KAVLICO Pressure Sensors

Data Sheet
P4000
Hermetically Sealed Pressure Sensor

Main Features

Pressure Ranges	0 to 100 up to 0 to 5000 PSI
Electrical Connection	Packard Electric Metri-Pack 150 Series, Deutsch
Pressure Connection	1/8 – 27 NPT, 7/16 – 20 UNF – for more options see how to order section
Housing Material	304 Stainless Steel (1.4301)
Output Signal	0.5 - 4.5 VDC

Attributes

- Welded Stainless Steel Construction
- Isolation Diaphragm
- Absolute or Sealed Gage Reference
- Low Power Consumption
- High Vibration Tolerance
- Outstanding EMI/RFI Protection
- Amplified Linear Output
- Temperature Compensated

Typical Applications

- On & Off-Highway Vehicle
- Hydraulic Systems
- Pressurized Tools
- Instruments
- Pneumatic Controls
- Refrigerant Control & Recovery

Description

The P4000 series of pressure sensors incorporates a stainless steel isolation diaphragm and welded construction to withstand harsh environments. The sensor uses piezo-resistive sensing technology and is paired with our custom ASIC to produce a stable, accurate output. Using a 5 Vdc input, the sensors provide a 0.5 to 4.5 Vdc output proportional to pressure. Internal temperature compensation provides an accurate, easy-to-use device. The rugged construction of the P4000 series is specifically designed to withstand high overpressure spikes and provide compatibility with a wide range of process media including refrigerants and hydraulic oils.

Technical Specifications

Pressure Ranges

From 0 to …*[1]	PSI (gage)	100	200	300	500	750	1000	1500	2000	3000	4000	5000
Proof pressure	PSI (gage)	300	900	900	150	1500	3000	5000	5000	8000	8000	8000
Burst pressure	PSI (gage)	3750	3750	3750	3750	3750	15000	15000	15000	15000	15000	15000

1 for more options see How to Order

Physical

Operating Life Cycle	min. 1 million full pressure cycles over the full range
Vibration Resistance	MIL-STD 202, Method 204, Condition A (10 G's sinusoidal)
Shock Resistance	75 G's ½ sine wave
Drop Test	1m onto concrete surface
Weight	≤ 80 grams (without mating connector)
Ingress Protection	IP67
Media Temperature	-40°C to + 150°C
Environmental Temperature	- 40°C to + 125 °C
Storage Temperature	- 40°C to + 125 °C
Media	All fluids compatible with stainless steel 304 (1.4301)

Performance

Total error band [2]	+/-2% of span (-40 ≤ T ≤ 125° C)

2. Including accuracy, calibration, temperature, non-linearity, hysteresis, non-repeatability, error

Electrical

Output Signal	0.5…4.5 VDC ratiometric
Operating Supply Signal	5.0 ± 0.5 VDC 10%
Power Consumption	<16 mW
Excitation Current	< 3 mA
Overvoltage Protection	16 VDC
Short-circuit Proofness	Yes [3]
Reverse Polarity Protection	Yes [4]
Output Load	≥ 25 kΩ
Response Time	≤ 10 ms max. to 63% of full scale pressure with step change on input

3. for min. 3 intervals at 5 minutes each

4. for min. 10 seconds on assigned pins

Approvals & Certificates

UL	Standard(s) for Safety: Electrical Equipment for Measurement, Control and Laboratory Use - UL SA10552

