

P2VA1, P2VA2

Pressure transmitter

Special features

- Monolithic steel measuring body
- No weld seam
- High-quality integral amplifier
- Nominal (rated) pressures from 0...500 bar to 0...5,000 bar
- Extremely reliable and durable

Data sheet

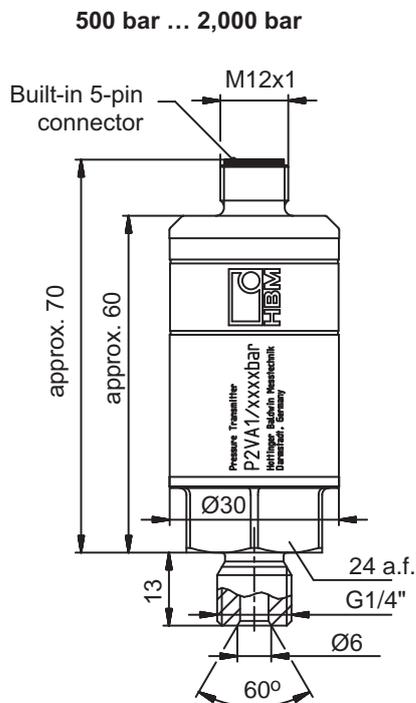


TEDS

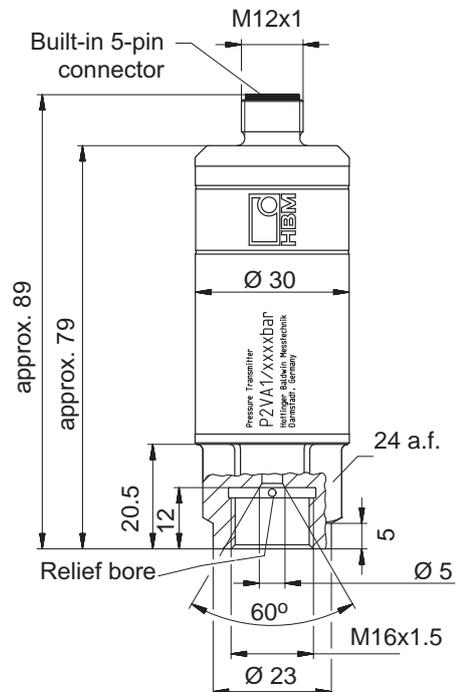
by HBM™

TEDS: Transducer
Electronic Data Sheet

Dimensions (in mm; 1 mm = 0.03937 inches)



3,000 bar ... 5,000 bar



Specifications according to DIN 16086

Type		P2VA1 (output signal in V) ¹⁾	
		<i>P2VA2 (output signal in mA) ¹⁾</i>	
Measuring ranges	bar	500, 1000, 2000, 3000	5000
Input quantities			
Type of pressure		Absolute pressure	
Accuracy class		0.3	
Initial value	bar	0	
Operating range at reference temperature	%	0 to approx. 110	
		<i>0 to approx. 105</i>	
Overload limit at reference temperature	%	150	
Test pressure	%	200	150
Dynamic loading			
Permissible pressure	%	100	
Permissible oscillation width (dyn. loading according to DIN 50100)	%	70	
Dead volume approx.	cm ³	0.8	
Control volume approx.	mm ³	1.5	
Materials from which components in contact with the measurement media are made		1.4542, 1.4301	
Output characteristics			
Transducer identification ²⁾		TEDS chip	
Signal spread (sensitivity)	V	0.5 ... 10	
	mA	<i>4 ... 20 (16)</i>	
Zero signal, adjustment tolerance (factory)	V	< ±0.010	±0.020
	mA	<i>< ±0.016</i>	<i>±0.032</i>
Rated output tolerance	V	< ±0.010	±0.020
	mA	<i>< ±0.016</i>	<i>±0.032</i>
Maximum signal	V	10.5	
	mA	<i>21.6</i>	
Effect of temperature on zero signal in the nominal (rated) excitation voltage range per 10 K, relative to nominal (rated) sensitivity	%/10 K	0.2	
Effect of temperature on sensitivity in the nominal (rated) excitation voltage range per 10 K, relative to actual value	%/10 K	0.2	
Characteristic curve deviation (setting of initial point)	%	0.3	
Repeatability to DIN 1319	%	< ±0.05	
Cut-off frequency	-3 dB	kHz	
	-1 dB	kHz	
Burden	Ω	≥10000 (min.)	
		<i>≤500 (max.)</i>	
Power supply			
Reference voltage	V	24	
Nominal range	V	15 ... 30 ³⁾	
Effect of the supply voltage when changing from 15 to 30 V	%	0.02	
Max. current consumption (excluding loop current in the case of P2VA2)	mA	25	
Max. power consumption	W	< 1	
		<i>< 2</i>	

