

# Wall-mounted user HIU For DHW production only

## SATK10 series



### Features

SATK10 is dedicated to the instantaneous production of domestic hot water by heat transfer from a technical thermal medium.

SATK10 is available in both a “domestic water only HIU” version, suitable for use in central systems with central heating pumps, and a version suitable for use together with technical water storage, with direct thermal power extraction by means of a built-in circulator.

To control the DHW temperature, the SATK10 has a digital regulator, which regulates the primary flow rate by means of a two-way modulating valve.

It is available in three different power ratings, making it possible to choose the most suitable heat exchanger to meet the needs of the application. Choosing the correct heat exchanger minimizes the return temperature of the primary thermal medium, giving benefits in terms of pumping costs, distribution pipe diameters and, last but not least, greater ability to use low-temperature heat sources.

### Product range

- |                    |   |
|--------------------|---|
| <b>SATK10253</b>   | Wall-mounted user HIU for DHW production only, 16-plate exchanger                           |
| <b>SATK10254</b>   | Wall-mounted user HIU for DHW production only, 30-plate exchanger                           |
| <b>SATK10255</b>   | Wall-mounted user HIU for DHW production only, 40-plate exchanger                           |
| <b>SATK10203HE</b> | Wall-mounted user HIU with high-efficiency pump for DHW production only, 16-plate exchanger |
| <b>SATK10204HE</b> | Wall-mounted user HIU with high-efficiency pump for DHW production only, 30-plate exchanger |
| <b>SATK10205HE</b> | Wall-mounted user HIU with high-efficiency pump for DHW production only, 40-plate exchanger |

### Functional characteristics

- DHW flow rate up to 27 l/min
- With or without high-efficiency primary circulator
- Low return temperature
- Operation with low-temperature primary medium

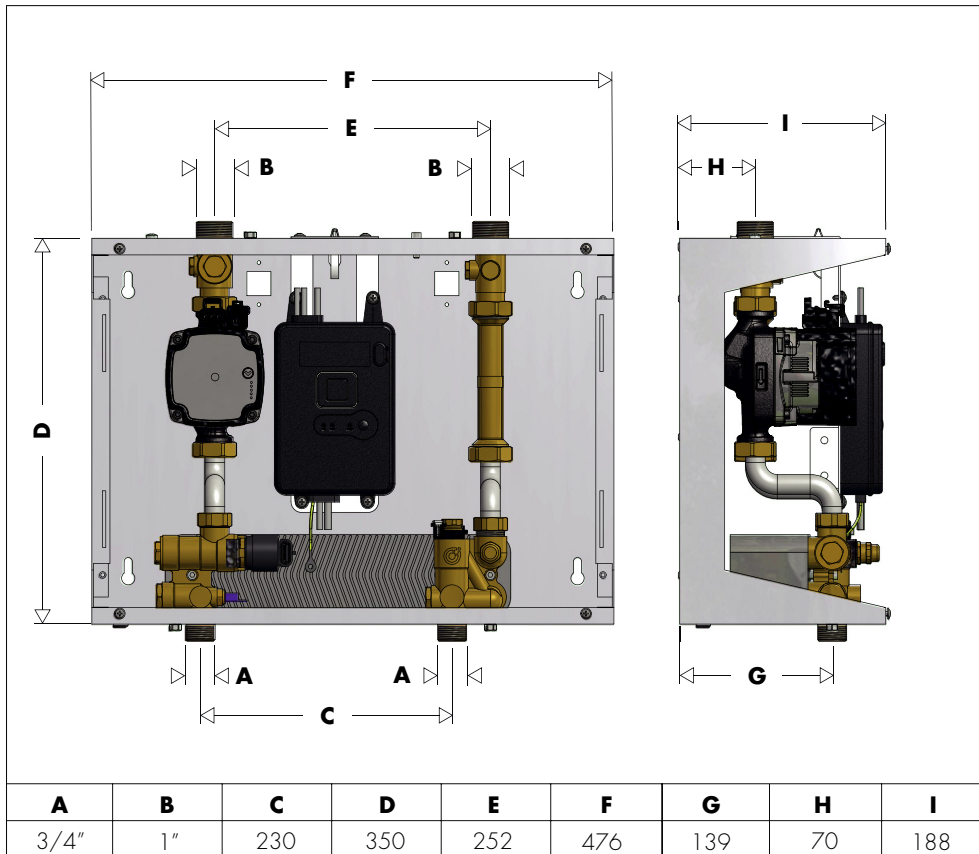
#### Standard functions

- DHW production range 42 – 60°C

#### Optional functions

- DHW pre-heating function

## Dimensions



## SATK10 technical specifications

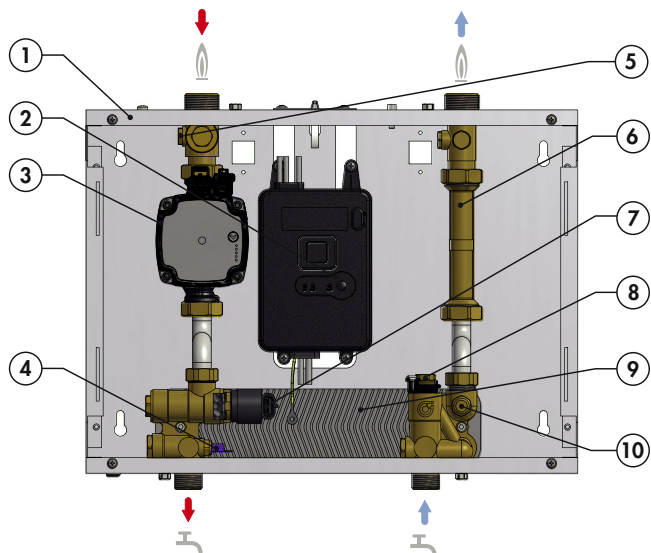
Medium:	water
Max. percentage of glycol:	30%
Maximum medium temperature:	85°C
Max. working pressure:	- primary circuit: 1 MPa (10 bar) - domestic circuit: 1 MPa (10 bar)
Primary circuit nominal flow rate:	1.0 m³/h (SATK102.3.) 1.2 m³/h (SATK102.4.) 1.3 m³/h (SATK102.5.)
Nominal head loss on primary circuit:	Δp 30 kPa (0.3 bar)
Maximum head on primary circuit:	Δp 90 kPa (0.9 bar)
Domestic water circuit max. flow rate:	27 l/min (0,45 l/s)
Minimum flow rate to activate domestic water flow meter:	2,7 l/min ±0,3
Power supply:	230 V (ac) ±10% 50 Hz
Max power consumption:	80 W (SATK1020.HE) 20 W (SATK1025.)
Protection class:	IP 40
Pump:	UPM3 15-70 (SATK1020.HE)
Actuator:	24 V stepper motor
Probe:	NTC 10 kΩ

