

RFT-Lora CO₂

LoRaWanCO₂, Humidity, Temperature and light sensor
Document Rev V1

CO₂

GENERAL DESCRIPTION












Product general description:

The RFT- LORACO₂ is a compact and stand-alone low powerLoRawan module with CO₂, humidity,temperature and light sensors, designed to monitor the air quality inside a building.



Main key features:

-  LoraWan Class A connectivity
-  Very low power design
-  CO₂ sensor (NDIR)
-  Temperature sensor
-  Humidity sensor
-  Light sensor
-  LED (CO₂ rate: green, orange, red)
-  Extended battery life (different day and night read periods)
-  3.6A/h Lithium- Thionyl Chloride cell Embedded, replaceable battery

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Other key features:



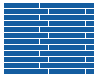
ILS (magnetic On/Off switch) or button On/Off switch



Parameters configurable by LoRaWan downlinks



Optional CO₂ automatic calibration



Can be wall mounted

Special care has been taken to lower current consumption. The light sensor can be used to have different measurement periods according to day or night light values. A higher night period permits to extend the battery life.

Using LoRa module, data are transmitted to a public or private LoRaWan network and can be used by your customer application.

The RFT-LORACO₂ sensor monitors the building air quality. It helps to improve comfortable environments, occupant health and wellbeing.

- The product permits air renewal according to people concentration by CO₂ measurement.
- The CO₂ rate can be checked at a glance by the mean of a LED (green, orange or red flashing LED). The CO₂ thresholds to control the LED colours can be configured.
- The sensors values send to LoRaWan network can be part of automatic air-conditioned systems and ventilations.



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DEVICE SPECIFICATIONS

CO₂

Operating principle	Non-dispersive infrared (NDIR)
Measurement range	0-2000ppm (extended range up to 10000ppm)
Operating environment range	0-50°C, 0-85% RH (non-condensing)
CO₂ accuracy	-/+50ppm, -/+3% of reading
Minimum Automatic Baseline Correction period	9 days
Default CO₂ rate LED thresholds	0-1000ppm:green; 1000-1500ppm:orange; >1500ppm:red

Temperature and relative Humidity

Relative humidityaccuracy	±2 %RH
Temperature accuracy	0.5°C
Operating environment range	0...100 %RH, -40...125 °C

Battery life

Period: day: 10mn + night : 10mn	2 years (worst case lorawan SF12)
Period: day: 10mn + night : 10mn	4 years (lorawan SF10)
Period: day: 10mn + night : 30mn	3 years (worst case lorawan SF12)
Period: day: 10mn + night : 30mn	4.8 years (lorawan SF10)

Dimensions

Size:	25*85*100mm
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LORAWAN SPECIFICATIONS

LoRaWAN® 1.0.1, LoRaWAN® End-to-End encryption (AES-CTR), Data Integrity Protection (AES-CMAC), Class A End-device, OTAA, ADR, Adaptive Channel Setup, EU863MHz – 870MHz

Default Channel list: 868,1MHz, 868,3MHz, 868,5MHz

Network operator channel list: The network channels can be freely attributed by the network operator in the 863-870MHz frequency band.

Maximum RF Transmit power: 12dBm (16mW), any channel.

APPLICATIONS

- Building air quality monitoring
- Classroom air quality monitoring in real time
- Ventilation and air-conditioned systems control
- Air renewal according to people concentration by CO₂ measurement

CUSTOMISATION ON DEMAND

- PT100 temperature measure
- External sensors interfaces
- External power supply