APPLICATION NOTE AN-002

Digital Zero Feature

1 Purpose of this Application Note

The STI Digital Zero feature provides the means to adjust the zero balance output of a transmitter at zero pressure conditions. The purpose of this Application Note is to explain the steps used to set the zero balance output using the Digital Zero feature.

Requirements

⇒ STI Pressure Transmitter w/Digital Zero feature

⇒ Power Supply capable of producing required transmitter excitation voltage

⇒ Current meter capable of resolving measurements to a resolution of 10uA (0.01 mA)

2 Procedure

1. Connect the pressure transmitter to the power supply and current meter so that:

⇒ The power supply's +Output terminal is connected to the transmitters +Signal pin (A).

⇒ The transmitter's -Signal pin (B) is connected to the current meter's +Signal terminal.

⇒ The current meter's -Signal terminal is connected to the power supply's -Output terminal.

2. Verify that the transmitter's pressure port is exposed to the zero pressure (0A for absolute units or 0G for gage units).

3. Set the power supply to the specified voltage level while observing the current meter reading. The reading should stablize at about 4 mA.

4. The Zero Adjust pins of the transmitter (C and D) control the Digital Zero feature. When the pins are shorted together, the zero balance output begins to change it's value as long as the pins remain shorted. The zero balance will increase or decrease until it reaches 1.6% FS from the factory calibrated zero and then change direction. This process is continuous and becomes permanent when the operator removes the short. The new zero balance output is stored in the sensor and any future power-up sequences will recognize the new zero balance output.

NOTE The Digital Zero pins must remain shorted for a minimum of 2 seconds for the transmitter to recognize that the zero is being permanently changed. If the operator shorts the pins for less than 2 seconds, the zero balance will change, but will remain changed only until power is removed. This feature allows for temporary changes.