



PIEZORESISTIVE TRANSMITTERS AND TRANSDUCERS INDUSTRIAL APPLICATIONS. ABSOLUTE AND GAUGE REFERENCES.

SERIES 21 R

This new range of KELLER OEM pressure transmitters and transducers offers the user the high accuracy and stability of the KELLER piezoresistive pressure capsule in a low cost OEM package. Applications include re Fridgeration, hydraulic controls, air compressors, ink jet printers, vacuum pumps etc.

The silicon sensor is mounted in an all welded oil filled stainless steel capsule, providing a highly stable measuring cell with negligible hysteresis, unrivalled linearity, high output and a life of millions of pressure cycles.

The Series 21R use the Series 6 capsule, which is of all welded 316L stainless steel construction. Transducers are supplied with 2 metres of screened cable, or a square connector and mating plug, type mPm-193.

Accuracy is achieved by very large scale predictable production quantities of the pressure capsule (over 2 million produced today).

Reliability is assured by the inherent properties of the perfectly elastic silicon chip, and ensuring that neither the pressure media nor the reference media (in the gauge version) come into contact with any sensitive parts.

Temperature Compensation: Each unit is fully tested and compensated. Span errors are reduced by selecting the semiconductor doping levels so that the gauge factor of the strain gauges (ΔR) is constant with temperature. Thermal zero compensation is achieved by an automatic test procedure which fits a single resistor across one arm of the bridge.

Shock and vibration performance is excellent due to the silicon chip being suspended in the oil-filled capsule. It is isolated mechanically from the body. Similarly, the effects of mounting torque are eliminated.



SERIES 21R WITH CABLE (PLAN 80096.2)		ELECTRICAL CONNECTIONS		
		2-WIRE	3-WIRE	4-WIRE
		GREEN	GND	GND (WHITE)
		WHITE	OUT/GND	+OUT (RED)
		BROWN	+Vcc	+Vcc (BLACK)
				-OUT (BLUE)
SERIES 21R WITH PLUG (PLAN 80096.3)		ELECTRICAL CONNECTIONS		
		2-WIRE	3-WIRE	4-WIRE
		1	OUT/GND	GND
		2		+OUT
		3	+Vcc	+Vcc
		4		-OUT

Subject to alterations

4/99



SPECIFICATIONS

SERIES 21 R

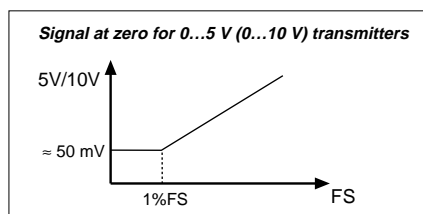
PR 21 R *	0,5	1,0	1,6	2,5	6	10	16	bar	<i>vented gauge</i>								
PAA 21 R		1,0	1,6	2,5	6	10	16	bar	<i>absolute</i>								
PA 21 R		1,0	1,6	2,5	6	10	16	25	50	100	160	250	400	600	bar	<i>sealed gauge</i>	
Over Range	2	2,5	3	6	8	15	25	60	75	150	250	600	600	800	bar		

* mPm connector only, not cable

	Transmitter				Transducer	
Signal Output	4...20 mA	0...5 Vdc	1...6 Vdc	0...10 Vdc	0...100 mV	
Supply Voltage	8...28 Vdc			13...30 Vdc	8...28 Vdc.	10 Vdc
Current required	up to 20 mA	4 mA max.			2 mA max.	
Zero/Span Tolerance	1% FS	1% FS**	1% FS	1% FS**	±0,1% FS	
Configuration	2 wire		3 wire		4 wire	
Electrical Connection:	OUT/GND: Pin 1 / White		GND: Pin 1 / Green		GND: Pin 1 / White	
mPm 193 micro or			+OUT: Pin 2 / White		+OUT: Pin 2 / Red	
cable 2m, 4 core	+Vcc: Pin 3 / Brown		+Vcc: Pin 3 / Brown		+Vcc: Pin 3 / Black	
					-OUT: Pin 4 / Blue	
Linearity	0,2 % typ. / 0,5% max.				0,2% typ. / 0,5% max.	
Total Error Band* +18...+22°C	1% max. / 0,5% typ.				0,5% max.	
Total Error Band* 0...+50°C	2% max. / 1,0% typ.				1,0% max.	
Total Error Band* -20...+80°C	4% max. / 2,5% typ.				2,5% max.	

* Total error band includes linearity, hysteresis, zero and span offsets, temperature effects and repeatability.

**Signal at zero ≈ 50 mV --> see chart



Maximum Temperature	-20...+80°C (on demand -40...100°C)
Pressure Port	G 1/4 male parallel to ISO 228 (1/4"BSP)
Pressure Media	Compatible with 316L stainless steel
Weight	75 gramme
Electromagnetic Compatibility	CE marked: Fully tested to EN 50082-2 and EN 50082-1
Enclosure Protection	IP65
Insulation	Greater than 100 MΩ at 50 Vdc
Insulation Test	1 minute at 500 Vdc

User Notes: Basic 100 mV transducers are calibrated at 10 Vdc to produce 0...100 mV signal (nominal), and require a stable voltage supply. They can be operated at 5 Vdc to give 0...50 mV signal or 20 Vdc to give 0...200 mV signal. The circuit is a compensated resistance bridge and is completely passive with no diodes or reactive components. Bridge resistance is 3,5KΩ nominal. The 8...28 V supply transducer is fitted with an internal regulator. The mPm micro connector has a PG7 cable gland entry suitable for cables between 4 and 6 mm diameter. Screw terminals and solder lags are provided. The G 1/4 pressure connection has an integral Viton seal at the shoulder. Alternatively it may be sealed using a face seal on the flat nose of the pressure port.