

Precision Pressure transducer

Basic version

Model CPT6020



WIKA data sheet CT 25.13

Applications

- Pressure calibration
- High accuracy pressure monitoring
- Pressure sensing in critical applications
- Aerospace

Special Features

- Accuracy: 0.020% FS
- Range: 0-10 in. H₂O (25 mbar) up to 15,015 psi (1001 bar)
- Temperature compensation: 0 to 50 °C
- RS-232 or RS-485 communication
- Compact rugged design



Precision Pressure Transducer, Model CPT6020

Description

The CPT6020 precision pressure transducer is a self-contained pressure sensing device that provides high accuracy pressure measurements. This transducer incorporates a low hysteresis silicon sensor with electronically compensated pressure linearity over the compensated temperature range. The CPT6020 transducer is characterized over the full pressure and temperature range to achieve 0.020% FS accuracy. This 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).

Application

The CPT6020 is used in OEM applications where a high accuracy pressure sensing is required. Examples are: flow calibrators, humidity calibrators, pressure controllers, aerospace wind tunnel calibration, automotive sensor testing, hydrology, oceanography, in the aviation and space industries in general, or wherever high accuracy pressure measurement and long-term calibration stability are valued. It can also be used as a transfer standard or in pressure calibration and testing areas of production facilities.

Functions

The model CPT6020 Precision Pressure Transducer has an RS-232 or RS-485 interface. The RS-485 interface offers multi-drop capability with cabling that includes power and communications. Four different baud rates can be selected and the transducer can be located up to 4,000 feet from the host. System designers appreciate these high accuracy remotely accessible transducers that are not tied to a front panel. Each transducer can be configured for gauge or absolute pressure types. With a recalibration time of 185 days and a high resolution of 8 significant digits, the CPT6020 is flexible enough to be used in a wide variety of applications.

Design

The 316L SS construction and IP67 rating are an asset when utilizing in corrosive or wet environments. Its compact design offers an advantage in miniaturization of product design in many OEM applications. The pressure connection and housing can be customized to fit your application. Standard fittings are easily changed using the AN-4 or the Autoclave® F250C connection.

Specifications

Model CPT6020

Measurement Specification	
Accuracy ¹⁾	0.020% FS
Measuring ranges	
Gauge pressure	0 ... 0.36 to 0 ... 1500 psig (0 ... 25 mbar to 0 ... 100 bar)
Bi-directional pressure ²⁾	± 0.18 to -15 ... 1500 psig (± 12.5 mbar to -1 ... 100 bar)
Absolute pressure	0 ... 5 psia to 0 ... 15,015 psia (0 ... 350 mbar to 0 ... 1001 bar abs.)
Calibration interval	185 days
Pressure units	39 and 1 user defined
CPT6020 as barometric reference	
Measuring range	8 ... 17 psi abs. (552 ... 1,172 mbar abs.)
Accuracy ¹⁾	0.020% of reading
<p>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.</p> <p>2) The negative portion of a bidirectional range has the same accuracy as the equivalent positive range.</p>	
General Specifications	
Case	
Orientation effects	Negligible – completely removable with re-zeroing
Dimensions	See technical drawings
Weight	~250 g (depending on range)
Ingress protection	IP-67
Display	
Resolution	100 ppb or better
Warm-up time	15 min.
Connections	
Pressure connections	SAE J514/JIC or Autoclave [®] F250C (for pressure ranges > 6000 psi)
Overpressure limit	2X proof, 3X burst; static pressure < 50 psig
Pressure port adapters	Standard: without Option (only up to 6,000 psi): 1/8" female BSP fitting, 1/4" BSP fitting, 1/8" female NPT fitting, 1/4" male NPT fitting, 6 mm tube fitting, 1/4" tube fitting and female 7/16-20 SAE fitting
Materials, wetted parts	Ranges ≤ 5 psi Silicon, 316 SS, glass filled resins, epoxy Ranges > 5 to 1500 psi 316 SS Ranges >1500 psi 316 SS, Fluorocarbon Rubber
Pressure media	Ranges ≤ 5 psi – clean, dry, non-corrosive gases Ranges > 5 psi – media compatible with the listed wetted parts.
Voltage supply	
Power supply	9 to 18 VDC (12 VDC nominal)
Power consumption	< 26 mA at 12 VDC +/-5% (.40 W max)
Permissible ambient conditions	
Compensated temperature range	0 to 50 °C (32 to 122 °F)
Operating temperature range	-40 to 85 °C (-40 to 185 °F)
Storage temperature range	-40 to 85 °C (-40 to 185 °F)
Humidity	0 ... 95% r.h. (non -condensing)
Operating altitude	<3000 meters (10,000 feet)
Measure port internal volume	<1 cc
Reference port internal volume	~ 40 cc

