

CPT 6000 Series Digital Pressure Transducer

Mensor Data Sheet CPT 6000 Series • 02/2012



Applications

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

Features

- 0.020% FS accuracy
- Model 6010 - single calibration
- Model 6020 - dual calibration
- Ranges:
 - Absolute: 0-7.5 psia to 0-6000 psia
 - Gauge: 0-5 psig to 0-6000 psig
- Resolution to 1 ppm
- Absolute or Gauge
- Pneumatic or Hydraulic
- Customer assigned pressure units
- RS-232 or RS-485 communication
- Multi-drop capability
- Fast response (20ms)
- 303 stainless steel housing
- CE compliant



Digital Pressure Transducer Model CPT 6000

Description

General

The CPT 6000 Digital Pressure Transducer is a self-contained pressure sensing device that provides high accuracy pressure measurements in both the single and dual calibration models. This transducer incorporates a low hysteresis silicon sensor with electronically compensated pressure linearity over the specified temperature range.

The CPT 6000 Transducer is characterized over the full pressure and temperature range to achieve 0.020% FS uncertainty. This uncertainty specification includes linearity, hysteresis, repeatability and temperature errors. Also featured is an output which is updated at a rate of 50 readings per second (20 ms).

Applications

The CPT 6000 is used in OEM Applications where a high accuracy pressure sensing is required. It can also be used as a

transfer standard or in pressure calibration and testing areas of production facilities.

Functional Flexibility

The CPT 6000 Digital Pressure Transducer is a high accuracy pressure measurement component that uses either RS-232 or RS-485 to communicate with a host computer over long distances. Any MS-DOS compatible PC with an available serial output port can serve as the host controller.

System designers will appreciate the flexibility offered by having highly accurate pressure transducers that are not tied to a front panel and which may be located remotely. For remote operation the transducer equipped with RS-485 can be located up to 4,000 feet from the host. A simple cable can accommodate both the power and the two-way communications requirements.

Specifications

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|---|------|---|
| Accuracy | FS | 0.020% |
| Precision | FS | 0.006% |
| Calibration Stability after warmup | | Less than 0.02% FS for six months. |
| Calibration | | Calibration Interval: 180 days Cal Uncertainties: 0.020% FS Calibration adjustment: Zero and Span. (Zero and span may be reset via the serial interface without affecting the linearity.) |
| Pressure Ranges | psi | Abs: 0-7.5 psia up to 0-6000 psia. Gauge: 0-5 psig up to 0-6000 psig. |
| Special Pressure Ranges | | Vacuum or bidirectional ranges. Metric pressure units also available. |
| Pressure Units | | Selected from a list of 35: psi, inHg @0°C and 60°F, inH ₂ O @4°C, 20°C and 60°F, ftH ₂ O @ 4°C, 20°C and 60°F, mTorr, inSW @ 0C, ftSW @ 0C, ATM, bars, mbars, mmH ₂ O @ 4°C, cm H 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, OSI, PSF, TSF, TSI, μHg @ 0°C, %fs. All seawater units are 3.5% salinity. |
| Resolution | | Up to 1 ppm, depending on measurement units and range. |
| Overpressure Limit | | 150% FS or greater, depending on range |
| Compensated Temp. Range | °C | 15 to 45 |
| Warm-up | min | 10 minutes to rated accuracy |
| Reading Rate | sec. | 50 per second |
| Response Time | ms | <0.2 for a full scale pressure step |
| Communications | | RS-232 or RS-485. LabVIEW® ¹ drivers are available. |
| Max. Transmission | ft. | 4000 feet (RS-485) |
| Multi-drop Capacity | | The maximum number of RS-485 Series 6000 transducers which can be connected to a single host computer is 31. |
| Mechanical Shock | | 5g max. |

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| Case Size | | 1.75" wide x 6.0" long (4.45 x 15.24 cm), not including pneumatic and electrical. |
| Weight | oz. | Approximately 12 ounces (28.3 grams). |
| Media Compatibility | | All media compatible with 316L stainless steel. |
| Fittings | | Pressure Port: 1/4 inch male NPT Reference Port: 1/16 inch barb (gauge instruments only) |
| Power | | 6-20 VDC, 45mA @ 12 VDC 6 pin Bendix connector #PT02E-10-6P |
| Compliance | | Conforms to CE standards EN 50081-1, EN 50082-1, EN 50081-2, and EN 50082-2. |
| Options | | Relief Valves —up to 1000 psig Custom ranges. |

¹LabVIEW® is a trademark of National Instruments Corporation.

Total Uncertainty is the combined uncertainties of all components of a measurement including the uncertainties of the following: Calibration standard, repeatability, 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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