

MUTELCOR

LoRa Wireless CO2 Sensor

MTC-XX-CO2-05 / MTC-XX-CO2-06

Quick Start Guide



Thank you for choosing Mutelcor GmbH.
We are proud to be part of your project.

1. Need Help?

For any other query related to our product, please contact the local distributor or Mutelcor at support@mutelcor.com.

2. Manufacturer

Mutelcor GmbH: An der Bastei 42a, 47259 Duisburg, Germany

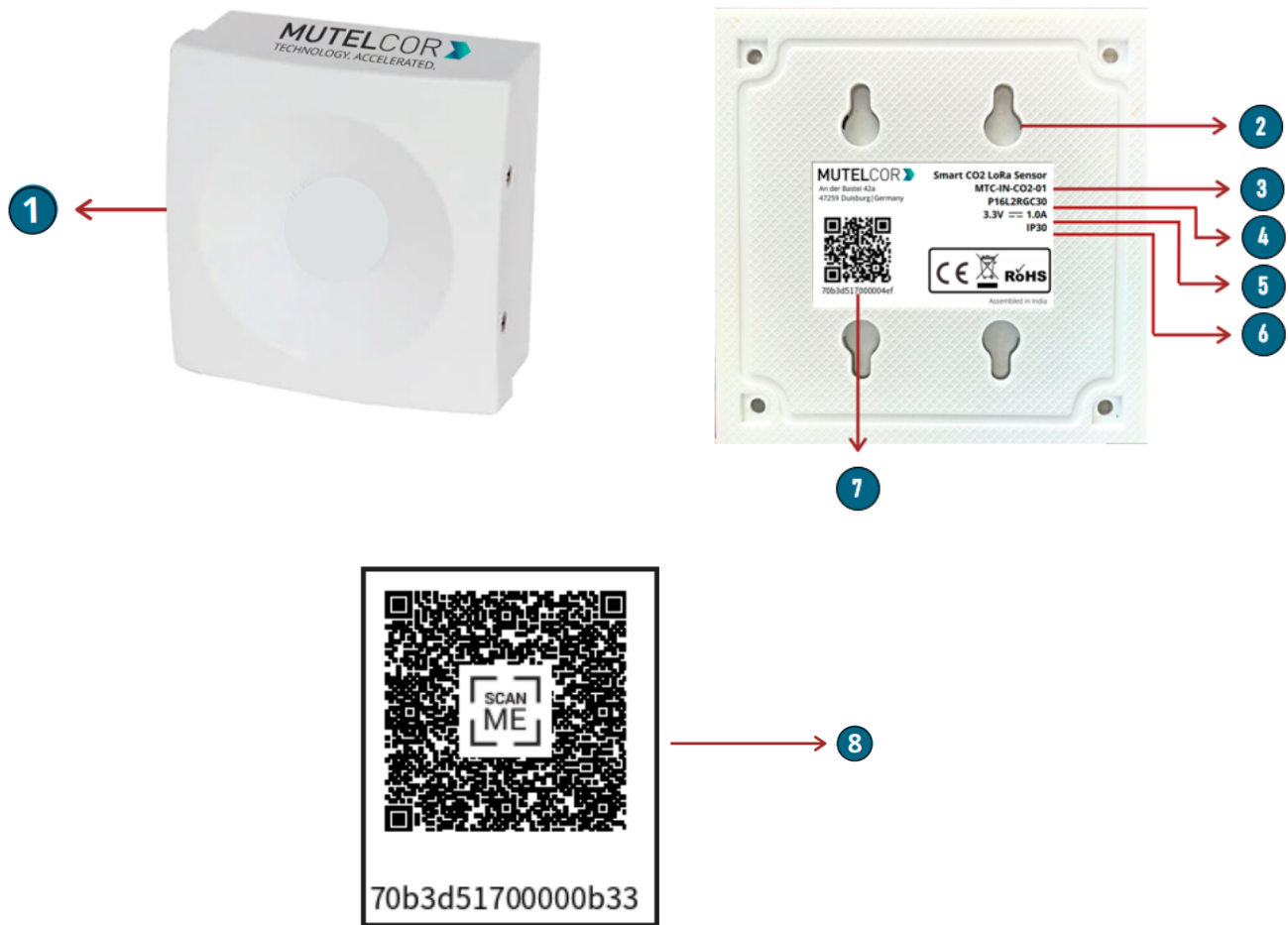
Office: +49 203 72996070, Fax: +49 203 72996071, Web: www.mutelcor.com

3. Safety

Read the instructions carefully before device installation, operation and maintenance.

