POTTERTON

COMMERCIAL

USER MODULES

SIRIUS SAT

RST – DE

RSE – DE

M-BUS MODELS TRANSMISSION OF CONSUMPTION VIA CABLE
INSTALLATION AND OPERATING MANUAL

TO THE OWNER OF THIS POTTERTON COMMERCIAL APPLIANCE

We are confident your new **POTTERTON COMMERCIAL** appliance will meet all your requirements.

All **POTTERTON COMMERCIAL** products have been designed to give you what you are looking for: good performance combined with simple and rational use.

Please do not put away this booklet without reading it first as it contains some useful information which will help you to operate your appliance correctly and efficiently.

Caution: Do not leave any packaging (plastic bags, polystyrene, etc.) within reach of children, as it is a potential source of danger.

POTTERTON COMMERCIAL declares that these models of boiler bear the CE mark in compliance with the basic requirements of the following Directives:

- Electromagnetic Compatibility Directive 2004/108/EEC
- Low Voltage Directive 2006/95/EC

CE

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
Children should be supervised to ensure that they do not play with the appliance.

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FOREWORD

The **SIRIUS SAT** Heat Interface Unit makes it possible to independently manage heating requirements in centralised systems, meter the heat distributed to each unit (flat or independently managed area) and transmit heat consumption data via radio.

The following notes and instructions are addressed to installers to allow them to carry out trouble-free installation. The operating instructions are contained in the “Start-up and operating instructions” section of this manual.

ATTENTION:

- **The appliance must be housed in the template casing supplied in a separate pack.**
- **Flush the Domestic Hot Water circuit prior to use**.

1. DESCRIPTION

The **SIRIUS SAT** Heat Interface Unit are available in 2 versions:

SIRIUS SAT	Instantaneous hot water production	Circulation pump	CASING / JIG KIT
SIRIUS SAT RST-DE	✓	✓	L = 805
SIRIUS SAT RSE-DE	✓	✓	L = 905

RST-DE model has a primary exchanger that separates the secondary circuit from the head generated by the riser pump by independently feeding the internal heating circuit.

Both models featuring domestic hot water production are fitted with a stainless steel instantaneous plate exchanger and produce hot water at a temperature that can be adjusted using an electronic modulating device (RSE-DE) or a thermostatic modulating device (RST-DE).

2. INSTRUCTIONS PRIOR TO INSTALLATION

These appliances must be inserted in a centralised heating system, especially designed for this purpose, consistently with their performance levels and power outputs.

The installer must be legally qualified to install heating appliances.

Commissioning be performed by a **POTTERTON COMMERCIAL** - authorised Service Engineer, as indicated on the attached sheet. Failure to observe the above will render the guarantee null and void.
Do the following before connecting the appliance:

- Carefully flush all the system pipes in order to remove any residual thread-cutting swarf, solder and solvents in the various heating circuit components.

INSTALLATION INSTRUCTIONS: HYDRAULIC CONNECTIONS

3. CENTRALISED SYSTEM REQUIREMENTS

Some general indications concerning the installation of the centralised heating system are shown below. For these types of plants, a bespoke design is always necessary in order to ensure ideal conditions of comfort, save energy and reduce the environmental impact.

Install the boilers in a cascade arrangement (preferably condensing boilers) of a suitable size to optimise plant performance according to seasonal loads, user demand and Domestic Hot Water demand peaks. The maximum installed power should include a diversity factor so as not to oversize the plant and consequently reduce operating efficiency.

The centralised plant must service the various floors of the building by means of risers positioned in the stairwells or in utility rooms which should preferably be inspectable.
A hydraulic separator or low loss header should always be fitted downline from the heat generator as this separates circulation in the generator from circulation in the risers.

The centralised plant must have the following features:

- Automatic filling
- Expansion system sized according to total plant capacity
- Overpressure safety valve sized according to current legislation.

Each suitably sized riser must be fitted with a circulator (preferably at variable speed depending on the demand of the modules), on/off valves and a dynamic balancing valve. Automatic air vents must be installed at the top of the risers. The inlet sections must have the same pressure drop in order to allow the system to balance feed to all the user systems. The recommended arrangement is multiple risers with a reverse return line.

Modules with Domestic Hot Water production require an appropriate centralised plant capacity so as to produce a thermal mass that can limit the instantaneous operation of the generator. This can be achieved with a suitable sized buffer vessel.

All communal area pipework and risers must be appropriately insulated in accordance with Building Regulation part L requirements.

Make sure that the circuit pressure drops downstream from the module (R = 0,3 KPa/m per linear metre + local leaks) are compatible with the pump supplied together with the module.

SIRIUS SAT Heat Interface Units are fitted with an adjustable automatic by-pass which opens the recirculation circuit when the module does not require heat.

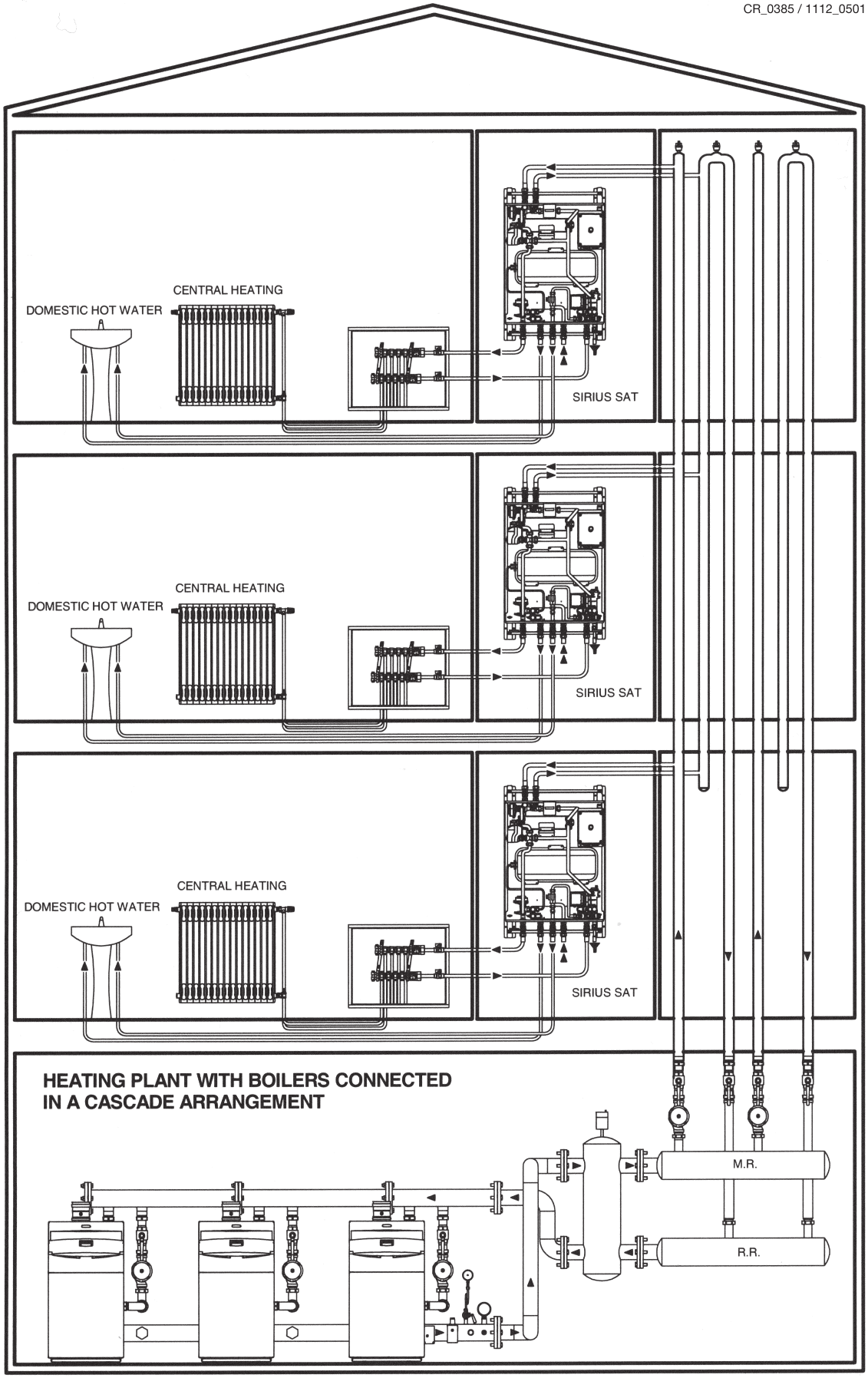


Figure 1A: Diagram of plant: local domestic hot water production

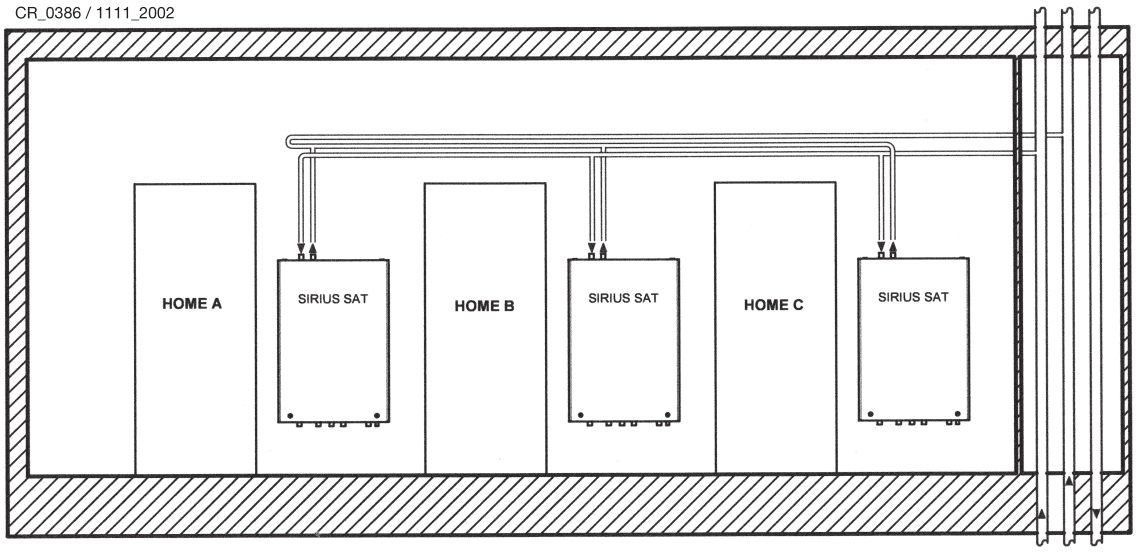


Figure 1B: Floor layout

The indicative diagram in figure 1b only illustrates the feed pipes of the individual user Heat Interface Units.
The heating plant inside the zone controlled by the Heat Interface Unit must be installed in a two pipe (flow and return) configuration.
A mains or boosted cold water feed, with adequate pressure to overcome final circuit resistance must be connected to the Domestic Hot Water inlet connector. The domestic hot water outlet must feed all the user hot water draw-off points.

3.1 GENERAL SIZING DATA

- Water temperature range in centralised plant: **60 - 75 °C**
- Maximum water pressure in centralised plant: **4 bar**
- Maximum water pressure in secondary circuit: **3 bar**
- Module feed flow rate (nominal): **700 - 1500 l/h**

- Maximum recommended velocity of heat transfer fluid: **1 - 1.5 m/s**
- Pressure drop in module: **20 KPa at 700 l/h (see fig. 6)**

Some purely indicative general sizing data is shown below:

TABLE: HEAT DEMAND – HEATED AREA

Area to heat (m^2)	**Heat demand (*) With F1 = 20 W/m³** (kW)	**Heat demand (*) With F2 = 30 W/m³** (kW)	**Heat demand (*) With F3 = 45 W/m³** (kW)
60	3,6	5,4	8,1
70	4,2	6,3	9,5
80	4,8	7,2	10,8
90	5,4	8,1	12,2
100	6,0	9	13,5
110	6,6	9,9	14,9
120	7,2	10,8	16,2
130	7,8	11,7	17,6
140	8,4	12,6	18,9
150	9,0	13,5	20,3

(*) Volumetric heat load "F": 20 - 30 - 45 W/m3 with Δt = 25 K;
Height of volume to be heated = 3 m
Δt = internal and external temperature difference (internal T = 20 °C, external = - 5°C)

F1 = 20 W/m³ buildings with an excellent level of insulation
F2 = 30 W/m³ buildings with an good level of insulation
F3 = 45 W/m³ buildings with an low level of insulation

TABLE: HEAT DEMAND – FLOW OF WATER IN HEATING CIRCUIT
DOMESTIC HOT WATER TAKE-OFF FLOW

Heating domestic water heat capacity (kW)	**Flow rate of Heating circuit with ΔT1 = 15 K** (l/h)	**Flow rate of Heating circuit with ΔT1 = 20 K** (l/h)	**Flow rate of domestic water circuit with ΔT2 = 35 K** (l/min)
7 (R)	401	301	2,9
8 (R)	459	344	3,3
9 (R)	516	387	3,7
10 (R)	573	430	4,1
11 (R)	631	473	4,5
12 (R)	688	516	4,9
13 (R)	745	559	5,3
14 (R)	803	602	5,7
15 (RS)	860	645	6,1
16 (RS)	917	688	6,6
17 (RS)	975	731	7,0
18 (RS)	1032	774	7,4
19 (RS)	1089	817	7,8
20 (RS)	1147	860	8,2
21 (S)	1204	903	8,6
22 (S)	1261	946	9,0
23 (S)	1319	989	9,4
24 (S)	1376	1032	9,8
25 (S)	1433	1075	10,2
26 (S)	1491	1118	10,6
27 (S)	1548	1161	11,1
28 (S)	1605	1204	11,5
29 (S)	1663	1247	11,9
30 (S)	1720	1290	12,3

ΔT1 = Difference between User Module Delivery – Return Temperature
ΔT2 = Difference between hot water outlet – cold water inlet temperature
R = central heating
S = domestic water

4. MOUNTING THE TEMPLATE CASING

CASING/TEMPLATE MODEL	*SIRIUS SAT MODELS*
SIRIUS SAT KIT H = 805	**RST - DE**
SIRIUS SAT KIT H = 905	**RSE - DE**

Install the **SIRIUS SAT** model inside the casing/template supplied in a separate pack.

Make sure the template casing model is correct.

Fit the template/casing on the wall and secure it with the screws. Make sure the installation allows easy access for maintenance.
Remove the door and put back after installation (make sure the casing accessories also include the key for opening the door).

Assemble the system starting from the position of the water connectors on upper and lower crossbar of the template.

