

## ELWF Load Cell



- Ultra Low Profile Through-Hole Design
- 5 – 2000 lbf
- mV or Optional High Level Output
- Industry Standard Packaging
- Full NIST Traceable 11 Point Calibration
- Shielded Teflon Cabling with Strain Relief

### DESCRIPTION

The ELWF series compression load cells raise the bar for high performance at low cost. Measurement Specialties proprietary Microfused™ technology, derived from demanding aerospace applications, employ micro-machined piezoresistive strain gages fused with high temperature glass to a high performance stainless steel force measuring flexure. Microfused™ technology eliminates age-sensitive organic epoxies used in traditional load cell designs providing excellent long term span and zero stability. Operating at very low strains, Microfused™ technology utilizes strain gages providing gage factors greater than 100, an essentially unlimited cycle life expectancy, superior resolution, exceedingly high over-range capabilities (without the need for stops) and a ratiometric span of 20 mV/V. High level of 0.5 to 4.5V ratiometric outputs (/AMP) available operating from 5Vdc excitation.

Microfused™ sensors are ideal for your test and measurement applications. Shielded, Teflon insulated instrumentation cabling is provided along with full NIST traceable calibration certificates. The ELWF unit is fully thermally compensated and will provide an essentially unlimited cycle life expectancy. The ELWF 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.

### FEATURES

- Through-Hole Design
- Low Cost
- Low Profile
- Low Noise
- Robust: High Over-Range
- High Reliability
- Low Deflection
- Fast
- Essentially Unlimited Life Cycle
- Optional High Level Output: 0.5V to 4.5V. (Option:/AMP)

### APPLICATIONS

- Bolt Loads
- Assembly Forces
- Biomechanical Force Measurement
- Tool Forces
- Thrust Measurements
- Robotics End Effectors

# ELWF Load Cell

## STANDARD RANGES

Lbf	N	Body Style
5	25	B1
10	50	B1, D1
20	100	B1, D1
100	500	D1, D2
200	1KN	D2
500	2.5KN	D2
1KL	5KN	D3
2KL	10KN	D3

## PERFORMANCE SPECIFICATIONS

Supply Voltage: 5V

Ambient Temperature: 25°C (unless otherwise specified)

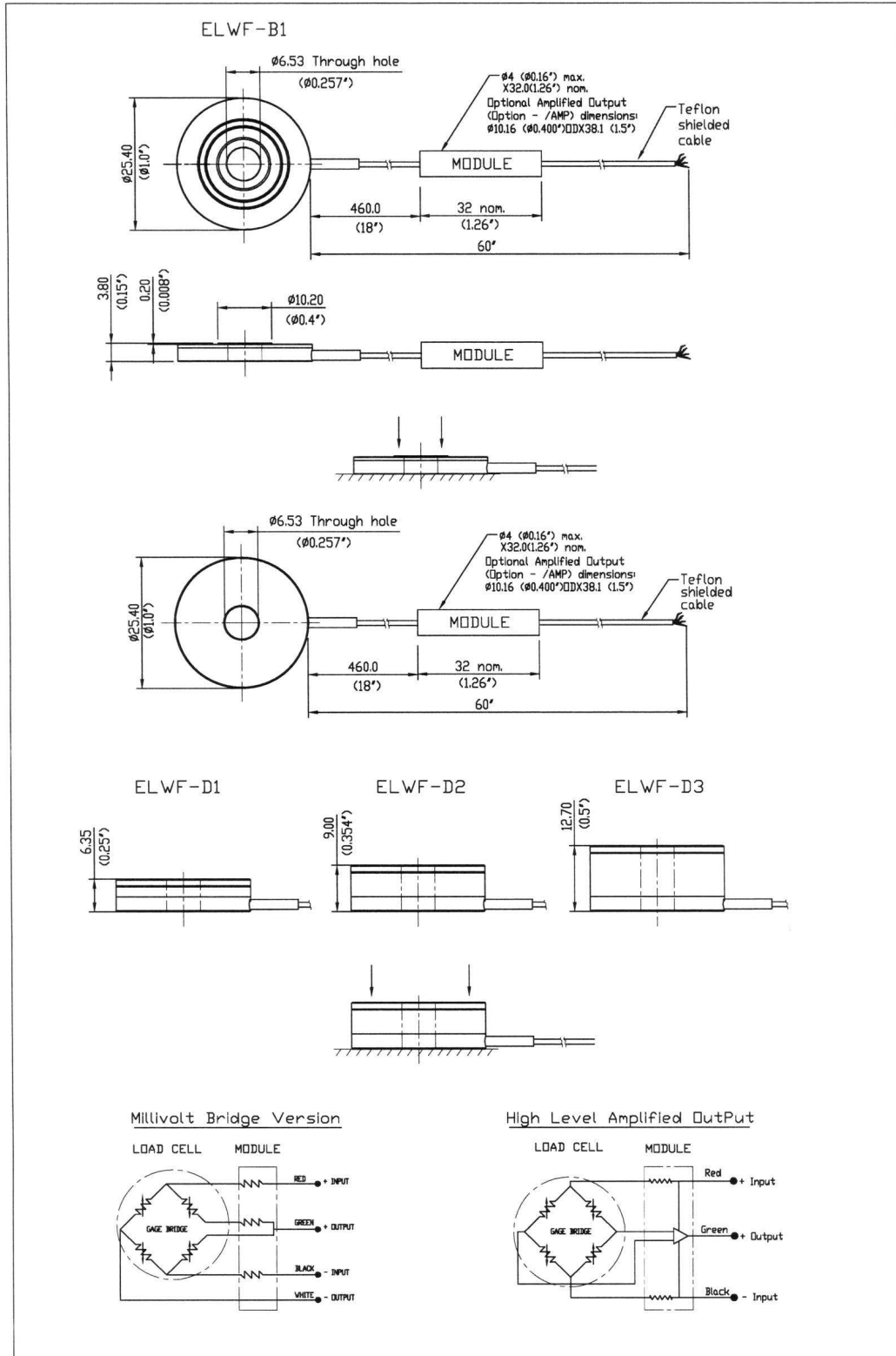
PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Full Scale Output Span (Model B1: 6mV/V ±5%,	19	20	21	mV/V	1
Zero Force Output			±5	%FSO	
Non Linearity			±1	%FSO	
Hysteresis			±1	%FSO	
Temperature Error – Zero			±0.05	%FSO/ °C	
Temperature Error – Span Thermal Sensitivity Shift			±0.05	%/ °C	
Maximum Over Load (>1Klbf)			150	%	
Maximum Over Load (to 1Klbf)			200	%	
Impedance In		3		KΩ	
Impedance Out		2.2		KΩ	
Compensated Temperature	20		80	°C	
Operating Temperature	-40		+120	°C	
Storage Temperature				°C	
Isolation Resistance (250Vdc)			50	MΩ	
Deflection at Rated Load		<0.05		mm	
Excitation Voltage		5		Vdc	
Cycle Life Expectancy		Essentially Unlimited			

