

Calibration of CO₂ HR & GAS probes on Pacific & Marlin⁺ Systems

For calibration of OxyGuard CO₂ system probes designed for measurement in air/gas:

CO₂ High Range - Item no.: G10PMPH

Measuring range: 0-100 % vol CO₂ / 0-1000 mg/L

CO₂ Gas - Item no.: G10PMPG

Measuring range: 0-5 % vol CO₂

Both probes measure CO₂ directly in air/gas and must be calibrated in gas. Do not calibrate these probes in water, and there's no use for calibration fluid, pH conditioner or liquid.

Calibration ensures accurate measurements and should be performed before first use, approximately once a month, or after longer periods without operation.

Required equipment

To calibrate the CO₂ gas probes, you will need:

- The connected CO₂ gas probe
- Supplied measuring chamber/adaptor for gas calibration
- Compatible gas regulator or flow control (not supplied)
- Certified calibration gas with a known CO₂ concentration (not supplied)



Use a calibration gas concentration that matches the probe range.

For CO₂ High Range, 100 % vol CO₂ or another known CO₂ gas mixture may be used.

For CO₂ Gas, use a known CO₂ gas mixture within the 0-5 % vol range.

Important notes:

- Calibration must be performed in air/gas only.
- The probe and measuring chamber must be clean and dry.
- Do not use water, calibration fluid or pH conditioner.
- Allow the probe to stabilize at room temperature before calibration.
- Keep the Pacific or Marlin⁺ powered on for **at least 10 minutes** before & after calibration.
- Use only a slow, steady gas flow. The flow should be sufficient to prevent ambient air from entering the chamber, but not excessive.
- Avoid rough handling of the sensor at the probe base.
- Perform calibration in a dry, temperature-stable and well-ventilated area.

Calibration steps for CO₂ HR & GAS probes on Marlin⁺

Step 1: Prepare the probe

- Make sure the probe is connected to the Pacific or Marlin⁺ system.
- Remove the yellow transport cap and the black protector, if mounted.
- Make sure the probe is clean and dry.
- Make sure the Pacific or Marlin⁺ system is powered on and allow the probe to stabilize for **at least 10 minutes** before calibration.

Step 2: Prepare the gas calibration setup

- Place the probe in the supplied measuring chamber.
- Make sure the chamber, hose and connections are dry and correctly fitted.
- Connect the calibration gas to the chamber inlet.
- Start a slow, steady gas flow.

Step 3: Prepare the Pacific or Marlin⁺ for calibration

- Select the correct connected CO₂ probe and open the calibration menu.
- Check the value of the gas that you use for calibration.
- Default value in Pacific or Marlin⁺ for: **CO₂ HR: 100 % vol CO₂ / for: CO₂ Gas: 5 % vol CO₂.**
- If you use another certified gas value, enter the correct value.
- Menu path to check/change value: **Calibration → Calibrate setup → Calibrate to →** enter the correct gas value.
- For CO₂ HR, the system automatically converts the entered value from %vol CO₂ to mg/L.

Step 4: Complete the calibration

- When the gas flow is stable, start calibration on the system's display and follow the steps.
- Do not move the probe or interrupt the gas flow during calibration.
- Allow the calibration process to complete. The system's display will show when it is done.
- Check that the displayed value corresponds to the selected calibration gas concentration.
- If calibration fails or if the value is unstable, repeat the procedure.

Step 5: Finish and return to operation

- When calibration is complete, keep the Pacific or Marlin⁺ system powered on and allow the probe to stabilize for **at least 10 minutes**.
- Stop the calibration gas flow.
- Remove the probe from the measuring chamber.
- Return the probe to its normal measuring position or installation point.
- Check that the displayed value is stable and relevant for the normal operating conditions.
- Clean and dry the measuring chamber and hose before storage.
- Only reattach the black protector if the probe is removed from operation or not in use.