SENSE IT
TECHNOLOGIES
MONITORING AND CONTROL SOLUTIONS



LoRaWAN CO2, Temperature, Humidity and Barometric Pressure Sensor

SKU: SI-LRW-THCO2-001

Monitor carbon dioxide (CO□), temperature, humidity and barometric pressure with a rugged wireless environmental sensor designed for outdoor and industrial applications. Using LoRaWAN® technology, it delivers long-range, low-power monitoring with real-time alerts, historical data logging and up to 10 years of battery life.

OVERVIEW

This industrial wireless environmental sensor provides reliable monitoring of carbon dioxide (CO□), temperature, humidity and barometric pressure in a single compact device. Designed for outdoor and harsh environments, it combines multiple environmental measurements with long-range LoRaWAN® connectivity, enabling continuous remote monitoring without the need for power or communication cabling.

With an IP65-rated enclosure and a high-capacity replaceable lithium battery offering up to 10 years of operation, the sensor is well suited to remote installations where maintenance needs to be kept to a minimum. Integrated local data storage ensures measurements are retained during temporary communication outages and automatically retransmitted once connectivity is restored.

The sensor accurately measures carbon dioxide concentrations from 400 to 5,000 ppm using NDIR technology, while simultaneously monitoring ambient temperature, relative humidity and atmospheric pressure. Configurable threshold alarms allow users to receive immediate notifications when environmental conditions exceed acceptable limits, helping protect personnel, products and processes.

Ideal for smart agriculture, greenhouses, warehouses, wineries, industrial facilities, underground parking areas, environmental monitoring and smart buildings, the sensor integrates seamlessly with the Sense It monitoring platform, providing live dashboards, historical trends, automated reports and multi-channel alerts for complete visibility across one or multiple sites.

KEY FEATURES

- Measures CO□, temperature, humidity and barometric pressure
- High-accuracy NDIR carbon dioxide sensor
- CO□ measurement range from 400 to 5,000 ppm
- Long-range LoRaWAN® wireless connectivity
- Up to 10 years battery life
- IP65-rated enclosure for outdoor and industrial environments
- Real-time monitoring and cloud connectivity
- Local data storage with automatic retransmission
- Configurable threshold alarms
- NFC configuration using a smartphone
- Firmware updates over the air (FUOTA)
- Replaceable high-capacity lithium battery
- Pole, wall or DIN rail mounting
- Suitable for outdoor, agricultural and industrial monitoring applications

TECHNICAL SPECIFICATIONS

General

- Wireless technology: LoRaWAN®
- LoRaWAN Class A
- Activation: OTAA / ABP
- Frequency bands: EU868, US915, AU915, AS923, KR920, IN865, RU864, CN470 (region dependent)
- RF output power: Up to 20 dBm (region dependent)
- Receiver sensitivity: Up to -137 dBm

Carbon Dioxide

- Measurement technology: NDIR (Non-Dispersive Infrared)
- Measurement range: 400–5,000 ppm
- Measurement accuracy: ±(30 ppm + 3% of reading)
- Resolution: 1 ppm

Temperature

- Measurement range: -30°C to 70°C
- Measurement accuracy: ±0.3°C (0°C to 70°C), ±0.6°C (-30°C to 0°C)
- Resolution: 0.1°C

Humidity

- Measurement range: 0–100% RH
- Measurement accuracy: ±3% RH (10–90%), ±5% RH (<10% or >90%)
- Resolution: 0.5% RH

Barometric Pressure

- Measurement range: 300–1100 hPa
- Measurement accuracy: ±1 hPa
- Resolution: 0.1 hPa

Data & Alarms

- Stores up to 1,000 historical records
- Automatic data retransmission after communication recovery
- Configurable threshold alarms

Configuration

- NFC configuration
- USB Type-C configuration
- Remote downlink configuration
- Firmware updates over the air (FUOTA)

Power

- Internal 19,000 mAh replaceable lithium battery
- Battery life: Up to 10 years depending on reporting interval

Environmental

- Operating temperature: -30°C to 70°C
- Operating humidity: 0–95% RH (non-condensing)
- Ingress protection: IP65

Installation

- Wall mount
- Pole mount
- DIN rail mount

Applications

- Greenhouses
- Warehouses
- Industrial facilities
- Underground parking
- Wineries
- Environmental monitoring
- Agriculture
- Smart buildings
- Indoor and outdoor air quality monitoring

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