CALEFFI Hydronic Solutions

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Wall-mounted compact indirect HIU - DHW production in storage cylinder

SATK40 series

INSTRUCTIONS FOR INSTALLATION, COMMISSIONING AND MAINTENANCE

Product range

SATK40103HE	Compact wall-mounted HIU for indirect heating and DHW production in storage cylinder. High efficiency pump.

Function

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

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SAFETY INSTRUCTIONS

WARNINGS

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

1 The device must be installed, commissioned and maintained by qualified technical personnel in accordance with national regulations and/or relevant local requirements.
2 If the device is not installed, commissioned and maintained correctly in accordance with the instructions provided in this manual, it may not work properly and may endanger the user.
3 Clean the pipes of any particles, rust, incrustations, limescale, welding slag and any other contaminants. The hydraulic circuit must be clean.
4 Make sure that all connection fittings are watertight.
5 When connecting water pipes, make sure that threaded connections are not mechanically overstressed. Over time this 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, adequate water filtration and treatment must be assured upstream from 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 two-pole 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 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 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.

LEAVE THIS MANUAL AS A REFERENCE GUIDE FOR THE USER. DISPOSE OF IN ACCORDANCE WITH LOCAL REGULATIONS. 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.

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.

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

Key to symbols


Primary circuit flow


Primary circuit return


High temperature circuit flow


High temperature circuit return


Low temperature circuit flow

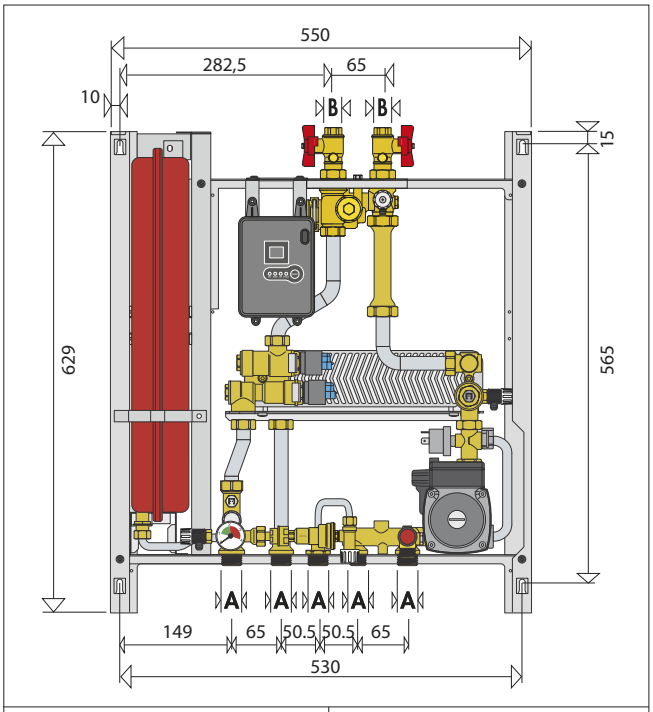

Low temperature circuit return


Storage flow


Storage return


Domestic cold water inlet (filling)

Dimensions



A	B
3/4" M	3/4" F

SATK40103HE technical specifications

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)
Nominal heat exchanger capacity:		15 kW
Maximum recommended primary circuit flow rate:		1,2 m³/h
Max. differential press. on modulating valve:		Δp 150 kPa (1,5 bar)
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)
Actuators:		stepper 24 V
Probes:		NTC 10 k Ω
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 EN12165 CW617N
Fitting pipes:	steel
Frame:	RAL 9010 painted steel
Protective shell cover:	PPE
Heat exchanger:	brazed stainless steel

Installation

The SATK series HIU is designed for installation in a protected domestic (or similar) environment and must not therefore be installed or used outdoors, i.e. in areas directly exposed to the weather. 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 appliance is 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:

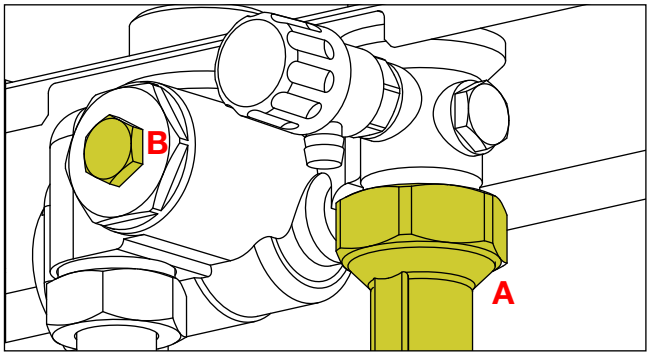
Hydraulic (see page 4):
1. connection to the central system line
2. heating circuit connection
3. connection to domestic hot water storage
4. domestic cold water circuit connection (for filling)
5. conveyance of safety relief valve and charging unit backflow preventer discharge

