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Wireless CO$_2$ / Temperature / Humidity Sensor

Wireless Sensor Network Based on LoRa Technology

RA0715

Datasheet

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Introduction

RA0715 is equipped with temperature and humidity sensor externally. It can monitor the ambient temperature and humidity and send the data via wireless method that adopts SX1276 wireless communication module. RA0715 is equipped with CO_2 sensor that can detect the concentration of CO_2 in the air.
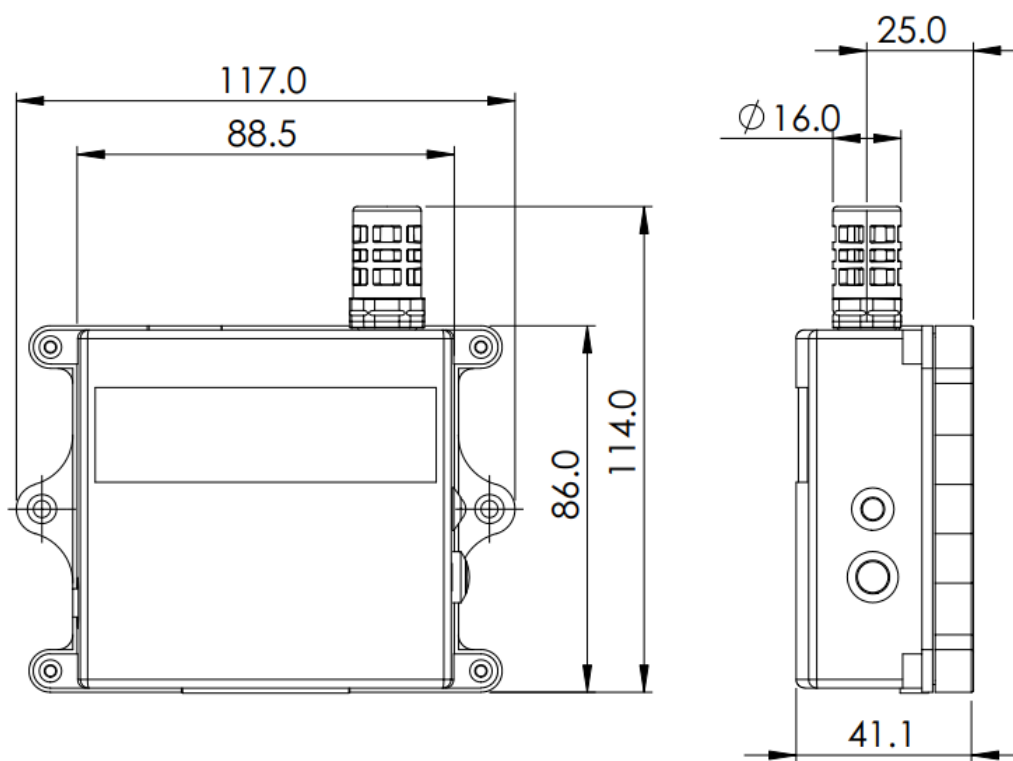
Main Features

- Apply SX1276 wireless communication module
- Temperature and humidity detection

  (The accuracy of the temperature and humidity takes 30 minutes to stabilize)
- CO_2 / Temperature / Humidity detection
- Compatible with LoRaWAN^{TM} Class A
- Frequency hopping spread spectrum
- Configuration parameters can be configured through third-party software platforms, data can be read and alarms can be set via SMS text and email (optional)
- Applicable to the third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne

Application

- CO_2 detection
- Temperature and humidity detection

Wireless CO2 / Temperature / Humidity Sensor

Dimension

Electric

Input power	DC 12V /1A
Operating Current 1	25mA (Standby status)
Operating Current 2	40mA (Operating status)

CO2 Sensor

Operating Current	< 85mA
Accuracy	± 100ppm+6% reading
Range	0-5000ppm
Warm-up Time	3min
Response Time	T<90s
Output	UART

Temperature and Humidity Sensor

Temperature Range	-20℃ to 55℃
Temperature Accuracy	±0.5℃@25℃ , Max ±0.8℃@-20℃~55℃
Humidity Range	0%RH-100%RH
Humidity Accuracy	±4%RH @25℃

Frequency

Frequency	863MHz-928MHz, 470MHz-510MHz
TX Power	US915　　20dbm AS923　　16dbm AU915　　20dbm CN470　　19.15dbm EU868　　16dbm KR920　　14dbm IN865　　　20dbm
RX Sensitivity	-121dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps) -136dBm (LoRa, Spreading Factor=12，Bit Rate=293bps)
Antenna Type	Built-in antenna
Communication Distance	10km (visible linear obstacle-free transmission distance, actual transmission distance depending on the environment)
Data Rate	0.3kbps ~ 50kbps (LoRa) 1.2kbps ~ 300kbps (FSK)
Modulation	LoRa/FSK (Note: choose one of them)
Supported LoRaWAN Frequency Band	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	117mm*114mm*41mm
Operating Temperature	-20℃ ～ 55℃
Operating Humidity	< 90%RH (No condensation)
Storage Temperature	-40℃ ～ 85℃