

# Aeroqual AQY-R

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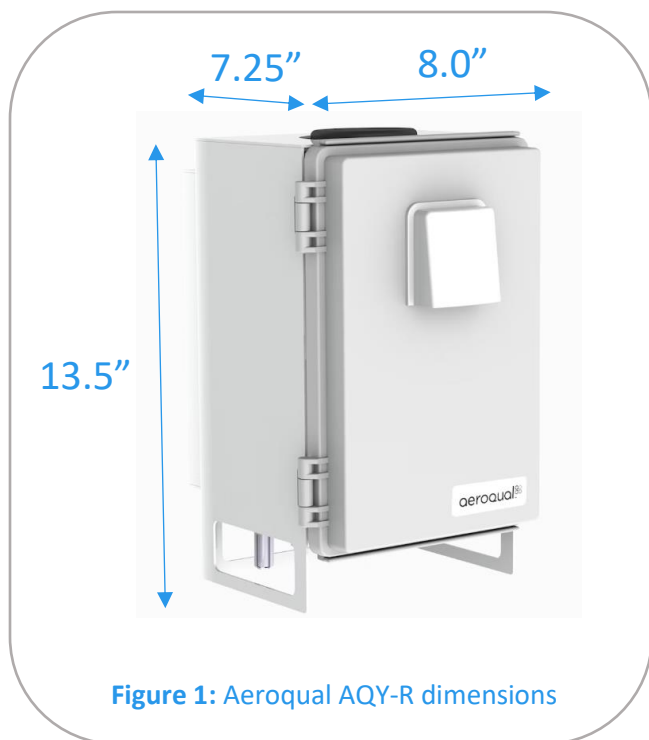
## Installation Guide



The South Coast Air Quality Management District's (South Coast AQMD) Air Quality Sensor Performance Evaluation Center (AQ-SPEC) team specializes in testing air quality sensors. This guide is intended to supplement vendor-provided documents and to facilitate the installation of sensors for community field deployments. Data from air quality sensors are intended for community education/engagement purposes and not for regulatory, legal, or policy purposes.



<http://www.aqmd.gov/aq-spec>



## Monitor Information

### Parameters Measured:

- Particulate Matter (PM<sub>2.5</sub>)
- Nitrogen Dioxide (NO<sub>2</sub>)
- Ozone (O<sub>3</sub>)
- Relative Humidity (RH)
- Temperature (T)

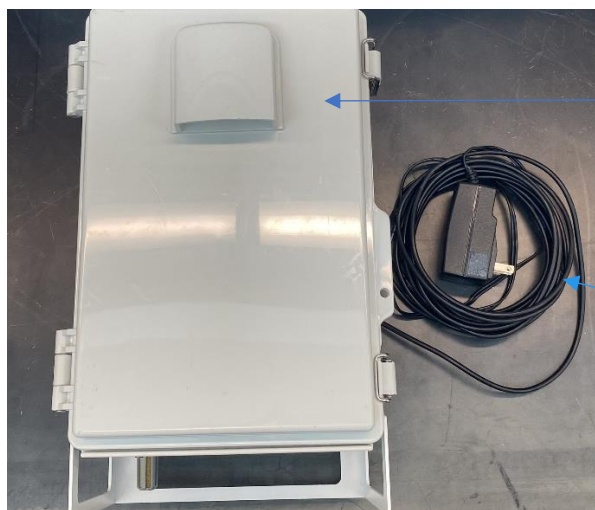
### Dimensions:

