

# AIC3Pro Air Ion Counter Operator's Guide



The AIC3Pro is designed and manufactured in the U.S.A. by AlphaLab, Inc., a trusted source of standard and custom air ion measurement products since 1993.

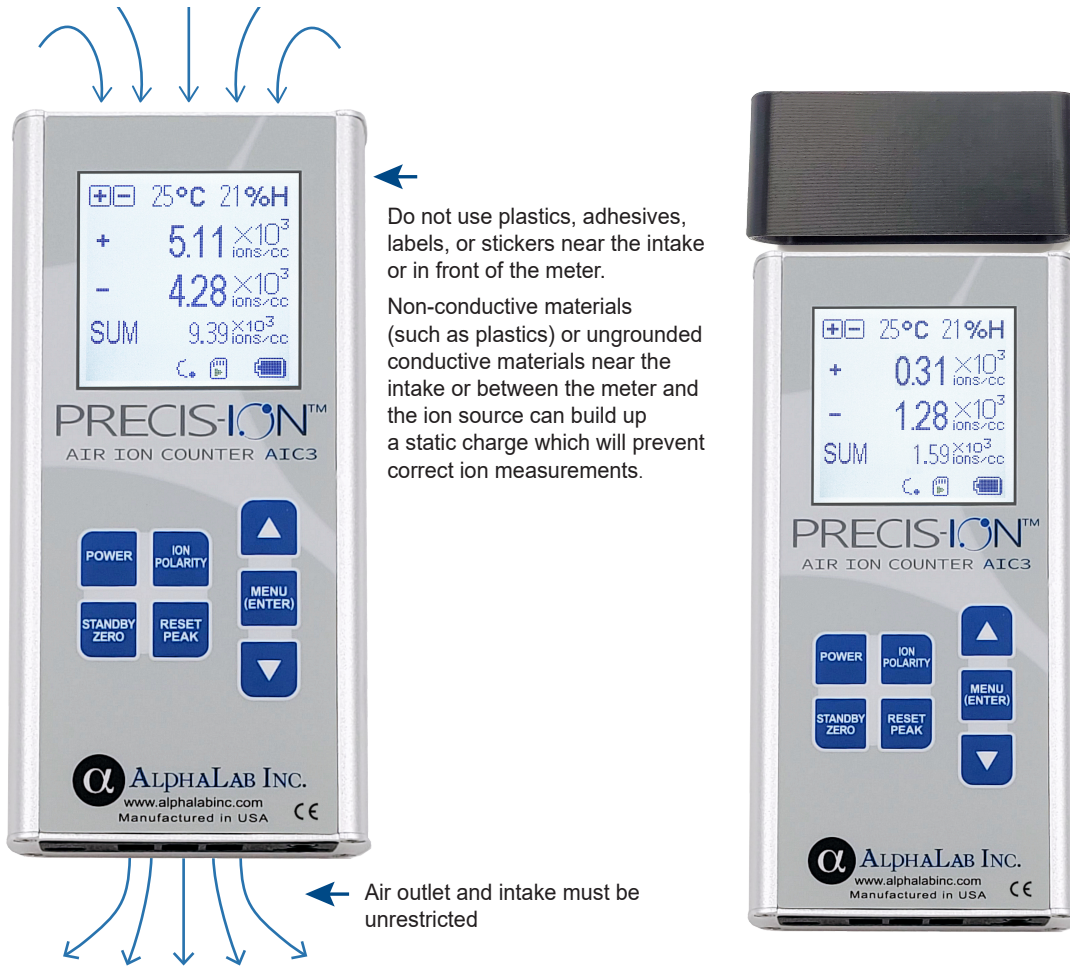
AlphaLab Inc. 3005 South 300 West, Salt Lake City, Utah 84115, U.S.A.  
www.alphalabinc.com email: mail@trifield.com Call 1-801-487-9492

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## Overview

The **Precis-Ion™ Air Ion Counter Model AIC3Pro** is a **Gerdien condenser air ion meter**. During operation, a blower draws air through the top of the meter, and the electrical charge from air ions (charged air molecules) is measured. The air ion count is calculated and displayed.



Do not use plastics, adhesives, labels, or stickers near the intake or in front of the meter.

Non-conductive materials (such as plastics) or ungrounded conductive materials near the intake or between the meter and the ion source can build up a static charge which will prevent correct ion measurements.

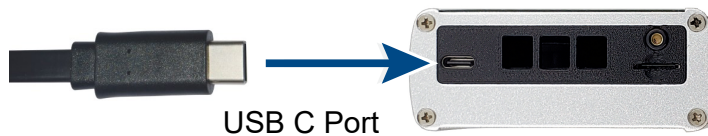
### The Static Shield:

Use of this shield is optional. The shield minimizes electric field interference when measuring ions at low levels. To use it, simply slide the shield over the top of the meter until it seats firmly. This shield must be removed when measuring high ion levels near an air ion generator or anytime the count exceeds 2 million/cc. Use of the shield when measuring high counts can result in a reduced (false) ion count. Note, this shield is semiconductive. Any non-conductive material near the meter intake can create measurement problems.

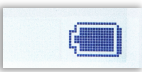


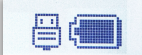
Air outlet and intake must be unrestricted

## Charging the AIC3Pro:

The AIC3Pro's rechargeable 2000mAh Li battery typically provides 7 hours of continuous operation. The meter may be charged with the supplied USB charger. The meter may also be charged via a USB port on a PC, laptop, or USB power pack. The meter can be operated indefinitely while charging. Typical charge time for a depleted battery is 4 to 5 hours.



