

## Fluid level sensor

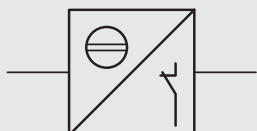
### Riser tube made of plastic

### FSK

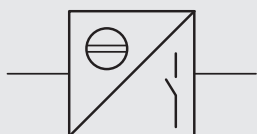
#### SYMBOL

Size 0127 - 0381

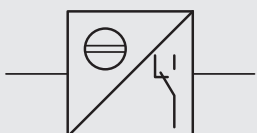
Type O – opening contact (NC)



Type C – closing contact (NO)



Type W – changing contact



#### DESCRIPTION

HYDAC fluid level sensors monitor the fluid level in a hydraulic container. If the level drops below the minimum, this is transmitted via an electrical signal. The switching signal can be received as a warning for level control or used in the PLC controller directly.

The fluid enters the unit via the lower connection bore and pushes a float up the tube. The float then indicates the level of the fluid in the tank. If the level of the fluid drops again, the float will activate a switch contact.

In the opening contact variant, the circuit is opened when the minimal fluid level is reached, and in the closing contact variant it is closed. In the changing contact variant, both switching functions can be used for control/display.

A visual display of the fluid level is provided additionally in all versions.

#### PRODUCT FEATURES

- Nominal size 127 – 381 mm
- Elliptical riser tube made of high-quality plastic
- Connectors made of PA
- Housing made of aluminium or stainless steel
- Switching contact available as NC contact, NO contact or changing contact
- Improved seal between tank and FSK thanks to geometrically optimised connection
- Optional line marking on riser tube and float, red float

#### CUSTOMER BENEFITS

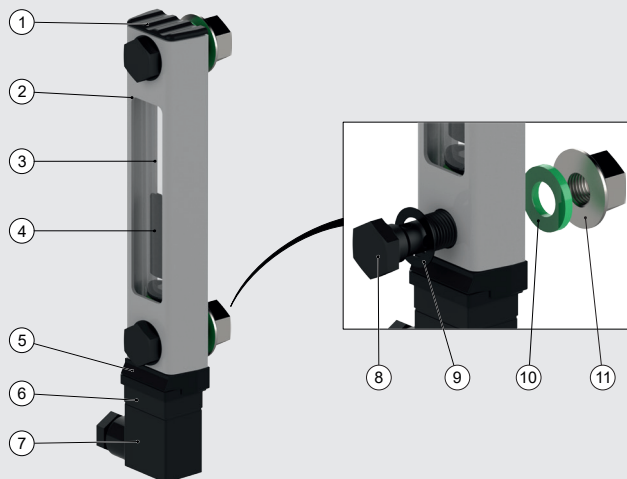
- Robust design
- Increased hydraulic fluid temperature, media compatibility and UV-resistance
- Simple standardised installation conditions
- Numerous plug connector variants

No.	Description
(1)	Connection piece, top
(2)	Housing frame
(3)	Riser tube
(4)	Float
(5)	Connection piece, bottom
(6)	Plug connector
(7)	Cable socket
(8)	Banjo bolt (2x)
(9)	Washer (2x)
(10)	Seal (2x)
(11)	Nuts (2x)

#### Note

Component may differ from illustration.

#### DESIGN



## Model code

(also order example)

FSK - 0127 - 2 . 50 - 00000 / O- / M12 . 000

## Designation

FSK = fluid level sensor

## Nominal size (≅ centre distance of bolts in mm)

0127, 0176, 0254, 0305, 0381

## Material of seal

2 = FKM (Viton)

## Connector design

4 = 3+PE plug connector form A, DIN EN 175301-803 (Z4\*)

5 = 2+PE plug connector form B, DIN EN 175301-803 (no details\*)

6 = round connector M12x1, 4-pole, male; DIN EN 61076-2-101, A-coded; connection left horizontal (SEW\*)

7 = round connector M12x1, 4-pole, male; DIN EN 61076-2-101, A-coded; connection bottom vertical (SES\*)

8 = 3+PE plug connector form A, DIN EN 175301-803; special connection (form B\*)

\* Former details in brackets

## Switching function

O = opening contact NC opens at switching level (only connector design 5)

C = closing contact NO closes at switching level (only connector design 5)

