

Pressure Transducer for Absolute and Relative Pressure Measurement



- Parts in contact with measuring medium and body are CrNi steel
- Measuring ranges from 0 ... 1 bar to 0 ... 1000 bar
- Output signal 4 ... 20 mA or 0 ... 10 V_{DC}
- Measuring medium temperature -30 ... + 100 °C
- Connector or cable output
- Protection class IP65 to IP67
- Power supply from 10 ... 32 V_{DC}
- Absolute pressure and relative pressure measurement
- Vacuum proof
- Particularly suitable for machine building and shipbuilding
- Certificated for shipbuilding and off-shore from GL (4 - 20 mA type only)
- Cable plug for connection variant acc. EN175301-803 included in delivery



Pressure Transducer PAX8



Pressure Transducer PAG8.../PAA8...

Range of Application

These devices are distinguished by a high degree of reliability, rugged and compact construction as well as flexibility in adapting to different types of measuring jobs. Typical applications are e. g. pressure monitoring on Diesel engines, pumps, filters, compressors, hydraulic and pneumatic, open-loop and closed-loop control systems in machine building and shipbuilding. Versions are available for relative pressure (PAG8 type) and absolute pressure (PAA8 type). Their technical specifications and attractive price level make these devices an excellent choice for applications where reliability and economy are prime considerations.

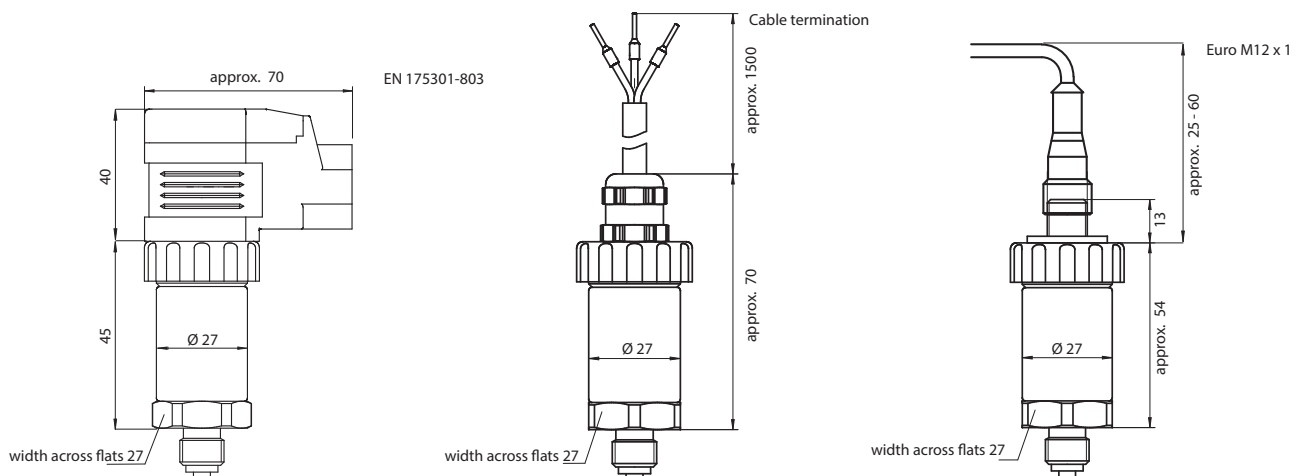
Technical Details

For technological reasons, piezo-resistive sensor elements are used for measuring ranges up to 10 bar. Thin-film sensors are used for measuring ranges upwards of 16 bar.

Their EMC properties have been tested and warrant reliable signal detection even under rough environmental conditions. All parts in contact with the fluid to be measured are CrNi steel and completely welded. There are no internal sealing elements that would restrict the choice of the fluid to be measured.

Auxiliary power required is 10 ... 30 V from a DC supply. The device will supply an output signal of 4 – 20 mA in two-wire systems, or 0 – 10 V_{DC} in three-wire systems, which is directly proportional to the existing pressure. Electric connection is available up to protection class IP67 depending on the connection type.

Dimensions



* All dimensions in the figures above in mm.

