

PIEZORESISTIVE PRESSURE TRANSMITTERS

ABSOLUTE AND GAUGE PRESSURE / ERROR BAND 0,5 %FS (0...50 °C)

The Y-line transmitters have an extremely small temperature error. This is achieved using an additional circuit containing a temperature sensor that subdivides the temperature range into fields that are 1,5 Kelvin (K) wide. The TK zero and TK compensation values are calculated for each field and programmed into the additional circuit. During operation, these values are fed into the analogue signal path depending on the temperature. Each temperature is the „calibration temperature“ for this transmitter. The accuracy thereof is mainly determined by linearity. 120 fields are available, representing a possible temperature range of 180 K. The wider the temperature range, the greater the amount of testing that is needed to minimise the inaccuracy of the mathematical model.

The Seriey 23 (S)Y/25 Y product line is outstanding due to its extreme ruggedness towards electromagnetic fields. The limits of the CE standard are undercut by a factor of up to 10 with conducted and radiated fields.

- **Series 23 Y** Ranges 0,2...2 bar Floating mounted sensor. Internal O-Ring.
- **Series 23 SY** Ranges 1...1000 bar Fully welded (no internal seals)
- **Series 25 Y** Ranges 0,5...600 bar Flush, fully welded.

A Comprehensive Range

Absolute, barometric, gauge (positive and negative pressures). Many nominal pressure ranges. Current or voltage output.

Flexibility

A modular concept is used, with fast and economical production achieved by using off-the-shelf sensors. Numerous options and variations are available to meet customers' specific requirements: Pressure ranges, pressure ports, signal outputs, electrical connectors, etc.

