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MClimate MC-LW-CO2-01 CO2 Sensor and Notifier LoRaWAN User Manual 📄

Contents

MClimate MC-LW-CO2-01 CO2 Sensor and Notifier LoRaWAN

Technical specifications

- Description: MClimate CO2 Sensor and Notifier
- Model: MC-LW-CO2-01
- Dimensions: 80 x 80 x 20mm
- Weight: 107gr
- Frequency range: 863÷870MHz
- LoRaWAN® Device type: Class A End-device
- Power supply: 2xAA batteries 1,5VDC
- Sensors: built-in CO2 sensor, pressure sensor, temperature & humidity sensor
- Work temperature: 0°C to +60°C
- Material: ABS

Environmental conditions, in which the device is intended to operate:

- Indoor using;
- f or altitude up to 2000m;
- f or an ambient temperature:0°C to +60°C;
- f or maximum relative humidity of 80% for temperature up to 31°C, decreasing linearly to 25% relative humidity at temperature 50°C;
- f or environment with a degree of contamination 2 (PD2).

Storage and transportation conditions:

- for an ambient temperature :-40°C to +85°C;
- for relative humidity 5% to 90% without condensation

Manufacturer
Gen. Gurko 4 street
1000 Sofia,Bulgaria
Compliance with the WEEE Directive
The appliance marked with this symbol should not be disposed of with other household waste. It must be handed

over to the relevant collection point for the recycling of electrical and electronic equipment.

Safety Instructions

Please read the safety instructions before installing the device! Failure to follow the recommended instructions in this manual may be dangerous or in violation of the law. The manufacturer Melissa Climate Jsc., is not responsible for any loss or damage caused by failure to follow the instructions in the operating manual.

Legal Notices

All information, including but not limited to, features, functionality, and / or other product specifications are subject to change without notice. MClimate retains all rights to review or update its products, software or documenta-tion without being required to notify any natural or legal person.
The MClimate and MClimate logo are trademarks of Melissa Climate Jsc. All other brands and product names mentioned herein are trademarks of their respective owners.
EU Declaration of Conformity
This device complies with the essential requirements and other applicable provisions of the following EU directives:
2014/53/EC
EN 50491-3:2009
EEU 300 220-1 V3.1.1:2017
EEU 300 220-2 V3.1.1:2017
EN 60950-1:2006+A11:2009 +A1:2010+A12:2011+
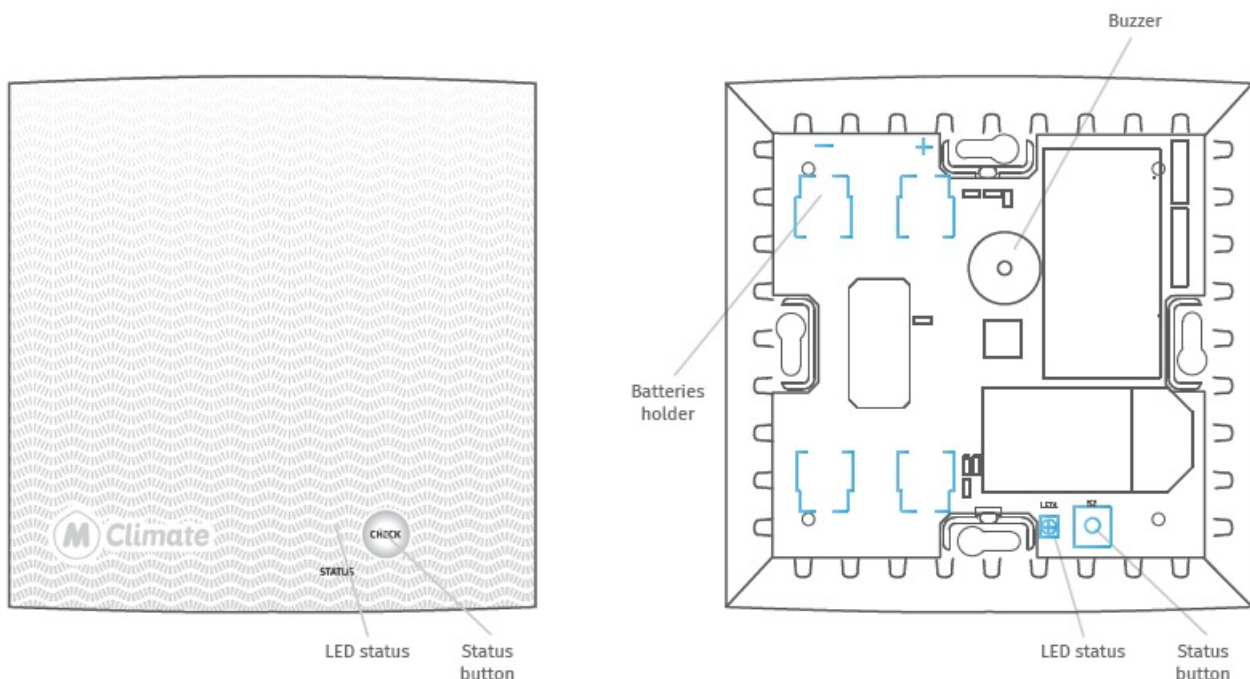A2:2013 + AC:2015
EN 301 489-1 V2.1.1:2017

