ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-L02-080D-V48-T1P27NM-400W-002	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

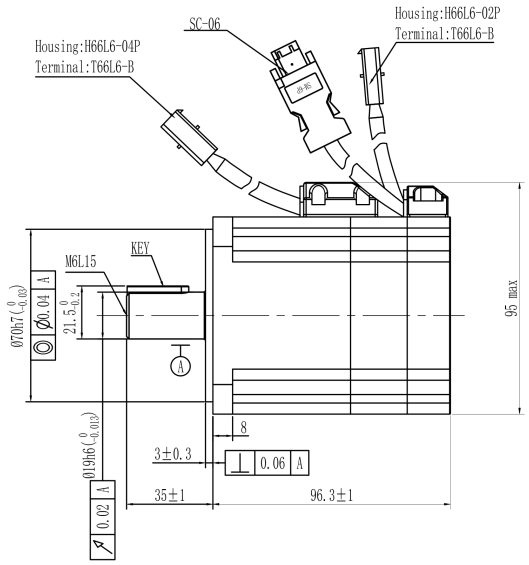
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

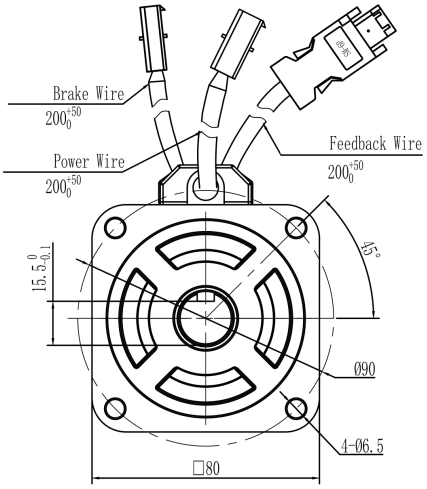
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	1.27 N·m
Rated Speed	3000 rpm
Rated Voltage	48 VDC
Flange Size	80 mm

Product Structure & Views

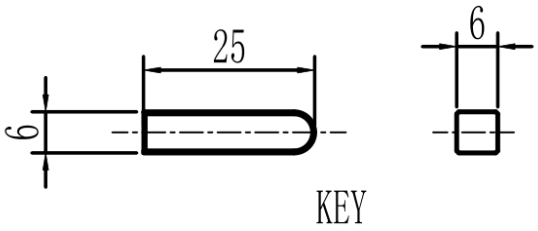
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



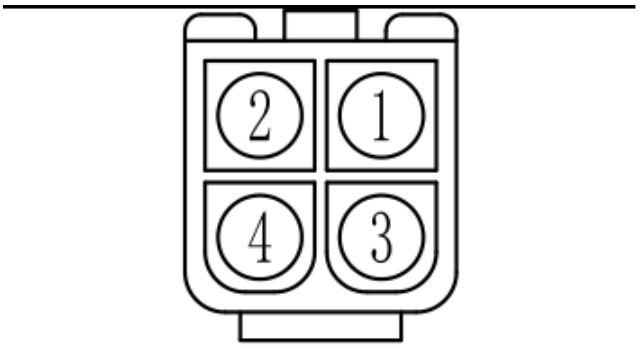
Mechanical View 1



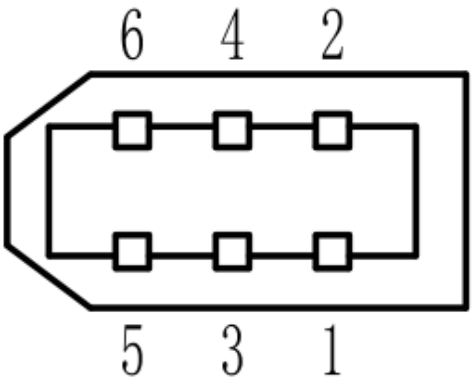
Mechanical View 2



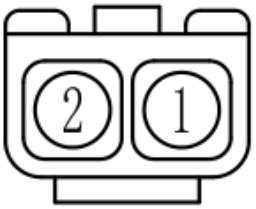
Mechanical View 3



Mechanical View 4



Mechanical View 7



Mechanical View 9

VIEW	FIELD	VALUE
Mechanical View 1	Connector housing (4-pin)	Housing H66L6-04P
	Terminal type (4-pin)	Terminal T66L6-B
	Connector housing (2-pin)	Housing H66L6-02P
	Terminal type (2-pin)	Terminal T66L6-B
	Connector label	SC-06
	Connector label	SM-6P
	Output shaft diameter and tolerance	Ø70h7 (0/-0.03)
	Keyway designation	Key slot present
	Mounting thread specification	M6 threaded hole, depth 15 mm
	Shaft extension diameter and tolerance	Ø19h6 (0/-0.013)
	Shaft extension length	3±0.3
	Shaft extension positioning dimension	8
	Position tolerance (relative to datum A)	Position tolerance Ø0.06 relative to datum A
	Axial total length (left segment)	35±1
	Total axial length	96.3±1
	Maximum radial dimension	95 max
	Perpendicularity tolerance (relative to datum A)	Perpendicularity 0.02 relative to datum A
	Coaxiality	| Ø0.04 | A
	Shaft Diameter	21.5 +0/-0.2
Mechanical View 2	Brake wire cable length	200mm +50/0mm
	Power wire cable length	200mm +50/0mm
	Feedback wire cable length	200mm +50/0mm
	Shaft diameter	Ø15.5mm 0/-0.1mm
	Flange pitch circle diameter	Ø90mm
	Mounting hole specification	4 holes Ø6.5mm
	Flange side length	80mm × 80mm square flange
	Mounting hole angular position	45 degrees
Mechanical View 3	Keyway length	25 mm
	Keyway width	6 mm
	Keyway label	KEY
	Key width	6
Mechanical View 4	Connector pin number 1	Pin 1
	Connector pin number 2	Pin 2
	Connector pin number 3	Pin 3
	Connector pin number 4	Pin 4
Mechanical View 7	SC-06 connector pin position 6	Pin 6

VIEW	FIELD	VALUE
SC-06 connector pin position 4	Pin 4	
SC-06 connector pin position 2	Pin 2	
SC-06 connector pin position 5	Pin 5	
SC-06 connector pin position 3	Pin 3	
SC-06 connector pin position 1	Pin 1	
Mechanical View 9	Connector port position identifier	Position 2
	Connector port position identifier	Position 1

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	0.87 / 1	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
Rated Voltage	48	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	1.27	N·m
Operating Temperature	-5 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	1.27	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-V48-T1P27NM-400W-002 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.