User guide

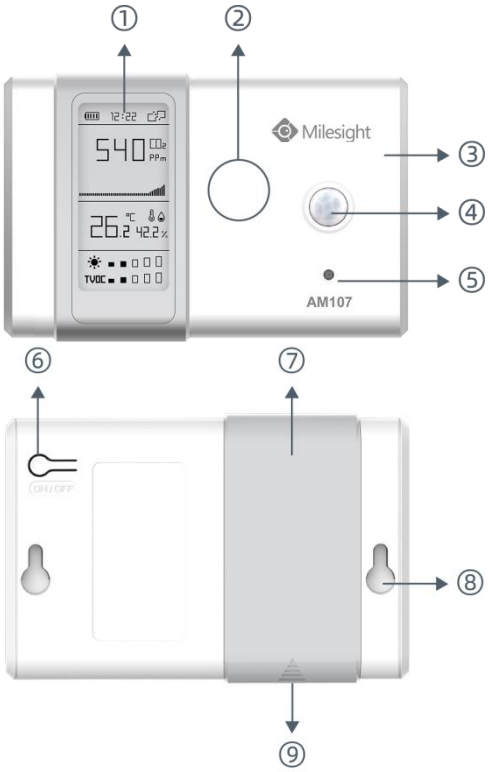
Indoor air quality sensor (AM107AT)

1. Overview

AM107 is a compact indoor air quality sensor used for temperature, humidity, CO_2 and motion monitoring. It is a battery powered device and is designed to be wall mounted.

Sensor data are transmitted in real-time using standard LoRaWAN® protocol. LoRaWAN® enables encrypted radio transmissions over long distance while consuming very little power.

2. Hardware Overview



Front Panel:

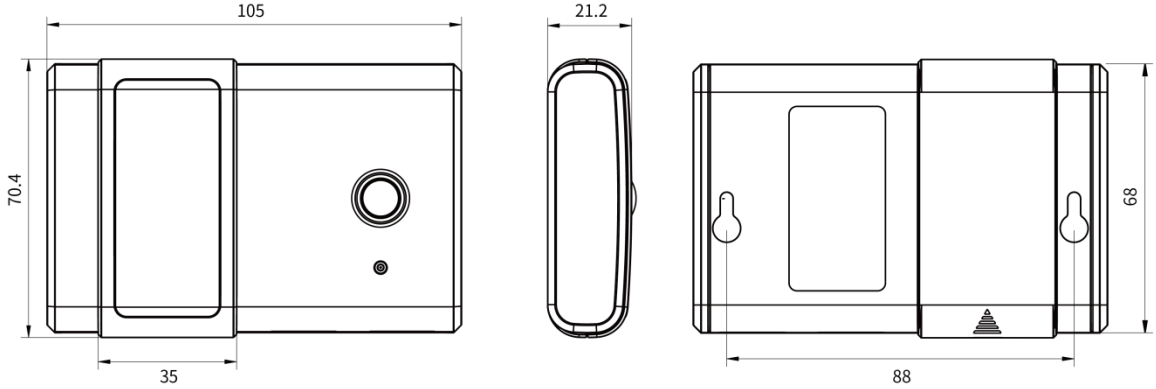
① E-ink screen
② NFC Area
③ LoRa Antenna (Internal)

Back Panel:

⑥ Power button
⑦ Battery Cover
⑧ Mounting Holes

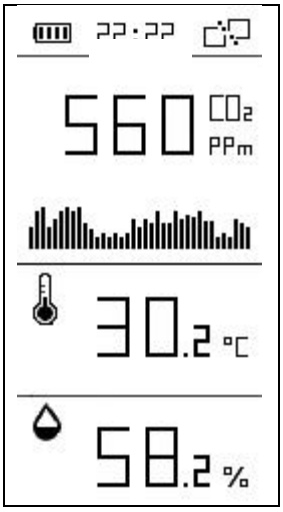
3. Dimensions

The following dimensions are in millimeters:



4. E-Ink Screen

The indoor air quality monitor provides 3 types of display modes:



To learn what an icon means, find it below.

Icon	Description	Screen Update
	Battery level	24 hours
	The device joins the network. The device fails to join the network.	According to join status
	Temperature	1 min
	Humidity	1 min
	Show CO_2 history tendency from 0 to 1400ppm. Show alarm when CO_2 exceeds the threshold value. (1000 ppm by default)	2 min

Note:

The indoor air quality monitor will do a full screen refresh every 30 minutes in order to remove ghosting.