Technical Data

Series PA...8				
Connection	Supply voltage	$U_s = 10 \dots 30 V_{DC}$ @ output signal 4 ... 20 mA $U_s = 14 \dots 30 V_{DC}$ @ output signal 0 ... 10 V _{DC}		
	Current limitation	32 mA		
	Polarity reversal	U_b+ to U_b-		
	Short circuit protec.	S+ to U_b-		
	Overvoltage protec.	36 V _{DC}		
	Electr. connection	EN175301-803, Euro M12 x 1, cable termination 1.5 m		
	Pressure connection	G¼ A, ¼ NPT, M14 x 1.5		
Input	Measuring range standard	absolute/relative	relative	
		Meas. range [bar]: Overl. limit [bar]: Burst press. [bar]:	1 1.6 2.5 4 6 10 5 10 17 35 35 6 12 12 20.5 42 42 16 25 40 60 100 160 250 400 600 80 50 80 120 200 320 500 800 1200 96 96 400 550 800 1000 1200 1700 2400	
Output	Measuring range special	relative only		
		Meas. range [bar]: Overl. limit [bar]: Burst press. [bar]:	2 3 -1...4 5 7 8 15 20 30 50 150 180 300 10 17 17 35 35 80 50 80 120 320 500 800 12 20.5 20.5 42 42 42 96 96 400 550 1000 1200 1700	
Output	Output signal and max. permissible burden R_A	4...20 mA, two-wire, $R_A \leq (U_s - 10 V) / 0.02 A$ 0...10 V _{DC} , three-wire, $R_A > 10 k\Omega$		
	Accuracy	$\leq 0.25\%$ of span (BFSL) $\leq 0.5\%$ of span (including non-linearity, hysteresis, zero point and full scale error (IEC 6198-2)); calibrated in vertical mounting position of pressure connection		
	Non-linearity	$\leq 0.2\%$ of span (BFSL) acc. IEC 61298-2		
	Non-repeatability	$\leq 0.1\%$ of span		
	1-year stability	$\leq 0.2\%$ of span (at reference condition)		
	Zero point/span	$\pm 5\%$ adjustable via device potentiometer		
	Adjustment time (10...90 %)	≤ 1 ms (≤ 10 ms for medium temperature $< -30^\circ C$ for measuring range up to 25 bar)		
Environmental influences	Storage temperature	-40...+100 °C		
	Operating temperature	Permissible medium temperature	-30...+100 °C	
		Permissible environmental temperature	-20...+80 °C	
		Compensated temperature range	0...+80 °C	
	Temperature coefficients in compensated temperature range	Mean TC of zero point:	$\leq 0.2\%$ of span / 10 K	
		Mean TC of span:	$< 0.4\%$ of span / 10 K (for measuring range 0.0..1 and 0.0..16 bar) $\leq 0.2\%$ of span / 10 K	
	Vibration resistance	IEC 60068-2-6: 20 g (resonance)		
	Shock resistance	IEC 60068-2-27: 1000 g (mechanically)		
	Degree of protection	IP 65: EN175301-803 IP 67: Euro M 12 x 1, cable termination 1.5 m		
	ESD	IEC 61000-4-2: ± 8 kV contact discharge		
Electromagnetic field	IEC 61000-4-3: 10 V/m; $f=0.01 \dots 1000$ MHz; 80 % AM, 1 kHz			
Burst	IEC 61000-4-4: ± 2 kV			
Surge	IEC 61000-4-5: sym. ± 0.5 kV; asym. ± 1 kV ($R_i=42 \Omega$) sym. ± 1 kV; asym. ± 2 kV ($R_i=42 \Omega$) (only with voltage limiter e. g. 919921 from company Dehn & Soehne or equivalent)			
	HF-interference	IEC 61000-4-6: 3 V _{pp} $f=0.01 \dots 100$ MHz; 80 % AM, 1 kHz		
	LF-interference	IEC 945: 3 V _{pp} $f=0.05 \dots 10$ kHz		
Mech. quant.	Material	Parts in contact with measuring medium: CrNi-steel Body: CrNi-steel		
	Weight	Approx. 200 g		
Approv.	Approvals	CE; GL (4 - 20 mA type only)		

