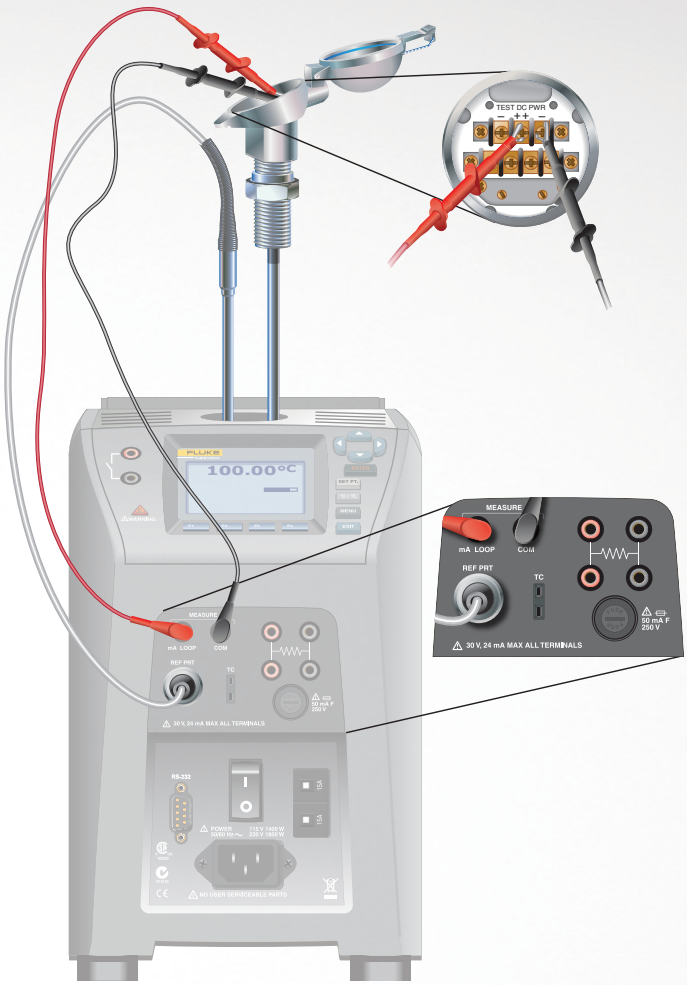

To perform the test:

STEP 1 Isolate the sensor from the process.

STEP 2 Fully immerse the sensor into a precision temperature source such as a dry-well or bath capable of covering the required temperature range.

STEP 3 Connect the temperature standard and 4–20 mA output of the transmitter to a suitable meter or calibrator (for example, the process electronics on a Fluke Field Metrology Well or the inputs of a Fluke 754).

STEP 4 Power the loop. (The Fluke 754 and the process electronics in a Field Metrology Well have this capability.)

STEP 5 Adjust the temperature of the bath or dry-well to each of the test points. (With Field Metrology Wells, these test points can be preprogrammed and automated.)

STEP 6 At each test point, monitor and record the readings of the temperature standard and the local or remote readings connected to the transmitter output.

STEP 7 Also, record the 4–20 mA output of the transmitter to determine which device needs adjustment if an adjustment is required.

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TECH TIPS

- Streamline the process with automation and provide documentation using a Fluke 754.
- Seventy-five percent of the errors in a temperature measurement system comes from the sensor.
- At minimum, you need a calibrator, and a device to measure 4–20 mA and power the loop.
- Choose a temperature standard with a 90 degree angle bend to ensure both the temperature standard and the transmitter fit in the dry-well at the same time.

Additional resources

For more in depth information about this application check out these videos and application notes from Fluke.

Eliminating Sensor Errors in Loop Calibrations

Multifunction calibration using the 7526A Precision Process Calibrator

Improving loop calibration temperature accuracy