

CATEGORY SELECTION GUIDE

Six Axis Force Sensor Category Selection Guide

Six-axis force sensors measure F_x , F_y and F_z forces together with M_x , M_y and M_z torques to provide multidimensional load feedback for robot force control, assembly, finishing and test measurement. The principal SKU differences are installation envelope, F_{xy}/F_z force range, M_{xy}/M_z torque range, resolution, interface and environmental conditions.

CATEGORY SELECTION GUIDE

CATEGORY	CURRENT CATALOG	REVISION / ISSUE
Six Axis Force Sensors	1 Product Platforms / 9 SKUs	R01 2026-09-04

CONTENTS

01	Category Scope and Objective
02	Product Principle and Typical Applications
03	Selection Inputs
04	Product Platform Catalog
05	Product Platform and SKU Selection Path
06	Selection Parameters and SKU Refinement
07	Integration Checklist
08	Engineering Use and Verification Notice

01 | Category Scope and Objective

Item	Current category
Product catalog	1 Product Platform / 9 SKUs
Suitable use	Three-axis force and three-axis torque measurement in robotics, assembly and test systems where range, dimensions, resolution, interface and environment must be considered together.

02 | Product Principle and Typical Applications

Product overview

Six-axis force sensors measure F_x , F_y and F_z forces together with M_x , M_y and M_z torques, providing multidimensional load feedback for robot force control, assembly, finishing and test measurement.

Typical applications

Robot force control and assembly

Select force range, torque range and overload capacity from contact-force and joint-torque conditions.

Finishing, test and quality monitoring

Continuous process monitoring requires resolution, crosstalk, output rate, interface and environmental conditions to be checked together.

03 | Selection Inputs

Prepare before selection

- Record continuous and peak conditions for F_{xy} , F_z , M_{xy} and M_z .
- Confirm mounting diameter, height, mass and connector clearance.
- Confirm resolution, nonlinearity, axis crosstalk and output-data-rate targets.
- Confirm communication interface, supply, ingress protection and operating temperature.

04 | Product Platform Catalog



Six Axis Force Sensor Product Platform 01

This Product Platform contains 9 SKUs spanning multiple F_{xy}/F_z force ranges and M_{xy}/M_z torque ranges. Start with dimensions and range, then confirm resolution, crosstalk, output rate, communication interface and environment.

9 SKUs

05 | Product Platform and SKU Selection Path

- Use installation envelope and mechanical interface to confirm Product Platform integration.
- Build the SKU shortlist from F_{xy}/F_z force ranges and M_{xy}/M_z torque ranges.
- Check measurement performance using resolution, nonlinearity, crosstalk and overload capacity.

04 Finally confirm communication interface, output rate, supply and environmental conditions.

Selection note

This category has one Product Platform; engineering differences are mainly at SKU level, so range and dimensions should be used directly for SKU shortlisting.

06 | Selection Parameters and SKU Refinement

Product Platform parameter span

Product Platform	SKUs	Force Range (Fxy)	Force Range (Fz)	Torque Range (Mxy)	Torque Range (Mz)	Dimensions	Communication Interface	Ingress Protection
Six Axis Force Sensor Product Platform 01	9	150 / 600 / 1000 / 1200 / 1800 / 2400 / 3000	200 / 800 / 1400 / 1600 / 2400 / 3200 / 4000	4 / 15 / 30 / 20 / 40 / 5 / 60 / 80 / 150	4 / 15 / 30 / 20 / 40 / 5 / 60 / 80 / 150	23 × 26.2 mm (diameter) / 87 × 78 mm (diameter) × 28.5 mm / 26 × 80 mm (diameter) / 142 × 126 mm (diameter) × 50 mm	Ethernet; EtherCAT; RS-485; analog output	IP65; IP67 customization available / IP64; IP67 customization available

SKU shortlist matrix

SKU	Force Range (Fxy)	Force Range (Fz)	Torque Range (Mxy)	Torque Range (Mz)	Dimensions	Mass	Communication Interface	Maximum Output Data Rate
ES-SN-C30-S001-V001	150	200	4	4	23 × 26.2 mm (diameter)	28	Ethernet; EtherCAT; RS-485; analog output	2000
ES-SN-C30-S001-V002	600	800	15	15	87 × 78 mm (diameter) × 28.5 mm	255	Ethernet; EtherCAT; RS-485; analog output	2000
ES-SN-C30-S001-V003	1000	1400	30	30	87 × 78 mm (diameter) × 28.5 mm	502	Ethernet; EtherCAT; RS-485; analog output	2000
ES-SN-C30-S001-V004	600	800	20	20	26 × 80 mm (diameter)	269	Ethernet; EtherCAT; RS-485; analog output	2700 / 2700Hz (max)
ES-SN-C30-S001-V005	1200	1600	40	40	26 × 80 mm (diameter)	478	Ethernet; EtherCAT; RS-485; analog output	2700 / 2700Hz (max)
ES-SN-C30-S001-V006	150	200	5	5	26 × 80 mm (diameter)	259	Ethernet; EtherCAT; RS-485; analog output	2700 / 2700Hz (max)
ES-SN-C30-S001-V007	1800	2400	60	60	26 × 80 mm (diameter)	488	Ethernet; EtherCAT; RS-485; analog output	2700 / 2700Hz (max)
ES-SN-C30-S001-V008	2400	3200	80	80	26 × 80 mm (diameter)	686	Ethernet; EtherCAT; RS-485; analog output	2700 / 2700Hz (max)
ES-SN-C30-S001-V009	3000	4000	150	150	142 × 126 mm (diameter) × 50 mm	1450	Ethernet; EtherCAT; RS-485; analog output	2000

07 | Integration Checklist

Design inputs

- | | |
|----|--|
| 01 | Check the sensor coordinate system, mounting orientation and load application point. |
| 02 | Check structural stiffness, mounting preload, allowable overload and cable routing. |
| 03 | Check communication interface, output rate, supply and controller acquisition chain. |
| 04 | Record temperature, ingress-protection and customization requirements. |

08 | Engineering Use and Verification Notice

Engineering verification

- | | |
|----|--|
| 01 | Before design freeze, verify mechanical, electrical, measurement-axis definitions and controlled engineering documents for the specific SKU. |
| 02 | Do not infer missing range, accuracy, 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.