

SATK series double wall-mounted indirect Heat Interface Unit

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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 systems served by district heating networks.

Product range

- SATK30103HE** Indirect wall-mounted HIU, separate water, for instantaneous domestic hot water production, 40 kW.
- SATK30105HE** Indirect wall-mounted HIU, separate water, for instantaneous domestic hot water production, 65 kW.



* For codes
SATK30103HE LTC
SATK30103HE LTCD
SATK30105HE LTC
SATK30105HE LTCD
there is no filling unit and
backflow preventer kit as
shown opposite.

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SAFETY INSTRUCTIONS

WARNINGS:



These instructions must be read and understood before installing and servicing 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, commissioned and serviced 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 debris, rust, incrustations, lime scale, 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 overstressed mechanically. Over time, this could result in breakage, resulting in leaks that cause damage and/or injury.
6. Water temperatures above 50 °C can cause serious scalding. When installing, commissioning and servicing the device, take the necessary precautions so that these temperatures will not be hazardous for people.
7. If the water is particularly hard or impure, it must be filtered and treated properly before entering the device inlet, in accordance with current legislation. Otherwise the device may be damaged and will not work properly.
8. Any use of the device other than for its intended purpose 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.

IMPORTANT! Electric shock risk. Live parts. Shut off the electric supply before opening the device enclosure.

1. During installation and maintenance operations, always avoid direct contact with live or potentially hazardous parts.
2. The device must not be exposed to dripping water or humidity, direct sunlight, weather conditions, 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 two-pole switch. If work has to be carried out 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 specifications of the zone in which 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 needs 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 current legislation.
6. Electrical installation must only be carried out by a qualified technician, in accordance with legal requirements.
7. The appliance 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.

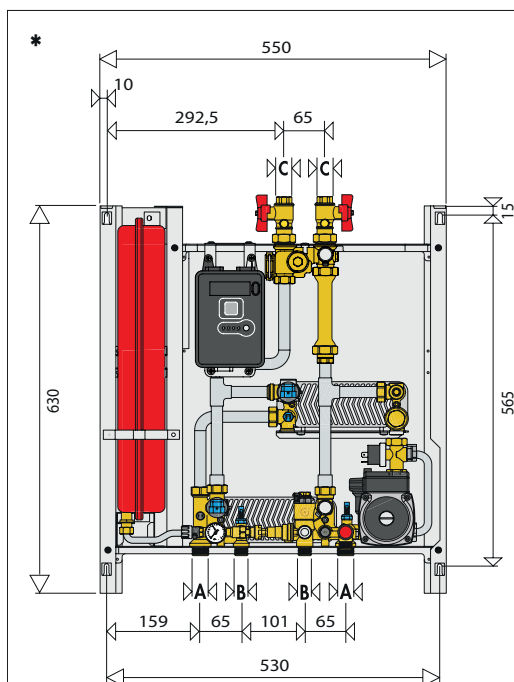
NOTES:

1. Install water hammer arrester devices to compensate for any overpressure in the domestic water circuit;
2. In the presence of hot water recirculation or if a check valve is fitted at the domestic cold water inlet, suitable devices must be used to accommodate the expansion of the medium 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.

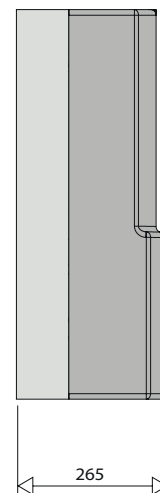
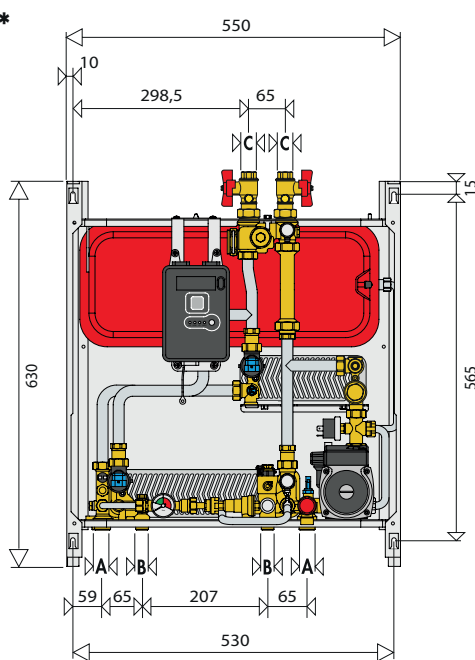
For the updated version of the technical documentation, please refer to the website www.caleffi.com.

