

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

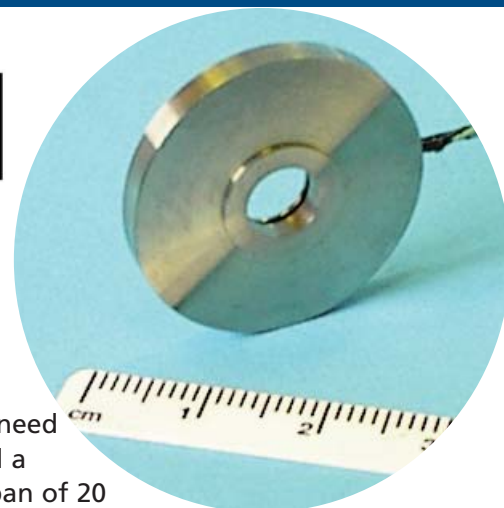
The **ELWF** series compression load cells raise the bar for high performance at low cost. Measurement Specialties proprietary Microfused™ technology, derived from demanding aerospace applications, employ micro-machined piezoresistive strain gages fused with high temperature glass to a high performance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

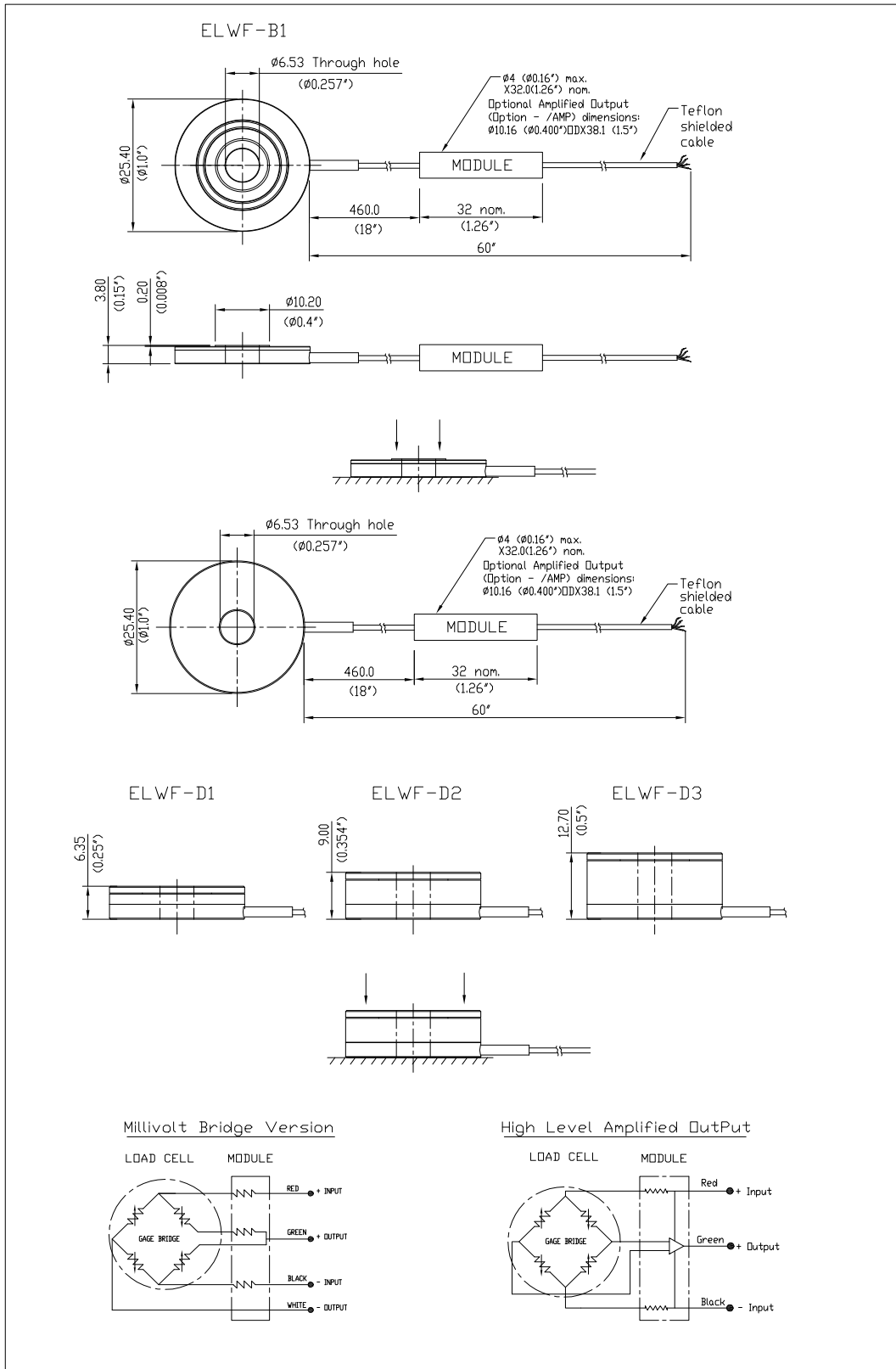
Maximum Over Load:	to 1Klbf: 200%
	>1Klbf: 150%
Recommended Excitation:	5 Vdc
Full Scale Output Span:	20 mV/V +/- 5% (Model B1: 6mV/V +/- 5%)
	High Level Output 0.5V to 4.5Vdc Optional
Output at No Load (Zero Output):	+/- 5% FSO
Nonlinearity:	+/- 1% FSO
Hysteresis:	+/- 1% FSO
Temperature Compensation	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

dimensions



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

Example:	Family	Body	Range	Multiplier	Units	Options	
	ELWF	D1	1	K	N	/option1/option2/...optionX	
			lbf			* See above	
		B1, D1, D2, D3, D4	5	K: For ranges >1000	L=lbf N=Newton		
		Ref Note*	25			B1	
			10			B1, D1	
			20			B1, D1	
			100			D1, D2	
			200			D2	
			500			D2	
			1KL			D3	
			2KL			D3	
			10KN			D3	
<p>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.</p>							

Distribuidor

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CONTATO

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