Electric (see page 9):
1. 230 V (ac) – 50 Hz electric supply line
2. chrono-thermostat/thermostat line (potential-free)
3. hot water storage thermostat line (live line)
4. centralised bus line for heat meter data transmission (if required)
5. centralised electric supply line for heat meter (if required)

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.*

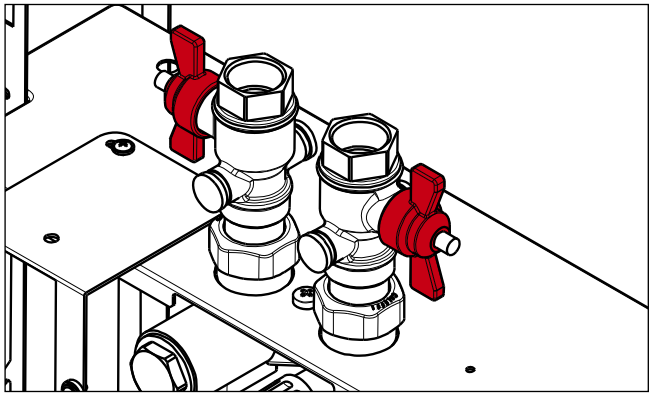
Heat meter installation

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
Proceed as described below to install the heat meter:
- 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.

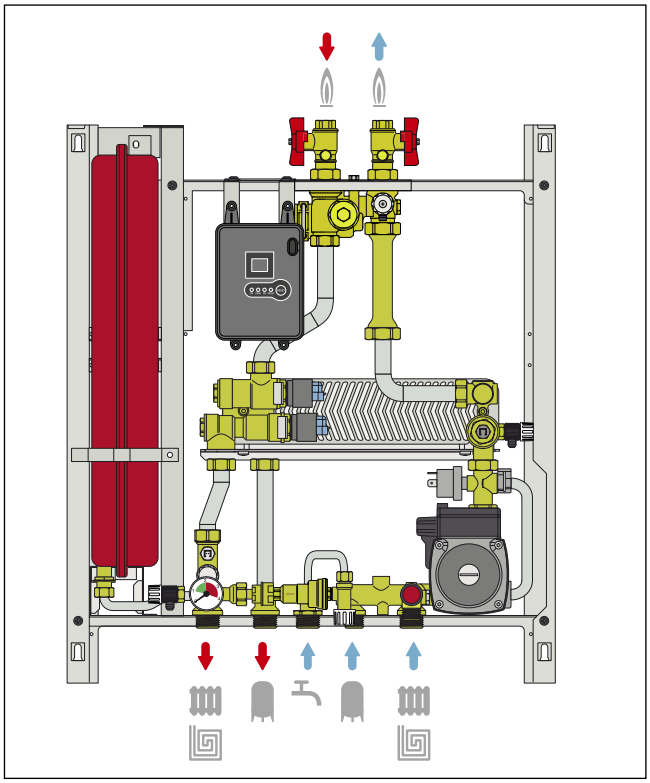


Hydraulic connections

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 terminals connecting to the dwelling.
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



N.B. DHW storage not supplied

N.B.:

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.

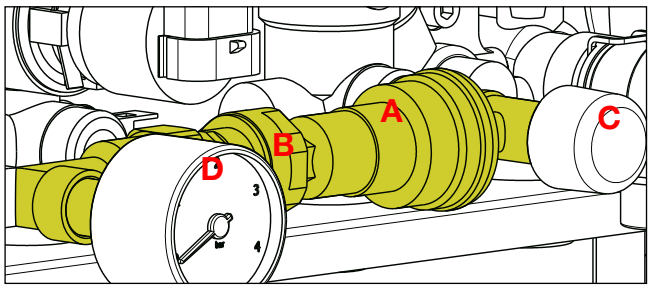
Commissioning

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).

