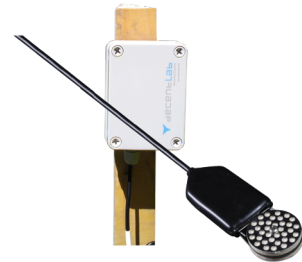




# LoRaWAN Sensor Device MPS-6

## Soil water potential and temperature



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### Sensors

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Decagon MPS-6

With 5m cable

Soil water potential

Accuracy:  $\pm(10\% + 2\text{kPa})$  from -9 kPa to -100 kPa

Resolution: 0.1 kPa

Range: -9 to -100'000 kPa

Soil temperature

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

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

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

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### Supply

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Internal battery 2 x C-type

Integrated sensor supply

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### Weight

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250g w/o batteries

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### Enclosure

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Weatherproof IP67, impact and UV- resistant polycarbonate enclosure

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### LoRaWAN specifics

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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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### Operating conditions

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-30 $^\circ\text{C}$  to 60 $^\circ\text{C}$

100% RH

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### Dimensions

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80 x 135 x 70 mm

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# LoRaWAN Sensor Device 5TE

## Soil Moisture, Temperature, and Electrical Conductivity



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### Sensors

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METER Group 5TE

With 5m cable

Apparent Dielectric Permittivity ( $\epsilon_a$ )

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

Resolution: 0.1  $\epsilon_a$  (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 Topp equation:  $\pm 0.03 \text{ m}^3/\text{m}^3$  ( $\pm 3\%$  VWC) typical in mineral soils that have solution electrical conductivity < 10 dS/m; using medium specific calibration,  $\pm 0.01 - 0.02 \text{ m}^3/\text{m}^3$  ( $\pm 1 - 2\%$  VWC) in any porous medium

Resolution: 0.0008  $\text{m}^3/\text{m}^3$  (0.8% VWC) from 0 to 50% VWC

Electrical Conductivity (EC)

Accuracy:  $\pm 10\%$  from 0 to 7 dS/m, user calibration required above 7 dS/m

Resolution: 0.01 dS/m from 0 to 7 dS/m, 0.05 dS/m from 7 to 23.1 dS/m

Range: 0 - 23 dS/m (bulk)

Soil temperature

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

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

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

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### LoRaWAN specifics

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Device class A

Over the air activation (OTAA)

Adaptive data rate (ADR)

Frequency band:

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

Input Sensitivity: -148 dBm (EU Version)

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## Supply

Internal battery 2 x C-type  
Integrated sensor supply

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## Operating conditions

-30°C to 60°C  
100% RH

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## Weight

250g w/o batteries

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## Dimensions

LoRaWAN sensor device: 80 x 135 x 70 mm

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## Enclosure

Weatherproof, impact and UV- resistant  
polycarbonate enclosure

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## Dimensional drawings (LoRaWAN Sensor Device w/o sensor)

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