

Pressure Sensor for Absolute and Relative Pressure Measurement, Type PAX9



Supply voltage	8 ... 30 VDC @ output signal 4 ... 20 mA; 14 ... 30 VDC @ output signal 0 ... 10 VDC
Output signal and maximum permissible load	4 ... 20 mA, 2-wire, RA ≤ (UB - 8 V) / 0.02 A; 0 ... 10 VDC, 3-wire, RA > 10 kΩ;
Electrical connection	Angular connector Form A EN175301-803, circular connector Euro M12 x 1, cable outlet 2 m length
Pressure connection	G $\frac{1}{4}$ B, $\frac{1}{4}$ - 18 NPT, M14 x 1.5
Reverse voltage protection	UB against 0 V
Short-circuit protection	S+ against 0 V (only U1 version)
Protection class	IP 65: Elbow connector Form A EN 175301-803; IP 67: Circular connector Euro M 12 x 1, cable outlet 2 m length
Vibration resistance	IEC 60068-2-6: 10 g (resonance)
Shock resistance	IEC 60068-2-27: 500 g (mechanical)



Pressure Transducer PAX9

Scope of application

Type PAX9 pressure sensors are mainly used in: Shipbuilding industry, transport technology, machinery and equipment. They acquire the pressure of diesel engines, pumps, filters, compressors, hydraulic and pneumatic control systems.

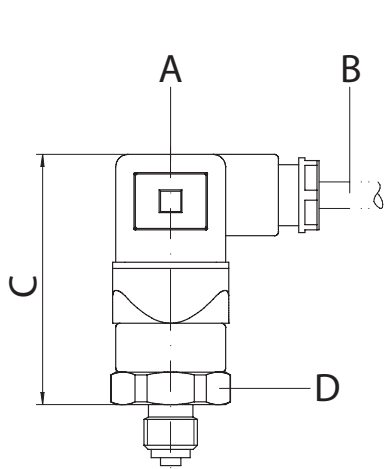
Outstanding EMC properties

The EMC properties guarantee reliable signal acquisition even under harsh ambient conditions. All parts that come in contact with the measured medium are made of CrNi steel and fully welded. There are no internal sealing elements that involve restriction in the selection of the measured medium.

Special features

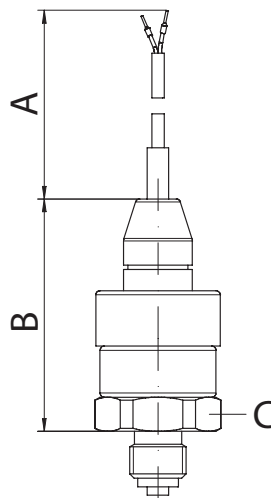
- Suitable for absolute and relative pressure measurement
- Vacuum-proof
- Various types of connection: Plug connections/cable outlet
- Various process connections
- Certified for shipbuilding industry and offshore by DNV-GL

Dimensions, connections and drawings



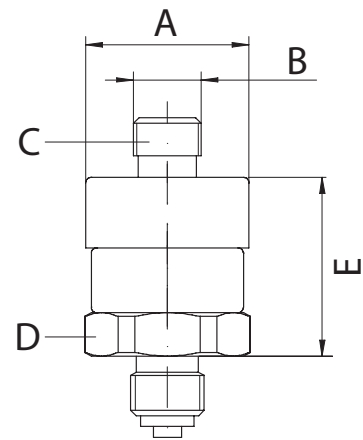
Angular connector form A

- A) Angular connector as per DIN 175301-803
- B) $\varnothing 6 \dots 8$ mm
- C) Length 61.5 mm
- D) WAF 27 mm



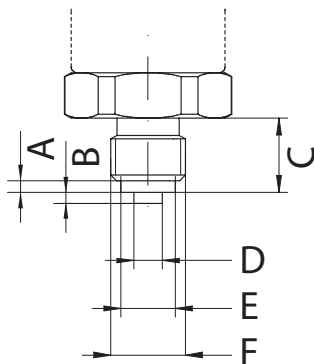
Cable terminal

- A) Length 2 m
- B) Length 54.5 mm
- C) WAF 27 mm



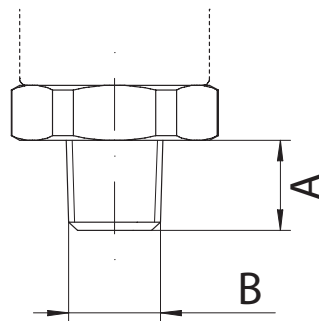
Circular connector M12 x 1

- A) $\varnothing 29$ mm
- B) M12x1
- C) 4-pin circular connector
- D) WAF 27 mm
- E) Length 33 mm



