



ELWF Load Cell

PRELIMINARY

- Ultra Low Profile Through-hole Design
- Compression Ranges: 5 through 2000 lbf
- Millivolt or Optional High Level Output
- Industry Standard Packaging
- Full NIST Traceable 11 Point Calibration
- Shielded Teflon Cabling with Strain Relief

DESCRIPTION

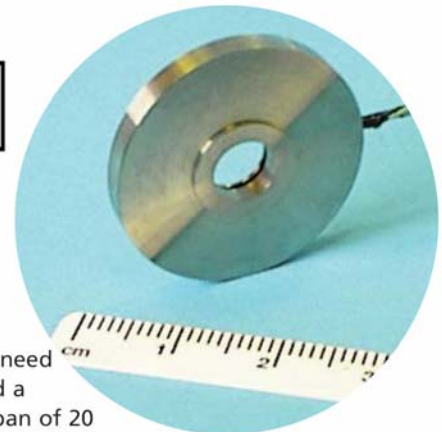
The **ELWF** series compression load cells raise the bar for high performance at low cost. Measurement Specialties proprietary Microfused™ technology, derived from demanding aerospace applications, employ micro-machined piezoresistive strain gages fused with high temperature glass to a high performance 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 overrange

FEATURES

- ◆ Through-hole design
- ◆ Low Cost
- ◆ Low Profile
- ◆ Low Noise
- ◆ Robust: High Overage
- ◆ High Reliability
- ◆ Low Deflection
- ◆ Fast
- ◆ Essentially Unlimited Cycle Life
- ◆ 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



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 and 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.

standard performance parameters:

Maximum Over Load:	to 1Klbf: 200% >1Klbf: 150%
Recommended Excitation:	5 Vdc
Full Scale Output Span:	20 mV/V +/- 5% (Model B1: 6mV/V +/- 5%) High Level Output 0.5V to 4.5Vdc Optional
Output at No Load (Zero Output):	+/- 5% FSO
Nonlinearity:	+/- 1% FSO
Hysteresis:	+/- 1% FSO
Temperature Compensation	20 -80°C
Thermal Zero Shift	+/- 0.05% FSO/°C
Thermal Sensitivity Shift:	+/- 0.05% /°C
Operating Temperature Range:	-40°C to 120°C
Impedance In:	3 K ohm nominal
Impedance Out:	2.2 K ohm nominal
Deflection at Rated Load	< 0.05 mm nominal
Isolation Resistance	> 50 Megohm nominal at 250 Vdc
Cycle Life Expectancy:	Essentially unlimited

Notes:

1. Positive output in compression.
2. Re: Zero output: Lower trim values available on request
3. Loads must be evenly distributed over the full load platform diameter and be applied perpendicular to the load platform. The base of the unit must be rigidly and uniformly supported. Thrust bearings are recommended to prevent torsional loading of the active member.