¹⁾ Normal font: P2VA1;

italics: P2VA2

²⁾ Not suitable for QuantumX.

³⁾ At maximum operating temperature and maximum excitation voltage, the permissible dissipation is exceeded with the P2VA2. The maximum operating temperature is therefore restricted to 70°C, not 85°C as for the P2VA1.

Measuring ranges	bar	500, 1000, 2000	3000, 5000
Ambient conditions			
Reference temperature	°C	+23	
Nominal (rated) temperature range	°C	0 ... +70	
Operating temperature range	°C	-20 ... +85 -20 ... +70	
Storage temperature range	°C	-40 ... +85	
Minimum permissible temperature	TS _{min}	-20	
Maximum permissible temperature	TS _{max}	+85 70	
Impact resistance (tested to DIN IEC 68)			
Impact acceleration	m/s ²	1000	
Impact duration	ms	4	
Impact form		Half sine wave	
Vibration resistance (tested to DIN IEC 68)	m/s ²	150	
Mechanical data			
Pressure connection		G1/4" external	M16x1.5 internal
Seal		Metallic, edge loading, 58° taper Seal can be attached to the transducer for mounting.	
Transducer mounting		The seal can be attached to the transducer.	Connect directly to a high-pressure pipe with a manipulated pipe end.
Tightening torque, max.	Nm	30	30 ... 50
Electrical connection		M12 x 1 / 5-pin connector	
Mounting position		Any, but preferably pressure connection uppermost for venting purposes	
Dimensions			
Length (without pressure connection and mating connector)	mm	70	approx. 80
Maximum diameter	mm	30	30
Hexagon, across flats	mm	24	
Weight without cable, approx.	g	150	200
Equipment protection level		IP67	

Sealing joint (to customer design)

3000 bar and higher

M16x1.5 internal: High-pressure cable gland M16x1.5, e.g. from Nova Swiss. The transducer has a relief aperture, which exits in the center of a hexagonal face.

