

# Air Quality Logger Model 1510



**ENVIRONMENTAL TESTERS**

Copyright© Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments. All rights reserved.

No part of this documentation may be reproduced in any form or by any means (including electronic storage and retrieval or translation into any other language) without prior agreement and written consent from Chauvin Arnoux®, Inc., as governed by United States and International copyright laws.

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments  
15 Faraday Drive • Dover, NH 03820 USA  
Phone: (603) 749-6434 or (800) 343-1391 • Fax: (603) 742-2346

This documentation is provided **as is**, without warranty of any kind, express, implied, or otherwise. Chauvin Arnoux®, Inc. has made every reasonable effort to ensure that this documentation is accurate; but does not warrant the accuracy or completeness of the text, graphics, or other information contained in this documentation. Chauvin Arnoux®, Inc. shall not be liable for any damages, special, indirect, incidental, or inconsequential; including (but not limited to) physical, emotional or monetary damages due to lost revenues or lost profits that may result from the use of this documentation, whether or not the user of the documentation has been advised of the possibility of such damages.

# Statement of Compliance

Chauvin Arnoux<sup>®</sup>, Inc. d.b.a. AEMC<sup>®</sup> Instruments certifies that this instrument has been calibrated using standards and instruments traceable to international standards.

We guarantee that at the time of shipping your instrument has met the instrument's published specifications.

**An NIST traceable certificate may be requested at the time of purchase, or obtained by returning the instrument to our repair and calibration facility, for a nominal charge.**

The recommended calibration interval for this instrument is 12 months and begins on the date of receipt by the customer. For recalibration, please use our calibration services. Refer to our repair and calibration section at [www.aemc.com/calibration](http://www.aemc.com/calibration).

**Serial #:** \_\_\_\_\_

**Catalog #:** 2138.08 / 2138.09

**Model #:** 1510

Please fill in the appropriate date as indicated:

Date Received: \_\_\_\_\_

Date Calibration Due: \_\_\_\_\_



Chauvin Arnoux<sup>®</sup>, Inc.  
d.b.a AEMC<sup>®</sup> Instruments  
[www.aemc.com](http://www.aemc.com)

---

# TABLE OF CONTENTS

---

<b>1. INTRODUCTION.....</b>	<b>6</b>
1.1 INTERNATIONAL ELECTRICAL SYMBOLS .....	6
1.2 DEFINITION OF MEASUREMENT CATEGORIES (CAT) .....	6
1.3 PRECAUTIONS FOR USE .....	7
1.4 RECEIVING YOUR SHIPMENT .....	7
1.5 ORDERING INFORMATION .....	7
1.5.1 Accessories .....	8
1.5.2 Replacement Parts.....	8
<b>2. PRODUCT FEATURES.....</b>	<b>9</b>
2.1 INSTRUMENT REAR PANEL & BATTERY INSTALLATION ...	9
2.2 INSTRUMENT FRONT PANEL.....	10
2.3 INSTRUMENT FUNCTIONS.....	10
2.4 TURNING THE INSTRUMENT ON/OFF.....	11
2.5 FUNCTION BUTTONS .....	11
2.6 DISPLAY .....	12
<b>3. OPERATION .....</b>	<b>13</b>
3.1 MAKING A MEASUREMENT .....	13
3.1.1 Selecting Temperature Units.....	13
3.2 PORTABLE MODE .....	13
3.3 1D AND 3D MODES.....	13
3.3.1 1D and 3D Modes Activation .....	14
3.3.2 Visible and Audible Warnings .....	15
3.4 ECO (ENERGY SAVING) MODE .....	16
3.5. P_REC (PROGRAMMED RECORDING) MODE .....	17
3.6. MIN MAX FUNCTION.....	17
3.7. HOLD FUNCTION .....	18
3.8. M_REC (MANUAL RECORDING) FUNCTION .....	19
3.9. BACKLIGHT .....	19
3.10 ALARM BUZZER.....	20
3.11. ERROR MESSAGES .....	20
3.11.1. OL (Overload) Symbol .....	20
3.11.2. Err (Error) Symbol.....	20
3.11.3. MEM_FULL (Memory Full) Symbol .....	21

- 4. DATAVIEW® ..... 22**
  - 4.1. DATAVIEW® INSTALLATION ..... 22
  - 4.2. CONNECTING THE INSTRUMENT TO A COMPUTER ..... 22
- 5. SPECIFICATIONS ..... 24**
  - 5.1. REFERENCE CONDITIONS ..... 24
  - 5.2. MEASUREMENT CHARACTERISTICS ..... 24
    - 5.2.1. CO<sub>2</sub> Measurements ..... 24
    - 5.2.2. Influences on the Measurements of CO<sub>2</sub> ..... 24
    - 5.2.3. Temperature Measurements ..... 24
    - 5.2.4. Humidity Measurement ..... 25
    - 5.2.5. Influence of the temperature on the relative humidity measurement ..... 25
  - 5.3. MEASUREMENT MODES ..... 26
  - 5.4. POWER SUPPLY ..... 26
  - 5.5. RECORDING ..... 26
  - 5.6. ENVIRONMENT CONDITIONS ..... 26
  - 5.7. MECHANICAL CHARACTERISTICS ..... 27
  - 5.8. COMPLIANCE WITH INTERNATIONAL STANDARDS ..... 27
  - 5.9. ELECTROMAGNETIC COMPATIBILITY ..... 27
- 6. MAINTENANCE ..... 28**
  - 6.1. CLEANING ..... 28
  - 6.2. BATTERY REPLACEMENT ..... 28
  - 6.3 REPAIR AND CALIBRATION ..... 29
  - 6.4 TECHNICAL ASSISTANCE ..... 30
  - 6.5 LIMITED WARRANTY ..... 30
    - 6.5.1 Warranty Repairs ..... 31

---









# 1. INTRODUCTION

---

Thank you for purchasing an AEMC® Instruments **Air Quality Logger Model 1510**.

