CALIBRATION PROCEDURE
GM50 GAS DETECTORS

Contents

Calibration Test Gases

⚠ **Gas mixtures must be prepared using equipment traceable to N.P.L / ISO standards.**
⚠ **Take normal precautions when using cylinders, they should always be stored in the vertical position and secured to prevent them from falling over.**
⚠ **Ensure valve/regulators are screwed and secured tight before use and ensure valves are closed after use.**
⚠ **Ensure all test gas is within the expiration date.**

General Safety Statement

⚠ **Before starting the calibration procedure, ensure the environment is free of any gas that may affect the result.**
⚠ **Give at least seven (7) minutes between testing the same unit or until gas has fully dispersed.**
⚠ **Ensure the device orientation is maintained when performing calibration.**

Calibration

Sensor calibration is recommended to be performed on a scheduled basis or when signs of sensor drift are noticed following bump testing.

Various environmental conditions can cause drift, such as high temperature fluctuations, long-term exposure to high temperatures, mechanical shock and vibration, sensor poising, and high environmental humidity.

GM50-CO2 Carbon Dioxide Gas Detector
Calibration Procedure

Re-Calibration Procedure

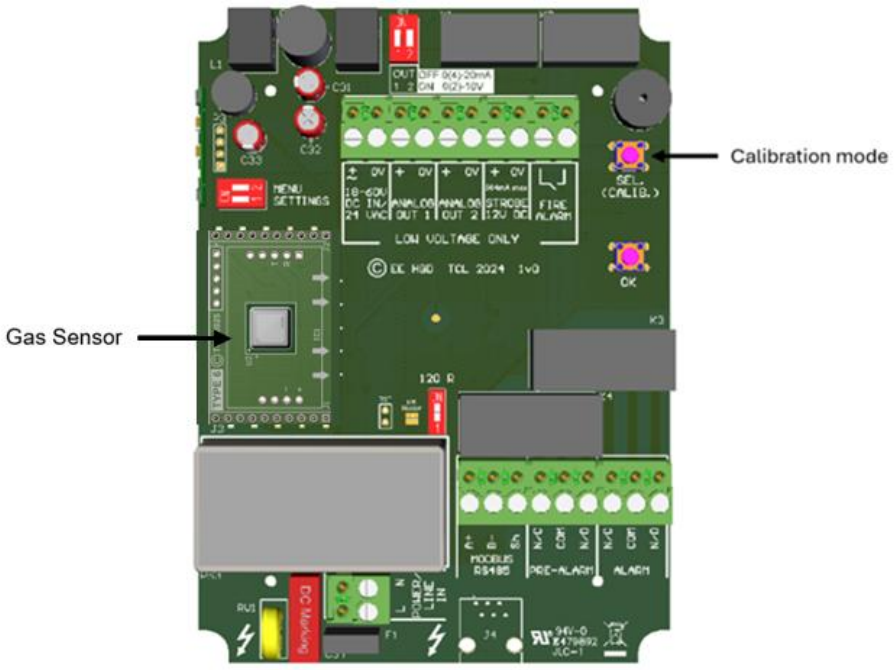
Important: Ensure the monitor has been continuously powered for 2hrs before carrying out this procedure.

Equipment:

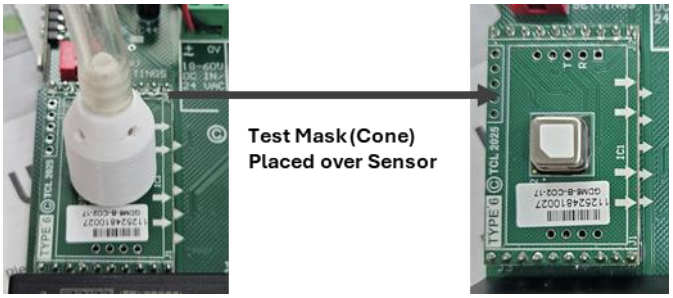
1. Suitable test gas within the range 400-5000ppm.
2. 0.5L Per/Min valve and application mask cone.
3. M3 hex key

Procedure:

1. With the unit un-powered, unscrew the four cover cap screws using an M3 hex key.
2. Carefully remove the front fascia to expose the circuit board, being careful of the electrical connections.
3. Power up the unit and wait until the display has initialised.
4. As explained in the GM50 user manual (Settings Screen) Go into settings and switch ABC OFF, save and go back to the front page.
5. Press and hold the [CALIB] button, activating the calibration mode.