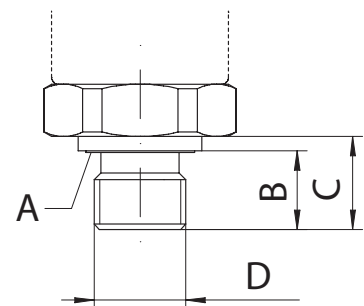
Process connection G1/4B

- A) Length 2 mm
- B) Length 2 mm
- C) Length 13 mm
- D) $\varnothing 5$ mm
- E) $\varnothing 9.5$ mm
- F) G 1/4 B



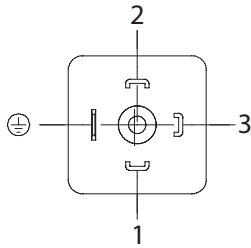
Process connection 1/4-18 NPT

- A) Length 13 mm
- B) 1/4 - 18 NPT



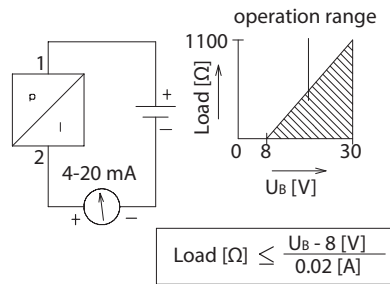
Process connection M14x1.5

- A) Nitrile rubber seal
- B) Length 12 mm
- C) Length 14 mm
- D) M14x1.5

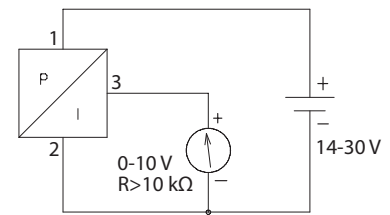


Electrical connection, angular connector form A

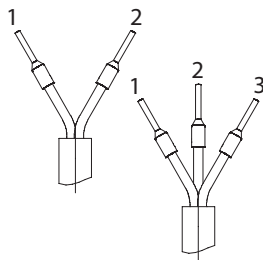
- 1) +U_B
- 2) -U_B (0V)
- 3) S+ (only U1 version)



Wiring diagram, angular connector form A, 2-wire technology

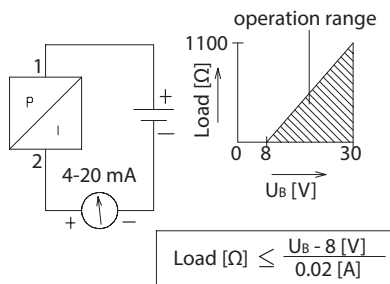


Wiring diagram, angular connector form A, 3-wire technology

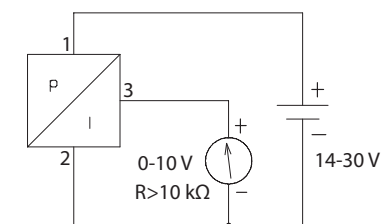


Electrical connection, cable outlet

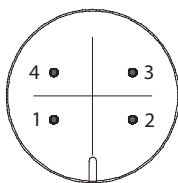
- 1) Brown = +U_B
- 2) Blue = -U_B (0V)
- 3) Black = S+



Wiring diagram, cable outlet, 2-wire technology

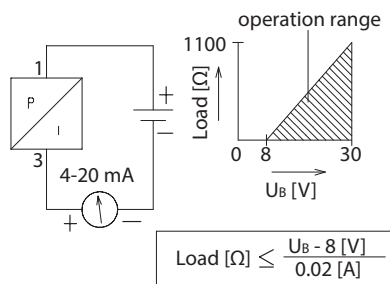


Wiring diagram, cable outlet, 3-wire technology

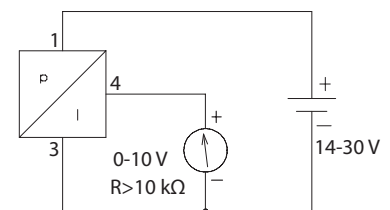


Electrical connection, circular connector M12x1

- 1) +U_B
- 2) Not connected
- 3) -U_B (0V)
- 4) S+ (U1-Version)