1	Maintenance and repair must be carried out by qualified personnel authorized by the reseller.
2	Keep the device away from any hot surface.
3	Never try to power the device using the DC Jack. The device can only be used with AA-Lithium Batteries


4. Product Description



At a Glance

No.	Description	No.	Description
1	LoRa Wireless CO2 Sensor	5	Voltage
2	Holes for Wall Mount	6	Ingress Protection
3	Model Name	7	DevEUI with QR code
4	Module ID	8	Optional QR Sticker to Access last CO2 reading

5. Opening and closing the device

	<ul style="list-style-type: none">• Always wear gloves or keep your hands dry while handling the PCB• Do not touch the circuitry part of the PCB with bare hands
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For reset, inserting or replacing the batteries, opening of the device is needed.



Fig 5.1

For **opening and closing** the enclosure, please follow the steps described below:

1. Unscrew the four screws on the two sides of the device
2. Gently separate the top from the bottom case, as shown in Fig 5.1 above.
3. Close the Top and Bottom of the enclosure and tighten all the four screws

6. Insertion and Replacement of Batteries



- Open the device for insertion or replacing the batteries
- Always wear gloves or keep your hands dry while handling the PCB
- Do not touch the circuitry part of the PCB with bare hands
- Do not use sharp objects to remove the batteries

Please follow the steps described below:

1. Open the device (for details please refer to section 5, “Opening and Closing the Device”)
2. To insert or replace the batteries, **lift up two white battery caps** from the battery holder of PCB, as shown in **Fig. 6.1** and keep them aside.
3. White Battery Caps are provided to secure batteries in the battery holders to avoid battery pop-out and disconnection.
4. Insert 2 AA-Lithium Batteries into the battery holder making sure the positive (+) and negative (-) ends of batteries are facing in the correct terminals.
5. Once the batteries are inserted, place the white Caps on the battery holder and close the top & bottom cases of the enclosure as described in the instructions at section 5 “Opening and Closing the Device”
6. To replace the batteries: follow step 1 and 2 of section 6 “Insertion and Replacement of Batteries”. Hold the LoRa PCB and carefully remove both the batteries from the battery holder and follow step 4 and 5 of section 6 “Insertion and Replacement of Batteries”.



Fig. 6.1

The insertion and replacement of the batteries will trigger the device to register to the LoRaWAN network. Upon successful registration the device will trigger 3 short beeps (chirps) in rapid

succession. This implies that the device is activated in a LoRa network successfully and will send heartbeats and measurements via LoRa.

Note: If rejoining of the device fails, one can manually reset the device as described in the section 9 "Resetting the Device"

7. Activating the Device



- Device must be provisioned in the LoRa network before activation, as otherwise it will continuously send join requests towards the network, which may result in quicker battery discharge

The device will automatically try to register on a LoRaWAN network upon battery insertion/replacement of battery. Upon successful registration to the network, the device will trigger 3 short beeps (chirps) in rapid succession. This implies that the device is activated in a LoRa network and will send heartbeats and measurements via LoRa.

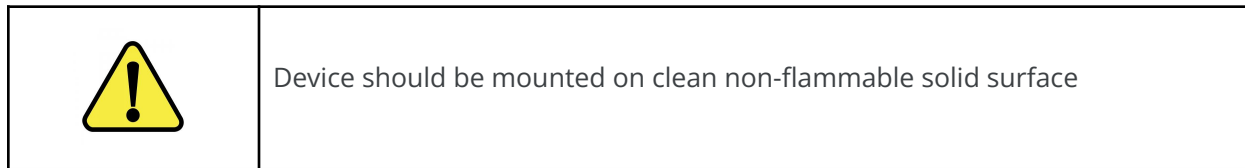
By default, the device sends measurements (CO₂, Temperature and Humidity) every 1 hour. The default can be configured depending on the customer's requirements.

