

PRODUCT DATASHEET

ES-SM-A02-130D-T14P3NM-3000W-002

AC Servo Motors

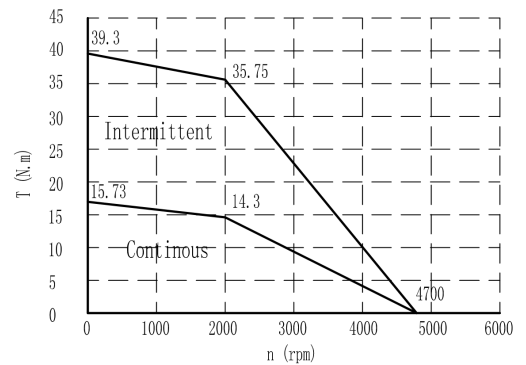
AC Servo Motors | ES-SM-A02-130D High-Response 130 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 14.3 N·m, instantaneous Maximum Torque 35.75 N·m and rated Speed 2000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	14.3	N·m
Instantaneous Maximum Torque	35.75	N·m
Rated Speed	2000	rpm
Continuous Rated Output Power	3000	W
Instantaneous Maximum Current	19.75	A
Flange Size	130	mm
Torque Constant	1.82	N·m/A
Rated Voltage	380	V AC
Rated Line Voltage	380	V



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	14.3	Nm
Instantaneous Maximum Torque	35.75	Nm
Rated Speed	2000	rpm
Continuous Rated Output Power	3000	W
Torque Constant	1.82	Nm/A
Rated Power	3000	W
ELECTRICAL		
Rated Voltage	380	V AC
Rated Line Voltage	380	V
Instantaneous Maximum Current	19.75	A
Back EMF Constant	110	V/krpm

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Position Feedback Device	2500 PPR incremental encoder	
Insulation Class	F	
Maximum Allowed Voltage Slew Rate	8	KV/ μ s
Motor Outlet Mode	YL-series aviation connector	
Pole Pairs	4	
Rated Current	7.9	A
Rotational Back-EMF Constant	110	V/krpm
Electrical Time Constant	10.97	ms
MECHANICAL		
Flange Size	130	mm
Inertia Level	Medium inertia	

Technical Specifications

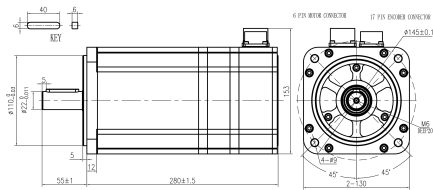
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Holding Brake Available	With holding brake		
Mechanical Time Constant	2.06	ms	
Rotor Inertia	34.9 kgcm ² / 34.8 Kg·cm ²		Brake Configuration: without_brake
Bearing Radial Force Capacity	900	N	
Bearing Axial Force Capacity	450	N	
ENVIRONMENTAL			
Altitude and Derating Rule	Maximum altitude 4000 m; above 1000 m, power derates 1.5% per 100 m		
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		

Dimensional & Integration Overview

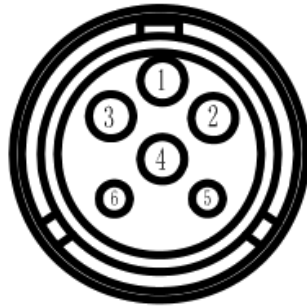
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	Medium inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	2.06	ms
Rotor Inertia	34.9 kgcm ² / 34.8 Kg·cm2	
Bearing Radial Force Capacity	900	N

Dimensional Drawings



Mechanical View 1



Power Connector Pinout



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key width	Key width 6 mm
	Key length	Key length 40 mm
	Key height	Key height 6 mm
	Key feature label	Key feature present
	Local shaft/key shoulder length	Local length 5 mm
	Shaft step local length	Local step length 5 mm
	Shaft end diameter	Diameter 22 mm, tolerance +0/-0.011 mm
	Pilot or shaft interface diameter	Diameter 110 mm, tolerance +0/-0.03 mm
	Front shaft extension length	Length 55 mm $\pm$ 1 mm
	Front flange step length	Step length 12 mm
	Motor body length	Body length 280 mm $\pm$ 1.5 mm
	Motor body height	Overall body height 153 mm
	Flange outside diameter	Diameter 145 mm $\pm$ 0.1 mm
	Threaded hole size and depth	M6 threaded holes, depth 20 mm
	Mounting through-hole quantity and diameter	4 holes, diameter 9 mm
	Mounting hole center spacing	Two-axis mounting hole spacing 130 mm
	Mounting hole angular position	Angular position 45 degrees

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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.