

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-A01-130D-T14P33NM-3000W-003	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

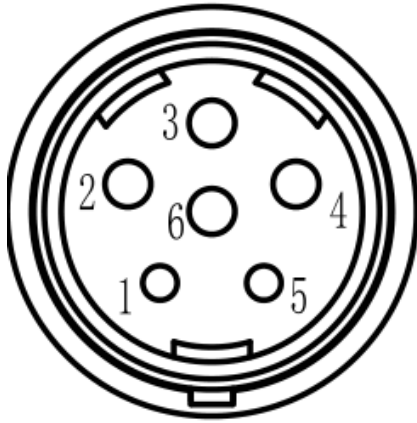
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

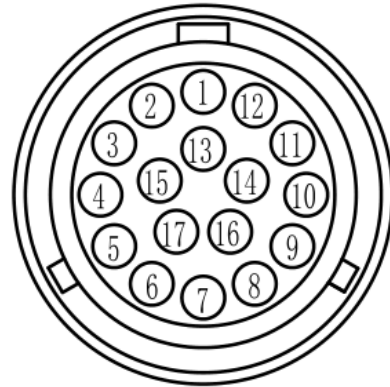
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	14.33 Nm
Rated Speed	2000 rpm
Flange Size	130 mm

Product Structure & Views

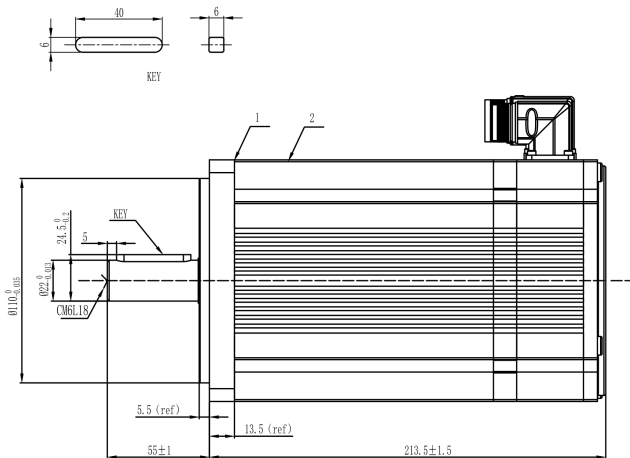
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



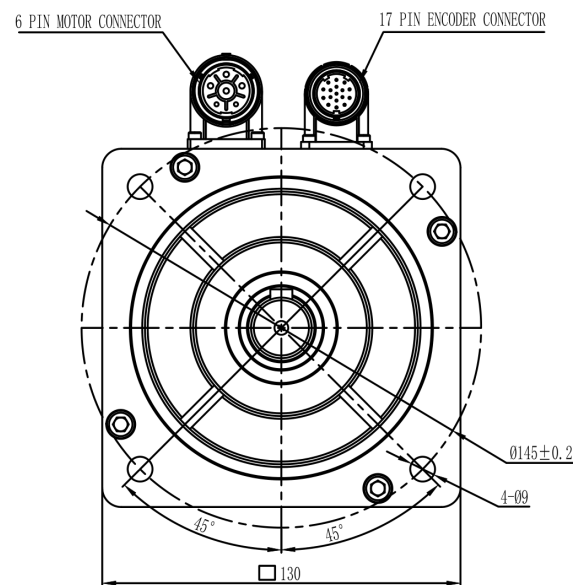
Mechanical View 4



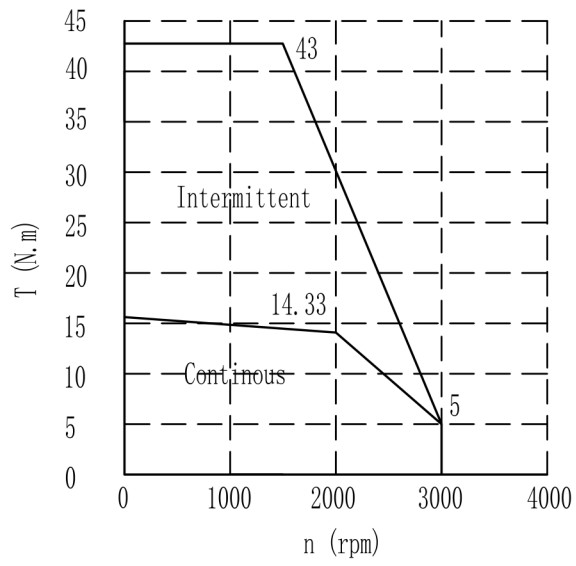
Mechanical View 5



Mechanical View 6



Mechanical View 7



Mechanical View 9

VIEW	FIELD	VALUE
Mechanical View 4	Pin 3 Label	Pin 3
	Pin 2 Label	Pin 2
	Pin 6 Label	Pin 6
	Pin 4 Label	Pin 4
	Pin 1 Label	Pin 1
	Pin 5 Label	Pin 5
Mechanical View 5	Pin 2	Pin 2
	Pin 12	Pin 12
	Pin 3	Pin 3
	Pin 13	Pin 13
	Pin 15	Pin 15
	Pin 14	Pin 14
	Pin 4	Pin 4
	Pin 10	Pin 10
	Pin 17	Pin 17
	Pin 16	Pin 16
	Pin 5	Pin 5
	Pin 9	Pin 9
	Pin 8	Pin 8
	Pin 6	Pin 6
	Encoder connector pin number	Pin 1
	Encoder connector pin number	Pin 11
	Encoder connector pin number	Pin 7
Mechanical View 6	Key length	40 mm
	Key width	6 mm
	Key depth	6 mm
	Shaft diameter with tolerance	Ø110 0/-0.035 mm
	Shaft extension length with tolerance	24.5 0/-0.2 mm
	Shaft journal diameter with tolerance	Ø22 0/-0.013 mm
	Keyway depth	5 mm
	Mounting dimension (reference)	5.5 mm (ref)
	Mounting dimension (reference)	13.5 mm (ref)
	Mounting face to reference distance	55±1 mm
	Overall length	213.5±1.5 mm
Mechanical View 7	17 PIN ENCODER CONNECTOR	17-pin encoder connector
	6 PIN MOTOR CONNECTOR	6-pin motor connector

VIEW	FIELD	VALUE
Mounting hole bolt circle diameter	Ø145±0.2	
Number and diameter of mounting holes	4 holes × Ø9	
Mounting hole angular position 1	45°	
Mounting hole angular position 2	45°	
Flange square side length	130 × 130 square	
Mechanical View 9	Y-axis scale - Maximum torque	45
	Intermittent peak torque	43
	Y-axis scale - Torque graduation	40
	Y-axis scale - Torque graduation	35
	Y-axis scale - Torque graduation	30
	Operation mode label - Intermittent	Intermittent
	Y-axis scale - Torque graduation	25
	Y-axis label - Torque	T (N.m)
	Y-axis scale - Torque graduation	20
	Continuous rated torque	14.33
	Y-axis scale - Torque graduation	15
	Operation mode label - Continuous	Continuous
	Y-axis scale - Torque graduation	10
	Continuous minimum torque	5
	Y-axis scale - Torque graduation	5
	Y-axis origin	0
	X-axis origin	0
	X-axis scale - Speed graduation	1000
	X-axis scale - Speed graduation	2000
	X-axis scale - Speed graduation	3000
	X-axis scale - Speed graduation	4000
	X-axis label - Speed	n (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	30	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	14.33	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	14.33	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-T14P33NM-3000W-003 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.