ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-A02-080S-T2P39NM-750W-004	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

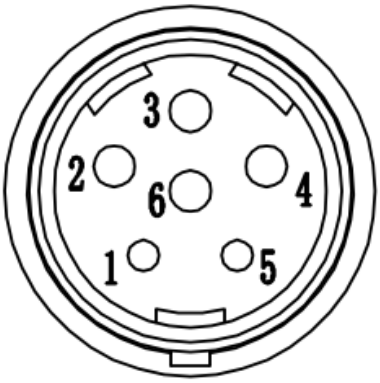
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

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

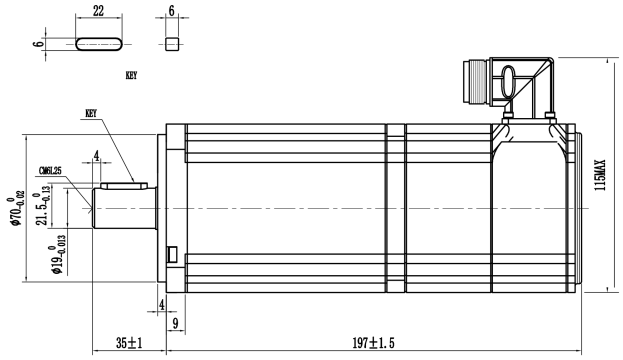
Product Structure & Views

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

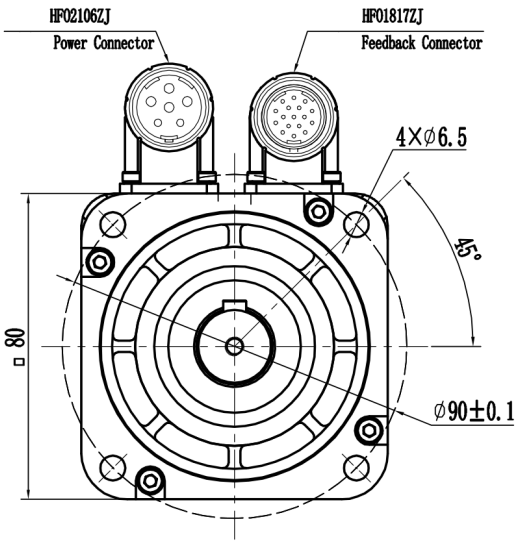


Mechanical View 3

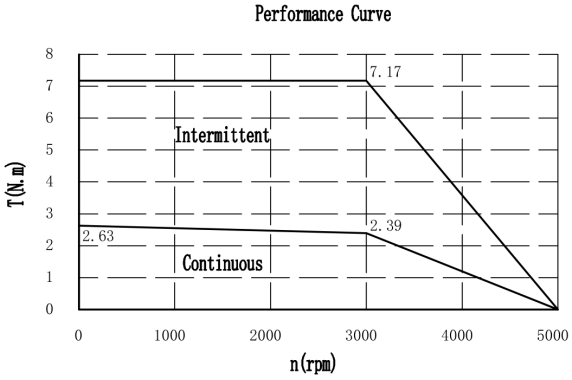
Mechanical View 4



Mechanical View 6



Mechanical View 7



Mechanical View 9

VIEW	FIELD	VALUE
Mechanical View 3	Connector pin number 3	Pin 3
	Connector pin number 2	Pin 2
	Connector pin number 4	Pin 4
	Connector pin number 6	Pin 6
	Connector pin number 5	Pin 5
	Connector pin number 1	Pin 1
Mechanical View 4	Feedback connector pin numbering	17-pin feedback connector pin layout; pin labels 1 through 17 shown
Mechanical View 6	Key length	22
	Key width	6
	Key height	6
	Key label	Key
	Connector or interface callout	CM6L25
	Maximum overall height	115 maximum
	Shaft shoulder diameter	Diameter 70 with +0/-0.02 tolerance
	Shaft section length	21.5 with +0/-0.13 tolerance
	Output shaft diameter	Diameter 19 with +0/-0.013 tolerance
	End face step offset	4
	Front step length	9
	Main body length	197 ±1.5
	Shaft extension length	35 ±1
	Keyway depth	4
Mechanical View 7	Power connector label	Power Connector
	Feedback connector label	Feedback Connector
	Mounting hole quantity and diameter	4 holes, diameter 6.5
	Mounting hole angular position	45 degrees
	Square flange outside size	Square 80
	Mounting hole pitch circle diameter	Diameter 90 ±0.1
Mechanical View 9	Chart title	Performance curve
	Torque axis	Torque T in N.m
	Speed axis	Speed n in rpm
	Torque scale range	Torque axis scale: 0 to 8 N.m
	Speed scale range	Speed axis scale: 0 to 5000 rpm
	Intermittent performance curve label	Intermittent operating curve
	Continuous performance curve label	Continuous operating curve
	Intermittent peak torque callout	Intermittent curve torque callout: 7.17 N.m
	Continuous torque callout	Continuous curve torque callout: 2.39 N.m

VIEW	FIELD	VALUE
Continuous starting torque callout	Continuous curve torque callout: 2.63 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	1.385	kg·cm²

- 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	2500 PPR incremental 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	N·m
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	2500 PPR incremental 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	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-A02-080S-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.