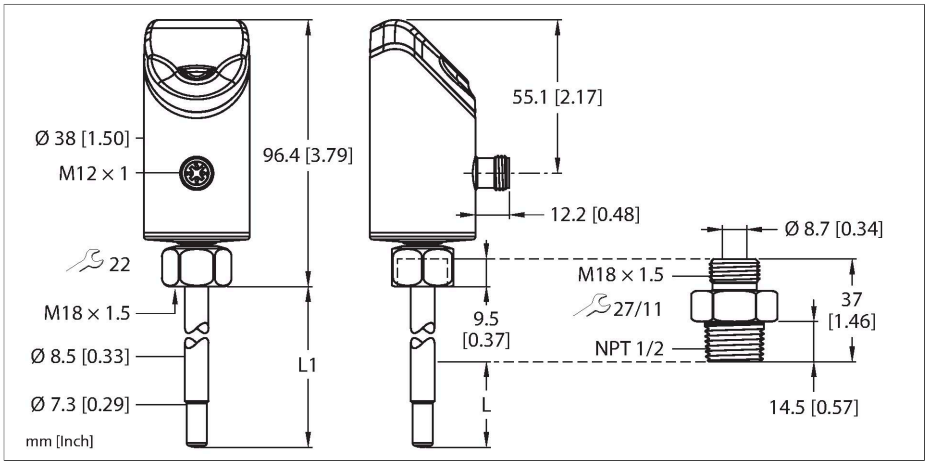
FS101-300L-63-2LI-H1141
Flow Sensor



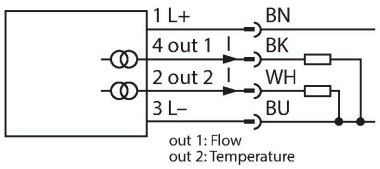
Technical data

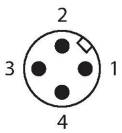
Type	FS101-300L-63-2LI-H1141
ID	100049080
Medium temperature	-25…+85 °C
Application area	
Mounting	Immersion sensor
Application area	liquids
Bar length (L1)	70 mm
Immersion depth (L)	41.9 mm, When using the supplied adapter
Process Pressure	300 bar
Flow Monitoring	
Standard flow range	3…300 cm/s
	Any axial alignment of the sensor rod in the medium
Extended flow range	1…300 cm/s
Extended flow range comment	Directed Inflow to Punch Mark ±20 °
Reproducibility	1…5 cm/s ; For Water 3…100 cm/s; 10…80 °C
Response time T09	6 s
Response time T05	3 s
Temperature drift	0.5 cm/s × 1/K
Temperature gradient	≤ 300 K/min
Temperature monitoring	
Measuring range	-25…85 °C
Switching point accuracy	± 2 K; for water >3 cm/s; 20…70 °C

Features

- Screw-in adapter with process connection NPT 1/2" male thread included in delivery
- Electronics housing material/media-contacting 1.4404 (316L)/1.4571 (316Ti)
- Immersion depth 41.9 mm
- 4-digit 12-segment display, rotatable by 180°
- Flow monitoring for liquid media
- Protection classes IP66, IP67 and IP69K
- Adjustment of flow speed via teach function
- 17…33 VDC
- Analog output 4…20 mA
- Male connector, M12 × 1

Wiring diagram





Functional principle

The flow sensor functions according to the calorimetric principle. The distinctive feature of this principle is that the flow rate correlates directly to the thermal loss of energy in the probe. The increased loss of energy is therefore a direct measure of an increased flow rate.

Technical data

Reproducibility	≤ 0.5 K
Resolution	0.1 K
Response time T09	12 s
Response time T05	3 s
Electrical data	
Operating voltage U_B	17…33 VDC
Short-circuit/reverse polarity protection	yes
Power consumption	≤ 3 W, Typ. 1.3 W
Overload protection	Yes
Insulation class	III
Standby delay time	30 s
Outputs	
Output 1	Flow: Analog signal within max/min teach-in limits (non-linear)
Output 2	Temperature: Analog (default: 4…20 mA corresponds to -25 °C…+85 °C (limits can be set via menu)
Output function	Analog output current
Current output	4…20 mA
Alternative current output	0…20 mA
Current output note	Each invertible
Load resistance current output	≤ 0.5 kΩ
Mechanical data	
Housing material	Stainless-steel/Plastic, 1.4404 (AISI 316L)/Grilamid TR90 UV/Elastollan C 65 A 15 HPM 000/Ultramid A3X2G5
Adapter material	Stainless steel 1.4571 (316Ti)
Materials (contact with media)	Stainless steel 1.4571 (AISI 316Ti), FKM O-ring
Process connection	1/2" NPT male thread
Process connection sensor	M18 x 1.5 female thread
Process connection adapter	M18 × 1.5 male thread; 1/2" NPT male thread
Electrical connection	Connector, M12 × 1
Protection class	IP66 IP67 IP69K
Electromagnetic compatibility (EMC)	DIN EN 61326-2-3: 2007
Environmental conditions	
Ambient temperature	-40…+80 °C
	(UL: -25…+80 °C)

Technical data

Storage temperature	-40…+80 °C
Shock resistance	50 g (11 ms) EN 60068-2-27
Vibration resistance	20 g (55…2000 Hz)DIN EN 60068-2-6
Tests/approvals	
Approvals	CE cULus
UL registration number	E516036
Display	LED display functions for status of supply voltage and teach processes. Process display via 12-segment display.
MTTF	120 years acc. to SN 29500 (Ed. 99) 40 °C

LED display

LED	Color	Status	Description
PWR	Green	On	Operating voltage applied Device is operational
FLT	Red	On	Error displayed (For error pattern in combination with LEDs see manual)
		Off	No errors displayed
LOC	Yellow	On	Device locked
		Off	Device unlocked
		Flashing	Locking/unlocking process active
FLOW	Yellow	Flashing	Teach mode/display of diagnostic data (see manual for specification)
%	Yellow	On	Display: max. flow in percent (%)
TEMP	Yellow	Flashing	Teach mode/display of diagnostic data (see manual for specification)
°C	Yellow	On	Display: temperature in ° Celsius
°F	Yellow	On	Display: temperature in ° Fahrenheit

For a detailed description of the display patterns and flashing codes see manual/instructions for use FS101 — Compact Flow Sensors (100030510.pdf)