

CATEGORY SELECTION GUIDE

Slotted Brushless DC Motors Category Selection Guide

Slotted brushless DC motors provide electronically commutated rotary motion in round-body and square-flange packages. The catalog covers eight frame-based Product Platforms and 17 SKUs from 16 mm to 86 mm. Select by installation form and body length, continuous torque and speed, transient current, voltage, feedback and duty before confirming the SKU and integration documents.

CATEGORY SELECTION GUIDE

CATEGORY	CURRENT CATALOG	REVISION / ISSUE
Slotted Brushless DC Motors	8 Product Platforms / 17 SKUs	R01 2026-09-04

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01 | Category Scope and Objective

Product catalog and suitable use

Item	Current category
Product catalog	8 Product Platforms / 17 SKUs
Suitable use	Electronically commutated rotary axes for logistics automation, office automation, synchronous-belt mechanisms, packaging, textile equipment and food-and-beverage equipment, with round-body or square-flange packaging selected to suit the installation.

02 | Product Form and Motion Role

Round-body and square-flange constructions

The category combines compact round-body motors with square-flange motors intended for low-voltage servo motion. The 42 mm Product Platform bridges both forms, so housing shape must be checked at SKU level.

Round-body packaging The 16, 22, 28 and 36 mm Product Platforms use round packaging; the 42 mm Product Platform includes one round SKU and square SKUs.	Square-flange packaging The 57, 60 and 86 mm Product Platforms use square-flange packaging, with body-length variants inside each Product Platform.	System integration options Encoder, gearbox and linear-motion integration can be considered after the motor operating point and interfaces are retained.
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03 | Typical Applications and Selection Inputs

Typical applications

Logistics and office automation For conveyor, sorting or document-handling axes, record the continuous speed, load torque, start-stop frequency and available installation form.	Synchronous-belt and packaging mechanisms Record pulley diameter, transmitted load, acceleration, duty cycle, body-length limit and drive current before retaining a Product Platform.	Textile and food-and-beverage equipment Record the required speed stability, continuous duty, ambient conditions, cleaning exposure and feedback requirement.
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Inputs to record before shortlisting

01	Installation envelope	Frame size, round or square form, body length, shaft and mounting interface, cable space and cooling path.
02	Continuous operating point	Required speed, continuous torque, output power, duty duration and ambient temperature.
03	Transient and dynamic demand	Acceleration, peak torque, instantaneous current, load inertia and start-stop frequency.
04	Electrical and control interface	DC bus voltage, drive current, commutation, Hall-sensor interface, wiring and any encoder requirement.

04 | Product Platform Directory

Current Product Platforms

The complete eight-platform catalog is shown below. Use frame size and housing form for mechanical navigation, then use the comparison and SKU sections for operating-point confirmation.

 16 mm Slotted Brushless DC Motor Product Platform · ES-DC-SL01 1 SKU	 22 mm Slotted Brushless DC Motor Product Platform · ES-DC-SL02 1 SKU
 28 mm Slotted Brushless DC Motor Product Platform · ES-DC-SL03 1 SKU	 36 mm Slotted Brushless DC Motor Product Platform · ES-DC-SL04 1 SKU

 42 mm Slotted Brushless DC Motor Product Platform · ES-DC-SL05 4 SKU	 57 mm Slotted Brushless DC Motor Product Platform · ES-DC-SL06 3 SKU
 60 mm Slotted Brushless DC Motor Product Platform · ES-DC-SL07 3 SKU	 86 mm Slotted Brushless DC Motor Product Platform · ES-DC-SL08 3 SKU

05 | Platform Comparison and Trade-offs

SKU-level envelope and operating-point comparison

Values in the same Product Platform are SKU-specific and are not freely combinable.