Power and Battery Status Indicator Examples

-  Battery Powered, 100% Remaining
-  Battery Powered, 33% Remaining
-  USB Powered, Battery Charging
-  USB Powered, Battery Charging Completed

### ⚠ Extreme Temperatures

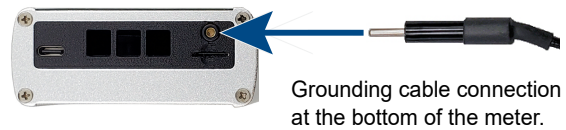
Built-in safety precautions prevent battery charging at temperatures below 0C°/32F° or above 45C°/113F°. If charging is attempted at these extremes, the meter will display a notice that charging cannot begin until the temperature of the meter is brought within battery charging safety limits.

## Grounding the AIC3Pro

Air ions are charged air molecules. These air molecules are measured with respect to earth/ground reference. Thus, the meter must have an earth ground reference either via the hand/body of the operator or a ground cable connected to an outlet ground or other ground connection.

At low air ion counts (<20K ions/cc), holding the meter (with the kickstand removed) maintains sufficient ground reference, provided that your body doesn't build up a static charge. Occasionally touching a pipe or the screw on a light switch plate will ensure accurate readings.

When using the kickstand (no meter to hand contact) or any time when high ion counts are possible, such as the ion counts near ionizers, the ground cable must be used!



Grounding cable connection at the bottom of the meter.



A 10 ft. (3 meter) ground cable is included with connectors for grounding (earthing) the AIC3Pro to a standard wall outlet (mains), ESD mats, metal water pipes, or metal heating/air conditioning ducts.

### Common Symptom if the Meter Is Not Grounded:

If not grounded when exposed to high ion levels, the meter will initially show a high ion count. Then as the meter's housing builds up a static charge from the charged air molecules, air ions in the vicinity of the meter will be repelled, and the air ion count will rapidly decrease to near zero. Materials between the ion counter and ion source can also become charged and repel air ions. See the bottom of page 15.

### Bi-Polar Ionizers:

Well balanced bi-polar ionizers minimize the static charge compared to single polarity ionizers. However, any static electricity (even that which is created from walking on a carpet) will influence air ion readings. Grounding insures accurate readings.

### Using USB Connection as Earth Ground:

The included USB charger will **not** provide earth grounding. PCs and laptops with the third prong ground connection power cords usually provide earth ground via their USB ports. Unless you know for sure that your PC's USB ports are grounded, do not rely on grounding via a USB cable.

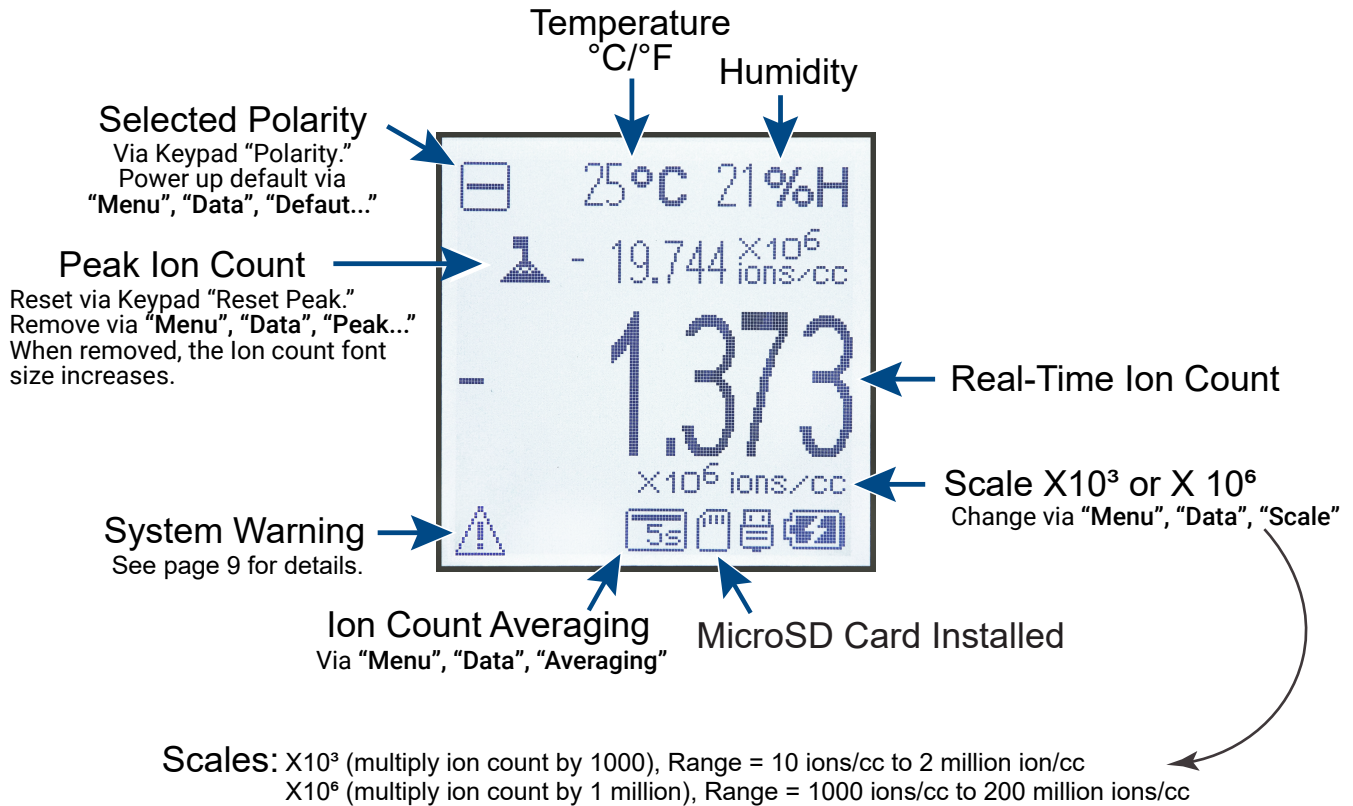


### USB Connecting Caution

When measuring high ion counts near an ion generator, make sure the meter is grounded prior to connecting the USB cable to a desktop or laptop PC. Failing to do so may damage the AIC3Pro and/or the computer!

