

# PTE7100 SERIES

## HERMETIC ANALOG PRESSURE SENSOR

The PTE7100 pressure sensor is the ideal solution for customers with challenging measuring requirements for general industrial applications in the mid and high pressure ranges. Utilizing Sensata's automotive leading Micro Silicon Strain Gauge with best-in-class accuracy, the PTE7100 features a wide range of ports, connectors, and analog electrical outputs for ease of integration in various industrial applications.

The PTE7100's high quality stainless steel design features a hermetic port with no internal o-ring seals making it compatible with most media and suitable for harsh environments. With extreme shock and vibration capabilities, a wide operating temperature range, and high proof and burst pressures; the PTE7100 is ideal for industrial applications including injection molding, CO<sub>2</sub> HVAC systems, and other hydraulic or pneumatic applications.



### Features

- Measuring range from 0-50 bar to 0-600 bar (0-725 to 0-8700 psi)
- High accuracy
- Wide range of ports, connectors, and electrical outputs
- Stainless steel design with hermetic port
- Storage and operating media temperature -40-125°C; Operating ambient temp. range -40-100°C
- Snubber option for dampening of pressure spikes due to hammer and cavitation
- REACH/RoHS/CE compliant

### Applications

- Hydraulics and Pneumatics
- Mobile Hydraulics and Off-Highway Vehicles
- Pumps and Compressors
- Air Conditioning and Refrigeration Systems
- Plant Engineering and Automation

## SPECIFICATIONS

### Electrical

<b>Pressure Ranges</b>	0-50 to 0-600 bar (0-725 to 0-8700 psi)
<b>Pressure Reference</b>	Gauge
<b>Supply Voltage/Output</b>	8-32VDC for 4-20mA output 5±0.25VDC for 0.5-4.5VDC output 8-32VDC for 0-5VDC output 12-32VDC for 0-10VDC output 8-32VDC for 1-5VDC output 8-32VDC for 0.5-4.5VDC output
<b>Output Load</b>	≥ 4.7 kΩ for voltage output ≤ (Vsup-8)/20mA for current supply
<b>Output Response Time</b>	<2 ms
<b>Overvoltage Protection</b>	36 VDC
<b>Reverse Voltage Protection</b>	Yes
<b>Short Circuit Protection</b>	Yes
<b>Insulation Resistance</b>	> 100 MΩ at 500V
<b>EMC</b>	IEC 61326-1 and EN 61326-2-3
<b>Dielectric Strength</b>	500 VAC
<b>Enhanced Radiated Immunity</b>	100V/m (80-200MHz) 200V/m (200-2700MHz)
<b>Enhanced ESD</b>	±8KV Contact; ±15KV Air

## Physical

<b>Proof Pressure</b>	2X full scale pressure <sup>(1)</sup>
<b>Burst Pressure</b>	20X for full scale pressure = 50-100 bar 10X for full scale pressure = 101-400 bar 4000 bar for full scale pressure = 401-600 bar
<b>Random Vibration</b>	IEC 60068-2-6, 30g (10...2000Hz)
<b>Mechanical Shock</b>	EN 60068-2-27, 500g
<b>Drop (any Axis)</b>	1m
<b>Ingress Protection</b>	IP65 - IP67 (see Connector Options)
<b>Media Compatibility</b>	Fluids and Gases compatible with 17-4PH stainless steel

