

PRODUCT DATASHEET

ES-SM-A01-040S-TOP32NM-100W-004

AC Servo Motors

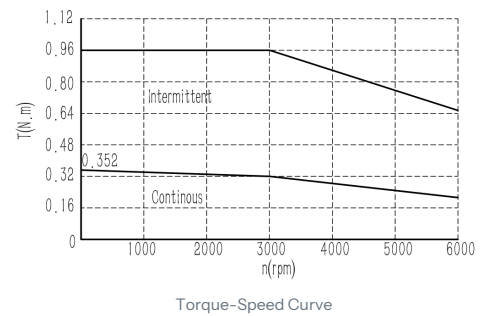
AC Servo Motors | ES-SM-A01-040S Standard 40 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 0.32 N·m, instantaneous Maximum Torque 0.96 N·m and rated Speed 3000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	0.32	N·m
Instantaneous Maximum Torque	0.96	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	100	W
Instantaneous Maximum Current	4.2	A
Flange Size	40	mm
Torque Constant	0.268	N·m/A
Rated Voltage	220	V AC
Rated Line Voltage	220	V



Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	0.32	Nm
Instantaneous Maximum Torque	0.96	Nm
Rated Speed	3000	rpm
Continuous Rated Output Power	100	W
Torque Constant	0.268	Nm/A
Rated Power	100	W
ELECTRICAL		
Rated Voltage	220	V AC
Rated Line Voltage	220	V
Instantaneous Maximum Current	4.2	A
Back EMF Constant	16.2	V/krpm

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Insulation Class	F	
Maximum Allowed Voltage Slew Rate	8	KV/ μ s
Motor Outlet Mode	Communication encoder socket	
Pole Pairs	5	
Rated Current	1.4	A
Rotational Back-EMF Constant	16.2	V/krpm
Electrical Time Constant	1.33	ms
Position Feedback Device	23-bit multi-turn communication optical absolute encoder	
MECHANICAL		
Flange Size	40	mm
Inertia Level	Low inertia	

Technical Specifications

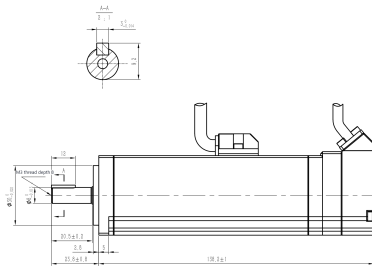
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Holding Brake Available	With holding brake		
Mechanical Time Constant	0.99	ms	Brake Configuration: without_brake
Rotor Inertia	0.046 kg·cm ² / 0.033 Kg·cm ²		Brake Configuration: without_brake
Bearing Radial Force Capacity	120	N	
Bearing Axial Force Capacity	60	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 (Note: with shaft-end oil seal IP54, without oil seal IP50)		

Dimensional & Integration Overview

Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	40	mm
Inertia Level	Low inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	0.99	ms
Rotor Inertia	0.046 kgcm ² / 0.033 Kg·cm ²	
Bearing Radial Force Capacity	120	N

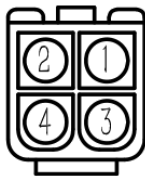
Dimensional Drawings



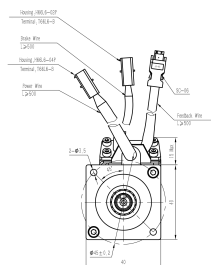
Mechanical View 1



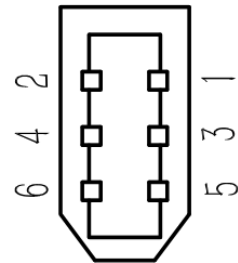
Power Connector Pinout



Power Connector Pinout



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Section view designation	A-A
	Output shaft keyway width	3 0/-0.014
	Shaft radial dimension	9.2
	Mounting face locating dimension	12
	Datum A	A
	M3 thread depth	M3 thread depth 8
	Inner hole diameter	Φ8 0/-0.015
	Output shaft diameter	Φ30 0/-0.021
	Mounting flange face to shaft end distance	20.5±0.2
	Mounting flange thickness	2.8
	Mounting flange boss width	5
	Total mounting end length	23.8±0.8
	Motor overall length	138.2±1
Mechanical View 4	Mounting hole specification and quantity	2 holes, Φ3.5 mm
	Connector mounting area maximum height	15 mm maximum
	Mounting hole angular position	45 degrees
	Motor flange outer diameter	Φ45 ±0.2 mm
	Mounting face width	40 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.