

Compact thermal energy meter

Water meter for in-line installation – Coaxial concentric connections



- Detection of backflow
- Dynamic temperature measuring cycle: 2/60 s
- Inlet or outlet and unit of measurement can be set on site
- Detachable calculator, 50 cm cable (optional)
- Communication interfaces:
 - wireless M-Bus
 - wireless M-Bus + 3 pulse inputs
 - M-Bus
 - M-Bus + 3 pulse inputs
 - 2 pulse outputs
- Replaceable battery, service life 10 years
- Ready for external power supply

TECHNICAL DATA

Water meter

| | | | | |
|--|-------------------|---|-------|-------|
| Measuring method | | Bidirectional inductive scanning system | | |
| Nominal flow rate q_p | m ³ /h | 0.6 | 1.5 | 2.5 |
| Low flow rate threshold | l/h | 3.5 | 4.0 | 5.5 |
| Minimum flow rate q_i | l/h | 12 | 30 | 50 |
| Maximum flow rate q_s | m ³ /h | 1.2 | 3.0 | 5.0 |
| Pressure drop Δp at q_p | bar | 0.120 | 0.230 | 0.240 |
| Pressure drop Δp at q_s | bar | 0.420 | 0.900 | 0.960 |
| Nominal diameter | mm | DN15 | DN15 | DN20 |
| Thread | inch | G3/4B | G3/4B | G1B |
| Length | mm | 110 | 110 | 130 |
| Dynamic range q_i/q_p | | 1:50 | | |
| Accuracy class (MID) | | 3 | | |
| Nominal pressure PN | bar | 16 | | |
| Temperature range of liquid – heat | °C | 15-90 | | |
| Temperature range of liquid – cooling (q_p 1.5 and q_p 2.5) | °C | 5-50 | | |
| Installation point | | Inlet or outlet Can be set if the energy value is ≤ 10 kWh. | | |
| Mounting position | | Any | | |
| Protection class | | IP65 | | |
| Liquid | | Water Optional, not certified*: water with a propylene glycol or ethylene glycol percentage rate of 20%, 30%, 40% or 50%. (*The type and concentration of glycol can be set if the energy value is ≤ 10 kWh) | | |

Calculator

| | | |
|--|----|--|
| Temperature range of liquid – heat | °C | 0-150 |
| Temperature range of liquid – cooling (q_p 1.5 and q_p 2.5) | °C | 0-50 |
| Operating ambient temperature | °C | 5-55 with 95% relative humidity |
| Transport temperature | °C | -25-70 (max. 168 hours) |
| Storage temperature | °C | -25-55 |
| Temperature difference range $\Delta\theta$ heat | K | 3-100 |
| Temperature difference range $\Delta\theta$ cooling | K | -3- -50 |
| Minimum temperature difference $\Delta\theta$ heat | K | > 0.05 |
| Minimum temperature difference $\Delta\theta$ cooling | K | < -0.05 |
| Minimum temperature difference $\Delta\theta_{HC}$ heat/cooling | K | > 0.5/< -0.5 |
| Temperature resolution | °C | 0.01 |
| Dynamic temperature measuring cycle | s | 2/60; with power pack: 2 s permanently |
| Display | | LCD - 8 digits + special characters |
| Decimals | | Up to 3 |
| Units | | MWh, kW, m ³ , m ³ /h (kWh, GJ, l, l/h, MW, MMBTU, Gcal). The energy unit can be set if the energy value is ≤ 10 kWh |
| Interfaces | | Optical interface (M-Bus protocol) Optional: wireless M-Bus, wireless M-Bus + 3 pulse inputs; M-Bus, M-Bus + 3 pulse inputs; 2 pulse inputs |

| | | |
|------------------------------|-------|---|
| Power supply | | Replaceable 3 V lithium battery; all models are prepared for a 3 V power pack (input voltage 230 V/24 V) |
| Estimated lifetime | Years | 10; see "Factors influencing battery lifetime" (Maddalena technical documents) |
| Data storage | | Non-volatile memory |
| Reading dates | | Selectable yearly reading date; 15 monthly and semimonthly values via display or wireless M-Bus; 24 monthly and semimonthly values via optical interface or M-Bus |
| 2 tariff registers | | Can be set individually; energy or time can be added |
| Storage of maximum values | | Flow rate and power |
| Protection class | | IP65 |
| CE | | Yes |
| Electromagnetic interference | | EN 1434 |

Temperature sensors (2-wire technique)

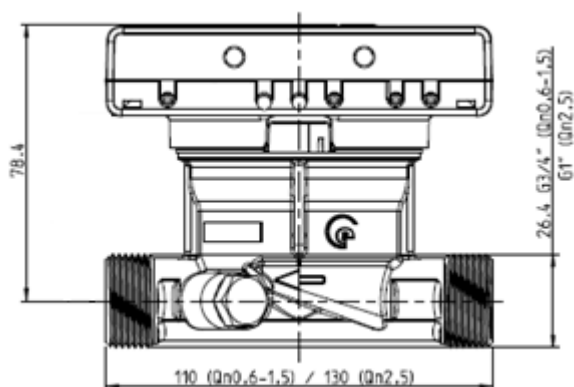
| | | |
|-----------------------------|----|--|
| Platinum precision resistor | | Pt 1000 |
| Diameter | mm | 5; 5.2; 6; AGFW 27.5; 38; needle sensor 3.5 x 75 |
| Cable length | m | 1.5; 3; 6 |
| Installation point | | Asymmetrical, symmetrical |

Weight

| | | | |
|---------------------------|----------------|---------|-------|
| Basic version | q _p | 0.6/1.5 | 2.5 |
| Calculator not detachable | kg | 0.875 | 0.955 |
| Detachable calculator | kg | 0.915 | 0.995 |

Dimensions

| | | | |
|---|----------------|-----------------|----------|
| Basic version | q _p | 0.6/1.5 | 2.5 |
| Pulse cable length (only separable version) | m | 0.50 | |
| Calculator housing (h x w x d) | mm | 75 x 110 x 34.5 | |
| Thread | | G3/4", DN15 | G1" DN20 |



(On the right: version with detachable calculator)

