

PRODUCT DATASHEET

ES-SM-A03-130G-T8P27NM-1300W-001

AC Servo Motors

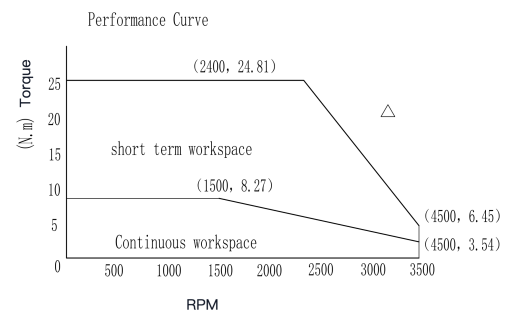
AC Servo Motors | ES-SM-A03-130G Compact 130 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 8.27 N·m, instantaneous Maximum Torque 24.81 N·m and rated Speed 1500 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	8.27	N·m
Instantaneous Maximum Torque	24.81	N·m
Rated Speed	1500	rpm
Continuous Rated Output Power	1300	W
Rated Voltage	220	V AC
Instantaneous Maximum Current	22.8	A
Flange Size	130	mm
Torque Constant	1.197	N·m/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	8.27	Nm
Instantaneous Maximum Torque	24.81	Nm
Rated Speed	1500	rpm
Continuous Rated Output Power	1300	W
Torque Constant	1.197	Nm/A
Rated Power	1300	W
ELECTRICAL		
Rated Voltage	220	V AC
Instantaneous Maximum Current	22.8	A
Back EMF Constant	53.8	V/krpm
Insulation Class	F	
Motor Outlet Mode	Standard socket	
Pole Pairs	5	
Rated Current	7.5	A
Rotational Back-EMF Constant	53.8	V/krpm
Electrical Time Constant	4.61	ms

Technical Specifications

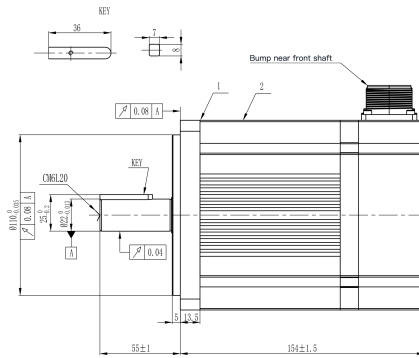
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Position Feedback Device	17-bit multi-turn communication magnetic absolute encoder		
MECHANICAL			
Flange Size	130	mm	
Inertia Level	High inertia		
Holding Brake Available	Without holding brake		
Mechanical Time Constant	1.97	ms	Brake Configuration: without_brake
Rotor Inertia	18.47 / 17.17	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	false		

Dimensional & Integration Overview

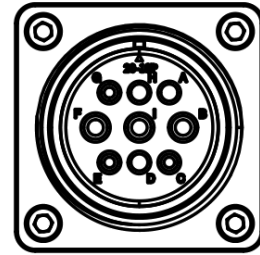
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	High inertia	
Holding Brake Available	Without holding brake	
Mechanical Time Constant	1.97	ms
Rotor Inertia	18.47 / 17.17	Kg·cm ²
Bearing Radial Force Capacity	686	N

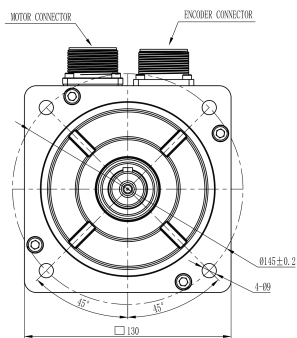
Dimensional Drawings



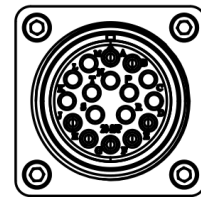
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Keyway length	36 mm
	Key width	7 mm
	Key depth	8 mm
	Position tolerance	Position 0.08 A
	Datum A	
	Coaxiality tolerance	Coaxiality 0.08
	Shaft diameter $\Phi 22$	$\Phi 22\ 0/-0.013\ \text{mm}$
	Shaft length 25	$25\ 0/-0.2\ \text{mm}$
	Mounting spigot diameter $\Phi 110$	$\Phi 110\ 0/-0.035\ \text{mm}$
	Position tolerance	Position 0.04
	Width dimension 13.5	13.5 mm
	Depth dimension 5	5 mm
	Length 55	$55\pm 1\ \text{mm}$
	Length 154	$154\pm 1.5\ \text{mm}$

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Mounting bolt circle diameter	Ø145±0.2 mm
	Number and diameter of mounting holes	4 holes × Ø9 mm
	Mounting hole angular position 1	45°
	Mounting hole angular position 2	
	Flange square envelope dimension	130 × 130 mm square

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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.