

| 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/UKCA 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)
Supply Voltage/Output	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
Output Load	≥ 4.7 kΩ for voltage output ≤ (Vsup-8)/20mA for current supply
Output Response Time	<2 ms
Overvoltage Protection	36 VDC
Reverse Voltage Protection	Yes
Short Circuit Protection	Yes
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 for full scale pressure ⁽¹⁾ = 10-29bar 200bar for full scale pressure = 30-100bar 500bar for full scale pressure = 101-250bar 800bar for full scale pressure = 251-400bar 1200bar for full scale pressure = 401-600bar
Burst Pressure	200bar for full scale pressure ⁽¹⁾ = 10-29bar 2000bar for full scale pressure = 30-100bar 2500bar for full scale pressure = 101-250bar 4000bar for full scale pressure = 251-600bar
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

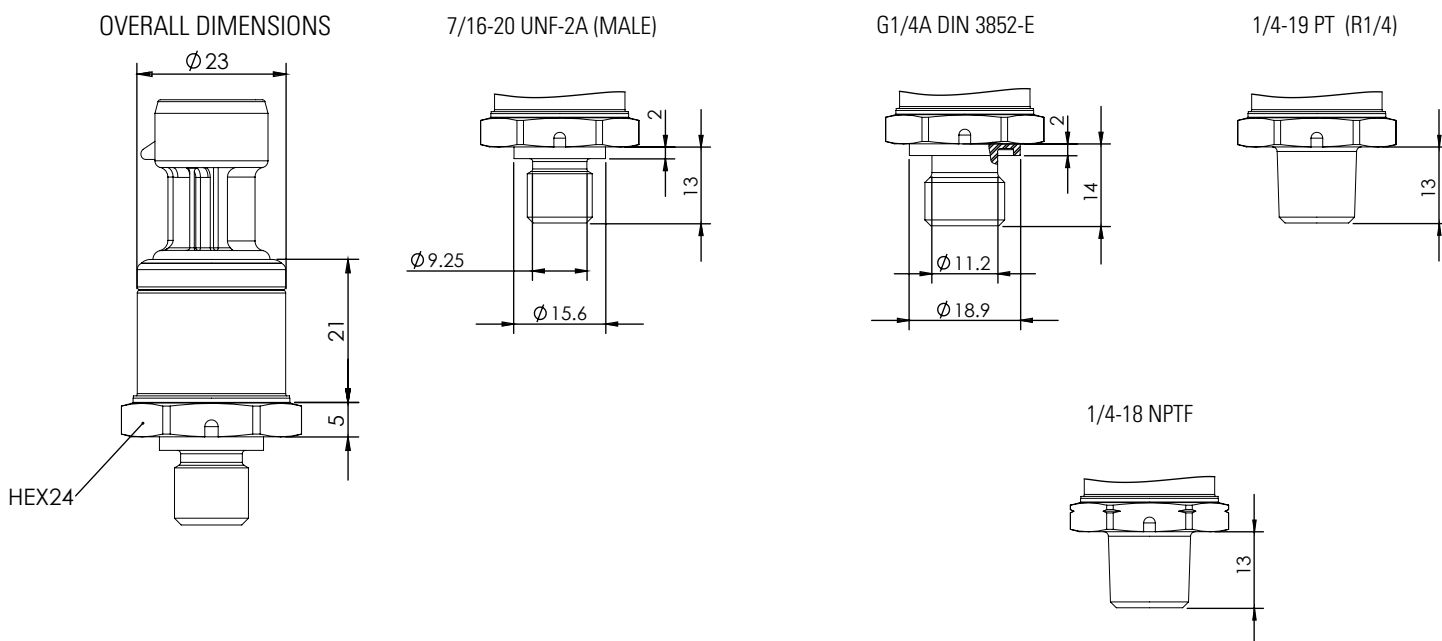
Accuracy (Best Fit Straight Line)⁽²⁾	±0.25%FS @25°C
Accuracy (Total Error Band)⁽³⁾	+/-1.5%FS @-20° to 85°C
Operating Endurance	>10M cycles
Operating Ambient Temperature	-40° to +100°C
Operating Media Temperature	-40° to +125°C
Storage Temperature	-40° to +125°C ⁽⁴⁾