## Performance

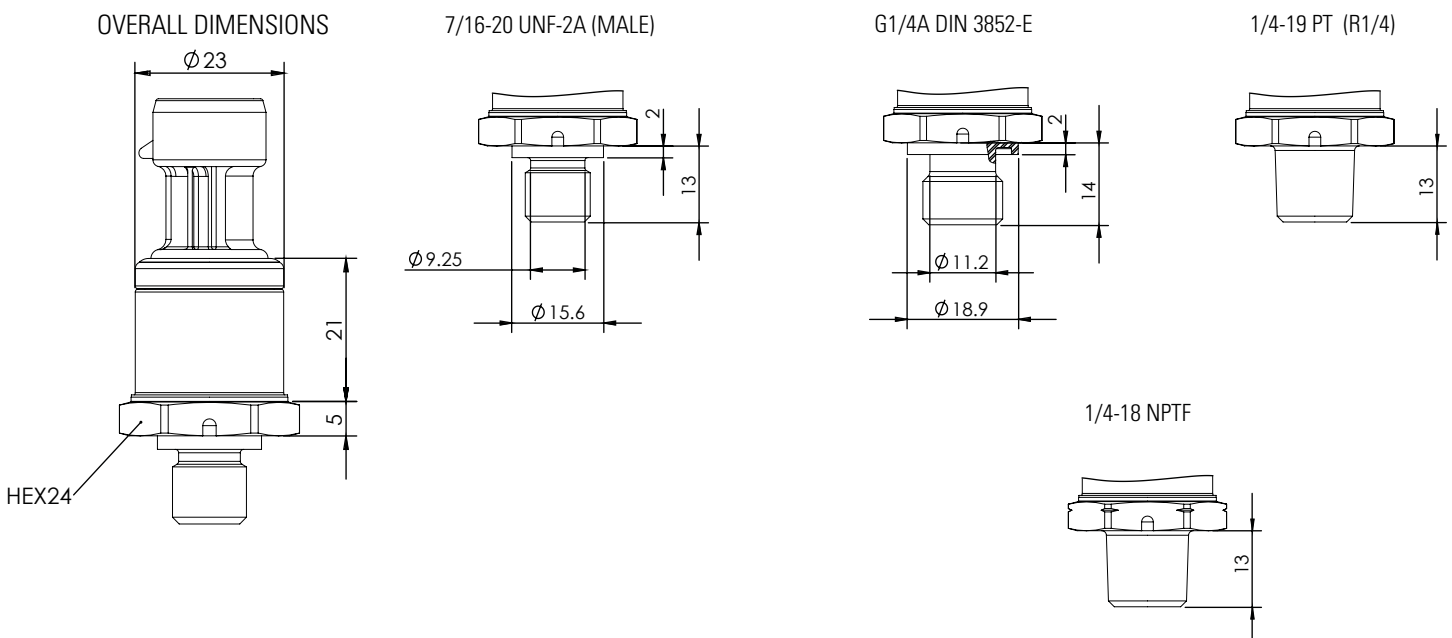
<b>Accuracy (Best Fit Straight Line)<sup>(2)</sup></b>	±0.25%FS @25°C
<b>Accuracy (Total Error Band)<sup>(3)</sup></b>	+/-1.5%FS @-20° to 85°C
<b>Operating Endurance</b>	>10M cycles
<b>Operating Ambient Temperature</b>	-40° to +100°C
<b>Operating Media Temperature</b>	-40° to +125°C
<b>Storage Temperature</b>	-40° to +125°C <sup>(4)</sup>



## DIMENSIONS

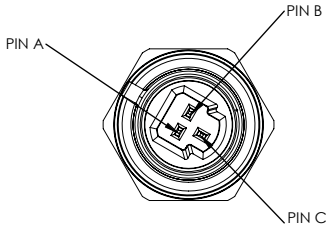
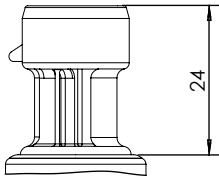
All dimensions are in millimeters

### Pressure Port



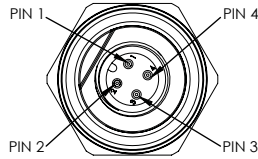
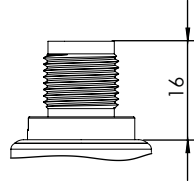
# Electrical Connector

PACKARD METRI-PACK 150  
IP67



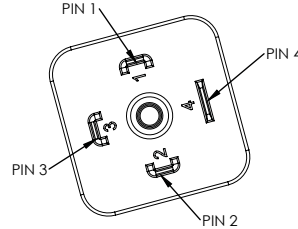
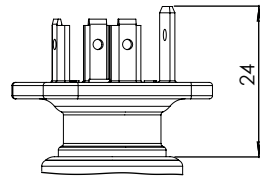
Output Type	PIN A	PIN B	PIN C
<b>Voltage</b>	V-	V+	Vout
<b>Current</b>	lout	V+	...

M12x1 4-POLE  
IP67



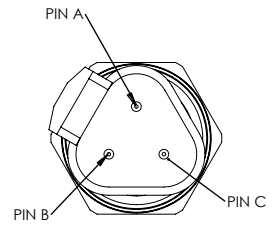
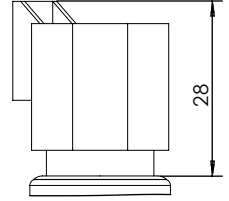
Output Type	PIN 1	PIN 2	PIN 3	PIN 4
<b>Voltage</b>	V+	...	V-	Vout
<b>Current</b>	V+	...	lout	...

