

| 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, CO₂ HVAC systems, and other hydraulic or pneumatic applications.



Features

- Measuring range from 0-10 bar to 0-600 bar (0-145 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

Pressure Ranges	0-10 to 0-600 bar (0-145 to 0-8700 psi)			
Pressure Reference	Gauge or Sealed Gauge (GTMS connector)			
Output Signal	0-10 VDC	0.5-4.5 VDC	4-20 mA	0.5-4.5 VDC
Operating Supply Voltage	12-32 VDC	5 + 0.25 VDC	8-32 VDC	8-32 VDC
Overvoltage Protection	Min 36 VDC	N/A	Min 36 VDC	Min 36 VDC
Short-Circuit Protection	Yes	Yes	N/A	Yes
Reverse Polarity Protection	Yes			
Load	≥ 4.7 kΩ (Pull Down)	≥ 4.7 kΩ	≤ (Vs-8 VDC)/(20 mA)	≥ 4.7 kΩ (Pull Down)
Response Time	< 2ms			
Insulation Resistance	> 100 MΩ at 500V			
EMC	IEC 61326-1 and EN 61326-2-3			
Dielectric Strength	500 VAC			
Enhanced Radiated Immunity	100V/m (80~200MHz) 200V/m (200~2700MHz)			
Enhanced ESD	±8KV Contact; ±15KV Air			

Physical

Proof Pressure	60bar (870 PSI) for full scale pressure ⁽¹⁾ = 10-29bar (145-420 PSI) 200bar (2900 PSI) for full scale pressure = 30-100bar (420-1450 PSI) 500bar (7250 PSI) for full scale pressure = 101-250bar (1450-3625 PSI) 800bar (11600 PSI) for full scale pressure = 251-400bar (3625-5800 PSI) 1200bar (17400 PSI) for full scale pressure = 401-600bar (5800-8700 PSI)
Burst Pressure	200bar (2900 PSI) for full scale pressure ⁽¹⁾ = 10-29bar (145-420 PSI) 2000bar (29000 PSI) for full scale pressure = 30-100bar (420-1450 PSI) 2500bar (36250 PSI) for full scale pressure = 101-250bar (1450-3625 PSI) 4000bar (58000 PSI) for full scale pressure = 251-600bar (3625-5800 PSI)
Random Vibration	IEC 60068-2-6, 30g (10...2000Hz)
Mechanical Shock	EN 60068-2-27, 500g
Drop (any Axis)	1m
Ingress Protection	IP65 - IP69 (see Connector Options)
Media Compatibility	Fluids and Gases compatible with 17-4PH stainless steel

