

INTRINSICALLY SAFE PRESSURE TRANSMITTERS FOR GAS AND DUST ATMOSPHERES



SERIE 23 SY Ei / 25 Y Ei / 26 Y Ei

These piezoresistive pressure transmitters are approved for use in highly explosion risk areas of group II (gas and dust).

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.

- **Series 23 SY Ei** 0,1...1000 bar Fully welded (no internal seals)
- **Series 25 Y Ei** 0,5...100 bar Flush, fully welded.
- **Series 26 Y Ei** 0,1...20 bar Level Probe. Floating mounted sensor.
Internal O-Ring.

A Comprehensive Range

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

Ex-Classification:

Ex ia IIC T6-T4 Ga	IBExU 10 ATEX 1124 X
Ex ia IIIC T 130 °C Da	II 1GD 0081
IECEx IBE 14.0044 X	



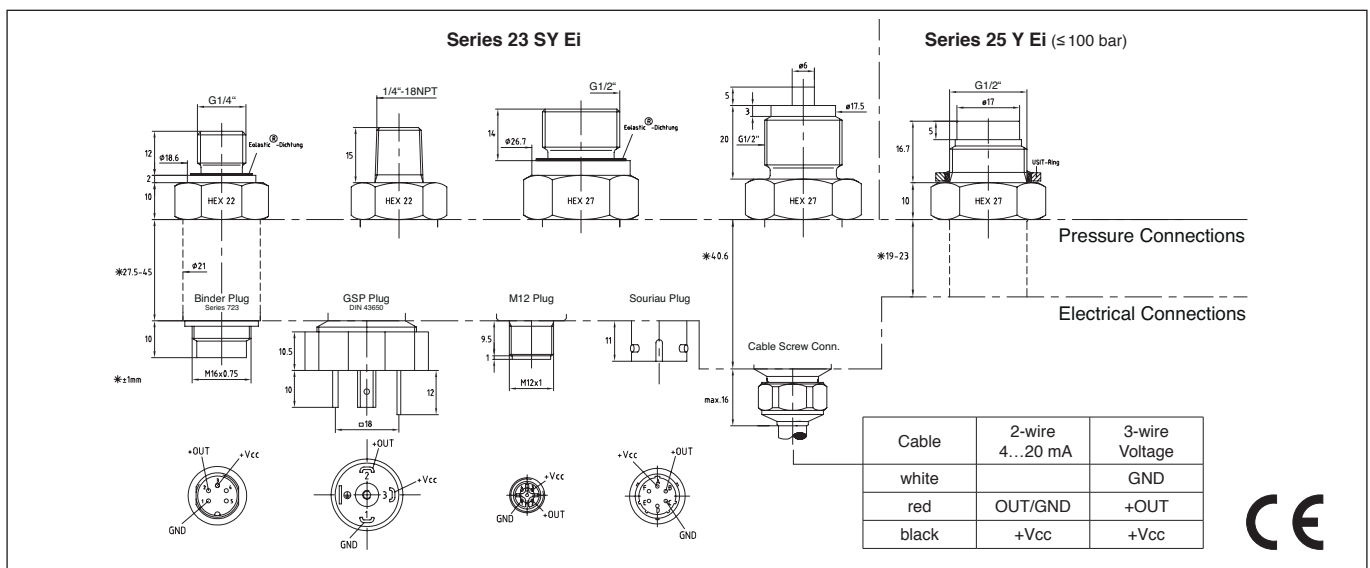
Series 23 SY Ei



Series 25 Y Ei



Series 26 Y Ei



Subject to alterations

06/2015

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Specifications

Pressure Ranges (FS) in bar

PR-23 SY Ei	-1 -0,5 -0,2 -0,1 0,1 ±0,1 0,2 ±0,2	0,5 ±0,5	1 ±1	2	5	10	20												
PA-23 SY Ei	-1		1 ±1	2	5	10	20	50	100	200	400	600	1000 ⁵⁾						
PAA-23 SY Ei		0,5	1	2	5	10	20	50	100	200	400	600	1000 ⁵⁾						
PR-25 Y Ei	-1 -0,5	0,5 ±0,5	1 ±1	2	5	10	20												
PA-25 Y Ei	-1		1 ±1	2	5	10	20	50	100										
PAA-25 Y Ei		0,5	1	2	5	10	20	50	100										
PR-26 Y Ei		0,1 0,2	0,5	1	2	5	10												
PAA-26 Y Ei			0,8...1,8	0,8...2,3	0,8...3	0,8...6	0,8...11												

Overpressure	-1	-1	-1	-1	4	4	4	4	4	4	12	12	40	40	80	80	200	300	1100	1100	1100
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PR: Gauge Pressure PA: Absolute. Zero at 1000 mbar abs PAA: Absolute. Zero at vacuum

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

¹⁾ Linearity (best fitted straight line), including Hysteresis + Repeatability ²⁾ Accuracy + Temperature Coefficients + Zero + Span Tolerance

³⁾ Pressure range 0,1 bar: Linearity ±1 %FS Max; Signal output limited to 4...20 mA / 0...5 V / 0...10 V

⁴⁾ Only 3-wire Version: Without burden of the voltage output (R_i = 100 Ω). With burden R_b = 100 KΩ the error increases by 0,1 %FS.

⁵⁾ Measuring range 1000 bar only suited for static applications.

Storage 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.

**Intrinsically safe in conjunction with certified intrinsically safe power circuits, with the following maximum connected loads:
U_i ≤ 30 V, I_i ≤ 200 mA, P_i depending on the Ambient Temperature T_a and Temperature classification, L_i = 0 mH, C_i = 2 nF**

Signal Output	Temperature classification	Ambient Temperature T _a	Power P _i
4...20 mA 0...10 V	T6	-40...65 °C	0,64 W
		-40...100 °C	0,64 W
	T4 and dust	-40...65 °C	1,1 W
		-40...40 °C	1,33 W
4...20 mA	T6	-40...50 °C	1,33 W

Type	2-wire	3-wire	3-wire
Signal Output	4...20 mA	0...10 V	0...5 V
Limitation Signal Output	3,2...22,3 mA	-1,2...11,2 V	-0,6...5,6 V
Supply	10...30 VDC	15...30 VDC	10...30 VDC
Load Resistance	< (U-10 V) / 0,025 A	> 100 kΩ	> 100 kΩ
Limiting Frequency	2 kHz	2 kHz	2 kHz
Power Consumption		max. 5 mA	max. 5 mA

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

Pressure Connection Series 23 SY Ei: G1/4", 1/4"-18NPT, G1/2", G1/2" Mano
Series 25 Y Ei: G1/2"
Series 26 Y Ei: Protection Cap, optional G1/4"

Response Time (Supply ON) (0...99 %) < 5 ms
Insulation > 10 MΩ@300 V
EMV 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 (DIN 1.4404/1.4435), USIT or Viton® O-Ring (others on request), Protection Cap POM
Protection Plug: IP65...IP67 (depending on connection and with corresponding mating plug)
Cable Screw Connection: IP68
Weight ≈ 140 g (depending on version)
Endurance > 10 million, 0...100 %FS at 25 °C ⁵⁾
Oil Filling Silicone oil

Options

Temperature Range Other temperature ranges on request
Oil Filling Fluorocarbon oil (O2-compatible), olive-oil
Pressure Ranges Intermediate ranges on request
Pressure Connection, Electrical Connection Others on request

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