

CPT 6180 High Precision Pressure Transducer

Mensor/WIKA Data Sheet CPT 6180 • 02/2012

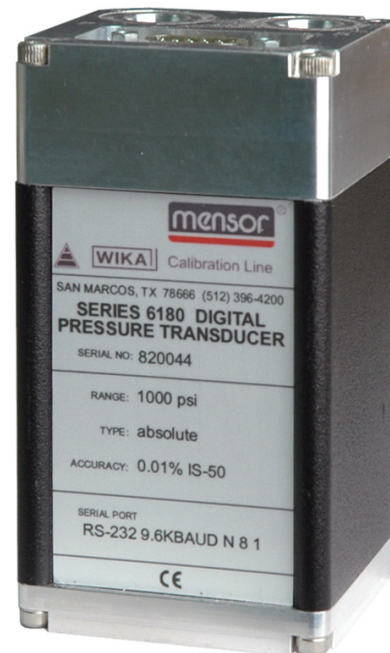
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Applications

- High accuracy transfer standard
- Internal pressure transducer in OEM devices
- Pressure standard in test & calibration stands
- Wind tunnels
- Hydrology
- Oceanography
- Aerospace
- Meteorology

Features

- **0.01% of reading uncertainty***
- **365 day calibration stability**
- RS-232 or RS-485 communication
- Optional high speed output
- Compact size



Description

The CPT 6180 High Precision Pressure Transducer is a small, rugged serial output transducer with pressure ranges configurable from 0 - 15 psi to 0 - 6000 psi. **An uncertainty of 0.01%IS-50* for 365 days** and an optional output rate of 250 Hz (one reading every 4 milliseconds with an uncertainty of 0.025% FS for 365 days) makes it one of the most accurate and fast transducers in the precision pressure market. The standard output mode provides the pressure via a query and response; the optional streaming output mode provides a continuous pressure reading every 4 milliseconds. Ports for both pressure and reference are 7/16-20 SAE with 1/8 npt adapters. A 9 pin D-sub connector is used for power input and serial communications.

*See total uncertainty in specifications section

Applications

The CPT 6180 is used in OEM devices like pressure calibrators, flow calibrators, humidity calibrators or any device that requires a high accuracy pressure measurement. It is used as a pressure standard in conjunction with automated production

of pressure devices, or as a standard for pressure calibration test stands. High accuracy, high speed and 365 day stability make it suitable for measurements required in wind tunnels and hypobaric / hyperbaric chambers. These features also make it a valuable tool in metrology, hydrology, oceanography, aerospace, and meteorology.

Functional Flexibility

The CPT 6180 has RS-232 or RS-485 communications. The RS-485 interface provides true multi-drop connection and cabling simplicity. There are four baud rates available. The CPT 6180 can be configured to any range within the specified limits for gauge or absolute modes. It has a wide power input range (6 to 20 vdc), and low power consumption (<1/2 watt). With an accuracy of 0.01%IS-50, a calibration stability of 365 days, an optional high speed mode and a resolution of 7 significant digits the CPT 6180 is flexible enough to be used in a wide variety of applications in production, calibration, and testing or as a component in a high accuracy OEM product.

Related Products:

