

Wireless Soil Moisture Sensor

Wireless Sensor Network Based on LoRa Technology



R718PB13 Data Sheet

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Wireless Soil Moisture Sensor

Description

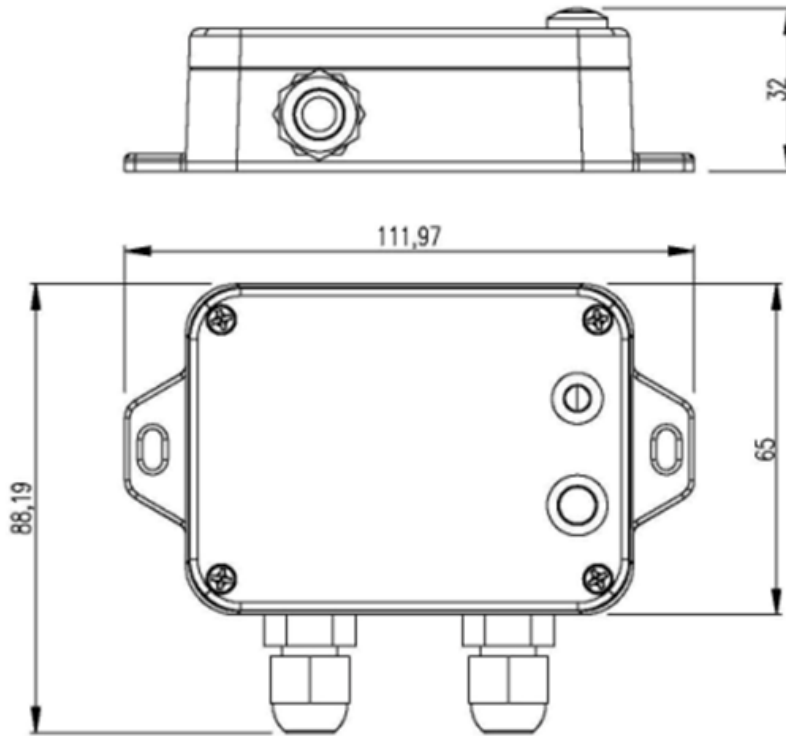
The device is a wireless communication device that detects the VWC (volumetric water content) of the soil and transmit the detected data to other devices through the wireless network. It uses the SX1276 wireless communication method.

Main Characteristics

- Adopt SX1276 wireless communication module
- 2 sections of ER14505 battery AA size (3.6V / section) parallel power supply
- Main body IP rating: IP65 / IP67 (Optional)
- The base is attached with a magnet that can be attached to a ferromagnetic material object
- VWC of the soil detection
- Frequency Hopping Spread Spectrum (FHSS)
- Third-Party online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email (optional)
- Available third-party platform: Actility/ThingPark, TTN, MyDevices/Cayenne
- Battery Life
 - Please refer to web: http://www.netvox.com.tw/electric/electric_calc.html
 - At this website, users can find battery life time for varier models at different configurations.

Application

- Volumetric water content detection
- Other

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Technical Specifications

Electric

Power Supply	2 sections of ER14505 battery AA size (3.6V / section) parallel power supply
Operating Current	Battery life is about 3.4 years (Condition: ambient temperature 25 ° C, report once every 15 mins, txpower = 20 dBm, LoRa spread factor SF = 10)
Standby Current	38uA
Wake up Current	6.3mA@3.3V
TX Current	120mA @3.3V
RX Current	11mA @3.3V
Battery Measurement Accuracy	±0.1V

*The actual electrical characteristics will vary depending on the power supply voltage.

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EC-5 Sensor

VWC Detection Range	0 to 100%
VWC Accuracy	± 3% VWC
VWC Resolution	0.1% VWC in mineral soils, 0.25% VWC in growth medium
Wire Length	5 m

*VWC: Volumetric Water Content

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 20dbm ; AS923 16dbm ; AU915 20dbm ; CN470 19.15dbm ; EU868 16dbm ; KR920 14dbm ; IN865 20dbm ;
Rx Sensitivity	-136dBm (LoRa, Spreading Factor=12, Bit Rate=293bps) -121dBm (FSK,Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna Type	Build-in antenna
Communication Range	Up to 10 km, the actual transmission distance depends on the environment.
Data Transfer Rate	0.3kbps ~ 50kbps (LoRa) 1.2kbps ~ 300kbps (FSK)
Spread Technique	LoRa / FSK
Available Frequency	EU863-870,US902-928,AU915-928,KR920-923, AS923-1,AS923-2,AS923-3,IN865-867,CN470-510 (Note: optional, to be done in the factory configuration)

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Physical

Size	L: 112 mm * W: 65 mm * H: 32 mm
Ambient Temperature Range	-20°C to 55°C
Body Weight	160g
Ambient Humidity Range	< 90% RH (non-condensing)
Storage Temperature Range	-40°C to 85°C