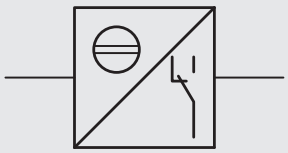
HYDAC INTERNATIONAL

Fluid level sensor
Fixed switch points
FSKF

SYMBOL
Size 0076-0381

Type W – changeover contact



DESCRIPTION
HYDAC fluid level sensors monitor the fluid level in a hydraulic tank. The FSKF uses an electrical signal to communicate both the minimum and the maximum fluid level. The switching signal can be used as a warning to control the liquid level or used directly in a PLC control.

The fluid enters the device through the lower connection bore and lifts up a floater inside a riser tube. The floater is then positioned at the same level as the fluid in the tank. When it reaches a predefined critical level, it actuates a switch.

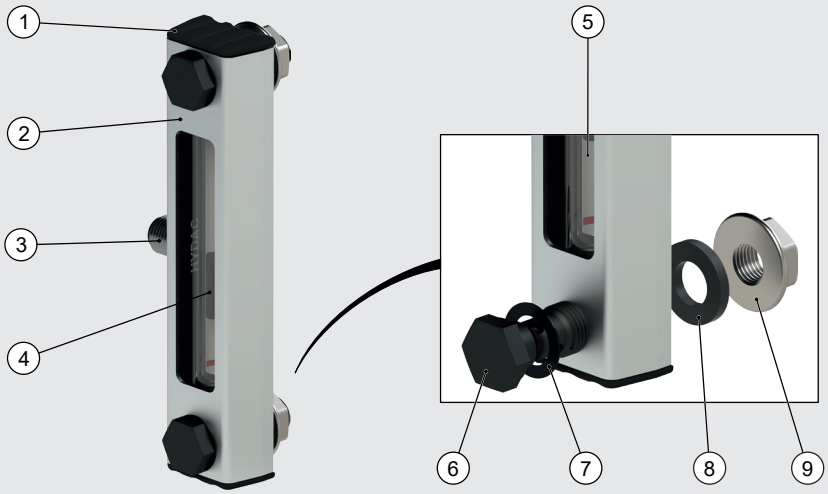
Visual display of the fluid level is also provided in all versions.

PRODUCT FEATURES
- Size 0076 - 0381 mm
  Size 0076: 1 plug connector, 1 switch point
  Size 0127: 1 plug connector, 2 switch points
  Size 0176 to 0381: 2 plug connectors, 2 switch points
- Round riser tube made of glass
- Connectors made from PA or aluminium
- Frame made from aluminium or stainless steel
- Switching contact as changeover contact

CUSTOMER BENEFITS
- Robust design
- Simple standardised installation conditions

Item	Description
(1)	Connection piece (2x)
(2)	Housing frame
(3)	Connection
(4)	Floater
(5)	Round riser tube with contrast pane
(6)	Banjo bolt (2x)
(7)	Washer (2x)
(8)	Seal (2x)
(9)	Nut (2x)

DESIGN



Notice
Part may differ from illustration.

Model code
(also order example)

FSKF - 0127 - 0 . 2W - 11000 / O- / M12 . 000 2SP

Designation
FSKF = fluid level sensor with fixed switch points

Size NG (≙ centre distance of bolts in mm)
0076, 0127, 0176, 0254, 0305, 0381

Sealing material
0 = NBR (Perbunan)

Plug connector form
0 = round plug connector M8x1, 3-pole, male; DIN EN 61076-2-104; connection on frame side
1 = round plug connector M12x1, 4-pole, male; DIN EN 61076-2-101, A-coded; connection on frame side
2 = round plug connector M12x1, 5-pole, male; DIN EN 61076-2-101, A-coded; connection on frame side
Notice: plug connector forms 0 and 1 for size 0076, plug connector form 2 for sizes 0127 - 0381

Switching function
W = changeover contact (opens and closes at switching level)

Tube geometry, materials
Tube geometry
1 = round tube Ø19

Material of tube
1 = glass

Material of connection pieces
0 = PA (seal = seal disc)
1 = aluminium (seal = seal disc)
2 = aluminium (seal = quad ring)
3 = aluminium (seal = O-ring)

Material of frame
00 = aluminium
03 = stainless steel

Options
Contrast pane
O = no contrast pane
H = contrast pane HYDAC
N = contrast pane neutral

