

## 2530 SERIES STATIC LOAD CELLS

500 N - 100 kN



Instron® load cells are a key part of a materials testing system. Among our competitors, Instron is the only global materials testing supplier that designs and manufactures its own load cells. This ensures that Instron load cells meet the unique requirements of materials testing such as; high accuracy over a wide measurement range, high stiffness, resistance to offset loads, accurate alignment and excellent zero stability.

The 2530-xxxN Series load cells are specifically designed for use with 3300 testing systems. The design, manufacture, and performance verification is conducted with materials testing applications in mind. Automatic transducer recognition and electrical calibration makes them easy to use. The load cells incorporate overload protection and can withstand loads up to 150% of their force capacity reducing the possibility of damage and 300% without mechanical failure. The load cells allow the user to zero out the tare weight of a grip or fixture that weighs up to 10% of the force capacity, while still maintaining the full accuracy.

All Instron load cells are individually temperature compensated and tested for accuracy and repeatability on calibration apparatus that is traceable to international standards, with a measurement uncertainty that does not exceed one third of the permissible error of the load cell.

### PRINCIPLE OF OPERATION

Instron 2530-xxxN series load cells are precision force transducers consisting of a full strain gauge bridge bonded to a stiff and highly linear elastic element. When the element is subjected to a force, the electrical resistance of the gauges changes, providing an output signal proportional to the applied force.

The load cells are designed to operate in tension, compression, cyclic and reverse stress. They have a wide measurement range allowing accurate force measurements to be made down to 1/500th of the load cells capacity, reducing the need to change load cells.

### FEATURES AND BENEFITS

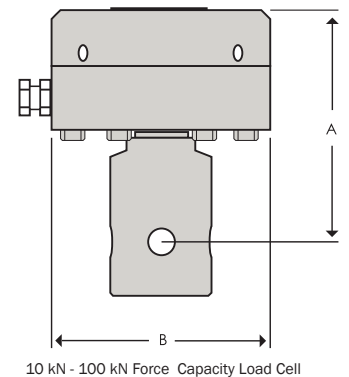
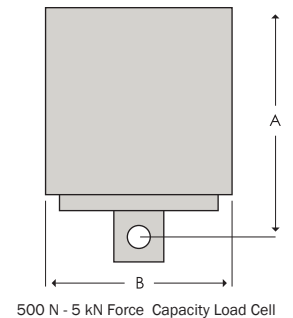
- Force capacities from  $\pm 500$  N -  $\pm 100$  kN (50 - 10,000 kgf, 112 - 22,500 lbf)
- Suitable for a range of test types, including tension, compression, cyclic, and reverse stress
- Accurate measurements down to 1/500th of load cell capacity- means fewer load cells and fewer load cell changes
- Automatic recognition with electronic serial number and electrical calibration allows for means simple, error-free operation
- 150% of force capacity overload capability – reduces the possibility of damage
- Tare weight 10% of Force Capacity – can be used with a wide range of grips and fixtures
- Can be used with optional Quick Change and Piggy Back Adapters to facilitate a quick change over of load cells
- Precision machining and construction along with high axial and lateral stiffness helps to maintain system alignment
- Low sensitivity to offset loads improves consistency of results
- Complies with all international force measurement standards, including ASTM E4, ISO 7500-1 class 0.5, and JIS B7721, B7733

## SPECIFICATIONS

Catalog Number	Force Capacity			Mechanical Fitting (Frame)	Mechanical Fitting (Load String)	Effective Length (A)		Diameter (B)		Weight		Deflection at Capacity		Off-Center Loading Error (10 mm offset)
	kN	kgf	lbf			mm	in	mm	in	kg	lb	mm	in	% of reading
2530-500N	±0.5	50	112	M10 × 1.5RH Central Thread	6.0 mm Clevis Pin (Type Of)	91	3.6	76	3.0	0.6	1.3	0.03	0.001	0.03
2530-1KN	±1	100	225	M10 × 1.5RH Central Thread	6.0 mm Clevis Pin (Type Of)	91	3.6	76	3.0	0.6	1.3	0.05	0.002	0.03
2530-2KN	±2	200	450	M10 × 1.5RH Central Thread	6.0 mm Clevis Pin (Type Of)	91	3.6	76	3.0	0.6	1.3	0.08	0.003	0.03
2530-5KN	±5	500	1,125	M10 × 1.5RH Central Thread	0.5 in Clevis Pin (Type Df)	101	4.0	76	3.0	0.8	1.8	0.12	0.005	0.20
2530-10KN	±10	1,000	2,250	M16 × 2RH Central Thread	0.5 in Clevis Pin (Type Df)	122	4.8	107	4.2	4.2	9.2	0.03	0.001	0.20
2530-30KN	±30	3,000	6,750	M16 × 2RH Central Thread	0.5 in Clevis Pin (Type Df)	122	4.8	107	4.2	4.2	9.2	0.05	0.002	0.20
2530-50KN	±50	5,000	11,250	M16 × 2RH Central Thread	0.5 in Clevis Pin (Type Df)	122	4.8	107	4.2	4.2	9.2	0.05	0.002	0.20
2530-100KN	±100	10,000	22,500	M30 × 2RH Central Thread	0.5 in Clevis Pin (Type Df)	110	4.3	113	4.4	11	24.2	0.05	0.002	0.50

## GENERAL PERFORMANCE

<b>Linearity</b>	±0.25% of Reading from 0.2 to 100% of Force Capacity
<b>Repeatability</b>	0.25% of Reading from 0.2 to 100% of Force Capacity
<b>Hysteresis</b>	±0.1% of Force Capacity (difference between increasing and decreasing force measurements at 50% of capacity)
<b>Creep</b>	±0.1% of Force Capacity (3 minutes after application of full force)
<b>Maximum Tare Weight</b>	10% of Force Capacity
<b>Overload</b>	150% of Force Capacity without Calibration Change, 300% of Force Capacity without Mechanical Failure
<b>Compensated Temperature Range</b>	0 to 50 °C (32 to 122 °F)
<b>Temperature Effect on Zero</b>	±0.002% of Force Capacity per °C (0.001% per °F)
<b>Temperature Effect on Sensitivity</b>	±0.002% of Force Capacity per °C (0.001% per °F)
<b>Frame Compatibility</b>	3300



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