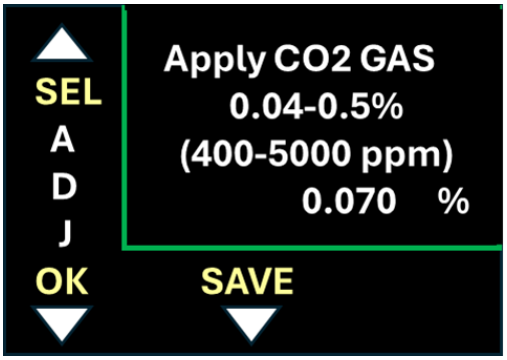


6. Apply calibration gas within the range of 400-5000 ppm (0.04-0.5 % VOL) equipped with a 0.5L Per/Min valve. Open the gas valve (before applying the mask), allowing pressure to release. Hold the mask cone over the sensor and apply the gas as shown.



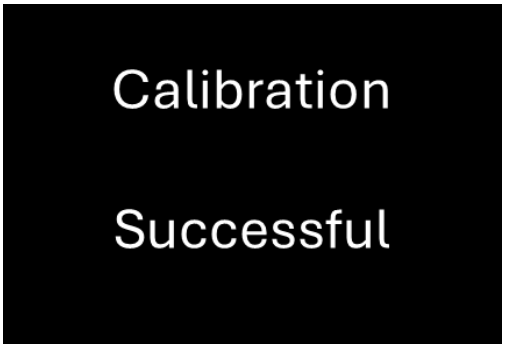
7. Apply the gas for 3 minutes minimum and check the % reading has settled. If required, make adjustments using the SEL and OK arrows to accurately match the applied gas.

8. When adjusted correctly, calibration can be saved by pressing the save button.



Turn off the gas and remove the application mask.

9. When the calibration is completed [Calibration Successful] will be displayed and the unit will automatically restart.



GM50-H2 Hydrogen (H_2) Gas Detector Calibration Procedure

Drift Zeroing (Re-Calibration) Procedure

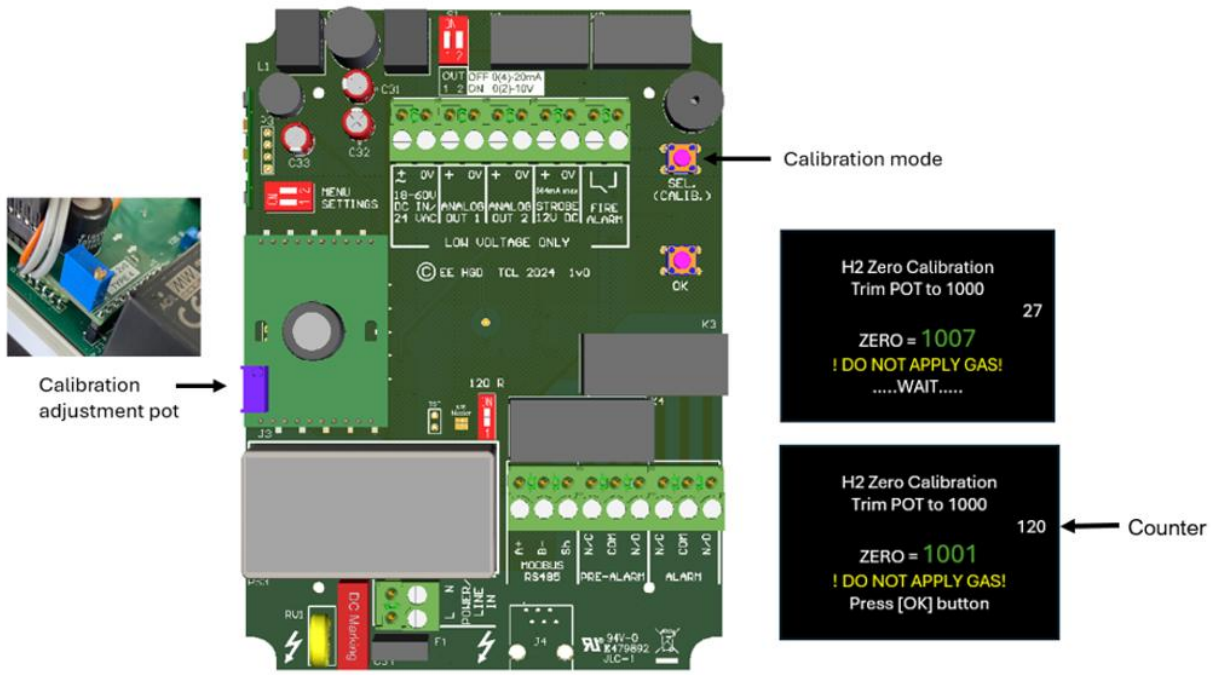
Important: Ensure the monitor has been continuously powered for 48hrs before carrying out this procedure.

