

## ELHS

### Miniature Load Cell

#### SPECIFICATIONS

- ◆ Ranges from 1kN to 50kN (200 lbf to 10,000 lbf)
- ◆ Semi-conductor strain gages bridge
- ◆ Low deflection, low mass

The **ELHS** load cell is a compact package able to fit into many applications where others cannot.

The low noise Wheatstone bridge consists of piezoresistive strain gages which provide 200 mV of typical full scale output with a compact design, an extreme stiffness and superior resolution. The **ELHS** is provided with either SAE or metric threads for tension and compression applications.

Care should be exercised to isolate your **ELHS** from off-axis loads. The **ELHS** is a Poisson column design providing low full scale input deflection and superior resolution. Designed specifically to provide high resolution and low deflection.

The **ELHS** can be configured with a variety of options to fine tune the instrument to your application: select from several standard compensated temperature ranges, input voltages, lead lengths or specify entirely unique combinations of these options.

On request, Instruction documents can be provided to ease the selection and use of our sensors and provide helpful tips.

#### FEATURES

- ◆ Low mass compression style or tension compression with studs
- ◆ Sensitivity "FSO": 20mV/V
- ◆ High stiffness
- ◆ High reliability

#### APPLICATIONS

- ◆ Assembly forces
- ◆ Applications requiring ultra fast response
- ◆ Tool forces
- ◆ Thrust measurements
- ◆ Product validation testing

## STANDARD RANGES

Ranges		Overrange	Body style		Sensitivity "FSO" <sup>1</sup> (typical at 23±3°C)
N	lbf		Compression	Tension & Compression	
1K	200	1.5 x FS	ELHS-B1	ELHS-T1	20 mV/V
2.5K	500	1.5 x FS	ELHS-B1	ELHS-T1	20 mV/V
5K	1K	1.5 x FS	ELHS-B1	ELHS-T1	20 mV/V
10K	2K	1.5 x FS	ELHS-B4	ELHS-T4	20 mV/V
25K	5K	1.5 x FS	ELHS-B4	ELHS-T4	20 mV/V
50K	10K	1.5 x FS	ELHS-B6	ELHS-T6	20 mV/V

1. Sensors are calibrated with 15Vdc power supply as standard.
2. For B1, B4 and B6 version, signal goes positive in compression with standard wiring configuration  
For T1, T4 and T6 version, signal goes positive in tension with standard wiring configuration

## PERFORMANCE SPECIFICATIONS (typical values at temperature 23±3°C)

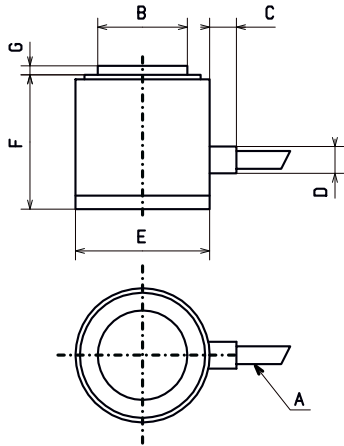
PARAMETERS	VALUES	NOTES
Supply voltage	1 to 15Vdc	
Input resistance	1500Ω nom.	
Output resistance	500Ω nom.	
Repeatability	±0.25% FS	
Combined non-linearity & hysteresis	±0.5%FS	
Thermal Zero Shift "TZS" in CTR	±0.02%FS /°C	
Thermal Sensitivity Shift "TSS" in CTR	±0.05% /°C	
Operating temperature Range (OTR)	-20°C to 80°C	
Compensated Temperature Range (CTR)	20°C to 80°C	See option table for other temperatures
Zero offset	±10mV	

**Note:**

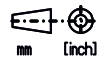
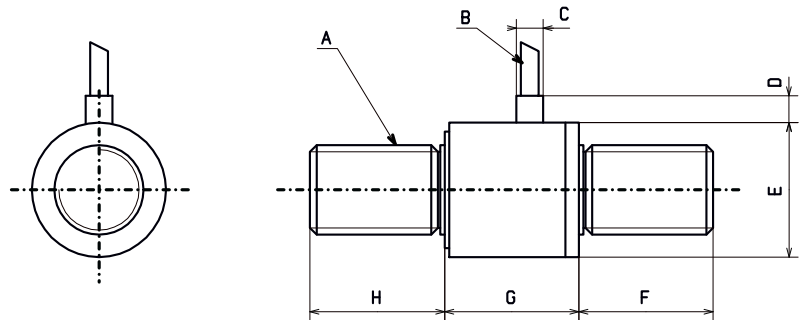
1. Electrical Termination: 3m shielded cable output as standard
2. Type B units have positive output in compression. Type T units have positive output in tension.
3. CE conformance according to EN 61010-1, EN 50081-1, EN 50082-1

