

PRODUCT DATASHEET

ES-SM-A02-150D-T14P3NM-3000W-001

AC Servo Motors

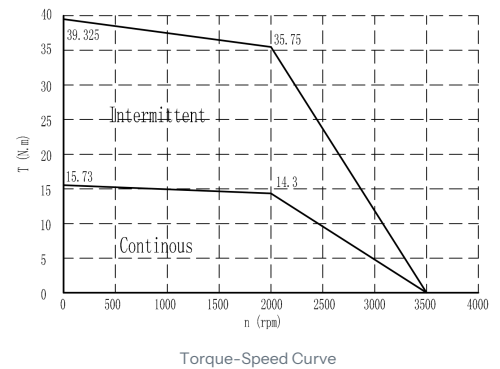
AC Servo Motors | ES-SM-A02-150D High-Response 150 mm AC Servo Motor Series

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
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	

Technical Specifications

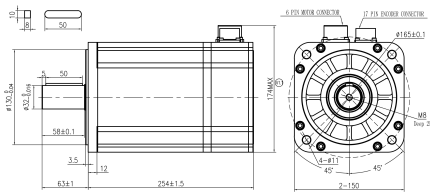
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Rated Current	8.5	A	
Rotational Back-EMF Constant	107	V/krpm	
Electrical Time Constant	7.72	ms	
MECHANICAL			
Flange Size	150	mm	
Inertia Level	Medium inertia		
Holding Brake Available	Without holding brake		
Mechanical Time Constant	3.34	ms	
Rotor Inertia	47.6 kgcm 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

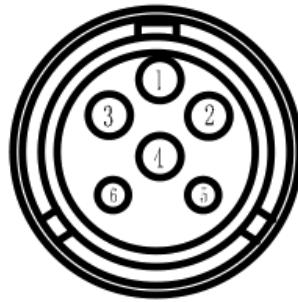
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	150	mm
Inertia Level	Medium inertia	
Holding Brake Available	Without holding brake	
Mechanical Time Constant	3.34	ms
Rotor Inertia	47.6 kgcm ² / 47.6 Kg·cm2	
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 flat width	10
	Shaft extension length	50
	Keyway width	8
	Flange outer diameter	$\varnothing 165 \pm 0.1$
	Mounting hole thread	M8
	Mounting hole depth	Deep 25
	Mounting hole pattern	4- $\varnothing 11$
	Mounting hole angular position	45°
	Mounting hole PCD	$\varnothing 130 \text{ } 0/-0.04$
	Shaft diameter	$\varnothing 32 \text{ } 0/-0.016$
	Motor body height	58 ± 0.1
	Overall length	254 ± 1.5
	Front section length	63 ± 1
	Keyway depth	3.5
	Keyway length	12
	Maximum height	174MAX
	Mounting hole spacing	2-150
	Local dimension	50

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Local dimension	5

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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.