Filling the user system

SATK40 series HIUs are fitted with a filling unit equipped with a backflow preventer (A), check valve (B) and cock (C) .
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 (C) and checking the value by means of the pressure gauge (D). Once the correct pressure has been reached, close the cock (C), vent the system and re-check the pressure (repeat the filling process if necessary).

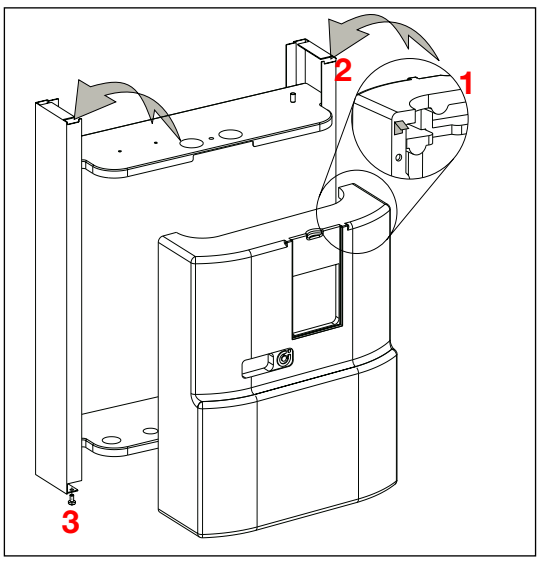


System start-up

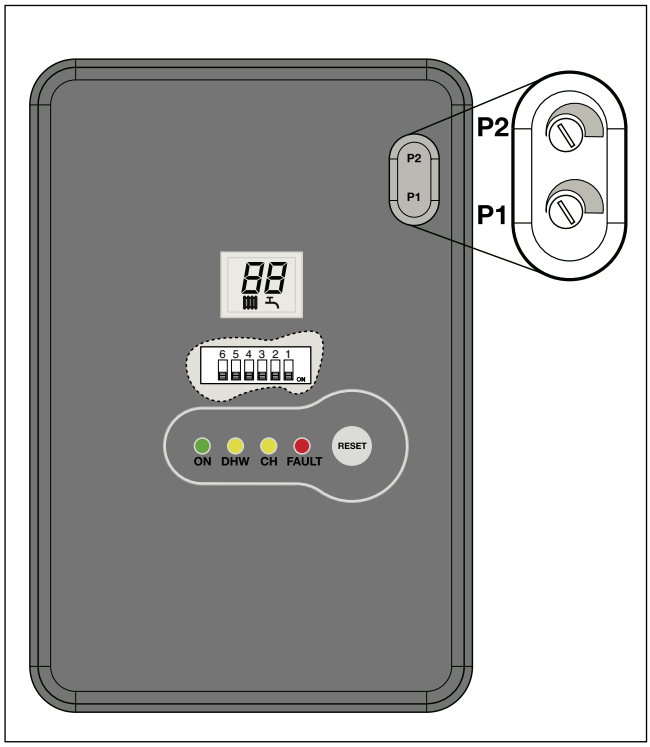
Before starting the HIU, visually check the hydraulic connection watertightness and the electric wiring. After finishing the check, activate the electric supply to the HIU and check for the presence of any error signals.
If there are any, eliminate the fault indicated and proceed as described below, 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.

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).



Electronic regulator



Operating principle
All heating and domestic hot water functions offered by SATK40 series HIUs are controlled by a digital temperature regulator.

Automatic controller functions

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

• 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-clogging cycle for the diverter/modulating valves is run every 24 hours.

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 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.

WARNING!
DO NOT CONNECT EXTERNAL VOLTAGE SUPPLY TO THESE TERMINALS

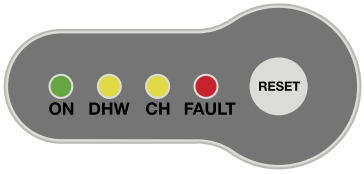
ATTENZIONE!
NON ALIMENTARE IN TENSIONE

Termostato ambiente (Contatto pulito)
Room thermostat (Volt free connection)

Raumthermostat (Potenzialfreier Kontakt)
Sonde d'ambiance (Contact sec)
Termostato de ambiente (Contacto sin potencial)
Ruimtesensor (Schoon contact)

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

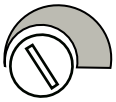
• LED indicator
The various functions and faults are signalled by either flashing or steady illumination of the LEDs.

