



2525-800 Series Load Cells

Features

- Rated capacities from ± 2.5 N to ± 100 kN (0.25 kgf to 10,000 kgf, 0.5 lbf to 22,500 lbf)
- Instron's unique 'drop through' crosshead design frees up valuable vertical testing space
- Operates in tension, compression and reverse stress mode
- Auto recognition and electrical calibration
- Load cells are designed to withstand 150% of rated capacity
- Excellent linearity through tension and compression
- High axial and lateral stiffness
- All load cells comply with the highest applicable testing standards, including ISO DIS 7500/1, EN10002-2, BS1610 (1992) and JIS B7721, B7733

Description

Instron load cells are an integral part of the load weighing system of a testing machine. The proprietary design, manufacturing and quality control are done with customer applications in mind. They are certified in accordance with international standards especially for use in materials testing machines.

Interchangeability, along with transducer recognition and single point calibration makes them easy-to-use. System electronics provide overload protection by stopping the test at 105% of full scale output.

They maintain high alignment and are resistant to offset loading throughout the test, even with large size specimens. The cells can withstand up to 150% of the rated capacity allowing the user to zero out the weight of the fixture up to 50% of the rated load cell capacity, and still maintain specified accuracy through the full range.

Instron load cells are tested for accuracy and repeatability on a calibration apparatus traceable to international standards, with an uncertainty of measurements not exceeding one third of the permissible error of the load cell. Accuracy has been found to be equal to or better than 0.025% of the load cell rated output or 0.25% of the indicated load, whichever is greater.

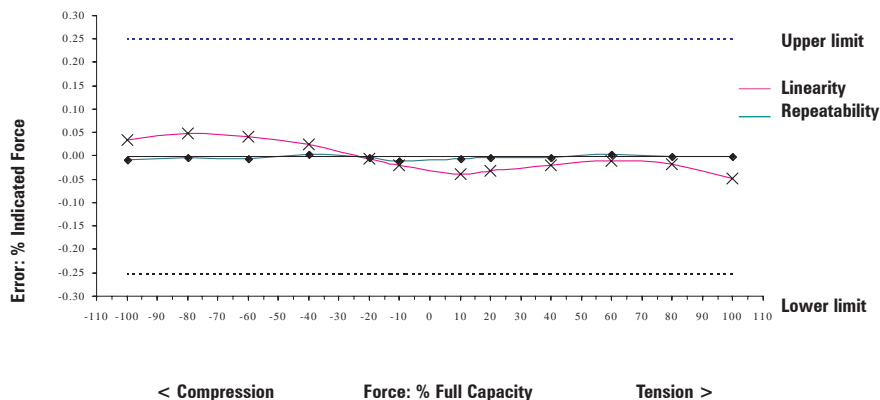


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2525-800 series load cell

Principle of Operation

Instron load cells are precision force transducers containing a full bridge of strain gauges bonded to internal load bearing structures. When mechanically stressed the electrical resistance changes on the gauges, thus changing the output signal. This signal is then conditioned for display readouts in accordance with international standards.

The load cell structure has high axial stiffness which reduces stored energy that can transfer to the specimen at break, giving false values. Increased lateral stiffness reduces measurement errors from off axis loading, commonly found when performing compression and flexural tests or where specimens fail by tearing. These load cells are designed to perform tension, compression, and reverse stress modes, eliminating the need to change cells frequently.



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Typical load cell calibration test results