W = changing contact opens and closes at switching level

## Tube geometry, materials

### Tube geometry / tube material

00 = elliptical tube / plastic

### Material – connectors

0 = PA

### Material – frame

00 = aluminium

02 = steel, zinc-plated

03 = stainless steel

## Options

### Contrast pane

O = no contrast pane

### Additional thermal function

- = no additional function

FF = preparation for sensor thermometer

FT100 = sensor thermometer 100 mm

FT200 = sensor thermometer 200 mm

FT300 = sensor thermometer 300 mm

TSL60-O = temperature switch NC, nominal temperature 60 °C

TSL70-O = temperature switch NC, nominal temperature 70 °C

TSL80-O = temperature switch NC, nominal temperature 80 °C

TFP100 = temperature probe -40 °C to +125 °C

TFP1000 = temperature probe -40 °C to +125 °C

**Notice:** The TSL temperature switch cannot be combined with the FT temperature gauge.

## Type of connection

M12 = M12 (standard)

M10 = M10 (not for TSL or TFP)

## Connecting elements

### Material of bolts/nuts

0 = bolt and poss. nut steel (surface protection galvanised, chromium(VI)-free)

2 = bolt and poss. nut stainless steel (M12 only M12)

### Seal

0 = with seal

1 = without seal

### Mounting nuts

0 = with mounting nuts

1 = without mounting nuts

## NOTICE

The vehicle/system manufacturer or the owner must check the product's suitability for the particular operating conditions and environmental conditions (pressure, viscosity, temperature, dynamics, cleaning).

If you have any questions, please get in touch with your contact in Technical Sales.

## TECHNICAL DATA

Connection	Banjo bolt M12x45 or M10x45				
Type of connection	Threaded hole (M12 or M10) or through-bore (Ø13 or Ø11)				
Mounting position	vertically on the tank wall				
Weight	Size 0127	Size 0176	Size 0254	Size 0305	Size 0381
	0.21 kg	0.23 kg	0.26 kg	0.28 kg	0.30 kg
Design of riser tube	Elliptical tube				
Media	Mineral oil in acc. with DIN 51524 Part 1 and 2, water, oil, emulsions and synthetic fluids (other fluids on request)				
Viscosity of fluid	max. 2000 mm²/s				
Max. operating pressure	0.5 bar (higher pressures on request)				
Flow direction	no orientation restrictions				
Ambient temperature	-20 °C to +95 °C				
Temperature of operating fluid	-20 °C to +95 °C (with thermometer -10 °C to +80 °C)				
Material:	Connectors	PA			
	Riser tube	High-quality plastic			
	Housing frame	Aluminium or stainless steel (steel on request)			
	Seal	FKM			
	Bolts, nuts	Steel galvanised or stainless steel			
	Plug connector	PA			
Accessories	Shut-off elements ABV, ABK, ABS				
	Protective cover				

## NOTICE

To ensure correct functioning, pressure, viscosity and temperature specifications must be observed.

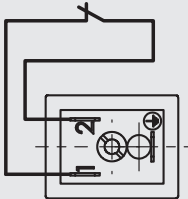
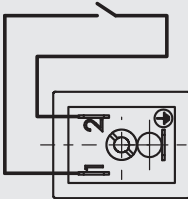
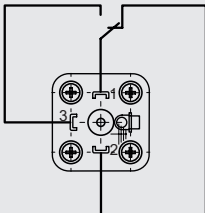
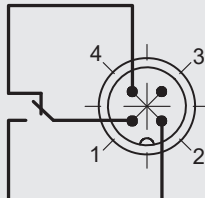
For perfect function at high temperatures, it must be ensured that the tightening torques of the bolts are not changed after the initial installation.

Suitable protective circuits must be used for inductive and capacitive loads.

