Precision Pressure Transducer
Premium Version
Model CPT9000

Applications

- Pressure calibration
- High accuracy pressure monitoring
- Pressure sensing in critical applications
- Aerospace

Special Features

- Accuracy: 0.008% IS-33
- Temperature compensation: -20 to 75 °C
- Range: 0-10 in. H2O (25 mbar) up to 15,015 psi (1001 bar)
- RS-232 or RS-485 communication
- Versatile output string options
- Compact rugged design
- Pressure and temperature alarms
- Calculates measurement uncertainty
- Temperature output

Precision Pressure Transducer, Model CPT9000

Description

The model CPT9000 Precision Pressure Transducer is designed to excel in performance and value. Advancements in pressure sensor technology, characterization and miniaturization are heavily leveraged to fulfill the needs of a demanding market. With an accuracy down to 0.008% IS-33, a temperature compensation range of -20 to 75 °C, calibration interval of 365 days and selectable ranges from 10 in. H2O (25 mbar) to 15,015 psi (1001 bar), the CPT9000 stands alone in performance and value in the high accuracy pressure transducer market. The CPT9000 is at the top of Mensor's high accuracy pressure transducer line.

Application
The CPT9000 Precision Pressure Transducer is ideal for OEM instruments that require a high accuracy pressure transducer. Examples are: flow calibrators, humidity calibrators, pressure controllers, aerospace wind tunnel calibration, automotive sensor testing, hydrology, oceanography, in the aviation and space industries in general, or wherever high accuracy pressure measurement and longterm calibration stability are valued.

Functions
The model CPT9000 Precision Pressure Transducer has an RS-232 or RS-485 interface. The RS-485 interface offers multi-drop capability with simple cabling and three different baud rates to choose from.

This high accuracy pressure transducer can be configured for gauge and absolute pressure for any measuring range within the specified limits. With a recalibration time of 365 days and a high resolution of 8 significant figures, the CPT9000 is flexible enough to be used in a wide variety of applications.

Design
The 316L SS construction and wetted parts are an asset when utilizing in corrosive or wet environments. Its compact design offers an advantage in miniaturization of product design in many OEM applications. The pressure connection and housing can be customized to fit your application. Standard fittings are easily changed using the AN-4 female connection.

Specifications
Model CPT9000

Precision pressure sensor technology

Accuracy[1)]	**0.008% IS-33** [2)]	**0.008% Full Span**
Measuring ranges		
Gauge pressure	0 ... 15 to 0 ... 1500 psig (0 ... 1 to 0 ... 100 bar)	0 ... 0.36 to 0 ... <15 psig (0 ... 25 mbar to 0 ... <1 bar)
Bi-directional [3)]	-15 ... 145 to -15 ... 1500 psi (-1 ... 10 to -1 ... 100 bar)	-0.18 ... 0.18 to -15 ... <145 psi (-12.5 ... 12.5 mbar to -1 ... <10 bar)
Absolute pressure	0 ... 15 to 0 ... 1515 psia (0 ... 1 to 0 ... 101 bar abs.)	0 ... 5 to 0 ... <15 psia (0 ... 350 mbar abs. to 0 ... <1 bar abs.) AND 0 ... >1515 to 0 ... 15,015 psia (0 ... >101 to 0 ... 1001 bar)
Calibration interval	365 days	
Pressure units	39 and 1 user defined	
CPT9000 as barometric reference		
Measuring range	8 ... 17 psi abs. (552 ... 1,172 mbar abs)	
Accuracy [1)]	0.008% of reading	

1) It is defined by the total measurement uncertainty, with the coverage factor (k = 2) and includes the intrinsic performance of the instrument, the measurement uncertainty of the reference instrument, long-term stability, influence of ambient conditions, drift and temperature effects over the compensated range with recommended zero point adjustment every 30 days.
2) 0.008 % IS-33 accuracy: Between 0 ... 33 % of the full scale, the accuracy is 0.008% of one third of the full scale value and between 33 ... 100 % of the full scale, the accuracy is 0.008 % of reading.
3) The negative portion of a bidirectional range has the same accuracy as the equivalent positive range.