## Materials

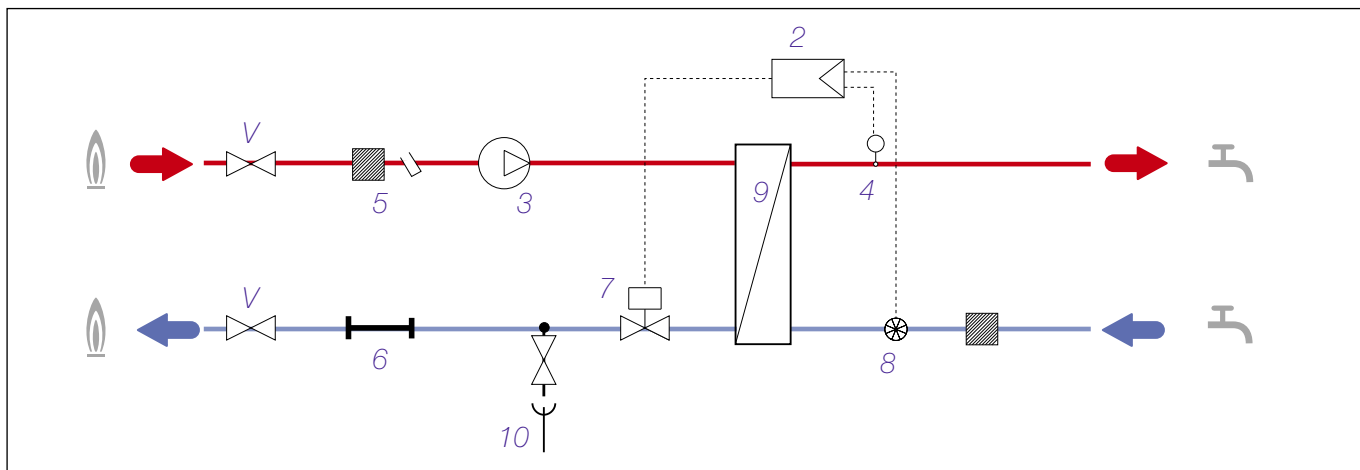
Components:	brass EN12165 CW617N
Connection pipes:	steel
Frame and cover:	painting steel RAL 9010
Exchanger:	stainless steel brazed with copper

### Characteristic components

1. Frame
2. Electronic regulator
3. Pump (SATK1020.HE)
4. DHW temperature probe
5. M10x1 connection for temperature probe and mesh filter
6. 130mm 1" heat meter template
7. DHW valve actuator
8. Flow meter (turbine + sensor)
9. Plate heat exchanger
10. Drain cock

