PolluCom E

Compact Heating / Cooling Meter



Application

The compact meter PolluCom E is used for measuring energy consumption in heating or cooling circuits. On account of its high-precision flow sensor the application range reaches from district heating transfer stations to consumption billing for individual apartments. Optionally our PolluCom E can also be supplied as combined heating / cooling meter. For this version the switch-over point between heating and cooling energy metering is programmable, so that, even for already installed meters, corrections according to plant specifications are possible (e.g. for buildings with concrete core activation).

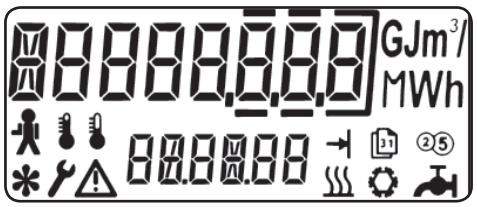
Regarding meter remote reading and data communication the following modules are available:

- M-Bus according to EN 1434-3 with unlimited number of readouts
- Mini-Bus for „garden gate reading" or as plug & play interface for radio reading systems
- M-Bus according to EN 1434-3 or Mini-Bus with two inputs for consumption meters with remote reading pulse output
- Integrated data logger
- Potential- and bounce-free remote reading pulses (1 kWh per pulse)

- Approval in class 2 according to EN 1434, measuring range (minimum to nominal flow) of 1 : 100 in horizontal and vertical fitting position
- Temperature range of the flow sensor from 5 to 90 °C, thus also ideal applicability for so-called „6/12 °C chilling systems"
- Optionally available with removable integrator for narrow installation sites:
- PolluCom E/S with ca. 0.3 m connection cable and PolluCom E/SL with ca. 1.2 m connection cable
- Fast updating of measuring values (2 seconds for temperatures, 4 seconds for heating output and flow rate)
- Standard optical interface
- Tariff function for differentiated consumption billing (e.g. in dependency on heating output)
- Password protected parameter selections right on the meter itself without additional peripheral equipment
- Temperature sensors Pt 500 with overall length 45 mm / diameter 5.2 mm, also available in overall length 45 mm / diameter 5.0 mm as well as in type DS 27.5 according to EN 1434-2

The Integrator

The integrator is equipped with a comfortable LC display with eight-digit main reading line and six-digit subordinate reading line. Moreover 12 additional symbols support the read-out.



Segment test

One of many comfortable features of this concept is the simultaneous display of stored consumption values together with the corresponding date – an important contribution to avoid read-out errors:



Example: monthly cooling energy

Where it is appropriate, the display shows additional letters in the six-digit subordinate line in order to increase the read-out comfort:



Example: M-Bus secondary address

The available display items are clearly structured in 6 menus and include essentially:

L 1: User menu

- Accumulated consumptions
- Segment test
- Instantaneous items (heating resp. cooling output, flow, temperatures)
- Customer's reference number

L 2: Target day menu

Consumption values at a programmable annual target day

L 3: Archive menu

Rolling monthly storage of the following items for the last 16 months:

- Consumptions
- Volumina of the heating and cooling liquid resp.
- Maxima for heating resp. cooling output and flow
- Possible failure hours

L 4: Service menu

- Maximum values since operational start-up
- Date and time
- Next target day
- Operation days
- M-Bus addresses

L 5: Control menu

- Set tariff parameters
- Switch-over point between heating and cooling energy metering
- Correction factor in case of using water-antifreezer-mixture

L 6: Parameter menu

This is the menu where, among other possibilities, the following items can be set right on the meter itself (password protected):

- M-Bus addresses
- Customer's reference number
- Date and time
- Next target date
- Reset of maximum values

The Optional Modules

For electronic meter reading and connection with building automation systems a series of factory fittable optional modules are available for PolluCom E:

M-Bus according to EN 1434-3

By this option the meter can be read out via its primary or secondary address with a M-Bus level converter (300 and 2400 Baud, automatic recognition). The secondary address is preset in the factory to the eight-digit meter serial number. In case of need both M-Bus addresses can be reset right on the meter itself. Because of the short time of only 4 seconds for updating energy and flow values our PolluCom E is excellently suitable for connection to district heating control stations.

