

# Barometric Pressure Transducer Model CPT6100



WIKA data sheet CPT6100 Barometer

## Applications

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

## Special Features

- 0.010% R accuracy
- Range: 8 to 17 psia
- RS-232 or RS-485 communication
- Remote operation to 4000 ft.
- Multi-drop capability



Barometric Pressure Transducer, Model CPT6100

## 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.

# Specifications

## Models CPT6100 - CPT6180

Precision Pressure Transducer Technology	
<b>CPT6100 Barometer</b>	
Measuring range	552 ... 1,172 mbar abs. (8 ... 17 psi abs.)
Accuracy <sup>1)</sup>	0.01 % of reading
Precision <sup>6)</sup>	0.004 % FS
Calibration interval	180 days
Pressure units	psi, bar, mbar, Pa, kPa, hPa, MPa, tsi, atm, torr, Dynes/cm <sup>2</sup> , g/cm <sup>2</sup> , kg/cm <sup>2</sup> , mSW, oz/in <sup>2</sup> , psf, tsf, mmH <sub>2</sub> O (4 °C), cmH <sub>2</sub> O (4 °C), mH <sub>2</sub> O (4 °C), inH <sub>2</sub> O (4 °C), inH <sub>2</sub> O (20 °C), inH <sub>2</sub> O (60 °F), ftH <sub>2</sub> O (4 °C), ftH <sub>2</sub> O (20 °C), ftH <sub>2</sub> O (60 °F), µmHg (0 °C), mmHg (0 °C), cmHg (0 °C), inHg (0 °C), inHg (60 °F), inSW (0 °C), ftSW (0 °C), mtorr (0 °C)

- 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) FS = full span
- 3) 0.01 % IS-50 accuracy: Between 0 ... 50 % of the full scale, the accuracy is 0.01% of half of the full scale value and between 50 ... 100 % of the full scale, the accuracy is 0.01 % of reading.
- 4) Ranges from 1500 to 2000 psig will be sealed gauge transducers.
- 5) The minimum calibrated range of absolute transducer(s) is 600mTorr
- 6) It is defined as the combined effects of linearity, repeatability and hysteresis throughout the stated compensated temperature range

Precision Pressure Transducer	
<b>Case</b>	
Mounting position	< 1 bar (< 15 psi) negligible Can be adjusted through zero point adjustment (linear shift of the characteristic curve)
Dimensions	See technical drawings
Weight	505 g (1.11 lbs.)
<b>Display</b>	
Resolution	CPT6100: 6 significant figures CPT6180: 7 significant figures
Filter	Adjustable exponential filter from 0 ... 99 % The filter is only active within a defined range of 0.010 % FS.
Warm-up time	approx. 15 min up to the specified accuracy
<b>Connections</b>	
Pressure connections	Connection 7/16-20 SAE for pressure and reference port. Available fittings include, 1/8 npt, 1/4 npt adapter, 1/4 tube adapter, 6 mm tube, 1/8 bspg
Overpressure safety	10% above the nominal pressure of the transducer
Material, wetted parts	Aluminum, brass, 316SS, Buna-N, Viton <sup>®</sup> , silicone grease, silicone rubber, nylon, ceramic, glass, silicon
<b>Voltage supply</b>	
Power supply	+12 VDC ± 10%, 55 mA max
<b>Permissible ambient conditions</b>	
Storage temperature	-20 ... +70 °C (-4 ... 158 °F)
Humidity	0 ... 95 % r. h. (non-condensing)
Compensated temperature range	15 ... 45 °C (59 ... 113 °F)

Viton<sup>®</sup> fluorelastomer is a registered trademark of DuPont Performance Elastomers.



## Scope of Delivery

- Precision pressure transducer model CPT6180 Barometer or CPT6100 Barometer
- Operating instructions
- ISO 17025, A2LA Certification

## Options

- DKD/DAkkS calibration certificate

## Accessories

- Voltage supply over RS-232 or RS-485 interface cable
- External overpressure protection
- Pressure adapters
- Power adaptor with communication
- Carrying case

## Ordering Information

CPT6100 / 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 / Analogue output / Mounting thread / Pressure adapter / Additional order information

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