## ELECTRICAL SPECIFICATIONS

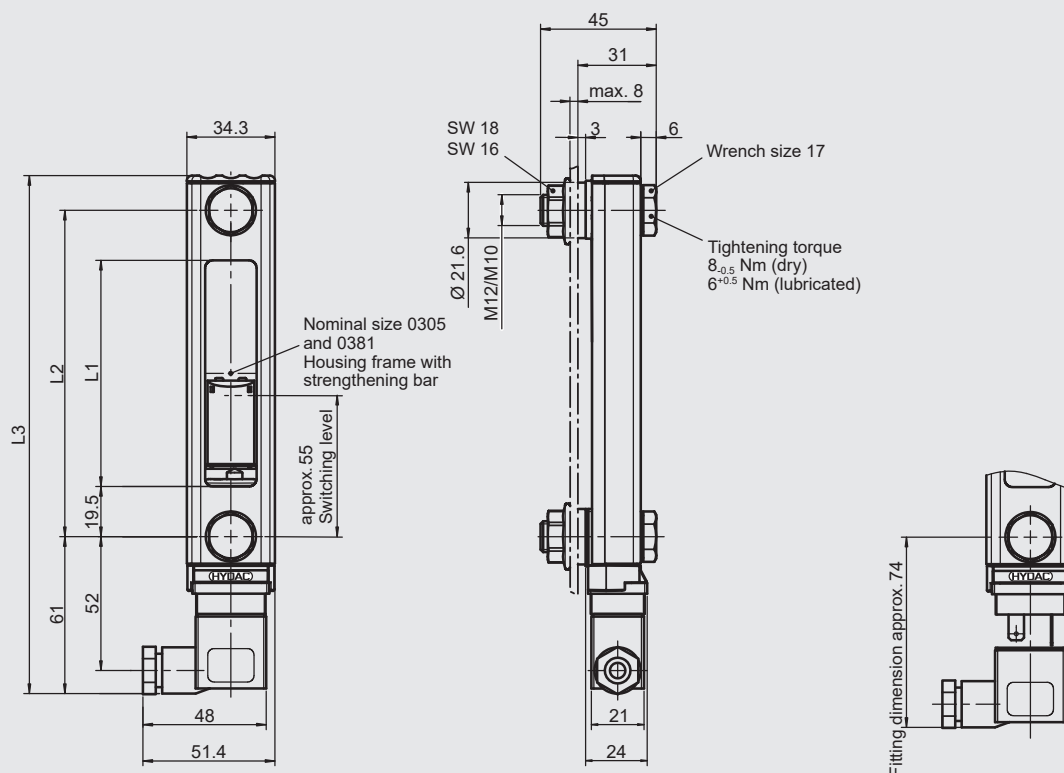
<b>Design of plug connector</b>	3+PE plug connector form A, DIN EN 175301-803 2+PE plug connector form B, DIN EN 175301-803 Round connector M12x1, 4-pole, male, DIN EN 61076-2-101, A-coded
<b>Number of switch points</b>	1
<b>Contact load</b>	max. 8 W
<b>Input voltage</b>	1 to 50 V AC/DC
<b>Switching current</b>	max. 0.2 A
<b>Protection class</b>	IP 65

## ELECTRIC FUNCTIONS

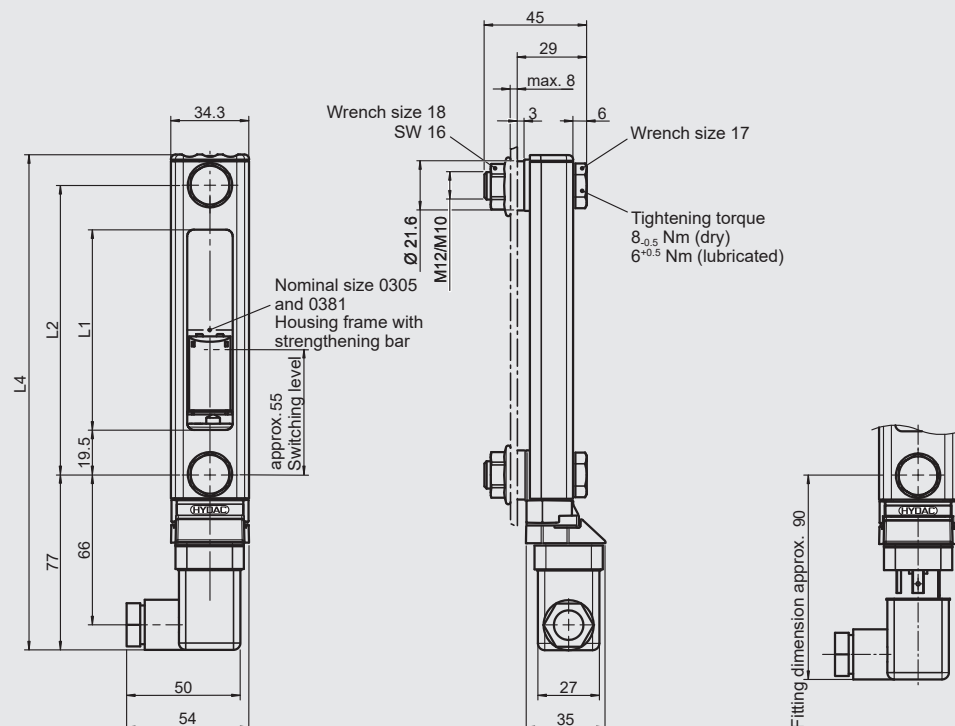
	Type O / normally closed (NC)	Type C / normally open (NO)	Type W / changing contact
2+PE plug connector form B (DIN EN 175301-803)			
3+PE plug connector form A (DIN EN 175301-803)			
Round connector M12x1, 4-pole, male, A-coded (DIN EN 61076-2-101)			

