

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

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

Individual customized calibration on request.

Electrical

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

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

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

Temperature coefficients

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

Conformity

UL	Standard(s) for Safety: Electrical Equipment for Measurement, Control and Laboratory Use - UL 61010-1
RoHS	According to 2002/95/EC RoHS Directive Pressure equipment directive 97/23/EC
CE	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

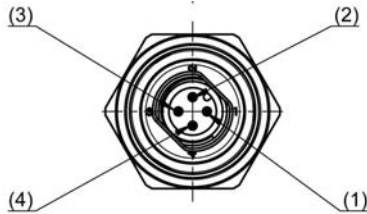
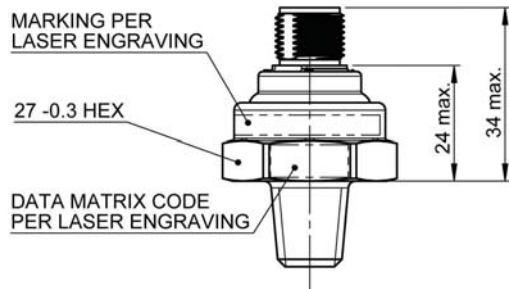
Electrical connector	M12 - 4 pole	Packard Metri-Pack 150 - 3 pole
Ingress protection per IEC 60 529	IP67 / IP69K (with special mating connector)	IP67

Weight appr. 50 gram (sensor without mating connector)

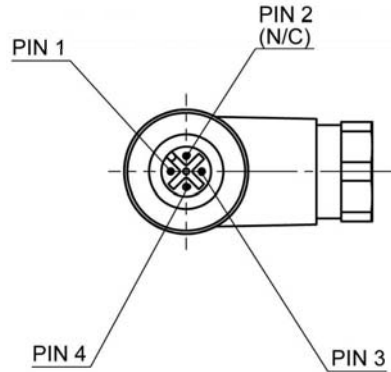
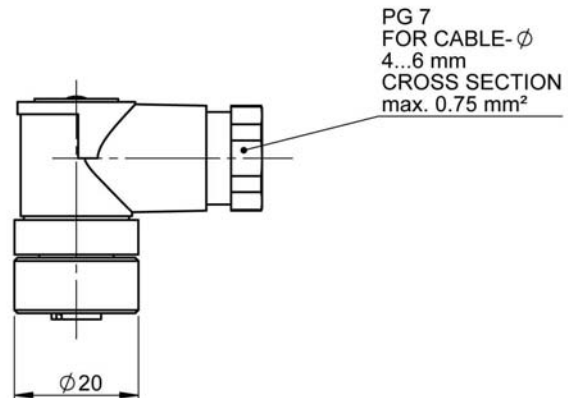
Media All class II fluids and gases compatible with stainless steel 304 (1.4301)

Customized versions on request - contact factory for details.

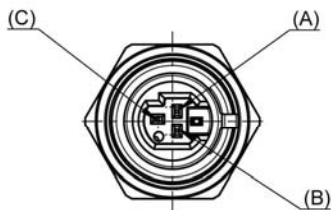
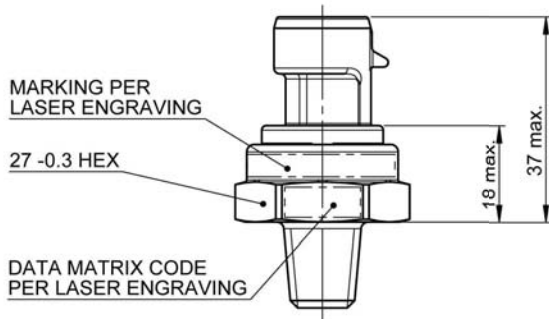
M12 - 4 POLE



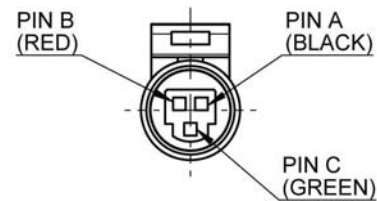
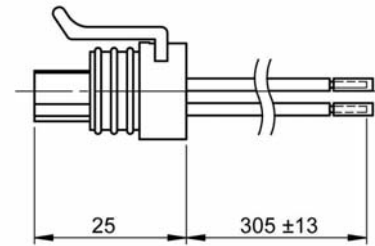
MATING CONNECTOR M12, RT-ANGLE



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