removing a fault

Normal operating conditions are restored automatically once the faulty safety valve is working properly again.

Incorrect switch setting

Error code 79



Removing a fault

Restore correct switch setting.

SATK50103/HE LOW temperature heat interface unit

Characteristic components

1. Template box (code 794950)
2. Electronic regulator
3. Thermal safety relief valve
4. Heating mixing valve
5. Heating flow temperature probe
6. Thermal safety thermostat
7. Heat meter flow temperature probe pocket
8. System strainer
9. DHW production modulating valve
10. DHW temperature probe
11. DHW heat exchanger
12. DHW priority flow meter
13. Drain cock
14. Heat meter return temperature probe pocket
15. Protective pump by-pass
16. Pump
17. Heat meter spacer template
18. Flow temp. compensation return probe
19. Air vent cock

Functional characteristics

Heating range 25–45°C

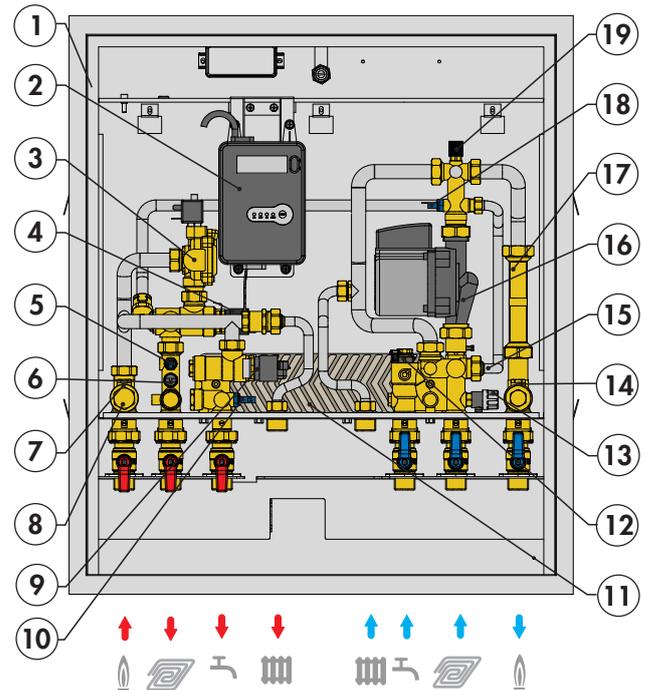
Set point regulation

DHW production range 42–60°C

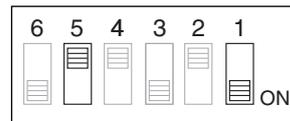
Optional functions

Domestic water cycle: - domestic water preheating function

Heating cycle: - modulating temperature regulation with compensated set point
- floor slab heating function



Factory settings



SATK50203/HE MEDIUM temperature heat interface unit

Characteristic components

1. Template box (code 794950)
2. Electronic regulator
3. Heating mixing valve
4. Heating flow temperature probe
5. Heat meter flow temperature probe pocket
6. System strainer
7. DHW production modulating valve
8. DHW temperature probe
9. DHW heat exchanger
10. DHW priority flow meter
11. Drain cock
12. Heat meter return temperature probe pocket
13. Protective pump by-pass
14. Pump
15. Heat meter spacer template
16. Flow temperature compensation return probe
17. Air vent cock

