Special-Sensors for Automation

Magnetic Flowmeter

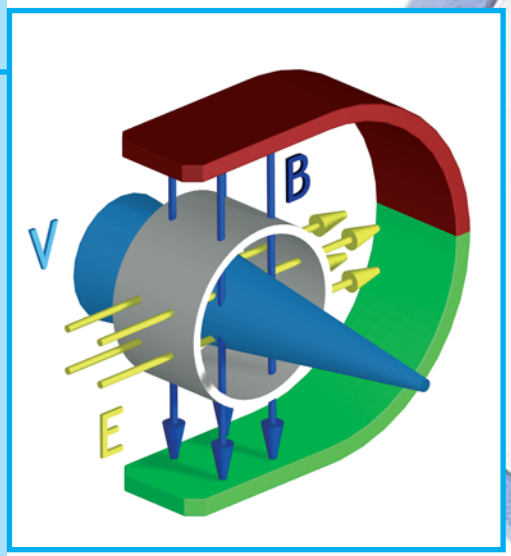
ISO 9001 certified

Flow measurement

The new inline flow sensors SDI 852 offer a monitoring function as well as precise flow measurements in the range of 0...40 l/min. The flow rate is digitally depicted using a clear 3-digit, 7-segment display. The magnetic-inductive measuring system facilitates that this device is suitable for many different applications in the field of automating processes and work-flows. Furthermore, a high degree of measuring accuracy is ensured.

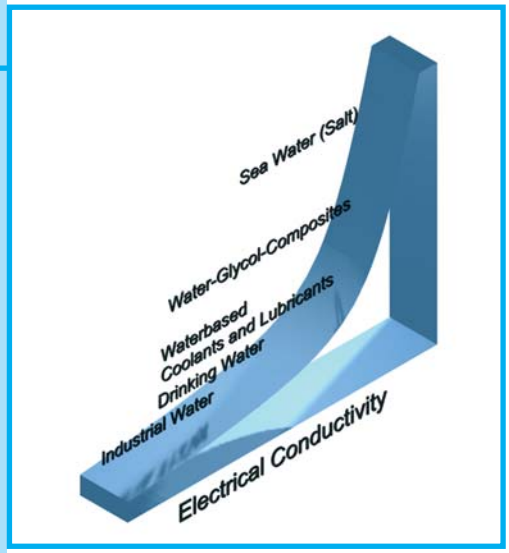
Function principle

If an electrically conductive fluid **V** is moving crosswise to a magnetic field **B**, a voltage **E** dependent on the flow rate is generated vertically to this magnetic field and the direction of motion. This is measured with electrodes contacting the fluid. Microcontrollers analyse this voltage and calculate the flow rate.



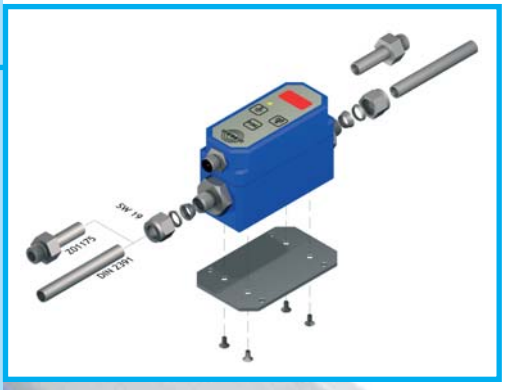
Medium

The magnetic-inductive measuring principle requires the electrical conductivity of the medium. Low limit values of 15 µS/cm for water or 10 µS/cm for other fluids still offer a broad function range; this includes high-percentage water-glycol mixtures. Small bubbles and non-abrasive solids in the fluid only slightly affect the measurement.



