

# **H**KELLER

SERIES 21 C

### PIEZO-RESISTIVE PRESSURE TRANSMITTER

FOR INDUSTRIAL APPLICATIONS, RATIOMETRIC OUTPUT

#### **Technology**

The C-series transmitters are noted for their ability to deliver high accuracy over a wide temperature range. This is achieved by means of mathematical modelling of the sensor characteristics and digital compensation. In order to do this, each transmitter is gauged over pressure and temperature, programmed and checked after calibration in the same test set-up.

The modular design of the Series 21 C and the extensive vertical range of in-house manufacture provide a high degree of flexibility. The company can quickly adapt to customer requests, even with large production batches. The extensive standard range of connectors and pressure connections means that a CIO measuring cell (Chip-in-Oil) can be quickly welded in from stock if small numbers are involved, and then calibrated to the required temperature range.

RoHS conformity and comprehensive EMC protection are a matter of course, therefore qualifying the Series 21 C for use in industrial areas.

#### Performance features

- Hermetically sealed electronics, extremely compact design
- No internal seals, all made from AISI 316L steel in media contact, IP67
- Extremely accurate, wide temperature range, outstanding long-term stability, no pressure hysteresis
- Ratiometric signal output, 5 V supply voltage, 24 V overvoltage and polarity reversal protection
- Low cost

#### Typical usage areas

Cooling and air conditioning systems, pneumatic systems, hydraulic systems, compressors, mechanical engineering, ventilation systems, pump systems etc.

Pressure connections and electrical connections can be combined without limitation.



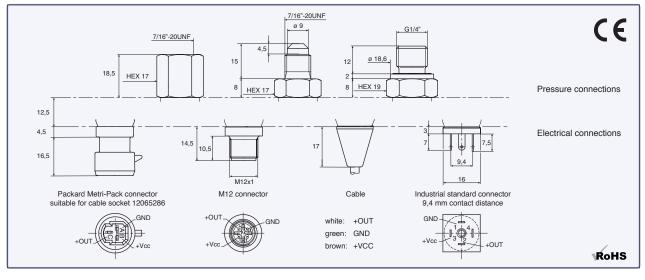
7/16" -20UNF



7/16"-20UNF internal







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Edition 11/2015 Subject to alterations Companies approved to ISO 9001 



## **C**KELLER

#### Specifications

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<b>Options</b> Temperature Range Pressure Connection, elec OEM Version	ctrical Connection	Others on request	perature ranges on reques		
Weight Pressure Endurance Vibration / Shock Dil Filling		<ul> <li>≈ 40 g (depending on pressure and electrical connection)</li> <li>&gt; 10 million pressure cycles 0100 %FS @ 25 °C</li> <li>10 g, 52000 Hz, X/Y/Z-axis / 75 g sinus 11 ms</li> <li>Silicone oil</li> </ul>			
Protection Class		M12-/Packard-Plug: mPm-Plug: Cable:	Pm-Plug: IP65 (with corresponding mating plug)		
Material in Media Contact		- Stainless Steel AISI 316L (DIN 1.4404/1.4435), - Viton® Seal external (-20200 °C, no internal seals)			
Isolation EMC Dead Volume Change		> 10 MΩ @ 500 VDC EN 61000-6-2 / EN 61000-6-3 / EN 61326-2-3 < 0,1 mm³			
Pressure Connection		- 7/16"-20 UNF outside and inside - G1/4"			
Electrical Connection		<ul> <li>Plug: M12 (4-pin), Packard Metri Pack, industrial standard plug, 9,4 mm contact distance</li> <li>Cable (standard length 2 m)</li> </ul>		Pin assignments (external view) GND (	
Response Time (Supply ON)		< 5 ms (099%)		➡ Temperature range of -50150 °C	
Rise Time T <sub>99</sub>		1 ms		⇒ Pressure range up to 200 bar	
Sampling Rate / Bandwidth		2 kHz / 800 Hz		➡ Total error band up to ±0,5 %FS @ -1080 °C	
Load Resistance		max. 8 mA > 5 kΩ		⇒ Accuracy ±0,25 %FS	
Reverse Polarity and Overvoltage Protection Power Consumption		±24 VDC max. 8 mA		➔ Compact design	
Supply		5,0 VDC ±0,5 V		rature.	
Type Signal Output		3 wire 0,5…4,5 V ratiometric		measuring cell. This makes it possible to provide OEM pressure transmitters with a standardised output signal without external electronics which are fully compensated via pressure and tempe- roture.	
Storage-/Operating Temperature		-40125 °C		hermetically sealed. The signal conditioner is integrated in an oil-filled transducer housing together with the pressure	
Stability		max. ±0,3 %FS		The heart of a Series 21 C pressure transmit- ter is a "CIO" transducer with all components	
Accuracy + temperature coefficie	ents + zero + span tolerance				
Linearity (best fitted straight line)	+ hysteresis + repeatability				
	1080 °C 0125 °C	max. ±1,5 %FS max. ±2,5 %FS			
Accuracy <sup>1)</sup> Fotal Error Band <sup>2)</sup>	050 °C	max. ±0,25 %FS max. ±1,0 %FS			
		-		CIO technology (Chip-in-Oil)	
Overpressure	eric pressure PA: Sealed		PAA: Absolute. Zero at vacuum	* Measuring range > 600 bar only suited for static application	
PA-21 C / PAA-21 C		21000* bar max.			
PR-21 C		230 bar			
PA-21 C / PAA-21 C Overpressure		230 bar 21000* bar max. 2,5 x pressure range	PAA: Absolute Zero et upprum	* Measuring range $\sim 800$ has only suited for static contin	

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