



Precision pressure sensor Models CPT6100, CPT6180

WIKA data sheet CT 25.10

Applications

- Testing technology
- Calibration technology
- Laboratories and maintenance shops
- Aviation

Special features

- Accuracy up to 0.01 % IS-50 ¹⁾
- Measuring range -1 ... +400 bar
- RS-232 or RS-485 interface
- Compact version



Precision pressure sensor CPT6180

Description

The models CPT6180 and CPT6100 are compact, robust sensors with a serial output and a measuring range which is freely selectable between -1 ... +400 bar. The impressive measurement uncertainty up to 0.01 % IS-50 ²⁾ for 365 days, makes the sensor of the most accurate transducers in precision pressure measurement technology. The standard output mode provides the pressure value via a query-response process.

Application

These precision pressure sensors are built into OEM instruments, e.g. in pressure, flow or humidity calibrators, or in any instruments where high-accuracy measurement is needed. They are used as reference pressure sensors within the automated manufacturing of pressure measuring instruments or calibration stands. Through a high accuracy, speed of reading and long-term stability, these are particularly suited for applications in wind-tunnels or in pressure chambers. These characteristics make it a valuable tool in metrology, hydrology, oceanography, and in the aviation and space industries.

Functions

The models CPT6180 and CPT6100 have an RS-232 or RS-485 interface. The RS-485 interface offers the possibility of a genuine multidrop connection and simple cabling. There are 4 different baud rates to choose from.

The sensors can be configured for gauge and absolute pressure for any measuring range within the specified limits. They have a wide power supply range (DC 6 ... 20 V) and low power consumption (< 0.5 W). With a recalibration time of 365 days and a high resolution of 7 significant figures, CPT6180 and CPT6100 are flexible enough to be used in a wide variety of applications.

Compact version

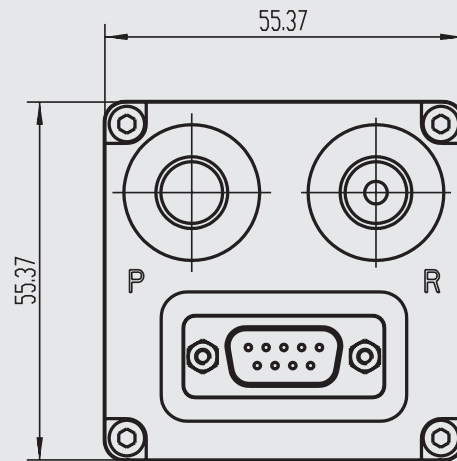
The pressure sensors are, due to their robust, compact design, easily integratable in a 19" rack without taking up much space. With the combination of male and female threads, a fast and secure fitting is always possible, negating the need for further sealing.

1) 0.01 % IS-50 accuracy: 0.01 % of measured value in the upper half of the measuring range

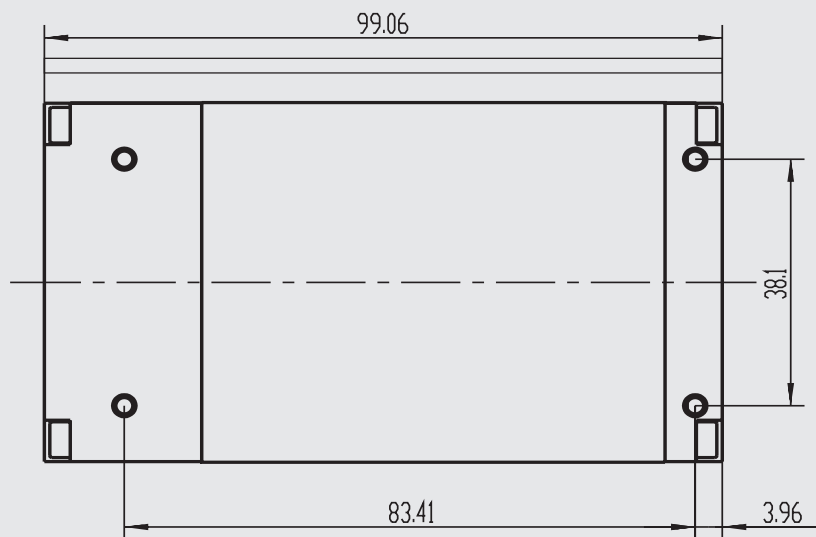
2) See overall accuracy in the specifications