Suitable read-out software:

DOKOM CS (leaflet LS 1300)

Suitable read-out hardware:

See leaflet LS 1100

Mini-Bus

By this option the meter can be connected to an inductive read-out point (MiniPad, order number: 182079), the distance can be as far as 50 meters. Typical applications are meters installed in sites, which are difficult to access, as well as in immovables where inhabitants are not present during the day.

Suitable read-out systems:

MiniReader (leaflet LS 3200)

DOKOM Mobil (leaflet LS 3400)

M-Bus or Mini-Bus with two inputs for external consumption meters

This option allows the connection of up to two external consumption meters with passive remote reading pulse output, e.g. one cold and one hot water meter. The consumptions of those meters can then be read out via M-Bus or Mini-Bus interface of PolluCom E.

Required pulse duration:	> 125 ms
Pulse input frequency:	< 3 Hz
Terminal voltage:	3 V

Remote reading pulses

This option provides potential- and bounce-free remote reading pulses, which can be summed up with a telecounter:

Pulse valency:	1 kWh
Closing time:	125 ms
Bounce time:	none
Max. voltage:	28 V DC or AC
Max. power:	0,1 A

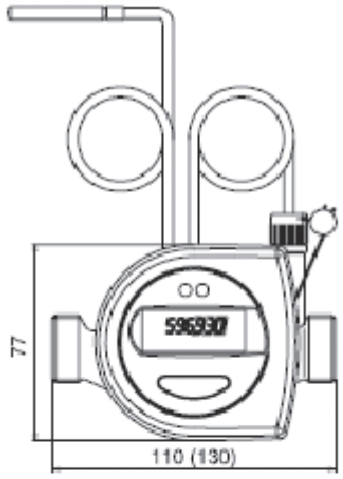
Integrated data logger

By this option the following items are stored in a selectable time interval (3 to 1440 minutes):

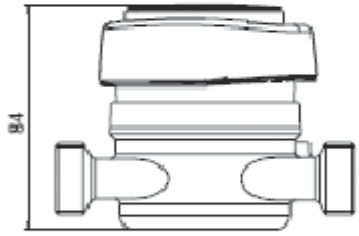
- Consumption (incl. tariff consumption and, if applicable, consumptions of the two external meters)
- Volume of the heating and cooling liquid resp.
- Flow of the heating and cooling liquid resp.
- Heating and cooling output resp.
- Temperature in the warmer pipe
- Temperature in the colder pipe
- Temperature difference
- Possible failure hours

Technical Data

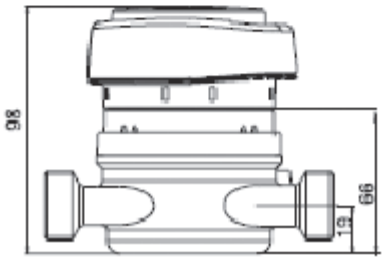
Dimensional drawings



Front view



Side view PolluCom E

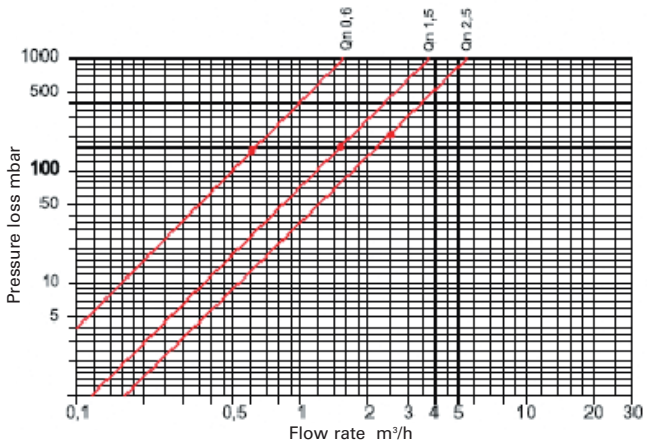


Side view PolluCom E/S

(overall height of PolluCom E/SL: 120 mm)