## DIMENSIONS (in mm)

### FSK Plug connector 5 2+PE plug connector form B, DIN EN 175301-803



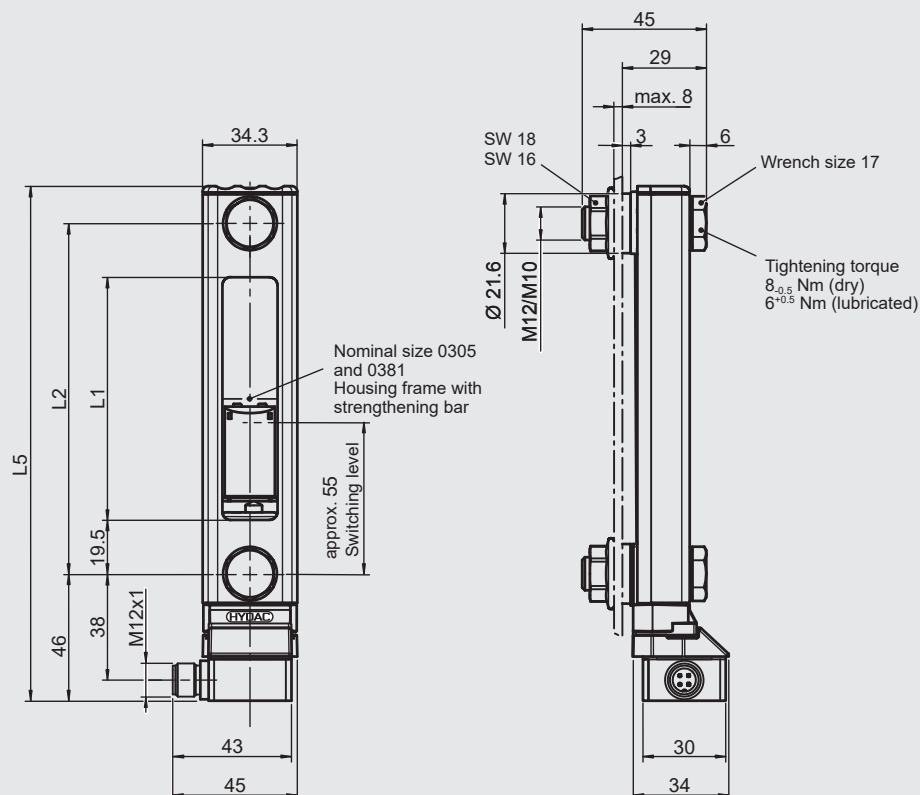
### FSK Plug connector 4 3+PE plug connector form A, DIN EN 175301-803