Additional thermal function
- = no additional function (standard)
FF = preparation for a probe thermometer
FT100 = probe thermometer 100 mm
FT200 = probe thermometer 200 mm
FT300 = probe thermometer 300 mm
TS60-O = temperature switch NC, nominal temperature 60 °C
TS70-O = temperature switch NC, nominal temperature 70 °C
TS80-O = temperature switch NC, nominal temperature 80 °C
TFP100 = temperature sensor -40 °C to +125 °C
TFP1000 = temperature sensor -40 °C to +125 °C
Notice: It is not possible to combine temperature switch TS with probe thermometer FT.

Body and ports
M12 = M12 (standard)
M10 = M10 (not for TS and TFP)

Connection elements
Material of bolts/nuts
0 = bolt and (as applicable) nut steel (surface protection galvanised, chromium(VI)-free)
2 = bolt and (as applicable) nut stainless steel (only M12)

Seal
0 = with seal
1 = without seal

Securing nuts
0 = with securing nuts
1 = without securing nuts

Number of switch points
1SP = 1 switch point (only size 0076)
2SP = 2 switch points (1x minimum, 1x maximum) (size 0127 and above)

NOTICE

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

If you have any questions, please consult with your Technical Sales contact.

TECHNICAL DATA

Connection	Banjo bolt M12x45 or M10x45					
Type of connection	Threaded hole (M12/M10) or through-bore (Ø13/Ø11)					
Installation position	Vertical on housing wall					
Weight	Size 0076	Size 0127	Size 0176	Size 0254	Size 0305	Size 0381
Plug connector form 0	0.18 kg	-	-	-	-	-
Plug connector form 1	0.22 kg	-	-	-	-	-
Plug connector form 2	-	0.29 kg	0.32 kg	0.37 kg	0.41 kg	0.46 kg
Version of riser tube	Round tube Ø19					
Media	Mineral oil to DIN 51524 Part 1 and 2, water, oil, emulsions, synthetic fluids (other media on request)					
Viscosity of medium	max. 2000 mm²/s					
Max. operating pressure	0.5 bar (higher pressures on request)					
Direction of flow	User-definable					
Ambient temperature	-20 °C to +95 °C					
Temperature of operating fluid	-20 °C to +95 °C (with thermometer -10 °C to +80 °C)					
Material: Connection pieces	PA or aluminium					
Riser tube	Glass					
Housing frame	Aluminium or stainless steel (steel on request)					
Seal	NBR					
Bolts, nuts	Steel galvanised or stainless steel					
Accessories	Shut-off elements (ABV, ABK, ABS), protective cover					

NOTICE

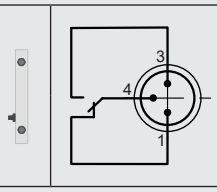
To ensure correct function, the specifications for pressure, viscosity and temperature must be observed. For perfect function at high temperatures, it must be ensured that the tightening torques of the bolts are not changed following the initial installation. In the event of inductive or capacitive loads, suitable protective circuitry must be implemented.

ELECTRICAL CHARACTERISTICS

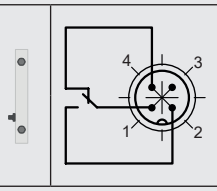
Version of plug connector	Round plug connector M8x1, 3-pole, male; DIN EN 61076-2-104 Round plug connector M12x1, 4-pole, male; DIN EN 61076-2-101, A-coded Round plug connector M12x1, 5-pole, male; DIN EN 61076-2-101, A-coded
Switching function	Type W / changeover contact (opens and closes at switching level)
Number of switch points	1 or 2
Contact load	max. 8 W
Input voltage	1 - 50 V AC/DC
Switching current	max. 0.2 A
Protection type	IP 65

CONTACT ASSIGNMENT

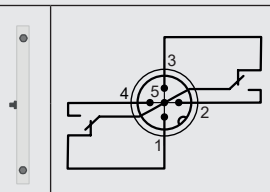
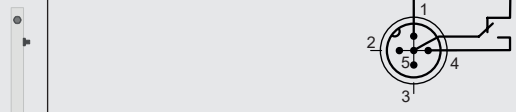
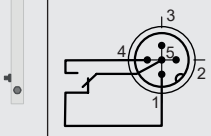
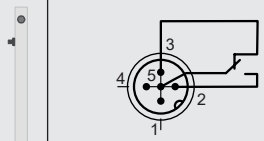
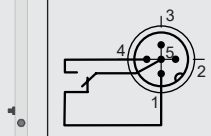
Round plug connector M8x1, 3-pole, male; DIN EN 61076-2-104