For the best results from your instrument and for your safety, you must read the enclosed operating instructions carefully and comply with the precautions for use. Only qualified and trained operators should use this product.

## 1.1 INTERNATIONAL ELECTRICAL SYMBOLS

	<b>CAUTION - Risk of Danger!</b> Indicates a <b>WARNING</b> . Whenever this symbol is present, the operator must refer to the user manual before operation.
	Indicates Important information to acknowledge
	Battery
	Magnet
	The product has been declared recyclable.
	This product complies with the Low Voltage & Electromagnetic Compatibility European directives.
	Chauvin Arnoux® and AEMC® Instruments have adopted an Eco-Design approach in order to design this instrument. Analysis of the complete lifecycle has enabled us to control and optimize the effects of the product on the environment. In particular this instrument exceeds regulation requirements with respect to recycling and reuse.
	In the European Union, this product is subject to a separate collection system for recycling electrical and electronic components in accordance with directive WEEE 2012/19/EU.

## 1.2 DEFINITION OF MEASUREMENT CATEGORIES (CAT)

**CAT IV** corresponds to measurements performed at the primary electrical supply (< 1000 V).

*Example: primary overcurrent protection devices, ripple control units, and meters.*

**CAT III** corresponds to measurements performed in the building installation at the distribution level.

*Example: hardwired equipment in fixed installation and circuit breakers.*

**CAT II** corresponds to measurements performed on circuits directly connected to the electrical distribution system.

*Example: measurements on household appliances and portable tools.*

### 1.3 PRECAUTIONS FOR USE

This instrument is compliant with safety standard IEC 61010-2-030, for voltages up to 5 V with respect to ground. Failure to observe the following safety instructions may result in electric shock, fire, explosion, and damage to the instrument and/or the installation in which it is located.

- The operator and/or the responsible authority must carefully read and clearly understand all precautions to be taken prior to using the instrument. Thorough knowledge and awareness of electrical hazards are essential when using this instrument.
- Observe the conditions of use, including temperature, relative humidity, altitude, pollution degree, and location of use.
- Do not use the instrument if it appears damaged, incomplete, or improperly closed.
- Before each use, check the condition of the housing and accessories. Any item on which the insulation is deteriorated (even partially) must be set aside for repair or disposal.
- Never make measurements in atmospheres contaminated by solvents, which could damage the sensor.
- All troubleshooting and metrological checks must be done by accredited personnel.

### 1.4 RECEIVING YOUR SHIPMENT

Upon receiving your shipment, make sure that the contents are consistent with the packing list. Notify your distributor of any missing items. If the equipment appears to be damaged, file a claim immediately with the carrier and notify your distributor at once, giving a detailed description of any damage. Save the damaged packing container to substantiate your claim.

### 1.5 ORDERING INFORMATION

Air Quality Logger Model 1015 (gray)..... **Cat. #2138.08**

Air Quality Logger Model 1015 (white)..... **Cat. #2138.09**

*Both models include soft carrying pouch, (2) AA batteries, 6 ft USB cable, quick start guide, USB drive with DataView® software and user manual.*

### 1.5.1 Accessories

Adapter, Bluetooth USB for Simple Logger II 4-Channel Models, 6417, 1510 & L452 .....	<b>Cat. #2126.45</b>
Wall Mount for Models 1520 & L452 (gray or black) .....	<b>Cat. #2138.61</b>
Desk Stand for Model 1510 (white) .....	<b>Cat. #2126.62</b>
Calibration Kit for Model 1510 (includes calibration software CD)..	<b>Cat. #2138.63</b>
Metal Carrying Case .....	<b>Cat. #2138.65</b>
Wall Mount for Model 1510 (white) .....	<b>Cat. #2126.67</b>
Adapter - USB Wall Plug .....	<b>Cat. #2153.78</b>

### 1.5.2 Replacement Parts

Cable - Replacement 6 ft (1.8 m) USB .....	<b>Cat. #2138.66</b>
Soft Carrying Pouch.....	<b>Cat. #2117.73</b>

**Order Accessories and Replacement Parts Directly Online**

Check our Storefront at [www.aemc.com/store](http://www.aemc.com/store) for availability



---

## 2. PRODUCT FEATURES

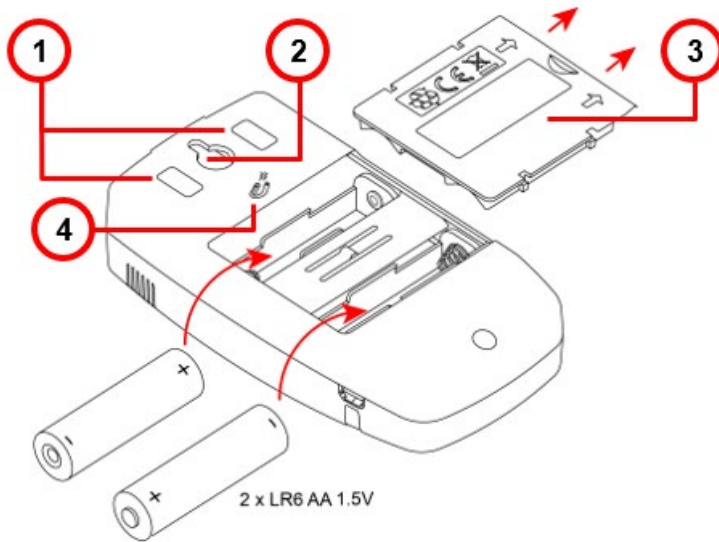
---

### 2.1 INSTRUMENT REAR PANEL & BATTERY INSTALLATION

The instrument accepts (2) AA or LR6 alkaline batteries.

