

S-SMB-M005

Soil Moisture (10 cm probe) Smart Sensor



Discontinued

Measures soil water content with the integrated field-proven ECH2O™ Sensor and a 12-bit A/D; $\pm 4\%$ accuracy in typical soil conditions, $\pm 2\%$ accuracy with soil-specific calibration; 10 cm probe.

[View upgrade options](#)

Supported Measurements

Soil Moisture

Features

- $\pm 4\%$ accuracy in typical soil conditions, and $\pm 2\%$ accuracy with soil-specific calibration
- 10 cm probe length
- Compatible with Onset stand-alone and web-based weather stations

Contact Us

Sales (8am to 5pm ET, Monday through Friday)

- Email sales@onsetcomp.com
- Call 1-508-759-9500
- In U.S. toll free 1-800-564-4377
- Fax 1-508-759-9100

Technical Support (8am to 5pm ET, Monday through Friday)

- Contact Product Support www.onsetcomp.com/support/contact
- Call 1-508-759-9500
- In U.S. toll free 1-877-564-4377

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Soil Moisture (10 cm probe) Smart Sensor (S-SMB-M005) Specifications

Measurement Range:

In soil: 0 to 0.450(m³/m³)

Extended range: -0.376 to 1.964 m³/m³ (full scale)

The sensor is capable of providing readings outside the standard volumetric water content range. This is helpful in diagnosing sensor operation and installation. See the Operation section below for more details.

Accuracy: ± 0.041 m³/m³ ($\pm 4\%$) typical 0 to 50°C (32° to 122°F); ± 0.020 m³/m³ ($\pm 2\%$) with soil specific calibration.

This is a system level accuracy specification and is comprised of the ECH2O probe's accuracy of ± 0.04 m³/m³ typical (± 0.02 m³/m³ soil specific) plus the smart sensor adapter accuracy of ± 0.001 m³/m³ at 25°C (77°F). There are additional temperature accuracy deviations of ± 0.003 m³/m³ / °C maximum for the ECH2O probe across operating temperature environment, typical < 0.001 m³/m³ / °C. (The temperature dependence of the smart sensor adapter is negligible.)

Resolution: ± 0.0006 m³/m³ ($\pm 0.06\%$)

Soil Probe Dimensions: 152 x 32 x 1.0 mm (6 x 1.25 x 0.04 in.)

Weight: 190 grams (6.7 oz)

Decagon ECH2O Probe Part No.: EC-10

Sensor Operating Temperature: 0° to 50°C (32° to 122°F).

While the sensor probe and cable can safely operate at below-freezing temperatures (to -40°C/F) and up to 75°C (167°F), the soil moisture data collected at these extreme temperatures is outside of the sensor's accurate measurement range.

Bits per Sample: 12

Volume of Influence: 0.13 liter (4.4 oz)

Sensor Frequency: 5 MHz

Number of Data Channels: 1 (A single smart sensor-compatible HOBO logger can accommodate 15 data channels and up to 100 m (328 ft) of smart sensor cable (the digital communications portion of the sensor cables)

Measurement Averaging Option: No

Cable Length Available: 5 m (16 ft)

Length of Smart Sensor Network Cable: 0.5 m (1.6 ft)