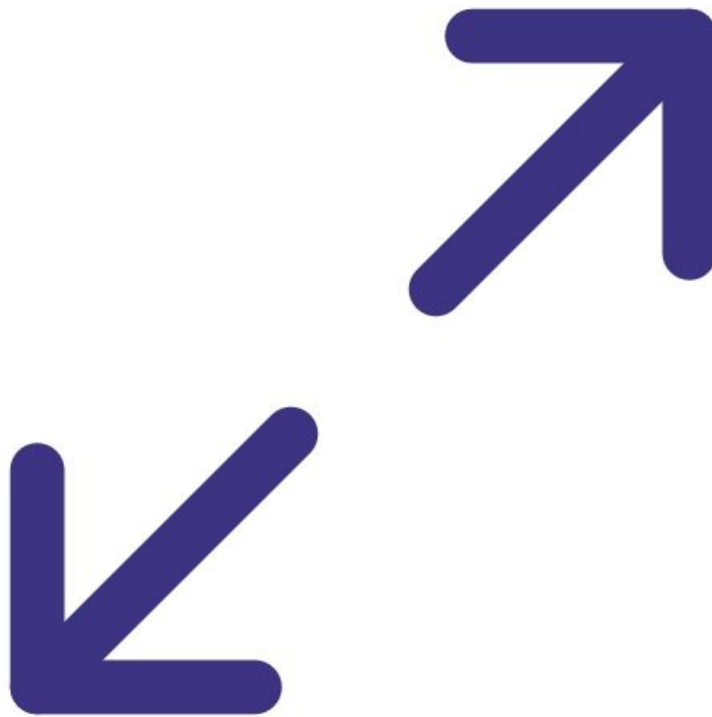




5. Perform zero and span calibration (CO2 module)

Written By: Tanya Taylor



INTRODUCTION

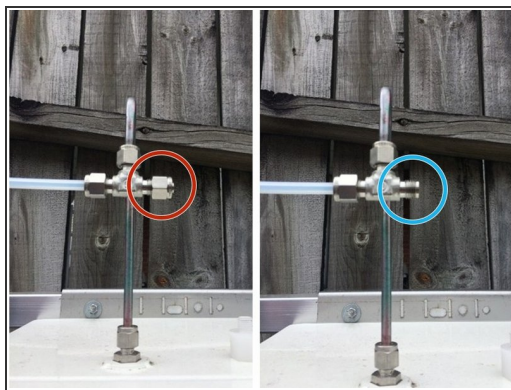
Aeroqual gas dilution calibrators can't be used to calibrate CO₂ because the scrubber media doesn't remove ambient CO₂ from the atmosphere. The CO₂ module responds very quickly to calibration gas, and is also tolerant of dry (< 5 % RH) calibration gas. For these reasons, CO₂ is the only gas module that can be successfully calibrated by direct injection of calibration gas into the gas inlet.

Step 1 — Understand CO2 calibration



- To learn more about CO2 calibration and the gas regulators you need, [read this wiki page](#).

Step 2 — Perform zero calibration



Module	Current offset	Reading after stabilization 10-minute average	Target zero acceptable range (ppm)	Acceptable standard deviation during zero calibration 10-minute average	New offset	Minimum and maximum recommended offset (ppm)	Offset uploaded	Reading after offset changed	Pass / fail
NO ₂ (CL)	0.000		0.000 ± 0.005	0.002	N/A	N/A	N/A	N/A	
NO ₂ (direct)			0.000 ± 0.005	0.002		Max +0.05 Min -0.05			
NO _x			0.000 ± 0.005	0.002		Max +0.05 Min -0.05			
O ₂			0.000 ± 0.005	0.002		Max +0.05 Min -0.05			
O ₃			0.000 ± 0.005	0.002		Max +0.05 Min -0.05			
CO			0.000 ± 0.050	0.020		Max +0.05 Min -0.05			
VOC low			0.000 ± 0.010	0.005		Max +0.05 Min -0.05			
VOC high			0.000 ± 0.100	0.020		Max +0.05 Min -0.05			
SO ₂			0.000 ± 0.005	0.002		Max +0.05 Min -0.05			
H ₂ S			0.000 ± 0.005	0.002		Max +0.05 Min -0.05			
CO ₂			0.000 ± 10.000	5.000		Max +0.05 Min -0.05			
Comments									

- Connect your flow regulator to your zero-grade cylinder from Calgas.
- If you're using a demand flow regulator, close (cap) the other side of the tee.
- If you're using a fixed or adjustable flow regulator, keep the other side of the tee open (uncapped).
- [Follow steps 3-9 in the perform zero calibration guide](#) to complete the zero calibration like you would any other gas.

Step 3 — Perform span calibration

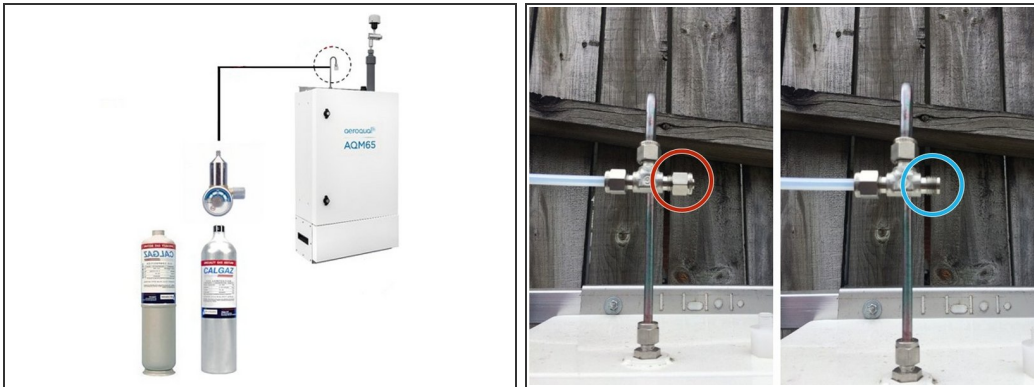


Table 8: Span calibration results

Module	Current gain	Current α value	Span point	Reading after calibration 10-minute average	Target span acceptable range (ppm) 10-minute average	Acceptable standard deviation during span calibration 10-minute average	New gain	Minimum and maximum recommended gain (ppm)	New α value	Ratio of gain change	Gain uploaded	Reading after gain changed	Pass / fail
NO _x CO	1.000				span $\pm$ 5 %	2 % of span	N/A						
NO _x (direct)	N/A				span $\pm$ 5 %	2 % of span			N/A				
NO _x	N/A				span $\pm$ 5 %	2 % of span			N/A				
O ₂	N/A				span $\pm$ 5 %	2 % of span			N/A				
O ₂	N/A				span $\pm$ 5 %	2 % of span			N/A				
CO	N/A				span $\pm$ 5 %	2 % of span			N/A				
VOC	N/A				span $\pm$ 5 %	2 % of span			N/A				
SO ₂	N/A				span $\pm$ 5 %	2 % of span			N/A				
H ₂ S	N/A				span $\pm$ 5 %	2 % of span			N/A				
CO ₂	N/A				span $\pm$ 5 %	2 % of span			N/A				

Comments

- Connect your flow regulator to your CO₂ span cylinder A0189932 cylinder from Calgaz.
- If you're using a demand flow regulator, close (cap) the other side of the tee.
- If you're using a fixed or adjustable flow regulator, keep the other side of the tee open (uncapped).
- [Follow steps 3-10 in the perform span calibration guide](#) to complete the span calibration like you would any other gas.

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