CaDi

CI-100 Carbon Dioxide Monitor
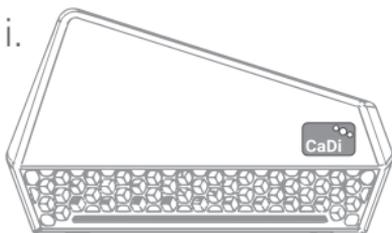
User Manual

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Introduction

Before using CaDi please read this manual. This manual provides important information to help you use this device properly. Retain this manual for future reference.

In order to use CaDi you need a Wi-Fi router and access to the internet. You also need an Android smartphone or tablet that can connect to the internet in order to download the CaDi app.

What's in the box

i.   CaDi monitor
ii. USB cable
iii. Power adapter
iv. Reset pin

CaDi CI-100 Overview

The CaDi CI-100 CO2 monitor is a non-dispersive infrared (NDIR) based Carbon Dioxide (CO2) Sensor designed for monitoring CO2 concentration levels in domestic dwellings, offices and other indoor environments for the purposes of effectively managing ventilation for occupants comfort and health. The monitor features a CO2 sensor that is stable and maintenance free with a measurement range from 0-5000ppm. The CO2 monitor comes with integrated WiFi to enable remote monitoring via a smartphone app.

Why monitor CO2:

Carbon dioxide (CO2) is a colorless, odorless gas formed by humans and animals as they exhale carbon dioxide as well as a by-product from fires and other combustion sources.

Although CO2 is not toxic, elevated levels indicate that insufficient fresh air is being circulated to occupants and that other pollutants may also be building up indoors and so controlling CO2 levels will help control indoor air quality in general.
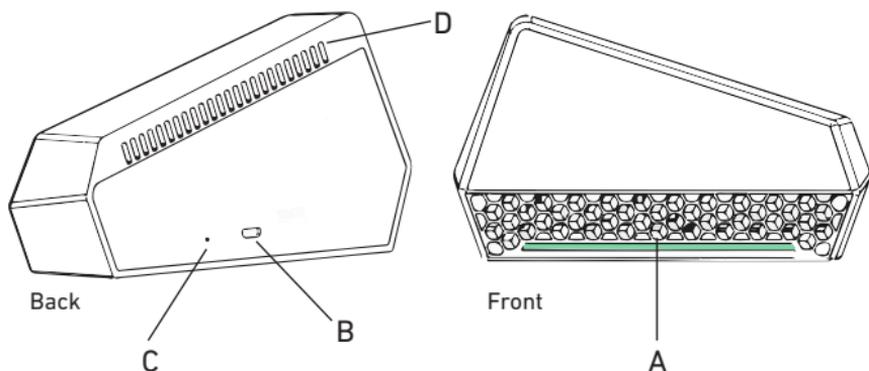Simple steps such as ensuring vents are kept open and windows are opened whenever CO2 levels build up can maintain good levels of indoor air quality.

The following table provide guidance on the optimum level of CO2 are and what is considered fair and poor levels of CO2.
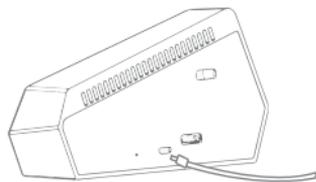
OK 0-999 ppm	Good Ventilation Typical of normal CO2 levels in occupied spaces
Fair 1000-1999 ppm	Inadequate Ventilation Can cause feelings of drowsiness and or headaches
Poor 2000-5000 ppm	Poor Ventilation Stale, stagnant air which can cause drowsiness, nausea and poor concentration

Know your CaDi sensor

CaDi

A. **Status LED** – LED will flash when setting up and or when the device is disconnected from Wi-Fi. A steady Green LED is on when connected. It changes colour from Green to Orange to Red depending on CO_2 level, Green being Ok.

B. **Power Port** – Connects the included power adapter with your CaDi sensor.

C. **Reset Button** – Resetting CaDi will allow you to connect to a new Wi-Fi network (useful if you change the sensor's location or change your Wi-Fi password). Using the reset pin supplied and with the CaDi sensor powered on; Press this button for 8 seconds and then release. If the sensor has reset correctly the Status LED's will slowly blink green.

D. **Air Vents** – These are important vents that allow air flow through your sensor – be careful not to block these and leave plenty of space (at least 10 cm) between other surfaces for optimum performance. Please refer to 'Cleaning your CaDi sensor' (page 7) for more information.

