

# Data Sheet

## P500

### Pressure Sensor



#### Main Features

Pressure Ranges	0 - 1 up to 0 - 70 Bar, 0 - 15 up to 0 - 1000 PSI
Electrical Connection	Packard Electric Metri-Pack 150 Series
Pressure Connection	1/4-18 NPT (external), 1/8-27 NPT (external) - for more options see how to order
Housing Material	Brass (up to 300 psi) and stainless steel (above 300 psi)
Output Voltage	0.5 to 4.5 Vdc

#### Attributes

- Small Size (3/4" Hex)
- External Hex for Easy Installation
- Linear Amplified Output
- Temperature Compensated
- Superior Long-Term Stability
- Low Power Consumption
- Minimum Life Expectancy: Ten Million Cycles

#### Typical Applications

- Compressors
- Process Controls
- Instruments & Test Equipment
- Sterilizers
- Air Pressure
- Oil & Fuel Pressure
- Coolant Pressure
- Agricultural Equipment
- CNG & Natural Gas Engines

#### Description

The P500 incorporates Kavlico's 4th generation ceramic capacitive sense element with the latest state-of-the-art proprietary ASIC. Available in brass or stainless steel housings, this multi-purpose sensor is rugged by design. Highly reliable, the P500 is ideal for measuring a broad range of process media including hydrocarbon based fluids, air, and gases. The P500 package has a built-in Metri-Pack 150 series sealed electrical connector and is available with popular pressure connection thread options. The sensor is offered with seal materials suitable for diverse applications. Standard pressure ranges are available in PSI or Bar.

# Technical Specifications

## Pressure Ranges

Bar A	0 - 1	0 - 1.6	0 - 2.5	0 - 4	0 - 6	0 - 10	0 - 16	0 - 25	0 - 40	0 - 50	0 - 70	
PSI A	0 - 15	0 - 20	0 - 30	0 - 50	0 - 75	0 - 100	0 - 150	0 - 200	0 - 300	0 - 500	0 - 750	0 - 1000

For custom pressure ranges consult Kavlico Pressure Sensors.

## Physical

Durability/Service Life	10 million full pressure cycles (minimum)
Proof Pressure	3X FS Pressure (upto 14 Bar / 200 PSI) 2X FS Pressure (above 14 Bar / 200 PSI)
Burst Pressure	1500 PSI (upto 24 Bar / 350 PSI) 2500 PSI (above 24 Bar / 350 PSI)
Humidity	93 +/- 3% RH
Vibration	10 g's peak to peak sine (10 - 2000 Hz)
Shock	75 g's, 1/2 Sine Wave
Drop Test	1 meter drop on concrete as per SAE J1455
Weight	< 50 gm
Ingress Protection	IP67

## Performance

Linearity Error	≤ +/- 0.5% of span
Total Error Band	+/-1.5% of span (0 ≤ T ≤ 85 C°) +/-2.0% of span (T < 0 C°, T < 85 C°)
Stability Coefficient	+/-0.3 % of Full span over 1 year
Operating Temperature	-40 C° to 125 C° (Seal material dependent. See How to Order)
Storage Temperature	-40 C° to 125 C° (Seal material dependent. See How to Order)

## Electrical

Supply Voltage	5.0 Vdc +/- 0.5
Output Voltage	0.5 to 4.5 Vdc
Supply Current	≤ 5 mA
Output Impedance	≤ 100 Ω
Output load	≥ 10 KΩ
Output response time	≤ 2 ms to 63 % of final output voltage with step change in input pressure
Overtoltage protection	36 Vdc
Reverse Voltage	-36 Vdc
Short Circuit protected	Output to supply, Output to Ground: Indefinite
Isolation Voltage	R ≥ 100 MΩ, 500 Vdc / 1 min
Warmup time	3 mSec Max.
EMC	Meets ISO 7637-3, ISO 11452-4, ISO 11452-2, CISPR 25, MIL-STD 461 E
ESD	IEC 1000-4.2 (8kV contact, 15kV air), ISO 10605 (8kV contact, 25kV air)

