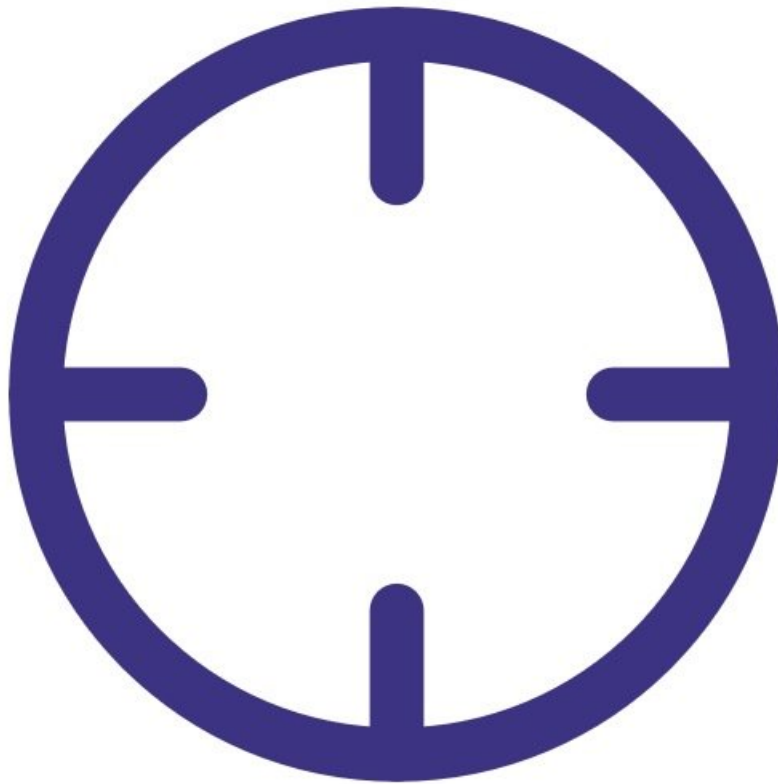




Zero calibration check for PCX

Written By: Kyle Alberti



INTRODUCTION

Use this procedure to check the zero baseline of your PCX.

The PCX has an automatic zero calibration function which runs at start up and every 24 hour after that, this procedure automatically changes the zero offset of the PCX.

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



PARTS:

- [Zero filter & flow assembly PCX](#) (1)

Step 1 — Enter service mode

oo

Calibration and Service

Instrument

Sales & Support Demo AQY (AQY Demo-001)

Normal operation

Calibration

History

Manual Entry

Manual service mode

Start

Calibration parameters

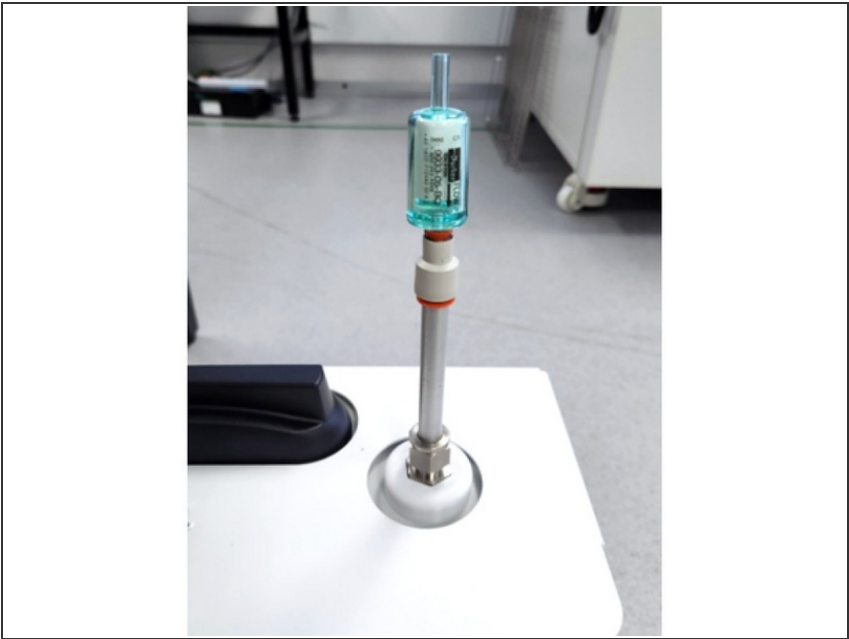
	NO2 ppb	Ox ppb	O3 ppb	O3 raw ppb	PM2.5 raw µg/m³	PM2.5 µg/m³	TEMP °C	RH %
Gain	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Offset	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0
a	1.100		2.550					
b			1.870					

Real time measurements

Time	NO2 ppb	Ox ppb	O3 ppb	O3 raw ppb	PM2.5 raw µg/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 — Attach zero filter



- Remove the TSP head and O-rings from the top of your monitor's particle inlet.
- Attach the flow adaptor and zero filter.

