Sensio Air V3 User Manual

Updated July 31, 2023.

Introduction

The Sensio Air indoor sensor is the first allergen tracker able to identify allergens in the air in real-time.

Currently, allergen detection is done manually by trained scientists using a spore trap (sticky tape) and analyzing it with expensive equipment.

Sensio Air is powered by Artificial Intelligence and Machine Learning and performs allergen characterization with an accuracy significantly superior to laboratory testing.

The sensor is updatable remotely to detect more particles based on the customer's needs.

The current version of the sensor is able to identify mold, dust mites, animal dander and pollen.

It's also able to monitor indoor parameters such as pollution (VOC and CO_2) as well as temperature, humidity, some units might be fitted with one or more of these sensors.
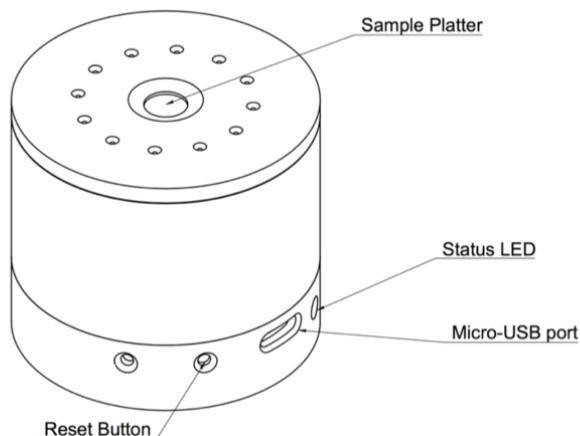
IMPORTANT NOTICE
The units are all fitted with anti-tamper stickers. If you remove or tamper with the unit you may be liable under the terms of conditions of usage. Attempting to reverse engineer the device will expose you or your company to serious legal consequences. Sensio Air is a registered trademark. Both the hardware and software are patent protected.

Technical Specification

Sensors	Temperature, humidity, VOC, CO2, Pathogen sensor
Wireless	802.11g/n @ 2.4GHz
Power input	micro-USB, 5 Volts
Power consumption	600mW (min 95mA; typical 105mA; max 350mA)
Dimensions	diameter of 70mm, height of 3.3mm
Weight	187g
Operating temperature	0 to 40 degrees Celsius

Additional sensors

Sensor	Manufacturer	Model
VOC and eCO2	Sciosense	ENS160-BGLM
Temperature and Humidity	Sensirion	SHT31-DIS-F2.5KS

Detected allergens

Mold	Alternaria, Aspergillus, Botrytis, Chaetomium, Cladosporium, Penicillium, Fusarium
Tree pollen	Ash, Aspen, Beech, Birch, Boxelder, Box European, Birch European, Cedar Japanese, Cedar Mountain, Cottonwood, Hazelnut, Mulberry, Olive, Palm, Poplar, Sycamore, Cypress Italian, Cypress Japanese, Elm, Oak

Weed pollen	Lamb's quarter, Mugwort common, Mugwort japanese, Pigweed, Plantain, Ragweed, Sagebrush,
Grass pollen	Bermuda, Johnson, Kentucky blue, Orchard, Ryegrass.
Dust mites	House dust mites.
Animal dander	Cat, Dog.
Other	Skin flakes

Prerequisites

Before using the device, please ensure that you have the following:

- A power socket
- The exact name and password of your 2.4 GHz WPA2 WiFi network
  PLEASE NOTE THAT THE SENSOR WILL NOT CONNECT TO 5GHz Wifi
- The Sensio Air mobile application (available on iPhone or Android) or a web browser on your Mac or PC, preferably Chrome.

Device management

A- Recommended use

1- Light interferes with the reading of the sensor, the best way to place a sensor is away from light in the darkest possible place of the room, make sure there's no overhead lighting - avoid direct sunlight or light sources interfering with the sensor.

2- Having more than a couple of sensors like any wifi product hampers the right operation of the devices, while they might work, the load on the router might pose issues with data transfer.

3- The wifi connectivity works from both the app and the desktop, make sure you try both before calling us.

4- Devices are to be used within the condition of use. Do not expose the devices to nonstandard conditions. Please do not expose to extreme conditions like heat, sunlight or humidity, and do not leave outside or exposed to water.

5- Please do not attempt to open the devices as this will break the calibration

6- Please make sure the sticker on the top of the device that says peel, is removed, do not touch or wipe the glass, only use canned air for clearing particles from the analysis plate.

The ideal position is about 120cm from the floor with the device pointing upwards.

Do not cover the device, do not use it outdoors.

