

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-L01-060S-V48-TOP64NM-200W-002	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

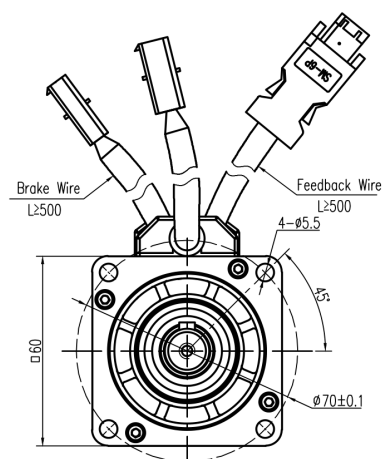
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

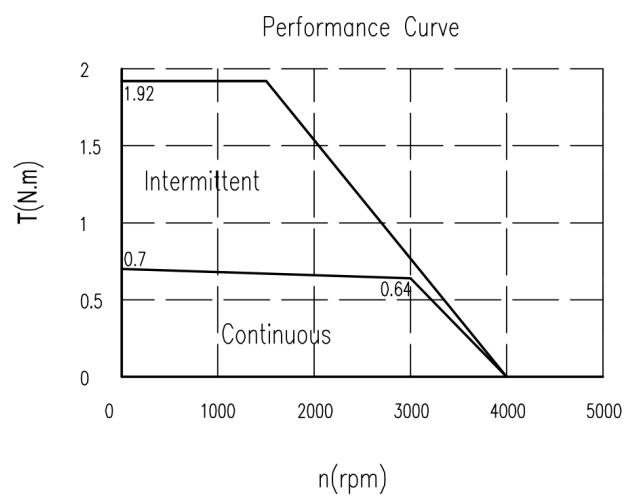
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	0.64 Nm
Rated Speed	3000 rpm
Rated Voltage	48 VDC
Flange Size	60 mm

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





Mechanical View 13



Mechanical View 14

VIEW	FIELD	VALUE
Mechanical View 4	Connector pin number layout	Connector pin layout: top row 6-4-2, bottom row 5-3-1
Mechanical View 5	Connector terminal number 2	Terminal/pin label 2
	Connector terminal number 1	Terminal/pin label 1
	Connector terminal number 3	Terminal/pin label 3
	Connector terminal number 4	Terminal/pin label 4
Mechanical View 7	Left connector cavity number	Connector cavity 2
	Right connector cavity number	Connector cavity 1
Mechanical View 12	Key width	16
	Key height	5
	Key feature label	KEY
	Power wire label	Power Wire
	Minimum cable length	L ≥500
	Perpendicularity tolerance to datum A	Perpendicularity 0.04 to datum A
	Cylindrical feature geometric tolerance to datum A	Geometric tolerance $\perp$ 0.04 to datum A
	Key feature label on shaft	KEY
	Shaft end callout	CM5L15
	Local keyway dimension	5
	Motor body height	72.5
	Pilot diameter with tolerance	Diameter 50 +0/-0.016
	Angularity tolerance	Angularity 0.02 mm
	Datum A	Datum A
	Hole diameter	Ø14 0/-0.011 mm
	Keyway length	16 -0.13 mm
	Mounting depth or offset	3 mm
	Mounting width or spacing	6 mm
	Axial length (near section)	30±1 mm
	Axial length (far section)	75±1.5 mm
	Key Width	5 mm
Mechanical View 13	Feedback wire label	Feedback wire
	Feedback wire length	Length at least 500 mm
	Brake wire label	Brake wire
	Brake wire length	Length at least 500 mm
	Mounting hole quantity and diameter	4 holes, diameter 5.5 mm
	Mounting hole angular position	45 degrees
	Square flange envelope size	Square 60 mm envelope
	Mounting hole pitch circle diameter	Pitch circle diameter 70 ±0.1 mm

VIEW	FIELD	VALUE
Mechanical View 14	Chart title	Performance Curve
	Torque axis label	Torque axis label, unit Nm
	Speed axis label	Speed axis label, unit rpm
	Intermittent operating region label	Intermittent
	Continuous operating region label	Continuous
	Peak torque value	2
	Intermittent torque value	1.92
	Torque axis tick value	1.5
	Continuous torque value	0.7
	Continuous curve transition torque value	0.64
	Torque axis tick value	0.5
	Zero tick value	0
	Speed axis tick value	1000
	Speed axis tick value	2000
	Speed axis tick value	3000
	Speed axis tick value	4000
	Speed axis tick value	5000
	Torque axis tick value	1

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	0.204 / 0.2	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	0.64	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	0.64	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-TOP64NM-200W-002 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.