#### Rear panel:

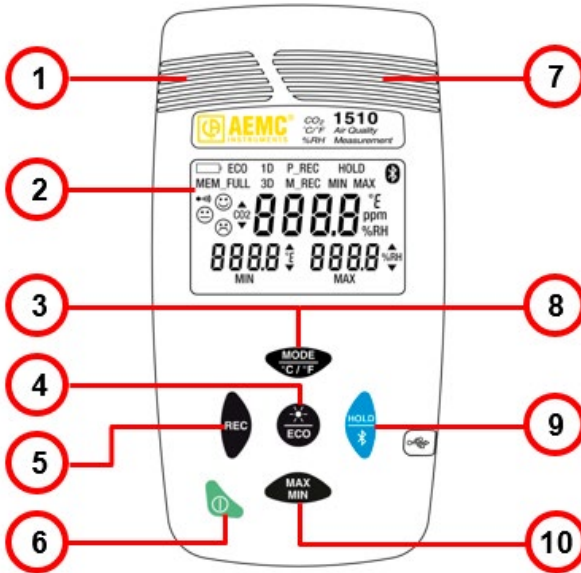
1. Non-skid pads
2. Tear-drop notch to hang instrument
3. Battery compartment cover
4. Magnets for mounting to a metallic surface



#### To change the batteries:

1. Press the tab of the battery compartment cover and lift it clear.
2. Remove the battery compartment cover.
3. Insert the new batteries, ensuring correct polarity.
4. Close the battery compartment cover; ensuring it is completely and correctly closed.

## 2.2 INSTRUMENT FRONT PANEL



1. Temperature and humidity sensors
2. LCD display
3. MODE/temperature units button
4. Backlight/ECO mode button
5. Record button
6. ON/OFF button
7. CO<sub>2</sub> sensor
8. Activate/deactivate buzzer
9. HOLD/Bluetooth enable/disable button
10. MAX/MIN button

## 2.3 INSTRUMENT FUNCTIONS

The Model 1510 measures:



- Concentration of carbon dioxide (CO<sub>2</sub>) in the air
- Ambient temperature
- Relative humidity

The instrument uses these measurements to determine and display the current comfort level.

DataView® with the Data Logger Control Panel software can be installed on a computer to allow you to configure the instrument, view measurements in real time, download data from the instrument, and create reports.

## 2.4 TURNING THE INSTRUMENT ON/OFF








- **ON:** Press the  button
- **OFF:** Press the  button for >2 seconds when the instrument is ON. Note that you cannot turn OFF the instrument when it is in **HOLD** or in recording mode.



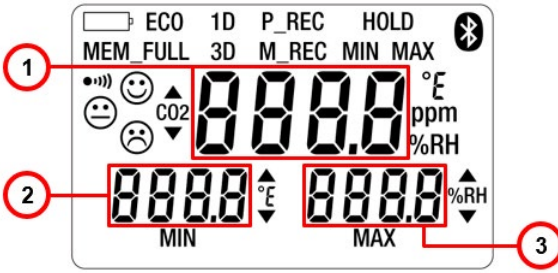
**NOTE:** In **Portable** mode, the instrument automatically turns OFF after 15 minutes of inactivity. This feature is de-activated in other modes (**1D** or **3D**, **ECO**, **P\_REC**, **MIN MAX**, and **M\_REC**), if the instrument is actively communicating via Bluetooth or USB, or is running on USB power.

## 2.5 FUNCTION BUTTONS

On each button, a short press activates the top function and a long press (>2 seconds) activates the lower function.

Button	Function
	<ul style="list-style-type: none"> <li>■ Short press enables <b>1D</b> and <b>3D</b> modes.</li> <li>■ Long press changes temperature units.</li> <li>■ Pressing this button while holding down  activates/deactivates alarm buzzer.</li> </ul>
<b>REC</b>	<ul style="list-style-type: none"> <li>■ Starts manual recording.</li> </ul>
	<ul style="list-style-type: none"> <li>■ Short press turns on the backlight.</li> <li>■ Long press enables/disables energy-saving mode.</li> <li>■ Holding down this button and then pressing  activates/deactivates alarm buzzer.</li> </ul>
	<ul style="list-style-type: none"> <li>■ Short press freezes the display.</li> <li>■ Long press activates/deactivates Bluetooth.</li> </ul>
<b>MAX MIN</b>	<ul style="list-style-type: none"> <li>■ Short press enters <b>MIN MAX</b> mode; measurement values continue to be displayed. Second press displays the maximum value. Third press displays minimum value. Fourth press returns to normal measurement operation.</li> <li>■ Long press exits <b>MIN MAX</b> mode.</li> </ul>