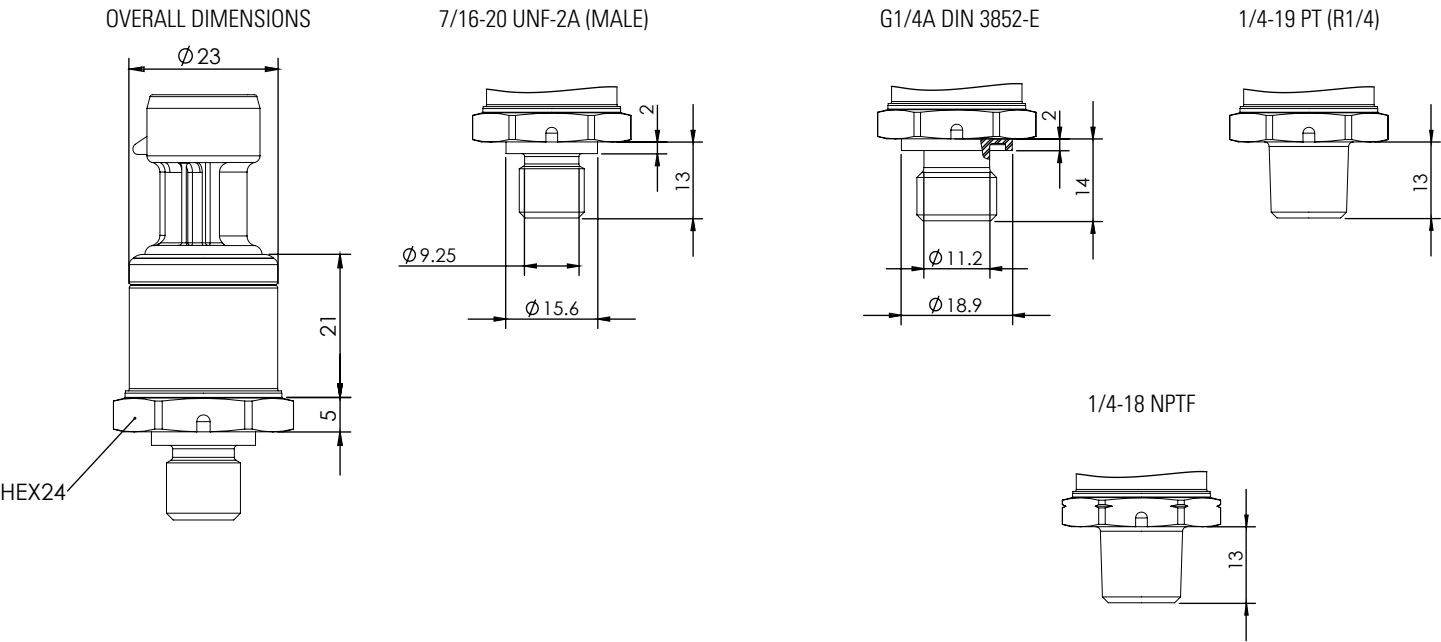
Performance

Accuracy (Best Fit Straight Line) ⁽²⁾	±0.25%FS @25°C
Accuracy (Total Error Band) ⁽³⁾	+/-1.5%FS @-20° to 85°C
Operating Endurance	>10M cycles
Operating Ambient Temperature	-40° to +100°C
Operating Media Temperature	-40° to +125°C
Storage Temperature	-40° to +125°C (-40°C to +105°C for PVC Flying Leads) ⁽⁴⁾

 DIMENSIONS

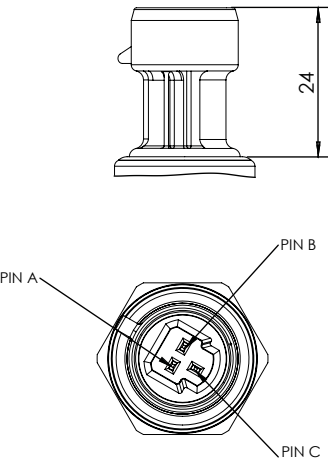
All dimensions are in millimeters

Pressure Port



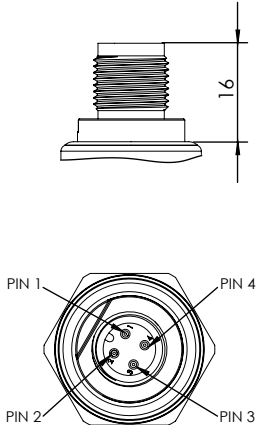
Electrical Connector

PACKARD METRI-PACK 150
IP67



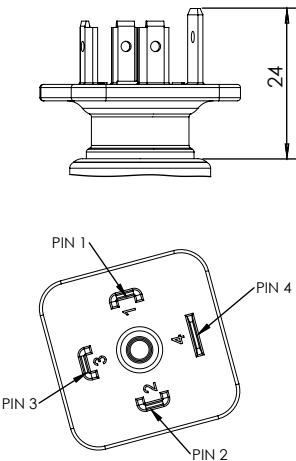
Output Type	PIN A	PIN B	PIN C
Voltage	V-	V+	Vout
Current	Iout	V+	...