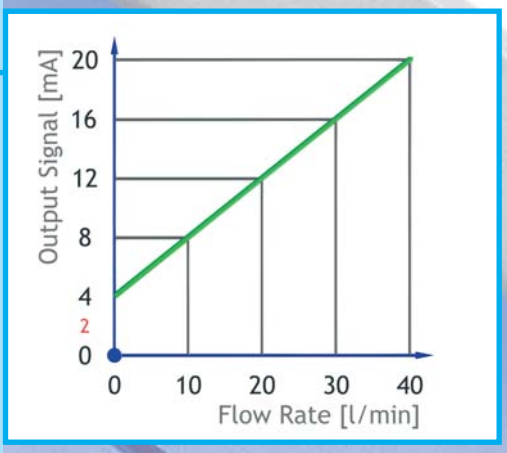
Installation

The inline flow sensors SDI 852 are installed "in-line" into a pipe line. The pipe may be connected directly with the compression tube fitting connection or with an adaptor SDA.... Threaded bushings are located in the bottom housing plate and are used to fasten the device to a support plate or other similar base. A mounting plate (optional accessory) may also be attached to the housing. This makes it possible to fasten the unit from the front.



Switching and analogue output

If the flow rate value is to be further processed with a PLC or a control system, the SDI 852 units offer a switching output as well as an analogue output with a 4...20 mA signal. The starting and ending value for the analogue output range is definable in the programming mode. A measuring system error sets the analogue output to 2 mA.
If a flow contrary to the installation orientation occurs, a minus sign is displayed in front of the flow rate in the display and the output current remains fixed at 4 mA. The measuring range displayed ends at -9.9 l/min for this installation position.



Application advantages

The combination of precise measuring system and small, compact design distinguishes the series SDI 852 from other inline flow sensors. They are easy to install subsequently into existing configurations or offer a space-saving alternative for new constructions.

Cooling and temperature control as well as metering circuits, for example in the field of water treatment, are precisely and accurately monitored. This is accomplished with a set point function as well as an analogue linear current output.

Stainless steel and PVDF for the device components in contact with the media allow using the unit in many electrically conductive fluids. This includes high-percentage water-glycol mixtures.

The simple structuring of the programming menu as well as the parameter protection via access code reduce the commissioning time and result in a high degree of process reliability.

Flows opposite to the given installation direction are detected and depicted in the display as a negative value. This is useful for e. g. checking the function of a return valve.

Operation

The inline flow sensors SDI 852 feature front panel buttons used to call functions and modify settings. All values are displayed in the 3-digit, 7 segment display.

Switching point

This limit value is entered in l/min to monitor a minimum or maximum value. It is also possible to program the difference between the switch-on and switch-off value, the hysteresis. The NC and NO contact functions are available for the switching output.

Time delay

The time delay is settable to a value between 0 and 50 seconds. The signal then changes only after the delay has expired insofar as the current value still exceeds the limit value. An additional parameter is available if the current value falls below a set limit value.

Signal filter

The parameter for the signal filter allows inputting a value that determines the time interval in which the measuring signal is averaged. Inputs between 0 to 8 seconds are possible. A low value results in a very quick response; a high value results in a very steady display of the measured value. The filter is switched off when the setting is 0. Averaging has the same effect on display and outputs.

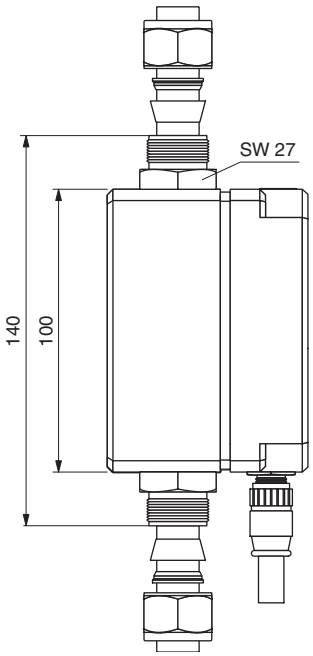
Access code

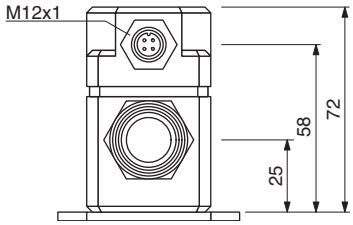
Programming or changes to the parameters of the device are not possible without entering an access code. The factory default is modifiable in the programming mode.

