ENGINEERING DOCUMENTATION

Rotary Servo Motor

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-SM-A02-180D-T35NM-5500W-001	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.

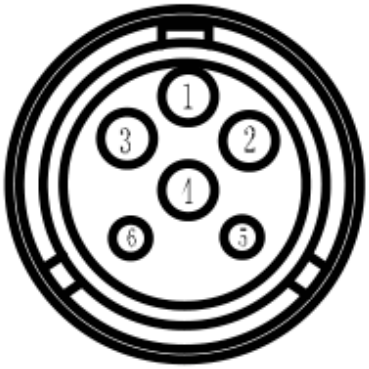
Key Integration Facts

INTEGRATION ITEM	PUBLISHED VALUE
Rated Torque	35 N·m
Rated Speed	1500 rpm
Flange Size	180 mm

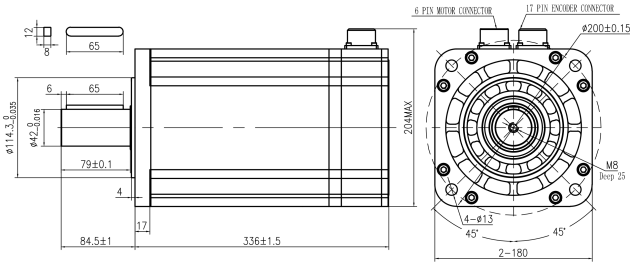
Product Structure & Views

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

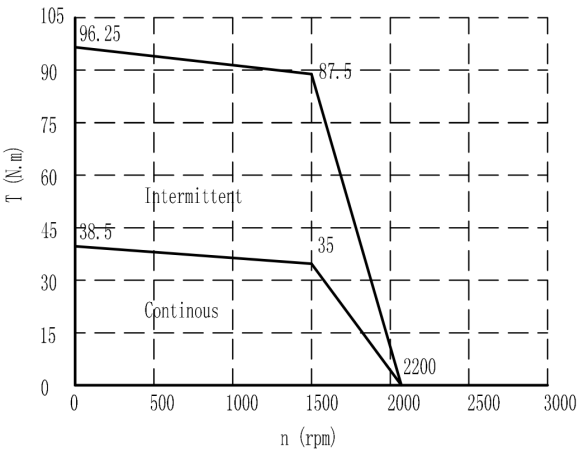
Mechanical View 2



Mechanical View 4



Mechanical View 6



Mechanical View 7

VIEW	FIELD	VALUE
Mechanical View 2	Connector pin label 1-17	Pin 1-17
Mechanical View 4	Pin 1 identifier	Connector contact identified as pin 1.
	Pin 2 identifier	Connector contact identified as pin 2.
	Pin 3 identifier	Connector contact identified as pin 3.
	Pin 4 identifier	Connector contact identified as pin 4.
	Pin 5 identifier	Connector contact identified as pin 5.
	Pin 6 identifier	Connector contact identified as pin 6.
Mechanical View 6	Encoder connector	17 pin encoder connector
	Motor connector	6 pin motor connector
	Front view outside diameter	Diameter 200 ±0.15
	Keyway width	12
	Keyway length	65
	Keyway depth or height	8
	Shaft end step length	6
	Shaft end extension length	65
	Maximum body height	204 maximum
	Pilot diameter	Diameter 114.3 +0/-0.035
	Output shaft diameter	Diameter 42 +0/-0.016
	Shaft shoulder to end face length	79 ±0.1
	Threaded hole size	M8 thread, depth 25
	End cover step width	4
	Mounting through holes quantity and diameter	4 holes diameter 13
	Front flange axial thickness	17
	Mounting hole angular position	45 degrees
	Front end to mounting face length	84.5 ±1
	Motor body length	336 ±1.5
	Mounting hole center distance	2 positions, 180 spacing
Mechanical View 7	Intermittent operation torque callout	Intermittent torque callout 96.25 N.m
	Intermittent operation torque callout near rated speed	Intermittent torque callout 87.5 N.m
	Continuous Torque	38.5 N·m
	Continuous Torque at 1500 rpm	35 N·m at 1500 rpm
	Maximum Speed	2200 rpm
	Torque Scale	0–105 N·m
	Motor Speed Scale	0–3000 rpm
	Intermittent operating curve label	Intermittent torque curve

VIEW	FIELD	VALUE
Continuous operating region	Continuous operation region	
Torque axis label	Torque T in N.m	
Speed axis label	Rotational speed n in rpm	

Overall Dimensions and Mounting Interface

PARAMETER	PUBLISHED VALUE	UNIT
Flange Size	180	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	154	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	S-MT37 rotary transformer	

- 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	35	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	S-MT37 rotary transformer	

- 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	35	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-A02-180D-T35NM-5500W-001 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.