

Wireless Type T Thermocouple and Temperature/Humidity Sensor

Wireless Sensor Network Based on LoRa Technology



R718CTAB

(Product image for illustration purposes only. Actual product may vary.)

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Wireless Thermocouple and Temperature/Humidity Sensor

Introduction

The device connects a temperature/humidity sensor and T-Type thermocouple, which respectively detects temperature and humidity, and the surface temperature of an object. The SX1276 wireless communication module is used in the device.

Features

- SX1276 wireless communication module
- 2 ER14505 batteries AA size in parallel
- IP50 rating
- Magnetic base
- Thermocouple detection
- Compatible with LoRaWAN Class A device
- Frequency hopping spread spectrum
- Support third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne
- Low-power design for longer battery life

Note:

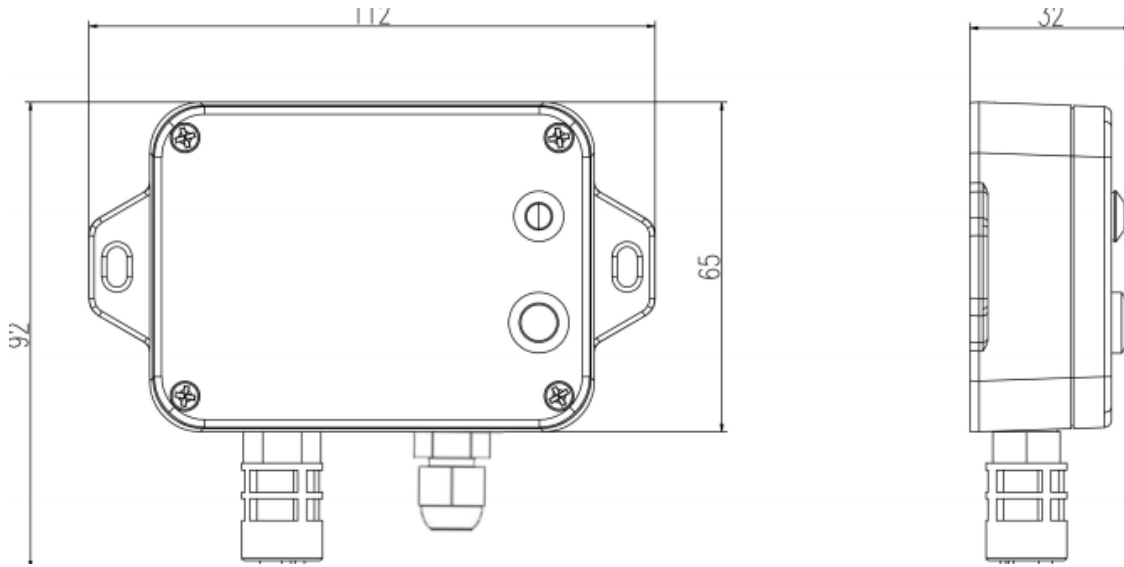
Please refer to http://www.netvox.com.tw/electric/electric_calc.html for battery life calculation and other detailed information

Application

- Object Temperature Measuring
- Environment Temperature/Humidity Measuring
- Thermal System Equipment

Wireless Thermocouple and Temperature/Humidity Sensor

Dimensions



Dimensions of the main body

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Electrical Specification

Input Power	2 ER14505 AA size lithium batteries (3.6V 2400mah for each one)
Operating Voltage	3.1V to 3.65V
Battery Life	4.8 years (Under the below conditions :Environment temperature: 25 °C Report frequency: every 15 mins , Txpower = 20dBm, LoRa spreading factor SF = 10)
Standby Current	35uA
Wakeup Current	7.33mA (typical value) Wakeup current range: 0.8mA to 20mA (without transmitting /receiving LoRa data)
Low Battery Voltage Threshold	3.2V
Battery Measurement Accuracy	±0.1V

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Module-R100H

Wake-up Current	(0.8mA-8mA)@3.3V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA @3.3V

*Actual electrical characteristics may vary depending on the power supply voltage

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	10km (The actual transmission distance may vary depending on the environment.)
Data Transfer Rate	0.3kbps to 50kbps (LoRaWAN) 1.2kbps to 300kbps (FSK)
Modulation Method	LoRa/FSK (Note: choose one method for different cases)
Available LoRaWAN Frequency Plans	EU863-870,US902-928,AU915-928,KR920-923,AS923-1,AS923-2,A S923-3,IN865-867,CN470-510 (Note: optional, to be done in the factory configuration)

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Temperature/Humidity Sensor

Temperature Measurement Range	-20°C to 55°C
Temperature Measurement Accuracy	±0.8°C
Humidity Measurement Range	0% RH to 100% RH
Humidity Measurement Accuracy	±4% RH

Type T Thermocouple

Measurement Accuracy	<p>1. Temperature range that the T-type thermocouple can measure: -40°C ≤ t ≤ 125°C</p> <p>2. Temperature measurement accuracy:</p> <p>A. When the main body and T-type thermocouple are in the same temperature range: Temperature Range: 0°C ≤ t ≤ 55°C, Accuracy: ±0.8°C</p> <p>B. When the main body and T-type thermocouple are in different temperature ranges: Temperature Range: 0°C ≤ T1 ≤ 55°C (Main body) Temperature Range: -40°C ≤ T2 < 0°C (Sensor) Accuracy: ±2°C</p> <p>Temperature Range: 0°C ≤ T1 ≤ 55°C (Main body) Temperature Range: 55°C < T2 ≤ 375°C (Sensor) Accuracy: ±1.5°C</p> <p>* t, T1, and T2 refer to temperature</p>
Thermocouple Wire Length	1m

Physical Properties

Dimension	L:112mm*W:92mm*H:32mm
Environment Temperature Range	-20°C to 55°C
Environment Humidity Range	<90%RH (No condensation)
Storage Temperature	-40°C to 85°C