

# PolluTherm® F

## Integrator for measuring heating and cooling energy

**District Heat / Industry Heat**  
**Commercial Heating / Cooling (HVAC)**  
**Domestic Warm Water Generation / Charging Systems**

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### Main Features

- Can be combined with all Sensus flow sensors not in need for an external voltage supply (passive sensors)  
We recommend: Choose PolluTherm® F for applications in combination with our ultrasonic flow sensor PolluFlow for all 90 °C / PN16 applications together with our ultrasonic compact meter PolluStat, as technically the calculators PolluTherm® F and PolluStat are the same.
- Standard possibility to connect temperature sensors Pt 500 in two-wire technology.
- Mounting space to retrofit one communication option.
- Power supplied by a 3V battery as standard.  
Optional external 230V / AC or 24V / AC power supply.

### Recommendation: PolluTherm® F + PolluFlow

#### PolluTherm® F with Ultrasonic flow sensor PolluFlow

Ultrasonic flow sensor threads 5-90°/PN16  
 $q_p$  0.6 to  $q_p$  10 (G¾" for R1½" to G2" for R1½", DN15 to DN40)

Ultrasonic flow sensor flange 5-90°/PN16  
 $q_p$  0.6 to  $q_p$  60 DN15 to DN100



### FEATURES

MID approval in class 2 per EN 1434

#### Application

In combination with our paired Pt 500 temperature sensors and the following flow sensors:

Model series AN130  
Model series WPD FS/FSL  
Model series MeiStream FS  
Model series PolluFlow 90 °C/PN16,

The PolluTherm® calculator serves to determine energy consumption in heating or cooling circuits and connect via a wide range of communication options.

In regard to data communication and remote reading, PolluTherm® F offers one slot for retrofitting of various at any time with modules such as wired M-Bus, Modbus, wireless M-Bus (OMS), LoRaWAN or pulse output plus some pulse input choices.

#### Important Note:

Our flow sensor series PolluFlow 130 °C/ PN25 series requires our PolluTherm® or PolluWatt Duo II as PolluTherm® F only operates only with passive flow sensors, so without a voltage output to supply these active flow sensors.



### Technical Data

#### CALCULATOR

Temperature range medium heat Temperature range medium cooling	°C °C	0 to 150 0 to 50
Ambient temperature in the field Transport temperature Storage temperature	°C °C	5 to 55 at 95 % relative humidity -25 to 70 (for maximal 168 h) -25 - 55
Temperature difference range $\Delta\theta$ heat	K	3 to 100
Temperature difference range $\Delta\theta$ cooling	K	-3 to -50
Minimum temperature difference $\Delta\theta$ heat	K	> 0.05
Minimum temp. difference $\Delta\theta$ cooling	K	< -0.05
Minimum temperature difference $\Delta\theta_{HC}$ heat / cooling	K	> 0.5 / < -0.5
Resolution temperature	°C	0.01
Measuring cycle energy in normal operation	s	60 with a lifetime of 10 years; 30 with a lifetime of 6+1 years (optional); 2 using a power pack
Pulse values, optional	l/Imp	1; 10; 100; 1,000
Display		LCD - 8 digits + special characters
Decimal places		Up three digits: 00,000. <b>000</b>
Units		MWh, kW, m <sup>3</sup> , m <sup>3</sup> /h (kWh, GJ); Unit can be set at the display as long as consumption is still $\leq$ 10 kWh
Interfaces		Standard: optical interface (M-Bus protocol) Optional: wireless M-Bus; wireless M-Bus + 3 pulse inputs; M-Bus; M-Bus + 3 pulse inputs; 1 pulse output; 2 pulse outputs; Modbus RTU; LoRaWAN
Power supply		Standard: 3 V lithium battery Option: 230V/AC or 24V/AC external power supply
Estimated lifetime	years	10 (No Com.-Options or 1 pulse output); With Com.- options 7+1
Data storage		Nonvolatile memory
Reading dates		selectable yearly reading date; 15 monthly and semimonthly values: via display or wireless M-Bus (compact mode); 24 monthly and semimonthly values: via optical interface or M-Bus
2 tariff registers		Can be custom-set individually; adding up energy or time
Storage of maximum values		Flow, power and temperatures (inlet, outlet, $\Delta\theta$ ), plus the respective maximum values of the last 15 months
Protection class		IP54
CE		Yes
Mechanical / electromagnetic class		M2 / E2
Pulse input interface		Microcontroller CMOS input class IB according to EN 1434-2:2015 (D)
Medium		Standard: Water without admixtures Optional: Water with glycol percentage at a rate of 20 %, 30 %, 40 % or 50 % (* type and concentration of glycol can be set at any time)
Weight	kg	0.350
Length x Width x Depth	mm	L150 x W130 x D35

# PolluTherm® F

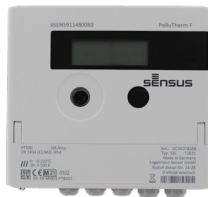
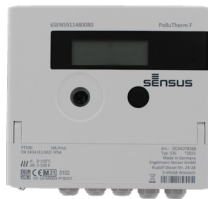
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### FLOW SENSOR REQUIREMENTS

Class of pulse output device (acc. to EN 1434-2:2015)		OA (reed contact); OC (open collector)
Maximum input frequency	Hz	10
Pulse length and pulse pause		at least 25 ms pulse length; at least 50 ms pulse pause

### TEMPERATURE SENSOR REQUIREMENTS

Platinum precision resistor		Pt 500
Temperature Sensor length of cables (unshielded)	m	Up to 10 m in 2-wire technique
Installation		Direct mounted or in temperature pockets



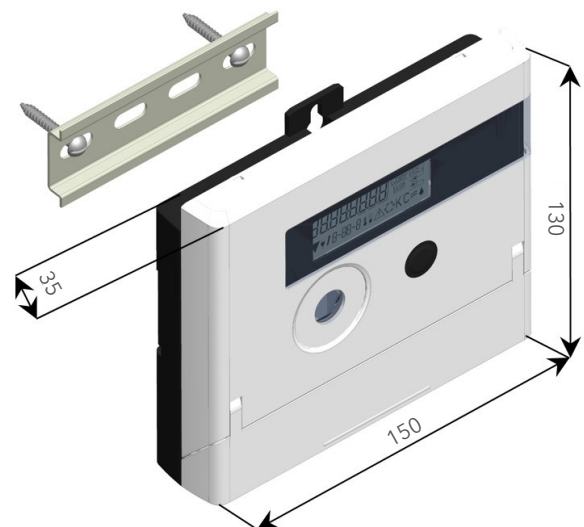
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Ultrasonic flow sensor flange 5-90°/PN16 q<sub>p</sub> 0.6 to q<sub>p</sub> 60 DN15 to DN100

### Dimensions



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