

JR3 Multi-Axis Force/Torque Sensor Technical Specifications

Sensor Model:	45E15A4	45E15A4	45E15A4
Mechanical Load Rating:	200N	400N	1000N
Diameter (mm)	120	120	120
Thickness (mm)	38,1	38,1	38,1
Material	Al 2024	Al 2024	Al 2024
Weight (g)	1150	1150	1150
Nominal Accuracy (% measurement range)	±0,25	±0,25	±0,25
Operating Temp. Range, non-condensing (°C)	-40 to +65	-40 to +65	-40 to +65
Fx, Fy			
Standard Measurement Range (N)	±200	±400	±1000
Digital Resolution (N)	0,025	0,050	0,13
Stiffness (N/m)	8.9e6	19e6	64e6
Single-Axis Overload (N)	1460	2450	7020
Multi-Axis Overload Coefficient, a (N) *	1460	2450	7560
Multi-Axis Overload Coefficient, b (N) *	2170	4580	7020
Fz			
Standard Measurement Range (N)	±400	±800	±2000
Digital Resolution (N)	0,050	0,10	0,25
Stiffness (N/m)	96e6	210e6	500e6
Single-Axis Overload (N)	5380	9780	21300
Multi-Axis Overload Coefficient, c (N) *	5380	9780	21300
Mx, My			
Standard Measurement Range (Nm)	±25	±50	±125
Digital Resolution (Nm)	0,0031	0,0063	0,016
Stiffness (Nm/rad)	0,11e6	0,23e6	0,54e6
Single-Axis Overload (Nm)	130	230	500
Multi-Axis Overload Coefficient, d (Nm) *	130	230	500
Mz			
Standard Measurement Range (Nm)	±25	±50	±125
Digital Resolution (Nm)	0,0031	0,0063	0,016
Stiffness (Nm/rad)	0,030e6	0,073e6	0,17e6
Single-Axis Overload (Nm)	110	200	420
Multi-Axis Overload Coefficient, e (Nm) *	110	200	420

Standard Measurement Range

The range of loads that the sensor is ideally suited to measure. Optional factory adjustments to electronics allow custom measurement ranges to meet application-specific needs.

Bolt Patterns

Available with both standard and custom patterns.

Multi-Axis Overloads

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

$$F_x/a + F_y/b + F_z/c + M_x/d + M_z/e \leq 1$$

and

$$F_x/b + F_y/a + F_z/c + M_y/d + M_z/e \leq 1$$

Both equations must be satisfied at all times to avoid damage.

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

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