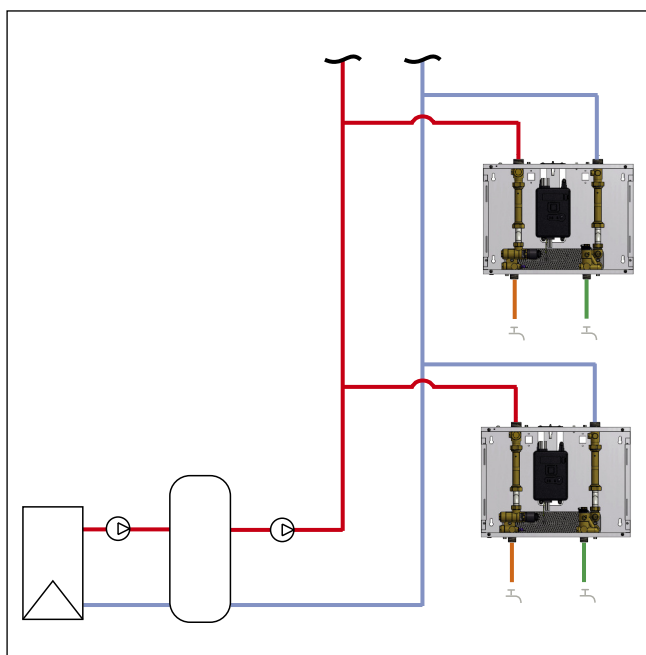


### Hydraulic diagram

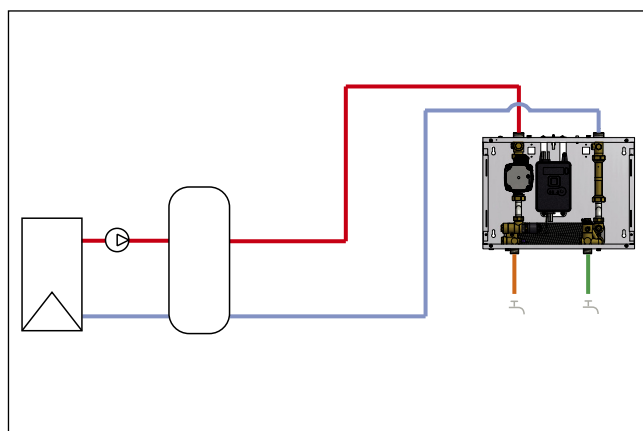


### Application diagrams

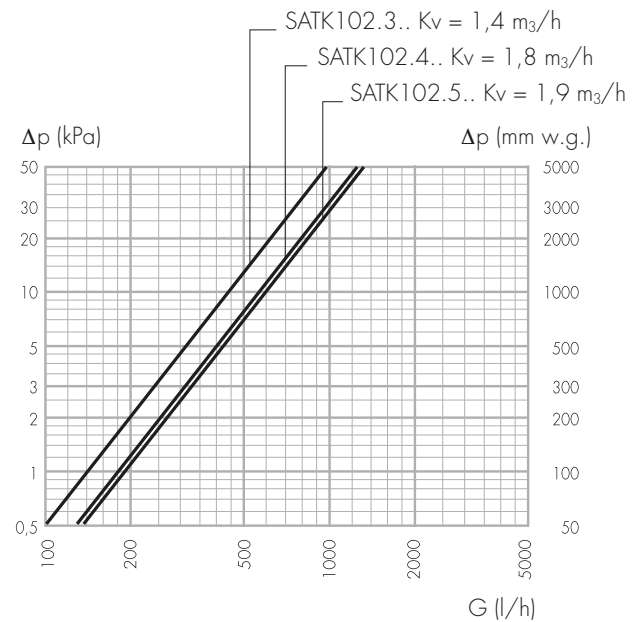
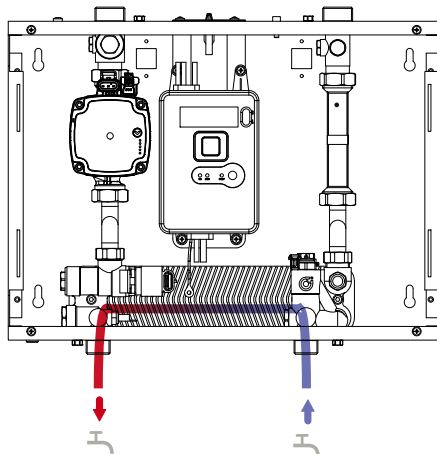
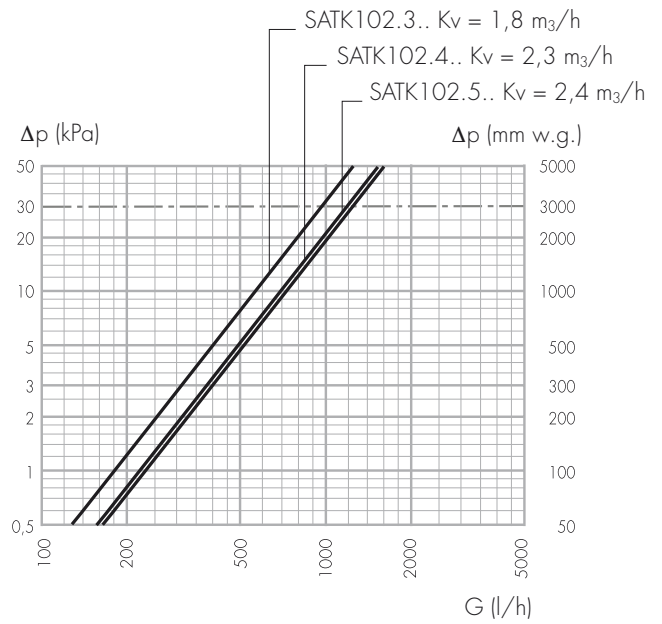
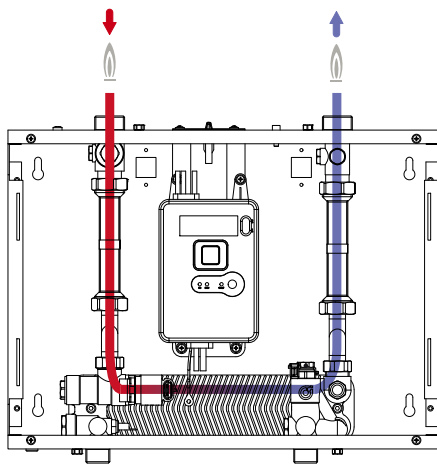
#### Domestic water only HIU



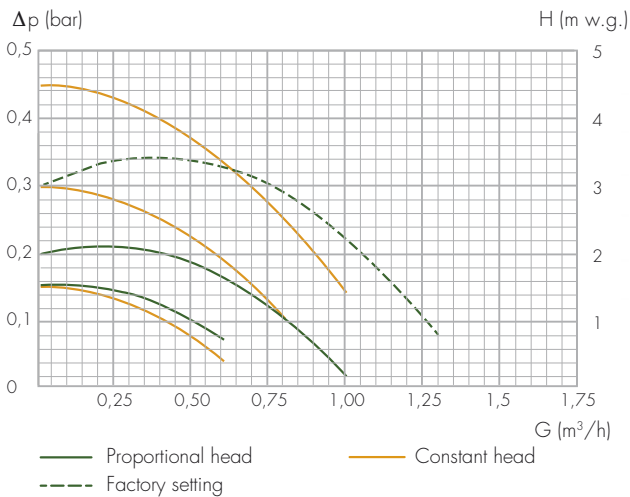
#### DHW production with direct thermal power extraction from the technical water storage



