FOS03

Optoelectronic Level Switch For Industrial Applications

FOS03.S
Standard-Version

- **for liquids**
- **Standard version and high temperature and high pressure version**
- **Small and compact, no moving parts**
- **Easy installation, can be installed in any position**
- **Visual indication of the switching status**
- **Low maintenance effort**
- **max. Druck: 25 bar (FOS03.S)**
  50 bar (FOS03.T)
- **max. temperature: 100 °C (FOS03.S)**
  170 °C (FOS03.T)

FOS03.T
High-temperature and high-pressure version

Description:

The FOS03 optoelectronic level switches are used to monitor the level of liquids. The sensor contains an infrared LED and a light receiver.
The light from the LED is directed into a prism that forms the tip of the sensor. As long as the tip is not immersed in liquid, the light is reflected within the prism to the receiver. If the liquid in the container rises and surrounds the tip, the light is refracted by the liquid and no longer or only weakly reaches the receiver, which reacts to this change and initiates a switching process.
The switching status can be read directly on the sensor (LED, with high temperature variant only as an option).

Typical applications:

The area of application for optoelectronic level indicators is the detection of limit values in a variety of liquids. The advantage here is that the measuring method is largely independent of physical variables such as refractive index, colour, density, dielectric constant or conductivity. The very compact design guarantees minimum space requirements, enabling measurement in very small volumes. The fact that it can be installed in any position and the high pressure and temperature ranges offer a wide range of applications.

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Subject to technical changes

Version: FOS03.S - Standard

Technical Data:

max. pressure:	0 ... 25 bar
max. media temperature:	-30 °C … +100 °C
max. ambient temperature:	-25 °C ... +70 °C
Materials:	
Light guide:	Borosilicate glass, fixed with silicone adhesive (Option: Fixed with epoxy resin)
Case (G 1/2“):	Stainless steel 1.4571 (316 Ti)
Case (G 3/8“):	Stainless steel 1.4305 (303)
Case (M12x1):	Stainless steel 1.4305 (303)
Process connections:	G 1/2 male, G 3/8 male, M12x1 male
Measurement accuracy	≤ ±2 mm
Mounting position:	as required
Indication of switching status:	1 LED
Minimum distance from the glass tip to an opposite surface:	>10 mm > 20 mm if electropolished
Weight:	appr. 115 g + 25 g/m cable length

Electrical Data:

Power supply:	12...32 V_{DC}
max. current supply:	40 mA
Electrical connection:	
PUR, PVC cable:	cable length: 2 m or special length diameter: 3 x 0,25 mm² cable end: cut to length
circular connector:	M8x1 (3-pin)
Output signal:	PNP transistor, protected against reverse polarity, 200 mA switching current
Switching function:	Normally open (closed in medium) or normally closed (open in medium)
Number of switch points:	1
Response time:	0,5 s (Switching delay up to 7 s on request)
Minimum distance from the glass tip to an opposite surface:	>10 mm > 20 mm if electropolished
Protection class:	IP65

Order Code:

Order number:	**FOS03.S**	**1.**	**1.**	**R.**	**0.**	**0**

Optoelectronic Level Switch Standard version

Process connection:
1 = G 1/2 male (standard)
2 = G 3/8 male
3 = M12x1 male

Switching function:
1 = in medium closed (n.o.)
2 = in medium open (n.c.)

Electrical connection:
R = circular connector M8x1, 3-pin
P = cable PUR
V = cable PVC

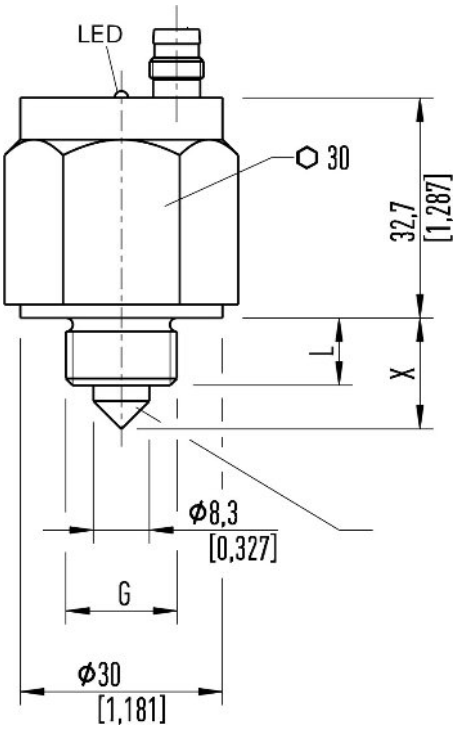
Cable length:
0 = (if circular connector)
2 = 2 m (standard)
S = special length (please specify in plain text)

