



Gas Calibration Log Guidelines

Purpose: To record the date the sensor was last calibrated and to measure the stability between calibrations. The time between calibrations (every six [6] months) may be lengthened if very little drift is recorded over two or more calibration intervals. One year is the maximum recommended time between calibration checks.

Use: This record of calibration and stability may be very valuable in the case of building inspections. It can be used to show inspectors and/or facilities managers that a calibration program is in effect. It will also show that the sensor is functioning within required specifications and is in compliance with ASHRAE and other building standards.

Equipment

Required: Valtronics Gas Calibration Kit
Valtronics Field Service Tester (or equivalent)

Refer to the attached sample gas calibration log form.

1. At the top of the form, record the seven digit lot number (example: 0196001).
2. In the first column, record the date that the sensor is checked and calibrated.
3. In the second column, record the ambient air temperature surrounding the CO₂ sensor. This information will help you to evaluate trends in the CO₂ measurements.
4. In the third column, record the zero to five volt (0-5 volt) output signal while flowing nitrogen into the gas calibration tube that is supplied with the sensor. Refer to VALTRONICS Application Note A25 (included in our calibration kit) for more detailed calibration instructions. If this is the second time you have calibrated this sensor, compare this reading with the previous one (recorded in the fourth column and previous row - less than 6 months earlier) to check zero stability.
5. If the zero reading is within the ± 0.050 volt window, do not bother to adjust it. If it is outside of that window, adjust the ZERO as shown in your instruction manual. Record (4th column) the reading at which it finally stabilizes (for example: +0.013 volt).
Note: 1% of the full scale (or 20 ppm of CO₂) is equivalent to 0.050 volt
6. Using certified 1000 \pm 20 ppm CO₂ (balance nitrogen), check and record (in the 5th column) the SPAN response by measuring the 0-5 volt output signal. This reading may be compared with the previous reading that is recorded in the 6th column and previous row (less than 6 months earlier) to check SPAN stability.
7. If the above reading is not 2.50 \pm 0.125 or between 2.375 to 2.625 (950 ppm to 1050 ppm CO₂), then adjust the SPAN as shown in your instruction manual. Record (in the 6th column) the reading where it finally stabilizes (for example: +2.55 volt which is equivalent to 1020 ppm CO₂).
8. Columns 7-10 are optional. They are for use with the Level Detect SET POINT and its associated relay contacts to control an air damper or alarm. Three of the four columns are associated with the fixed SET POINTS of 800, 1000, or 1200 ppm (see manual). Column 10 is used if you opted to adjust the SET POINT to a custom level. A simple check mark (✓) will indicate that it is functioning.

