Intrinsically Safe Pressure Transmitters

FOR GAS AND DUST ATMOSPHERES

25Y-Ei

Series 25Y-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).

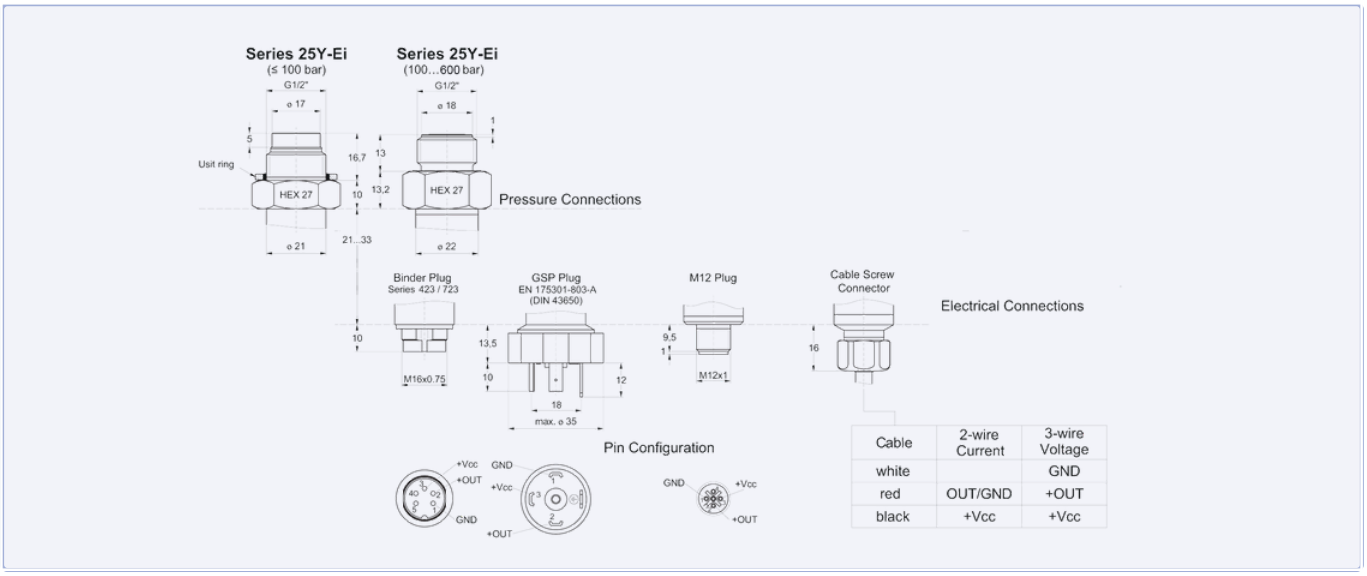
The Y-line transmitters have an extremely small temperature error. This is achieved using an additional circuit containing a temperature sensor that subdivides the temperature range into fields that are 1,5 Kelvin (K) wide. The TK zero and TK compensation values are calculated for each field and programmed 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.

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	IBExU10ATEX 1124 X
Ex ia IIIC T 130 °C Da	Ex II1GD CE 0081
IECEx IBE 14.0044 X	



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Subject to alterations
Companies approved to ISO 9001
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Specifications

Pressure Ranges (FS) in bar

PR-25Y-Ei	-1	-0,5						0,5	±0,5		1	±1		2		5		10	20							
PA-25Y-Ei	-1										1	±1		2		5		10	20	50	100	200	400	600		
PAA-25Y-Ei								0,5			1			2		5		10	20	50	100	200	400	600		
Overpressure	-1	-1	-1	-1	4	4	4	4	4	4	4	12	12	40				40	80	80	200	300	1100*	1100		

PR: Gauge Pressure PA: Absolute. Zero at 1000 mbar abs PAA: Absolute.Zeroatvacuum

		Error Band @ 0…50 °C [2) 4)]		Error Band @ -10…80 °C [2) 4)]	
Pressure Range	Accuracy [1)]	typ.	max.	typ.	max.
> 2…600 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

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

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

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
	T4 and dust	-40…100 °C	0,64 W
		-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	G1/2”
Response Time (Supply ON)	(0…99 %) < 5 ms
Insulation	> 10 MΩ @ 300 VDC
EMV	EN 61000-6-1 to -6-4 / EN 61326-1 / EN 61326-2-3
Dead Volume Change	< 0,1 mm3
Material in Media Contact Protection	Stainless Steel AISI 316L (DIN 1.4404/1.4435); 25Y > 400 bar: Inconel 718 USIT or Viton® O-Ring (others on request), 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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