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Quick start steps

1. Plug in your CaDi sensor using the power supply included. Plugging the sensor in turns on the sensor – there's no on or off switch. After powering on, please leave it unattended during setup so it can adjust to it's surroundings. You will see the status LED start to blink

2. Download and install the CaDi app onto your android device. Go to Google Play and search for 'CaDi' to find the app.

3. After installation, follow the set up instructions on your device to set up CaDi with your Wi-Fi.

Select your Home WiFi:

NuWaveSensor
Connected

WiFi Router 1

WiFi Router 2

4. Start using CaDi – after setting up your sensor to your home network, CaDi will start collecting air quality information. It will take a few minutes to start displaying CO2 readings on the app.
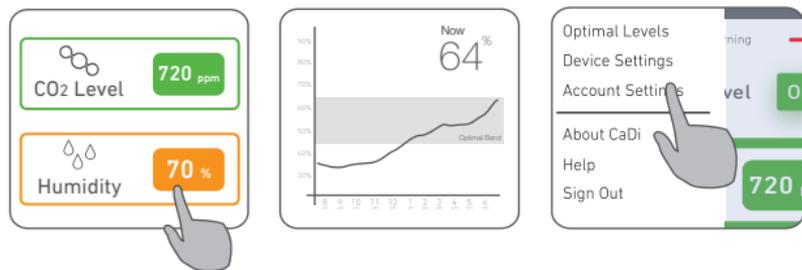
For more information, support or to read frequently asked questions, please visit www.nuwavesensors.com/support

Using the CaDi app

The CaDi app is how you can interact with your sensor and see the CO2 levels in your home. For a full list of features and to learn more about using the CaDi app, please visit: www.nuwavesensors.com/support

The following are some of the major features of the CaDi app:

App Dashboard
The dashboard is the main page on the app and where you can view all of the different sensor readings. Each sensor has its own widget which displays the current reading while the surrounding widget box changes colour depending on air quality. Pressing one of the widgets will tell you more about the data from that sensor.

Optimal Levels
Each sensor has an optimal band which is the ideal level each sensor should be reading. This is a recommendation to help you understand what is ideal but do not worry if your sensor is reading above or below the optimum bands. You can find tips and recommendation on how to improve air quality in your home on the Optimal Levels page which is accessible from the main menu.

Compatibility
• Android: Android smart devices running on Android 4.4 and higher

Where to place CaDi

- CaDi is designed to be used indoors only. We recommend placing a CaDi sensor in every room that is commonly used such as your kitchen, living room, bedroom or in the work environment.
- CaDi should be installed at least 3 m (10 ft) away from cooking appliances.
- To help CaDi work at its best please ensure that there is a clear space around your CaDi sensor with no obstructions.
- Do not place your CaDi sensor near any heat source such as a radiator or at a window or direct sunlight.
- Place CaDi within range of your wireless network.
- Place on a flat surface in an open space – avoid placing in areas where airflow may be obstructed
- Avoid placing CaDi within reach of pets and children.

⚠️ Important notes

- CaDi is designed to help you understand the CO_2 levels in indoor environments. CaDi is not a medical device and is not designed to diagnose, treat, cure, or prevent any disease.
- Please consult your doctor if you have any concerns about air quality and its effect on your respiratory system or general health.
- CaDi is not designed to detect carbon monoxide and is not a replacement for a carbon monoxide alarm.
- CaDi is not a replacement for a smoke alarm.

Important precautions when using CaDi

Caution! This device is recommended for use indoors and in a dry location only.

- Avoid using CaDi in very dusty environments as dust build up may obstruct the air flow within the device.
- Take care when using CaDi to route the power cable in a way that reduces the risk of injury to others, such as by tripping or choking.
- Do not cover or obstruct vents around the CaDi sensor.
- Only use the power adapter supplied with CaDi.
- Do not open or disassemble the CaDi sensor as this will void the warranty.
- Do not insert anything through the vents.
- Do not concentrate any gas, dust or chemicals directly at the CaDi sensor.
- Do not use this device near water.
- Do not drop or subject the device to undue shock.
- Do not place in insect-infested areas. Insects can block vent openings to the sensor and cause unwanted alerts.

Cleaning your CaDi sensor

CaDi is designed to be maintenance free, but you should keep it clean and avoid dust build up - especially around the air vents of the sensor which can reduce performance.
To clean CaDi:
1. Turn off mains power and remove the power adapter plug from CaDi.
2. Wipe the outside with a clean, slightly damp cloth. Don't use soap or solvents!
3. Very gently vacuum around the vents of the CaDi sensor to remove dust obstructing the vent openings.

Note:
- Never use detergents or solvents on your CaDi sensor or spray air fresheners, hair spray or other aerosols near it.
- Do not place CaDi in water or let water get inside the CaDi sensor.
- Do not paint your CaDi sensor.

Recycling and disposal

The WEEE symbol on this product means that CaDi should be disposed of separate from ordinary household waste at the end of its life in accordance with local regulations. Please take CaDi to a collection point designated by your local authority to be recycled to help conserve natural resources.

Regulatory notes:

European Union Regulatory Conformance

• This wireless device complies with the applicable requirements of EU Directives.

