

## PFM111R Roll Force Load Cells Magnetoelastic Type

The PFM111R Series Rolling Mill load cells are a precision force measuring device designed to install in the modern rolling mill. The magnetoelastic design allows direct replacement of ABB 2nd Generation Roll Force load cells.



### Data for Load Cells:

Accuracy Class:	$\leq 0.5\%$ in typical operating range
Linearity Error:	$\leq 0.5\%$ in typical operating range
Hysteresis:	$< 0.2\%$ of nominal load
Repeatability:	$\pm 0.1\%$ of nominal load
Compression:	0.05mm
Calibration Error:	0.1%

Technical Weighing Services, Inc. is an ISO 9001:2000 registered company with an ISO 17025:2005 accredited lab. All calibration work is performed in accordance with approved ISO/IEC 17025 calibration procedures using standards traceable to NIST.

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## Definitions

**Nominal Load** ( $F_{nom}$ ) is the maximum gross load for which the load cell is demensioned to measure, i.e. the total fixed tare, maximum moving tare and maximum measurement load. Normally this corresponds to 100 N/mm<sup>2</sup> on the pressure surface of the load cell.

**Hysteresis** is the greatest deviation in output signal that is measured when the load cell goes through a load cycle from 0 to  $F_{nom}$  and back to 0. The hysteresis is expressed as a percentage of the output signal at nominal load and is proportional to the size of the load cell.

**Temperature dependence** is given in ppM/K (100ppM+0.1% of the signal at nominal load.)

**The zero point drift** is measured with the load cell entirely free of load; **the sensitivity drift** is determined at nominal load.

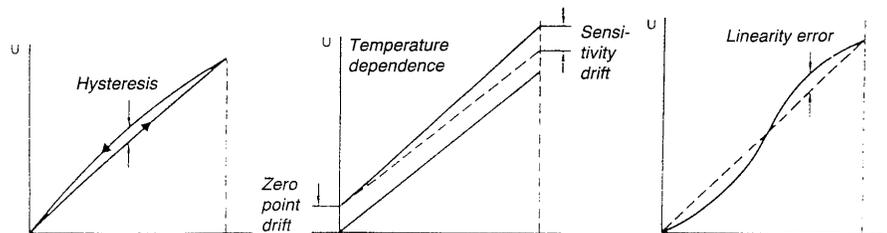
**The repeatability error** is the maximum deviation between the readings obtained on a number of repeated loadings under identical external conditions. It is stated as a percentage of the output signal at nominal load.

**Linearity error** is the maximum deviation in the signal voltage/load diagram from a straight line between the theoretical values for signal and force at 0 load and at nominal load. The deviation is state as a percentage of the voltage at nominal load.

**The compression** is the reduction in the height of the load cell when the load rises from 0 to nominal load. Accuracy class is defined as the maximum deviation and is expressed as a percentage or the sensitivity at nominal load. This includes linearity deviation, hysteresis and repeatability error.



*3 Million Pound Calibration/Test Press*



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