



## WLRC-S22



### Wireless Soil Moisture Sensor

This soil moisture sensor measures the quantity of water contained in a material, such as soil on a volumetric or gravimetric basis. To obtain an accurate measurement these oil-water sensors provide promising new opportunities for automating greenhouse irrigation according to plant needs.

#### Features:

- Super Long Range Signal Penetration
- 5 years plus Battery Life\*
- Easy Installation
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Over-the-air updates
- Interactive WatchNET IoT platform with dashboard, search and notification settings
- \* Magnetized ABS enclosure for easy installation

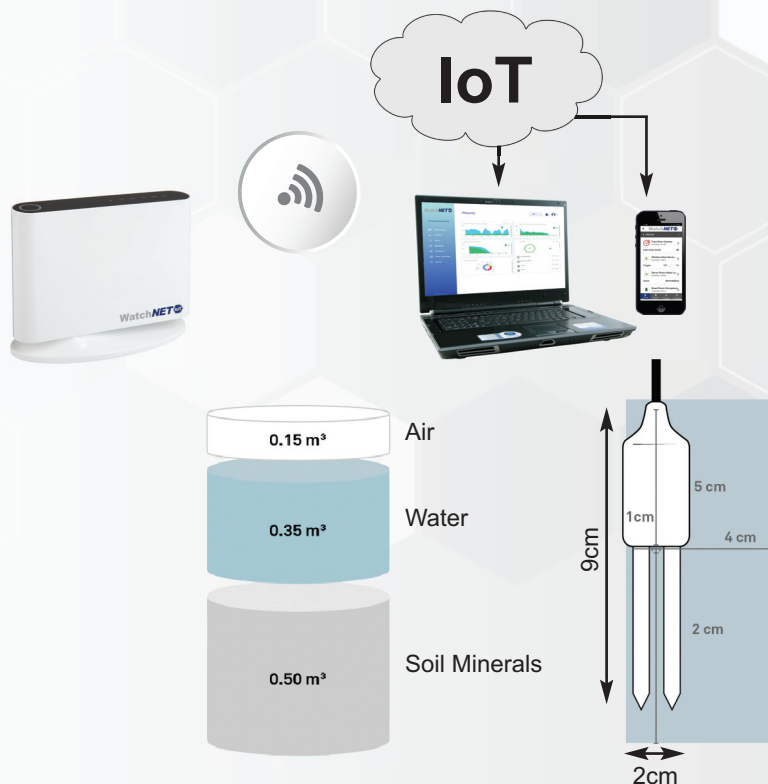


#### Applications:

- Soil moisture content detection
- e-farming
- Indoor / Outdoor greenhouses
- Home / Office plant monitoring

#### Schematic Diagram:

- 70 MHz frequency, which minimizes salinity and textural effects
- Use Decagon EC-5 Soil Moisture Sensor USA



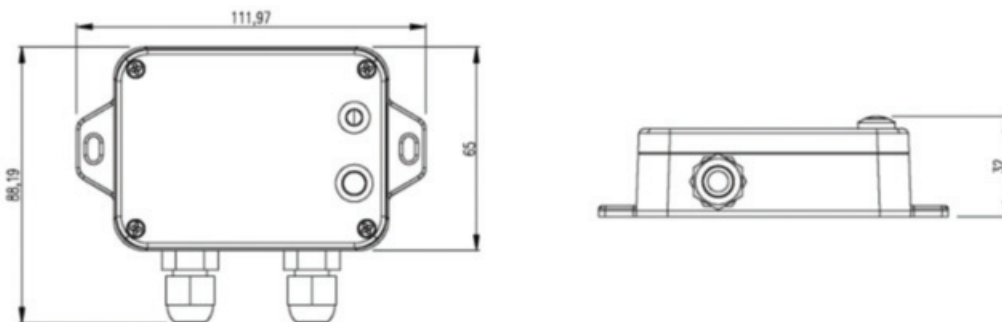
## Technical Specifications

| Electrical   |  |
|--|--|
| 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/77°F, reports once every 15 mins, txpower = 20 dBm, LoRa spread factor SF = 10) |
| Sleeping Current   | 38uA   |
| Wake up Current  | 6.3mA@3.3V   |
| TX Current   | 120mA @3.3V  |
| RX Current   | 11mA @3.3V   |
| Battery Measurement Accuracy   | ±1%  |
| <i>*The actual electrical characteristics will vary depending on the power supply voltage.</i> |  |
| Frequency  |  |
| Frequency Range  | 863MHz-928MHz 470MHz-510MHz  |
| Rx Sensitivity   | -136dBm (LoRa, Spreading Factor=12, Bit Rate=293bps)<br>-121dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)                                    |
| TX Power   | 19dBm±1dBm   |
| Wireless Soil Moisture Sensor  |  |
| Antenna Type   | Built-in antenna   |
| Communication Range  | Up to 500m/0.310miles, the actual transmission distance depends on the environment*  |
| Data Transfer Rate   | 0.3kbps~50kbps   |
| Spread Technique   | LoRa/FSK   |
| Available Frequency  | EU863-870, US902-928. Configured before shipment.  |
| EC-5 Sensor  |  |
| Rated power Supply   | 2.5VDC   |
| Water Content Detection Accuracy   | ± 3% VWC   |
| Moisture Content Resolution  | 0.1% VWC in mineral soil, 0.25% VWC in growth medium   |
| Moisture Content Detection Range   | 0-100%VWC  |
| Physical   |  |
| Dimension  | L:112mm x W:65mm x H:32mm / L:4.41" x W:2.56" x H:1.26"  |
| Weight   | 160g / 0.35lb  |
| Protection Class   | Main Part IP65   |
| Environment Temperature Range  | -20°C ~ 55°C / -4°F ~ 131°F  |
| Environment Humidity Range   | <90%RH (No condensation)   |
| Storage Temperature  | -40°C ~ 85°C / -40°F ~ 185°F   |

\* Actual signal range may vary depending on the environment.

\* Battery life is determined by sensor reporting frequency and other variables.

## Dimensions



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