Dimensions

SATK30103HE



SATK30105HE



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

SATK30103HE technical specifications

Medium:	water
Maximum percentage of glycol:	30 %
Maximum medium temperature:	85 °C
Maximum working pressure:	- primary circuit: 1,6 MPa (16 bar) - secondary circuit: 0,3 MPa (3 bar) - domestic 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 maximum 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
Maximum power consumption:	80 W
Protection class:	IP 40
Pump:	UPM3 15 - 70
Pump by-pass setting:	45 kPa (0,45 bar)
Motors:	24 V stepper
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)

Property, plant and equipment

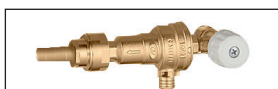
Components:	brass EN 12165 CW617N
Connecting pipes:	steel
Frame:	painted steel RAL 9010
Protective shell cover:	PPE
Heat exchanger:	brazed stainless steel

SATK30105HE technical specifications

Medium:	water
Maximum percentage of glycol:	30 %
Maximum medium temperature:	85 °C
Maximum working pressure:	- primary circuit: 1,6 MPa (16 bar) - secondary circuit: 0,3 MPa (3 bar) - domestic circuit: 1,6 MPa (16 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 maximum 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
Maximum power consumption:	80 W with UPM3 15 - 70
Protection class:	IP 40
Pump:	UPM3 15 - 70
Pump by-pass setting:	45 kPa (0,45 bar)
Motors:	24 V stepper
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)

Property, plant and equipment

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



* For codes SATK30103HE LTC / SATK30103HE LTCD / SATK30105HE LTC / SATK30105HE LTCD, there is no filling unit and backflow preventer kit as shown opposite.

Installation

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

If the appliance is enclosed inside or between cabinets, sufficient space must be provided for routine maintenance procedures. It is recommended that electrical devices NOT be 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 appliance 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. safety relief valve and filling unit backflow preventer discharge pipe

• Electric:

1. electric supply line 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)

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, making sure in particular that the cross-section of the cables is suitable.

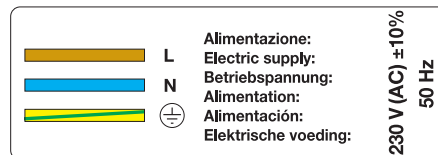
If you have any doubts, contact a qualified technician to request a thorough check of the electrical system.

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

The appliance 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.



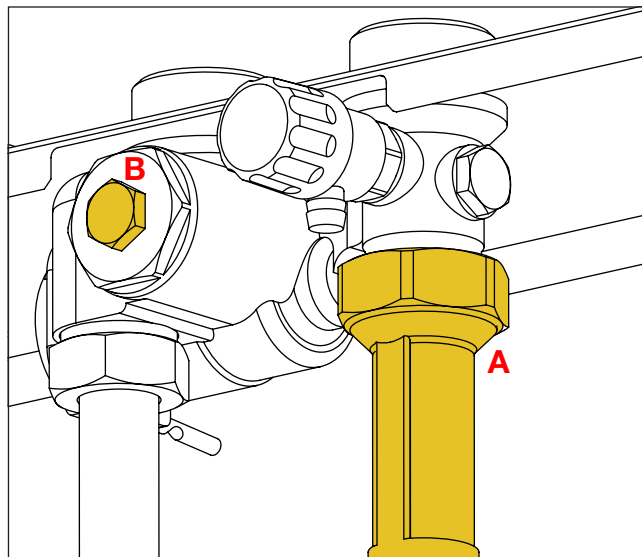
Heat meter installation

The HIU is designed to house 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.



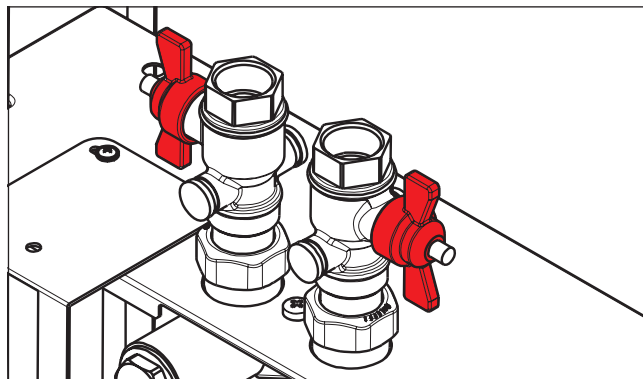
Hydraulic connections

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.

