



INTRINSICALLY SAFE PRESSURE TRANSMITTERS
FOR GAS AND DUST ATMOSPHERES



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

These piezoresistive pressure transmitters with ATEX and IECEx certifications 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...1000 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



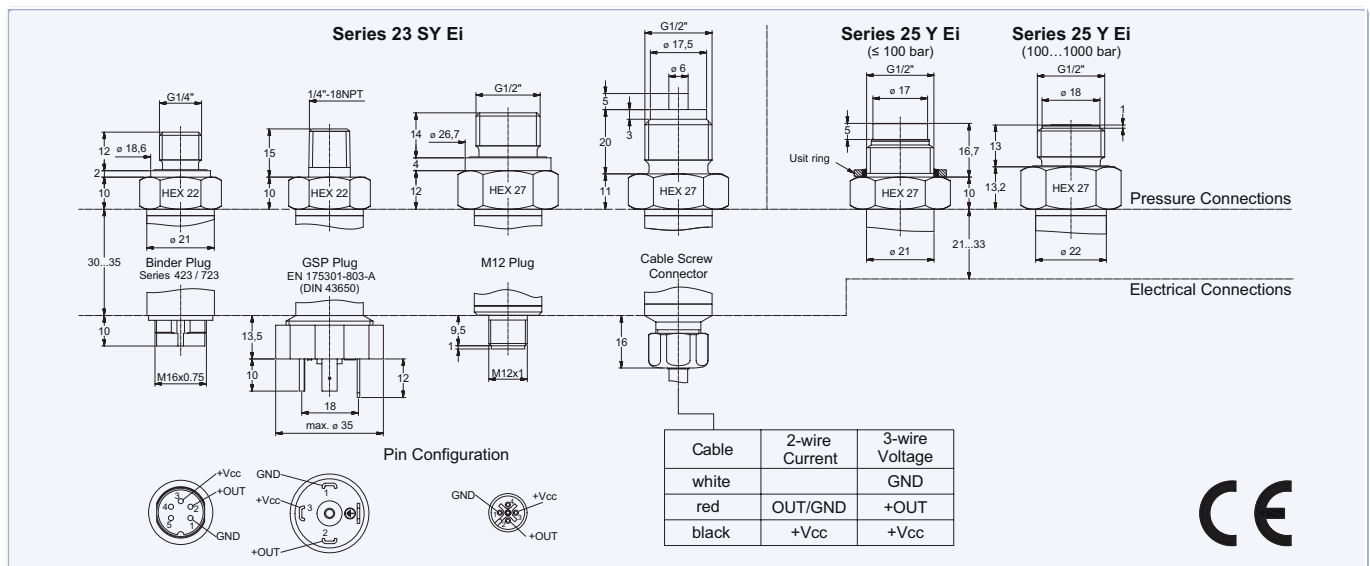
Series 26 Y Ei



Series 23 SY Ei



Series 25 Y Ei





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
PAA-23 SY Ei									0,5		1		2	5	10	20
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
PAA-25 Y Ei									0,5		1		2	5	10	20
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	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

*for 25 Y: up to 600 bar

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) + Hysteresis + Repeatability

²⁾ Accuracy + Temperature Coefficients + Zero + Span Tolerance

³⁾ Pressure range 0,1 bar: Accuracy ±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

Signal Output

Limitation Signal Output

Supply

Load Resistance

Limiting Frequency

Power Consumption

Electrical Connection

Pressure Connection

Response Time (Supply ON)

Insulation

EMV

Dead Volume Change

Material in Media Contact

Protection

Weight

Endurance

Oil Filling

Options

Temperature Range

Oil Filling

Pressure Ranges

Pressure Connection, Electrical Connection

2-wire

4...20 mA

3,2...22,3 mA

10...30 VDC

< (U-10 V) / 0,025 A

2 kHz

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

- Cable

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"

(0...99 %) < 5 ms

> 10 MΩ @ 300 VDC

EN 61000-6-1 to -6-4 / EN 61326-1 / EN 61326-2-3

< 0,1 mm³

Stainless Steel AISI 316L (DIN 1.4404/1.4435); 25 Y > 400 bar: Inconel 718

USIT or Viton® O-Ring (others on request),

Protection Cap POM (Series 26 Y Ei)

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

Cable Screw Connection: IP68

≈ 140 g (depending on version)

> 10 million, 0...100 %FS at 25 °C ⁵⁾

Silicone oil

Other temperature ranges on request

Fluorocarbon oil (O₂-compatible), olive-oil

Intermediate ranges on request

Others on request