

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-L01-060S-V48-TOP64NM-200W-003	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

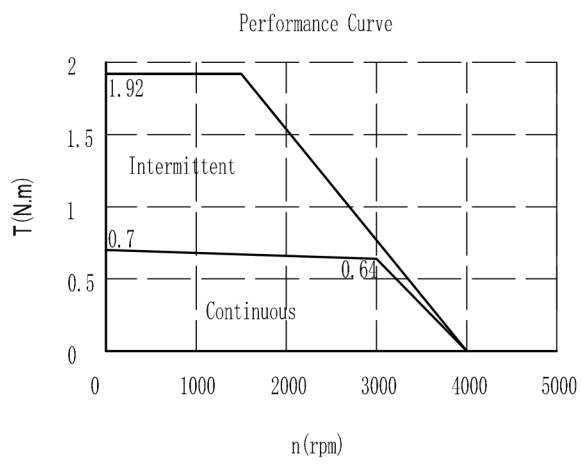
A 3x3 grid with numbers 1 through 6. The numbers are arranged as follows: 6, 4, 2 in the top row; 5, 3, 1 in the bottom row. A path is highlighted with a thick line, starting at the top-left cell (6), moving right to the middle cell (4), then right to the right cell (2), then down to the bottom-right cell (1), then left to the bottom-middle cell (3), then left to the bottom-left cell (5), and finally up to the top-left cell (6).

2	1
4	3

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Technical drawing of the sensor head assembly. The drawing shows a top view of a square base with a circular sensor element in the center. Two wires, labeled "Power Wire" and "Feedback Wire", are connected to the top of the assembly. Dimensions include a square base of 60, a central hole of 4-Ø5.5, a 45-degree angle for the wire exit, and an outer diameter of Ø70±0.1 for the sensor element.

2 / 8



Mechanical View 8

VIEW	FIELD	VALUE
Mechanical View 2	Connector upper row left pin number	Pin 6
	Connector upper row middle pin number	Pin 4
	Connector upper row right pin number	Pin 2
	Connector lower row left pin number	Pin 5
	Connector lower row middle pin number	Pin 3
	Connector lower row right pin number	Pin 1
Mechanical View 4	Connector terminal position 1	Terminal position 1
	Connector terminal position 2	Terminal position 2
	Connector terminal position 3	Terminal position 3
	Connector pin number 4	Pin 4
Mechanical View 5	Key width	16 mm
	Key height	5 mm
	Connector housing part number	H66L6-04P
	Terminal part number	T66L6-B
	Cable minimum length	±500 mm
	Position tolerance relative to datum A	Position tolerance Ø0.04 relative to datum A
	Concentricity tolerance Ø4 relative to datum A	Concentricity Ø0.04 for Ø4 feature relative to datum A
	Key location marker	KEY
	Keyway depth	5 mm
	Internal component code	CM5L15
	Overall height	72.5 mm
	Shaft small section length with tolerance	16 -0.13 mm
	Shaft major diameter with tolerance	Ø50 0/-0.016 mm
	Perpendicularity tolerance	Perpendicularity 0.02 mm
	Datum A	Datum A
	Mounting hole offset	3 mm
	Mounting hole depth or spacing	6 mm
	Motor front section length	30±1 mm
	Overall motor length	75±1.5 mm
	Key Width	5 mm
	Hole diameter	14 mm with tolerance 0/-0.01
Mechanical View 6	Power wire label	Power Wire
	Feedback wire label	Feedback Wire
	Mounting hole quantity and diameter	4 holes, diameter 5.5 mm
	Mounting hole angular position	45 degrees
	Square flange envelope size	Square 60 mm

VIEW	FIELD	VALUE
Mounting hole pitch circle diameter	Diameter 70 mm, tolerance ± 0.1 mm	
Connector housing marking	Connector marking d9-HJS	
Mechanical View 8	Chart title	Performance curve
	Torque vertical axis	Torque T in N.m
	Speed horizontal axis	Speed n in rpm
	Intermittent operating curve label	Intermittent operation curve
	Continuous operating curve label	Continuous operation curve
	Intermittent torque callout	1.92 N.m
	Continuous torque callout	0.7 N.m
	Continuous curve torque callout	0.64 N.m
	Torque axis tick values	Torque ticks: 0, 0.5, 1, 1.5, 2 N.m
	Speed axis tick values	Speed ticks: 0, 1000, 2000, 3000, 4000, 5000 rpm

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

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|----|--|
| 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-003 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.