		Float setting	Contact assignment
Size 0076		Maximum	1–4 NC
		Minimum	3–4 NO

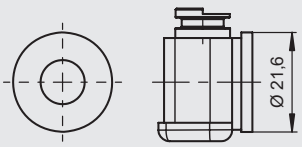
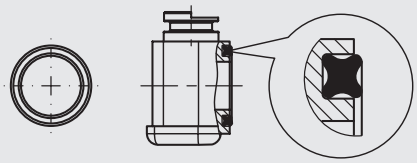
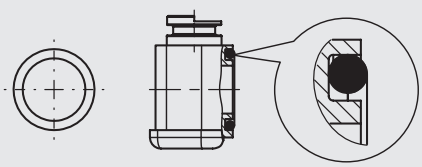
Round plug connector M12x1, 4-pole, male; DIN EN 61076-2-101, A-coded

		Float setting	Contact assignment
Size 0076		Maximum	1–4 NC
		Minimum	1–2 NO

Round plug connector M12x1, 5-pole, male; DIN EN 61076-2-101, A-coded

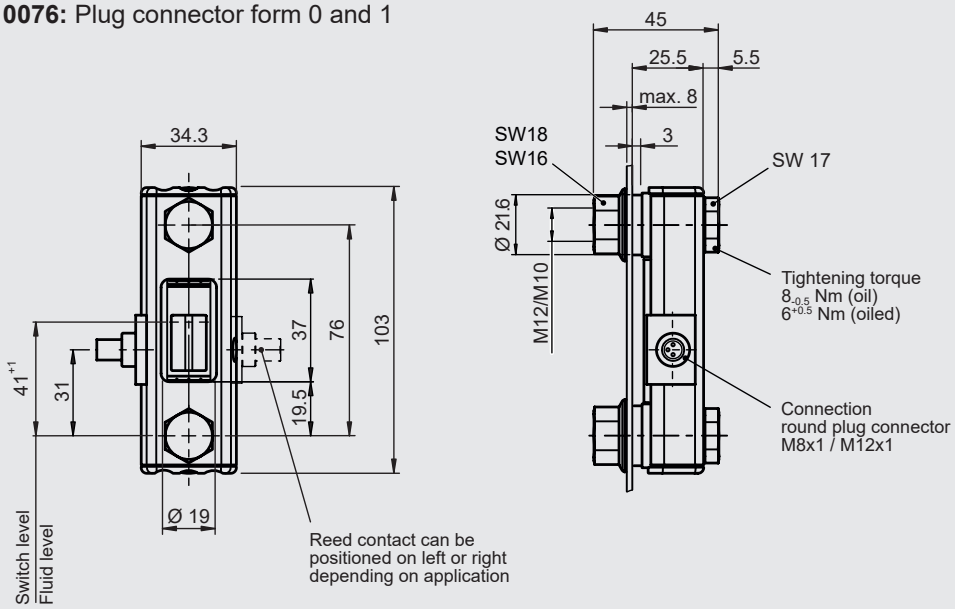
		Float setting	Contact assignment	
Size 0127		Maximum	5–2 NO	5–3 NC
		Minimum	5–4 NO	5–1 NC
Size 0176		Maximum	5–4 NO	5–1 NC
		Minimum	5–4 NO	5–1 NC
Size 0254–0381		Maximum	5–2 NO	5–3 NC
		Minimum	5–4 NO	5–1 NC

SEAL VARIANTS for tank connection

Gasket (standard)	Quad ring (only for alum. connection pieces)	O-ring (only for alum. connection pieces)
		

