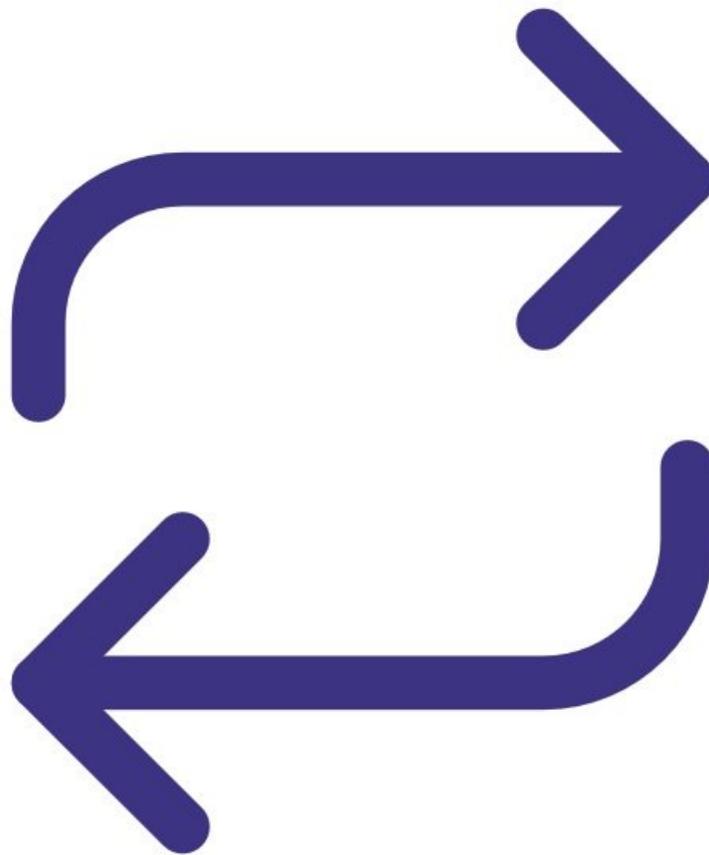




Change filter for PCX

Written By: Kyle Alberti



INTRODUCTION

The PCX module has a filter which periodically needs to be replaced. [Click here for the maintenance schedule.](#)

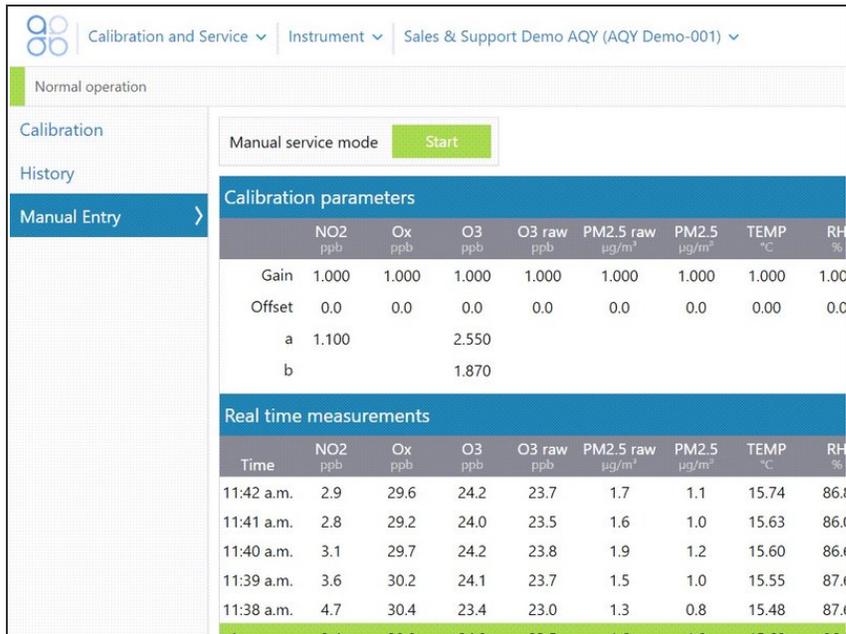
TOOLS:

- Large flat head screwdriver (1)

PARTS:

