

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

Sensor Model: Mechanical Load Rating:	75E20A4 1000N	75E20A4 2000N
Diameter (mm)	191	191
Thickness (mm)	50.8	50.8
Material	AL 2024	AL 2024
Weight (g)	3400	3400
Nominal Accuracy, all axes (% measuring range)	±0,25	±0,25
Operating Temp. Range, non-condensing (°C)	-40 to +65	-40 to +65
<b>F<sub>x</sub>, F<sub>y</sub></b>		
Standard Measurement Range (N)	±1000	±2000
Digital Resolution (N)	0,13	0,25
Stiffness (N/m)	64e6	105e6
Single-axis Overload (N)	6900	12 900
Multi-axis Overload Coefficient, a (N)	7600	13 300
Multi-axis Overload Coefficient, b (N)	6900	12 900
<b>F<sub>z</sub></b>		
Standard Measurement Range (N)	±2000	±4000
Digital Resolution (N)	0,25	0,50
Stiffness (N/m)	496e6	784e6
Single-axis Overload (N)	21 300	40 900
Multi-axis Overload Coefficient, c (N)	21 300	40 900
<b>M<sub>x</sub>, M<sub>y</sub></b>		
Standard Measurement Range (Nm)	±200	±400
Digital Resolution (Nm)	0,025	0,05
Stiffness (Nm/rad)	1,72e6	2,66e6
Single-axis Overload (Nm)	890	1680
Multi-axis Overload Coefficient, d (Nm)	890	1680
<b>M<sub>z</sub></b>		
Standard Measurement Range (Nm)	±200	±400
Digital Resolution (Nm)	0,025	0,05
Stiffness (Nm/rad)	0,54e6	0,89e6
Single-axis Overload (Nm)	760	1380
Multi-axis Overload Coefficient, e (Nm)	760	1380

### Standard Measurement Range

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

### Bolt Patterns

- The 75E20A4 sensors are available standard with the ISO 9409-1 Ø125mm bolt pattern.
- Alternate standard and custom bolt patterns are also available.

### Multi-axis Overloads

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

$$F_x/a + F_y/b + F_z/c + M_x/d + M_z/e \leq 1 \quad \text{and}$$

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

Both equations must be satisfied to avoid damage.

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

### JR3, INC.

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