



This installation guide is intended for trained personnel and therefore does not include basic working steps.

IMPORTANT

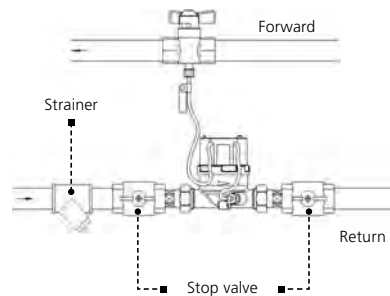
The seal on the meter must not be damaged!
A damaged seal immediately invalidates the factory warranty and calibration / conformity.

The temperature sensor cables must not be shortened or changed in any other way.

NOTES

- The requirements of EN 1434-6 for the installation must be observed
- Medium: water without additives

INSTALLATION OF THE METER



4440 HEAT METER

Install the meter in the return pipe (cooler line) of a conventional heating system.

4450 COOLING & HEAT METER

Install the meter in the return pipe of a heating, cooling or combination heating/cooling system (see special note about solar installation).

SPECIAL INSTRUCTIONS FOR A SOLAR SYSTEM

Install the meter on the pipe running from the storage tank to the collector (cooler line). Install the loose sensor (Red Banded on 4440, Blue Banded on 4450) in the well provided on the pipe running from the collector to the tank (hotter line). Doing this will cause the energy value to be recorded in the heating register. Failure to do so may damage the meter.

Ensure that the volume measuring component is always filled with liquid on completion of installation.

The meter must be mounted so that the arrow on the housing points in the same direction as the flow.

Marking of cooling & heat meter

This symbol indicates that this version is fully encapsulated and reliable against condensation on the integrator board.

Protection class IP 68.



INSTALLATION OF TEMPERATURE SENSORS

MODEL 4440

Install the RED banded sensor in the well provided on the SUPPLY pipe (Heating System) or Return Pipe (Solar System). The BLUE banded sensor fits directly in the meter body of the 4440.

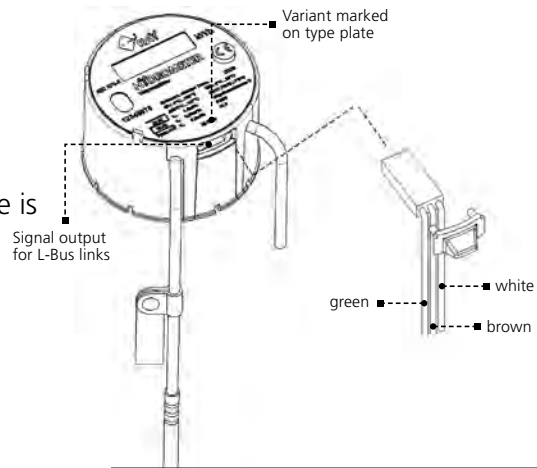
MODEL 4450

Install the BLUE banded sensor in the well provided on the SUPPLY pipe (Heating System) or Return Pipe (Solar System). The RED banded sensor fits directly in the meter body of the 4450.

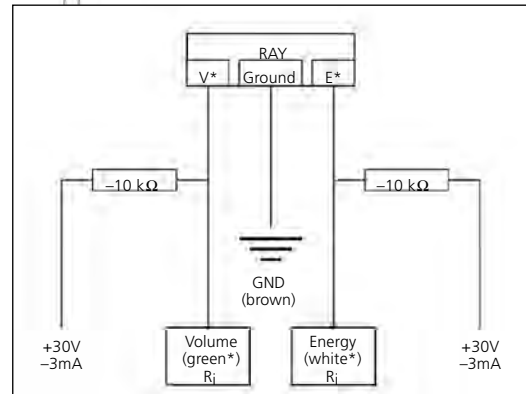
PIN ASSIGNMENT

A 3-pole, 3-m connecting cable with plug is supplied with the system variants.

Attention: Always connect the plug so that the green cable is on the left.



Example 4440



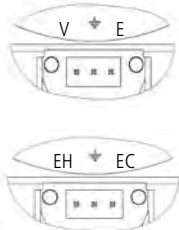
Pulse outputs

Heat meter: **4440**

- V → Volume pulse (green)
- E → Energy pulse (white)
- Ground (brown)

Cooling & heat meter: **4450**

- EH → Energy pulse heat (green)
- EC → Energy pulse cold (white)
- Ground (brown)



The pulse outputs are open-collector circuits. The collector branch contains only 0 ohm resistance, i.e. there is no internal current limiting. If required, this must be provided by an external collector resistance

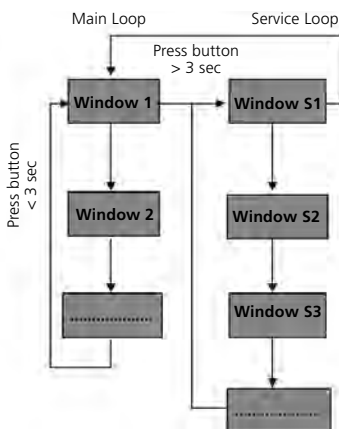
(see example).

$$R_i > 5 \times R_v$$

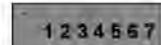
$$R_v = \frac{U}{I} \quad R_v = \frac{30V}{3mA} = 10 \text{ k}\Omega$$

NOTE:
Cooling & heat meter: 4450
*EH → Energy pulse heat (green)
*EC → Energy pulse cold (white)

READ LOOP 4440 / 4450



The LC display has a power save mode. The display is activated by pressing a button and shows the accumulated energy since initial operation → basic display



Next display → press button < 3 sec

Switch from main loop to service loop → press button < 3sec



Display switches off automatically and changes to the power save mode if the button is not pressed for 5 minutes

