

Software Manual + Hardware Setup Guide



https://app.pureairemonitoring.com/

Powered by **JAS Monitoring**



Manual Version 1.1 September 21, 2023 CloudConnect Version 0.1.2

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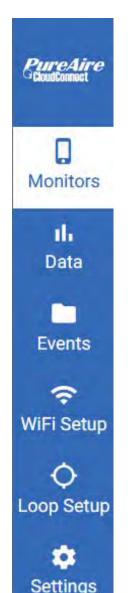
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Overview

CloudConnect is a remote monitoring service that provides a convenient web portal that allows you to track live Monitor status, setup alerts and access historical data. The software is mobile-friendly and accessible from any Internet-connected device with a web browser: including your desktop, tablet, or phone.

The software is organized into several tabs, inside a menu on the left:

When using a small screen such as a mobile device, this menu may be hidden. In this case, click the menu icon in the top left, to toggle the main menu



Monitors

This tab shows a live status overview of your PureAire Monitors, and also allows you to click on individual monitors to view a live graph, or configure alerts.

Data

This tab is a quick interface to view and/or download historical data, which is monitor data collected from any time in the past.

Events

This tab allows you to bookmark frequently accessed historical data, such as data collected during important events.

WiFi Setup

This tab uses browser-based Bluetooth to manage the WiFi networks stored on WiFi monitors.

Loop Setup

This tab uses browser-based Bluetooth to calibrate monitor data coming from a 4-20mA current loop.

Settings

This tab is where you can see the people who have monitoring access, and invite more people to join your company within the software.

The CloudConnect Module is the hardware portion, which connects to the O2 Monitor and brings all of the Monitor's data into the cloud, allowing for the functionality listed above. The CloudConnect module connected to the O2 Monitor looks like this:



Before logging into the monitoring software, let's get the CloudConnect module all wired up.

2. Hardware Wiring & Setup

The CloudConnect module must be connected to PureAire O2 Monitor for power and collecting O2 Data. Here's how to add the CloudConnect module to your **existing** O2 Monitor.

NOTE: For PureAire Monitors and CloudConnect Modules that are already connected, please begin the setup process in **Section 3-Installation**.

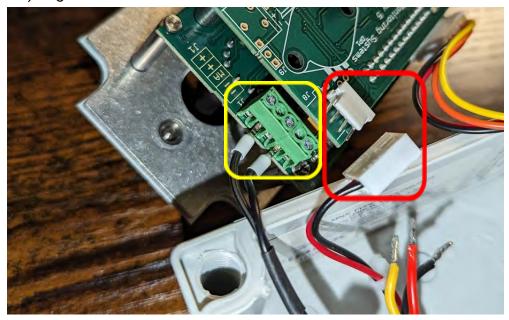
1) **Important** - Disconnect the Monitor from the power supply.



2) Remove the front cover using a standard phillips head screwdriver on the (4) plastic screws (see yellow). Then, loosen the (2) flathead screws to lift the electronics board out (see red).



3) Lift the electronics board out, and locate the following terminal block in your monitor (see yellow). You will need to unplug the alarm horn connector (see red) to gain full access to the terminal block:



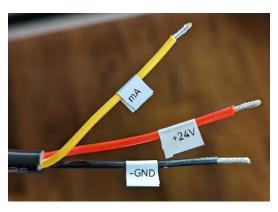
4) You will need to unscrew the cord grip on the O2 monitor, and open up the hole. This will allow you to feed the wire from the CloudConnect module through:



5) Identify the (3) labeled wires on the CloudConnect module, and fee the wires through the cord grip opening, as shown above in Step 4. Do not tighten the cord grip, yet.