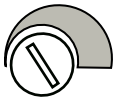


ON - Electric supply 230 V (ac)
DHW - Domestic cycle
CH - Heating cycle
FAULT - Fault detected

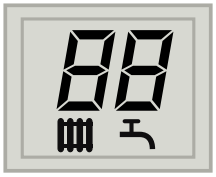
• RESET key
This allows restoration of normal function after the safety thermostat has been triggered and activation/deactivation of the floor slab heating function.

• 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.

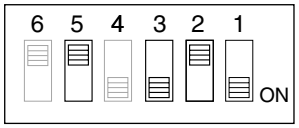
P1  Definition of simultaneous heating and DHW cycle times (see page 6)

P2  Heating cycle

• LCD display
Shows programmed set point temperatures and error codes.



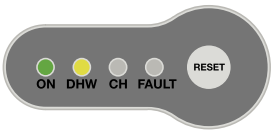
• Dip switches
Allow set-up of the various models and enabling of optional functions.



Operating cycles

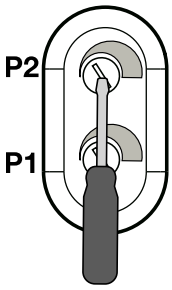
Domestic cycle
(assumes priority over the heating cycle in the default configuration)

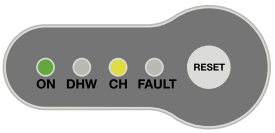
In response to a request for execution of the DHW cycle due to tripping of the storage thermostat, the regulator opens the primary circuit modulating valve fully, switches the diverter valve towards the storage circuit, and starts the circulation pump.
In order to reduce the storage temperature maintenance cycle times no check is performed on the water temperature supplied to the storage (ON-OFF regulation).
When the storage temperature is reached the circulation pump is stopped and the modulating valve is closed.
The domestic water cycle, when active, is indicated by the steady yellow DHW LED while the symbol is blinking.



Heating cycle - Fixed set point regulation

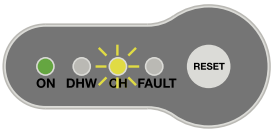
In response to a heating cycle request from the room thermostat the circulation pump is powered while the modulating valve is opened gradually until the set point temperature is reached.
At the end of the heating cycle, the circulation pump comes to a stop and the modulating valve is closed.
The active heating cycle is signalled by the yellow CH LED which comes on while the symbol is blinking.
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.
This function has priority over heating and domestic water cycles, and can be suspended at any time by pressing and holding the RESET button for 8 seconds.



Optional functions

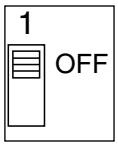
(to activate/deactivate the optional functions the electric power supply must always be turned off!)

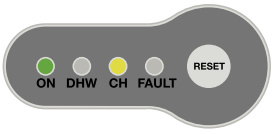
Heating cycle
Modulating temperature regulation with compensated set point

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 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:

Flow temperature = Return temperature + ΔT

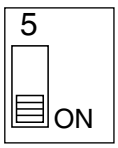
In **MEDIUM/HIGH** temperature setting:	ΔT 10–25°C
At **LOW** temperature setting:	ΔT 4–10°C

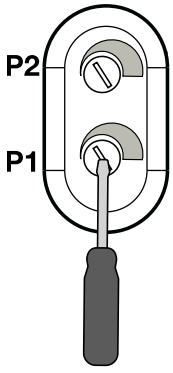




DHW circuit absolute priority disabling

Heating the hot water storage may, in the presence of a concurrent demand to perform a heating cycle, significantly delay the heating cycle and thus compromise the room comfort level. The absolute priority assigned to the DHW cycle can be disabled by setting dip switch 5 to ON. In this case, during the period of simultaneous requests for domestic water and space heating cycles the regulator will assign periods of 10 minutes between the two cycles. The active cycle is shown by blinking of the corresponding LED while the inactive cycle LED remains steady on. By using trimmer P1 the duration of the storage cylinder heating stage can be set (from 1 to 9 minutes).
(e.g. if you set “6”, 6 minutes every 10 will be dedicated to heating the storage cylinder, the remaining 4 to the space heating cycle).





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 SATK40 series HIU continuously monitors the status of the pressure switch controlling the water pressure in the closed-circuit user heating system.
If the pressure switch trips, the heating circulation pump immediately comes to a stop and the modulating valve is completely closed.
N.B.: A low expansion vessel pre-charge value can cause a pressure switch fault (see page 4 - “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

Compensation probe fault
Error code: 15

Removing a fault
Return to the operating mode is possible once the temperature probe is operating correctly (see page 10 - “Temperature probe replacement”).

