



## ECH2O EC-5 SOIL MOISTURE SENSORE

### DESCRIPTION

EC-5 determines volumetric water content (VWC) by measuring the dielectric constant of the media using capacitance/frequency domain technology. Its 70 MHz frequency minimizes salinity and textural effects, making this sensor accurate in almost any soil or soilless media. Factory calibrations are included for mineral soils, potting soils, rockwool, and perlite.

Just 5 cm long with a ~0.2 L measurement volume, this handy little sensor is easy to install in the field and can also be used in nursery pots. The EC-5's compact design makes it easy to push directly into undisturbed soil to ensure good accuracy.



### EC-5

#### FEATURES

- Measures volumetric water content
- Affordable: ideal for large sensor networks
- Simple sensor with excellent accuracy
- Small volume of influence (eg., field spatial variability, lab column studies, or greenhouse research)
- 70 MHz frequency minimizes salinity and textural effects
- Factory calibrations included for mineral soils, potting soils, rockwool, and perlite
- Small size means easy installation
- Plug and play capability
- Easy integration with other

# EC-5 Soil Moisture Sensor

## SPECIAL 4-20 MILLIAMP VERSION FOR INTEGRATORS

The MAS-1 4-20 milliamp sensor is a version of the EC-5 for integrators. It's the first current-based sensor to use METER's trademark 70 MHz technology. This sensor offers a standard 4-20 milliamp output that is common with PLCs and irrigation controllers. With the 4-20 mA interface, cable lengths over 250 feet are possible.

## Contact info



### Monitoring MENA

Insight into instrumentations

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SPECIFICATIONS	
<b>Volumetric water content (VWC)</b>	<b>Range:</b> 0%–100% <b>Resolution:</b> 0.001 m <sup>3</sup> /m <sup>3</sup> VWC in mineral soils, 0.25% in growing media <b>Accuracy:</b> Generic calibration: ±0.03 m <sup>3</sup> /m <sup>3</sup> typical in mineral soils that have solution EC <8 dS/m Medium specific calibration: ±0.02 m <sup>3</sup> /m <sup>3</sup> in any porous medium (± 2%)
<b>Measurement volume</b>	See <a href="#">comparison article</a>
COMMUNICATION SPECIFICATIONS	
<b>Output</b>	10%–50% of excitation voltage (250–1,250 mV at 2,500 mV excitation)
<b>Data logger compatibility</b>	METER data loggers (ZL6, EM50/60 series, Em5b) or any data acquisition systems capable of switched 2.5–3.6 VDC excitation and single-ended voltage measurement at greater than or equal to 12-bit resolution. <b>NOTE: These calibration constants only apply to 2,500-mV excitation; use of these numbers with any other excitation voltage results in erroneous readings!</b>
PHYSICAL SPECIFICATIONS	
<b>Dimensions</b>	Length: 8.9 cm (3.50 in) Width: 1.8 cm (0.71 in) Height: 0.7 cm (0.28 in)
<b>Prong length</b>	5 cm (1.97 in)
<b>Operating temperature range</b>	Minimum: –40 °C Typical: NA Maximum: +60 °C <b>NOTE: Sensors may be used at higher temperatures under certain conditions; contact Customer Support for assistance.</b>
<b>Cable length</b>	5 m (standard) 40 m (maximum custom cable length) <b>NOTE: Contact Customer Support if a nonstandard cable length is needed.</b>
<b>Connector types</b>	3.5-mm stereo plug connector or stripped and tinned wires
ELECTRICAL AND TIMING CHARACTERISTICS	
<b>Supply voltage (VIN to GND)</b>	Minimum: 2.5 VDC at 10 mA Typical: NA Maximum: 3.6 VDC at 10 mA
<b>Measurement duration</b>	Maximum 10 ms
<b>COMPLIANCE</b>	Manufactured under ISO 9001:2015 EM ISO/IEC 17050:2010 (CE Mark) 2014/30/EU 2011/65/EU EN61326-1:2013 EN50581:2012

This Instrument is manufactured by our principle company

**METER Environment - USA**