13.5" H x 8.0" W x 7.25" D

Weatherproof

Wi-Fi required

## Each AQY-R Includes:

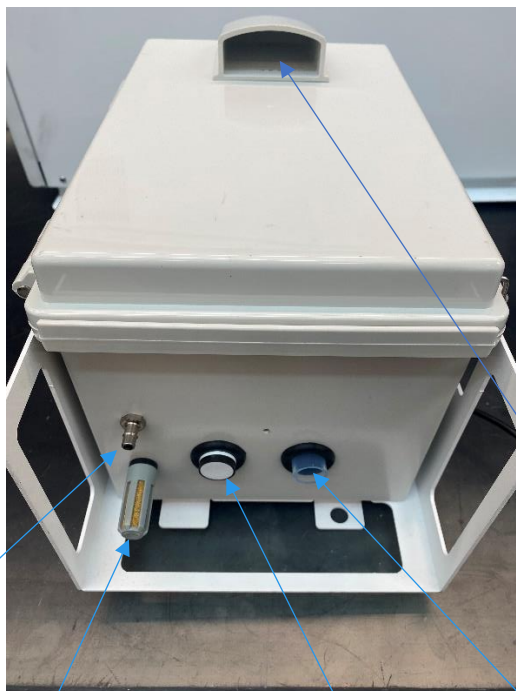


Aeroqual AQY-R Monitor

Power Adapter with  
Extension Cord

Figure 2: Aeroqual AQY-R parts

## Monitor Components



**Figure 3:**  
Aeroqual AQY-R  
external features

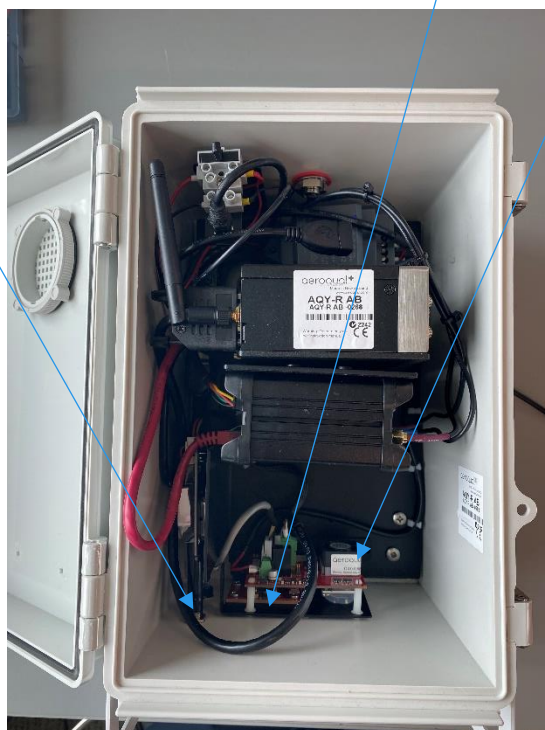
PM<sub>2.5</sub> Inlet

T/RH Probe

NO<sub>2</sub> Sensor

O<sub>3</sub> Sensor

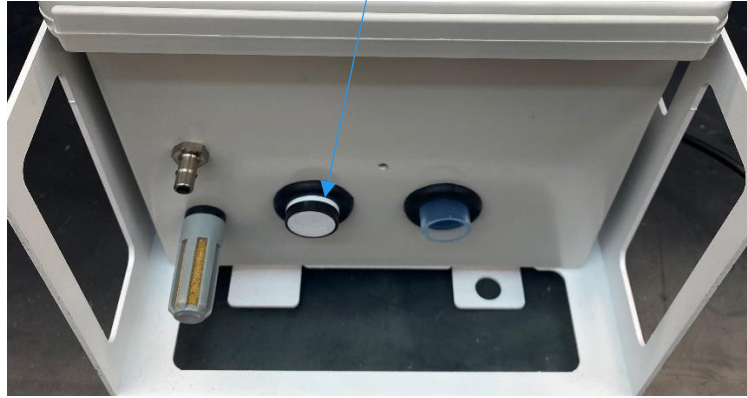
Vent



**Figure 4:**  
Aeroqual AQY-R  
Internal features

## Precautions

- The AQY-R monitor does not have a power switch. The monitor will automatically power on when the 120V wall adapter is plugged in
- Do not unplug the power adapter from the monitor during the boot-up process (first minute after powering on) as this can cause programming/settings damage
- Do not touch the NO<sub>2</sub> sensor's white filter/film as it is sensitive to touch and can easily tear



- Avoid bumping or shaking the monitor as this can loosen internal components
- While mounting the monitor, be very cautious when attaching it to the 3-point mounting bracket. Misalignment of sensor and bracket can result in droppage, resulting in sensor destruction and/or bodily injury

Please see below for the 4-step installation process for the Aeroqual AQY-R monitor:

### 1. Determine the Installation Location

There are a few considerations to keep in mind while determining the monitoring location for an air quality monitor:

- Sensor should be installed in a location which allows for open airflow around the monitor (e.g. roof fascia, vertical post/pole, top of a fenceline, or similar)
- Ideal height for installation is 5ft to 10ft from the ground
- Avoid installing monitor within 2ft of the ground or in a space closed off by walls
- Be careful to avoid installing near local sources of pollution (e.g., dust or fumes). Examples of sources to avoid include A/C units, ventilation ducts, barbecues, or parking areas where vehicles may idle.
- Install away from major obstructions, such as tall trees or overhead shade structures
- It is preferable, but not required, to install away from direct sunlight (e.g., on a north-facing wall)
- Near a power outlet for easy connection with minimal power cord length
- The location should provide access to a reliable and strong Wi-Fi signal