Safety thermostat cut-out
(in LOW temperature setting)

Error code 69

The HIUs configured to support low temperature heating continuously monitor the safety thermostat controlling the flow temperature.
If the safety thermostat is activated during a general cycle, the heating circulation pump immediately comes to a stop and the modulating valve is completely closed.

Removing a fault
To restore the operating mode press the manual RESET button.

Incorrect DIP-switch setting
Error code 79

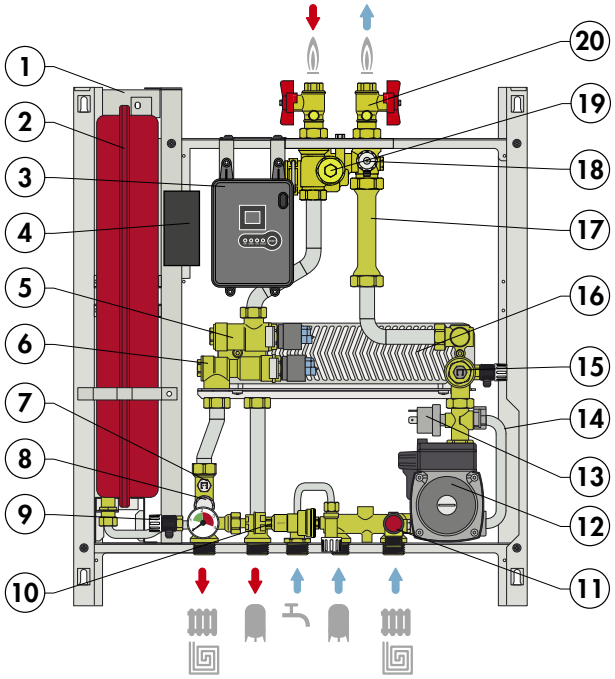
Removing a fault
Restore the correct switch setting as shown on page 8.

Incorrect DIP 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 setting as shown on page 8.

Characteristic components

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



Functional characteristics

Heating range

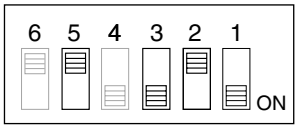
- LOW temperature setting 25–45°C
- HIGH temperature setting 45–75°C

Optional functions

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

Factory settings

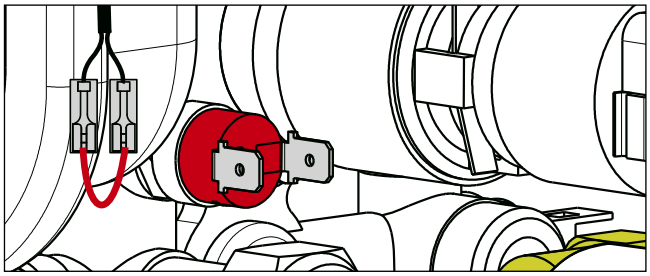
SATK40 HIUs are factory set to support **low temperature** heating (25–45°C), according to the following switch setting:



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 and apply a jumper on the cable (see page 9 ref. 5)**
4 - restore the electric supply.



OFF
ON

Factory set (do not change)