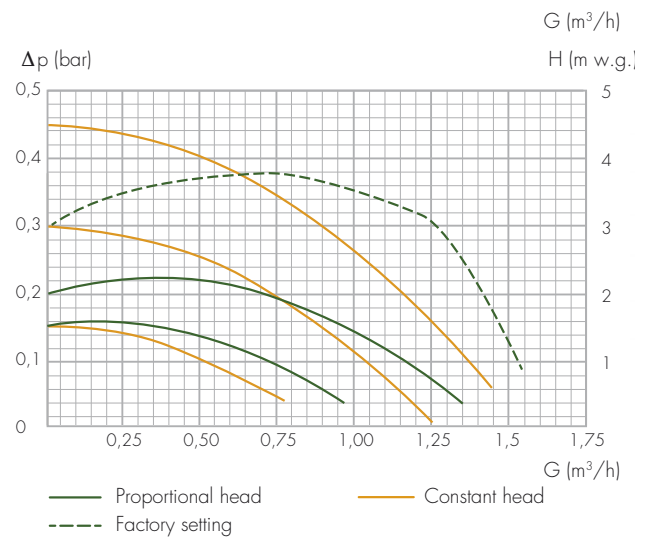
## Hydraulic characteristics



## Head available at connections SATK10203HE

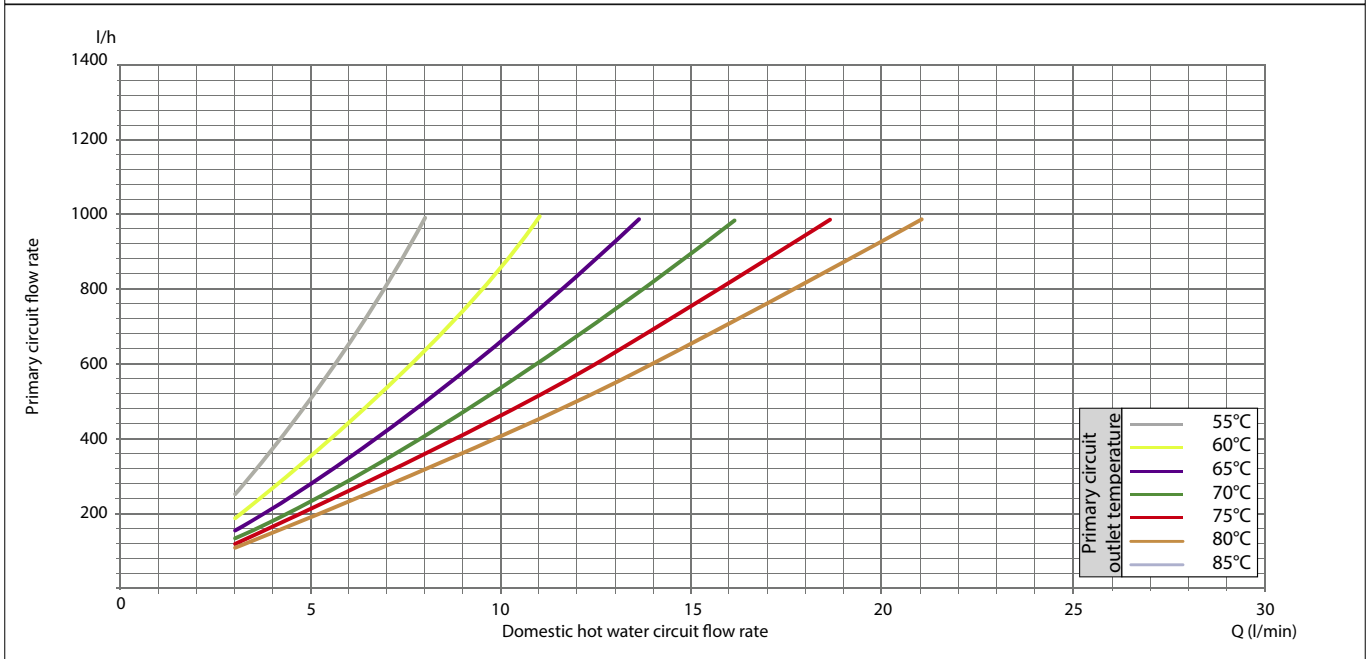
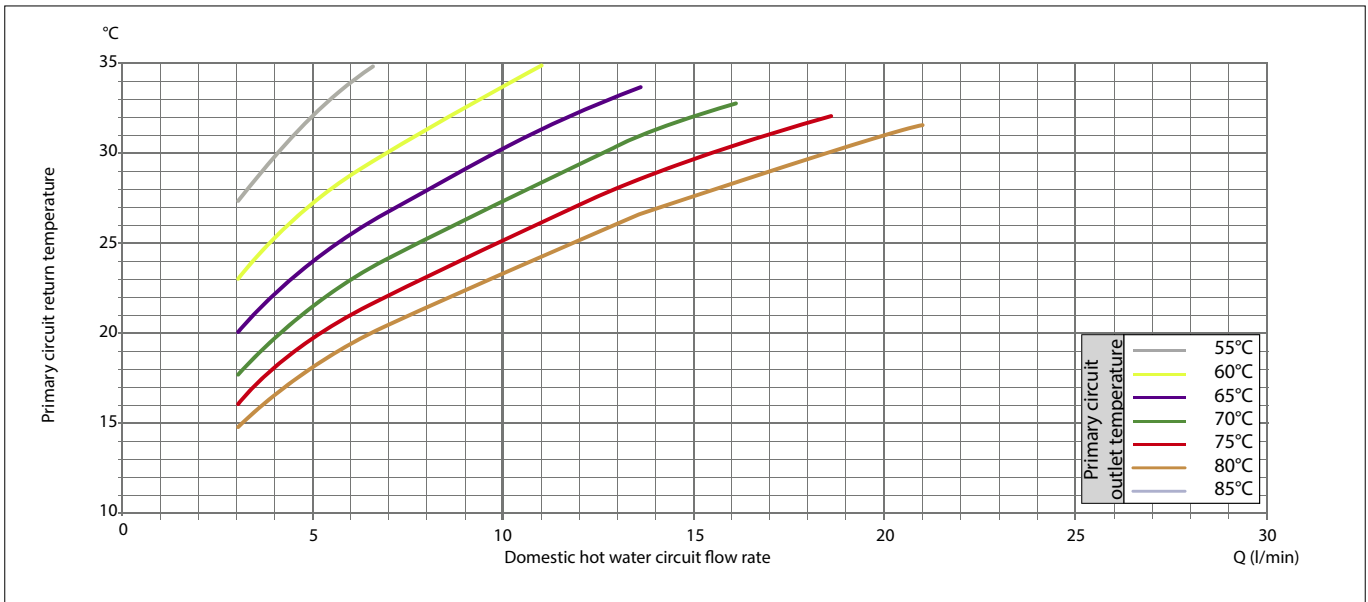


## Head available at connections SATK10204HE - SATK10205HE



**SATK10203HE and SATK10253 series domestic water production performance diagrams**

DOMESTIC WATER 10 – 48°C, maximum primary side Δp 30 kPa, maximum secondary side Δp 1,5 bar



