AirGradient ONE Maintenance Manual

Models:
8PSL (Standard Model)
8PSL-DE (Display Edition)
8PSLM (Modbus Version)

Product Overview

AirGradient ONE is a powerful air quality monitor measuring $PM_{2.5}$, CO_2, TVOC, temperature and humidity.

Replacement sensor modules can be purchased from AirGradient and should be changed according to this estimated schedule:

PM Sensor: Every 2 Years
CO_2 Sensor: Every 10 Years

Actual required replacement schedule may differ due to operating environments.

Tools Needed

- Replacement sensor module from AirGradient
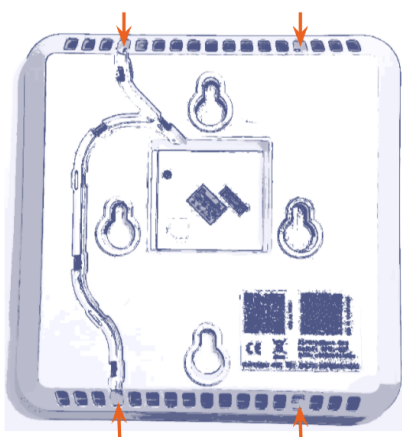- Philips Screwdriver
- Hex Screwdriver

Opening the Enclosure

Ensure that all power cables and the USB cable are disconnected from the monitor.
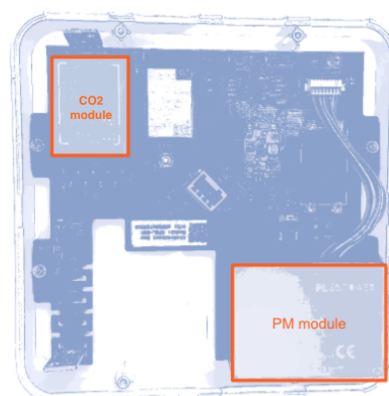
Caution: NEVER open the monitor when it is powered on or connected to a power adapter! The monitor contains sensitive modules that are susceptible to electrostatic discharge (ESD).
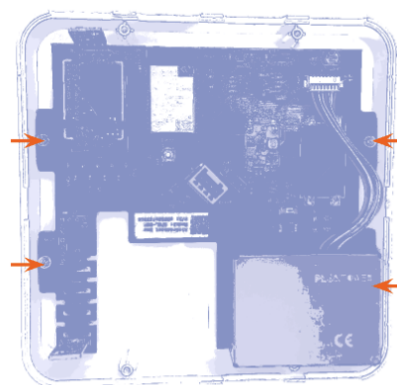
Unfasten Enclosure Screws

Place the monitor upside down onto a soft surface to prevent scratches. Unscrew the four screws located on the four corners of the monitor

After lifting off the back of the enclosure, locate the CO_2 and PM modules:

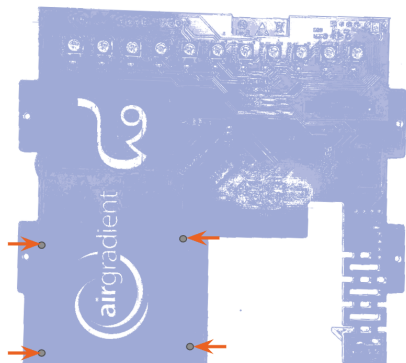Remove the PCB from the enclosure top by remove the four PCB screws:

Changing the CO_2 Module

To change the CO_2 sensor module, please follow these steps:

a) Cut the zip tie holding the CO_2 module in place
b) Lift the CO_2 module from its socket
c) Press the new CO_2 module in place
d) Use the supplied new zip tie to resecure the CO_2 module. DO NOT OVERTIGHTEN - the tie must not put pressure on the CO_2 module.

Changing the PM Module

To change the PM sensor module, please follow these steps:

a) Unplug the cable from the PM module
b) Turn the PCB around and remove the four screws

c) Screw in the new PM module and turn the PCB around
d) Plug back in the cable into the PM module. Ensure the cable is plugged in the correct way

Closing the Enclosure

Screw back the PCB into the top part of the enclosure.

Close and screw together the enclosure halves.

Test

Power on the sensor again and check that all sensor modules are providing valid data.

The PM module is pre-tested and pre-calibrated.

CO2 and TVOC baseline calibration

If the CO_2 data does not meet expected level when placed outdoors, then trigger CO_2 calibration from the AirGradient platform.

To do this, go to:
https://app.airgradient.com/settings/hardware

then find the sensor that you need to calibrate. In the actions menu, click on Edit Sensor and then in the following dialog, check "Request CO2 calibration" and Save.

After about 5 minutes, the sensor's CO2 reading should be at around 400ppm. You can then bring the sensor back inside.

The TVOC baseline can be calibrated in the same way by clicking the "delete TVOC baseline" button.

Important, please reboot the monitor by unplugging and replugging it after pressin the calibration buttons. Then the calibration should happen within 5 minutes.

Specifications

Name: AirGradient ONE
Dimensions: 130 x 130 x 36 mm
Weight: 300 g
Wireless Connectivity: Wi-Fi 2.4 GHz
Input: 100~240V AC, 50/60Hz USB-C
Output: 5V/2.0A
LED Bar: Color-LED (configurable)
Certifications: RESET™ Air, FCC, CE, RoHS, WEEE

Sensor Module Accuracy
$PM_{2.5}$ (laser scattering principle):
  ±10%@100~500μ g/m³,
  ±10μg/m³@0~100μ g/m³
CO_2 (NDIR): Range 0 - 10,000ppm, ± 40 ppm ± 3%, automatic baseline calibration
TVOC (multi-pixel gas sensor): 0 - 1,000 ppm of ethanol equivalents, accuracy: 15%
Temperature: Range: -40 to 125°C, ±0.3°C @ 0-90 °C
Relative Humidity: Range 0 - 100% RH, ±2% @ 0-100% RH

Safety Information

- Only use the provided charger and cable
- For indoor use only
- Unplug the sensor from the outlet before servicing
- DO NOT clean with liquid
- DO NOT use in wet or damp areas
- DO NOT exceed the recommended electrical ratings
- Operating ambient temperature: 0° to 50° Celsius

Manufacturer

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Made in China