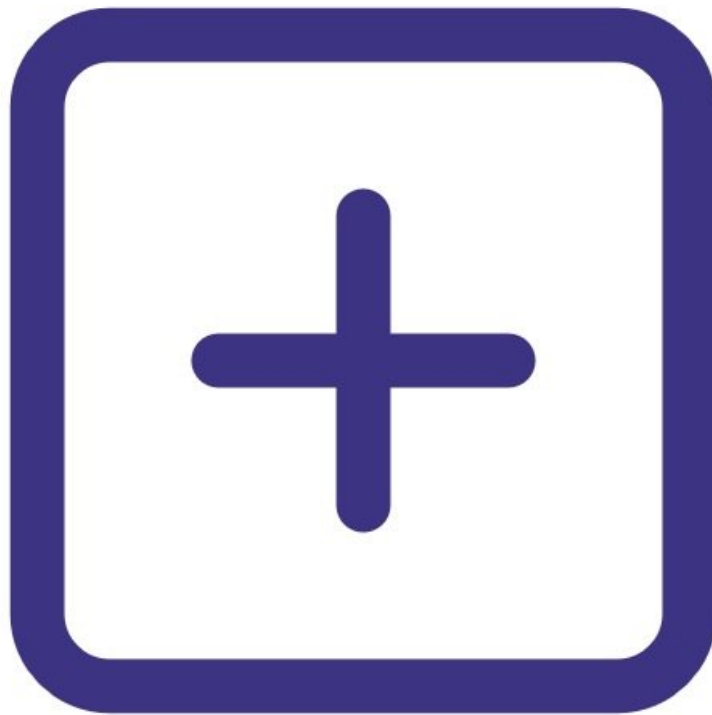




Add gas module

Learn how to add a new gas module to your monitor.

Written By: Tanya Taylor



INTRODUCTION

The AQS 1 supports up to 4 gases: O₃, NO₂, CO, VOC high range or VOC low range.

The AQM 65 supports up to 8 gases: O₃, NO₂, NO_x, SO₂, CO, CO₂, H₂S, VOC low range or VOC high range.

You can easily do this procedure on site at the monitoring location.

To understand how often you should perform this service activity, [click here](#).



TOOLS:


- [Large Phillips head screwdriver](#) (1)
- [Tube cutter](#) (1)



PARTS:

- [PFA tubing \(inlet\)](#) (1)
- [Tygon tubing \(exhaust\)](#) (1)
- [Luer fittings](#) (1)
- [Flowmeter - TSI 4140](#) (1)
- [O₃ gas module](#) (1)
- [NO₂ gas module](#) (1)
- [NO_x gas module](#) (1)
- [CO gas module](#) (1)
- [CO₂ gas module](#) (1)
- [H₂S gas module](#) (1)
- [SO₂ gas module](#) (1)
- [VOC gas module - low range](#) (1)
- [VOC gas module - high range](#) (1)

Step 1 — Enter service mode



Calibration and Service ▾

Instrument ▾

Sales & Support Demo AQY (AQY Demo-001) ▾

Normal operation

Calibration

History

Manual Entry

Manual service mode

Start

Calibration parameters

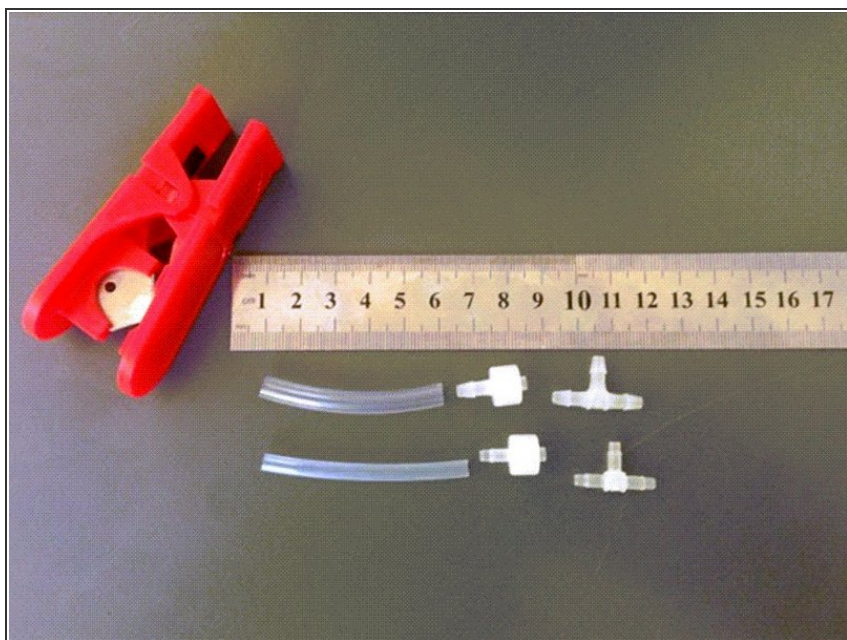
	NO2 ppb	Ox ppb	O3 ppb	O3 raw ppb	PM2.5 raw µg/m³	PM2.5 µg/m³	TEMP °C	RH %
Gain	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.00
Offset	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0
a	1.100		2.550					
b			1.870					