### Notes

1. High Level Output 0.5 to 4.5V Optional

# ELWF Load Cell

## DIMENSIONS



# ELWF Load Cell

## OPTIONS

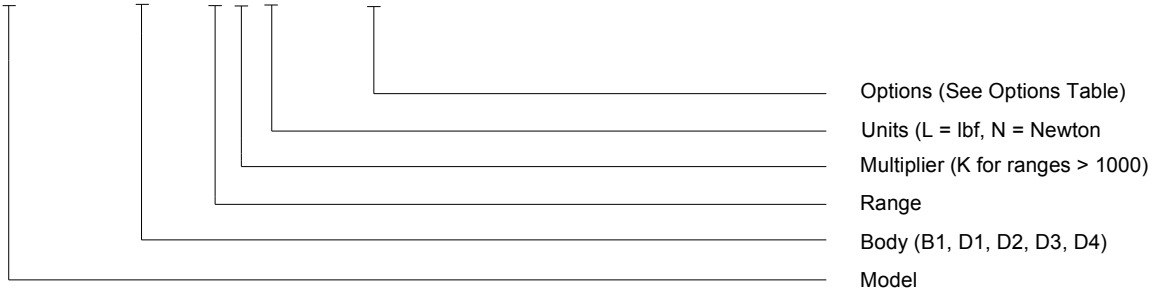
<b>Standard Compensation Range:</b> 20 to 80°C
Z0: -40 to +20°C
Z1: -20 to +40°C
Z2: 0 to 60°C
Z*: Nonstandard compensation temperature range
<b>Excitation Voltage:</b> 5Vdc Standard
V00: T1 models: Replace 00 with excitation between 1 and 10V. (At excitations less than 5V, sensitivity decreases proportionately. Sensitivity at excitations > 5V equals 20 mV/V)
V2.5: Sensitivity equals 50% of nominal data sheet value.
V10: Sensitivity equals 100mV FSO. Note that input impedance may increase substantially when excitations > 5Vdc are specified.
<b>Standard Cable Length = 5ft (1.5m)</b>
LXXF: Replace "XX" with total cable length in feet. Specified only on units with lbf range.
L10F: Units provided with 10 ft cable length. Specified only on units with lbf range.
L00M: Replace "00" with total cable length in meters. Specified only on units with metric threads and N range.
L6M: Units provided with 6m total cable length. Specified only on units with N range.
L10M: Units provided with 10m total cable length. Specified only on units with N range.
<b>MXXP:</b> MXXP Special Compensation Module Location: Replace "XX" with percentage of cable length.
M10P: Module located at 10% of cable length ±5%.
M25P: Module located at 25% of cable length ±5%.
M50P: Module located at 50% of cable length ±5%.
M75P: Module located at 75% of cable length ±5%.
<b>C:</b> Microtech type male or equivalent (w/o mate)
<b>R:</b> RJ Telephone type male (w/o mate)
<b>AN:</b> Calibrate lbf range unit in Newtons
<b>AL:</b> Calibrate N range unit in lbf
<b>Special Notes:</b> Provided with full NIST calibration, spring strain relief and Teflon shielded cable. Housing styles offered: B1, D1, D2, D3 and D4. Sensitivity for all ranges: 20 mV/V.
<b>AMP:</b> Amplified output option provided 0.5 – 4.5V output ±5% ratiometric (5 Vdc input only), module dimensions: 10.16 (0.400")OD X 38.1(1.5") length

ELECTROMAGNETIC COMPATIBILITY: RESIDENTIAL, COMMERCIAL AND LIGHT INDUSTRY

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## ORDERING INFORMATION

ELWF - D1 - 1KN - /V10/M25P/...



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