

Type SFP

high @ level

Hygienic analogue Fill Level Sensor for liquids

Basic Features

- ▶ Analogue Fill Level Sensor for liquids
- ▶ Robust design increases service life
- ▶ One System for level and continuous fill level measurement
- ▶ Cuttable probe and welding sleeve system with modular process connections
- ▶ Hygienic Design
- ▶ Aseptic Measuring Point
- ▶ No calibration or recalibration required for commissioning
- ▶ Wetted parts made of 1.4404 and PEEK
- ▶ FDA, EHEDG-conformal

Technical Features

- ▶ High-Grade-Steel connection head mat. No. 1.4305
- ▶ Connection: M12 plug, 5-pole
- ▶ Thread G 1" elastomer-free sealing system
- ▶ Supply Voltage: 12 V DC...30V DC
- ▶ Output IO-link parametrizable
- ▶ Analog output 4 mA ... 20 mA, 0 V ... 10 V automatic switching to a current or voltage output depending on the load.
- ▶ 1 PNP transistor output (Q1) and 1 PNP/NPN transistor output (Q2) switchable.
- ▶ Response time <400 ms
- ▶ Ambient Temperature, operation -20...+60°C
- ▶ Process Temperature durable -20...+150°C
- ▶ Storage Temperature -40...+80°C
- ▶ Process Pressure -1 bar...+16bar
- ▶ Protection class up to IP69K
- ▶ Torque max. 6 Nm
- ▶ Probe length 1000/2000/3000/4000 mm

Favoured fields of operation are e. g.:

The SFP is a hygienic level measurement device for liquids using the TDR technology.

- ▶ Fill level measurement in hygienic applications

Order Code

Bestellcode SFP

Probe Lengths

Probe Lengths	SFP-
Probe Length 1000 mm	1000
Probe Length 2000 mm	2000
Probe Length 3000 mm	3000
Probe Length 4000 mm	4000
Customized Lengths on request (200 mm...4000mm)	K



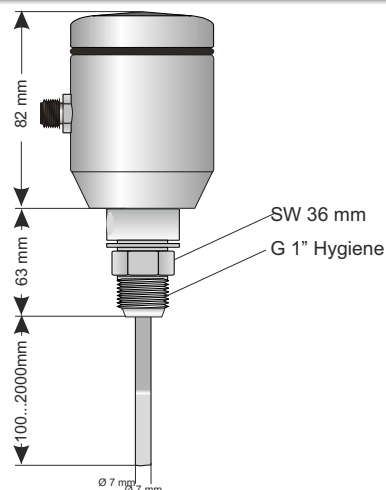
Examples of modular process connections



See data sheet process connection technology

modular @ process

Dimensional Drawing



Dimensional Drawing (Connection)



- 1 L+: Supply voltage, brown
- 2 Q_A: Analog current-/voltage output, white
- 3 M: Ground, OUT-for current-/voltage output, blue
- 4 C/Q : Switch output 1, PNP/ IO-Link-Communication black
- 5 Q₂: Switching output 2, PNP/NPN, grey

The tightness to IP67 classification does not mean that these parts are suitable for applications or with dew point temperature shocks (DIN 60068-2-14).

Technical Changes reserved

2019-12

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Technical data**Features**

Medium	Fluids
Erfassungsart	Switch, continuous
Switch, continuous	100 mm ... 4.000 mm cuttable
Process pressure	-1 bar ... +16 bar
Process temperature	-20 °C ... +150 °C
Installation in nozzle	D ≥ DN25
Distance to the container-wall	≥ 50 mm
Distance to container-bottom	≥ 15 mm
Distance to installations inside container	≥ 100 mm

Performance

Accuracy ¹⁾	± 5 mm
Reproducibility ¹⁾	< 2 mm
Resolution	< 2 mm
Dielectricity constante	≥ 5
Conductivity	No limitation
inaktive area at process connection ²⁾	25 mm
inaktive area at probe end ¹⁾	10 mm

¹⁾ With water under reference conditions.²⁾ With parameterized tank with water under reference conditions, otherwise 40 mm**Mechanics**

Wetted parts	1.4404 (Ra ≤ 0,8 µm), PEEK
Process connection	aseptic G1" Process connection with polymer-free sealing system, hygienic Design
Housing material	1.4305
max.probe load	6 Nm

Electronics

Supply voltage ¹⁾	12 V DC ... 30 V DC
Power consumption	≤ 75 mA at 24 V without output load
Initialisation time	≤ 2 s
Protection class	up to IP 69K
Electrical connection	M 12X1, 5-pol.
Signal output ¹⁾	Analog output 4 mA...20mA, 0V...10V automatic switching to a current or voltage output depending on the load 1 PNP transistor output (Q1) and 1PNP/NPN transistor ouotput (Q2) switchable
Hysteresis ²⁾	Min. 2 mm, free adjustable
Signal voltage HIGH $Q_{1/2}$	$V_s - 2 V$
Signal voltage LOW $Q_{1/2}$	≤ 2 V
Output current $Q_{1/2}$	< 100 mA
Inductive load $Q_{1/2}$	< 1 H
Capacitive load $Q_{1/2}$	< 100 nF
Response time	< 400 ms
Protection class	IP 67: EN 60529, IP 69K: EN 40050
Temperature drift:	< 0,1 mm/K
Output load	4 mA ... 20 mA: < 500 Ohm at $U_v > 13,5 V$ 4 mA ... 20 mA: < 400 Ohm at $U_v > 12 V$ 0 V ... 10V: > 750 Ohm at $U_v \geq 14 V$
Lower signal level Q_A	3,8 mA ... 4 mA, 0 V
Upper signal level Q_A	20 mA ... 20,5 mA, 10,5 V
EMC	EN 61326-1:2006, 2004/108/EG
Interference resistance	EN 61000-6-2:2005
Interference emission	EN 61000-6-4:2007

¹⁾ All connections are polarity protected. All outputs are overload and short-circuit protected.²⁾ Min. 2mm, free adjustable**Ambient data**

ambient temperature, operation	-20 °C ... +60 °C
ambient temperature, storage	-40 °C ... +80 °C