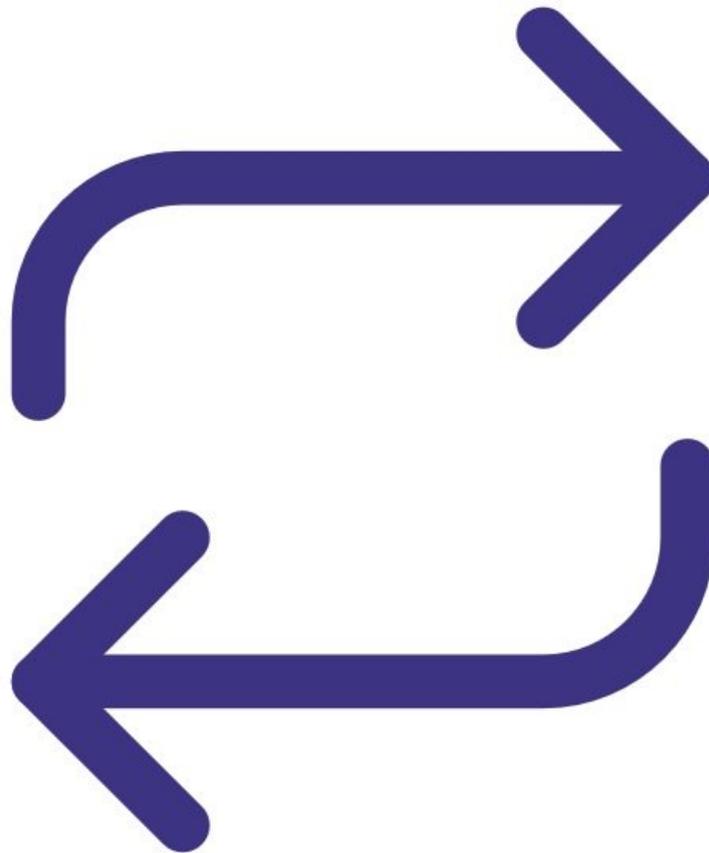




Replace gas module

Learn how to replace a gas module with another of the same type or a module of a different type.

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)



PARTS:

- [Flowmeter - TSI 4140](#) (1)
- [O3 gas module](#) (1)
- [NO2 gas module](#) (1)
- [NOx 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

Normal operation

Calibration and Service | Instrument | Sales & Support Demo AQY (AQY Demo-001)

Calibration

History

Manual Entry

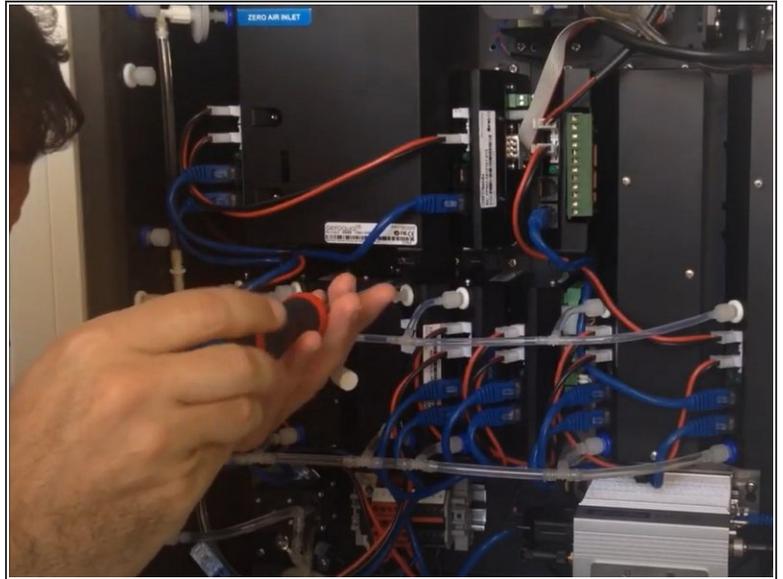
Manual service mode

Calibration parameters								
	NO2 ppb	Ox ppb	O3 ppb	O3 raw ppb	PM2.5 raw µg/m ³	PM2.5 µg/m ³	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/m ³	PM2.5 µg/m ³	TEMP °C	RH %
11:42 a.m.	2.9	29.6	24.2	23.7	1.7	1.1	15.74	86.0
11:41 a.m.	2.8	29.2	24.0	23.5	1.6	1.0	15.63	86.0
11:40 a.m.	3.1	29.7	24.2	23.8	1.9	1.2	15.60	86.0
11:39 a.m.	3.6	30.2	24.1	23.7	1.5	1.0	15.55	87.0
11:38 a.m.	4.7	30.4	23.4	23.0	1.3	0.8	15.48	87.0