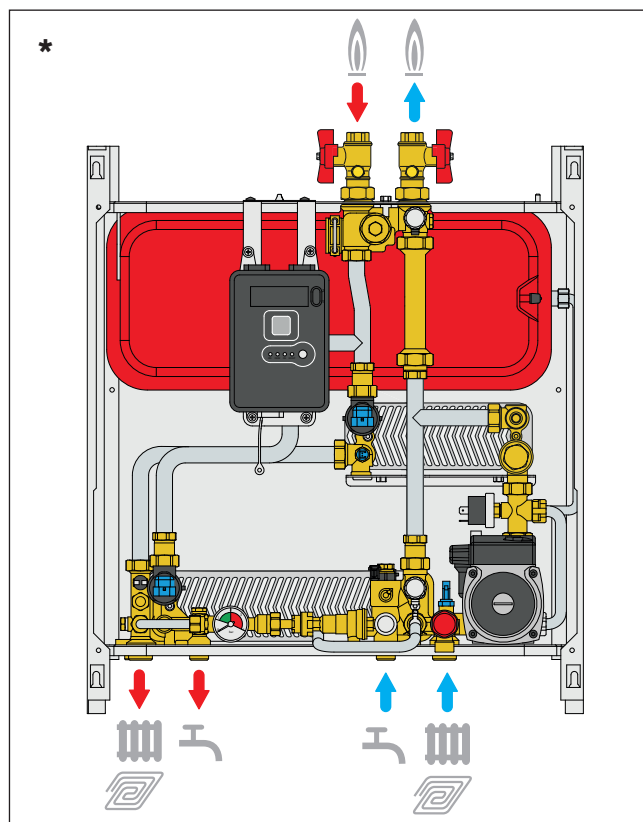
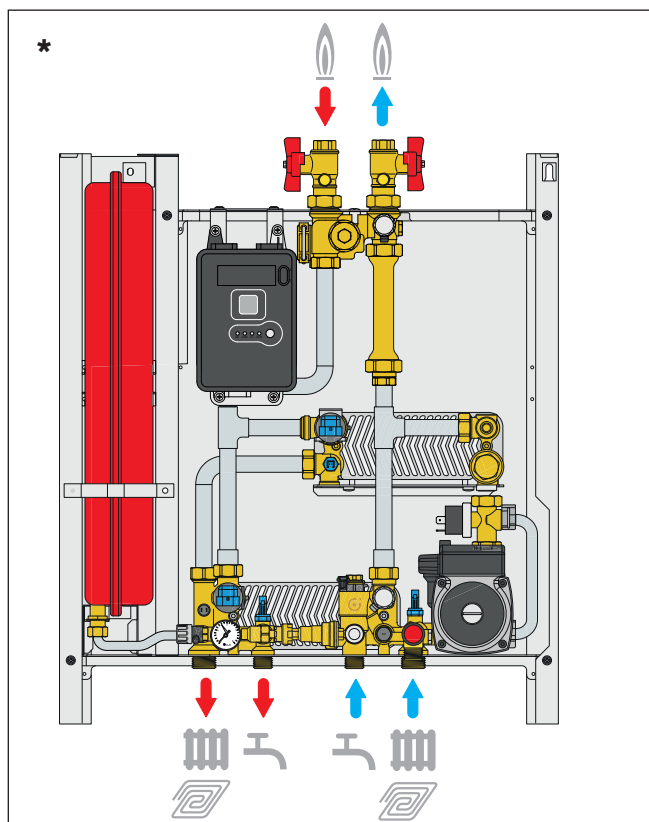
It is advisable to also install manual shut-off valves (not supplied) on the bottom connections to the user circuits.

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 by-pass 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 arrester devices to compensate for any overpressure in the domestic water circuit;
2. In the presence of hot water recirculation or if a check valve is fitted at the domestic cold water inlet, suitable devices must be used to accommodate the expansion of the medium 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.




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Connection to the chrono-thermostat

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

Connection to this device (**voltage-free contact**) must take place using the 2-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.

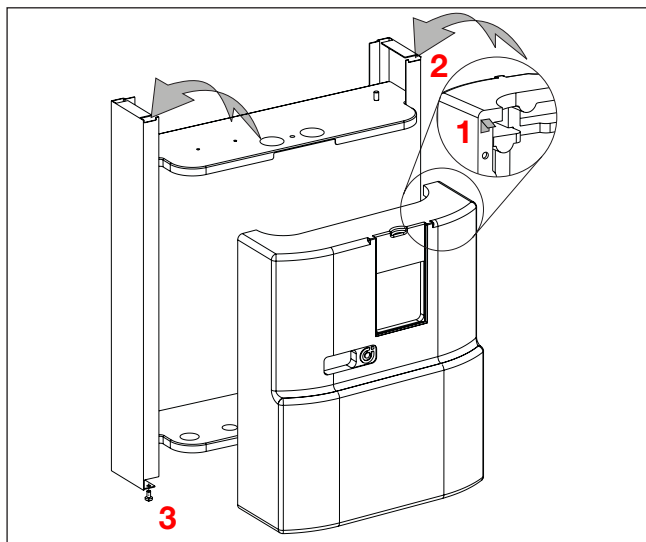
<p>WARNING! DO NOT CONNECT EXTERNAL VOLTAGE SUPPLY TO THESE TERMINALS</p> <p>ATTENZIONE! NON ALIMENTARE IN TENSIONE</p>	 <p>Termostato ambiente (Contatto pulito) Room thermostat (Volt free connection)</p>	<p>Raumthermostat (Potenzialfreier Kontakt) Sonde d'ambiance (Contact sec) Termostato de ambiente (Contacto sin potencial) Ruimtesensor (Schoon contact)</p>
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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.

