

JR3 Multi-Axis Force-Torque Sensor Technical Specifications (SI Units)

Sensor Model: Mechanical Load Rating:	67M25A3 100N	67M25A3 200N	67M25S3 315N	67M25S3 630N
Diameter (mm)	67	67	67	67
Thickness (mm)	25	25	25	25
Material	AL 2024	AL 2024	SS 15-5PH	SS 15-5PH
Weight (g)	175	175	400	400
Nominal Accuracy, all axes (% measuring range)	±1,0	±1,0	±1,0	±1,0
Operating Temp. Range, non-condensing (°C)	-40 to +65	-40 to +65	-40 to +65	-40 to +65
F_x, F_y				
Standard Measurement Range (N)	±100	±200	±315	±630
Digital Resolution (N)	0,025	0,050	0,079	0,158
Stiffness (N/m)	5,1e6	13e6	13,7e6	34,3e6
Single-axis Overload (N)	470	930	1250	2450
Multi-axis Overload Coefficient, a (N)	470	930	1250	2450
Multi-axis Overload Coefficient, b (N)	600	1200	1550	3200
Multi-axis Overload Coefficient, c (N)	490	970	1330	2530
F_z				
Standard Measurement Range (N)	±200	±400	±630	±1250
Digital Resolution (N)	0,050	0,100	0,158	0,313
Stiffness (N/m)	51e6	130e6	138e6	347e6
Single-axis Overload (N)	1900	3870	5070	10200
Multi-axis Overload Coefficient, d (N)	1900	3870	5070	10200
M_x, M_y				
Standard Measurement Range (Nm)	±6,3	±12	±20	±40
Digital Resolution (Nm)	0,0016	0,0032	0,0050	0,010
Stiffness (Nm/rad)	21200	53000	57000	143000
Single-axis Overload (Nm)	28	58	75	150
Multi-axis Overload Coefficient, e (Nm)	40	79	100	200
Multi-axis Overload Coefficient, f (Nm)	105	215	280	560
Multi-axis Overload Coefficient, g (Nm)	28	58	75	150
M_z				
Standard Measurement Range (Nm)	±6,3	±12	±20	±40
Digital Resolution (Nm)	0,0016	0,0032	0,0050	0,010
Stiffness (Nm/rad)	5360	15000	14400	40400
Single-axis Overload (Nm)	21	48	57	130
Multi-axis Overload Coefficient, h (Nm)	22	48	57	130

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 (315N 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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