
Wireless Outdoor CO2/Temperature/Humidity Sensor (DC-powered)

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Wireless Sensor Network Based on LoRa Technology



RA0715Y

DIREKTRONIK

Dataprodukter utöver det vanliga

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General Description

The RA0715Y has a temperature and humidity sensor that detects and transmits ambient temperature and humidity data. The RA0715Y has a CO2 sensor that detects the concentration of CO2 in the air and transmits the detected data to other devices via LoRa wireless network. It uses the SX1276 wireless communication method.

Working Principle

RA0715Y built-in SHT30 temperature and humidity sensor, air temperature and humidity sensor SHT-30 through I2C communication and module communication, while built-in CO2 sensor, CO2 sensor through the UART serial port and module communication.

Example Applications

- Smart Home
- Outdoor Air Detection
- Smart Farm
- Others

Features of NETVOX Sensors

- LoRaWAN™ compatible
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Over-the-air updates (future)
- 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
- Uses SX1276 wireless communication module

*1. Actual range may vary depending on environment.

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

Wireless Outdoor CO2/Temperature/Humidity Sensor (DC-powered)**Electric**

Power Supply	Power adapter DC power supply, DC12V/1A
Operating Current 1	40mA (No radio frequency signal transmission)
Operating Current 2	80mA (With radio frequency signal transmission)

CO2 Sensor Characteristic

Working Voltage	4.5VDC-5.5VDC
Working Current	<85mA
CO2 Accuracy	+/- (100ppm + 6% reading)
CO2 Range	0-5000ppm
Warm-up Time	3mins
Response Time	T<90s
Output Signal	PWM UART

SHT-30 Temperature and Humidity Sensor

Operating Voltage	+3.3VDC
Temperature Measurement Range	-20°C – 55°C
Temperature Measurement Accuracy	+/-0.5°C@25°C Max.+/-0.8°C@ -20°C – 55°C
Humidity Measurement Range	0%RH-100%RH
Humidity Measurement Accuracy	+/-4%RH @25°C

Frequency

TX Power	19dBm±1dBm
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	Up to 10 km, the actual transmission distance depends on the environment.
Data Transfer Rate	0.3kbps~50kbps
Spread Technique	LoRa/FSK
Available Frequency	EU863-870 , US902-928 , AU915-928 , KR920-923 , AS923 , CN470-510 Configured before shipment

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Physical

Dimension	Mask : D220mm*H180mm Main Part : 111mm*86mm*41mm
Operating Temperature Range	-20°C ~ 55°C
Operating Humidity Range	< 90%RH (no condensation)
Storage Temperature range	-40°C ~ 85°C

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