PRODUCT DATASHEET

ES-SM-A03-130G-T8P27NM-1300W-004

AC Servo Motors

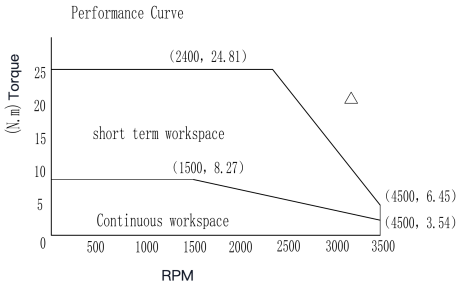
AC Servo Motors | ES-SM-A03-130G Compact 130 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 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	N·m
Instantaneous Maximum Torque	24.81	N·m
Rated Speed	1500	rpm
Continuous Rated Output Power	1300	W
Torque Constant	1.197	N·m/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

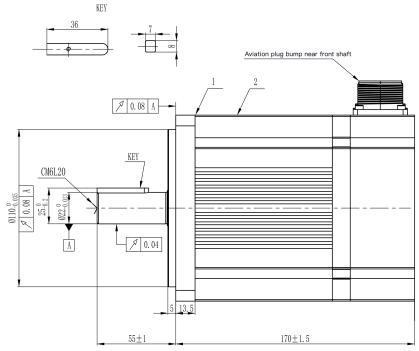
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Position Feedback Device	23-bit multi-turn communication optical absolute encoder		
MECHANICAL			
Flange Size	130	mm	
Inertia Level	High inertia		
Holding Brake Available	With holding brake		
Mechanical Time Constant	2.12 / 1.97	ms	Brake Configuration: 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 altitude2000m(1000mfor each increase above100m,Power drop1.5%)		
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

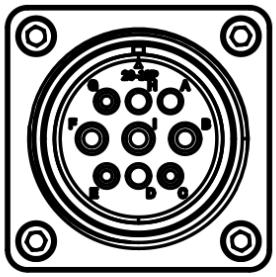
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	High inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	2.12 / 1.97	ms
Rotor Inertia	18.47 / 17.17	Kg·cm2
Bearing Radial Force Capacity	686	N

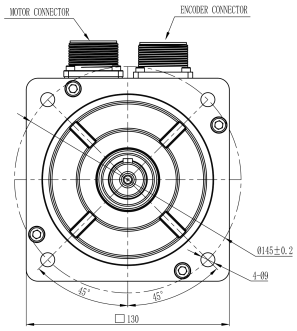
Dimensional Drawings



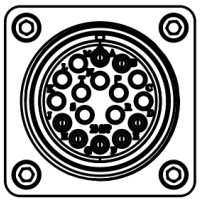
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Mechanical View 4

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key feature label	Key feature
	Key length	36 mm
	Key width	8 mm
	Item callout 1	Item 1
	Item callout 2	Item 2
	Geometric tolerance 0.08 relative to datum A	Geometric tolerance 0.08 to datum A
	Shaft key feature label	Key feature on shaft
	Threaded hole specification	CM6L20
	Mounting pilot diameter	Diameter 110 mm, +0/-0.035 mm
	Mounting interface geometric tolerance 0.08 relative to datum A	Geometric tolerance 0.08 to datum A
	Shaft extension length	25 mm, +0/-0.2 mm
	Output shaft diameter	Diameter 22 mm, +0/-0.013 mm
	Datum A	
	Shaft end geometric tolerance 0.04	Geometric tolerance 0.04
	Front step length	5 mm
	Front flange step length	13.5 mm
	Shaft projection length	55 mm ±1 mm
	Motor body length	170 mm ±1.5 mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Mounting hole pitch circle diameter	Pitch circle diameter Ø145 ±0.2
	Mounting hole quantity and diameter	4 holes, Ø9
	Left mounting hole angular offset	45 degrees
	Right mounting hole angular offset	
	Square flange envelope size	Square flange 130 x 130

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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.