**SATK102.3 domestic water production performance tables.**  
 DHW 10 – 48°C, maximum primary side Δp 30 kPa, maximum domestic water Δp 1,5 bar

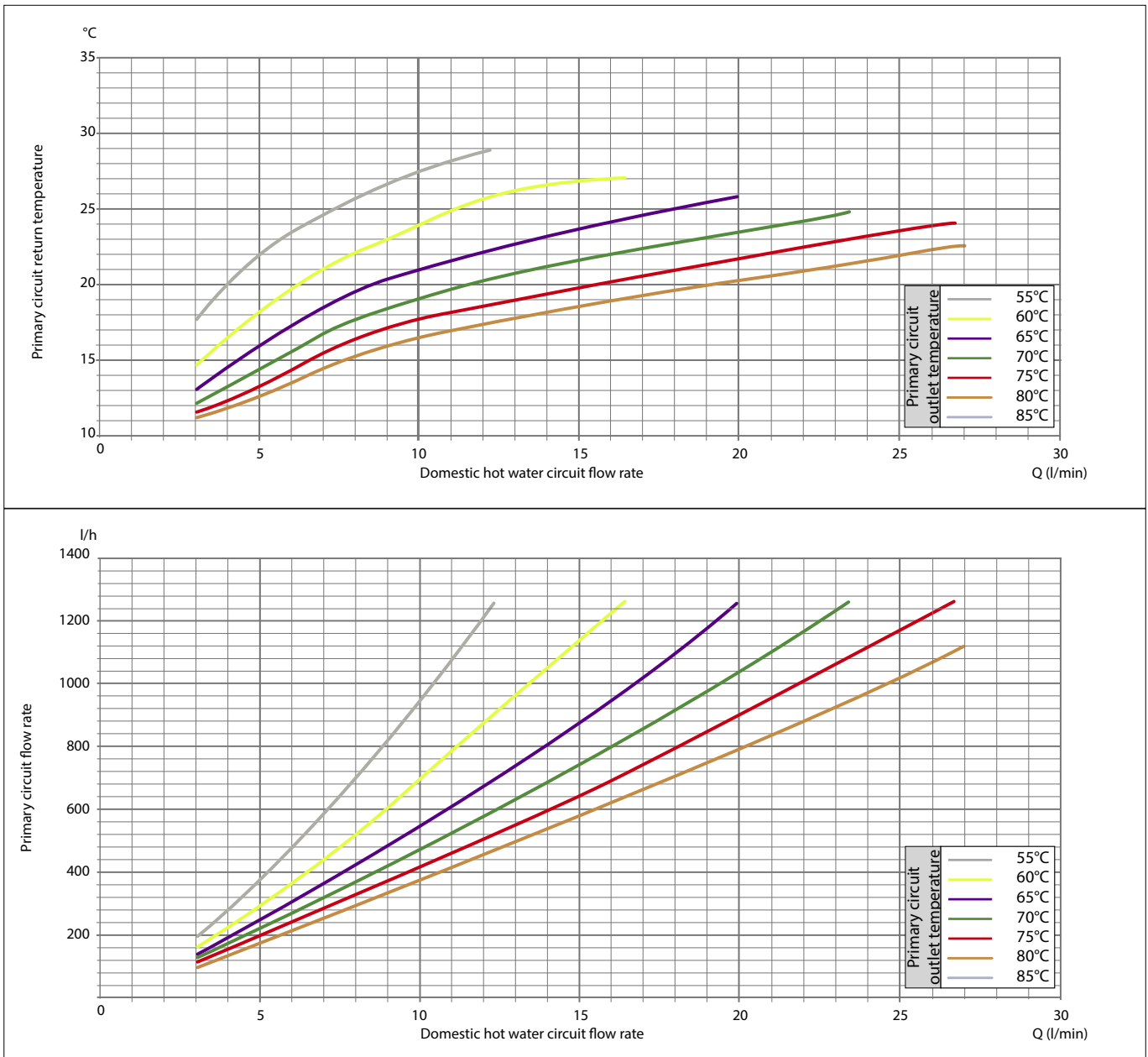
**Performance with DHW flow rate of 21 l/min**

Primary circuit temperature (°C)	Domestic water flow rate (l/min)	Primary return temperature (°C)	Primary flow rate (l/h)	Power (kW)
55	8.0	37	990	21
60	10.9	35	990	29
65	13.6	34	990	36
70	16.2	33	990	43
75	18.7	32	990	49
80	21.0	31	990	56

Primary circuit temperature (°C)	Domestic water temperature (°C)	Primary return temperature (°C)	Power (kW)
55	34	25	35
60	37	26	39
65	39	28	43
70	42	29	47
75	45	30	52
80	48	32	55

**SATK10204HE and SATK10254 series domestic water production performance diagrams**

DOMESTIC WATER 10 – 48°C, maximum primary side  $\Delta p$  30 kPa, maximum secondary side  $\Delta p$  1,5 bar



**SATK102.4 domestic water production performance tables.**  
 DHW 10-48 °C, maximum primary side  $\Delta p$  30 kPa, maximum domestic water  $\Delta p$  1,5 bar

