

S-SMA-M005

Soil Moisture (20 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; 20 cm probe. 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; 20 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.
- 20 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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Bourne, MA 02532

Soil Moisture (20 cm probe) Smart Sensor (S-SMA-M005) Specifications

Measurement Range:

In soil: 0 to 0.405(m³/m³)

Extended range: -0.29 to 1.4475 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.

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: ± 0.0004 m³/m³ ($\pm 0.04\%$)

Soil Probe Dimensions: 254 x 32 x 1.0 mm (10 x 1.25 x 0.04 in.)

Weight: 200 grams (7.0 oz)

Decagon ECH2O Probe Part No.: EC-20

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: 0.25 liter (8.5 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)