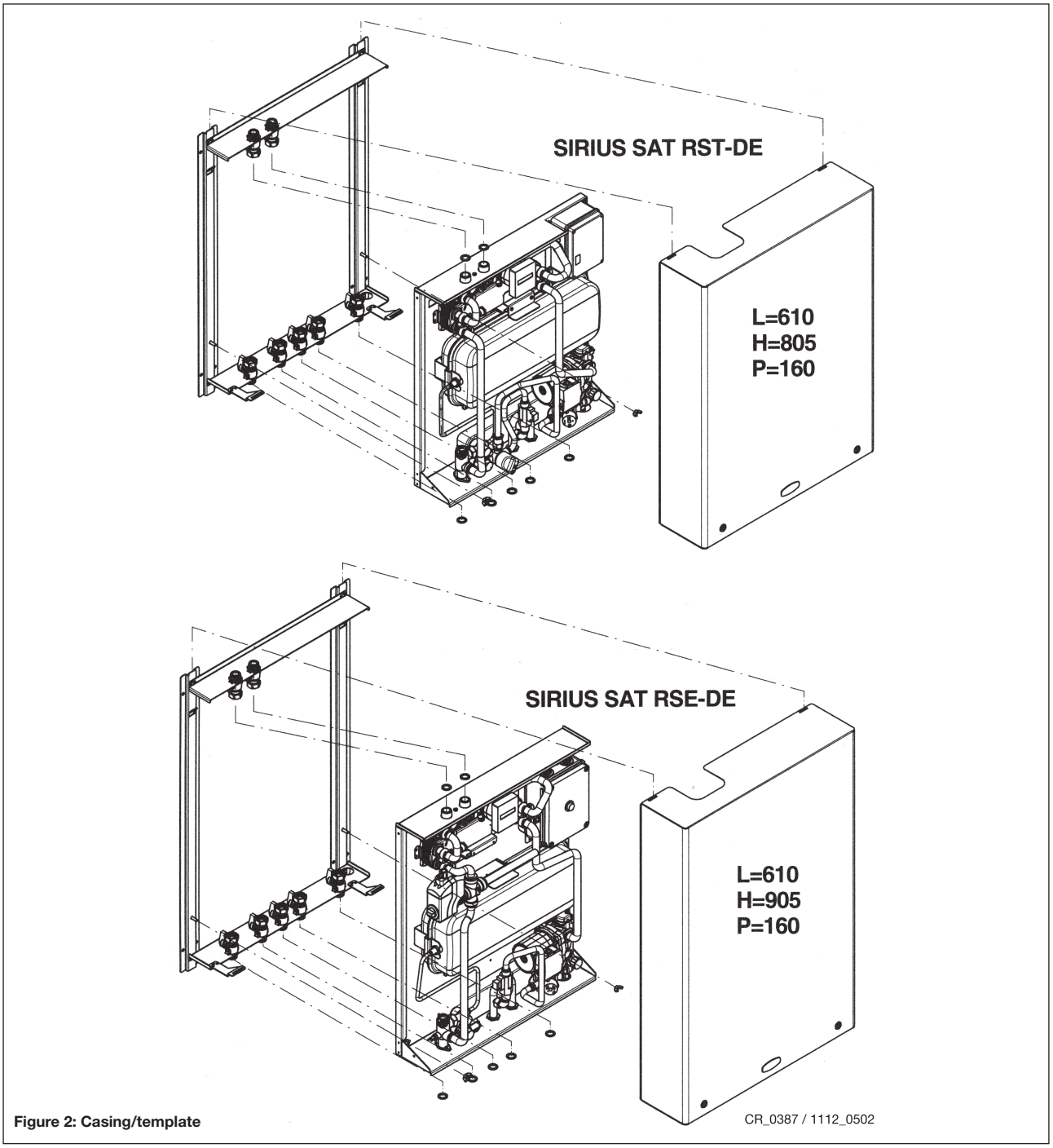


Figure 2: Casing/template

5. MOUNTING THE APPLIANCE

After completing the masonry work, hook the SIRIUS SAT Heat Interface Unit onto the casing/template and make the hydraulic connections using the supplied connections (see figure 3).
Then secure the module with the supplied nuts.

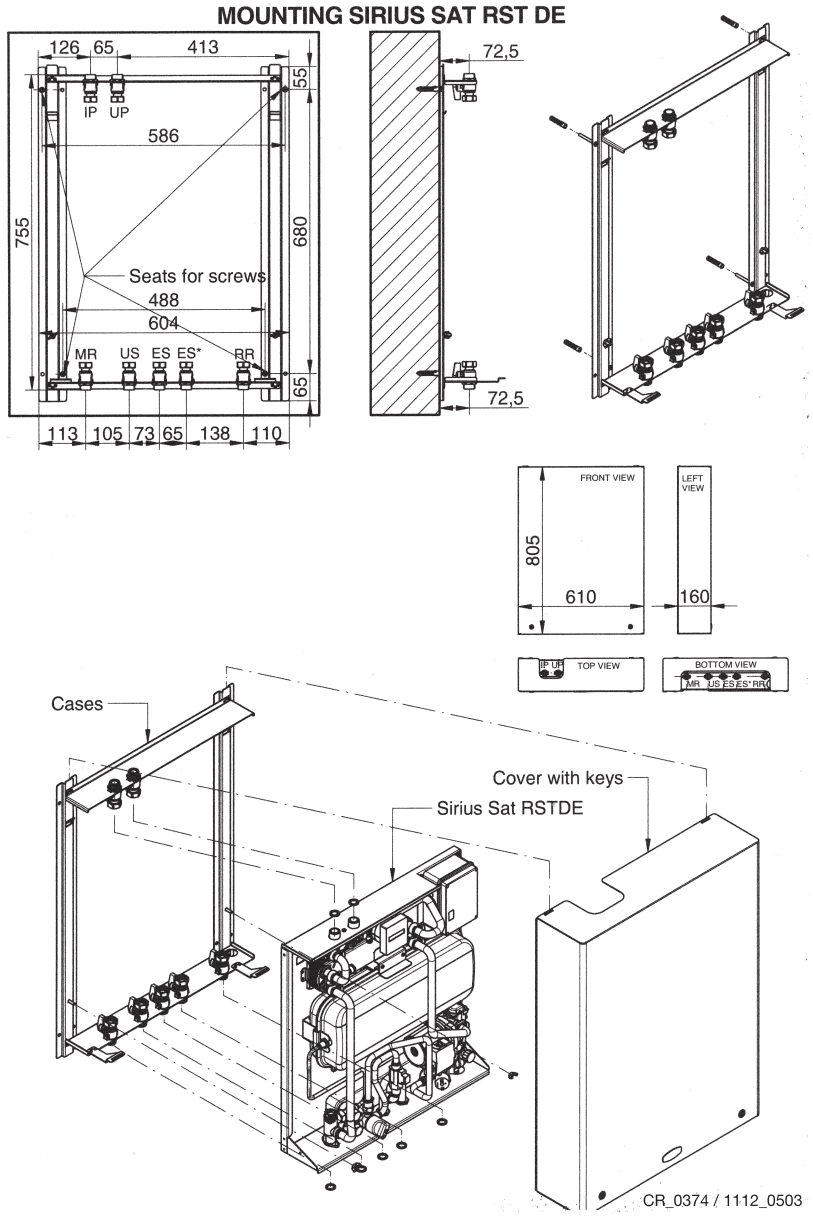


Figure 3 A: Connectors and sizes of SIRIUS SAT RST-DE

Key

CONNECTIONS TO CENTRALISED PLANT

IP: primary inlet from centralised plant G 3/4" M
UP: primary outlet from centralised plant G 3/4" M

HEATING PLANT CONNECTIONS

MR: G 3/4" M heating plant delivery
RR: G 3/4" M heating plant return

CONNECTIONS TO DOMESTIC WATER PLANT

ES (*): domestic cold water outlet G 3/4"
US: domestic hot water outlet G 3/4"

(*) If the meter is installed to measure domestic water consumption (accessory supplied on request), use this connection to feed the DHW circuit

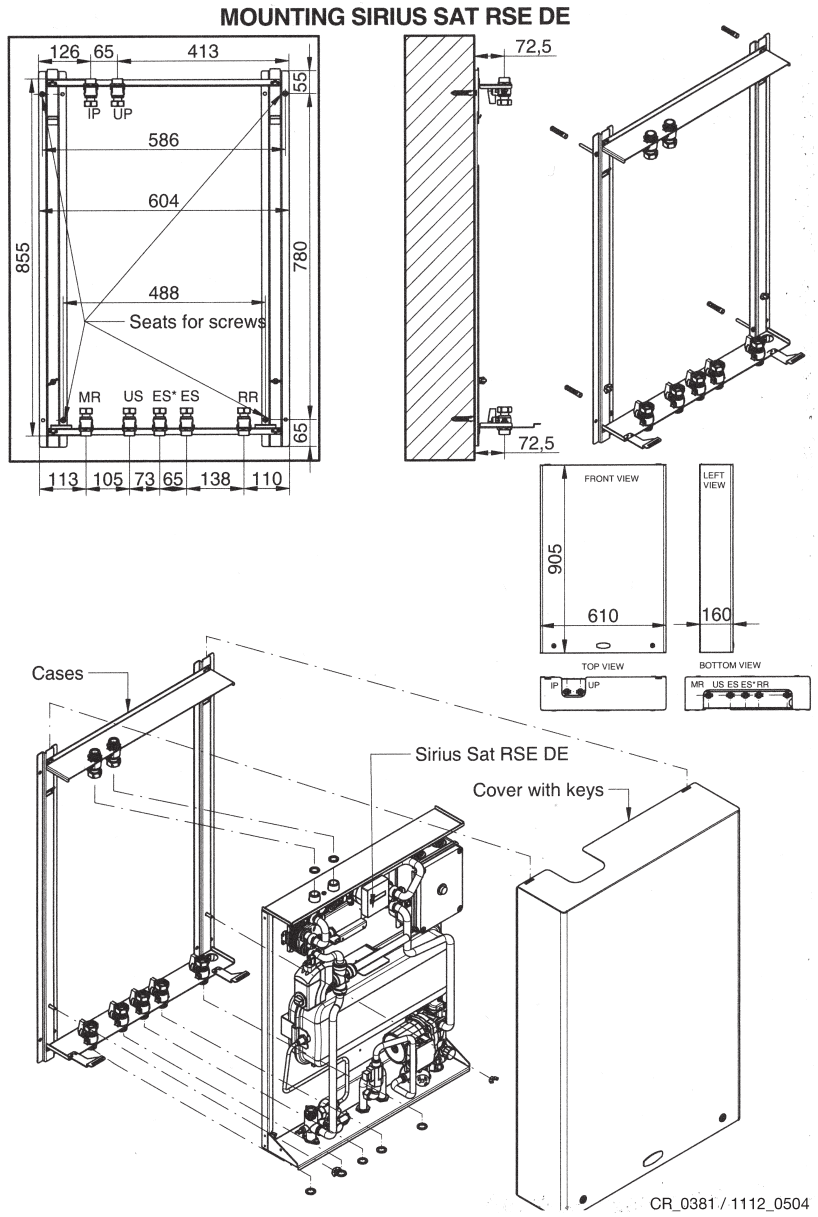


Figure 3 B: Connectors and sizes of SIRIUS SAT RSE – DE

Key

CONNECTIONS TO CENTRALISED PLANT

IP: primary inlet from centralised plant G 3/4" M
UP: primary outlet from centralised plant G 3/4" M

HEATING PLANT CONNECTIONS

MR: G 3/4" M heating plant delivery
RR: G 3/4" M heating plant return

CONNECTIONS TO DOMESTIC WATER PLANT

ES (*): domestic cold water inlet G 3/4"
US: domestic hot water outlet G 3/4"

(*) If the meter is installed to measure domestic water consumption (accessory supplied on request), use this connection to feed the DHW circuit

6. FLOW RATE/PRESSURE DROP CHARACTERISTICS (PRIMARY CIRCUIT)

PRIMARY CIRCUIT

Both models are fitted with a balancing valve (figure 5). This device is used to balance the flow of water circulating in the single heat Interface unit in case of non-optimal distribution in the inlet pipes. Figure 4 shows the **Flow Rate - Pressure Drop** curve with balancing valve in the wide open position.

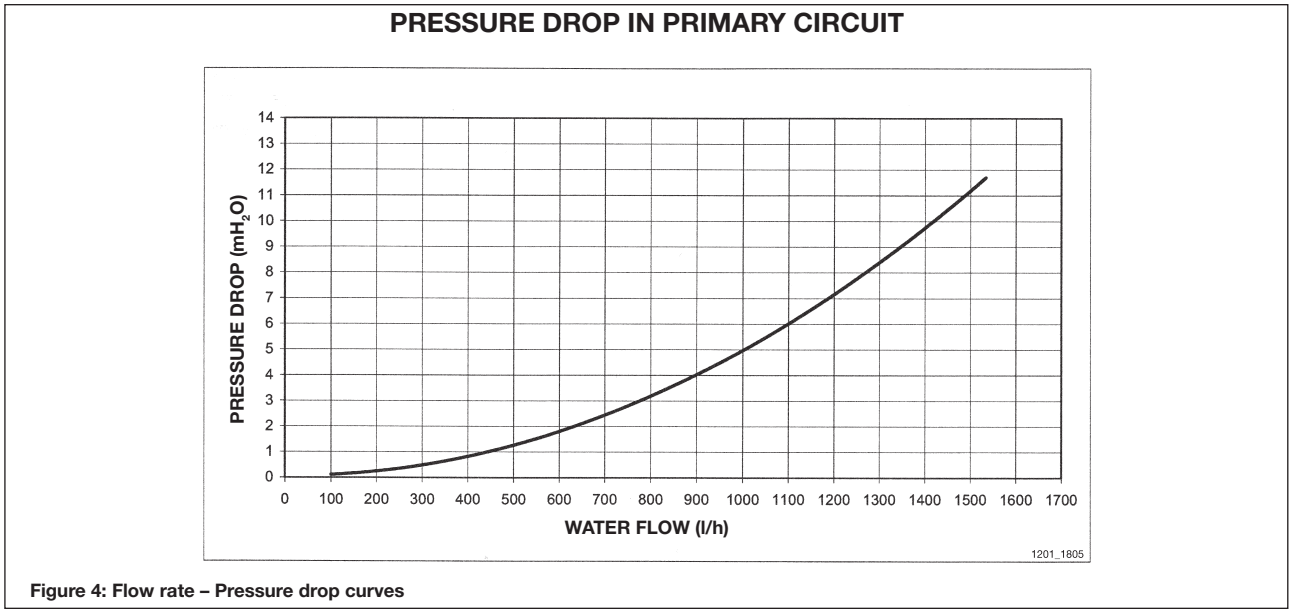


Figure 4: Flow rate – Pressure drop curves

Figure 5 shows the **Flow rate – Pressure drop** curves with various positions of the adjustment screw “A”. Curve 3 refers to one full turn of the knob starting from its closed position. The subsequent curves indicate additional 1/3 turns of the knob with respect to the previous curve. Curve 1 represents the valve fully open.