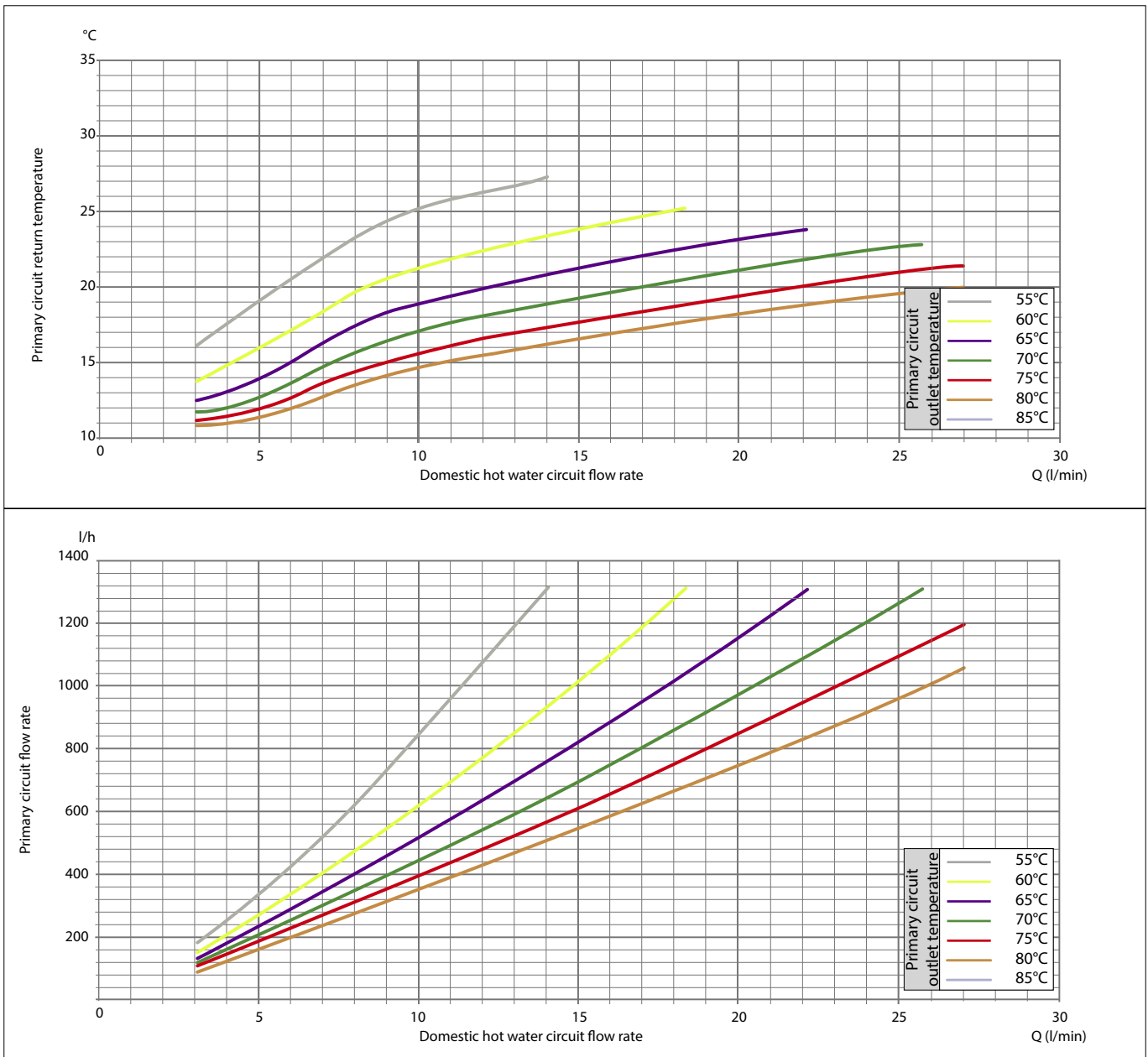
**Performance with DHW flow rate of 27 l/min**

Primary circuit temperature (°C)	Domestic water flow rate (l/min)	Primary return temperature (°C)	Primary flow rate (l/h)	Power (kW)
55	12.2	33	1250	32
60	16.3	30	1250	43
65	19.8	29	1250	53
70	23.2	28	1250	62
75	26.5	27	1250	70
80	27.0	25	1060	72

Primary circuit temperature (°C)	Domestic water temperature (°C)	Primary return temperature (°C)	Power (kW)
55	36	21	40
60	40	22	44
65	43	23	49
70	46	24	53
75	49	25	58
80	52	26	62

**SATK10205HE and SATK10255 series domestic water production performance diagrams**

DOMESTIC WATER 10 – 48°C, maximum primary side  $\Delta p$  30 kPa, maximum secondary side  $\Delta p$  1,5 bar



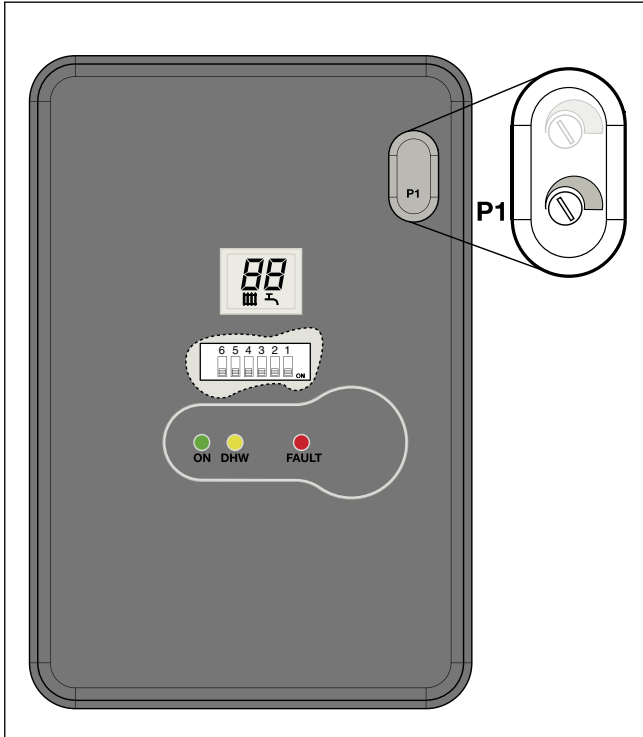
**SATK102.5 domestic water production performance tables.**  
 DHW 10-48 °C, maximum primary side  $\Delta p$  30 kPa, maximum domestic water  $\Delta p$  1,5 bar

**Performance with DHW flow rate of 27 l/min**

Primary circuit temperature (°C)	Domestic water flow rate (l/min)	Primary return temperature (°C)	Primary flow rate (l/h)	Power (kW)
55	14.0	31	1300	37
60	18.3	28	1300	48
65	22.1	27	1300	59
70	25.7	25	1300	68
75	27.0	24	1200	72
80	27.0	22	1060	72

Primary circuit temperature (°C)	Domestic water temperature (°C)	Primary return temperature (°C)	Power (kW)
55	37	21	51
60	40	23	57
65	44	24	63
70	47	25	69
75	50	26	75
80	53	27	82

## Electronic regulator



### Operation

The domestic hot water functions offered by SATK10 series satellites are controlled by a digital temperature regulator.

