

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-L01-060S-V48-T1P27NM-400W-004	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

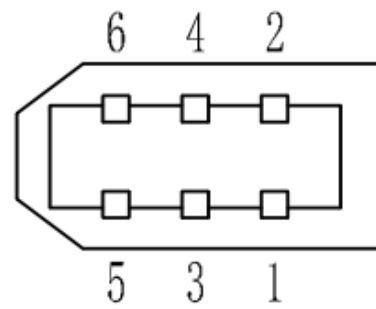
Integration Overview

Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

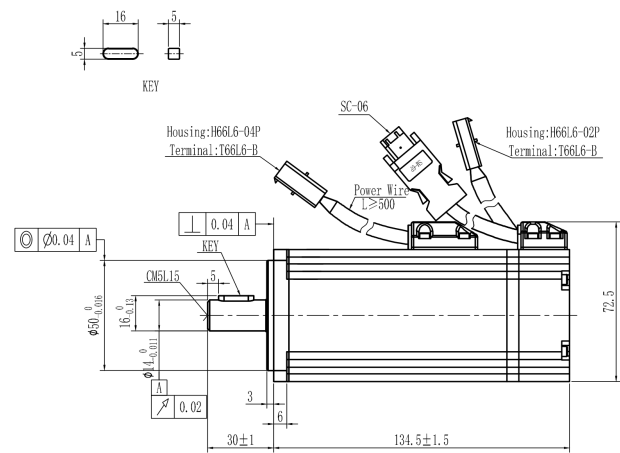
Key Integration Facts

INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	1.27 N·m
Rated Speed	3000 rpm
Rated Voltage	48 VDC
Flange Size	60 mm

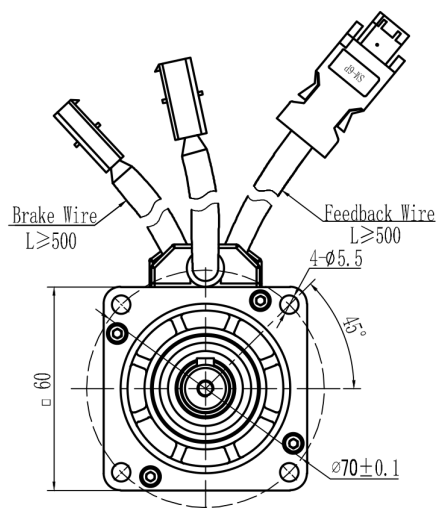
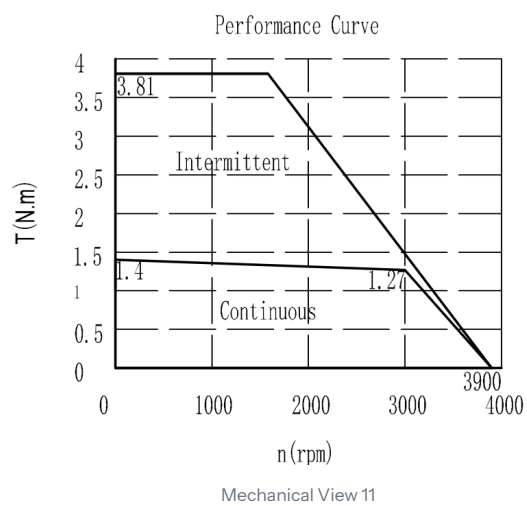
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



Mechanical View 4



Mechanical View 7



VIEW	FIELD	VALUE
Mechanical View 3	Connector pin number 1	Pin 1
	Connector pin number 2	Pin 2
	Connector pin number 3	Pin 3
	Connector pin number 4	Pin 4
Mechanical View 4	Feedback connector pin 6	Pin number 6
	Feedback connector pin 4	Pin number 4
	Feedback connector pin 2	Pin number 2
	Feedback connector pin 5	Pin number 5
	Feedback connector pin 3	Pin number 3
	Feedback connector pin 1	Pin number 1
Mechanical View 6	Connector terminal number 2	Terminal position 2
	Connector terminal number 1	Terminal position 1
Mechanical View 7	Keyway length	16 mm
	Keyway width	5 mm
	Power wire minimum length	L ≥500 mm
	Perpendicularity tolerance	0.04 relative to datum A
	Housing height	72.5 mm
	Output shaft diameter	∅30 0/-0.016 mm
	Shaft extension length	16 0/-0.013 mm
	Shaft journal diameter	∅14 0/-0.011 mm
	Datum A	Datum A (shaft end face)
	Chamfer or angular tolerance	0.02 (chamfer/angle tolerance)
	Shaft shoulder height	3 mm
	Shaft shoulder width	6 mm
	Shaft end to mounting face distance	30±1 mm
	Motor overall length	134.5±1.5 mm
	Position tolerance	Position tolerance ∅0.04 relative to datum A
	Key Width	5 mm
Mechanical View 9	Feedback wire label	Feedback wire
	Brake wire label	Brake wire
	Feedback wire length	L ≥= 500
	Brake wire length	L ≥= 500
	Mounting hole quantity and diameter	4 holes, diameter 5.5
	Square mounting face size	Square 60
	Mounting hole pitch circle diameter	Diameter 70 ± 0.1
	Mounting hole angular position	45 degrees

