

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-A01-130D-T9P55NM-2000W-008	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

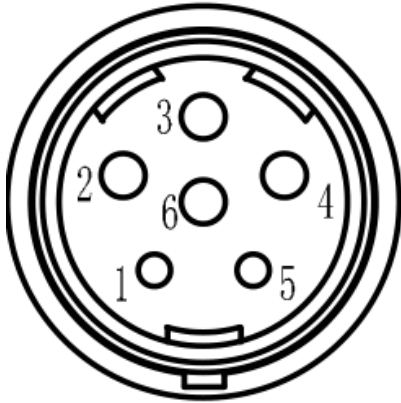
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

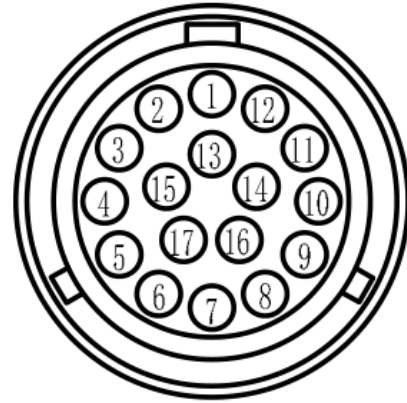
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	9.55 N·m
Rated Speed	2000 rpm
Flange Size	130 mm

Product Structure & Views

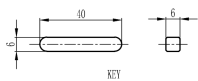
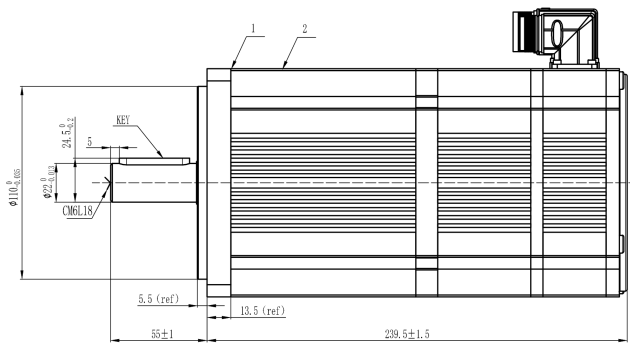
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



