

Precision Barometric Transmitters



Description

The barometric transmitter uses a piezoresistive high accuracy and temperature-compensated sensor. It allows to measure the atmospheric pressure in the range 0..1350 hPa (digital outputs; 100...1350 for SDI-12 version) or 500...1200 hPa (analog outputs), providing extreme accuracy and time stability, with excellent repeatability, low hysteresis, and excellent temperature behaviour.

The superior performances are obtained thanks to the employment of a piezoresistive Silicon sensor that integrates both a pressure sensitive as well as a temperature sensitive element. The measurement of pressure and temperature are processed by a microprocessor to obtain an output signal that is compensated over the transmitter's whole, wide temperature operating range: -40...+85 °C. The sensor is factory calibrated at several points at different temperatures in the range of use.

The transmitter is available in three versions which differ in the output type so to guarantee a maximum flexibility in the choice. Moreover, the digital output enables the transmission of the measurements over long distances and connects the transmitter to sensor networks. The pressure measured and transmitted with MODBUS RTU and SDI-12 protocols can be expressed in different user-selectable measuring units.

The instrument is particularly suitable for meteorological applications (AWOS - Automated Weather Observing Systems), environmental monitoring systems, meteorological and environmental data logging, measurement laboratories, atmospheric pressure compensation in the performance of internal combustion engines, barometric pressure compensation in clean rooms, vehicle emission test.

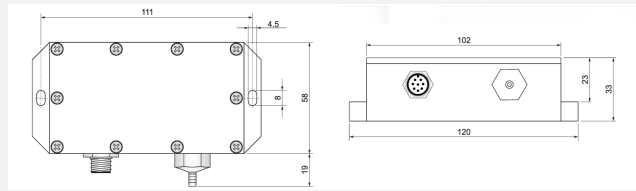
Its low power consumption makes it ideal for remote acquisition systems such as automatic weather stations powered by solar cells.



Precision Barometric Transmitters

Technical specifications may be varied without prior notice

Technical specifications

Sensor	High accuracy piezoresistive
Measuring range	Digital outputs: 0...1350hPa (100...1350 hPa with modbus protocol) Analog outputs: 500...1200hPa
Resolution	0,01hPa
Accuracy	± 0,1hPa (500...1200hPa) ± 0,2hPa (remaining range) @ 23°C ± 0,3hPa (500...1200hPa) / ± 0,4hPa (remaining range) in the entire temperature operating range -40...+85°C
Units of measurement with Modbus and SDI-12 protocols	Pa, hPa, kPa, mbar, bar, atm, psi, mmHg, inHg, mmH ₂ O, ftH ₂ O, kg/cm ² , Torr.
Long term stability @ 25 °C	0,25 hPa/year
Output signal	RS485, RS422, RS232, Standard protocols MODBUS-RTU e NMEA Analog voltage output 0...5/1...5V or analog active current 0...20/4...20mA SDI-12
Warm-up time	2s approx. from powering
Measuring period	16ms Upon user request for SDI-12 protocol
Analog output response time	150ms to reach 90% of final value with step pressure input (from 600 to 1000 hPa)
Overpressure limit	3 x f.s.
Compatible media	Only dry air and non-corrosive gases
Power supply	10...30Vdc - 8...30Vdc for SDI-12 protocol
Absorption	< 10mA @ 12Vdc < 200µA @ 12Vdc SDI-12 (average consumption between two subsequent measurements)
Pressure connection	Ø 5 mm flexible tube
Electrical connections	M12
Operating conditions	-40...+85°C / 0...100%UR
Storage temperature	-40...+85°C
Housing material	Anticorodal
Protection degree	IP67
Dimensions	

Ordering codes

Sensor with configurable analog voltage output 0...5 V o 1...5 V. Digital output RS232, RS422 or RS485. Standard protocols MODBUS-RTU e NMEA	PCTPR320
Analog output sensor in configurable current 0...20 mA o 4...20 mA. Digital output RS232, RS422 or RS485. Standard protocols MODBUS-RTU e NMEA	PCTPR314
Digital SDI-12 output	PCTPR321

Technical specifications may be varied without prior notice