



PRESSURE TRANSMITTER WITH PRESSURE PROOF HOUSING FOR HAZARDOUS APPLICATIONS

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.

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.

Ex-Classification

Ex db IIC T6 to T4 Gb EPS 22 ATEX 1 007X IECEX EPS 22.0002X EPS 22 UKEX 1 007X

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

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





Series 25-Ed Series 35X-Ed

Series 23-Ed / Series 35X-Ed Series 25-Ed / Series 35X-Ed Pressure connection: illustrations of examples 87/97 Series 25-Ed / Series 35X-Ed Pressure connection: of examples \$\frac{2}{18} \frac{1}{11} \frac{1

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Edition 05/2022

Subject to alterations
Companies approved to ISO 9001

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SPECIFICATIONS

Standard Pressure Ranges (FS) and Overpressure in bar	Standard	Pressure	Ranges	(FS) and	Overpressure	in bar
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PR-23/25-Ed, PR-33/35X-Ed PA(A)-23-Ed, PA(A)-33X-Ed PA-25-Ed, PA-35X-Ed	-1	1 1 1	3 3 3	10 10 10	30 30 30	100 100	200	300	All intermediate ranges for the analog output of Series 33/35X-Ed are realizable by spreading the
Overpressure	-1	3	7	20	60	200	300	450	standard ranges. Smallest range: 0,1 bar.
PAA: Absolute. Reference pressure at 0 bar abs. (vacuum)	abs. (vacuum) PA: Absolute			Reference pressure at 1 bar abs.			r 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. -10...80 °C Compensated Temperature Range

Storage- / Operating Temperature (2) -40...100 °C Temperature Coefficients... ...of Zero

...of Sensitivity 0,01 %FS/°C max. 0,02 %/°C max. \cdot FS > 1 bar · 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. 0,05 %FS/°C max. 0,02 %/°C max. · FS 0,2 bar

analog

Series 33 X Ed / 35 X Ed

Accuracy @ RT (3) 0,03 %FS typ.(4) 0,02 %FS typ. Error Band (10...40 °C) 0.1 %FS (4) 0,05 %FS 0,15 %FS (4) Error band (-10...80 °C) 0,1 %FS Storage- / Operating Temperature (2) -30...100 °C

⁽⁴⁾ Disturbance of the 4...20 mA signal occurs during communication through RS485.

	2-Wire	3-Wire	Digital (only 33/35X-Ed)
Signal Output	420 mA	010 V	RS 485
Supply (U)	832 VDC	1332 VDC	3,232 VDC
Load Posistance (P.)	(11 0 \/) / 0 005 /	> E	

(U-8 V) / 0,025 A

Electrical Connection PUR-cable, length 2 m (with PE-sheath and reference tube for gauge). Others on request.

<u>digital</u>

Volumetric Change

Pressure Connection 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 q

 $> 10 \ M\Omega \ @ 50 \ V$ Insulation

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

Optionen

Pressure Connection On request

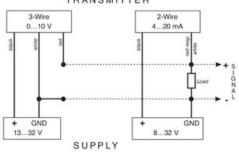
Pressure Ranges All pressure ranges between 0,1 and 300 bar Wetted Parts Hastelloy C-276, gold-plated. Others on request.

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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⁽¹⁾ Linearity (best straight line through zero) + hysteresis + repeatability

⁽³⁾ Linearity (BFSL) + hysteresis + repeatability

⁽²⁾ T4: -40 °C \leq T_a \leq +100 °C, T5: -40 °C \leq T_a \leq +95 °C, T6: -40 °C \leq T_a \leq +80 °C