PRODUCT DATASHEET

ES-SM-A01-130D-T4P78NM-1000W-005

AC Servo Motors

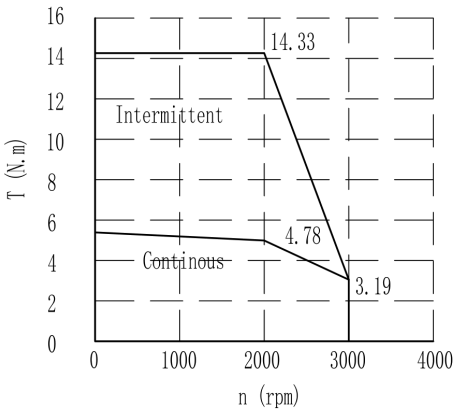
AC Servo Motors | ES-SM-A01-130D Standard 130 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 4.78 N·m, instantaneous Maximum Torque 14.34 N·m and rated Speed 2000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	4.78	N·m
Instantaneous Maximum Torque	14.34	N·m
Rated Speed	2000	rpm
Continuous Rated Output Power	1000	W
Instantaneous Maximum Current	14.5 ref.)	A
Flange Size	130	mm
Torque Constant	1.21	N·m/A
Rated Voltage	320	V AC
Rated Line Voltage	320	V



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	4.78	N·m
Instantaneous Maximum Torque	14.34	N·m
Rated Speed	2000	rpm
Continuous Rated Output Power	1000	W
Torque Constant	1.21	N·m/A
Bearing Axial Force	392	N
Bearing Radial Force	980	N
Rated Power	1000	W
ELECTRICAL		
Rated Voltage	320	V AC
Rated Line Voltage	320	V

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Instantaneous Maximum Current	14.5 ref.)	A
Back EMF Constant	73.4 ref.)	V/krpm
Insulation Class	F	
Motor Outlet Mode	HFO21 + HFO18 aviation connectors	
Pole Pairs	5	
Rated Current	4.5 ref.)	A
Maximum Allowed Voltage Slew Rate	8	KV/μs
Rotational Back-EMF Constant	73.4 ref.)	V/krpm
Electrical Time Constant	8.96	ms
Position Feedback Device	Single-turn communication optical encoder	

Technical Specifications

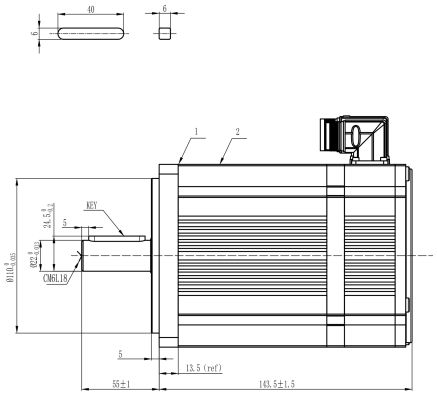
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Flange Size	130	mm	
Inertia Level	Medium inertia		
Holding Brake Available	Without holding brake		
Mechanical Time Constant	1.9	ms	Brake Configuration: without_brake
Rotor Inertia	10.6 kg·cm² / 10.6 Kg·cm2		Brake Configuration: without_brake
Bearing Radial Force Capacity	980	N	
Bearing Axial Force Capacity	392	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		

Dimensional & Integration Overview

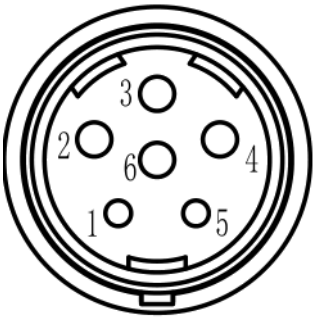
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	Medium inertia	
Holding Brake Available	Without holding brake	
Mechanical Time Constant	1.9	ms
Rotor Inertia	10.6 kg·cm² / 10.6 Kg·cm2	
Bearing Radial Force Capacity	980	N

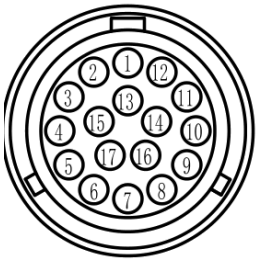
Dimensional Drawings



Mechanical View 1



Power Connector Pinout



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key length	40 mm
	Key width	6 mm
	Item balloon number	Item 2
	Shaft keyway label	Keyway on shaft
	Shaft shoulder offset dimension	24.5 mm +0/-0.2
	Shaft end small step length	5 mm
	Shaft diameter	Diameter 22 mm +0/-0.013
	Mounting pilot diameter	Diameter 110 mm +0/-0.035
	Thread specification	CM6L18
	Shaft shoulder clearance length	5 mm
	Reference axial length	13.5 mm reference
	Shaft extension length	55 mm ±1
	Motor body axial length	143.5 mm ±1.5

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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.