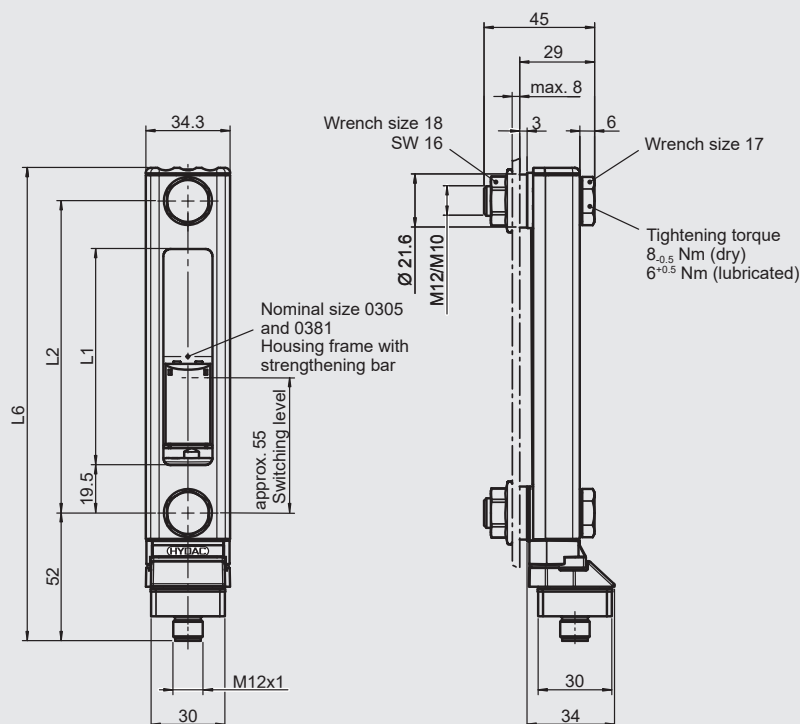
Nominal size ≅ Centre distance of bolts	L1		L2		L3		L4	
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]
0127	88	3.5	127	5.0	202	8.0	218	8.6
0176	137	5.4	176	6.9	251	9.9	267	10.5
0254	215	8.5	254	10.0	329	13.0	345	13.6
0305	266	10.5	305	12.0	380	15.0	396	15.6
0381	342	13.5	381	15.0	456	18.0	472	18.6

## DIMENSIONS (in mm)

**FSK Plug connector 6**  
**Round connector M12x1, 4-pole, DIN EN 61076-2-101, A-coded, male**  
**Connection left, horizontal**



**FSK Plug connector 7**  
**Round connector M12x1, 4-pole, DIN EN 61076-2-101, A-coded, male**  
**Connection bottom, vertical**