CPT 6000 Digital Pressure Transducer
CPG 2500 Digital Pressure Gauge

Specifications

Pressure ranges	psi	Gauge: 0...15 to 0...6000 psig Absolute: 0...15 to 0...6000 psia
Pressure types		Absolute or gauge
Total uncertainty		0.01%IS-50 = 0.01% of reading from 50% to 100% of range, 0.005% of full scale at 50% of range and below. In the Optional High Speed Mode, the uncertainty is 0.025% of full span for 365 days. Accuracy statement includes all temperature, linearity, hysteresis and repeatability.
Calibration interval	days	365
Compensated temp range	°C	15...45
Resolution		7 significant digits
Operating temp	°C	0...50
Storage temp	°C	-20...70
Pressure units		psi, in.Hg (at 0°C), in.Hg (at 60°F), in.H ₂ O (at 4°C), in.H ₂ O (at 20°C), In.H ₂ O (at 60°F), ft.H ₂ O (at 4°C), ft.H ₂ O (at 20°C), ft.H ₂ O (at 60°F), mtorr (at 0°C), in. seawater (at 0°C), ft. seawater (at 0°C), atm, bar, mbar, mm H ₂ O (at 4°C), cm H ₂ O (at 4°C), m H ₂ O (at 4°C), mm Hg (at 0°C), cm Hg (at 0°C), torr, kPa, Pa, Dynes/cm ² , g/cm ² , kg/cm ² , m seawater, oz/in. ² , psf, tsf, % full scale, microns Hg (at 0°C), tsi, hPa, MPa
Measurement filters		User adjustable exponential filter 0 to 99%. Filter active only in a fixed 0.010% of span window
Pressure ports		Pneumatic interfaces - 7/16-20 SAE for pressure and reference. Reference sealed on absolute units.
Parts exposed to pressure media		Aluminum, brass, 316 SS, Buna-N, Viton, Silicone grease, Silicone rubber, nylon, ceramics, glass, silicon
Calibration media		Clean, dry Nitrogen or air
Overpressure Limit	%FS	120
Air humidity	RH	0-95%RH, non-condensing
Warm-up time	min	approx. 15 minutes to rated accuracy
User interfaces		RS-232 or RS-485
Baud rates	baud	9600, 19200, 38400, or 57600

Represented by:

Since product innovation is a continuous process at Mensor, we reserve the right to change specifications without notice.

Output Mode		Standard: query and response High Speed: continuous streaming
Reading rate	sec	50 Hz, 10 Hz, or optional 250 Hz
Response time	msec	20 milliseconds for FS pressure step, 100 milliseconds for FS pressure step, or optional 4 milliseconds for FS pressure step.
Operating position		Negligible – can be completely removed with re-zeroing
Power supply		Power 6-20 vdc, 45 mA at 12 V.
Weight	oz.	<12 ozs.
Dimensions	in. (cm)	2.18" w x 2.18" d x 3.9" h (5.54cm x 5.54cm x 9.91cm)
Warranty		One year
CE		Compliant to EN 50081-1, EN 50082-1, EN 50081-2 and EN 50082-2
Calibration		NIST traceable calibration certificate included
Options		High speed "streaming" output mode Mounting threads: • English: 6 - 32 • Metric: 3 x 0.5
Accessories		External power supply External relief valve

Order Number

Choose the number/letter associated with the desired option.
Model No.: CPT6180 _ _ _ _ _ , Range: _____

2 - RS-232
4 - RS-485

A - 9600 Baud
B - 19200 Baud
C - 38400 Baud
D - 57600 baud

N - NIST Calibration
A - A2LA Certificate

S - 1/8 in. FNPT adaptor
M - 6 mm tube adaptor
N - No adaptor required

S - 6-32 unc mounting threads
M - M3 X 0.5 mounting threads

6 - Standard Output Mode, 50 Hz
7 - Standard Output Mode, 10 Hz
8 - High Speed Output Mode, 250 Hz*

*Only available at 57600 baud

Example: 6180 2-A-6-S-S-N, Range: 0-40 in Hg Absolute

Total Uncertainty is the combined uncertainties of all components of a measurement at the approximate 95% confidence level (K=2). Total uncertainty includes the uncertainties of the following: calibration standard, repeatability, pressure hysteresis, creep, linearity, and temperature effects over the compensated temperature range.

The calibration program at Mensor is accredited by A2LA as complying with both the ISO/IEC 17025:2005 and the ANSI/NCSL Z540-1-1994 standards. All Mensor primary standards are traceable to NIST. Mensor Corporation is registered to ISO9001:2008.



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