## 2.6 DISPLAY



1. CO2 measurement
2. Temperature
3. Relative humidity

Symbol	Function
<b>MEM_FULL</b>	Memory full
<b>1D</b>	Monitor CO2 level
<b>3D</b>	Monitor CO2, temperature, and humidity comfort zone thresholds
<b>MAX</b>	Maximum value
<b>MIN</b>	Minimum value
<b>ECO</b>	Energy-saving operating mode
<b>P_REC</b>	Programmed recording <ul style="list-style-type: none"> <li>■ Blinking: waiting to start recording</li> <li>■ Steady: recording</li> </ul>
<b>M_REC</b>	Manual recording
<b>HOLD</b>	Hold of the display
<b>MIN MAX</b>	<b>MIN MAX</b> function: detection of minimum and maximum values
<b>ppm</b>	Unit of concentration of CO2 in the air in parts per million
● 1))	Buzzer active
	Bluetooth <ul style="list-style-type: none"> <li>■ Blinking: waiting for connection</li> <li>■ Steady: connected</li> </ul>
	<ul style="list-style-type: none"> <li>■ Blinking: Batteries low</li> <li>■ Steady: Indicator of external power supply by connection of the mains adapter or of the USB connection.</li> </ul>
	High threshold passed
	Low threshold passed
	Air quality/comfort level indicator

---

## 3. OPERATION

---

### 3.1 MAKING A MEASUREMENT

When the instrument is turned ON, the message **CO<sub>2</sub>** is displayed on the screen (and function buttons are disabled) until the first CO<sub>2</sub> measurement appears. Updated measurements then appear automatically.



**NOTE:** If the instrument is exposed to large variations of temperature, after the temperature stabilizes, wait 20 minutes before starting measurements.

---

The instrument has four operating modes: **Portable** mode, **1D** and **3D** modes, **ECO** mode, and **P\_REC** mode. It also has several functions that can be used in certain modes: **MIN MAX**, **HOLD**, **M\_REC**, and **Backlight**.

#### 3.1.1 Selecting Temperature Units

Long-press the **MODE**  $\frac{C}{F}$  button to toggle between °F and °C. The setting remains in effect when the instrument is turned OFF.

### 3.2 PORTABLE MODE

When you turn ON the instrument, it automatically starts up in Portable mode. In this mode the instrument makes a measurement every 15 seconds, more frequently than in other modes. It is therefore highly responsive to changes in air quality. This mode is used to inspect several rooms one after another. Install the instrument in a room and wait for the CO<sub>2</sub> measurement to stabilize (approximately 10 minutes).

### 3.3 1D AND 3D MODES

- **1D** mode: surveillance of CO<sub>2</sub> level.
- **3D** mode: surveillance of CO<sub>2</sub> level, temperature, and humidity.

The audible and/or visual warnings alert you to overages. The level of CO<sub>2</sub> is measured every minute.

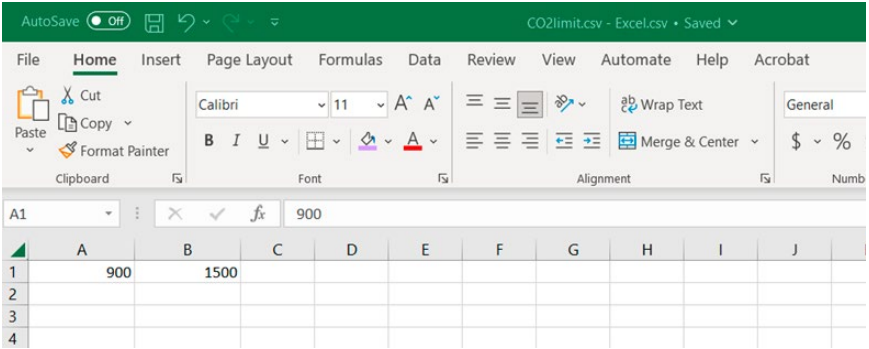
- S1 = Low threshold = 1000 ppm
- S2 = High threshold = 1700 ppm

In internal software versions 4.14 and above, these thresholds can be programmed. To change them, simply modify the CO<sub>2</sub>limit.csv file in the memory of the device. Connect the Model 1510 to a PC using a USB cable (see § 4.2).



**NOTE:** Do not modify the CO<sub>2</sub>limit.csv file when recording is in progress.

---



You must observe the following rules:

- $S1 \leq S2$
- S1 and S2 between (0 and 5000) ppm

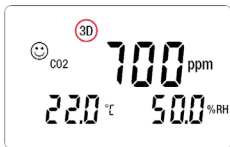
After modifying the CO2limit.csv file:

1. Eject the device from the file explorer.
2. Unplug the USB cable.
3. Switch the device off and back on to apply the new thresholds.

### 3.3.1 1D and 3D Modes Activation



1. Press **MODE** **C/F** to activate **1D** mode. The symbol **1D** appears on the display.





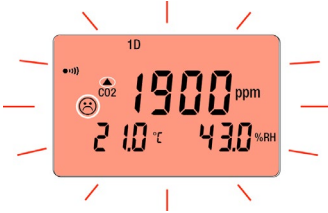
2. Press **MODE** **C/F** a second time to activate **3D** mode. The symbol **3D** appears on the display.




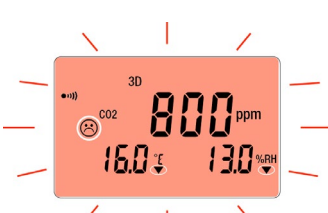
3. Press **MODE** **C/F** a third time to return to normal operation.

