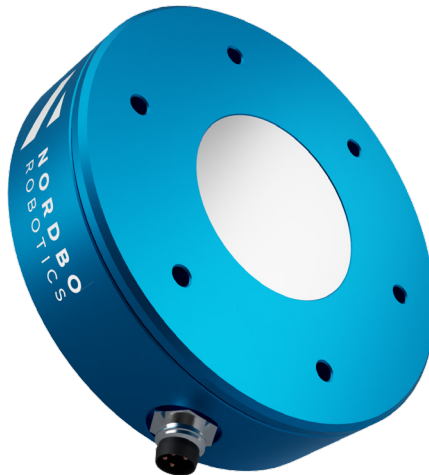


NRS-6200-D80

FORCE/TORQUE SENSOR



NORDBO
ROBOTICS



KEY FEATURES

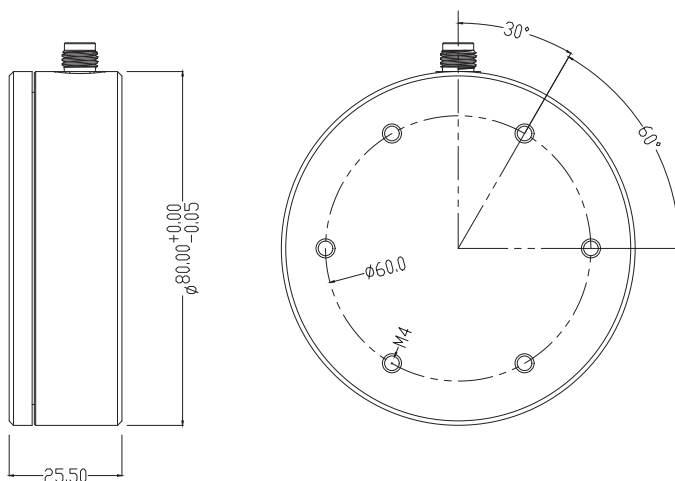
- High stiffness
- High resolution
- No programming skills needed
- Compact design
- Optional signal filtering
- Dust & water resistant (IP54)

DESCRIPTION

Nordbo Robotics 200 kg 6 axis force torque sensor measure 6 degree of freedom force and torque. The sensor is compact, stiff and robust. It is ideal for mounting on robots for precise force control or/and teach-in applications. All electronics are embedded inside the sensor hence only a cable from sensor to PLC, Robot or PC is needed.

Typical applications include grinding, polishing, buffing and deburring where the high stiffness of the sensor is necessary in order to keep high precision of the tool.

	Range	Resolution	Deformation
Fx, Fy	2000 N	0.005 N	30 μ m
Fz	2000 N	0.005 N	27 μ m
Tx, Ty	40 Nm	0.0012 Nm	0,2°
Tz	30 Nm	0.00095 Nm	0.05°



Absolute accuracy

The absolute accuracy describe how large a percentage error one can expect of the measured forces compared to the real loads. Accuracy of the sensor depends on calibration and temperature. However, measurements of a calibrated sensor at the calibration temperature can be expected to have an measuring accuracy below 3%.

Resolution

The range and resolution of the sensor may vary depending on factory calibration. Below is a table of a 2000N range calibrated sensor. The range is the minimum and maximum measurement values. The resolution describe the minimal increment of the different axis.

Specifications

Sensor Type	6-Axis Force/Torque Sensor			
Dimension (H x Ø)	25 x 80			
Weight (with build-in adapter plates)	300g			
Channels	Fxy	Fz	Txy	Tz
Range of measurement	2000 N	2000 N	40 Nm	30 Nm
Resolution	0,005 N	0.005 N	0.0012 Nm	0.00095 Nm
Single axis overload	2700 N	4700 N	55 Nm	55 Nm
Signal noise ¹ (typical)	0.056 N	0.085 N	0.0008 Nm	0.00095 Nm
Noise-free resolution (typical)	0.25 N	0.35 N	0.003 Nm	0.0035 Nm
Full scale non-linearity	< 4 %			
Single axis deformation	30 µm	27 µm	0.2°	0.05°
Operation conditions	0 to 50°C, humidity <85%without condensation			
Hysteresis	< 0.2%			
Crosstalk	< 5 %			

Interface types	CAN	Ethernet*
Power requirement	5VDC @ 100 mA	6-40VDC @ 500 mA
Sample rate	Up to 1000 Hz	Up to 1000 Hz
Driver compatibility	Windows, Linux, ROS, UR	

¹ Signal noise is defined as the standard deviation of a typical one second no-load signal

* Optional, NRS-ETH/DAC

The sensor has a high stiffness and will only compress 2.3µm in z-axis given a 10kg load. High stiffness is crucial in applications where precision of tcp is needed.

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

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