

Wall-mounted compact indirect heat interface unit

SATK30 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 or served by district heating networks.

CONTENTS

Safety instructions	2
Dimensions	3
Technical specifications	
Installation	4
Commissioning	6
Electronic regulator	7
Operating cycles	8
Safety and alarms	9
SATK30103HE	10
SATK30105HE	11
Maintenance	12
Electric connections	13
Troubleshooting	14
Commissioning checklist	16

Product range

SATK30103HE Indirect wall-mounted compact HIU for instantaneous domestic hot water production, power capacity 40 kW.

SATK30105HE Indirect wall-mounted compact HIU for instantaneous domestic hot water production, power capacity 65 kW.

SAFETY INSTRUCTIONS

WARNINGS



These instructions must be read and understood before installing and maintaining the device. IMPORTANT! 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, pre-run checked 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 could result in breakage, with water leaks causing damage and/or 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, the device must be fitted 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 use is prohibited.
- 9 Any combination of the device with other system components must be made taking the operational characteristics of both units into consideration. 10 An incorrect coupling could compromise operation of the device and/or system.

IMPORTANT: 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.
- 7 The device does not contain asbestos or mercury.
- 8 The device is not designed for use by persons of reduced mental, physical or sensory capacity (including children) or persons lacking experience, unless they are supervised or instructed in use of the device by a person responsible for their personal safety.

NOTES:

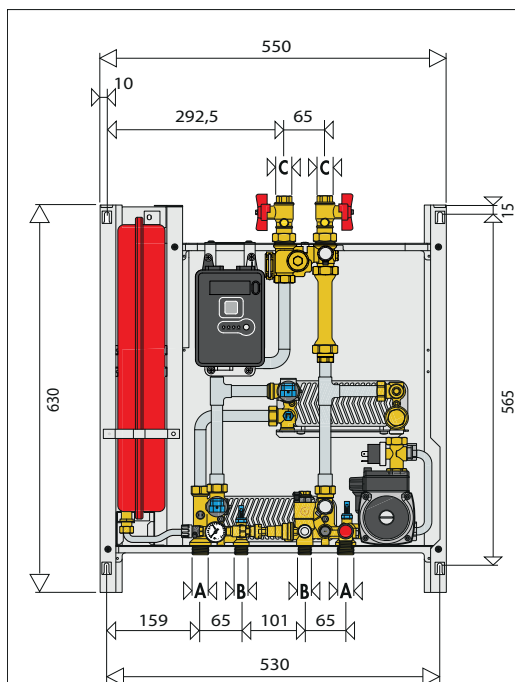
- 1 Install water hammer arresters to compensate for any overpressure in the domestic water circuit;
- 2 In the presence of hot water recirculation or if non-return valves are fitted on the domestic cold water inlet, provision must be made to accommodate expansion of the water contained in the system and in the heat interface unit;
- 3 All hydraulic connections must be checked before pressurising the system. Vibration during transport may cause the connections to become loose. DO NOT APPLY EXCESSIVE TIGHTENING TORQUE otherwise the components may be damaged.

For the updated version of the technical documentation refer to www.caleffi.com.

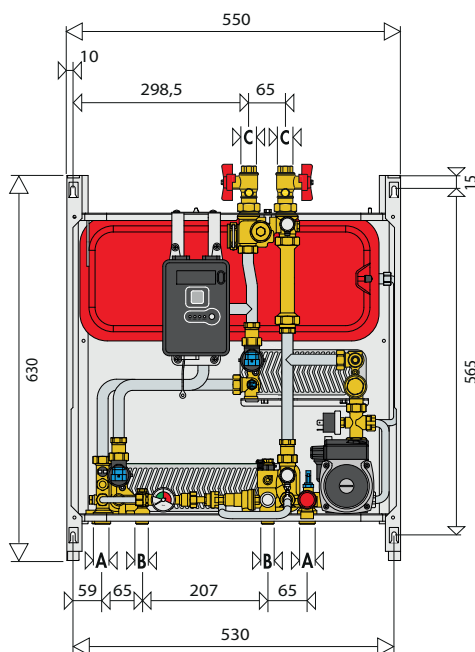
LEAVE THIS MANUAL AS A REFERENCE GUIDE FOR THE USER. DISPOSE OF THE PRODUCT IN COMPLIANCE WITH CURRENT LEGISLATION THE MANUFACTURER RESERVES THE RIGHT TO CEASE PRODUCTION AT ANY TIME AND TO MAKE ANY CHANGES DEEMED USEFUL OR NECESSARY WITHOUT THE OBLIGATION OF PRIOR NOTICE.

Dimensions

SATK30103HE



SATK30105HE



A	B	C
3/4" M	1/2" M	3/4" F

Technical specifications SATK30103HE

Medium:	water
Maximum percentage of glycol:	30%
Maximum medium temperature:	85°C
Max. working pressure:	- primary circuit: 1,6 MPa (16 bar) - secondary circuit: 0,3 MPa (3 bar) - domestic water circuit: 1 MPa (10 bar)
Nominal DHW exchanger capacity:	40 kW
Nominal heating exchanger capacity:	15 kW
Maximum recommended primary circuit flow rate:	1,2 m³/h
Maximum differential pressure on domestic water modulating valves:	Δp 90 kPa (0,9 bar)
Domestic water circuit max. flow rate:	18 l/min (0,3 l/s)
Minimum flow to activate domestic water flow meter:	2,7 l/min ±0,3
Electric supply:	230 V (ac) ±10% 50 Hz
Max power consumption:	80 W
Protection class:	IP 40
Pump:	UPM3 15-70
Pump by-pass setting:	45 kPa (0,45 bar)
Actuators:	stepper 24 V
Probes:	NTC 10 kΩ
Safety relief valve setting:	0,3 MPa (3 bar)
Safety thermostat:	55°C ±3
Expansion vessel:	- capacity: 7 l - pre-charge value: 0,1 MPa (1 bar)
Pressure switch:	- opening: 40 kPa (0,4 bar) - closing: 80 kPa (0,8 bar)

Materials

Components:	brass EN 12165 CW617N
Fitting pipes:	steel
Frame:	RAL 9010 painted steel
Protective shell cover:	EPP
Heat exchanger:	brazed stainless steel