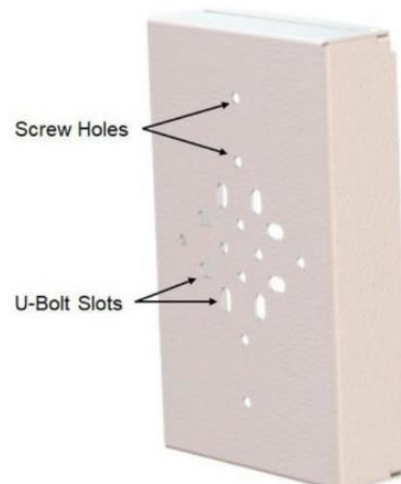
## 2. Installation

Prior to mounting the air monitor in the planned deployment location, note the AQY-R serial number found on the sticker on the inside of the monitor

The AQY-R monitor's serial number will be in the form of "AQY-R AB-####"



1. The AQY-R comes with a multi-functional mounting bracket. U-bolts can be used to secure the bracket to vertical or horizontal poles, while several screw holes can be used to affix the bracket to walls or wooden structures.
2. To ensure a secure and lasting attachment, mount the monitor using metal cable ties/hose clamps (e.g., for a railing or pole) or outdoor rated screws (e.g., for a rooftop edge or wall). The sensor inlets should be facing down to avoid damage from rain or mist.



AQY-R mounting bracket

3. Plug the power adapter in to a 120V outlet
  - a. If the power outlet being plugged into is located outdoors, use a weatherproof receptacle cover to protect the outlet from moisture.
  - b. The power cable should have enough slack to create a drip loop below the point of entry into the outlet.
  - c. Use zip ties to secure the power cable to ensure no tripping hazards exist
4. The monitor connects and transmits data via Wi-Fi and will attempt to connect automatically after powering on (Wi-Fi setup detailed in Section 3 below)



5. Collect installation information for records
  - Note the date/time of installation and who installed the sensor
  - Take a photo of the installed monitor and its surroundings
  - Using Google Maps on a smartphone or computer (either via the Google Maps mobile app or visiting [maps.google.com](https://maps.google.com)), tap and hold the screen on the monitor's exact location on the map and record the coordinates (ex. 34.001943, -117.830218) shown at the bottom of the pop-up box

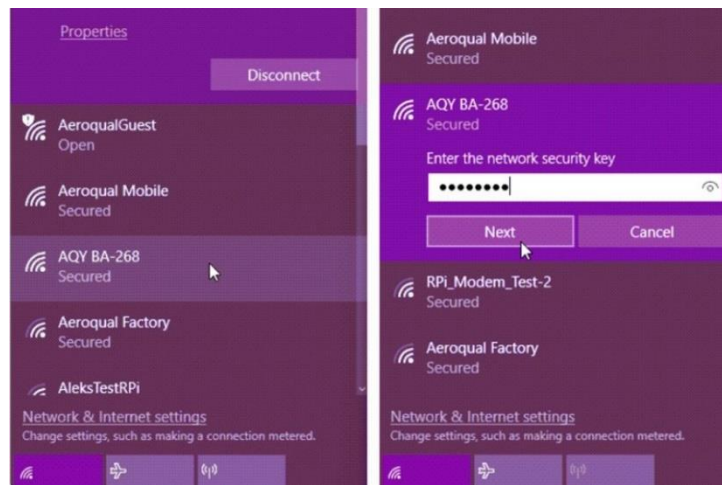


### 3. Data transmission: Connecting to Wi-Fi

The AQY-R requires connecting to a local Wi-Fi network to communicate with the Aeroqual Data Platform.

**Follow the steps below to configure the device to a local Wi-Fi network:**

1. With the AQY-R powered on, use a smartphone, tablet, or laptop to scan for available Wi-Fi networks. The AQY-R should emit a Wi-Fi network with a name identical to the monitor's serial number.
2. Connect to the Wi-Fi emitted by the AQY-R unit and enter the following password to join: **Aeroqual**