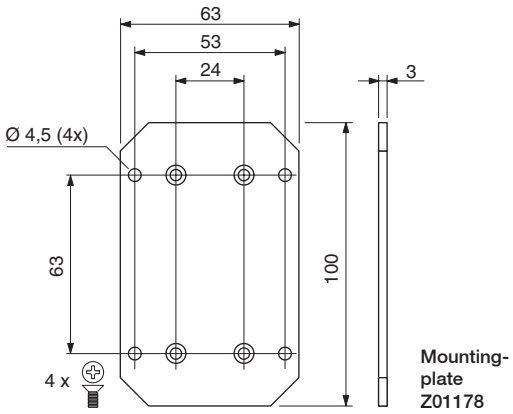
Reset function

Use the reset function to reset all parameters to the factory defaults.

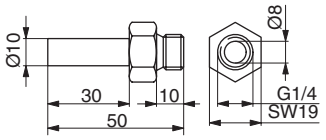
Terminology: see our main booklet „Flow controllers and air flow controllers“.







Mounting-plate Z01178



Adapter Z01175

EGE-Elektronik Spezial-Sensoren GmbH
www.ege-elektronik.com

FLOW MEASURING DEVICE

Inline-Compact with digital display

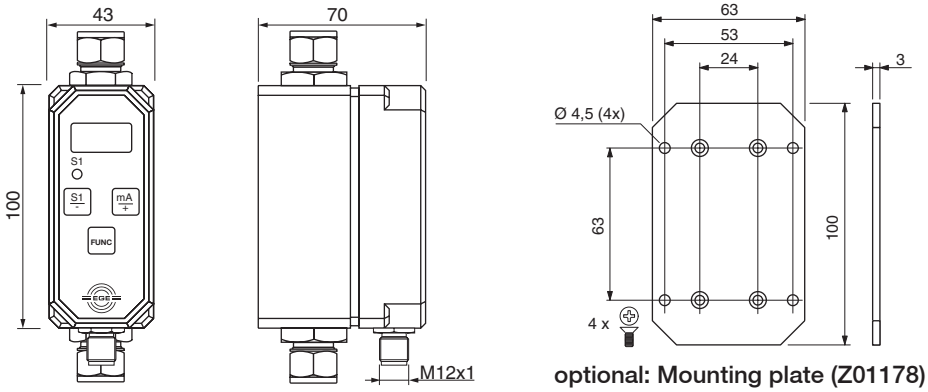
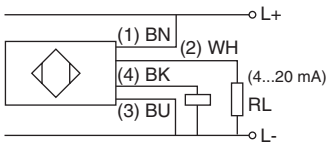
Series SDI - Magnetic flowmeter

Flow measurement for conductive media (≥10 µS/cm)

Measurement error < 2%

Programmable

Analogue and PNP output

Design	SDI 852/1 GAPP
Dimensions	 optional: Mounting plate (Z01178)
Working range [l/min]	0...40
Measurement error	0...5.0 l/min ≤0.1 l/min 5...40 l/min ≤2% of measurement value*
Outer diameter pipe [mm]	10
Pipe connection	tube fittings for steel tubes according to DIN 2391 / ISO 3304
Medium conductivity [µS/cm]	≥10 (water: ≥15)
Output	PNP NO / NC, programmable 4...20 mA, linear
ID-No.	**P11320**
Type	SDI 852/1 GAPP
Switching current [mA]	200
Load R_L [Ω]	200...500
Supply voltage [V]	24 DC ±10%
Current consumption [mA]	100
Ambient temperature [°C]	0...60
Medium temperature [°C]	5...60
Start-up time [s]	4.5...8
Reaction time [s]	0.5...8
Programmable functions	Switching point, hysteresis, switching output, time on/off delay, analogue range, averaging, access code
Compressive strength [bar]	10
Material	housing: PBT Sensor: PVDF / AISI 316 Ti
Protection [EN 60529]	IP 65
Connection	M12 connector
*Notice: Reference conditions according to EN 29104	
Accessories	Connecting cable type SLG, mounting plate, adapter G1/4

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