Technical specifications SATK30105HE

Medium:	water
Maximum percentage of glycol:	30%
Maximum medium temperature:	85°C
Max. working pressure:	- primary circuit: 1,6 MPa (16 bar) - secondary circuit: 0,3 MPa (3 bar) - domestic water circuit: 1 MPa (10 bar)
Nominal DHW exchanger capacity:	65 kW
Nominal heating exchanger capacity:	15 kW
Maximum recommended primary circuit flow rate:	1,2 m³/h
Maximum differential pressure on domestic water modulating valves:	Δp 165 kPa (1,65 bar)
Domestic water circuit max. flow rate:	27 l/min (0,45 l/s)
Minimum flow to activate domestic water flow meter:	2,7 l/min ±0,3
Electric supply:	230 V (ac) ±10% 50 Hz
Max power consumption:	80 W
Protection class:	IP 40
Pump:	UPM3 15-70
Pump by-pass setting:	45 kPa (0,45 bar)
Actuators:	stepper 24 V
Probes:	NTC 10 kΩ
Safety relief valve setting:	0,3 MPa (3 bar)
Safety thermostat:	55°C ±3
Expansion vessel:	- capacity: 7 l - pre-charge value: 0,1 MPa (1 bar)
Pressure switch:	- opening: 40 kPa (0,4 bar) - closing: 80 kPa (0,8 bar)

Materials

Components:	brass EN 12165 CW617N
Fitting pipes:	steel
Frame:	RAL 9010 painted steel
Protective shell cover:	EPP
Heat exchanger:	brazed stainless steel

Installation

The SATK series HIU is designed for installation in a sheltered domestic environment (or similar), therefore cannot be installed or used outdoors, i.e. in areas directly exposed to atmospheric agents. Outdoor installation may cause malfunctioning and hazards.

If the device is enclosed inside or between cabinets, sufficient space must be provided for routine maintenance procedures. It is recommended that electrical devices are NOT placed underneath the HIU, as they may be damaged in the event of safety relief valve activation if not connected to a discharge tundish, or in the event of leaks occurring at the hydraulic fittings. 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.

Preparation

After having established the point where the device has to be installed, perform the following operations:

- Mark the holes required for securing the HIU to the wall
- Mark the position of the hydraulic connections

Check the measurements again and begin laying the following lines:

• Hydraulic:

1. connection to the central system line
2. heating circuit connection
3. domestic water circuit connection
4. conveyance of safety relief valve and charging unit backflow preventer discharge

• Electric:

1. 230 V (ac) – 50 Hz electric supply line
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)

Before installation, 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 endanger correct operation of the HIU.

Fix the HIU to the wall.

N.B.: the wall anchors (not supplied) can only guarantee effective support if inserted correctly (in accordance with good technical practice) into walls built using solid or semi-solid bricks. If working with walls built using perforated bricks or blocks, mobile dividing panels or any masonry walls other than those indicated, a preliminary static test must be carried out on the support system.

Electric connections

Make sure that the electrical system can withstand the maximum power consumption of the appliance, with particular emphasis on the cross-section of the cables.

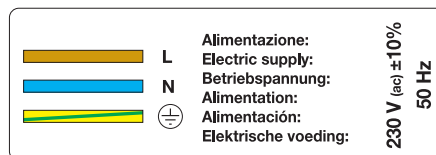
If you have any doubts, contact a qualified technician to request a thorough check of the electrical system.

Electrical safety of the appliance is only achieved when it is correctly connected to an effective earthing system, constructed as specified in current safety regulations. This is a compulsory safety requirement.

Connection to the main supply

The device is supplied with an electric supply cable which is not fitted with a plug.

The device should be electrically connected to a 230 V (ac) single-phase + earth mains supply using the three-wire cable marked with the label as specified below, observing the LIVE (L) - NEUTRAL (N) polarities and the earth connection. This line must be connected to a circuit breaker device.



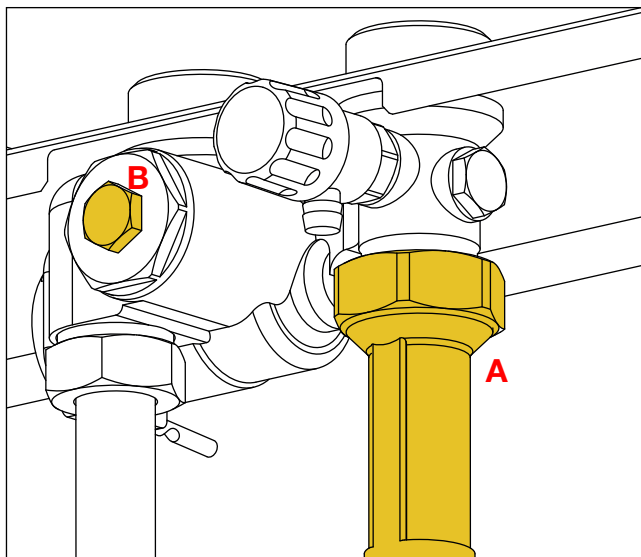
Heat meter installation

The HIU is designed to fit a compact heat meter (with incorporated return probe) with 1" threaded connections and 130 mm gauge.

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)
- remove the cap (B)
- install the flow meter on the return pipe
- install the flow probe in the M10 pocket (B).

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



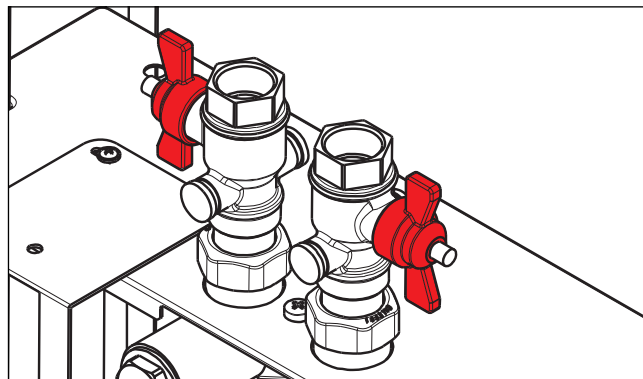
Hydraulic connections

Hydraulic connections to the centralised line must be implemented using the manual shut-off valves supplied with the HIU, which allow any necessary maintenance work to take place without having to empty the centralised system.

