



LoRaWAN Sensor Device GS3

Ruggedized Soil Moisture, Temperature and Electrical Conductivity



Sensors

METER Group GS3

With 5m cable

Apparent Dielectric Permittivity (ϵ_a)

Accuracy: $\pm 1 \epsilon_a$ (unitless) from 1 - 40 (soil range), $\pm 15\%$ from 40 – 80

Resolution: 0.1 ϵ_a (unitless) from 1 - 20, $< 0.75 \epsilon_a$ (unitless) from 20 – 80

Range: 1 (air) to 80 (water)

Soil Volumetric Water Content (VWC)

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: 0.002 m^3/m^3 (0.2% VWC) from 0 to 40% VWC, 0.001 m^3/m^3 (0.1% VWC) $> 40\%$ VWC

Electrical Conductivity (EC)

Accuracy: $\pm 5\%$ from 0 to 5 dS/m , $\pm 10\%$ from 5-23 dS/m

Resolution: 0.001 dS/m from 0 to 23 dS/m

Range: 0 - 25 dS/m (bulk)

Soil temperature

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

Resolution: 0.1 $^\circ\text{C}$

Range: -40 ° to $60 \text{ }^\circ\text{C}$

LoRaWAN specifics

Device class A

Over the air activation (OTAA)

Adaptive data rate (ADR)

Frequency band:

EU868 MHz (EU Version), US915MHz (US Version), AS923 (Asia Version) or AU920 (Australia Version)

Input Sensitivity: -148 dBm (EU Version)

Supply

Internal battery 2 x C-type
Integrated sensor supply

Operating conditions

-30°C to 60°C
100% RH

Weight

250g w/o batteries

Dimensions

LoRaWAN sensor device: 80 x 135 x 70 mm

Enclosure

Weatherproof, impact and UV- resistant
polycarbonate enclosure

Dimensional drawings (LoRaWAN Sensor Device w/o sensor)

