

Model 2413

Differential Pressure Cell and Indicator

Technical Data

Features

- Diaphragm isolation provides physical separation between different media
- Capable of 100 MPa (15,000 psi) differential overpressure
- Maximum error contribution to 5 ppm
- Model 2413 for pressures to 100 MPa (15,000 psi)
- Utilize one standard for multiple media
- Compatible with virtually any noncorrosive gas or liquid
- Time saving tool for crossfloat calibration



Fluke Calibration's Differential Pressure Cell and Null Indicator is designed to physically separate two media while only contributing 5 part per million uncertainty to the measurement process.

The differential pressure cell has two pressure chambers separated by a thin metal diaphragm. A difference in pressure in the two chambers causes a deflection of the diaphragm which is sensed by an LVDT circuit. The output from the LVDT is displayed on the indicator.

The differential pressure cell and indicator is capable of indicating when zero differential pressure exists between two systems to within 5 ppm. However, it is not intended to measure the magnitude of a differential pressure.

Approved gas media in either chamber include dry air, nitrogen, CO₂, and the noble gases and exclude hydrogen and oxygen. Liquid media in the top chamber may be virtually any nonconducting, noncorrosive liquid. Liquid media in the lower chamber can be virtually any noncorrosive media. For applications where water will be used in the lower chamber, Fluke Calibration offers a differential pressure cell manufactured from monel.

A variety of configurations can be provided, including a differential pressure cell equipped with a constant volume valve for deadweight gauge crossfloat calibrations.

A zero offset correction curve is supplied with all differential pressure cells and indicators, except those equipped with a constant volume valve since the differential pressure cell is re-zeroed at each pressure during a crossfloat calibration. This curve is a one time process and the differential pressure cell and indicator do not require periodic testing or calibration.

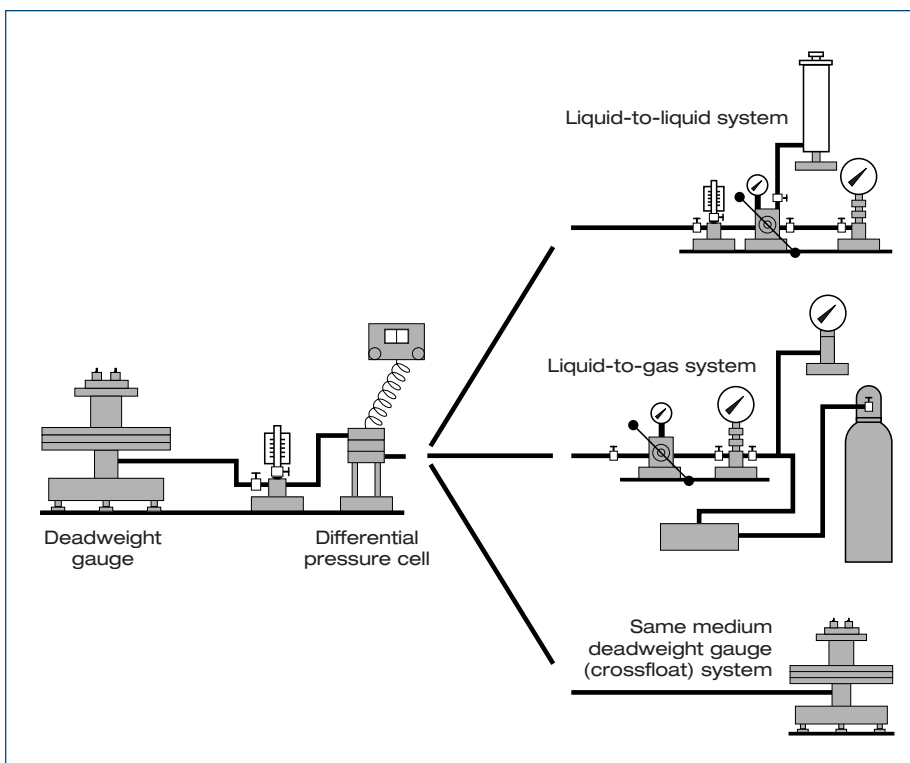
During manufacture, all testing of the differential pressure cell is performed with nitrogen, therefore the instrument is supplied with each chamber dry. Once the user has committed either chamber with a liquid, changing that chamber to a different liquid is not recommended as it requires disassembly, cleaning and replacement of the diaphragm. This procedure should only be performed at the factory, and requires a new zero offset correction curve.

Specifications

Selection guide	
Model 2413-800	For use as a media separator, such as liquid to liquid or liquid to gas, for pressures to 100 MPa (15,000 psi).
Model 2413-800-59900	Same as 2413-800, but for water service in lower chamber. Lower cell material is monel.
Model 2413-851	For gas crossfloat calibrations to 20 MPa (3000 psi). Includes constant volume valve.
Model 2413-850	For liquid crossfloat calibrations using a single medium. Includes constant volume valve.
Please consult the factory if you have an application not described above.	

General	
Model	Model 2413
Operating pressure	100 MPa (15,000 psi)
Accuracy	5 ppm or 0.01 psid, whichever is greater
Sensitivity	Variable from 2×10^{-4} to 0.01 psi per meter unit
Over pressure	100 MPa (15,000 psi), either side
Temperature range	5 °C to 70 °C (41 °F to 158 °F)
Material	Cell is 400 series stainless steel
Fittings	DH500 (equivalent to AE F250C, HIP HF4)
Upper chamber volume	29.5 cm ³
Lower chamber volume	0.6 cm ³
Indicator	
Type	Analog meter movement. Potentiometers for zero and gain adjust
Power	115/230 V ac, 50/60 Hz
Application notes	
For each side using a liquid, an open tube manometer is required for zeroing head pressure. Also, since the differential pressure cell does not transfer.	

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Fluke Calibration
PO Box 9090, Everett, WA 98206 U.S.A.

Fluke Europe B.V.
PO Box 1186, 5602 BD
Eindhoven, The Netherlands

For more information call:
In the U.S.A. (877) 355-3225 or
Fax (425) 446-5116
In Europe/M-East/Africa +31 (0) 40 2675 200 or
Fax +31 (0) 40 2675 222
In Canada (800)-36-FLUKE or
Fax (905) 890-6866
From other countries +1 (425) 446-5500 or
Fax +1 (425) 446-5116
Web access: <http://www.fluke.com>

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