ECH$_2$O 10HS
SOIL MOISTURE SENSOR

METER

Extra large volume of influence

The 10-cm long 10HS has three times the volume of influence compared to smaller sensors, measuring one liter of soil volume. Most soil sensors that measure this much volume are 20 cm or longer, causing installation headaches. The 10HS provides the perfect balance between volume of influence and sensor size, installing easily into the sidewall of a narrow trench.

Fast, accurate water content measurements

10HS measures volumetric water content by means of capacitance technology. Its high measurement frequency minimizes salinity and textural effects, making this sensor accurate in a large range of mineral soils. Factory calibrations can be used in most typical soils with a saturation extract EC of 8 dS/m or less.

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A special coating makes 10HS soil moisture sensor resistant to salts. Very low power consumption and a high resolution provide increased precision over a longer period of time.

Sublimely simple

Push 10HS directly into undisturbed soil, plug it in, and start collecting data. It's that easy with the METER ZL6 data logging system.

Features

- Large volume of influence 1,320 mL
- High measurement frequency
- Plug and play capability
- Easy integration with other systems
- Use with ZL6 data logger to collect data remotely

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Specifications

MEASUREMENT SPECIFICATIONS

Volumetric water content (VWC)	**Range:** Mineral soil calibration: 0-0.57 m^3/m^3 (0%-57% VWC) Soilless media calibration: 0-0.69 m^3/m^3 (0%-69% VWC) Apparent dielectric permittivity (εa): 1 (air) to 80 (water) **Resolution:** 0.0008 m^3/m^3 (0.08% VWC) in mineral soils from 0-0.50 m^3/m^3 (0%-50% VWC) **Accuracy:** With standard calibration equation, 0.03 m^3/m^3 (3% VWC) typical in mineral soils that have solution electrical conductivity <10 dS/m With soil-specific calibration, ±0.02 m^3/m^3 (±2% VWC) is typical in any soil.
Measurement duration	**Maximum:** 10 ms

COMMUNICATION SPECIFICATIONS

Output	300-1,250 mV, independent of excitation voltage
Data logger compatibility	METER data loggers (ZL6, EM50/60) or any data acquisition system capable of switched 3-15 VDC excitation and single-ended voltage measurement at greater than or equal to 12-bit resolution.

PHYSICAL SPECIFICATIONS

Dimensions	**Length:** 16 cm **Width:** 3.3 cm **Height:** 0.8 cm
Prong length	10 cm
Cable length	5 m (standard) 40 m (maximum custom cable length)
Connector types	3.5-mm stereo plug connector or stripped and tinned wires
Operating temperature range	-40°C to 50°C

ELECTRICAL AND TIMING CHARACTERISTICS

Supply voltage (VIN to GND)	3 to 15 VDC
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