

## The most important features:

- Application flexibility (horizontal and vertical):
  - flow sensors in coaxial multi-jet or single-jet versions ( $q_p$  0.6; 1.5 oder 2.5 m<sup>3</sup>/h).
  - available for all common measuring point types.
  - temperature sensors with various diameters (5.0; 5.2 und 6.0 mm) and connection cable lengths (1.5 m oder 3.0 m).
  - rotatable and, in the separable version SENSOSTAR® 2+ and easily detachable calculator.
- Simple operability and read-out using the straightforward menus and the large and clearly laid out liquid crystal display.
- 15 monthly values can be read out over the display and 18 monthly values over the optical interface.
- Exact measurements because of very low flow threshold values (e.g. 2.5 l/h for the coaxial multi-jet flow sensor in the nominal size  $q_p$  0.6 m<sup>3</sup>/h).
- Reliable measurements guaranteed by routine calculator self-checks.
- The battery has a guaranteed lifetime of 6+1 years.
- Interface:
  - M-bus with power supply, 2 pulse inputs and tariff registers
- Delivery with MID conformity declaration



## Setting of the 2 additional pulse inputs (only in connection with the M-bus)

With this setting the instruments can be read out via the M-bus. The optional pulse inputs 1 + 2 for external meters (with contact output) can be set using the Engelmann® Monitor configuration software. The settings are the input pulse value and the units in which the external meter counts. For invoicing, the meter readings of the instruments connected to the pulse inputs must be included in the calculation.

### Setting of input pulse value:

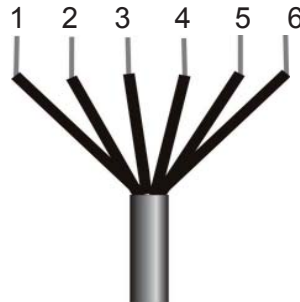
Input pulse value	Units	
1	liter/kWh	per pulse
2,5	liter/kWh	per pulse
10	liter/kWh	per pulse
25	liter/kWh	per pulse
100	liter/kWh	per pulse
250	liter/kWh	per pulse
1000	liter/kWh	per pulse

- Class IB according to classification of pulse input devices EN1434-2:2007
- Pulse length:  $\geq 100$  ms
- Pulse frequency:  $\leq 5$  Hz
- Current source:  $\leq 0,1$  mA

## SENSOSTAR® 2/2+ with 2 pulse inputs (incl. M-bus) and 2 tariff registers

Pin connections for 6-wire cable (cable length 1 m)

PIN	color	
1	white	IE1 +
2	brown	IE1 ⊥
3	green	IE2 ⊥
4	yellow	IE2 +
5	grey	M-bus
6	pink	M-bus



- Connection
- 2 x 2 wires for 2 pulse inputs
- 1 x 2 wires for the common M-bus output
- M- bus protocol EN 1434-4

### Setting of the 2 additional tariff registers (only in connection with 2 additional pulse inputs)

There are 2 tariff registers, which add up the energy **or** time, depending on certain criteria. The registers can be individually set using the Engelmann®Monitor software and can be read via the display or using the read-out software.

	Display examples	Description of example in tariff register 1 (either the energy or the time can be measured)
0	'E1 0	Not defined (at delivery).
1	' 0.683 MWh 'E1 1 ' 18:00 ' 06:00	The energy (0.683 MWh) in the <b>time period from 18.00 (6 pm) to 6.00 am</b> (the time can be set in 10-min. steps) is being measured.
2	' 0.683 MWh 'E1 2 ' 2000 kW	The energy (0.683 MWh) above a <b>power</b> of $\geq 2.000$ kW
3	' 0.683 MWh 'E1 3 ' 2000 kW	The energy (0.683 MWh) up to a <b>power</b> $\leq 2.000$ kW
4	' 0.683 MWh 'E1 4 ' 0.600 m³/h	The energy (0.683 MWh) above a <b>flow</b> of $\geq 0.600$ m³/h
5	' 0.683 MWh 'E1 5 ' 0.600 m³/h	The energy (0.683 MWh) up to a <b>flow</b> $\leq 0.600$ m³/h
6	' 11 h 'E1 6 ' 65.00 °C	The time (11 h) above a temperature in the <b>forward flow</b> of $\geq 65.00$ °C (in steps of 0.01 °C)
7	' 11 h 'E1 7 ' 65.00 °C	The time (11 h) up to a temperature in the <b>forward flow</b> $\leq 65.00$ °C (in steps of 0.01 °C)
8	' 11 h 'E1 8 ' 36.00 °C	The time (11 h) above a temperature in the <b>return flow</b> $\geq 36.00$ °C (in steps of 0.01 °C)
9	' 11 h 'E1 9 ' 36.00 °C	The time (11 h) up to a temperature in the <b>return flow</b> $\leq 36.00$ °C (in steps of 0.01 °C)
10	' 0.683 MWh 'E1 10 ' 10.00 °C	The energy (0.683 MWh) above a <b>temperature difference</b> of $\geq 10.00$ °C (in steps of 0.01 K)
11	' 11 h 'E1 11 ' 10.00 °C	The time (11 h) up to a <b>temperature difference</b> of $\leq 10.00$ °C (in steps of 0,01 K)

**Note:** For invoicing the standard meter reading of the heat meter, total energy consumption, is legally binding.

2

Engelmann Sensor GmbH  
Rudolf-Diesel-Straße 24-28  
D-69168 Wiesloch  
GERMANY

Phone.: +49 6222 9800-217  
Fax: +49 6222 9800-50  
E-Mail: info@engelmann.de

www.engelmann.de