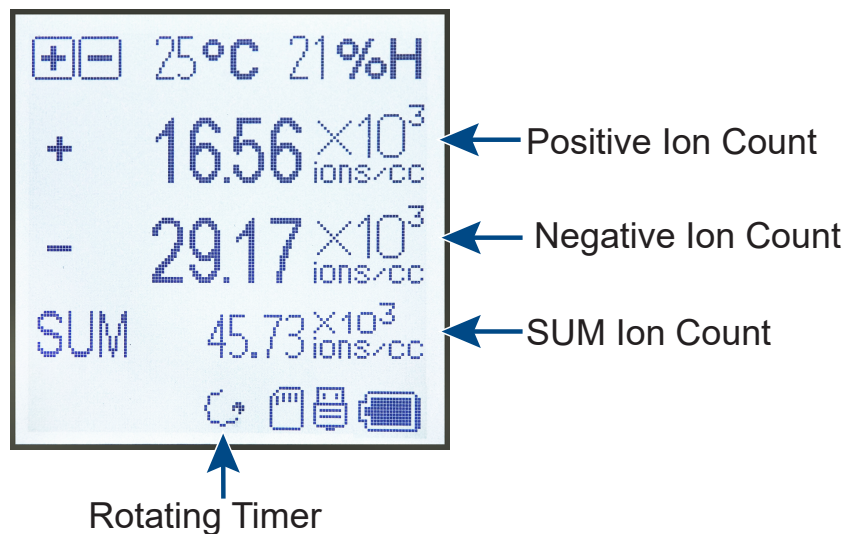
# Operating Modes and Displayed Information

## Single Polarity (Positive or Negative) Operating Mode



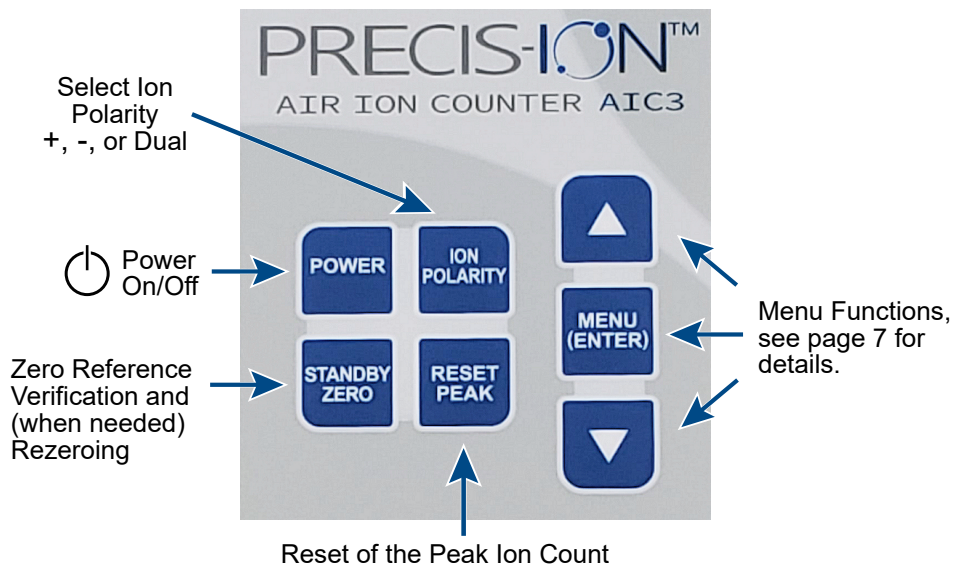
## Dual Polarity Operating Mode

This mode allows for the alternating measurement of each polarity to be displayed. The SUM feature adds the total number of positive and negative air ions and displays the cumulative count.



Ion polarities are alternately updated every 7.5 seconds.  
The rotating timer indicates the update cycle.

## Key Pad Functions



**Reset of the Peak Ion Count**  
When peak ion count is displayed ("Menu", "Data", "Peak"... selection) the highest ion level ever encountered is displayed until the "RESET PEAK" is pressed or the meter is powered off/on.

## Zero Reference

In "STANDBY ZERO" the blower is turned off while the air ion sensor remains active. This provides immediate verification of the meter's zero reference and allows (when needed) for automatic or manual rezeroing. Check the zero reference if the temperature has changed significantly or the meter has not been used for some time. It is not necessary to zero the meter every time the meter is powered up. Details about the last zero, including the date and time, can be viewed by selecting "Menu", "Zero Settings", "Last Zero...".

Step 1. Meter must be stationary and not near a strong air ion source or wind. The top of the meter must not be placed near surfaces/objects that could have a static charge. Best practice is to use the meter's kickstand or place the top 1/3 of the meter over the edge of a table.

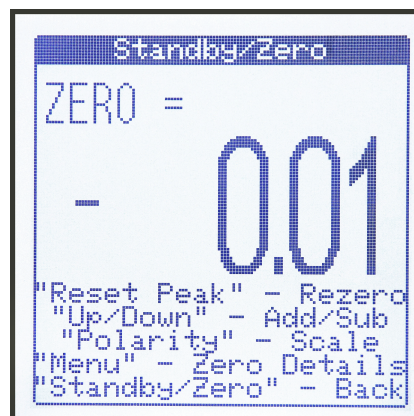
Step 2. Press the "Standby Zero" button. The displayed count starts high and rapidly decreases. If the count settles to a count greater than +/- 0.04, zero the meter by manually pressing the arrow buttons (up arrow more positive, down arrow more negative). To have the meter automatically rezero, press "Reset Peak".

