

## JR3 Multi-Axis Force-Torque Sensor Technical Specifications

Sensor Model: Mechanical Load Rating:	100M40A3 200N	100M40A3 400N
Diameter (mm)	100	100
Thickness (mm)	40	40
Material	AL 2024	AL 2024
Mass (g)	650	650
Nominal Accuracy, all axes (% measuring range)	±1,0	±1,0
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)	±200	±400
Standard Resolution (N)	0,050	0,10
Stiffness (N/m)	11,5e6	19,8e6
Single-Axis Maximum Load (N)	1200	2000
Multi-Axis Overload Coefficients, a (N)	1800	3500
[see notes] b (N)	1550	2400
c (N)	1200	2000
d (N)	1250	2200
<b>F<sub>z</sub></b>		
Standard Measurement Range (N)	±400	±800
Standard Resolution (N)	0,10	0,20
Stiffness (N/m)	110e6	190e6
Single-Axis Maximum Load (N)	5100	8750
Multi-Axis Overload Coefficient, e (N)	5100	8750
<b>M<sub>x</sub> M<sub>y</sub></b>		
Standard Measurement Range (Nm)	±20	±40
Standard Resolution (Nm)	0,005	0,01
Stiffness (Nm/rad)	0,098e6	0,170e6
Single-Axis Maximum Load (Nm)	110	185
Multi-Axis Overload Coefficients, f (Nm)	110	185
g (Nm)	125	215
h (Nm)	215	375
<b>M<sub>z</sub></b>		
Standard Measurement Range (Nm)	±20	±40
Standard Resolution (Nm)	0,005	0,01
Stiffness (Nm/rad)	0,026e6	0,052e6
Single-Axis Maximum Load (Nm)	87	160
Multi-Axis Overload Coefficient, i (Nm)	87	160

### Standard Measurement Range

- This is the range of loads 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 100M40A3 sensors are available standard with the ISO 9409-1, Ø63mm 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:

$$F_x/a + F_y/c + F_z/e + M_x/f + M_z/i \leq 1$$

and

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

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.

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