A: DIN 175301-803 FORM A(18mm)  
IP65



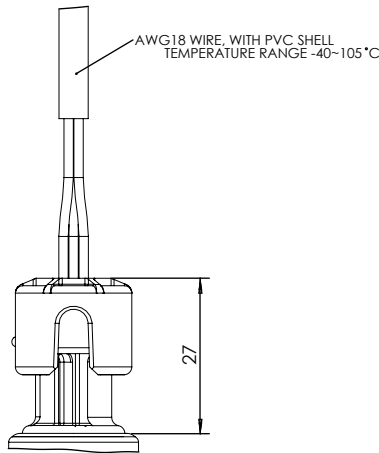
Output Type	PIN 1	PIN 2	PIN 3	PIN 4
<b>Voltage</b>	V+	V-	Vout	...
<b>Current</b>	V+	lout	...	...

DEUTSCH DT04-3P  
IP67



Output Type	PIN A	PIN B	PIN C
<b>Voltage</b>	V+	V-	Vout
<b>Current</b>	V+	lout	...

FLY LEAD WITH HARNESS  
IP67



Output Type	RED	BLACK	WHITE
<b>Voltage</b>	V+	V-	Vout
<b>Current</b>	V+	lout	...



# ORDERING OPTIONS

Example : PTE7100-31AA-1A250BS

PTE7100 with G1/4A thread with external FKM o-ring seal, DIN A connector, 4-20

**PTE7100 - XX\* A A - 1 A 250B S**

**Family** PTE7100

**Pressure Port**  
**A:** G1/4A DIN 3852-E  
**B:** 1/4-19PT (R1/4)  
**C:** 7/16-20 UNF-2A (MALE)  
**D:** 1/4-18NPT

**Electrical Connector**  
**A:** DIN 175301-803 Form A(18mm)  
**B:** M12 4-POLE  
**C:** Packard Metri-Pack 150  
**D:** Fly-Lead 3 pole harness  
**E:** DEUTSCH DT04-3P

**External Sealing**  
**0:** No o-ring  
**1:** FKM (Viton) o-ring (only for G1/4 pressure port)  
**2:** HNBR o-ring (only for 7/16-20 UNF-2A MALE pressure port)

**Electrical Output/Input**  
**A:** 4-20ma / 8-32Vdc  
**B:** 0.5-4.5Vdc / 5±0.25Vdc  
**C:** 0-5Vdc / 8-32Vdc  
**D:** 0-10Vdc / 12-32Vdc  
**E:** 1-5Vdc/8-32Vdc  
**F:** 0.5-4.5Vdc / 8-32VDC

**Pressure Range**  
**050B:** 0-50bar  
**060B:** 0-60bar  
**100B:** 0-100bar  
**160B:** 0-160bar  
**200B:** 0-200bar  
**250B:** 0-250bar  
**350B:** 0-350bar  
**400B:** 0-400bar  
**500B:** 0-500bar  
**600B:** 0-600bar

**Mating Connector & Snubber <sup>(5)</sup>**  
**N:** No snubber and no mating connector  
**S:** No mating connector, snubber with 0.5 damping hole  
**M:** No snubber, with mating connector  
**A:** Mating connector and snubber with 0.5 damping hole

\*Factory Specified



# AGENCY APPROVALS & CERTIFICATIONS



## GENERAL NOTES

- (1) Full Scale Pressure = Pmax - Pmin
- (2) Best fit straight line accuracy includes errors from non-linearity, non-repeatability, and hysteresis
- (3) Total error band accuracy includes errors from non-linearity, non-repeatability, hysteresis, zero offset, full span offset, and thermal effects
- (4) PVC flying leads are rated for storage of -40° to +105°C
- (5) Mating connector only available with DIN A connector

## 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 can result in death or serious injury.**

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

## CONTACT US

### Americas

+1 (800) 350 2727

[sensors@sensata.com](mailto:sensors@sensata.com)

[switches@sensata.com](mailto:switches@sensata.com)

### Europe, Middle East & Africa

+359 (2) 809 1826

[pressure-info.eu@sensata.com](mailto:pressure-info.eu@sensata.com)

### Asia Pacific

[sales.isasia@list.sensata.com](mailto: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