NPL
National Physical Laboratory

DC Ratio Meters

NPL offers a calibration and adjustment service for DC ratio meters. A calibrated DC ratio meter may be used with more than one force transducer offering significant advantages over dedicated instrumentation.

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DC Ratio Meters

DC ratio meters are l instruments which energise a load cell, typically with a voltage of 10 V. They then compare the input and output voltages and display the ratio of the two in mV/V. This eliminates the effect on the load cell output of any small variations in input voltage during its use.

DC Ratio Meter Calibrations

NPL calibrates DC ratio meters against reference resistances, using precision digital voltmeters traceable to national standards.

NPL's best measurement capability voltage ratio at a 95% confidence level, given below, for specific ranges. This allows calibrations of DC ratio meters to meet the requirements specified in BS EN ISO 376:2004.

0.01 mV/V to 0.05 mV/V	±0.010 %
0.05 mV/V to 1.0 mV/V	±0.005 %
1.0 mV/V to 2.5 mV/V	±0.007 %
2.5 mV/V to 10 mV/V	±0.005 %

Interchange of Ratio Meters

Greater flexibility is achieved when the DC ratio meter is calibrated both separately from and together with the force transducer. This allows the ratio meter, should it be damaged, to be repaired and recalibrated, or replaced by another calibrated ratio meter, without affecting the transducer's calibration.

International standards permit the interchange of voltage ratio meters providing:

- The ratio meter has a calibration certificate in the same electrical units, traceable to national standards.
- The range and resolution of the meter is equal to or greater than that of the meter being replaced.
- The meters agree within ±0.1 % over the full working range.

For further information or to discuss your requirements, please contact us.
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