### 3.3.2 Visible and Audible Warnings

#### 1D Mode

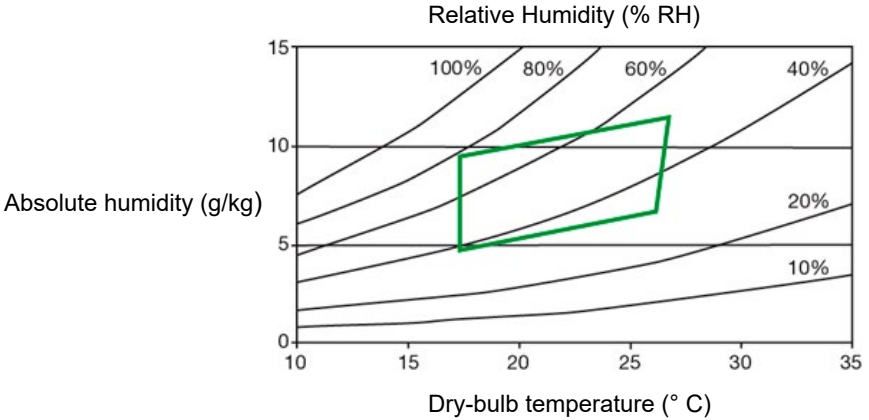
<b>Air quality good (CO<sub>2</sub> level &lt; S1)</b>	
	Optimum comfort zone indicator: 😊 Backlight OFF.
<b>Air quality average (S1 &lt; CO<sub>2</sub> level &lt; S2)</b>	
	Average comfort zone indicator: 😞 Arrow indicates overage of low CO <sub>2</sub> threshold. Backlight blinks orange.
<b>Air quality poor (CO<sub>2</sub> level &gt; S2)</b>	
	Outside optimum comfort zone indicator: 😞 Arrow indicates overage of high CO <sub>2</sub> threshold. Buzzer sounds (if enabled). Backlight blinks red.

#### 3D Mode

<b>Air quality good (no overages of CO<sub>2</sub>, temperature and humidity thresholds)</b>	
	Optimum comfort zone indicator: 😊 Backlight OFF.
<b>Air quality poor (overage of temperature and humidity thresholds)</b>	
	Outside optimum comfort zone indicator: 😞 Arrow in the direction of the overage for each quantity outside the comfort zone. Buzzer sounds (if enabled). Backlight blinks red.

**i** NOTE: For 1D and 3D modes, if the buzzer is active it will sound intermittently when 😞 is displayed.


The Porcher diagram defines the hygrothermal comfort zones:



### 3.4 ECO (ENERGY SAVING) MODE

**ECO** mode saves energy when the Model 1510 measures air quality over a long period. The backlight and the buzzer are deactivated, and CO<sub>2</sub> is measured only once every 10 minutes. This saves the batteries. In addition, the instrument automatically activates **sleep** mode between 4:30 p.m. to 8:30 a.m. These times can be changed using DataView<sup>®</sup> software (see § 4).



1. Long-press  **ECO** (>2 seconds to activate **ECO** mode. The symbol **ECO** appears on the display.



2. Long-press  **ECO** a second time to return to normal operation.



**NOTE:** In **ECO** mode, measurements are more sensitive to instantaneous variations of CO<sub>2</sub>. For example, breathing near the instrument can affect measurement. It will be necessary to wait for the next measurement to recover the true concentration of CO<sub>2</sub> in the room.



### 3.5. P\_REC (PROGRAMMED RECORDING) MODE

When the instrument is connected to a computer, you can program two types of recordings (see § 4):

- Locked recording, in which the instrument only displays the **P\_REC** symbol (blinking before recording starts, then steady while recording) and the keys are inactive. At the end of recording, the instrument automatically turns OFF.
- Unlocked recording, in which the instrument displays the measurements. The **P\_REC** symbol is displayed, blinking before recording starts, then steady while recording. The instrument otherwise operates normally. It is not possible to change the mode, but the **MIN MAX**, **HOLD**, and **Backlight** functions can be used.



**NOTE:** In **P\_REC** mode, pressing the  button has no effect.

### 3.6. MIN MAX FUNCTION

This function displays the maximum and minimum measured values in addition to the current value: the instrument compares each new measurement to those displayed. If the new measurement is greater than the current MAX value or less than the current MIN value, it replaces them in the display.



**NOTE:** The **MIN MAX** function cannot be used in the **1D** and **3D** modes.



1. Press **MIN** to activate the **MIN MAX** function. The symbol **MIN MAX** appears on the display.



2. Press **MIN** a second time to display maximum and minimum measurements for CO<sub>2</sub>.

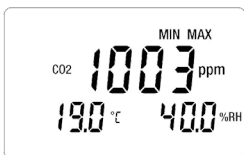


3. Press **MIN** a third time to display maximum and minimum measurements for temperature.



4. Press **MAX** **MIN** a fourth time to display maximum and minimum measurements for humidity.

Additional presses of **MAX** **MIN** repeat this cycle.



5. Long-press **MAX** **MIN** to exit **MIN MAX** and return to normal measurement display.

### 3.7. HOLD FUNCTION

Pressing **HOLD** freezes the displayed measurement on the screen. This function does not interrupt recording or operation of the current mode; but access to the other functions is disabled.