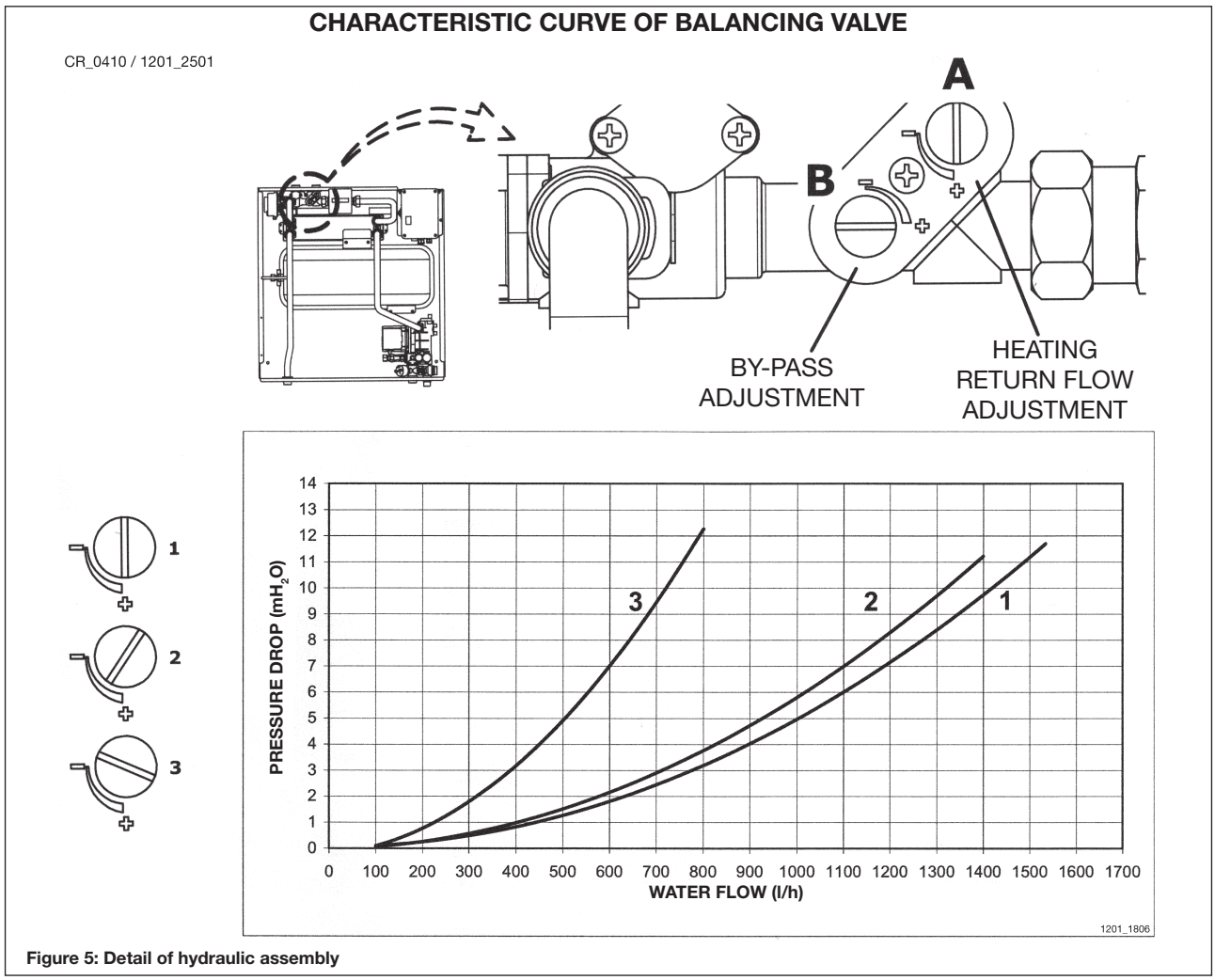


Figure 5: Detail of hydraulic assembly

6.1 BY-PASS

The Heat Interface Unit is fitted with an adjustable automatic by-pass (see figure 5) which opens the recirculation circuit when the heat interface unit does not require heat. To adjust, turn the screw “B” using a screwdriver. The “**+**” on the hydraulic assembly indicates complete open while “**-**“indicates closed.
If modulating pumps are fitted, the by-pass can be completely closed.

7. OUTPUT/PUMP HEAD PERFORMANCE (secondary circuit)

SECONDARY CIRCUIT
Both models are fitted with a circulation pump in the secondary circuit.
This high-head pump is suitable for use on any type of heating emitter.
The pump, mounted inside the appliance, is fitted for operation at maximum speed (III). Speed (I) should not be used as flow rate/head performance, does not satisfy normal operating conditions.
Make sure the circuit pressure drops downline from the heat interface unit are compatible with the pump.

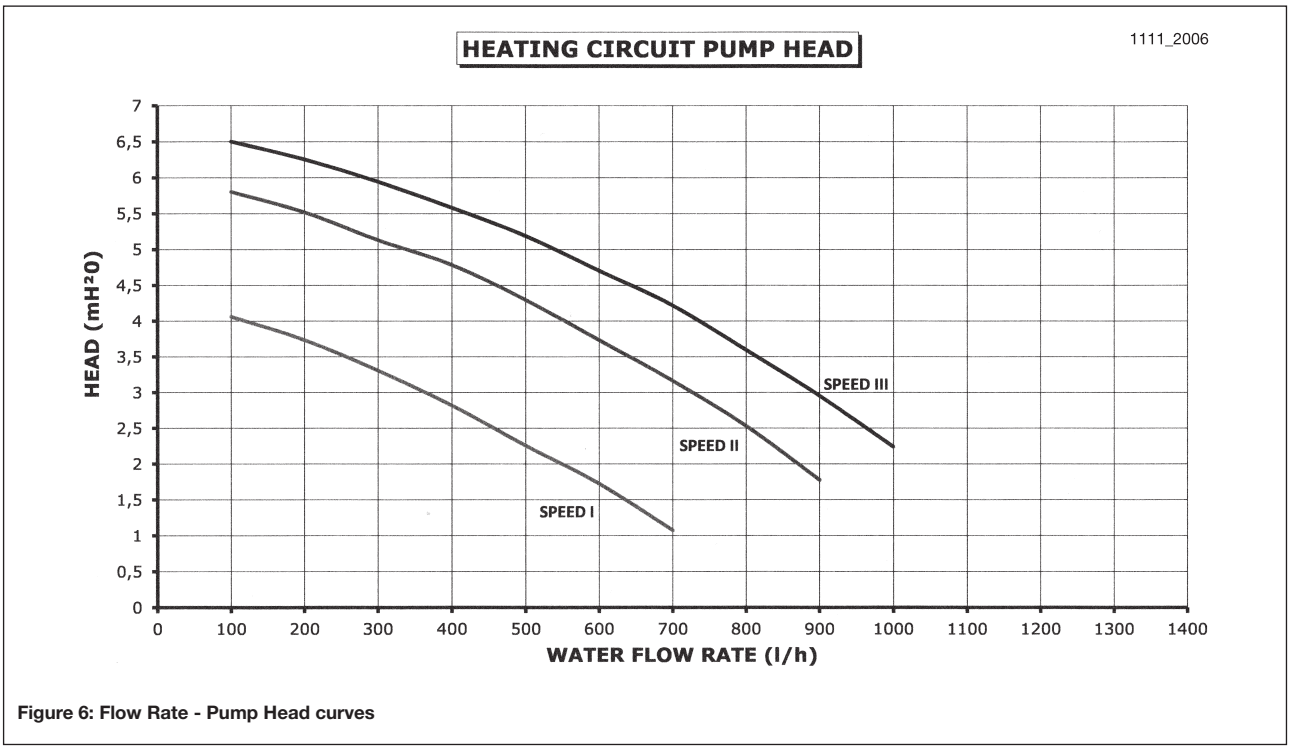


Figure 6: Flow Rate - Pump Head curves

8. DOMESTIC HOT WATER PRODUCTION

Both models have domestic hot water production fitted, an instantaneous plate exchanger in stainless steel is sized for a heat exchange of 35 kW with inlet water at 75 °C.
The heat exchange surface offers suitable domestic hot water performance also with water at 60 °C.

Table: Domestic hot water production according to inlet temperature

Temperature of water in centralised plant circuit (°C)	**Heat exchange capacity** (kW)	**Domestic water flow rate with ΔTs = 35 K** (l/min)
75	35	14,3
70	31	12,7
65	28	11,4
60	26	10,6

ΔTS = temperature difference between hot water outlet and cold water inlet

Temperatures greater than 75 °C are not recommended in order to prevent damaging scale deposits that can restrict the exchanger, reduce performance and shorten maintenance intervals.
Maximum pressure in the hydraulic circuit: 8 bar
Minimum dynamic pressure in the hydraulic circuit: 0,2 bar

9. DOMESTIC WATER METER (available on request)

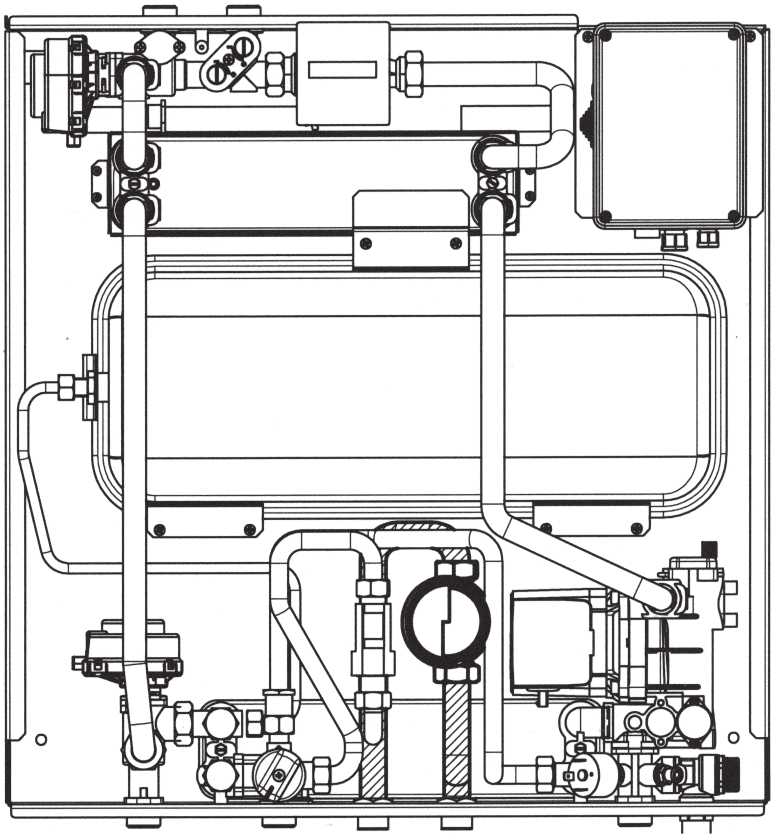
The following meter kit for measuring water consumption is available as accessory.

- **Domestic water meter KIT for models: RST–DE; RSE–DE**

Both models can be fitted with a meter for measuring the consumption of domestic hot water or total domestic water consumption (hot water + cold water).
In the first case, the blind cap on the hydraulic assembly must be moved from the connector to the cold water inlet (ES).
In the second case, the cap must be removed.

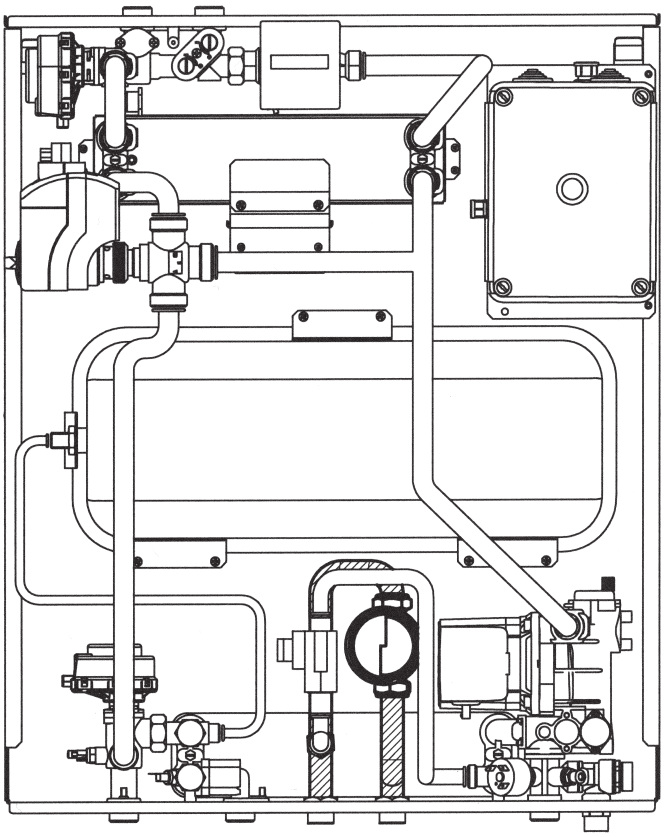
The kits comprise of an electronic volumetric meter with display and radio data transmission (featuring the same characteristics as the heat meter: see fig.12) and two connection pipes housed inside the frame of the user module in the holes made for that purpose.
For further information on the meter, see the supplied **volumetric meter** instructions.

9.1 DOMESTIC WATER METER



CR_0399 / 1112_0505

Figure 7 A: Domestic water meters (model RST-DE)



CR_0400 / 1112_0801

Figure 7 B: Domestic water meters (model RSE-DE)

10. ELECTRICAL CONNECTIONS

The appliance is supplied complete with electrical connections and power cable.
The electrical Installation of the Heat Interface Unit should be complete by a COMPETANT electrical engineer
The Heat Interface Unit is only electrically safe when it is correctly installed in accordance with current IEE wiring regulations.
A double-pole isolation switch with a minimum contact separation of 3mm, is required to be installed for connection to the mains electrical supply
If the power supply cable, is required to be replaced then is should be replaced with a harmonised HAR H05 VV-F' 3x1 mm^2 cable with a maximum outside diameter of 8 mm.

