

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-L03-130G-V96-T9P55NM-3000W-001	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

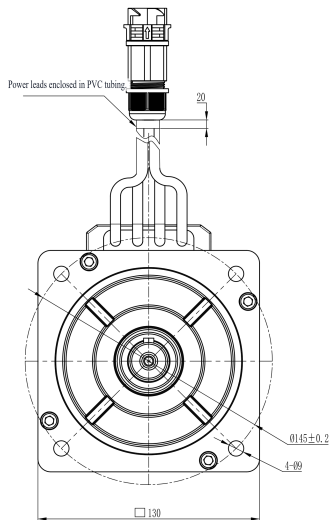
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

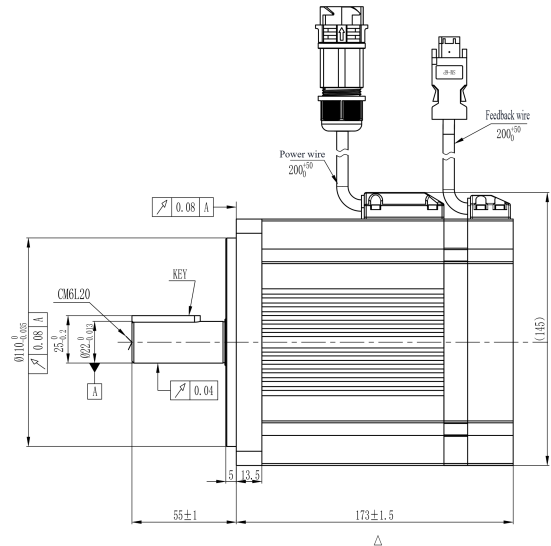
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	9.55 N·m
Rated Speed	3000 rpm
Rated Voltage	96 VDC
Flange Size	130 mm

Product Structure & Views

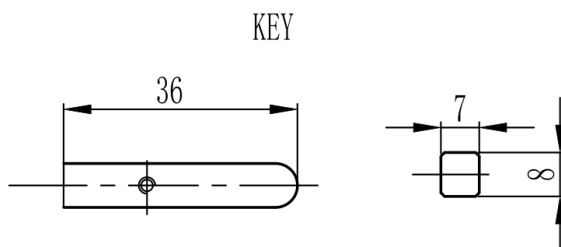
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



Mechanical View 1



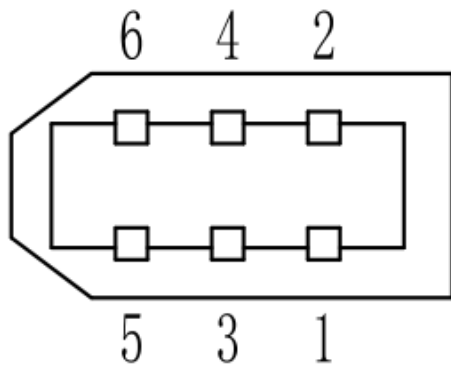
Mechanical View 2



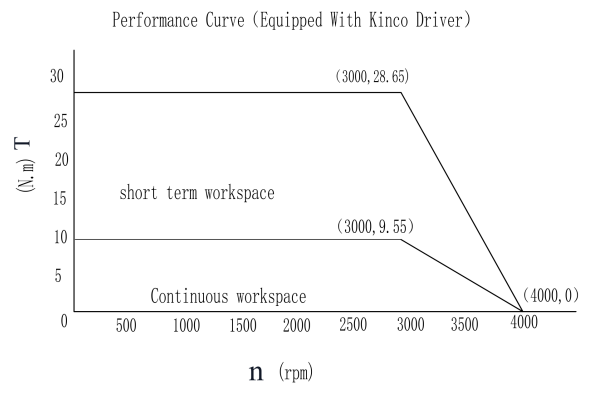
Mechanical View 3



Mechanical View 5



Mechanical View 8



Mechanical View 10

VIEW	FIELD	VALUE
Mechanical View 1	Power leads PVC tubing note	Power leads enclosed in PVC tubing
	Power lead tubing length or offset dimension	20
	Mounting hole pitch circle diameter	Diameter 145 ±0.2
	Mounting hole quantity and diameter	4 holes, diameter 9
	Square flange envelope size	Square 130
Mechanical View 2	Feedback cable connector type	SM-6P connector
	Feedback wire length	Feedback wire length 200 mm, +50/0 mm tolerance
	Power wire length	Power wire length 200 mm, +50/0 mm tolerance
	Body-related geometric tolerance	Geometric tolerance 0.08 relative to datum A
	Keyway callout	Keyway feature indicated
	Shaft end thread/interface specification	CM6L20
	Datum A	Datum A
	Reference overall height	Reference height 145 mm
	Locating diameter	Diameter 110 mm, +0/-0.035 mm tolerance
	Mounting interface geometric tolerance	Geometric tolerance 0.08 relative to datum A
	Keyway dimension	25 mm with -0.2 mm lower deviation
	Shaft diameter	Diameter 22 mm, +0/-0.013 mm tolerance
	Shaft end geometric tolerance	Geometric tolerance 0.04
	Shaft datum A	Datum A
	Front step length	5 mm
	Front flange/step length	13.5 mm
	Shaft extension length	55 mm ±1 mm
	Motor body length	173 mm ±1.5 mm
Mechanical View 3	Key detail view label	Key detail
	Key length	36 mm
	Key height	8 mm
	Key Width	7 mm
Mechanical View 5	Connector pin label 1	Pin 1
	Connector pin label 2	Pin 2
	Connector pin label 3	Pin 3
	Connector pin label 4	Pin 4
Mechanical View 8	Connector pin 6 identifier	Pin 6
	Connector pin 4 identifier	Pin 4
	Connector pin 2 identifier	Pin 2
	Connector pin 5 identifier	Pin 5
	Connector pin 3 identifier	Pin 3

VIEW	FIELD	VALUE
Connector pin 1 identifier	Pin 1	
Mechanical View 10	Y-axis - Torque	Torque axis unit: N.m (Newton-meter)
	Y-axis scale - Torque values	Torque scale: 0 to 30 N.m
	X-axis scale - Speed values	Speed scale: 0 to 4000 rpm
	Peak torque operating point	Peak torque: 28.65 N.m at 3000 rpm
	Continuous torque operating point	Continuous torque: 9.55 N.m at 3000 rpm
	Maximum speed operating point	Maximum speed: 4000 rpm at 0 N.m
	Short-time workspace	Short-time operating zone: above 9.55 N.m up to 28.65 N.m peak torque
	Continuous workspace	Continuous operating zone: up to 9.55 N.m continuous torque at 3000 rpm
	X-axis label: Speed	Speed in revolutions per minute
	Performance Curve Title	Performance Curve

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	24.15 (/ 22.85	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	9.55	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	9.55	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-T9P55NM-3000W-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.