M12x1 4-POLE
IP67



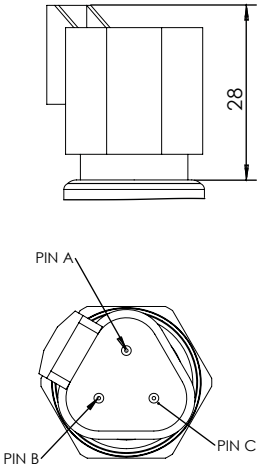
Output Type	PIN 1	PIN 2	PIN 3	PIN 4
Voltage	V+	...	V-	Vout
Current	V+	...	Iout	...

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



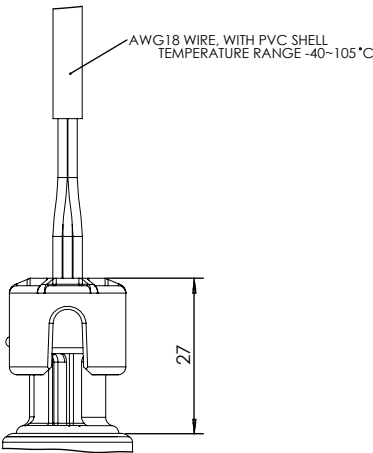
Output Type	PIN 1	PIN 2	PIN 3	PIN 4
Voltage	V+	V-	Vout	...
Current	V+	Iout	...	...

DEUTSCH DT04-3P
IP67



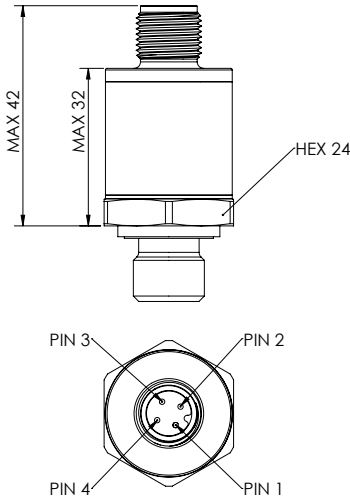
Output Type	PIN A	PIN B	PIN C
Voltage	V+	V-	Vout
Current	V+	Iout	...

FLY LEAD WITH HARNESS
IP67



Output Type	RED	BLACK	WHITE
Voltage	V+	V-	Vout
Current	V+	Iout	...

GTMS-4POLE M12x1 CONNECTOR
IP69



	V+	...	V-	Vout
	V+	...	Iout	...

PTE7100 with G1/4A thread with external FKM o-ring seal, DIN A connector, 4-20 mA, 250bar (Gauge)

	PTE7100	-	3	1	A	A	-	1	A	250	B	S
Family	PTE7100											
SEA Type												
0-29bar (0-420 PSI)												
30-100bar (420-1450 PSI)												
101-250bar (1450-3625 PSI)												
251-400bar (3625-5800 PSI)												
401-600bar (5800-8700 PSI)												
EMA Type												
1: Current OUTPUT												
2: Ratio-metric OUTPUT												
3: Vreg OUTPUT												
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: M12x1 4-POLE												
C: Packard Metri-Pack 150												
D: Fly-Lead 3 pole harness												
E: DEUTSCH DT04-3P												
H: GTMS M12x1 4-POLE												
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												
010: 0-10bar = 145 PSI												
016: 0-16bar = 230 PSI												
025: 0-25bar = 360 PSI												
040: 0-40bar = 580 PSI												
050: 0-50bar = 725 PSI												
060: 0-60bar = 870 PSI												
100: 0-100bar = 1450 PSI												
160: 0-160bar = 2320 PSI												
200: 0-200bar = 2900 PSI												
250: 0-250bar = 3625 PSI												
350: 0-350bar = 5075 PSI												
400: 0-400bar = 5800 PSI												
500: 0-500bar = 7250 PSI												
600: 0-600bar = 8700 PSI												
Pressure Type												
S: Seal gauge, when GTMS connector H												
B: Non seal gauge												
Mating Connector & Snubber ⁽⁵⁾												
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												

AGENCY APPROVALS & CERTIFICATIONS



GENERAL NOTES

- ⁽¹⁾ Full Scale Pressure = $P_{max} - P_{min}$
- ⁽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 fly 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

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