

PRODUCT DATASHEET

ES-SM-A03-130G-T5P39NM-850W-001

AC Servo Motors

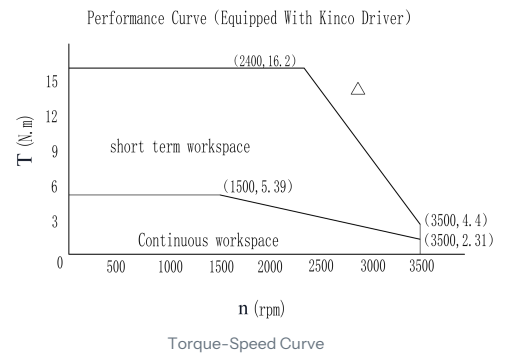
AC Servo Motors | ES-SM-A03-130G Compact 130 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 5.39 N·m, instantaneous Maximum Torque 16.2 N·m and rated Speed 1500 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	5.39	N·m
Instantaneous Maximum Torque	16.2	N·m
Rated Speed	1500	rpm
Continuous Rated Output Power	850	W
Rated Voltage	220	V AC
Instantaneous Maximum Current	16.7	A
Flange Size	130	mm
Torque Constant	1.082	N·m/A
Altitude and Derating Rule	highest altitude2000m(1000mfor each increase above100m,Power drop1.5%)	



Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	5.39	Nm
Instantaneous Maximum Torque	16.2	Nm
Rated Speed	1500	rpm
Continuous Rated Output Power	850	W
Torque Constant	1.082	Nm/A
Rated Power	850	W
ELECTRICAL		
Rated Voltage	220	V AC
Instantaneous Maximum Current	16.7	A
Back EMF Constant	56.23	V/krpm
Insulation Class	F	
Motor Outlet Mode	Standard socket	
Pole Pairs	5	
Rated Current	5.4	A
Rotational Back-EMF Constant	56.23	V/krpm
Electrical Time Constant	4.39	ms

Technical Specifications

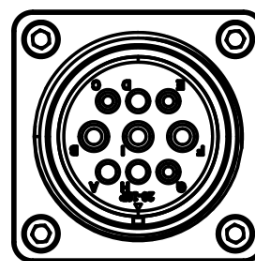
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Position Feedback Device	17-bit multi-turn communication magnetic absolute encoder		
MECHANICAL			
Flange Size	130	mm	
Inertia Level	High inertia		
Holding Brake Available	Without holding brake		
Mechanical Time Constant	2.29	ms	Brake Configuration: without_brake
Rotor Inertia	12.86 / 11.56	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		

Mechanical Overview

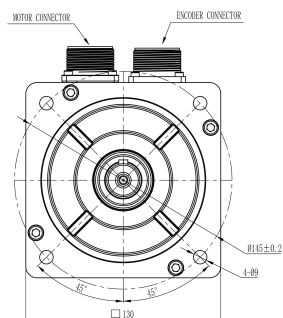
PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	High inertia	
Holding Brake Available	Without holding brake	
Mechanical Time Constant	2.29	ms
Rotor Inertia	12.86 / 11.56	Kg·cm2
Bearing Radial Force Capacity	686	N

Technical drawing showing a shaft assembly. The top view shows a shaft with a diameter of 36 mm and a keyway with a width of 7 mm. The side view shows a shaft with a diameter of 36 mm and a keyway with a width of 7 mm. The shaft is connected to a pulley with a diameter of 139 ± 1.5 mm. The shaft-hub connection is shown with a key and a shaft-hub connection. The shaft-hub connection is shown with a key and a shaft-hub connection. The shaft-hub connection is shown with a key and a shaft-hub connection.

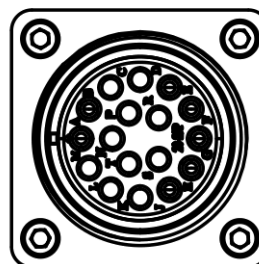
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Keyway label	Keyway
	Key length	36
	Keyway width	8
	Item balloon 2	Item 2
	Geometric tolerance	Geometric tolerance 0.08 relative to datum A
	Shaft keyway label	Keyway
	Threaded hole specification	CM6L20
	Datum A	
	Front output shaft diameter	Diameter 22, +0/-0.013
	Geometric tolerance value	Geometric tolerance 0.08
	Shaft extension length	25, +0/-0.2
	Housing outer diameter	Diameter 110, +0/-0.035
	Geometric tolerance value	Geometric tolerance 0.04
	End step dimensions	5 and 13.5
	Front shaft end to flange distance	55 ±1
	Main body length	139 ±1.5

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Mounting hole pitch circle diameter	Pitch circle diameter $\varnothing 145 \pm 0.2$
	Mounting hole quantity and diameter	4 holes, $\varnothing 9$
	Left mounting hole angular position	45 degrees
	Right mounting hole angular position	
	Square mounting flange side length	Square flange 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.