1. Press **HOLD** to activate HOLD. The symbol **HOLD** appears and the current measurement remains on the screen.



2. Press **HOLD** a second time to return to normal measurement display.

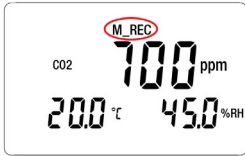
### 3.8. M\_REC (MANUAL RECORDING) FUNCTION

You can start a recording session manually. All measurement data is recorded in the instrument at the rate determined by the current mode (see § 5.3).



**NOTE:** You can start a manual recording session in any mode except **P\_REC**. After recording is in progress, you cannot change modes.

---




1. Long-press **REC** (>2 seconds) to start a manual recording. The symbol **M-REC** appears on the display.



2. Long-press **REC** a second time to stop recording.

### 3.9. BACKLIGHT

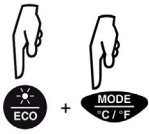
Press  **ECO** to turn ON the backlight. The backlight automatically turns OFF after 10 seconds.






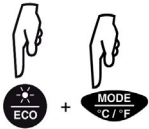
**NOTE:** The backlight function is disabled in **ECO** mode.



---

### 3.10 ALARM BUZZER



1. To activate the alarm buzzer, press the  **ECO** button; and while holding it down press  **MODE C/F**. The  icon appears on the screen.



2. To deactivate the alarm, press  **ECO** and while holding it down press  **MODE C/F**.



**NOTE:** The alarm buzzer function is disabled in **ECO** mode.

### 3.11. ERROR MESSAGES

#### 3.11.1. OL (Overload) Symbol

The **OL** symbol appears when the measurement is outside the range measured by the instrument:

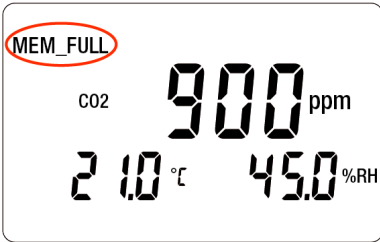
- $\text{CO}_2 > 5000 \text{ ppm}$
- $14 < T < 140 \text{ }^\circ\text{F}$  ( $-10 < T < 60 \text{ }^\circ\text{C}$ )
- $5 \% < \text{RH} < 95 \%$

#### 3.11.2. Err (Error) Symbol

If an **Err** error is displayed, turn the instrument OFF and back ON. If the error persists, the instrument must be sent in for repair (see § 6.3 Repair and Calibration).

### 3.11.3. MEM\_FULL (Memory Full) Symbol

When the memory is full, the **MEM\_FULL** symbol appears on screen.



If a recording is in progress, it automatically stops when the memory becomes full. The memory must be erased before starting a new recording.

You can erase memory manually or via DataView®. To do this in DataView®, install the software (see § 4) and consult the Help system.

To erase memory manually, do the following:

1. Connect the instrument to a computer via the USB cable.
2. Open the computer's file system.
3. Locate and open the folder named CA1510.
4. Delete any unnecessary files to free memory space.

---

## 4. DATAVIEW®

---

DataView® is required to perform several basic setup tasks including connecting the instrument to a computer and setting the time and date on the instrument. In addition, DataView® allows you to:

- Configure and schedule a recording session on the instrument.
- Download recorded data from the instrument to the computer.
- Generate reports from downloaded data.
- View instrument measurements in real time on the computer.

### 4.1. DATAVIEW® INSTALLATION

1. Insert the USB drive that comes with the instrument into a USB port on your computer.
2. If Autorun is enabled, an AutoPlay window appears on your screen. Click **Open folder to view files** to display the DataView folder. If Autorun is not enabled or allowed, use Windows Explorer to locate and open the USB drive labeled **DataView**.
3. When the DataView folder is open, double-click Setup.exe in the USB drive root directory.
4. The Setup screen appears. This enables you to select the language for the setup UI. You can also select additional install options (each option is explained in the Description field). Make your selections and click Install.
5. Click OK to confirm setup. The InstallShield Wizard screen appears. This leads you through DataView® install. As you complete these screens, be sure to check Data Loggers when prompted to select features to install.
6. When the InstallShield Wizard finishes installing DataView®, the Setup screen appears. Click Exit to close. The DataView folder appears on your computer desktop.

### 4.2. CONNECTING THE INSTRUMENT TO A COMPUTER




You can connect the instrument to a computer either through USB cable (provided with the instrument) or Bluetooth®. The first two steps of the connection procedure depend on the connection type:

#### **USB:**


1. Connect the instrument to an available USB port using the supplied cable.
2. Turn ON the instrument. If this is the first time this instrument has been connected to this computer, drivers will be installed. Wait for this to finish before proceeding with step 3 below.

## Bluetooth:

Connecting the instrument via Bluetooth requires a Bluetooth USB adapter, Cat. #2126.45 (sold separately). When the dongle is installed, do the following:

1. Turn ON the instrument by pressing the  button.
2. Activate Bluetooth on the instrument by pressing the  button until the  symbol appears in the LCD.

### **After the USB cable is connected or Bluetooth is activated, proceed as follows:**

3. Open the DataView folder on your desktop. This displays a list of icons for the Control Panel(s) installed with DataView®.
4. Open the DataView® Data Logger Control Panel by clicking the  icon.
5. In the menu bar at the top of the screen, select Help. In the drop-down menu that appears, click the option Help Topics. This opens the Data Logger Control Panel Help system.
6. Use the Contents window in the Help system to locate and open the topic **Connecting to an Instrument**. This provides instructions explaining how to connect your instrument to the computer.
7. When the instrument is connected, its name appears in the Data Logger Network folder in the left side of the Control Panel. A green check mark appears next to the name indicating it is currently connected.

