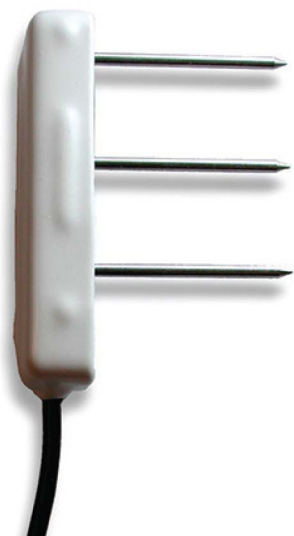


GS3

Soil Moisture, EC & Temperature Sensor



The Decagon GS3 Soil Moisture, EC & Temperature Sensor is an accurate tool for monitoring electrical conductivity, volumetric water content, and temperature in soil and soil-less substrates. The GS3 determines volumetric water content (VWC) by measuring the dielectric constant of the medium using capacitance / frequency-domain technology.

Benefits & Applications

- Greenhouse substrate monitoring
- Volumetric water content measurement
- Soil/Substrate water balance
- Electrical Conductivity measurement
- Salt management
- Fertilizer movement
- Soil/Substrate temperature measurement
- Modeling processes that are affected by temperature

The internal circuitry is the same cutting edge design that you'll find in other Decagon soil moisture sensors, but the form factor has been optimized for use in soilless substrates, giving it a wider range of EC measurement and an increased temperature range.

The steel needles not only slice through the substrates for perfect contact, but they also improve the sensor's ability to measure EC in porous substrates such as peat or perlite. The sensor also works well in mineral soils.

Engineered for Accuracy

The GS3 measures water content, temperature, and EC independently.

Its 70 MHz frequency minimizes salinity and textural effects, making it accurate in most soil or soilless media. Stainless steel needles have an extended surface area to optimize EC measurements, while minimizing substrate disturbance during insertion.

Temperature is measured with an onboard thermistor, and electrical conductivity is measured using a stainless steel electrode array.



ACCURACY	WVC: Using a generic calibration: ± 0.03 m ³ /m ³ ($\pm 3\%$ VWC) typical in mineral soils that have solution electrical conductivity < 10 dS/m; Using medium specific calibration, $\pm 0.01 - 0.02$ m ³ /m ³ ($\pm 1 - 2\%$ VWC) in any porous medium. Electrical Conductivity: $\pm 10\%$ from 0 to 10 dS/m, user calibration required above 10 dS/m Temperature: $\pm 1^{\circ}\text{C}$
RESOLUTION	WVC: 0.002 m ³ /m ³ (0.2% VWC) from 0 to 40% VWC, 0.001 m ³ /m ³ (0.1% VWC) > 40% VWC EC: 0.001 dS/m from 0 to 23 dS/m Temperature: 0.1 $^{\circ}\text{C}$
RANGE	WVC: 0 - 100% EC: 0 - 23 dS/m (bulk)
MEASUREMENT TIME	150 ms (milliseconds)
SENSOR TYPE	WVC: Frequency domain, EC: Two probe design, Temperature: Thermistor
OUTPUT	Serial TTL, 3.6 Volt Levels or SDI-12
OPERATING ENVIRONMENT	- 40 $^{\circ}\text{C}$ to 80 $^{\circ}\text{C}$
POWER	3.6 - 15 VDC, 0.3 mA quiescent, 25 mA during 150 ms measurement
CABLE LENGTH	5 m standard, custom cable lengths available upon request
CABLE CONNECTOR TYPES	3.5 mm "stereo" plug, or stripped and tinned lead wires (3)
SENSOR DIMENSIONS	9.3 cm x 2.4 cm x 6.5 cm
DATA LOGGER	Any data acquisition system capable of 3.6-15V excitation and serial or SDI-12 communication
WARRANTY	One year, parts and labour