2525-800 Series Load Cells

Specifications

Catalog Number	Maximum Capacity	Frame Fitting	Loadstring Fitting	Diameter (A)	Effective Length (B)	Weight
2525 - 801	±100 kN (10,000 kgf, 22,500 lbf)	6 x M10 on 100 mm BC	16 mm clevis - pin (Type 1f)	80 mm (3.1 in)	142 mm (5.6 in)	5 kg (11 lb)
2525 - 802	±50 kN (5,000 kgf, 11,250 lbf)	6 x M10 on 100 mm BC	16 mm clevis - pin (Type 1f)	80 mm (3.1 in)	142 mm (5.6 in)	5 kg (11 lb)
2525 - 810	±30 kN (3,000 kgf, 6,750 lbf)	6 x M10 on 100 mm BC	16 mm clevis - pin (Type 1f)	80 mm (3.1 in)	142 mm (5.6 in)	5 kg (11 lb)
2525 - 804	±10 kN (1,000 kgf, 2250 lbf)	6 x M10 on 100 mm BC	6 mm clevis - pin (Type 0f)	80 mm (3.1 in)	133 mm (5.2 in)	5 kg (11 lb)
2525 - 805	±5 kN (500 kgf, 1,125 lbf)	6 x M10 on 100 mm BC	6 mm clevis - pin (Type 0f)	80 mm (3.1 in)	133 mm (5.2 in)	5 kg (11 lb)
2525 - 818	±2 kN (200 kgf, 450 lbf)	6 x M10 on 100 mm BC	6 mm clevis - pin (Type 0f)	80 mm (3.1 in)	133 mm (5.2 in)	5 kg (11 lb)
2525 - 806	±1 kN (100 kgf, 225 lbf)	6 x M10 on 100 mm BC	6 mm clevis - pin (Type 0f)	80 mm (3.1 in)	133 mm (5.2 in)	5 kg (11 lb)
2525 - 816	±500 N (50 kgf, 112 lbf)	6 x M10 on 100 mm BC	6 mm clevis - pin (Type 0f)	80 mm (3.1 in)	133 mm (5.2 in)	5 kg (11 lb)
2525 - 807	±100 N (10 kgf, 22 lbf)	6 x M10 on 100 mm BC	2.5 mm clevis - pin (Type 00f)	80 mm (3.1 in)	135 mm (5.3 in)	2 kg (4.4 lb)
2525 - 817	±50 N (5 kgf, 11 lbf)	6 x M10 on 100 mm BC	2.5 mm clevis - pin (Type 00f)	80 mm (3.1 in)	135 mm (5.3 in)	2 kg (4.4 lb)
2525 - 808	±10 N (1 kgf, 2 lbf)	6 x M10 on 100 mm BC	2.5 mm clevis - pin (Type 00f)	80 mm (3.1 in)	135 mm (5.3 in)	2 kg (4.4 lb)
2525 - 815	±2.5 N (0.25 kgf, 0.5 lbf)	6 x M10 on 100 mm BC	2.5 mm clevis - pin (Type 00f)	80 mm (3.1 in)	135 mm (5.3 in)	2 kg (4.4 lb)

Notes:

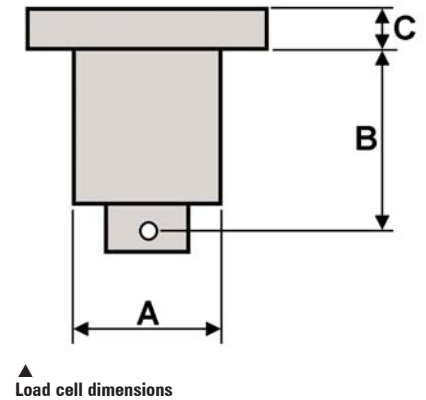
- Crown height, dimension C is 30 mm.
- Each load cell includes a clevis pin and securing clip.
- Series 2525-800 load cells are supplied with an interconnecting cable, allowing connections to 4200, 4300 and 4500 models.

Load Cells General Performance

Linearity	< ±0.25% of reading over a range of 100% to 0.4% of load cell static rating
Repeatability	< 0.25% of reading over a range of 100% to 0.4% of load cell static rating
Zero Error	The residual indicated force after removing a series of forces is not greater than ±0.05% full rated output
Hysteresis	0.1% of full rated output
Zero Recovery	0.1% of reading over three minutes
Sensitivity	2 mV/V at full static rating
Zero Balance	< ±10% full rated output
Overload	150% static rating without permanent zero shift 300% static rating without mechanical failure
Deflection	0.1 mm at full static rating
Load Reversal Zero Shift	< ±0.50% full rated output (tension to compression)
Compensated Temperature Range	Temperature range 0 to +50 °C
Temperature Effect on Zero	< ±0.002% of rated output per °C
Temperature Effect on Sensitivity	< ±0.002 % of rated output per °C

Notes:

- It is important to note that most other transducer manufacturers specify linearity of their load cells as a percentage of the full rated output (% FRO). This can be misleading when using lower ranges (e.g. 1% of capacity). A load cell rated at 0.05% FRO could show a reading error of 5% at this low point.



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