

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-L03-130G-V96-T4P775NM-1500W-002	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

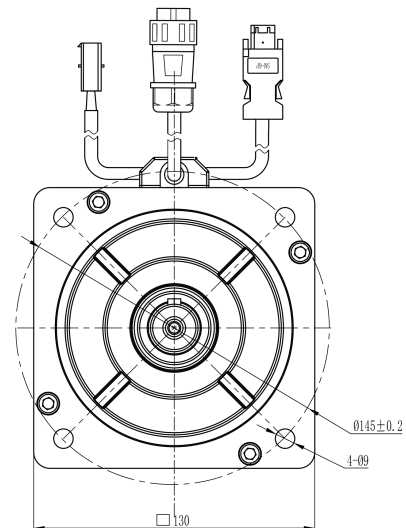
Integration Overview

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.

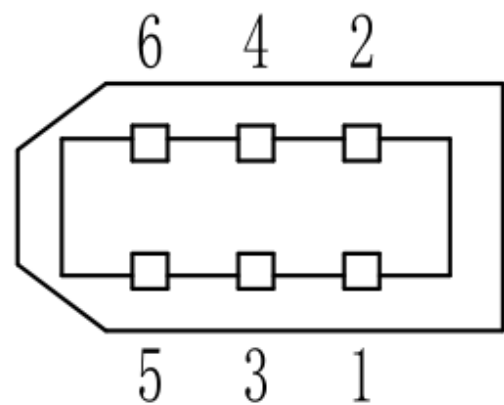
Key Integration Facts

INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	4.775 Nm
Rated Speed	3000 rpm
Rated Voltage	96 VDC
Flange Size	130 mm

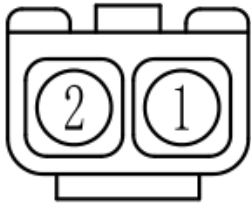
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



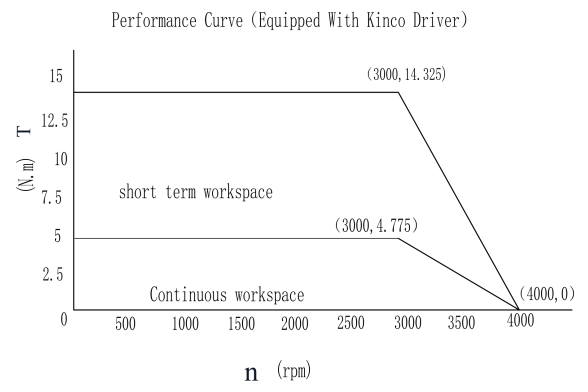
Mechanical View 2



Mechanical View 7



Mechanical View 8



Mechanical View 11

VIEW	FIELD	VALUE
Mechanical View 1	Key feature label	Key feature indicated
	Key length	36 mm
	Key width	7 mm
	Feedback wire label	Feedback wire
	Feedback wire length	200 mm +50/0
	Brake wire label	Brake wire
	Brake wire length	200 mm +50/0
	Power wire label	Power wire
	Power wire length	200 mm +50/0
	Connector marking	SM-6P connector marking
	Upper position tolerance	Position tolerance 0.08 relative to datum A
	Shaft key feature label	Key feature indicated on shaft
	Thread or mounting hole callout	CM6L20
	Left-side position tolerance	Position tolerance 0.08 relative to datum A
	Locating outer diameter	Diameter 110 mm, +0/-0.035
	Shaft step length	25 mm, +0/-0.2
	Shaft end diameter	Diameter 22 mm, +0/-0.013
	Datum A	Datum A
	Shaft end position tolerance	Geometric tolerance 0.04
	End step length	13.5 mm
	Shaft extension length	55 mm ±1
	Motor body length	144.5 mm ±1.5
	Reference height	145 mm reference
	Key height	8 mm
Mechanical View 2	Mounting hole pitch circle diameter	Diameter 145 ±0.2
	Mounting hole quantity and diameter	4 holes, diameter 9
	Square flange side length	Square 130
Mechanical View 4	Connector pin numbering	Visible connector pin labels: 1, 2, 3, 4, 5
Mechanical View 7	Connector upper row terminal numbering	Upper row terminals: 6, 4, 2
	Connector lower row terminal numbering	Lower row terminals: 5, 3, 1
Mechanical View 8	Connector terminal number	Terminal position 2
	Terminal position number	Position 1
Mechanical View 11	Peak torque point (short-term operating zone)	3000 rpm at 14.325 Nm
	Rated torque point (continuous operating zone)	3000 rpm at 4.775 Nm
	Maximum speed point	4000 rpm at 0 Nm
	Short-term operating zone label	Short-term duty zone

VIEW	FIELD	VALUE
Continuous operating zone label	Continuous duty zone	
Speed Range	0 to 4000 rpm	
Torque Scale	0-15 Nm	
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	130	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	11.56 / 12.86 (	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	4.775	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	4.775	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-L03-130G-V96-T4P775NM-1500W-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.