

ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-A03-130G-T15P2NM-2400W-002	DRAFT-08 / 27 Aug 2026	Engineering Integration Reference

Integration Overview

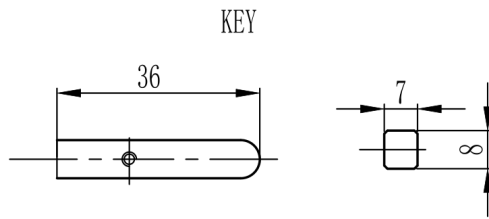
Closed-loop rotary servo motor for specified motion axes. This guide supports mechanical mounting, shaft and coupling integration, feedback and brake planning, cable routing, thermal validation and staged commissioning.

Key Integration Facts

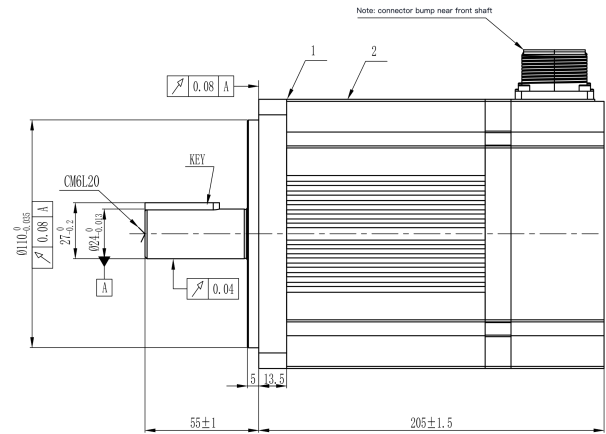
INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	15.2 Nm
Rated Speed	1500 rpm
Rated Voltage	220 VAC
Flange Size	130 mm

Product Structure & Views

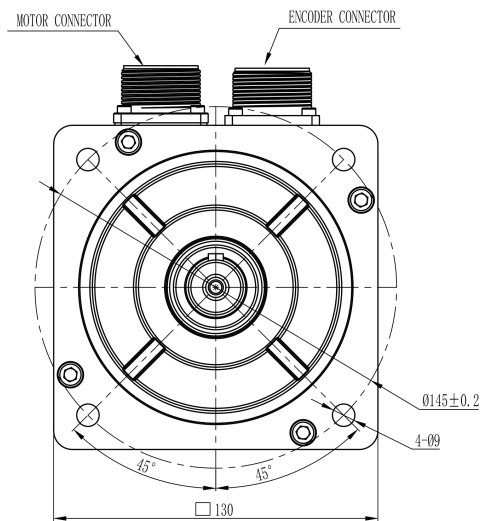
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



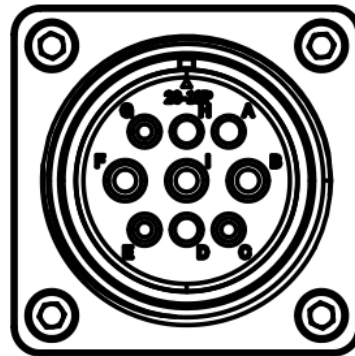
Mechanical View 1



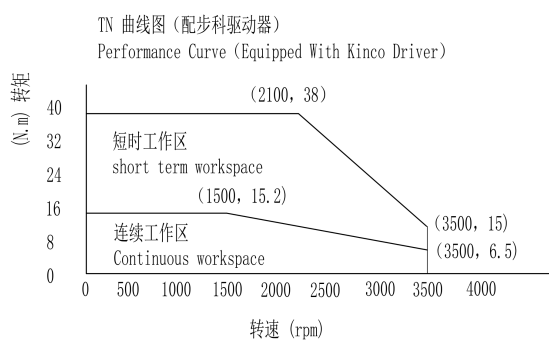
Mechanical View 2



Mechanical View 3



Mechanical View 5



Mechanical View 10

VIEW	FIELD	VALUE
Mechanical View 1	Keyway length	36
	Keyway width	7
	Keyway depth	8
	Keyway designation	KEY
Mechanical View 2	Mounting flange outer diameter	Ø110 +0/-0.035 mm
	Output shaft diameter	Ø24 +0.013/0 mm
	Keyway width	27 +0/-0.2 mm
	Keyway standard	CM6L20
	Position tolerance (upper feature)	Position tolerance Ø0.08 relative to datum A
	Cylindricity or runout tolerance (shaft)	Cylindricity/runout tolerance 0.08 relative to datum A
	Position tolerance (lower feature)	Position tolerance Ø0.04
	Datum A	Datum A
	Overall length	205±1.5 mm
	Front section length	55±1 mm
	Reference dimension	13.5 mm (reference)
	Connector mounting note	Connector bump positioned near front output shaft
	End step length	5 mm
Mechanical View 3	Motor connector	Motor aviation connector
	Encoder connector	Encoder aviation connector
	Mounting hole circle diameter	Ø145±0.2 mm
	Mounting hole quantity and diameter	4 holes × Ø9 mm
	Mounting hole angular spacing	45° angular spacing
	Overall width	130 mm
Mechanical View 5	Connector Contact Letter Designation	A, B, C, D, ...
Mechanical View 10	Torque axis label	Torque (N.m)
	Speed axis label	Speed (rpm)
	Rated operating point	Speed 2100 rpm, Torque 38 N.m
	Short-term operating zone boundary point	Speed 1500 rpm, Torque 15.2 N.m
	Maximum speed rated torque point	Speed 3500 rpm, Torque 15 N.m
	Maximum speed continuous operating point	Speed 3500 rpm, Torque 6.5 N.m
	Short-term operating zone (Chinese)	Short-term operating zone
	Short-term operating zone (English)	Short term workspace
	Continuous operating zone (Chinese)	Continuous operating zone
	Continuous operating zone (English)	Continuous workspace
	Torque range	0-40 N.m
	Speed Range	0 to 4000 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	31.67 ()	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	220	VAC
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	15.2	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	1500	rpm
Rated Torque	15.2	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-A03-130G-T15P2NM-2400W-002 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.