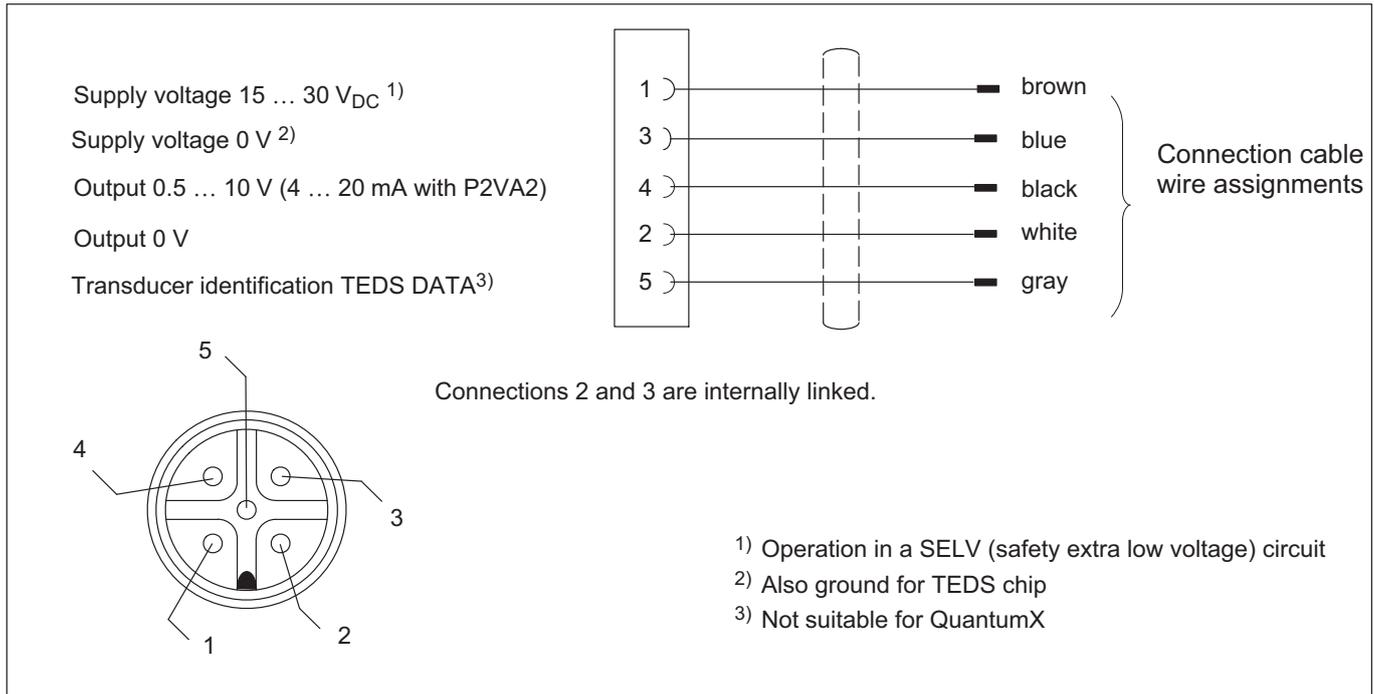
Less than 3000 bar

G1/4" external (with the aid of the conical seals with 58° taper and retaining spring, included in scope of delivery for these measuring ranges): The depth to the root of the line aperture should be 17 mm, the thread must be at least 13.5 mm long. The diameter of the line aperture should be 4 mm if sharp-edged, or 5 mm with taper (max. 0.5 x 45°).

Possible up to 1000 bar

Under the hexagon, sealing is provided by a USIT ring, 14.7x22x1.5. The ring must be screwed in so that it is centered and supported, with a height of 1.3 mm and a diameter of 22.2 ± 0.1 mm.

Pin assignment



Accessories

Included in scope of supply:

- 1 bag containing 2x conical seals with 58° taper and retaining spring ¹⁾ Order no.: 2-9278.0371
- 1 x 5 m cable, female connector, M12x1 with shield, 5-pin PUR Order no.: 1-KAB166-5

Available as options

Connection adapter for a measuring range of less than 3000 bar

- Connection adapter G1/4" external, M20x1.5 external Order no.: 1-Adapt-G1/4-M20
- Connection adapter G1/4" external, G1/2" external Order no.: 1-Adapt-G1/4-G1/2
- 1 bag containing 2x conical seals with 58° taper and retaining spring ¹⁾ Order no.: 2-9278.0371
- 1 x 5 m cable, female connector, M12x1 with shield, 5-pin PUR Order no.: 3-3301.0185
- 1 x 20 m cable, female connector, M12x1 with shield, 5-pin PUR Order no.: 1-KAB166-20

¹⁾ For measuring ranges 500 bar ... 2,000 bar

Subject to modifications.
 All product descriptions are for general information only. They are not to be understood as a guarantee of quality or durability.

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