

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-A01-130D-T9P55NM-2000W-007	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

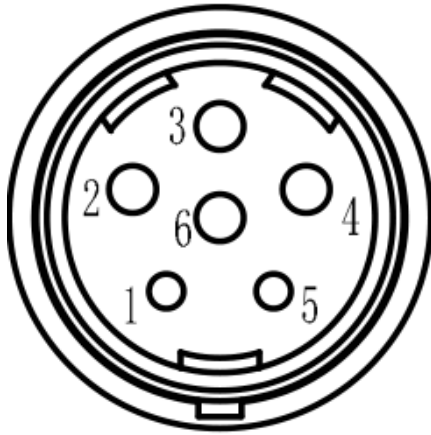
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

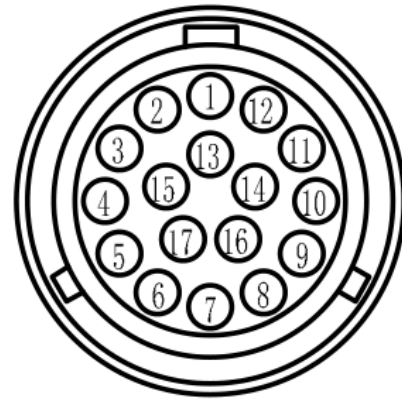
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	9.55 N·m
Rated Speed	2000 rpm
Flange Size	130 mm

Product Structure & Views

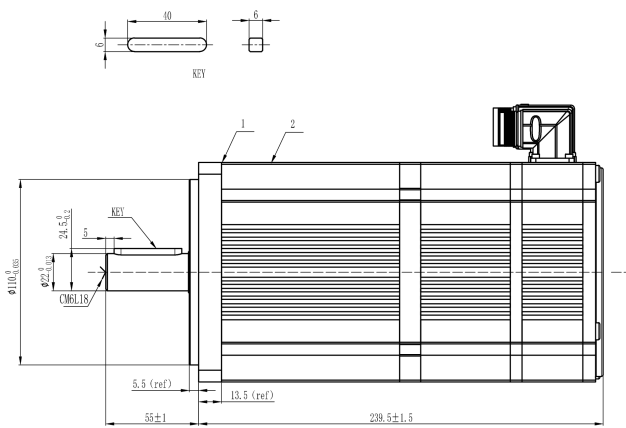
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



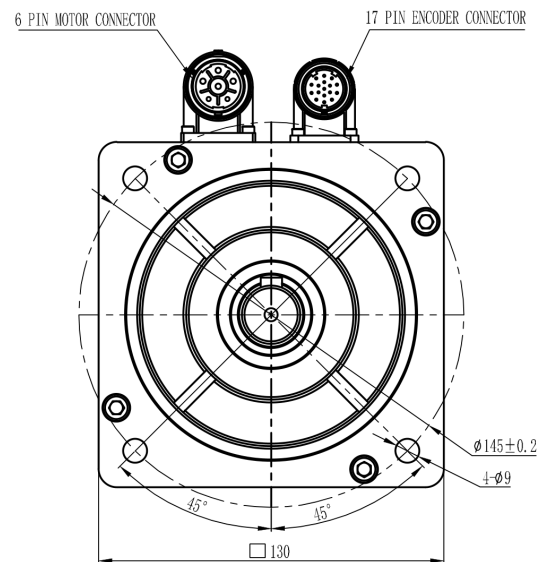
Mechanical View 5



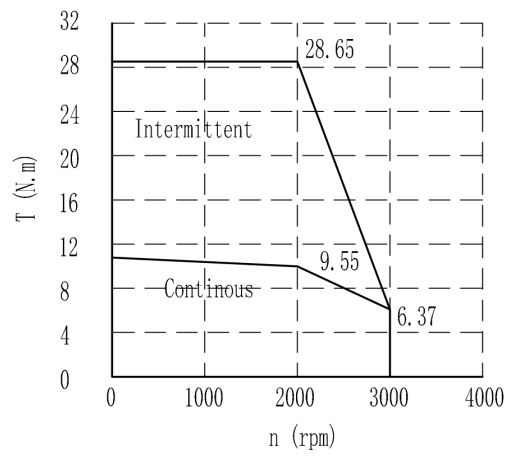
Mechanical View 6



Mechanical View 7



Mechanical View 8



Mechanical View 10

VIEW	FIELD	VALUE
Mechanical View 5	Connector pin number 1	Pin 1
	Connector pin number 2	Pin 2
	Connector pin number 3	Pin 3
	Connector pin number 4	Pin 4
	Connector pin number 5	Pin 5
	Connector pin number 6	Pin 6
Mechanical View 6	Feedback connector pin 1	Pin number 1
	Feedback connector pin 12	Pin number 12
	Feedback connector pin 11	Pin number 11
	Feedback connector pin 13	Pin number 13
	Feedback connector pin 15	Pin number 15
	Feedback connector pin 14	Pin number 14
	Feedback connector pin 4	Pin number 4
	Feedback connector pin 10	Pin number 10
	Feedback connector pin 17	Pin number 17
	Feedback connector pin 16	Pin number 16
	Feedback connector pin 5	Pin number 5
	Feedback connector pin 9	Pin number 9
	Feedback connector pin 8	Pin number 8
	Feedback connector pin 6	Pin number 6
	Feedback connector pin 7	Pin number 7
	Connector pin number 2	Pin 2
	Encoder connector pin number	Pin 3
Mechanical View 7	Key length	40
	Key width	6
	Key height	6
	Key label	KEY
	Item callout 1	Item 1
	Item callout 2	Item 2
	Shaft key label	KEY
	Shaft shoulder or key-related dimension	24.5 +0/-0.2
	Shaft keyway width	5
	Shaft diameter	Diameter 22 +0/-0.013
	Mounting register or flange diameter	Diameter 110 +0/-0.035
	Shaft end thread	CM6L18
	Reference axial dimension	5.5 reference

VIEW	FIELD	VALUE
Reference axial dimension	13.5 reference	
Shaft extension length	55 ±1	
Motor body length	239.5 ±1.5	
Mechanical View 8	6-pin motor connector	6 PIN MOTOR CONNECTOR
	17-pin encoder connector	17 PIN ENCODER CONNECTOR
	Mounting hole pitch circle diameter	Diameter 145 ±0.2
	Mounting hole quantity and diameter	4 holes, diameter 9
	Left mounting hole angular position	45 degrees
	Right mounting hole angular position	45 degrees
	Square flange outside size	Square 130
Mechanical View 10	Torque vertical axis unit	Torque T in N.m
	Speed horizontal axis unit	Rotational speed n in rpm
	Torque axis tick labels	Torque scale labels: 0, 4, 8, 12, 16, 20, 24, 28, 32 N.m
	Speed axis tick labels	Speed scale labels: 0, 1000, 2000, 3000, 4000 rpm
	Intermittent torque curve label	Intermittent torque curve
	Continuous torque curve label	Continuous torque curve
	Intermittent torque callout value	Intermittent torque callout: 28.65 N.m
	Continuous torque callout value	Continuous torque callout: 9.55 N.m
	High-speed torque callout value	Torque callout at high-speed end: 6.37 N.m

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	21.25	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	17-bit multi-turn communication magnetic absolute 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	9.55	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	17-bit multi-turn communication magnetic absolute 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	2000	rpm
Rated Torque	9.55	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-A01-130D-T9P55NM-2000W-007 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.