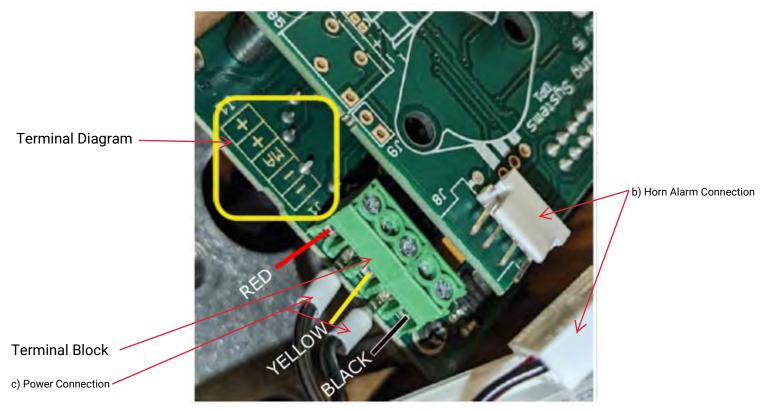


Cord Grip

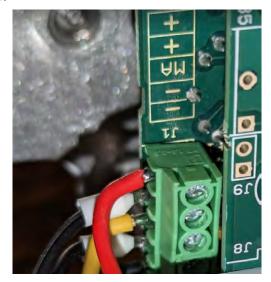


- a) RED is the 24V (+) wire
- b) **BLACK** is the GND (-) wire
- c) YELLOW is the 4-20mA Current Loop signal wire

6) Once the wires have been fed through the cord opening, please see the diagram in the yellow square next to the terminal block. The diagram matches exactly to the terminal block ports. The (+) and (-) ports on the immediate sides of **MA** are already dedicated for the power to the O2 Monitor. Do not use these ports.



a) Utilize the remaining (3) open ports to connect the *CloudConnect* wiring shown above in step 5. You will need a small/precision Phillips head screwdriver:



- b) Reconnect the Horn Alarm
- c) Reconnect the Power

7) With the wires inserted into the terminal block and tightened down, the hardware setup is almost complete. Re-orient the O2 Monitor's electronics board, and begin putting it back into place. You will likely need to back the wire out of the cord grip so there is enough space inside the Monitor:



8) Place the electronic board back into position, and hand tighten the (2) flathead screws. Replace the front cover, and hand tighten the (4) Phillips plastic screws. Re-tighten the cord grip. Hardware setup complete!



3. Installation

The Monitor and CloudConnect module should be mounted in an area free of vibration and electrical noise or interference. If possible, avoid areas with elevated temperatures or condensing humidity. **PLEASE NOTE:** To ensure uninterrupted service, install the Monitor and CloudConnect module in locations with sufficient signal coverage and minimal interference.

Both the Monitor and the CloudConnect are designed for wall mounting and should be installed at a height convenient for operation, maintenance, and viewing of the instrument display.

The Monitor and CloudConnect module should be installed in locations where gas leaks are likely to occur or where released gases may accumulate. They should be mounted no closer than 12 inches above floor level. Airflow within the monitored area, the characteristics of the gas (lighter or heavier than air), and the position of workstations and personnel should all be considered in determining the most suitable installation location.

For more information on installation, please see the PureAire Product Manual.





Mounting feet can be oriented in any direction and are removable for flush mounting to a wall or other flat surface.

4. Account Setup

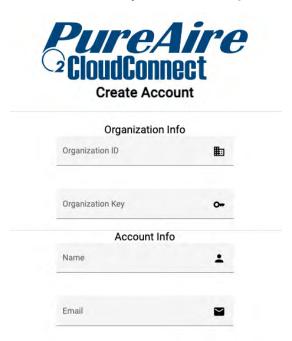
When buying a PureAire Monitor with the CloudConnect for the first time, PureAire will provide a private link to join your company within the remote monitoring software. **NOTE:** The link provided to you will look similar to the example below.

https://app.pureairemonitoring.com/create_account?org_id=id&org_key=key

Using the provided link, any employee of your company can create their own account. Each person will become associated with your company and have access to the PureAire Monitors your company has purchased.

This link is private, do not share it with anyone else

1) Clicking on the link will take you to the 'Create Account' page. The Organization ID and Organization Key fields will be prefilled, but you will need to enter your name, email, and phone number. This information is used solely for monitoring/alerting purposes.



- 2) When you are finished entering your information, click on the "Create Account" button, and wait for a confirmation that your account has been created successfully.
- 3) Afterwards, you will be redirected to the "Log In" page. You can now enter the email & password you used to create your account, and log in.



Log In Password Log In Version 0.1.2 Forgot your password? Forgot Password Need an account? Create Account

Once a company account has been created, additional Monitors will simply be added to your existing company account, with no further setup required.