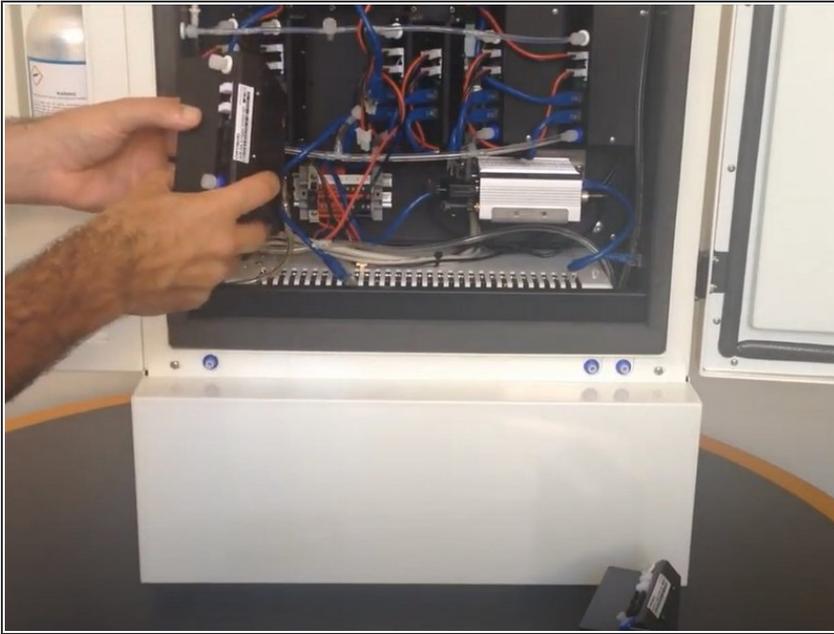
- [Enter service mode](#) so any fluctuations in the data caused from this activity can be excluded from air quality reports.

Step 2 — Remove old module



- i Keep your monitor on. You don't need to turn it off for this procedure.
- Disconnect the blue communications cables and red and black power cables.
- Disconnect the sample inlet and exhaust tubes.
- Loosen the retaining screws and carefully remove the module.

Step 3 — Insert new module



- Carefully insert the new module and screw it in.
- Take the luer caps off the sample inlet and exhaust connections.
- Connect the sample inlet and exhaust tubes to the module.
- Connect the communication and power cables.

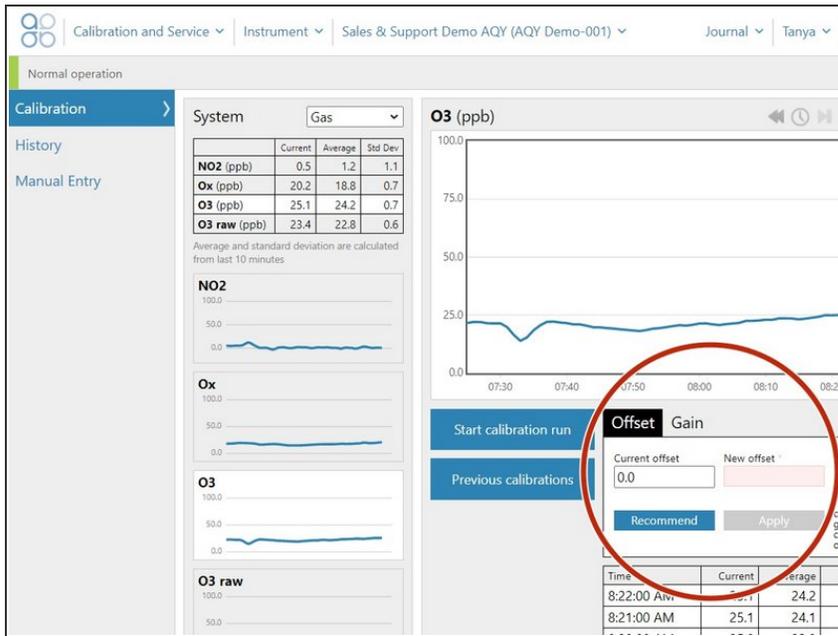
⚠ Make sure the polarity of the red and black cable is the correct.