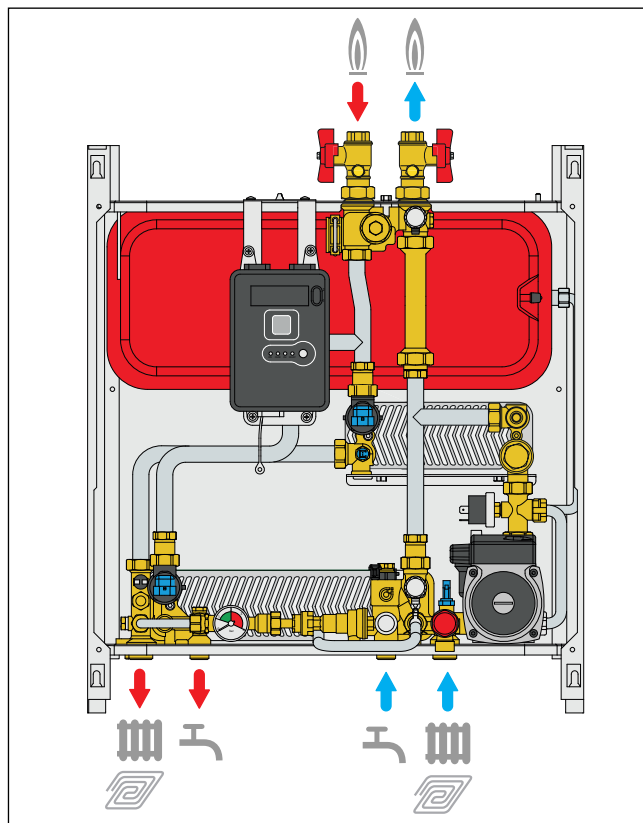
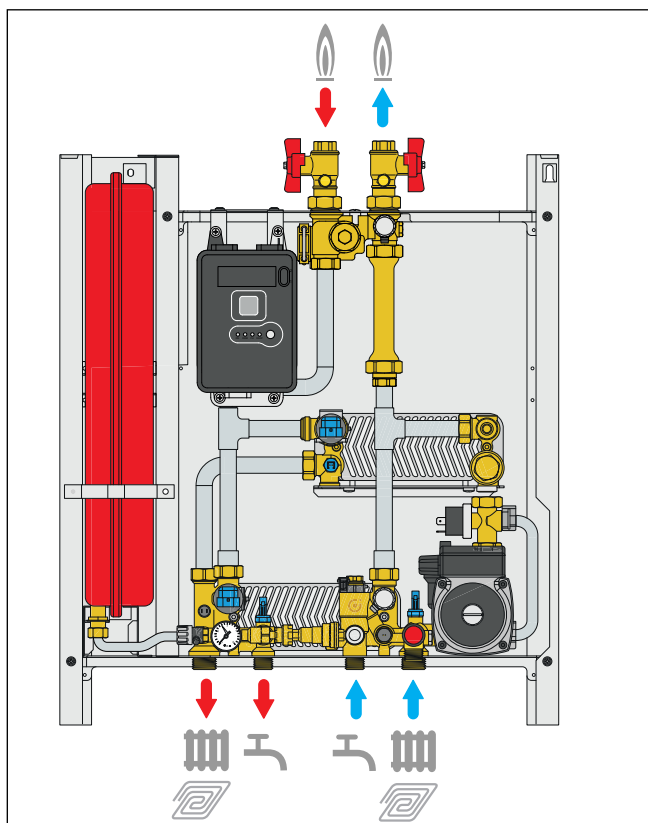
It is advisable to install manual shut-off valves (not supplied) also on the bottom connections to the apartment circuits.

Before installation, 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 endanger correct operation of the HIU.

In order to facilitate these operations a manual bypass flushing valve is available (code 789100).



N.B. Install the valves as shown in the figure



Key to symbols



Primary circuit flow



Primary circuit return



Domestic hot water outlet



Domestic cold water inlet



Low temperature circuit flow



Low temperature circuit return



High temperature circuit flow



High temperature circuit return

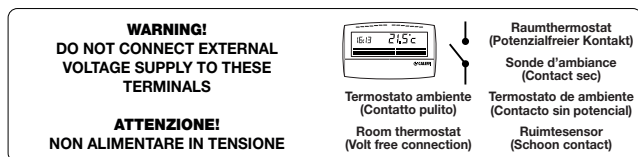
NOTES:

- 1 Install water hammer arresters to compensate for any overpressure in the domestic water circuit;
- 2 In the presence of hot water recirculation or if a non-return valve is fitted into the domestic cold water inlet, provision must be made to accommodate the expansion of the water contained within the system and the heat interface unit;
- 3 All hydraulic connections must be checked before pressurising the system. Vibration during transport may cause the connections to become loose. DO NOT APPLY EXCESSIVE TIGHTENING TORQUE otherwise the components may be damaged.

Connection to the chrono-thermostat

The SATK series HIU is fitted for connection to a thermostat or chrono-thermostat, both standard and **OpenTherm**, for ambient temperature adjustment.

The connection to this device (**potential-free contact**) must be made with the two-wire cable marked with the label shown below. Should it be necessary to extend this cable, use one with the same cross-section (max 1 mm²) and maximum length 30 m.

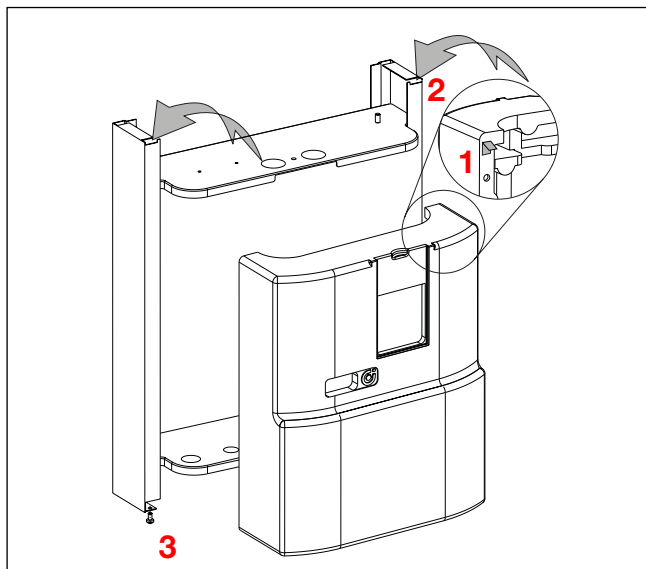


Fitting the cover

Place the casing over the frame, inserting the upper tabs (1) into the corresponding slots (2).

