

# Z Series

## Aluminum Alloy Tension Load Cells



- Capacities from 50-lb/22-kg to 1,000-lb/453-kg available
- Strain relief seal (except for Z-50, Z-100)
- Threaded holes on each end for hanger assemblies (metric available)
- NTEP certified for commercial use
- Integral shielded cable
- IP67-rated protection

These waterproof Z series load cells are ideally suited for single load cell tension applications. The load cells are potted with a proprietary sealant that provides for superior water protection and, at the same time, remains flexible over the life of the load cell. This special compound protects the load cell strain gages and over a broad temperature range.

### MECHANICAL DATA

Rated Capacity, (R.C.) E <sub>max</sub>	22.68, 45.4, 113.4, 226.8, and 453.6 kg
Minimum Dead Load	2.27 (Z-50 & Z-100 only) and 4.5 kg
Safe Load Limit	150% R.C.
Ultimate Load	300% R.C.
Deflection at R.C.	0.2 to 0.8 mm
Spring Element Material	Aluminum
Net Weight	0.091 to 0.4 kg

### CERTIFICATE DATA

Issuing Body	NTEP
Certificate Number	88-166A1
Accuracy Class	III
Single/Multiple	S
Maximum Number of Load Cell Intervals, n <sub>max</sub>	5,000 - 22.68 & 45.36 kg 3,000 - all other cells
Accuracy Class	IIIL
Maximum Number of Load Cell Intervals, n <sub>max</sub>	10,000
Single/Multiple	S
Minimum Load Cell Verification Interval V <sub>min</sub>	III - 2.3, 4.6, 15.9, 31.8, 63.5 g IIIL - 1.1, 2.3, 11.3, 22.7, 45.4 g

### ELECTRICAL DATA

Rated Output	2 mV/V ± 10%
Excitation Voltage, Maximum	20 VDC
Cable Length	Z-50, Z-100 2.5 ft / 76 cm Z-250, Z-500, Z-1000 30 ft / 9 m
Terminal Resistance	
Excitation	415 ± 12 ohms
Signal	350 ± 5 ohms
Zero Load Output	± 1% R.C.
Insulation Resistance	>5000 megohms at 50 VDC

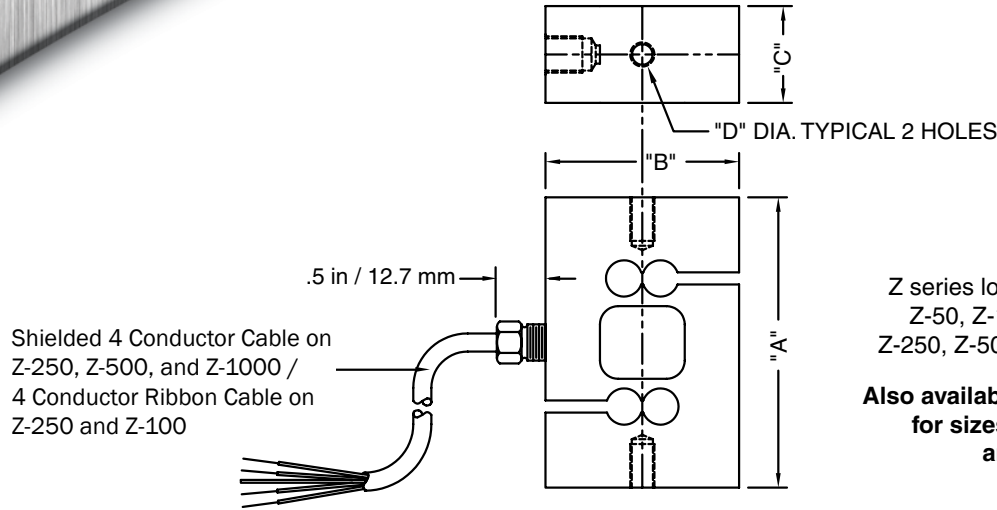
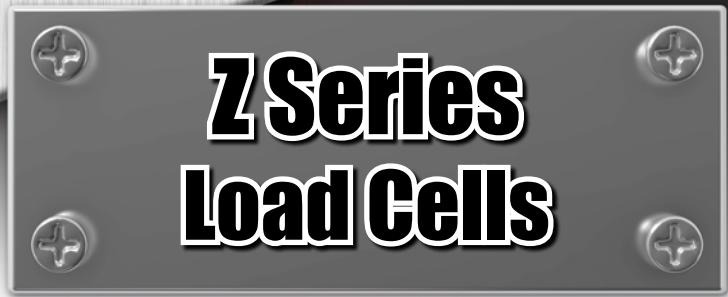
### ENVIRONMENTAL DATA

Temperature Compensation Range	-10 to +40°C
Operating Temperature Range	-25 to +50°C
Construction & Protection Code	CP-55 AU, IP67
Barometric Pressure Effect on Zero Load Output	<1 v (min)/1kPa

LOAD CELLS

# Tension Applications

**Aluminum Alloy**  
**Waterproof Tension Load Cells**

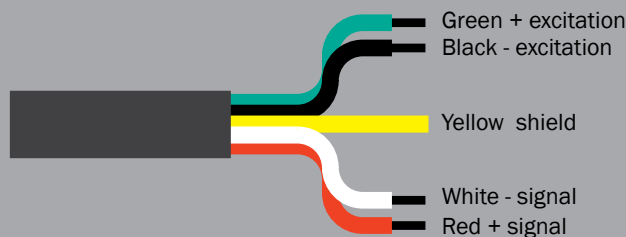


Z series load cell cable lengths:  
Z-50, Z-100 = 2.5 ft / 76 cm  
Z-250, Z-500, Z1000 = 30 ft / 9 m

Also available with metric threads for sizes Z-250M, Z-500M, and Z-1000M

Model	Capacity	"A"	"B"	"C"	"D"	Metric Thread
Z-50	50 lb / 22.68 kg	3 in / 76.2 mm	1.5 in / 38.1 mm	0.5 in / 12.7 mm	#10"-32 NF	Not available
Z-100	100 lb / 45.4 kg	3 in / 76.2 mm	1.5 in / 38.1 mm	0.5 in / 12.7 mm	#10"-32 NF	Not available
Z-250	250 lb / 113.4 kg	3 in / 76.2 mm	2 in / 50.8 mm	1 in / 25.4 mm	1/4"-28 NF	M6 x 1
Z-500	500 lb / 226.8 kg	1.6 in / 69.8 mm	2 in / 50.8 mm	1 in / 25.4 mm	1/2"-20 NF	M14 x 2
Z-1000	1000 lb / 453.6 kg	1.6 in / 69.8 mm	2 in / 50.8 mm	1 in / 25.4 mm	1/2"-20 NF	M14 x 2

## ELECTRICAL INFORMATION



## State-of-the-Art Load Cell Manufacturing Facility ISO 9001 Quality Environment



## CERTIFICATIONS

The Model Z Series Load Cell meets or exceeds Class III/IIIL, 10,000 division accuracy requirements in accordance with NIST Handbook 44. A Certificate of Conformance (Number 88-166A1) has been issued under the National Type Evaluation Program (NTEP) of the National Conference on Weights and Measures.



## VCAP CERTIFIED

Cardinal Scale has been formally audited and found to be fully compliant with the Verified Conformity Assessment Program (VCAP) administered by the National Type Evaluation Program (NTEP) of the National Conference on Weights and Measures (NCWM).

Cardinal Scale reserves the right to improve, enhance or modify features and specifications without prior notice. All registered trademarks are the property of their respective owners.

**Cardinal**

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