

CATEGORY SELECTION GUIDE

24–60 V Low-Voltage Micro Servo Drive Category Selection Guide

24–60 V low-voltage micro servo drives provide power conversion, position, speed and torque control, feedback connectivity and communications for closed-loop axes powered from a DC bus. The catalog covers different current, rated-output, protocol, braking, cooling and STO combinations for compact robotics, packaging, logistics and general automation equipment.

CATEGORY SELECTION GUIDE

CATEGORY	CURRENT CATALOG	REVISION / ISSUE
24–60 V Low-Voltage Micro Servo Drives	5 Product Platforms / 48 SKUs	R01 2026-09-04

CONTENTS

01	Category Scope and Objective
02	Typical Applications and Selection Inputs
03	Product Platform Catalog Logic
04	Product Platform Directory
05	Layered Selection Path
06	Product Platform Parameter Comparison
07	Product Platform Differences and Engineering Trade-offs
08	SKU Refinement
09	Application Record Checklist
10	Engineering Use and Verification Notice

01 | Category Scope and Objective

Product catalog and application scope

24–60 V low-voltage micro servo drives provide power conversion, position/speed/torque control, feedback connection and communications for closed-loop motion axes. The category covers different supply, current, rated-output, protocol, braking, cooling and STO combinations for compact robotics, packaging, logistics and general automation equipment.

Product catalog

Item	Content
Terminal category	24–60 V Low-Voltage Micro Servo Drives
Product Platforms	5
SKU	48
Primary catalog dimensions	Supply, continuous and peak output current, rated output power, communication, braking, cooling and STO

02 | Typical Applications and Selection Inputs

Typical applications

Robotics and multi-axis motion equipment For joints, rotary tables, conveying, lifting and synchronized axes; match motor current, supply, feedback and communication interface.	Packaging, CNC and 3C automation For equipment axes requiring closed-loop position, speed or torque control; confirm response, cyclic duty, braking energy and I/O.	Logistics and battery-manufacturing equipment For handling, conveying, winding, assembly and test mechanisms; confirm fieldbus, continuous and peak current, cooling and controlled documents.
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Selection inputs

01	Motor and load	Record motor rated and peak current, continuous and peak torque, speed, load inertia and cyclic duty.
02	Supply architecture	Record phase arrangement, voltage, frequency, capacity, grounding, circuit protection and DC-bus conditions.
03	Feedback and control	Record feedback interface, position/speed/torque mode, pulse input or fieldbus protocol.
04	Braking and regeneration	Record deceleration duty, regenerative energy, braking resistor, stop frequency and brake-control requirement.
05	Installation and environment	Record cabinet envelope, cooling path, temperature, altitude, contamination, vibration and service clearance.

03 | Product Platform Catalog Logic

Catalog navigation basis

Product Platform	Published distinction	Navigation use
ES-SD-C21-S001	RS232, RS485 and pulse-train commands; 6 SKUs	Entry for this interface combination
ES-SD-C21-S002	EtherCAT and CoE CiA 402; 6 SKUs	Entry for EtherCAT motion axes
ES-SD-C21-S003	EtherCAT, Modbus RTU, PROFINET and pulse combinations; 23 SKUs	Entry for the broadest output and protocol mix
ES-SD-C21-S004	EtherCAT or RS485/Modbus RTU/pulse; 18 SKUs	Continue by protocol and temperature condition
ES-SD-C21-S005	RS232, RS485, Modbus RTU and CANopen with recorded STO; 5 SKUs	Entry where CANopen and STO are required

04 | Product Platform Directory

5 Product Platforms



Low-Voltage Micro Servo Drive Product Platform 01

This Product Platform contains 15 SKUs for compact servo control on 24–60 V DC-link systems. Start with supply, current, power and installation conditions, then confirm communication, feedback, protection and cooling interfaces.

15 SKUs



Low-Voltage Micro Servo Drive Product Platform 02

This Product Platform contains 12 SKUs for compact servo control on 24–60 V DC-link systems. Start with supply, current, power and installation conditions, then confirm communication, feedback, protection and cooling interfaces.

12 SKUs



Low-Voltage Micro Servo Drive Product Platform 03

This Product Platform contains 10 SKUs for compact servo control on 24–60 V DC-link systems. Start with supply, current, power and installation conditions, then confirm communication, feedback, protection and cooling interfaces.

10 SKUs



Low-Voltage Micro Servo Drive Product Platform 04

This Product Platform contains 2 SKUs for compact servo control on 24–60 V DC-link systems. Start with supply, current, power and installation conditions, then confirm communication, feedback, protection and cooling interfaces.

2 SKUs



Low-Voltage Micro Servo Drive Product Platform 05

This Product Platform contains 9 SKUs for compact servo control on 24–60 V DC-link systems. Start with supply, current, power and installation conditions, then confirm communication, feedback, protection and cooling interfaces.

9 SKUs

05 | Layered Selection Path

Recommended selection sequence

01	1	Confirm motor continuous and peak current
02	2	Confirm AC phase arrangement, voltage and capacity
03	3	Check overload duration, cyclic duty and braking energy
04	4	Confirm feedback, control mode and communication protocol
05	5	Confirm STO, cooling, cabinet envelope and environment
06	6	Open the matching Product Platform
07	7	Confirm the SKU from differentiating parameters

06 | Product Platform Parameter Comparison

Published standard-parameter ranges by Product Platform

Values are distinct standard display values or spans derived from SKU records. Values in one row are not necessarily combinable; confirm the exact SKU.

