

Analog Pressure Transducer Model CPT6030



WIKA data sheet CT 25.14

Applications

- Pressure calibration
- High accuracy pressure monitoring
- Pressure sensing in critical applications
- Process instrumentation

Special Features

- Metrological Accuracy of 0.025% FS on the 4-20 mA output
- Range: 0-10 in. H₂O (25 mbar) up to 15,015 psi (1001 bar)
- Wide voltage power input from 15 to 28 Vdc
- Wide temperature compensation from -20 to 75 °C
- IP-67 rating for harsh environments
- Compact rugged design
- NAMUR NE43 complaint



Analog Pressure Transducer, Model CPT6030

Description

The analog pressure transducer, CPT6030 is a self-contained pressure sensing device that provides high accuracy pressure measurements with a true two wire, 4 to 20 mA output. This transducer incorporates a low hysteresis silicon sensor with electronically compensated pressure linearity over the compensated temperature range. The transducer is characterized over the full pressure and compensated temperature range to achieve 0.025% FS accuracy. The pressure output is updated at a rate of 21 readings per second (47 ms).

Application

The analog pressure transducer can be used to verify and adjust industrial and process pressure transmitters as a compact calibration solution. The metrological grade accuracy of 0.025% FS includes linearity, hysteresis, repeatability, drift and reference uncertainty over the temperature range. The CPT6030 can also be used for OEM applications such as flow calibrators, humidity calibrators, pressure controllers, aerospace wind tunnel calibration, automotive sensor testing, hydrology, oceanography, and in the aviation and space industries. It can also be used as a transfer standard or in pressure calibration and testing areas of production facilities.

Functions

System designers appreciate these high accuracy remotely accessible transducers that are not tied to a front panel. Each transducer can be configured for gauge, absolute or bidirectional pressure types with pressure ranges as low as 10" of H₂O up to 15,000 psi and a recalibration period of 365 days. This two wire loop powered pressure transducer accepts a wide range of voltage input from 15 to 28 Vdc making it flexible enough to be used in a wide variety of applications.

Design

The 316L SS construction and IP67 rating are an asset when utilizing the transducer 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 SAE J514/JIC or the Autoclave® F250C connection. The CPT6030 is a smart pressure transducer with calibration and compensation data stored on-board the sensor at all times. It can be configured with a digital interface using RS-232 to set and adjust zero and span.

Specifications

Measurement Specification	
Accuracy ¹⁾	0.025% FS ²⁾
Precision ³⁾	0.015% FS
Measuring ranges	
Gauge pressure ⁴⁾	0 ... 0.36 to 0 ... 15,000 psig (0 ... 25 mbar to 0 ... 1000 bar)
Bi-directional pressure ⁴⁾⁵⁾	± 0.18 to -15 ... 15,000 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	365 days
Pressure units	39
As barometric reference	
Measuring range	8 ... 17 psi abs. (552 ... 1,172 mbar abs.)
Accuracy ¹⁾	0.025% 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) FS = Full Span</p> <p>3) It is defined as the combined effects of linearity, repeatability and hysteresis throughout the stated compensated temperature range.</p> <p>4) Ranges from 1500 to 15,000 psig will be sealed gauge transducers.</p> <p>5) 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)
Display	
Warm-up time	15 min.
Connections	
Pressure Port	FSAE J514/JIC 4 or Autoclave® F250C (for pressure ranges > 400 bar (> 6,000 psi))
Reference Port	Absolute & >1500 psi Gauge: Sealed Relief Valve ³⁾ <1500 psi Gauge: 1/16" Barb fitting
Overpressure limit	2X proof, 3X burst; static pressure < 50 psig
Materials, wetted parts	Ranges ≤ 5 psi Silicon, 316 SS, silicon, 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.
Power	
Voltage Range	15 to 28 VDC (24 VDC nominal)
Power consumption	4...20 mA depending on pressure input (23 mA, 0.65 W max.)
Permissible ambient conditions	
Compensated temperature range	-20 to 75 °C (-4 to 167 °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	~ 45 cc
Communication	
Measuring rate	21 values/second

