ENGINEERING DOCUMENTATION

Miniature Rod-Type Electric Cylinder

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-EC-R01-M001	DRAFT-08 / 28 Aug 2026	Engineering Integration Reference

Integration Overview

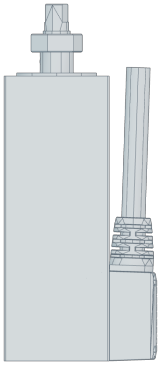
Compact electric linear actuator for precision positioning, tooling and automation integration. This guide supports envelope, mounting, load-path, motion, cable, commissioning and service planning for ES-EC-R01-M001.

Key Integration Facts

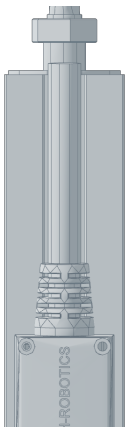
INTEGRATION ITEM	VALUE
Minimum Thrust	60 N (Applicable when screw lead: 1 mm); 30 N (Applicable when screw lead: 2 mm); 15 N (Applicable when screw lead: 4 mm); 9 N (Applicable when screw lead: 6 mm) N
Maximum Acceleration	2000 mm/s² (Applicable when screw lead: 1 mm); 3000 mm/s² (Applicable when screw lead: 2 mm); 3000 mm/s² (Applicable when screw lead: 4 mm); 3000 mm/s² (Applicable when screw lead: 6 mm) mm/s²
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) kg
Peak Current	3 A
Continuous Rated Current	1.5 A
Continuous Rated Output Power	36 W
Mechanical Backlash	≤0.1 mm
Repeat Positioning Accuracy	±0.01 mm

3D Orientation and Interface Views

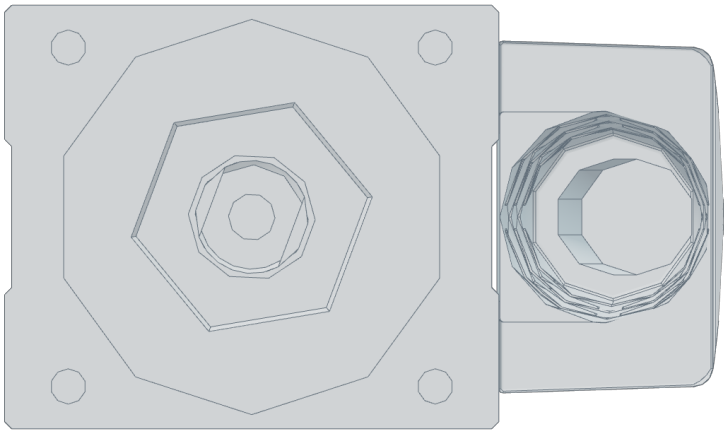
The front, right-side and top views are retained because each exposes a different integration relationship: moving-axis orientation, actuator side envelope and cable or motor-side projection. Dimensions remain governed by the applicable 2D drawing and exact-SKU parameters.



Front View



Right Side View

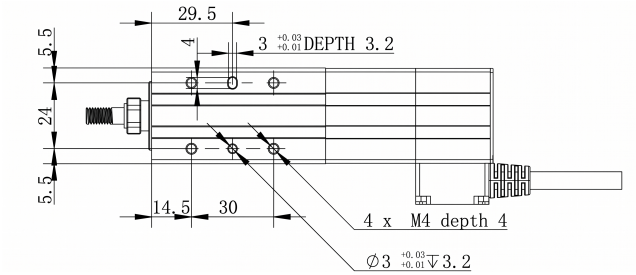


Top View

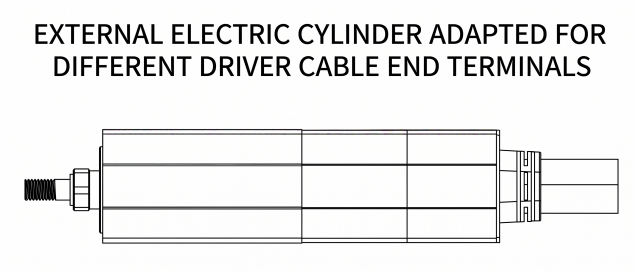
Each selected view contributes a distinct orientation or interface relationship used by the integration guidance.