B- Register your device with the app

Download the Sensio Air mobile application available for iPhone and Android. **In order to connect your indoor device to the app, you must have been granted special permission by sending the email you registered with to air@wlab.io**

C- Connecting your device to the WiFi Network - Explainer Video

Fast Track (If you know what you're doing):

Please connect the devices one by one, as they may interfere with each other

Step 1- Please wait for the blue light to appear, check on both your phone or computer to see if the network Sensio Air appears when it does

Step 2 - As soon as you connect Go to your browser and type in http://192.168.1.1/setup_network?ssid=**InputNetworkName**&password=**InputNetworkPassword**

Please replace the letters in bold and black with *Network Name* and *Network Password* - refresh the page just in case it takes time until it flashes green

Step 3 - Look at your device, is it now flashing green? if yes then it is connected if not please please try step 2 again -

Step 4 - if you do not see the network please unplug the device and try again from Step 1

If your network name has characters like **+, |, %** please go to the troubleshooting section of this manual.

Before starting, please make sure that you have a strong internet connection and that you know the username/password of your WiFi network. Also, download the Sensio Air App for Android or iPhone.

Connect the device using the micro-USB cable provided. Plug it into a power outlet with the provided adaptor and cable. If the device is properly powered, you should see the LED turn blue.

Step 1 - Open the Sensio Air mobile application, tap on add device (A) then open the WiFi settings of your phone, either by clicking on the "open settings" button (B) or by going out of the mobile application and opening the settings directly.

Step 2 - In your phone WiFi setting, select the network called "SensioAir". This network does not require a password (C). Go back in the Sensio Air mobile app and tap on "Next Step" (D).

Step 3 - In the Configure WiFi window, tap on the arrow and select the new WiFi network you wish the device to connect to from the scroll list. In figure E, the new WiFi network is called NETGEAR93 for example.

Step 4 - In the text box, enter the new WiFi network password. Pay extra attention while typing as it must match exactly the password (case sensitive). Tap on Submit (F).

Step 5 - Wait for a few seconds, the device will restart and the LED will turn green then white if the WiFi credentials are correct. If this is the case, tap on continue (G). If not, please go back to step 3.

Connecting your device with a browser

Step 1 - Connect your computer to the "Sensio Air" WiFi network.

Step 2 - Using your regular browser, enter the following IP address in the browser bar: "192.168.1.1"

Step 3 - In the text box, enter the network name and password of your WiFi network. Please note that this is case-sensitive.

Step 4 - Click on the submit button. The device will reboot and automatically connect to your WiFi.

Step 5 - Wait for a few seconds, the device will restart and the LED will turn green then white if the WiFi credentials are correct. If this is the case, tap on continue. If not, please go back to step 2.

-> *Once the device is connected to the internet*, it will automatically start analyzing the particles at the centre of the round collection slide *every 20 Minutes* unless configured otherwise. If this is the case, you will see **LEDs blinking White**.

If everything else fails and you cannot connect to WiFi

Step 1 - Please rename your network or iPhone tether with the <u>fallback network</u> *Network name* [Network_Name] *Password* [Password] **(please email us for the credentials)**

Step 2 - The device should connect automatically
Please note all devices should have a fallback network

Additional step: If the device fails to connect or connects to a Wifi that doesn't have a connection it will blink green but not reach a solid green position. You can start the device while keeping the button pressed and this should start the device in "Listening" mode so you can connect with your phone or computer.

To view results on the mobile app

Step 1 - Adding a device: After connecting successfully your device to the internet in the mobile app, enter the device credentials in the mobile application. You can find these on the sticker under the devices. The device code and password should be on the sticker on the base of the device
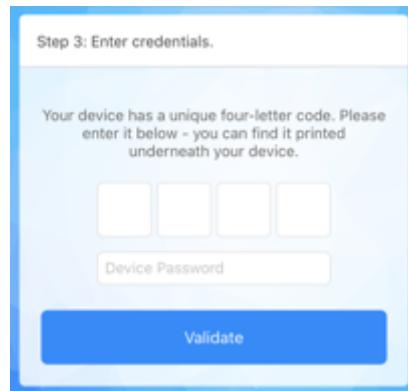
Step 2 - Seeing the device on the app: Once validated, the device will appear on the main page of the app. To view the reading details, please tap on either index boxes.
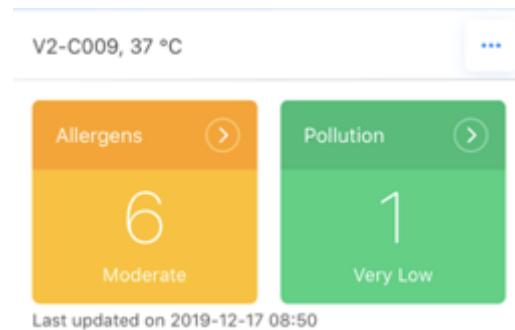
Step 3 - Notifications On the app you can tap the three points at the top right of the device box to enable or disable notifications.