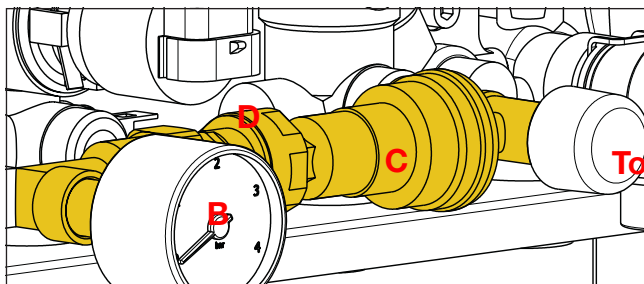
Filling the user system (*)

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

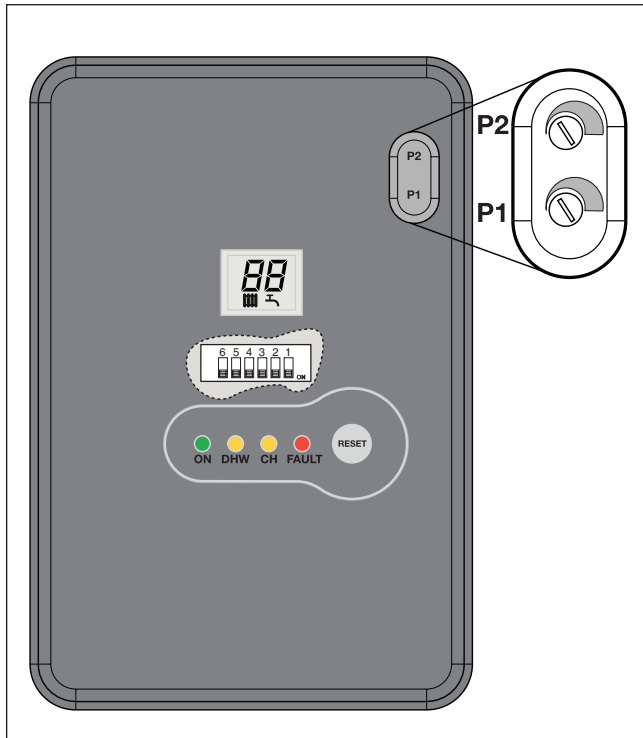
Before starting the HIU, visually check the hydraulic connections' watertightness and the tightness of the electric connections. After finishing the check, activate the electric supply to the HIU and check for the presence of any error signals.

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.



* For codes
SATK30103HE LTC
SATK30103HE LTCD
SATK30105HE LTC
SATK30105HE LTCD
there is no filling unit and backflow preventer kit as shown opposite.
For information on the user system filling procedure, please refer to the technical documentation for the product ALT-HIUFLP.

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 valve anti-seizing cycle

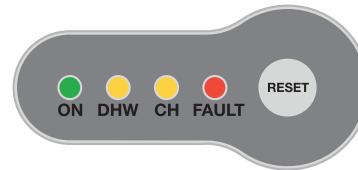
The anti-seizing cycle for the diverter/modulating valve is run every 24 hours.

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 water 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

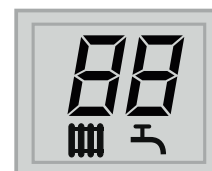
• Trimmers for set point settings

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



• 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 is activated due to water request (detected by the domestic water flow meter), the controller pilots the opening of the modulating valve so as to keep the temperature detected by the domestic water probe at the selected set point value.

When tapping ends, the modulating valve is fully closed.

The active domestic hot water cycle is signalled by the yellow DHW LED steadily lit.

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 steadily lit.

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 the heating and domestic water cycles, and can be suspended at any time by pressing and holding the RESET key for 8 seconds.

Optional functions (to activate/deactivate the optional functions the electric 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 regulator partially opens the domestic water modulating valve for the time required (max. 5 min.) to bring the heat exchanger to the condition wherein it can assure rapid DHW production.

The domestic 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.

