

PRODUCT DATASHEET

ES-SM-A03-040-TOP16NM-50W-004

AC Servo Motors

AC Servo Motors | ES-SM-A03-040 Compact 40 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 0.16 N·m, instantaneous Maximum Torque 0.56 N·m and rated Speed 3000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	0.16	N·m
Instantaneous Maximum Torque	0.56	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	50	W
Rated Voltage	220	V AC
Instantaneous Maximum Current	3.3	A
Flange Size	40	mm
Torque Constant	0.2	Nm/A
Altitude and Derating Rule	highest altitude2000m,1000mabove,every rise100m,Power drop1.5%	

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	0.16	Nm
Instantaneous Maximum Torque	0.56	Nm
Rated Speed	3000	rpm
Continuous Rated Output Power	50	W
Torque Constant	0.2	Nm/A
Rated Power	50	W
ELECTRICAL		
Rated Voltage	220	V AC
Instantaneous Maximum Current	3.3	A
Back EMF Constant	12.14	V/krpm
Insulation Class	F	

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Motor Outlet Mode	Standard socket		
Pole Pairs	5		
Rated Current	0.88	A	
Rotational Back-EMF Constant	12.14	V/krpm	
Electrical Time Constant	0.606	ms	
Position Feedback Device	23-bit multi-turn communication optical absolute encoder		
MECHANICAL			
Flange Size	40	mm	
Inertia Level	Low inertia		
Holding Brake Available	With holding brake		
Mechanical Time Constant	1.42 / 1.308	ms	Brake Configuration: without_brake

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Rotor Inertia	0.025 / 0.023	Kg·cm ²	Brake Configuration: without_brake
Bearing Radial Force Capacity	78	N	
Bearing Axial Force Capacity	54	N	
ENVIRONMENTAL			
Altitude and Derating Rule	highest altitude 2000m, 1000m above, every rise 100m, Power drop 1.5%		
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	IP67, shaft end IP54 (Note: with shaft-end oil seal IP54, without oil seal IP50)		
CONFIGURATION			
Output Shaft Type	Keyed shaft		
ADDITIONAL SPECIFICATIONS			
Holding Brake	1		

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	1.42 / 1.308	ms
Rotor Inertia	0.025 / 0.023	Kg·cm ²
Bearing Radial Force Capacity	78	N

[View Product Online](#) [Request Engineering Data](#) [Request a Quote](#)

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.