INSTRON®

The difference is measurable®

2519 Series Load Cells | 2519-200

Instron® load cells are an integral part of a materials testing system. The 2519-200 load cells are specifically designed for use with Instron's 3300 Single column testing systems. The design, manufacture, and performance verification is conducted with materials testing applications in mind and the cells are certified in accordance with international standards. Interchangeability, along with transducer recognition and automatic calibration, makes them easy to use. The cells maintain accurate alignment and are resistant to offset loading throughout a test, even when large, oversized specimens are being tested. The cells can withstand loads up to 150% or more of their rated capacity, allowing the user to zero out the weight of a fixture that weighs up to 50% of the rated load cell capacity, while still maintaining specified accuracy through its full nominal capacity range. Instron load cells are 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 load cells are precision force transducers that utilize a full strain gauge bridge bonded to internal, load-bearing structures. When mechanically stressed, the electrical resistance of the strain gauges changes, thus changing the output signal of the bridge. This output signal is then conditioned for display readouts in accordance with international standards.

The load cell structure's high-axial stiffness reduces the stored energy that can be transferred to the specimen at break, thus reducing false values. Increased lateral stiffness reduces measurement errors from off-axis loading that is commonly found when performing compression and flexural tests or where specimens fail by tearing. The load cells are designed to perform in tension, compression, and reverse stress modes, eliminating the need to change cells frequently.

Features and Benefits

- Rated capacities from ±10 N - ±5 kN (1 - 500 kgf, 2.2 - 1,125 lbf)
- Operates in tension, compression, and reverse stress modes
- Auto recognition with electronic serial number and electrical calibration
- Ability to withstand loads of at least 150% of rated capacity
- Excellent linearity through tension and compression
- In compliance with ASTM E4, ISO 7500/1 class 0.5, and JIS B7721, B7733

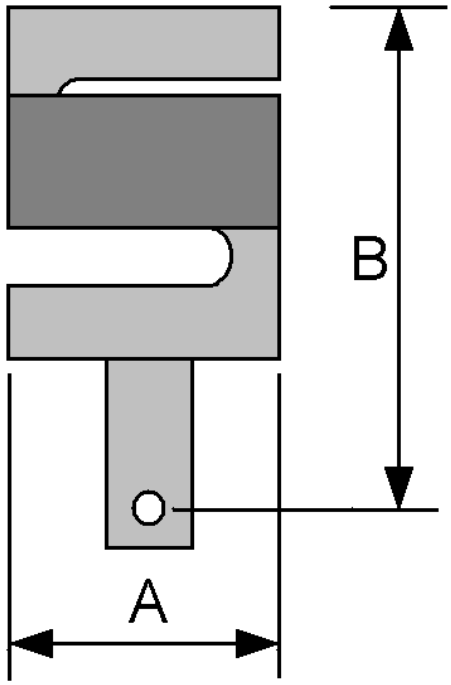
Specifications

		2519-201	2519-202	2519-203	2519-204	2519-205	2519-206	2519-207
Maximum Capacity	N	±10	±50	±100	±500	-	-	-
	kN	-	-	-	-	±1	±2	±5
	kgf	1	5	10	50	100	200	500
	lbf	2.2	11	22	112	225	450	1125
Mechanical Fitting (Frame)	-	M6	M6	M6	M6	M6	M10	M10
Mechanical Fitting (Load String)	-	2.5 mm Clevis Pin (Type OO)*	2.5 mm Clevis Pin (Type OO)*	2.5 mm Clevis Pin (Type OO)*	6.0 mm Clevis Pin (Type O)	6.0 mm Clevis Pin (Type O)	6.0 mm Clevis Pin (Type O)	12.5 mm Clevis Pin (Type D)
Overall Height	mm	83	83	83	97	97	110	140
	in	3.27	3.27	3.27	3.82	3.82	4.33	5.51
Effective Length (B)	mm	78	81	78	88	88	101	114
	in	3.07	3.07	3.07	3.46	3.46	3.98	4.48
Width (A)	mm	51	51	51	51	51	50.8	50.8
	in	2.01	2.01	2.01	2.01	2.01	2	2
Depth	mm	17.1	17.1	17.1	17	17	30	30
	in	0.67	0.67	0.67	0.67	0.67	1.18	1.18

* Supplied with an adapter to convert to 6 mm Clevis Pin (Type O)

General Performance

Linearity	±0.25% of Reading from 0.5 to 100% of Maximum Capacity
Repeatability	±0.25% of Reading from 0.5 to 100% of Maximum Capacity
Hysteresis	±0.05% of Full Rated Output
Creep	±0.1% of Full Rated Output over a Period of 20 Minutes
Sensitivity	1.6 to 2.4 mV/V at Maximum Capacity
Zero Balance	±5% of Full Rated Output for 10, 50 and 100 N, ±1% of Full Rated Output for 500 N to 5 kN
Overload	150% of Maximum Capacity
Safe Overload	10 × Maximum Capacity for 10, 50 and 100 N 3 × Maximum Capacity for 500 N to 5 kN
Load Reversal Zero Shift	±0.5% of Full Rated Output (Tension to Compression)
Compensated Temperature Range	0 to 50 °C (32 to 122 °F)
Temperature Effect on Zero	±0.003% of Full Rated Output per °C (0.002% per °F)
Temperature Effect on Sensitivity	±0.002% of Full Rated Output per °C (0.001% per °F)
Frame Compatibility	3300 Single Column Frames Only



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