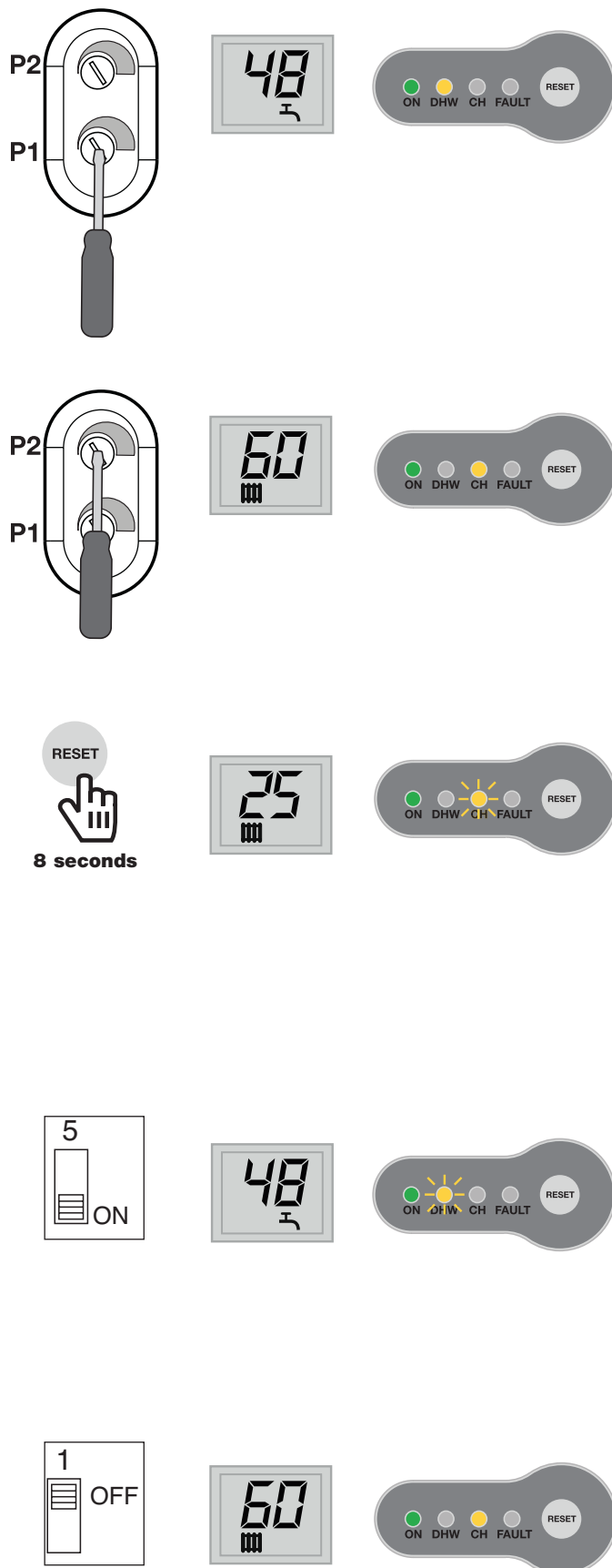
When the function is enabled, the flow temperature is modified according to the temperature detected by the compensation probe in order to maintain this latter temperature value constant. This keeps the actual thermal efficiency of the slab under control, and consequently also the ambient thermal load. 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 setting: $\Delta T = 8\text{--}22\text{ }^{\circ}\text{C}$

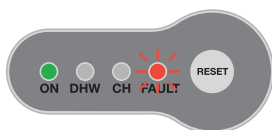
In **LOW** temperature setting: $\Delta T = 2\text{--}8\text{ }^{\circ}\text{C}$



Safety and alarms

Error codes associated with faults signalled by the 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 trips, 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 for the expansion vessel can cause a pressure switch fault.

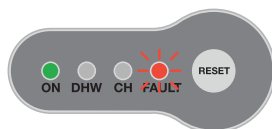
Removing the fault

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").

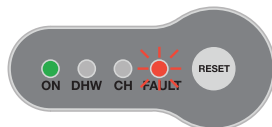
Probe fault

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.

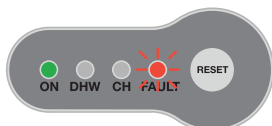
Heating probe fault Error code: 5



Domestic water probe fault Error code: 6



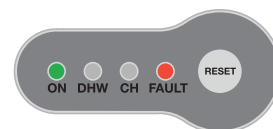
Compensation probe fault Error code: 15



Removing the 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



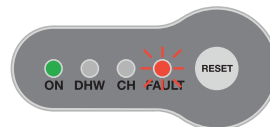
HIUs configured to support low-temperature heating continuously monitor the safety thermostat controlling the flow temperature. If the safety thermostat is activated during a general cycle, the heating circulation pump immediately comes to a stop and the modulating valve is completely closed. After the 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, activation of the shut-off valve will be postponed until the end of that domestic water cycle.

Removing the fault

To restore the operating mode press the manual RESET button.



Incorrect switch setting Error code 79



Removing the 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 the 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, separate water, with high-efficiency pump. DHW 40 kW.

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 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 (not in UK market)
12. Safety relief valve
13. Flow temp. compensation return probe
14. Primary circuit drain cock
15. Pump UPS3 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 features