Once you are logged in, we recommend that you create a browser bookmark for CloudConnect. This will make accessing CloudConnect much faster.



Each CloudConnect module has a status LED that will change color based on the current state.

Upon each startup, WiFi modules enter WiFi Setup Mode (solid blue), which will last for 60 seconds.

Cellular/Ethernet modules will skip WiFi Setup Mode, and begin seeking a connection right away.

Blinking Green: Looking for connection Blinking Lt Blue: Connecting Fading Lt Blue: Connected

** In some cases, the status LED may be blinking purple, indicating a firmware update. These usually take less than 2 minutes. During an update, do NOT turn off the module. **

Ethernet:

Some modules provide an ethernet port. If you plug in an ethernet cable to this port, the module should detect this automatically and connect in a matter of seconds.

WiFi:

The "WiFi Setup" section of this guide has details on how to add a WiFi network to your module during WiFi Setup Mode, as well as troubleshooting steps.

Cellular:

When starting up for the first time, it may take several minutes to find a cell connection. Subsequent connections will occur faster, usually within 1-2 minutes.

Just like your smartphone, cellular connectivity can be impacted by areas of poor reception, harsh weather, or signal interference from dense material. Poor cell reception may result in intermittent data due to frequently losing cell connection.

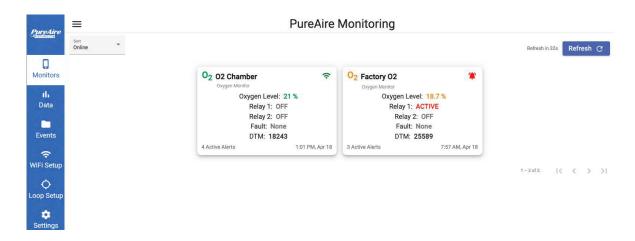
Ensure your module is installed in an area with cell coverage and minimal interference.

Please get in touch with JAS if you have trouble setting up your module; we will gladly assist you.

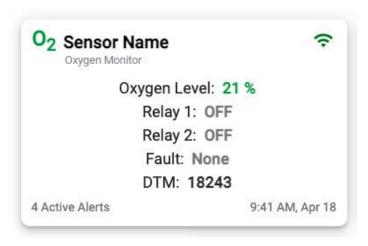
5. View Live Monitor Data

When logging in to the software, you will immediately be directed to the "Monitors" tab. You can also navigate to this tab by clicking on it from the main (vertical) menu.

This tab shows a list of your Monitors, which automatically updates every 60 seconds:



Each Monitor on the list will look similar to the following:



The most recent O2 level and relay states are shown.

(Top Right) The green connection signal indicates the Monitor is currently online.

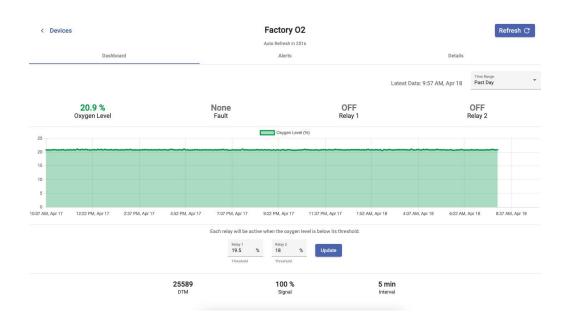
(Bottom Left) This Monitor currently has 4 alerts turned on.

(Bottom Right) This time indicates the most recent data from this Monitor.



The look of a Monitor will change when it has an alert whose condition is currently met. This doesn't always mean the alert has been triggered though, some alerts only trigger after a period of time. More on alerts in the next section. Clicking on the Monitor's name will take you to a focused view for that Monitor with 3 tabs:

1) The dashboard tab shows the past 7 days worth of data. You can adjust this to show a more specific time range, such as only the last 12 hours.



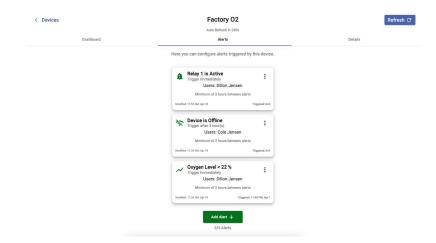
Additionally, you can also edit the O2 level thresholds for each relay to be considered "active". The device must be online for this feature to work, it may take 30-60 seconds for new data to be posted with the updated settings.

