Calibrating a HART smart pressure transmitter

Pressure transmitter manufacturers have improved the accuracy and technology designed into these smart pressure measurement devices. Many conventional calibration tools have become inadequate or simply unable to test and calibrate these high accuracy pressure transmitters. Better test solutions are required.

Verifying and documenting the performance and adjusting a HART smart pressure transmitter can require a bucket full of tools. Performing this task with a HART enabled calibrator like the Fluke 754 simplifies the task and reduces what you need to carry.

Before going to the field: install the pressure module adapter to the hand pump with thread seal. Once the adapter is properly installed on the pump, changing modules to different pressure ranges is a snap, no tools required.

To get the accuracy needed: to test these new high accuracy transmitters match the pressure measurement standard range closely to the device tested. For example, use a 100 psi pressure module to calibrate and test a transmitter ranged at 100 psi. Industry standards suggest the measurement standard should be 4–10 times more accurate than the device being tested so best-in-class accuracy is required.

The Fluke 754 utilizes the 750P series pressure modules and has built-in HART functionality to enable smart trims on transmitters. It can also document transmitter performance before and after adjustment and calculate pass/fail errors.

Suggested test tools

Fluke 754 Documenting Process Calibrator-HART

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Fluke 700G Precision Pressure Gauge Calibrator

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Fluke 750P Series Pressure Modules

See pg 12

Fluke 700PTP-1 Pneumatic Test Pump

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