Real time measurements

Time	NO2 ppb	Ox ppb	O3 ppb	O3 raw ppb	PM2.5 raw µg/m³	PM2.5 µg/m³	TEMP °C	RH %
11:42 a.m.	2.9	29.6	24.2	23.7	1.7	1.1	15.74	86.1
11:41 a.m.	2.8	29.2	24.0	23.5	1.6	1.0	15.63	86.1
11:40 a.m.	3.1	29.7	24.2	23.8	1.9	1.2	15.60	86.1
11:39 a.m.	3.6	30.2	24.1	23.7	1.5	1.0	15.55	87.1
11:38 a.m.	4.7	30.4	23.4	23.0	1.3	0.8	15.48	87.1

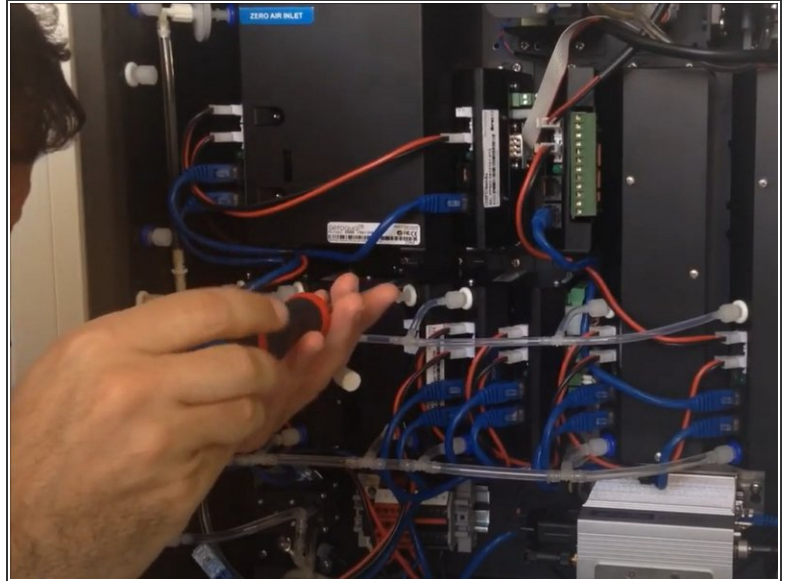
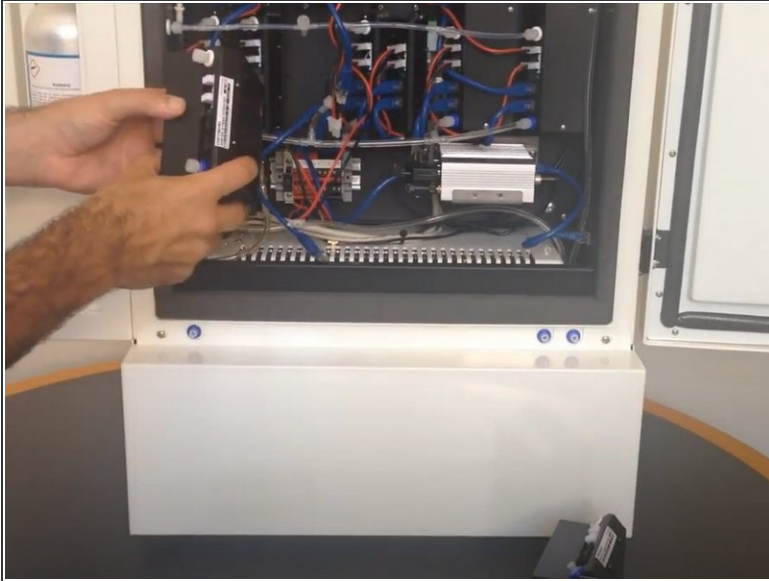
- [Enter service mode](#) so any fluctuations in the data caused from this activity can be excluded from air quality reports.