Place the lower part of the casing over the frame.

Tighten the screws (3).



Commissioning

Filling the central heating system

Open the shut-off valves on the connections to the centralised line 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)

Vessel pre-charge check

Perform the following steps:

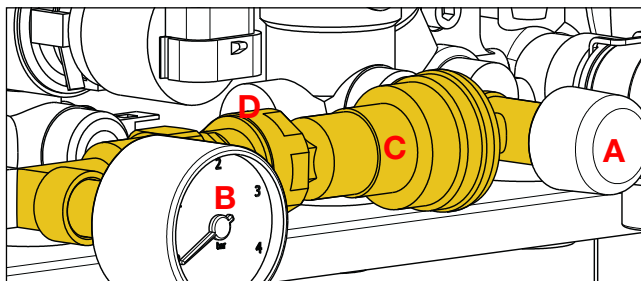
- Use a pressure gauge to check the pre-charge value
- If necessary, restore the pre-charge value shown in the technical specifications.

Filling the user system

SATK30 series HIU are fitted with a filling unit equipped with a backflow preventer (C), check valve (D) and cock (A).

When filling the system for the first time or for subsequent top-up procedures following a heating circuit pressure switch fault, restore the system pressure (0,12–0,2 MPa - 1,2–2 bar) by opening cock (A) and checking the value by means of 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)

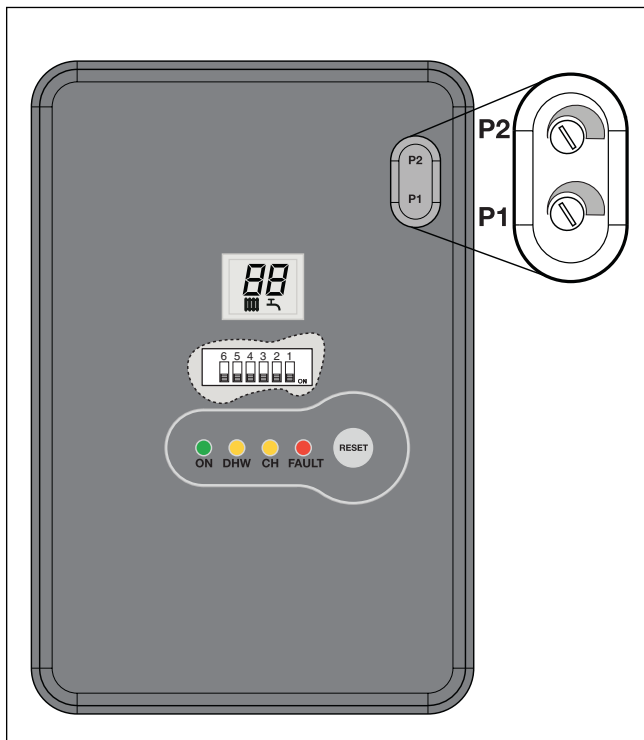


System start-up

Before starting the HIU, visually check the hydraulic connection watertightness 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 and proceed as described below, 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.

Electronic regulator



Operating principle

All heating and domestic hot water functions offered by SATK30 series HIUs are controlled by a digital temperature regulator.

Automatic controller functions

• Reset diverter/modulating valve to zero

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

• Pump anti-seizing

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

Diverter/modulating anti-seizing cycle

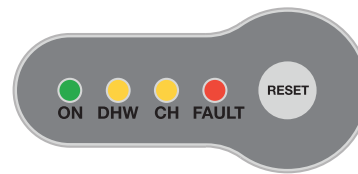
The anti-seizing cycle for the diverter/modulating valve is run every 24 hours.

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 steady illumination of the LEDs.



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

• RESET key

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

RESET

• Trimmers for set point settings

They allow the setting of the temperature set-point for the operating cycles and view the relative value on the display.

P2



Heating cycle

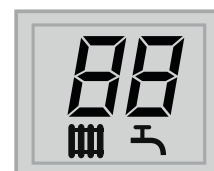
P1



Not used

• LCD display

Shows programmed set-point temperatures and error codes.



• Dip switches

Allow set-up of the various models and enabling of optional functions

Operating cycles

Domestic cycle

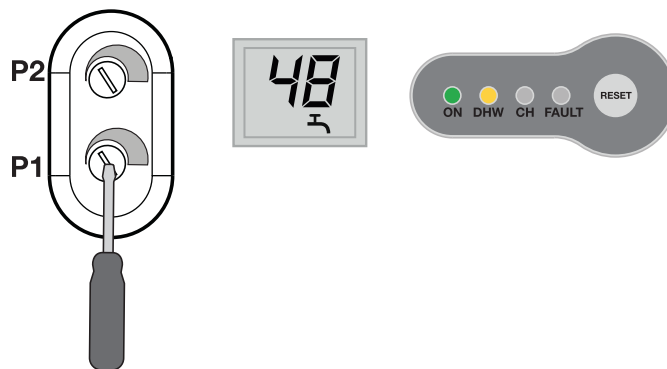
This cycle always takes priority over the heating cycle.

When DHW cycle activation is requested, due to DHW tapping by the user (detected by the domestic water flow meter), the regulator modulates the valve opening in order to adjust the temperature detected by the domestic water probe to the selected set point value.

When tapping ends, the modulating valve is fully closed.

The active domestic hot water cycle is signalled by yellow DHW LED steady on.

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



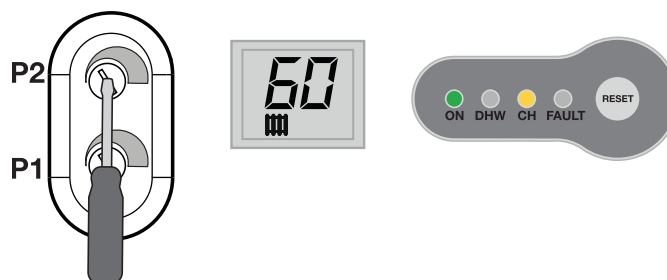
Heating cycle

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 lighting of the yellow CH LED.

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



Floor slab heating function

LOW temperature setting

Facilitates the installation 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 lasts 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 procedures, 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 cycle

DHW pre-heating 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 hot water modulating valve for the time required (max. 5 min.) to bring the exchanger to the condition wherein it can assure rapid DHW production.

