

Electronic Pressure Switch

ATM/GR



CUSTOMER BENEFITS

- 2 limit switches adjustable over 0 - 100% of the pressure range
- Reverse polarity and short circuit protected
- Fast customization thanks to modular product design
- Pressure switch and analog transmitter in one device
- Demountable electrical connector option allow adjustment of zero and span setting in the field
- Stainless steel and titanium version for use in acidic or otherwise aggressive media

Technical Specifications

PRESSURE MEASURING RANGE (BAR)

	0.1 ... 0.5, (1)	> 0.5 ... 2	> 2 ... 25
Overpressure	3 bar	3 x FS (≥ 3 bar)	3 x FS
Burst pressure, (5)	> 200 bar	> 200 bar	> 200 bar
Accuracy, (6) (\pm % FS)	$\leq 0.5 / \leq 0.25$	$\leq 0.5 / \leq 0.25 / \leq 0.1$	$\leq 0.5 / \leq 0.25 / \leq 0.1$
Thermal shift, (\pm % FS/ $^{\circ}$ C)			
Zero point 0 ... 70 $^{\circ}$ C	≤ 0.06	≤ 0.03	≤ 0.015
Zero point -25 ... 85 $^{\circ}$ C	≤ 0.08	≤ 0.04	≤ 0.02
Span 0 ... 70 $^{\circ}$ C	≤ 0.015	≤ 0.015	≤ 0.015
Span -25 ... 85 $^{\circ}$ C	≤ 0.02	≤ 0.02	≤ 0.02
Long term stability, (7)	< 0.5% FS / < 4 mbar	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

	> 25 ... 600, (2), (3), (4)	> 600 ... 1000, (2)
Overpressure	3 x FS ($\leq 850 / \leq 1500$ bar)	1500 bar
Burst pressure, (5)	> 850 / ≤ 1500 bar	> 1500 bar
Accuracy, (6) (\pm % FS)	$\leq 0.5 / \leq 0.25 / \leq 0.1$	$\leq 1 / \leq 0.5 / \leq 0.25$
Thermal shift, (\pm % FS/ $^{\circ}$ C)		
Zero point 0 ... 70 $^{\circ}$ C	≤ 0.015	≤ 0.015
Zero point -25 ... 85 $^{\circ}$ C	≤ 0.02	≤ 0.02
Span 0 ... 70 $^{\circ}$ C	≤ 0.015	≤ 0.015
Span -25 ... 85 $^{\circ}$ C	≤ 0.02	≤ 0.02
Long term stability, (7)	< 0.1% FS / < 0.2% FS	< 0.1% FS / < 0.2% FS

(1) 50 mbar on request

(2) Titanium available ≤ 400 bar (burst pressure > 550 bar)

(3) Process connection frontal and flush diaphragm available ≤ 600 bar

(4) Overpressure and burst pressure 1500 bar (stainless steel) optional

(5) Transducer

(6) Zero based accuracy according to DIN-16086, incl. hysteresis and repeatability at ambient temperature

(7) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

TEMPERATURE RANGE

Operating temperature	-25 ... 85 $^{\circ}$ C
Process temperatur	-40 ... 150 $^{\circ}$ C
Storage temperatur	-25 ... 85 $^{\circ}$ C

ELECTRICAL SPECIFICATIONS

Analog output	0 ... 20 mA / 4 ... 20 mA		
Power supply	10 ... 33 VDC		
Current consumption, (1)			
Circuit diagram			
Load resistance			
Switches			
Number of switches	2 (independent)		
Type	SPDT (Relais)		
Adjustment	Potentiometer		
Setting range	0 ... 100% FS		
Switching voltage, (max.)	48 VDC		
Switching current, (max.)	2 A		
Switching power, (max.)	60 W		
Switching functions			
Description	Pressure is below both set points: both relays are selected.	Pressure is over the set point 1 (relay 1 is released), but below the set point 2 (relay 2 is selected).	Pressure is over both set points: both relays are released or the supply voltage is missing.

(1) Both switches activated, without current output

PHYSICAL SPECIFICATIONS

Materials	
Transducer	Stainless steel (316L / 1.4435), titanium (Gr. 2), (1)
Housing	Stainless steel (316L / 1.4404), titanium (Gr. 2)
Seals	Viton (standard), EPDM, Kalrez
Cable	PVC