Step 4 — Configure module

System	Sensors	Communications
Serial number AQY Demo-001 Name Sales & Support Demo Instrument type AQY1 Software version 1.16.7263 Time zone (UTC+12:00) Auckland Summer time adjusted <input checked="" type="checkbox"/> Location <input type="text"/> Default averaging period 1 hour	Aeroqual Sensor Port COM 1 Poll interval Every 5 seconds Poll time-out 15 seconds Active Sensors NO2 <input checked="" type="checkbox"/> Ox O3 <input type="checkbox"/> O3 raw PM2.5 raw <input type="checkbox"/> PM2.5 TEMP <input type="checkbox"/> RH DP <input type="checkbox"/> Add new sensor ...	Remote config interval Every minute Remote config server Demo Server VPN Server Demo Offline reboot interval 24 hours Ethernet mode Direct (DHCP server) Ethernet IP address 10.10.0.1 WIFI mode Client WIFI SSID PDEV Router

- ⓘ You only need to do this step if you are replacing the module with a different type of module.
- Go to the **Configure** app and click **Settings** from the side menu.
- Remove the old module from the **Active Sensors** list by hovering over the sensor name and clicking the cross that displays.
- Click **Save** when the confirmation message appears.
- 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 replaced 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



- ⓘ If you replace a gas module with the same type of module, the total inlet flow rate should remain the same.
- ⓘ If you replace a gas module with a different type of module, the overall flow rate of the main gas inlet might change.
- 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)

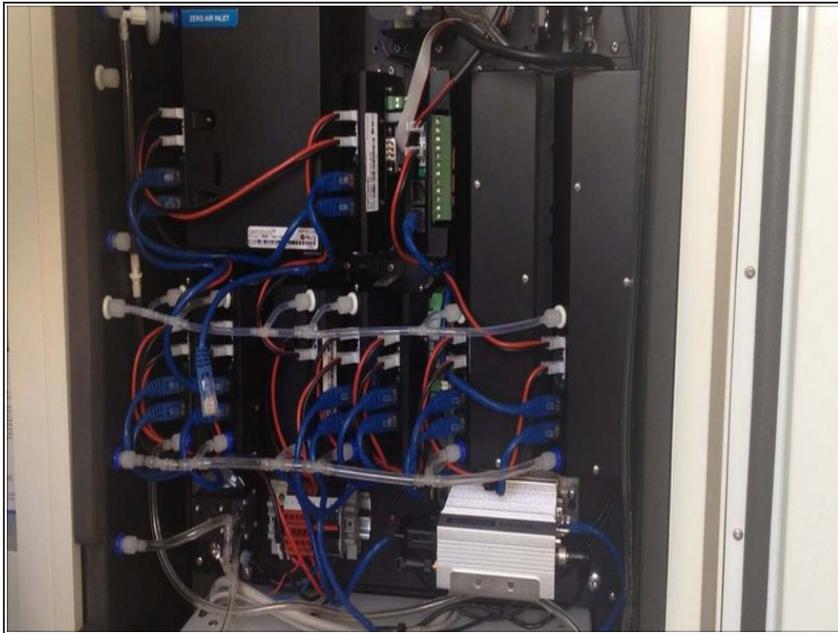
All journal types

User entry | Cloud user - John Wagner

<p>1. Site Inspection:</p> <p>No new local emission sources Instrument in good condition No obstructions to monitoring equipment</p> <p>3. Equipment:</p> <p>Aeroqual Gas dilution calibrator: Aircal 1000 Aeroqual Ozone calibrator: AQM O3Cal Aeroqual Flow meter: AQM R7</p> <p>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.</p> <p>6. Zero calibration All modules passed zero calibration, all modules were stable and all offsets were within acceptable limits.</p> <p>7. Span Calibration</p> <table border="0"> <tr> <td>CO @ 10.00 ppm</td> <td>Module response was 8.95 ppm gain adjustment to 1.15</td> <td>pass</td> </tr> <tr> <td>SO2 @ 0.2 ppm</td> <td>Module response was 0.210 ppm gain adjustment to 0.92</td> <td>pass</td> </tr> <tr> <td>NO2 @ 0.2 ppm</td> <td>Module response was 0.090 ppm gain adjustment to 2.10</td> <td>pass (module may need replacing soon contact A</td> </tr> </table> <p>8 Pack up. Next scheduled calibration 3 months from now. June 2017.</p>	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 A	<p>2. Instrument inspection:</p> <p>Cooling fan operational PM and gas inlet secure Instrument has been running at stable</p> <p>4 Gas cylinders:</p> <table border="0"> <tr> <td>CO 1000 ppm in Air</td> <td>(expiry March)</td> </tr> <tr> <td>SO2 20 ppm in Air</td> <td>(expiry December)</td> </tr> <tr> <td>NO2 20 ppm in Air</td> <td>(expiry November)</td> </tr> </table> <p>5. Open door and change gas inlet filter</p>	CO 1000 ppm in Air	(expiry March)	SO2 20 ppm in Air	(expiry December)	NO2 20 ppm in Air	(expiry November)
CO @ 10.00 ppm	Module response was 8.95 ppm gain adjustment to 1.15	pass														
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NO2 20 ppm in Air	(expiry November)															

- [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 replacing a module in an AQM 65, watch this video.

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