

# ***PTA5000***

## ***Hermetically Sealed Modular Pressure Sensor***

### ***Typical Applications***

- Compressors
- Hydraulic Systems
- Agricultural Equipment
- Construction Equipment
- Heat Pumps
- Wind Energy
- HVAC Systems
- Chemical Industry

### ***Standard Full Scale Pressure Ranges***

0-100, 0-150, 0-200, 0-300, 0-600,  
0-1000, 0-2000, 0-3000, 0-6000, 0-9000  
and 0-10000 Psi (Gage)

### ***Features***

- Hermetically Sealed
- Rugged & Durable
- Compact & Light-weight
- Resistant to Chemical Attack
- Superior Long-Term Stability & Repeatability
- Outstanding Shock & Vibration Performance



### ***Description***

The PTA5000 utilizes Kavlico's thin film strain gauge sensing technology, incorporating a hermetically sealed design with no internal sealing required. Designed for harsh environments, a rugged 304 stainless steel housing surrounds the PTA5000 transducer.

The PTA5000's small, compact design as well as low overall weight is ideal for applications with spacing and weight limitations. This easy-to-use sensor is media resistant, allowing for a broad range of liquid and gaseous media compatibility. It can be used at high operating temperatures and has internal temperature compensation. Highly reliable, the PTA5000 provides accurate, high pressure measurements every time.

Specifically designed for industrial applications, the PTA5000 can be customized to fit your application-specific needs. So contact us to place your custom order now.

## Technical Specifications

<b>Pressure ranges from 0 to ...</b>	psi (gage)	100	150	200	300	600	1000	2000	3000	6000	9000	10000
<b>Proof pressure</b>	psi (gage)	290	290	465	725	1160	1740	4640	5540	8700	13050	13050
<b>Burst pressure</b>	psi (gage)	435	435	695	1085	1740	2610	6960	7250	11600	17400	17400

Individual customized calibration on request.

### Electrical

<b>Output Signal</b>	<b>4 - 20 mA</b>	<b>0.5 - 4.5 VDC ratiometric</b>	<b>0 - 10 VDC</b>
<b>Operating supply voltage</b>	8 - 30 VDC	5 VDC ± 5 %	14 - 30 VDC
<b>Power consumption</b>	≤ 600 mW	≤ 25 mW	≤ 600 mW
<b>Load</b>	$\leq \frac{V_{sup} - 8 \text{ VDC}}{0,02 \text{ A}} [\Omega]$	≥ 4.7 kΩ	≥ 4.7 kΩ
<b>Overvoltage protection</b>	min. 33 VDC	min. 6 VDC	min. 33 VDC
<b>Short-circuit proofness</b>	not applicable	Yes *1)	Yes *1)
<b>Reverse polarity protection</b>	Yes *2)	Yes *2)	Yes *2)

\*1) for min. 3 intervals at 5 minutes each at max. rated supply voltage

\*2) for min. 10 seconds on assigned pins at max. rated supply voltage

Unit shall be supplied by a power supply with double/reinforced insulation (SELV) and limited energy in accordance to UL/EN/IEC 61010-1 or LPS in accordance to UL/EN/IEC 60950-1 or class 2 per UL1310/UL1585 (NEC or CEC). The power supply shall be approved for usage above 2000m if the pressure sensor is used in this environment. For indoor and outdoor use, not exposed to direct sunlight.

### Pin assignment

Connector	Current Output				Voltage Output			
	PIN 1 / A	PIN 2 / B	PIN 3 / C	PIN 4	PIN 1 / A	PIN 2 / B	PIN 3 / C	PIN 4
M12 4-pole	Vsup	...	Iout	...	Vsup	...	Vout	GND
Packard Metri-Pack 150	Iout	Vsup	...	...	GND	Vsup	Vout	...

**Response time** ≤ 2 ms max. to 63 % of full scale pressure with step change on input

### Accuracy

Reference conditions to EN 61298-1

<b>Accuracy *</b>	≤ 0.5 % of span
<b>Non-linearity **)</b>	0.2 % of span
<b>Non-repeatability</b>	0.1 % of span
<b>1-year stability</b>	0.2 % of span

\*) Including non-linearity, hysteresis, non-repeatability, zero point and full scale error (corresponds to error of measurement per IEC 61298-2). Adjusted in vertical mounting position with pressure port down

\*\*\*) BFSL according to IEC 61298-2

### Temperatures

<b>Medium</b>	-30 °C to +120 °C
<b>Environmental</b>	-30 °C to +100 °C (depending on electrical connector)
<b>Storage</b>	-30 °C to +100 °C (depending on electrical connector)

### Temperature coefficients

<b>TC zero</b>	0.2 % of span / 10 K within temperature range 0 °C to +80 °C
<b>TC span</b>	0.2 % of span / 10 K within temperature range 0 °C to +80 °C

### Conformity

<b>UL</b>	Standard(s) for Safety: Electrical Equipment for Measurement, Control and Laboratory Use - UL 61010-1
<b>RoHS</b>	According to 2002/95/EC RoHS Directive Pressure equipment directive 97/23/EC
<b>CE</b>	EMC directive 2004/108/EEC, EN 61 326 Emission (Group 1, Class B) and Immunity (industrial locations)