Functional characteristics

Heating range 50–75°C

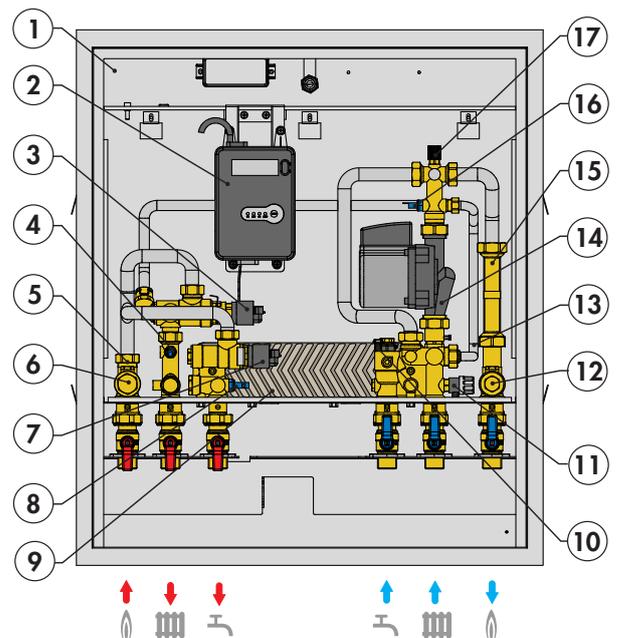
Set point regulation

DHW production range 42–60°C

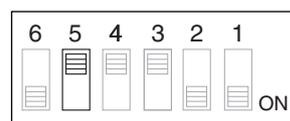
Optional functions

Domestic water cycle: - domestic water preheating function

Heating cycle: - modulating temperature regulation with compensated set point



Factory settings



Operating cycles

Domestic water cycle

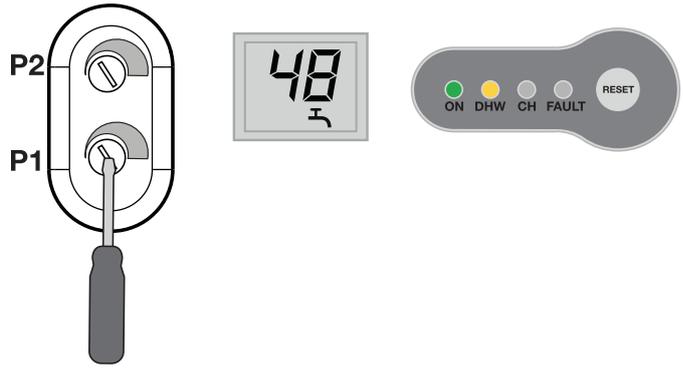
This cycle always takes priority over the heating cycle.

When DHW tapping is detected by the flow meter, the associated cycle is enabled and the controller commands the opening of the modulating valve so as to adjust the temperature detected by the domestic water probe to the selected set point value.

At the end of the drawing-off procedure, the modulating valve is fully closed.

The active domestic water cycle is signalled by the yellow DHW LED which comes on.

The general domestic water cycle temperature set point can be set using trimmer P1 and shown on the display.



Heating cycle

Set point regulation

When heating cycle activation is requested by the room thermostat, the circulation pump is powered while the mixing valve is opened gradually until the set point temperature is reached.

At the end of the heating cycle, the circulation pump comes to a stop and the mixing valve is closed.

The active heating cycle is signalled by the yellow CH LED which comes on.

The heating cycle temperature set point can be set using trimmer P2 and shown on the display.



Floor slab heating function

SATK50103/HE - LOW temperature

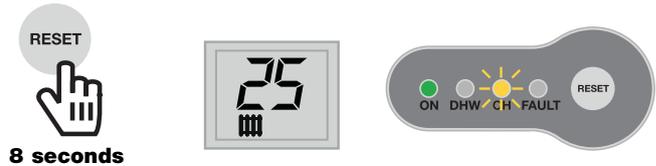
This facilitates the laying of underfloor heating systems at low temperatures. This function can only be activated and executed if there are no faults.

It can be activated by pressing and holding the RESET button for 8 seconds.

The yellow CH LED blinks while the floor slab heating function is in operation.

The function has a duration of 240 hours, and is carried out by simulating a request to run in heating mode starting from a set point of 25°C and rising in regular intervals to a temperature of 45°C. Once the maximum set point has been reached, the function is executed, following the same procedure, in reverse (from the maximum set point to the minimum set point).

This function has priority over heating and hot water cycles, and can be suspended at any time by pressing and holding the RESET button for 8 seconds.



Optional functions (to activate/deactivate the optional functions the electric power supply must always be turned off!)

Domestic water cycle

Domestic water preheating function

The function is enabled by setting dip switch 5 to the ON position. During periods when the domestic water cycle is not used, if the DHW probe detects a temperature 10°C below the SET value, the controller partially opens the domestic water modulating valve for the time required (maximum 5 mins) to bring the temperature detected up to a value 5°C below the set point.

The domestic water preheating function is signalled by the flashing yellow DHW LED.

This function is less of a priority than any domestic water or heating cycles.



