

BAROsense PBS83M... series

A COMPLETE SERIES OF BAROMETRIC PRESSURE TRANSMITTER

INTRODUCTION

Unlock unparalleled precision and reliability with BAROsense, a cutting-edge barometric transmitter designed for excellence.

Elevate your measurements with our state-of-the-art features and customizable options.

Specifically designed for applications such as:

- Meteorological applications
- Environmental monitoring systems
- Altitude applications
- Barometric pressure compensation in internal combustion engines
- Cleanrooms
- Testing of vehicle emissions

FEATURES

Precision technology

Equipped with a high-precision piezo-resistive pressure sensor and integrated temperature sensor, BAROsense delivers accuracy beyond expectations.

Digital excellence

The digital RS485 output with MODBUS-RTU or proprietary protocol ensures seamless connectivity and data transmission over extended distances, linking your transmitter to sensor networks effortlessly.

User-friendly interface

Choose from a range of user-selectable units of measurement, making it adaptable to your specific requirements. Opt for the optional LCD display for immediate and direct reading convenience.

Weather-ready solutions

Enhance accuracy with optional inputs for combined temperature and relative humidity probes. Calculate dew point, absolute humidity, and wet bulb temperature effortlessly. By having these additional measurements, the device can offer a more comprehensive view of the surrounding environment. This is particularly useful in applications where environmental conditions can affect processes or equipment performance

Wind-resistant solutions

For outdoor installations, our optional static port with support bracket minimizes measurement errors caused by wind flow, ensuring extreme accuracy and reliability in open field measurements.

CONFIGURATION & MEASUREMENT

Versatile outputs

Tailor your experience with an additional analog output, user-configurable in current (0/4...20 mA) or voltage (0...1 V, 0...5 V, or 0...10 V) – the flexibility you desire.

Calibration confidence

Factory calibrated in multiple points, BAROsense boasts excellent time stability and repeatability, providing you with confidence in every measurement.



RELIABILITY

Benefit from factory-calibrated precision and outstanding stability for consistently accurate measurements.



ACCORDING TO THE STANDARD
Meets WMO requirements.



GREAT FLEXIBILITY

Customize your outputs and units to meet your unique measurement needs, ensuring a seamless integration with your existing systems.



DURABILITY

Crafted with excellence, is built to withstand diverse environmental conditions, ensuring longevity and performance. Static port available optionally.

Measurement specifications

Barometric Pressure

Sensor	Piezoresistive
Measuring range	300...1100 hPa Configurable for analog output (default 600...1100 hPa)
Resolution	0.1 for the display 0.01 for the digital output
Accuracy	± 0.5 hPa (700...1100 hPa) @ 20 °C ± 1 hPa (500...1100 hPa) / ± 1.5 hPa (300...500 hPa) @ T=(0...60 °C) ± 0.5 hPa @ 20 °C
Long-term stability	< ± 1 hPa/year

Relative Humidity only for PBS83M with external probe

Sensor	capacitive
Measuring range	0...100 %RH
Resolution	0.1%
Accuracy	± 2.5% (0...85%) ± 3.5% (85...100%) @ T=23 °C
Temperature drift	0.05%/K (0...60 °C)
Sensor operating temperature	-40...+105 °C (R.H. max= [100-2*(T-80)] @ T=80...105 °C)
Response time	$T_{63} < 4$ s (air speed = 2 m/s, without filter)
Long-term stability	< 1%/year (@ 23 °C and 30...70 %RH)

Temperature only for PBS83M with external probe

Sensor	PTAT integrated in humidity module
Measuring range	-40...+105 °C
Resolution	0.1 °C
Accuracy	± 0.2 °C in the range 0...+60 °C ± (0.2 - 0.05 * T) °C in the range T=-40...0 °C ± [0.2 + 0.032 * (T-60)] °C in the range T=+60...+105 °C
Long-term stability	0.05 °C/year

Calculated quantities only for PBS83M with external probe

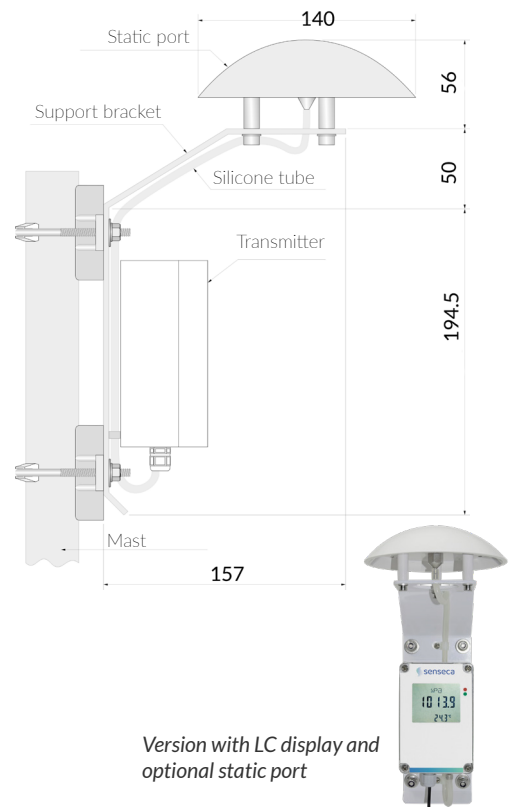
Dew point, absolute humidity and wet bulb temperature

Ordering codes

PBS83M	LCD 0 = no L = with LCD display
	T / RH probe 0 = no C = with combined T / RH probe kit
	Additional analog output 0 = no W = 0/4...20 mA or 0...1 V analog output X = 0/4...20 mA or 0...5 V analog output Y = 0/4...20 mA or 0...10 V analog output

General specifications

Output	RS485 with Modbus-RTU or ASCII proprietary protocol Optional analog output, selectable in current (0/4...20 mA) or voltage (0...1 V, 0...5 V or 0...10 V, depending on the model)
Power supply	PBS83M0...: 7...30 Vdc PBS83MW...: 8...30 Vdc PBS83MX...: 8...30 Vdc PBS83MY...: 15...30 Vdc
Power consumption	4 mA @ 24 Vdc (+ output current if current output is used)
Connection	Internal screw terminal header / PG7 cable gland for power supply and output Optional M12 connector for the T/ RH external probe
Operating conditions	-40...+60 °C (-20...+60 °C with LCD) 0...100%RH
Compatible media	Air and dry gases
Material	Transmitter: polycarbonate, pressure input in nickel-plated brass Static port (optional): ASA Support bracket (optional): aluminium alloy
Housing dimensions	120 x 80 x 55 mm
Weight	250 g approx. (+ 570 g approx. for static port)
Protection degree	IP 65



V 1.0