Each relay will be active when the oxygen level is below its threshold.

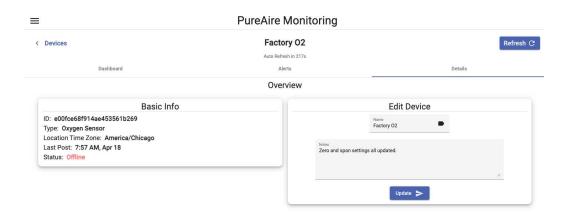


Note: This feature does NOT change the relay threshold settings on the physical monitor. To ensure the Monitor's relays and monitoring software are in agreement, enter the same values as you did on the physical Monitor.

2) The alerts tab shows you a list of alerts already created for this Monitor.



3) The details tab shows troubleshooting information, and allows you to rename the device, and optionally add some brief notes about the Monitor.

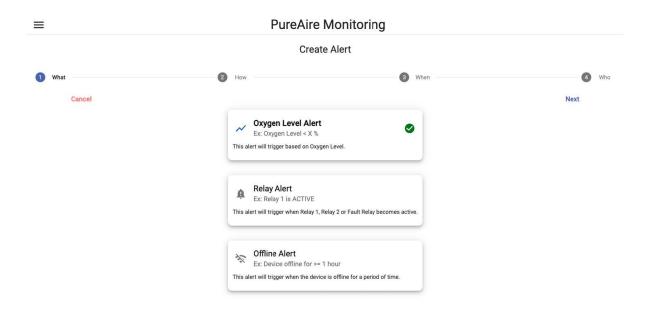


6. Creating Alerts

A useful feature within the monitoring software is to set custom alerts. An alert is simply an email/text/phone call message, describing the reason why the Monitor triggered the alert.

Navigate to the "Monitors" tab from the main (vertical) menu. Click on the Monitor you would like to create an alert for, then click on the "Alerts" tab.

1) Click on the "Add Alert" button to start a step-by-step process to create an alert:



The first step is to define what you would like to be alerted on. There are 3 options:

1) Oxygen Level Alert

This alert will trigger when the O2 level is outside of an acceptable range.

2) Relay Alert

This alert will trigger based on Relay 1, Relay 2, or the Fault Relay being active.

*Relays are "active" when the O2 level is above or below a certain threshold. The main difference from an oxygen level alert, is the alert message you will receive.

3) Offline Alert

This alert will trigger when the Monitor has not been online for a period of time.

*Offline alerts are helpful when the Monitor is expected to be in continuous operation. This will prevent unknowingly missing alerts due to power or Internet connectivity issues. You cannot receive an O2 level alert if the device is not online to report the O2 level!
*In the event of disruption in Internet connectivity, CloudConnect contains a feature that will store data locally for two hours during such outage, with the stored data uploaded to the Cloud once connectivity is restored.

Click on the alert you would like, then click "Next" on the right.

2) Define the condition which will trigger the alert.



In this example, we are creating an **Oxygen Level Alert**. We set the threshold as "Oxygen Level < 20%".
You could also change this to be "Oxygen Level < 20% or > 22%" if only a precise range is acceptable.

This screen will be different if you are creating a Relay Alert or Offline Alert instead.

Input your desired alert condition, then click "Next".

3) Determine if this alert should be sent immediately, or only if the alert condition holds consistently for a period of time.



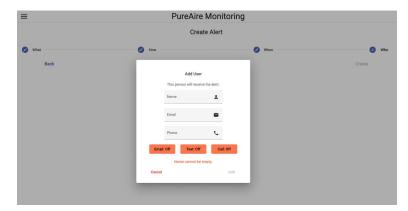
In some cases, you want to know as soon as possible when the oxygen level dips below a certain threshold.

In other cases, it is only concerning if the oxygen level is low for an extended period, such as 30 minutes.

Alerts that trigger immediately will have a faster response time, but may offer false alarms when the Monitor dips below the threshold only momentarily.

Adjust the settings as needed, then click "Next".