Wiring diagram, circular connector M12x1, 2-wire technology



Wiring diagram, circular connector M12x1, 3-wire technology

Technical data

Electrical connection	
Supply voltage	8 ... 30 VDC @ output signal 4 ... 20 mA; 14 ... 30 VDC @ output signal 0 ... 10 VDC
Current limitation	Power supply by energy-limited electrical circuit in accordance with 9.3 of UL/EN/IEC 61010-1 or LPS in accordance with UL/EN/IEC 60950-1 or Class 2 in accordance with UL1310/UL1585 (NEC or CEC) (the power supply must also be suitable for operation at an altitude above 2000 m, if used in these heights)
Reverse voltage protection	UB against 0 V
Short-circuit protection	S+ against 0 V (only U1 version)
Electrical connection	Angular connector Form A EN175301-803, circular connector Euro M12 x 1, cable outlet 2 m length
Pressure connection	G $\frac{1}{4}$ B, $\frac{1}{4}$ - 18 NPT, M14 x 1.5

Signal acquisition	
Standard measuring range	See measuring range table
Special measuring range	See measuring range table

Electrical output	
Output signal and maximum permissible load	4 ... 20 mA, 2-wire, RA \leq (UB - 8 V) / 0.02 A; 0 ... 10 VDC, 3-wire, RA > 10 k Ω ;
Accuracy	$\leq \pm 1$ % of the range (including non-linearity, hysteresis, zero point and final value deviation (IEC 6198-2)); calibrated in vertical mounting position with process connection facing downward
Non-linearity	$\leq \pm 0.5$ % of range
Non-repeatability	≤ 0.1 % of range
Long-term drift	$\leq \pm 0.1$ % of range (under reference conditions)
Transient response	Transient recovery time < 4 ms; turn on-time < 15 ms

Environmental influences	
Operating temperature	Permissible measured medium temperature: -30 ... +100 °C Permissible ambient temperature: -30 ... +100 °C (for type -X cable outlet 0 ... +80°C)
Storage temperature	-30 ... +100 °C (for type -X cable outlet -20 ... +80 °C)
Vibration resistance	IEC 60068-2-6: 10 g (resonance)
Shock resistance	IEC 60068-2-27: 500 g (mechanical)
Protection class	IP 65: Elbow connector Form A EN 175301-803; IP 67: Circular connector Euro M 12 x 1, cable outlet 2 m length

Mechanical quantities	
Material	Parts in contact with measured medium: < 10 bar CrNi steel 316L; > 10 bar CrNi steel 316L and 13-8 PH, housing CrNi steel 316L
Weight	Approx. 80 g

Other	
Approvals	DNV-GL
CE Conformity	Pressure Equipment Directive 97/23/EC; EMC Directive 2004/108/EC EN 61326 Emission (Group 1, Class B) and interference immunity (industrial environment)

Measuring range PAx9					
		Code	Measuring range [bar]	Overload [bar]	
Standard	Absolute or relative	01	1 bar	2 bar	
		02	1.6 bar	3.2 bar	
		03	2.5 bar	5 bar	*
		04	4 bar	8 bar	*
		05	6 bar	12 bar	*
		06	10 bar	20 bar	*
		07	16 bar	32 bar	
	Relative	08	25 bar	50 bar	
		09	40 bar	80 bar	*
		10	60 bar	120 bar	
		11	100 bar	200 bar	
		12	160 bar	320 bar	
		13	250 bar	500 bar	
		14	400 bar	800 bar	
		15	600 bar	1200 bar	
Special	Relative	20	2 bar	4 bar	
		21	3 bar	6 bar	
		22	-1...4 bar	10 bar	
		23	5 bar	10 bar	
		24	7 bar	14 bar	
		25	8 bar	16 bar	
		26	15 bar	30 bar	
		27	20 bar	40 bar	
		28	30 bar	60 bar	
		29	50 bar	100 bar	
		30	150 bar	300 bar	
		31	180 bar	360 bar	
		32	300 bar	600 bar	

Preferred types

Features marked with a * symbol at the end of the line are preferred features. If you select a preferred feature for each placeholder, the device is specified as preferred type. Preferred types are available quickly from stock. Other types will be delivered according to scheduled appointments.

Type code PAX9

Type code structure							
PA	G	9	-81	-11	I2	A	Example: PAG9-81-11I2A
Reference							
Construction type 9							
Connection thread							
Measuring range							
Signal output							
Electrical connection							

Type code PAX9-... (standard and preferred types)							
Reference	A	Absolute pressure					
	G	Relative pressure					*
Construction type	9						
Connection thread	81	G 1/4 B				*	
	90	1/4 - 18 NPT					
	21	M14x1.5					
Measuring range		See measuring range table					
Signal output	I2	4 – 20 mA				*	
	U1	0 – 10 V					
Electrical connection	A	Elbow connector as per DIN 175301-803 Form A				*	
	E	Circular connector M12x1					
	X	Cable outlet, length 2 m					
PA	9	-	-	-	-	Example: PAG9-81-11I2A	

Preferred types

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Special types

If our standard types do not correspond with your expectation, we are pleased to develop a special solution together with you.