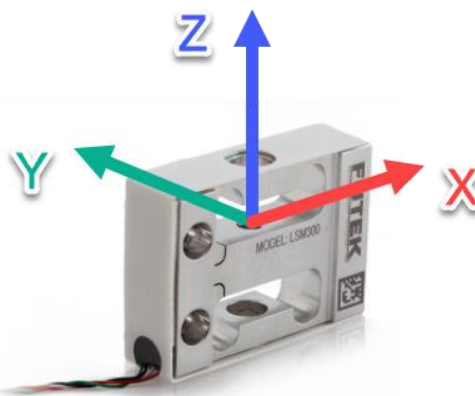# Extraneous Load Factors

Equation: $\sigma_{max} \geq AF_x + BF_y + CF_z + DM_x + EM_y + FM_z$

Material: 17-4 P.H. Stainless Steel, 2024-T4 Aluminum

Extraneous Load Coefficients:

Material	Capacity [lb]	A	B	C	D	E	F
Aluminum	2.2	140	630	6800	1100	230	1700
	5	110	400	2700	670	220	1000
	10	100	310	1400	480	220	730
	25	81	210	600	310	220	450
	50	63	150	320	280	220	320
	100	44	120	200	270	220	220
17-4 PH COND A	200	51	120	210	270	210	240

*All Force and Moment to be calculated using lb and in-lb units

σ_max Table:

Material	Static Load (=60% Y.S.)	Fatigue (Non Reversing Loads)	Fatigue (Full Reversing Loads)
2024-T4/T351	28,000	18,000	15,000*
17-4PH S.S	87,000	78,000	62,000*

***Value is 75% of Fatigue Strength based on 10-20 x 10^6 cycles and allow for factors that influence Fatigue such as surface finish, stress concentrations, corrosion, temperature, and other variables for the production of the transducer, for infinite Fatigue Life (100 x 10^6) use 75% of values shown.**

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