Heating cycle

Modulating temperature regulation with compensated set point

The function is enabled by setting dip switch 1 to the OFF position.

When the function is enabled, the flow temperature is modified according to the temperature detected by the compensation probe.

This keeps the actual thermal output of the slab - and therefore the ambient thermal load - under control. The thermal response time of the system is thus minimised.



Safety and alarms

Error codes associated with faults signalled by the lighting up of the FAULT LED are shown on the display (see page 7).



SATK50303 HIGH temperature heat interface unit

Characteristic components

1. Template box (code 794950)
2. Electronic regulator
3. Heating ON/OFF valve
4. Heat meter flow temperature probe pocket
5. System strainer
6. DHW production modulating valve
7. DHW temperature probe
8. DHW heat exchanger
9. DHW priority flow meter
10. Drain cock
11. Heat meter return temperature probe pocket
12. Heat meter spacer template
13. Air vent cock

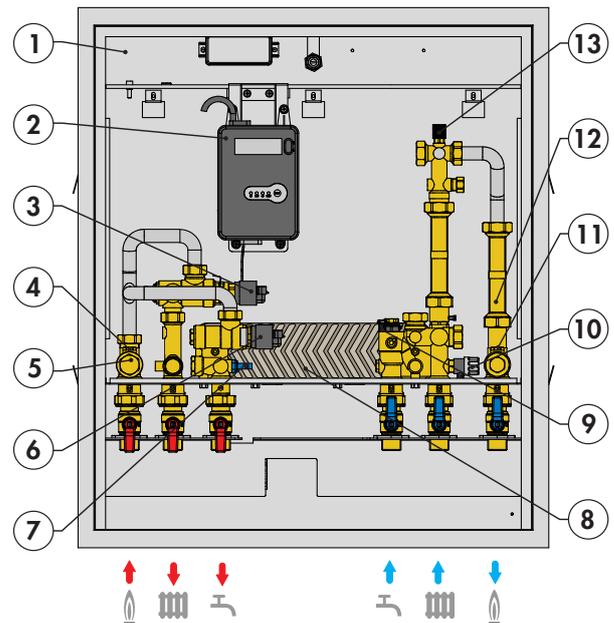
Functional characteristics

Maximum heating temp. 85°C
ON/OFF regulation

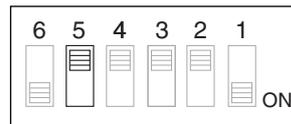
DHW production range 42–60°C

Optional functions

Domestic water cycle: - domestic water preheating function



Factory settings



Operating cycles

Domestic water cycle

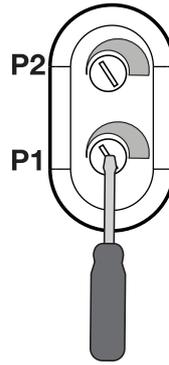
This cycle always takes priority over the heating cycle.

When DHW tapping is detected by the flow meter, the associated cycle is enabled and the controller commands the opening of the modulating valve so as to adjust the temperature detected by the domestic water probe to the selected set point value.

At the end of the drawing-off procedure, the modulating valve is fully closed.

The active domestic water cycle is signalled by the yellow DHW LED which comes on.

The general domestic water cycle temperature set point can be set using trimmer P1 and shown on the display.



Heating cycle

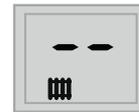
ON/OFF regulation.

When the room thermostat requests the start of a heating cycle, the valve is opened completely, allowing water to circulate at the temperature supplied by the central heating system (ON-OFF regulation).

The valve is closed on completion of the heating cycle.

The active heating cycle is signalled by the yellow CH LED which comes on.

No value is shown on the display.



Optional functions (to activate/deactivate the optional functions the electric power supply must always be turned off!)

Domestic water cycle

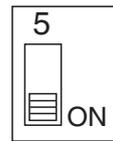
Domestic water preheating function

The function is enabled by setting dip switch 5 to the ON position.

During periods when the domestic water cycle is not used, if the DHW probe detects a temperature 10°C below the SET value, the controller partially opens the domestic water modulating valve for the time required (maximum 5 mins) to bring the temperature detected up to a value 5°C below the set point.

