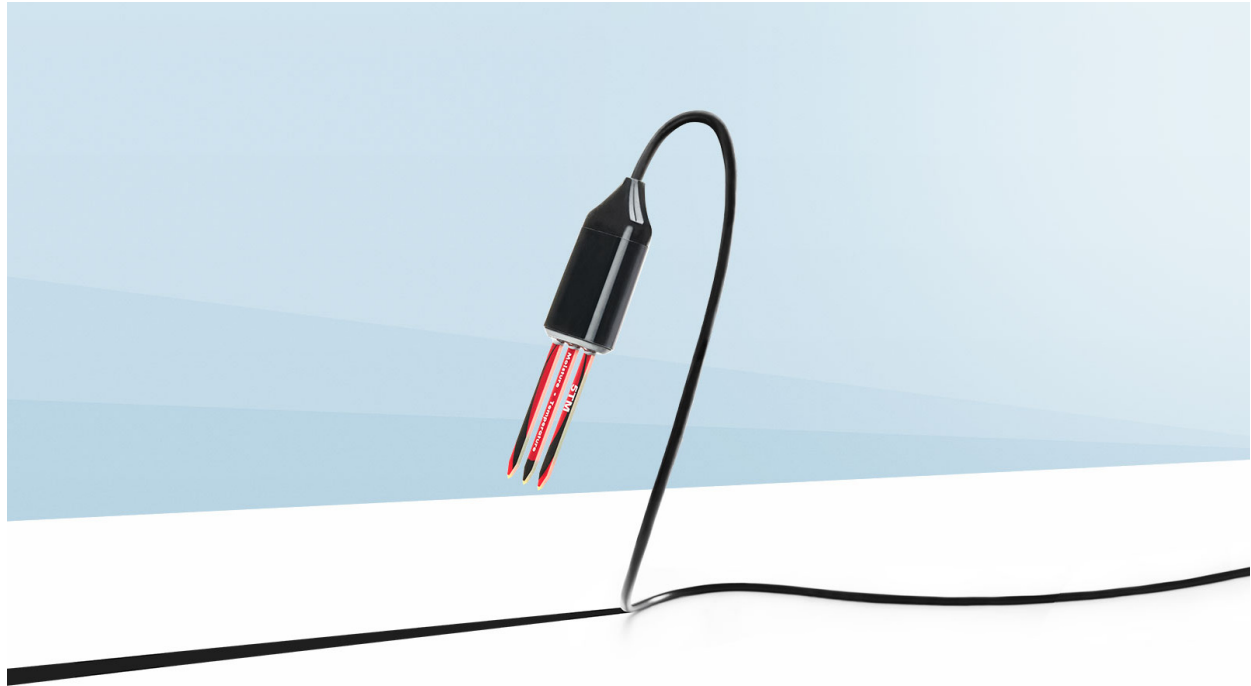


Soil Moisture and Temperature

metergroup.com/environment/products/ech2o-5tm-soil-moisture/



Engineered for accuracy

ECH₂O 5TM

Temperature integrated with soil moisture

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 in the field and the greenhouse. This robust sensor can be pushed directly into undisturbed soil to ensure good accuracy.

Plug and read

Get straight to the data with an Em50-series data logger. Just install the 5TM, plug it into the Em50, set the clock and measurement intervals, and start logging data. No programming required.

Easy integration

The 5TM comes standard with both serial and SDI-12 communication options, meaning easy integration with systems manufactured by other companies.

Advantages of the 5TM

- Measures VWC and temperature
- SDI-12 compatible
- 715 mL volume of influence

[Get pricing](#)

[Features](#) [Specifications](#) [Accessories](#) [Support / Downloads](#)

Features

- Measures VWC and soil temperature
- SDI-12 compatible
- 515 mL volume of influence
- Easy installation
- Plug and play with METER data loggers
- Use with the [EM60G](#) data logger to collect data remotely
- 70 MHz frequency minimizes salinity and textural effects
- Factory calibrations are included for mineral soils, potting soils, [rockwool](#), and perlite

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: $\pm 1 \text{ }^\circ\text{C}$
Resolution	ϵ_a : $0.1 \epsilon_a$ from 1-20, $< 0.75 \epsilon_a$ from 20-80 VWC: $0.0008 \text{ m}^3/\text{m}^3$ (0.08% VWC) from 0 to 50% VWC Temperature: $0.1 \text{ }^\circ\text{C}$
Range	ϵ_a : 1 (air) to 80 (water) Temperature: $-40 - 60 \text{ }^\circ\text{C}^*$ *Sensors can be used at higher temperatures under some conditions. Contact METER for more details.
Dimensions	10 cm x 3.2 cm x 0.7cm

Cable length	Sensors come standard with 5 m cable. Custom cable lengths available. Maximum cable length of 75 m. Please contact METER if you need longer cable lengths.
Measurement time	150 ms
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 (not exclusive)	METER Em50/50G , EM60/60G , ProCheck , Campbell Scientific
Measurement volume	See comparison article
Warranty	One year, parts and labor

Accessories



Splice Kit



Probe Adaptor Pigtail for CSI Data Loggers



Pigtail-to-Stereo Adaptor



EM60

SOLAR-POWERED DATA LOGGING



EM60G

CELLULAR DATA LOGGING



50 Foot Extension Cable



10 Foot Extension Cable

Support

Have a question or problem? Our support team can help.

We manufacture, test, calibrate, and repair every instrument in house. Our scientists and technicians use the instruments every day in our product testing lab. No matter what your question is, we have someone who can help you answer it.

Email: support.environment@metergroup.com

Phone US: +1 509-332-5600

Phone Europe: +49 89 12 66 52 0

Downloads

[5TM Firmware Updater EXE / 1.29 MB](#)

[5TM Integration Guide PDF / 790.61 KB](#)

[5TM Quick Start PDF / 726.24 KB](#)

[ECH₂O 5TM manual PDF / 916.90 KB](#)

[ECH₂O CSI – SCWin \(shortcut\) ZIP / 92.91 KB](#)

[View all downloads](#)

Related Products



ECH₂O 5TE

The 5TE's smaller size ensures fast, easy installation, and provides three measurements in one—bulk EC, VWC, and soil temperature.

[Learn more](#)

[Get pricing](#)



ECH₂O EC-5

The METER ECH₂O EC-5 soil moisture sensor delivers research-grade accuracy at a price that makes large sensor networks economically practical.

[Learn more](#)

[Get pricing](#)

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