PRODUCT DATASHEET

ES-SM-A01-130D-T7P16NM-1500W-010

AC Servo Motors

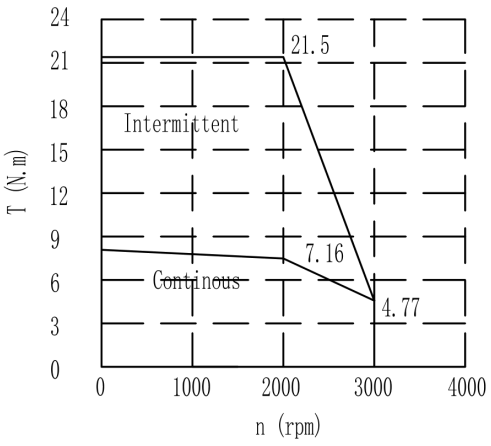
AC Servo Motors | ES-SM-A01-130D Standard 130 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 7.16 N·m, instantaneous Maximum Torque 21.5 N·m and rated Speed 2000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	7.16	N·m
Instantaneous Maximum Torque	21.5	N·m
Rated Speed	2000	rpm
Continuous Rated Output Power	1500	W
Instantaneous Maximum Current	25 ref.)	A
Flange Size	130	mm
Torque Constant	1.1	N·m/A
Rated Voltage	320	V AC
Rated Line Voltage	320	V



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	7.16	N·m
Instantaneous Maximum Torque	21.5	N·m
Rated Speed	2000	rpm
Continuous Rated Output Power	1500	W
Torque Constant	1.1	N·m/A
Bearing Axial Force	392	N
Bearing Radial Force	980	N
Rated Power	1500	W
ELECTRICAL		
Rated Voltage	320	V AC
Rated Line Voltage	320	V

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Instantaneous Maximum Current	25 ref.)	A
Back EMF Constant	66.9 ref.)	V/krpm
Insulation Class	F	
Motor Outlet Mode	HFO21 + HFO18 aviation connectors	
Pole Pairs	5	
Rated Current	7.7 ref.)	A
Maximum Allowed Voltage Slew Rate	8	KV/μs
Rotational Back-EMF Constant	66.9 ref.)	V/krpm
Electrical Time Constant	10.95	ms
Position Feedback Device	Single-turn communication optical encoder	

Technical Specifications

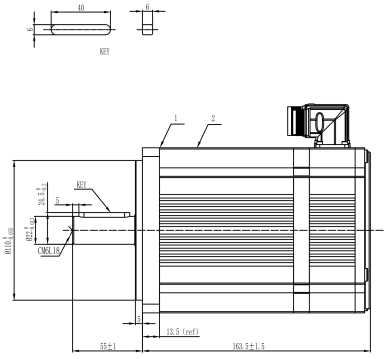
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Flange Size	130	mm	
Inertia Level	Medium inertia		
Holding Brake Available	Without holding brake		
Mechanical Time Constant	1.42	ms	Brake Configuration: without_brake
Rotor Inertia	15.95 kg·cm² / 15.95 Kg·cm2		Brake Configuration: without_brake
Bearing 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

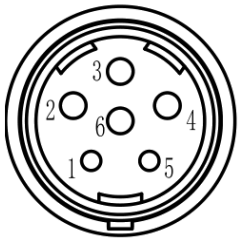
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	Medium inertia	
Holding Brake Available	Without holding brake	
Mechanical Time Constant	1.42	ms
Rotor Inertia	15.95 kg·cm² / 15.95 Kg·cm2	
Bearing Radial Force Capacity	980	N

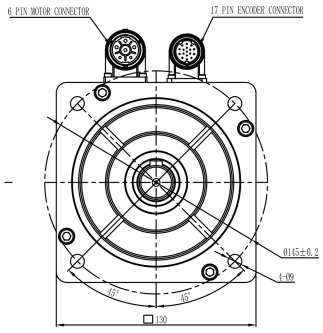
Dimensional Drawings



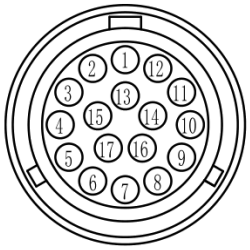
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key length	40
	Key width	6
	Key label	KEY
	Leader item callout 2	Item 2
	Shaft step length	24.5 +0/-0.2
	Keyway width	5
	Shaft diameter	Diameter 22 +0/-0.013
	Flange outside diameter	Diameter 110 +0/-0.035
	Shaft end thread specification	CM6L18
	Mounting end step thickness	5
	Reference axial spacing	13.5 reference
	Body axial length	163.5 ±1.5
	Front shaft-side axial length	55 ±1
Mechanical View 3	mounting hole pitch circle diameter	PCD Ø145 ±0.2
	mounting hole quantity and diameter	4 holes Ø9
	mounting hole angular spacing/position	45° angular mounting-hole orientation, shown on both sides
	square mounting flange outside size	Square flange 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.