

PRODUCT DATASHEET

ES-SM-A02-150D-T14P3NM-3000W-002

AC Servo Motors

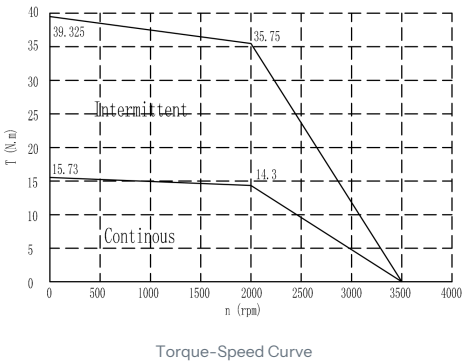
AC Servo Motors | ES-SM-A02-150D High-Response 150 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 14.3 N·m, instantaneous Maximum Torque 35.75 N·m and rated Speed 2000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	14.3	N·m
Instantaneous Maximum Torque	35.75	N·m
Rated Speed	2000	rpm
Continuous Rated Output Power	3000	W
Instantaneous Maximum Current	21.25	A
Flange Size	150	mm
Torque Constant	1.77	N·m/A
Rated Voltage	380	V AC
Rated Line Voltage	380	V



Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	14.3	Nm
Instantaneous Maximum Torque	35.75	Nm
Rated Speed	2000	rpm
Continuous Rated Output Power	3000	W
Torque Constant	1.77	Nm/A
Rated Power	3000	W
ELECTRICAL		
Rated Voltage	380	V AC
Rated Line Voltage	380	V
Instantaneous Maximum Current	21.25	A
Back EMF Constant	107	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	8.5	A
Rotational Back-EMF Constant	107	V/krpm
Electrical Time Constant	7.72	ms
MECHANICAL		
Flange Size	150	mm
Inertia Level	Medium inertia	

Technical Specifications

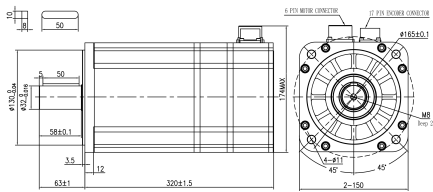
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Holding Brake Available	With holding brake		
Mechanical Time Constant	3.34	ms	
Rotor Inertia	47.7 kg·cm ² / 47.6 Kg·cm ²		Brake Configuration: without_brake
Bearing Radial Force Capacity	1200	N	
Bearing Axial Force Capacity	600	N	
ENVIRONMENTAL			
Altitude 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

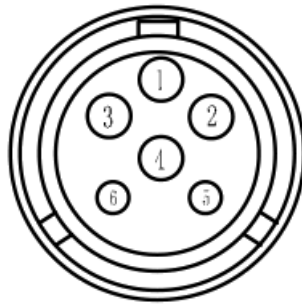
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	150	mm
Inertia Level	Medium inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	3.34	ms
Rotor Inertia	47.7 kgcm ² / 47.6 Kg·cm ²	
Bearing Radial Force Capacity	1200	N

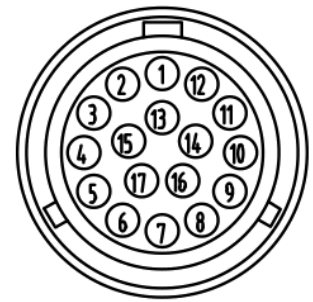
Dimensional Drawings



Mechanical View 1



Power Connector Pinout



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Shaft end step length	10
	Keyway length	50
	Keyway width	8
	Mounting flange outside diameter	Diameter 165 $\pm$ 0.1
	Shaft shoulder to end distance	50
	Local axial step dimension	5
	Maximum body height	174 maximum
	Pilot register diameter	Diameter 130 +0/-0.04
	Output shaft diameter	Diameter 32 +0/-0.016
	Threaded hole size and depth	M8 thread, depth 25
	Shaft extension length	58 $\pm$ 0.1
	Through hole quantity and diameter	4 holes, diameter 11
	Shaft end chamfer or relief dimension	3.5
	Mounting hole angular position	45 degrees
	End cover step width	12
	Shaft end to flange reference length	63 $\pm$ 1
	Motor body length	320 $\pm$ 1.5
	Mounting hole center distance	Two directions, 150 center distance

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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.