VIEW	FIELD	VALUE
Mechanical View 11	Chart title	Performance Curve
	Y-axis parameter	Torque T, unit N.m
	X-axis parameter	Speed n, unit rpm
	Torque axis scale range	Torque scale from 0 to 4 N.m in 0.5 N.m increments
	Speed axis scale range	Speed scale from 0 to 4000 rpm in 1000 rpm increments
	Intermittent operating region	Intermittent operating curve with marked torque value 3.81 N.m
	Continuous operating region	Continuous operating curve with marked torque values 1.4 N.m and 1.27 N.m
	Marked maximum speed	3900 rpm marked near curve endpoint

Overall Dimensions and Mounting Interface

PARAMETER	PUBLISHED VALUE	UNIT
Flange Size	60	mm

- Confirm the mounting face, locating feature, shaft geometry, fastener engagement and removal clearance against the applicable exact-SKU drawing.
- Mount the motor on a flat, rigid interface and avoid using fasteners to pull a misaligned assembly into position.

Shaft, Coupling and Load Path

PARAMETER	PUBLISHED VALUE	UNIT
Rotor Inertia	0.38 / 0.384	Kg·cm ²

- Align the driven shaft and coupling before tightening; validate radial, axial and moment loads against applicable bearing-load data.
- Do not hammer, uncontrolled press-fit or transmit installation force through the motor bearings.

Electrical, Feedback and Brake Integration

PARAMETER	PUBLISHED VALUE	UNIT
Rated Voltage	48	VDC

- Use only the current winding, feedback, brake and connector definitions for this exact SKU.
- Verify drive compatibility, polarity, current limits, feedback direction and brake sequencing before enabling torque.

Thermal, Duty and Environmental Conditions

PARAMETER	PUBLISHED VALUE	UNIT
Rated Torque	1.27	N·m
Operating Temperature	-20 to 40	°C

- Validate winding and housing temperature under the installed duty cycle, ambient condition, mounting heat path and enclosure airflow.
- Published peak values are transient boundaries and must not be treated as continuous operating ratings.

Cable Routing, Grounding and EMC

- Provide strain relief and bend radius through the full machine motion envelope.
- Separate motor power, brake and feedback wiring and terminate shields according to the specified system grounding architecture.

Commissioning and Motion Validation

PARAMETER	PUBLISHED VALUE	UNIT
Rated Speed	3000	rpm
Rated Torque	1.27	N·m

- Commission at low energy with the transmission unloaded or safely restrained, then confirm direction, feedback polarity, brake final integration, current limit and fault response.
- Validate the complete axis through intended acceleration, speed, load, stop and fault cycles during integration planning.

Integration Checklist

- | | |
|----|--|
| 01 | Confirm the exact SKU, 2D drawing and applicable wiring data. |
| 02 | Verify mounting, shaft, coupling, alignment, fasteners and removal clearance. |
| 03 | Validate radial and axial loads, inertia, acceleration and credible shock cases. |
| 04 | Confirm drive, winding, feedback, brake and connector compatibility. |
| 05 | Set current, speed, acceleration and thermal limits from the installed duty cycle. |
| 06 | Verify cable routing, shielding, grounding, strain relief and bend radius. |
| 07 | Commission at low energy before validating the full machine cycle. |

[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-SM-L01-060S-V48-T1P27NM-400W-004 and is intended for dimensional evaluation and preliminary integration. It is not a applicable manufacturing drawing, wiring definition, application approval, machinery risk assessment, safety validation or integration planning document. Before design freeze, machining, wiring or energization, verify all dimensions, tolerances, mounting and locating features, load boundaries, electrical interfaces, thermal conditions, cabling, grounding, protection, commissioning and applicable regulatory requirements against the applicable EmbodyStack engineering data for this exact SKU. Where this guide and applicable product documentation differ, the applicable product documentation governs. Validate the complete installed system under intended duty cycles, loads, accelerations, environmental conditions and credible fault cases.