### Automatic controller functions

#### • Modulating valve reset

The modulating valve position is reset immediately after connecting the electric supply.

#### • Pump anti-blocking

If the pump is not used for 24 consecutive hours, it is powered up for 5 seconds.

#### • Modulating valve anti-blocking cycle

The modulating valve performs an open-close cycle every 24 hours.

### Operating cycles

#### Domestic cycle

When DHW cycle activation is requested due to DHW tapping by the user detected by the domestic water flow meter, the regulator controls the opening of the modulating valve 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 domestic hot water cycle temperature set point can be set using trimmer P1 and shown on the display.

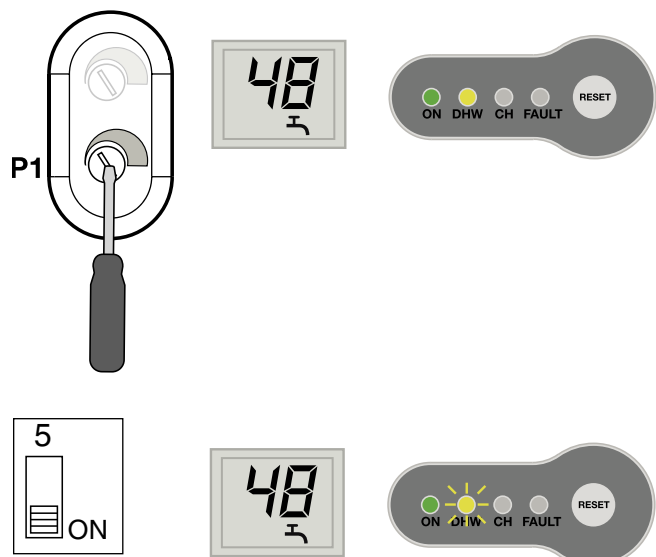
#### Domestic cycle

##### 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 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.

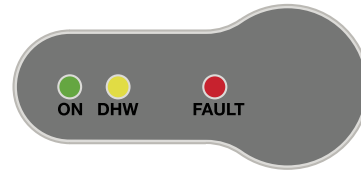


### User interface

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

#### DHW (ON)

#### DHW (flashing)

#### FAULT

- Electric supply 230 V (ac)

- Domestic cycle

- Preheating in progress

- Fault

#### • Trimmers for set point settings

This allows you to set the temperature setpoint for the domestic hot water cycle and view the relative value set on the display.



#### • LCD display

Allows viewing of heating and domestic hot water set point temperatures and the error codes.



## Finishing accessories

### 789540

Recess mounting meter box with galvanized base and door painted in RAL 9010 for interior use.

- Includes:
- pair of 3/4" M manual shut-off valves,
  - pair of temperature pockets,
  - heat meter mounting template,
  - fittings for DCW.



Code	Connection	Size (mm)
789540	3/4"	350 x 380 x 110

### 789540 002

Galvanized sheet metal meter plate.

- Includes:
- pair of 3/4" M manual shut-off valves,
  - pair of temperature pockets,
  - heat meter mounting template,
  - fittings for DCW.



Code	Connection	Size (mm)
789540 002	3/4"	276 x 400

### 7554

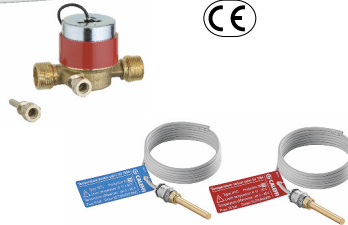
#### Direct heat meter CONTECA®

Direct heat meter for SATK series and/or meter box code 789540. Equipped with an 8-digit liquid crystal display.

**Centralised electric supply 24 V (ac) 50 Hz - 1 W.**



Conforms to directive  
2004/22/EC (MI004)



Code	Connection	Type	Q <sub>nom</sub> m <sup>3</sup> /h	Q <sub>min</sub> l/h
755404 K	1/2"	single nozzle	1.5	30
755405 K	3/4"	single nozzle	2.5	50

### 794540

Domestic hot water template consisting of:

- BALLSTOP shut-off ball valve with check valve;
- flushing pipe.

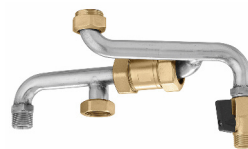


Code	Connection
794540	3/4"

### 794530

Kit for domestic water circuit with recirculation, for use with SATK10/20/30 series.

- Includes:
- steel connection pipes
  - 1/2" fittings for DCW volume meter
  - ball shut-off valve on recirculation circuit
  - brass fitting with non-return on DCW circuit



**N.B.: another non-return valve is required on the recirculation circuit.**

Code
794530

## SPECIFICATION SUMMARY

### Code SATK10203HE

Station for domestic water production with technical water extraction from storage, complete with: digital regulator, UPM3 15-70 pump, fittings for heat meter, DHW production modulating valve, DHW temperature probe, plate heat exchanger, DHW flow meter, filter, domestic water preheating function. Domestic hot water temperature setting from 42 – 60°C. Dimensions W 476 x H 350 x D 188 mm. Medium: water. Max. percentage of glycol: 30%. Maximum medium temperature: 85°C. Maximum working pressure: primary circuit: 10 bar, domestic circuit: 10 bar. Nominal DHW exchanger capacity: 40 kW. Maximum recommended primary circuit flow rate: 1.0 m<sup>3</sup>/h. Max. domestic water circuit flow rate: 21 l/min. Minimum flow to activate domestic flow meter: 2,7 l/min ±0,3. Max. differential pressure on modulating valve: 0.9 bar (90 kPa), alimentazione: 230 V (ac) ±10% 50 Hz. Maximum power consumption: 80 W. Protection class: IP 40. Pump: UPM3 15-70. Actuator: 24 V stepper motor. Probe: NTC 10 kΩ. Materials: components: brass EN12165 CW617N. Connection pipes: steel, steel cover RAL 9010.