Step 3. Press "Polarity" if you wish to confirm/adjust the X10<sup>6</sup> scale zero.

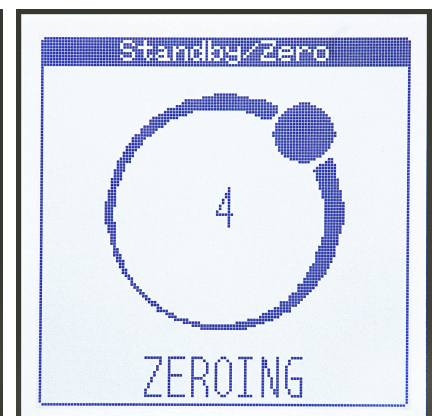
Step 4. Once satisfied with the zero level, press "Standby Zero" to return to normal operation.

**Automatic Rezeroing:** When making long duration, unattended recordings, the meter can be set to automatically rezero at 3, 6, 12 or 24 hours ("Menu", "Zero..." "Auto Zero"). The default is no automatic rezeroing.

**Self-Test:** In addition to zeroing, the meter's automatic rezeroing function tests the meter's ion detection sensitivity and possible contamination. If an error is detected, a failure notice is displayed with user help information. See failure notifications on page 11 for details.



Standby/Zero Display with instructions



Automatic rezero 10 second rotating timer

## Measuring Air Ions

The meter begins measuring air ions as soon as it is powered on. The display is refreshed every half second.

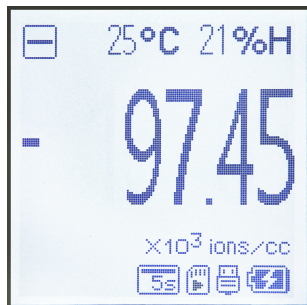
### Ion Count Averaging

Air ions (charged air molecules) do not mix well, and they have a short life. Thus, the air ion count can vary over short distances. As air ions are drawn into the meter and measured, there will be constant changes in the ion count. To help smooth out these rapid changes, averaging is imposed. The factory default averaging is five seconds. This power up default averaging can be changed from 1 to 15 seconds, or no averaging.

## Air Ion Measurement Examples

### Evaporating Water

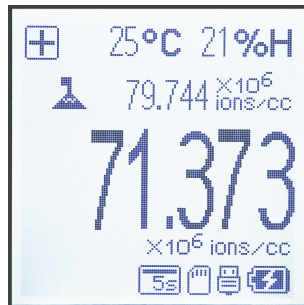
Air ion count from evaporating water near a sink with running hot water



Negative Polarity in the  $\times 10^3$  Scale, without Peak Hold, 5 Second Averaging, Data Recording, USB Power, Battery Charging

### Ion Generator

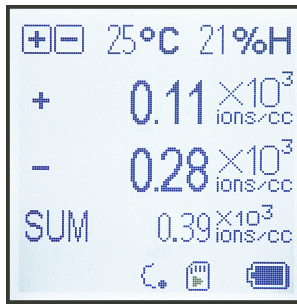
Air ion count from a nearby air ion generator



Positive Polarity in the  $\times 10^6$  Scale, 8 Second Averaging with Peak Hold, USB Power, Battery Charging

### Ambient Indoors

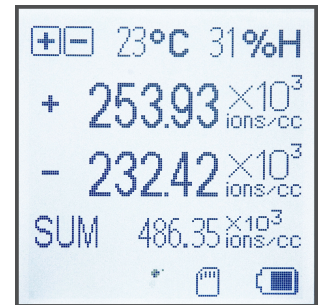
Typical indoor ambient levels with no significant air ion generating source



Dual Polarity in the  $\times 10^3$  Scale, Data Recording

### Americium / Radioactivity

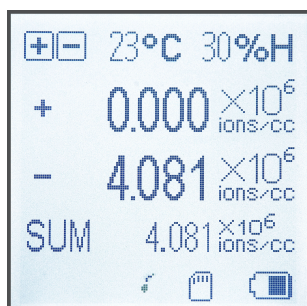
Measurements close to a smoke detector's detection cylinder, which contains americium-241



Dual Polarity in the  $\times 10^3$  Scale

### Miniature Ion Generator

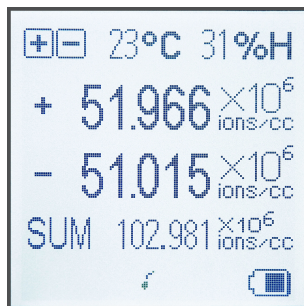
Personal (around the neck style) negative-only ion generator



Dual Polarity in the  $\times 10^6$  Scale

### Bi-polar Needlepoint Ionizer

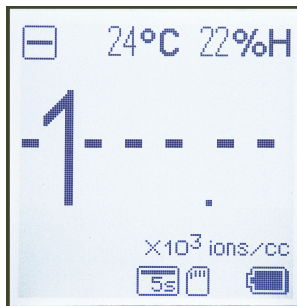
Measurements near the needles of a bi-polar ion generator used to mitigate static



Dual Polarity in the  $\times 10^6$  Scale, No Micro SD card installed

### Overrange

Ion count exceeded 2 million/cc in the  $\times 10^3$  scale



To change the scale, select "Menu", "Data Settings", "Toggle Scale"

For information on the nature of air ions and their sources, see page 14.

