



| 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

Applications

- 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
Oversvoltage 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



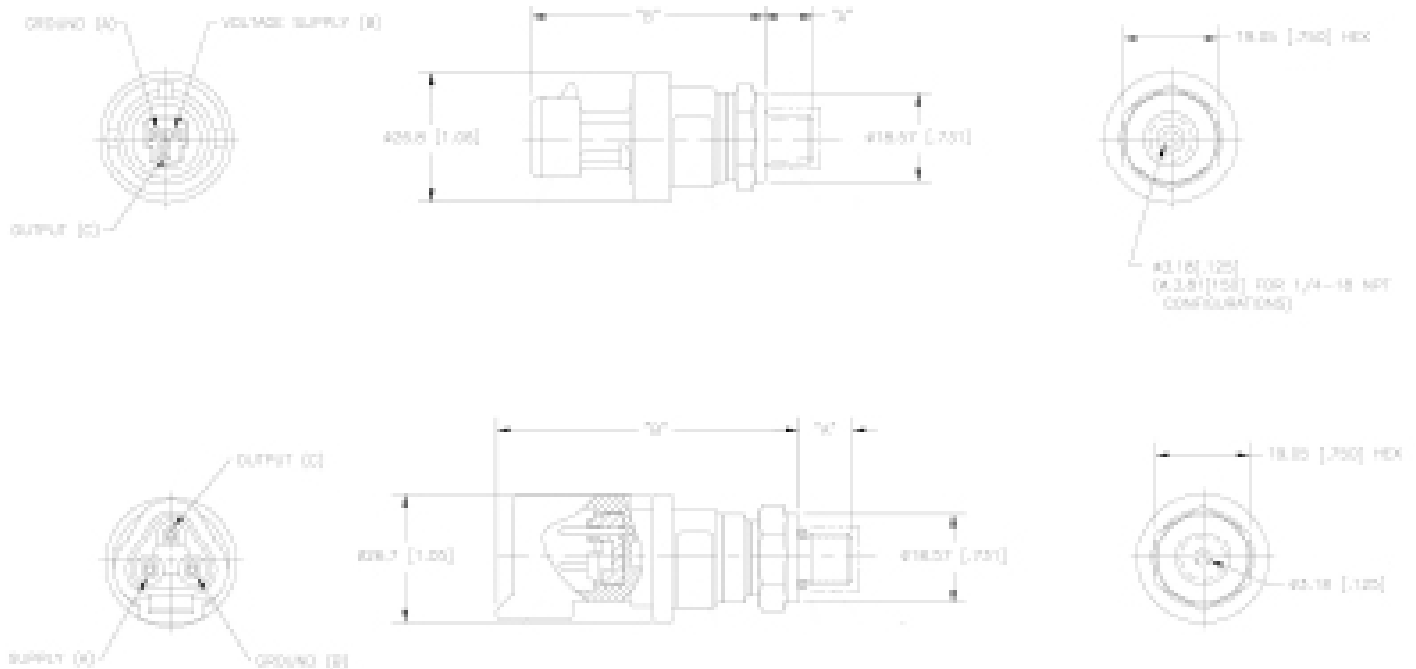
DIMENSIONS

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

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



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.

Page 4

Sensata Technologies, Inc. ("Sensata") data sheets are solely intended to assist designers ("Buyers") who are developing systems that incorporate Sensata products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products. Sensata data sheets have been created using standard laboratory conditions and engineering practices. Sensata has not conducted any testing other than that specifically described in the published documentation for a particular data sheet. Sensata may make corrections, enhancements, improvements and other changes to its data sheets or components without notice.

Buyers are authorized to use Sensata data sheets with the Sensata component(s) identified in each particular data sheet. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER SENSATA INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN. SENSATA DATA SHEETS ARE PROVIDED "AS IS". SENSATA MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE DATA SHEETS OR USE OF THE DATA SHEETS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. SENSATA DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO SENSATA DATA SHEETS OR USE THEREOF.

All products are sold subject to Sensata's terms and conditions of sale supplied at www.sensata.com SENSATA ASSUMES NO LIABILITY FOR APPLICATIONS ASSISTANCE OR THE DESIGN OF BUYERS' PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT IT IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LEGAL, REGULATORY AND SAFETY-RELATED REQUIREMENTS CONCERNING ITS PRODUCTS, AND ANY USE OF SENSATA COMPONENTS IN ITS APPLICATIONS, NOTWITHSTANDING ANY APPLICATIONS-RELATED INFORMATION OR SUPPORT THAT MAY BE PROVIDED BY SENSATA.

Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

CONTACT US

Americas

+1 (800) 350 2727
sensors@sensata.com
switches@sensata.com

Europe, Middle East & Africa

+359 (2) 809 1826
pressure-info.eu@sensata.com

Asia Pacific

sales.isasia@list.sensata.com
China +86 (21) 2306 1500
Japan +81 (45) 277 7117
Korea +82 (31) 601 2004
India +91 (80) 67920890
Rest of Asia +886 (2) 27602006
ext 2808