

# Simple Soil Moisture Sensing

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[metergroup.com/environment/products/ech2o-gs-1/](https://metergroup.com/environment/products/ech2o-gs-1/)



## Ruggedized and inexpensive

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### ECH<sub>2</sub>O GS 1

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#### Monitor more, spend less

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The GS1 is a ruggedized version of our basic, no-frills soil moisture sensor. It accurately measures volumetric water content in soil or soilless media.

The longer lifetime of the GS1 helps your budget go further. It delivers research-grade accuracy at a price that makes large sensor networks economically practical. Characterize your site with sensors at multiple depths and locations, even on a tight budget.

#### Epoxy body withstands tough field conditions

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This sensor is built to last longer in the field under warmer, wetter conditions. The epoxy body withstands harsh environments and water intrusion.

#### Stainless steel needles for easy installation

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Two stainless steel needles cut through the soil for better soil-sensor contact and easier installation. Needles are also much more durable than our standard sensor blades.

#### Full water content range

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The GS1 is sensitive across the entire water content range. It can be installed in dry desert soils or in very wet peat. Sensitive to small changes in water content anywhere from 0 – 100% VWC.

## 70 MHz frequency capacitance technology

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This frequency minimizes salinity and textural effects, making the GS1 accurate in most soil or soilless media. Can be used in a variety of conditions with the factory [calibration](#).

## Plug and log with METER data loggers

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[Install](#) the GS1, plug it in to the EM60, set the measurement intervals, and start logging data. No programming required.

## Database and graph measurements

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Use this sensor with DataTrac 3 to quickly and easily store, access, and compare soil water content data from a large installation.

## Compatible with many other loggers

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The GS1 accepts a wide range of input voltages and has an easy-to-read voltage output. Voltage correlates to soil water content through a simple linear relationship, making this sensor easy to integrate into a wide variety of non-METER loggers.

[Get pricing](#)

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## Features

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- Inexpensive, ruggedized soil moisture sensor
- Measure VWC in a harsh environment
- Large [volume of influence](#)

## Specifications

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Accuracy	Using a generic calibration: $\pm 0.03 \text{ m}^3/\text{m}^3$ ( $\pm 3\%$ VWC) typical in mineral soils that have solution electrical conductivity $< 10 \text{ dS/m}$ . Using medium specific calibration, $\pm 0.01 - 0.02 \text{ m}^3/\text{m}^3$ ( $\pm 1 - 2\%$ VWC) in any porous medium
Resolution	0.001 $\text{m}^3/\text{m}^3$ VWC in mineral soils
Range	0 to 57% VWC
Volume of Influence	690 $\text{cm}^3$
Measurement Speed	10 ms (milliseconds)
Sensor Type	VWC: Frequency domain

Output	1,000 to 2,500 mV
Operating Environment	-40°C to 50°C
Power	3.0 VDC to 15 VDC (absolute maximum) @ 15 mA
Cable Length	Sensors come standard with 5 m cable. Custom cable lengths available. Maximum cable length of 75 m.
Cable Connector Types	3.5 mm "stereo" plug, or stripped and tinned lead wires (3)
Sensor Dimensions	5.1 cm x 2.4 cm x 2.1 cm
Data Logger Compatibility	EM60 Series, EM50 Series, Campbell Scientific, DataTaker
Warranty	12 months, parts and labor

## 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](mailto:support.environment@metergroup.com)

Phone US: +1 509-332-5600

Phone Europe: +49 89 12 66 52 0

## Related Products



## EM60G

The EM60G is a plug-and-play data logger for environmental monitoring.

[Learn more](#)

[Get pricing](#)



## ECH<sub>2</sub>O 5TE

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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](#)

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