

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

Sensor Model: Mechanical Load Rating:	75E20S4 3000N	75E20S4 6000N
Diameter (mm)	191	191
Thickness (mm)	50.8	50.8
Material	15-5PH SS	15-5PH SS
Weight (g)	6800	6800
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)	±3000	±6000
Digital Resolution (N)	0,38	0,75
Stiffness (N/m)	172e6	281e6
Single-axis Overload (N)	18200	33800
Multi-axis Overload Coefficient, a (N)	19600	34900
Multi-axis Overload Coefficient, b (N)	18200	33800
<b>F<sub>z</sub></b>		
Standard Measurement Range (N)	±6000	±12000
Digital Resolution (N)	0,75	1,50
Stiffness (N/m)	1330e6	2100e6
Single-axis Overload (N)	55600	107200
Multi-axis Overload Coefficient, c (N)	55600	107200
<b>M<sub>x</sub>, M<sub>y</sub></b>		
Standard Measurement Range (Nm)	±550	±1100
Digital Resolution (Nm)	0,07	0,14
Stiffness (Nm/rad)	4,32e6	7,27e6
Single-axis Overload (Nm)	2250	4450
Multi-axis Overload Coefficient, d (Nm)	2250	4450
<b>M<sub>z</sub></b>		
Standard Measurement Range (Nm)	±550	±1100
Digital Resolution (Nm)	0,07	0,14
Stiffness (Nm/rad)	1,34e6	2,44e6
Single-axis Overload (Nm)	1920	3650
Multi-axis Overload Coefficient, e (Nm)	1920	3650

### 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 75E20S4 sensors are available standard with English or metric bolt patterns.
- Customer-specified bolt patterns are possible at additional cost.

### 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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