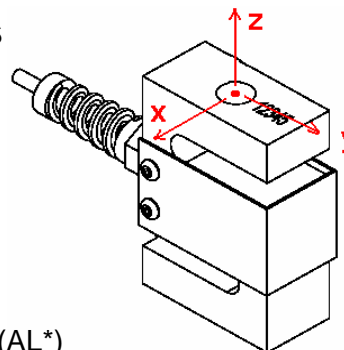


Extraneous Load Factors

*Note: L2351 is Lemo® receptacle version of L2350

Equation: $\sigma_{max} \geq (A)Fx + (B)Fy + (C)Fz + (D)Mx + (E)My + (F)Mz$



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