Wireless CO Sensor

Wireless Sensor Network Based on LoRa Technology

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Introduction

RA0701 is a wireless communication device that detects the carbon monoxide content in ambient air. RA0701 can detect the concentration of CO in the air. The body and the sensor are connected through the RS485 interface, and the detected data is transmitted to data center through the wireless network for display. It adopts the wireless communication method conforming to the LoRa^{TM} protocol standard.
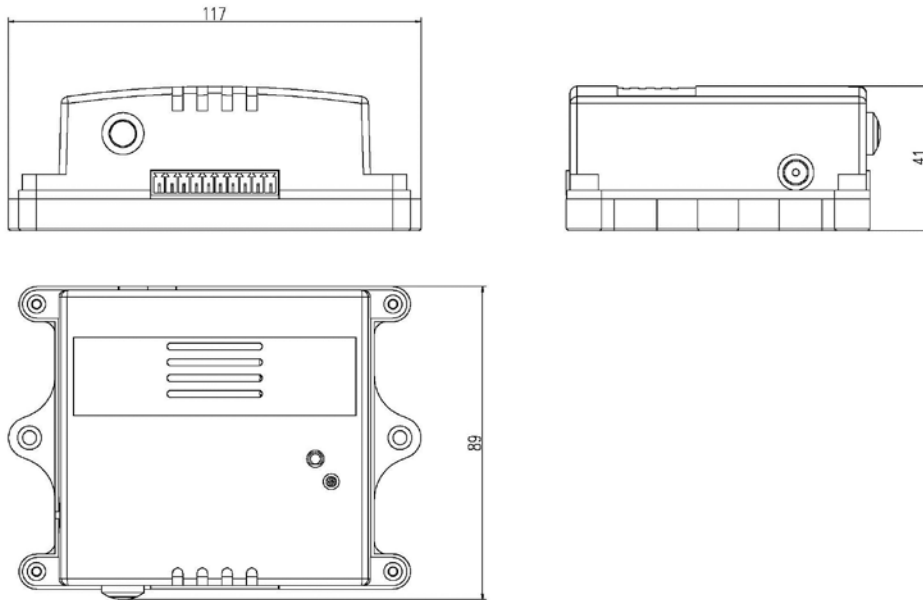
Main Characteristic

- Compatible with LoRaWAN^{TM} Class A
- Carbon Monoxide Detection
- DC 12V power supply
- Adopt SX1276 wireless communication module
- Frequency hopping spread spectrum technology
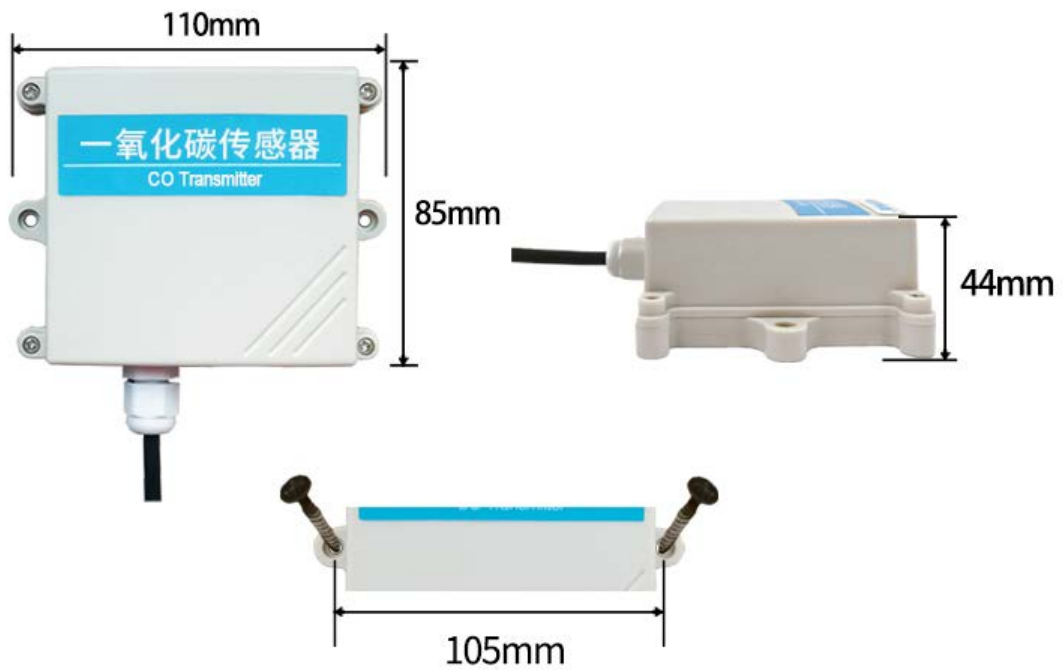- Applicable to the third-party platforms: Actility/ ThingPark/ TTN/ MyDevices/ Cayenn

Application Field

- CO concentration detection
- Other

Dimension

Host body

CO Sensor

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Waterproof Connector

Model	D(mm)	B(mm)	D2(mm)	L(mm)	L1(mm)	L2(mm)
M12	11.8	17.8	19.5	30.3	8	5

Electric

Power Supply	DC12V/1A
Operating Current 1	40mA (no RF signal transmission)
Operating Current 2	80mA (with RF signal transmission)

CO Sensor Parameter

CO Measurement Range	0 to 2000ppm
CO Measurement Method	Electrochemical sensor
CO Measurement Accuracy	$<\pm$ Reading 3% (@25°C)
CO Measurement Resolution	0.1ppm
Response Time	≤50s
Service Life	1-2 years
Working Pressure Range	Standard Atmospheric Pressure ±10%

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Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
Tx Power	US915　　20dbm； AS923　　16dbm； AU915　　20dbm； CN470　　19.15dbm； EU868　　16dbm； KR920　　14dbm； IN865　　　20dbm；
Receive 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 Transfer Rate	0.3kbps ~ 50kbps (LoRa) 1.2kbps ~ 300kbps (FSK)
Modulation	LoRa/FSK (Note: choose one of them)
Supportable LoraWAN Band	EU863-870,US902-928,AU915-928,KR920-923,AS923-1, AS923-2,AS923-3,IN865-867,CN470-510 (Note: optional, to be done in the factory configuration)

Physical

Dimension	Host body：117mm*89mm*41mm CO sensor：110mm*85mm*44mm
Ambient Temperature Range	-20°C to 55°C
Ambient Humidity Range	< 90%RH (No condensation)
Storage Temperature Range	-40°C to 85°C