The domestic hot water pre-heating 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 (located on the user return pipe). 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. If the function is enabled the display shows the return temperature, and the flow temperature is adjusted in accordance with the following formula:

$$\text{Flow temperature} = \text{Return temperature} + \Delta T$$

In **MEDIUM/HIGH** temperature configuration: $\Delta T = 8-22^{\circ}\text{C}$

At **LOW** temperature setting: $\Delta T = 2-8^{\circ}\text{C}$

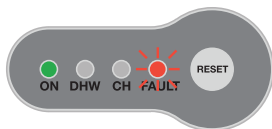


Safety and alarms

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

Heating circuit pressure switch fault

Error code 4



The electronic regulator continuously monitors the status of the pressure switch controlling the water pressure in the heating circuit. If the pressure switch is activated, the heating circulation pump immediately comes to a stop and the modulating valve is completely closed.

This fault implies the stoppage of the heating cycle only.

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

Removing a fault

Return to the operating mode is subordinate to restoration of the correct water pressure in the secondary heating circuit (see page 6 - "Filling the user system").

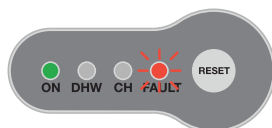
Probe fault

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.

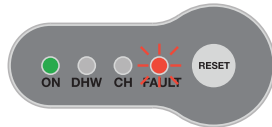
Heating probe fault

Error code: 5



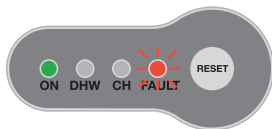
Domestic water probe fault

Error code: 6



Compensation probe fault

Error code: 15

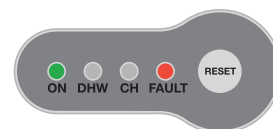


Removing a fault

Normal operating conditions are restored automatically once the faulty probe is working properly again (see page 12 - "Temperature probe replacement").

Safety thermostat cut-out

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 valve is completely closed.

After the user has removed the block imposed by the safety thermostat, operation can only be re-enabled when the modulating valves are completely closed again.

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.

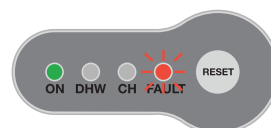
Removing a fault

To restore the operating mode press the manual RESET button.



Incorrect switch setting

Error code 79

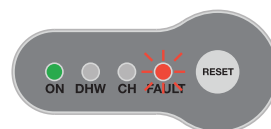


Removing a fault

Restore the correct switch setting in accordance with the procedure shown on pages 10-11.

Incorrect switch setting (heat interface unit disabled)

Error code 80



Removing a fault

The heat interface unit is disabled due to incorrect setting of the dip-switches. Restore the correct switch setting in accordance with the procedure shown on pages 10-11.

SATK30103HE Indirect HIU with high-efficiency pump. 40 kW DHW.

Characteristic components

1. Frame
2. Expansion vessel
3. Electronic regulator
4. 2-way modulating valve (primary heating)
5. Heating flow temperature probe (secondary)
6. DHW heat exchanger
7. 2-way modulating valve - DHW
8. Thermal safety thermostat
9. DHW temperature probe
10. Secondary heating drain cock
11. Filling unit with backflow preventer
12. Safety relief valve
13. Flow temp. compensation return probe
14. Primary circuit drain cock
15. Pump UPM3 15-70
16. Protective by-pass
17. DHW priority flow meter
18. Pressure switch
19. Secondary heating strainer
20. Heating exchanger
21. Heat meter spacer template
22. Primary circuit strainer/flow probe pocket
23. Primary air vent cock
24. Primary circuit shut-off valves

Functional characteristics

Heating range

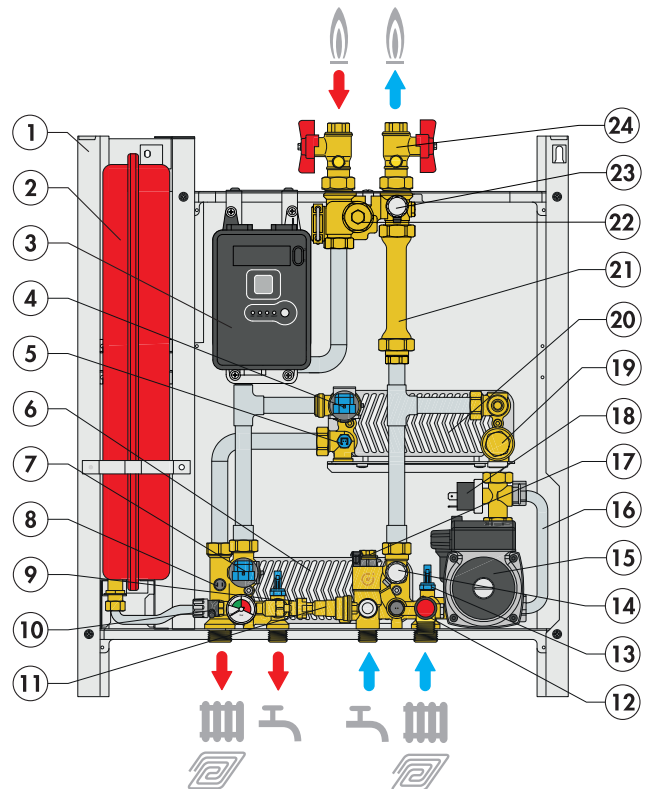
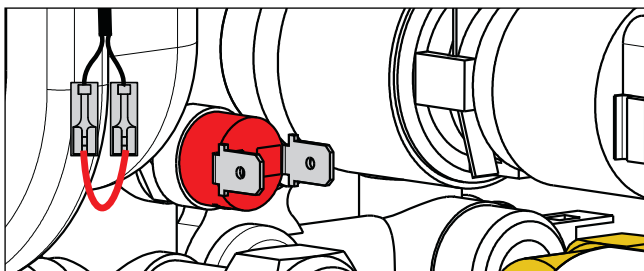
- **LOW** temperature setting 25–45°C
- **MEDIUM/HIGH** temperature setting 45–75°C

Set point regulation

DHW production range 42–60°C

Optional functions

- Domestic cycle: - DHW pre-heating function
- Heating cycle: - modulating temperature regulation with compensated set point
- at **LOW** temperature setting: - floor slab heating function



Factory settings

The SATK30103HE HIU is 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 (45–75°C), proceed as follows.