- Filters for PCX (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

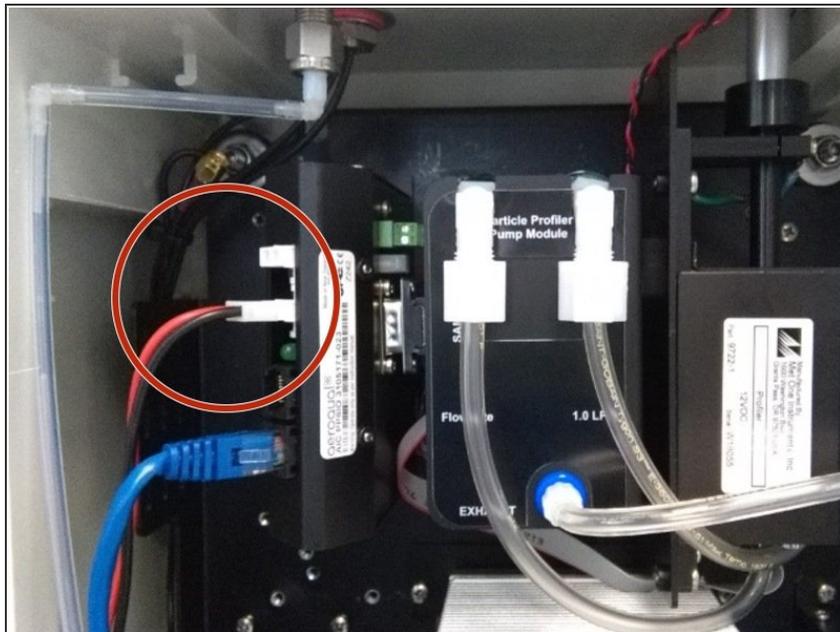
	NO2 ppb	Ox ppb	O3 ppb	O3 raw ppb	PM2.5 raw µg/m ³	PM2.5 µg/m ³	TEMP °C	RH %
Gain	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Offset	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0
a	1.100		2.550					
b			1.870					

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 — Disconnect pump



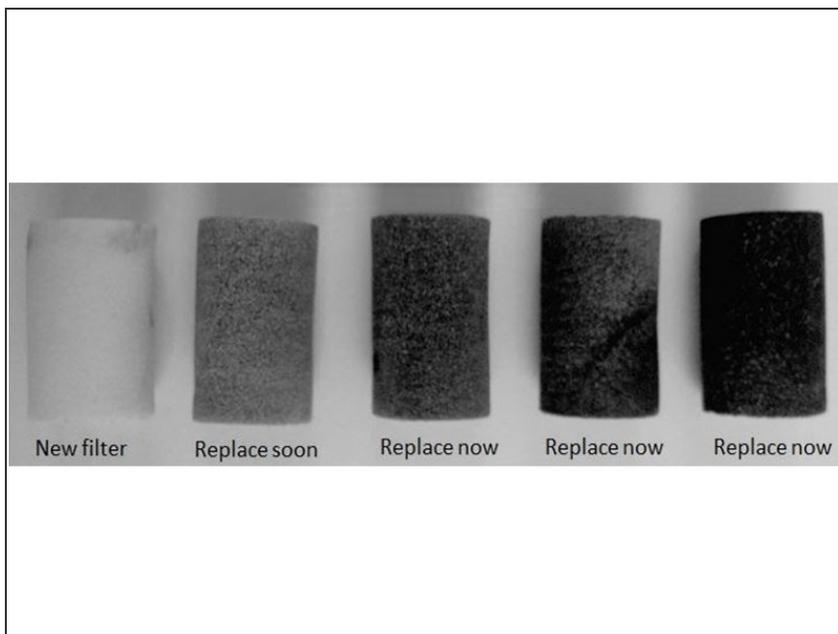
- Disconnect the sample pump from the monitor's electronics module.

Step 3 — Change filters



- The filters for the PCX are located inside the module.
- If required, you can use a large flat head screwdriver to unscrew the filter housing on the front panel of the optical module.
- Replace the filters

Step 4 — Reconnect pump



- Reconnect the sample pump to the electronics module.

Step 5 — 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. 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

4 Gas cylinders:
CO 1000 ppm in Air (expiry March)
SO2 20 ppm in Air (expiry December)
NO2 20 ppm in Air (expiry November)