## Recording Data

Air ion counts can be recorded on the supplied (user accessible) MicroSD card. Date/time stamped air ion counts, as well as the temperature and humidity, are recorded in a standard CSV spread sheet format. Recording intervals for single polarity are selectable as, single (only records current level) or at intervals of 1, 2, 5, 10, 15, 30 or 60 seconds. Data is averaged over the interval period. In dual polarity mode, both polarity ion counts, along with their sum and the temperature and humidity, are recorded at a non-alterable interval of 15 seconds. To change the single polarity default record interval of 1 second, select "Menu", "Record Settings", "Record Rate".



MicroSD Card  
Gently push in to dismount.

**Maximum MicroSD Card Size 32G**  
**Included 8G Card Recording Time:**  
Approximately 150,000 hours can be at a one second record interval.

### Maximum File Length:

To prevent excessive file sizes, files are truncated when their duration exceeds the intervals noted below. A new file is automatically created, and the recording continues.

Record Interval	Max Recording Time
1 Second	12 Hours
2 Second	24 Hours
5 Second	48 Hours
All Others	1 Week

### To start a recording:

Press "Menu (Enter)" once to bring up the main menu.

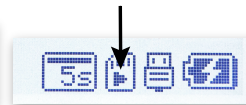
Press "Menu (Enter)" a second time to start the recording.



"Recording" appears briefly



Flashing arrow indicates an ongoing recording



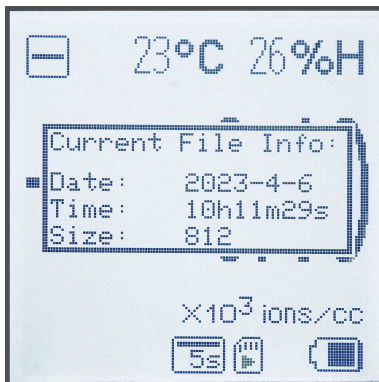
### To stop a recording:

Press "Menu (Enter)" once to bring up the main menu.

Press "Menu (Enter)" a second time to stop the recording.



To check the recording status, press the "UP Arrow".



After pressing the "Up Arrow", the recording start date, start time, and the number of ion measurements recorded thus far are displayed for five seconds.

### Recorded CSV Spread Sheet

	A	B	C	D	E	F	G
1	# AIC3 Ion Data						
2	# -----						
3	# Start Date	3/21/2023					
4	# Start Time	17h33m25s					
5	# Recording Rate	15 s					
6	# Scale	x10 <sup>3</sup> ions/cc (Thousands)					
7							
8	# Time (s)	Ions (-)	Ions (+)	Sum	Temp (Deg C)	Humidity (%)	
9	0	135.46	-156.14	291.6	23	18	
10	15	150.45	-132.95	283.41	23	18	
11	30	126.94	-153.91	280.86	23	18	
12	45	147.26	-158.51	305.77	23	18	
13	60	154.54	-163.48	318.02	23	18	
14	75	123.34	-158.3	281.64	23	18	
15	90	124.13	-139.11	263.24	23	18	
16	105	132.1	-141.03	273.14	23	18	
17	120	143.61	-165.1	308.72	23	18	

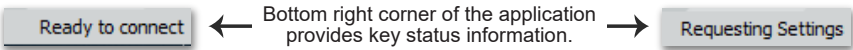


# AlphaApp Data Streaming, Uploading, and Plotting

With the AlphaApp (free PC application), previously recorded data or live streaming data can be saved and graphically plotted. Download the AlphaApp at: <https://www.alphalabinc.com/alphaapp>

Connect (powered) AIC3Pro via USB cable.

Open the Application



The Application should detect the meter and start acquiring information. If not, select “Home” (top left) and “Connect”.

## Uploading Recorded Files

Indicates that saved files are uploading. Once uploaded, the status will change to “Ready” and the data set list will darken.

Buffering File  
Ready

## Plotting & Saving Files

Left click a data set to plot it.

Saves checked data set  
Combines data sets  
Erases checked data sets  
Saves plot image

Data Set Loaded

## Streaming Ion Measurements

Stream, record, plot, and save realtime measurements

Data to be plotted is selectable. It can include both polarities, sum, temperature, and humidity or any combination.

Streaming Data

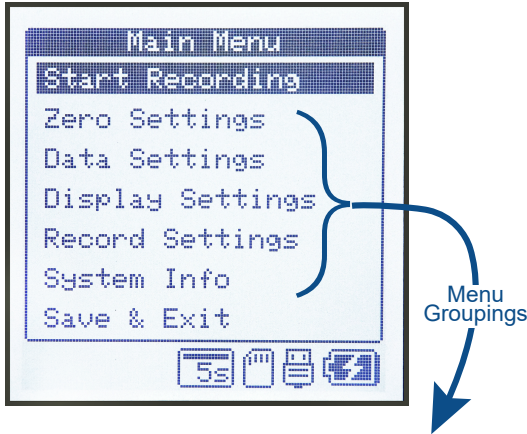
## Move large files to PC via a MicroSD card reader



Due to the slow transfer speed via the USB cable, it is recommended that whenever there are many files or large files, that they are loaded into the PC with the included microSD card reader. After attaching/opening the microSD file folder, copy the desired CSV spreadsheets into the PC’s “Documents” “AlphApp” “AIC3Pro” folder. This directory/folder was automatically created when AlphaApp was installed. After the files are transferred, erase them from the microSD card or leave the card un-mounted from the AIC3Pro, otherwise AlphaApp will attempt to transfer them via the USB cable. Attach the powered-up AIC3Pro and open AlphaApp. To plot a previously saved file, select “Home”, “Load Data File”. Note, the AIC3Pro must be on and initially attached for AlphaApp to load the application screen. Once the AlphaApp display appears, the AIC3Pro can be turned off.

