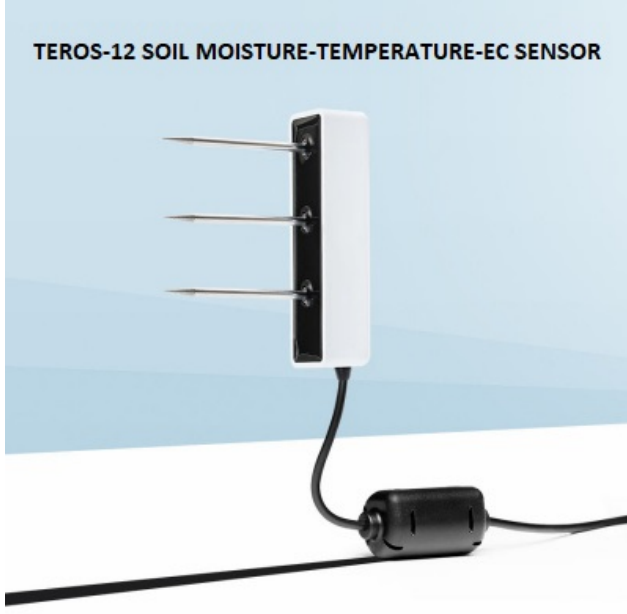




TEROS-12 SOIL MOISTURE-TEMPERATURE-EC SENSOR

METER

TEROS-12 soil moisture, temperature, and electrical conductivity sensor makes your life easier with a large volume of influence, reduced sensor-to-sensor variability, and a near-bulletproof form factor—which lasts up to 10 years in the field. These innovations, along with our well-published capacitance technology, an accuracy verification clip, and a blazing fast installation tool have combined to generate our most accurate, easy-to-use, highly durable—yet still economical—soil moisture sensor. 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.



Unlike other sensors on the market which spec an unverifiable $\pm 1.0\%$ VWC accuracy, Teros-12 was rigorously tested by our soil physicists across a challenging range of soil types and EC levels so you can be confident in the accuracy of your data.

Plus, Teros sensor repeatability can be checked with an accuracy verification clip. No other soil moisture sensor has this ability. Just slide the verification clip onto a sensor and plug it into a logger. If it reads within the right range, your sensor is good to go.

Easy and reliable data collection is part of Teros-12 experience. Combine Teros-12 with the new ZL6, where all data is connected and delivered through the cloud. Collect data in near real time, from the comfort of your office. So all you have to do is sit back and let the data flow.

TEROS BORE HOLE INSTALLATION TOOL



Features

- Increased volume of influence (1010 mL)
- Reduced sensor-to-sensor variability
- 3-year long-life guarantee
- Track solute and fertilizer movement with accurate EC measurement
- Easy installation with borehole installation tool (minimizes air gaps for cleaner readings)
- Check installation or troubleshoot with the ZSC Bluetooth sensor interface.
- Repeatability can be checked with an accuracy verification clip
- Robust epoxy body for tough field conditions
- Minimizes salinity and textural effects by using 70 MHz frequency capacitance technology
- Ferrite core eliminates cable noise
- Easy-to-use SDI-12 communication for non-METER data loggers





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Specifications

MEASUREMENT SPECIFICATIONS

Volumetric water content (VWC)	RANGE Mineral soil calibration: 0.00-0.70 m ³ /m ³ Soilless media calibration: 0.0-1.0 m ³ /m ³ Apparent dielectric permittivity (ϵ_a): 1 (air) to 80 (water) RESOLUTION 0.001 m ³ /m ³ ACCURACY Generic calibration: ± 0.03 m ³ /m ³ ($\pm 3.00\%$ VWC) typical in mineral soils that have solution EC <8 dS/m Medium specific calibration: ± 0.01 -0.02 m ³ /m ³ (± 1 -2% VWC) in any porous medium Apparent dielectric permittivity (ϵ_a): 1-40 (soil range), $\pm 1 \epsilon_a$ (unitless) 40-80, 15% of measurement
Dielectric measurement frequency	70 MHz
Temperature	Range: -40 to 60°C Resolution: 0.1°C Accuracy: $\pm 1^\circ\text{C}$ from -40 to 0°C , $\pm 0.5^\circ\text{C}$ from 0 to +60°C
Bulk electrical conductivity (EC_b)	Range: 0 to 20 dS/m (bulk) Resolution: 0.001 dS/m Accuracy: $\pm (5\% + 0.01 \text{ dS/m})$ from 0 to 10 dS/m $\pm 8\%$ from 10 to 20 dS/m

COMMUNICATION SPECIFICATIONS

Output	DDI serial or SDI-12 communication protocol
Temperature	Operating range: -40 to 60 °C
Data logger compatibility	METER data loggers (ZL6, EM50/60 series) or any data acquisition systems capable of 4.0-15 VDC power and serial or SDI-12 communication.

PHYSICAL SPECIFICATIONS

Dimensions	Length: 9.4 cm Width: 2.4 cm Height: 7.5 cm
Needle/Probe length	5.5 cm
Cable length	5 m (standard) 75 m (maximum custom cable length)
Connector types	3.5-mm stereo plug connector or stripped and tinned wires

ELECTRICAL AND TIMING CHARACTERISTICS

Operating temperature range	Minimum: -40°C Typical: NA Maximum: 60°C
Measurement duration	Minimum: 25ms Typical: NA Maximum: 150 ms

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
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BİLMAR BİLİMSEL ARAŞTIRMA VE MÜHENDİSLİK ANONİM ŞİRKETİ

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