

5TM Soil Moisture & Temperature Sensor

The 5TM delivers temperature, measured by an onboard thermistor, along with accurate volumetric water content.

Engineered for Accuracy

The 5TM determines volumetric water content (VWC) by measuring the dielectric constant of the soil (or other media) using capacitance/frequency domain technology. Signal filtering minimizes salinity and textural effects, making the 5TM accurate in most soils and soilless media.

Factory calibrations are included for mineral soils, potting soils, rockwool, and perlite.

Easy Installation

The 5TM's small size makes it easy to install--perfect for in field installations. This robust probe can be pushed directly into undisturbed soil to ensure good accuracy. Its compact design makes it useful not only in the field, but also in labs or greenhouses.



Solutions for soil, plant & environmental monitoring

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5TM Specifications

ACCURACY

Apparent Dielectric Permittivity (ϵ_a): $\pm 1 \epsilon_a$ from 1 - 40 (soil range); $\pm 15\%$ from 40 - 80 Soil.

Volumetric Water Content (VWC):

Using Topp equation: $\pm 0.03 \text{ m}^3/\text{m}^3$ ($\pm 3\%$ VWC) typical in mineral soils that have solution electrical conductivity $< 10 \text{ dS/m}$.

Using medium specific calibration, $\pm 0.02 \text{ m}^3/\text{m}^3$ ($\pm 2\%$ VWC) in any porous medium.

Temperature: $\pm 1^\circ\text{C}$

VWC: $0.0008 \text{ m}^3/\text{m}^3$ (0.08% VWC) from 0 to 50% VWC Temperature: 0.1°C

Range: VWC: 0 - 100% Temperature: $-40 - 50^\circ\text{C}$

Dimensions: 10 cm x 3.2 cm x 0.7cm

Cable Length: 5 m standard, custom cable lengths available upon request

Measurement Time: 150 ms (milliseconds)

Power: 3.6 - 15 VDC, 0.3 mA quiescent, 10 mA during 150 ms measurement

Output: RS232 or SDI-12

Connector Types: 3.5mm "stereo" plug, or stripped and tinned lead wires (3)

Data Logger Compatibility: Em50 series loggers, ProCheck.



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