The domestic water preheating function is signalled by the flashing yellow DHW LED.

This function is less of a priority than any domestic water or heating cycles.



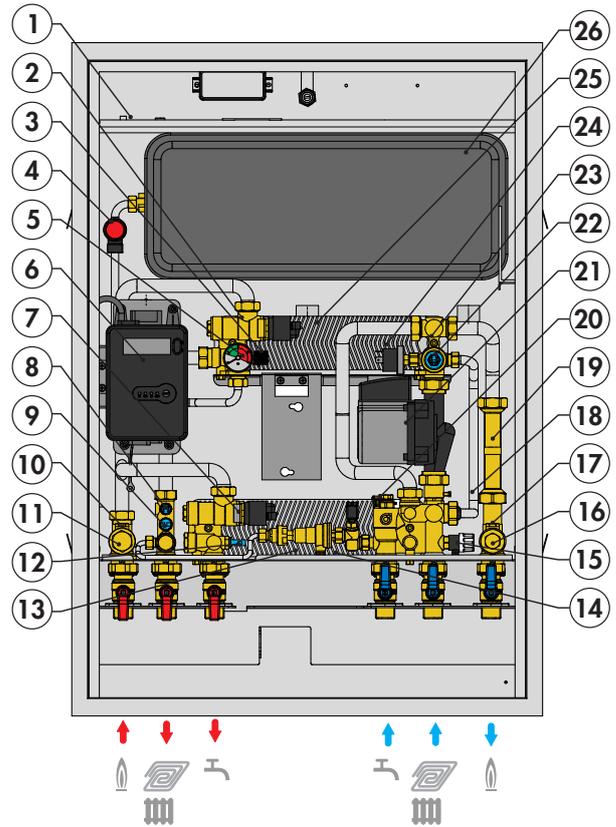
Safety and alarms

Error codes associated with faults signalled by the lighting up of the FAULT LED are shown on the display (see page 7).



Characteristic components

1. Template box (code 794960)
2. 2-way modulating valve (primary heating)
3. Heating circuit (secondary) air vent cock
4. Safety relief valve
5. Pressure gauge
6. Electronic regulator
7. DHW production modulating valve
8. Heating flow temperature probe (secondary)
9. Thermal safety thermostat
10. Heat meter flow temperature probe pocket
11. Primary circuit strainer
12. DHW temperature probe
13. DHW heat exchanger
14. Filling unit with backflow preventer
15. Heating circuit (secondary) drain cock
16. Primary circuit drain cock
17. Heat meter return temperature probe pocket
18. Protective pump by-pass
19. Heat meter template spacer
20. DHW priority flow meter
21. Pump
22. Flow temp. compensation return probe
23. Secondary circuit strainer
24. Pressure switch
25. Heating exchanger
26. Expansion vessel



Functional characteristics

Heating range

- LOW temperature setting 25–45°C
- MEDIUM/HIGH temperature setting 50–75°C

Set point regulation

DHW production range 42–60°C

Optional functions

- Domestic water cycle: - domestic water preheating function
- Heating cycle at LOW temperature setting:
- modulating temperature regulation with compensated set point
 - floor slab heating function

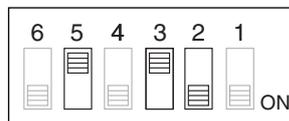
Factory settings

SATK60103/HE HIUs are factory set to support **low temperature heating** (25–45°C), according to the following switch setting.

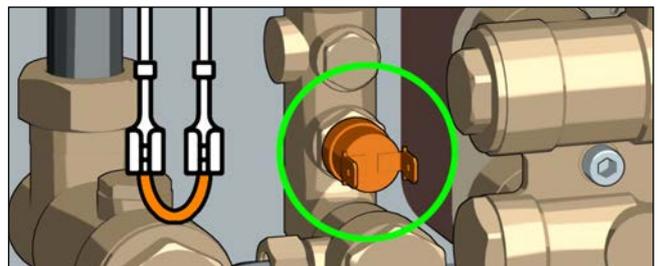


To modify the factory settings and enable the HIU to support **medium/high temperature** systems (50–75°C), proceed as follows.

