SWW series

For monitoring flow of liquid and piped, gaseous media



The flow in fluids can be monitored reliably with flow sensors SWF 62 and SWF 62 L and evaluation unit ASW 454.

The sensitivity can be adjusted accurately with a rough and fine potentiometer. The switching state is indicated by LED. The sensor element must be located in the flow.

Technical data of sensor

General

The flow sensor in stainless steel 1.4571 is suitable for lightly contaminated media, and also aggressive media provided the material is compatible. Flows in gaseous media can also be monitored with this sensor.

Medium temperature 0...80°C

Higher medium temperatures (up to 120°C) may cause a deviation of the switching point but cannot damage the sensor.

Temperature compensation up to 80°C

Sensor material

In contact with medium: stainless steel 1.4571 Casting compound: Wepuran (vu 4459/41 sv) Cable gland: Nickel-plated brass

Max. permitted pressure 20 bar

Process connection G 1/4" or G 1/2"

Connection cable four-core, 2.5 m long

Degree of protection IP 65

Technical data of evaluation unit

Power supply 230 VAC or 24 VAC/DC (see Product Summary)

Power consumption approx. 3 VA

Contact load Relay, single pole 8 A, max. 250 VAC

Ambient temperature 0 - 60°C

Max. temperature gradient 10 K/min.

Flow rate 0.1...3 m/s (liquid media) 1...15 m/s (gaseous media)

Response time approx. 20 – 60 s

Repetition accuracy < 2%, relative to the flow rate at the sensor.

Switching hysteresis Approx. 2% of overall range.

Max. cable length between sensor and evaluation unit 60 m, for shielded cable 1.5 mm².

Sensor protection In case of breakage or interruption of the sensor wires, the unit switches off or an interruption of flow is signaled.

Type of construction Standard housing N 45

Weight approx. 0.35 kg

i Function

The flow monitors work according to the calorimetric principle. A thermistor is heated up. As heat is withdrawn by the flowing medium, the thermistor resistance alters. The change in resistance is evaluated. As the resistance also depends on the temperature of the medium, the difference must be determined by a second thermistor. The difference is compensated and in this way the switching point is kept stable. When monitoring high flow rates, rapid temperature fluctuations can trigger switching operations. Suspended materials adhering to the sensor can have an insulating effect and so affect the measurement result and hence the defined switching point. Therefore it is advisable to remove any dirt during routine maintenance operations.

Product Summary

Sensors	Screw-in thread	Sensor length (from thread)	Thread length	Туре
	G 1/4	25 mm	23 mm	SWF 62
	G 1/2	45 mm	18 mm	SWF 62 L

Evaluation units	Supply voltage	Туре
	230 V AC	ASW 454
	24 V AC/DC	ASW 454/24

Operator interface



Adjusting elements

Sensitivity (rough and fine) (high sensitivity at low flow) **Signal lamps**

1 = Flow present

CE

2 = Supply voltage present

Wiring diagram



In case of malfunction, a sensor error can be ruled out by checking the resistances between the connecting wires of the sensor. Sensor SWF62 or SWF62L must be disconnected and checked with a suitable ohmmeter between the individual connecting wires:

White-brownapprox. 0.2 kOhm White-green approx. 1.0 kOhm White-yellowapprox. 1.0 kOhm

The terminal voltage of the evaluation units ASW454 or ASW 454/24 can also be checked with a voltmeter between the "+" and "Gnd" terminals after disconnecting the sensor. 14.8 VDC is the correct value.