



Calibrating the CI-340: H2O Zero and H2O Span

H2O Zero should be calibrated every week, unless there are very significant changes in ambient conditions or the relative humidity values are erroneous. The H2O Span should be calibrated annually, and with heavy use every six months. Zero is a one point calibration, set Span is a two point calibration. Tools required for a complete calibration: CI-340, Silica gel external conditioning tube, filter, hose barbs, an H2O standard gas from 1.0-7.5 kPa, a t-junction, and a flow regulator.

1. Power on the instrument
2. Connect the silica gel to the instrument.
3. Use the up/down arrow to navigate the menu to Calibrate H2O
4. Press Start/Enter
 - a. Instrument will display “exit to quit”
 - b. “START to set Zero, else EXIT”
 - i. If the silica gel is connected and has been flowing for several minutes, press START.
 - ii. “Use 0 kPa H2O, Press START/ENTER”
1. Press START/ENTER and instrument will count down from 60 seconds and set the H2O zero.
2. At this point, the H2O concentration of the gas passing the analyzer is taken as 0 ppm and the sensor is calibrated to read this level as 0. Therefore, if the gas isn't 0 ppm or hasn't been allowed enough time to run through and completely clear the system, the calibration can skew the instrument further.
5. After the H2O zero is set, the instrument will display “Use known H2O gas, Press START/ENTER”
6. If you wish to calibrate the H2O Span, hit start/enter. If you only wish to calibrate the H2O zero, press EXIT
7. To calibrate the H2O span, connect a gas with a known concentration of H2O (*see below).
 - a. Press Start/Enter
 - b. The unit will display “H2O pressure: ? x.xxx kPA”
 - i. Enter the known partial pressure of the H2O gas in kPA, calculated from the relative humidity and temperature, software to calculate this value can be found here: https://www.cid-inc.com/static/media/uploads/old_software/CI-340/RH2kPa.exe
 - c. Enter the H2O pressure of the known standard gas from 1.0-7.5 kPa.
 - i. Press Start/Enter
 - ii. Instrument will count down from 60 seconds and set the H2O span.
 - iii. Press Start/Enter to save and the display will return to the “ENTER to select Calibrate H2O”

To verify a successful calibration, take a reading of a known gas. The instrument should read with an accuracy of $< \pm 2\%$ at 10% RH, $\pm 3.5\%$ at 95% RH.

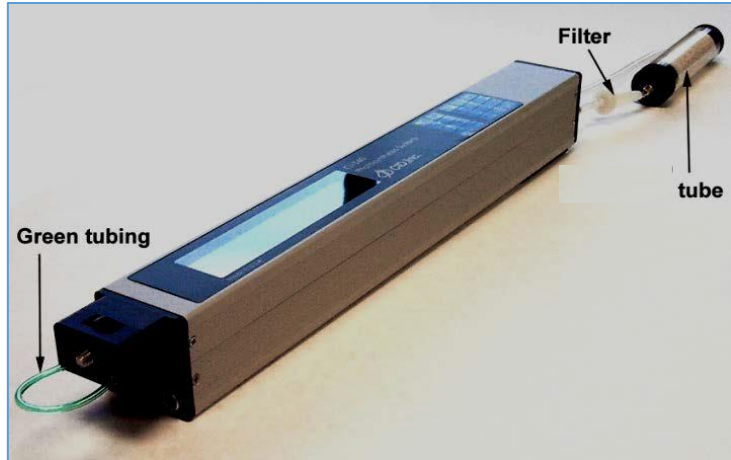


Fig.1 CO2 zero setup



Fig.2 CO2 zero setup

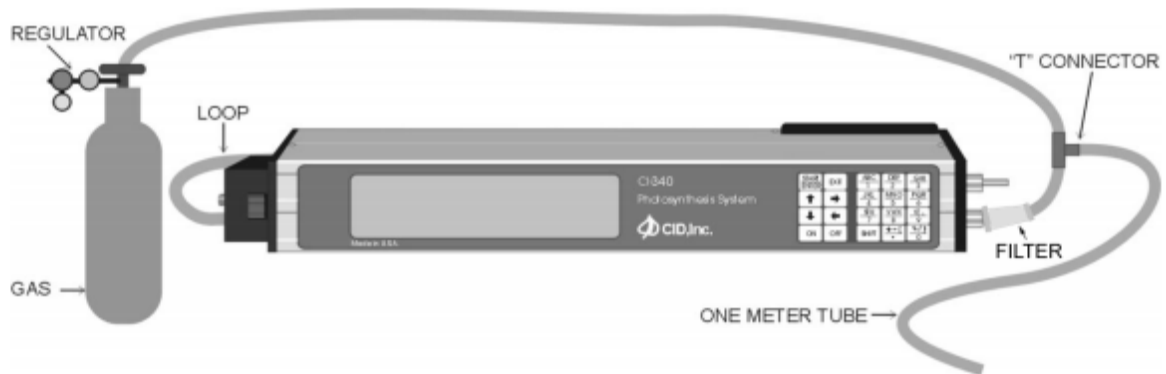


Fig.3 H2O span setup

For more information on calibrating the CI-340 or other technical information, please refer to the user manual and our support webpage: <https://www.cid-inc.com/support>