Precision pressure sensor

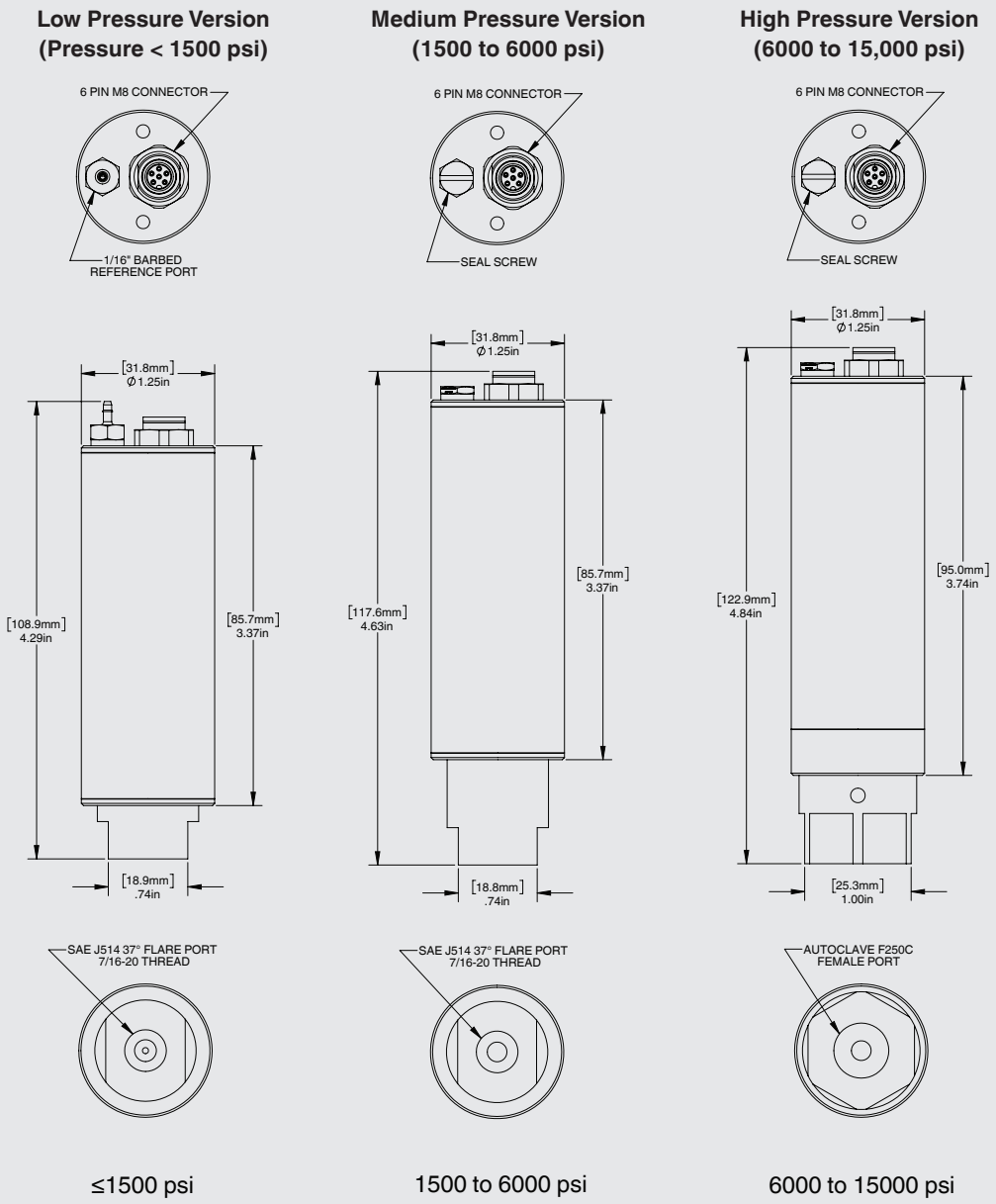
Case	
Orientation effects	Negligible – completely removable with re-zeroing
Dimensions	See technical drawings
Weight	~250 g (depending on range)
Ingress protection	IP-67
Display	
Resolution	100 ppb or better
Warm-up time	15 min.
Connections	
Pressure connections	FSAE J514/JIC 4 or Autoclave® F250C (or pressure ranges > 400 bar (> 6,000 psi))
Overpressure limit	2X proof, 3X burst; static pressure < 50 psig
Materials, wetted parts	Ranges ≤ 5 psi – Silicon, 316 SS, glass filled resins, epoxy Ranges > 5 to 1500 psi – 316 SS Ranges >1500 psi – 316 SS, fluorocarbon rubber
Pressure media	Ranges ≤ 5 psi – clean, dry, non-corrosive gases Ranges > 5 psi – media compatible with the listed wetted parts
Voltage supply	
Power supply	9 to 18 VDC (12 VDC nominal)
Power consumption	< 26 mA at 12 VDC +/-5%
Permissible ambient conditions	
Compensated temperature range	-20 to 75 °C (-4 to 167 °F)
Operating temperature range	-40 to 85 °C (-40 to 185 °F)
Storage temperature range	-40 to 85 °C (-40 to 185 °F)
Humidity	0 ... 95% r.h. (non-condensing)
Operating altitude	<3000 meters (10,000 feet)
Internal volume	
Measure port	<1 cc

Reference port internal volume	~ 40 cc
Communication	
Interface	RS-232 or RS-485
Baud rate	Default 57,600 baud - 9600, 19200 and 115200 user selectable
Measuring rate	50 values/second, default - (factory adjustable)
Command sets	See manual, Section 6 Operation

Certificates	
Compliance	CISPR 11 & A1, IEC 61000-4-2, 3, 4, 5, 6, 11, IEC 61000 A1, A2, IEC 61010-1
Calibration [4)]	A2LA calibration certificate

4) Calibration in a vertical position.

Dimensions in [mm] in.



Note: Reference port is for gauge type sensors only; for absolute type, and sealed gauge type, the port is plugged.

Scope of Delivery

- Precision Pressure Transducer model CPT9000
- Operating instructions
- ISO 17025, A2LA accredited calibration certificate
- Pressure adapter (as specified)
- 5 ft. connection cable with flying leads

Accessories

- Power supply & communication cable
- Pressure adapters

Ordering Information

CPT9000 / Instrument version / Pressure unit / Type of pressure / Start of measuring range / End of measuring range / Accuracy / Type of certificate / Mounting position / Interface / Baud rate / Output mode / Pressure adapter / Additional order information

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Mensor
201 Barnes Drive
San Marcos, Texas 78666
Tel. (512) 396-4200
Fax (512) 396-1820
sales@mensor.com
www.mensor.com