Step 2 — Prepare tubing



- ① Keep your monitor on. You don't need to turn it off for this procedure.
 - Identify where you want to install the new module.
 - ① You can install it between two existing modules or connect it directly to manifold on the left side of the enclosure.
 - Carefully cut the PFA and Tygon tubing in the enclosure to the required length (about 5cm).
- ⚠ Use a tube cutter. Don't use scissors.

Step 3 — Insert module



- If you're inserting the new module between two existing modules, use a large barb tee for the exhaust tubing and a small barb tee for the inlet tubing.
- Secure the module to the back plate using 4 x 10mm M4 screws.
- Connect one blue communications cable and one red and black power cable to ensure all modules have power and communications.

 **Make sure the polarity of the red and black cable is the correct.**

Step 4 — Configure module

Configure Instrument | Instrument | CASANZ AQY (AQY BB-658)

Normal operation

Settings

Alerts

Sensor List

Data Filters

About

System

Serial number
AQY BB-658

Name
CASANZ AQY

Instrument type
AQY1

Software version
1.16.0

Time zone
(UTC) Coordinated U

Summer time adjusted
☒

Location

Default averaging period
1 hour

Sensors

Aeroqual Sensor Port
COM 1

Poll interval
Every 5 seconds

Poll time-out
15 seconds

Active Sensors

NO2	Ox
O3	O3 raw
PM2.5 raw	PM2.5
TEMP	RH
DP	
Add new sensor ...	

Communications

Remote config interval
Every minute

Remote config server
Demo Server

Offline reboot interval
1 hour

Ethernet mode
Direct (DHCP server)

Ethernet IP address
10.10.0.1

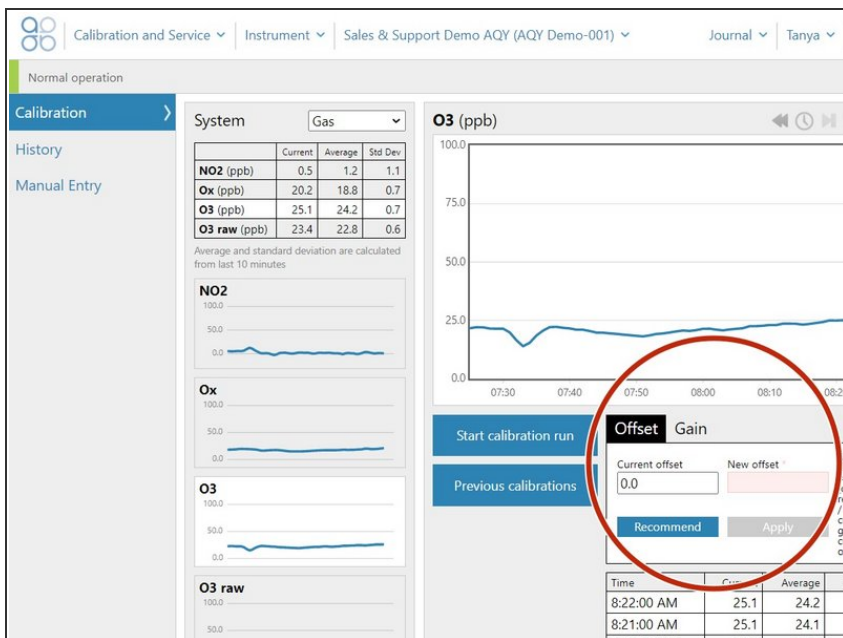
WiFi mode
Client

WiFi SSID
Aeroqual

Hidden SSID
☐

- Go to the **Configure** app and click **Settings** from the side menu.
- Select the new module from the **Add new sensor** drop-down.
- Click **Save**.

