Wireless Temperature and Humidity Sensor with Activity Detection Sensor

Wireless Sensor Network Based on LoRa Technology

R720B

Data Sheet

Introduction

The R720B is a wireless communication device that detects ambient air temperature and humidity. The R720B also detects if it is being moved. The R720B can transmit the detected data to other devices via the wireless network, using the SX1276 wireless communication module.

Main Characteristic

- Adopt SX1276 wireless communication module
- 2 ER14505 battery AA size (3.6V / section) parallel power supply
- Compatible with LoRaWAN^{TM} Class A
- Air temperature and humidity detection
- Motion detection alarm
- Protection class IP65
- Frequency hopping spread spectrum (FHSS)
- The base is attached with a magnet that can be attached to a ferromagnetic material object
- Applicable to the third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne
- Low power consumption and long battery life

Note:

 Battery life is determined by the sensor reporting frequency and other variables, please refer to http://www.netvox.com.tw/electric/electric_calc.html
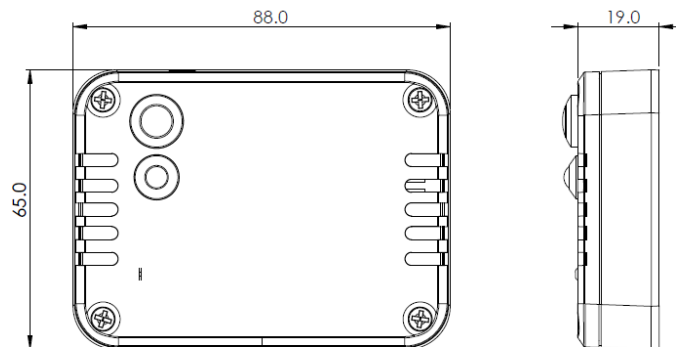
On this website, users can find battery life of various models in different configurations.

Application

- Ambient temperature monitoring
- Environment monitoring
- Smart city & smart building
- Data center monitoring
- Others

Wireless Temperature and Humidity Sensor with Activity Detection Sensor

Dimension

Electric

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V 2400mah/section)
Battery Life	3 years (Conditions: ambient temperature 25 °C, 15 min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)
Standby Current	80uA
Wakeup Current	6.3mA/ 3.3V
Low Voltage Threshold	3.2V
Transmitting Current (max)	120mA/ 3.3V
Receiving Current (max)	11mA/ 3.3V

Temperature Sensor

Temperature Detecting Range	-40°C to 55°C
Temperature Accuracy	±0.5°C @25°C
Humidity Detecting Range	0%RH to 100%RH
Humidity Accuracy	±4%RH @25°C

3-Axis Accelerometer

Range	±2/4/8/16g (optional)
Resolution	10 bit or 4mg/ lsb (full scale) 13 bit @±16g

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 20dbm; AS923 16dbm; AU915 20dbm; CN470 19.15dbm; EU868 16dbm; KR920 14dbm; IN865 20dbm;
Receiving Sensitivity	-136 dBm (LoRa, Spreading Factor=12, Bit Rate = 293bps) -121 dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna Type	Build-in antenna
Communication Distance	10 km (Visible linear obstacle-free transmission distance, actual transmission distance depending on the environment.)
Data Transfer Rate	0.3kbps ~ 50kbps
Modulation	LoRa / FSK (Note: choose one of them)
Supportable LoRaWAN Frequency	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865-867,CN470-510 (Note: The frequency band is optional and needs to be configured before shipment.)

Physical

Dimension	L: 88 mm x W: 65 mm x H: 19 mm
Weight	113g
Environment Humidity Range	<90 %RH (No condensation)
Operating Temperature	-40°C to 55 °C
Storage Temperature	-40°C to 85 °C