Heating range

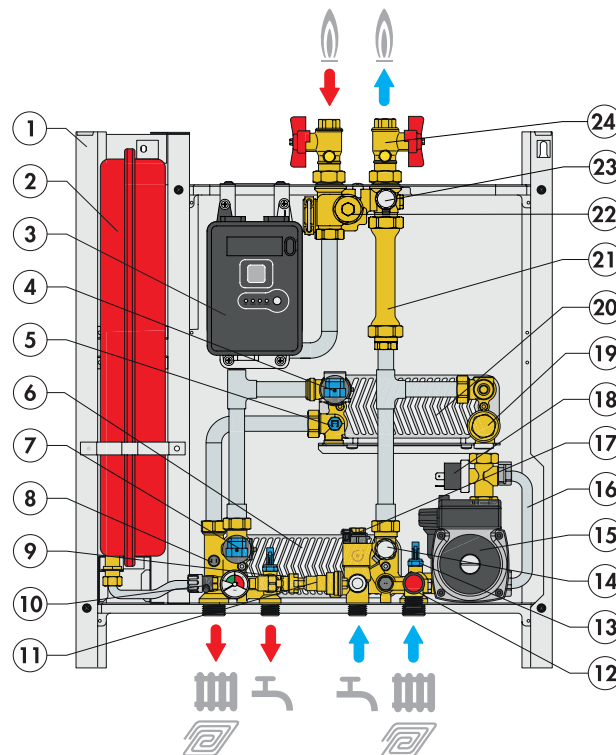
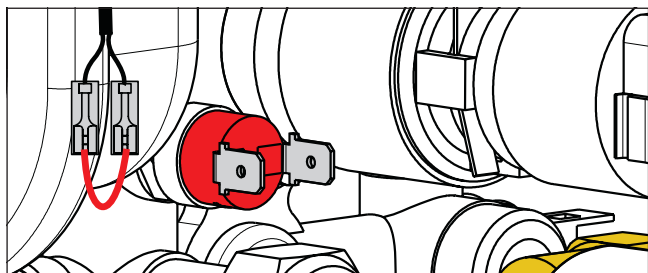
- **LOW** temperature setting 25–45 °C
- **MEDIUM/HIGH** temperature setting 45–75 °C

Set point regulation

DHW production range 42–60 °C

Optional functions

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



Factory settings (*)

The SATK30103HE heat interface unit is factory set to support **low temperature** heating (25–45 °C), according to the switch setting below.



To change 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 bridge the cable (see image opposite)
- 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

* codes

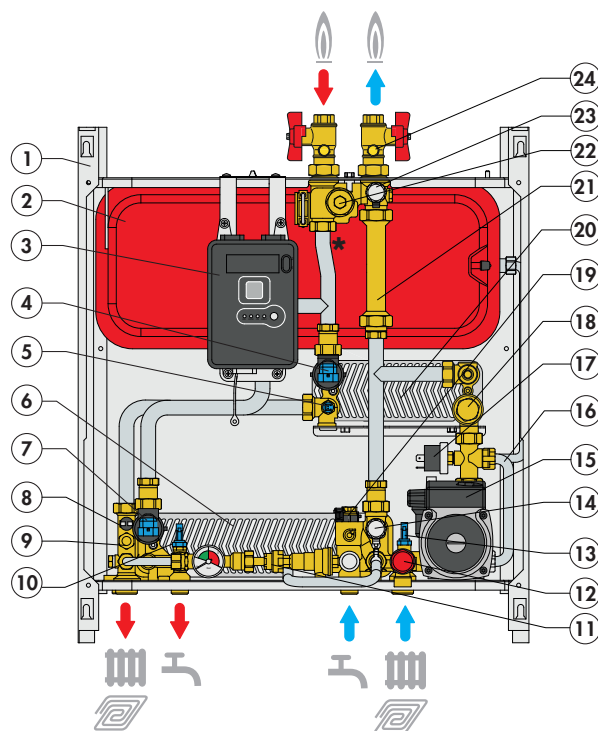
SATK30103HE LTC
SATK30103HE LTCD
SATK30105HE LTC
SATK30105HE LTCD

are factory set to high temperature. For more information, please review the reference documentation.

SATK30105HE Indirect HIU, separate water, with high-efficiency pump. DHW 65 kW.

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 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 (not in UK market)
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 features

Heating range

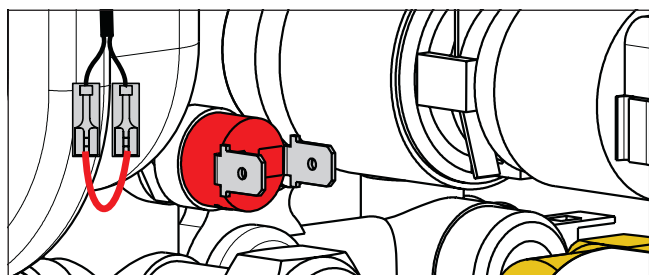
- **LOW** temperature setting 25–45 °C
- **MEDIUM/HIGH** temperature setting 45–75 °C

Set point regulation

DHW production range 42–60 °C

Optional functions

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



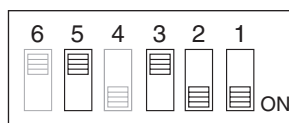
Factory settings (*)

The SATK30105HE heat interface unit is factory set to support **low temperature** heating (25–45 °C), according to the switch setting below.



To change 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 bridge the cable (see image opposite)
- 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**

* codes

SATK30103HE LTC
SATK30103HE LTCD
SATK30105HE LTC
SATK30105HE LTCD

are factory set to high temperature. For more information, please review the reference documentation.

Maintenance

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

Regular maintenance guarantees better efficiency and helps to save energy.