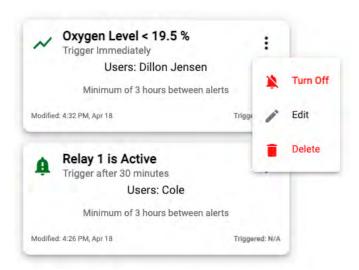
4) Add up to 5 people from your company's CloudConnect account who should receive alerts. If you need help, please refer to **Chapter 3-Account Setup**, on how to add personnel to your CloudConnect account.



Click the "Add User" button, then type their name, and optionally phone number or email. Toggle the buttons on the bottom for how the user should receive the alert. Alerts can be sent with any combination of email, text message, or phone call.

Finally, click the "Create" button on the right. You're done!

After you have created an alert, you will be redirected back to the "Alerts" tab for the Monitor you created the alert for. Here you will see your newly created alert:



The top is the alert condition, the middle are the names of people who will be alerted, the bottom indicates the last time the alert was updated and triggered (if applicable).

Clicking the 3 dots in the top right, will open a small menu, to turn the alert on/off, or to edit/delete the alert.

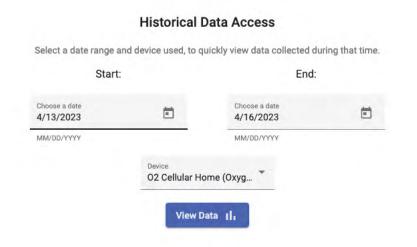
Turning off an alert means it will **not** trigger for any reason.

Please contact JAS if you need help setting up your ideal alert.

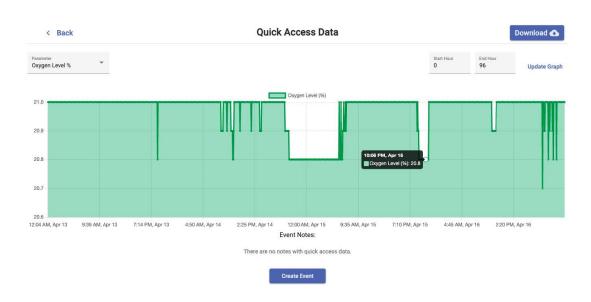
7. Accessing Historical Data

All data collected from the Monitor, is stored permanently and securely in the Cloud. Anyone in your company that you invited to create a CloudConnect account can also view or download this data at any time.

To access historical data, click on the "Data" tab.



You must specify a date range and a Monitor, click the "View Data" button and you will see a graph like the one below:



You can change the data metric displayed on the graph via the dropdown in the top left, or narrow in on a more specific range, by adjusting the hours in the top right. The hour adjustments represent the start/end of the data snippet you are looking at.

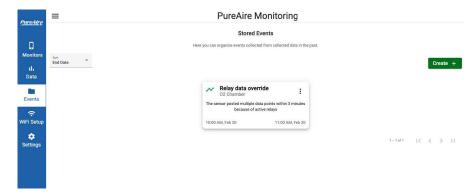
Download this data in CSV format by clicking the download button in the top right. The CSV file will look like the following:

1	Timestamp (UTC)	Oxygen Level (%)	Relay 1	Relay 2	Fault Relay	Fault
2	2023-04-13T05:04:45.648Z	21	0	0	0	0
3	2023-04-13T05:09:45.684Z	21	0	0	0	0
4	2023-04-13T05:14:45.514Z	21	0	0	0	0
5	2023-04-13T05:19:45.841Z	21	0	0	0	0
6	2023-04-13T05:24:45.852Z	21	0	0	0	0
7	2023-04-13T05:29:45.920Z	21	0	0	0	0
8	2023-04-13T05:34:45.595Z	21	0	0	0	0
9	2023-04-13T05:39:45.910Z	21	0	0	0	. 0
10	2023-04-13T05:44:45.764Z	21	0	0	0	0
11	2023-04-13T05:49:46.074Z	21	0	0	0	0
12	2023-04-13T05:54:45.510Z	21	0	0	0	0
13	2023-04-13T05:59:45.444Z	21	0	0	0	0
14	2023-04-13T06:04:45.517Z	21	0	0	0	0
15	2023-04-13T06:09:45.656Z	21	0	0	0	0
16	2023-04-13T06:14:45.672Z	21	0	0	0	.0
17	2023-04-13T06:19:45.438Z	21	0	0	0	0
18	2023-04-13T06:24:46.778Z	21	0	0	0	0
19	2023-04-13T06:29:47.029Z	21	0	0	0	0
20	2023-04-13T06:34:46.556Z	21	0	0	0	0

If you would like to download all Monitor data at once, spanning months/years, or in an arbitrary format not already supported in the software, please contact JAS, and we will provide this data to you directly.

