

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-A01-080S-T2P39NM-750W-004	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

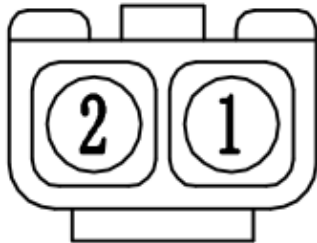
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	2.39 Nm
Rated Speed	3000 rpm
Flange Size	80 mm

Product Structure & Views

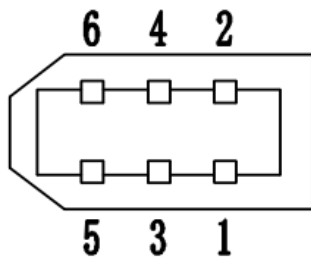
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



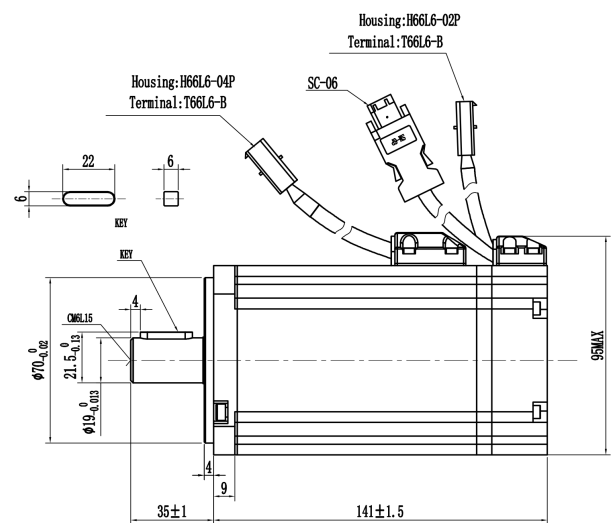
Mechanical View 3



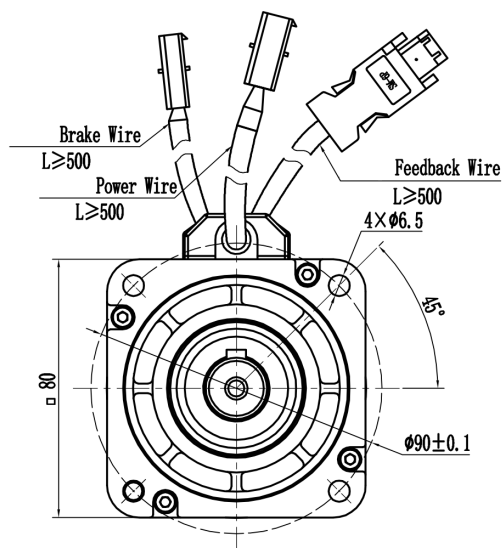
Mechanical View 5



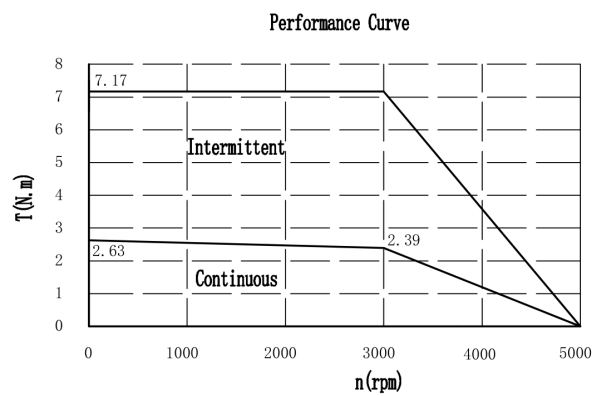
Mechanical View 6



Mechanical View 7



Mechanical View 9



Mechanical View 11

VIEW	FIELD	VALUE
Mechanical View 3	Connector pin position number	Pin position 2
	Connector pin position number	Pin position 1
Mechanical View 5	Connector terminal cavity number 2	Terminal cavity 2
	Connector terminal cavity number 1	Terminal cavity 1
	Connector terminal cavity number 4	Terminal cavity 4
	Connector terminal cavity number 3	Terminal cavity 3
Mechanical View 6	SC-06 connector upper-row pin numbers	Upper row pins: 6, 4, 2
	SC-06 connector lower-row pin numbers	Lower row pins: 5, 3, 1
Mechanical View 7	Connector identification mark	SC-06
	Connector face marking	SM-6P
	Keyway slot length	22 mm
	Keyway slot width	6 mm
	Key feature height	6 mm
	Key label	Key
	Shaft-end thread specification	CM6L15
	Pilot diameter tolerance	Diameter 70 mm, +0/-0.02 mm
	Shaft extension length tolerance	21.5 mm, +0/-0.13 mm
	Shaft diameter tolerance	Diameter 19 mm, +0/-0.013 mm
	Front step width	4 mm
	Front mounting step length	9 mm
	Motor body length	141 mm ±1.5 mm
	Maximum envelope height	95 mm maximum
	Keyway depth	4
	Shaft extension length	35 mm ±1 mm
Mechanical View 9	Brake wire label	Brake Wire
	Brake wire length	L ≥500
	Feedback wire label	Feedback Wire
	Feedback wire length	L ≥500
	Power wire label	Power Wire
	Power wire length	L ≥500
	Mounting hole quantity and diameter	4 holes, diameter 6.5
	Mounting hole angular spacing	45 degrees
	Square flange envelope size	Square 80
	Mounting pitch circle diameter tolerance	Diameter 90 ± 0.1
Mechanical View 11	Performance curve title	Performance Curve
	Torque axis	Torque T in N.m

VIEW	FIELD	VALUE
Speed axis	Rotational speed n in rpm	
Torque scale range	Torque axis scale from 0 to 8 N.m	
Speed scale range	Speed axis scale from 0 to 5000 rpm	
Intermittent operation curve	Intermittent curve maximum labeled torque 7.17 N.m	
Continuous operation curve initial torque	Continuous curve labeled torque 2.63 N.m near zero speed	
Continuous operation curve knee torque	Continuous curve knee labeled torque 2.39 N.m	

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	1.099	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	17-bit multi-turn communication magnetic 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	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	17-bit multi-turn communication magnetic 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	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-004 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.