LoRaWAN Sensor Device GS3

Ruggedized Soil Moisture, Temperature and Electrical Conductivity

### Sensors

**METER Group GS3**

*With 5m cable*

**Apparent Dielectric Permittivity (ε_a)**

- **Accuracy:** ± 1 ε_a (unitless) from 1 - 40 (soil range), ± 15% from 40 – 80
- **Resolution:** 0.1 ε_a (unitless) from 1 - 20, < 0.75 ε_a (unitless) from 20 – 80
- **Range:** 1 (air) to 80 (water)

**Soil Volumetric Water Content (VWC)**

- **Accuracy:** Using a generic calibration: ± 0.03 m^3^/m^3^ (± 3% VWC) typical in mineral soils that have solution electrical conductivity < 10 dS/m; using medium specific calibration, ± 0.01 - 0.02 m^3^/m^3^ (± 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:** ± 5% from 0 to 5 dS/m, ± 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:** ± 1 °C
- **Resolution:** 0.1 °C
- **Range:** -40 ° to 60 °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)
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<thead>
<tr>
<th><strong>Supply</strong></th>
<th><strong>Operating conditions</strong></th>
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<tbody>
<tr>
<td>Internal battery 2 x C-type</td>
<td>-30°C to 60°C</td>
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<tr>
<td>Integrated sensor supply</td>
<td>100% RH</td>
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<tr>
<th><strong>Weight</strong></th>
<th><strong>Dimensions</strong></th>
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<tr>
<td>250g w/o batteries</td>
<td>LoRaWAN sensor device: 80 x 135 x 70 mm</td>
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<th><strong>Enclosure</strong></th>
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<td>Weatherproof, impact and UV-resistant polycarbonate enclosure</td>
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**Dimensional drawings (LoRaWAN Sensor Device w/o sensor)**