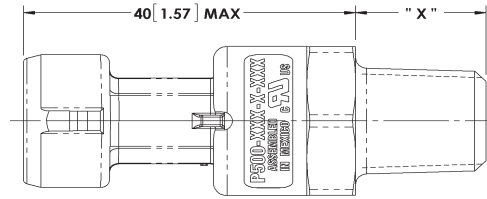
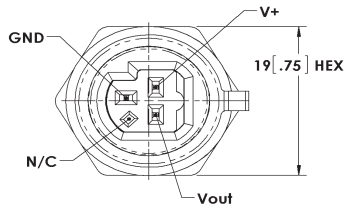
## Approvals & Certificates

CE Compliance	EN 61326-1, 2006 IEC 61000-4-2, 2001 IEC 61000-4-3, 2006 IEC 61000-4-8, 2001
UL	File # SA10552
ROHS	2002/95/EC RoHS Directive

## Dimensions

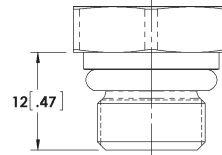
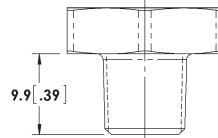
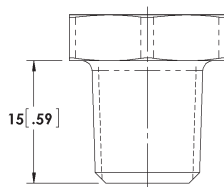
### Pressure Sensor with Electrical Connection

Dimensions in mm [Inch]

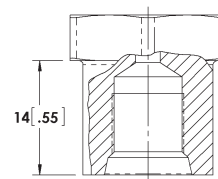
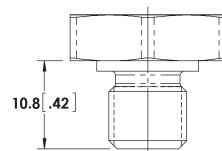
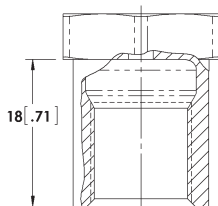


### Pressure Connections and Recommended Installation Torque

Dimensions in mm [Inch]



Name	1/4 - 18 NPT	1/8 - 27 NPT	Stud End DIN 3852-B-G1/4
Thread	External	External	External
Torque	25 Nm	20 Nm	20 Nm



Name	Tapped Hole DIN 3852-Y-G1/4	3/8-24 UNF-2A PER SAE J 1926/2	3/8-24 UNF-2B PER SAE J 1926/1
Thread	Internal	External	Internal
Torque	15 Nm	22 Nm	22 Nm

Note: Recommended torque may vary according to material and specific application.

# How to Order



Pressure Ranges		Reference	Built-in Electrical Connection		
1B	0 – 1 Bar	15	0 – 15 PSI	A Absolute	A With Mating Connector, w/12", 18 AWG Leads
1.6B	0 – 1.6 Bar	20	0 – 20 PSI	G Gage	C Without Mating Connector
2.5B	0 – 2.5 Bar	30	0 – 30 PSI	S Sealed Gage (Referenced to 14.7 PSIA)	
4B	0 – 4 Bar	50	0 – 50 PSI		
6B	0 – 6 Bar	75	0 – 75 PSI		
10B	0 – 10 Bar	100	0 – 100 PSI		
<b>16B</b>	<b>0 – 16 Bar</b>	150	0 – 150 PSI		
25B	0 – 25 Bar	200	0 – 200 PSI		
40B	0 – 40 Bar	300	0 – 300 PSI		
50B	0 – 50 Bar	500	0 – 500 PSI		
70B	0 – 70 Bar	750	0 – 750 PSI		
		1000	0 – 1000PSI		

**Example:**  
P500 -16B - A - E1A

**Description:**  
P500 Sensor, 0 - 16 Bar Absolute, Fluorosilicone Seal Material, 1/4 - 18 NPT Pressure Connection, with Mating Connector

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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