TEROS 10: ADVANCED SOIL MOISTURE SENSING

DESCRIPTION

The new, ultra-robust TEROS 10 soil moisture sensor delivers scientific accuracy and reliability at a price that makes large sensor networks economically practical. 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. Ideal for large sensing networks, it is sensitive to small VWC changes across the entire range of soil and substrate water content and can be installed in anything from dry desert soils to very wet peat. Not only that, the TEROS 10 has very low power consumption and a high resolution.

TEROS 10

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

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TEROS 10 eliminates common problems that cause uncertainty in the data—things like air gaps and preferential flow. How? The TEROS 10 is compatible with the TEROS Borehole Installation Tool which mistake-proofs installation. Because of its mechanical advantage, the tool delivers consistent, flawless installation into any soil type (even hard clay) while minimizing site disturbance. Sensors are installed straight in and perpendicular with no side-to-side movement, then gently released to prevent air gaps and preferential flow.

Contact info

SPECIFICATIONS

MEASUREMENT SPECIFICATIONS	
Volumetric water content (VWC)	**Range:** Mineral soil calibration: 0.00–0.64 m^3/m^3 Soilless media calibration: 0.0–0.7 m^3/m^3 Apparent dielectric permittivity (ε_a): 1 (air) to 80 (water) **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.** **Resolution:** 0.001 m^3/m^3. **Accuracy:** Mineral soil calibration: ±0.03 m^3/m^3 typical in mineral soils that have solution EC <8 dS/m Soilless media calibration: ±0.05 m^3/m^3 typical in media that has a solution EC <8 dS/m Medium specific calibration: ±0.01–0.02 m^3/m^3 in any porous medium Apparent dielectric permittivity (ε_a): 1–40 (soil range) , ±1 ε_a (unitless) 40–80, 15% of measurement
Dielectric measurement frequency	70 MHz
COMMUNICATION SPECIFICATIONS	
Output	1,000 to 2,500 mV
Data logger compatibility	METER data loggers (ZL6, EM50/60 series) or any 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.
PHYSICAL SPECIFICATIONS	
Dimensions	Length: 5.1 cm (2.02 in). Width: 2.4 cm (0.95 in) Height: 7.5 cm (2.95 in)
Needle length	5.4 cm (2.11 in)
Cable length	5 m (standard). 40 m (maximum custom cable length) **NOTE: Contact Customer Support if a nonstandard cable length is needed.**
Connector types	3.5-mm stereo plug connector or stripped and tinned wires
ELECTRICAL AND TIMING CHARACTERISTICS	
Supply voltage (VIN to GND)	Minimum: 3.0 VDC. Typical: NA. Maximum: 15.0 VDC
Operating temperature range	Minimum: –40 °C. Typical: NA. Maximum: 60 °C **NOTE: Sensors may be used at higher temperatures under certain conditions; Contact Customer Support for assistance.**
Measurement duration	Minimum: 10 ms. Typical: NA. Maximum: NA
COMPLIANCE	Manufactured under ISO 9001:2015 EM ISO/IEC 17050:2010 (CE Mark) 2014/30/EU and 2011/65/EU EN61326-1:2013 and EN55022/CISPR 22

This Instrument is manufactured by our principle company

METER Environment - USA