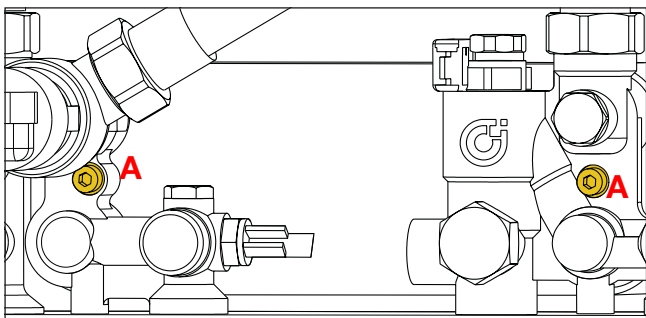
Before carrying out any maintenance, repair or part replacement work, proceed as follows:

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

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.

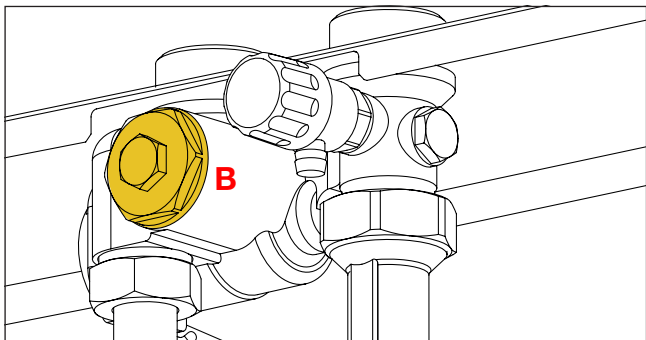


Strainer cleaning

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

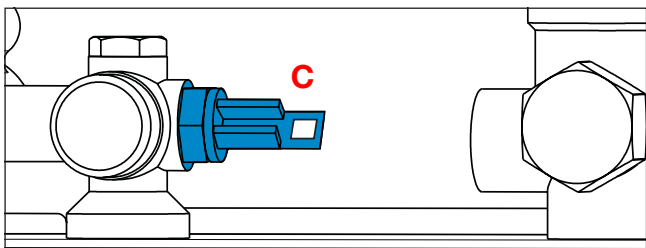
To clean these strainers, carry out the following maintenance procedure:

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



Temperature probe replacement

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

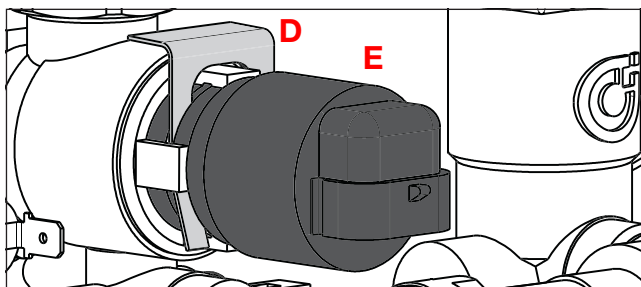


Vessel pre-charge check

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

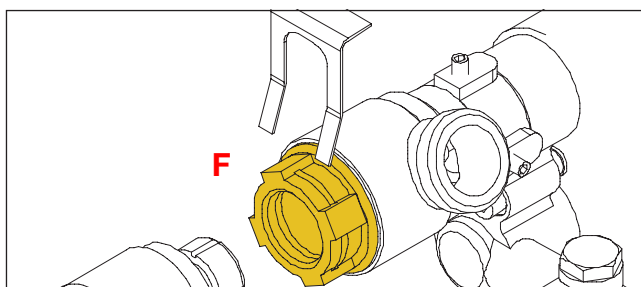
Replacing the valve obturator

- 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.



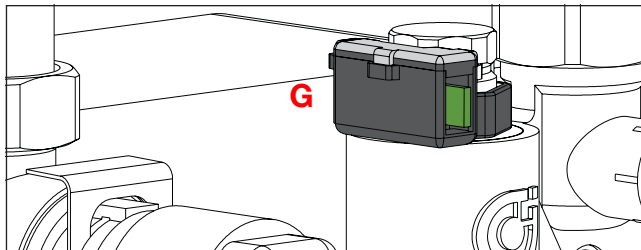
Replacing the valve obturator

- 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

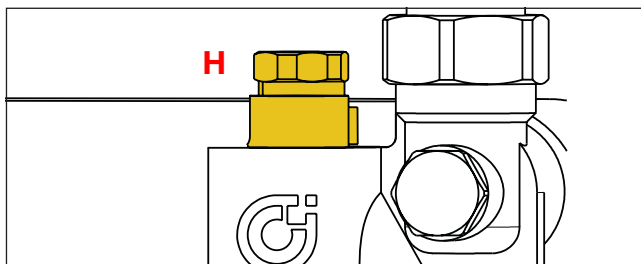
- Disconnect the flow meter cable acting on the connector (see page 13, ref. 2)
- Extract the flow sensor (G)
- Position the new sensor
- Reconnect the connector, observing the only possible way it can be inserted.



