

PRODUCT DATASHEET

ES-SM-A03-130G-T11P45NM-1800W-004

AC Servo Motors

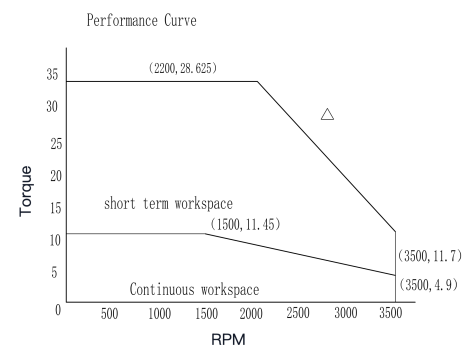
AC Servo Motors | ES-SM-A03-130G Compact 130 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 11.45 Nm, instantaneous Maximum Torque 28.625 Nm and rated Speed 1500 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	11.45	Nm
Instantaneous Maximum Torque	28.625	Nm
Rated Speed	1500	rpm
Continuous Rated Output Power	1800	W
Rated Voltage	220	V AC
Instantaneous Maximum Current	26	A
Flange Size	130	mm
Torque Constant	1.26	Nm/A
Altitude and Derating Rule	highest altitude2000m(1000mfor each increase above100m,Power drop1.5%)	



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	11.45	Nm
Instantaneous Maximum Torque	28.625	Nm
Rated Speed	1500	rpm
Continuous Rated Output Power	1800	W
Torque Constant	1.26	Nm/A
Rated Power	1800	W
ELECTRICAL		
Rated Voltage	220	V AC
Instantaneous Maximum Current	26	A
Back EMF Constant	76.2	V/krpm
Insulation Class	F	
Motor Outlet Mode	Standard socket	
Pole Pairs	5	
Rated Current	10	A
Rotational Back-EMF Constant	76.2	V/krpm
Electrical Time Constant	5.69	ms

Technical Specifications

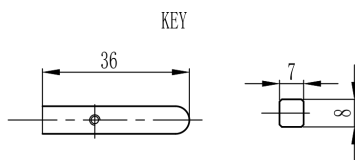
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Position Feedback Device	23-bit multi-turn communication optical absolute encoder		
MECHANICAL			
Flange Size	130	mm	
Inertia Level	High inertia		
Holding Brake Available	With holding brake		
Mechanical Time Constant	1.71 / 1.26	ms	Brake Configuration: without_brake
Rotor Inertia	24.15 / 22.85	Kg·cm ²	Brake Configuration: without_brake
Bearing Radial Force Capacity	686	N	
Bearing Axial Force Capacity	196	N	
ENVIRONMENTAL			
Altitude and Derating Rule	highest altitude 2000m (1000m for each increase above 100m, Power drop 1.5%)		
Operating Environment	Keep away from corrosive or flammable gases, oil droplets and dust		
Operating Humidity	≤90% RH, non-condensing		
Operating Temperature	-20 to 40°C (no freezing)		
Protection Rating	IP65, shaft end IP54 (Note: with shaft-end oil seal IP54, without oil seal IP50)		
CONFIGURATION			
Output Shaft Type	Keyed shaft		
ADDITIONAL SPECIFICATIONS			
Holding Brake	1		

Dimensional & Integration Overview

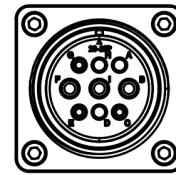
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	High inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	1.71 / 1.26	ms
Rotor Inertia	24.15 / 22.85	Kg·cm ²
Bearing Radial Force Capacity	686	N

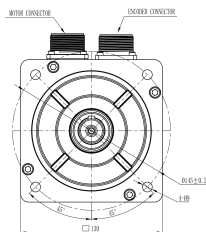
Dimensional Drawings



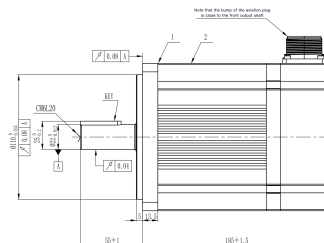
Mechanical View 1



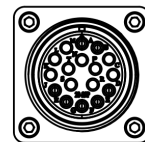
Power Connector Pinout



Mechanical View 3



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Keyway identifier	KEY
	Keyway length	36
	Keyway width	7
	Keyway depth	8
Mechanical View 3	Mounting hole bolt circle diameter	Ø145±0.2 mm
	Mounting hole count and diameter	4 holes × Ø9 mm
	Mounting hole angular spacing (lower left)	45°
	Mounting hole angular spacing (lower right)	
	Flange width	130 mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 4	Aviation plug bump orientation	Bump oriented toward front output shaft
	Position tolerance	Position 0.08 relative to datum A
	Keyway designation	Keyway present
	Datum A	
	Perpendicularity tolerance	Perpendicularity 0.08
	Shaft diameter with tolerance	$\Phi 22 +0/-0.013$
	Shaft length with tolerance	$25 +0/-0.2$
	Mounting flange diameter	$\Phi 110 +0/-0.035$
	Position tolerance	Position 0.04 relative to datum A
	Boss height	13.5
	Overall length (front section)	55 ± 1
	Overall length	185 ± 1.5

[View Product Online](#) [Request Engineering Data](#) [Request a Quote](#)

01 Specifications are subject to change without notice. Verify the current product configuration before final design release.

02 2D drawings, CAD files and integration documentation are controlled documents and are supplied separately on request.