Options:
0 = without
1 = with trimmer (Adjustable responsiveness (trimmer) for other liquids and foaming media
9 = please specify in plain text

Accessory:

SM08: M8x1 connector plug with PVC cable

Dimensions:



Process connection G	X	L
G 3/8 male	17 mm	10 mm
M12x1 male	17 mm	10 mm
G ½ male	27 mm	20 mm

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Version: FOS03.T
High Temperature and high pressure version

Technical Data:

max. pressure:	0 ... 25 bar
max. media temperature:	-40 °C … +170 °C
max. ambient temperature:	-30 °C ... +80 °C
Materials:	
Light guide:	Borosilicate glass, fixed with epoxy resin
Case:	Stainless steel 1.4305 (303)
Process connection:	Stainless steel 1.4571 (316 Ti)
Process connections:	G 1/2 male, M16x 1,5 male
Measurement accuracy	≤ ±2 mm
Mounting position:	as required
Indication of switching status:	1 red LED (only with option trimmer)
Minimum distance from the glass tip to an opposite surface:	>10 mm > 20 mm if electropolished
Weight:	appr. 170 g + 25 g/m cable length

Electrical Data:

Power supply:	12...32 V_{DC}
max. current supply:	40 mA
Electrical connection:	
PUR, PVC cable:	cable length: 2 m or special length diameter: 3 x 0,25 mm² cable end: cut to length
circular connector:	M12x1 (4-pin)
angled plug:	acc. to EN 175301-803 A
Output signal:	PNP transistor, protected against reverse polarity, 200 mA switching current
Switching function:	Normally open (closed in medium) or normally closed (open in medium)
Number of switch points:	1
Response time:	0,5 s (Switching delay up to 7 s on request)
Responsiveness:	Preset for the detection of aqueous media and oils
with trimmer and LED (option):	Adjustable responsiveness (trimmer) for other liquids and foaming media
Minimum distance from the glass tip to an opposite surface:	>10 mm > 20 mm if electropolished
Protection class:	IP65

Order Code:

Order number:	FOS03.T	1.	1.	M.	0.	0

Optoelectronic Level Switch
High temperature and high pressure version

Process connection:
1 = G 1/2 male
4 = M16 x 1,5 male

Switching function:
1 = in medium closed (n.o.)
2 = in medium open (n.c.)

Electrical connection:
M = circular connector M12x1, 4-pin
W = angled plug EN 175301-803 A, 3-pin
P = cable PUR
V = cable PVC

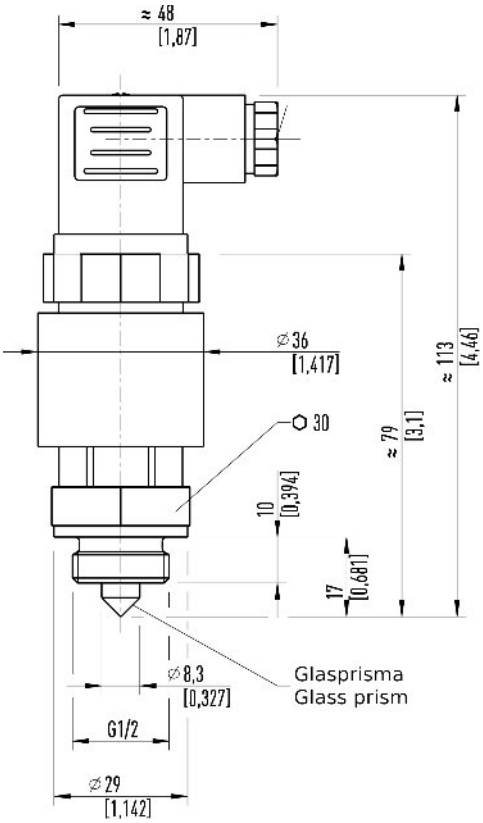
Cable length:
0 = (if circular connector or angled plug)
2 = 2 m (standard)
S = special length (please specify in plain text)

Options:
0 = without
1 = with trimmer (adjustable responsiveness (trimmer) for other liquids and foaming media and LED status indication
9 = please specify in plain text

Accessory:

SM12: M12x1 connector plug with PVC cable

Dimensions:



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