

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

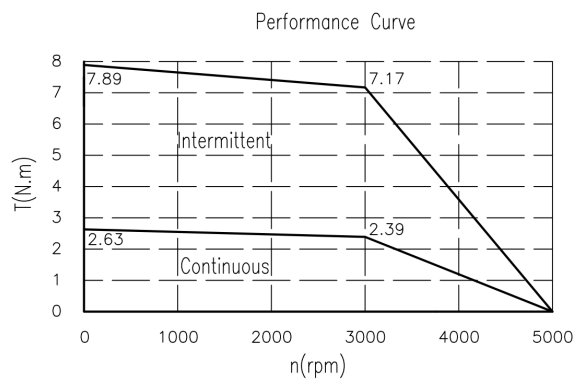
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Integration Overview

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



Mechanical View 9

VIEW	FIELD	VALUE
Mechanical View 2	DB15M connector pin 5 position	Pin 5
	DB15M connector pin 15 position	Pin 15
	DB15M connector pin 10 position	Pin 10
	DB15M connector pin 1 position	Pin 1
	DB15M connector pin 11 position	Pin 11
	DB15M connector pin 6 position	Pin 6
Mechanical View 4	Connector pin position number 2	Pin position 2
	Connector pin position number 1	Pin position 1
	Connector pin position number 4	Pin position 4
	Connector pin position number 3	Pin position 3
Mechanical View 6	Power wire connector housing	H66L6-04P
	Power wire terminal	T66L6-B
	Feedback connector type	DB-15 Male
	Mounting hole diameter and quantity	4 holes × $\phi 5$ mm
	Mounting hole angular distribution	45° spacing
	Mounting flange or motor housing width	80 mm
	Mounting hole bolt circle diameter	$\phi 0 \pm 0.1$ mm
	Power wire label	Power Wire
Mechanical View 7	Key width	22 mm
	Key depth	6 mm
	Minimum cable length	L≥800 mm
	Maximum height	95 mm MAX
	Shaft diameter with tolerance	$\phi 70$ 0/-0.02 mm
	Shaft length with tolerance	21.5 0/-0.13 mm
	Hole diameter with tolerance	$\phi 19$ 0/-0.013 mm
	Dimension	4 mm
	Dimension	9 mm
	Mounting dimension	35±1 mm
	Overall length	147±1.5 mm
Mechanical View 9	Intermittent peak torque at zero speed	7.89 N.m
	Intermittent torque at approximately 3000 rpm	7.17 N.m
	Continuous rated torque at zero speed	2.63 N.m
	Continuous torque at approximately 3000 rpm	2.39 N.m
	Speed range	0 to 5000 rpm
	Torque measurement range	0 to 8 N.m
	Intermittent working zone	Intermittent operation zone

VIEW	FIELD	VALUE
Continuous working zone	Continuous operation zone	
Torque axis label	Torque in Newton-meters	
Speed axis label	Rotational speed in revolutions per minute	

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	1.36	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	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	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	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	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-A02-080S-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.