- 1 - cut off the electric power supply to the HIU
- 2 - set switches 2-3 with the ON-OFF setting



- 3 - **disconnect the thermal safety thermostat and apply a jumper on the cable (see page 15 ref. 5)**
- 4 - restore the electric power supply.



Operating cycles

Domestic water cycle

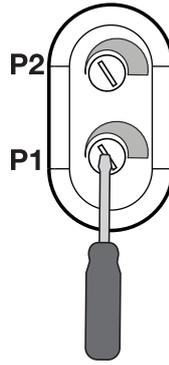
This cycle always takes priority over the heating cycle.

When DHW tapping is detected by the flow meter, the associated cycle is enabled and the controller commands the opening of the modulating valve so as to adjust the temperature detected by the domestic water probe to the selected set point value.

At the end of the drawing-off procedure, the modulating valve is fully closed.

The active domestic water cycle is signalled by the yellow DHW LED which comes on.

The general domestic water cycle temperature set point can be set using trimmer P1 and shown on the display.



Heating cycle

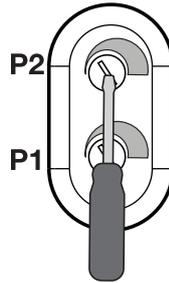
Set point regulation

When heating cycle activation is requested by the room thermostat, the circulation pump is powered while the modulating valve is opened gradually until the set point temperature is reached.

At the end of the heating cycle, the circulation pump comes to a stop and the modulating valve is closed.

The active heating cycle is signalled by the yellow CH LED which comes on.

The heating cycle temperature set point can be set using trimmer P2 and shown on the display.



Floor slab heating function

(at LOW temperature setting)

This facilitates the laying of underfloor heating systems at low temperatures. This function can only be activated and executed if there are no faults.

It can be activated by pressing and holding the RESET button for 8 seconds.

The yellow CH LED blinks while the floor slab heating function is in operation.

The function has a duration of 240 hours, and is carried out by simulating a request to run in heating mode starting from a set point of 25°C and rising in regular intervals to a temperature of 45°C. Once the maximum set point has been reached, the function is executed, following the same procedure, in reverse (from the maximum set point to the minimum set point).

This function has priority over heating and domestic water cycles, and can be suspended at any time by pressing and holding the RESET button for 8 seconds.



8 seconds



Optional functions (to activate/deactivate the optional functions the electric power supply must always be turned off!)

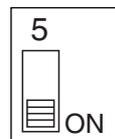
Domestic water cycle

Domestic water preheating function

The function is enabled by setting dip switch 5 to the ON position. During periods when the domestic water cycle is not used, if the DHW probe detects a temperature 10°C below the SET value, the controller partially opens the domestic water modulating valve for the time required (maximum 5 mins) to bring the temperature detected up to a value 5°C below the set point.

The domestic water preheating function is signalled by the flashing yellow DHW LED.

This function is less of a priority than any domestic water or heating cycles.



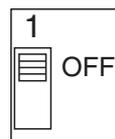
Heating cycle

Modulating temperature regulation with compensated set point

The function is enabled by setting dip switch 1 to the OFF position.

When the function is enabled, the flow temperature is modified according to the temperature detected by the compensation probe.

This keeps the actual thermal output of the slab - and therefore the ambient thermal load - under control. The thermal response time of the system is thus minimised.



Safety and alarms

Error codes associated with faults signalled by the lighting up of the FAULT LED are shown on the display (see page 7).



Maintenance

All maintenance procedures should be carried out by an authorised technician.

Regular maintenance guarantees better efficiency and helps to save energy.

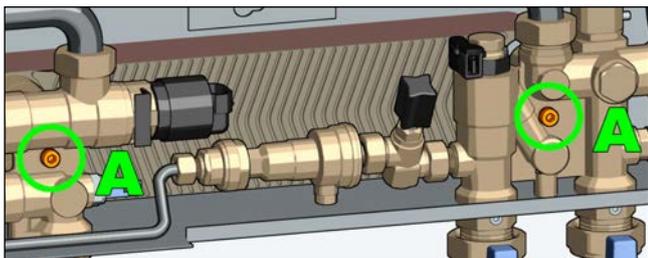
Before carrying out any maintenance, repair or part replacement work, proceed as follows:

- Cut off the electric supply
- Remove the cover
- Close the shut-off valves
- Empty the HIU using the drain cocks provided.

