PreonCube Condition CO$_2$

Measuring cube for recording CO$_2$ concentration in the ambient air with wireless communication

Product attributes

- Mobile, self-sufficient radio measuring spot with external sensor

- Determination of the carbon dioxide concentration in the ambient air

- Measured value acquisition, buffering and radio transmission (min. 128 Bit AES encryption)

- Convenient measurement value analysis and data export in the PreonLive online portal my.virtenio.com[1]

- up to 50 days battery life with lithium-ion battery

- Modular compatibility with all Virtenio Cubes and Gateways

- Robust housing (IP65) with pressure compensation valve

- Compact dimensions of 65 x 65 x 162 mm (L x W x H)

Description

The PreonCube Condition CO$_2$ is a wireless radio measuring point with external CO$_2$ sensor. Due to its handy and compact design and long battery life, the Cube is ideal for self-sufficient monitoring of buildings, warehouses, transport containers or hard-to-reach environments. With its CO$_2$ sensor, it records data on carbon dioxide concentration in the ambient air at customer-specific intervals. Depending on requirements, it transmits these measured values wirelessly to other measuring points or directly to a radio gateway. From the optionally available gateways, the data is transferred to the PreonLive online portal where it can be analyzed and exported. This allows you to monitor your remote PreonCubes from any PC, smartphone or tablet with Internet access and always have an overview of their local environmental conditions. PreonCube Condition Signal Light is available to match the PreonCube Condition CO$_2$. The three-stage traffic light can be operated within radio range of the measurement point and signals, depending on the CO2 concentration, the actual measured value range with different colours.

Sensors

An external sensor with infrared technology (NDIR) is used to record the data. It is equipped with a white filter cap and is located on the top of the cube. It measures the concentration of carbon dioxide in ambient air from 0ppm to 5000ppm with high accuracy.

Applications

- Areas of application: seminar rooms, buildings, storage, occupational health and safety, indoor climate

- Usage: Monitoring of buildings, halls, rooms, cabinets or showcases, etc.

- Monitoring, verification, control and alarming

- Spot checks or long-term measurements

- Can be used for ventilation monitoring and room climate improvement, etc.

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[1]Only available with PreonGate Gateway products

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General

Dimensions:	65 x 65 x 162 mm (L x W x H)
Weight:	228 g
Housing:	Polycarbonate
Protection class:	IP65 with pressure compensation valve
Power supply:	Lithium-ion battery with 2350mAh capacity; USB power supply
Operating modes:	Battery; power supply with 5V@500mA
Operating life time:	up to 50 days without recharging (depending on configuration)
Memory:	Flash, non-volatile
Operating temperature:	-20ºC to +50ºC / 0ºC to +40ºC in power supply mode
Interaction:	Touchless Reed Switch, LED (two-color)
Interfaces:	Micro-USB connector for USB power supply

Radio communication

Radio frequency	2.4 GHz, license-free ISM band
Radio standard	IEEE 802.15.4
Range (up to)	outdoor 300m / indoor 30m
Security	At least 128 Bit AES
Radio protocol	IEEE 802.15.4 (P2P); 6LoWPAN with Duty Cycling (via SW update)
Radio Channels	16
Transmission interval	15 min (standard, programmable)

Sensors

	Measuring interval	15 min (standard, programmable)
CO₂	**Measuring probe**	digital CO_2-sensor, non-dispersive infrared technology (NDIR)
	Measuring range	0ppm to 5000ppm
	Temperature dependency	Typ. 2ppm CO_2/ºC (0ºC to 50ºC)
	Accuracy	< +/- (50ppm +3% of measured value)
	Calibration	Autocalibration, maintenance-free

Norms and standards CE

Electrical safety	EN 62368-1, EN 62311
EMC	EN 61326-1, EN 301489-1/-17
Radio	EN 300 328
RoHS	EN 50581