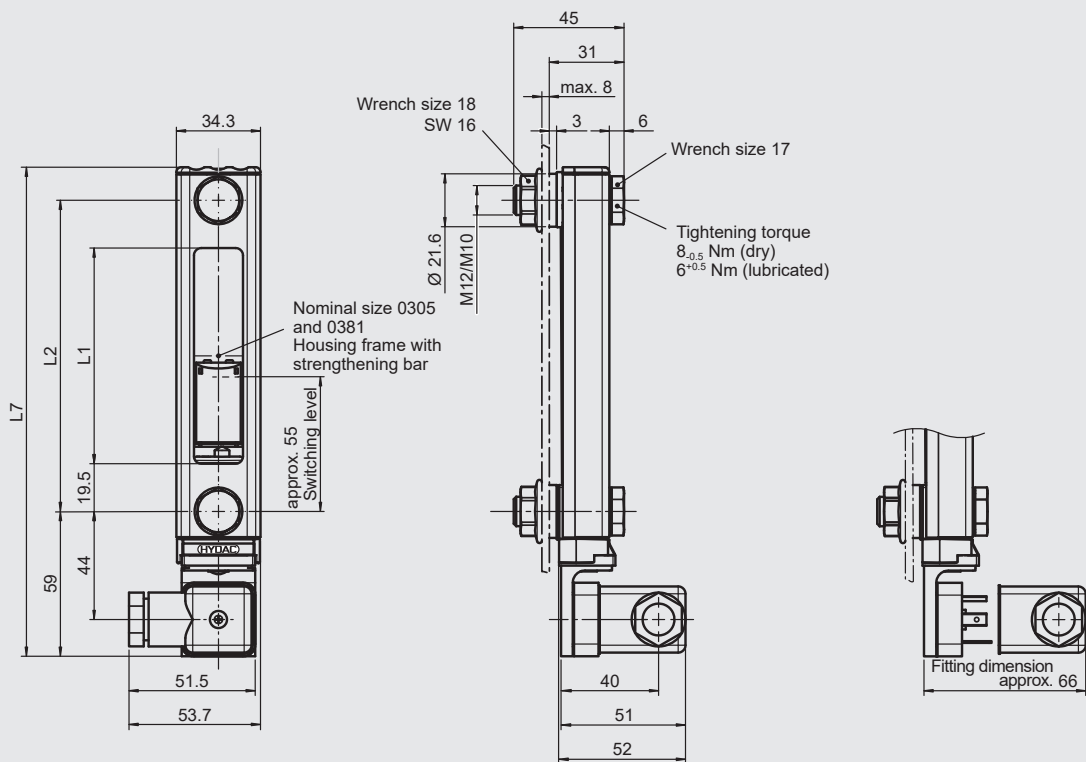


Nominal size ≅ Centre distance of bolts	L1		L2		L5		L6	
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]
0127	88	3.5	127	5.0	187	7.4	193	7.6
0176	137	5.4	176	6.9	236	9.3	242	9.5
0254	215	8.5	254	10.0	314	12.4	320	12.6
0305	266	10.5	305	12.0	365	14.4	371	14.6
0381	342	13.5	381	15.0	441	17.4	447	17.6

DIMENSIONS (in mm)

FSK    Plug connector 8

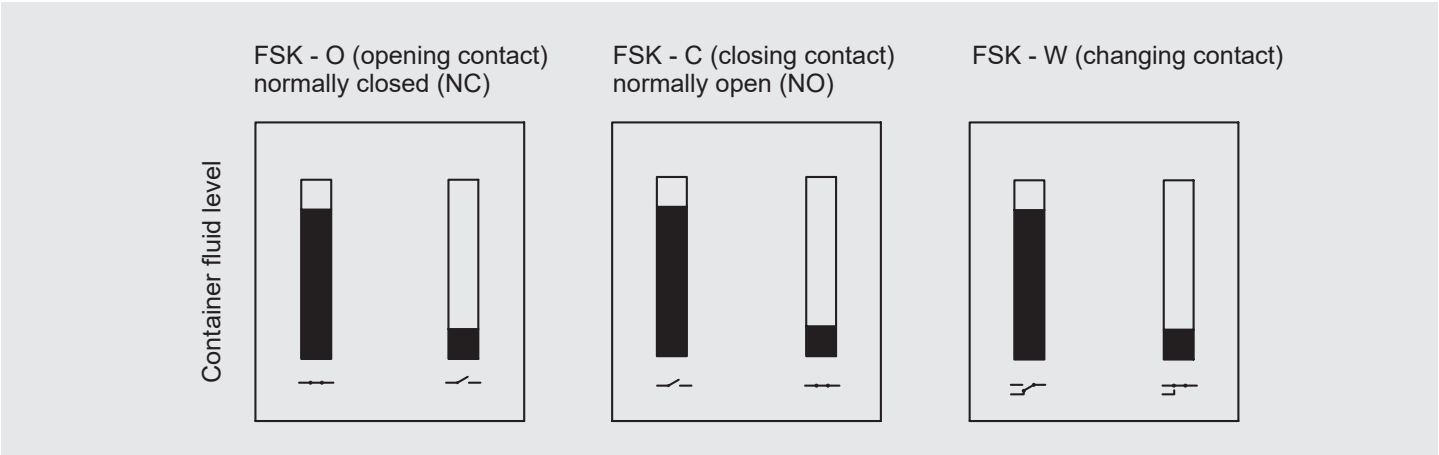
Special connection 3+PE plug connector form A, DIN EN 175301-803



Nominal size ≅ Centre distance of bolts	L1		L2		L7	
	[mm]	[in]	[mm]	[in]	[mm]	[in]
0127	88	3.5	127	5.0	200	7.9
0176	137	5.4	176	6.9	249	9.8
0254	215	8.5	254	10.0	327	12.9
0305	266	10.5	305	12.0	378	14.9
0381	342	13.5	381	15.0	454	17.9