Heat exchanger replacement

- Remove the heat exchanger, loosening the 2 hex head screws fixing it in place (A)
- Replace the heat exchanger and the O-rings.
- Tighten the two fixing screws (A) to a maximum torque of 3 Nm.

N.B. The pins fixing the heat exchanger are positioned in such a way as to allow it to be placed only in the correct direction.

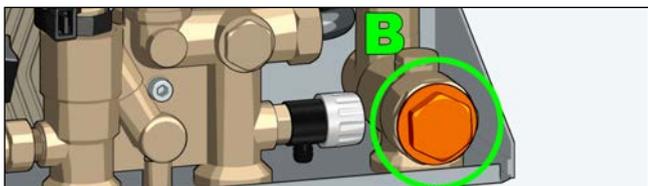


Strainer cleaning

All HIUs have a strainer on the water inlet from the centralised system and (for SATK60103/HE only), also on the secondary circuit.

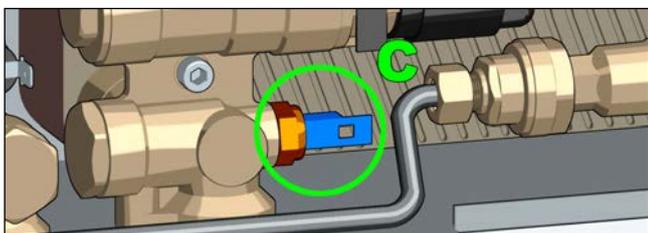
To clean these strainers, carry out the following maintenance procedure:

- Unscrew the cap (B)
- Remove the strainer mesh and discard any impurities
- Put the strainer mesh back in
- Screw the cap back on.



Temperature probe replacement

- Disconnect the probe cable, lightly folding the tab (C) and extracting the connector (see page 15, ref. 1-3-7)
- Unscrew the probe
- Fit the new probe
- Reconnect the connector respecting the only possible way it can be inserted.



Replacing the valve obturator

- Disconnect the valve actuator (see next paragraph)
- Extract the obturator, unscrewing the locking nut (F)
- Replace the obturator and screw on the locking nut (F), then insert the actuator
- Insert the fixing clip, respecting the correct direction
- Reconnect the connector.



Replacing the valve actuator

- Disconnect the actuator cable, lightly pressing the tab on the connector and extracting it (see page 15, ref. 4-8)
- Extract the fixing clip (D) and then the actuator
- Position the new actuator (E)
- Insert the fixing clip, respecting the correct direction
- Reconnect the connector.



Replacing the DHW priority flow meter

- Disconnect the flow meter cable acting on the connector (see page 15, ref. 2)
- Extract the flow sensor (G)
- Position the new sensor
- Reconnect the connector respecting the only possible way it can be inserted.



Replacing or cleaning the DHW priority flow meter turbine

Extract the flow sensor

- Unscrew and remove the cartridge (H)
- Eliminate any impurities present or change the cartridge if necessary
- Screw the cartridge back in
- Reposition the flow sensor



Vessel pre-charge check

For correct operation of the system periodically check (at least once every six months) the vessel pre-charge value. Perform the following checks:

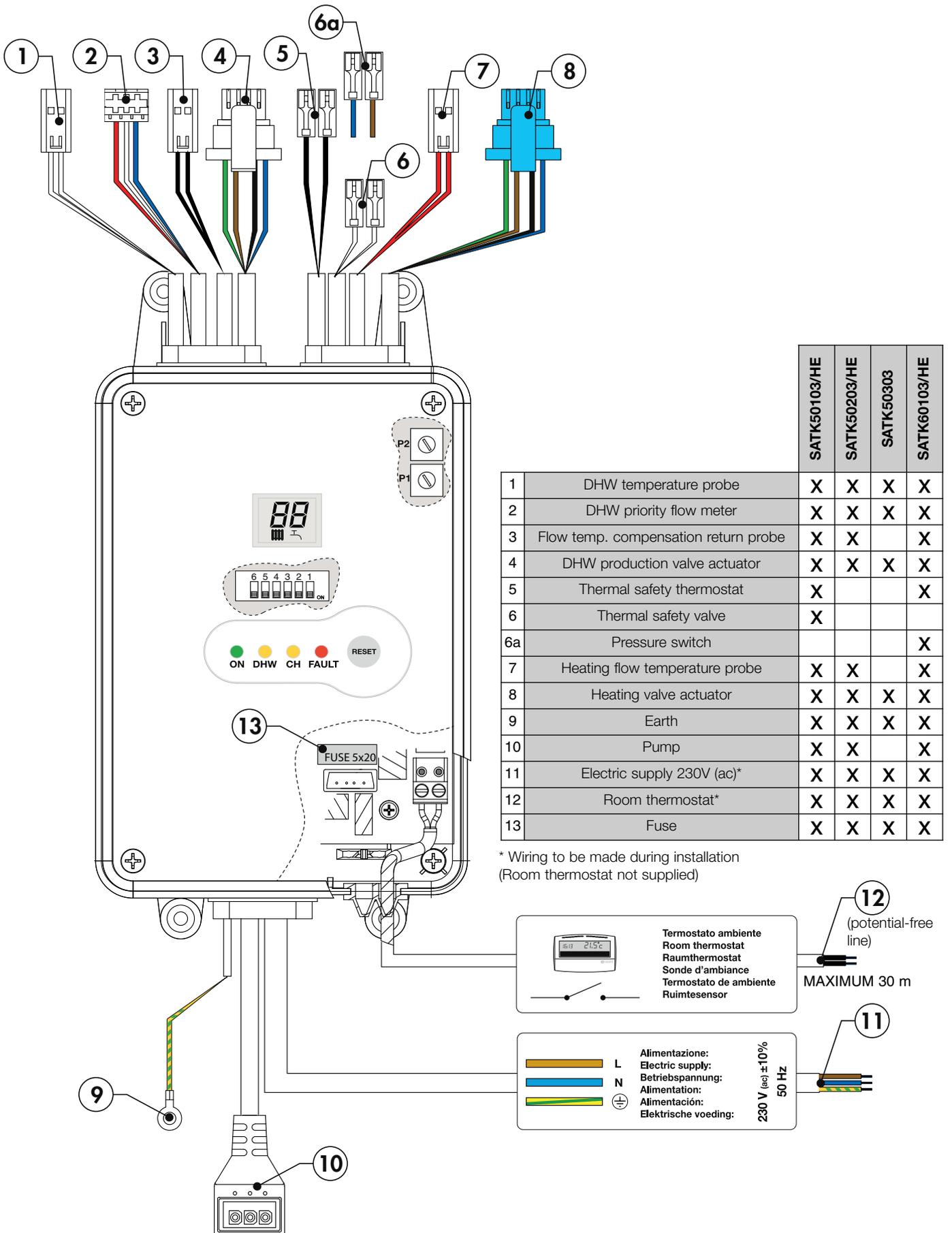
- Use a pressure gauge to check the pre-charge value
- If necessary, restore the pre-charge value shown in the technical specifications.

When carrying out maintenance on the electrical part, for the connections follow the diagram on page 15.

After concluding maintenance, proceed with the filling and checking operations described in the chapter "Commissioning" and fit the cover.

If you require any information regarding spare parts, please contact Caleffi spa.