Product Platform	SKU	Form and length	Continuous point	Electrical	Duty
16 mm Product Platform · ES-DC-SL01	ES-DC-SL01-M001	Housing shape: Round / Body Length: 32 mm	Rated Torque: 0.007 Nm / Rated Speed: 12600 rpm / Continuous Rated Output Power: 9.2 W	Rated Voltage: 24 V / Instantaneous Maximum Current: 1.95 A	Duty Cycle: S2 duty rating
22 mm Product Platform · ES-DC-SL02	ES-DC-SL02-M001	Housing shape: Round / Body Length: 48 mm	Rated Torque: 0.019 Nm / Rated Speed: 10000 rpm / Continuous Rated Output Power: 19.9 W	Rated Voltage: 24 V / Instantaneous Maximum Current: 3.6 A	Duty Cycle: S2 duty rating
28 mm Product Platform · ES-DC-SL03	ES-DC-SL03-M001	Housing shape: Round / Body Length: 58 mm	Rated Torque: 0.05 Nm / Rated Speed: 10000 rpm / Continuous Rated Output Power: 52.4 W	Rated Voltage: 24 V / Instantaneous Maximum Current: 9 A	Duty Cycle: S2 duty rating
36 mm Product Platform · ES-DC-SL04	ES-DC-SL04-M001	Housing shape: Round / Body Length: 72 mm	Rated Torque: 0.125 Nm / Rated Speed: 10000 rpm / Continuous Rated Output Power: 130.9 W	Rated Voltage: 48 V / Instantaneous Maximum Current: 10.8 A	Duty Cycle: S2 duty rating
42 mm Product Platform · ES-DC-SL05	ES-DC-SL05-M001	Housing shape: Round / Body Length: 75 mm	Rated Torque: 0.2 Nm / Rated Speed: 10000 rpm / Continuous Rated Output Power: 209.4 W	Rated Voltage: 48 V / Instantaneous Maximum Current: 16.5 A	Duty Cycle: S2 duty rating
42 mm Product Platform · ES-DC-SL05	ES-DC-SL05-M002	Housing shape: Square / Body Length: 50 mm	Rated Torque: 0.0625 Nm / Rated Speed: 3000 rpm / Continuous Rated Output Power: 19.6 W	Rated Voltage: 24 V / Instantaneous Maximum Current: 3.6 A	Duty Cycle: S2 duty rating
42 mm Product Platform · ES-DC-SL05	ES-DC-SL05-M003	Housing shape: Square / Body Length: 63 mm	Rated Torque: 0.125 Nm / Rated Speed: 3000 rpm / Continuous Rated Output Power: 39.3 W	Rated Voltage: 24 V / Instantaneous Maximum Current: 7.2 A	Duty Cycle: S2 duty rating
42 mm Product Platform · ES-DC-SL05	ES-DC-SL05-M004	Housing shape: Square / Body Length: 75 mm	Rated Torque: 0.185 Nm / Rated Speed: 3000 rpm / Continuous Rated Output Power: 58.1 W	Rated Voltage: 24 V / Instantaneous Maximum Current: 10.8 A	Duty Cycle: S2 duty rating
57 mm Product Platform · ES-DC-SL06	ES-DC-SL06-M001	Housing shape: Square / Body Length: 50 mm	Rated Torque: 0.119 Nm / Rated Speed: 3000 rpm / Continuous Rated Output Power: 37.4 W	Rated Voltage: 24 V / Instantaneous Maximum Current: 6.6 A	Duty Cycle: S1 duty rating
57 mm Product Platform · ES-DC-SL06	ES-DC-SL06-M002	Housing shape: Square / Body Length: 63 mm	Rated Torque: 0.22 Nm / Rated Speed: 3000 rpm / Continuous Rated Output Power: 69.1 W	Rated Voltage: 24 V / Instantaneous Maximum Current: 12.3 A	Duty Cycle: S1 duty rating
57 mm Product Platform · ES-DC-SL06	ES-DC-SL06-M003	Housing shape: Square / Body Length: 75 mm	Rated Torque: 0.33 Nm / Rated Speed: 3000 rpm / Continuous Rated Output Power: 103.7 W	Rated Voltage: 24 V / Instantaneous Maximum Current: 18 A	Duty Cycle: S1 duty rating
60 mm Product Platform · ES-DC-SL07	ES-DC-SL07-M001	Housing shape: Square / Body Length: 50 mm	Rated Torque: 0.15 Nm / Rated Speed: 3500 rpm / Continuous Rated Output Power: 47.1 W	Rated Voltage: 24 V / Instantaneous Maximum Current: 8.1 A	Duty Cycle: S1 duty rating
60 mm Product Platform · ES-DC-SL07	ES-DC-SL07-M002	Housing shape: Square / Body Length: 63 mm	Rated Torque: 0.31 Nm / Rated Speed: 3500 rpm / Continuous Rated Output Power: 97.4 W	Rated Voltage: 24 V / Instantaneous Maximum Current: 16.5 A	Duty Cycle: S1 duty rating

Product Platform	SKU	Form and length	Continuous point	Electrical	Duty
60 mm Product Platform · ES-DC-SL07	ES-DC-SL07-M 003	Housing shape: Square / Body Length: 75 mm	Rated Torque: 0.46 Nm / Rated Speed: 3500 rpm / Continuous Rated Output Power: 144.5 W	Rated Voltage: 24 V / Instantaneous Maximum Current: 24.6 A	Duty Cycle: S1 duty rating
86 mm Product Platform · ES-DC-SL08	ES-DC-SL08-M 001	Housing shape: Square / Body Length: 61 mm	Rated Torque: 0.5 Nm / Rated Speed: 3000 rpm / Continuous Rated Output Power: 157.1 W	Rated Voltage: 48 V / Instantaneous Maximum Current: 14.1 A	Duty Cycle: S1 duty rating
86 mm Product Platform · ES-DC-SL08	ES-DC-SL08-M 002	Housing shape: Square / Body Length: 81 mm	Rated Torque: 1 Nm / Rated Speed: 3000 rpm / Continuous Rated Output Power: 314.1 W	Rated Voltage: 48 V / Instantaneous Maximum Current: 28.2 A	Duty Cycle: S1 duty rating
86 mm Product Platform · ES-DC-SL08	ES-DC-SL08-M 003	Housing shape: Square / Body Length: 101 mm	Rated Torque: 1.5 Nm / Rated Speed: 3000 rpm / Continuous Rated Output Power: 471.2 W	Rated Voltage: 48 V / Instantaneous Maximum Current: 42.3 A	Duty Cycle: S1 duty rating