### Code SATK10204HE

Station for domestic water production with technical water extraction from storage, complete with: digital regulator, UPM3 15-70 pump, fittings for heat meter, DHW production modulating valve, DHW temperature probe, plate heat exchanger, DHW flow meter, filter, domestic water preheating function. Domestic hot water temperature setting from 42 – 60°C. Dimensions W 476 x H 350 x D 188 mm. Medium: water. Max. percentage of glycol: 30%. Maximum medium temperature: 85°C. Maximum working pressure: primary circuit: 10 bar, domestic circuit: 10 bar. Nominal DHW exchanger capacity: 70 kW. Maximum recommended primary circuit flow rate: 1.2 m<sup>3</sup>/h. Max. domestic water circuit flow rate: 27 l/min. Minimum flow to activate domestic flow meter: 2,7 l/min ±0,3. Max. differential pressure on modulating valve: 0.9 bar (90 kPa), Power supply: 230 V (ac) ±10% 50 Hz. Maximum power consumption: 80 W. Protection class: IP 40. Pump: UPM3 15-70. Actuator: 24 V stepper motor. Probe: NTC 10 kΩ. Materials: components: brass EN12165 CW617N. Connection pipes: steel, steel cover RAL 9010.

### Code SATK10205HE

Station for domestic water production with technical water extraction from storage, complete with: digital regulator, UPM3 15-70 pump, fittings for heat meter, DHW production modulating valve, DHW temperature probe, plate heat exchanger, DHW flow meter, filter, domestic water preheating function. Domestic hot water temperature setting from 42 – 60°C. Dimensions W 476 x H 350 x D 188 mm. Medium: water. Max. percentage of glycol: 30%. Maximum medium temperature: 85°C. Maximum working pressure: primary circuit: 10 bar, domestic circuit: 10 bar. Nominal DHW exchanger capacity: 80 kW. Maximum recommended primary circuit flow rate: 1.3 m<sup>3</sup>/h. Max. domestic water circuit flow rate: 27 l/min. Minimum flow to activate domestic flow meter: 2,7 l/min ±0,3. Max. differential pressure on modulating valve: 0.9 bar (90 kPa), Power supply: 230 V (ac) ±10% 50 Hz. Maximum power consumption: 80 W. Protection class: IP 40. Pump: UPM3 15-70. Actuator: 24 V stepper motor. Probe: NTC 10 kΩ. Materials: components: brass EN12165 CW617N. Connection pipes: steel, steel cover RAL 9010.

### Code SATK10253

Domestic water only HIU, complete with: digital regulator, UPM3 15-70 pump, fittings for heat meter, DHW production modulating valve, DHW temperature probe, plate heat exchanger, DHW flow meter, filter, domestic water preheating function. Domestic hot water temperature setting from 42 – 60°C. Dimensions W 476 x H 350 x D 188 mm. Medium: water. Max. percentage of glycol: 30%. Maximum medium temperature: 85°C. Maximum working pressure: primary circuit: 10 bar, domestic circuit: 10 bar. Nominal DHW exchanger capacity: 40 kW. Maximum recommended primary circuit flow rate: 1.0 m<sup>3</sup>/h. Max. domestic water circuit flow rate: 21 l/min. Minimum flow to activate domestic flow meter: 2,7 l/min ±0,3. Max. differential pressure on modulating valve: 0.9 bar (90 kPa), Power supply: 230 V (ac) ±10% 50 Hz. Maximum power consumption: 20 W. Protection class: IP 40. Actuator: 24 V stepper motor. Probe: NTC 10 kΩ. Materials: components: brass EN12165 CW617N. Connection pipes: steel, steel cover RAL 9010.

### Code SATK10254

Domestic water only HIU, complete with: digital regulator, UPM3 15-70 pump, fittings for heat meter, DHW production modulating valve, DHW temperature probe, plate heat exchanger, DHW flow meter, filter, domestic water preheating function. Domestic hot water temperature setting from 42 – 60°C. Dimensions W 476 x H 350 x D 188 mm. Medium: water. Max. percentage of glycol: 30%. Maximum medium temperature: 85°C. Maximum working pressure: primary circuit: 10 bar, domestic circuit: 10 bar. Nominal DHW exchanger capacity: 70 kW. Maximum recommended primary circuit flow rate: 1.2 m<sup>3</sup>/h. Max. domestic water circuit flow rate: 27 l/min. Minimum flow to activate domestic flow meter: 2,7 l/min ±0,3. Max. differential pressure on modulating valve: 0.9 bar (90 kPa), Power supply: 230 V (ac) ±10% 50 Hz. Maximum power consumption: 20 W. Protection class: IP 40. Actuator: 24 V stepper motor. Probe: NTC 10 kΩ. Materials: components: brass EN12165 CW617N. Connection pipes: steel, steel cover RAL 9010.

### Code SATK10255

Domestic water only HIU, complete with: digital regulator, UPM3 15-70 pump, fittings for heat meter, DHW production modulating valve, DHW temperature probe, plate heat exchanger, DHW flow meter, filter, domestic water preheating function. Domestic hot water temperature setting from 42 – 60°C. Dimensions W 476 x H 350 x D 188 mm. Medium: water. Max. percentage of glycol: 30%. Maximum medium temperature: 85°C. Maximum working pressure: primary circuit: 10 bar, domestic circuit: 10 bar. Nominal DHW exchanger capacity: 80 kW. Maximum recommended primary circuit flow rate: 1.3 m<sup>3</sup>/h. Max. domestic water circuit flow rate: 27 l/min. Minimum flow to activate domestic flow meter: 2,7 l/min ±0,3. Max. differential pressure on modulating valve: 0.9 bar (90 kPa), Power supply: 230 V (ac) ±10% 50 Hz. Maximum power consumption: 20 W. Protection class: IP 40. Actuator: 24 V stepper motor. Probe: NTC 10 kΩ. Materials: components: brass EN12165 CW617N. Connection pipes: steel, steel cover RAL 9010.

*We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice.*