10.1 ACCESS TO THE POWER SUPPLY TERMINAL BLOCK

- Disconnect the appliance from the mains power supply using the twin-pole isolation switch;
- Remove the door of the casing using the square key (supplied).
- Make sure that the switch indicator light is off.
- Loosen the screws on the cover of the electrical box and remove it.
- The 2A rapid fuse is incorporated in the power terminal block (model RST-DE) or in the electronic board (model RSE-DE).

(L) = LIVE - Brown
(N) = NEUTRAL - Blue
⏚ = EARTH - Yellow-Green

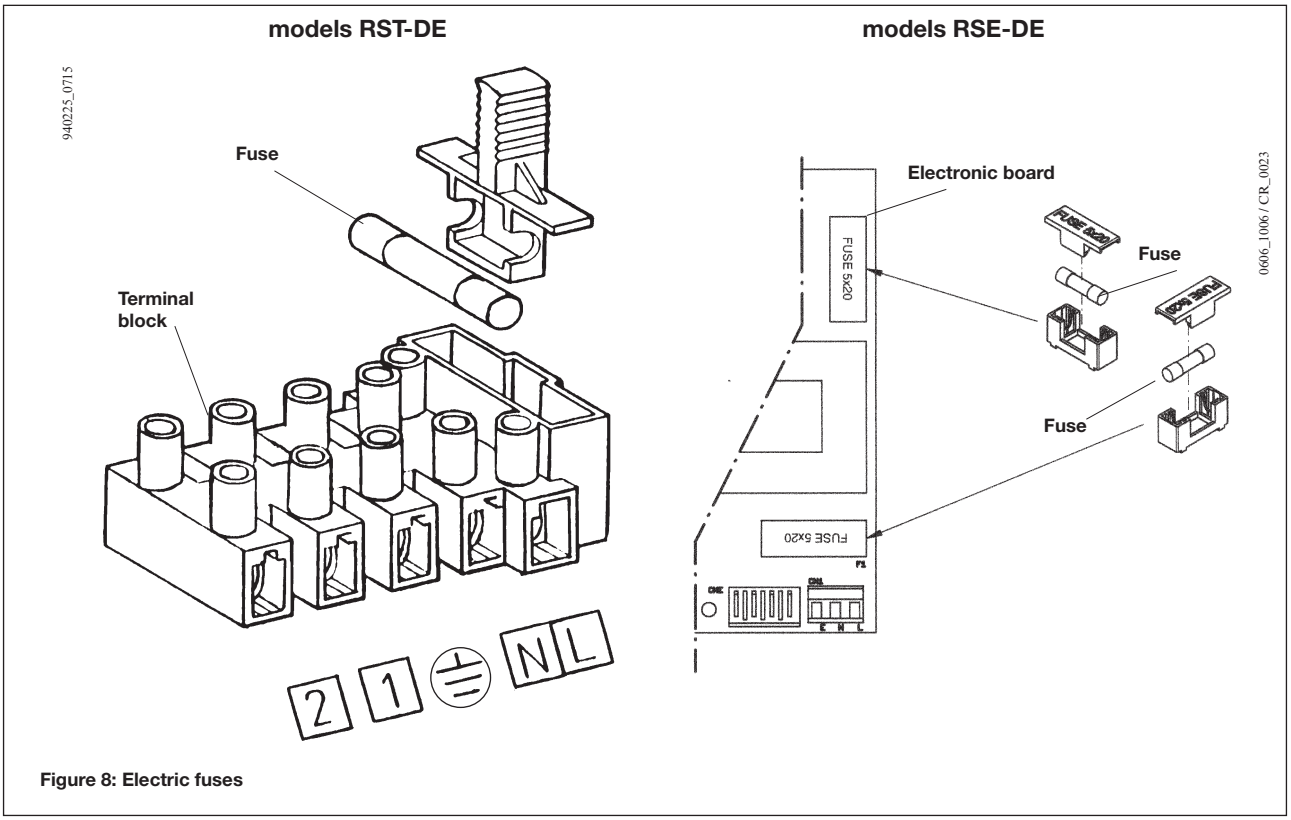
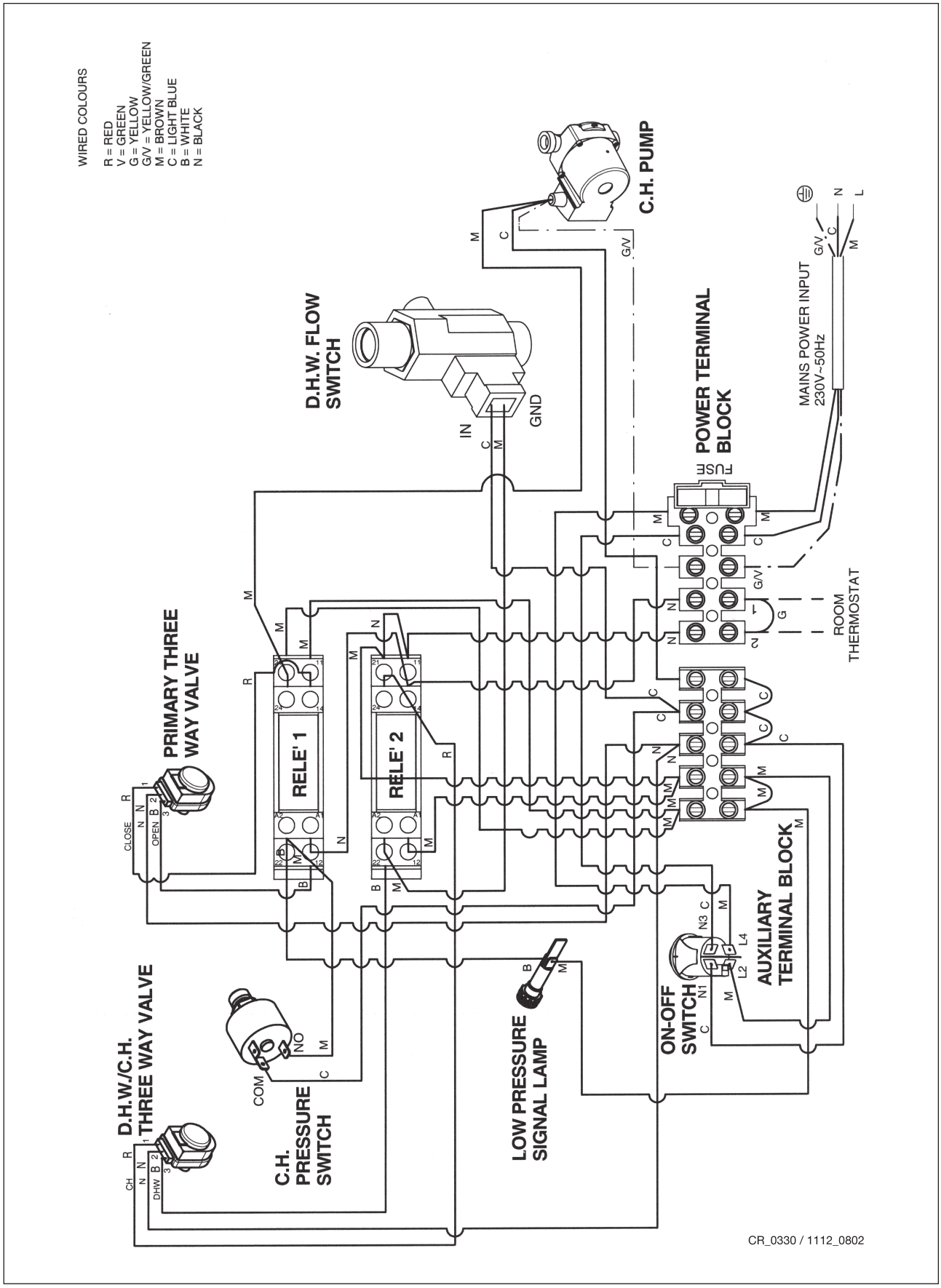


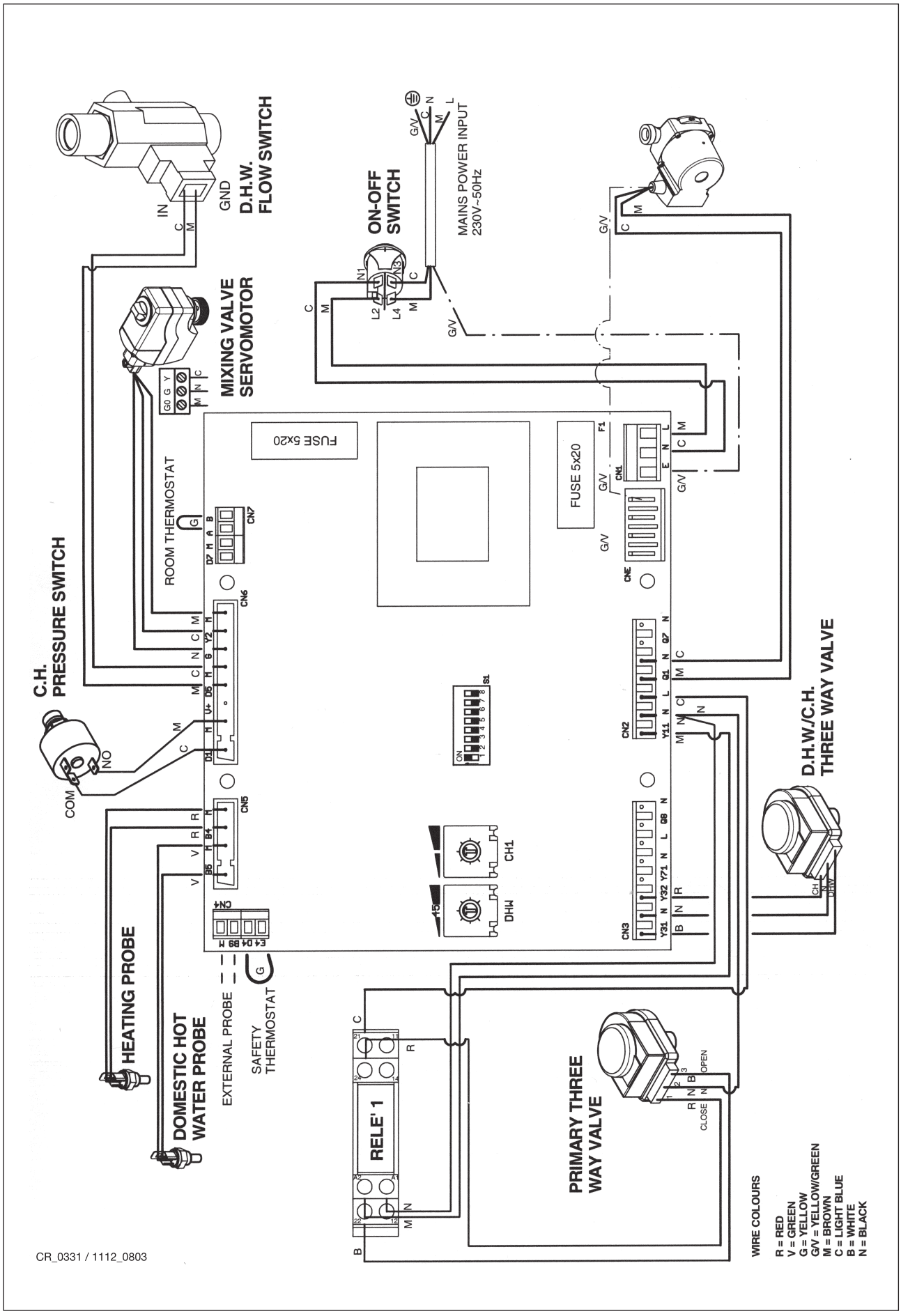
Figure 8: Electric fuses

11. WIRING DIAGRAMS

11.1 MODEL RST-DE



11.2 MODEL RSE-DE



12. CONNECTING THE ROOM THERMOSTAT

The system must be fitted with a room thermostat in order to control room temperature. To connect this device, proceed as follows:

12.1 THERMOSTATIC MODEL: RST-DE

Access the electrical components as described in section 10.1.
Remove the jumper on terminals (1) and (2) of the main terminal block (see wiring diagrams in fig. 11.1).
Thread the two-wire cable through the grommets of the electrical box and connect it to these two terminals using a harmonised cable “HAR H05 VV-F” 2 x 0.75 mm^2 with a maximum outer diameter of 8 mm.

12.2 ELECTRONIC MODEL: RSE-DE

Access the electrical components as described in section 10.1.
Remove the jumper (G) on the electronic board terminals (CN7: A - B) (see wiring diagrams in fig. 11.2 and Figure 8).
Thread the two-wire cable through the grommets of the electrical box and connect it to these two terminals using a harmonised cable “HAR H05 VV-F” 2 x 0.75 mm^2 with a maximum outer diameter of 8 mm.

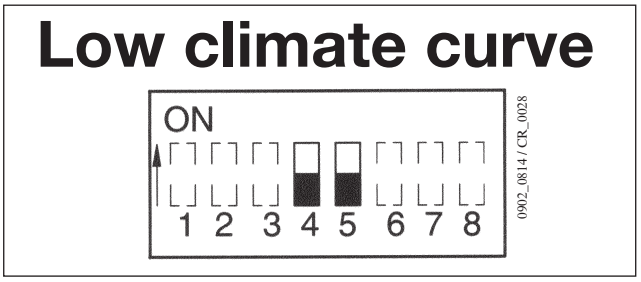
13. CONNECTING THE FLOOR OVERHEATING THERMOSTAT (MODEL RSE-DE)

When connecting the heat interface unit to a system operating at low temperature, installation of a manually resettable contact thermostat (calibrated to 50°C) is required to protect the floor system from elevated temperatures due to possible faults in the adjustment system. The thermostat needs to be mounted on the low temperature delivery line upline from the distribution manifold to the various loops and a distant from the heat interface unit delivery connector (> 1m).

Caution:

- **Make sure low temperature operation is enabled.**
- **Electronic board switches 4 and 5 (climate curve switches) must be OFF.**

SWITCH 4 = OFF
SWITCH 5 = OFF



This selection allows central heating temperature to be adjusted by turning the heating water adjustment potentiometer (TCH) on the electronic board. The temperature range is 25 - 40 °C.

Electrical connection of thermostat

- Access the electrical components as described in section 10.1.
- Remove the jumper on the electronic board terminals (CN4: E4 - D4) (see wiring diagrams in sec. 11.2).
- Thread the two-wire cable from the thermostat terminals through the grommets of the electrical box and connect it to these two terminals (use a harmonised cable “HAR H05VV-F” 2x 0.75 mm^2 with a maximum outer diameter of 8 mm).

