

## HELIX™ LOAD CELL

For Tension and Compression



- Insensitivity to off-axis and non-parallel mounting.
- Rugged design, tolerant to shock loading and overload up to 15X
- Does not require expensive mounting structures
- High sensitivity, high resolution
- Through-hole design for easy mounting
- Surfaces can be drilled and tapped

The **Helix™** Load Cell utilizes the properties of a wire wound spring to remove errors caused by off-axis loading or irregular mounting and to resist damage caused by shock and overload.

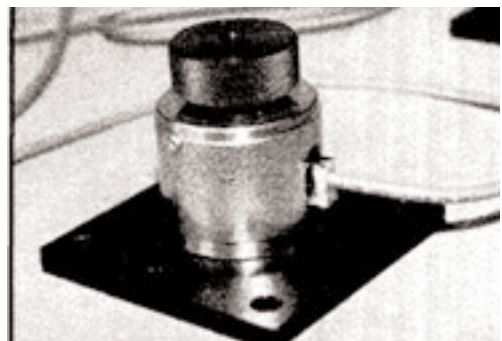
A spring works by converting a load force to a torsional moment in its wire. Through measurement of this torsional moment the **Helix™** can provide accurate load data under extremely irregular mounting conditions without the requirement of load correcting mounting structures. The **Helix™** can be mounted on rough surfaces or where upper and lower surfaces are not parallel and the total error incurred will remain within 0.5%. When loaded on axis and on flat surfaces, the error incurred is less than 0.1%. Because of its spring-like design and the fact that it does not utilize strength reducing shear webs to achieve sensitivity, the **Helix™** is extremely resistant to damage caused by shock or overload.

Mounting surfaces can be drilled and tapped for specific loading applications or the through hole can be threaded for mounting in tension. Additionally, the **Helix™** Load Cell can be cast in virtually any shape. For example, a 10,000 pound capacity version can take the form of a cube just 1.5 inches on a side and still retain its excellent insensitivity to off-axis loading.



### Winner of the 1998 Kardux Cup

For the most outstanding achievement in weighing and measurement technology.



Portable Scale Assembly

## HELIX LOAD CELL SPECIFICATIONS

Full Scale Output (F.S.O.)	2.5 mV/V T or C 1.5 mV/V T and C
Excitation Voltage	2 - 12 VDC
Bridge Resistance	350 Ohms
Safe Overload	15x F.S.O.
Fatigue Life	1x10 <sup>6</sup> cycles at 75% capacity
Temperature compensation	Included

### Error - Center Loading

Total Error	<0.15 % of F.S.O.
Nonlinearity	0.03 % of F.S.O.
Hysteresis	0.05 % of F.S.O.
Repeatability	

### Error - Off Axis Loading

Off-axis 1/4 diameter any direction, no tilt,  
(includes point loading on surface)

Total Error	0.3 % of F.S.O.
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Full off-axis to edge with 2 degree tilt,

Total Error	0.5 % of F.S.O.
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### AVAILABLE OPTIONS

- \* Drilled and tapped top and bottom mounting surfaces
- \* Threaded holes for mounting or tensile applications
- \* Adjustable overload stop for safe overload up to x15 rated capacity
- \* Custom Shape
- \* High temperature version
- \* Size can be scaled for any weighing capacity (we have made 30k lb rated capacity load cells) output

### APPLICATIONS

- \* Forklift Scales
- \* Portable Platform Scales
- \* Tank / Bin / Conveyor Monitoring
- \* Process Control Systems
- \* Laboratory R & D testing

### STANDARD DIMENSIONS (with cover)

Model Number	Capacity	A	B (OD)	(ID)	Spring Rate (lb/in)	Full Scale Deflection
H-2000 (T or C)	2000 lbs	1.59"	2.01"	.688"	50,000	.045"
H-4000 (T or C)	4000 lbs	1.77"	2.50"	.921"	88,000	.046"

Patents: 5,925,832    5,872,319    5,714,695



Off Axis Load test



Helix™ Load Cell with SM50 Display

