

Datasheet



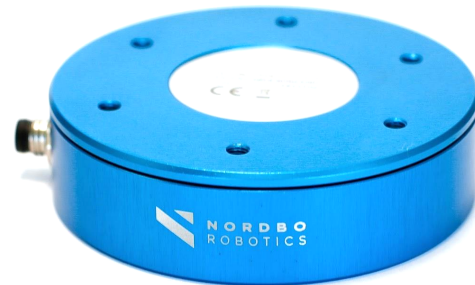
NRS-6 Force & Torque Sensor

Get to know NRS-6

Nordbo Robotics 6-axis force torque sensors are rigid, robust and ideal for mounting on robots for precise force control. The sensors' minimal deformation when being exposed to forces makes the NRS-6 ideal for applications such as grinding, polishing, buffing, and deburring where high tool precision is required.

Key Features

- High stiffness
- High resolution
- No programming needed
- Compact design
- Optional signal filtering
- Dust- & waterproof (IP67)

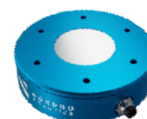
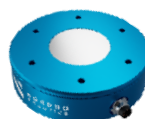
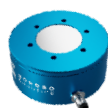


Technical Specifications

NRS-6050-D50

NRS-6050-D80

NRS-6200-D80



| | | | |
|---------------------------------------|--------------------|---------------|---------------|
| Dimensions (Diameter x Height) | 50 x 22 mm | 80 x 22 mm | 80 x 22 mm |
| Weight | 100 g | 300 g | 300 g |
| Software | UR, AUBO & Codesys | | |
| Hysteresis | < 0,2 % | | |
| Crosstalk | < 5 % | | |
| Maximum sampling frequency | 1000 Hz | | |
| Operating temperature | 0° to 50° | | |
| Operating humidity | < 85% | | |
| Power requirement (CAN) | 5 VDC @ 250 mA | | |
| Power requirement (Ethernet) | 6-40 VDC @ 1000 mA | | |
| | Fx, Fy | Fx, Fy | Fx, Fy |
| Max force | ± 500 N | ± 500 N | ± 2000 N |
| Resolution | 0,03 N | 0,03 N | 0,10 N |
| Overload* | ± 700 N | ± 700 N | ± 2700 N |
| Signal noise** | 0,025 N | 0,025 N | 0,050 N |
| Noise-free resolution | 0,1 N | 0,1 N | 0,25 N |
| Full scale non-linearity | < 4% | < 4% | < 4% |
| Axis deformation | 30 µm | 30 µm | 30 µm |
| | Fz | Fz | Fz |

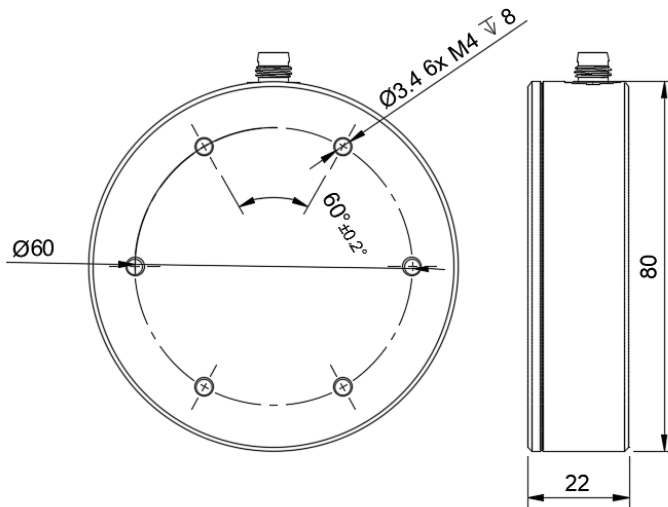
| | | | |
|---------------------------------|--------------------------|--------------------------|--------------------------|
| Max force | ± 500 N | ± 500 N | ± 2000 N |
| Resolution | 0,03 N | 0,03 N | 0,10 N |
| Overload* | ± 1200 N | ± 1200 N | ± 4700 N |
| Signal noise** | 0,032 N | 0,032 N | 0,08 N |
| Noise-free resolution | 0,15 N | 0,15 N | 0,35 N |
| Full scale non-linearity | < 4% | < 4% | < 4% |
| Axis deformation | 27 µm | 27 µm | 27 µm |
| | Tx, Ty | Tx, Ty | Tx, Ty |
| Max torque | ± 10 Nm | ± 10 Nm | ± 40 Nm |
| Resolution | 0,32*10 ⁻³ Nm | 0,32*10 ⁻³ Nm | 1,2*10 ⁻³ Nm |
| Overload* | ± 15 Nm | ± 15 Nm | ± 55 Nm |
| Signal noise** | 0,35*10 ⁻³ Nm | 0,35*10 ⁻³ Nm | 0,8*10 ⁻³ Nm |
| Noise-free resolution | 1,5*10 ⁻³ Nm | 1,5*10 ⁻³ Nm | 3,0*10 ⁻³ Nm |
| Full scale non-linearity | < 4% | < 4% | < 4% |
| Axis deformation | 0,2° | 0,2° | 0,2° |
| | Tz | Tz | Tz |
| Max torque | ± 5 Nm | ± 5 Nm | ± 30 Nm |
| Resolution | 0,25*10 ⁻³ Nm | 0,25*10 ⁻³ Nm | 0,95*10 ⁻³ Nm |
| Overload* | ± 15 Nm | ± 15 Nm | ± 55 Nm |
| Signal noise** | 0,4*10 ⁻³ Nm | 0,4*10 ⁻³ Nm | 0,95*10 ⁻³ Nm |
| Noise-free resolution | 0,002 Nm | 0,002 Nm | 3,5*10 ⁻³ Nm |
| Full scale non-linearity | < 4% | < 4% | < 4% |
| Axis deformation | 0,05° | 0,05° | 0,05° |

