Digital Quick Start
Calibration Guide – Using RS232 Test Board

Application Note A84

GETTING STARTED

1. After verifying that communication has been established from the computer to the SPI board. (See Application Note A83 “Digital Quick Start” Setup Guide - Using RS232 Test Board)

2. Type in “VTI” (letters need to be in caps) and the text line should now read “UNLOCKED”.
   NOTE: You can now confirm calibration and setup data on the printed specification sheet that was shipped with the sensor by typing in the command numbers 1, 11, 2, 3, or 4. See Application Note A66 – page 2 for more detailed information.

   WARNING: If you do not have a preprinted specification sheet, one should be printed now so the current parameters can be reinstalled or compared to the new values.
   CAUTION: The proper sample gas flow rate is important and normally should be between 0.3LPM to 0.5LPM.

3. Connect and turn on the zero gas (normally N2) to the calibration tube or inlet barb of the gas cell.
   You can type in command “1” and confirm gas stabilization in the cell by consistent numerical readout.

4. Type in command “SETZ”, then enter command “1” to confirm consistent near zero percent readout on the screen.
   LED3 through 6 will flash on & off together. If they flash on & off sequentially, there is an error. Type in command “RESET” to clear the error. LED3 will be on constant to indicate that zero set was accepted.

5. Type in command “STAR” and enter the percent calibration value.
   LED4 will flash briefly when value is accepted.

6. Connect and turn on the span target gas (calibration value) to the gas cell calibration tube or inlet barb.
   You can type in command “1” and confirm gas stabilization in the cell by consistent numerical readout.

7. Type in command “SETS”, then enter command “1” to confirm consistent span target gas (calibration value) readout.
   LED’s 3 through 6 will flash on & off together when value is accepted.

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8. Turn off the span target gas (calibration value) and confirm all enter values have been accepted and are correct.

   Confirm by typing in the command "2" which displays all calibration data.

   NOTE: SPI boards without SW1 to SW4 are digital output only units and the next procedure below would not be applicable.

9. If you need to change the **selectable range**, connect a volt meter between TP7 and JP1 to measure the output analog voltage signal. (See Product Specification Sheet for model number under test and refer to the tables to determine the correct voltage value.) Always press and HOLD down SW4 while adjusting the range up or down. Adjust the VOLTAGE UP by pressing and holding down SW1 (you should be still holding down SW4). Adjust the VOLTAGE DOWN by pressing and holding down SW3 (you should be still holding down SW4). It takes approximately 50 seconds of pressing the up or down switches to change the voltage output by 0.1 volt.

   This setting only affects the percent gas range of the 0-1 volt analog output. There is always a 0-1 volt output. For example on a 0 – 10% scale, if the range is set to 10% then the voltage output at max scale (10%) will be 1.0V. If the range is reset to 5% then the voltage output at max scale (5%) will still be 1.0V. If the range again is reset to 2% then the voltage output at max scale (2%) will still be 1.0V.

10. After confirmation of correct operation disconnect the gas calibration tube/s and disconnect power to the PC boards.

