



METER
ENVIRONMENT



TEROS 54

Soil Moisture Profile Probe

SIMPLICITY WITHOUT SACRIFICE

You need accurate soil moisture measurements from easily installed sensors without extensive excavation. Most profile probes require you to choose between ease of installation and removal, sensor accuracy, measurement volume, and durability. At METER, we weren't willing to create a soil moisture profile probe unless it could meet all of these requirements. That's why we made the TEROS 54.

DO MORE WITH LESS

Using multiple individual sensors in a large sensor network can create a cord management nightmare, requiring an overabundance of wires and using up all the ports on your data logger. The TEROS 54 alleviates this problem, connecting all the sensors to the ZL6 data logger via one wire while maintaining your ability to monitor individual sensors in ZENTRA Cloud. Best of all, the TEROS 54 is plug and play—no programming or wiring necessary.

FEATURES

- Multi-depth soil moisture profile probe measures water content and temperature
- Installs via a small borehole without the need of a pilot tube
- Hammers directly into the soil for direct soil contact
- All sensors can be removed at once with dedicated removal tool
- Easy plug-and-play operation
- See all your data remotely in real-time
- Ideal for annual crops and soil that requires sensors to be installed and removed seasonally
- Get more measurements per logger port
- Larger measurement volume
- Reduced labor during installation and removal
- Accurate research-grade soil moisture measurements
- Sensors provide profile measurements throughout and around most root zones
- Robust design means durability during installation and through operation in harsh conditions

SPECS

Range	Mineral Soil Calibration: 0.00–0.70 m ³ /m ³ 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. Apparent Dielectric Permittivity (ϵ_a): 1–50 (soil range) 1 (air) to 80 (water)
Resolution	0.001 m ³ /m ³
Accuracy	Generic Calibration: ± 0.05 m ³ /m ³ typical in mineral soils that have solution EC < 8 dS/m Medium Specific Calibration: ± 0.02 – 0.03 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
Temperature	Range: –20 to +60 °C Resolution: 0.03 °C Accuracy: ± 0.35 °C from –20°C to 0 °C ± 0.25 °C from 0°C to 60 °C
Output	DDI Serial and SDI-12 communications protocol 3-wire cable version 4-wire cable version RS-485 Modbus RTU and tensioLINK serial communications protocol 4-wire version
Data Logger Compatibility	METER ZL6 and EM60 data loggers or any data acquisition system capable of 4.0- to 24.0-VDC power and serial interface with SDI-12; and/or RS-485 interface, Modbus RTU, or tensioLINK communication.
Dimensions	Diameter: (Shaft) 6.0 cm (2.36 in) Length: 75.0 cm (29.53 in) Width: (Head) 11.0 cm (4.33 in)
Operating Temperature	Minimum: –20 °C Maximum: +60 °C
Cable Length	Standard: 5.0 m (stereo plug and stripped and tinned wires) 75.0 m (maximum custom cable length) 1.5 m (M12 connector) NOTE: Contact Customer Support if a nonstandard cable length is needed.
Cable Diameter	Stereo Plug: 4.2 \pm 0.2 mm (0.16 \pm 0.01 in) with minimum jacket of 0.8mm (0.031 in) M12 Plug: 5.5 \pm 0.2 mm (0.22 \pm 0.01 in) with minimum jacket of 1.0 mm (0.039 in)
Connector Size	3.50 mm (diameter) 14.4 mm (diameter M12)
Connector Types	Stereo plug connector or stripped and tinned wires 4-pin M12 connector or stripped and tinned wires
Conductor Gauge	Stereo Plug: 22-AWG / 24-AWG ground wire M12 Plug: 22-AWG