

PRODUCT DATASHEET

ES-SM-A02-130D-T5NM-1050W-001

AC Servo Motors

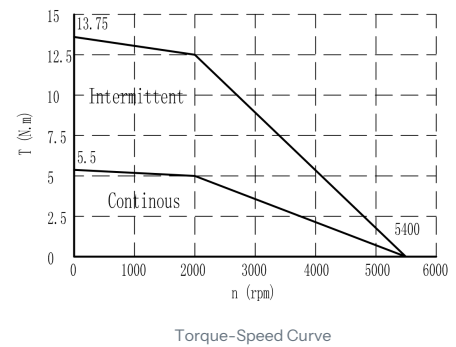
AC Servo Motors | ES-SM-A02-130D High-Response 130 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 5 Nm, instantaneous Maximum Torque 12.5 Nm and rated Speed 2000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	5	N·m
Instantaneous Maximum Torque	12.5	N·m
Rated Speed	2000	rpm
Continuous Rated Output Power	1050	W
Instantaneous Maximum Current	10.75	A
Flange Size	130	mm
Torque Constant	1.16	N·m/A
Rated Voltage	380	V AC
Rated Line Voltage	380	V





Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	5	Nm
Instantaneous Maximum Torque	12.5	Nm
Rated Speed	2000	rpm
Continuous Rated Output Power	1050	W
Torque Constant	1.16	Nm/A
Rated Power	1050	W
ELECTRICAL		
Rated Voltage	380	V AC
Rated Line Voltage	380	V
Instantaneous Maximum Current	10.75	A
Back EMF Constant	70	V/krpm

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Position Feedback Device	2500 PPR incremental encoder	
Insulation Class	F	
Maximum Allowed Voltage Slew Rate	8	KV/ μ s
Motor Outlet Mode	YL-series aviation connector	
Pole Pairs	4	
Rated Current	4.3	A
Rotational Back-EMF Constant	70	V/krpm
Electrical Time Constant	12.44	ms
MECHANICAL		
Flange Size	130	mm
Inertia Level	Medium inertia	

Technical Specifications

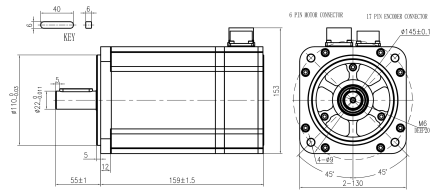
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Holding Brake Available	Without holding brake		
Mechanical Time Constant	2.43	ms	
Rotor Inertia	12 kg·cm ² / 12 Kg·cm ²		Brake Configuration: without_brake
Bearing Radial Force Capacity	900	N	
Bearing Axial Force Capacity	450	N	
ENVIRONMENTAL			
Altitude 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		
Operating Temperature	-20 to 40°C (no freezing)		
Protection Rating	IP65, shaft end IP54		

Dimensional & Integration Overview

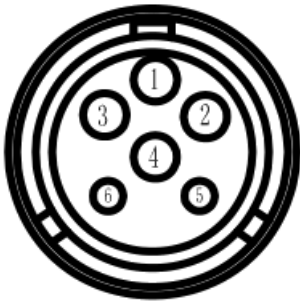
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	Medium inertia	
Holding Brake Available	Without holding brake	
Mechanical Time Constant	2.43	ms
Rotor Inertia	12 kgcm ² / 12 Kg·cm2	
Bearing Radial Force Capacity	900	N

Dimensional Drawings



Mechanical View 1



Power Connector Pinout



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 height	Key height 6 mm
	Flange outside diameter	Diameter 145 $\pm$ 0.1 mm
	Key label	Key feature label
	Key projection or step dimension	5 mm
	Motor body height	153 mm
	Shaft diameter	Shaft diameter Φ 22 mm with tolerance +0/-0.011 mm
	Pilot diameter	Pilot diameter Φ 110 mm with tolerance +0/-0.03 mm
	Threaded hole size and depth	M6 threaded hole, depth 20 mm
	End face step dimension	5 mm
	Mounting through hole quantity and diameter	4 holes, diameter Φ 9 mm
	Flange or shoulder axial dimension	12 mm
	Mounting hole angular position	45 degrees
	Shaft extension length	Shaft extension length 55 $\pm$ 1 mm
	Motor body length	Motor body length 159 $\pm$ 1.5 mm
	Mounting hole center distance	Two directions center distance 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.