- 1 - cut off the electric power supply to the HIU
- 2 - set switches 2-3 according to the following setting:



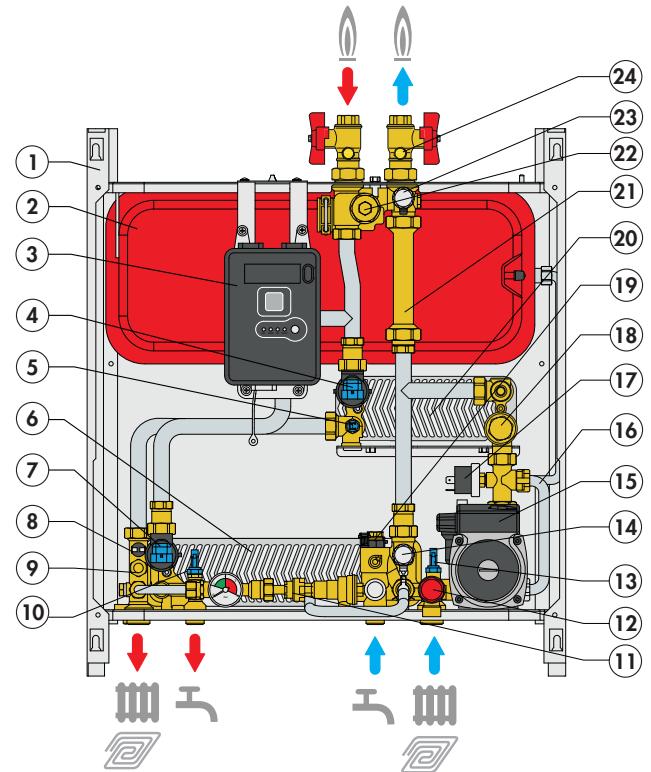
- 3 - **disconnect the thermal safety thermostat** (see page 13 ref. 5) and **apply a jumper on the cable** (see adjacent diagram)
- 4 - restore the electric supply.

- OFF**  **Factory set (do not change)**
- ON** 
- OFF**  **May be changed to activate optional functions**
- ON** 
- Switch 1:** modulating temperature regulation with compensated set point
- Switch 2-3:** HIGH - LOW temperature setting
- Switch 5:** DHW pre-heating function

SATK30105HE Indirect HIU with high efficiency pump. 65 kW DHW.

Characteristic components

1. Frame
2. Expansion vessel
3. Electronic regulator
4. 2-way modulating valve (primary heating)
5. Heating flow temperature probe (secondary)
6. DHW heat exchanger
7. 2-way modulating valve - DHW
8. Thermal safety thermostat
9. Secondary heating drain cock
10. DHW temperature probe
11. Filling unit with backflow preventer
12. Safety relief valve
13. Flow temp. compensation return probe
14. Primary circuit drain cock
15. Pump UPM3 15-70
16. Protective by-pass
17. Pressure switch
18. Heating strainer (secondary)
19. DHW priority flow meter
20. Heating exchanger
21. Heat meter spacer template
22. Primary circuit strainer/flow probe pocket
23. Primary air vent cock
24. Primary circuit shut-off valves



Functional characteristics

Heating range

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

Set point regulation

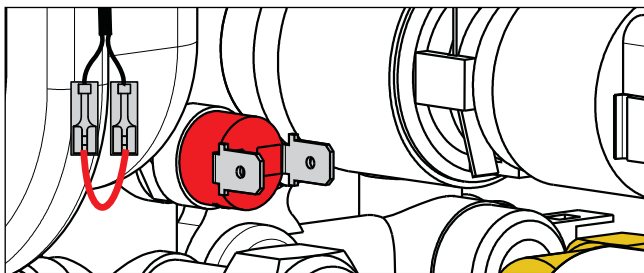
DHW production range 42–60°C

Optional functions

- Domestic cycle: - DHW pre-heating function
- Heating cycle: - modulating temperature regulation with compensated set point

at **LOW** temperature setting:

- floor slab heating function



Factory settings

The SATK30105HE HIU is 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 (45–75°C), proceed as follows.

- 1 - cut off the electric power supply to the HIU
- 2 - set switches 2-3 according to the following setting:




- 3 - **disconnect the thermal safety thermostat** (see page 13 ref. 5) and **apply a jumper on the cable** (see adjacent diagram)
- 4 - restore the electric supply.

OFF  **Factory set (do not change)**

ON 

OFF  **May be changed to activate optional functions**

ON  **Switch 1: modulating temperature regulation with compensated set point**

Switch 2-3: HIGH - LOW temperature setting

Switch 5: DHW pre-heating function

Maintenance

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

Regular maintenance guarantees better efficiency and helps to save energy.

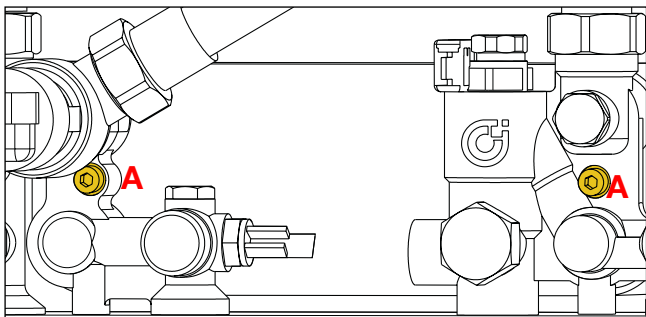
Before carrying out any maintenance, repair or part replacement work, proceed as follows:

- 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 socket head screws fixing it in place (A)
- Replace the heat exchanger and the O-rings.
- Tighten the two fixing screws (A).

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.

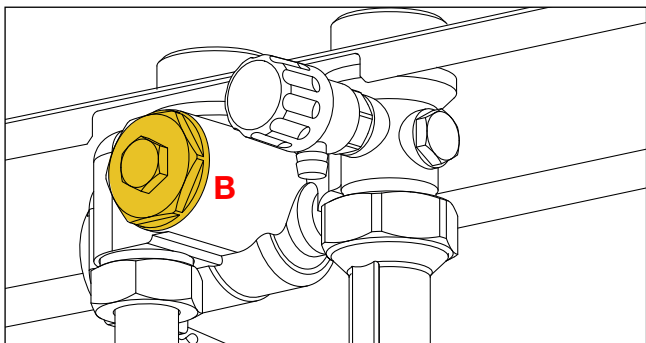


Strainer cleaning

All heat interface units have a strainer on the inlet for water from the centralised system.

