PRODUCT DATASHEET

ES-SM-A01-040S-T0P32NM-100W-001

AC Servo Motors

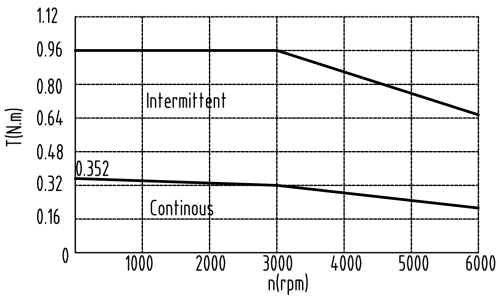
AC Servo Motors | ES-SM-A01-040S Standard 40 mm AC Servo Motor Series

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



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	0.32	N·m
Instantaneous Maximum Torque	0.96	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	100	W
Torque Constant	0.268	N·m/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/μs
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	Single-turn communication magnetic encoder	
MECHANICAL		
Flange Size	40	mm
Inertia Level	Low inertia	

Technical Specifications

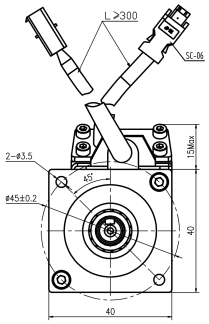
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Holding Brake Available	Without holding brake		
Mechanical Time Constant	0.99	ms	Brake Configuration: without_brake
Rotor Inertia	0.033 kg·cm² / 0.033 Kg·cm2		Brake Configuration: without_brake
Bearing Radial Force Capacity	120	N	
Bearing Axial Force Capacity	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

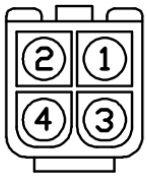
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	40	mm
Inertia Level	Low inertia	
Holding Brake Available	Without holding brake	
Mechanical Time Constant	0.99	ms
Rotor Inertia	0.033 kg·cm² / 0.033 Kg·cm2	
Bearing Radial Force Capacity	120	N

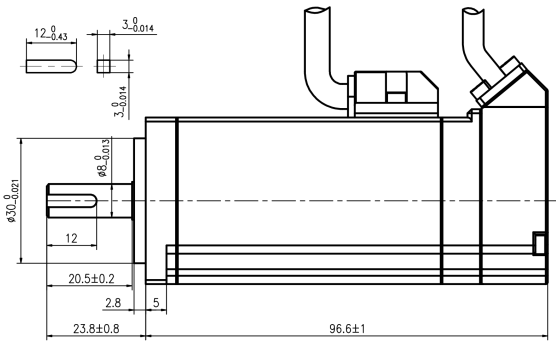
Dimensional Drawings



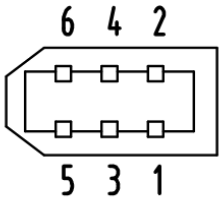
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Mounting height maximum	15 mm max
	Mounting hole diameter and quantity	2 holes × φ3.5 mm
	Mounting hole angular position	45°
	Mounting hole pitch circle diameter	φ45 ±0.2 mm
	Motor body width	40 mm
	Motor body length	
Mechanical View 3	Output shaft length	12 0/-0.43 mm
	Output shaft diameter (horizontal callout)	3 0/-0.014 mm
	Output shaft diameter (vertical callout)	
	Main output shaft diameter	φ30 0/-0.021 mm
	Mounting hole diameter	φ8 0/-0.013 mm
	Mounting flange thickness or shaft extension	12 mm
	Mounting flange diameter or width	20.5±0.2 mm
	Mounting boss or flange dimension	2.8 mm
	Mounting boss or step width	5 mm
	Mounting flange total width or reference distance	23.8±0.8 mm
	Motor overall length	96.6±1 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.