

S-SMC-M005

## EC5 Soil Moisture Smart Sensor

### Small area of influence

An affordable soil moisture smart sensor with a two-tine design for easy installation; integrates the field-proven ECH2O™ EC-5 Sensor and a 12-bit A/D. An affordable soil moisture smart sensor with a two-tine design for easy installation; integrates the field-proven ECH2O™ EC-5 Sensor and a 12-bit A/D.



### Supported Measurements

Soil Moisture

### Features

- Measures a 0.3-liter volume of soil
- Smaller measurement volume for use in containers or measuring at multiple depths
- High-frequency (70 MHz) circuit provides good accuracy even in high-salinity and sandy soils
- Compatible with Onset stand-alone and web-based weather stations

### Contact Us

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

- Email [sales@onsetcomp.com](mailto: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](http://www.onsetcomp.com/support/contact)
- Call 1-508-759-9500
- In U.S. toll free 1-877-564-4377

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## EC5 Soil Moisture Smart Sensor (S-SMC-M005) Specifications

### Measurement Range

**In soil:** 0 to 0.550(m<sup>3</sup>/m<sup>3</sup>)

**Extended range:** -0.401 to 2.574 m<sup>3</sup>/m<sup>3</sup> (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 User Manual for additional information.

**Accuracy:** ±0.031 m<sup>3</sup>/m<sup>3</sup> (±3.1%) typical 0 to 50°C (32° to 122°F); ±0.020 m<sup>3</sup>/m<sup>3</sup> (±2%) with soil specific calibration.

This is a system-level accuracy specification and is comprised of the ECH2O probe's accuracy of ±0.03 m<sup>3</sup>/m<sup>3</sup> typical (±0.02 m<sup>3</sup>/m<sup>3</sup> soil specific) plus the smart sensor adapter accuracy of ±0.001 m<sup>3</sup>/m<sup>3</sup> at 25°C (77°F). There are additional temperature accuracy deviations of ±0.003 m<sup>3</sup>/m<sup>3</sup> / °C maximum for the ECH2O probe across operating temperature environment, typical <0.001 m<sup>3</sup>/m<sup>3</sup> / °C. (The temperature dependence of the smart sensor adapter is negligible.)

**Resolution:** 0.0007 m<sup>3</sup>/m<sup>3</sup> (0.07%)

**Soil probe dimensions:** 89 x 15 x 1.5 mm (3.5 x 0.62 x 0.06 in.)

**Weight:** 180 grams (6.3 oz)

**Decagon ECH2O probe part No.:** EC-5

**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.

**Volume of influence:** 0.3 liter (10.1 oz)

**Sensor frequency:** 70 MHz

**Bits per sample:** 12

**Number of data channels:** 1

Note: 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)



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