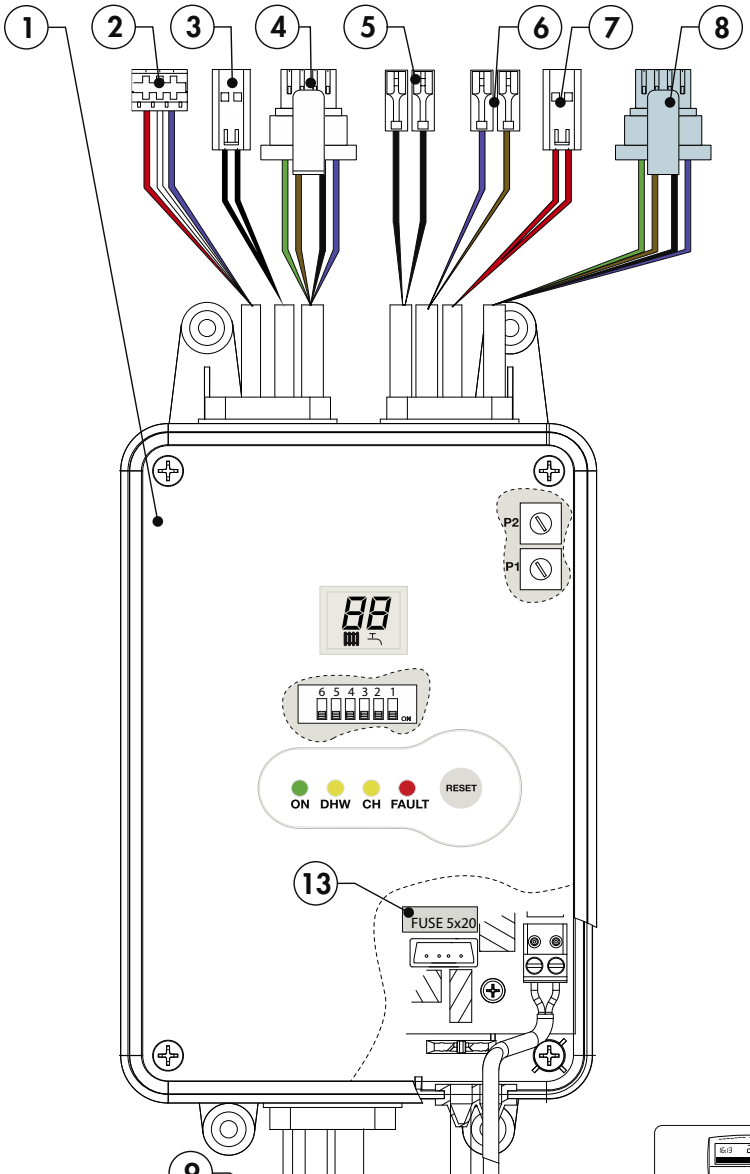
OFF
ON

May be changed to activate optional functions
Switch 1: modulating temperature regulation with compensated set point
Switch 2-3: change temperature range
Switch 5: DHW circuit absolute priority disabling

Electric connections

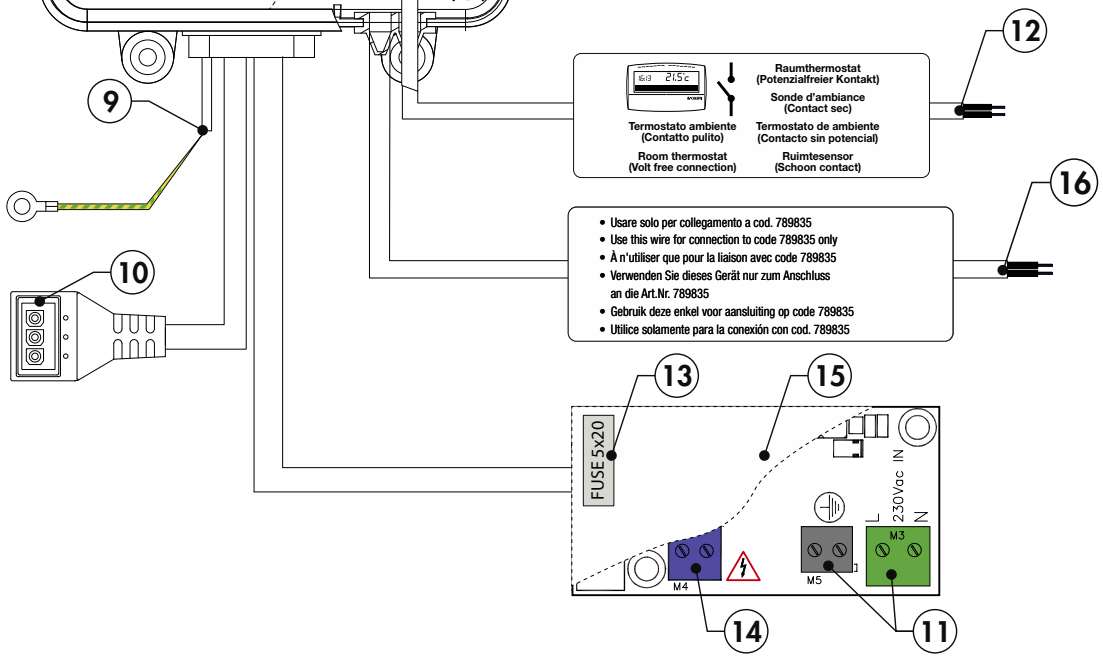
Make sure that the electrical system can withstand the maximum power consumption of the appliance, with particular emphasis on the cross-section of the cables.
If you have any doubts, contact a qualified technician to request a thorough check of the electrical system.
Electrical safety of the appliance 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.