Safety thermostat tripping

If the safety thermostat trips due to a fault in the adjustment system, the heat interface unit stops for safety reasons and the **red LED DL12** shines on the electronic board (see fig. 16).
After checking the reason for the overheating, restart the system by pressing the safety thermostat reset device, the unit is momentarily disconnected from the power supply.(this operation is required in order to cancel the block from the board memory: the red LED DL12 flashes).

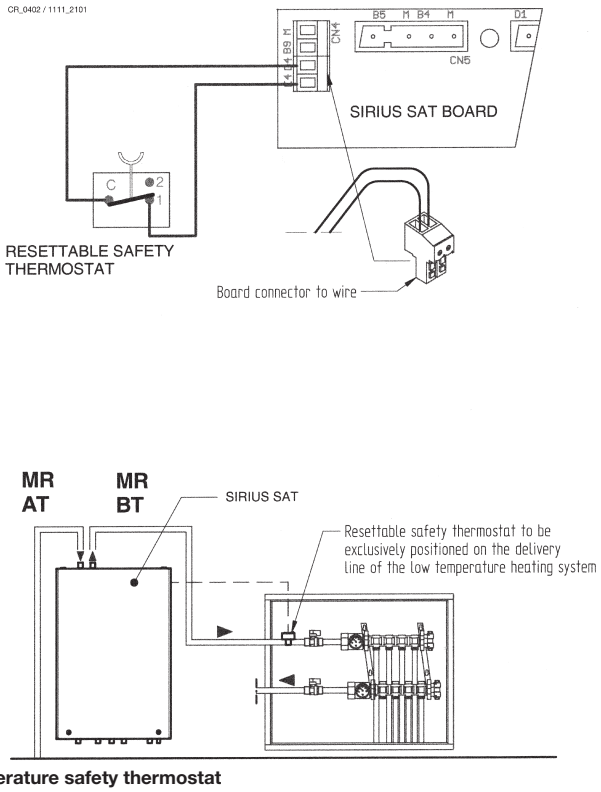


Figure 9: Connecting the low temperature safety thermostat

14. INSTALLING AND CONNECTING THE EXTERNAL PROBE

(accessory available on request only for model RSE-DE)

The heat interface unit has a connection for an weather compensation probe (Available on request). The weather compensation probe independently adjusts delivery temperature depending on the external temperature and the chosen curve.

To mount and electrically connect this accessory, see the figure below and the instructions supplied with the external probe.

The weather compensation probe must be installed on a wall outside the building as follows:
- Install on a wall facing north-north/east and protected from direct sunlight.
- Do not install on walls affected by humidity and mould.
- Make sure the wall is sufficiently insulated.
- Do not install near fans, steam outlets or chimneys.

Attach to the wall using the two supplied expansion grips, following the technical instructions supplied with the accessory. The electrical connections to the probe are made by using two wires with a minimum cross-section of 0.5 mm^2 and a maximum length of 20 m (polarity is unimportant).
Fix one end of the Heat Interface Unit - Probe connection cable to the probe terminal block, securing it with the relative sealed grommet, and the other end to the screw connector (CN4: B9 - M) on the electronic board (to access the electrical components see section 11.2).Use a harmonised cable “HAR H05 VV-F” 2 x 0.75 mm^2 with a maximum outer diameter of 8 mm.

Only model: RSE-DE

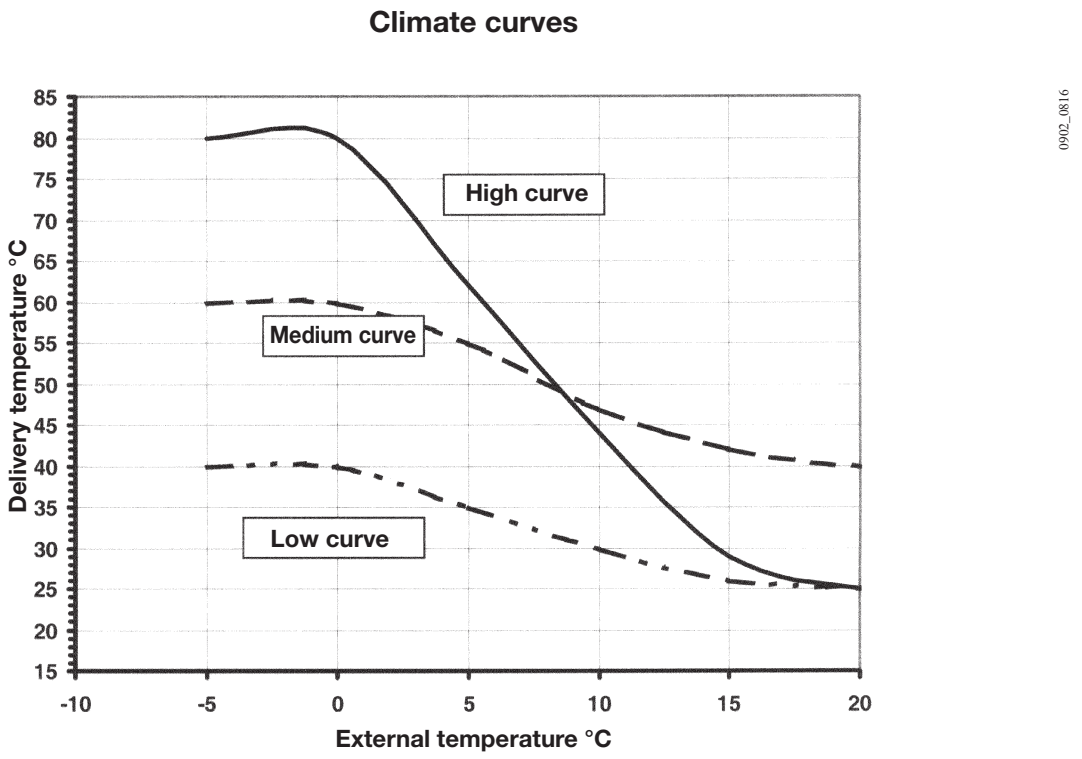
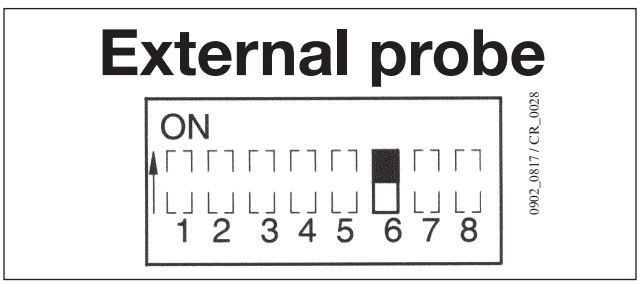


Figure 10: External temperature – delivery temperature performance curve

With the weather compensation probe, the **TCH potentiometer** on the electronic board limits maximum heating temperature.

Attention: With the weather compensation probe connected, switch 6 on the electronic board must be turned ON.

SELECTOR 6 = ON



15. ELECTRONIC BOARD ADJUSTMENT

(model RSE-DE)

Caution: only make adjustments to the electronic board after disconnecting the power supply (see sec.10: access to live components)

These adjustment can be made on electronically controlled model:

TR = Heating temperature adjustment potentiometer (CH1)
Adjusts the heating delivery temperature according to the set climate curve.
TR temperature range TR: 25 - 80°C (see climate curve selection table)

With the weather compensation probe, this device acts as a maximum temperature limiting device

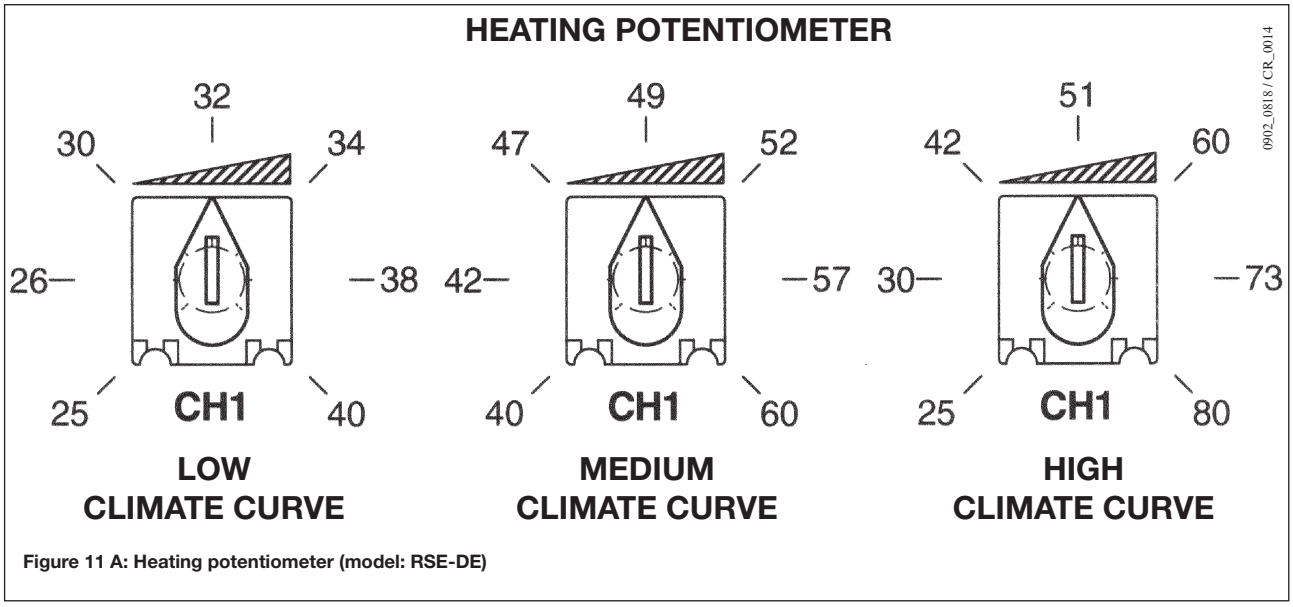


Figure 11 A: Heating potentiometer (model: RSE-DE)

TS = Domestic hot water (DHW) adjustment potentiometer
Adjusts domestic hot water temperature.
TS temperature range: 30 - 60°C
Factory setting 45°C

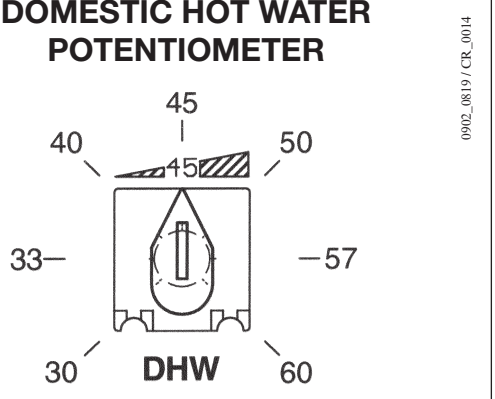


Figure 11 B: Domestic hot water potentiometer

SELECTORS 1 - 2 - 3 : Heat Interface Unit CONFIGURATIONS

Model selection table

MODEL	Switch 1	Switch 2	Switch 3
RSE-DE	ON	OFF	OFF

Make sure the switches are in the correct position for the model

RSE-DE

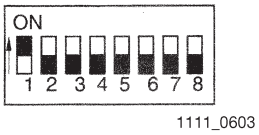


Figure 11 C: Model witches

SWITCHES 4 – 5 : CLIMATE CURVE SELECTION (only for model RSE-DE)

Climate curve selection table

CLIMATE CURVE	Switch 4	Switch 5	Temperature range
LOW	OFF	OFF	25 - 40 °C
MEDIUM	ON	OFF	50 - 60 °C
HIGH (*)	OFF	ON	25 - 80 °C

(*) factory setting

The high curve should be selected for heating elements at high temperatures: radiators
The medium curve should be selected for heating elements fitted with fans: fan coil units
The low curve should be selected for heating elements at low temperatures: underfloor or similar systems.

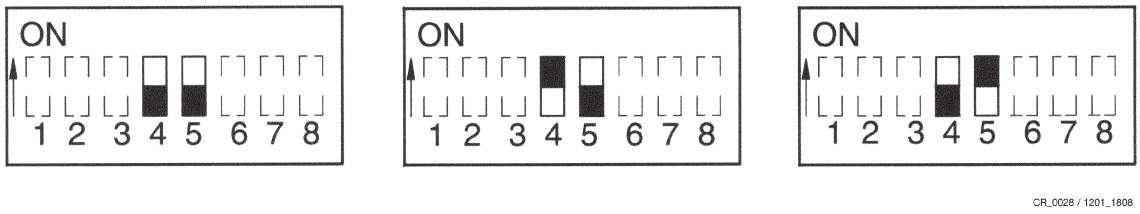


Figure 11 D: Climate curve selectors

SWITCH 6: EXTERNAL PROBE ENABLE (only for model RSE-DE)

Weather compensation probe enable table

EXTERNAL PROBE	Switch 6
WITH PROBE	ON
WITHOUT PROBE (*)	OFF

(*) factory setting

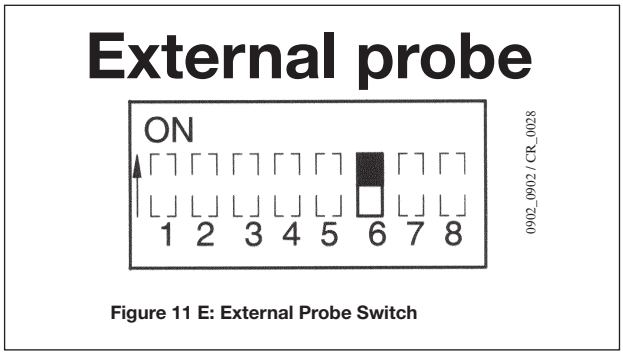


Figure 11 E: External Probe Switch

SELECTOR 7 : PUMP POST-CIRCULATION TIME

Pump post-circulation time selection table

EXTERNAL PROBE	Switch 7
WITH PROBE	ON
WITHOUT PROBE (*)	OFF

(*) factory setting

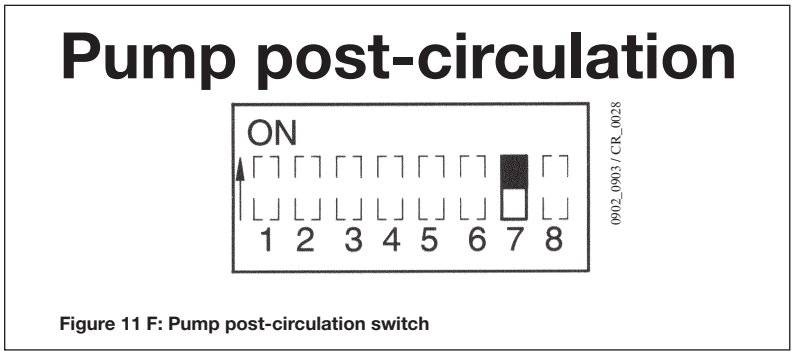


Figure 11 F: Pump post-circulation switch

16. HEAT METERING

The Heat Interface Units are supplied standard with a SIEMENS MEGATRON electronic heat meter. This device measures heat consumption in the zone controlled by the user module.
The heat meter features an 8-digit LCD display. The 3 Vdc input voltage is provided by a lithium battery (lifetime 8 years).
A button for querying the appliance is located on the front of the display.
The appliance can be turned by 360° and inclined by 90°.
The appliance display has two levels with which the following information can be shown:

- Total power consumed since the last reading date.
- Segment test
- Current consumption
- Current flow rate
- Current delivery temperature
- Current return temperature
- Current T Delta between the two temperatures
- Operating hours since initial start-up
- Last reading date
- Last year‘s power consumption.
- Check code
- Total power consumption since installation
- Fault signals (consult the following section)

The units of measurement are °C or K, kWh, m^3/h, kW, and hours.
The display shows total heating consumption by default.

