

Electronic relative and absolute pressure switch type 615

Pressure range
-1 ... 0 – 600 bar

The type 615 electronic absolute and relative pressure switches measure pressure by means of highly resistant ceramic elements. An open collector (transistor) output accommodates loads up to 100 mA. Either an N/C or N/O contact may be used, and the upper and lower switching point. Can be freely selected between 5% and 100% fs

Various electrical and pressure connections are available to suit given applications.

- Ideal for frequent switching cycles
- Long service life and long-term stability due to lack of moving parts (unlike mechanical pressure switches)
- Very low susceptibility to temperature
- Modular system for easy implementation of individual applications



Technical overview

Pressure range

Relative	-1 ... 600 bar
Absolute	0 ... 16 bar

Operating conditions

Medium		Liquids and gases
Temperature	Medium / ambient	-15 ... +80 °C ¹⁾
	Storage	-40 ... +80 °C
Tolerable overload		2 x fs (max. 1000 bar)
Repture pressure		3 x fs (max. 1200 bar)
Mechanical rating		Resistant to vibration up to 15 g

Materials in contact with medium

Pressure connection	Inox 1.4305 ²⁾
Sensor	Ceramic Al ₂ O ₃ (96%)
Sealing material	FPM, EPDM, NBR, MVQ

Electrical overview

Output	Open collector switch output for max. 100 mA at maximum supply voltage.	
Power supply	10 ... 33 VDC	24 VAC ± 15%
Polarity reversal protection	Short circuit proof and protected against polarity reversal. Each connection is protected against crossover up to max. supply voltage.	
Accommodates loads	max. 100 mA	

Dynamic response

Response time	< 5 ms
Load cycle	< 50 Hz

Protection standard

With connector	IP 65
With cable	IP 67 or IP 68

Accuracy of switching point adjustments

< 1% fs

Calibration of switching points (Please state on order)

The upper and lower switching point can be freely selected between 5 and 100 % fs.
 Recommendation spacing between upper and lower switching points: > 2 % fs (factory-set at 5 and 100 % unless switching point is specified).

Electrical connection

Connector DIN EN 175301-803-A
Connector DIN EN 60130-9
Cable 1.5 m PG7

Pressure connection

Inside thread	G 1/4
	G 1/2
Outside thread	G 1/4
	G 1/8
	7/16 - 20 UNF
	1/2 - 14 NPT
	1/4 - 18 NPT

Mounting instruction

Installation arrangement	Unrestricted	Recommend: Pressure connection downwards
Mounting		Bracket (accessories)

Tests / Admissions

Electromagnetic compatibility	CE conformity acc. EN 61326-2-3
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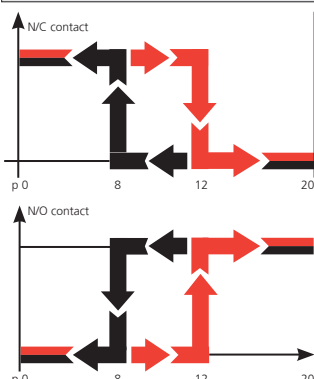
Weight

With inside thread	G 1/4, 7/16 -20 UNF	~ 200 g
	G 1/8, 7/16 -20 UNF	~ 212 g
With outside thread	G 1/4, 1/4 -18 NPT	~ 245 g
	G 1/2, 1/2 -18 NPT	~ 280 g

Packaging

Single packaging in cardboard

Function



N/C contact: When pressure is applied ($p_0 \rightarrow p_{max}$) the switch will disconnect the applied load as soon as the upper switching point is reached. As the pressure falls ($p_{max} \rightarrow p_0$) the switch will connect the load as soon as the lower switching point is reached.

N/O contact: When pressure is applied ($p_0 \rightarrow p_{max}$) the switch will connect the applied load as soon as the upper switching point is reached. With a fall in pressure ($p_{max} \rightarrow p_0$) the switch will disconnect the load as soon as the lower switching point is reached.

Example: p_s 20 bar
 Upper switching point 12 bar
 Lower switching point 8 bar
 max. switch last 100 mA

¹⁾ -40 ... +80 °C on request

²⁾ PVDF on request

Accuracy

Parameter		Unit	
Tolerance zero point	max.	% fs	± 0.3
Tolerance full scale	max.	% fs	± 0.3
Resolution		% fs	0.1
Total of linearity, hysteresis and repeatability	max.	% fs	± 0.3
Long term stability acc. to DIN EN 60770		% fs	± 0.5
TC zero point ²⁾	max.	% fs/10K	± 0.3
TC sensitivity ²⁾	max.	% fs/10K	± 0.15

Test conditions: 25 °C, 45% RH, Power supply 24 VDC
TC z.p. / TC s. -15 ... +80 °C