For all details on the payload sent on LoRa, changing values via OTAA, provisioning of the device in a LoRa network, please contact the local distributor or Mutelcor GmbH at support@mutelcor.com

Note: If the buzzer in the device continuously beeps in every 8-second interval, then there is a software error. When this happens please immediately contact your reseller or Mutelcor GmbH at support@mutelcor.com

QR code sticker: All devices are QR-Ready. If requested, we can activate this feature to allow reading the current battery status by simply scanning a QR code. Please contact us for activation of this service. Please contact the local distributor or Mutelcor GmbH at support@mutelcor.com

8. Mounting



To ensure best product performance and prevent malfunctioning, avoid the following :

- Areas that are susceptible to vibration
- Areas near the high-voltage cables

The device may be mounted on the wall. Four screws (not included) are needed. Mounting information is depicted in the following Fig 8.1.

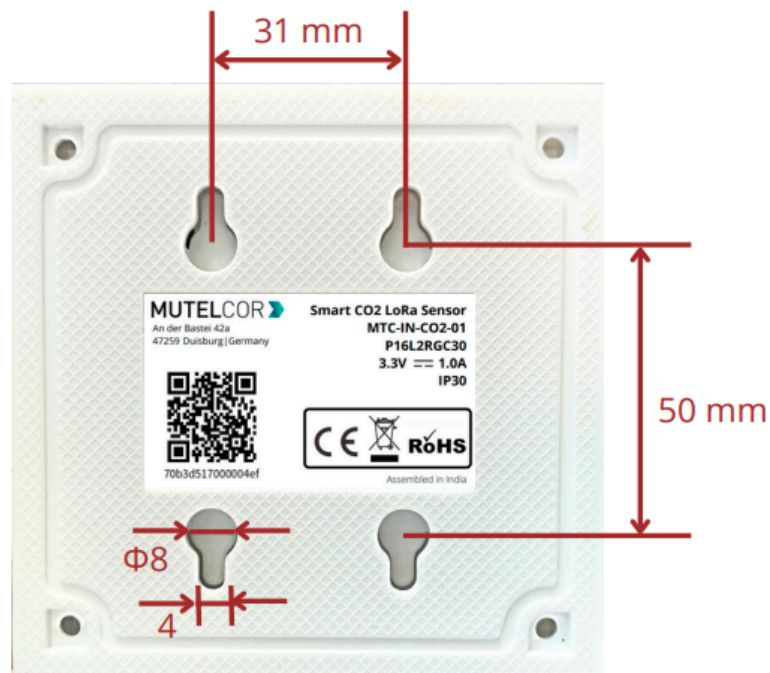


Fig 8.1

9. Resetting the Device



- Open the device for resetting
- Always wear gloves or keep your hands dry while handling the PCB
- Do not touch the circuitry part of the PCB with bare hands
- Do not use sharp objects to press the reset button

Resetting the device may be needed, e.g. to re-register the device into the LoRa network. For resetting please follow the steps described below.

1. Open the device. For details please refer to section 5 “Opening and Closing the Device”
2. Position and hold the PCB as shown in fig 9.1.
3. **Ensure 2 AA** Lithium Batteries are inserted in the battery holders.
4. On the PCB, carefully observe a small reset button as shown in fig 9.1
5. Press (do not hold) the button shortly for a second

The reset will trigger the device to re-register to a LoRaWAN network. Upon successful registration, the device will trigger 3 short beeps (chirps) in rapid succession. This implies that the device is activated in a LoRa network and will send heartbeats and alarms via LoRa.