Fault signals

The heat meter automatically carries out diagnostic controls and displays the faults it finds. It divides the faults into two categories.
Temporary faults that do not cause operating problems. In this case, the display flashes for 32 seconds and then resumes normal operation;
Major faults that stop the appliance. In this case, the display alternatively indicates the fault code and the date on which it appeared for the first time. The flows metered up until that moment, remain memorised.

For further information, see the supplied **SIEMENS** instructions supplied with the meter.

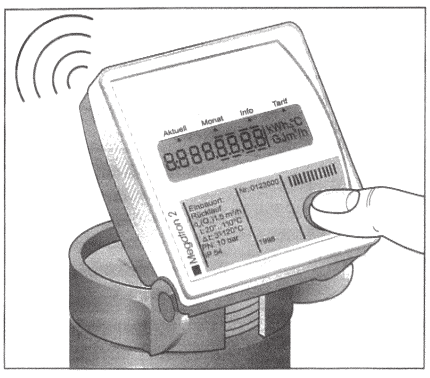


Figure 12: Meter display

Metering data can also be transmitted via radio to a remote reception device (Radio system expansion).

17. AUTOMATIC MEASUREMENT SYSTEM VIA RADIO

This system allows all the consumption data of the building to be handled from a single station, thus reducing measurement times whilst protecting user privacy. Transmission frequency is the 868 MHz established by the national radio transmission plan (European standard). The duration and power of the radio signal are irrelevant and are in no way connected with problems of “electro smog”.

The heat meters of the various user modules transmit consumption via a radio signal and the relative floor aerials (WTT16) which receive and save the data. Consumption can be read by connecting a Personal computer to any of the floor aerials via radio or making a cable connection to an aerial with a serial output or using a remote modem (GSM).

- Local reading via cable from the WTT16.**232** aerial with RS232 interface:
  via **PC** (with **ACS26** data reading software) connected with a serial cable (figure 15b case 1).
- Local reading via radio of the **WTT16** floor aerials:
  via **PC** (with **ACS26** data reading software) connected to the **WTZ.RM** radio module (figure 15b case 2).
- Remote reading via GSM from the **WTX16.GSM** Gateway aerial:
  Via PC (with **ACS26** reading software and GSM modem + phone card) (figure 15b case 3).

In certain cases, the following accessory components must be used:

- **WTT16 FLOOR AERIAL**
- **WTT16.232 AERIAL WITH SERIAL OUTPUT (local reading via PC)**
- **WTX16.GSM GATEWAY AERIAL (telephone reading via PC)**
- **SIEMECA WTZ.RM RADIO MODULE FOR PC (radio reading via PC)**
- **ACS26 READING SOFTWARE (for PC)**

During installation, no special start-up procedures are required for radio transmissions as all the system components are automatically configured for signal transmissions. These characteristics guarantee rapid, problem-free start-up and simple system management.

Install the Radio system according to the following parameters:

- Average reception capacity of WTT16 aerials: radius of 25 metres on the floor where they are installed and 15 metres on the floors above and below (install one WTT16 aerial every two floors).
- System capacity: max. 12 WTT16 aerials (or 11 WTT16 aerials + 1 GATEWAY WTX16 aerial) with max. reception of 500 meters.
- Lifetime of battery-operated WTT16 aerial: at least 6 years plus 1 reserve year during which a “battery low” message is sent
- Lifetime of heat meter battery: 6 years plus 15 reserve months
- The WTX16.GSM Gateway aerial must be powered at mains voltage.

The floor aerials (WTT16) must be fixed to a wall of the stairwell or corridor, at a height that prevents tampering, using the supplied
expansion grip. The Gateway aerial (WTX16.GSM) must be installed in the entrance area of the metered building (this component requires mains voltage input).

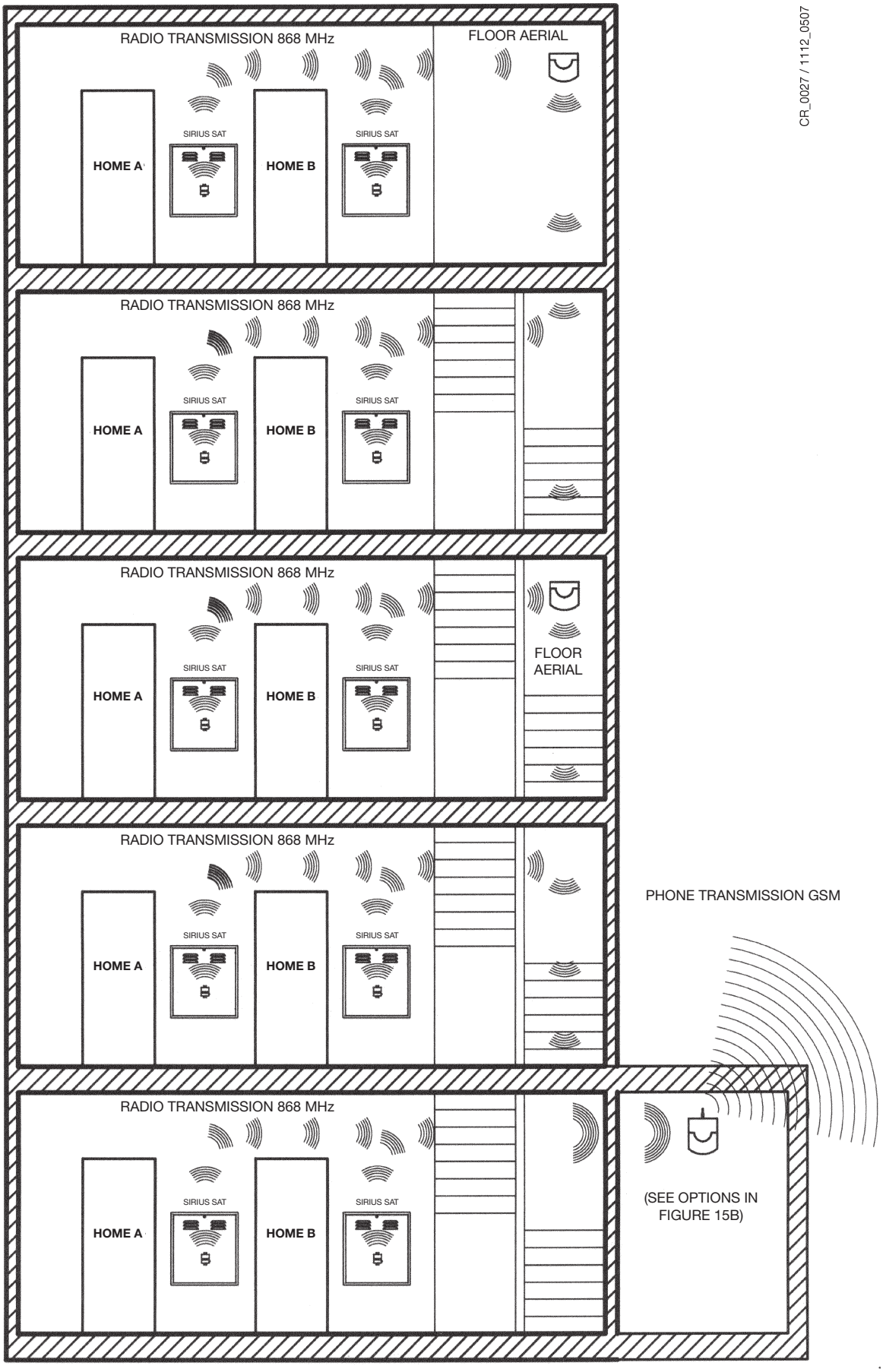
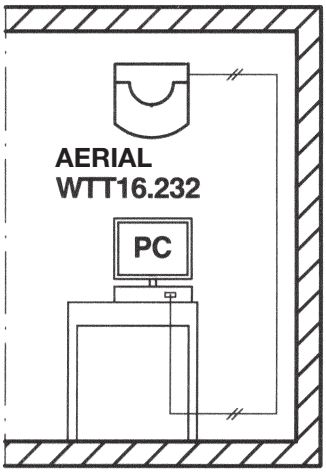


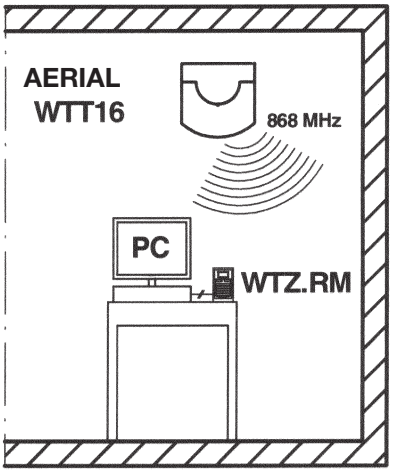
Figure 13 A: Automatic measurement system via radio

0902_0904 / CR_0033

1) LOCAL TRANSMISSION VIA “SERIAL”



2) LOCAL TRANSMISSION VIA “RADIO”



3) TRANSMISSION VIA “GSM”

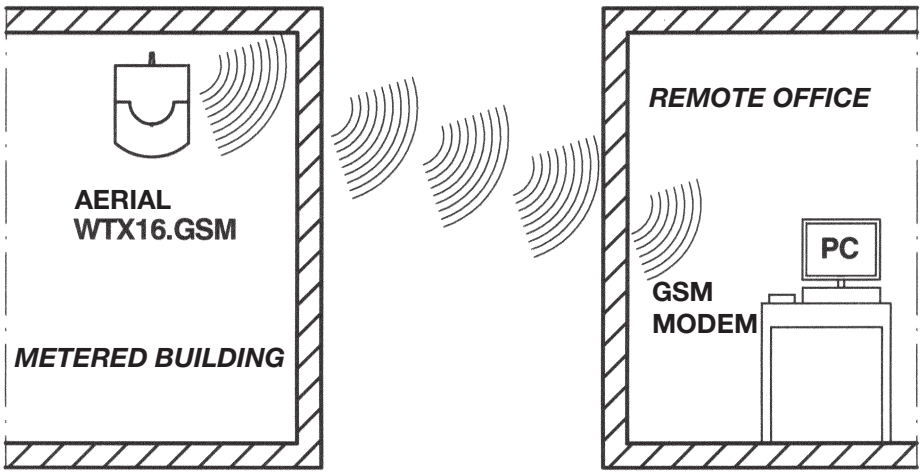


Figure 13 B: Reading options

17.1 START-UP

Start-up of the radio system comprises several steps:

- Set the WTT16 aerials to the start-up mode (press the red MODE button on each WTT16 aerial).
- At this point, the WTT16 aerials configure themselves and automatically create a virtual communication network.
- Set the heat meter to the start-up mode by pressing the button on the front. After setting the mode, all the meters send a start-up signal to the WTT16 aerials.
- After receiving all the meters in the field, to compete system start-up, set the aerials to the standard mode (press the blue button on each WTT16 aerial).

17.2 OPERATING PROCEDURE

During automatic system operation, the WTT16 aerials and the GATEWAY WTX16.GSM aerial exchange the consumption data of the meters on a daily basis in order to allow each single aerial to store the data of the entire building. The data of the entire building can be manually updated without having to wait for the daily exchange routine.

17.3 DATA FORMAT

Consumption data is coded in XML format or in ASCII code to that it can be processed by any editor (Notepad, Excel, etc.).

For further information, consult the manuals of the individual components.

18. FILLING THE SYSTEM

PRIMARY CIRCUIT
Before starting the heat interface unit, open the on/off valves on the hydraulic connectors and check the system filling pressure in the boiler room and distribution risers (< 6 bar).

The centralised plant must have an automatic filling device.

SECONDARY CIRCUIT
The filling loop is to be connected between the mains domestic hot water outlet and plant heating return isolation taps. The loop and valves must be connected as shown in figure 14, with the combined double check and stop valve on the mains domestic hot water outlet tap.

IMPORTANT: Regularly check that the pressure displayed by the pressure gauge "A" (figure 14) is 0.9 to 1.5 bar. In case of overpressure, open the boiler drain valve "B". In case the pressure is lower open the filling loop.
We recommend you open the tap very slowly in order to let off the air.

NOTE: If pressure drops occur frequently have the boiler checked by a Qualified Service Engineer.