APP Screenshots
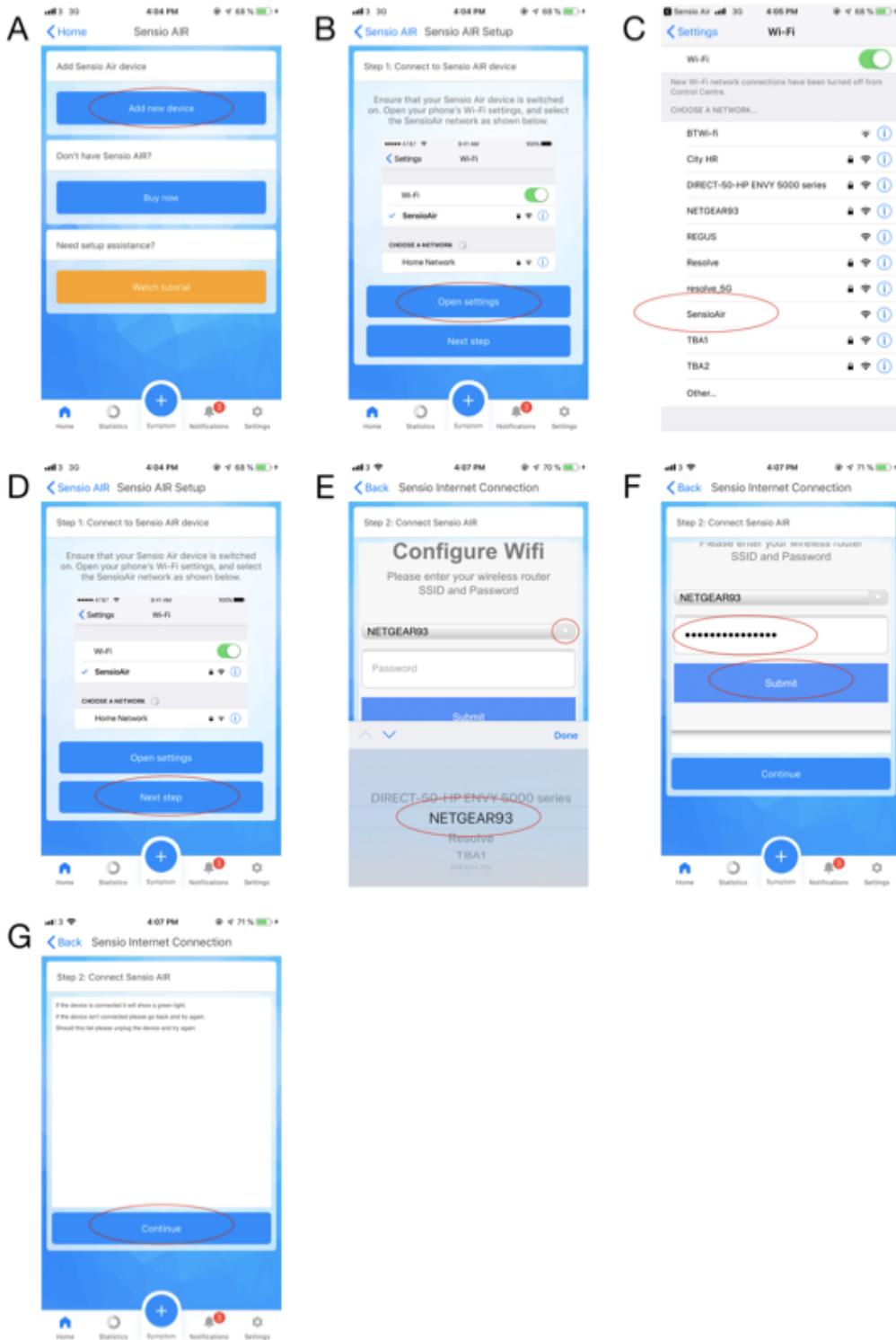
Disconnecting the device

To turn off the device, simply disconnect the micro-USB from the power outlet.
Please make sure to store the device in a safe place to avoid damage. If not in use, please place the device in its box or at least cover the collection plate to avoid unwanted dust accumulation

Resetting the WiFi credentials:

To reset and forget the WiFi credential stored on the device, press the button on the left side of the USB socket when plugging the USB cable in. The device LED will emit a blue light indicating it is ready to accept new connections.

