CPT6010 Digital Pressure Transducer

Data Sheet CPT6010 • 09/2013

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
- Single and 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
- Reading Rate 50 Hz
- 303 stainless steel housing
- CE compliant

Digital Pressure Transducer Model CPT6010

Description

General

The CPT6010 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 CPT6010 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 CPT6010 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 CPT6010 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.

Related Products:
CPT6100 and CPT6180 Digital Pressure Transducer
Pressure Systems

Specifications

Total Uncertainty	FS	0.020%FS. Total uncertainty (k=2) includes hysteresis, linearity, repeatability, reference standard, drift and temperature effects over the calibrated range for the calibration interval specified with periodic re-zeroing.
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_2O @4°C, 20°C and 60°F, ftH_2O @ 4°C, 20°C and 60°F, mTorr, inSW @ 0C, ftSW @ 0C, ATM, bars, mbars, mmH_2O @ 4°C, cm H_2O @ 4°C, MH_2O @ 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	Hz	50
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.
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.

[1]LabVIEW® is a trademark of National Instruments Corporation.

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 is registered to ISO9001:2008.

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