



**METER**



# TEROS 10

Simple Soil Water Content Sensor

## IF YOU THINK BIG, YOU'LL LOVE THIS NEARLY BULLETPROOF SENSOR

Large sensor networks can make a giant hole in the research budget, especially because many soil moisture sensors have reliability issues. Plus, traditional sensors force you to choose between accuracy and affordability. Not anymore. The ultra-robust TEROS 10 delivers scientific accuracy and reliability at a price that makes large sensor networks economically practical.

## EVERYTHING YOU NEED. NOTHING YOU DON'T.

The TEROS 10 soil water content sensor is a ruggedized version of our basic, no-frills soil moisture sensor. Its 70-MHz frequency minimizes salinity and textural effects, making it accurate in most soil or soilless media. With a tough, epoxy body, the TEROS 10 is designed to withstand some of the harshest field conditions, which means problem-free measurements over the longevity of your research. In fact, we're so confident about the long life of our TEROS sensor line, we've increased our standard warranty from one to three years.

## FEATURES

- Low-cost, ruggedized soil moisture sensor
- Ideal for large sensor networks
- Sharpened stainless steel needles are securely fastened and reduce breakage
- Compatible with TEROS Borehole Installation Tool ensuring fast, error-free installation with little site disturbance
- 3-year long-life guarantee
- Check installation or troubleshoot with the ZSC Bluetooth sensor interface
- Measure VWC in a harsh environment
- Robust epoxy body means it lasts for 10+ years in the field
- 430 mL volume of influence
- Repeatability can be checked with an accuracy verification standard
- Plug and play with METER data loggers
- Ferrite core eliminates cable noise
- Easy integration with third-party systems

## SPECS

<b>Volumetric Water Content Range</b>	Mineral Soil Calibration: 0.0000 – 0.6400 m <sup>3</sup> /m <sup>3</sup> Soilless Media Calibration: 0.0000 – 0.7000 m <sup>3</sup> /m <sup>3</sup> Apparent Dielectric Permittivity ( $\epsilon_a$ ): 1 (air) to 80 (water) <b>NOTE: The VWC range is dependent on the media the sensor is calibrated to. A custom calibration will accommodate the necessary ranges for most substrates.</b>
<b>VWC Resolution</b>	0.0010 m <sup>3</sup> /m <sup>3</sup>
<b>VWC Accuracy</b>	Mineral Soil Calibration: $\pm 0.03$ m <sup>3</sup> /m <sup>3</sup> typical in mineral soils that have solution EC <8 dS/m Soilless Media Calibration: $\pm 0.05$ m <sup>3</sup> /m <sup>3</sup> typical in media that has a solution EC <8 dS/m Medium Specific Calibration: $\pm 0.01$ – $0.02$ m <sup>3</sup> /m <sup>3</sup> in any porous medium Apparent Dielectric Permittivity ( $\epsilon_a$ ): 1–40 (soil range), $\pm 1 \epsilon_a$ (unitless) 40–80, 15% of measurement
<b>Dielectric Measurement Frequency</b>	70 MHz
<b>Communication Output</b>	1,000 – 2,500 mV
<b>Data Logger Compatibility</b>	Data acquisition systems capable of switched 3.0–15 VDC excitation and single-ended voltage measurement at greater than or equal to 12-bit resolution.
<b>Dimensions</b>	Length: 5.1 cm (2.02 in) Width: 2.4 cm (0.95 in) Height: 7.5 cm (2.95 in)
<b>Needle Length</b>	5.4 cm (2.11 in)
<b>Operating Temperature Range</b>	Minimum: -40.00 °C Typical: NA Maximum: 60.00 °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>Cable Diameter</b>	0.165 $\pm$ .004 (4.20 $\pm$ .10 mm) with min. jacket of .030 (.76 mm)
<b>Connector Types</b>	3.5-mm stereo plug connector or stripped and tinned wires
<b>Stereo Plug Connector Diameter</b>	3.5 mm
<b>Conductor Gauge</b>	22 AWG/24 AWG drain wire
<b>Supply Voltage (VIN to GND)</b>	Minimum: 3.0 VDC Typical: NA Maximum: 15.0 VDC
<b>Measurement Duration</b>	Minimum: 10 ms Typical: NA Maximum: NA
<b>Compliance</b>	EM ISO/IEC 17050:2010 (CE Mark) 2014/30/EU 2011/65/EU EN61326-1:2013 EN55022/CISPR 22 EN 55011:2016/A1:2017 (GROUP 1, CLASS A-RCM mark)

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