

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-L01-060S-V48-T1P27NM-400W-003	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

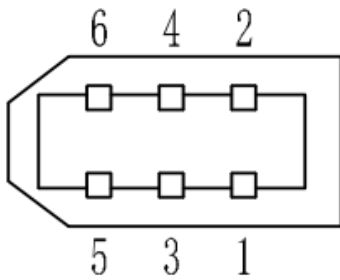
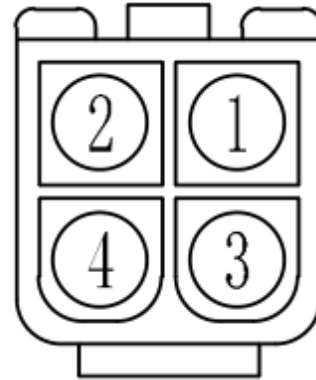
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

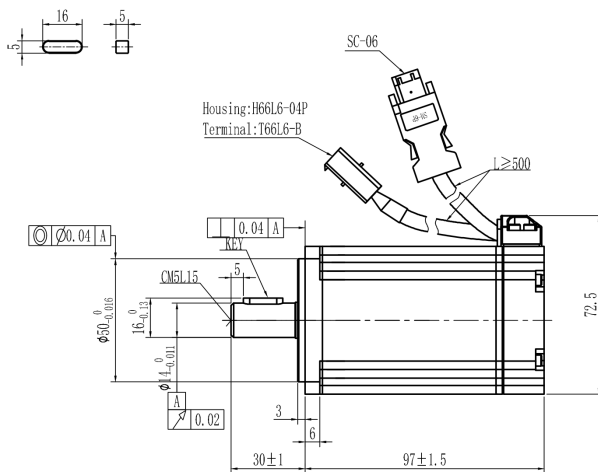
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	1.27 N·m
Rated Speed	3000 rpm
Rated Voltage	48 VDC
Flange Size	60 mm

Product Structure & Views

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

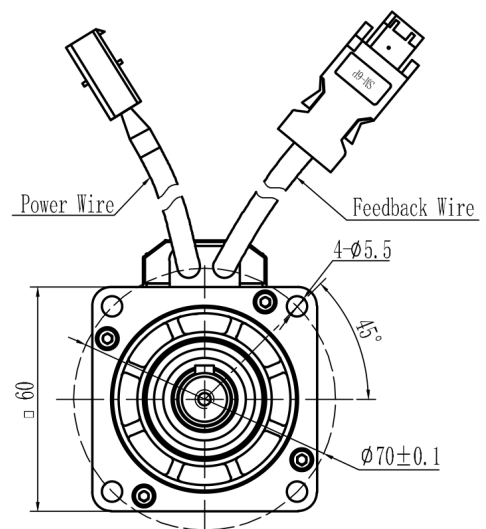


Mechanical View 2

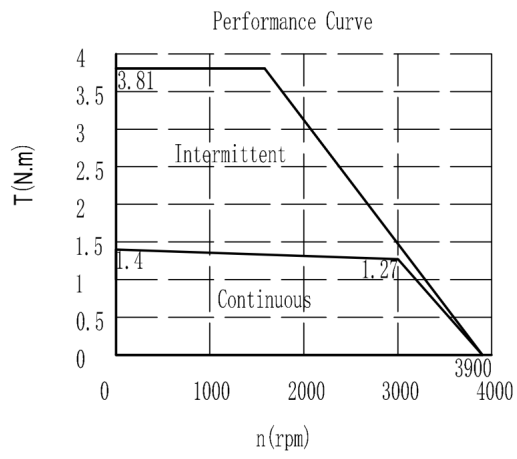


Mechanical View 5

Mechanical View 4



Mechanical View 6



Mechanical View 8

VIEW	FIELD	VALUE
Mechanical View 2	Connector Pin 6	Pin 6
	Connector Pin 4	Pin 4
	Connector Pin 2	Pin 2
	Connector Pin 5	Pin 5
	Connector Pin 3	Pin 3
	Connector Pin 1	Pin 1
Mechanical View 4	Connector terminal number 2	Terminal position 2
	Connector terminal number 1	Terminal position 1
	Connector terminal number 4	Terminal position 4
	Connector terminal number 3	Terminal position 3
Mechanical View 5	Connector width	16 mm
	Minimum cable length	L ≥500 mm
	Position tolerance	Position tolerance 0.04 mm relative to datum A
	Position tolerance	Position tolerance 0.04 mm relative to datum A
	Keyway label	Keyway
	Keyway width	5 mm
	Overall length	72.5 mm
	Shaft diameter	16 mm with tolerance 0/-0.13
	Main shaft diameter	50 mm with tolerance 0/-0.016
	Hole diameter	14 mm with tolerance 0/-0.01
	Flatness tolerance	0.02 mm
	Mounting dimension	3 mm
	Mounting dimension	6 mm
	Mounting section length	30±1 mm
	Overall length	97±1.5 mm
	Key Height	5 mm
	Key Width	5 mm
	Datum A	Datum A
Mechanical View 6	Power Wire Label	Power Wire
	Feedback Wire Label	Feedback Wire
	Mounting Hole Diameter and Count	4× $\varnothing$ 5.5
	Mounting Hole Angular Distribution	45°
	Motor Square Housing Dimension	60×60
	Mounting Hole PCD (Pitch Circle Diameter)	$\varnothing$ 70±0.1
Mechanical View 8	Performance curve title	Performance Curve
	Torque axis label	Torque T in N.m

VIEW	FIELD	VALUE
Speed axis label	Rotational speed n in rpm	
Torque axis scale values	Torque scale from 0 to 4 N.m in 0.5 N.m increments	
Speed axis scale values	Speed scale from 0 to 4000 rpm in 1000 rpm increments	
Intermittent operation curve label	Intermittent operation curve	
Continuous operation curve label	Continuous operation curve	
Intermittent torque callout	Intermittent torque callout 3.81 N.m	
Continuous torque callout	Continuous torque callout 1.4 N.m	
Continuous curve intermediate torque callout	Continuous curve callout 1.27 N.m	
Maximum speed callout	Speed callout 3900 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	0.38 / 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-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.