



07-012A
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Linearity Adjustment on E-Series CO and CO₂ Analyzers

I. PURPOSE:

If linearity becomes an issue, corrections can be made by using the linearity adjustment feature in the DIAG menu. You must make sure the linearity error is not in your calibration system or tanks of gas prior to using this feature. Often a bottle will be filled with an incorrect concentration.

II. TOOLS:

III. PARTS:

IV. PROCEDURE:

1. Turn on linearity adjust (LIN ADJ) by pressing: SETUP – MORE – DIAG – enter password 929 – ENTR – NEXT...until FACTORY OPTIONS – ENTR – NEXT...until LINEARITY ADJUST – press “OFF” to make it say “ON” – press ENTR.
2. Turn power off to the analyzer and then back on – to reboot. This brings the option into the DIAG menu for linearity adjust.
3. Zero and span the analyzer (the span point must be 80% to 90% of the full scale range). Make sure the analyzer is given enough time to stabilize between points. Zero cal is very important – 10 or even 20 minutes of zero gas should flow and the stability (STAB) should be as low as possible.
4. Input a gas concentration approximately mid-scale or a concentration of interest (a concentration that has been out of tolerance that is below the mid-scale range). The linearity adjust point MUST be below the mid-point as the compensation cannot work above the mid-point.
5. Press : SETUP – MORE – DIAG – enter password 929 – ENTR – NEXT...until LINEARITY ADJUST – ENTR – CAL – CONC - input the LIN TARGET CONC (the value of the gas you are inputting) – press ENTR - wait 15 minutes or until STAB gets lower than .1 - press CAL - ENTR.
6. The display should go to the concentration that you are inputting.
7. Exit to the main menu and continue checking the other linearity points, the adjustment may need to be made again.
8. If you have dual ranges (LOW and HIGH), the other range will need to have LIN ADJ performed as well.
9. You can remove linearity adjustments and go back to the original calibration curve by pressing the reset (RST) button in the LINEARITY ADJUST menu.
10. This adjustment should not have to be done on a regular basis, if it is – this may indicate a problem with the bottles of gas, the calibration system, or the analyzer.