Product Structure & Views

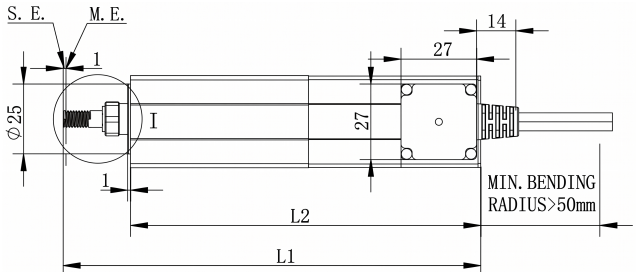
These views present the selected product structure, mounting interfaces and relevant integration geometry for this configuration.



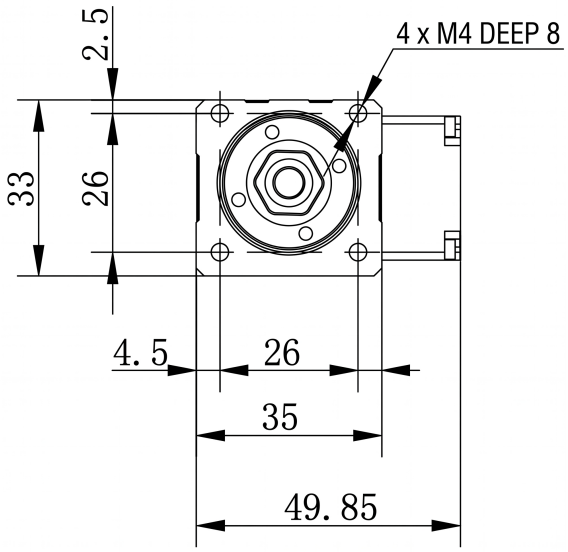
Mechanical View 2



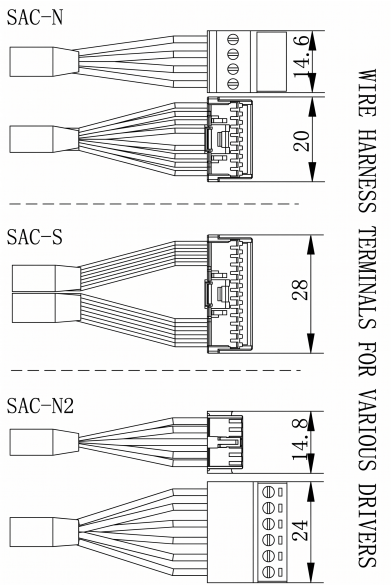
Mechanical View 3



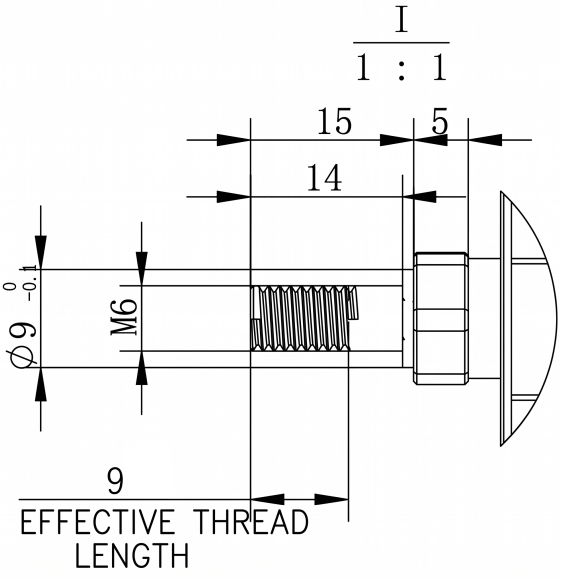
Mechanical View 4



Mechanical View 5



Mechanical View 6



Mechanical View 7

VIEW	FIELD	VALUE
Mechanical View 2	Top mounting hole horizontal position	29.5 mm
	Upper edge offset	5.5 mm
	Upper hole diameter/depth callout with tolerance	3 mm, +0.03/+0.01 tolerance, depth 3.2 mm
	Main body vertical height	24 mm
	Lower edge offset	5.5 mm
	Left mounting hole horizontal position	14.5 mm
	Mounting hole horizontal spacing	30 mm
	Threaded hole specification	4 x M4 threaded holes, depth 4 mm
	Dowel/locating hole specification	Diameter 3 mm, +0.03/+0.01 tolerance, depth 3.2 mm
Mechanical View 4	Right end axial length	14 mm
	Right mounting section axial length	27 mm
	Left end clearance or step dimension	1 mm
	Left end diameter	Diameter 25 mm
	Right mounting face height or width	27 mm
	Detail view identifier	Detail I
	L2 length	L2 value Not specified in this crop
	L1 length	L1 value Not specified in this crop
Mechanical View 5	Top edge offset	2.5 mm
	Mounting threaded holes and depth	4 × M4 threaded holes, depth 8 mm
	Mounting face overall height	33 mm
	Vertical mounting hole center distance	26 mm
	Left edge to mounting hole center offset	4.5 mm
	Horizontal mounting hole center distance	26 mm
	Mounting face width	35 mm
	Overall width / envelope width	49.85 mm
Mechanical View 7	Detail view identifier	Detail I
	Axial length	15 mm
	End axial length	5 mm
	Axial length	14 mm
	Outer diameter with tolerance	Diameter 9 mm, +0/-0.1 mm
	Thread specification	M6 thread
	Effective thread length	Effective thread length 9 mm

Technical Specifications - 1

PARAMETER	VALUE	UNIT
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)	N
Maximum Acceleration	2000 mm/s² (Applicable when screw lead: 1 mm); 3000 mm/s² (Applicable when screw lead: 2 mm); 3000 mm/s² (Applicable when screw lead: 4 mm); 3000 mm/s² (Applicable when screw lead: 6 mm)	mm/s²
