

PRODUCT DATASHEET

ES-SM-A01-130D-T14P33NM-3000W-004

AC Servo Motors

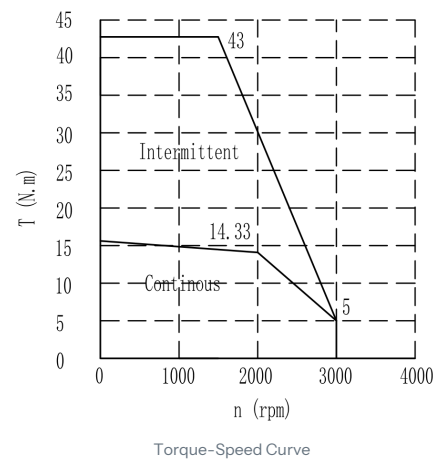
AC Servo Motors | ES-SM-A01-130D Standard 130 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 14.33 Nm, instantaneous Maximum Torque 43 Nm and rated Speed 2000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	14.33	N·m
Instantaneous Maximum Torque	43	N·m
Rated Speed	2000	rpm
Continuous Rated Output Power	3000	W
Instantaneous Maximum Current	22.7 ref.)	A
Flange Size	130	mm
Torque Constant	2.56	N·m/A
Rated Voltage	560	V AC
Rated Line Voltage	560	V



Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	14.33	Nm
Instantaneous Maximum Torque	43	Nm
Rated Speed	2000	rpm
Continuous Rated Output Power	3000	W
Torque Constant	2.56	Nm/A
Bearing Axial Force	392	N
Bearing Radial Force	980	N
Rated Power	3000	W
ELECTRICAL		
Rated Voltage	560	V AC
Rated Line Voltage	560	V
Instantaneous Maximum Current	22.7 ref.)	A
Back EMF Constant	154.8 ref.)	V/krpm
Insulation Class	F	
Motor Outlet Mode	HFO21 + HFO18 aviation connectors	
Pole Pairs	5	

Technical Specifications

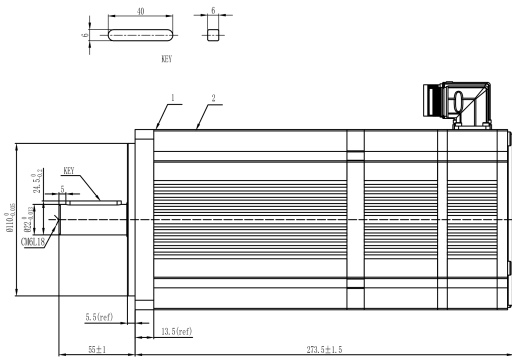
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Rated Current	7 ref.)	A	
Maximum Allowed Voltage Slew Rate	13	KV/ μ s	
Rotational Back-EMF Constant	154.8 ref.)	V/krpm	
Electrical Time Constant	13.75	ms	
Position Feedback Device	17-bit multi-turn communication magnetic absolute encoder		
MECHANICAL			
Flange Size	130	mm	
Inertia Level	Medium inertia		
Holding Brake Available	With holding brake		
Mechanical Time Constant	1.08 / 1.06	ms	Brake Configuration: without_brake
Rotor Inertia	31 kg $\cdot$ cm ² / 30 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

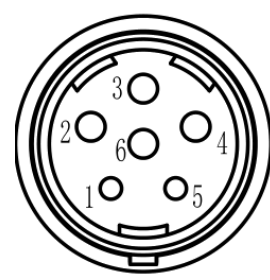
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	Medium inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	1.08 / 1.06	ms
Rotor Inertia	31 kgcm ² / 30 Kg·cm ²	
Bearing Radial Force Capacity	980	N

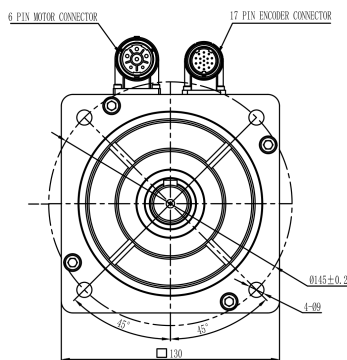
Dimensional Drawings



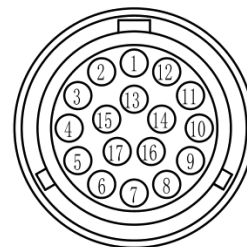
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key length	40 mm
	Key width	6 mm
	Key height or slot width	
	Key feature label	Key
	Item callout 1	Item 1
	Item callout 2	Item 2
	Shaft key label	Key on shaft end
	Shaft key location dimension	24.5 mm +0/-0.2
	Shaft shoulder diameter	Diameter 110 mm +0/-0.035
	Output shaft diameter	Diameter 22 mm +0/-0.013
	Shaft end center/threaded hole callout	CM6L18
	Reference clearance dimension	5.5 mm reference
	Reference step dimension	13.5 mm reference
	Overall motor length	273.5 mm $\pm$ 1.5
	Shaft extension length	55 mm $\pm$ 1

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Mounting hole pitch circle diameter	Pitch circle diameter $\Phi 145 \pm 0.2$
	Mounting hole quantity and diameter	4 holes, diameter $\Phi 9$
	Mounting hole angular position	Mounting holes located at 45° angular offsets as shown
	Square flange outside size	Square outside size 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.