

Zero & Span

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Instrument Drift

Zero: Offset Error

Span: Gain Error

$$\text{Gain}_{\text{CO}_2} = [\text{CO}_2]_{\text{actual}} / ([\text{CO}_2]_{\text{measured}} - [\text{CO}_2]_{\text{zero}})$$

$$\text{Gain}_{\text{H}_2\text{O}} = [\text{H}_2\text{O}]_{\text{actual}} / ([\text{H}_2\text{O}]_{\text{measured}} - [\text{H}_2\text{O}]_{\text{zero}})$$

Equipment

Zero gas or zero air generator

Reference CO2 cylinder

Dew point generator



ECMon Software



EC100 Series Monitor Software

File Help

EC100 Setup Graphs Zero/Span Status

CO₂

N/A	mg/m ³
N/A	mmol/m ³
N/A	μmol/mol
N/A	μmol/mol (dry)

H₂O

N/A	g/m ³
N/A	mmol/m ³
N/A	mmol/mol
N/A	mmol/mol (dry)
N/A	% rel. humidity
N/A	°C

Ux	N/A	m/s
Uy	N/A	m/s
Uz	N/A	m/s
Sonic Temperature	N/A	°C

Air Temperature	N/A	°C
Barometric Pressure	N/A	kPa

CO2 Signal Strength	N/A
H2O Signal Strength	N/A

Connect Com Port Refresh

Calculate Gain

$$\text{GainCO}_2 = [\text{CO}_2]_{\text{actual}} / ([\text{CO}_2]_{\text{measured}} - [\text{CO}_2]_{\text{zero}})$$

$$\text{GainH}_2\text{O} = [\text{H}_2\text{O}]_{\text{actual}} / ([\text{H}_2\text{O}]_{\text{measured}} - [\text{H}_2\text{O}]_{\text{zero}})$$



<https://www.campbellsci.com/videos/zero-and-span>