IoTivity
by REACOM
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SOIL MOISTURE AND TEMPERATURE SENSOR

MAIN PURPOSE

REACOM's RSMT6L Sensor is a moisture and temperature sensor developed for agriculture, that able to measure:
- soil moisture at six depth level
- soil temperature at six depth level
- air temperature

The RSMT6L Sensor can be easily installed by simple burying in any field or garden by non-professional personal.

PRINCIPLE OF OPERATION

The RSMT6L Sensor use capacitive measurement method for a moisture, and RTD measurement method for a temperature. The device is a wireless communication tool that detects air temperature, soil temperature and moisture, and transmits the detected data to software applications through a LoRaWAN network. This sensor do not have a direct electrical contact with a soil, that means disruption of electrodes excluded, and long life cycle usage is guaranteed. The RSMT6L Sensor can be schedule preconfigured for sending data payload to the dashboards or any third party software customer may need.

MAIN FEATURES

1. Air temperature
2. 6 depth level soil temperature 5/15/25/35/45/55 cm, measurement accuracy ±0.5°C
3. 6 depth level soil moisture 5/15/25/35/45/55 cm
4. Ability to change the depth of measurement within -2.5 cm/+5 cm
5. Battery voltage status
6. Wireless range - up to 10 km*
7. LoRaWANTM Class A compatible
8. Improved interference immunity
9. Improved power management for longer battery life
10. Encrypt-RFTM Security (Diffie-Hellman Key Exchange+ AES-128 CBC for sensor data messages)
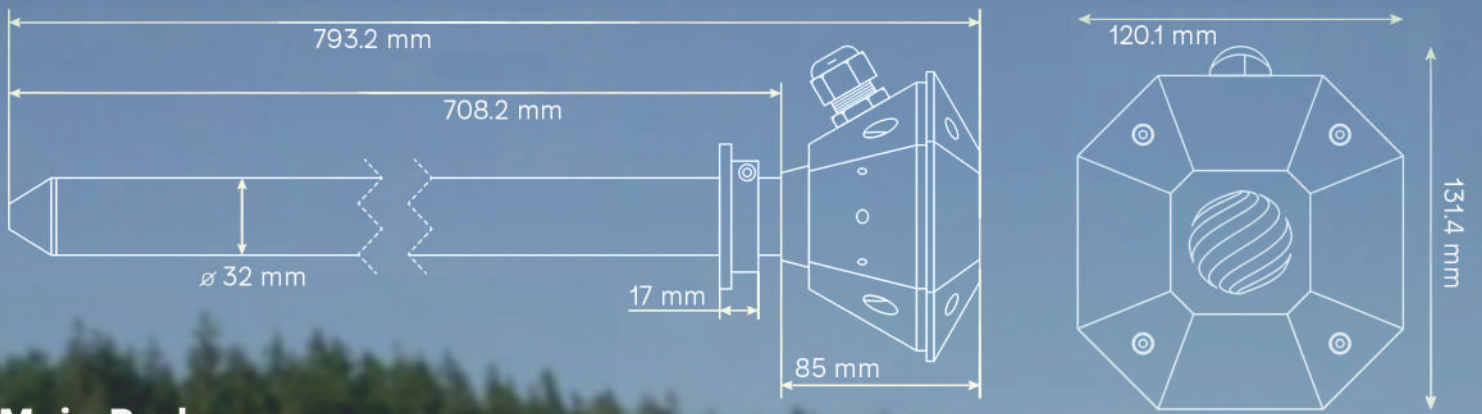11. Battery Life — up 2 years*

EXAMPLE OF APPLICATIONS

1. Field state monitoring and analytics
2. Soil irrigation
3. Greenhouses, Farming
4. Plant nurseries

*Conditions: no obstacles, direct line-of-sight
**Conditions: temperature 20 °C, 96 meas/day, txpower = 14 dBm, LoRa spreading factor SF = 7

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Main Body

The RSMT6L Sensor can be produced and preconfigured with loaded by Reacom's software, that is user friendly, and can be easily integrated to any Third-Party online monitoring and notification System to view data, set alerts, ets.***

TECHNICAL SPECIFICATIONS

PHYSICAL

Main Body	
Dimension	793.2x131.4x120.1 mm
Weight	1365 g
Operating Temperature	-20 °C ~ 55 °C
Environment Humidity Range	0-100% RH
Storage Temperature	-40 °C~85 °C

ELECTRIC

Input Pow	1 x 3.6V 19000mAh Li-SOCl 2 battery
Working Voltage	DC 2.4V~3.6V
Standby Current	3uA/3.3V
Transmitting Current (max)	39mA / 3.3V
Receiving Current (max)	14mA / 3.3V
Measurement Accuracy	+10mV
Low Voltage Threshold	
Battery Voltage	2.4V

FREQUENCY

TX Power	2dBm - 14dBm
Rx Sensitivity	-136dBm (LoRa, Spreading Factor=7-12 Bit Rate = 5470-293bps)
Communication Range	10 km (line-of-sight, the actual transmission distance depends on the environment)
Antenna Type	Build-in or external antenna
Data Transfer Rate	0.3 kbps~50 kbps
Spread Technique	LoRa
Available Frequency	EU863-870 Other regional bands can be configured before shipment

***Optional