



Gas flow meter - Combimass SME-01



Application:

The SME-01 equipment is used to measure gas flow. The equipment is intended for use in potentially explosive mines.

Description of SME-01

The SME-01 device is designed as a solid enclosure. The instrument compartment is designed as Ex d and the terminal compartment as Ex e.

The instrument compartment contains fuses, the 24VDC source, intrinsically safe converters, CM1 evaluation unit and terminals. The terminal compartment is equipped with 14 screwless terminals, secured design, for connecting conductors up to 4mm². Three M20 cable glands and two M25 cable glands are located at the terminal junction.

230VAC is used for power, which is conducted through the input fuse protection to the 24VDC voltage source. This source supplies power to the intrinsically safe converters and evaluation module.

One of the intrinsically safe converters is used for power and communication (via an RS485 line) with the sensor. The sensor is placed on the pipe conducting the measured gas. The gas flow measurement sensor works on the basis of temperature variance. Measurement is conducted regardless of temperature and pressure medium. The signal is conducted from the sensor through the converter to the evaluation unit, where it is processed and the output is a 4-20 mA signal and pulse output (up to 30 pulses / sec). The pulse output is set to 1 pulse per 1 dm³ of gas. The 4-20 mA output signal from the evaluation unit is converted via the second converter to an intrinsically safe 4-20mA signal.

The terminal compartment contains terminals for powering the SME01, for powering and communicating with the sensor, the intrinsically safe 4-20 mA output (an optional second 4-20mA output signal can be ordered but is not intrinsically safe) and pulse output.

Specifications of SME-01:

Rated supply voltage	230 VAC
Power	57.5 VA
Flow speed	
standard	0.08 to 46 m/s
on order	0.08 to 400 m/s
Cross-section of connected wires	0.08 to 4 mm ²
Case	IP54
Temperature range	0 to 40 °C
Relative humidity (max.)	95% w/o condensation
Dimensions including outlets	380x510x210 mm
Weight of electrical equipment	1 kg
Total weight	21 kg
Design	I M2 (M1) Ex d e [ia] I
Output - terminals X1.6 and X1.7	4 - 20 mA intrinsically safe
Output - terminals X2.1 and X2.2	4 - 20 mA not intrinsically safe by order
Output - terminals X2.3 and X2.4	pulses, max 30 imp / sec

Specifications of sensors

Krytí	IP65/IP68
Rozměry	168x min 288 mm
Relativní vlhkost (max)	80%
Provedení	II 1/2G EEx ia IIC T4 -2D IP6X T80°C -20°C < Ta < +60°C

Measured gases

- air and industrial gases
- explosive gases (e.g. methane, propane, etc.)
- contaminated and exhaust gases
- explosive gases from incinerator
- biogases from sewage treatment
- gases and gas mixtures of different composition

Installation

The SME-01 cabinet is attached to a suitable structure using four M8 screws. The mounting feet are welded to the side walls of the cabinet.

To attach the sensor, a hole with a diameter greater than the diameter of the ordered sensor head must be drilled into the pipe carrying the gas (diameter 12, 18 or 25 mm). A coupling with internal threading according to the order must be welded to the hole. The sensor is attached directly to the pipe or through a ball valve. The sensor must be inserted into the pipe far enough for the end of it to reach 6 mm from the center of the pipe. The sensor must be installed in the position according to the order (the pipe runs horizontally or vertically) and according to the user manual.

The catalogue has only those selected important parameters for your final decision. For project designs always ask for the user's guide for this product and any engineering consultation about possible uses.