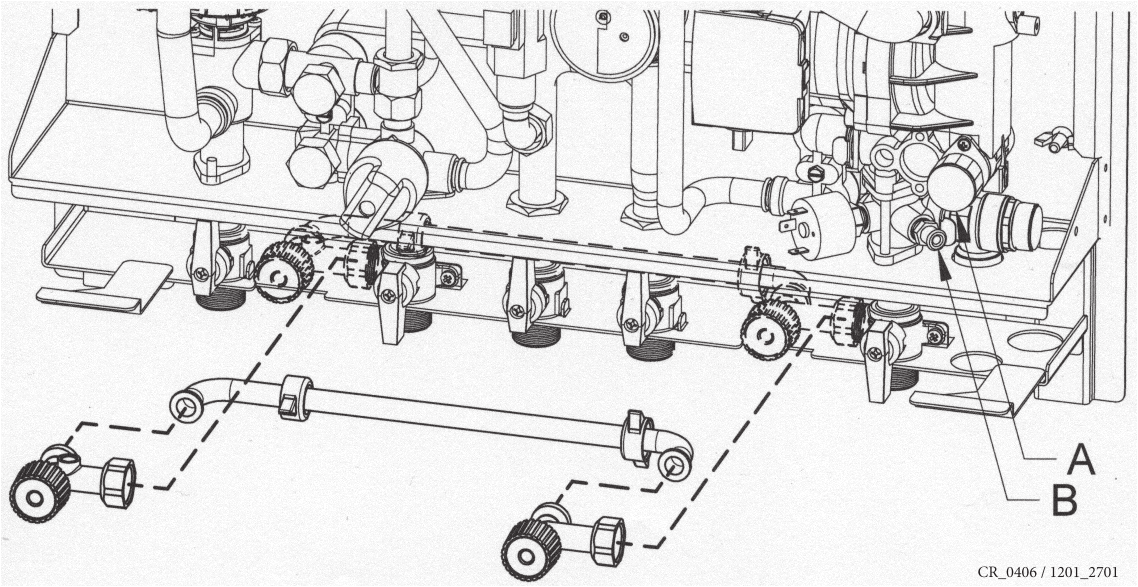


Figure 14

19. AIR VENT AND PUMP RESET

19.1 AIR VENT

In the first plant filling operation, vent any air in the system, including the heat interface unit. The appliance is fitted with an automatic air vent valve.

19.2 PUMP RESET

The heat interface unit is fitted with a pump reset device (not present in model RST-DE) which, if no heat demand (heating and/or domestic water) is received for 24 consecutive hours, automatically runs the pump for one minute. This function is only available if the system is powered.

If, however, the pump needs to be reset after a period of inactivity or during initial starting, simply remove the cap screwed onto the shaft, insert a screwdriver and turn the rotor a few times in order to reset it and allow it to start. Collect the water flowing from the pump shaft.

20. OPERATING PROCEDURE

20.1 STARTING

To start the appliance correctly, proceed as follows:

- Power the module.
- Check that the system is full and at the right pressure (see sec. 19) and temperature (65 - 75°C).
- For models with electronic board, check that the electronic board switches are in the correct position (see fig. 16).
- Press the luminous switch on the cover of the electrical box.
  Verify if the red led (placed on the electrical box side) is not “ON” (low pressure < 0.8 bar). In this case check the secondary circuit pressure and fill the circuit.
- Adjust the ambient thermostat (or the climate adjustor) to the required temperature.

Following a heat demand from the ambient thermostat, the water from the centralised system begins to circulate in the heating elements of the zone controlled by the user module.

When a domestic hot water tap is opened, the user module heats the water at the temperature set by the relative DHW thermostatic knob (RST-DE) or DHW potentiometer (RSE-DE). DHW temperature range: 30-60°C (see fig.15A and 15B).

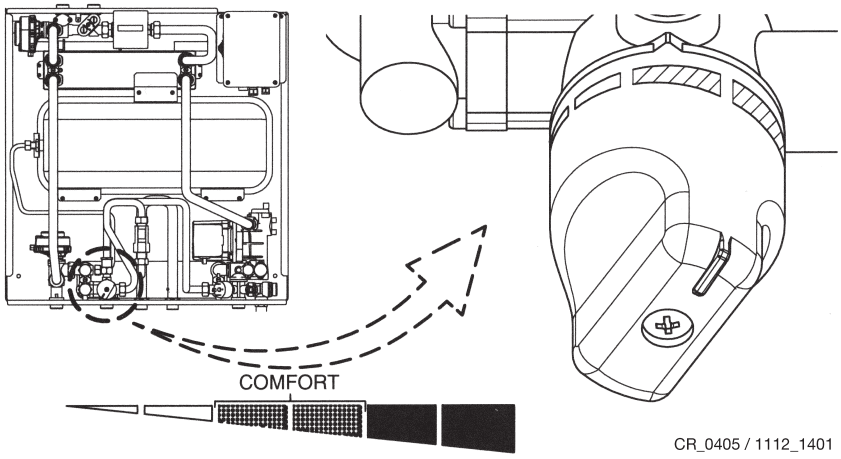


Figure 15 A: Domestic hot water potentiometer (RST-DE model)

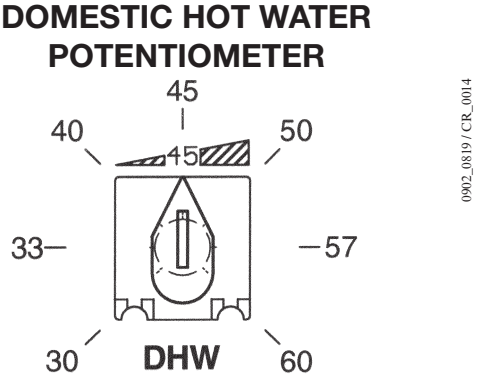


Figure 15 B: Domestic hot water potentiometer (RSE-DE model)

20.2 PARTIAL SHUT-DOWN

Adjust the ambient thermostat / heating programmer / ECO CRONO climate adjuster to disable the heating function (lower the set ambient temperature or disable heating). The domestic hot water function (model **RSE-DE**) and the frost protection device (only for **RST-DE**) remain active).

20.3 TOTAL SHUT-DOWN

Disconnect the appliance from the power supply by turning the luminous switch and the twin-pole isolation switch.

21. ELECTRONIC BOARD SIGNALS (MODEL RSE–DE)

The models with electronic board display the operating status and any system blocks via the board LED‘s.

Key to LED‘s:

LED	*COLOUR*	*LED STATUS*	*OPERATING STATUS*
DL1	**RED**	**OFF**	NO ALARMS
DL1	**RED**	***1 FLASH EVERY 3 SECONDS***	EXTERNAL PROBE FAULTY
DL1	**RED**	***2 FLASHES EVERY 1 SECOND***	DOMESTIC HOT WATER PROBE FAULTY
DL1	**RED**	***3 FLASHES EVERY 1 SECOND***	HEATING PROBE FAULTY
DL1	**RED**	**ON**	ON/OFF VALVE CLOSED
DL2	**GREEN**	**OFF**	NO POWER
DL2	**GREEN**	**ON**	ZONE I HEAT DEMAND (MIXED)
DL2	**GREEN**	***1 FLASH EVERY 0.5 SECONDS***	POWER ON (NON-OPENTHERM AMBIENT THERMOSTAT)
DL2	**GREEN**	**1 FLASH EVERY 0.5 SECONDS**	POWER ON (OPENTHERM: QAA73 AMBIENT THERMOSTAT)
DL3	**GREEN**	**ON**	ZONE II PUMP FEED (HIGH TEMPERATURE)
DL4	**GREEN**	**ON**	ZONE 1 PUMP FEED (MIXED)
DL5	**GREEN**	**ON**	ON/OFF VALVE SERVOMOTOR POWER INPUT
DL6	**GREEN**	**ON**	DOMESTIC HOT WATER CIRCULATION PUMP (NON-OPERATIVE)
DL7	**GREEN**	**ON**	ZONE II VALVE OPEN
DL8	**GREEN**	**ON**	DOMESTIC HOT WATER THREE-WAY VALVE
DL9	**GREEN**	**ON**	HEATING THREE-WAY VALVE
DL10	**GREEN**	**ON**	DOMESTIC HOT WATER DEMAND
DL11	**GREEN**	**ON**	ON/OFF VALVE OPEN (AT TRAVEL STOP)
DL12	**RED**	**ON**	SAFETY THERMOSTAT TRIPPED (*)
DL12	**RED**	***FLASHING***	AFTER SAFETY THERMOSTAT RESET (*)
DL13	**GREEN**	**ON**	ZONE II HEAT DEMAND

(*) Safety thermostat tripping
If the safety thermostat trips due to a fault in the adjustment system, the heat interface unit stops for safety reasons and the red **LED DL12** (fig. 16) is switched “ON”, on the electronic board.
After checking the reason for the overheating, restart the system by pressing the safety thermostat reset device and momentarily disconnecting the power supply from the module (this operation is required in order to cancel the block from the board memory: the red **LED DL12 flashes**). In case this device trips repeatedly, contact the technical support helpline.

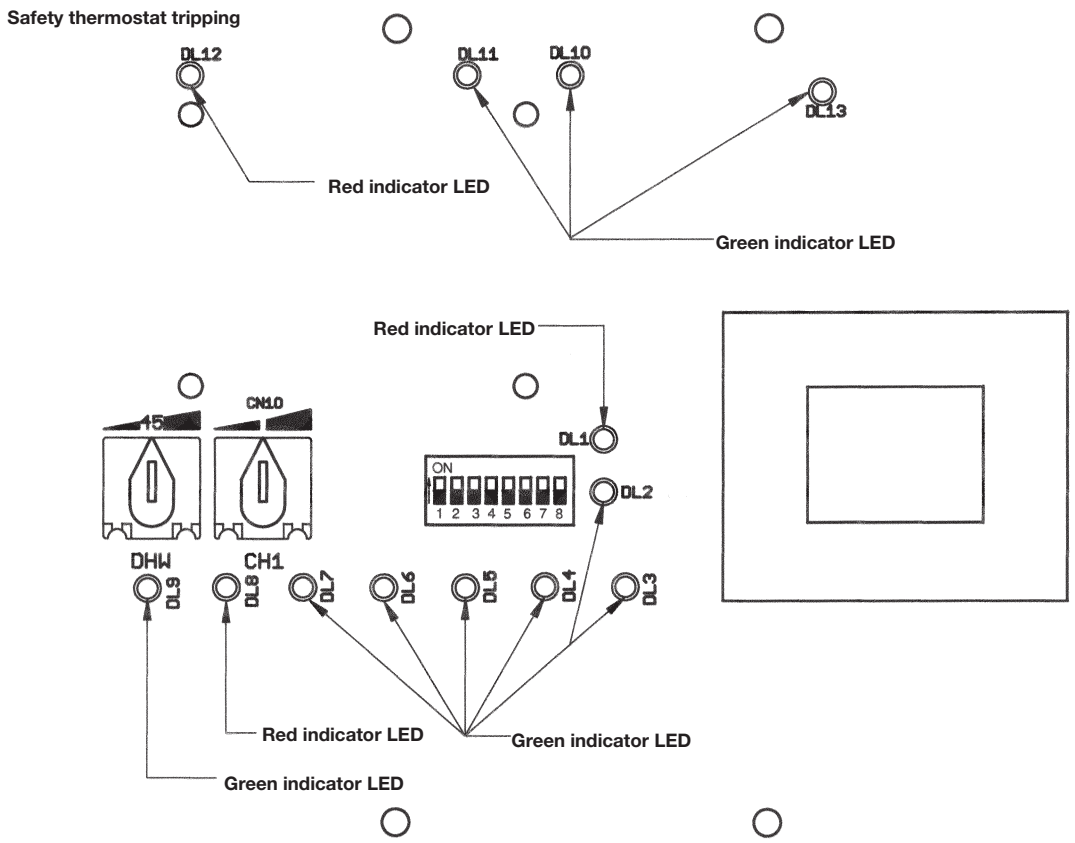


Figure 16: Electronic board signals (RSE-DE)

MAINTENANCE INSTRUCTIONS

For regular and cost-effective operation of the heat interface unit, they must be periodically checked and overhauled approximately once every two years.

22. DISMOUNTING/ CLEANING THE DOMESTIC HOT WATER EXCHANGER

The stainless steel domestic hot water plate-type heat exchanger can be easily disassembled with a screwdriver as described below:

- Close all the on/off taps on the hydraulic connectors of the module;
- Empty the heating circuit with the relative drain tap;
- Empty the water in the domestic hot water circuit by opening a hot water tap;
- Remove the two front screws securing the water-water heat exchanger and pull it out.

To clean the exchanger and/or DHW circuit, use Cillit FFW-AL or Benckiser HF-AL. Remove the scale from the seat and only for RSE-DE NTC sensor fitted on the DHW circuit.

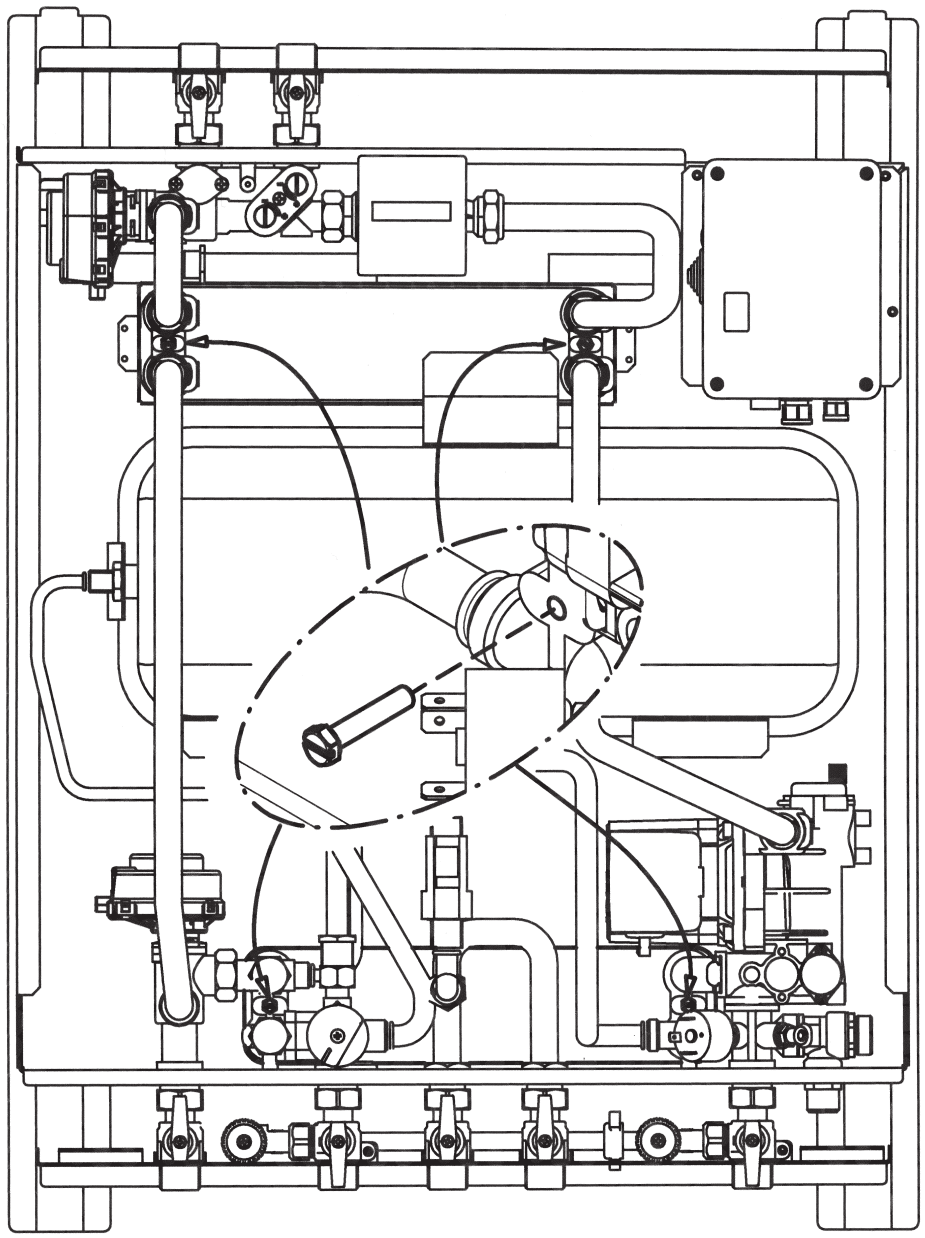


Figure 17: Dismounting the DHW exchanger

23. CLEANING THE PRIMARY HEATING INLET FILTER

Both of these models are fitted with a heating water filter on the water inlet line coming from the centralised plant. To clean, proceed as follows:

- Close all the on/off taps on the hydraulic connectors of the module;
- Drain the primary heating circuit **through the drain tap**;
- Unscrew the two screws, remove the plate and internal cylinder cartridge and eliminate any impurities.

