

CPT 6100 Barometric Transducer

Mensor/WIKA Data Sheet CPT 6100 Barometric Transducer • 04/2011



Calibration Line

Applications

- High accuracy barometric pressure sensor
- Internal pressure transducer in OEM devices
- Barometric pressure standard in test & calibration stands
- Laboratory barometric standard

Features

- 0.010% R accuracy
- Range: 8 to 17 psig
- Can be calibrated in one of 32 different pressure units
- RS-232 or RS-485 communication
- Remote operation to 4000 ft.
- Multi-drop capability
- Fast response (20ms)
- CE compliant



CPT 6100 Barometric Transducer

Description

The CPT 6100 Barometric Pressure Transducer is a high accuracy barometer that delivers high performance in a compact design. RS-232 or RS-485 allows the 6100 Barometer to communicate with any MS-DOS compatible computer over the serial port. A 9-pin D-sub connector is provided to simplify the connections to the serial port of the system or host computer. Barometric pressure readings can be displayed directly on digital readouts or collected remotely within data acquisition software.

Proprietary characterization techniques help the CPT 6100 achieve an accuracy of 0.010% of reading (R) from 8 to 17 psia over the compensated temperature range of 15 to 45 °C. This insures a high level of performance at varying temperatures. The recommended calibration interval is 180 days. The accuracy statement includes linearity, hysteresis, repeatability and temperature errors over the compensated range. Zero and span can be adjusted via the serial interface. There are no other adjustments required by the end user.

Applications

The CPT 6100 is used in OEM devices like pressure calibrators, flow calibrators, humidity calibrators or any device that requires a high accuracy barometric pressure measurement. It is used as a pressure standard in conjunction with automated production of pressure devices, or as a standard for barometric pressure calibration in test stands. High accuracy makes it suitable for measurements in metrology, aerospace, health care, pharmaceutical and meteorology applications.

Functional Flexibility

The CPT 6100 Barometer 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 6100 Barometer delivers a percent of reading accuracy between 8 and 17 psia. It has a wide power input range (6 to 20 vdc), and low power consumption (<1/2 watt). It delivers high performance in a small footprint.

Related Products:

CPT 6000 Digital Pressure Transducer

CPT 6180 High Precision Pressure Transducer



Specifications

Total uncertainty	%R	0.01%
Calibration stability (after warm up)		Better than 0.010% R for 180 days with periodic re-zeroing.
Calibration interval		180 days
Calibration adjustment		Zero and Span may be reset via the serial interface without affecting linearity
Pressure range		8 ... 17 psia (calibration using other pressure units, within the equivalent psi range, is available)
Calibration pressure units		psi, in.Hg @ 0°C and 60°F, in.H ₂ O @ 4°C, 20°C and 60°F, ft.H ₂ O @ 4°C, 20°C and 60°F, mTorr, inSW @ 0°C, ftSW @ 0°C, atm, bars, mbars, mmH ₂ O @ 4°C, cmH ₂ O @ 4°C, MH ₂ O @ 4°C, mmHg @ 0°C, cmHg @ 0°C, Torr, hPa, mPa, kPa, Pa, D/cmsq, g/cmsq, kg/cmsq, mSW @ 0°C, PSI, PSF, TSF, TSI, mHg @ 0°C, %FS. All seawater units are 3.5% salinity.
Resolution		Up to 1 ppm, depending on measurement units.
Overpressure limit		150% FS or greater, depending on range
Compensated temp range	°C	15 ... 45
Operating temp.	°C	0 ... 50
Storage temp.	°C	0 ... 70
Warm up	min	10 minutes to rated accuracy
Reading rate	sec	50 per second
Response time	ms	< 250ms for FS pressure step
Orientation effects		Orientation must be specified
Communications		RS-232 or RS-485. From 9600 to 56k baud.
Case size	in./cm	2.18" w x 2.18" d x 3.90" h (5.53cm x 5.54cm x 9.90cm)
Weight	oz/g	Approximately 12 ounces (28.3 grams)
Media compatibility		Compatible with aluminum, 316 stainless steel, brass, Buna N, Viton, sealant, and silicone grease. Not designed for oxygen use.
Fittings		Female 7/16-20 SAE/MS straight thread port. 1/8 inch female NPT adapter fitting is included.
Power		6-20 VDC, 55mA @ 12 VDC
Option		Relief valves
Mechanical shock		3g max
Multi-drop capacity		The max. number of RS-485 CPT 6100 transducers which can be connected to a single host computer is 31.
Compliance		Compliant to EN 50081-1, EN 50082-1, EN 50081-2 and EN 50082-2.
Optional output		Analog: 0-1, 0-5 and 0-10 VDC @ 0.010% FS accuracy.

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 (precision), pressure hysteresis, creep, linearity, and temperature effects over the compensated temperature range.

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

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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