KELLER

PIEZORESISTIVE PRESSURE TRANSMITTERS

SERIES 21 Y

FOR INDUSTRIAL APPLICATIONS

<u>Technology</u>: 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.

<u>Flexibility</u>: The extent of the vertical range of manufacture, the modular design and the programmable electronics make it possible to manufacture large, customer-specific batches. The pressure sensors (insulated measuring cells) are manufactured in large quantities and kept in stock. These are then welded into the required transmitter head, equipped with electronics and calibrated over the entire temperature and pressure range in systems with up to 1000 measuring stations.

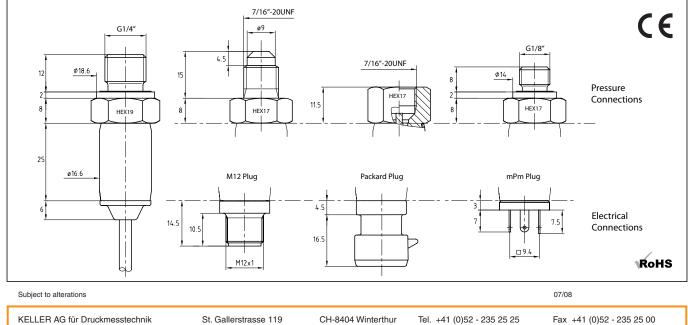
mPm connectors, M12 connectors, Packard connectors and cable connections are used as standard for the electrical connection. In the relative pressure version, the ambient pressure is led into the interior via cable or connector.

<u>Outputs</u>: A 2-wire (4...20 mA) or 3-wire version with voltage output is available as an output signal. For a ratiometric 0,5 to 4,5 V version, we refer to the KELLER Series 21 G product range.

EMC: The 21 Y product line is outstanding due to its extreme ruggedness towards electromagnetic fields. The limits of the CE standard are undercut by a factor of up to 10 with conducted and radiated fields. These transmitters are also extremely immune to external voltages between the housing and the electrical connection, which is particularly important when frequency converters are being used. The high insulation voltage of 300 V make this product ideal for use in the harshest of environments.

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Specifications

Pressure Rai	nges (all intermediate range	es possible)				
PR-21 Y		210 bar FS				
PAA-21 Y / PA-21 Y		21000 bar FS	21000 bar FS			
Overpressure	9	2 x pressure range, m	2 x pressure range, max. 1100 bar			
PAA: Absolute. Ze	ro at vacuum PA: Sealed Gaug	e. Zero at 1000 mbar abs. PR: Ver	nted Gauge. Zero at atmospher	ric pressure		
Accuracy						
Linearity (best fitted straight line) $^{1)}$		typ. ±0,25 %FS	typ. ±0,25 %FS max. ±0,5 %FS			
Total Error Band ² 050 °C		max. ±1,0 %FS				
) including Livets	-1080 °C	max. ±1,5 %FS	Cooff , Zara , Caon Talarana			
⁷ Including Hyste	resis + Repeatability ²⁾ Lineari	ty + Hysteresis + Repeatability + Temp. (Joen. + Zero + Span Tolerand	e		
Storage-/Operating Temperature		-40100 °C				
Stability	PR-Version	max. ±0,5 %FS				
	PAA/PA-Version	max. ±0,3 %FS				
-		0.11"	c	- ····		
Туре		<u>2-Wire</u>	<u>3-Wire</u>	<u>3-Wire</u>		
Signal Output		420 mA	010 V	0,54,5		
Limitation Signal Output		3,222,3 mA	-1,211,2 V	0,14,9 V		
Supply		832 VDC	1332 VDC	832 VD		
Load Resistance		< (U-8 V) / 0,025 A	> 5 kΩ	> 5 kΩ		
Limiting Frequency Power Consumption		2 kHz	2 kHz	2 kHz	A	
Power Consu	mption		max. 5 mA	max. 4 m/	4	
Electrical Connection		- Plug: M12 (4-pole), F - Cable	- Plug: M12 (4-pole), Packard, mPm - Cable			
Pressure Cor	nnection	G1/4" male, G1/8" mal	e, 7/16"-20 UNF male	and female		
Response Tir	ne (Supply ON)	(0…99 %) < 5 ms				
Isolation		> 10 MΩ at 300 VDC				
EMC		EN 61000-6-2: 2005 /	EN 61000-6-2: 2005 / EN 61000-6-3: 2007 / EN 61326-2-3: 2006			
Dead Volume Change		< 0,1 mm ³	< 0,1 mm ³			
Material in Media Contact		- Stainless Steel AISI	- Stainless Steel AISI 316L (1.4404/1.4435)			
		- Viton® Seal external	(no internal seals)			
Protection Cl	ass	M12-/Packard-Plug:				
		mPm-Plug:	mPm-Plug: IP65 (with corresponding mating plug)			
		Cable:	IP54			
Weight		• • •				
Endurance			> 10 million cycles, 0100 %FS at 25 °C			
Oil Filling		Silicone oil				
Options						
Temperature Range Other temperature ranges on request. Maximal range: -40+120 °C						
Dil Filling		-	Fluorocarbon oil (O ₂ -compatible), olive-oil, lowest temperature oil (-55 °C)			
Pressure Con	nection, Electr.ical Connectio	n Others on request				
Subject to altera	ations				07/08	
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