

# ELAF Load Cell

PRELIMINARY

**Compact Design: 0.5", 1.25" and 1.5" Diameter**  
**Compression Ranges: 10 through 5000 lbf**  
**High Level and Millivolt Output**  
**High Stability**  
**Industry Standard Packaging**  
**Resists Off Axis Load Components**  
**Full NIST Traceable 11 Point Calibration**  
**Shielded Teflon Cabling with Strain Relief**

## DESCRIPTION

The **ELAF** series compression load cells raise the bar for high performance at low cost. Measurement Specialties proprietary Microfused™ technology, derived from demanding aerospace applications, employs 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,

## FEATURES

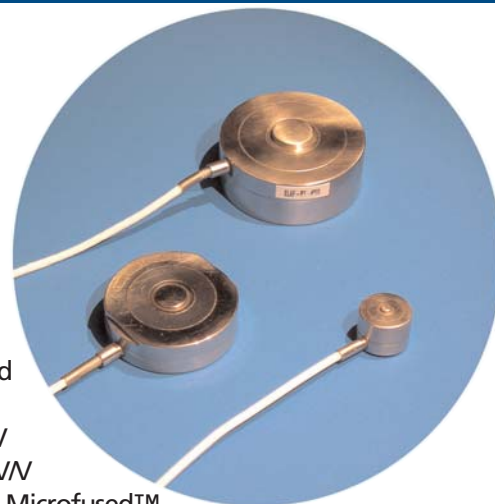
- ◆ Low Cost
- ◆ Optional High Level Output
- ◆ Small, Low Profile Design
- ◆ Low Noise
- ◆ Robust: High Overrange
- ◆ High Reliability
- ◆ Low Deflection
- ◆ Low Off-Axis Response
- ◆ Fast
- ◆ Essentially Unlimited Cycle Life

## APPLICATIONS

- ◆ Theatrical Rigging Loads
- ◆ Assembly Forces
- ◆ Weighing
- ◆ Tool Forces
- ◆ Thrust Measurements
- ◆ Batch Weighing
- ◆ Robotics End Effectors
- ◆ Product Validation Testing
- ◆ Material Test
- ◆ Hoist and Winch Loads



exceedingly high overrange capabilities (without the need for stops) and an amplified ratiometric high level 0.5 to 4.5 V output or 20 mV/V bridge output. Microfused™



sensors are ideal for your test and measurement applications. From the ultra compact 0.5" diameter B0 design to the high range 1.5" Diameter B3 package, the ELAF provides exceptional flexibility and superior performance

Measurement Specialties' ELAF Test and Measurement series sensors, unlike most designs, are provided with a "four-bar" design where a flexible diaphragm parallels the measuring flexure. This configuration is far less susceptible to off-axis load components than single diaphragm traditional designs. Shielded, teflon insulated instrumentation cabling is provided along with spring steel strain reliefs and full NIST traceable calibration certificates. The ELAF unit is fully thermally compensated and will provide an essentially unlimited cycle life expectancy. The ELAF can be configured with a variety of options to fine tune the instrument to your application: select from several standard package geometries. Compensated temperature ranges, input voltages, lead lengths or specify entirely unique combinations of these options.

## standard performance parameters:

<b>Maximum over load:</b>	to 1Klbf: 250% (Except B2-2KL 150%)
<b>Recommended Excitation:</b>	5 Vdc
<b>Output Span (Amplified/Ratiometric):</b>	0.5 to 4.5 V +/-3% of Span at 5 Vdc Excitation
<b>Output span (Bridge Only):</b>	20 mV/V +/- 5%
<b>Output at No Load (Zero Output):</b>	+/- 5% FSO
<b>Nonlinearity:</b>	+/- 0.25% FSO
<b>Hysteresis:</b>	+/- 0.25% FSO
<b>Temperature Compensation</b>	20 -80°C
<b>Thermal Zero Shift</b>	+/- 0.01% FSO/°C
<b>Thermal Sensitivity Shift:</b>	+/- 0.01% /°C
<b>Operating Temperature Range:</b>	-50°C to 120°C
<b>Impedance In (Bridge Only):</b>	3 K ohm nominal
<b>Impedance Out (Bridge Only):</b>	2.2 K ohm nominal
<b>Deflection at Rated Load</b>	< 0.05 mm nominal
<b>Isolation Resistance:</b>	> 50 Megohm nominal at 250 Vdc
<b>Cycle Life Expectancy:</b>	Essentially Unlimited

Note: Positive output in compression.

Note: Re: Zero output: Lower trim values available on request.

Note: Laser welded stainless steel body construction. Spring strain relief and shielded teflon cable provided standard.

Note: Unique 4 bar linkage design provides resistance to off axis load components.

PRELIMINARY

## dimensions