Meter size	Qp 0.6	Qp 1.5	Qp 2.5
Nominal flow q_p in m³/h	0.6	1.5	2.5
Minimum flow q_i according to approval in m³/h	0.006	0.015	0.025
Accuracy class	2 or 3 acc. to EN 1434		
Ratio q_i /q_p	1:25, 1:50 or 1:100		
Maximum flow q_s in m³/h (short-term)	1.2	3	5
Starting flow in m³/h (average value)	0.0015	0.0025	0.003
Temperature measuring range	5 ... 150 °C (-20 ... 150 °C for water-antifreezer liquids, uncalibrated)		
Temperature difference range	3 ... 100 K		
Cut-out threshold	0.15 K		
Permissible temperature in the flow sensor	5 ... 90 °C		
Flow rate at 0.1 bar head loss in m³/h	0.5	1.2	1.7
Head loss at q_p in bar	0.15	0.17	0.21
kvs-value (flow rate at 1 bar head loss in m³/h)	1.53	3.65	5.45
Permissible working pressure in bar	16		
Overall length in mm	110	110	130
Nominal diameter	R 1/2"	R 1/2"	R 3/4"
Connection thread	G 3/4 B	G 3/4 B	G 1 B
Connection cable length of split meters	PolluCom E/S, EX/S: ca. 0.3 m PolluCom E/SL, EX/SL: ca. 1.2 m		
Weight in kg	ca. 0.8	ca. 0.8	ca. 0.86
Permissible environmental temperature	5 ... 55 °C		
Environmental class	C acc.to EN 1434		
Protection	IP 54		
Battery lifetime for PolluCom E, EX, E/S, EX/S, E/SL, EX/SL	6 years		
Battery lifetime for PolluCom E/S 10, EX/S 10	10 years		

Head Loss Curve



Order Codes

The order code is composed of a twelve-digit figure-letter-combination. Please enter the required code of the available variants and options respectively into each empty box of the fields 5, 6, 7, 8, 9, 10 and 11. The next page completes the table below with a summary of the standard versions including full order codes.

Field description	Coding	1	2	3	4	5	6	7	8	9	10	11	12	Remarks
Field description →		3	0	M	E								0	
Meter type (PolluCom E)														
Qp 0.6 m³/h (overall length 110 mm)	1													
Qp 1.5 m³/h (overall length 110 mm)	2													
Qp 2.5 m³/h (overall length 130 mm)	3													
Compact version / installation in return pipe (colder line)	0													
Compact version / installation in supply pipe (warmer line)	1													
Split version 0.3 m / installation in return pipe (colder line)	2													
Split version 0.3 m / installation in supply pipe (warmer line)	3													
Split version 1.2 m / installation in return pipe (colder line)	4													
Split version 1.2 m / installation in supply pipe (warmer line)	5													
Temperature sensor integrated in the flow sensor	0													
Temperature sensor not integrated in the flow sensor	1													
Temperatur sensor husk and cable length:														
Diameter 5.2 mm / cable length 1.5 m	0													
Diameter 5.2 mm / cable length 5 m	1													
Diameter 5.2 mm / cable length 10 m	2													
Type DS 27.5 / cable length 1.5 m	6													
Diameter 5.0 mm / cable length 1.5 m	7													
Diameter 5.0 mm / cable length 5 m	8													
Diameter 5.0 mm / cable length 10 m	9													
Meter application:														
Heating meter, reading in MWh	0													
Heating meter, reading in GJ	1													
Heating meter, reading in kWh	2													
Cooling meter, reading in MWh	3													for split version 0.3 m only
Cooling meter, reading in GJ	4													for split version 0.3 m only
Cooling meter, reading in kWh	5													for split version 0.3 m only
Combined heating/cooling meter, reading in MWh	6													for split version 0.3 m only
Combined heating/cooling meter, reading in GJ	7													for split version 0.3 m only
Combined heating/cooling meter, reading in kWh	8													for split version 0.3 m only
Available options:														
without optional module	0													
M-Bus-Module	1													
Mini-Bus-Module	2													not for split version 1.2 m
Remote pulse output incl. Data logger	3													for split version 0.3 m only
10 years battery life time	4													for split version 0.3 m only
Data logger	6													for split version 0.3 m only
Mini-Bus module / 10 years battery life time	7													for split version 0.3 m only
M-Bus module / input for 2 ext. meters	8													for split version 0.3 m only
Mini-Bus module / input for 2 ext. meters	9													for split version 0.3 m only
Calibrated	0													
Non-calibrated for water-antifreezer-mixtures	S													
Not specified	0													