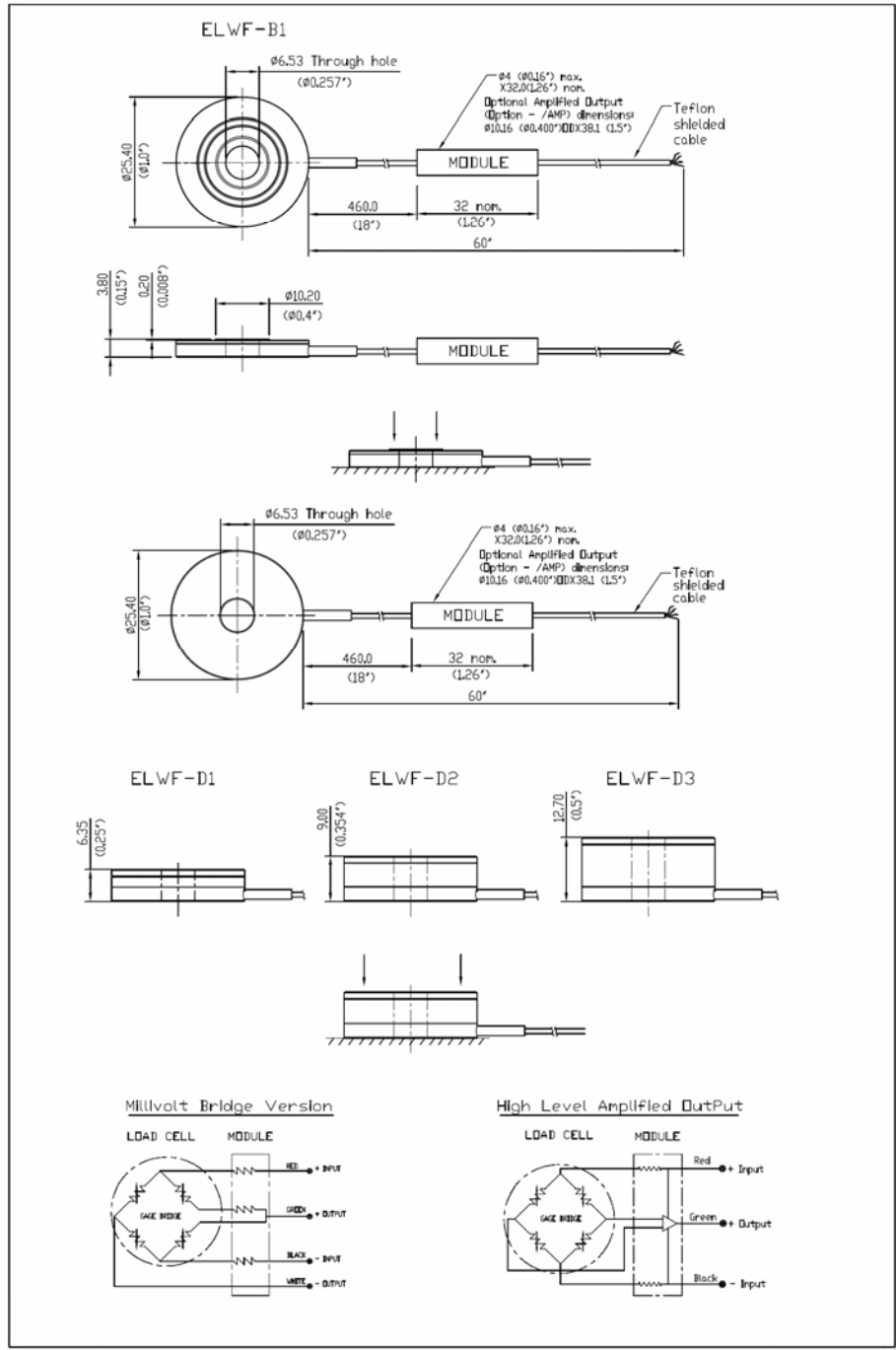
PRELIMINARY



ELWF Load Cell

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dimensions



PRELIMINARY



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options

- Standard Compensation Range:** +20 to +80°C
 Z0: -40°C to +20°C
 Z1: -20°C to +40°C
 Z2: 0°C to +60°C
 Z*: Nonstandard compensation temp range
- Excitation Voltage:**
 V00: Replace "00" with excitation between 1 and 10V (5 V standard). (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 100 mV FSO. Note that input impedance may increase substantially when excitations > 5 Vdc are specified.
- Standard Cable Length = 5 ft (1.5 m)**
 LXXF: Replace "XX" with total cable length in feet. Specified only on units with lbf range
 L10F: Units provided with 10 ft total cable length. Specified only on units with lbf range
 L00M: Replace "00" with total cable length in meters. Specified only on units with N range
 L6M: Units provided with 6 m total cable length. Specified only on units with N range
 L10M: Units provided with 10 m total cable length. Specified only on units with N range
- 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%
- C:** Microtech type male or equivalent (w/o mate)
R: RJ Telephone type male (w/o mate)
AN: Calibrate lbf range unit in Newtons
AL: Calibrate N range unit in lbf
- SPECIAL NOTES:**
 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
- AN:** Calibrate lbf range unit in Newtons
AL: Calibrate N range unit in lbf
AMP: Amplified output option provides 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

ordering information						
Family	Body	Range	Multiplier	Units	Options	
Example: ELWF	- D1	1	K	N	- /option1/option2/...optionX	
	B1, D1, D2, D3, D4 Ref Note*	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	K: For ranges >1000	L=lbf N=Newton	* See above	
NOTE: Nominal is defined as any value within the range of +50% to -30% of the stated value. NOTE: Typical values: 50% of units will be delivered with specifications greater than the typical value and 50% of units will be delivered with specifications less than the typical value stated. *NOTE: EXXXX: Special Factory Designation for custom components. No options need to be incorporated into the unit part numbers. SXXXX designation reserved for MEAS Spec European operations.						

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