

Portable Calibration Kit (M1233SR)

Why Calibrate?

The relationship between oxygen concentration and the electromotive force of a cell is theoretical. Generally, a sensor shows a slight deviation from the theoretical value versus the actual value. In this situation, it is necessary to conduct a calibration in order to ensure that an accurate calibration curve is obtained, and the deviation from the theoretical cell electromotive force is corrected.

A gas with a known oxygen concentration is used for calibration. In this instance Yokogawa recommends using a Zero gas of 0.95 to 1.0% oxygen (O₂) with a balance of nitrogen (N₂). The recommended Span, or Reference Gas, should be 20.95 to 21% oxygen with a balance of nitrogen. This can be accomplished using clean dry instrument air. The M1233SR Portable Calibration Kit provides one 105L bottle of each of these gases in a convenient carrying case.

How to use the M1233SR Portable Calibration Kit



CAUTION – The contents of the bottled gases are under pressure. Please use caution when handling the calibration bottles, and installing the pressure regulators.

1. Remove the Cal (1% O₂) gas bottle from the case.
2. Install the pressure regulator, with the bottle opening facing away from you or other personnel. Verify that the o-ring on the regulator is not nicked, cracked or cut prior to installation.
3. Attach the 3/16in clear tubing onto the regulator nipple.
4. Insert the brass 1/4 in NPT fitting to the ZR22G “CAL IN” port on the bottom of the ZR22G gas manifold.
5. Attach the 3/16 clear tubing to the brass 1/4 in NPT fitting.



Calibrating with the ZR402G Single Channel Oxygen Analyzer

1. Select the Setup key from the basic panel display to display Execution/Setup.
2. Select Maintenance from the Execution/Setup display.
3. Select Calibration setup from the Maintenance display.
4. Select Mode from the Calibration setup display (see figure 1).

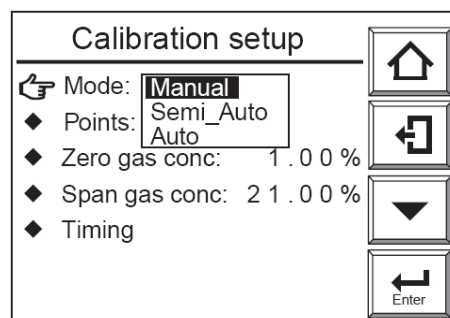


Figure 1

5. Select Manual and press the Enter key.
6. Follow the on screen instructions on the ZR402G.
7. When instructed to open the calibration gas valve, open the regulator by pushing in and turning the knob $\frac{1}{4}$ turn. (The on-off action of the regulator knob is bi-directional). The calibration gas is now flowing into the probe CAL IN port.
8. Repeat the above outlined instructions for a span calibration utilizing the 21% span gas instead of the 1% zero gas.

