

OY1211 LoRaWAN CO2 meter

Product datasheet

LoRaWAN sensor measuring temperature, humidity and CO₂, with a maintenance free lifetime of 5 years at a 20-minute reporting interval. Designed for US915 frequency plans. Supports adaptive reporting functionality to detect rapid changes in CO₂ levels.

Operating principle

Non-dispersive infrared (NDIR)	Yes
Sample method	Diffusion

Accuracy and range

Temperature accuracy	± 0,2 °C (conditions 0 °C to +50 °C)
Temperature range	-20 °C to +60 °C
Humidity accuracy	± 2% (conditions 10-90% RH)
Humidity range	0% to 100% non-condensing
Measurement range CO ₂	400 – 5000 ppm
Accuracy CO ₂	±30ppm ±3% of reading
RMS noise CO ₂	0.7ppm @ 400ppm 1.4ppm @2000ppm (filtered)

Accuracy of ± 0,1 °C and ± 1,5% humidity available upon request

Connectivity

Network	LoRaWAN
Frequency bands	915 MHz
Provisioning	Over the air & personalization



Size

Size	111 x 77 x 26 mm
Weight	136g

Security

Algorithms	AES-128
Hardware	Cryptographic co-processor
Features	Secure boot Secure firmware upgrade

Hardware based ultra-secure key storage

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Battery life

Battery life length	>5 years (at 20 minute intervals, SF12)
Battery type	2x Lithium-thionyl 3.6V (replaceable)
Capacity	3.6Ah

Configuration

Measurement intervals	1 minute, configurable over the air
Transmission intervals	20 minutes, configurable over the air
Adaptive reporting	Extra transmission for CO ₂ level changes >100ppm

Unique App EUI available upon request

Enclosure

IP30

Certifications

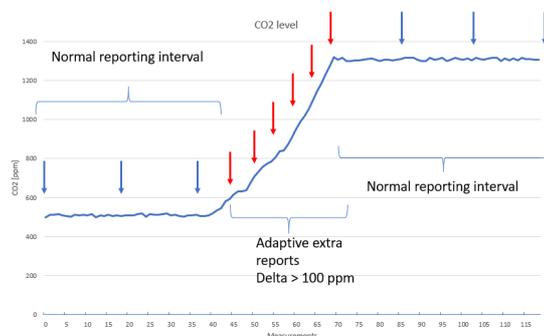
RoHS compliant

FCC

LoRaWAN

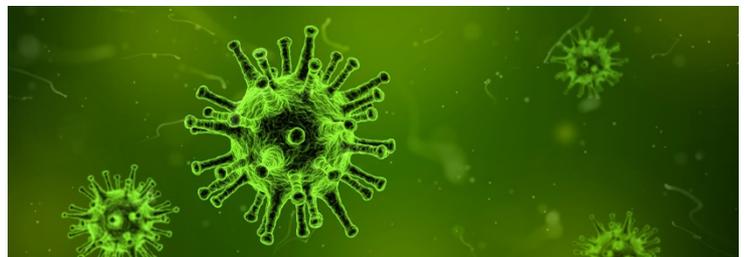
Adaptive data reporting functionality

Talkpool's OY1211 LoRaWAN CO₂ meter comes with a function that is unique on the market: adaptive data reporting. This functionality makes the sensor report directly when a rapid increase in CO₂ levels is detected. This low latency is crucial when a meeting room or classroom suddenly fills up with people and air quality diminishes.



COVID-19 & CO2 air quality monitoring

With its adaptive reporting functionality, the OY1211 LoRaWAN is the go-to sensor when it comes to COVID-19 monitoring in indoor environments. CO₂ levels give an indication of the air quality, as CO₂ is a residue of human breathing. If levels are high, productivity and well-being drops, while the risk of airborne spreading of diseases increases.



HVAC optimization

The OY1211 LoRaWAN CO₂ meter is designed for optimization of HVAC systems. Measurement data of temperature, humidity and carbon dioxide levels forms the basis for demand-driven HVAC steering, where the building's heating, ventilation and cooling are activated only when necessary. This results in better air quality, as you will not find any rooms under ventilated, which increases health, productivity and comfort. On top of that, the solution typically results in energy savings between 10% and 30%, making for a strong financial and sustainability argument.



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Order Product Numbers

Version	OPN
OY1211 LoRaWAN CO2 meter US915	TP-T1211-000-1-US
OY1210 LoRaWAN CO2 meter EU868	TP-T1210-000-1-EU