

CATEGORY SELECTION GUIDE

Joint Torque Sensor Category Selection Guide

Joint torque sensors convert torsional load in a robot joint into a measurable signal for force control, collision detection, assembly-process monitoring and joint-state feedback. Product Platform and SKU selection depends primarily on measuring range, load capacity, installation envelope, accuracy, resolution, output form and interface.

CATEGORY SELECTION GUIDE

CATEGORY	CURRENT CATALOG	REVISION / ISSUE
Joint Torque Sensors	2 Product Platforms / 7 SKUs	R01 2026-09-04

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01 | Category Scope and Objective

Item	Current category
Product catalog	2 Product Platforms / 7 SKUs
Suitable use	Torque measurement and feedback in robot joints where measuring range, load capacity, installation envelope, accuracy, resolution and interfaces must be considered together.

02 | Product Principle and Typical Applications

Product overview

Joint torque sensors convert torsional load in a robot joint into a measurable signal for force control, collision detection, assembly monitoring and joint-state feedback. Select a Product Platform by output form and installation envelope.

Typical applications

Force control and collision detection

When a joint must detect external torque or collision events, first confirm measuring range, overload capacity and output interface.

Assembly and state monitoring

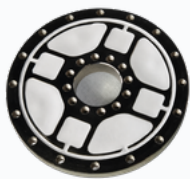
Assembly monitoring requires repeatability and resolution; also check outer diameter, stiffness and supply conditions.

03 | Selection Inputs

Prepare before selection

- Record the required measuring range and peak joint torque.
- Confirm outer diameter, axial/radial load capacity and allowable bending moment.
- Confirm accuracy, repeatability, resolution and stiffness requirements.
- Confirm supply, output type and controller interface.

04 | Product Platform Catalog



Joint Torque Sensor Product Platform 01

This Product Platform contains 3 SKUs for joint-torque measurement. Start with measuring range, outer diameter and axial/radial load capacity, then confirm accuracy, resolution, supply and output interface.

3 SKUs



Joint Torque Sensor Product Platform 02

This Product Platform contains 4 SKUs for joint-torque measurement. Start with measuring range, outer diameter and axial/radial load capacity, then confirm accuracy, resolution, supply and output interface.

4 SKUs

05 | Product Platform Selection Path

- Use installation envelope and load capacity to remove incompatible platforms first.
- Then shortlist platforms by measuring range, accuracy, resolution and stiffness.
- Confirm system connections from supply and output-interface requirements.

04 Enter SKU refinement within the platform and verify the parameter combination for each SKU.

Selection note

Product Platforms provide catalog navigation and application orientation; parameter ranges may overlap, so do not eliminate candidates by platform name alone.

06 | Selection Parameter Comparison

Platform-level shortlist parameters

Product Platform	SKUs	Measuring Range	Axial Load Capacity	Radial Load Capacity	Bending Moment Capacity	Body Outer Diameter	Measurement Accuracy	Measurement Repeatability	Measurement Resolution	Recommended Supply Voltage	Output Type	Torsional Stiffness	Weight
Joint Torque Sensor Product Platform 01	3	125 Nm / 230 Nm / 484 Nm	300 N / 500 N / 700 N	300 N / 500 N / 700 N	60 Nm / 80 Nm / 150 Nm	84.5 mm / 100 mm / 94 mm	0.5	0.5	0.06	5	—	150000 Nm/rad / 400000 Nm/rad / 800000 Nm/rad	203 g / 290 g / 437 g
Joint Torque Sensor Product Platform 02	4	100 Nm / 180 Nm / 50 Nm / 300 Nm	650 N / □500 N / 500 / □250 N / 250 / □600 N / 600	1900 N / □500 N / 500 / □250 N / 250 / □600 N / 600	80 Nm / □50 Nm / 50 / □25 Nm / 25 / □15 Nm / 15	63 mm / 80 mm / 66 mm / 105 mm	Better than 0.8 %FS / 0.2 %FS / 0.4 %FS	Better than 0.6 %FS / 0.1 %FS / 0.15 %FS / 0.2 %FS	0.1 %FS / 0.06 %FS / 0.04 %FS	6 / 6 VDC	Analog	205734 Nm/rad / 186500 Nm/rad / 52600 Nm/rad / 382500 Nm/rad	138 g / 282 g / 126 g / 200 g

07 | SKU Confirmation and Integration Checklist

Product Platform	SKU	Initial shortlist	Main differences	Final confirmation
Joint Torque Sensor Product Platform	ES-SN-C18-S003-V0 01	Measuring range, outer diameter, axial/radial load capacity	Accuracy, resolution, stiffness and weight	Supply, output type and mechanical interface
Joint Torque Sensor Product Platform	ES-SN-C18-S002-V0 01	Measuring range, outer diameter, axial/radial load capacity	Accuracy, resolution, stiffness and weight	Supply, output type and mechanical interface

Integration checklist

- 01** Confirm outer diameter, mounting pattern and mechanical stiffness.
- 02** Confirm supply voltage, output type, impedance and controller input.
- 03** Confirm measuring range, overload capacity, accuracy, repeatability and resolution.

08 | Engineering Use and Verification Notice

Engineering verification

- 01** Before design freeze, verify mechanical, electrical, feedback and controlled engineering documents for the specific SKU.
- 02** Do not infer missing torque, life or compatibility data from an SKU code or a single rating.
- 03** Use the Datasheet and Dimensional & Integration Guide as the primary engineering verification documents.

Responsibility boundary

This guide organizes candidate scope. Final selection, interface confirmation and system responsibility remain subject to controlled engineering documents for the specific SKU and project verification.