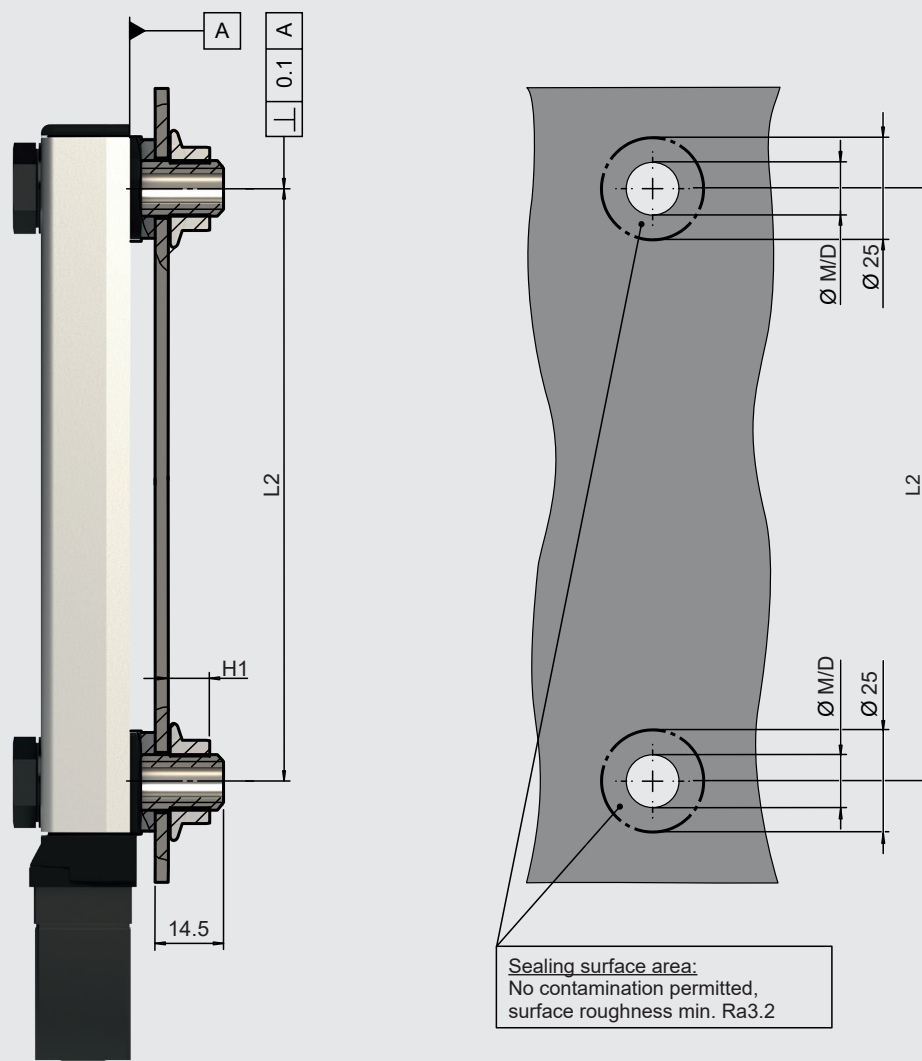
SWITCHING LOGIC

Depending on the container's fluid level, the FSK fluid level sensor with N/C and N/O contacts has the following switching logic:



In each case, the switching logic of the fluid level sensor starts with a full container. With the N/C contact version, the switching contact opens when the fluid drops below the switching level. Correspondingly, with the N/O contact version, the switching contact closes when the fluid drops below the switching level.

## INSTALLATION INFORMATION (dimensions in mm)



Bolt	Nut	Threaded hole ØM	Through-bore ØD	H1	Tightening torque dry / oiled
M12, SW17	M12, SW18	M12 – min. 6 mm deep	13 mm	12 mm	8 <sub>-0.5</sub> Nm / 6 <sup>+0.5</sup> Nm
M10, SW17	M10, SW16	M10 – min. 5 mm deep	11 mm	10 mm	8 <sub>-0.5</sub> Nm / 6 <sup>+0.5</sup> Nm

## SPARE PARTS

Seal kit (4x O-ring, 2x sealing washer)

Nom. size	Size	Material	Order no. = part no.
0127 – 0381	M12	FKM	4566428
0127 – 0381	M10	FKM	4566430

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and/or operating conditions not described please contact the relevant technical department.

The operator is always responsible for determining the product suitability for the specific application. Quantified values for product characteristics are average values for a new product that undergo a time deterioration process.

Subject to technical modifications and errors.

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