• Low Voltage Directive (LVD) 2014/35/EU, EMC directive 2014/30/EU.

• This device meets the following conformance standards:

EN 61010-1 for Safety and EN 61326-1 for EMC

EU Declaration of Conformity

The complete declaration of conformity can be found here:

www.nuwavesensors.com/doc/CI-100

Federal Communications Commission (FCC) Statement

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:

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.

FCC Warning:

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

Limited Product Warranty

THIS LIMITED WARRANTY CONTAINS IMPORTANT INFORMATION ABOUT YOUR RIGHTS AND OBLIGATIONS, AS WELL AS LIMITATIONS AND EXCLUSIONS THAT MAY APPLY TO YOU AS PART OF THE TERMS AND CONDITIONS OF SALE IN EFFECT AT THE TIME THAT YOU PURCHASE A NUWAVE SENSOR TECHNOLOGY LIMITED PRODUCT.

What this warranty covers?

NuWave Sensor Technology Limited ("NuWave") warrants to the original purchaser of this CI-100 sensor (the "Product") shall be free of defects in design, assembly material, or workmanship under normal use for a period of one (1) year from the date of purchase (the "Warranty Period"). NuWave does not warrant that the operation of the Product will be uninterrupted or error-free. NuWave is not responsible for damage arising from failure to follow instructions relating to the Product's use. This Limited Warranty does not cover software embedded in the Product and the services provided by NuWave to owners of the Product. Refer to the licence agreement accompany -ing the software for details of your rights with respect to their use.

Remedies

NuWave will repair or replace, at its option, any defective product free of charge (except for shipping charges for the product). Any replacement hardware product will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer. In the event that NuWave is unable to repair or replace the product (for example, because it has been discontinued), NuWave will offer either a refund or a credit towards the purchase of another product from NuWave in an amount equal to the purchase price of the product as evidenced on the original purchase receipt.

What is not covered by this warranty?

The warranty is null and void if the Product is not provided to NuWave for inspection upon NuWave's request, or if NuWave determines the Product has been improperly installed, altered in any way, or tampered with. The NuWave Product Warranty does not protect against floods, lightning, earthquakes, war, vandalism, theft, normal-use wear and tear, erosion, depletion, obsolescence, abuse, damage due to low voltage disturbances such as brownouts, non-authorised program or system equipment modification, alternation or other external causes.

How to Obtain Warranty Service

Please review the online help resources at nuwavesensors.com/support prior to seeking warranty service. To get service for your CaDi sensor you must take the following steps;
1. Contact NuWave Sensors customer support. Customer Support contact information can be found by visiting www.nuwavesensors.com/support
2. Provide the following to the customer support agent;
    a. The serial number found on the back of your CaDi sensor
    b. Where you purchased the product
    c. When you purchased the product
    d. Proof of payment
3. Your customer service representative will then instruct you on how to forward your receipt and your CI-100 as well as how to proceed with your claim.

It is likely that any stored data relating to the product will be lost or reformatted during service and NuWave will not be responsible for any such damage or loss.

NuWave reserve the right to review the damaged NuWave product. All costs of shipping the Product to NuWave for inspection shall be borne by the purchaser. Damaged equipment must remain available for inspection until the claim is finalised. Whenever claims are settled NuWave reserves the right to be subrogated under any existing insurance policies the purchaser may have.

Implied Warranties

EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ALL IMPLIED WARRANTIES (INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) SHALL BE LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. Some jurisdictions do not allow limitations on the duration of an implied warranty, so the above limitation may not apply to you.

Limitation of Damages

IN NO EVENT SHALL NUWAVE BE LIABLE FOR INCIDENTAL, SPECIAL, DIRECT, INDIRECT, CONSEQUENTIAL OR MULTIPLE DAMAGES SUCH AS, BUT NOT LIMITED TO, LOST BUSINESS OR PROFITS ARISING OUT OF THE SALE OR USE OF ANY NUWAVE PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Statutory Rights

This warranty gives you specific legal rights, and you may have other rights, depending on your jurisdiction. These rights are not affected by the warranties in this Limited Warranty.

Technical Support

www.nuwavesensors.com/support

Technical Specifications

Sensor Ranges
Carbon dioxide Sensor: 0 to 5000 ppm / 0.04 to 2% Volume CO_2
CO_2 Sensor Accuracy: ± 40 ppm, ±3% of reading
Humidity Sensor: 5% to 95% RH
Temperature: -10°C to 85°C

Connectivity: WiFi 802.11 b/g/n @2.4GHz

Power Input: 5V, 90mA

Product Dimensions
CaDi unit:
    Dimensions (L x W x D): 140 x 80 x 50 mm
    Weight: 5 oz/150 g
With packaging:
    Dimensions (L x W x D): 200mm x 100mm x 100mm
    Weight: 12 oz/350 g