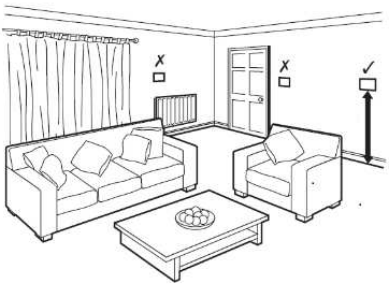
1. DESCRIPTION

The MCF-LW12CO2 is a battery powered sensor for indoor applications that reads temperature, relative humidity, pressure, ambient light index, IAQ air quality index add CO2. The device sends collected data over the LoRaWAN™ network. Ideally suited for a wide range of applications such as home buildings, air quality monitoring and energy saving applications.

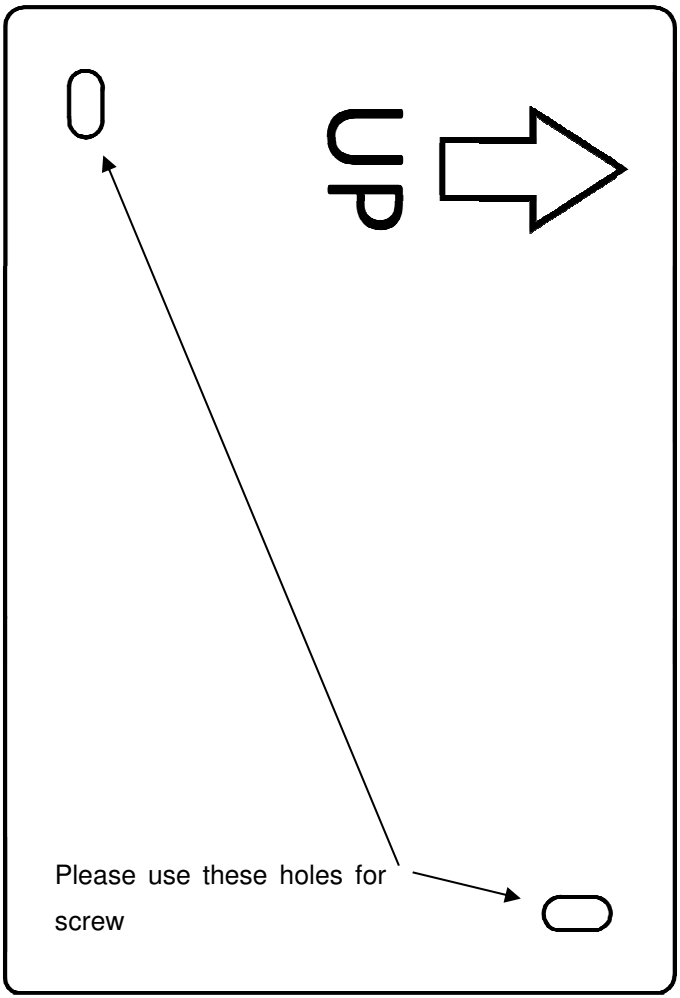
2. INSTALLATION

To ensure correct operation and reliable and consistent measurements, install the MCF-LW12CO2 sensor away from direct sunlight and heating sources like radiators, conveyors, TV, lights etc. and far away from doors and windows.



The device must be placed where the LoRaWAN™ signal coverage is good (SF = 7 optimal, SF = 12 weak). The sensor must be installed vertically on a wall at about 1.5mt height.
It must be at least 30cm away from metal objects, and 1mt away from electronic devices.