For instructions about using DataView® with the instrument, consult the Data Logger Control Panel Help system.

---

## 5. SPECIFICATIONS

---

### 5.1. REFERENCE CONDITIONS

Quantity of influence	Reference conditions
Supply voltage	3 ± 0.5 V
Air pollution	No pollution (CO, solvents, etc.)

The intrinsic uncertainty is the error specified for the reference conditions.

### 5.2. MEASUREMENT CHARACTERISTICS

#### 5.2.1. CO<sub>2</sub> Measurements

Type of sensor:	Dual-beam infrared cell
Measuring principle:	Non-dispersive infrared (NDIR) technology
Measurement range:	(0 to 5000) ppm
Intrinsic uncertainty:	±3 % ± 50 ppm at 77 °F (25 °C) and 1013 mbar In <b>ECO</b> mode: ±3 % ± 80 ppm at 77 °F (25 °C) and 1013 mbar
Response time at 63 %:	195 seconds
Resolution (R):	1 ppm

#### 5.2.2. Influences on the Measurements of CO<sub>2</sub>

The influence of the temperature is 1 ppm/°C from (-10 to 45) °C (14 to 113) °F

The influence of the atmospheric pressure is:

$$\text{CO}_{2 \text{ real}} = \text{CO}_{2 \text{ measured}} \times (1 + (1013 - P) \times 0.0014)$$

where P = pressure in mbar

#### 5.2.3. Temperature Measurements

Type of sensor:	CMOS
Measurement range:	(14 to 140) °F (-10 to 60) °C
Intrinsic uncertainty:	±0.5 °C at 50 % RH
Influence of relative humidity	±0.5 °C ± R from (10 to 40) % RH Outside this range: ±0.032 x (T - 25 °C) ± R
Resolution (R):	0.1 °C or 0.1 °F



## 5.2.4. Humidity Measurement

Type of sensor: Capacitive

Measurement range: (5 to 95) % RH

Intrinsic uncertainty:  $\pm 2$  % RH  $\pm R$  from (10 to 90) % RH  
 $\pm 3$  % RH  $\pm R$  outside of the range stated above

Resolution (R): 0.1 % RH

Measurement hysteresis:  $\pm 1$  % RH



**NOTE:** Prolonged exposure to humidity outside the (10 to 80) % range may produce measurement bias up to  $\pm 3$  % RH. This bias disappears after 5 days between (68 to 86) °F (20 and 30) °C and (40 and 75) % RH.

Rate of increase of intrinsic uncertainty: < 0.5 % RH/year

## 5.2.5. Influence of the temperature on the relative humidity measurement

Relative humidity (%)																
100																
95	$\pm 5$	$\pm 5$	$\pm 5$	$\pm 4$	$\pm 4$	$\pm 3$	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 5$		
90	$\pm 5$	$\pm 5$	$\pm 4$	$\pm 3$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 4$	$\pm 4$	$\pm 4$		
85	$\pm 5$	$\pm 4$	$\pm 4$	$\pm 3$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 4$	$\pm 4$	$\pm 4$		
80	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 3$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 4$		
75	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 3$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$		
70	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 3$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$		
65	$\pm 4$	$\pm 4$	$\pm 3$	$\pm 3$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$		
60	$\pm 4$	$\pm 3$	$\pm 3$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$		
55	$\pm 4$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$		
50	$\pm 4$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$		
45	$\pm 4$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$		
40	$\pm 4$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$		
35	$\pm 4$	$\pm 3$	$\pm 3$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$		
30	$\pm 4$	$\pm 3$	$\pm 3$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$		
25	$\pm 4$	$\pm 4$	$\pm 3$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$		
20	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 3$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$		
15	$\pm 5$	$\pm 4$	$\pm 4$	$\pm 3$	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 3$	$\pm 4$	$\pm 4$		
10	$\pm 8$	$\pm 5$	$\pm 5$	$\pm 4$	$\pm 3$	$\pm 2$	$\pm 3$	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 4$	$\pm 4$		
5	$\pm 8$	$\pm 8$	$\pm 8$	$\pm 6$	$\pm 5$	$\pm 3$	$\pm 5$	$\pm 5$	$\pm 5$	$\pm 5$	$\pm 5$	$\pm 5$	$\pm 5$	$\pm 5$		
0																
	0	10	20	30	40	50	60	70								
									Temperature (°C)							

### 5.3. MEASUREMENT MODES

Measurement mode	Displayed value	Display rate of CO <sub>2</sub> values	Polling rate for temperature and RH sensors
Portable	Mean of 11 successive measurements	Every 15 seconds	Every 2 seconds
1D and 3D	Mean	Every minute	Every 2 seconds
ECO	Instantaneous, not averaged	Every 10 minutes	Every 5 seconds
P_REC	Mean	User Programmable	User Programmable

### 5.4. POWER SUPPLY

Batteries: (2) 1.5 V AA/LR6

Mean battery life (without backlighting and Bluetooth):

- **Portable** mode: 15 days
- **1D** or **3D** mode: 45 days
- **ECO** mode: approximately 1 year
- **P\_REC** 10 minutes mode: 45 days

Rechargeable storage batteries can be used, but the period between charges will be shorter. The batteries are not used while the instrument is connected to USB power.

