

Barometric Pressure Smart Sensor (S-BPB-CM50) Manual

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The S-BPB barometric pressure smart sensor easily plugs into HOBO® stations with smart sensor inputs. All calibration parameters are stored inside the smart sensor, which automatically communicates configuration information to the station without any programming or extensive user setup.

The S-BPB barometric pressure smart sensor has a rugged, outdoor rated, weatherproof housing. The sensor is mounted outside the logger enclosure, so the logger does not need to be open to the atmosphere.

Barometric Pressure Smart Sensor

S-BPB-CM50

Items Included:

- Two cable ties
- Two self-tapping screws

Accessories:

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

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
Dimensions	6.4 cm (2.5 in) diameter x 5.1 cm (2 in) height
Weight	96 gm (3.4 oz)
Bits per Sample	12
Number of Data Channels*	1
Measurement Averaging Option	Yes
Cable Length Available	50 cm (20 in.)
Length of Smart Sensor Network Cable*	50 cm (20 in.)



The CE Marking identifies this product as complying with all relevant directives in the European Union (EU).

* A single HOBO 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).

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. Onset recommends 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.

Maintenance

Use a damp sponge or rag to clean the barometric pressure smart sensor housing if it gets dirty. Under no circumstances should the unit be immersed in water or any other cleaning solvent.

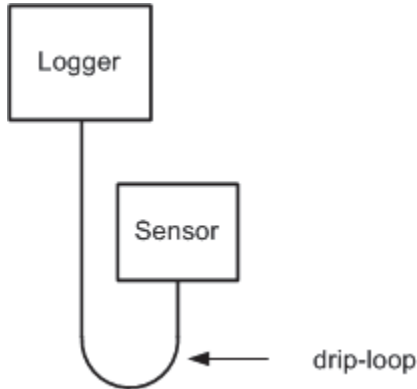
Do not open the sensor as there are no user-serviceable parts inside.

Important: The sensor will give inaccurate measurements if exposed to light by removing the cap.

Mounting the Sensor

Guidelines

- Mount the S-BPB barometric pressure smart sensor outside the logger, either on a mast or a flat, vertical surface.
- The sensor must be mounted vertically to prevent water from collecting under the cap.
- Mount the sensor so that the cable is hanging straight down and create a drip-loop to prevent moisture from entering the logger connection.



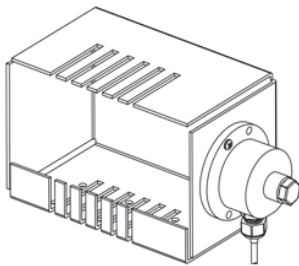
Mounting Options

Tripod: To mount the S-BPB on a pole or Onset tripod mast, use the cable ties provided, as shown in below.



S-BPB Mounted to a Tripod Mast

Onset Cable Caddy: To mount the sensor on the side of the Onset Cable Caddy (M-CDY), use the 8-32 x 3/8 Phillips pan head screws provided with the Cable Caddy, as shown below.



S-BPB Mounted to Cable Caddy

Flat Surface: To mount the sensor on a flat, vertical surface, use the #8 x 1 self-tapping screws provided.

CAUTION: Do not screw the sensor to the side of the HOBO station case. Inserting screws in the side of the HOBO station case will violate the integrity of the unit. You can use double-sided tape.

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.

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.