**Vibration resistance** IEC 60068-2-64 (RANDOM) 20 PSD

**Shock resistance** 25 g minimum according to EN 60068-2-27

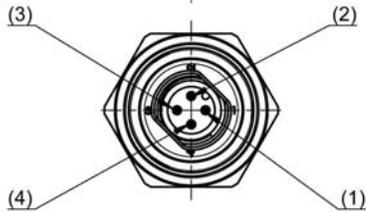
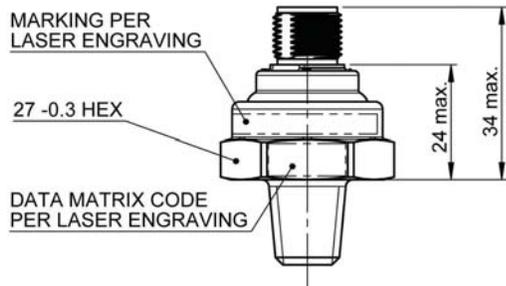
<b>Electrical connector</b>	M12 - 4 pole	Packard Metri-Pack 150 - 3 pole
<b>Ingress protection per IEC 60 529</b>	IP67 / IP69K (with special mating connector)	IP67

**Weight** appr. 50 gram (sensor without mating connector)

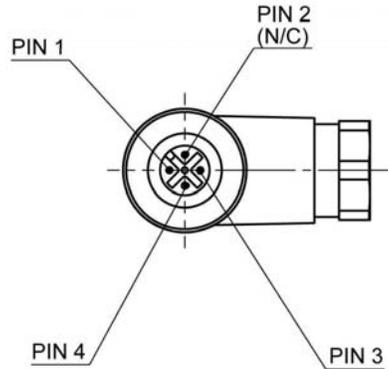
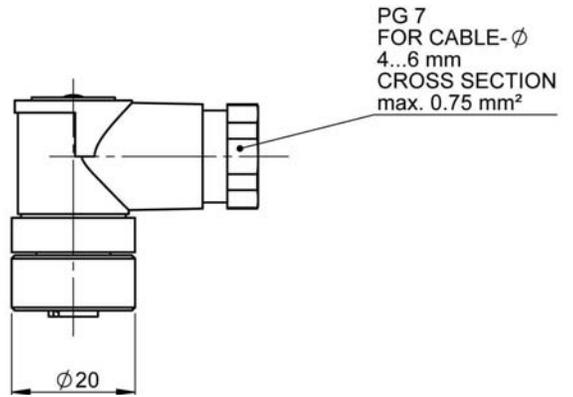
**Media** All class II fluids and gases compatible with stainless steel 304 (1.4301)

Customized versions on request - contact factory for details.

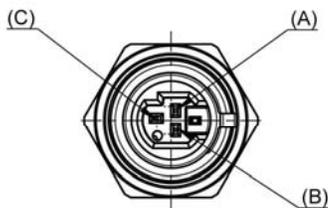
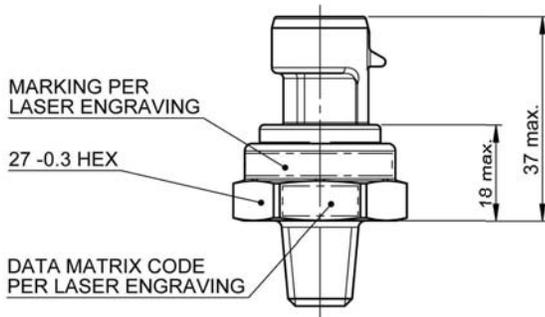
M12 - 4 POLE



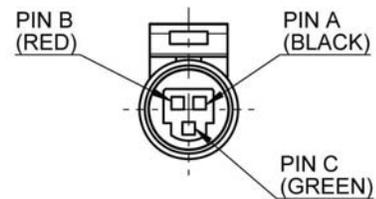
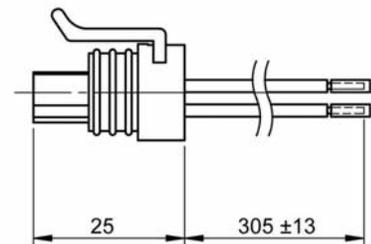
MATING CONNECTOR M12, RT-ANGLE



PACKARD (METRI-PACK 150)



MATING CONNECTOR PACKARD METRIC-PACK, CABLE ASSEMBLY



Dimensions in: mm

## How to Order

### PTA5000 PART NUMBER DESIGNATION

PTA5000	-	3000	-	2	-	A
<b>Pressure Ranges Psi</b>						
0 – 100 psi		0100				
0 – 150 psi		0150				
0 – 200 psi		0200				
0 – 300 psi		0300				
0 – 600 psi		0600				
0 – 1000 psi		1000				
0 – 2000 psi		2000				
<b>0 – 3000 psi</b>		<b>3000</b>				
0 – 6000 psi		6000		1		
0 – 9000 psi		9000		2		
0 – 10000 psi		10000		3		
<b>Built-in Electrical Connection</b>						
A						M12 - 4 pole
B						Packard Metri-Pack 150
X						Packard Metri-Pack 150 with mating connector 30.5cm leads
Y						M12 - 4 pole with mating connector; rt-angle cable assembly
Z						M12 - 4 pole with mating connector; rt-angle
<b>Output</b>						
				1		4 – 20 mA
				2		<b>0.5 – 4.5 VDC Ratiometric</b>
				3		0 – 10 VDC
<b>Pressure Connection (port)</b>						
						1/4 – 18 NPT

Example: PTA5000 - 3000 - 2 - A

Description: PTA5000 Sensor, 0 - 3000 PSI Absolute, 0.5 - 4.5 VDC Ratiometric Electrical Output, with Built-in M12 - 4 Pole Connector, 1/4 - 18 NPT Pressure Connection



Before installation and operation, ensure that the appropriate pressure sensor has been selected in terms of pressure range, design and specific measuring conditions. Non-compliance can result in serious injury and/or damage to the equipment.

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