

JR3 Multi-Axis Force-Torque Sensor Technical Specifications

Sensor Model: Mechanical Load Rating:	67M25A3 25 lb	67M25A3 50 lb
Diameter (in)	2.64	2.64
Thickness (in)	0.984	0.984
Material	AL 2024	AL 2024
Weight (lb)	0.40	0.40
Nominal Accuracy, all axes (% measuring range)	±1.0	±1.0
Operating Temp. Range, non-condensing (°F)	-40 to +150	-40 to +150
F_x, F_y		
Standard Measurement Range (lb)	±25	±50
Digital Resolution (lb)	0.0063	0.013
Stiffness (lb/in)	29,000	73,000
Single-axis Overload (lb)	105	210
Multi-axis Overload Coefficient, a (lb)	105	210
Multi-axis Overload Coefficient, b (lb)	135	270
Multi-axis Overload Coefficient, c (lb)	110	220
F_z		
Standard Measurement Range (lb)	±50	±100
Digital Resolution (lb)	0.013	0.025
Stiffness (lb/in)	290,000	740,000
Single-axis Overload (lb)	430	870
Multi-axis Overload Coefficient, d (lb)	430	870
M_x, M_y		
Standard Measurement Range (in-lb)	±65	±130
Digital Resolution (in-lb)	0.016	0.033
Stiffness (in-lb/rad)	190,000	470,000
Single-axis Overload (in-lb)	250	510
Multi-axis Overload Coefficient, e (in-lb)	350	700
Multi-axis Overload Coefficient, f (in-lb)	950	1900
Multi-axis Overload Coefficient, g (in-lb)	250	510
M_z		
Standard Measurement Range (in-lb)	±65	±130
Digital Resolution (in-lb)	0.016	0.033
Stiffness (in-lb/rad)	47,000	130,000
Single-axis Overload (in-lb)	190	430
Multi-axis Overload Coefficient, h (in-lb)	190	430

Standard Measurement Range

- This is the range of loads that each sensor model is ideally suited to measure. Factory adjustments to internal electronics allow custom measurement ranges to meet application-specific needs.

Bolt Patterns

- The 67M25A3 and 67M25S3 (65lb only) sensors are available standard with the ISO 9409-1 Ø40mm bolt pattern.
- Alternate and custom bolt patterns are also available.

Multi-axis Overloads

- Insert your applied loads and the coefficients from the above table into the equations below to determine safe loading:

$$F_x/a + F_y/a + F_z/d + M_x/e + M_y/e + M_z/h \leq 1$$

and

$$F_x/b + F_y/c + F_z/d + M_x/f + M_y/g + M_z/h \leq 1$$

and

$$F_x/c + F_y/b + F_z/d + M_x/g + M_y/f + M_z/h \leq 1$$

All 3 equations must be satisfied to avoid damage.

- If additional overload capability is desired we recommend using a higher-rated sensor with electronically lowered measuring ranges.

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