

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-A01-080S-T2P39NM-750W-005	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

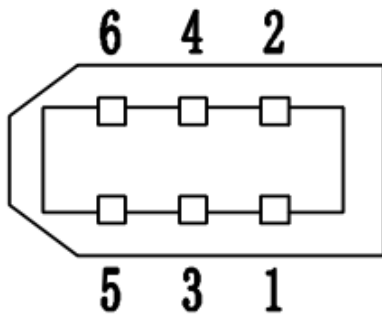
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

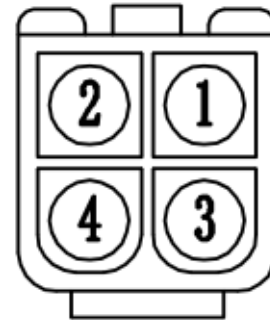
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	2.39 N·m
Rated Speed	3000 rpm
Flange Size	80 mm

Product Structure & Views

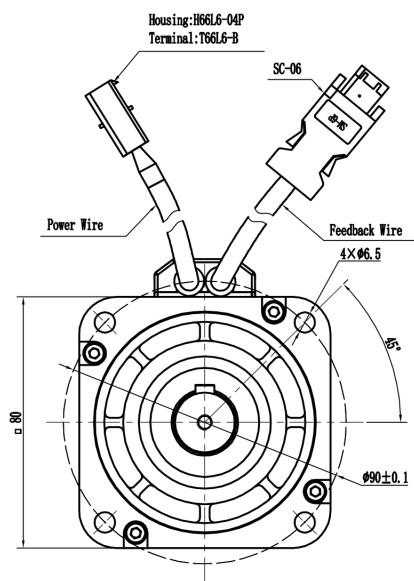
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



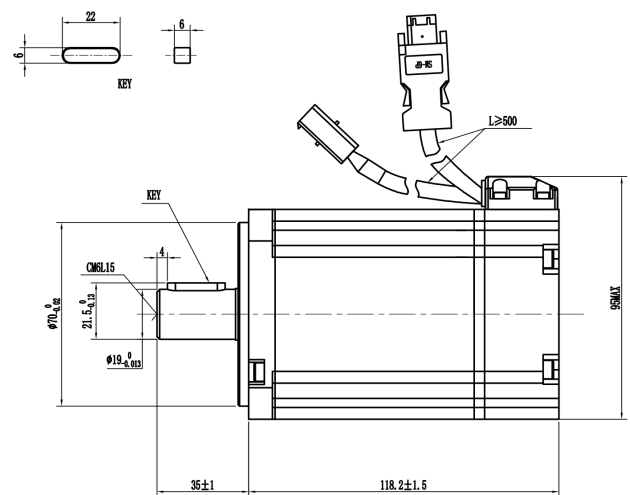
Mechanical View 3



Mechanical View 4

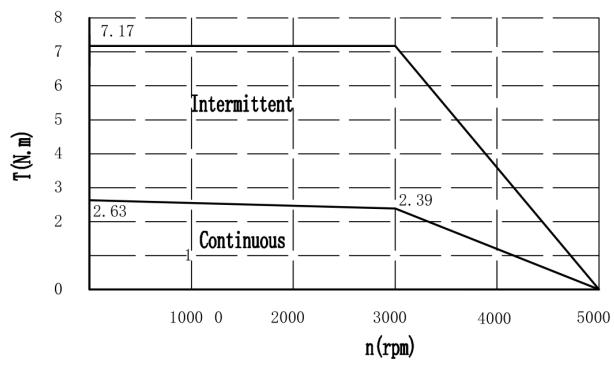


Mechanical View 7



Mechanical View 8

Performance Curve



Mechanical View 10

VIEW	FIELD	VALUE
Mechanical View 3	Connector upper-left pin number	Pin 6
	Connector upper-middle pin number	Pin 4
	Connector upper-right pin number	Pin 2
	Connector lower-left pin number	Pin 5
	Connector lower-middle and lower-right pin numbers	Pin 3
	Connector upper-right pin number	Pin 1
Mechanical View 4	Connector terminal position 2	Terminal position number 2
	Connector terminal position 1	Terminal position number 1
	Connector terminal position 3	Terminal position number 3
	Connector terminal position 4	Terminal position number 4
Mechanical View 7	Connector identifier	SC-06
	Interface identifier	SM-6P
	Power wire	Power Wire
	Feedback wire	Feedback Wire
	Mounting hole quantity and diameter	4 holes, diameter 6.5
	Mounting hole angular spacing/reference angle	45 degrees
	Mounting flange side length	80
	Mounting bolt circle diameter	Diameter 90 ±0.1
Mechanical View 8	Key length	22
	Key width	6
	Key height	6
	Key label	Key
	Cable length	L >= 500
	Shaft key label	Key on shaft
	Shaft-end thread or hole specification	CM6L15
	Maximum envelope height	95 MAX
	Shaft shoulder diameter	21.5 +0/-0.13
	Pilot diameter	Diameter 70 +0/-0.02
	Output shaft diameter	Diameter 19 +0/-0.013
	Shaft extension length	35 ±1
	Motor body length	118.2 ±1.5
	Mounting hole radial position	4 mm
Mechanical View 10	Chart title	Performance curve
	Torque axis label	Torque T in N.m
	Speed axis label	Speed n in rpm

VIEW	FIELD	VALUE
Torque scale ticks	Torque scale includes visible ticks 0, 2, 3, 4, 5, 6, 7, 8 N.m	
Speed scale ticks	Speed scale includes 1000, 2000, 3000, 4000, 5000 rpm	
Intermittent operating region label	Intermittent operating curve/region	
Continuous operating region label	Continuous operating curve/region	
Intermittent curve low-speed torque callout	Intermittent torque callout 7.17 N.m	
Continuous curve low-speed torque callout	Continuous torque callout 2.63 N.m	
Continuous curve rated-point torque callout	Continuous torque callout 2.39 N.m near 3000 rpm	

Overall Dimensions and Mounting Interface

PARAMETER	PUBLISHED VALUE	UNIT
Flange Size	80	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	1.027	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	2.39	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	2.39	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-A01-080S-T2P39NM-750W-005 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.