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 A

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 6 — View cumulative PM

Diagnostics

Select parameter: Flow Averaging period: 1 minute

Time	Flow (L/min)	PWM Value (°)	Setpoint Reached (°)	Cumulative PM (mg/m³)	Pressure (Pa)	Temperature (°C*10)	Inlet
3/9/2023 1:28 PM	0.991	378.511	1.000	0.648	101124.000	240.000	Sample
3/9/2023 1:27 PM	1.007	378.515	1.000	0.648	101124.000	240.333	Sample
3/9/2023 1:26 PM	1.005	378.465	1.000	0.648	101126.000	240.250	Sample
3/9/2023 1:25 PM	0.989	378.519	1.000	0.648	101130.000	240.000	Sample
3/9/2023 1:24 PM	1.012	378.496	1.000	0.648	101135.000	240.000	Sample
3/9/2023 1:23 PM	0.984	378.502	1.000	0.648	101139.000	240.000	Sample
3/9/2023 1:22 PM	0.996	378.568	1.000	0.648	101143.000	240.000	Sample
3/9/2023 1:21 PM	0.993	378.605	1.000	0.648	101147.000	240.000	Sample
3/9/2023 1:20 PM	0.997	378.639	1.000	0.648	101152.000	240.000	Sample
3/9/2023 1:19 PM	1.008	378.624	1.000	0.648	101157.000	240.000	Sample
3/9/2023 1:18 PM	1.011	378.572	1.000	0.647	101159.000	240.000	Sample
3/9/2023 1:17 PM	1.010	378.496	1.000	0.647	101162.000	240.083	Sample
3/9/2023 1:16 PM	0.997	378.464	1.000	0.647	101163.000	240.000	Sample
3/9/2023 1:15 PM	0.993	378.508	1.000	0.647	101164.000	240.000	Sample
3/9/2023 1:14 PM	1.005	378.520	1.000	0.647	101163.000	240.000	Sample
3/9/2023 1:13 PM	1.004	378.483	1.000	0.647	101162.000	240.000	Sample
3/9/2023 1:12 PM	0.992	378.496	1.000	0.647	101163.000	240.000	Sample

- **i** The PCX module can assist you with determining the required service interval as it records the amount of

particulate that has passed through the system

- Click on the 'Diagnostics and Advanced' page
- Click on the 'Diagnostics' tab
- The fifth column shows how much PM has passed through the device in mg/m3.

Step 7 — Re-set the cumulative PM value

Module	H0	H1	H2	H3	TIMA	TIMR	TEMA	TEMR	PWML	PWMH	HTR	GAIN
Flow	1	2.5	0	0	2	-3	100	0	100	-1	0	1

Module	H0	H1	H2	H3	TIMA	TIMR	TEMA	TEMR	PWML	PWMH	HTR	GAIN
Flow	1	2.5	0	0	2	-3	10	1	100	-1	0	1

- ① When the 'Cumulative PM' value exceeds the trigger level, the system will raise the 'Flow Sensor Aging' flag.
- ① The trigger level is controlled by the value stored in the module setting 'TEMA' for Flow.
 - Change TEMR from 0 to 1 in order to reset the Cumulative PM value.

Step 8 — Check inlet flow

Diagnostics							
Select parameter	Flow	Averaging period		1 minute	Pause	Export	
Time	Flow (L/min)	PWM Value ()	Setpoint Reached ()	Cumulative PM (mg/m ³)	Pressure (Pa)	Temperature (°C*10)	Inlet
3/9/2023 1:28 PM	0.991	378.511	1.000	0.648	101124.000	240.000	Sample
3/9/2023 1:27 PM	1.007	378.515	1.000	0.648	101124.000	240.333	Sample
3/9/2023 1:26 PM	1.005	378.465	1.000	0.648	101126.000	240.250	Sample
3/9/2023 1:25 PM	0.989	378.519	1.000	0.648	101130.000	240.000	Sample
3/9/2023 1:24 PM	1.012	378.496	1.000	0.648	101135.000	240.000	Sample
3/9/2023 1:23 PM	0.984	378.502	1.000	0.648	101139.000	240.000	Sample
3/9/2023 1:22 PM	0.996	378.568	1.000	0.648	101143.000	240.000	Sample
3/9/2023 1:21 PM	0.993	378.605	1.000	0.648	101147.000	240.000	Sample
3/9/2023 1:20 PM	0.997	378.639	1.000	0.648	101152.000	240.000	Sample
3/9/2023 1:19 PM	1.008	378.624	1.000	0.648	101157.000	240.000	Sample
3/9/2023 1:18 PM	1.011	378.572	1.000	0.647	101159.000	240.000	Sample
3/9/2023 1:17 PM	1.010	378.496	1.000	0.647	101162.000	240.083	Sample

i The PCX module has a factory integrated flow sensor will automatically check and maintain the flow rate of the module.

- For a current reading, navigating to the monitor's page in Aeroqual Cloud
- Go to the 'Diagnostics and Advanced' page
- Go to the 'Diagnostics' tab
- Select the 'Flow' parameter
- The target flow rate of the PCX module is 1.0 ± 0.05 LPM

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