Carbon Dioxide Sensor

Featuring LoRaWAN

KL500-CO$_2$

KLED MEASUREMENT

KL500-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, KL500-CO can work up to 10 years with 19000 mAh battery. Combining with KLED LoRaWAN® gateway and KLED IoT Cloud solution, users can manage all sensor data remotely and visually.

KL500-CO 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
- ➢ Equipped with NFC for easy configuration
- ➢ Compliant with standard LoRaWAN® gateways and network servers
- ➢ Quick and easy management with KLED 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 (CO_2)	
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.

LoRaWAN Wireless Transmission

Ultra-low power consumption and easy deployment

Built-in 19000 mAh high-capacity battery can be used for 10 years.

Available for 10 years

19000 mAh
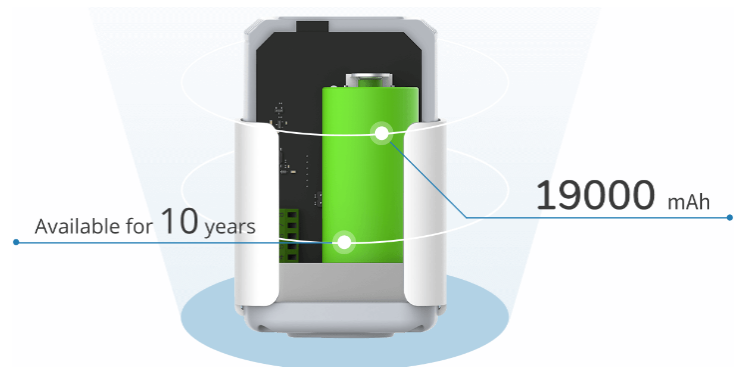
CO₂ Sensor (4 in 1)

KL500 CO2! is designed for measuring gaseous carbon dioxide (CO2) concentration in harsh environments. It is useful in the application where knowing CO2 level is important like greenhouse, building ventilation, fruit and vegetable storage. Besides, it also supports temperature, humidity and barometric pressure measurement.

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