P4000
Pressure Sensor

Introduction

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.

Features

- 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

Aplications

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

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

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

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)

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

GENERAL NOTES

[1] For more options see Ordering Options
[2] Including accuracy, calibration, temperature, non-linearity, hysteresis, non-repeatability, error
[3] For min. 3 intervals at 5 minutes each
[4] For min. 10 seconds on assigned pins

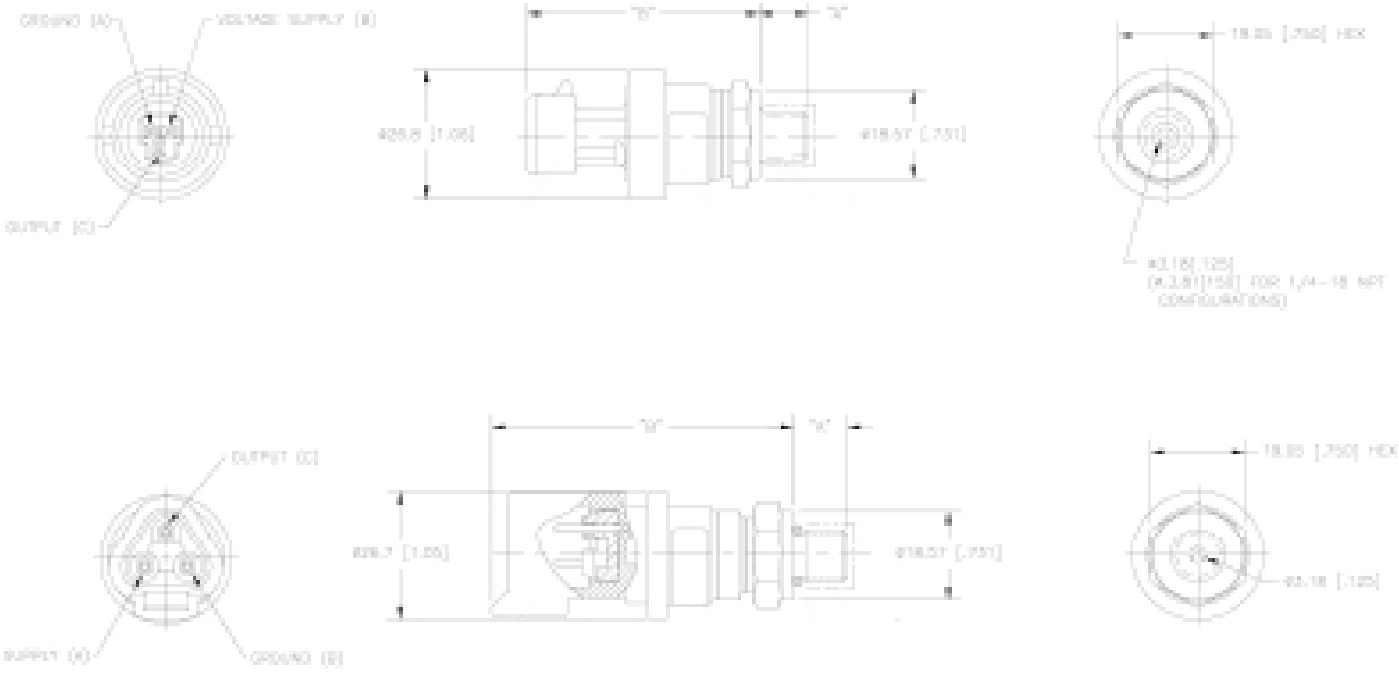
DIMENSIONS

Dimensions in mm [Inch]

Pressure Sensor with Electrical Connection

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



Approvals & Certificates

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

ORDERING OPTIONS

Example : P4000-1000-AB1BA

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

P4000 – 1000 – A B 1 B A

Family

P4000

Pressure Ranges (PSI)

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

Reference

A: Absolute
S: Sealed Gauge

External O-Ring

A: None
B: Nitrile

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

Built-in Connection

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

Options

A: 4.5 VDC @ full scale pressure
B: 4.75 VDC @full scale pressure

WARNINGS

DANGER

RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

Failure to follow these instructions can result in serious injury, or equipment damage.

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

Failure to follow these instructions will result in death or serious injury.

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