



Field Calibration Instructions

Overview

Brasch Generation 2 sensor boards are calibrated at the factory and have an expected calibration duration of approximately two years. Environmental conditions may shorten or prolong this period of time, but once the sensor parameters drift outside of acceptable tolerances, the sensor board must be either be recalibrated or replaced.

This document outlines the procedure for performing field calibration of all Brasch Generation 2 sensor boards including:

Carbon Monoxide Models

GSE2-CM-24
GSE2-CM-120
GSE2-CM-Remote
TRNS2-CM-Analog
TRNS2-CM-Digital
GDPCP-CM-Remote

Nitrogen Dioxide Models

GSE2-ND-24
GSE2-ND-120
GSE2-ND-Remote
TRNS2-ND-Analog
TRNS2-ND-Digital
GDPCP-ND-Remote

Combination Models

GSE2-NCM-24
GSE2-NCM-120
GSE2-NCM-Remote
TRNS2-NCM-Analog
TRNS2-NCM-Digital
GDPCP-NCM-Remote

Required:

- Voltmeter
- Potentiometer Adjustment Tool
- 100 PPM Carbon Monoxide Test Gas (for CO sensors)
- 5.0 PPM Nitrogen Dioxide Test Gas (for NO₂ sensors)
- Gas Flow Regulator
- Tubing
- Calibration Hood

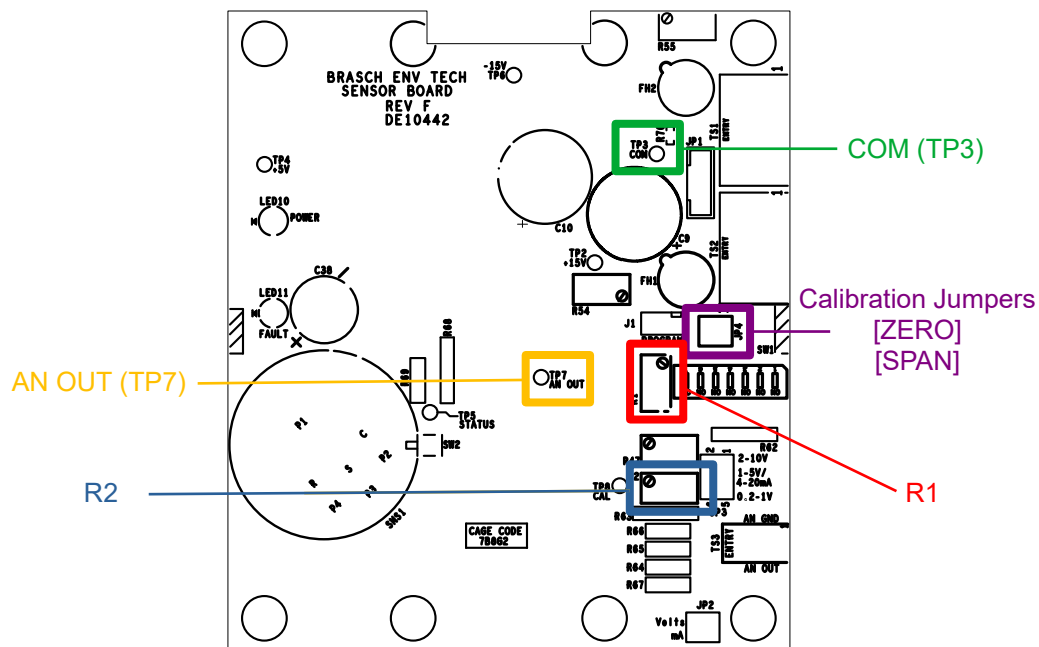
Note: All of the above required parts (except a voltmeter) are included with Brasch CO and NO₂ Test Gas Kits.

Procedure:

1. Turn power OFF to the sensor board
2. Move the calibration jumpers (JP4) so that both pins are covered by the jumpers
3. Turn power ON to the sensor board
4. Connect the negative voltmeter lead to COM (TP3)
5. Connect the positive voltmeter lead to AN OUT (TP7)
6. Set the voltmeter to measure DC voltage (VDC)
 - a) If possible, set the meter to display the average voltage to smooth out readings
7. Use the potentiometer adjustment tool on R2 until the meter reads approximately 5.0 V
 - a) This number will fluctuate but should remain stable at or near 5.0 V
8. Remove the top calibration jumper on JP4
9. Apply test gas directly to the sensor
 - a) The voltage at TP7 will begin to drop
10. Once the voltage stabilizes, remove the bottom calibration jumper on JP4
 - a) Stabilization requires approximately 5 minutes from the application of gas
11. Remove test gas from the sensor
12. Verify that the voltage at TP7 returns to approximately the same value as was set in step 7
 - a) Stabilization may take approximately 5 minutes from the removal of gas
13. Cycle power to the sensor board to verify that calibration data has been saved
14. Repeat this procedure for any remaining sensor boards

Troubleshooting:

- 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 voltages is not possible, it may be necessary to replace the sensor and/or the sensor board.
 - Once the useful lifespan of the sensor is exceeded, the sensor can no longer be recalibrated. Both carbon monoxide and nitrogen dioxide sensors have an expected lifespan of up to 10 years; however, this period can be reduced with increased exposure to the target gas or sensor poisons. Replacing the sensor should yield more stable voltages.
 - Over time, control electronics can degrade or suffer damage. If this is the case, replacing the sensor board should yield more stable voltages.



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