Carbon Dioxide Sensor

Featuring LoRaWAN®

EM500-CO_2



EM500-CO_2 is designed for measuring CO_2, temperature, humidity and barometric pressure in harsh environments and transmitting data using LoRaWAN® technology. With this low power consumption technology, EM500-CO_2 can work up to 10 years with 19000 mAh battery. Combining with Milesight LoRaWAN® gateway and Milesight Development Platform solution, users can manage all sensor data remotely.

EM500-CO_2 is widely used for applications like smart agriculture, smart city, forest fire detection, etc.

◆ Features

- Integrated with multiple sensors like CO_2, 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
- Store historical records locally and support retransmission
- Equipped with NFC for easy configuration
- Compliant with standard LoRaWAN® gateways and network servers
- Quick and easy management with Milesight IoT Cloud and Milesight Development Platform

◆ Applications

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

◆ Specifications

Wireless Transmission	
Technology	LoRaWAN®
Antenna	Internal Antenna
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 (CO_2)	
Sensor Type	NDIR
Range	400 - 5000 ppm
Accuracy	± (30 ppm + 3 % of reading) (0°C - 50°C, 0 - 85%RH)
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
Others	
LED	1 × LED Indicator (Internal)
Button	1 × Power/Reset Button (Internal)
USB	1 × USB Type-C(Internal) for Configuration and Console
Software	

Power On & Off	NFC, Power Button (Internal)
Configuration	Mobile App(via NFC), PC software(via USB Type-C), Downlink
Advanced Features	Data Storage (1,000 entries), Data Retransmission, Data Retrievability, Threshold Alarm, Calibration
Physical Characteristics	
Power Supply	1 × 19000 mAh ER34615 Li-$SOCL_2$ Battery
Battery Life*	10 years (10 min interval, 25 °C)
Operating Temperature	-30°C to +70°C
Relative Humidity	0% to 95% (non-condensing)
Ingress Protection	IP65
Housing & Color	ABS + PC, Grey
Weight	434.7g (With battery and mounting bracket)
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, LoRaWAN® Certified, ISED, ICASA, Telec
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
Environmental	RoHS

* Tested under laboratory conditions and for guideline purposes only.

◆ Dimensions(mm)