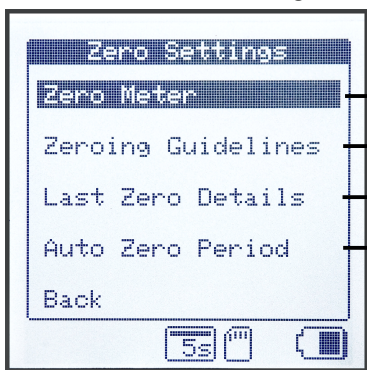
## Menu Selections and Additional Features

### Main Menu



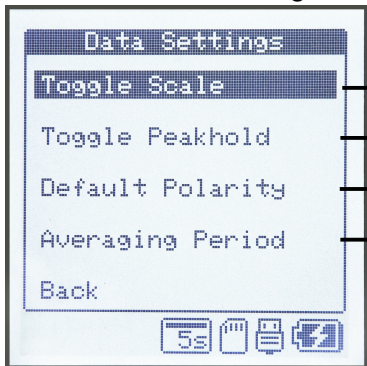
Press the “Menu(Enter)” button to access the main menu. Use the up and down arrows to highlight the desired settings/functions. Once highlighted, press “Menu (Enter)”. When settings are changed, the new setting becomes the new power-up default.

### Menu, Zero Settings



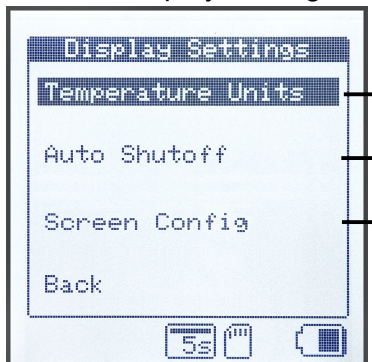
- Zero reference verification / rezeroing, same as “Standby Zero” button
- Guidelines for zeroing the meter
- Last zero date/time and zeroing analysis
- Automatic rezeroing for long term unattended recordings  
None, 3, 6, 12, or 24 hours. The factory default is none.

### Menu, Data Settings



- Scale selection,  $\times 10^3$  or  $\times 10^6$ . The factory default is  $\times 10^3$ .
- Display peakhold, on/off. The factory default is on.  
Peak hold is not available in the dual polarity mode.
- Power up polarity, negative, positive or dual. The factory default is negative.
- Ion count averaging, 1 to 15 seconds or none. The factory default is 5 seconds.

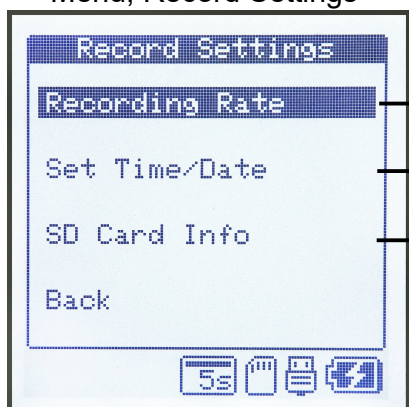
### Menu, Display Settings



- Temperature units celsius or fahrenheit. The factory default is celsius.
- Automatic power shut down after 5, 15, 30, 60 minutes or no auto shut down.  
The factory default is no auto shut down.
- Display contrast, backlight intensity, and display polarity (black characters on the white background) selections. The contrast selections allows for optimal screen contrast at different viewing angles (firmware version 1.0.2 or later).  
Firmware version 1.0.1 has no contrast adjustment.

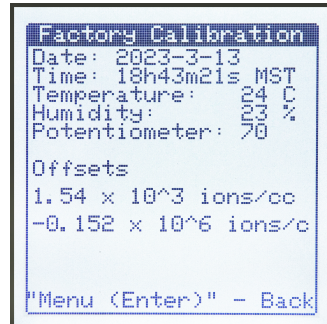
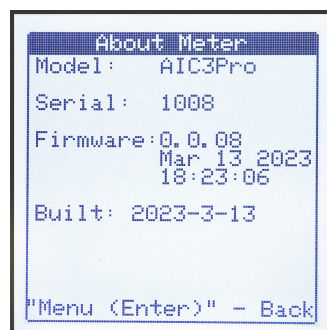
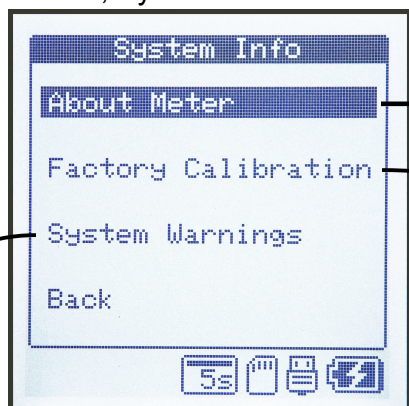
## Additional Menu Selections

### Menu, Record Settings



- Recording interval, 1, 2, 5, 10, 15, 30 or 60 seconds or a single ion count. The recorded value is the averaged ion counts over the selected period.
- Date and time settings vis the meter. When AlphaApp is used the date/time is automatically synchronized to the attached PC time.
- MicroSD card available space, mounting status, model/SN number, and read/write errors.

### Menu, System Information



Potentiometer and offsets values are for manufacturing references.



Warning Icon

### Warnings & Error Messages

If there are system warnings or errors, the warning icon will appear on the (bottom left) of the main display. The warning icon will also appear in the menu adjacent to the menu group that is related to the error or warning.