Compatibility

In order to operate MClimate CO2 Sensor and Notifier LoRaWAN®, you will need: LoRaWAN® network
Battery
Battery type: 2xAA battery 1,5VDC Device operating voltage: 2.7 – 3.6VDC

Device parts

- Assembled MClimate CO2 Sensor and Notifier LoRaWAN®, top view
- Disassembled MClimate CO2 Sensor and Notifier LoRaWAN®, top view

IMPORTANT

CO2 Calibration mechanism and your first steps with the device

Please read carefully the information below to ensure your device will continously give good CO2 measurements. The first time you power up the CO2 sensor, it will perform auto-calibration within the first 2-8 hours. This means that you MUST leave the sensor at fresh air for at least 15 minutes after it has powered up and joined your LoRaWAN® network.
MClimate CO2 Sensor and Notifier automatically recalibrates its' sensor every 8 days using ABC algorithm. Every 8 days (also configurable by downlink) the device performs auto-calibration. This routine calibrates the sensor to set 400 ppm to the lowest value that has been sensed during the last period. This means that the sensor must be exposed to fresh (well ventilated) air at least once for the calibration to work. The sensor can also be manually calibrated.
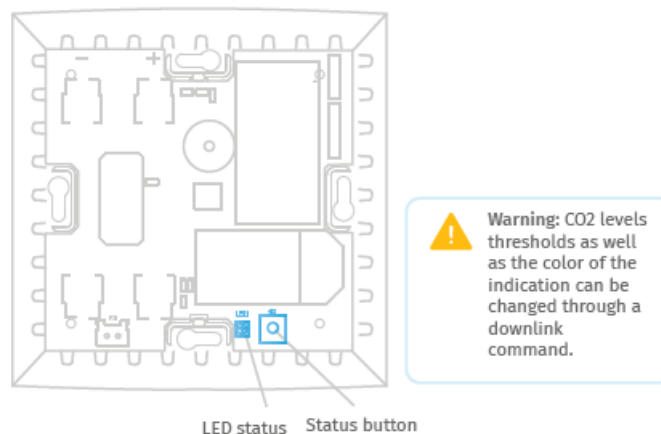The auto-calibration is particularly useful for spaces that are NOT occupied 24/7.
If you are using the MClimate CO2 Sensor and Notifier in constantly occupied spaces, please turn off the auto-calibration function.

LED, Buttons and behaviour

When you press the button, the device indicates the current:

1. CO2 Level
   - Green: Good CO2 levels (less than 900ppm by default)
   - Yellow: Medium CO2 levels (>900ppm and <1500ppm)
   - Red: Bad CO2 levels (>1500ppm)
2. Connection status
   - Constant indication: The device is connected to a LoRaWAN® network
   - Blinking indication: The device is not connected to a LoRaWAN® network

Warning: CO2 levels thresholds as well as the color of the indication can be changed through a downlink command.
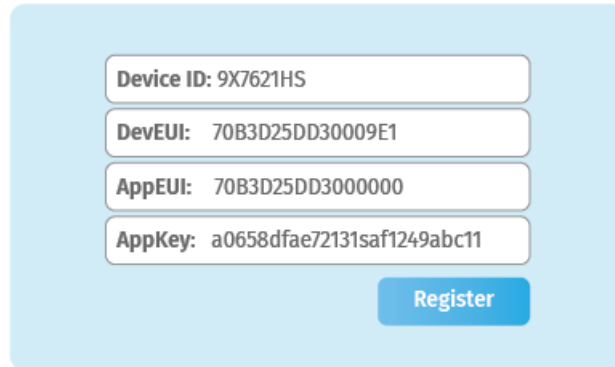
LED status   Status button

- LED status Status button
- Acoustic alarm: The acoustic alarm activates when the CO2 reading is in medium or bad level. The default settings are as follows:
- Good: No alarm
- Medium: 1 short beep every 10 minutes

- Bad: 1 short beep every 10 minutes.

