

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-A01-060S-T1P27NM-400W-006	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

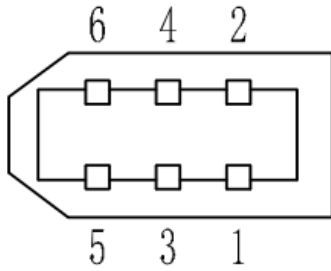
Integration Overview

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.

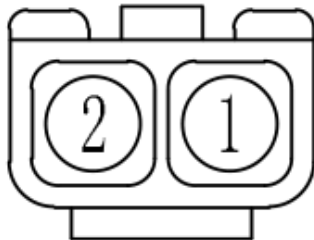
Key Integration Facts

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

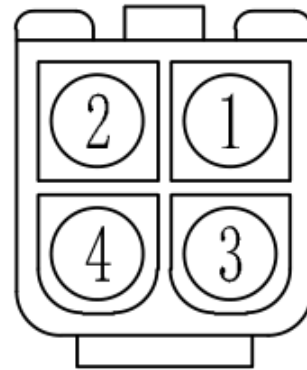
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



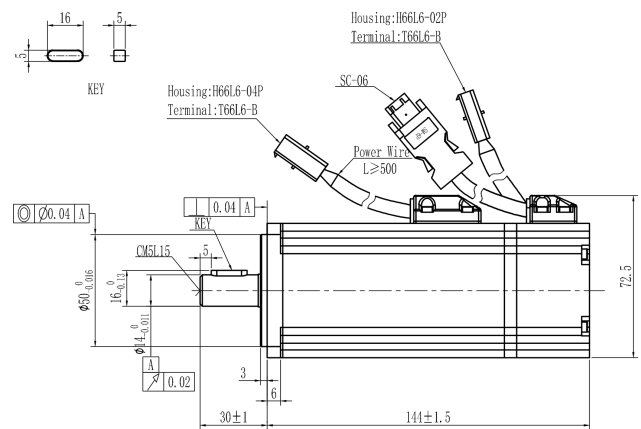
Mechanical View 2



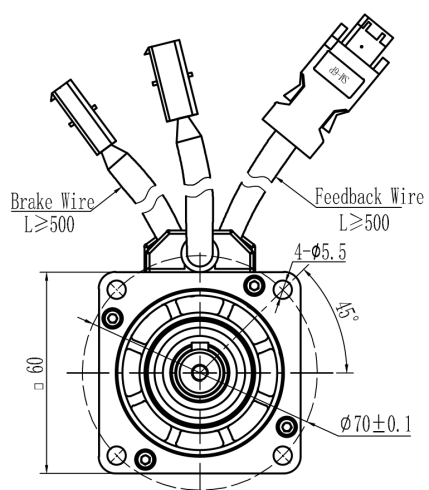
Mechanical View 6



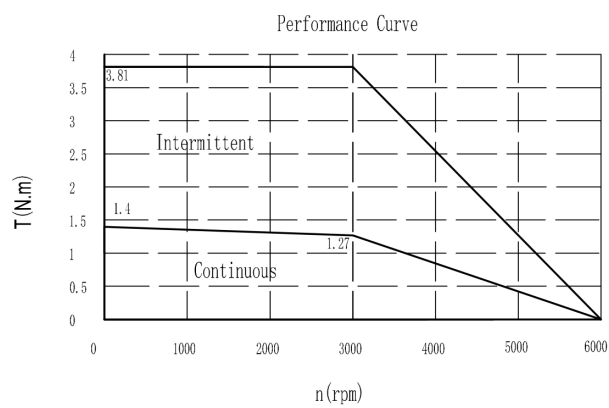
Mechanical View 4



Mechanical View 7



Mechanical View 8



Mechanical View 11

VIEW	FIELD	VALUE
Mechanical View 2	Pin 6 identifier	Pin 6
	Pin 4 identifier	Pin 4
	Pin 2 identifier	Pin 2
	Pin 5 identifier	Pin 5
	Pin 3 identifier	Pin 3
	Pin 1 identifier	Pin 1
Mechanical View 4	Connector pin position identifier - Position 2	Pin position 2
	Connector pin position identifier - Position 1	Pin position 1
	Connector pin position identifier - Position 3	Pin position 3
	Connector pin position identifier - Position 4	Pin position 4
Mechanical View 6	Terminal pin number 2	Pin 2
	Terminal pin number 1	Pin 1
Mechanical View 7	Keyway width	16 mm
	Keyway depth	5 mm
	Power wire minimum length	≥500 mm
	Perpendicularity tolerance to datum A	0.04 A
	Keyway designation	KEY
	Shaft diameter	Φ50 0/-0.016 mm
	Keyway width with tolerance	16 0/-0.13 mm
	Shaft shoulder diameter	Φ40 0/-0.011 mm
	Keyway height	5 mm
	Position tolerance to datum A	0.04 A
	Datum reference A	Datum A
	Surface flatness/parallelism tolerance	0.02 mm
	Mounting hole spacing	3 mm
	Mounting hole offset	6 mm
	Axial length (local)	30±1 mm
	Overall length	144±1.5 mm
	Housing diameter/radius	72.5 mm
	Key Width	5 mm
Mechanical View 8	Feedback wire connector type	SM-6P connector
	Feedback wire minimum length	L ≥500 mm
	Brake wire minimum length	L ≥500 mm
	Mounting hole diameter and quantity	4 holes × Φ5.5 mm
	Mounting hole angular position	45° angular spacing
	Square mounting face dimension	60 mm × 60 mm square

VIEW	FIELD	VALUE
Mounting hole pattern circle diameter	$\varnothing 0 \pm 0.1$ mm PCD	
Mechanical View 11	Y-axis label	Torque in Newton-meters
	X-axis label	Speed in revolutions per minute
	Intermittent operation curve	Intermittent torque-speed curve label
	Continuous operation curve	Continuous torque-speed curve label
	Intermittent peak torque	3.81 N.m
	Continuous rated torque	1.4 N.m
	Continuous mid-speed torque	1.27 N.m
	Torque scale values	0, 0.5, 1, 1.5, 2, 2.5, 3, 3.5, 4 Nm
	Speed scale values	0, 1000, 2000, 3000, 4000, 5000, 6000 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	0.384	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	Single-turn communication optical 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	Single-turn communication optical 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-006 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.