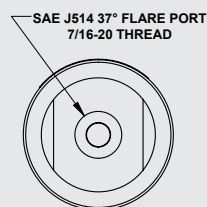
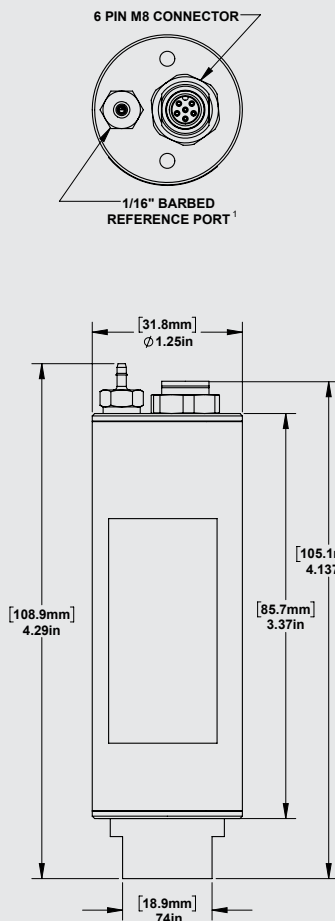
3) Sealed Relief Valve has fluoro-carbon rubber O-ring with a release pressure setting of 10-20 psig

Certificates	
Calibration	Traceable to SI units through NIST or equivalent

Dimensions in [mm] in.

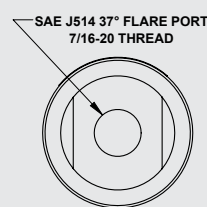
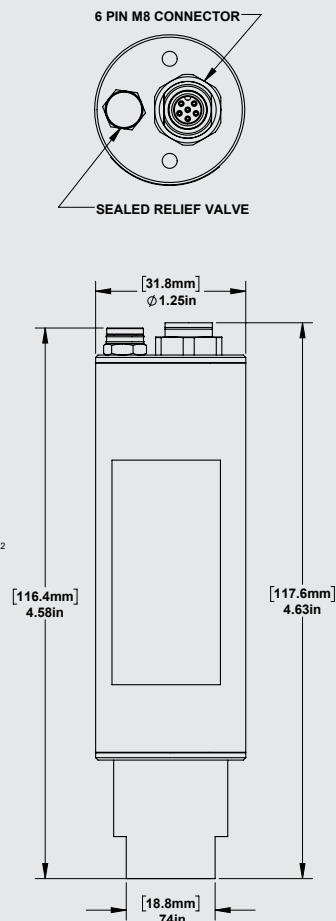
- 1 Shown is a gauge variant with 1/16" barbed reference port
- 2 Maximum dimension for absolute variant

Low Pressure Version (Pressure < 1500 psi)



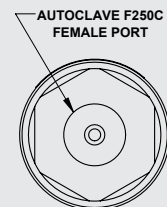
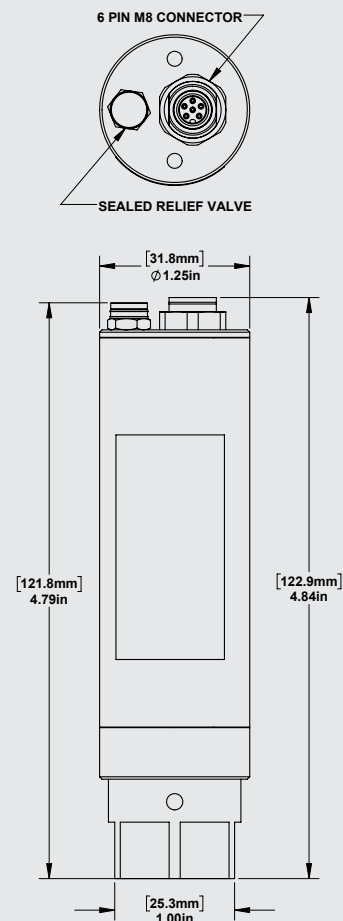
≤1500 psi

Medium Pressure Version (1500 to 6000 psi)



1500 to 6000 psi

High Pressure Version (6000 to 15,000 psi)



6000 to 15000 psi

Scope of Delivery

- Analog Pressure Transducer, CPT6030
- Operating instructions
- ISO 17025, NIST or equivalent traceable certificate
- Pressure adapter (as specified)
- 5 ft. connection cable with flying leads

Accessories

- Pressure adapters
- Calibration adapter with communication cable and power supply (PN: 19825001)

Ordering Information

Analog pressure transducer / Instrument version / Pressure unit / Type of pressure / Start of measuring range / End of measuring range / Type of certificate / Mounting position / Pressure adapter / Additional order information

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