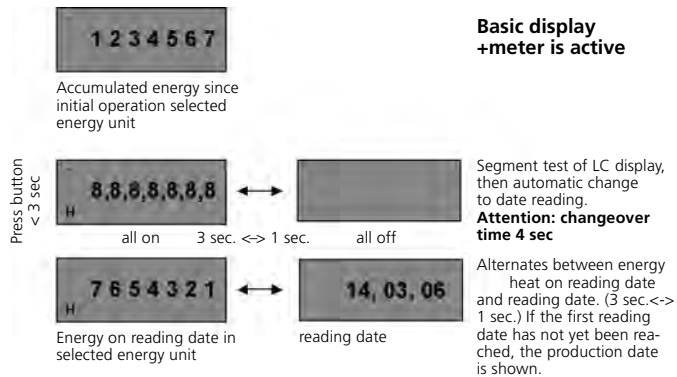
DIAGNOSTIC DISPLAY

Attention: Activate LCD with button

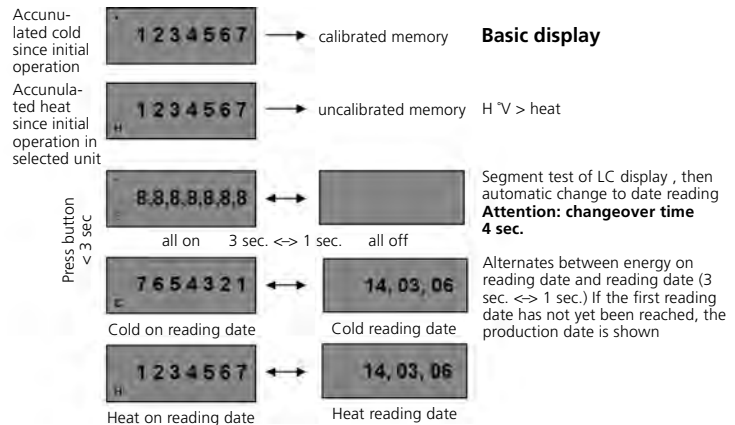
Display Fault description

- | Display | Fault description |
|---------|---|
| C 1 | Basic parameter part of RAM damaged. |
| F 1 | Sensor short-circuit, sensor break. |
| F 3 | Return sensor registers a higher temperature than forward sensor. Check if the heat meter/temperature sensors are located in the correct lines (4440 Only). |
| F 4 | Flow sensors defective. |
| F 5 | Heat meter operating correctly. Optical communication is temporarily out of operation to save power. |
| F 6 | Volume measuring component is installed opposite to the direction of flow. |

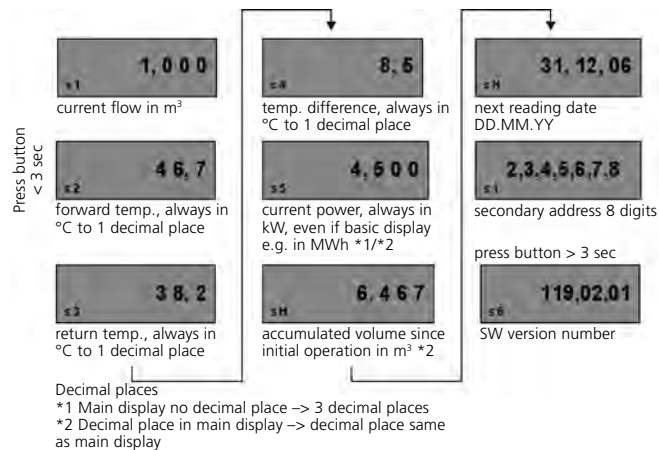
MAIN LOOP Heat meter 4440



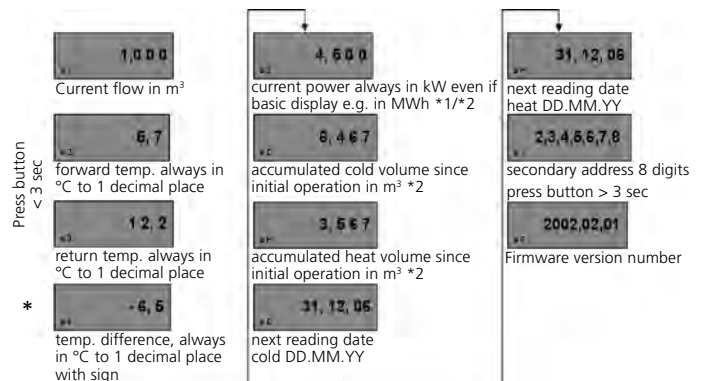
Cooling & heat meter 4450



SERVICE LOOP Heat meter 4440



Cooling & heat meter 4450



* NOTE

A positive ΔT indicates the system is in the cooling mode, a negative Δ indicates the system is in the heating mode.

CHECK THE FOLLOWING POINTS BEFORE LOOKING FOR A FAULT IN THE HEAT METER ITSELF

- Is the heating system in operation?
- Is the circulating pump running?
- Are the stop valves fully open?
- Is the pipe clear (clean strainers)?
- Are all the seals intact (tampering)?
- Is the meter rating correct?

FAULT CLEARANCE

Display shows temperatures but no flow rate:

- Check direction of meter and correct if necessary
- Remove meter, blow into meter and check that the impeller turns or the + sign (active flow) flashes in the display.

If this does not help: Replace the meter

DECLARATION OF CONFORMITY FOR DEVICES

EMC-Directive (2004/108/EG)

R&TTE-Directive (1999/5/EG)

MID-Directive (2004/22/EG)

DE-07-MI004-PTB030 EC type examination certificate number