DIMENSIONS

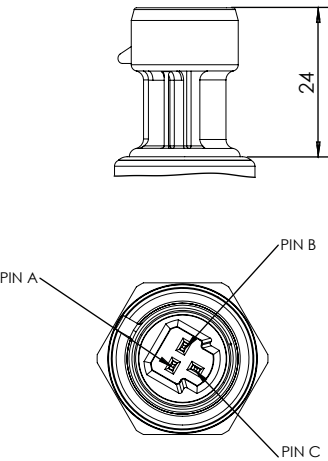
All dimensions are in millimeters

Pressure Port



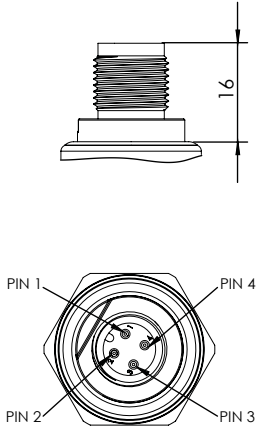
Electrical Connector

PACKARD METRI-PACK 150
IP67



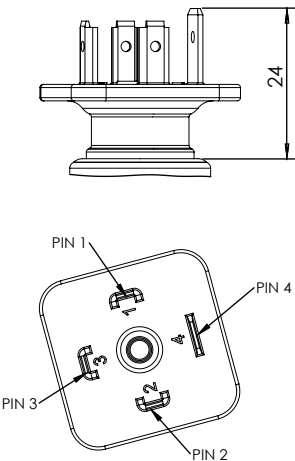
Output Type	PIN A	PIN B	PIN C
Voltage	V-	V+	Vout
Current	Iout	V+	...

M12x1 4-POLE
IP67



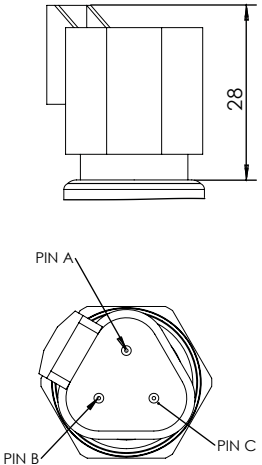
Output Type	PIN 1	PIN 2	PIN 3	PIN 4
Voltage	V+	...	V-	Vout
Current	V+	...	Iout	...

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



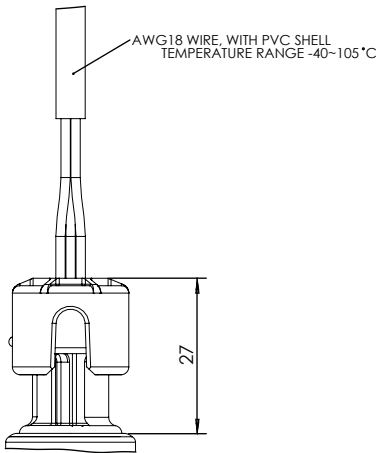
Output Type	PIN 1	PIN 2	PIN 3	PIN 4
Voltage	V+	V-	Vout	...
Current	V+	Iout	...	...

DEUTSCH DT04-3P
IP67



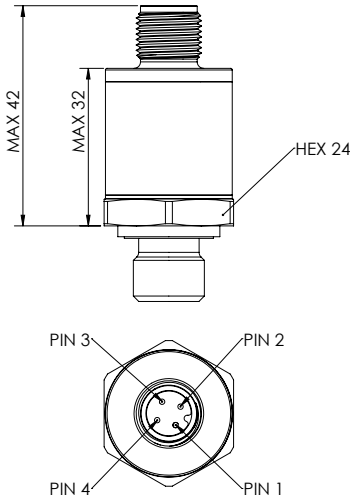
Output Type	PIN A	PIN B	PIN C
Voltage	V+	V-	Vout
Current	V+	Iout	...

FLY LEAD WITH HARNESS
IP67



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

GTMS-4POLE M12x1 CONNECTOR
IP69



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



ORDERING OPTIONS

Example : PTE7100-31AA-1A250BS

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												
1: 0~29bar												
2: 30~100bar												
3: 101~250bar												
4: 251~400bar												
5: 401~600bar												
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												
016: 0-16bar												
025: 0-25bar												
040: 0-40bar												
050: 0-50bar												
060: 0-60bar												
100: 0-100bar												
160: 0-160bar												
200: 0-200bar												
250: 0-250bar												
350: 0-350bar												
400: 0-400bar												
500: 0-500bar												
600: 0-600bar												
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 $+105^{\circ}\text{C}$
- (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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