Dimensions in mm

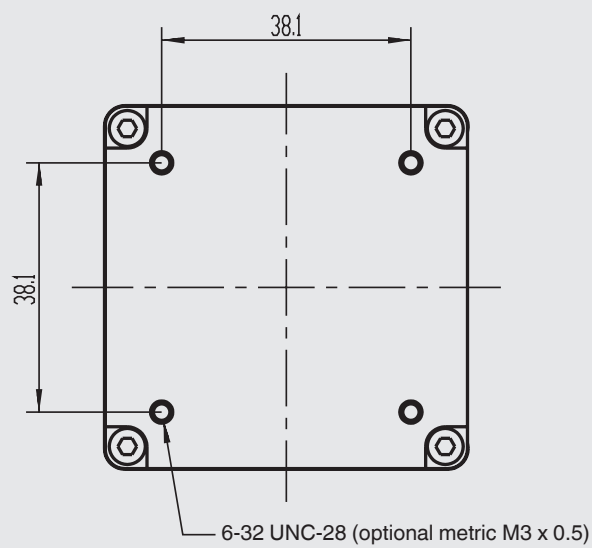
Top view



Side view



Bottom view



Specifications		Model CPT6100	Model CPT6180
Accuracy		0.01 % FS	0.01 % IS-50 ¹⁾
Measuring range			
■ Overpressure	bar	0 ... 0.025 up to 0 ... 400	0 ... 1 up to 0 ... 400
■ Bi-directional	bar	-1 ... -0.025 up to 0.025 ... 400	-
■ Absolute pressure	bar abs.	0 ... 0.35 up to 0 ... 401	0 ... 1 up to 0 ... 401
Precision		0.005 % FS	0.005 % IS-50
Pressure units		psi, bar, mbar, Pa, kPa, hPa, MPa, tsi, atm, torr, Dynes/cm ² , g/cm ² , kg/cm ² , mSW, oz/in ² , psf, tsf, mmH ₂ O (4 °C), cmH ₂ O (4 °C), mH ₂ O (4 °C), inH ₂ O (4 °C), inH ₂ O (20 °C), inH ₂ O (60 °F), ftH ₂ O (4 °C), ftH ₂ O (20 °C), ftH ₂ 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)	
Pressure connections		Connection 7/16-20 SAE for pressure and reference port The reference port is sealed for absolute pressure sensors	
Resolution		7 significant figures	
Filter		Adjustable exponential filter from 0 ... 99 % The filter is only active within a defined range of 0.010 % FS.	
Overpressure safety	% FS	120	
Warm-up time		approx. 15 min up to the specified accuracy	
Interface		RS-232 or RS-485	
Baud rates		9600, 19200, 38400, or 57600 baud	
Signal output		Query and response	
Measuring rate		Standard: 10 values/sec. Option: 50 values/sec.	
Response time		Standard: 100 msec for a FS pressure pulse Option: 20 msec for a FS pressure pulse	
Mounting position		< 1 bar negligible Can be adjusted through zero point adjustment (linear shift of the characteristic curve)	
Material wetted parts		Aluminium, brass, 316SS, Buna-N, Viton®, silicone grease, silicone rubber, Nylon, ceramic, glass, silicon	
Permissible ambient conditions			
■ Operating temperature	°C	0 ... 50	
■ Storage temperature	°C	-20 ... +70	
■ Humidity	% r. H.	0 ... 95, non-condensing	
Compensated temperature range	°C	15 ... 45	
Calibration ²⁾		Incl. 3.1 acceptance test certificate per DIN EN 10204	
Recalibration interval	days	365	
Power supply	DC	6 ... 20 V; 45 mA at 12 V	
Dimensions	mm	554 x 554 x 991	
Weight	g	340	

1) 0.01 % IS-50 accuracy: 0 ... 50 % of the measuring range 0.01 % of half the measuring range and 0.01 % between 50 ... 100 % of measurement.

2) Calibrated in a horizontal position.

Viton® fluoroelastomers are a registered trademark of DuPont Performance Elastomers.

Scope of delivery

- Precision pressure sensor model CPT6180 or model CPT6100
- Operating instructions
- 3.1 Acceptance test certificate per DIN EN 10204

Options

- DKD/DAkkS calibration certificate

Accessories

- Power supply over RS-232 or RS-485 interface
- External overpressure protection
- Pressure adapters

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