

# MSA Z-Gard® S Sensor

## Calibration Procedure



### Indicators



The "Sensor OK" LED is located on the front of the instrument and will be used as feedback from the sensor to indicate successful completion of the calibration steps presented in this document.



Solid

- Normal Operation
- Successful Calibration



Slow Flash

- Calibration Fault



Slow Flash

- Zero Calibration in progress



Fast Flash

- Span Calibration in progress

### Equipment Needed



Calibration Gas



Calibration Cover  
MSA P/N 10128624



Regulator 0.25 LPM  
MSA P/N 10128624



Calibration Magnet  
MSA P/N 30060-2



Polyurethane  
Tubing 12"  
MSA P/N 604067



Humidifying Tubing  
Assembly  
MSA P/N 813628

# Z-Gard S Sensor Calibration Procedure

## 1 Verify the sensor type to be calibrated

### Options:

- Carbon Monoxide
- Nitrogen Dioxide
- Combustible



## 2 Select the appropriate calibration gas

Gas Type	Span Value	MSA Gas Cylinder P/N
Zero Air	20.8% O <sub>2</sub> in Nitrogen	10028042
Carbon Monoxide	60 ppm CO	710882
Nitrogen Dioxide	5 ppm NO <sub>2</sub>	710332
Combustible	2.5% CH <sub>4</sub>	10028032

## 3 Prepare the calibration cylinder

### NOTE

tubing P/N 813628 (Humidifying Tubing) should be used when calibrating solid state CO sensors.

tubing P/N 604067 can be used for all other sensors.



- Assemble the regulator to the cylinder.



- Attach the tubing from the regulator to the calibration cover.

## 4 Apply the magnet

- Turn on gas supply.
- Align the calibration magnet to the target.
- "Sensor OK" Green LED will begin to flash at a slow rate of 1 Hz. This slow flashing rate indicates **zero calibration** has started.



## 5 Remove the magnet

- **Remove** magnet.
- If magnet is left on for more than 16 seconds, calibration aborts (with no change to calibration).



## 6 Apply calibration cover

- **Quickly** apply the calibration cover to begin the supply of zero air.
- During this process, the "Sensor OK" Green LED will continue to flash at the slow 1 Hz rate.



## 7 Zero Calibration confirmation

- After approximately 2 minutes, calibration will complete. The "Sensor OK" LED will indicate if zero calibration completed successfully:

**G** Calibration successful

**R** Calibration *NOT* successful

- If calibration was not successful, see trouble guide on the back of this document.
- If successful, move on to Step 8.

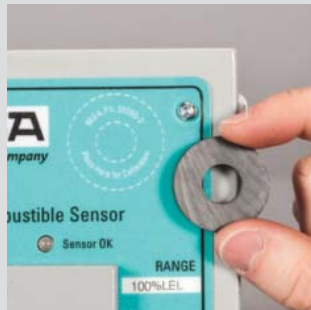
## 8 Reapply the magnet

- Turn on gas supply.
- Align the calibration magnet to the target.
- "Sensor OK" Green LED will begin to flash at a slow rate of 1 Hz, and then at a fast rate of 5 Hz. This fast flashing rate indicates **span calibration** has started.



## 9 Remove the magnet

- **Remove** magnet.
- If magnet is left on for more than 16 seconds, calibration aborts (with no change to calibration).



## 10 Reapply calibration cover

- **Quickly** apply the calibration cover to begin the supply of span gas.
- During this process, the "Sensor OK" Green LED will continue to flash at the fast 5 Hz rate.



## 11 Span Calibration confirmation

- After approximately 2 minutes, calibration will complete. The "Sensor OK" LED will indicate if zero calibration completed successfully:

**G** Calibration successful

**R** Calibration *NOT* successful

- If calibration was not successful, see trouble guide on the back of this document.
- **If successful, calibration is complete.**
- **Remove calibration cover.**



# Calibration Fault Trouble Shooting Guide

Problem	What to Check?	What to Do?
Calibration is aborted before completion	Check that you are removing the magnet after LED begins to flash	Re-initiate calibration
Calibration Fault	Is the appropriate calibration gas being applied?	Re-initiate calibration
Calibration Fault	Is there a high concentration of background gas?	Ensure Zero Gas is used for zero calibration
Calibration Fault	Calibration fault continues after each calibration	Cycle Power and/or call MSA Technical Service

## Our Mission

MSA's mission is to see to it that men and women may work in safety and that they, their families and their communities may live in health throughout the world.

**MSA: Because every life has a purpose.**

Note: This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products.



**ID 0708-19-MC / December 2015**  
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