Step 5 — Set offset and gain



- Go to the **Calibration and Service** app and select **Calibration** from the side menu.
- Select your new gas channel from the **System** panel.
- In the details panel, set the offset to 0.000 and the gain to 1.000.

Step 6 — Check inlet flow



- When you add a gas module, you increase the overall flow rate of the main gas inlet.
- Read the PDF attached to the end of this user guide to understand the expected flow rate for the gas inlet.
- [Measure the inlet flow rate to make sure it's as expected.](#)

Step 7 — Record in journal

Instrument ▾ Air Quality Monitor (AQM65 04082015-437) ▾

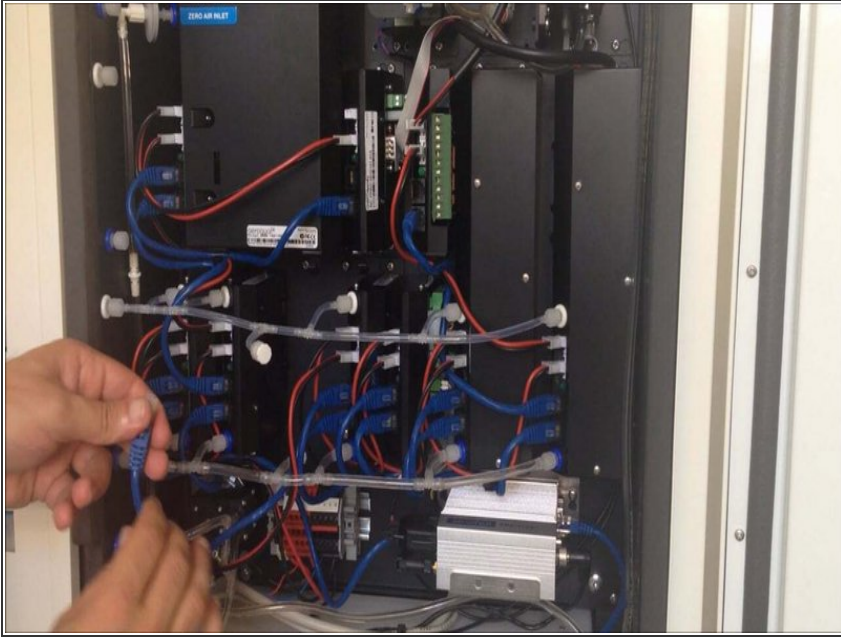
All journal types ▾

User entry | Cloud user - John Wagner

1. Site Inspection: No new local emission sources Instrument in good condition No obstructions to monitoring equipment	2. Instrument inspection: Cooling fan operational PM and gas inlet secure Instrument has been running at stable
3. Equipment: Aeroqual Gas dilution calibrator: Aircal 1000 Aeroqual Ozone calibrator: AQM O3Cal Aeroqual Flow meter: AQM R7	4 Gas cylinders: CO 1000 ppm in Air (expiry March) SO2 20 ppm in Air (expiry December) NO2 20 ppm in Air (expiry November)
4. Flow rate check: Expected flow rate = 0.450 ml per min, Measured flow rate = 0.452 ml per min Main inlet flow rate OK, individual module flow rates were not measured.	5. Open door and change gas inlet filter
6. Zero calibration All modules passed zero calibration, all modules were stable and all offsets were within acceptable limits.	
7. Span Calibration CO @ 10.00 ppm Module response was 8.95 ppm gain adjustment to 1.15 pass SO2 @ 0.2 ppm Module response was 0.210 ppm gain adjustment to 0.92 pass NO2 @ 0.2 ppm Module response was 0.090 ppm gain adjustment to 2.10 pass (module may need replacing soon contact Aeroqual)	
8 Pack up. Next scheduled calibration 3 months from now. June 2017.	

- [Record the results of this service activity in the monitor's journal.](#)
- [Exit service mode.](#)

Step 8 — Video of steps



- To see the process of adding a module in an AQM 65, watch this video.

For further support, contact [Technical Support](#).