

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-A01-060S-T1P27NM-400W-008	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

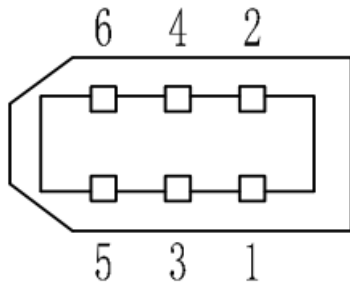
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

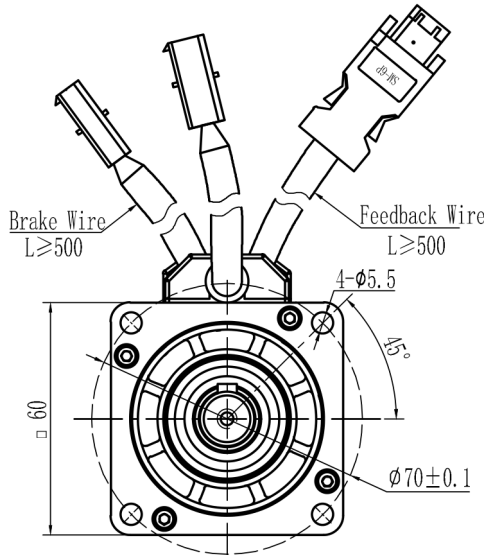
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	1.27 N·m
Rated Speed	3000 rpm
Flange Size	60 mm

Product Structure & Views

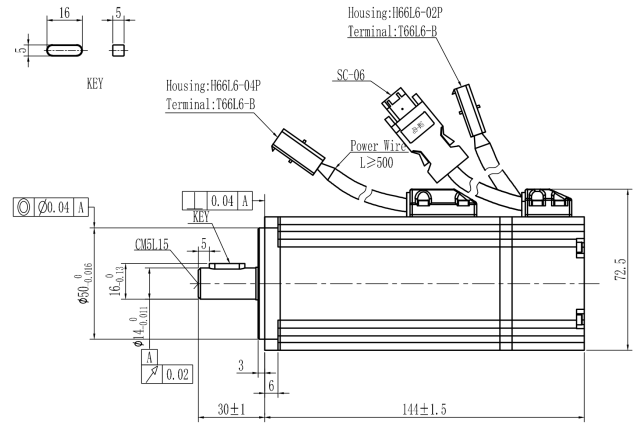
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



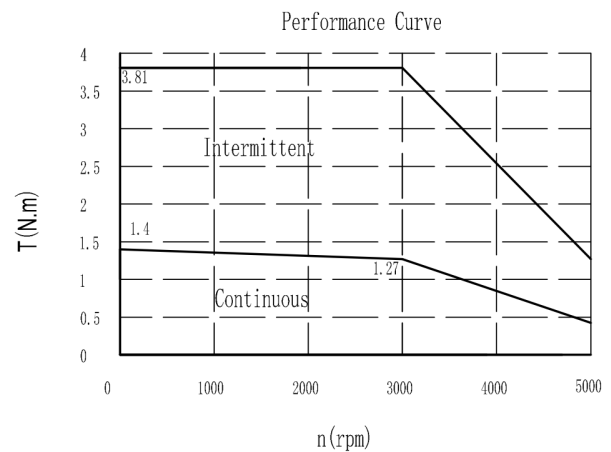
Mechanical View 2



Mechanical View 10



Mechanical View 8



Mechanical View 12

VIEW	FIELD	VALUE
Mechanical View 2	Top row left pin designation	Pin 6
	Top row middle pin designation	Pin 4
	Top row right pin designation	Pin 2
	Bottom row left pin designation	Pin 5
	Bottom row middle pin designation	Pin 3
	Bottom row right pin designation	Pin 1
Mechanical View 8	Key size	Key size 16 × 5
	Connector designation	Designation SC-06
	Wire type	Power wire
	Cable length requirement	Cable length L ≥500 mm
	Geometric tolerance	Geometric tolerance 0.04 relative to datum A
	Shaft-end thread/tapped hole callout	Visible callout CM5L15
	Front related diameter	Diameter Φ 0 with tolerance +0 / -0.016
	Output shaft diameter	Diameter Φ 6 with tolerance +0 / -0.13
	Pilot/shoulder diameter	Diameter Φ 4 with tolerance +0 / -0.011
	Geometric tolerance value	Geometric tolerance value 0.02
	Shoulder length	Length 3 mm
	Front step length	Length 6 mm
	Shaft extension length	Length 30 ±1 mm
	Overall length	Overall length 144 ±1.5 mm
	Overall height direction dimension	Overall height direction dimension 72.5 mm
	Datum A related geometric tolerance	Geometric tolerance 0.04 relative to datum A
	Key feature designation	Key feature indicated
	Key Height	5 mm
	End step offset dimension	5 mm
Mechanical View 10	Brake wire	Brake wire, minimum length 500 mm
	Feedback wire	Feedback wire, minimum length 500 mm
	Mounting hole diameter	4 holes, diameter 5.5 mm
	Square size	Square 60 mm
	Angle	45 degrees
	Diameter with tolerance	Diameter 70 mm ±0.1 mm
	Connector marking	SM-6P connector marking
Mechanical View 12	Performance Curve Title	Performance Curve
	Y-Axis Label (Torque)	T(N.m)
	X-Axis Label (Speed)	n(rpm)
	Intermittent Operation Mode Label	Intermittent

VIEW	FIELD	VALUE
Continuous Operation Mode Label	Continuous	
Intermittent Peak Torque	3.81 N.m	
Continuous Starting Torque	1.4 N.m	
Continuous Torque at 3000 rpm	1.27 N.m at 3000 rpm	
Speed Range Scale	0 to 5000 rpm	
Torque Range Scale	0 to 4 N.m	

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	0.384	kgcm 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
Position Feedback Device	23-bit multi-turn communication optical absolute encoder	

- 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	Nm
Operating Temperature	20 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

PARAMETER	PUBLISHED VALUE	UNIT
Position Feedback Device	23-bit multi-turn communication optical absolute encoder	

- 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	Nm

- 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-A01-060S-T1P27NM-400W-008 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.