

Carbon Dioxide Sensor

Featuring LoRaWAN®

EM500-CO₂



EM500-CO₂ is designed for measuring CO₂, temperature, humidity and barometric pressure in harsh environments and transmitting data using LoRaWAN® technology. With this low power consumption technology, EM500-CO₂ can work up to 10 years with 19000 mAh battery. Combining with Milesight LoRaWAN® gateway and Milesight IoT Cloud solution, users can manage all sensor data remotely and visually.

EM500-CO₂ is widely used for applications like smart agriculture, smart city, forest fire detection, etc.

◆ Features

- Integrated with multiple sensors like CO₂, temperature, humidity, etc.
- Ultra-wide-distance transmission up to line of sight of 10km
- IP65 waterproof enclosure for harsh environment applications
- Built-in 19000 mAh replaceable battery and work for 10 years without replacement
- Equipped with NFC for easy configuration
- Compliant with standard LoRaWAN® gateways and network servers
- Quick and easy management with Milesight IoT Cloud solution

◆ Applications

- Warehouse environment monitoring
- Basement and underground parking monitoring
- Smart agriculture
- Forest fire detection
- Smart building

◆ Specifications

| Wireless Transmission | |
|--|---|
| Technology | LoRaWAN® |
| Frequency | CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4 |
| Tx Power | 16dBm(868)/20dBm(915)/19dBm(470) |
| Sensitivity | -137dBm @300bps |
| Mode | OTAA/ABP Class A |
| Sensors | |
| Carbon Dioxide (CO₂) | |
| Sensor Type | NDIR |
| Range | 400 - 5000 ppm |
| Accuracy (0°C to +50°C) | ± (30 ppm + 3 % of reading) |
| Resolution | 1 ppm |
| Temperature | |
| Sensor Type | MEMS |
| Range | -30°C to + 70°C |
| Accuracy | 0°C to + 70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C) |
| Resolution | 0.1°C |
| Humidity | |
| Sensor Type | MEMS |
| Range | 0% to 100% RH |
| Accuracy | 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) |
| Resolution | 0.5% RH |
| Barometric Pressure | |
| Sensor Type | MEMS |
| Range | 300 - 1100 hPa (-40°C - 85°C) |
| Accuracy | ±1 hPa |
| Resolution | 0.1 hPa |
| Operation | |
| Power On & Off | NFC, Power Button (Internal) |
| Configuration | Mobile App(via NFC) or PC software(via USB Type-C) |
| Physical Characteristics | |
| Power Supply | 19000 mAh Li-SOCL ₂ battery (ER34615) |

| | |
|-----------------------|--|
| Battery Life* | 10 years (10 min interval) |
| Operating Temperature | -30°C to +70°C |
| Relative Humidity | 0% to 100% (non-condensing) |
| Ingress Protection | IP65 |
| Dimension | 147.9 × 71 × 69.5 mm (5.8 × 2.8 × 2.7 in) |
| Installation | Pole, Wall or DIN Rail Mounting |
| Approvals | |
| Regulatory | CE, FCC, RoHS, LoRaWAN [®] Certified |
| EMC | EN 55032, EN 55035 |
| EMS | IEC 61000-4-2 Level 3 |
| | IEC 61000-4-3 Level 2 |
| | IEC 61000-4-8 Level 4 |
| Radio Frequency | FCC Part 15B, FCC Part 15.247, EN 300 330, EN 301 489-1/3, EN 300 220-1/2 |
| Safety | EN62368-1 |

* Tested under laboratory conditions and for guideline purposes only.