(1) Hastelloy (C-276) on request

Equipment

OVERVIEW

10.00.0091	
10.00.0091	Accessories overview

Additional documents

OPERATING AND SAFETY INSTRUCTIONS

Article number	
10.88.0092	DMM029

Ordering information

	X.	XXXX.	XXXX.	XX.	XXX
Type					
ATM/GR					27
Pressure type					
Gauge					1
Absolute (vacuum)					2
Sealed gauge					3
Pressure measuring range					
50 mbar ... <100 mbar				XX	
100 mbar ... 600 bar				XX	
> 600 bar				XX	
Negative ranges, offset, special adjustment					99
Process connection					
G 1/4 F (Fig. 1)					00
1/4 NPT M					10
1/2 NPT M (Fig. 8)					19
G 1/4 M (Fig. 2)					11
G 1/4 flush diaphragm					21
G 1/4 M, manometer DIN 16288 (Fig. 3)					12
G 1/2 M, (Fig. 4)					13
G 1/2 M Hastelloy C-276					98
G 1/2 M, frontal diaphragm (Fig. 5), (4)					14
G 1/2 M, frontal diaphragm					37
G 1/2 M, flush diaphragm (Fig. 6), (4)					15
G 1/2 M, manometer DIN 16288 (Fig. 7)					16
G 1/2 male with bore Ø 14 mm					17
Customized					99
Electrical connection					
M16 (Binder 723), 12 pins, IP 67 (Fig. 10), (5)					45
PVC cable, grey, IP 67 (Fig. 11), (6)					10
Customized					99
Output signal					
0...20 mA, 2 relays					14
4...20 mA, 2 relays					15
Customized					
Accuracy					
≤ 600 bar ≤ ± 0.5 % FS					0
≤ 600 bar ≤ ± 0.25 % FS					1
≤ 600 bar ± 0.1 % FS					2
> 600 bar ≤ ± 1 % FS					5
> 600 bar ≤ ± 0.5 % FS					0
> 600 bar ≤ ± 0.25 % FS					1
Temperature range					
0 ... 70°C compensated process temperature: -25 ... 100°C			(allowed		0
-25 ... 100°C compensated (allowed process temperature: -25 ... 100°C)					7
-25 ... 85°C compensated (allowed process temperature: -25 ... 100°C)					1

-25 ... 85°C compensated (allowed process temperature: -25 ... 150°C) with cooling fins		2
-20 ... 100°C compensated (allowed process temperature: -25 ... 150°C) with cooling fins		6
Customized		9
Option 1		
Throttle, (7)		A
Special oil filling: Anderol Food food applications	(for	G
Special oil filling: AS100 (suitable for meda temp -55...150°C)		J
Special oil filling: PAO4 (silicone free)		Q
Option 2		
Electronics packed in gel: Gauge pressure		C
Electronics packed in gel: Absolute pressure		D
Option 3		
Version titanium		K
Seals: Viton (standard)		U
Seals: EPDM		S
Seals: Kalrez		T

(4) Process connection available ≤ 600 bar

(5) Cable socket connector not included

(6) Please specify the required cable length and medium

(7) Only with pressure connection Fig. 2, Fig. 3, Fig. 4, Fig. 7 and Fig. 8

Technical drawings

Pressure connection

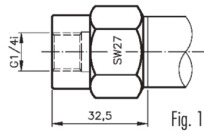


Fig. 1

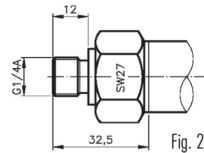


Fig. 2

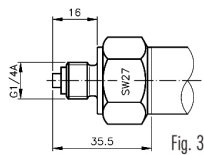


Fig. 3

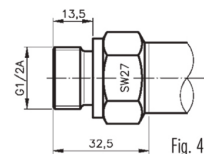


Fig. 4

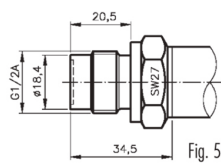


Fig. 5

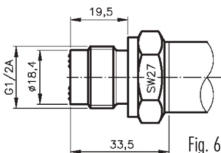


Fig. 6

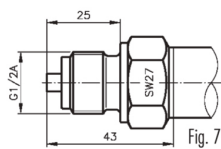


Fig. 7

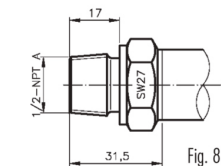
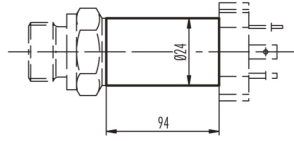


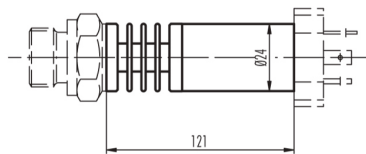
Fig. 8

Dimensions

Version for media temperature up to 100°C



Version for media temperature >100°C up to 150°C



Electrical connection

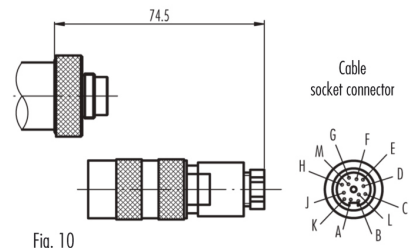


Fig. 10

Cable socket connector

Pin	
A	+Vin
L	Pout
B	GND
E	NC1
D	COM1
F	NO1
H	NC2
G	COM2
J	NO2

Colour	
white	+Vin
brown	Pout
yellow	GND
green	NC1
orange	COM1
violet	NO1
red	NC2
blue	COM2
black	NO2

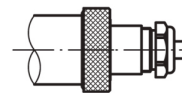
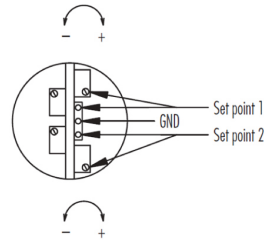


Fig. 11



Connector side

Specifications may change without notice.

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