If the connection to the router fails:

If the device cannot find any known WiFi networks the device LED will emit yellow light and the device will try to reconnect to the previously known connection for 5 minutes. If unsuccessful the device will accept new WiFi connections (blue LED). If no attempts are made to connect to the device through the app or browser, after a few minutes, the device will try to connect to the known connection again.

Troubleshooting guide

The device does not power/ the LED is off.	Please ensure that you are only using the cable and adaptor provided with the demo unit. If you are using a power bank, or alternative equipment this will damage the device.
The "sensioair" WiFI network does not show or does not connect.	Some networks will take up to 30 seconds to show on your phone or computer. If the LED is green, this means that the device is already connected to your WiFi network. For some operating systems, make sure to confirm the connection to the "sensioair" network when your phone informs you that it does not have a working internet connection.

The device does not connect to my WiFi network.	Please make sure that you have a confirmation message when you input your username and password.
	Please note that the demo unit does not support 5G network, make sure that you use a 2.4GHz network. If you suspect an IP address conflict, restart the device or router, if all fails please reach out to our team by email or on the website www.wlab.io
The LEDs around the sensor are always shining.	If you encounter this situation, simply unplug the device and plug it in again.
The device is working but I can't access my results.	Please ensure that your WiFi has proper access to the internet and no firewalls or additional security authentication. Please also check the internet speed. Make sure the app is configured properly and you have the right user account. Make sure you have the right device in the app.
I'm having issue setting up the WiFi credentials using the Sensio Air mobile application	You can use an alternative method as described below: 1. Upon first use, the device will emit a WiFi access point called "sensioair" after 30 seconds of powering. Using a computer or mobile phone, connect to this open access point (does not require username or password) - if you do not see the "sensioair" WiFi on your list; please refresh it. 2. Using the same computer or phone, open a web browser and type 192.168.1.1 in the address bar. 3. In the text box, enter the network name and password of your WiFi network. Please note that this is case-sensitive. 4. Click on the submit button. The device will reboot and automatically connect to your WiFI. If this is the case, you will see the LEDs light solid green.

IMPORTANT NOTE: If your Network name has special characters like **+**, **%, |** or other characters not compliant with syntax rules for network names you might want to check this link in order to input the credentials correctly.

LED color guide

Solid Green	The device is connected to the internet and is functioning well
Intermittent Green	The device is sending/receiving data
Red	General error - please disconnect and reconnect the device.
Blue	Device emitting "Sensio Air" network - ready for you to connect with your browser or app.
Purple	The device is Booting.
White	Device analyzing and sending data.
Orange / Yellow	Connected to WiFi but no data.
Intermittent Blue / Red Flicker	The device is updating to a new firmware version - Do Not Disconnect.

Boot

Booting up (Yellow) 🟡

Online check OK (Green) 🟢

Prepare sensor (Blinking Purple) ⚪🟣

Capture Sensor reading (Purple) 🟣

Sending data (Blinking Green) ⚪🟢

All OK, ready for next. (Green) 🟢

Manual capture with user button

Prepare sensor (Blinking Purple)

Capture Sensor reading (Purple)

Sending data (Blinking Green)

All OK, ready for next. (Green)

Important Notices

WLAB LTD provides the enclosed product under the following conditions:

- The user assumes all responsibility and liability for the proper and safe handling of the goods. Further, the user releases WLAB LTD from all claims arising from the handling or use of the goods. It is the user's responsibility to take any and all appropriate precautions with regard to electrostatic discharge.
- Protection impairment may occur if the device is used in a manner not specified by the manufacturer, potentially leading to hazards or damage.
- This equipment contains specified radio equipment that has been certified to the Technical Regulation Conformity Certification under the Radio Law.
- The device should only be used indoors, and should not be left unattended in hazardous conditions.
- The user should maintain a 20cm safety distance from the device.
- No license is granted under any patent right or other intellectual property whatsoever.
- WLAB LTD assumes no liability for applications assistance, customer product design, software performance, or infringement of patents or any other intellectual property rights of any kind.
- Please note that this document is confidential and should not be distributed or disseminated without the written consent of WLAB LTD.

FC IC CE **RoHS** COMPLIANT

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FCC Compliance Notice

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

ISED Compliance Notice

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

RF warning for Mobile device: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Avertissement RF pour appareil mobile: Cet équipement est conforme aux directives d'exposition RF. l'utilisateur peut obtenir des informations canadiennes sur l'exposition aux RF et la conformité. La distance minimale entre le corps et l'utilisateur de l'appareil est de 20 cm.