Order code for standard variants:

- Installation in return pipe (colder line)
- Temperature sensor diameter: 5.2 mm / temperature sensor cable length: 1.5 m
- Heating meter, reading in MWh, battery for 6 years

Meter version	Order code
PolluCom E / Qp 0.6 / compact	30ME 1000 0000
PolluCom E / Qp 1.5 / compact	30ME 2000 0000
PolluCom E / Qp 2.5 / compact	30ME 3000 0000
PolluCom E / Qp 0.6 / split 0.3 m	30ME 1200 0000
PolluCom E / Qp 1.5 / split 0.3 m	30ME 2200 0000
PolluCom E / Qp 2.5 / split 0.3 m	30ME 3200 0000
PolluCom E / Qp 0.6 / compact / M-Bus	30ME 1000 0100
PolluCom E / Qp 1.5 / compact / M-Bus	30ME 2000 0100
PolluCom E / Qp 2.5 / compact / M-Bus	30ME 3000 0100
PolluCom E / Qp 0.6 / split 0.3 m / M-Bus	30ME 1200 0100
PolluCom E / Qp 1.5 / split 0.3 m / M-Bus	30ME 2200 0100
PolluCom E / Qp 2.5 / split 0.3 m / M-Bus	30ME 3200 0100
PolluCom E / Qp 0.6 / compact / Mini-Bus	30ME 1000 0200
PolluCom E / Qp 1.5 / compact / Mini-Bus	30ME 2000 0200
PolluCom E / Qp 2.5 / compact / Mini-Bus	30ME 3000 0200
PolluCom E / Qp 0.6 / split 0.3 m / Mini-Bus	30ME 1200 0200
PolluCom E / Qp 1.5 / split 0.3 m / Mini-Bus	30ME 2200 0200
PolluCom E / Qp 2.5 / split 0.3 m / Mini-Bus	30ME 3200 0200
PolluCom E / Qp 0.6 / split 0.3 m / remote pulse output	30ME 1200 0300
PolluCom E / Qp 1.5 / split 0.3 m / remote pulse output	30ME 2200 0300
PolluCom E / Qp 2.5 / split 0.3 m / remote pulse output	30ME 3200 0300

Accessories:

Description	Order number
Standard mounting kit R 1/2" for Qp 0.6 and 1.5 (fitting pipe 110 mm, 2 thread connectors R 1/2", 2 gaskets, 1 well)	68500515
Standard mounting kit R 3/4" for Qp 2,5 (fitting pipe 130 mm, 2 thread connectors R 3/4", 2 gaskets, 1 well)	68500517
Ball valve mounting kit R 1/2" for Qp 0.6 and 1.5 (fitting pipe 110 mm, 2 thread connectors R 1/2", 2 gaskets, 1 ball valve)	68504876
Ball valve mounting kit R 3/4" for Qp 2.5 (fitting pipe 130 mm, 2 thread connectors R 3/4", 2 gaskets, 1 ball valve)	68504877
Adapter Z 1218 (110 mm / G 3/4 B to 130 mm / G 1 B) (two pieces required)	78104905