## DIMENSIONS

**ELHS-B1, -B4 & -B6**



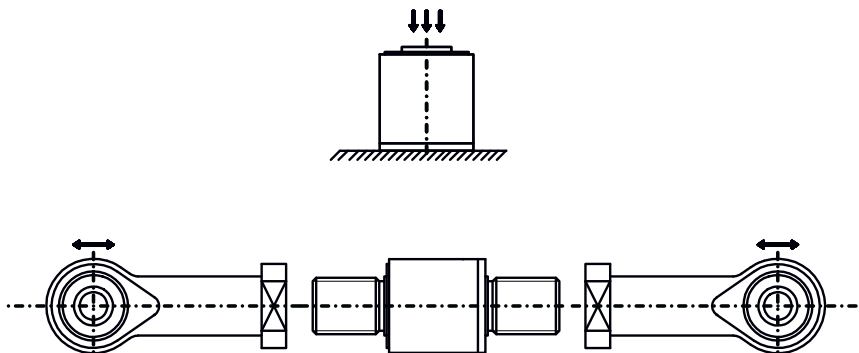
**ELHS-T1, -T4 & T6**



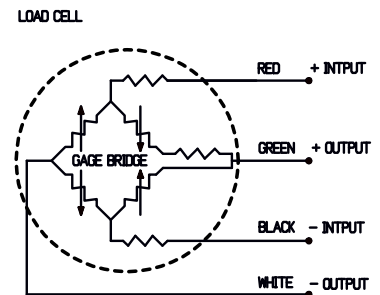
ITEM	ELHS-B1 1kN to 5kN 200 to 1,000Lb	ELHS-B4 10kN to 25kN 2kLb to 5kLb	ELHS-B6 50kN 10kLb
A	3m (10 ft)	3m (10 ft)	3m (10 ft)
B	∅ 10 (0.39")	∅ 20 (0.78")	∅ 28 (1.1")
C	3 (0.12")	3 (0.12")	6 (0.24")
D	∅ 3 (0.12")	∅ 3 (0.12")	∅ 5 (0.2")
E	∅ 15 (0.59")	∅ 25 (0.98")	∅ 35 (1.38")
F	15 (0.59")	25 (0.98")	35 (1.38")
G	1 (0.04")	1 (0.04")	1 (0.04")

ITEM	ELHS-T1 1kN to 5kN 200 to 1,000Lb	ELHS-T4 10kN to 25kN 2kLb to 5kLb	ELHS-T6 50kN 10kLb
A	-T1E : 3/8-24 UNF -T1M : M10x1.5	-T4E : 5/8-18 UNF -T4M : M16x2	-T6E : 3/4-16 UNF -T6M : M20x2.5
B	3m (10 ft)	3m (10 ft)	3m (10 ft)
C	∅ 3 (0.12")	∅ 3 (0.12")	∅ 5 (0.2")
D	3 (0.12")	3 (0.12")	6 (0.24")
E	∅ 15 (0.59")	∅ 25 (0.98")	∅ 35 (1.38")
F	15 (0.59")	25 (0.98")	30 (1.18")
G	15 (0.59")	25 (0.98")	30 (1.18")
H	15 (0.59")	25 (0.98")	30 (1.18")

## INSTALLATION



## CONNECTIONS



## OPTIONS AND ACCESSORIES

OPTIONS	CODES	DESCRIPTIONS
Compensated temperature ranges	<b>Z0</b>	-40°C to 20°C
	<b>Z1</b>	-20°C to 40°C
	<b>Z2</b>	0°C to 60°C
	<b>Z*</b>	Non-standard, contact factory
Supply voltage	<b>V00</b>	Non-standard power supply calibration, replace "00" with value in Volt (standard 15Vdc)
Special cable length	<b>L00F</b>	Replace "00" with total length in feet with Lb range.
	<b>L00M</b>	Replace "00" with total length in meters with N range.
Connector wired to cable	<b>C</b>	Microtech type male or equivalent (w/o mate)
	<b>RS</b>	RJ telephone type male (w/o mate)

## ORDERING INFORMATION

Model	-	Body	Thread Type	-	Range & Unit <sup>(1)</sup>		-	/Options
ELHS	-	B1/T1 B4/T4 B6/T6	M : Metric E : SAE	-	1KN 2.5KN 5KN 10KN 25KN 50KN	200L 500L 1KL 2KL 5KL 10KL	-	/Z0, Z1, Z2, or Z* /V1 thru V14 /L00F or L00M /C or RS

**(1)Note :** L=lbf ; N=Newton.  
Metric threaded units must have range in Newton and cable length in meters specified.  
SAE threaded units must have range in lbf and cable length in inches specified.  
Options can be multiple if compatible (e.g. **ELHS-B1-5KN-/Z1 /L3M/C**)

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