Digital Quick Start
Calibration Guide – With PCB Switches

Application Note A85

GETTING STARTED

NOTE: Digital boards without SW1 to SW4 are digital output only sensors and this procedure would not be applicable.

1. Connect a volt meter between TP7 and JP1 on the Digital board to measure the output analog voltage signal. (See Product Specification Sheet for model number under test for location of test points or more details.)

   CAUTION: The proper sample gas flow rate is important and normally should be between 0.3LPM to 0.5LPM.

2. Connect and turn on the zero gas (normally N2) to the calibration tube or inlet barb of the gas cell.

   NOTE: Confirm that the zero gas is stable by observing the volt meter display which should have a steady voltage reading. (+/- 0.005)

3. Once your meter reading is stable, press SW1 to **ZERO CALIBRATE**.

   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.

   The voltage reading on the meter should snap to 0.000 volts (+/- 0.015).

4. If you need to **CHANGE** the selectable **RANGE** value, 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 (LED 6 will be on) while adjusting the range up or down. Adjust the VOLTAGE UP by pressing and holding down SW1 (you should be still holding holding down SW4). Adjust the VOLTAGE DOWN by pressing and holding down SW3 (you should be still holding down SW4).

   NOTE: 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.

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5. If you need to **CHANGE** the **STAR** (**S**pan **TAR**get) calibration gas value, 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 SW2 (LED 4 will be on) while adjusting the STAR VALUE up or down. Adjust the STAR VALUE voltage reading UP by pressing and holding down SW1 (you should be still holding holding down SW2). Adjust the STAR VALUE voltage reading DOWN by pressing and holding down SW3 (you should be still holding down SW2).

   NOTE: It takes approximately 50 seconds of pressing the up or down switches to change the voltage output by 0.1 volt.

   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.

   NOTE: Confirm that the span gas is stable by observing the volt meter display which should have a steady voltage reading. (+/- 0.005)

7. Once your meter reading is stable, press SW3 (LED 5 will be on) to **SPAN CALIBRATE**.
   (See Product Specification Sheet for model number under test and refer to the tables to determine the correct voltage value.)

   LED's 3 through 6 will flash on & off together when value is accepted.

8. Turn off the span target gas (calibration value) and reconfirm that voltages values have been accepted and are correct.

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

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