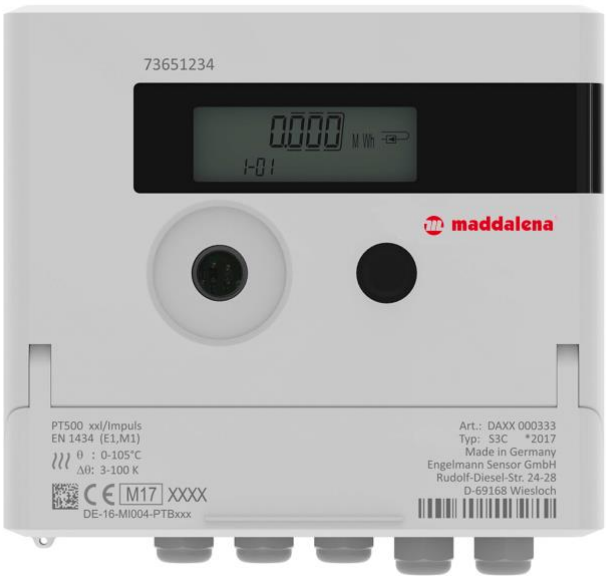
maddalena
METERING EXPERTISE

microCLIMA S3C

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Calculator for compact thermal energy meters



- Compact design
- Replaceable battery, may be connected to a 3 V power pack
- Point of installation (inlet/outlet) may be set on site
- Retrofit communication interfaces:
  - wireless M-Bus*
  - wireless M-Bus + 3 pulse inputs*
  - M-Bus*
  - M-Bus + 3 pulse inputs*
  - 2 pulse outputs*
  - LoRaWAN + 3 pulse inputs
  - Modbus*

** can also be installed later*

TECHNICAL DATA

Calculator

Temperature range of medium – heat	0 °C-+150 °C
Temperature range of medium – cooling	0 °C-+50 °C
Operating ambient temperature	+5 °C-+55 °C with 95% relative humidity
Transport temperature	-25 °C-+70 °C (max. 168 hours)
Storage temperature	-25 °C-+55 °C
Temperature difference range $\Delta\Theta$ heat	3 K-100 K
Temperature difference range $\Delta\Theta$ cooling	-3 K- -50 K
Minimum temperature difference $\Delta\Theta$ heat	> 0.05 K
Minimum temperature difference $\Delta\Theta$ cooling	< -0.05 K
Minimum temperature difference $\Delta\Theta$ HC heat/cooling	> 0.5 K/< -0.5 K
Temperature resolution	0.01 °C
Energy measuring cycle in standard operation conditions	30 s with a lifetime 6 years + 1 (on request) 60 s with a lifetime 10 years 2 s with power pack
Pulse options (on request)	1/2.5/10/25/100/250/1000/2500 litres/pulse
Display	LCD - 8 digits + special characters
Decimals	Up to 3
Unit of measurement	MWh, kW, m^3, m^3/h (kWh, GJ, l, MMBTU, Gcal). The energy unit of measurement can be set until 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 outputs; LoRaWan + + 3 pulse inputs; Modbus.

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	10 years - 6 years + 1 (on request); see "Factors influencing battery lifetime" (Maddalena technical documents)
Data storage	Nonvolatile memory
Reading dates	Selectable yearly reading date 15 monthly and semi-monthly values via display or wireless M-Bus (compact mode) 24 monthly and semi-monthly values via optical interface or M-Bus
2 tariff registers	Can be set individually; energy or time can be added
Storage of maximum values	Power, power and temperature (inlet, outlet, $\Delta\Theta$), related values of the latest 15 months included
Protection class	IP54
CE	Yes
Mechanical class	M2
Electromagnetic class	E2
Pulse input interface	CMOS microcontroller, class IB, EN 1434-2:2015 (D) compliant
Medium	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)
Weight	0.350 kg
H x L x D	150 mm x 130 mm x 35 mm

Water meter

Pulse output device class	EN 1434-2:2015 compliant: OA (reed switch contact); OC (open collector)
Maximum input frequency	10 Hz
Pulse length	Minimum 25 ms
Pulse pause	Minimum 50 ms

Temperature sensors

Platinum precision resistor	Pt 500
Cable length (unshielded)	Up to 10 m for two-wire cables (standard: 3 m; 10 m on request)
Mounting	Direct; in pocket