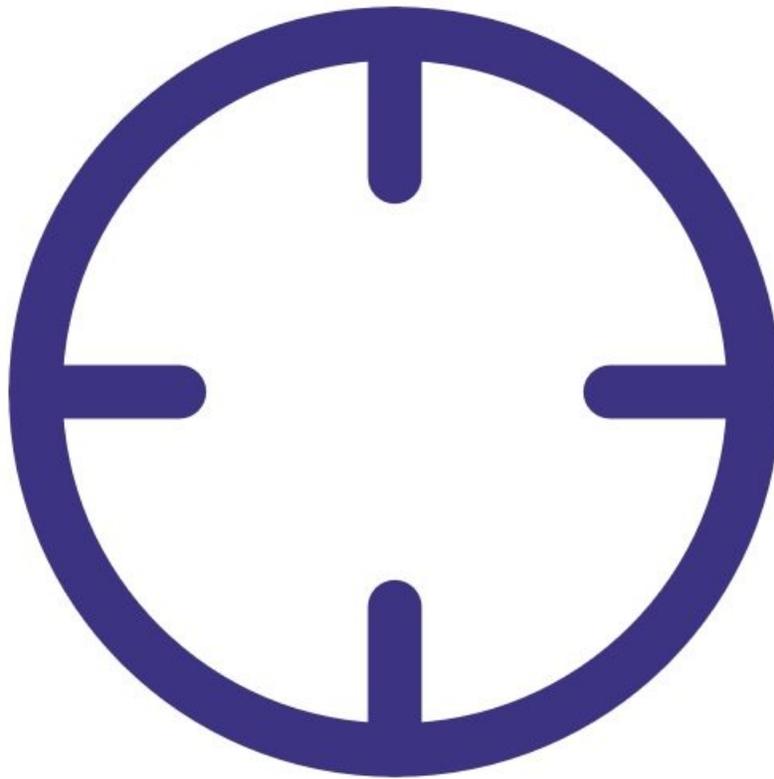




# Check auto zero calibration flow rate of PCX

Written By: Kyle Alberti



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## INTRODUCTION

Use this procedure to check the auto zero calibration flow rate of your PCX.

The PCX executes an automatic zero calibration at start up and every subsequent 1440 minutes (24 hours).

The auto zero procedure on the PCX causes the baseline to be adjusted. Negative readings on the PCX can be a result of the auto zero cycle failing to work correctly.

The zero cycle works by switching off the sample pump and switching on a zero pump. The flow rate during the zero cycle is reversed and is a positive flow out through the inlet. The flow rate is approximately 1 to 2 LPM.

This flow rate does not need to be set to a specific value, but it is important that the flow rate is at least 1 LPM positive flow out from the inlet.

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



### PARTS:

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

## Step 1 — Enter service mode

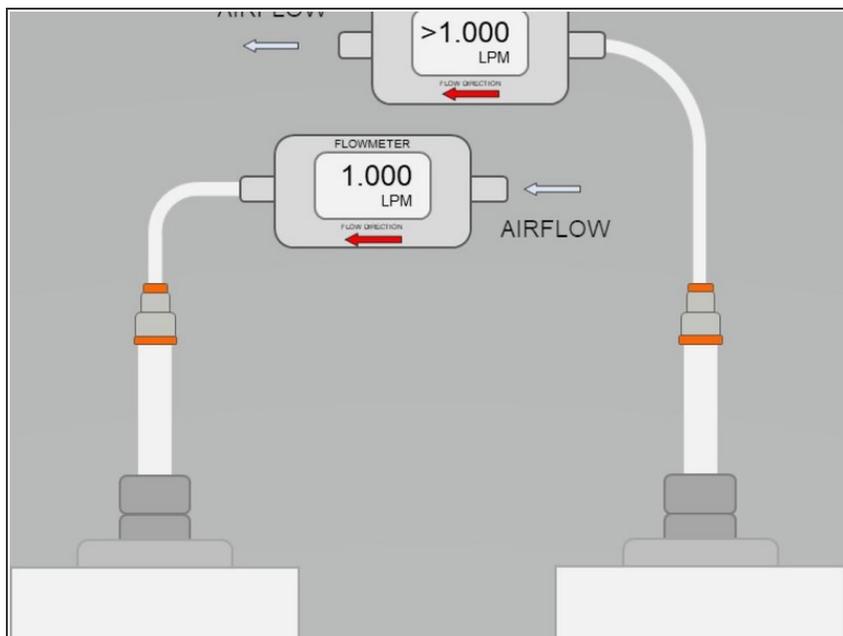
	NO2 ppb	Ox ppb	O3 ppb	O3 raw ppb	PM2.5 raw µg/m <sup>3</sup>	PM2.5 µg/m <sup>3</sup>	TEMP °C	RH %
Gain	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.00
Offset	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0
a	1.100		2.550					
b			1.870					