Equipment:

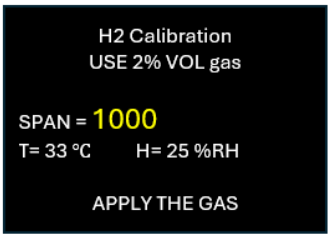
1. Small flat-head screwdriver
2. 2% Vol Hydrogen test gas kit with 0.5L Per/Min valve and application mask cone.
3. M3 hex key

Procedure:

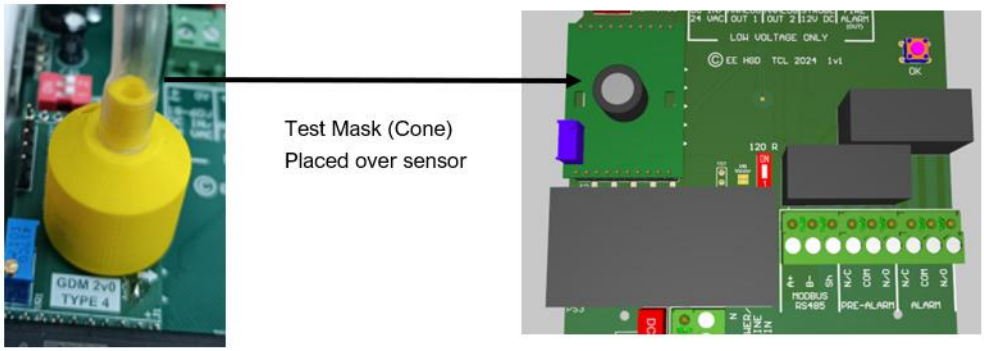
1. With the unit un-powered, unscrew the four cover cap screws using an M3 hex key.
2. Carefully remove the front fascia to expose the circuit board, being careful of the electrical connections.
3. Power up the unit and wait until the display has initialized.
4. Press and hold the [CALIB] button activating the calibration mode.
5. Follow the instructions to adjust (Trim) the calibration pot to target 1000 or within the acceptable range 990~1010. DO NOT apply gas whilst the pot is being adjusted.
6. Wait for the counter to reach 120 and when instructed press the [OK] button.



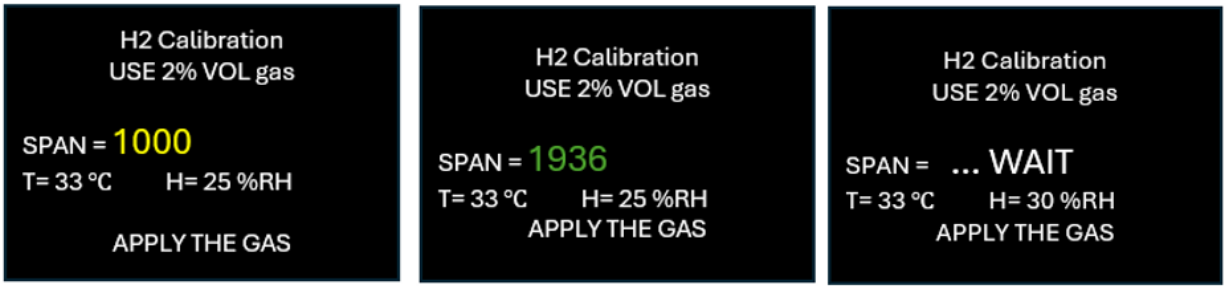
7. Once the pot has been successfully adjusted the display will change to "**APPLY THE GAS**"



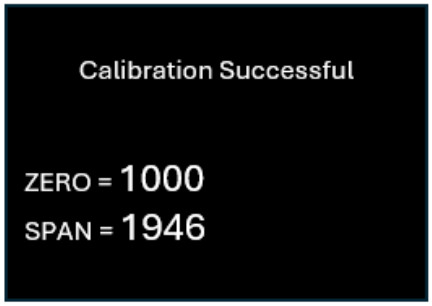
8. Using an appropriate test gas kit of 2% Vol Hydrogen, equipped with a 0.5L Per/Min valve and application mask. Open the gas valve (before applying the mask) allowing pressure to release. Hold the mask cone over the sensor and apply the gas as shown.



9. Apply the gas and the span reading will increase, changing from yellow to green and with an instruction to [WAIT] If the gas concentration is not strong enough and the green level cannot be reached the calibration cannot be completed.



10. When the calibration is completed [Calibration Successful] will be displayed and the unit will automatically restart.



