

PRODUCT DATASHEET

ES-SM-A03-130G-T5P39NM-850W-003

AC Servo Motors

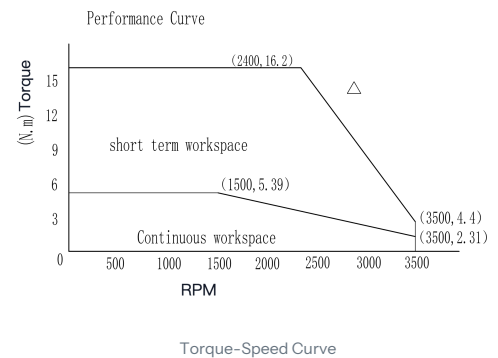
AC Servo Motors | ES-SM-A03-130G Compact 130 mm AC Servo Motor Series

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

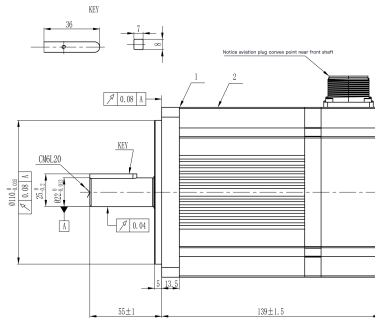
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Position Feedback Device	23-bit multi-turn communication optical absolute encoder		
MECHANICAL			
Flange Size	130	mm	
Inertia Level	High inertia		
Holding Brake Available	Without holding brake		
Mechanical Time Constant	2.29	ms	Brake Configuration: without_brake
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		

Dimensional & Integration Overview

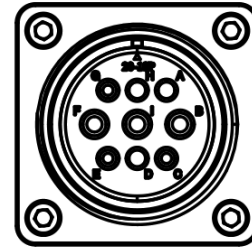
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	High inertia	
Holding Brake Available	Without holding brake	
Mechanical Time Constant	2.29	ms
Rotor Inertia	12.86 / 11.56	Kg·cm ²
Bearing Radial Force Capacity	686	N

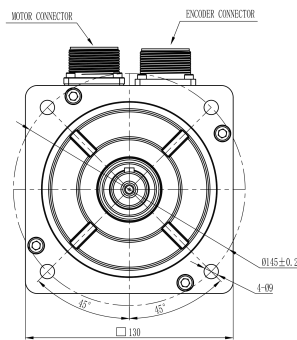
Dimensional Drawings



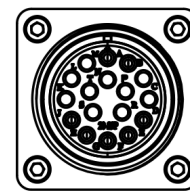
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key slot length	36 mm
	Key width	7 mm
	Key height	8 mm
	Key label	Key feature indicated
	Item callout 1	Item 1 callout
	Item callout 2	Item 2 callout
	Body positional tolerance relative to datum A	Positional tolerance 0.08 mm relative to datum A
	Shaft positional tolerance relative to datum A	
	Pilot or body reference diameter	Diameter 110 mm, +0 / -0.035 mm
	Shaft shoulder length	25 mm, +0 / -0.2 mm
	Output shaft diameter	Diameter 22 mm, +0 / -0.013 mm
	Datum A	
	Local positional tolerance	Positional tolerance 0.04 mm
	End step length	5 mm
	End step or flange thickness	13.5 mm
	Front shaft projection to body face	55 mm ±1 mm
	Motor body length	139 mm ±1.5 mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Mounting hole pitch circle diameter	PCD Ø145 ±0.2
	Mounting hole quantity and diameter	4 × Ø9 holes
	Left mounting hole angular offset	45°
	Right mounting hole angular offset	
	Square mounting flange size	Square 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.