

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-L02-080D-V96-T2P39NM-750W-001	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

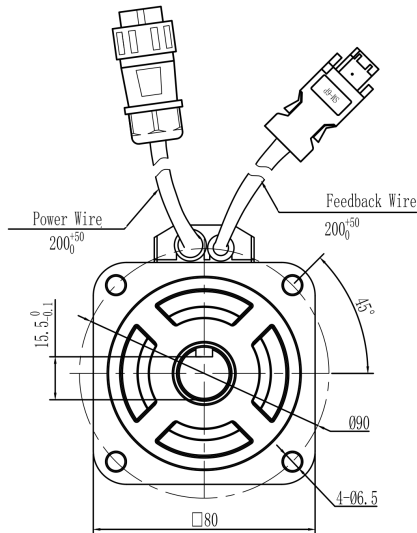
Integration Overview

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.

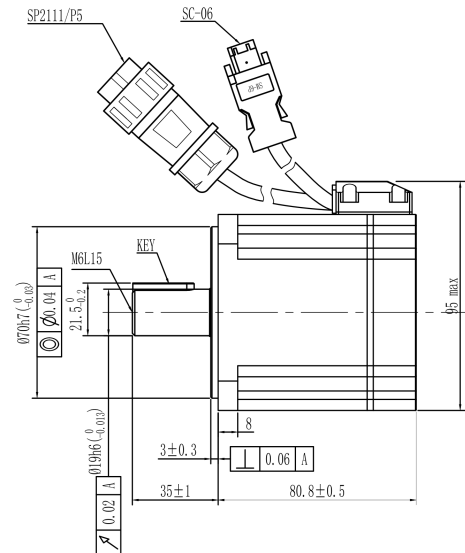
Key Integration Facts

INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	2.39 N·m
Rated Speed	3000 rpm
Rated Voltage	96 VDC
Flange Size	80 mm

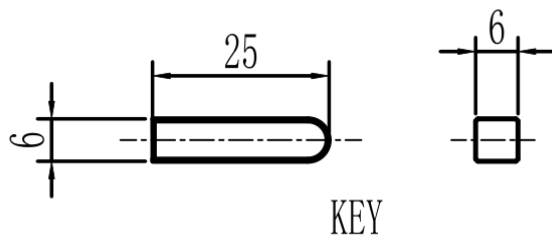
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



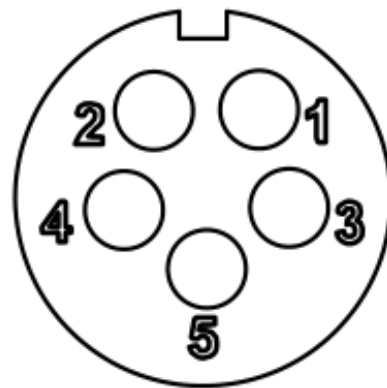
Mechanical View 1



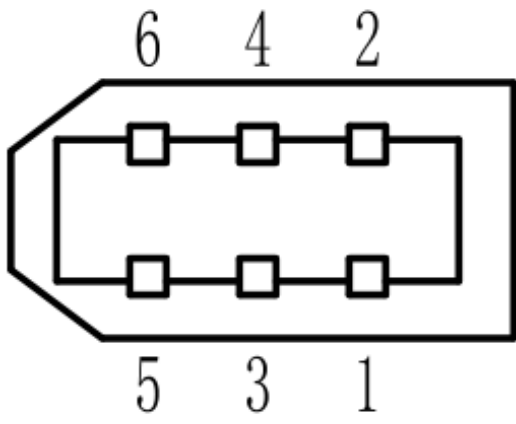
Mechanical View 2



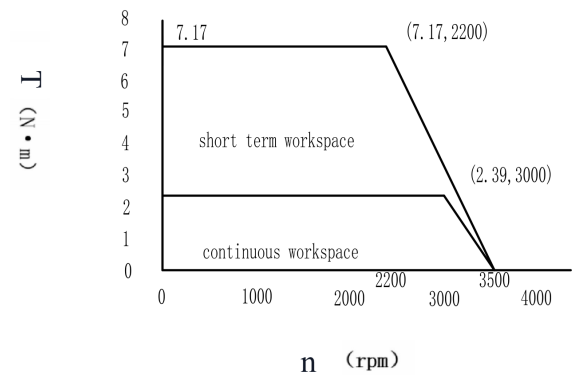
Mechanical View 3



Mechanical View 5



Mechanical View 8



Mechanical View 9

VIEW	FIELD	VALUE
Mechanical View 1	Feedback Wire Label	Feedback Wire
	Feedback Wire Length with Tolerance	200 +50/0
	Power Wire Label	Power Wire
	Power Wire Length with Tolerance	200 +50/0
	Mounting Dimension with Tolerance	15.5 +0/-0.1
	Angular Dimension	45°
	Mounting Bolt Circle Diameter	Ø90
	Mounting Hole Quantity and Diameter	4-Ø6.5
	Square Envelope Dimension	±80
Mechanical View 2	Power connector type	SC-06
	Communication connector type	SP2111/P5
	Signal connector type	SM-6P
	Keyway notation	Keyway present
	Mounting thread specification	M6×15
	Shaft journal diameter with tolerance	Ø70h7 (0/-0.03)
	Shaft journal position tolerance relative to datum A	Position tolerance 0.04 relative to datum A
	Shaft shoulder length with tolerance	21.5 (0/-0.2)
	Maximum envelope dimension	95 max
	Shaft end diameter with tolerance	Ø19h6 (0/-0.013)
	Shaft extension length	8
	Keyway depth with tolerance	3±0.3
	Keyway perpendicularity tolerance relative to datum A	Perpendicularity tolerance 0.06 relative to datum A
	Axial mounting dimension 1	35±1
	Overall length dimension	80.8±0.5
	End face parallelism tolerance relative to datum A	Parallelism tolerance 0.02 relative to datum A
Mechanical View 3	Keyway length	25 mm
	Keyway width	6 mm
	Key height/depth	6 mm
Mechanical View 5	Connector Pin 1	Pin 1
	Connector Pin 2	Pin 2
	Connector Pin 3	Pin 3
	Connector Pin 4	Pin 4
	Connector Pin 5	Pin 5
Mechanical View 8	Connector Pin 6	Pin 6
	Connector Pin 4	Pin 4

VIEW	FIELD	VALUE
Connector Pin 2	Pin 2	
Connector Pin 5	Pin 5	
Connector Pin 3	Pin 3	
Connector Pin 1	Pin 1	
Mechanical View 9	Y-axis label - Torque	Torque in Newton-meters
	X-axis label - Speed	Speed in revolutions per minute
	Rated torque at constant speed	7.17 Nm
	Short-term workspace key point	7.17 Nm at 2200 rpm
	Workspace transition point	2.39 Nm at 3000 rpm
	Short-term workspace zone label	Short-term operation zone
	Continuous workspace zone label	Continuous operation zone
	Y-axis scale values	Torque scale from 0 to 8 Nm
	X-axis scale values	Speed scale from 0 to 4000 rpm with key points at 2200, 3000, 3500

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	1.61 (/ 1.45	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	96	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	2.39	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	2.39	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-L02-080D-V96-T2P39NM-750W-001 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.