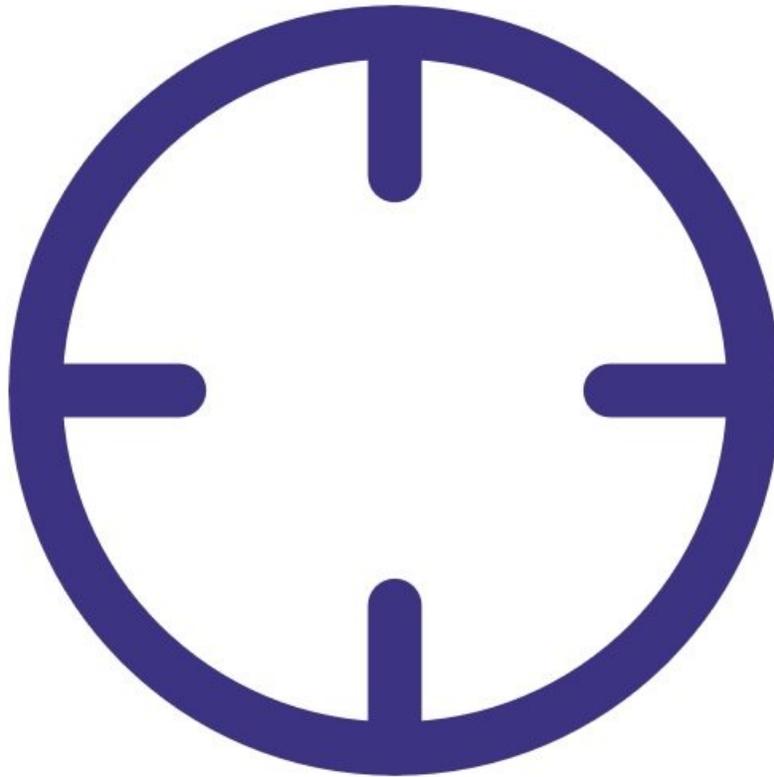




# Check flow of gas inlet

Learn how to measure the flow rate of the main gas inlet.

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## INTRODUCTION

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



### TOOLS:

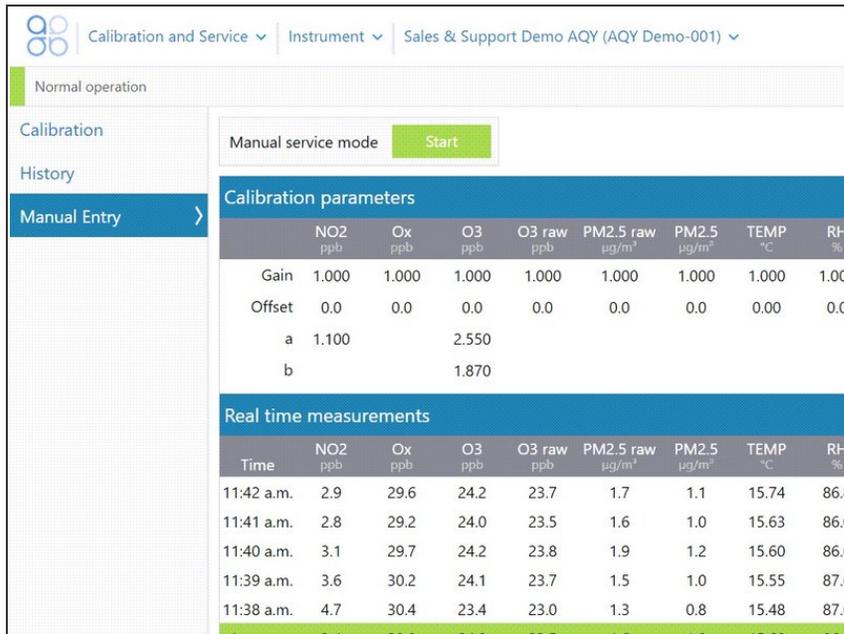
- [Small Phillips head screwdriver](#) (1)



### PARTS:

- [Flowmeter - TSI 4140](#) (1)
- [Bios Defender DryCal](#) (1)
- [Gas inlet flow adapter](#) (1)
- [Zero filter and flow assembly](#) (1)

## Step 1 — Enter service mode



Normal operation

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

Manual service mode

Calibration parameters

	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					

Real time measurements

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 — Calculate total flow rate



- The gas inlet flow rate is controlled by the number of gas modules installed.
- Each gas module contributes to the overall flow rate. In other words, the inlet flow rate is equal to the sum of all of the individual flow rates.
- Read the PDF attached to the end of this user guide to understand the expected flow rate for the main gas inlet.

### Step 3 — Remove inlet fitting



- Remove the white inlet fitting containing the mesh filter.

### Step 4 — Attach flow adapter



- Attach the inlet flow adaptor.

## Step 5 — Attach flow meter



- Attach a high-quality flowmeter such as the TSI 4040 or the Bios Defender DryCal to the inlet.

## Step 6 — 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. 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.](#)
- ⚠ The flow rate should be the same as the previously measured flow rate which is recorded in the journal.
- [Exit service mode.](#)

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