06 | Selection Path

From application inputs to SKU

01	Retain the installation form Use Frame size, Housing shape and Body Length to retain mechanically compatible Product Platforms and SKUs.
02	Match the continuous operating point Compare Rated Torque, Rated Speed and Continuous Rated Output Power together at the required duty.
03	Check transient demand Confirm instantaneous current, peak torque where stated, acceleration and load inertia against the drive and thermal limits.
04	Match voltage, feedback and interfaces Confirm Rated Voltage, Position Feedback Device, commutation, wiring, shaft, mounting and optional encoder or gearbox requirements.
05	Confirm the Product Platform and SKU Use the retained frame and construction as Product Platform navigation, then confirm the exact SKU using its complete parameter and integration package.

07 | SKU Refinement

Parameters used to move from Product Platform to SKU

Standard parameter	Selection role	Published values
Frame size	Use the frame size as the first installation-envelope constraint.	16 mm / 22 mm / 28 mm / 36 mm / 42 mm / 57 mm / 60 mm / 86 mm
Housing shape	Choose between round-body and square-flange packaging before checking mounting details.	Round / Square
Body Length	Confirm axial space and cable clearance for the retained frame.	32 mm / 48 mm / 58 mm / 72 mm / 75 mm / 50 mm / 63 mm / 61 mm / 81 mm / 101 mm
Rated Torque	Match the continuous load requirement at the required speed.	0.007 Nm / 0.019 Nm / 0.05 Nm / 0.125 Nm / 0.2 Nm / 0.0625 Nm / 0.185 Nm / 0.119 Nm / 0.22 Nm / 0.33 Nm / 0.15 Nm / 0.31 Nm / 0.46 Nm / 0.5 Nm / 1 Nm / 1.5 Nm
Rated Speed	Match the continuous operating speed rather than using no-load speed as the duty point.	12600 rpm / 10000 rpm / 3000 rpm / 3500 rpm
Continuous Rated Output Power	Check together with torque and speed; do not use output power as the only filter.	9.2 W / 19.9 W / 52.4 W / 130.9 W / 209.4 W / 19.6 W / 39.3 W / 58.1 W / 37.4 W / 69.1 W / 103.7 W / 47.1 W / 97.4 W / 144.5 W / 157.1 W / 314.1 W / 471.2 W
Rated Voltage	Match the available DC bus and drive.	24 V / 48 V
Instantaneous Maximum Current	Check acceleration and transient demand against the drive current capacity.	1.95 A / 3.6 A / 9 A / 10.8 A / 16.5 A / 7.2 A / 6.6 A / 12.3 A / 18 A / 8.1 A / 24.6 A / 14.1 A / 28.2 A / 42.3 A
Position Feedback Device	Confirm the feedback interface with the controller.	Hall sensors
Duty Cycle	Confirm the published duty against the application cycle and thermal path.	S2 duty rating / S1 duty rating

Lightweight SKU refinement sequence

01	Confirm form and body length Within the retained frame, distinguish round or square form and the required axial length.
02	Confirm continuous duty Check rated torque, rated speed and continuous output power as one operating point.
03	Confirm drive capacity Match rated voltage and instantaneous current with the drive and power supply.
04	Confirm feedback, duty and integration Check Hall-sensor interface, duty cycle, thermal path, shaft, mounting and required controlled documents before confirming the SKU.

08 | Engineering Information Checklist

Record before RFQ or engineering evaluation

01	Mechanical envelope	Frame size, housing shape, body length, shaft, mounting, coupling, cable route and available cooling surface.
02	Motion profile	Continuous speed and torque, acceleration, peak demand, direction changes, start-stop frequency and duty cycle.
03	Electrical interface	DC bus voltage, continuous and instantaneous current, drive type, commutation, feedback and wiring.
04	Load and transmission	Load inertia, pulley or gearbox ratio, transmission efficiency, radial and axial loads and required positioning behavior.
05	Environment and thermal path	Ambient temperature, enclosure, contamination, cleaning exposure, noise target and heat-removal assumptions.
06	Required documents	SKU Product Datasheet, Dimensional & Integration Guide, 2D drawing and controlled 3D resources.

09 | Engineering Use and Verification Notice

Controlled engineering documents

01	SKU Product Datasheet	Use the current document for exact SKU parameters and configuration verification.
02	Dimensional & Integration Guide	Use the applicable guide and 2D drawing for envelope, shaft, mounting, wiring and installation details.
03	Controlled 3D resources	Request STEP or native CAD for the exact SKU through the controlled engineering-file process.

Final verification statement

This guide supports preliminary Product Platform and SKU selection. Before design freeze, procurement or use, verify the exact SKU, mechanical and electrical interfaces, operating point, transient duty, thermal conditions, feedback, environment and current controlled engineering documents. Do not derive missing torque, speed, current, compatibility or performance values from a SKU code, Product Platform name, adjacent frame or a single rated value.