Order Code Selection Table

615. X X X X X X X X X X

Pressure mode	Relative		9																	
	Absolute		5																	
Pressure range ²⁾	-1 ... + 0 bar		9	0	0															
	-1 ... + 0.6 bar		9	0	1															
	-1 ... + 1 bar		9	0	2															
	-1 ... + 1.5 bar		9	0	3															
	-1 ... + 3 bar		9	0	4															
	-1 ... + 5 bar		9	0	5															
	-1 ... + 9 bar		9	0	6															
	0 ... + 0.3 bar	(absolute 0.1 ... 0.3 bar)		2	6															
	0 ... + 0.6 bar	(absolute 0.1 ... 0.6 bar)		1	0															
	0 ... + 1 bar			1	1															
	0 ... + 1.6 bar			1	2															
	0 ... + 2.5 bar			1	4															
	0 ... + 4 bar			1	5															
	0 ... + 6 bar			1	7															
	0 ... + 10 bar			3	0															
	0 ... + 16 bar			3	1															
	0 ... + 25 bar			9	3	2														
	0 ... + 40 bar			9	3	3														
	0 ... + 60 bar			9	4	0														
	0 ... + 100 bar			9	4	1														
0 ... + 160 bar			9	4	2															
0 ... + 250 bar			9	4	3															
0 ... + 400 bar	FPM sealing only		9	5	4	0														
0 ... + 600 bar	FPM sealing only		9	5	5	0														
▲ Bei diesem Druck Endwert Signal																				
Sealing material ²⁾	FPM	Fluoro elastomer																		0
	EPDM	Ethylene propylene																		1
	NBR	Nitrile butadiene																		2
	MVQ	Silicone polymer																		3
Calibration of switching points	Factory set																			0
	Not factory set	(IP 65 only)																		1
Switch contact	Contact N/O	NPN non-floating																		0
	Contact N/C	NPN non-floating																		1
	Contact N/O	PNP non-floating																		2
	Contact N/C	PNP non-floating																		3
Electrical connection ³⁾	Cable 1.5 m, PG7	IP 65																		0
	Cable 1.5 m, PG7	IP 67																		2
	Connector DIN EN 175301-803-A																			1
	Connector DIN EN 60130-9																			3
Pressure connection ⁵⁾	Inside thread	G ¼	Fig. 1 (no pressure tip orifice possible)																	0
	Outside thread	G ¼ (... 250 bar)	Fig. 2 sealed an front																	1
	Outside thread	G ¼	Fig. 2 sealed at front																	2
	Outside thread	G ½	Fig. 3 sealed at front																	3
	Outside thread	7/16 - 20 UNF	Fig. 4																	4
	Outside thread	¼ - 18 NPT	Fig. 5																	5
	Outside thread	½ - 14 NPT	Fig. 6																	6
	Outside thread	G ¼ (... 250 bar)	Fig. 7 sealed at back																	7
	Outside thread	G ¼	Fig. 7 sealed at back																	8
Outside thread	G ½	Fig. 8 sealed at back																	9	
Case material	Stainless steel																			1
	Stainless steel with pressure tip orifice (standard from 100 bar)																			3
	Stainless steel, free of oil and grease (FPM seal only, not compound-filled)																			5
Calibration (optional)	Indicate W and state on order (e.g.: W15/12bar)																			W

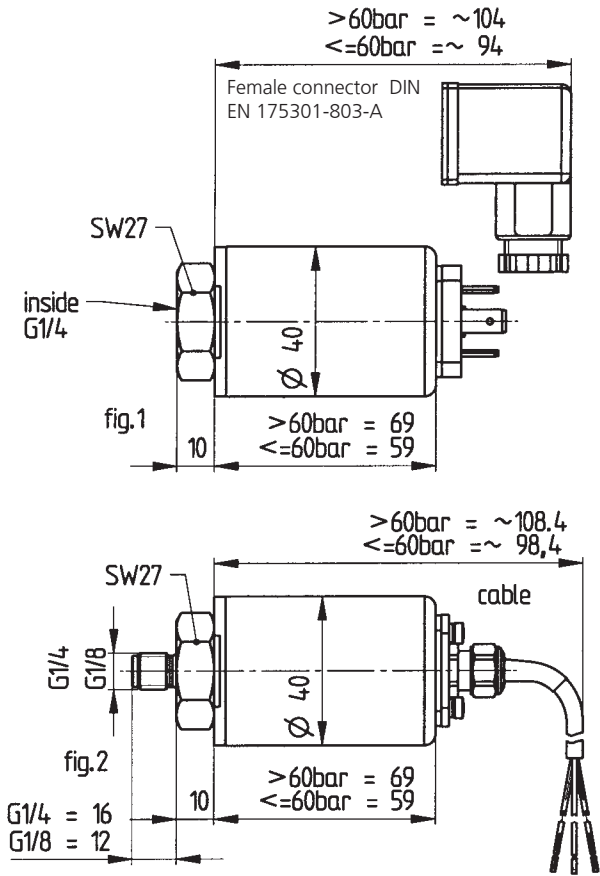
Accessories ⁶⁾

	Order number
Female connector DIN EN 175301-803-A with seal (IP 65 when installed and latched)	103510
Female connector DIN EN 175301-803-A with LED display	103528
Female connector DIN EN 60130-9	103524
Mounting bracket	104954
Calibration certificate	104551