11. Turn off the gas and remove the application mask.

GM50-O2 Oxygen Detector
Calibration Procedure

Drift Zeroing (Re-Calibration) Procedure

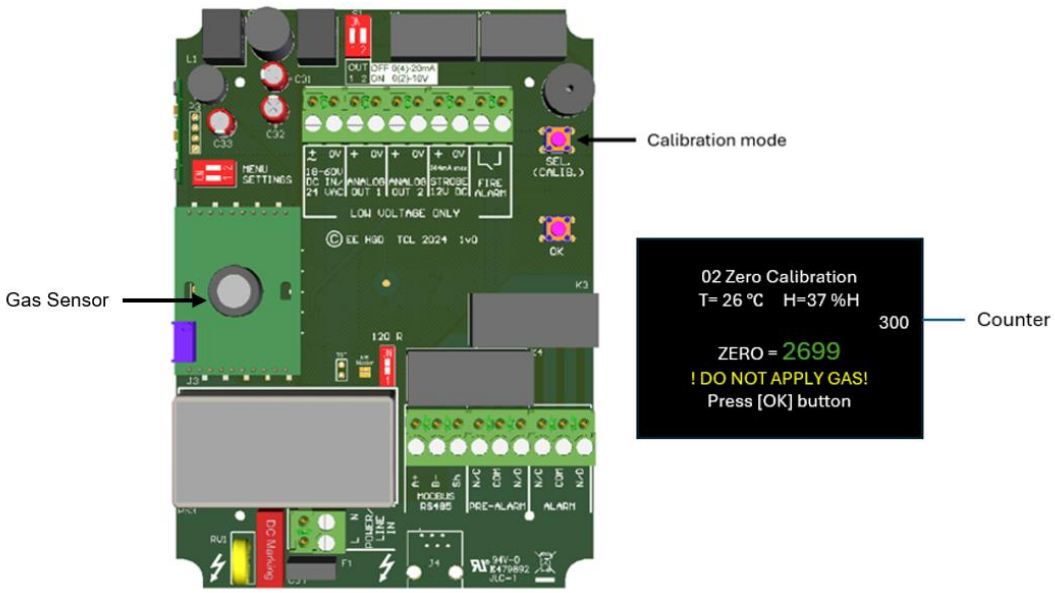
Important: Ensure the monitor has been continuously powered for 48hrs before carrying out this procedure.

Equipment:

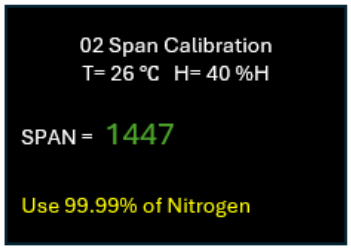
1. Small flat-head screwdriver
2. 99% Nitrogen test gas kit with 0.5L Per/Min valve and application mask cone.
3. M3 hex key

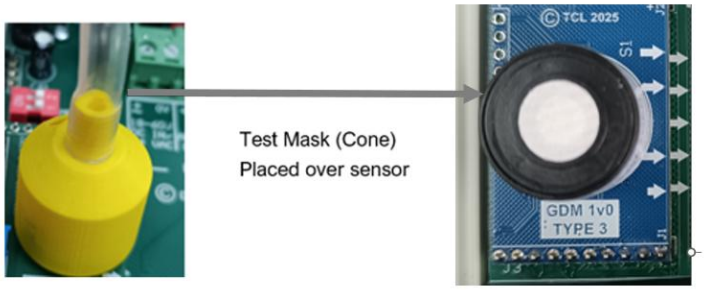
Procedure:

1. With the unit un-powered, unscrew the four cover cap screws using an M3 hex key.
2. Carefully remove the front fascia to expose the circuit board, being careful of the electrical connections.
3. Power up the unit and wait until the display has initialized.
4. Press and hold the [CALIB] button, activating the calibration mode.
5. Follow the instructions and wait for the counter to reach 300 and when instructed press the [OK] button.

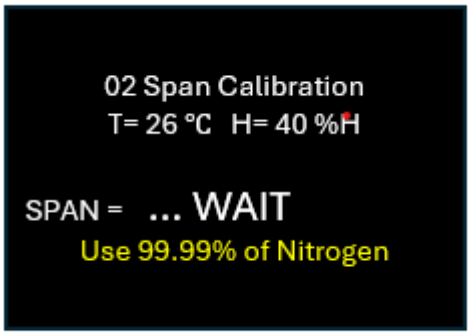


6. When instructed, apply calibration gas of 99.99% Nitrogen equipped with a 0.5L Per/Min valve. Open the gas valve (before applying the mask), allowing pressure to release. Hold the mask cone over the sensor and apply the gas as shown.

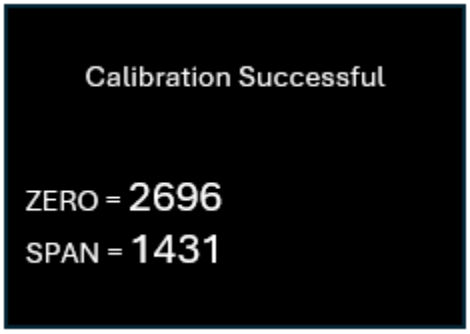




7. Apply the gas and the span reading will increase, and with an instruction to [WAIT]



8. When the calibration is completed [Calibration Successful] will be displayed and the unit will automatically restart.



9. Turn off the gas and remove the application mask.