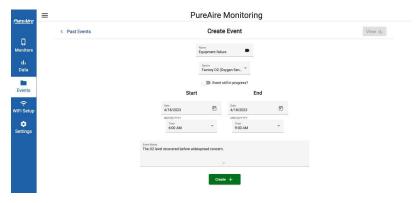
8. Organizing Historical Data

In some cases, you may need to reference specific historical data frequently. You can create an "Event" to serve as a bookmark for past data. An event is just Monitor data labeled with a readable name and description.



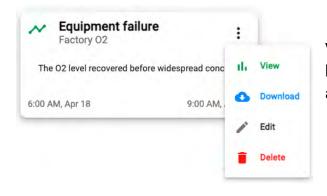
Navigate to the "Events" tab from the main menu on the left. This will show all the events you have already created, and allow you to create new ones.

If you click the "Create" button, you will see the screen below to create a new event. Similar to other historical data access, you just need to select a date range and a Monitor.



The main difference is that you can also add a name and readable description.

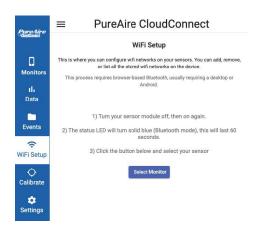
Once created, each event looks like the following. Click the icon in the top right to show options to view/download the data from that event.



Viewing the data will show you a graph just like the one in the section above about accessing historical data.

9. WiFi Setup Mode

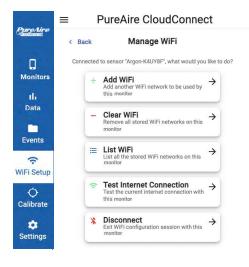
CloudConnect modules that use WiFi, will need access to join your network. You can do this through the "WiFi Setup" tab from the main (vertical) menu. This process happens over *Bluetooth*, so your module must be nearby, you cannot do this remotely.



- 1) Turn on your WiFi CloudConnect Module. The status LED should turn solid blue (WiFi Setup mode), this will last for 60 seconds.
- 2 While the LED is solid blue, click the "Select Monitor" button. A small window will popup asking what Bluetooth device to pair with.



- 3) Click on the device that shows up in the list, then click "pair", and wait a few seconds.
- *This list will only show CloudConnect modules in WiFi setup mode, so don't worry about pairing with the wrong device.
- *Depending on your browser, the module may be named in the format of "PA-O2-XYZ" or "Argon-XYZ"

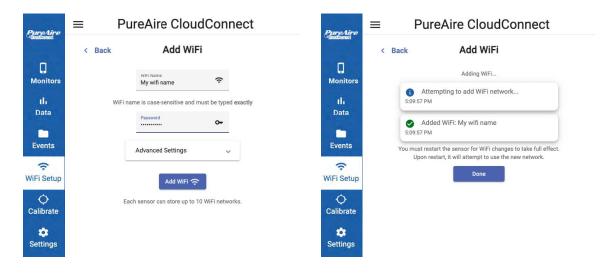


4) Once your module is connected, you will be presented with a list of commands to perform on the WiFi module.

You can add a new network, remove all stored networks, list the stored networks, or test the current internet connection.

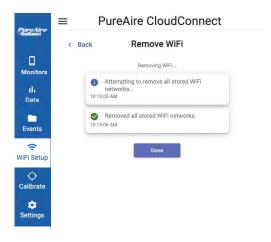
*Each WiFi module can store up to 10 WiFi networks at once *It does no harm to have a network stored which isn't used Below are some example screenshots of performing different commands. Each command will provide further instructions within CloudConnect.