If necessary use drilling guideline as follow:



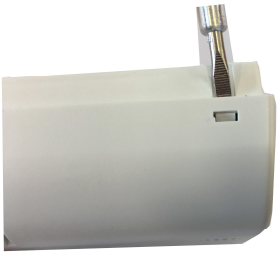
3. FIRST POWER-ON OF THE SENSOR

The sensor is shipped completely off to prevent battery consumption during storage. It is therefore necessary to carry out a first power-on prior to commissioning.
There are two ways to power on the sensor:

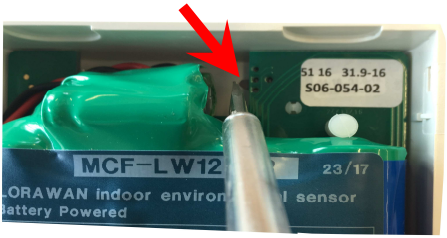
1. With NFC: Move the NFC antenna of the mobile (the exact position varies depending on the model of the smartphone) to the sensor antenna, in the area shown in the figure.

In case of long period inactivity, if necessary, is possible to shut-off again the sensor to prevent battery consumption, using the mcf88 APP.

2. Mechanical power on:
   Open the case using a screw driver as follow



By using a screw driver pushbutton for 1s as follow, moving right:

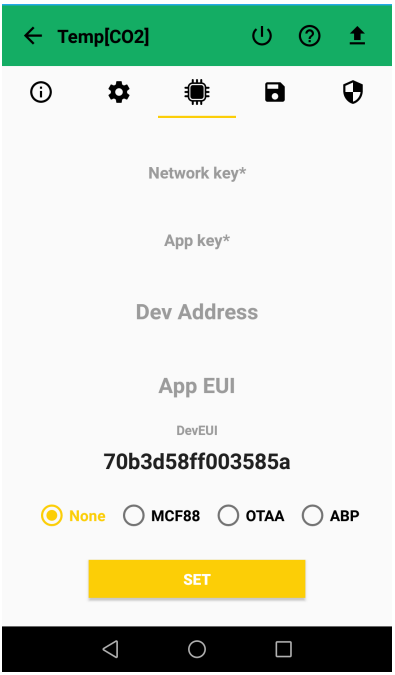


Close the plastic case.
Switch-on is visible by flashing of red and green leds.

4. LORAWAN ACTIVATION

The device supports the following activations on a LoRaWAN™ network:

1. **NONE**: sensor not activated
2. **OTAA**: the appkey and AppEUI must be written to the device.
3. **OTAA MCF88**: Over the air activation according to mcf88 specifications
4. **ABP**: requires writing to the device of NwkSkey, AppSkey, DevAddr



The device exits factory activated with **NONE** mode.
The DevEUI of the device is shown on the product label.

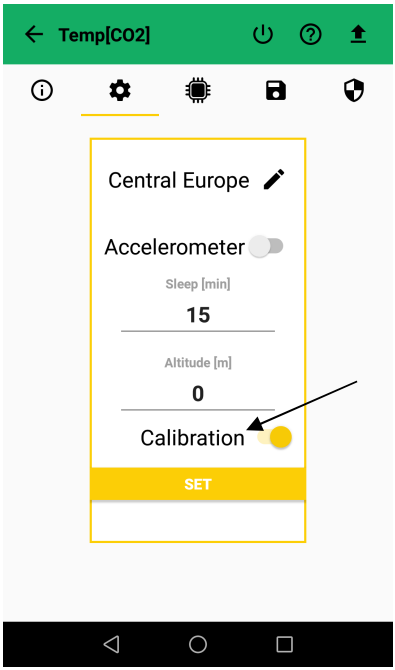
The application allows, in addition to parameters configuration, the firmware update.
Further features are:

LoRaWAN™ class	=>	class “A”
measuring interval	=>	minimum 15 min
transmission interval	=>	every 2 measures

5. SELF CALIBRATION

Due to the internal automatic calibration algorithm (enabled as default), the sensor must be exposed to true fresh air environment at least once a week.

If such an environment can never be expected to occur, either by sensor locality or ever-presence of CO2 emission sources (for example gree-house), or exposure to even lower concentrations than the natural fresh air baseline, the automatic calibration must be disabled with APP:



6. ALTITUDE SETTINGS

When the sensor is not installed at the sea level, the reading of barometric pressures at other elevations must be compensated.

Set the right altitude value with the APP: