



METER
ENVIRONMENT



TEROS 12

SOIL MOISTURE SENSING—REINVENTED

In the field, soil moisture accuracy can make or break a study. But accuracy is about more than just the sensor. It's about eliminating anything that confounds the data. That's why we've completely reinvented not just our sensor, but the entire soil moisture sensor experience. Introducing the new TEROS 12.

FEATURES

- Increased volume of influence (1010 mL)
- Easy installation (minimizes air gaps for cleaner readings)
- New fast electrical conductivity method for improved EC measurements
- Thermistor embedded in the center needle
- Repeatability can be checked with an accuracy verification standard
- Robust, epoxy body for tough field conditions
- Minimizes salinity and textural effects by using 70 MHz frequency capacitance technology
- Steel needles cut through the soil for better soil-sensor contact
- Easy-to-read voltage output for various data loggers
- Ferrite core eliminates cable noise



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environmental research & monitoring equipment

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SPECIFICATIONS

VOLUMETRIC WATER CONTENT (VMC)

RANGE Mineral soil calibration: 0.00–0.70 m³/m³

Soilless media calibration: 0.0–1.0 m³/m³

Apparent dielectric permittivity (ϵ_a): 1 (air) to 80 (water)

RESOLUTION 0.001 m³/m³

ACCURACY Generic calibration: ± 0.03 m³/m³ ($\pm 3.00\%$ VWC) typical in mineral soils that have solution EC <8 dS/m

Medium specific calibration: ± 0.01 – 0.02 m³/m³ (± 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: ± 0.5 °C from –40 to 0 °C

± 0.3 °C from 0 to +60 °C

BULK ELECTRICAL

CONDUCTIVITY Range: 0 to 20 dS/m (bulk)

Resolution: 0.001 dS/m

Accuracy: $\pm 5\%$ (+0.01 dS/m)

from 0 to 10 dS/m

$\pm 8\%$ from 10 to 20 dS/m