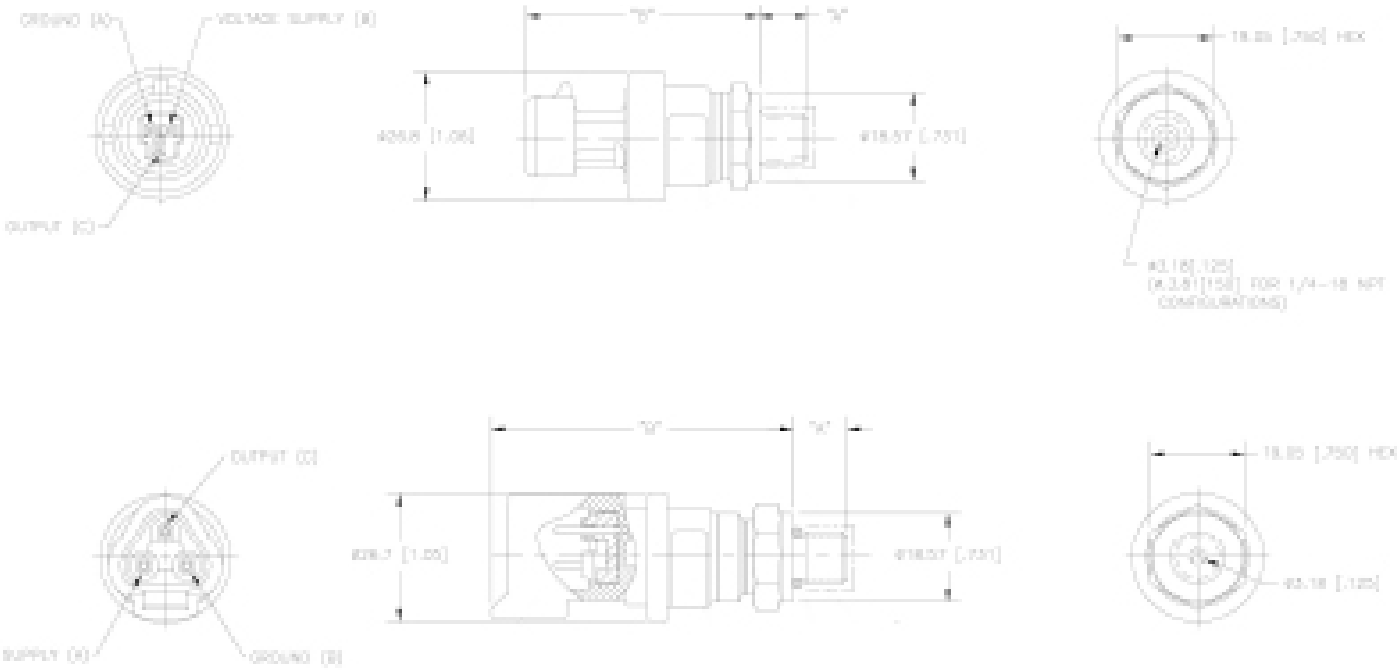
Dimensions

Pressure Sensor with Electrical Connection

Dimensions in mm [Inch]

Packard (metri-pack 150) Pin Call Outs			
Output	Pin 1	Pin 2	Pin 3
0.5-4.5 VDC ratiometric	GND	Vsup	Vout

Thread Size	DIM “A”	DIM “B” (Low Pressure) Connector		DIM “B” (High Pressure) Connector	
		Packard	Deutsch	Packard	Deutsch
1/8 - 27 NPT	9.91 [.39]	48.01 [1.89] MAX	56.39 [2.22] MAX	53.85 [2.12] MAX	61.98 [2.44] MAX
Schrader (7/16 - 20 UNF)	12.45 [.49]	48.01 [1.89] MAX	56.39 [2.22] MAX	-	-
7/16 - 20 UNF SAE J1926/2	11 [.433]	48.01 [1.89] MAX	56.39 [2.22] MAX	53.85 [2.12] MAX	61.98 [2.44] MAX
1/2 - 20 UNF SAE J1926/2	11 [.433]	48.01 [1.89] MAX	56.39 [2.22] MAX	53.85 [2.12] MAX	61.98 [2.44] MAX



How to Order

Reference
- A Absolute
- S Sealed Gauge

Pressure Connection (port)
- 1 1/8 - 27 NPT
- 2 Schrader (7/16 - 20 UNF)
- 3 7/16 - 20 UNF SAE J1926/2
- 4 1/2 - 20 UNF SAE J1926/2
- 5 1/4 - 18 NPT

Options
- A 4.5 VDC @ full scale pressure
- B 4.75 VDC @full scale pressure

P4000 - 1000 A - B 1 B A

Pressure Ranges (PSI)

0 - 100.....100	0 - 1000.....1000
0 - 150.....150	0 - 1500.....1500
0 - 200.....200	0 - 2000.....2000
0 - 250.....250	0 - 2500.....2500
0 - 300.....300	0 - 3000.....3000
0 - 500.....500	0 - 3500.....3500
0 - 600.....600	0 - 4000.....4000
0 - 750.....750	0 - 4500.....4500
	0 - 5000.....5000

External O-Ring
- A None
- B Nitrile

Built-in Connector
- A Packard PA66 GF33
- B Deutsch
- C Deutsch, Voltage regulated
- D Packard with mating connector 36” leads 16 AWG
- E Deutsch with mating connector 36” leads 16 AWG
- F Deutsch, voltage regulated with mating connector 36” leads 16 AWG
- G Packard PEI GF30
- H Packard with mating connector 12” leads 16 AWG
- J M12 with straight mating connector assy (2 meter leads, 22 AWG)
- K Metripack 150, with mating connector assy 48” leads 16 AWG

Example:
P4000-1000-AB1BA

Description:
P4000 Pressure Sensor, 0 – 1000 PSI Absolute, Nitrile External O- Ring, 1/8-27 NPT Pressure Connection, with Deutsch Built-in Connector , without further electrical options

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.

KAVLICO
Pressure Sensors

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Ref.: DS_PR_EN_LT_JUL 2016 I Creation-Design: Kavlico - Photos: Oliver Windus, Fotodesign

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