¹⁾ TC = Temperature coefficient
⁴⁾ Delivery without female connector

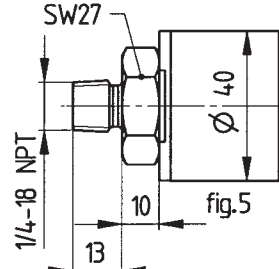
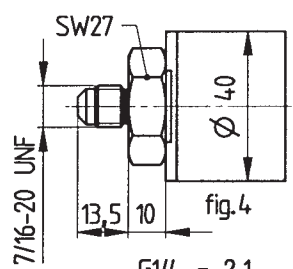
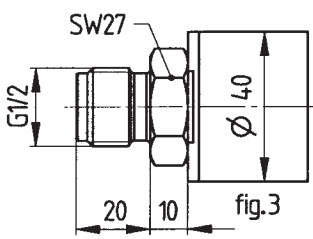
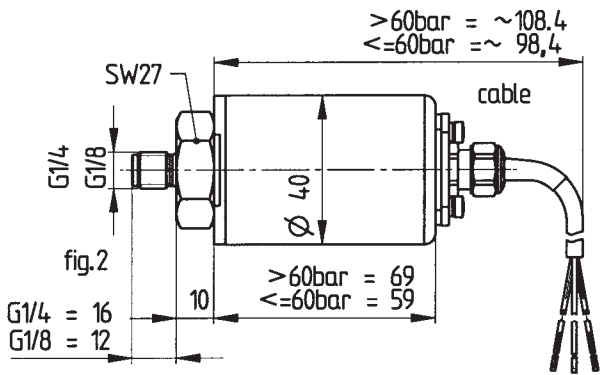
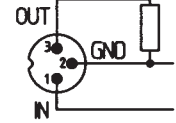
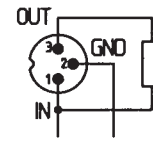
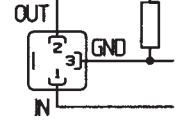
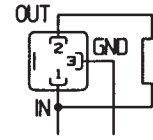
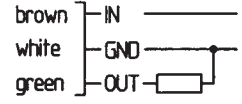
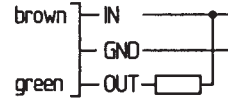
²⁾ Other pressure range on request
⁵⁾ Other pressure connection on request

³⁾ Other sealing material on request
⁶⁾ Accessories supplied loose

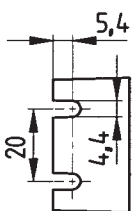
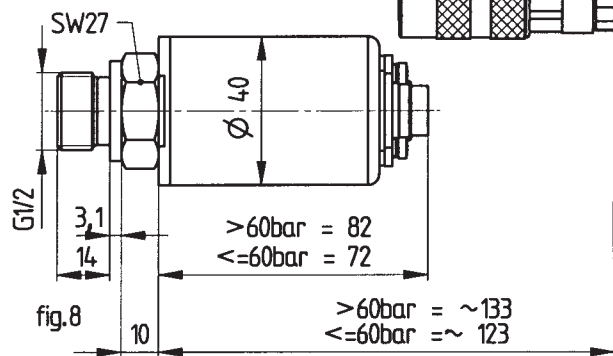
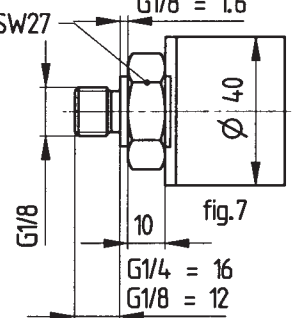
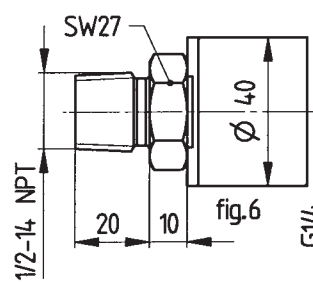


NPN

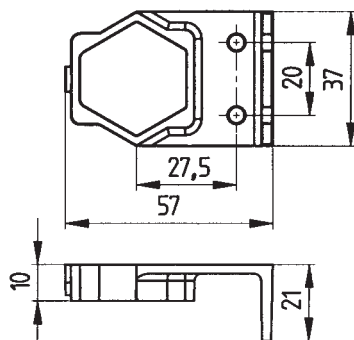
PNP



Female connector
DIN EN 60130-9



mounting bracket



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