Add WiFi:



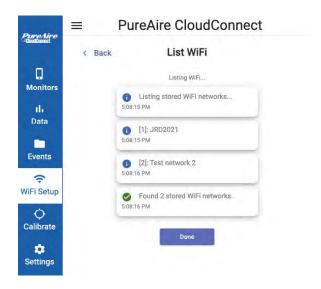
*After adding new wifi networks, restart the CloudConnect module (on/off) for changes to take place.

Clear WiFi:



*Only remove all networks before adding a new one. Trying to use the *CloudConnect* module with no stored networks or valid Ethernet connection is useless and can lead to strange behavior.

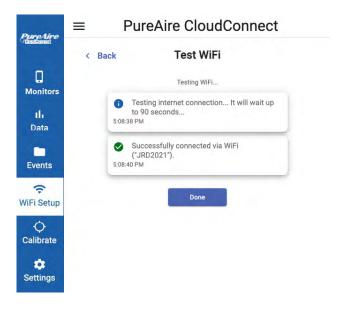
List WiFi:



*Each CloudConnect module can store up to 10 networks at once. It will use the first one it can connect to successfully.

*Storing additional networks that aren't consistently used won't cause any connectivity issues.

Test Internet:



*If Internet connection fails, try restarting the CloudConnect module. If failure persists, contact JAS Monitoring at Team@JensenAppliedSciences.com for help.

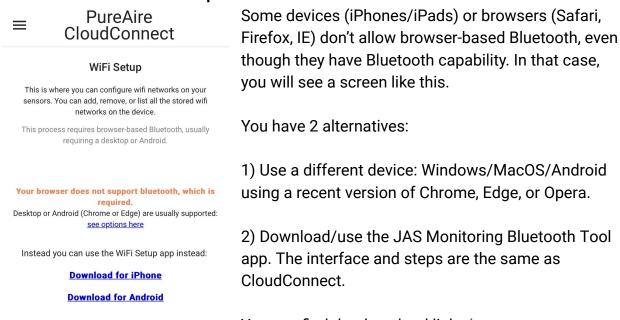
Troubleshooting:

After adding a new WiFi network, restart the CloudConnect module by turning it off then back on again. Upon restart, the CloudConnect module should attempt to use the new network.

When adding a new WiFi network, the name of the WiFi must be typed exactly.

The WiFi module uses 2.4 GHz for WiFi, a 5 GHz router will not work. Many routers are dual-band (both 5GHz & 2.4GHz) which should work fine.

Browser-based Bluetooth required:



You can find the download links here.

If you are having any trouble getting your WiFi module setup on your network, please contact JAS.

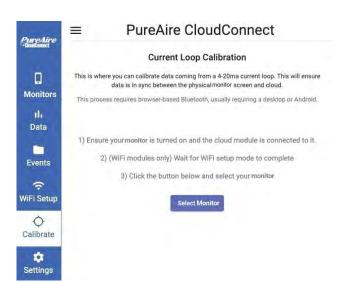
10. Calibrate Current Loop

The CloudConnect module receives O2 data from the Monitor via a 4-20mA current loop. For the best monitoring experience, calibrate the current loop data to ensure that the O2 information displayed on the Monitor's screen will match the O2 shown in CloudConnect.

*Without calibration, the O2 on CloudConnect may differ slightly from the O2 displayed on the Monitor's screen.

** Calibrating the 4-20mA current loop is NOT the same as calibrating the actual O2 Monitor. See your PureAire Monitor M anual - Section 6.1 "Monitor Verification" for more details. **

In order to calibrate the CloudConnect module monitor data, you will need to your O2 Monitor plugged in & the & cloud module properly connected to it.



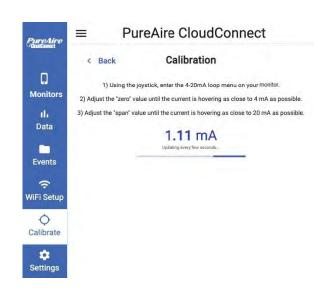
1) Navigate to the "Calibrate" tab from the main (vertical) menu, and click the "Select Monitor" button.

This process happens over *Bluetooth*, so the CloudConnect module must be nearby. You cannot complete this process remotely.

*If you have a WiFi module, you must wait for WiFi Setup mode to complete.