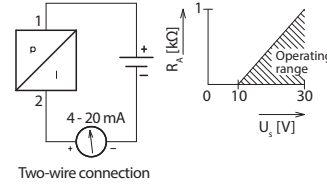
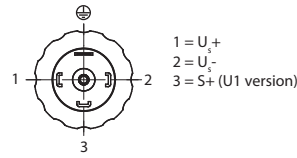
Type Code / Standard Variants

PAG8 - 81 - 11 I2 A (e.g. PAG8-81-11I2A)

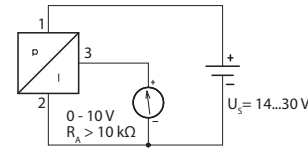
1	Pressure transducer series 8	4	Signal output
PAG8	Relative pressure (standard)	I2	4...20 mA (standard; certificated by GL)
PAA8	Absolute pressure	U1	0...10 V
2	Connection thread	5	Electrical connection
21	M14 x 1.5	A	Connector acc. EN175301-803 (standard; cable plug included in delivery)
81	G ¼ B (Standard)	E	Euro plug M12 x 1
90	¼ 18-NPT	X	Cable termination 1.5 m

Electrical Connection

EN175301-803

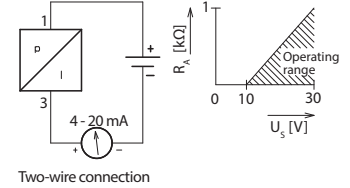
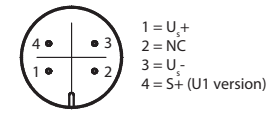


Two-wire connection

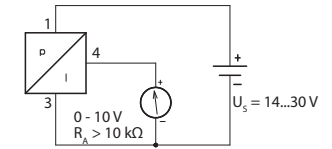


Three-wire connection

Euro M12 x 1

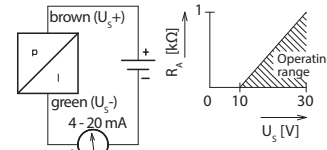
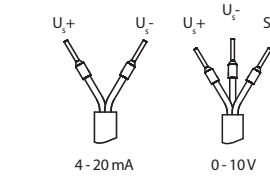


Two-wire connection

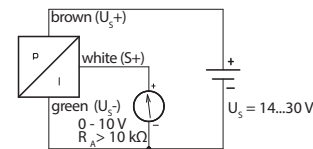


Three-wire connection

Cable Termination

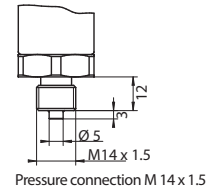


Two-wire connection

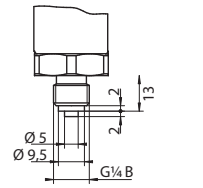


Three-wire connection

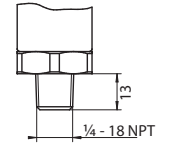
Pressure Connection



Pressure connection M 14 x 1.5



Pressure connection G¼ B



Pressure connection ¼ 18 NPT

* All dimensions in the figures above in mm.

3	Standard			3	Special		
	Range	Relative	Absolute*		Range	Relative	Absolute*
Order code	P in [bar]	Available	Available	Order code	P in [bar]	Available	Available
01	1	x	x	20	2	x	-
02	1.6	x	x	21	3	x	-
03	2.5	x	x	22	-1...4	x	-
04	4	x	x	23	5	x	-
05	6	x	x	24	7	x	-
06	10	x	x	25	8	x	-
07	16	x	-	26	15	x	-
08	25	x	-	27	20	x	-
09	40	x	-	28	30	x	-
10	60	x	-	29	50	x	-
11	100	x	-	30	150	x	-
12	160	x	-	31	180	x	-
13	250	x	-	32	300	x	-
14	400	x	-				
15	600	x	-				

* For absolute pressure measurement of 16 bar or higher a static pressure of 1 bar is considered. Variations of atmospheric pressure will be not considered.