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

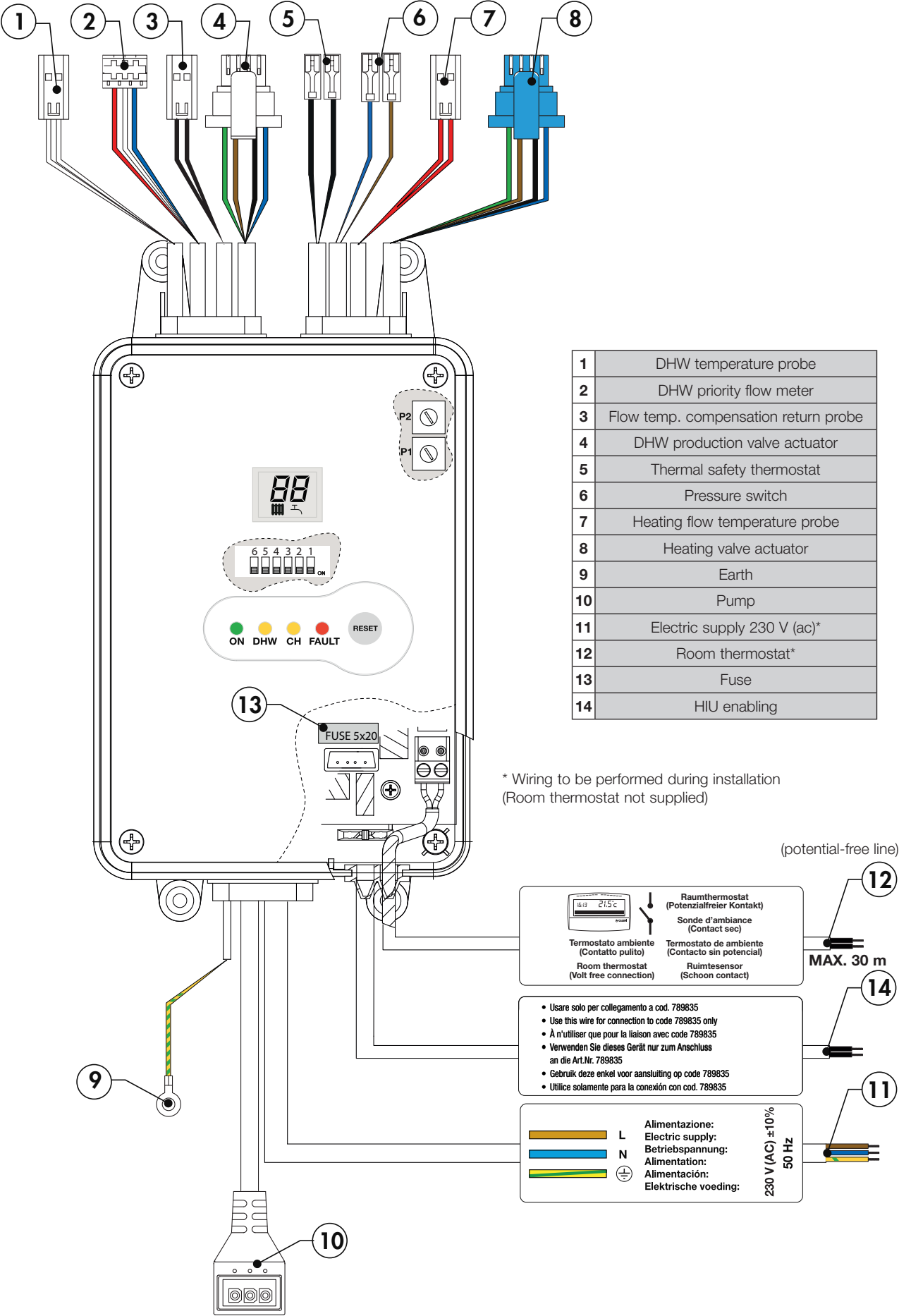


When carrying out maintenance on the electrical part, for the connections follow the diagram on page 13.

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 S.p.A.

Electrical connections



Troubleshooting

FAULT DESCRIPTION	ALERTS	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 and heating temperature probe cables inverted	restore correct connection
		presence of air in the system	vent the system
		electronic regulator 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	electric supply cut off	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 partially 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 regulator 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
the 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
		electronic regulator not working	call qualified personnel to have it replaced
		primary circuit excessive pressure	contact person in charge of system
Hot water flow rate is insufficient	DHW LED on	HIU strainer clogged	call qualified personnel to have it serviced
		potential domestic water system shut-off valves partially closed	open the valves
		centralised domestic circuit cold water flow rate insufficient	call qualified personnel to have it serviced
Hot water flow rate is zero	DHW LED off	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	ALERTS	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 chrono-thermostat programming
		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 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 regulator 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 chrono-thermostat programming
		chrono-thermostat not working	check chrono-thermostat
	all LEDs are off	Electric supply cut off	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 check-list

	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 sealing efficiency produced positive results?	
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) on heat interface unit regulator?	
19	Has the DHW temperature been set to the required value? (recommended 42-50 °C)	
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 demand (approx 3 l/min) and check that the "DHW" LEDs come on and that water is supplied at the required temperature	
25	Simulate abundant DHW demand and check, by means of the installed heat meter, that the primary circuit flow rate is sufficiently high	