Time	NO2 ppb	Ox ppb	O3 ppb	O3 raw ppb	PM2.5 raw µg/m <sup>3</sup>	PM2.5 µg/m <sup>3</sup>	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

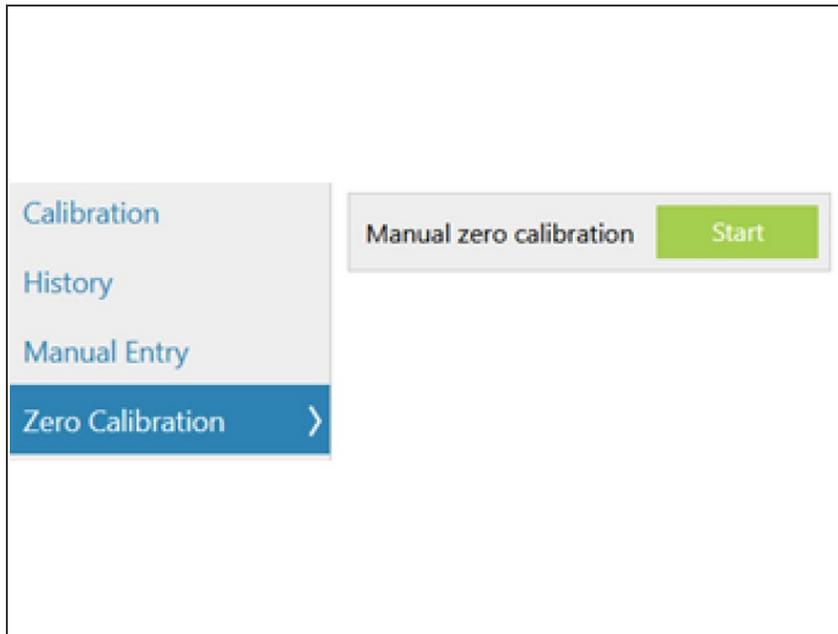
- [Enter service mode](#) so any fluctuations in the data caused from this activity can be excluded from air quality reports.

## Step 2 — Change the port on the flow meter



- Change the port on the flow meter, as shown in the figure, to measure this flow
- ⓘ When measuring the sample flow of the PCX, a vacuum is measured. When measuring the zero flow, a positive pressure is measured.

### Step 3 — Execute manual zero calibration



- Go to the 'Calibration and Service' page in Connect software
  - Select the Zero Calibration tab from the list on the left.
  - Press the 'Manual zero calibration' button and wait for the zero calibration to execute.
- i** This will cause the auto zero to start. The flow will change from 1.000 LPM negative flow into the inlet to approximately 1 to 2 LPM positive flow out from the inlet.
- i** The internal flow sensor of the PCX module will not report a flow value during zero cycles
- If no flow is measured, there may be an issue with the zero cycle or zero pump. Visit the troubleshooting section.
- i** The zero cycle takes approximately 10 minutes to complete.

## Step 4 — 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.		

- Measure the positive flow coming out from the inlet
- [Record the results of this service activity in the monitor's journal.](#)
- [Exit service mode.](#)

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