



Field Calibration Instructions

Overview

The sensor's useful lifetime depends greatly upon its operating conditions. Continuous operation around large or numerous gas sources may necessitate more frequent calibration. A recommended recalibration date is recorded on the front panel label of each transmitter. If at any point in time the sensor fails to respond in a timely manner or fails to read within acceptable tolerances, calibrate the sensor as soon as possible. Brasch recommends a response time to 90% of under 50 seconds and an accuracy of $\pm 10\%$.

This document outlines the procedure for performing field calibration of Brasch Generation 2 sensor modules.

Required:

- Voltmeter
- Test Gas Cylinder(s)
 - Carbon Monoxide – 100 PPM CO
 - Nitrogen Dioxide – 5.0 PPM NO₂
 - Methane – 50% LEL (2.5% V/V) CH₄
 - Propane – 50% LEL (2.5% V/V) CH₄
 - Hydrogen – 50% LEL (2% V/V) H₂
 - Oxygen – 100% N₂
 - Zero Air – 20.9% O₂
- Gas Flow Regulator
- Tubing
- Sensor Cup

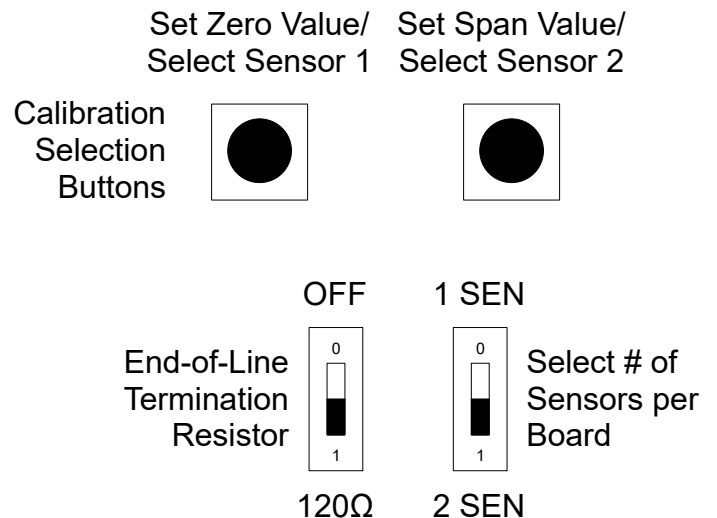
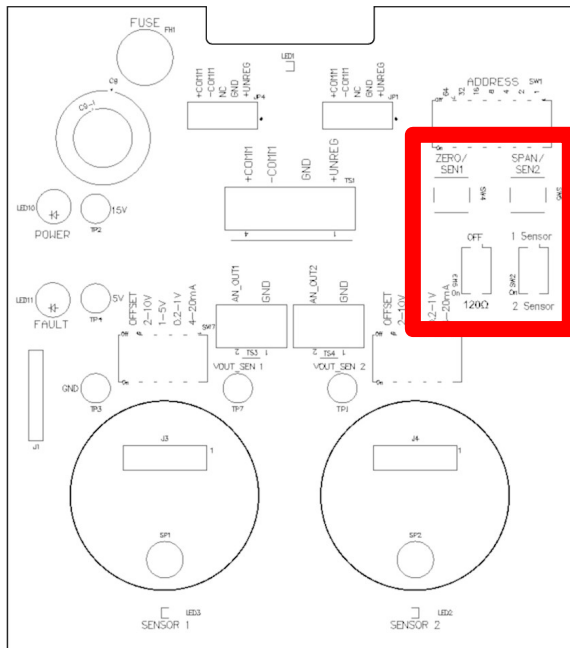
Note: All of the above required parts (except a voltmeter) are included with Brasch Test Gas Kits.

Procedure:

1. To enter calibration mode, simultaneously press and hold both SW4 and SW5 for three seconds.
2. Once LED2 and LED3 blink in an alternating pattern, select the sensor to be calibrated by pressing the corresponding button – SW4 or SW5.
 - a) Once selected, the corresponding LED will remain solid.
3. Verify there is no target gas present.
 - a) Use a cylinder of zero air if necessary.
4. Press SW4 to set the zero value.
 - a) The corresponding LED will blink continuously when the zero value is saved correctly.
 - b) Repeat this step if the LED remains solid.
5. Apply calibration gas to the sensor.
6. Place the voltmeter leads between COM (TP3) and VOUT_SEN 1 or 2 (TP7 or TP1).
7. Once the sensor output voltage has stabilized, press SW5 to set the span value.
 - a) Stabilization time varies by gas type, but should take no more than five minutes.
8. If the calibration completed successfully, the blue LEDs will turn off and the transmitter will exit calibration mode.

Troubleshooting:

- In the event calibration needs to be cancelled, use one of the following two methods:
 - After ten minutes of inactivity, the calibration mode will automatically timeout and return to normal operation.
 - Press and hold SW4 and SW5 for three seconds to manually exit calibration mode.
- If any of the following errors are present, calibration data was corrupted and this procedure needs to be repeated.
 - Standalone Detectors: 9997
 - BMS Transmitters: 0x0008
 - Control Panel Remotes: Sensor # Calibration Invalid
- If achieving stable values is not possible, it may be necessary to replace the sensor module and/or the sensor board.
 - Once the useful lifespan of the sensor is exceeded, the sensor can no longer be recalibrated. Replacing the sensor module should yield more stable values.
 - Over time, control electronics can degrade or suffer damage. If this is the case, replacing the sensor board should yield more stable values.





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