Wireless Thermocouple Sensor

Type K

R718CK

Data Sheet

Introduction

This equipment is used to detect temperature of the object and medium which thermocouple is contacted. It uses SX1276 wireless communication module. Type K thermocouple (R718CK), and it will display the collected data in the gateway.

Application

- Temperature Measuring
- Thermal system Equipment

Main Characteristic

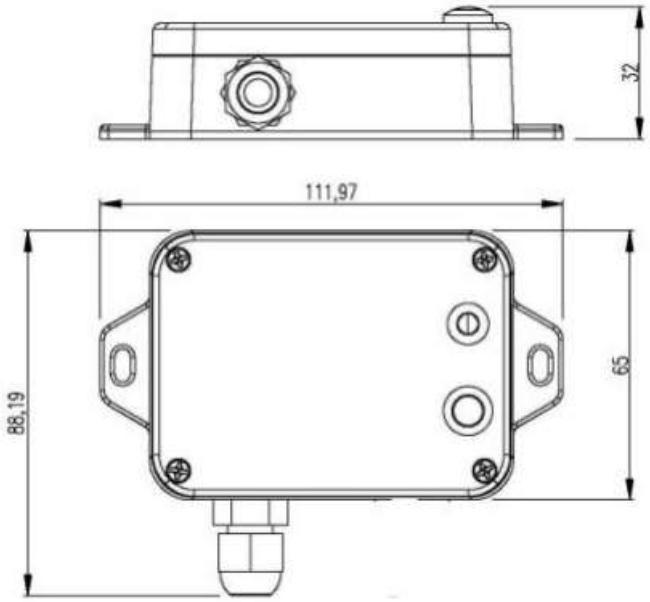
- Apply SX1276 wireless communication module
- 2 ER14505 batteries AA SIZE in parallel (3.6V / section)
- Whole device IP rating IP50
- The base is attached with a magnet that can be attached to a ferromagnetic material object
- Thermocouple detection
- LoRaWAN™ Class A compatible
- Frequency Hopping 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
- Improved power management for longer battery life
- Battery Life:

- Please refer to web: http://www.netvox.com.tw/electric/electric_calc.html
- At this website, users can find battery lifetime for varier models at different configurations

*1. Actual range may vary depending on environment

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

Technical Specification



Unit. mm

Electric

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section)
Operating Voltage	3.1V ~ 3.65V
Battery Life	4.8 years (Conditions: ambient temperature 25 °C, 15 min report once, txpower = 20dBm, LoRa spreading factor SF = 10)
Standby Current	33uA
Wakeup Current	7.33mA (Typical value) Wakeup current range 0.8mA-20 mA * When not transmitting /receiving LoRa data)
Low Battery Voltage Threshold	3.2V
Battery Measurement Accuracy	±0.1V

Module-R100H

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

* Specific 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	10 km (The actual transmission distance depends on the Environment.)
Data Transfer Rate	0.3kbps～50kbps (LoRa) 1.2kbps～300kbps (FSK)
Modulation Method	LoRa/FSK (Note: choose one of them)
Available Frequency	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865-867, CN470-510 (Note: Configured before shipment)
Communication Range	Up to10 km (The actual transmission distance depends on the Environment.)

Physical

Dimension	Main Body: L:112mm*W:88.19mm*H:32mm
Environment Temperature Range	-20℃ ~ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ~ 85℃

Thermocouple Characteristic

K-type Thermocouple Measurement Range	-40°C to 375°C
Measurement Accuracy	**The host body and K-type thermocouple are in the <u>same</u> temperature range:** Temperature Range: 0°C ≤ t ≤ 55°C, Accuracy: ±1.5°C **The host body and K-type thermocouple are in <u>different</u> temperature ranges:** Temperature Range T1: 0°C ≤ T1 ≤ 55°C (Host body) Temperature Range T2: -40°C ≤ T2 < 0°C (Sensor) Accuracy: ±2°C Temperature Range T1: 0°C ≤ T1 ≤ 55°C (Host body) Temperature Range T2: 55°C < T2 ≤ 375°C (Sensor) Accuracy: ±2°C * t, T1, T2 refers to temperature
Thermocouple Wire Length	1m