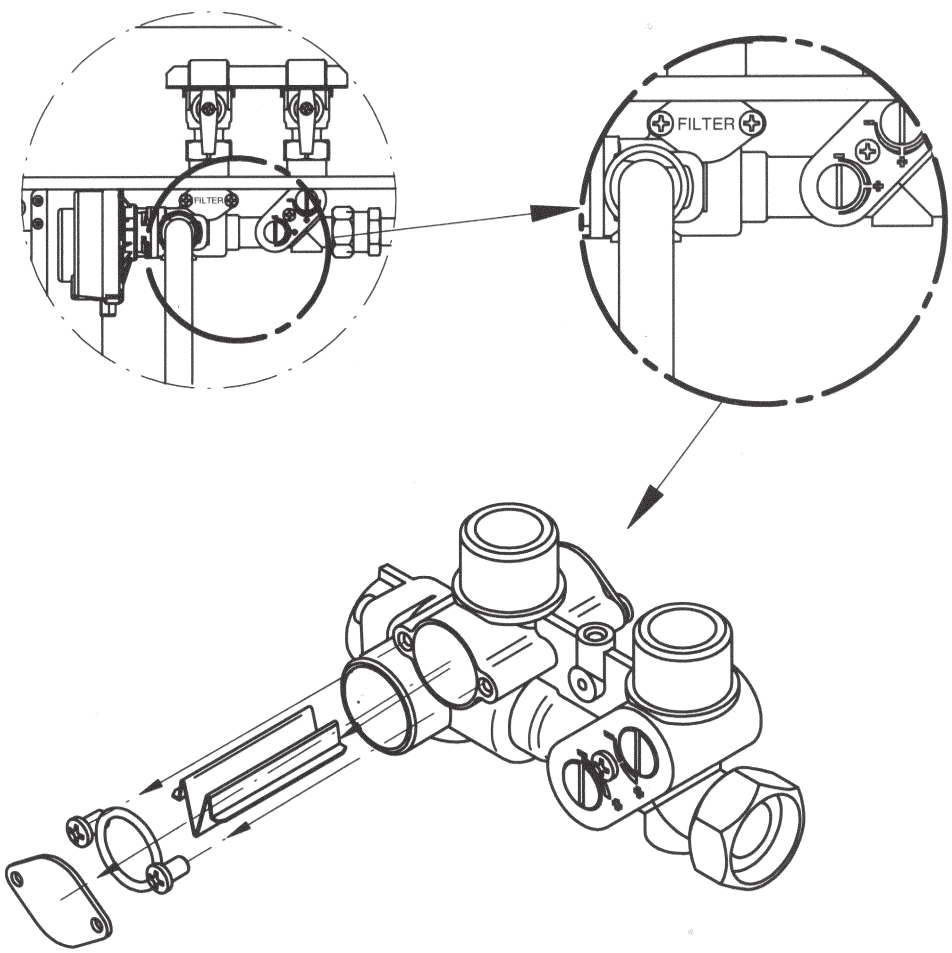
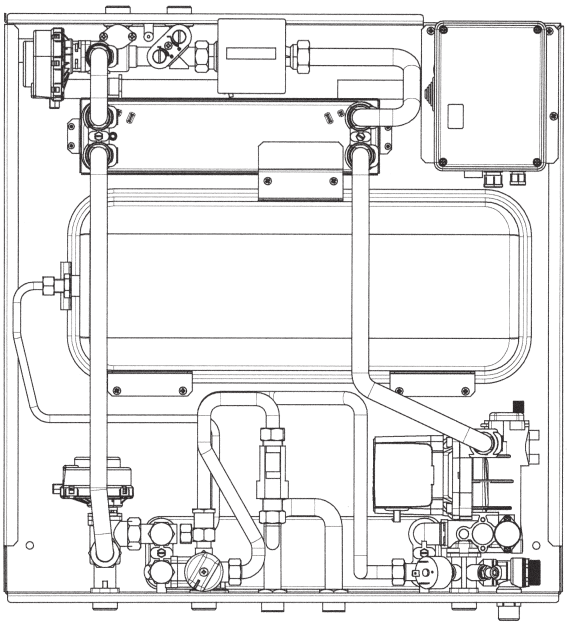
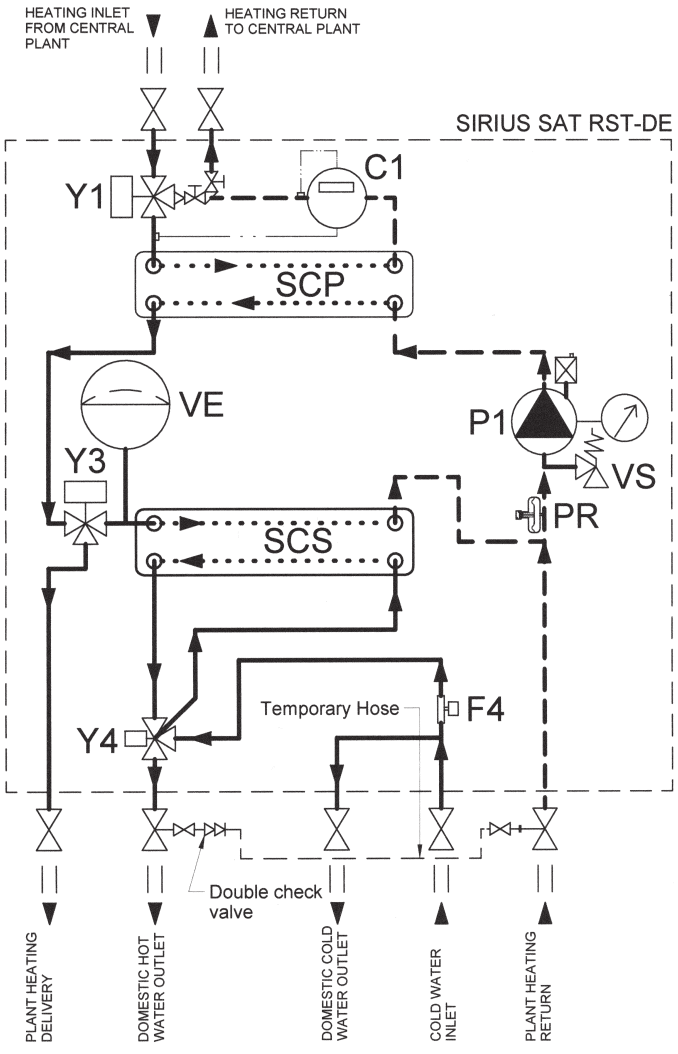


Figure 18: Dismounting the primary heating circuit filter

24. FUNCTIONAL CIRCUIT DIAGRAM

24.1 MODEL RST-DE

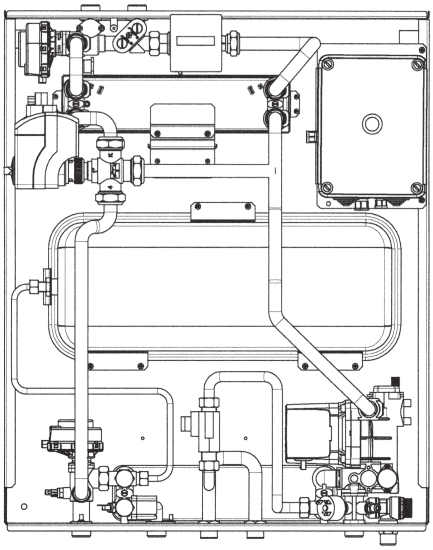


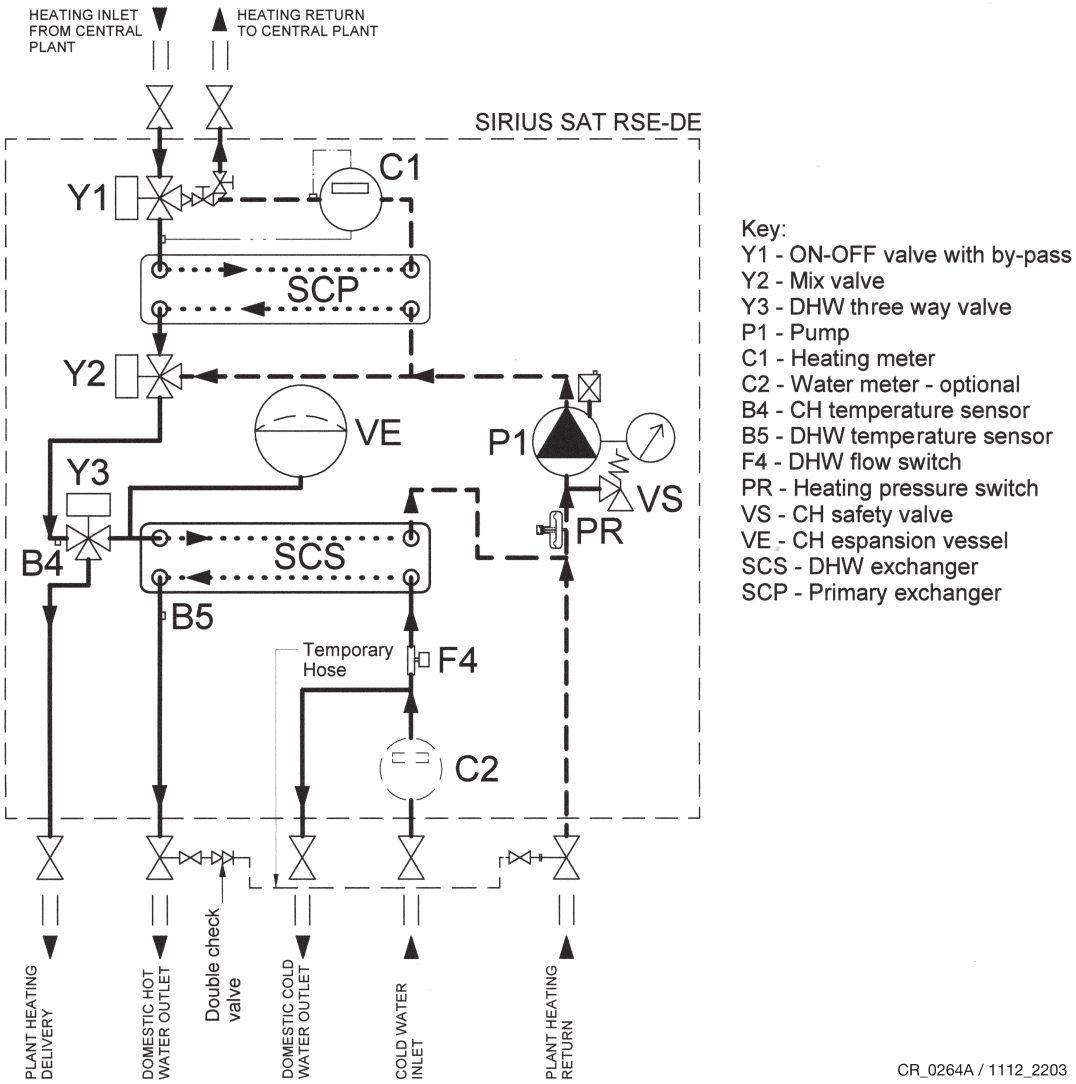


Key:
- Y1 - ON-OFF valve with by-pass
- Y3 - DHW 3 way valve
- Y4 - DHW thermostatics valve
- P1 - Pump
- C1 - Heating meter
- F4 - DHW flow switch
- PR - Heating pressure switch
- VS - CH relief valve
- VE - CH expansion vessel
- SCS - DHW exchanger
- SCP - Primary exchanger

CR_0277A / 1204_1901

24.2 MODEL RSE-DE





Key:
Y1 - ON-OFF valve with by-pass
Y2 - Mix valve
Y3 - DHW three way valve
P1 - Pump
C1 - Heating meter
C2 - Water meter - optional
B4 - CH temperature sensor
B5 - DHW temperature sensor
F4 - DHW flow switch
PR - Heating pressure switch
VS - CH safety valve
VE - CH espansion vessel
SCS - DHW exchanger
SCP - Primary exchanger

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25. DISPOSAL

These products has been built with materials that do not pollute the environment. At the end of its lifetime, do not treat it as domestic waste but take it to the nearest appliance recycling plant.
Disposal must be performed according to current environmental waste disposal laws.

26. TECHNICAL DATA

SIRIUS SAT user modules		**RST-DE**	**RSE-DE**
Production of domestic hot water		✓	✓
Models with pump		✓	✓
Heating water temperature adjustment with climate curve high	°C	25-80	25-80
Adjustment of domestic hot water temperature	°C	30-60	30-60
Production of domestic hot water with ΔT = 35°C and Inlet water temperature 75°C	l/min	14,3	14,3
Maximum pressure in primary heating circuit	bar	6	6
Maximum pressure in secondary heating circuit	bar	3	3
Maximum pressure in domestic hot water circuit	bar	8	8
Minimum dynamic pressure in domestic hot water circuit	bar	0,2	0,2
Water content	l	2	2,5
Input voltage	V	230	230
Input frequency	Hz	50	50
Rated electrical input	W	15	110
Width of casing	mm	600	600
Height of casing	mm	650	650
Depth of casing	mm	150	150
Net weight	kg	16	18
Capacity of water in expansion vessel	l	8	8
Pressure of expansion vessel	bar	0,8	0,8

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