

PRODUCT DATASHEET

ES-SM-A03-130G-T15P2NM-2400W-004

AC Servo Motors

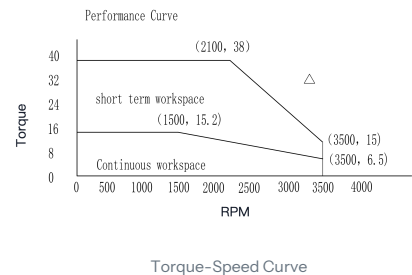
AC Servo Motors | ES-SM-A03-130G Compact 130 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 15.2 N·m, instantaneous Maximum Torque 38 N·m and rated Speed 1500 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	15.2	N·m
Instantaneous Maximum Torque	38	N·m
Rated Speed	1500	rpm
Continuous Rated Output Power	2400	W
Rated Voltage	220	V AC
Instantaneous Maximum Current	32.3	A
Flange Size	130	mm
Torque Constant	1.293	N·m/A
Altitude and Derating Rule	highest altitude2000m(1000mfor each increase above100m,Power drop1.5%)	



Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	15.2	Nm
Instantaneous Maximum Torque	38	Nm
Rated Speed	1500	rpm
Continuous Rated Output Power	2400	W
Torque Constant	1.293	Nm/A
Rated Power	2400	W
ELECTRICAL		
Rated Voltage	220	V AC
Instantaneous Maximum Current	32.3	A
Back EMF Constant	78.15	V/krpm
Insulation Class	F	
Motor Outlet Mode	Standard socket	
Pole Pairs	5	
Rated Current	12.9	A
Rotational Back-EMF Constant	78.15	V/krpm
Electrical Time Constant	6.1	ms

Technical Specifications

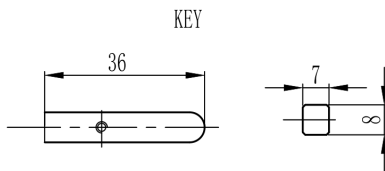
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Position Feedback Device	23-bit multi-turn communication optical absolute encoder		
MECHANICAL			
Flange Size	130	mm	
Inertia Level	High inertia		
Holding Brake Available	With holding brake		
Mechanical Time Constant	1.52 / 1.46	ms	Brake Configuration: without_brake
Rotor Inertia	31.67 / 30.37	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

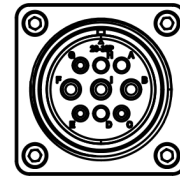
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	High inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	1.52 / 1.46	ms
Rotor Inertia	31.67 / 30.37	Kg·cm ²
Bearing Radial Force Capacity	686	N

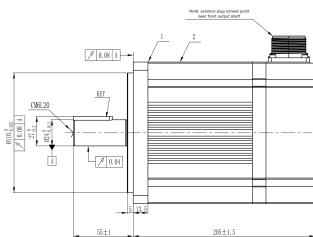
Dimensional Drawings



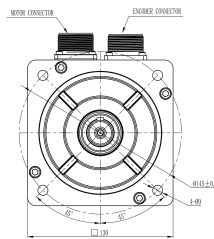
Mechanical View 1



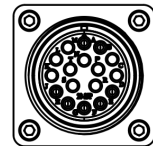
Power Connector Pinout



Mechanical View 3



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Keyway length	36
	Keyway width	7
	Keyway depth	8
Mechanical View 3	Installation note	Note: avionics plug convex point near front output shaft
	Part reference number 1	1
	Part reference number 2	2
	Circular runout tolerance, front face region	Circular runout 0.08 mm, datum A
	Keyway label	Keyway
	Datum A	
	Front output shaft diameter with tolerance	$\Phi 10 +0.035/-0$ mm
	Circular runout tolerance, bore fit region	Circular runout 0.08 mm, datum A
	Shaft segment axial length	$27\ 0/-0.2$ mm
	Shaft journal diameter with tolerance	$\Phi 24\ 0/-0.013$ mm
	Datum reference A in tolerance frame	Datum A
	Position or coaxiality tolerance	0.04 mm (datum A)
	Front shaft section length	55 ± 1 mm
	Rear body section length	205 ± 1.5 mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 4	Mounting bolt circle diameter	$\varnothing 145 \pm 0.2$
	Mounting hole count and diameter	4- $\varnothing 9$
	Mounting hole angular position 1	45°
	Mounting hole angular position 2	
	Motor housing side length	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.