

Barometric Pressure Smart Sensor (S-BPA-CM10) Manual



Barometric Pressure Smart Sensor

S-BPA-CM10

Items Included:

- Hook and loop tape

Accessories:

- Smart sensor extension cables (S-EXT-M-0xx)
- Weatherproof connection housing (S-EXT-CASE)
- Cable caddy (M-CDY)

The barometric pressure smart sensor is designed to work with HOB0® stations. The smart sensor has a plug-in modular connector that allows it to be added easily to a HOB0 station. All calibration parameters are stored inside the smart sensor, which automatically communicates configuration information to the logger without any programming or extensive user setup.

Specifications

Measurement Range	660 to 1070 mbar (19.47 to 31.55 in. Hg)
Accuracy	±3.0 mbar (0.088 in. Hg) over full pressure range at 25°C (77°F); maximum error of ±5.0 mbar (0.148 in. Hg) over -40° to 70°C (-40° to 158°F)
Resolution	0.1 mbar (.003 in. Hg)
Drift	1.0 mbar (0.03 in. Hg) per year
Operating Temperature Range	-40° to 70°C (-40° to 158°F)
Environmental Rating	Weatherproof when used inside logger enclosure
Dimensions	4.5 x 4.8 x 1.6 cm (1.75 x 1.88 x 0.63 in.)
Weight	30 g (1 oz)
Bits per Sample	12
Number of Data Channels*	1
Measurement Averaging Option	Yes
Cable Length Available	10 cm (4 in.)
Length of Smart Sensor Network Cable*	0.1 m (0.3 ft)
CE	The CE Marking identifies this product as complying with all relevant directives in the European Union (EU).

* A single HOB0 station can accommodate 15 data channels and up to 100 m (328 ft) of smart sensor cable (the digital communications portion of the sensor cables).

Mounting

- The barometric pressure smart sensor must be used inside the logger housing. Use the hook and loop tape to affix it to the inside the logger enclosure.
- The barometric pressure smart sensor measures the air pressure inside the enclosure. Therefore, the vent at the bottom of the enclosure must be free from obstructions for the sensor to function correctly.
- Refer to the logger manual for more information regarding setting up station loggers.

Connecting the Sensor to a Station

To connect the sensor to a station, stop the station from logging and insert the smart sensor's modular jack into an available smart sensor port on the station. See the station manual for details on operating stations with smart sensors.

Operation

The barometric pressure smart sensor supports measurement averaging. When measurement averaging is enabled, data is sampled more frequently than it is logged. The multiple samples are then averaged together and the average value is stored as the data for the interval. For example, if the logging interval is set at 10 minutes and the sampling interval is set at 1 minute, each data point in the data file will be the average of 10 measurements. Measurement averaging is useful for reducing noise in the data. It is recommended that measurement averaging be used when the barometric pressure smart sensor is used in a windy location. Note that fast sampling intervals (less than 1 minute) may significantly reduce battery life. Refer to the logger manual for more details about smart sensor operation and battery life.

Maintenance

Use a damp sponge or rag to clean the barometric pressure smart sensor housing if it gets dirty or needs to be cleaned. Under no circumstances should the unit be immersed in water or any other cleaning solvent. Do not open the sensor as there are no user serviceable parts inside. The electronics are sensitive to light. Do not remove the black label over the sensor. The sensor will give inaccurate measurements if exposed to light.

Verifying Sensor Accuracy

It is recommended that you check the accuracy of the barometric pressure smart sensor annually. The barometric pressure smart sensor cannot be re-calibrated. Onset uses precision components to obtain accurate measurements. If the smart sensor is not providing accurate data, then it may be damaged and should be replaced.