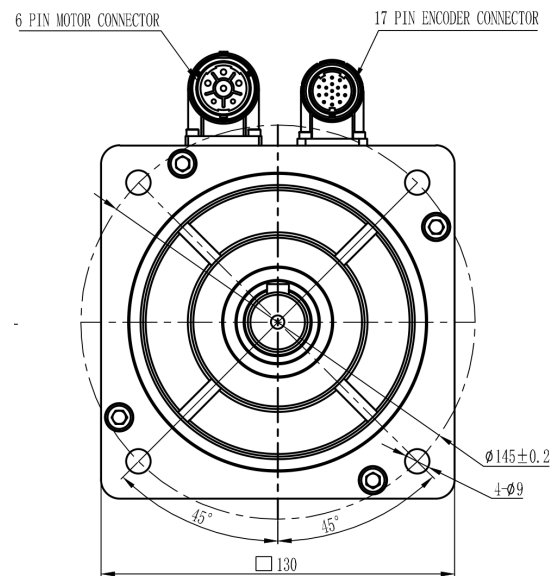
Mechanical View 4



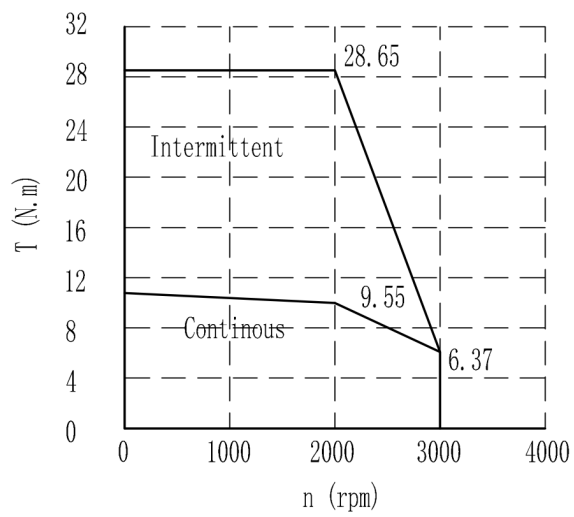
Mechanical View 6



Mechanical View 7



Mechanical View 8



Mechanical View 10

VIEW	FIELD	VALUE
Mechanical View 4	Connector pin index 1	Pin 1
	Connector pin index 2	Pin 2
	Connector pin index 3	Pin 3
	Connector pin index 4	Pin 4
	Connector pin index 5	Pin 5
	Connector pin index 6	Pin 6
Mechanical View 6	Feedback connector pin number 12	Pin 12
	Feedback connector pin number 2	Pin 2
	Feedback connector pin number 11	Pin 11
	Feedback connector pin number 3	Pin 3
	Feedback connector pin number 13	Pin 13
	Feedback connector pin number 15	Pin 15
	Feedback connector pin number 14	Pin 14
	Feedback connector pin number 10	Pin 10
	Feedback connector pin number 4	Pin 4
	Feedback connector pin number 16	Pin 16
	Feedback connector pin number 17	Pin 17
	Feedback connector pin number 5	Pin 5
	Feedback connector pin number 8	Pin 8
	Feedback connector pin number 6	Pin 6
	Encoder connector pin number	Pin 1
	Encoder connector pin number	Pin 9
	Encoder connector pin number	Pin 7
Mechanical View 7	Key length	Key length 40 mm
	Key width	Key width 6 mm
	Key height	Key height 6 mm
	Key feature label	Key feature label
	Item callout 1	Item callout 1
	Item callout 2	Item callout 2
	Shaft key feature label	Shaft key feature label
	Shaft shoulder axial distance	24.5 mm with +0/-0.2 tolerance
	Shaft keyway axial dimension	Keyway axial dimension 5 mm
	Shaft diameter	Shaft diameter $\varnothing 2$ mm with +0/-0.013 tolerance
	Mounting pilot diameter	Mounting pilot diameter $\varnothing 10$ mm with +0/-0.035 tolerance
	Connector specification	Connector/model callout CM6L18
	Reference axial clearance	Reference dimension 5.5 mm

VIEW	FIELD	VALUE
Reference axial distance	Reference dimension 13.5 mm	
Front shaft-side axial length	55 mm ±1	
Motor body overall length	239.5 mm ±1.5	
Mechanical View 8	17-pin encoder connector label	17-pin encoder connector
	Motor connector label	Motor connector label; pin count not normalized from OCR source
	Mounting hole pitch circle diameter	Diameter 145 ±0.2
	Mounting hole quantity and diameter	4 holes, diameter 9
	Lower-left mounting hole angular position	45 degrees
	Lower-right mounting hole angular position	45 degrees
	Square mounting flange side length	Square 130
Mechanical View 10	Torque axis tick 32	Torque tick value 32 N.m
	Intermittent maximum torque	28.65 N.m
	Torque axis tick 28	Torque tick value 28 N.m
	Torque axis tick 24	Torque tick value 24 N.m
	Intermittent operating region label	Intermittent operating region
	Torque axis tick 20	Torque tick value 20 N.m
	Y-axis label	Torque T in N.m
	Torque axis tick 16	Torque tick value 16 N.m
	Torque axis tick 12	Torque tick value 12 N.m
	Continuous torque point	9.55 N.m
	Continuous operating region label	Continuous operating region
	Torque axis tick 8	Torque tick value 8 N.m
	High-speed torque point	6.37 N.m
	Torque axis tick 4	Torque tick value 4 N.m
	Torque axis tick 0	Torque tick value 0 N.m
	Speed axis tick 0	Speed tick value 0 rpm
	Speed axis tick 1000	Speed tick value 1000 rpm
	Speed axis tick 2000	Speed tick value 2000 rpm
	Speed axis tick 3000	Speed tick value 3000 rpm
	Speed axis tick 4000	Speed tick value 4000 rpm
	X-axis unit	Rotational speed unit 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	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-008 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.