

PolluWatt Duo

Energy Meter - Totaliser



Description

The PolluWatt Duo energy meter and totaliser is the successful combination of a high-performance energy meter and three integrated, freely programmable analogue outputs (0/4 – 20 mA) in one housing. PolluWatt Duo can be used to complete the heat measuring point with almost all the usual volume measuring units and temperature sensors that are currently in use in the field of measuring quantities of heat.

Depending on the type and size of the volume measuring unit foreseen, the valence of the incoming volume signal is programmed in the factory before delivery. For measuring points in which the volume measuring unit is built into the heating supply (or in the reflux in a refrigeration system), PolluWatt Duo can be acquired as a supply-calibrated variant.

All measurements and information are shown in clear text on a backlit two-line dot matrix display. Operation is via two user-friendly buttons on the front side of the device.

All setting of parameters can be carried out directly on-site without additional peripheral devices.

In order to guarantee connection to current systems for the long-distance transmission of measurement data, PolluWatt Duo possesses the following outputs and data interfaces;

- Three analogue freely programmable current outputs (0/4 – 20mA)
- Two outputs for heat quantity and volume signals with programmable signal valence and closure time
- M-Bus interface in accordance with EN 1434 with variable data structure
- RS 232-interface
- optical interface
- alarm relay output

A large number of special functions allows comprehensive evaluations and checks. For example, cutoff date programming enables the collation of 12 intermediate values of the heat quantities during a year. A minimum-maximum control over a longer period of time can be carried out by means of extreme value recording. In this, the highest and lowest dynamic values (inflow and outflow temperature, temperature difference, thermal performance and flowrate) which occur from a definable point in time are recorded. Furthermore, operational hours, quantity and duration of faulty states, date of calibration, date of recalibration, as well as number and duration of alarm states can be evaluated.

Technical Information

Display:

Two-line dot matrix display with back-lighting (LCD, 2 x 16 characters, height of characters 5 mm)

- accumulated quantity of heat (6-digit plus 3 digits after the decimal point in MWh)
- high-resolution heat quantities in Wh for systems with low heat consumption
- accumulated flow (6-digit plus 3 digits after the decimal point in m³)
- actual temperature difference, 3 – 150 K, resolution 0.01K
- actual supply temperature, 0-200 °C, resolution 0.1 °C
- actual reflux temperature, 0-200 °C, resolution 0.1 °C
- actual flowrate (6-digit plus 3 digits after the decimal point in m³/h)
- actual flowrate as a percentage bar display relating to a definable maximum flowrate
- actual thermal performance 7-digit plus 3 digits after the decimal point in kW)
- actual thermal performance as a percentage bar display relating to a definable, maximum thermal performance

Display Examples

quantity of heat
123456.789 MWh

accum. quantity of heat

act. spread
Tdif = 35.12 K

temperature difference

actual flowrate
124.451 m³/h

actual flowrate

VW 12: 25.09.2000
24501.273 MWh

cutoff date reading (12th day)

operational hours
1.225.78 h

volumes
123456.789 m³

accum. volumes

Treflux = 60.7 °C
Tsupply = 95.8 °C

reflux and supply temperature

actual performance
14997.215 kW

actual performance

Min. Treflux Max
23.3 °C 64.7

extreme value reading (reflux temp.)

Meter Inputs:

- temperature sensor connection (pt 100 or pt 500) in two-wire or four-wire
- volume signal input for dry-reed contact, open collector and optical pickup

Meter Outputs:

- two indirect-coupled open collector outputs (max. 24 V, max. 50 mA) for heat quantity and volume signals with programmable signal valence and duration (1 to 59999ms)

	heat quantity signal	volume signal
closure time in ms	1 ... 59999	1 ... 59999
min. signal valence	19999.99999 pulses/kWh corresponds to app. 0.5 Wh	99.9999 pulses/litre corresponds to app. 10ml
max. signal valence	0.0001 pulses/kWh corresponds to 10 MWh	0.0001 pulses/litre corresponds to 10 m ³

- three freely programmable current outputs (0 – 20mA or 4-20 mA) for flowrate, thermal performance, supply and reflux temperature as well as temperature difference
- M-bus interface in accordance with EN 1434-3 with variable data structure, support of primary and secondary addressing, Baudrates from 300 to 9600
- RS 232 interface
- optical interface
- alarm relay function for flowrate, thermal performance, supply and reflux temperature as well as temperature difference