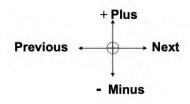


- 2) Click on the device that shows up in the list, then click "pair", and wait a few seconds.
- *This list will only show CloudConnect modules available to calibrate, so don't worry about pairing with the wrong device.
- *Depending on your browser, the module may be named in the format of "PA-O2-XYZ" or "Argon-XYZ"



3) Once connected, your module will stream the latest current value in milliamps, every few seconds.

While watching this value, you will need to adjust 2 settings on the Monitor via the joystick.



Plus - Pushing the joystick in this direction increases the value

Minus - Pushing the joystick in this direction decreases the value

Next - Pushing the joystick in this direction moves you to the next level of the menu hierarchy.

Previous - Pushing the joystick in this direction takes you out to the last level of menu hierarchy.

Enter - Pushing the joystick directly in the center enters the information into the microprocessor

4) Use the Monitor's joystick to enter the "Set 4-20mA loop" screen

This will require using the Monitor's password to enter the menus. More info can be found in the Monitor's User Manual - Section 5, /5.5.1 "Set 4-20mA loop".

.Set 4-20mA loop.. 20.9%

5) Adjust the "Zero" value (0-255) until the CloudConnect value hovers around 4mA.

..Set 4mA zero... 20.9% 255 20.9%

5) Adjust the "Span" value (0-255) until the CloudConnect value hovers around 20mA.

...Set 20mA Span... 20.9% 255 20.9%

After calibration, the Monitor and CloudConnect should display the same O2 value.

Browser-based Bluetooth required:



PureAire CloudConnect

Current Loop Calibration

This is where you can calibrate data coming from a 4-20ma current loop. This will ensure data is in sync between the physical monitor screen and cloud.

This process requires browser-based Bluetooth, usually requiring a desktop or Android.

Your browser does not support bluetooth, which is required.

Desktop or Android (Chrome or Edge) are usually supported: see options here

You can use the bluetooth tool mobile app for calibration instead:

Download for iPhone

Download for Android

Some devices (iPhones/iPads) or browsers (Safari, Firefox, IE) don't allow browser-based Bluetooth, even though they have Bluetooth capability. In that case, you will see a screen like this.

You have 2 alternatives:

- 1) Use a different device: Windows/MacOS/Android using a recent version of Chrome, Edge, or Opera.
- 2) Download and use the JAS Monitoring Bluetooth Tool app. The interface and steps are the same as CloudConnect.

You can find the links to download here.

Please contact JAS if you are having trouble calibrating the 02 Monitor current loop.

11. Forgot Password

Occasionally, you might forget your password and be unable to log in to CloudConnect. It is easy to reset your password, you just need access to your email.

1) Navigate to https://app.pureairemonitoring.com/forgot_password



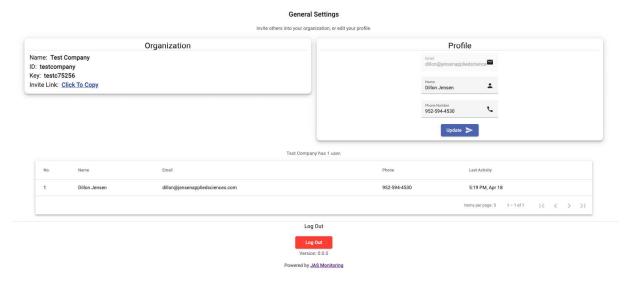
- 2) Enter your email address, then click "Send Reset Email"
- 3) Click the link in your reset email (Check your spam if you don't see it in your email)



Here you can enter a new password, then click "Reset Password". That's it!

12. Inviting Coworkers in Settings

If you'd like to give more people within your company remote monitoring access to the Monitors, navigate to the "Settings" tab from the main menu on the left.



In the top left, you can copy the join link for your company. Send this link to your coworkers, and they'll be able to join the same way you have already.

On the right, you can edit your profile. On the bottom, you will see a table of people who have joined your company, and the last time they have accessed the software.

On the very bottom is a button to log out. This will redirect you back to the login page.



13. Contact Us

For inquiries regarding the CloudConnect Module, please contact JAS at:

Team@JensenAppliedSciences.com (952)-594-4530

For inquires regarding PureAire Monitors, please contact PureAire Monitoring Systems at:

pureairemonitoring.com

(847)726-6000 (888)788-8050