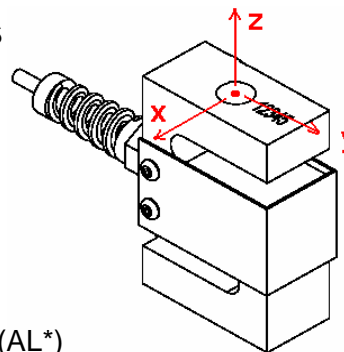


Extraneous Load Factors

*Note: L2351 is Lemo® receptacle version of L2350

Equation: $\sigma_{max} \geq (A)F_x + (B)F_y + (C)F_z + (D)M_x + (E)M_y + (F)M_z$



Material: 17-4 P.H. Stainless Steel (S.S.*), 2024-T4 Aluminum (AL*)

| Material | Capacity (lb) | A | B | C | D | E | F |
|----------|---------------|--------|--------|--------|--------|--------|--------|
| (AL*) | 25 | 287.22 | 146.41 | 528.18 | 125.66 | 177.26 | 262.45 |
| | 50 | 225.81 | 150.12 | 277.72 | 125.29 | 145.28 | 191.18 |
| | 100 | 170.49 | 155.41 | 137.49 | 123.84 | 122.75 | 133.95 |
| | 200 | 158.86 | 144.33 | 80.70 | 125.85 | 123.46 | 109.97 |
| | 300 | 159.34 | 136.66 | 72.78 | 125.74 | 121.40 | 101.41 |
| | 500 | 58.22 | 84.24 | 36.18 | 45.31 | 35.79 | 39.39 |
| | 1,000 | 53.74 | 83.81 | 21.25 | 49.43 | 38.43 | 36.99 |
| (S.S.*) | 2,000 | 54.89 | 89.22 | 37.23 | 44.54 | 34.10 | 35.27 |
| | 5,000 | 21.66 | 34.50 | 13.42 | 16.10 | 11.91 | 14.15 |
| | 10,000 | 21.43 | 34.30 | 7.25 | 15.88 | 11.44 | 13.15 |

σ_{max} **Table**

| Material | Static Load (=60% Y.S.) |
|--------------|-------------------------|
| 2024-T4/T351 | 28,000* |
| 17-4PH S.S | 87,000* |

*Value is based on empirical analysis where static loading is recommended per capacity and limitation of extraneous forces are applied. Please refer to other Quality Futek Advanced Sensor Technology Load Cells and Force Sensors (i.e. LCF300-400) if cyclical loadings, excess side-load, and fatigue factors are warranted; additional recommendations and/or information may be obtained by calling our Futek Sales department at 1-800-23-FUTEK.

Deflection & Natural Frequency

| Material | Capacity (lb) | Deflection (in.) | Natural Frequency (Hz) | β |
|----------|---------------|------------------|------------------------|---------|
| (AL*) | 25 | 0.006 | 650 | 0.0994 |
| | 50 | 0.006 | 900 | 0.0994 |
| | 100 | 0.006 | 1300 | 0.0994 |
| | 200 | 0.009 | 1500 | 0.0994 |
| | 300 | 0.012 | 1600 | 0.0994 |
| | 500 | 0.010 | 1400 | 0.2549 |
| | 1,000 | 0.015 | 1500 | 0.2835 |
| (S.S.*) | 2,000 | 0.016 | 1300 | 0.7462 |
| | 5,000 | 0.011 | 1600 | 1.8259 |
| | 10,000 | 0.020 | 1600 | 1.8704 |

*FN results are based on calculation of deflection & weight scene on Sensor arm.

This documentation was generated and completed to the best ability of FUTEK’s Engineering Team using FEA Analysis, Empirical data and Multiple Testing Simulations. The information and recommendations on this document are presented in good faith and believed to be correct however, FUTEK Advanced Sensor Technology makes no representations or warranties as to the completeness or accuracy of the information.

Natural Frequency & Frequency Response Equation's:

$$\text{Natural Frequency (FN)} = 3.13 \sqrt{\frac{1}{\frac{\beta}{\text{Capacity}} \cdot \text{Deflection}}} \text{ (Hz)}$$

$$\text{Frequency Response with load (FR)} = 3.13 \sqrt{\frac{1}{\frac{\beta + \text{AppliedLoad}}{\text{Capacity}} \cdot \text{Deflection}}} \text{ (Hz)}$$

*Where β values are obtained by Futek Engineers