Warning / Error Message	Location of Message Details	Corrective Action
Zeroing Has Failed ...	Zero Settings Last Zero Details	Cover intake with aluminum foil and re-zero. Internal ion detection could be contaminated with dust etc, or condensation has occurred. Blow compressed air into air intake openings.
[microSD] Read, write, mount, etc.	Record Settings SD Card Info	Remount card, try a different card, format card, etc.
[microSD] Access Denied! Is card writeable?		
[microSD] No Filesystem! Card too large or not formatted'		
Temp unresponsive	System Info System Warnings	Cycle power
Gain unresponsive	System Info System Warnings	Cycle power
[Environment ] Env bad for data	System Info System Warnings	Temperature or Humidity are beyond specified limits. See unit specifications.
[Battery] Too cold to charge	System Info System Warnings	Unit triggers too cold at 0C/32F Unit will clear error above 3C/38F
[Battery] Too hot to charge	System Info System Warnings	Unit triggers too hot at 45C/113F Unit will clear error below 42C/108F

## Accessories (Included)

**Deluxe Protective Carrying Case**



**Three-in-one Kickstand, Tripod Mount, and Wall Mount**



### Wall Mounting

Included mounting hardware



#### Pilot Hole Drill Sizes

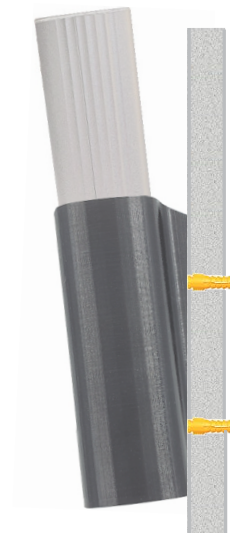
Drywall Anchor:  
3/16" / 4.5mm  
Screw into Wood:  
3/32" / 3.4mm



Drill 4 holes based on the mounting-hole positions in the wall mount.



Tap in plastic anchors



## Specifications

<b>Ion Polarity</b>	Positive, Negative, or Dual polarity with Sum – Selectable In dual polarity mode, polarities are alternately updated every 7.5 sec.
<b>Ion Scale Range</b>	2 million or 200 million ions/cc – Selectable
<b>Ion Resolution</b>	10 ions/cc in 2 million scale, 1000 ions/cc in 200 million scale
<b>Ion Accuracy</b>	+/- 20%*, repeatability 5%
<b>Averaging</b>	None or 1-15 seconds – Selectable
<b>Peak Value</b>	Continuously saved, peak reset – Selectable
<b>Data Recording</b>	Date and Time stamped, standard spread sheet CSV format Includes ion level, temperature, and humidity In dual polarity mode, both polarities and sum are recorded. Data is recorded onto a removable MicroSD, 32G max.
<b>Streaming/Plotting</b>	AlphaApps (no charge PC application) provides real-time data streaming, recorded data uploading, and plotting via a supplied 6' USB cable
<b>Temp. Sensor</b>	+/- 0.2 °C, Displayed in Celsius or Fahrenheit – Selectable
<b>Humidity Sensor</b>	+/- 2% Relative Humidity
<b>Meter Zeroing</b>	Zero reference calibration and self-test – Selectable Automatic re-zeroing for long term unattended operation None or 3, 6, 12, or 24hr – Selectable
<b>Auto Shutdown</b>	None or 5, 15, 30, or 60min – Selectable
<b>Display</b>	128x128 pixel LCD, Backlight high/low level – Selectable
<b>Battery</b>	2,000mAh rechargeable lithium-ion, UN38.3 certified 6-7 operating hours, Charging via USB port with any USB power source
<b>Charger (included)</b>	Input 110-240V, 50-60Hz, .35A, Output 5VDC, 1A
<b>Environmental Limits</b>	Temp -20°C to 43°C, Humidity 0-85% non condensing Wind, <15km/hr (9mph)
<b>Accessories (Included)</b>	ESD shielding cap, Earthing ground cable with connectors 3-in-1 kickstand, wall mount, and tripod mount Deluxe protective carrying case
<b>Meter Size</b>	6.5625" x 3" x 1.5" (166.7mm x 76.2mm x 38.1mm)
<b>Meter Weight</b>	12.9 oz. (366 grams)
<b>Carrying Case</b>	12" x 10.6" x 2.7" (305mm x 269mm x 69mm), 1.1 lbs. (.5kg)
<b>FCC Compliance</b>	Part 15
<b>CE Compliance</b>	EMC: BS EN 55032:2015/Cor 1:2016, BS EN 61000-3-2:2019, BS EN 61000-3-3:2013+A1:2017,BS EN 55035:2017/A11:2020 RoHS: EN 50581:2012

\* Percentage variability is due to ions easily being destroyed before being measured, depending on the sampling conditions.

## Frequently Asked Questions about Air Ions

### **What are natural sources of air ions?**

Ions in the air are created when any energetic event causes a separation of charges in air molecules. These energetic events include things like fire (or very hot surfaces or combustion), lightning and storms, volcanic activity, radioactive decay of radon (or radioactive rocks), and cosmic rays. Mechanical rubbing between two surfaces will also often create air ions, and in some cases even plant leaves rubbing against each other in the wind will have this effect. Any type of rubbing between surfaces that causes static electricity will usually also create ions in the air near those charged surfaces. All of the preceding causes will produce both positive and negative ions. All of the preceding will produce generally equal quantities of positive and negative ions in the air. However, evaporating water is one special source of naturally produced negative ions. Evaporating water creates excess negative charges that are carried with the evaporated water molecules, while the excess positive charges conduct back to the ground, resulting in the creation of negative air ions.

