

ENGINEERING DOCUMENTATION

Hybrid Hollow-Shaft Stepper Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-ST-17HS2048-4D-250	DRAFT-08 / 28 Aug 2026	Engineering Integration Reference

Integration Overview

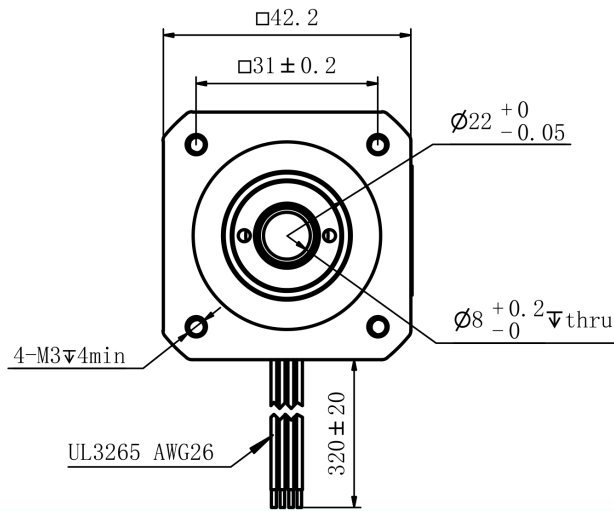
Hybrid stepper motor for indexed positioning and specified rotary motion. This guide supports mounting, shaft, load-path, drive-current, phase, thermal, cable and commissioning planning for ES-ST-17HS2048-4D-250.

Key Integration Facts

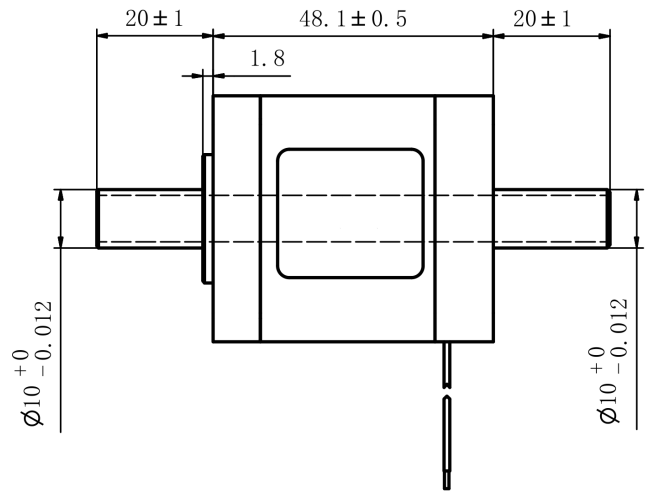
INTEGRATION ITEM	VALUE
Detent Torque	0.02 N·m
Holding Torque	0.48 N·m
Phase Resistance	1.0 Ω
Continuous Rated Current	2.5 A RMS
Phase Inductance	1.8 mH
Step Angle	1.8 °
Rated Voltage	2.25 V
Body Length	48 mm

Product Structure & Views

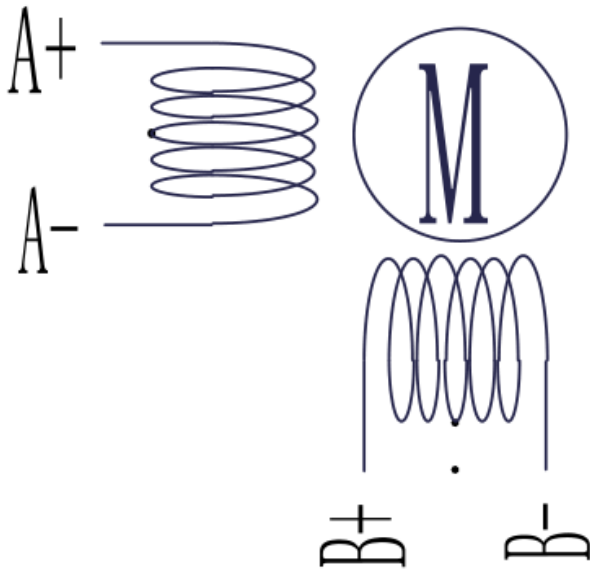
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



Mechanical View 1



Mechanical View 2



Mechanical View 6

VIEW	FIELD	VALUE
Mechanical View 1	Flange outer envelope dimension	42.2 mm square
	Flange mounting hole center distance	31±0.2 mm square pattern
	Output shaft diameter	22 +0/-0.05
	Mounting through-hole diameter	8 +0.2/-0 through-hole
	Tapped hole specification	4× M3 tapped holes, minimum depth 4 mm



VIEW	FIELD	VALUE
Mechanical View 6	Mounting hole center distance from left end	20±1 mm
	Mounting hole center-to-center distance	48.1±0.5 mm
	Mounting hole center distance from right end	20±1 mm
	Nameplate mounting slot depth	1.8 mm
	Left mounting hole diameter and tolerance	Ø10 +0/-0.012 mm
	Right mounting hole diameter and tolerance	Ø10 +0/-0.012 mm

Technical Specifications

PARAMETER	VALUE	UNIT
Detent Torque	0.02	N·m
Holding Torque	0.48	
Phase Resistance	1.0	Ω
Continuous Rated Current	2.5	A RMS
Phase Inductance	1.8	mH
Step Angle	1.8	°
Rated Voltage	2.25	V
Body Length	48	mm
Motor Construction Type	Hollow Shaft Stepper Motor	
Lead Wire Configuration	Bipolar, 4 flying leads	
Frame Size	42	mm
Shaft Configuration	Double shaft	
NEMA Size	17	
Lead Wire Count	4	
Phase Count	2	

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-17HS2048-4D-250 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.