### 5.5. RECORDING

Memory: 1,000,000 measurements (8 MB) FAT12 format

### 5.6. ENVIRONMENT CONDITIONS

Use indoors

Operating range: (14 to 140) °F (-10 to 60) °C and (5 to 95) % RH

Range in storage (without battery): (-4 to 140) °F (-20 to 60) °C

Altitude: < 2000 m

## **5.7. MECHANICAL CHARACTERISTICS**

Dimensions (L x W x H): (4.92 x 2.58 x 1.26) in (125 x 65.5 x 32) mm

Weight: Approximately: 190 g

Protection class: IP 40 per IEC60529

IK 04 per IEC50102

Free fall test: Per IEC61010-1

## **5.8. COMPLIANCE WITH INTERNATIONAL STANDARDS**

Compliant with IEC61010-1 safety standard for voltages of 50 V in CAT II.

## **5.9. ELECTROMAGNETIC COMPATIBILITY**

Emissions and immunity in an industrial setting compliant with IEC 61326-1.

---

## 6. MAINTENANCE

---



**NOTE:** Except for batteries, the instrument contains no parts that can be replaced by personnel who have not been specially trained and accredited. Any unauthorized repair or replacement of a part by an **equivalent** may significantly impair safety.



---

### 6.1. CLEANING

- Disconnect the instrument from all sensors, cable, etc. and turn it OFF.
- Use a soft cloth, dampened with soapy water. Rinse with a damp cloth and dry rapidly with a dry cloth or forced air.
- Do not use alcohol, solvents, or hydrocarbons.
- Be sure to keep the two sensor intakes perfectly clean (indicated by arrow in below illustration).



### 6.2. BATTERY REPLACEMENT

The  symbol indicates the remaining battery life. When the  symbol is empty, all the batteries must be replaced (see § 2.1).



**NOTE:** Spent batteries must not be treated as ordinary household waste. Take them to an appropriate recycling facility.

---

## 6.3 REPAIR AND CALIBRATION

To ensure that your instrument meets factory specifications, we recommend that it be sent back to our factory Service Center at one-year intervals for recalibration or as required by other standards or internal procedures.

### **For instrument repair and calibration:**

You must contact our Service Center for a Customer Service Authorization Number (CSA#). Send an email to [repair@aemc.com](mailto:repair@aemc.com) requesting a CSA#, you will be provided a CSA Form and other required paperwork along with the next steps to complete the request. Then return the instrument along with the signed CSA Form. This will ensure that when your instrument arrives, it will be tracked and processed promptly. Please write the CSA# on the outside of the shipping container. If the instrument is returned for calibration, we need to know if you want a standard calibration or a calibration traceable to N.I.S.T. (includes calibration certificate plus recorded calibration data).

**Ship To:** Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments  
15 Faraday Drive ▪ Dover, NH 03820 USA  
Phone: (800) 945-2362 (Ext. 360) / (603) 749-6434 (Ext. 360)  
Fax: (603) 742-2346  
E-mail: [repair@aemc.com](mailto:repair@aemc.com)

### **(Or contact your authorized distributor.)**

Contact us for the costs for repair, standard calibration, and calibration traceable to N.I.S.T.



**NOTE: You must obtain a CSA# before returning any instrument.**

---

## 6.4 TECHNICAL ASSISTANCE

If you are experiencing any technical problems or require any assistance with the proper operation or application of your instrument, please call, e-mail or fax our technical support team:

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments

Phone: (800) 343-1391 (Ext. 351)

Fax: (603) 742-2346

E-mail: [techsupport@aemc.com](mailto:techsupport@aemc.com)

[www.aemc.com](http://www.aemc.com)

## 6.5 LIMITED WARRANTY

The instrument is warranted to the owner for a period of two years from the date of original purchase against defects in manufacture. This limited warranty is given by AEMC® Instruments, not by the distributor from whom it was purchased. This warranty is void if the unit has been tampered with, abused, or if the defect is related to service not performed by AEMC® Instruments.

**Full warranty coverage and product registration is available on our website at [www.aemc.com/warranty.html](http://www.aemc.com/warranty.html)**

Please print the online Warranty Coverage Information for your records.

### **What AEMC® Instruments will do:**

If a malfunction occurs within the warranty period, you may return the instrument to us for repair, provided we have your warranty registration information on file or a proof of purchase. AEMC® Instruments will repair or replace the faulty material at our discretion.

**REGISTER ONLINE AT: [www.aemc.com/warranty.html](http://www.aemc.com/warranty.html)**

## 6.5.1 Warranty Repairs

### What you must do to return an Instrument for Warranty Repair:

First, send an email to [repair@aemc.com](mailto:repair@aemc.com) requesting a Customer Service Authorization Number (CSA#) from our Service Department. You will be provided a CSA Form and other required paperwork along with the next steps to complete the request. Then return the instrument along with the signed CSA Form. Please write the CSA# on the outside of the shipping container. Return the instrument, postage or shipment pre-paid to:

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments  
15 Faraday Drive, Dover, NH 03820 USA  
Phone: (800) 945-2362 (Ext. 360) / (603) 749-6434 (Ext. 360)  
Fax: (603) 742-2346  
E-mail: [repair@aemc.com](mailto:repair@aemc.com)

**Caution: To protect yourself against in-transit loss, we recommend that you insure your returned material.**



**NOTE: You must obtain a CSA# before returning any instrument.**

---



11/24  
99-MAN 100460 v08

---

**AEMC® Instruments**  
15 Faraday Drive • Dover, NH 03820 USA  
Phone: (603) 749-6434 • (800) 343-1391 • Fax: (603) 742-2346  
[www.aemc.com](http://www.aemc.com)

---