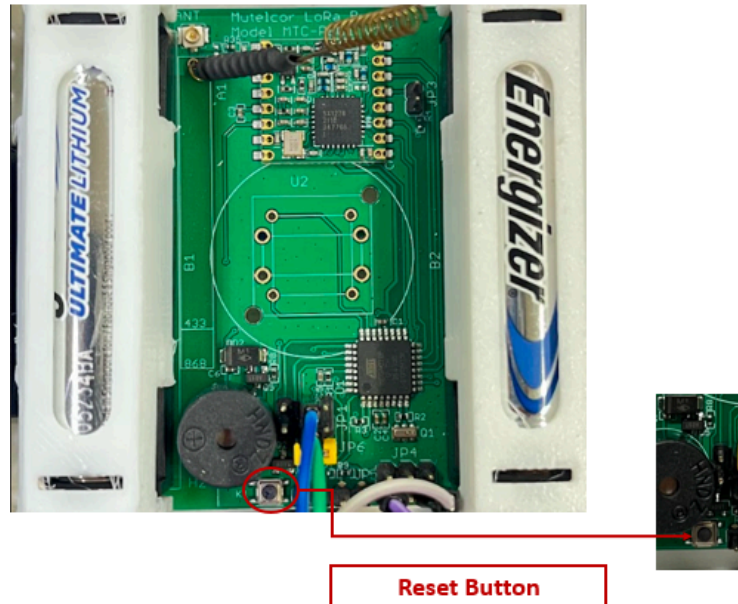


Fig 9.1

10. Technical Specifications

Model Name	LoRa Wireless CO2 Sensor	Enclosure Size	95 x 95 x 48 mm
Module ID	P16E28	Net Weight	180 g
Model No	MTC-XX-CO2-05 (IP30 = not protected against liquids) MTC-XX-CO2-06 (IP54 = protected against spray water)	Model No. (XX) LoRa Frequency	EU: EU 863-870 IN: IN865-867 US: US 902-928 AU: AU915-928 AS: AS923-1 KR: KR920-923 IL: AS923-4 OTAA and ADR supported
Battery Life	2 Years	Voltage	3V (2 x AA-Lithium Battery)
LoRaWAN Version	MAC V1.0.3	Operating Temperature	-18°C to +55°C
Transmission Power	Max 25mW (14 dBm)	Ingress Protection	IP30 / IP54
NDIR Sensor	CO2: 0-40.000 ppm Temperature: -40-70°C Humidity: 0-100%RH	Sensor Accuracy	CO2: ± 30ppm ± 3% (for 400-10.000 ppm) Temperature: ± 0.5°C Humidity: ±3% RH

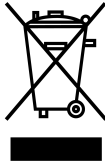
11. Declaration of Conformity

Hereby, Mutelcor GmbH, declares that the Product is in conformity with the essential requirements of Article 3.1 (a) the protection of the health, 3.1 (b) an adequate level of electromagnetic compatibility and 3.2 effective use of the spectrum of 2014/53/EU

The CE mark appears due to the issued declaration of conformity under responsibility of Mutelcor GmbH as manufacturer, who declares that the used radio equipment is in compliance with relevant EC Directives. For any further information, please contact Mutelcor GmbH at support@mutelcor.com

In Europe, the Sensor also complies with EN62479 and ERC requirements regarding duty cycle and maximum EIRP

12. Disposal / Recycling

	<ul style="list-style-type: none"> • Do not dispose of the product with household waste. For proper disposal, contact a waste disposal company • Discharge batteries store in a plastic or cardboard container that doesn't conduct electricity in case there is a spark • Search the area for recycling centers that accept single-use batteries using Earth911's Recycling Search. • WEEE-Reg.-Nr.: DE71445608
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13. Product complies and Directives




ETA



Equipment Type Approval (INDIA)
Issue by Wireless Planning and Coordination (WPC)
DEPARTMENT OF TELECOMMUNICATIONS

14. Warranty

Contact your reseller for warranty

	LoRa Air Quality is not warranted by Mutelcor GmbH in case the enclosure is modified, broken, painted, branded out, outlined for any reason
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The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Mutelcor GmbH be liable for any consequential, special or incidental damages


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We stay at your disposal for any help on your project requirements.

Mutelcor GmbH Team



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