

PRODUCT DATASHEET

ES-SM-A01-130D-T4P78NM-1000W-007

AC Servo Motors

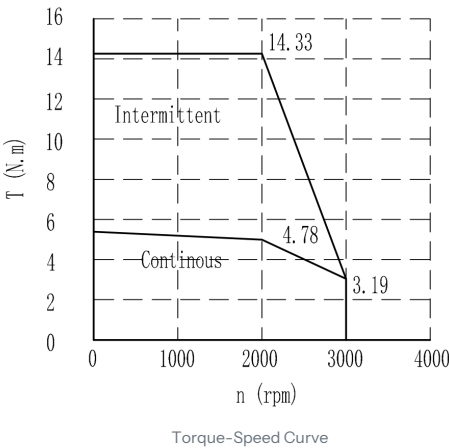
AC Servo Motors | ES-SM-A01-130D Standard 130 mm AC Servo Motor Series

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

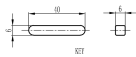
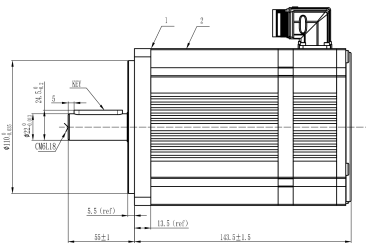
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Rated Current	4.5 ref.)	A	
Maximum Allowed Voltage Slew Rate	8	KV/ μ s	
Rotational Back-EMF Constant	73.4 ref.)	V/krpm	
Electrical Time Constant	8.96	ms	
Position Feedback Device	23-bit multi-turn communication optical absolute encoder		
MECHANICAL			
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 kgcm ² / 10.6 Kg·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	≤90% RH, non-condensing		

Dimensional & Integration Overview

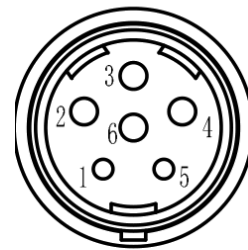
Mechanical Overview

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 kgcm ² / 10.6 Kg·cm ²	
Bearing Radial Force Capacity	980	N

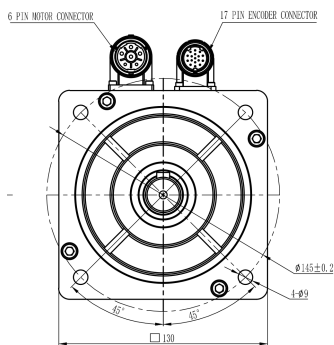
Dimensional Drawings



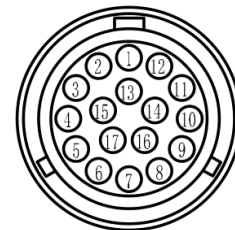
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key length	Key length 40 mm
	Key width	Key width 6 mm
	Key thickness	Key thickness 6 mm
	Item callout 1	Item label 1
	Item callout 2	Item label 2
	Shaft key feature label	Key feature on shaft
	Keyseat height or radial position dimension	24.5 mm, upper deviation 0, lower deviation -0.2
	Key feature local dimension	Key feature local dimension 5 mm
	Shaft diameter	Shaft diameter $\Phi 22$ mm, upper deviation 0, lower deviation -0.013
	Flange locating diameter	Locating diameter $\Phi 110$ mm, upper deviation 0, lower deviation -0.035
	Shaft end thread	CM6L18 shaft end thread/callout
	Reference shoulder offset	Reference dimension 5.5 mm
	Reference flange or end-face offset	Reference dimension 13.5 mm
	Motor body length	Motor body length 143.5 ± 1.5 mm
	Shaft extension length	Shaft extension length 55 ± 1 mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	outer diameter	Ø145 ±0.2 mm
	hole quantity and diameter	4 × Ø9 mm
	angle	45°
	square overall size	□130 mm

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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.