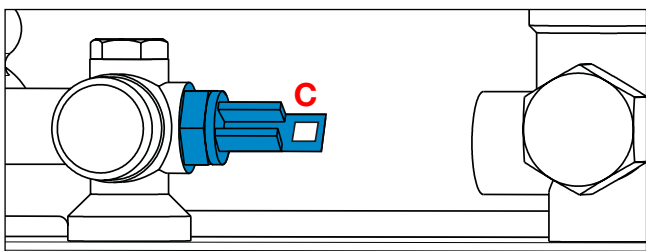
To clean these strainers, carry out the following maintenance procedure:

- Unscrew the cap (B)
- Remove the strainer mesh and discard any impurities
- Refit the strainer mesh
- Refit the cap and tighten it.



Temperature probe replacement

- Disconnect the probe cable by bending tab (C) slightly and extracting the connector (see page 13, ref. 1-3-7)
- Unscrew the probe
- Fit the new probe
- Reconnect the connector respecting the only possible way it can be inserted.

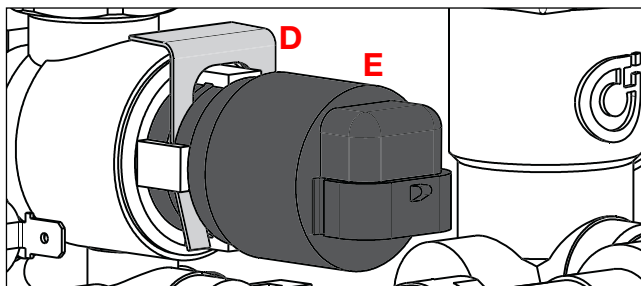


Vessel pre-charge check

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

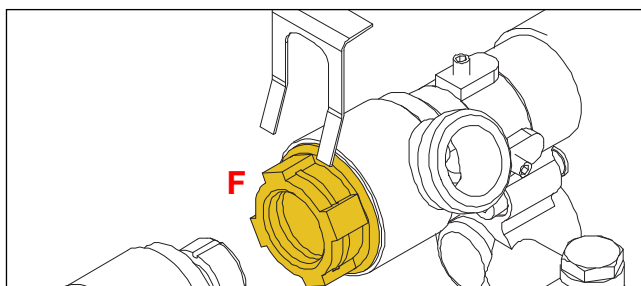
Replacing the valve obturator

- 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.



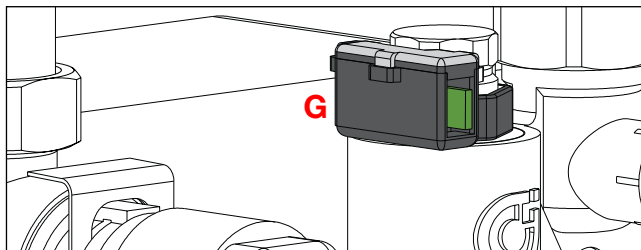
Replacing the valve obturator

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



Replacing the DHW priority flow meter

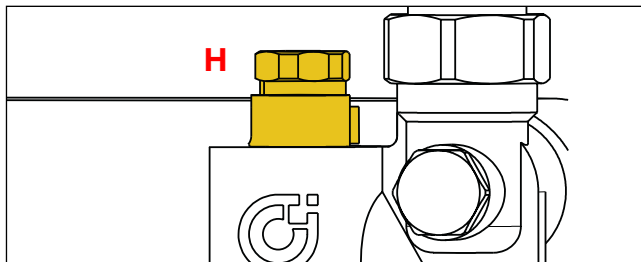
- Disconnect the flow meter cable acting on the connector (see page 13, ref. 2)
- Extract the flow sensor (G)
- Position the new sensor
- Reconnect the connector respecting the only possible way it can be inserted.



Replacing or cleaning the DHW priority flow meter turbine

Extract the flow sensor

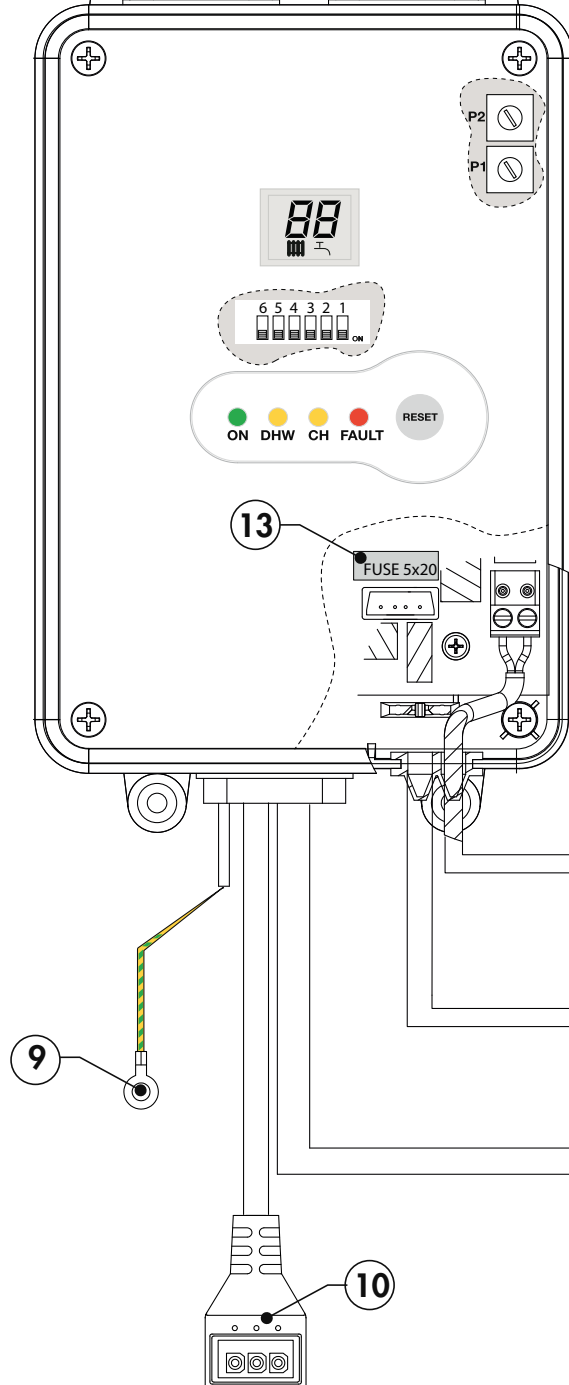
- Unscrew and remove the cartridge (H)
- Remove any impurities or change the cartridge if necessary
- Screw the cartridge back into place
- Refit the flow sensor



When carrying out maintenance on the electrical part, for the connections follow the diagram on page 13.