Additional Functions:

- Recording of extreme values (minimum and maximum from a definable point in time) for flowrate, thermal performance, supply and reflux temperature and temperature difference
- Display of serial number, next calibration date, time in operation, time debit, signal valence, cause of alarm, number of alarms, duration of alarm
- Cutoff date programming for up to 12 days freely selectable with rolling storage of 16 days
- All options for the setting of parameters and resetting are protected against unauthorised use by a numerical code
- The activation of an alarm is signalled by a flashing A on the display

Dimensions: 160x185x85mm (WxHxD)

Protection Class: IP 65

Ambient Temperature: 0 – 50 °C

Power Supply: mains operation
230 V AC, 50 Hz, 16 VA

Ordering Information

The PolluWatt Duo energy meter is available as a separate device without volume measuring unit and temperature sensor. For completion of the heat measuring point volume measuring units and temperature sensors can be used according to the following data sheets or tables:

1. Volume Measuring Units

- **Volume measuring units**
nominal flowrate of 1.5m³/h up to 10m³/h (horizontal integration, downpipe, riser pipe) in accordance with data sheet LH 7100
- **Woltmann volume measuring units, WP type,**
nominal flowrate of 15m³/h up to 600 m³/h in accordance with data sheet LB 4100
- **Woltmann volume measuring units, WS type,**
(only suitable for horizontal installation
nominal flowrate of 15 m³/h to 150 m³/h in accordance with data sheet LB 4200

In order to receive a high-resolution volume signal (and thereby the most up-to-date values for flowrate and thermal performance possible), it is recommended that the OD 02 optical pickup (ordering number 68204758) is used instead of the dry reed switch RD 022.

Nominal flowrate of the meter pickup	standard signal valence	
	dry-reed-switch RD 022	optical OD 02
QN 1.5 ... QN 10	10 litres	-
QN 15 ... QN 100	100 litres	1 litre
QN 150 ... QN 600	1000 litres	10 litres

2. Supply and reflux temperature sensors certified in pairs

Design Pt 100

Installation length	cable length
100 mm	2 m
100 mm	5 m
100 mm	10 m
150 mm	2 m
150 mm	5 m
150 mm	10 m

Design Pt 500

Installation length	cable length
45 mm	1.5 m
45 mm	5 m
45 mm	10 m
100 mm	2 m
100 mm	5 m
100 mm	10 m
150 mm	2 m
150 mm	5 m
150 mm	10 m

Thermometer pockets for temperature sensors

Suitable for following temperature sensor installation lengths	
tin-coated design	
	Installation length 45 mm
	Installation length 100 mm
	Installation length 150 mm
stainless steel design V 4A	
	Installation length 100 mm
	Installation length 150 mm

A screw-in/welding-in piece is available for the installation of temperature sensors with the installation lengths 100mm and 150mm directly into the heating medium.

- On the rear, there is a prepared enquiry/ordering form in which one can enter the respective parameters that are desired and to be programmed in at the factory. If necessary, please copy and send to us by mail or by fax.

Enquiry

Order / your ordering number _____

Device Specifications

To: Sensus

The following specifications relate to a variant of the device. If other variants are also required at the same time, please copy this page and fill it in accordingly.

Number of devices required _____

Language version English French German

Czech Hungarian Romanian

Temperature sensor used Pt 100 Pt 500

Physical unit of the heat quantity displayed MWh GJ

Installation site of the volume measuring unit reflux supply

Valence of the volume signal of the volume measuring unit _____ signal/litres

The valence in signals per litre is entered in the meter in the form of a decimal figure with three places before the decimal point and three commas after (xxx.xxx signals/litre). The maximum input frequency must not exceed 400 Hz.

On many of the volume measuring units, the signal valence is given in litres per signal. The following table contains the conversions for the most common signal valences:

Signal valence in litres/signal	signal valence in signals/litre
1	1
10	0.1
100	0.01
1000	0.001
2.5	0.4
25	0.04
250	0.004
2500	0.0004

Customer Information

Company: _____

Contact: _____

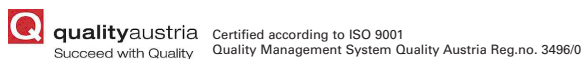
Address: _____

Telephone: _____

Fax: _____

Date: _____

Signature: _____



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