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Peak Current	3	A
Continuous Rated Current	1.5	
Continuous Rated Output Power	36	W
Mechanical Backlash	±0.1	mm
Repeat Positioning Accuracy	±0.01	

Technical Specifications - 2

PARAMETER	VALUE	UNIT
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)	mm
Compliance Standards	CE, FCC, RoHS, TUV	
Communication Protocol	External control: determined by the selected controller	

Mounting and Load Path

- Support the complete mounting face, preserve locating datums and verify fastener engagement for the installed load path.
- Validate thrust, side load, moment, duty cycle and acceleration for the complete mechanism; do not use component ratings as a machine-level approval.

Motion, Cable and Commissioning

- Keep the full moving envelope clear, provide strain relief through the complete stroke and prevent cable forces from biasing motion.
- Commission at reduced energy and verify homing, travel limits, repeatability, temperature and fault handling before automatic operation.

Integration Checklist

01	Confirm the exact-SKU drawing and parameter set.
02	Verify mounting datums, fasteners and the complete actuator envelope.
03	Validate stroke, speed, thrust, load path and side-load boundaries.
04	Provide cable clearance and strain relief through the complete travel.
05	Commission at reduced energy and verify homing, limits, repeatability and fault behavior.

View SKU Product Datasheet Request controlled 2D drawing Request controlled STEP review Request a Quote

Engineering Use and Verification Notice

01. This Dimensional & Integration Guide applies only to EmbodyStack SKU ES-EC-R01-M001 and is intended for dimensional evaluation and preliminary integration. It is not a manufacturing drawing, machine-level load approval, wiring final integration, safety validation or production authorization. Before design freeze, installation or commissioning, verify all dimensions, interfaces, fits, fasteners, loads, motion limits, cable requirements, environmental boundaries and maintenance requirements against the applicable EmbodyStack engineering documentation for this exact SKU. Validate the complete installed system under intended operating and fault conditions.