Product Platform	SKUs	AC Supply	Continuous Output Current	Peak Output Current	Rated Output Power	Communication	Control Method	Feedback Signal	STO	Cooling Method
Low-Voltage Micro Servo Drive Product Platform 01	15	24 to 60 VDC	5 Arms / 12 Arms / 20 Arms / 30 Arms / 60 Arms	12 A peak / 48 A peak / 80 A peak / 120 A peak / 240 A peak	—	RS232; CANopen / RS232; EtherCAT; CoE CiA 402 / RS232; RS485; Modbus RTU; Pulse	RS232 and CANopen / RS232 and EtherCAT / RS232, RS485 and pulse	2500 P/R incremental differential 5 V encoder; Magnetic encoder; Resolver	false / No / No / false	Natural cooling
Low-Voltage Micro Servo Drive Product Platform 02	12	24 to 60 VDC	5 Arms / 12 Arms / 22 Arms / 35 Arms	18 A peak / 48 A peak / 100 A peak / 160 A peak	—	RS485; Modbus RTU; CANopen; Pulse / EtherCAT; CoE CiA 402; Pulse / Profinet; Pulse	RS485, CANopen and pulse / EtherCAT and pulse / Profinet and pulse	Tamagawa serial protocol; Incremental encoder	1 / Yes / Yes / 1	Natural cooling
Low-Voltage Micro Servo Drive Product Platform 03	10	24 to 60 VDC	12 Arms / 22 Arms / 35 Arms	48 A peak / 100 A peak / 160 A peak	—	RS485; Modbus RTU; CANopen; Pulse / EtherCAT; CoE CiA 402; Pulse	RS485, CANopen and pulse / EtherCAT and pulse	Multi-turn Tamagawa serial encoder	false / No / No / false	Natural cooling
Low-Voltage Micro Servo Drive Product Platform 04	2	72 to 110 VDC	12 Arms / 22 Arms	48 A peak / 100 A peak	—	RS485; Modbus RTU; CANopen; Pulse	RS485, CANopen, STO and pulse	Tamagawa serial protocol; Incremental encoder	1 / Yes / Yes / 1	Natural cooling
Low-Voltage Micro Servo Drive Product Platform 05	9	24 to 70 VDC	2.5 Arms / 9 Arms / 13 Arms	12 A peak / 36 A peak / 80 A peak	—	RS232; CANopen; Pulse / RS232; EtherCAT; CoE CiA 402; Pulse / RS232; RS485; Modbus RTU; Pulse	RS232, CANopen and pulse / RS232, EtherCAT and pulse / RS232, RS485 and pulse	2500 P/R incremental differential 5 V encoder; Magnetic encoder	false / No / No / false	Natural cooling

07 | Product Platform Differences and Engineering Trade-offs

Difference checks

Current before power label Screen by motor continuous and peak current first, then check rated output power. Do not determine compatibility from power alone.	Supply defines the hardware boundary The 200–240 VAC and 380–415 VAC conditions affect the power stage, protection and braking voltage; verify them at Product Platform and SKU levels.
Protocol is not the complete interface Within one protocol, still confirm control mode, feedback, motor compatibility, I/O, synchronization cycle and commissioning path.	Braking, STO and cooling Braking resistors can be integrated, external or unrecorded; STO and cooling also vary by SKU and must be checked against the actual cycle and cabinet.

08 | SKU Refinement

Key parameters after entering a Product Platform

01	Continuous and peak output current	Use the motor operating point, overload multiple and duration to narrow the SKUs.
02	Supply and rated output power	Confirm phase arrangement, voltage, frequency, rated output power and source capacity.
03	Communication and control	Confirm the recorded protocol, then check control mode, synchronization and I/O.
04	Feedback and motor pairing	Confirm feedback type, resolution, connector, cable and drive compatibility.
05	Braking and STO	Confirm braking-resistor configuration, regenerative energy, STO circuit and stopping logic.
06	Thermal design and installation	Confirm cooling, operating temperature, cabinet airflow, dimensions, weight and service clearance.
07	SKU record	Carry the final SKU, motor, supply, feedback, protocol, braking and controlled-document requirements into the RFQ or project record.

09 | Application Record Checklist

Design-input record

01	Motor and load	Motor SKU, rated and peak current, continuous and peak torque, speed, load inertia and cyclic duty.
02	Supply	Phase arrangement, voltage, frequency, capacity, circuit breaker, contactor, grounding and DC-bus conditions.
03	Feedback and control	Feedback type, control mode, protocol, synchronization cycle, I/O, host controller and commissioning software.
04	Braking and safety	Regenerative energy, braking resistor, STO, safety circuit, emergency stop and brake timing.
05	Thermal and environment	Cabinet dimensions, cooling, ambient temperature, altitude, humidity, contamination and service clearance.
06	Documents	Record the required Datasheet, wiring information, 2D drawing, STEP/STP and Dimensional & Integration Guide.

10 | Engineering Use and Verification Notice

Engineering use and controlled documents

This guide supports terminal-category screening and Product Platform navigation. Parameter names use `names.en` from `product_param_dict_std`, and values use published `standard_display_value_en` records from `product_parameter_std`. Before design freeze, verify motor pairing, supply, continuous and peak current, feedback, control mode, communication, braking, STO, thermal design and wiring for the final SKU, and obtain the current Datasheet, wiring information, 2D drawing, STEP/STP and Dimensional & Integration Guide. Do not infer an unrecorded current, interface, safety function or dimension from a SKU code, Product Platform title or a single rated-power value.