

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-A02-080S-T3P18NM-1000W-001	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

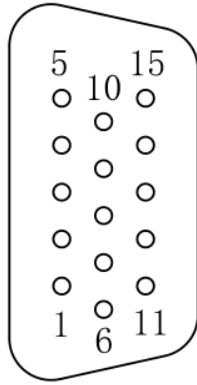
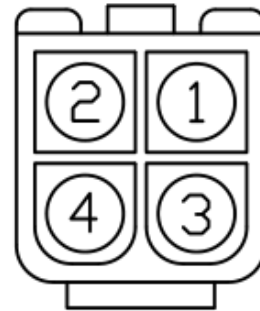
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

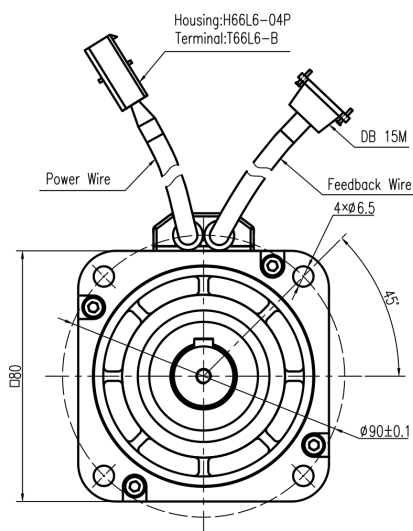
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	3.18 Nm
Rated Speed	3000 rpm
Flange Size	80 mm

Product Structure & Views

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

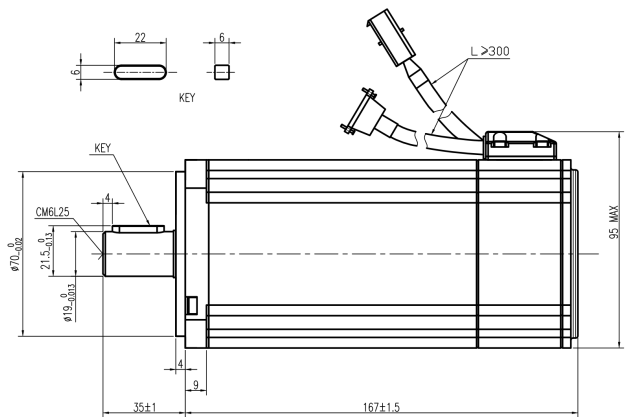


Mechanical View 2

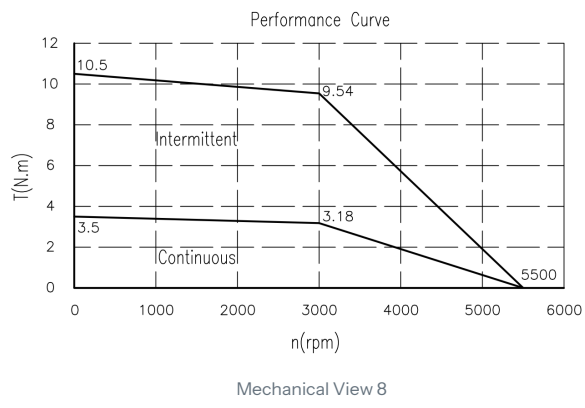


Mechanical View 6

Mechanical View 4



Mechanical View 7



VIEW	FIELD	VALUE
Mechanical View 2	Pin 5	Pin 5
	Pin 15	Pin 15
	Pin 10	Pin 10
	Pin 1	Pin 1
	Pin 6	Pin 6
	Pin 11	Pin 11
Mechanical View 4	Connector pin 2 position identifier	Pin 2
	Connector pin 1 position identifier	Pin 1
	Connector pin 3 position identifier	Pin 3
	Connector pin 4 position identifier	Pin 4
Mechanical View 6	Feedback wire connector housing	H66L6-04P
	Feedback wire connector terminal	T66L6-B
	Feedback wire connector type	DB-15 Male
	Power wire label	Power Wire
	Feedback wire label	Feedback Wire
	Connector mounting holes	4× ϕ 5
	Angular positioning	45°
	Housing diameter	ϕ 0
	Mounting flange outer diameter	ϕ 0±0.1
Mechanical View 7	Key width	22 mm
	Key height	6 mm
	Minimum shaft length	L ≥800 mm
	Key depth in shaft	6 mm
	Maximum height	95 mm MAX
	Shaft keyway depth with tolerance	21.5 -0.13 mm
	Shaft outer diameter with tolerance	$\varnothing$ 0 0/-0.02 mm
	Shaft inner diameter with tolerance	$\varnothing$ 9 -0.013 mm
	Lower spacing dimension	6 mm
	Keyway width	4 mm
	Left mounting distance	35±1 mm
	Overall mounting length	167±1.5 mm
	Local width	Local width 4mm
	Mounting dimension	9 mm
Mechanical View 8	Performance curve title	Performance Curve
	Torque axis	Torque T in N.m
	Speed axis	Speed n in rpm

VIEW	FIELD	VALUE
Torque scale range	Torque scale from 0 to 12 N.m	
Speed scale range	Speed scale from 0 to 6000 rpm	
Intermittent operating curve label	Intermittent curve	
Continuous operating curve label	Continuous curve	
Intermittent curve torque callouts	Intermittent curve torque callouts: 10.5 N.m and 9.54 N.m	
Continuous curve torque callouts	Continuous curve torque callouts: 3.5 N.m and 3.18 N.m	
Curve endpoint speed callout	Endpoint speed callout: 5500 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	1.9	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	3.18	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	3.18	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-T3P18NM-1000W-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.