Wiring diagram



Troubleshooting

FAULT DESCRIPTION	INDICATIONS	POSSIBLE CAUSE OF FAULT	OPERATIONS TO BE PERFORMED
Water is not heated	DHW LED on	primary circuit shut-off valves closed	open the valves
		modulating valve actuator connector disconnected	reconnect actuator connector
		modulating valve actuator disconnected from valve body	reconnect actuator
		modulating valve actuator faulty	call qualified personnel to have it replaced
		clogged strainer and/or heat exchanger	call qualified personnel to have it replaced
		DHW and heating temperature probe cables inverted	restore correct connection
		presence of air in the system	vent the system
		electronic controller not working	call qualified personnel to have it replaced
	DHW LED off	valve obturator blocked in closed position	call qualified personnel to have it replaced
		centralised system not working	contact person in charge of system
	FAULT LED on + error code 6 active	DHW temperature probe disconnected	reconnect probe
		DHW temperature probe faulty	call qualified personnel to have it replaced
	FAULT LED on + error code 79 active	incorrect switch setting	restore correct switch setting
	DHW LED off	DHW priority flow meter disconnected	reconnect flow meter
DHW priority flow meter faulty		call qualified personnel to have it replaced	
electronic controller not working		call qualified personnel to have it replaced	
all LEDs are off	electric power supply switched off	restore HIU electric supply	
	protection fuse burnt out	call qualified personnel to have it replaced	
	electronic controller not working	call qualified personnel to have it replaced	
The water is hot but does not reach the desired temperature	DHW LED on	domestic water cycle temperature set-point too low	increase the set-point
		HIU strainer clogged	call qualified personnel to have it serviced
		heat exchanger partly clogged	call qualified personnel to have it serviced
		modulating valve actuator faulty	call qualified personnel to have it replaced
		valve obturator blocked in intermediate position	call qualified personnel to have it replaced
		modulating valve actuator connector disconnected	reconnect actuator connector
		DHW and heating temperature probe cables inverted	restore correct connection
		excessive demand for DHW	decrease demand
		electronic controller not working	call qualified personnel to have it replaced
		centralised system temperature insufficient	contact person in charge of system
		primary circuit flow rate insufficient	contact person in charge of system
Hot water temperature is too high	DHW LED on	domestic water cycle temperature set-point too high	decrease set-point
		DHW and heating temperature probe cables inverted	restore correct connection
		modulating valve actuator faulty	call qualified personnel to have it replaced
		valve obturator blocked in intermediate or open position	call qualified personnel to have it replaced
Hot water flow rate is insufficient	DHW LED on	electronic controller not working	call qualified personnel to have it replaced
		HIU strainer clogged	call qualified personnel to have it serviced
Hot water flow rate is zero	DHW LED off	possible domestic water system shut-off valves partly open	open the valves
		centralised domestic circuit cold water flow rate insufficient	call qualified personnel to have it serviced
		possible domestic water system shut-off valves closed	open the valves
The room is not reaching the desired temperature	CH LED on	no cold water in centralised domestic circuit	call qualified personnel to have it serviced
		HIU strainer completely clogged	call qualified personnel to have it serviced
		heat exchanger completely blocked	call qualified personnel to have it serviced
		heating cycle temperature set-point too low	increase the set-point
		chrono-thermostat temperature setting incorrect	check programming of chrono-thermostat
		HIU strainer clogged	call qualified personnel to have it serviced
		heating valve actuator faulty	call qualified personnel to have it replaced
		heating valve obturator blocked	call qualified personnel to have it replaced
		modulating valve actuator connector disconnected	reconnect actuator connector
		DHW and heating temperature probe cables inverted	restore correct connection
		presence of air in the system	vent the system
		pump (if present) not working	call qualified personnel to have it replaced
		pump cable (if present) not connected	restore connection
		possible system shut-off valves/terminals closed	open the valves
	centralised system temperature insufficient	contact person in charge of system	
	CH LED off	electronic controller not working	call qualified personnel to have it replaced
		primary circuit flow rate insufficient	contact person in charge of system
		centralised system not working	contact person in charge of system
	all LEDs are off	chrono-thermostat time setting incorrect	check programming of chrono-thermostat
		chrono-thermostat not working	check chrono-thermostat
		electronic controller not working	call qualified personnel to have it replaced
electric power supply switched off		restore HIU electric supply	
protection fuse burnt out		call qualified personnel to have it replaced	
electronic controller not working		call qualified personnel to have it replaced	
heating circuit pressure too low		restore system pressure	
FAULT LED on + error code 4 active	heating temperature probe faulty	call qualified personnel to have it replaced	
FAULT LED on + error code 5 active	heating temperature probe faulty	call qualified personnel to have it replaced	
FAULT LED on + error code 15 active	compensation temperature probe faulty	call qualified personnel to have it replaced	
FAULT LED on + error code 69 active	safety thermostat cut-in	call qualified personnel to have it serviced	
FAULT LED on + error code 76 active	safety relief valve faulty	call qualified personnel to have it serviced	
FAULT LED on + error code 79 active	incorrect switch setting	restore correct switch setting	