Communication

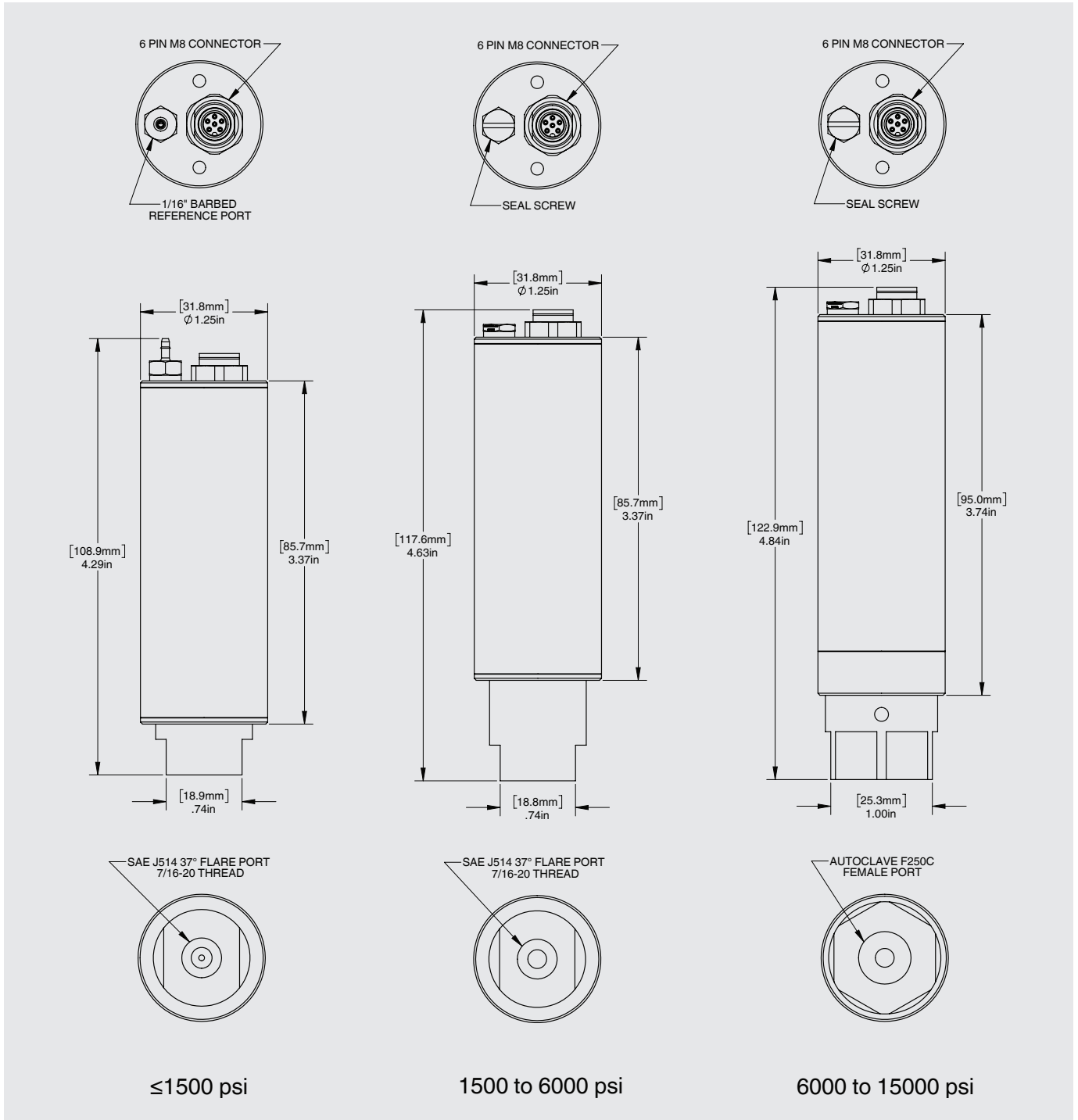
Interface	RS-232 or RS-485
Baud rate	Default 57,600 baud - 9600, 19200 and 115200 user selectable
Measuring rate	50 values/second, default - (factory adjustable)

Certificates

Compliance	EN 50581:2012, EN 61326-1:2013, 61010-1:2010 (ed.3)
Calibration ³⁾	A2LA accreditation

3) Calibration in a vertical position.

Dimensions in [mm] in.



Scope of Delivery

- Precision Pressure Transducer model CPT6020
- Operating instructions
- ISO 17025, A2LA accredited calibration certificate
- Pressure adapter (as specified)
- 5 ft. connection cable with flying leads

Accessories

- Power supply & communication cable
- Pressure adapters

Ordering Information

CPT6020 / 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 / Pressure adapter / Additional order information

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