Step 3 — Check concentrations

Normal operation

Diagnostics

Download Data

Module Details

Module Settings

Select parameter

PM10

Averaging period

1 minute

Pause

Export

Time	PM10 (µg/m³)	Run time (Hours)	Pressure (mBar)	Laser current (mA)	Raw signal (Hz)
11:42 PM	1.39	7663.000	1017.000	20.800	101.583
11:41 PM	1.39	7663.000	1017.000	20.800	101.833
11:40 PM	1.39	7663.000	1017.000	20.800	104.000
11:39 PM	1.38	7663.000	1017.000	20.800	102.667
11:38 PM	1.38	7663.000	1017.000	20.800	101.667
11:37 PM	1.29	7663.000	1017.000	20.800	103.667
11:36 PM	1.48	7663.000	1017.000	20.800	99.667
11:35 PM	1.36	7663.000	1017.000	20.800	107.167
11:34 PM	1.33	7663.000	1017.000	20.800	103.333
11:33 PM	1.38	7663.000	1017.000	20.800	101.833
11:32 PM	1.40	7663.000	1017.000	20.800	103.167
11:31 PM	1.42	7663.000	1017.000	20.800	100.167
11:30 PM	1.46	7663.000	1017.000	20.800	103.167
11:29 PM	1.41	7663.000	1017.000	20.800	101.500
11:28 PM	1.50	7663.000	1017.000	20.800	102.000
11:27 PM	1.48	7663.000	1017.000	20.800	102.417
11:26 PM	1.42	7663.000	1017.000	20.800	101.500
11:25 PM	1.53	7663.000	1017.000	20.800	101.500
11:24 PM	1.49	7663.000	1017.000	20.800	103.167
11:23 PM	1.34	7663.000	1017.000	20.800	102.750
11:22 PM	1.54	7663.000	1017.000	20.800	103.083
11:21 PM	1.46	7663.000	1017.080	20.800	102.583

Calibration and Service

Instrument

Normal operation

Calibration

History

Manual Entry

Zero Calibration

Manual service mode

Start

Calibration parameters

PM10 µg/m³

Gain 1.000

Offset 0.00

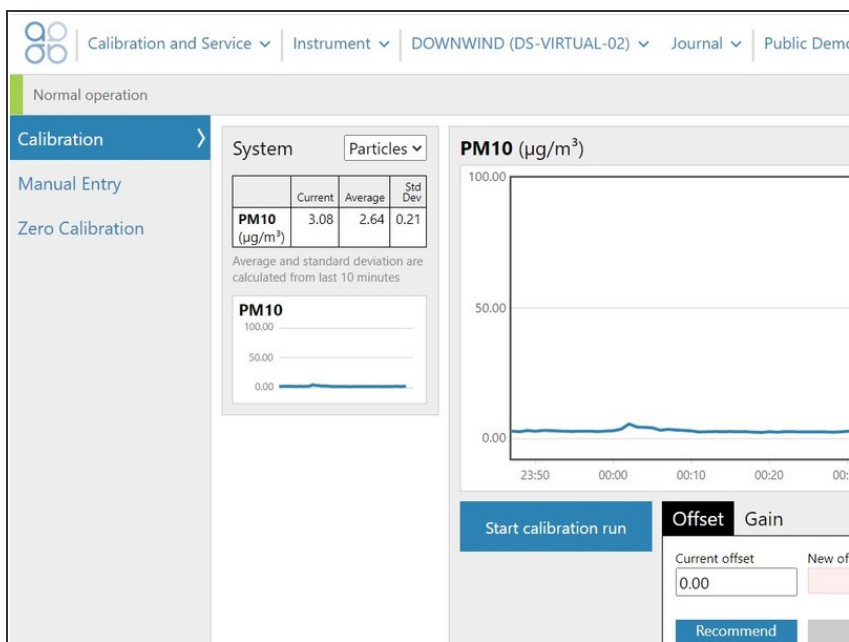
Real time measurements

Last 5 readings

Time	PM10 µg/m³	Inlet
11:41 PM	1.39	Sample
11:40 PM	1.39	Sample
11:39 PM	1.38	Sample
11:38 PM	1.38	Sample
11:37 PM	1.29	Sample
Average	1.37	
Std Dev	0.04	

- To view particle concentrations, open the **Diagnostics and Advanced** app and select **Diagnostics** from the side menu.
- Alternatively, use the **Calibration and Service** app and select **Manual Entry** from the side menu.
- While the zero filter is attached, the **PM µg/m3** values for PCX channels should be 0 or close to 0 (between ±3 µg/m3).

Step 4 — Adjust offset



- If the zero check shows negative numbers, there may be a problem with the auto zero cycle. See the troubleshooting section.
- Check that the offset is 0.000
- Check that the gain is between 0.6 and 4.0
- The zero baseline check is now complete.

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 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 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.](#)

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