Warning: Acoustic notification behavior can be changed with a downlink command!

Commissioning

1. Open your LoRaWAN® Network provider access panel and add the device using the supplied Serial Number, DevEUI, AppEUI (JoinEUI) and AppKey.

The data is example. Do not use.

2. Continue the Installation with the instructions of your LoRaWAN® Network provider.
   You can get DevEUI, AppEUI (JoinEUI) & AppKey information from the LoRaWAN® credentials .csv file we sent you with the fulfillment confirmation.
3. In order to remove the frontal plastic cover, apply pressure on the bottom and top and bottom sides of the device and gently lift one of the sides.
4. After inserting the 2xAA 1.5VDC batteries in the device, it will automatically connect to the network. In order to see whether the device has connected to the network, please check LED, Buttons and behaviour.
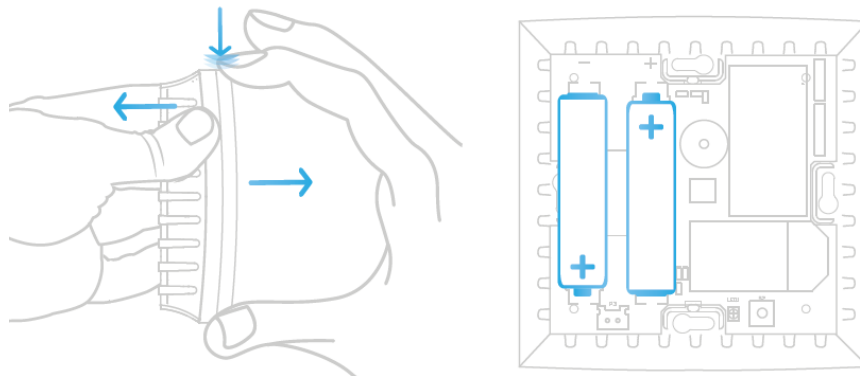
Installation

We recommend installing the device in an open environment (e.g. not in a recess) at 1.5m height. Do not install the device near air vents as it will negatively impact the measurements. Avoid large metal parts as it will worsen the RF performance. Use double-sided tape to attach it or remove the frontal plastic cover and use screws to attach it in a more permanent manner.
We recommend installing the device so that the QR code with the serial number stays on the bottom-right side of the device in order to ensure good measurements.
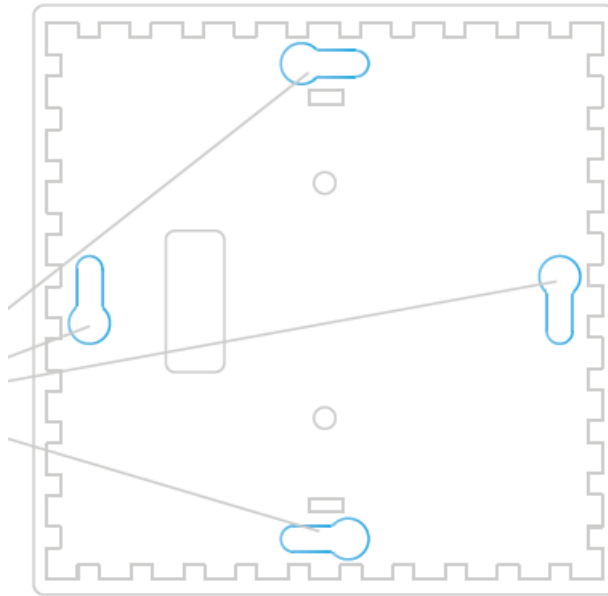
Documents / Resources

	MClimate MC-LW-CO2-01 CO2 Sensor and Notifier LoRaWAN [pdf] User Manual MC-LW-CO2-01, CO2 Sensor and Notifier LoRaWAN, MC-LW-CO2-01 CO2 Sensor and Notifier LoRaWAN

References

- Ⓜ **LoRaWAN Resources | MClimate**
- Ⓜ **MClimate | MClimate - We make any building smart**