Pressure Transmitter with Pressure Proof Housing
Forhazardous applications

Series 23-Ed / 25-Ed
Series 33X-Ed / 35X-Ed

These piezoresistive pressure transmitters with pressure proof housing are approved for use in explosion risk areas of group II. They provide stable and accurate measurements of absolute and gauge pressures of liquid and gaseous media in the pressure range between 0,1 and 300 bar.

Series 23-Ed
Series 33X-Ed

Flexibility

The modular structure of this product range allows highly flexible applications and solutions that are tailored to users‘ requirements. Numerous versions are available, for example with different pressure connections, materials and filling oils, or versions for use with oxygen and with special performance characteristics. In addition to the classical analog output signal (Series 23-Ed and 25-Ed), a digital solution based on the successful high-precision Series 30X transmitters is also available (33X-Ed and 35X-Ed).

Analog transmitters, Series 23-Ed and 25-Ed

This series is based on the stable piezoresistive transducer with analog electronics. The zero point and sensitivity, and the temperature coefficients for the zero point and sensitivity, are compensated by resistors resp. potentiometers.

Digital transmitters Series 33X-Ed and 35X-Ed

This series features microcontroller-based electronic evaluation to ensure maximum accuracy. Each transmitter is gauged across the entire pressure and temperature range. This provides the basis for calculating a mathematical model that corrects all reproducible errors. The pressure value can be read via the interface and at the same time it is also available in analog form as a 4…20 mA or 0…10 V version.

Interface: RS485 half-duplex for 9600 and 115’200 baud for line lengths up to 1200 m and a maximum of 128 bus subscribers. Protocol: KELLER Bus and MODBUS RTU. The devices can be configured (scale analog output, switch units, change filter settings, zeroing, etc.) and measured values can be recorded with the CCS30 software, available free of charge.

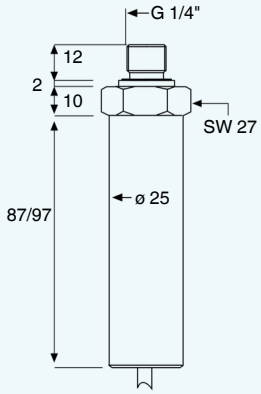
Series 25-Ed
Series 35X-Ed

Ex-Classification

II 2 G
Ex db IIC T6 to T4 Gb
EPS 22 ATEX 1 007X
IECEx EPS 22.0002X
EPS 22 UKEX 1 007X

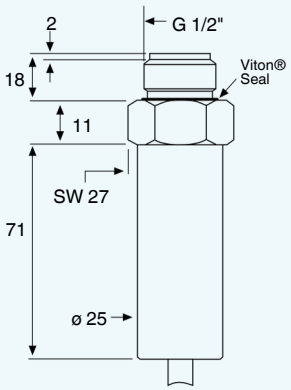
T4: -40 °C ≤ T_a ≤ +100 °C, T5: -40 °C ≤ T_a ≤ + 95 °C, T6: -40 °C ≤ T_a ≤ + 80 °C

Series 23-Ed / Serie 33X-Ed



Pressure connection:
illustrations of examples

Series 25-Ed / Series 35X-Ed



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Specifications

	Standard Pressure Ranges (FS) and Overpressure in bar								
PR-23/25-Ed,PR-33/35X-Ed	-1	1	3	10	30				Allintermediate ranges for the analog output of Series33/35X-Ed are realizable by spreading the standardranges. Smallest range: 0,1 bar.
PA(A)-23-Ed,PA(A)-33X-Ed		1	3	10	30	100	200	300	
PA-25-Ed, PA-35X-Ed		1	3	10	30	100			
Overpressure	-1	3	7	20	60	200	300	450	

PAA: Absolute. Reference pressure at 0 bar abs. (vacuum) PA: Absolute. Reference pressure at 1 bar abs. PR: Relative. Reference pressure at ambient air pressure