* The sensor is not overload protected and may break if forces are not kept below the overload values for each axis.

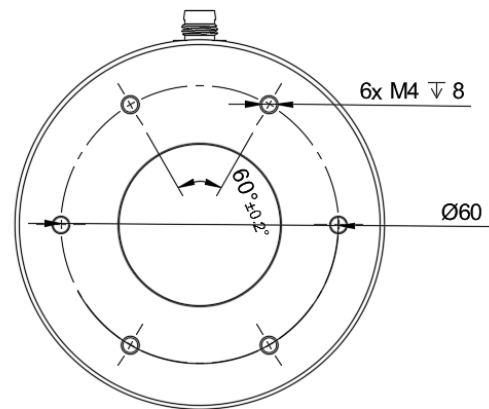
** Signal noise is defined as the standard deviation of a typical one-second no-load signal

Mechanical Dimensions NRS-6XXX-D80

Bottom view

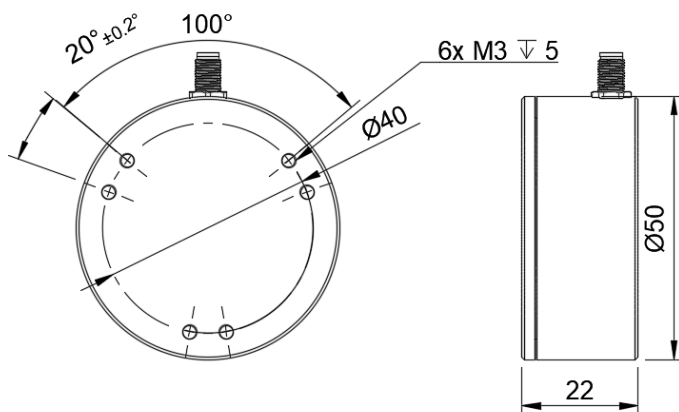


Top view

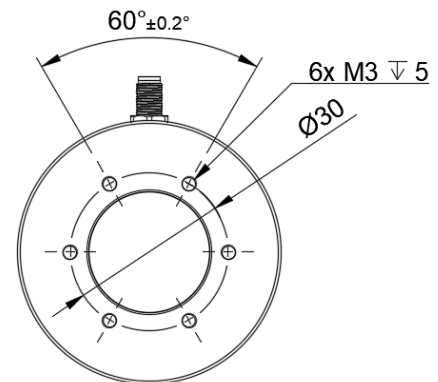


Mechanical Dimensions NRS-6050-D50

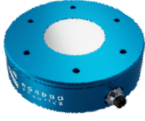
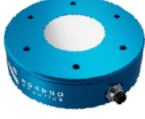
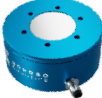




Bottom view



Top view



NRS-6 Contents

| Component | |
|---|---|
|  | 1x NRS-6050-D80 / 1x NRS-6200-D80 / 1x NRS-6050-D50 |
|  | |
|  | |
|  | 1x NRC-ETH 3m sensor cable |
|  | 1x USB key with relevant software |
|  | 1x NRC-ETH - CAN to Ethernet converter (optional) |
|  | 1x NRC-ETH 2m power cable (optional) |