

ENGINEERING DOCUMENTATION

Hybrid Rotary Stepper Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-ST-6H2030-030-4AL	DRAFT-08 / 28 Aug 2026	Engineering Integration Reference

Integration Overview

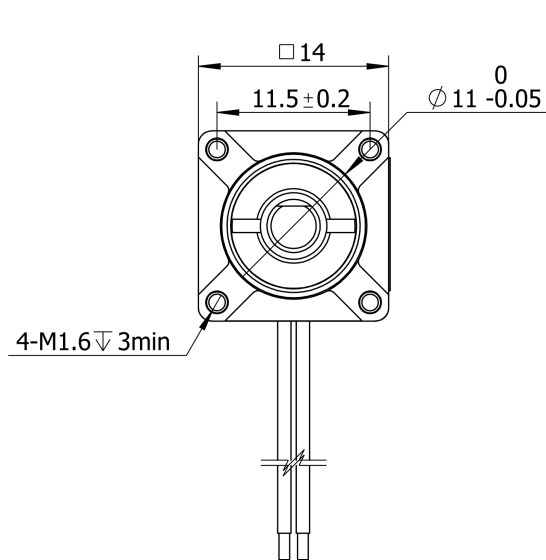
Hybrid stepper motor for indexed positioning and specified rotary motion. This guide supports mounting, shaft, load-path, drive-current, phase, thermal, cable and commissioning planning for ES-ST-6H2030-030-4AL.

Key Integration Facts

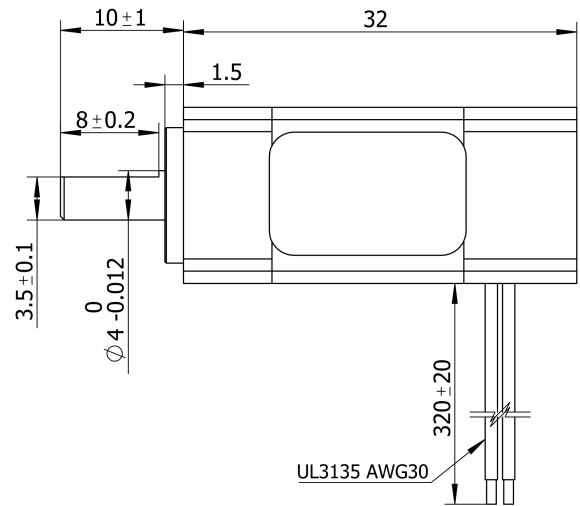
INTEGRATION ITEM	VALUE
Holding Torque	0.005 Nm
Rotor Inertia	1.5 gcm ²
Temperature Rise	80 °C
Number of Phases	2
Phase Resistance	23 Ω ±10% Ω
Continuous Rated Current	0.3 A
Phase Inductance	4 mH ±20% mH
Insulation Class	B

Product Structure & Views

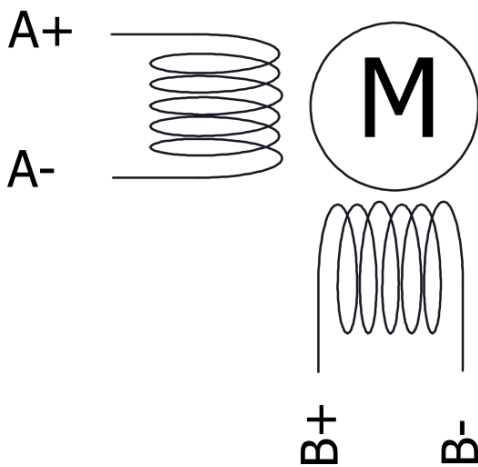
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



Mechanical View 1



Mechanical View 2



Mechanical View 7

VIEW	FIELD	VALUE
Mechanical View 1	Square mounting face outside dimension	Square 14
	Mounting hole center distance	11.5 ± 0.2
	Central shaft or pilot diameter	Diameter 11 with tolerance +0/-0.05
	Mounting threaded holes and minimum depth	4× M1.6 threaded holes, depth 3 min



VIEW	FIELD	VALUE
Mechanical View 7	Shaft protrusion length	10 ± 1
	Motor body length	32
	Step or shoulder offset length	1.5
	Shaft end feature length	8 ± 0.2
	Shaft end feature height	3.5 ± 0.1
	Shaft diameter with tolerance	Diameter 4, +0 / -0.012

Technical Specifications

PARAMETER	VALUE	UNIT
Holding Torque	0.005	Nm
Rotor Inertia	1.5	gcm ²
Temperature Rise	80	°C
Number of Phases	2	
Phase Resistance	23 Ω±10%	Ω
Continuous Rated Current	0.3	A
Phase Inductance	4 mH±20%	mH
Insulation Class	B	
Insulation Resistance	100 MΩ(250 VDC)	MΩ
Step Angle	1.8	°
Shaft material	Stainless steel	
End-cap material	Die-cast aluminum alloy	
Bearing type	Deep-groove ball bearing	
Body Length	32	mm
Weight	0.035	kg
Duty Cycle	S1	

Technical Specifications - Continued

PARAMETER	VALUE	UNIT
Motor Weight	35	g

Mounting, Shaft and Load Path

- Support the complete mounting face, preserve locating features and verify fastener engagement without distorting the housing.
- Align the shaft and coupling before tightening, and validate radial load, axial load, overhung distance, belt tension, inertia and shock for the installed mechanism.

Drive, Electrical and Motion Integration

- Set phase current, microstep, acceleration and speed for the actual load inertia, resonance behavior and installed thermal condition.
- Use applicable wiring data for conductor identity, polarity, phase pairing, shielding and grounding; do not infer these from the product view.

Thermal, Cable and Commissioning Conditions

- Validate housing and winding temperature over the intended operating cycle, ambient condition, mounting heat path and enclosure airflow.
- Provide strain relief and service clearance, then commission at reduced energy and verify direction, current limits, motion response, temperature and fault behavior.

Integration Checklist

- | | |
|----|---|
| 01 | Confirm the exact-SKU drawing and parameter set. |
| 02 | Verify mounting geometry, locating features, shaft engagement, coupling alignment and service clearance. |
| 03 | Validate torque, speed, inertia, radial and axial loads, overhung distance and shock. |
| 04 | Set drive, current, motion, wiring, grounding and thermal boundaries from applicable product documentation. |
| 05 | Commission at reduced energy and verify direction, motion response, temperature and fault behavior. |

[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-ST-6H2030-030-4AL and is intended for dimensional evaluation and preliminary integration. It is not a applicable manufacturing drawing, motor or actuator application approval, wiring definition, drive-selection approval, machinery risk assessment, safety validation or production authorization. Before design freeze, installation or energization, verify all dimensions, mounting and locating features, moving envelopes, shaft or output geometry, permissible loads, alignment, supply and current limits, wiring, motion profile, duty cycle, thermal condition, cable routing, environmental boundaries, maintenance and fault response against the applicable EmbodyStack engineering data for this exact SKU. Validate the complete installed system under intended operating and fault conditions.