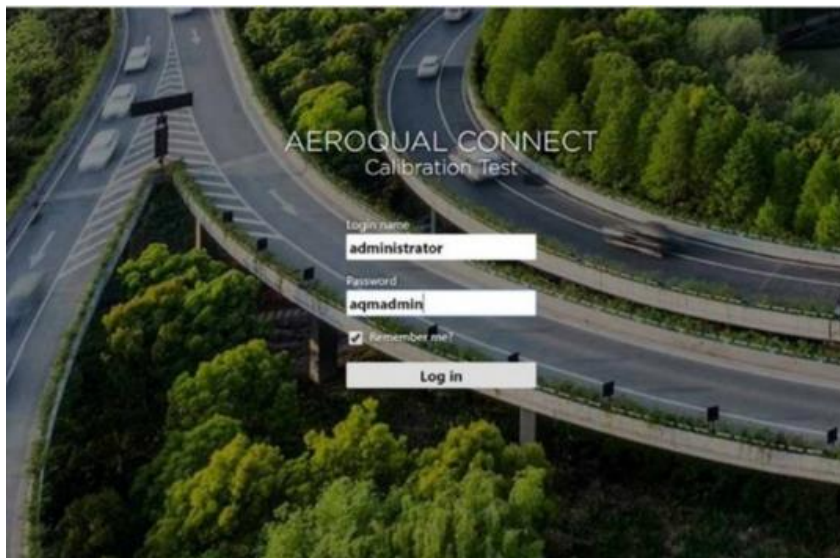
- Once connected to the built-in Wi-Fi, open a browser tab on your device and enter **10.10.0.1** into the address bar. This is the local address to the monitor.

(Note: Smartphones may detect that the monitor's Wi-Fi is not connected to the internet. Opt to stay on the monitor's Wi-Fi network if prompted as this setup procedure will not work if connection between your device and the air monitor is lost)

- When the login screen for Aeroqual Connect appears, log in with the following credentials:

Login name: **administrator**  
 Password: **aqmadmin**

Login Screen for Aeroqual Connect:



After entering the credentials and selecting “Log in” the Aeroqual Connect home screen will appear:



- To configure the air monitor to the local Wi-Fi:
  1. Click on **“Configure Instrument”**
  2. Click **“settings”** from the side Menu
  3. Under the communications column, change the **“WiFi mode”** from **“Access point”** to **“client”**
  4. Manually enter the Wi-Fi credentials of your local Wi-Fi into the **“WIFI SSID”** and **“WIFI password”** fields. Ensure these are entered correctly.
  5. Click **“Save”**. The air monitor’s Wi-Fi will no longer appear when scanning for Wi-Fi networks and the air monitor will now automatically connect to your local Wi-Fi and stream data to the cloud.

Note: If the incorrect Wi-Fi SSID or password was entered, the monitor will not come online and cannot easily be reconfigured without performing a factory reset. Please contact Aeroqual support or AQ-SPEC staff for instructions on performing a factory reset to start the configuration process over.



To ensure the monitor has connected to the Aeroqual Data Management Platform, contact AQ-SPEC (contact information available on page 9) to confirm the monitor has connected and is reporting data. You will also need to provide the monitor's serial number and coordinates to update your monitor's accurate location on the database.

## **4. Installation Survey and Log Notes Form**

After completing all the previous steps and contacting AQ-SPEC to ensure the monitor is online, please complete the following survey:

- Aeroqual AQY-R Monitor Installation Survey

<https://forms.office.com/g/J9GAKVc5Bs>

This survey is to be filled out just once and covers the installation/deployment process and collects information on the type of environment and surroundings the monitor was deployed in.

During the monitor's entire deployment period, community members are encouraged to submit information about activities and ambient conditions that may impact the data collected by the monitor. This information allows community scientists to better analyze and interpret local air quality conditions and note any atypical conditions that may impact the monitor. A Log Notes Form shall be used to record any activities, observations, concerns, or general notes about a monitor and its surroundings:

- Aeroqual AQY-R Log Notes Form

<https://forms.office.com/g/TJsTc0QEzm>

This form is intended for ongoing and repeated use to collect information about the date/time of any notable observations regarding the ambient air sampled by the monitor or any events you believe may have caused spikes in the readings. This form also gives you the opportunity to explain any trends you observe.

### **Helpful links from the manufacturer:**

Installing the AQY-R

<https://support.aeroqual.com/Guide/Install+the+AQY+R/263>

Connecting to the monitor:

<https://support.aeroqual.com/Guide/Connect+directly+to+monitor++using+built-in+Wi-Fi/16>

Setting up Wi-Fi connectivity:

<https://support.aeroqual.com/Guide/Connect+monitor+to+Aeroqual+Cloud+using+office+Wi-Fi/17>

**AQ-SPEC Technical Support**  
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