

PRODUCT DATASHEET

ES-SM-A01-130D-T4P78NM-1000W-004

AC Servo Motors

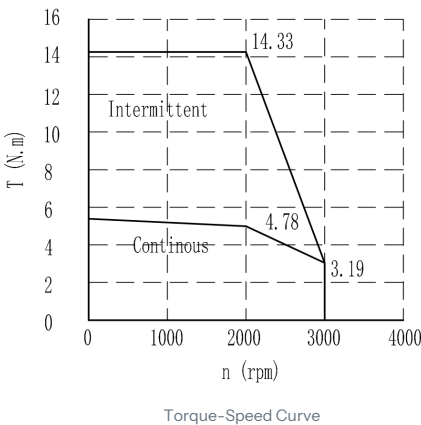
AC Servo Motors | ES-SM-A01-130D Standard 130 mm AC Servo Motor Series

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



Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	4.78	Nm
Instantaneous Maximum Torque	14.34	Nm
Rated Speed	2000	rpm
Continuous Rated Output Power	1000	W
Torque Constant	1.21	Nm/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
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	

Technical Specifications

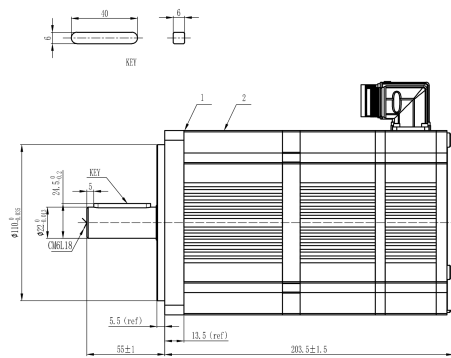
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Rated Current	4.5 ref.)	A	
Maximum Allowed Voltage Slew Rate	8	KV/ μ s	
Rotational Back-EMF Constant	73.4 ref.)	V/krpm	
Electrical Time Constant	8.96	ms	
Position Feedback Device	17-bit multi-turn communication magnetic absolute encoder		
MECHANICAL			
Flange Size	130	mm	
Inertia Level	Medium inertia		
Holding Brake Available	With holding brake		
Mechanical Time Constant	2.1 / 1.9	ms	Brake Configuration: without_brake
Rotor Inertia	11.6 kg $\cdot$ cm ² / 10.6 Kg $\cdot$ cm ²		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	$\leq$ 90% RH, non-condensing		

Dimensional & Integration Overview

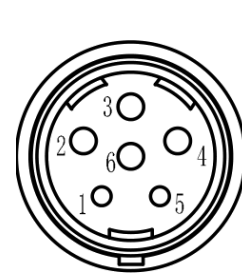
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	Medium inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	2.1 / 1.9	ms
Rotor Inertia	11.6 kg·cm ² / 10.6 Kg·cm ²	
Bearing Radial Force Capacity	980	N

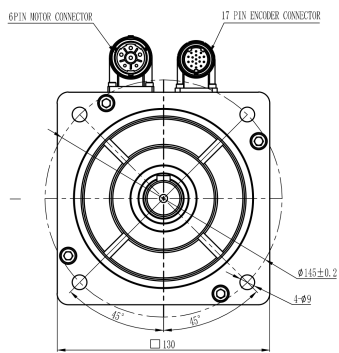
Dimensional Drawings



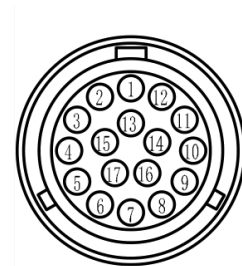
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key length	Key length 40
	Key width	Key width 6
	Key cross-section dimension	Key cross-section dimension 6
	Key label	KEY
	Leader item number 1	Item marker 1
	Leader item number 2	Item marker 2
	Shaft key label	Shaft key/keyway indicated
	Keyway axial position dimension	24.5 with upper deviation 0 and lower deviation -0.2
	Keyway width	Keyway width 5
	Mounting pilot diameter	Diameter 110 with upper deviation 0 and lower deviation -0.035
	Shaft diameter	Shaft diameter 22 with upper deviation 0 and lower deviation -0.013
	Shaft-end threaded hole	CM6L18 shaft-end thread/hole callout
	Reference clearance dimension	5.5 reference
	Reference axial dimension	13.5 reference
	Motor body length	203.5 ±1.5
	Shaft extension length	55 ±1

2D Drawing Dimensions & Callouts

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