

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-L03-130G-V96-T4P775NM-1500W-001	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

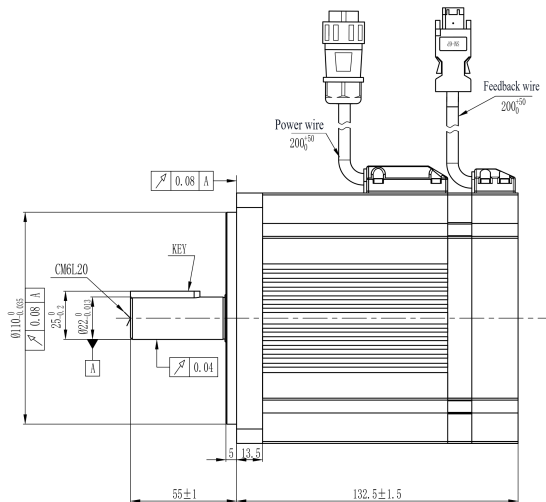
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

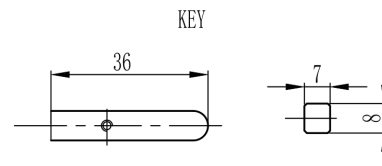
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	4.775 Nm
Rated Speed	3000 rpm
Rated Voltage	96 VDC
Flange Size	130 mm

Product Structure & Views

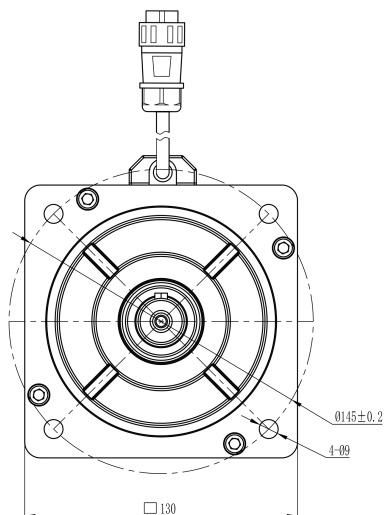
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



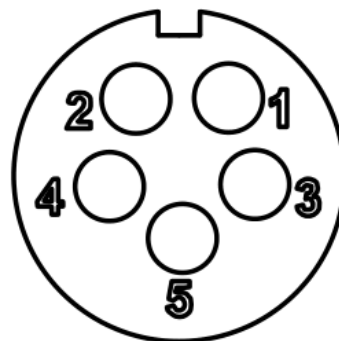
Mechanical View 1



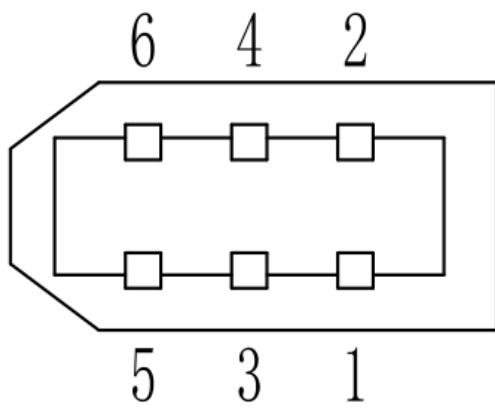
Mechanical View 2



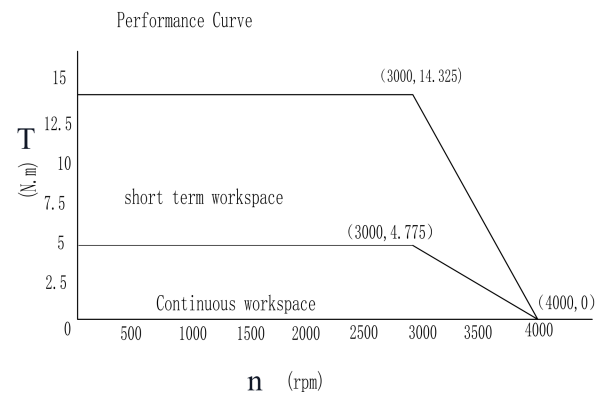
Mechanical View 3



Mechanical View 5



Mechanical View 8



Mechanical View 10

VIEW	FIELD	VALUE
Mechanical View 1	Feedback cable label	Feedback wire
	Feedback cable length	200 mm, +50/0 tolerance
	Power cable label	Power wire
	Power cable length	200 mm, +50/0 tolerance
	Face geometric tolerance to datum A	Geometric tolerance 0.08 relative to datum A
	Keyway label	KEY
	Shaft end note CM6L20	CM6L20
	Shaft geometric tolerance to datum A	Geometric tolerance 0.08 relative to datum A
	Shaft section length	25 mm, +0/-0.2 tolerance
	Shaft diameter	Diameter 22 mm, +0/-0.013 tolerance
	Pilot diameter	Diameter 110 mm, +0/-0.035 tolerance
	Shaft geometric tolerance	Geometric tolerance 0.04
	Datum A	Datum A
	Short shoulder length	5 mm
	Shoulder length	13.5 mm
	Front axial length	55 mm ±1
	Motor body axial length	132.5 mm ±1.5
Mechanical View 2	Key feature label	Key feature
	Key length	36 mm
	Key width	7 mm
	Key height	8 mm
Mechanical View 3	Mounting hole pitch circle diameter	Pitch circle diameter Ø145 ±0.2
	Mounting hole quantity and diameter	4 holes, diameter Ø9
	Square mounting flange side length	Square flange 130 × 130
Mechanical View 5	Connector terminal position 2	Terminal position 2
	Connector terminal position 3	Terminal position 3
	Connector terminal position 5	Terminal position 5
	Connector Pin 1	Pin 1
	Connector Pin 4	Pin 4
Mechanical View 8	Upper row connector pin numbers	Upper row pins: 6, 4, 2
	Lower row connector pin numbers	Lower row pins: 5, 3, 1
Mechanical View 10	Performance curve title	Performance Curve
	Torque axis label	Torque T, unit N.m
	Short-term operating workspace	Short-term workspace region
	Continuous operating workspace	Continuous workspace region
	Short-term peak curve point	Speed 3000 rpm, torque 14.325 N.m

VIEW	FIELD	VALUE
Continuous rated curve point	Speed 3000 rpm, torque 4.775 N.m	
High-speed zero-torque point	Speed 4000 rpm, torque 0 N.m	
Torque scale values	Torque axis scale: 0 to 15 N.m	
Speed scale values	Detected speed-axis tick labels: 500 1000, 1500,2000 2500, 3000,3500 4000 rpm	

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-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.