

CATEGORY SELECTION GUIDE

Miniature Rod-Type Electric Cylinders Category Selection Guide

Miniature rod-type electric cylinders integrate a servo motor, drive electronics and a precision screw in a compact rod actuator to convert rotary motion into controlled linear push and pull motion. A specific configuration must be checked by treating stroke and screw lead together with thrust, speed, acceleration, payload, supply and mounting interfaces.

CATEGORY SELECTION GUIDE

CATEGORY	CURRENT CATALOG	REVISION / ISSUE
Miniature Rod Type Electric Cylinders	1 Product Platforms / 1 SKUs	R01 2026-09-04

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01 | Category Scope and Objective

Item	Current category
Product catalog	1 Product Platform / 1 SKU
Suitable use	The category covers compact rod-type electric cylinders for short-stroke pushing, positioning, transfer, correction and pressing tasks in space-constrained automation equipment and robot end-of-arm assemblies.

02 | Operating Principle and Typical Applications

Compact rod-actuator principle

The Product Platform integrates a servo motor, drive electronics and a precision screw in a compact rod-type actuator. Screw lead changes the available speed, thrust, acceleration and payload combination recorded for the SKU, so those values must be considered together rather than independently.

Typical applications

Pushing and insertion Use controlled rod motion for insertion, pushing and pressing operations where a defined stroke and thrust are required.	Positioning and correction Use the actuator for compact X/Z positioning, alignment correction and stop functions.
Loading and transfer Use the small envelope for loading, unloading and transfer stations where the actuator must fit within a constrained machine layout.	Inspection and assembly Use programmable position, speed and thrust behavior for repeatable inspection or assembly moves.

03 | Application Record Checklist

Application record checklist

01	Work motion	Record stroke, direction, cycle time, acceleration and the required end-of-stroke condition.
02	Load path	Record horizontal or vertical payload, external forces, tooling mass and the required thrust margin.
03	Lead and performance	Record the acceptable screw lead, target speed and thrust combination; do not select one value without its lead condition.
04	Electrical control	Record 24 V DC supply tolerance, peak current, controller choice and communication path.
05	Mechanical envelope	Record mounting faces, rod clearance, bracket stiffness, cable routing and maintenance access.
06	Environment	Record ambient temperature, humidity, dust, liquid exposure and cleaning conditions.
07	Documents	Request the current controlled 2D, STEP/STP and integration records before design freeze.

04 | Product Platform Catalog

Miniature Rod-Type Electric Cylinder Product Platform



Miniature Rod-Type Electric Cylinder Product Platform

A compact rod-type electric cylinder Product Platform for short-stroke positioning, pushing and pressing. The current SKU records 30 mm or 50 mm total stroke options, lead-dependent thrust and speed, ± 0.01 mm repeat positioning accuracy and 24 V DC $\pm 10\%$ operation.

[ES-LA-C00-S020](#)

05 | Technical Selection Path

Selection sequence

01	1	Define stroke and load path
02	2	Select the lead/performance point
03	3	Check accuracy and cycle
04	4	Check electrical integration
05	5	Open the Product Platform
06	6	Confirm the SKU

06 | Product Platform Parameter Matrix

Initial comparison parameters

Parameter	Published value
Maximum Acceleration	2000 mm/s ² (Applicable when screw lead: 1 mm); 3000 mm/s ² (Applicable when screw lead: 2 mm); 3000 mm/s ² (Applicable when screw lead: 4 mm); 3000 mm/s ² (Applicable when screw lead: 6 mm)
Maximum Horizontal Payload	8 kg (Applicable when screw lead: 1 mm); 6 kg (Applicable when screw lead: 2 mm); 3 kg (Applicable when screw lead: 4 mm); 2 kg (Applicable when screw lead: 6 mm)
Maximum Speed	50 mm/s (Applicable when screw lead: 1 mm); 100 mm/s (Applicable when screw lead: 2 mm); 200 mm/s (Applicable when screw lead: 4 mm); 300 mm/s (Applicable when screw lead: 6 mm)
Maximum Vertical Payload	2 kg (Applicable when screw lead: 1 mm); 1.5 kg (Applicable when screw lead: 2 mm); 0.75 kg (Applicable when screw lead: 4 mm); 0.5 kg (Applicable when screw lead: 6 mm)
Minimum Thrust	60 N (Applicable when screw lead: 1 mm); 30 N (Applicable when screw lead: 2 mm); 15 N (Applicable when screw lead: 4 mm); 9 N (Applicable when screw lead: 6 mm)
Operating Voltage	24 V DC $\pm$ 10%
Rated Thrust	200 N (Applicable when screw lead: 1 mm); 100 N (Applicable when screw lead: 2 mm); 50 N (Applicable when screw lead: 4 mm); 30 N (Applicable when screw lead: 6 mm)
Repeat Positioning Accuracy	$\pm$ 0.01 mm
Screw Lead	1 mm (Applicable when screw lead: 1 mm); 2 mm (Applicable when screw lead: 2 mm); 4 mm (Applicable when screw lead: 4 mm); 6 mm (Applicable when screw lead: 6 mm)
Total Stroke	30 mm, 50 mm
Weight	0.47 kg (Applicable when stroke: 30 mm, brake: without brake); 0.55 kg (Applicable when stroke: 50 mm, brake: without brake); 0.54 kg (Applicable when stroke: 30 mm, brake: with brake); 0.62 kg (Applicable when stroke: 50 mm, brake: with brake)

07 | SKU Refinement

SKU refinement checklist

01	SKU identity	Confirm ES-EC-R01-M001 in the project or RFQ record.
02	Performance combination	Reconfirm that the selected screw lead, stroke and brake condition correspond to the displayed thrust, speed, acceleration, payload and weight values.
03	Mechanical fit	Confirm mounting, rod travel, clearance, bracket stiffness and the complete moving mass.
04	Control and supply	Confirm 24 V DC $\pm$ 10%, peak current, controller-dependent communication and cable routing.
05	Controlled documents	Request the current 2D drawing, STEP/STP record and integration information for the selected configuration.

08 | Integration Checklist

Integration checks

01	Mounting	Align the cylinder with the load path, support the actuator body and prevent side loading on the rod.
02	Stroke and clearance	Reserve the full 30 mm or 50 mm stroke option plus end clearances, tooling and service access.
03	Load and duty	Use the lead-specific thrust, speed, acceleration and payload values together with the actual duty cycle; verify external moments and shock separately.
04	Electrical and control	Provide the stated 24 V DC supply, confirm controller selection and validate the communication path before commissioning.

09 | Engineering Use and Verification Notice

Engineering use and verification

The values in this guide are a category-level navigation aid based on the cited published standard-parameter records and collected engineering material. Before design freeze, confirm the exact SKU, mechanical and electrical interfaces, duty cycle and the current controlled Datasheet and Dimensional & Integration Guide. Do not infer an unrecorded value from a SKU code or a single rated value.