Electric wiring



1	Electronic regulator
2	To electrical connections box
3	Flow temp. compensation return probe
4	Modulating valve actuator
5	Thermal safety thermostat
6	Pressure switch
7	Heating flow temperature probe
8	Diverter valve actuator
9	Earth
10	Pump
11	Electric supply 230V (ac)*
12	Room thermostat*
13	Protection fuse
14	Storage cylinder thermostat*
15	Electrical connections box
16	HIU enabling

* Wiring required during installation (room thermostat and storage thermostat not supplied)

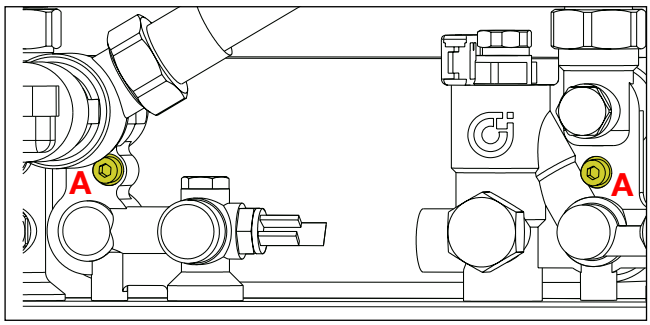


Maintenance

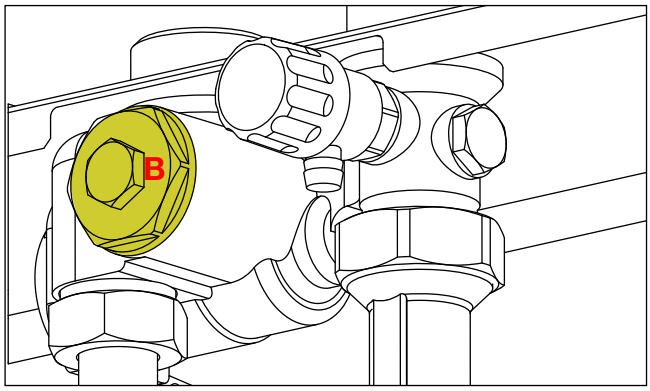
All maintenance procedures should be carried out by an authorised technician.
Regular maintenance guarantees better efficiency and helps to save energy.
Before carrying out any maintenance, repair or part replacement work, proceed as follows:
- Cut off the electric supply
- Remove the cover
- Close the shut-off valves
- Empty the heat interface unit using the drain cocks provided.

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).

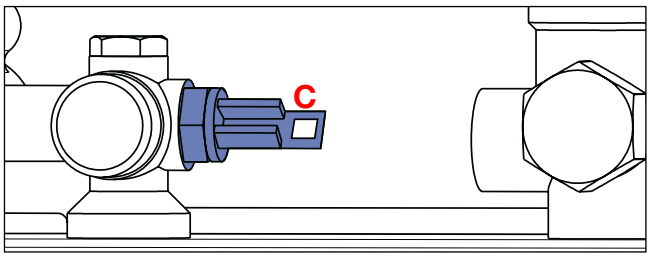
N.B. The pins fixing the heat exchanger are positioned in such a way as to allow it to be placed only in the correct direction.



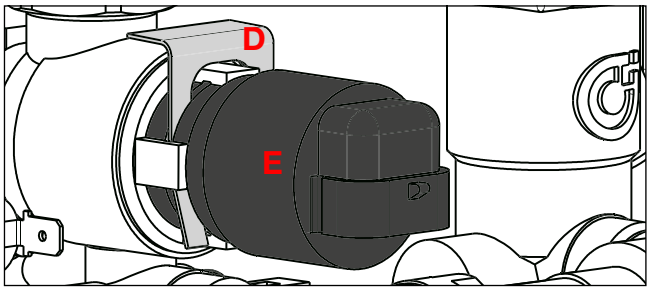
Strainer cleaning
All the HIUs have strainers on the inlet for water from the centralised system and on the secondary circuit.
To clean these strainers, carry out the following maintenance procedure:
- Unscrew the cap (B)
- Remove the mesh strainer and discard any impurities
- Refit the mesh strainer
- Refit the cap and tighten it.



