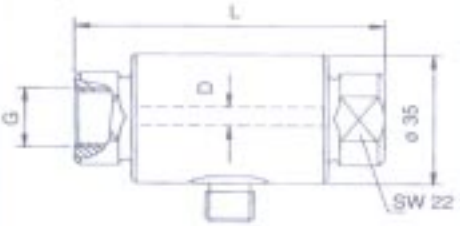
EGE ELEKTRONIK

FLOW CONTROLLER

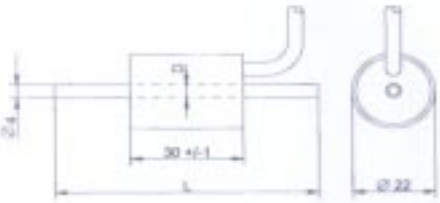
Inline-sensors • Series 400

Monitoring sensors for fluids

- Fit directly into pipes
- Byte-type fitting joint according to DIN 2353 for metallic pipes
- Pipe diameter 6, 10 or 12 mm
- Steel A4 1.4571 (AISI-316 Ti)
- Low flow detection
- Applications for medical and laboratory technology
- May be connected to Series 400 switching amplifiers



SD 404 S... / SD 410 S...



SDM 404 K

Inline sensors are introduced directly into a pipe. This avoids the use of measurement sensors which project into the stream. Types SD 404 S.../ SD 410 S... are fitted with a metric thread allowing them to take a byte-type fitting joint according to DIN 2353. The table shows the possible combinations between the sensor and the byte-type fitting joint. SDM 404 K is installed simply by pushing on plastic tubes onto the measurement pipe.

TYPE	*ID-NO.*	*D/mm*	*L/mm*	*G*
SD 404 S-M12	P10590	3.5	76	M12 x 1.5
SD 404 S-M16	P10591	3.5	76	M16 x 1.5
SD 404 S-G1/4	P10593	3.5	76	G1/4
SD 410 S-M16	P10592	9.3	76	M16 x 1.5
SDM 404 K	P11069	3.6	70	measurement pipe ø 4 mm

ACCESSORIES

SV-M12-6	Z01083	Cutting ring union for pipe ø 6 mm
SV-M16-10	Z01084	Cutting ring union for pipe ø 10 mm
SV-M16-12	Z01085	Cutting ring union for pipe ø 12 mm
SLG 4-2	Z00445	Cable plug casing straight, 2 m PVC-cable
SLW 4-2	Z00446	Cable plug casing angular, 2 m PVC-cable

Combinations	*Pipe ø 6 mm*	*Pipe ø 10 mm*	*Pipe ø 12 mm*
SD 404 S-M12	SV-M12-6	–	–
SD 404 S-M16	–	SV-M16-10	SV-M16-12
SD 410 S-M16	–	SV-M16-10	SV-M16-12

Combinations sensor-amplifier

	SKZ 400...	SKM 420...	SKV 480...
SD...	●	●	●

FLOW CONTROLLER

Inline-sensors • Series 400

EGE ELEKTRONIK

Application notes

The electric function of the inline sensor is based on the thermodynamic principle. The sensor is heated by a few degrees centigrade as compared to the flowing medium. The flowing medium carries off heat generated in the sensor, which means that the sensor is cooled. The resulting temperature is measured and compared to the medium temperature measured in the sensor. The obtained temperature differences determine the flow status of every medium.
The inline sensor is introduced directly into the piping. The byte-type fitting joint according to DIN 2353 assures high tightness and pressure resistance.
The SD 404 inline sensor has an interior diameter of 3.5 mm and narrows down the section of the pipe. This causes increased flow speed as compared to the connecting tube. This may be used to monitor small flows.

The SD 410 sensor has an interior diameter of 9.3 mm and is designed for monitoring applications up to a maximum of 900 l/min.
Thanks to its compact design and small weight, the SDM 404 K can be introduced without problem into plastic tubes, even under reduced space conditions. Installation is carried out by simply sliding over the tubes. For pressures of 0.5 bar and more, hose clamps must be used.
The inline sensors are used together with a switching amplifier. The switching point is set on the switching amplifier for a given medium within the flow range. For flow speeds higher than the detection limit of the sensor, flow failure or reduction is announced if the flow speed falls within the detection range of the sensor.

Technical Data

	SD 404 S-...	SD 410 S-...	SDM 404K
Detection range			
Water	5...150 ml/min	30...900 ml/min	5...150 ml/min
Oil	15...300 ml/min	90...1800 ml/min	15...300 ml/min
Flow volume max.	300 l/h	1800 l/h	300 l/h
Temperature range medium			
Medium	-20...+80 °C	-20...+80 °C	-5...+70 °C
Temperature gradient	typ. 250 °C/min	typ. 250 °C/min	typ. 250 °C/min
Temperature shock time	typ. 12 sec.	typ. 12 sec.	typ. 12 sec.
Standby time	typ. 8 sec. (2...15)	typ. 8 sec. (2...15)	typ. 8 sec. (2...15)
On transition time	typ. 2 sec. (1...15)	typ. 2 sec. (1...15)	typ. 2 sec. (1...15)
Off transition time	typ. 2 sec. (1...15)	typ. 2 sec. (1...15)	typ. 2 sec. (1...15)
Pressure resistance	10 bar	15 bar	5 bar
Protection (DIN 40 050)	IP 67	IP 67	IP 68
Sensor material	Stainless steel AISI-316-Ti	Stainless steel AISI-316-Ti	Tube: AISI-316-Ti Case material: Delrin
Connection plug	Universal plug M12 systems: SL..., SB...	Universal plug M12 systems: SL..., SB...	
Connection cable			2 m PVC-cable 4 x 0.25 mm²

Nominal data are defined for a flow rate of 50 ml/min (SD 404/SDM 404 K) and 300 ml/min (SD 410) and a temperature of 20 °C.

Connection

Code: BK = black BN = brown BU = blue GN = green YE = yellow GY = grey PK = pink WH = white