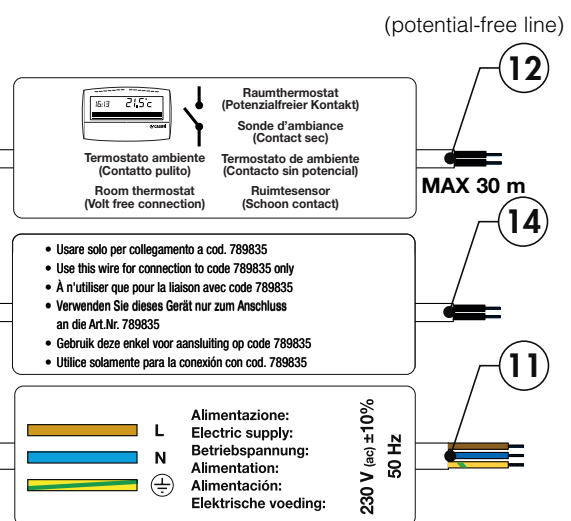
After concluding maintenance, proceed with the filling and checking operations described in the chapter "Commissioning" and fit the cover.

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



1	DHW temperature probe
2	DHW priority flow meter
3	Flow temp. compensation return probe
4	DHW production valve actuator
5	Thermal safety thermostat
6	Pressure switch
7	Heating flow temperature probe
8	Heating valve actuator
9	Earth
10	Pump
11	Electric supply 230V (ac)*
12	Room thermostat*
13	Fuse
14	HIU enabling

* Wiring to be made during installation
(Room thermostat not supplied)



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
		DHW temperature probe cable inverted with heating probe	restore correct connection
		presence of air in the system	vent the system
		electronic controller not working	call qualified personnel to have it replaced
		valve obturator blocked in closed position	call qualified personnel to have it replaced
		centralised system not working/cold	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
	FAULT LED ON + error code 80 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
The water is hot but does not reach the desired temperature	DHW LED ON	no electric power supply	restore HIU electric supply
		protection fuse burnt out	call qualified personnel to have it replaced
		domestic water cycle temperature set point too low	increase set point
		primary circuit strainer of the HIU 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 temperature probe cable inverted with heating probe	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
Hot water temperature is too high	DHW LED ON	primary circuit flow rate insufficient	contact person in charge of system
		domestic water cycle temperature set point too high	decrease set point
		DHW temperature probe cable inverted with heating probe	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
		electronic controller not working	call qualified personnel to have it replaced
Hot water flow rate is insufficient	DHW LED ON	primary circuit excessive pressure	contact person in charge of system
		HIU strainer clogged	call qualified personnel to have it serviced
		possible domestic water system shut-off valves partially closed	open the valves
Hot water flow rate is zero	DHW LED OFF	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
		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

FAULT DESCRIPTION	INDICATIONS	POSSIBLE CAUSE OF FAULT	OPERATIONS TO BE PERFORMED
The room is not reaching the desired temperature	CH LED ON	heating cycle temperature set point too low	increase 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 temperature probe cable inverted with heating probe	restore correct connection
		presence of air in the system	vent the system
		pump not working	call qualified personnel to have it replaced
		pump cable not connected	restore connection
		possible system shut-off valves/terminals closed	open the valves
		centralised system temperature insufficient	contact person in charge of system
		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
	CH LED OFF	chrono-thermostat time setting incorrect	check programming of chrono-thermostat
		chrono-thermostat not working	check chrono-thermostat
	all LEDs are OFF	no electric power supply	restore HIU electric supply
		protection fuse burnt out	call qualified personnel to have it replaced
	FAULT LED ON + error code 4 active	heating circuit pressure too low	restore system pressure
	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-out	call qualified personnel to have it serviced
	FAULT LED ON + error code 79 active	incorrect switch setting	restore correct switch setting
	FAULT LED ON + error code 80 active	incorrect switch setting	restore correct switch setting
Start-up of the heat interface unit heating function triggers the safety circuit breaker	All LEDs are OFF	pump cable connector inserted the wrong way round	check that the pump cable connector is inserted the right way round

Commissioning checklist

	Checks to be performed	
1	Is the heat interface unit properly secured to the wall?	
2	Has the system flushing been carried out?	
3	Check strainers and clean them if necessary	
4	Is the heat meter (if present) connected?	
5	Is the heat meter (if present) connected to the building datalogger (if required)?	
6	Is the DCW line fitted with a pressure reducing valve?	
7	Is the system protected by water hammer arresters?	
8	Has the domestic exchanger pre-heating function (normally off) been activated (if required)?	
9	Has the modulating temperature regulation with compensated set point (normally off) been activated (if required)?	
10	Is the heat interface unit connected to the 230 V (ac) electric supply?	
11	Is the room thermostat (potential-free contact) connected?	
12	Has the visual inspection of the HIU internal electrical connections given a positive result and are the connections compliant with specifications and made in accordance with best practices?	
13	Are the shut-off valves open?	
14	Has the visual inspection of the hydraulic connections given a positive result?	
15	Has the system (primary) been filled and vented?	
16	Has the system (secondary) been vented and filled to a pressure of between 1,2 and 2 bar?	
17	Is the heat interface unit powered (green "ON" LED lit)?	
18	No alarm code ("fault" LED lit) displayed on the heat interface unit regulator?	
19	Has the DHW temperature been set to the required value? (42–50°C recommended)	
20	Has the heating flow temperature been set to a correct value?	
21	Is the primary circuit at working temperature?	
22	Check that "CH" LED lights approx. 10 seconds after the thermostat trips	
23	Check that the pump operates correctly on tripping of the thermostat (check that secondary flow pipes start to heat up)	
24	Simulate minimal DHW tapping (approx 3 l/min) and check that "DHW" LED lights and that water is supplied at the required temperature	
25	Simulate abundant DHW tapping and check, by means of the installed heat meter, that the primary circuit flow rate is sufficiently high	