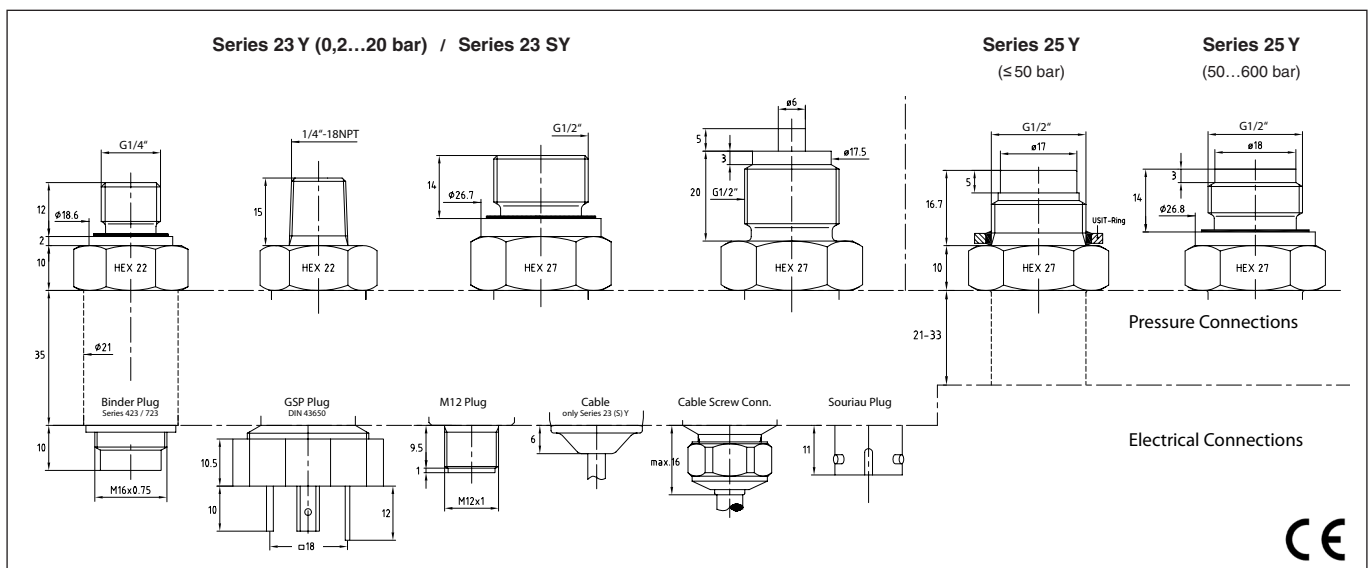
SERIES 23 (S)Y / 25 Y



Series 23 (S)Y



Series 25 Y



Subject to alterations

08/08

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Specifications

Pressure Ranges (FS) in bar

PA(A)/PR-23 Y	-1	-0,5	-0,2	0,2	0,5	1	2										
PA(A)/PR-23 SY (PR-Version ≤ 20 bar)	-1					1	2	5	10	20	50	100	200	400	600	1000	
PA(A)/PR-25 Y (PR-Version ≤ 20 bar)	-1	-0,5			0,5	1	2	5	10	20	50	100	200	400	600		
Overpressure	-1	-1	-1	2,5	2,5	3	4	10	20	40	100	200	300	600	900	1100	

PAA: Absolute, Zero at vacuum PA: Sealed Gauge, Zero at 1000 mbar abs PR: Vented Gauge, Zero at atmospheric pressure

Pressure Range	Linearity ¹⁾	Error Band ²⁾ @ 0...50 °C		Error Band ²⁾ @ -10...80 °C	
		typ.	max.	typ.	max.
2...1000 bar	±0,25 %FS	±0,3 %FS	±0,5 %FS	±0,4 %FS	±0,7 %FS
0,5...< 2 bar	±0,25 %FS	±0,6 %FS	±1,0 %FS	±0,8 %FS	±1,5 %FS
0,2...0,5 bar	±0,50 %FS	± 2 mbar	± 5 mbar	± 3 mbar	±7,5 mbar

¹⁾ Best fitted straight line, including Hysteresis + Repeatability

²⁾ Linearity + Hysteresis + Repeatability + Temp. Coeff. + Zero + Span Tolerance

Storage-/Operating Temperature -40...100 °C

Stability	Range > 2 bar	0,1 %FS typ.	0,2 %FS max.
	Range ≤ 2 bar	2 mbar typ.	4 mbar max.

Type	<u>2-wire</u>	<u>3-wire</u>	<u>3-wire</u>	<u>3-wire</u>
Signal Output	4...20 mA	0...10 V	0...5 V	0,5...4,5 V
Limitation Signal Output	3,2...22,3 mA	-1,2...11,2 V	-0,6...5,6 V	0,1...4,9 V
Supply	8...32 VDC	13...32 VDC	8...32 VDC	8...32 VDC
Load Resistance	< (U-8 V) / 0,025 A	> 5 kΩ	> 5 kΩ	> 5 kΩ
Limiting Frequency	2 kHz	2 kHz	2 kHz	2 kHz
Power Consumption		max. 5 mA	max. 5 mA	max. 4 mA

Electrical Connection - Plug: Binder-423/723 (5-pole), GSP (DIN 43650), M12 (4-pole), Souriau (MIL-C26482)
- Cable

Pressure Connection Series 23 (S)Y: G1/4", 1/4"-18NPT, G1/2", G1/2" Mano
Series 25 Y: G1/2"

Response Time (Supply ON) (0...99 %) < 5 ms

Insulation > 10 MΩ@300 V

EMC EN 61000-6-2: 2005 / EN 61000-6-3: 2007 / EN 61326-2-3: 2006

Dead Volume Change < 0,1 mm³

Material in Media Contact - Stainless Steel AISI 316L (1.4404/1.4435)

- USIT or Viton® O-Ring (no internal seals, except for 23 Y)

Protection Class Plug: IP65...IP67 (depending on connection and with corresponding mating plug)

Cable: IP54 Cable Screw Connection: IP68

Weight ≈ 120 g (depending on version)

Endurance > 10 million cycles, 0...100 %FS at 25 °C

Oil Filling Silicone oil

Options

Temperature Range Other temperature ranges on request. Maximal range: -40...+120 °C

Oil Filling Fluorocarbon oil (O₂-compatible), olive-oil, lowest temperature oil (-55 °C)

Pressure Ranges Intermediate ranges on request

Pressure Connection, Electrical Connection Others on request

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