5. Power Button

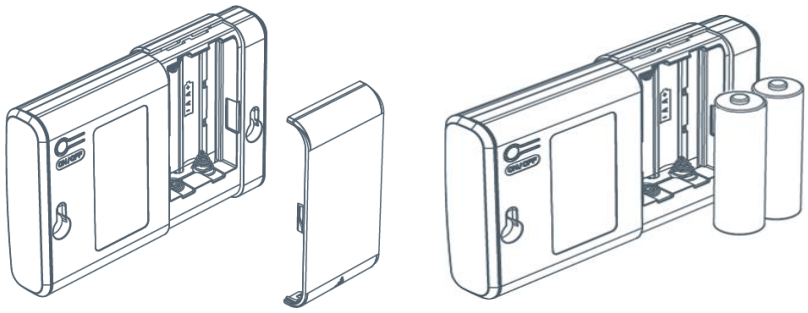
The indoor air quality monitor can be turned ON/OFF or reset by using the power button on the rear panel.

Function	Action

Turn On	Press and hold the power button for more than 3 seconds until the screen changes state.
Turn Off	Press and hold the power button for more than 3 seconds until the screen changes state.
Reset	Press and hold the power button for more than 10 seconds.
Change Screen Mode	Quick press the power button.

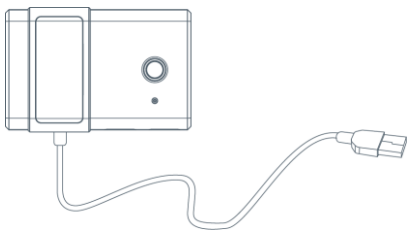
6. Power Supply

The indoor air quality monitor is powered by two ER14505 3.6V AA batteries. Batteries can easily be replaced by gently removing the battery cover in the back of the device. The battery lifetime is 4.4 years.



Note:

The indoor air quality monitor can also be powered by USB-C port (5V, 100mA). When batteries and external power are both connected, external power will be used to power the device. USB-C port can't be used to charge the batteries.



7. Installation

7.1 Sensor Location

The indoor air quality sensor must be installed:

- More than 2 meters away from the following:
  - Ventilation grids or air diffusers.
  - Opening windows.

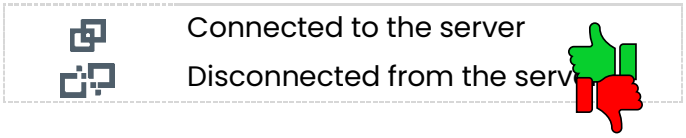
  - Heat sources (radiators).
- In a visible place and not behind a cupboard.
- More than 1.5 meter away from an occupant.
- At the height at which the occupants breathe (between 0.5 meter and 2 meters from the ground).
- On an interior wall (not exterior).

7.2 Turning ON the Sensor

1. Turn ON the sensor by pressing and holding the power button for 3 seconds until the screen changes state.

   Note :
   It may take up to 5 minutes for the sensor to display a first CO2 level value.

2. Wait a few minutes, then confirm the sensor is in range of a gateway by checking the server connection pictogram in the upper right corner of the screen. If it is not the case, validate the designated gateway is in operation.



   Note :
   It may be necessary to wait a few minutes for the sensor to connect to a gateway. If the sensor has remained turned ON and not connected to the server for more than one hour, it is recommended to turn it OFF (press and hold the power button for 3 seconds), then restart it to force a new connection attempt.

   Note :
   If the sensor cannot reach a gateway, it may be necessary to relocate the gateway while making sure it remains in the center of the targeted sensors. When it is not possible to achieve a configuration where all sensors are within range of a gateway, it may be necessary to install an additional gateway. If necessary, contact Assek Technologie by writing to support@assek.ca or by calling 1-888-833-8044.

7.3 Wall Installation

1. Place the mounting sticker horizontally to the classroom wall.

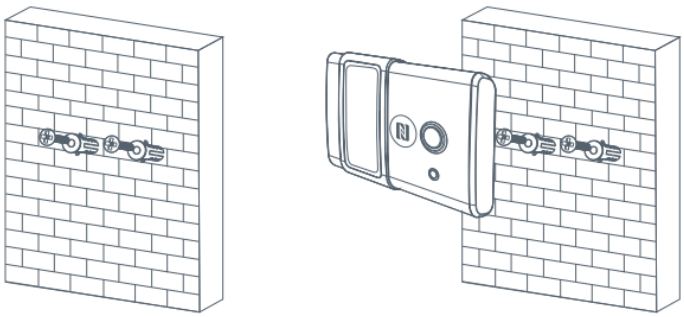
2. Drill two mounting holes with a 6 mm drill bit according to the sticker's mark.

   Note:
   Be sure to follow applicable standards if you drill into materials that contains asbestos.

3. Remove the mounting sticker from the wall.

4. Place the wall plugs into the holes using a hammer, then the mounting screws using a screwdriver leaving a space of about 5 mm between the screw head and the wall.

5. Mount the device on the wall by inserting the screws attached to the wall in its mounting cavities.



8. Configuration

The indoor air quality monitor is already pre-configured out of the box and will start sending data to the information system as soon as it is powered ON and in range of an active gateway.

The following parameters can be changed remotely on demand:

- Data reading interval
- E-ink screen display mode
- Co_2 recalibration (0ppm and ABC Calibration)
- Device displayed time
- Disable/enable a metric
- Co_2 threshold value (onscreen visual alarm)
- Reboot the device