Long Term Stability	0,1 %FS typ. (FS > 1 bar)	1 mbar typ. (FS ≤ 1 bar)

Series 23 Ed / 25 Ed

Accuracy @ RT (1)	0,2 %FS typ.	0,5 %FS max.
Compensated Temperature Range	-10...80 °C	
Storage- / Operating Temperature(2)	-40...100 °C	
Temperature Coefficients…	…of Zero	…of Sensitivity
· FS > 1 bar	0,01 %FS/°C max.	0,02 %/°C max.
· FS 1 bar	0,02 %FS/°C max.	0,02 %/°C max.
· FS 0,5 bar	0,03 %FS/°C max.	0,02 %/°C max.
· FS 0,2 bar	0,05 %FS/°C max.	0,02 %/°C max.

Series 33 X Ed / 35 X Ed

	analog	digital
Accuracy @ RT (3)	0,03 %FStyp.(4)	0,02 %FS typ.
Error Band (10…40 °C)	0,1 %FS(4)	0,05 %FS
Error band (-10…80 °C)	0,15 %FS(4)	0,1 %FS
Storage- / Operating Temperature(2)	-30...100°C	

(1) Linearity (best straight line through zero) +hysteresis + repeatability
(2) T4: -40 °C ≤ Ta ≤ +100 °C, T5: -40 °C ≤ Ta ≤ +95 °C, T6: -40 °C ≤ Ta ≤ +80 °C
(3) Linearity (BFSL) + hysteresis + repeatability
(4) Disturbance of the 4...20 mA signal occurs during communication through RS485.

	2-Wire	3-Wire	Digital (only 33/35X-Ed)
SignalOutput	4...20 mA	0...10 V	RS 485
Supply (U)	8...32 VDC	13...32 VDC	3,2...32 VDC
LoadResistance (RΩ)	(U-8 V) / 0,025 A	> 5 k	

ElectricalConnection	PUR-cable, length 2 m (with PE-sheath and reference tube for gauge). Others on request.
VolumetricChange	< 0,1 mm3 / FS
PressureConnection	G 1/4", G 1/2", G 3/4", 1/2"-14 NPT, 1/4"-18 NPT
Wetted Parts	Stainless steel 1.4435 (316L), Viton®
Protection	IP50 (IP65/IP68 on request)
EMC Conformity	EN 61000-6-2 / EN 61000-6-3 / EN 61326-2-3
Weight	≈ 200 g
Insulation	> 10 MΩ @ 50 V
Endurance	> 10 million cycles 0…100 %FS at 25 °C

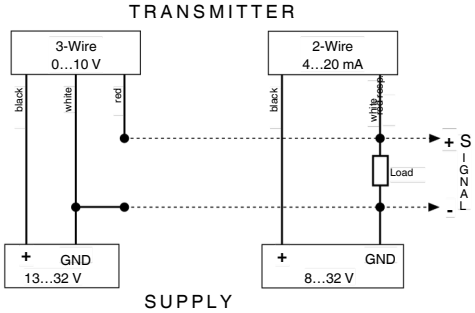
Optionen

Pressure Connection	On request
Pressure Ranges	All pressure ranges between 0,1 and 300 bar
Wetted Parts	Hastelloy C-276, gold-plated. Others on request.
Oil Filling	Fluorized oil (O2-compatible), olive-oil, low temperature oil

ELECTRICAL CONNECTIONS

Series 23-Ed / 25-Ed			Series 33X-Ed / 35X-Ed	
2-Wire Transmitter	3-Wire Transmitter	Cable	2-Wire Transmitter	3-Wire Transmitter
–	GND	white	OUT/GND	GND
OUT/GND	+OUT	red	–	+OUT
+Vcc	+Vcc	black	+Vcc	+Vcc
		blue	RS485A	RS485A
		yellow	RS485B	RS485B

TRANSMITTER



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