ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-A01-130D-T9P55NM-2000W-006	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

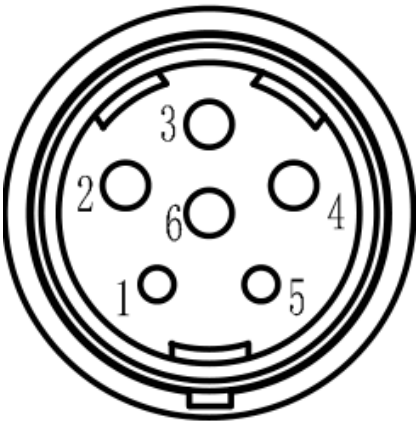
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

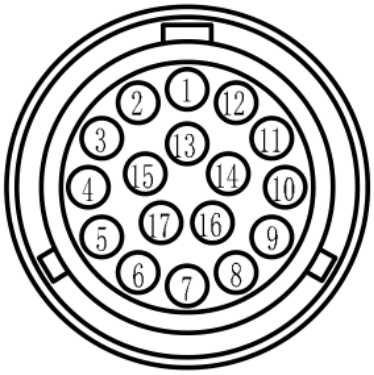
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	9.55 N·m
Rated Speed	2000 rpm
Flange Size	130 mm

Product Structure & Views

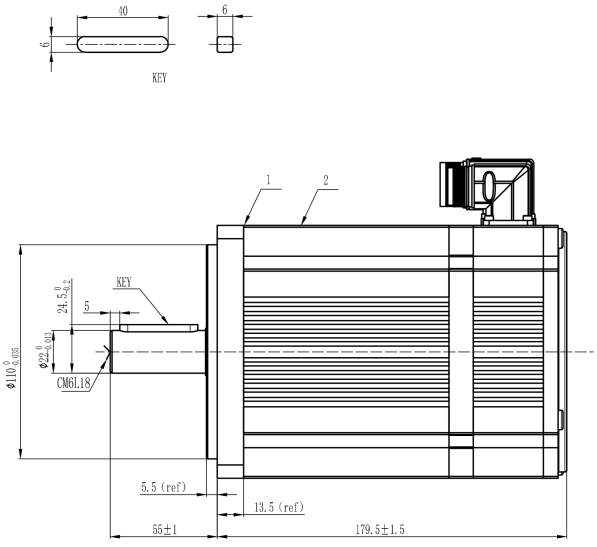
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



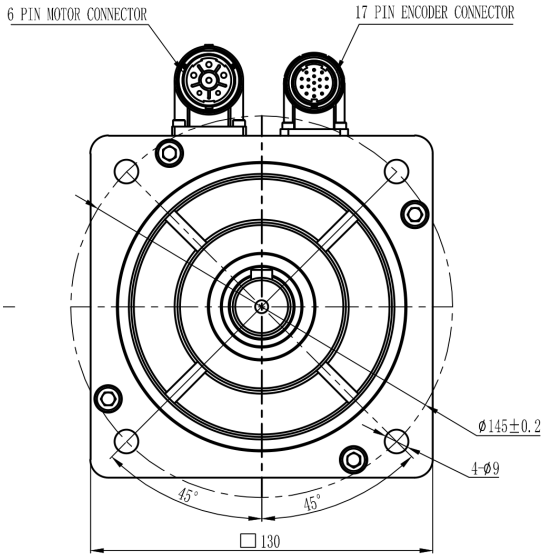
Mechanical View 4



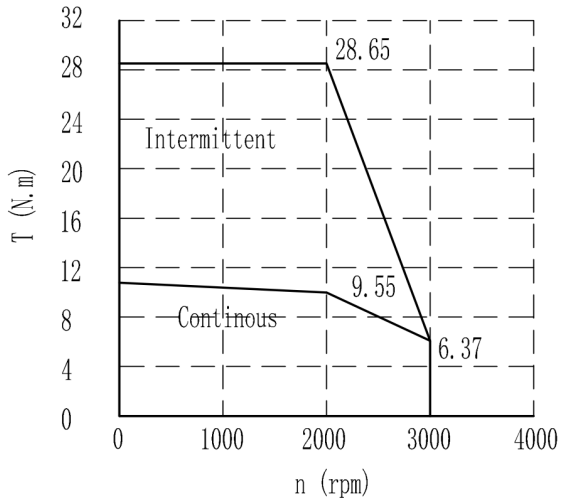
Mechanical View 5



Mechanical View 6



Mechanical View 7



Mechanical View 9

VIEW	FIELD	VALUE
Mechanical View 4	Pin 1 Position	Pin 1
	Pin 2 Position	Pin 2
	Pin 3 Position	Pin 3
	Pin 4 Position	Pin 4
	Pin 5 Position	Pin 5
	Pin 6 Position	Pin 6
Mechanical View 5	Pin number 1	Pin 1
	Pin number 2	Pin 2
	Pin number 3	Pin 3
	Pin number 4	Pin 4
	Pin number 6	Pin 6
	Pin number 8	Pin 8
	Pin number 10	Pin 10
	Pin number 13	Pin 13
	Pin number 14	Pin 14
	Pin number 15	Pin 15
	Pin number 16	Pin 16
	Pin number 17	Pin 17
	Encoder connector pin number	Pin 12
	Encoder connector pin number	Pin 11
	Encoder connector pin number	Pin 5
	Encoder connector pin number	Pin 7
	Encoder connector pin number	Pin 9
Mechanical View 6	Key length	40 mm
	Key width	6 mm
	Key depth	6 mm
	Keyway identification	KEY
	Part identification 1	Component 1
	Part identification 2	Component 2
	Shaft journal length	24.5 mm with tolerance 0/-0.2
	Keyway depth	5 mm
	Shaft diameter	Φ22 mm with tolerance 0/-0.013
	Mounting bolt circle diameter	Φ40 mm with tolerance 0/-0.035
	Mounting screw depth (reference)	5.5 mm (reference)
	Mounting screw depth (reference)	13.5 mm (reference)
	Motor-side mounting dimension	55 mm ±1

VIEW	FIELD	VALUE
Overall length	179.5 mm ±1.5	
Mechanical View 7	17 pin encoder connector	17 PIN ENCODER CONNECTOR
	6 pin motor connector	6 PIN MOTOR CONNECTOR
	Mounting hole circle diameter	Φ45±0.2
	Mounting hole diameter and quantity	4-Φ
	Mounting hole angular position (left)	45°
	Mounting hole angular position (right)	45°
	Square flange dimension	□130
Mechanical View 9	Y-axis label - Torque	T (N.m)
	X-axis label - Speed	n (rpm)
	Y-axis scale values - Torque	0, 4, 8, 12, 16, 20, 24, 28, 32 N.m
	X-axis scale values - Speed	0, 1000, 2000, 3000, 4000 rpm
	Intermittent operation zone label	Intermittent operation zone
	Continuous operation zone label	Continuous operation zone
	Maximum torque point - Intermittent zone	28.65 N.m
	Torque point 1 - Continuous zone	9.55 N.m
	Torque point 2 - Continuous zone	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	20.25	kg·cm²

- 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	N·m
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	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-A01-130D-T9P55NM-2000W-006 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.