

LoRaWan CO₂

LoRaWan CO₂, Humidity, Temperature and light sensor
Document Rev V1

GENERAL DESCRIPTION

Product general description:

The LoRaWan CO₂ is a compact, self-contained, low-power LoRaWan module with CO₂, humidity, temperature and light sensors designed to monitor indoor air quality.



Main key features:



LoRaWan Class A connectivity



Very low power design



CO₂ sensor (NDIR)



Temperature sensor



Humidity sensor



Light sensor



LED (color according to CO₂ level: green, orange, red, programmable thresholds)



Extended battery life (different day and night read periods)



Replaceable 3.6Ah Lithium- Thionyl Chloride cell battery







LoRaWan CO₂

LoRaWan CO₂, Humidity, Temperature and light sensor

Document Rev V1

Other key features:

-  ILS (magnetic On/Off switch)
-  Parameters configurable by LoraWan downlinks
-  Automatic calibration of the CO₂ measurement (disabled by default)
-  Can be wall mounted

Special care has been taken to reduce power consumption. The light sensor allows to differentiate between day and night to reduce the number of measurements at night and increase the autonomy.

The data are transmitted to a public or private LoRaWan network and can be used by your client application.

The RFT-LORACO₂ sensor monitors the air quality of the building. It helps to improve comfortable environments, health and well-being of occupants.

The CO₂ level can be monitored at a glance by means of an LED (green, orange or red flashing LED). CO₂ thresholds can be configured to control the LED colors.

The sensor values sent to the LoRaWan network can be used by automatic air conditioning and ventilation systems.



LoRaWan CO₂

LoRaWanCO2, Humidity, Temperature and light sensor
Document Rev V1

DEVICE SPECIFICATIONS

CO ₂	
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)
CO ₂ accuracy	-/+50ppm, -/+3% of reading
Minimum Automatic Baseline Correction period	9 days
Default CO ₂ 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



LoRaWan CO₂

LoRaWanCO2, Humidity, Temperature and light sensor

Document Rev V1

LORAWAN SPECIFICATIONS

LoRaWAN® 1.0.1, LoRaWAN® End-to-end encryption (AES-CTR), data integrity protection (AES-CMAC), Class A endpoint device, OTAA, ADR, adaptive channel configuration, EU863MHz - 870MHz

Default channel list: 868.1MHz, 868.3MHz, 868.5MHz

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

Maximum RF transmission power: 12dBm (16mW), for all channels

APPLICATIONS

- Building Air Quality Monitoring
- Real-time classroom air quality monitoring
- Control of ventilation and air conditioning systems
- Renewal of air according to the concentration of people by measuring CO₂

CUSTOMISATION ON DEMAND

- Temperature measurement PT100
- Interfaces for external sensors
- External power supply