

Removing Obstacles from DP Calibrations in Field

Problem: Portable, electronic calibration standards for differential pressure measurement are typically not compatible with liquids, corrosive gases or wet gases. Consequently, most field calibrations are done using air after isolating the field instrument from the process and draining or venting to atmosphere. Liquid slugs or corrosive material remaining in the field instrument or tubing can enter the calibration standard and cause costly repairs.

In addition, static pressure limitations for these standards are typically less than 150 PSI, making calibrations or DP spot checks under operating conditions impossible in many applications.



I & E shops currently work with the limitations of portable electronic DP calibration standards. Field DP instruments are often removed to a shop environment for calibration under more friendly conditions, creating additional handling and causing additional trimming operations when the instrument is returned to service. Calibration of field DP instruments at operating pressures isn't even considered when operating pressures are too high. And performing spot checks on head type liquid flow instruments, evaporators or chillers is not an option for dry / dry or wet / dry handhelds.

Solution: M200-DI Wet / Wet DP Smart Manometers use DP sensors that are protected from the process fluid by 316L SS diaphragms and Viton O-rings on both the high (P1) and low (P2) sides. This unique isolation in a DP handheld opens up a new set of options for I & E technicians:

1. 316L SS and Viton wetted parts improves process media compatibility and eliminates costly repairs; many liquid, corrosive gas and wet gas measurements are now possible and more calibrations can be accomplished in the field.
2. When used properly with a 3-valve equalizing manifold, the M200-DI series will handle up to 1000 PSIG common mode pressure. Field calibrations of DP instrumentation can be accomplished at operating pressure, reducing or eliminating static pressure effects on the accuracy of the field instrument.
3. Spot checks of head type flow meters in liquid service (orifice plates, venturis, nozzles, wedge elements, V-cone) are now possible; technicians can check the DP without interrupting the process or they can use the square root function to display flow rate.
4. The flushing manifold option enables users to flush particulates, contaminants or residues from the manifold and sensor body. Flushing with appropriate solvents prior to sending out for re-certification or re-calibration eliminates potentially hazardous residue and removes vendor concerns about exposure to hazardous chemicals.