For more information on the nature of air ions and their sources, read "About Air Ions" by Dr. William Lee (PhD Physics): <https://www.alphalabinc.com/about-air-ions/>

### **How do electric ionizers create air ions?**

Whenever a high voltage (typically 5 to 20KV) is applied to a sharp, conductive point, such as a needle, the air surrounding or passing by the point will become ionized in the same polarity as the DC voltage applied to the point. Thus, the name "needle point" ionizers.

### **What are safe levels of positive or negative ions?**

Air ions are not harmful. However, if there are high levels of positive and negative ions indoors with no apparent source, high levels of radon could be the cause.

### **Do electric ionizers create ozone?**

Some ozone is usually created by electric ionizers. Ionizers that produce positive ions will generally create more ozone than those that exclusively produce negative ions. International and national standards govern the ozone limits for ionizers. See ionizer's specifications.

### **Why does the air ion count only extend a short distance (one meter or less) from the ionizer?**

Only the air molecules in the vicinity of the ion source will become ionized. To increase the distribution, a fan must be utilized to pass air over the ion source. Newly created ions in the air will last a minute or less before being neutralized by making contact with a surface. Therefore, in order to reach a given corner of a room, the air flow from fans must be sufficient to get air from the ionizer to that corner of the room generally in less than a minute.

### **If an ion generator is placed in a closed room, will the air ion count continue to rise?**

Within minutes the maximum air ion count will be achieved. This count is the ratio of strength and distribution of the air ion source versus the air ion decay time.

### **If there are high levels of positive ions in a basement or ground floor, how can I determine if the likely source is radon?**

Anytime there are positive air ion counts in excess of 1000/cc (AIC3Pro display  $1.00 \times 10^3$ ) with no apparent electronic generated ionization, there could be radon present. To confirm this, place the AIC3Pro on its kickstand in a (1.5x1.5x1.5 foot, 0.5x0.5x0.5 meter or larger) cardboard box. Partially close off the lid. If the positive air ions are not generated by radon, the air ion level will immediately drop. Radon gas has about a 4 day half-life. Thus, if the air ions are from radon gas (which will still be in the box), the ion count will not immediately diminish. Radon will produce both positive and negative ions, but it's best to use the positive setting on the AIC3Pro because if evaporating water is present, that may produce negative ions which would confuse the results. Note that the exhaust near water heaters, which may contain combustion products, can also produce ion levels over 1000/cc.

## Frequently Asked Questions about the AIC3Pro

**Does the AIC3Pro measure ions from air ionizing hair dryers, ionizing air purifiers, or ionized HVAC (heating/air conditioning systems)?** Yes.

**Can the AIC3Pro measure air ions for needle point bi-polar ionizers that are used in manufacturing processes to control static electricity?** Yes

**Will the AIC3Pro measure tourmaline?**

At room temperature and in the dark, pure tourmaline has no energy source, so it does not produce ions. It can produce ions if heated sufficiently or rubbed, or if high speed air is traveling across it. If it is producing ions, the AIC3Pro can measure the ion count.

**Why do negative ion counts appear in the positive polarity mode (and vice versa) when measuring very low (near zero) ion counts?** The meter's internal ion sensor pickup plate is always sensitive to both polarities. The outside walls surrounding this plate have a positive charge applied when the meter is measuring positive ions. Due to this charge, the negative air ions will be attracted to the charged walls of the chamber, leaving the positive ions to charge the pickup plate/sensor. However, if there are nearly no positive ions and ample negative ions present, the result can be a slight negative charge on the pickup plate/sensor and a corresponding negative ion count on the display. The reverse of this applies when in "Negative" polarity mode. In "Dual" polarity mode, any wrong polarity counts are clamped at zero.

**Why do two or more air ion counters measure different air ion counts?**

Air ion counts can vary significantly between short distances. For an ion count to match, each meter would have to be in exactly the same location at the same time. The meter's "Averaging" setting can also have a significant effect. For any comparisons make sure all meters are set to the same "Averaging" settings. If one meter is set to a high averaging time, that meter will not display low or high levels unless the level is consistent and maintained for the duration of the averaging time.

**Why is the "SUM" on the display the total of all air ions? Don't the negative and positive ions cancel each other?** Both positive and negative air ions can coexist for a period of time in the same area. The effects of ionized air on dust, smoke, and other particulates in the air are the same regardless of the polarity. Thus, the overall potential benefit is the sum of the number of all air ions.

**What causes an air ion count from an ionizer to start high and then quickly diminish?**

This can be caused by an ungrounded AIC3Pro. See page 4. Also, surfaces between the meter and the ionizer, such as tabletops, plastics, or ungrounded metal can quickly build up a static charge from air ions. Once charged, air ions will be repelled. Even non-grounded grills/guards, plastics, or labels on/or in front of an air ionizer can build up a charge and repel/choke off air ions.

## Calibration, Troubleshooting, Warranty, and Support

### **Are calibration certificates available?**

There are no established ISO standards for air ion measurements. However, a calibration certificate can be provided that explains how the meter's air ion count is calculated, and the meter is calibrated. For more information, visit: <https://www.alphalabinc.com/calibration/>

### **What if the meter seems to be malfunctioning?**

1. Make sure that the meter is fully charged.
2. If the meter's "auto zero" fails, follow the steps outlined on page 11.
3. If the meter's display is on, but unresponsive, do a hard reset. To do a hard reset, continually press the "Power" button while pressing the "Up Arrow" button. The hard reset reboots the meter and returns it to its factory default settings.
4. Contact AlphaLab Inc. for further support. <https://www.alphalabinc.com/contact/> or Call 801-487-9492

### **What is the manufacturer's warranty?**

Every AlphaLab, Inc. meter comes with a one-year limited warranty from the date of purchase.