Druck
a Baker Hughes business

Application story

# A Texas Refinery improves its Emerson 3051 calibrations with Druck TERPS technology

**Industry supplied**
Oil & Gas (downstream)

**Application**
Field calibration of Emerson 3051 pressure transmitters

**Product/service**
Druck TERPS PM pressure modules

**Customer type**
Oil refinery

## Druck's customer

Druck's customer, based in Texas, is an oil refinery who processes a wide variety of crude oils to produce petroleum products such as diesel, gasoline and heating oils.

## Druck's customer's challenge

In oil refineries, pressure measurement instruments are used in various applications such as measuring critical parameters in the processing of petroleum products.

Such instruments must be regularly calibrated, to ensure the accuracy of equipment and minimise any measurement uncertainty.

In a calibration procedure, Test Accuracy Ratio (TAR) denotes the accuracy tolerance of the instrument under calibration to the accuracy tolerance of the calibration standard used. The 4:1 calibration ratio is the refinery and industry standard for comparing calibration device to device under test (DUT) accuracy.

Adherence to this standard gives the instrumentation team confidence that they are maintaining the performance of their pressure transmitters within refinery specifications. It also avoids the situation where they would adjust a transmitter based upon the information from an inaccurate calibration device (false negative error).

Druck's customer needed a calibration device that would give them the accuracy to achieve a 4:1 calibration ratio with their 0.04% full scale (FS) Emerson 3051 pressure transmitters.

## Druck's solution

Druck's customer upgraded to the TERPS pressure modules (Trench Etched Resonant Pressure Sensor) which is uniquely accurate in the calibration industry and provides up to four times greater stability and higher accuracy than any other pressure measurement technologies.


Picture 1: Druck's TERPS pressure modules

With today's technology, maintaining a 4:1 accuracy ratio with modern equipment is difficult.

Previously, the customer's calibration ratio equalled 1.81:1 which meant the calibration ratio was not compliant with the 4:1 refinery standard for confidence in the annual calibration of the pressure transmitter.

From using Druck's TERPS PM, the customer was able to achieve a calibration ratio equal to 8:1 which is far greater than the required standard.

## Druck's added value

The introduction of Druck TERPS PM pressure modules provided the following benefits:

**Reliability:** From using Druck's TERPS PM, the customer can accurately calibrate their Emerson 3051 pressure transmitters and have confidence that their process is in control while avoiding "false negative" calibrations in which they were adjusting transmitters based on incorrect calibration device readings.

Inaccurate calibration readings could lead to process inefficiency and unscheduled downtime on the refinery. Druck's TERPS pressure modules prevent this from happening.

**Savings in time and cost:** Druck's customer spends approximately $70 for every hour that an instrumentation maintenance technician takes when completing transmitter calibrations. If the calibration device is not sufficiently accurate then they are not actually performing calibrations, therefore their labour investment is wasted time and money.

## For more information

To learn more about this product and Druck, please visit:

**Online:** https://www.bakerhughesds.com/measurement-sensing/druck-pressure-measurement/test-and-calibration/multi-function-calibration

**Linkedin:** linkedin.com/company/druckcompany

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