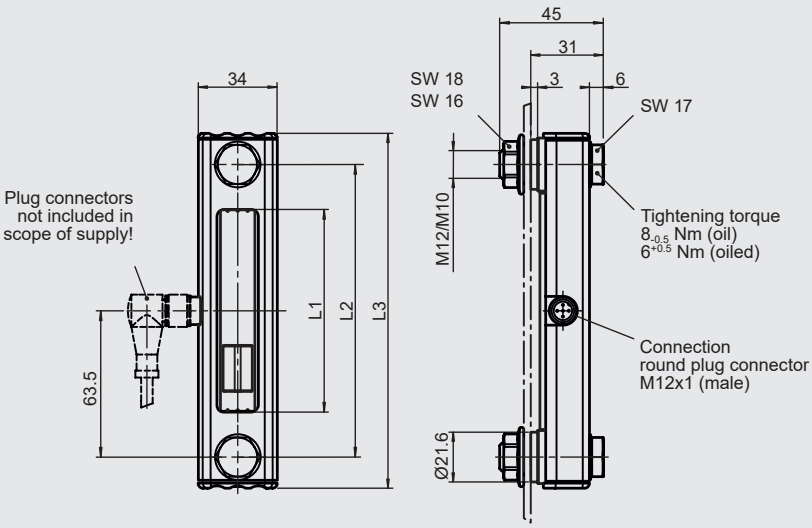
DIMENSIONS (measurements in mm)

