

## Barometric Pressure Smart Sensor (Part # S-BPA-CM10)

The Barometric Pressure smart sensor is designed to work with the HOBO® Weather Station Logger. The smart sensor has a plug-in modular connector that allows it to be added easily to a HOBO Weather 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.



### Inside this Package

- Barometric Pressure smart sensor
- Mounting Accessories: Hook and loop tape

| Specifications                                                                      | Barometric Pressure Smart Sensor                                                                                                                   |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 3/4 x 1 7/8 x 5/8 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)                                                                                                                                     |
| Part Number                                                                         | S-BPA-CM10                                                                                                                                         |
|  | The CE Marking identifies this product as complying with all relevant directives in the European Union (EU).                                       |

\* A single HOBO Weather 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

### Typical Mounting

Self-adhesive hook and loop tape is supplied for mounting the sensor on top of the battery cover inside the logger enclosure (see Figure 1 below).

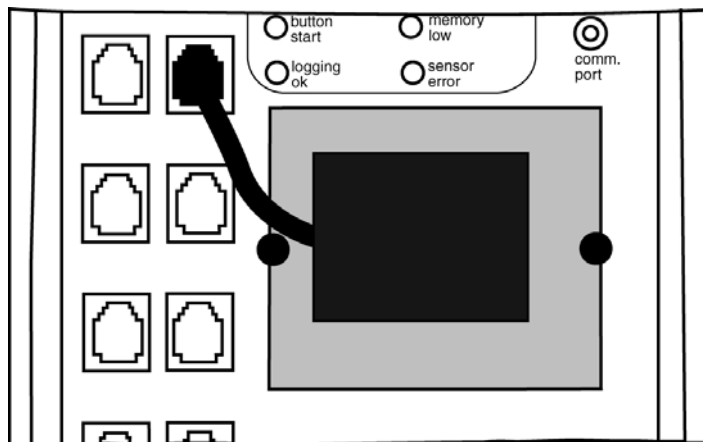


Figure 1: Barometric Pressure Smart Sensor Mounted in the HOBO Weather Station Logger

### Mounting Considerations

- The Barometric Pressure smart sensor must be used inside the logger housing.
- 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 *HOBO Weather Station User's Guide* for more information regarding setting up complete weather stations.

### Connecting the Sensor to the Logger

To start using the Barometric Pressure smart sensor, stop the logger and insert the sensor's modular jack into an available port on the logger. If a port is not available, use a 1-to-2 adaptor (Onset Part # S-ADAPT), which allows you to plug two sensors into one port. The next time the HOBO Weather Station is launched it will automatically detect the new sensor. Note that the HOBO Weather Station supports a maximum of 15 data channels; this sensor uses one data channel. Launch the logger and verify that the sensor is functioning correctly. See the *HOBO Weather Station User's Guide* for more details about connecting smart sensors to the HOBO Weather Station.

## 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 *HOBO Weather Station User's Guide* 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. If you are unsure of the smart sensor's accuracy, you can send the smart sensor back to Onset for re-certification. Contact Onset or your dealer for a Return Merchandise Authorization (RMA) number before sending it.

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