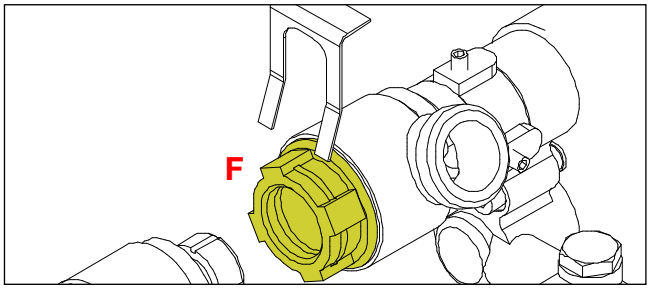
Temperature probe replacement
- Disconnect the probe cable, lightly folding the tab (C) and extracting the connector (see page 9, ref. 3-7)
- Unscrew the probe
- Fit the new probe
- Reconnect the connector respecting the only possible way it can be inserted.



Replacing the valve actuator
- Disconnect the actuator cable, lightly pressing the tab on the connector and extracting it (see page 9, ref. 4-8)
- Extract the fixing clip (D) and then the actuator
- Position the new actuator (E)
- Insert the fixing clip, respecting the correct direction
- Reconnect the connector.



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



Vessel pre-charge check
For correct operation of the system periodically check (at least once every six months) the vessel pre-charge value. Perform check by means of the following actions:
- Close the shut-off valve
- Empty the HIU using the drain cocks provided.
- Use a pressure gauge to check the pre-charge value
- If necessary, restore the pre-charge value shown in the technical specifications.

When carrying out maintenance on the electrical part, for the connections follow the diagram on page 9.
After concluding maintenance, proceed with the filling and checking operations described in the chapter “Commissioning” on page 4 and fit the cover.
If you require any information regarding spare parts, please contact Caleffi spa.

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
		pump not working	call qualified personnel to have it replaced
		pump cable not connected	restore connection
		presence of air in the system	vent the system
		electronic controller not working	call qualified personnel to have it replaced
		diverter valve obturator seized	call qualified personnel to have it replaced
		centralised system not working	contact person in charge of system
	FAULT LED on + error code 4 active	heating circuit pressure too low	restore system pressure
	FAULT LED on + error code 69 active	safety thermostat cut-out	call qualified personnel to have it serviced
	FAULT LED on + error code 79/80 active	incorrect switch setting	restore correct switch setting
	DHW LED off	DHW storage thermostat disconnected	reconnect thermostat
		DHW storage thermostat faulty	call qualified personnel to have it replaced
	all LEDs are off	electric supply cut off	restore HIU electric supply
		protection fuse burnt out	call qualified personnel to have it replaced
The water is hot but does not reach the desired temperature	DHW LED on	DHW temperature too low	increase set point
		HIU strainer clogged	call qualified personnel to have it serviced
		pump not working	call qualified personnel to have it replaced
		excessive demand for DHW	decrease demand
		electronic controller not working	call qualified personnel to have it replaced
		centralised system temperature insufficient	contact person in charge of system
		primary circuit flow rate insufficient	contact person in charge of system
Hot water temperature is too high	DHW LED on	domestic water cycle temperature set point too high	decrease set point
		thermostat faulty	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	possible clogged strainers	call qualified personnel to have it serviced
		possible 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
The room does not reach 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
		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	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 79/80 active	incorrect switch setting	restore correct switch setting
Start-up of the heat interface unit heating function causes the safety circuit breaker to trip	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	Has the modulating temperature regulation with compensated set point (normally off) been activated (if required)?	
7	Is the heat interface unit connected to the 230 V (ac) electric supply?	
8	Is the room thermostat (potential-free contact) connected?	
9	Has the storage thermostat been connected?	
10	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?	
11	Are the shut-off valves open?	
12	Has the visual inspection of the hydraulic connections given a positive result?	
13	Has the system been filled and vented?	
14	Is the heat interface unit powered (green “ON” LED lit)?	
15	No alarm code (“fault” LED lit) on heat interface unit regulator?	
16	Has the DHW set point temperature on the storage thermostat been set to the required value?	
19	Has the heating flow temperature been set to a correct value?	
18	Is the primary circuit at working temperature?	
19	Check that “CH” LED lights approx. 10 seconds after the thermostat trips	
20	Check that the pump operates correctly when the room thermostat trips (check that secondary heating flow pipes start to heat up)	
21	Check that the pump operates correctly when the storage thermostat trips (check that flow pipe to the storage cylinder starts to heat up)	