FSKF 0076: Plug connector form 0 and 1

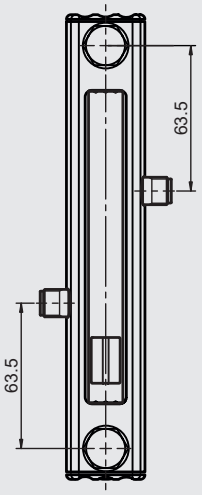


FSKF 0127–0381: Plug connector form 2

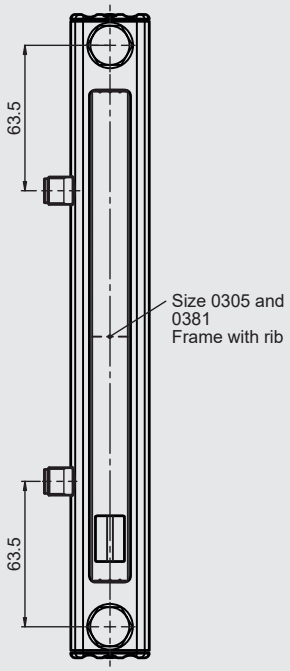
Size 0127



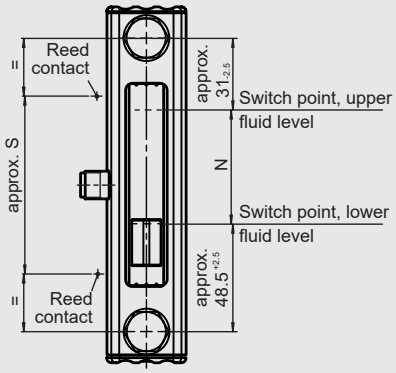
Size 0176



Size 0254–0381



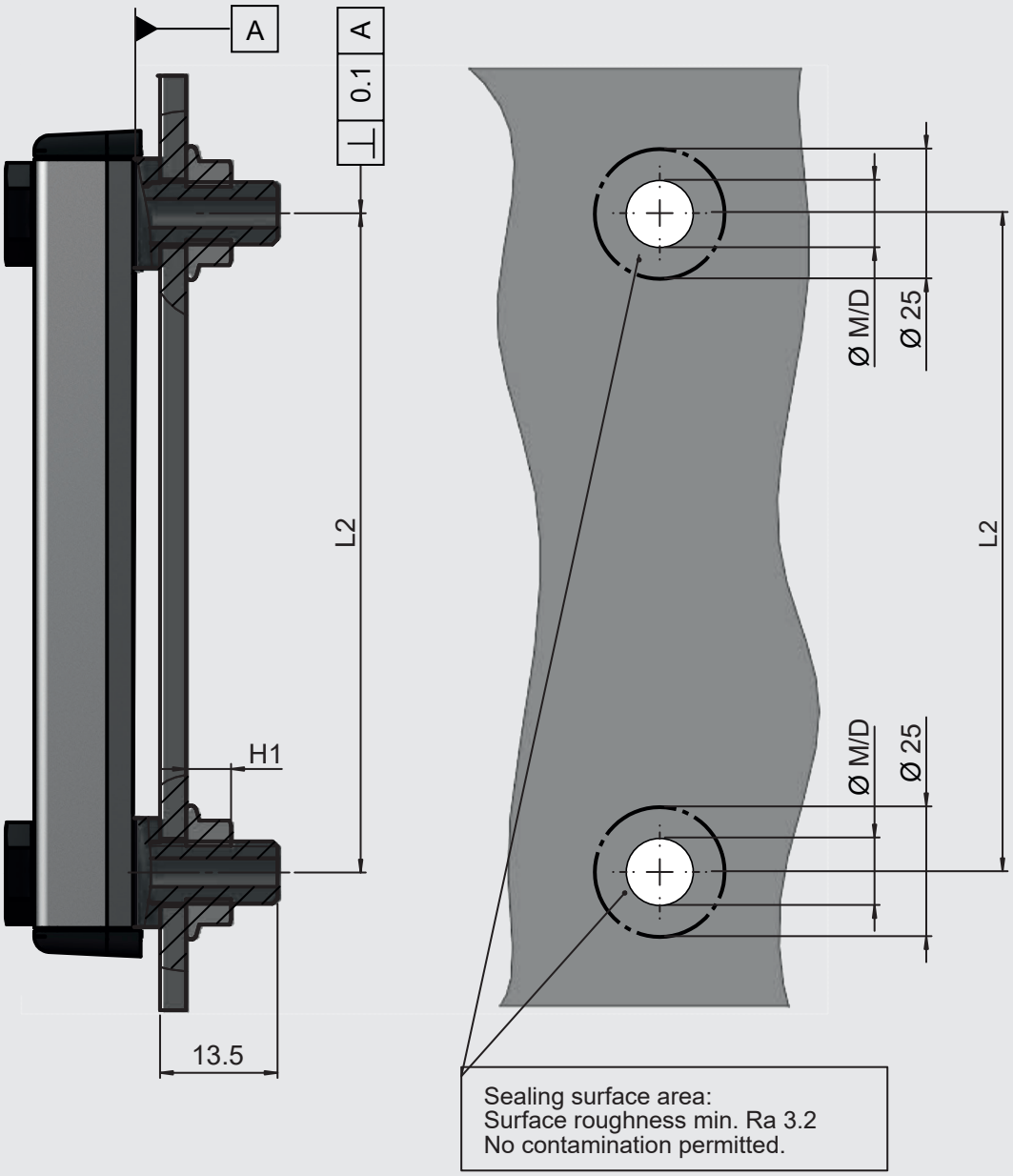
View of switch level



NG = nominal size
SW = spanner width

Size ≙ centre distance of bolts	**L1**		**L2**		**L3**		**N**		**Approx. S**	
	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]
0127	88	3.5	127	5	159	6.3	47.5	1.9	77	3
0176	137	5.4	176	7	208	8.2	96.5	3.8	126	5
0254	215	8.5	254	10	286	11.3	174.5	6.9	204	8
0305	266	10.5	305	12	274	10.8	225.5	8.9	255	10
0381	342	13.5	381	15	413	16.3	301.5	11.9	331	13

INSTALLATION INFORMATION (measurements in mm)



Screw	Nut	Threaded hole ØM	Through-bore ØD	H1	Tightening torque, bolt Dry/oiled
M12, SW17	M12, SW18	M12 – min. 6 mm deep	13 mm	12 mm	$8_{-0.5}$ Nm / $6^{+0.5}$ Nm
M10, SW17	M10, SW16	M10 – min. 5 mm deep	11 mm	10 mm	$8_{-0.5}$ Nm / $6^{+0.5}$ Nm

SPARE PARTS

Seal kit (4x O-ring, 2x seal disc)

Nom. size	Size	Material	Order no. = part no.
0076 - 0381	M12	NBR	4566427
0076 - 0381	M10	NBR	4566429

COMMENT

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

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

The operator is always responsible for determining the product suitability for the specific application. Figures given for product characteristics are average values for a new product which are subject to an ageing process.

Subject to technical modifications and errors.

HYDAC ACCESSORIES GMBH
Hirschbachstr. 2
66280 Sulzbach/Saar
Germany
Phone: +49 6897 509-01
E-mail: accessories@hydac.com
Internet: www.hydac.com