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# 2519-100 Series Load Cells

## Features

- Rated capacities from  $\pm 10$  N to  $\pm 5$  kN (1 kgf to 500 kgf, 1 lbf to 1,125 lbf)
- Operates in tension, compression and reverse stress modes
- Auto recognition and electrical calibration
- Load cells are designed to withstand loads of at least 150% of rated capacity
- Excellent linearity through tension and compression
- All load cells comply with the highest applicable testing standards, including ASTM E4, ISO 7500/1 class 0.5, EN10002-2 class 0.5, BS1610 Part 1(1992) grade 0.5 and JIS B7721, B7733



▲  
2519-100 Series load cells

## Description

Instron load cells are an integral part of a materials testing system. The design, manufacture, and performance verification of Instron load cells is conducted with materials testing applications in mind and the cells are certified in accordance with international standards especially for use in materials testing systems. Interchangeability, along with transducer recognition and single point calibration makes them easy to use in materials testing applications. The cells maintain high alignment and are resistant to offset loading throughout a test, even when large, over sized specimens are being tested. The cells can withstand loads up to 150% or more of their rated capacity. This allows 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 the full nominal capacity range of the load cell. 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 contain a full bridge of strain gauges 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 has high axial stiffness, which 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, 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.

# 2519-100 Series Load Cells

## Specifications

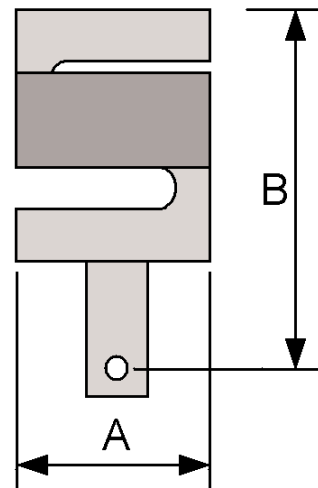
Catalog Number	Max. Capacity	Mech. Fitting (Frame)	Mech. Fitting (Load String)	Overall Height	Effective Length (B)	Width (A)	Depth
2519-101	± 10 N (1 kgf, 2 lbf)	M6	2.5 mm Clevis pin (type 00)*	83 mm (3.27 in)	78 mm (3.07 in)	59.2 mm (2.33 in)	16.5 mm (0.65 in)
2519-102	± 50 N (5 kgf, 10 lbf)						
2519-103	± 100 N (10 kgf, 20 lbf)						
2519-104	± 500 N (50 kgf, 112 lbf)	M6	6.0 mm Clevis pin (type 0)	97.5 mm (3.84 in)	88.5 mm (3.48 in)	50.8 mm (2 in)	12.7 mm (0.50 in)
2519-105	± 1 kN (100 kgf, 225 lbf)						
2519-106	± 2 kN (200 kgf, 450 lbf)	M10	6.0 mm Clevis pin (type 0)	110.2 mm (4.34 in)	101.2 mm (3.98 in)	50.8 mm (2 in)	25.4 mm (1 in)
2519-107	± 5 kN (500 kgf, 1125 lbf)						

### Notes:

1: \*Supplied with an adapter to convert to 6 mm clevis pin (type 0).

## General Performance

<b>Linearity</b>	< ±0.25% of reading from 1 to 100% of static rating
<b>Repeatability</b>	< ±0.25% of reading from 1 to 100% of static rating
<b>Zero Error</b>	The residual indicated force after removing a series of forces is not greater than ±0.05% of full rated output
<b>Hysteresis</b>	< ±0.05% of full rated output
<b>Creep</b>	< ±0.1% of full rated output over a period of 20 minutes
<b>Sensitivity</b>	1.6 to 2.4 mV/V at static rating
<b>Zero Balance</b>	< ±5% of full rated output for 10 N and 100 N, < ±1% of full rated output for 500 N to 5 kN
<b>Overload</b>	10N to 100N 1000% of capacity 500 N to 5 kN 150% of capacity
<b>Load Reversal Zero Shift</b>	< ±0.5% of full rated output (tension to compression)
<b>Compensated Temperature Range</b>	0 °C to 50 °C
<b>Temperature Effect on Zero</b>	< ±0.003% of full rated output per °C
<b>Temperature Effect on Sensitivity</b>	< ±0.002% of full rated output per °C
<b>Frame Compatibility</b>	These cells are compatible with 3300 single column frames only



▲ Load cell dimensions



### Corporate Headquarters

100 Royall Street, Canton, Massachusetts 02021-1089, USA  
Tel: +1 800 564 8378 or +1 781 575 5000 Fax: +1 781 575 5751

### European Headquarters

Coronation Road, High Wycombe, Bucks HP12 3SY, United Kingdom  
Tel: +44 1494 464646 Fax: +44 1494 456123

[www.instron.com](http://www.instron.com)

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