

PRODUCT DATASHEET

ES-SM-A03-060S-T1P27NM-400W-002

AC Servo Motors

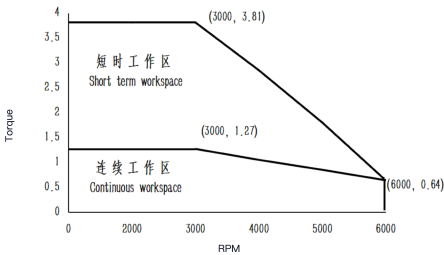
AC Servo Motors | ES-SM-A03-060S Compact 60 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 1.27 Nm, instantaneous Maximum Torque 3.81 Nm and rated Speed 3000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	1.27	Nm
Instantaneous Maximum Torque	3.81	Nm
Rated Speed	3000	rpm
Continuous Rated Output Power	400	W
Rated Voltage	220	V AC
Instantaneous Maximum Current	9.4	A
Flange Size	60	mm
Torque Constant	0.51	Nm/A
Altitude and Derating Rule	highest altitude2000m,1000mabove,every rise100m,Power drop1.5%	



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	1.27	Nm
Instantaneous Maximum Torque	3.81	Nm
Rated Speed	3000	rpm
Continuous Rated Output Power	400	W
Torque Constant	0.51	Nm/A
Rated Power	400	W
ELECTRICAL		
Rated Voltage	220	V AC
Instantaneous Maximum Current	9.4	A
Back EMF Constant	31	V/krpm
Insulation Class	F	
Motor Outlet Mode	Standard socket	
Pole Pairs	5	
Rated Current	2.93	A
Rotational Back-EMF Constant	31	V/krpm
Electrical Time Constant	2.18	ms

Technical Specifications

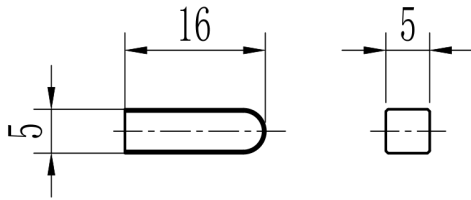
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Position Feedback Device	17-bit multi-turn communication magnetic absolute encoder		
MECHANICAL			
Flange Size	60	mm	
Inertia Level	Low inertia		
Holding Brake Available	With holding brake		
Mechanical Time Constant	0.78 / 0.74	ms	Brake Configuration: without_brake
Rotor Inertia	0.29 / 0.274	Kg-cm ²	Brake Configuration: without_brake
Bearing Radial Force Capacity	180	N	
Bearing Axial Force Capacity	90	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

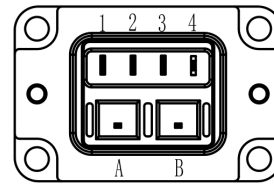
PARAMETER	VALUE	UNIT
Flange Size	60	mm
Inertia Level	Low inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	0.78 / 0.74	ms
Rotor Inertia	0.29 / 0.274	Kg·cm ²
Bearing Radial Force Capacity	180	N

Dimensional Drawings

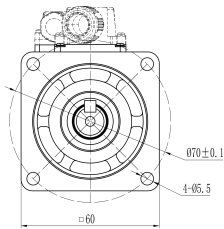


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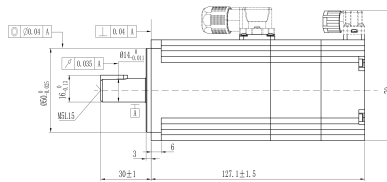
Mechanical View 1



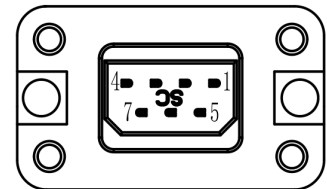
Power Connector Pinout



Mechanical View 3



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key length	Key length 16 mm
	Key width	Key width 5 mm
	Key height	Key height 5 mm
	Part label	KEY
Mechanical View 3	Mounting hole pitch circle diameter	Pitch circle diameter Ø70 ±0.1
	Mounting hole quantity and diameter	4 holes, diameter Ø5.5
	Square flange mounting size	Square flange size □60

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 4	Position tolerance	Position tolerance $\Phi 0.04$ relative to datum A
	Perpendicularity tolerance	Perpendicularity tolerance 0.04 relative to datum A
	Runout tolerance	Runout tolerance 0.035 relative to datum A
	Shaft diameter	Diameter 14 mm, upper deviation 0, lower deviation -0.011
	Mounting pilot diameter	Diameter 50 mm, upper deviation 0, lower deviation -0.025
	Shaft step dimension	16 mm, upper deviation 0, lower deviation -0.13
	Datum A	Datum feature A
	Threaded hole specification	M5 thread, depth/length 15
	Short end step length	3
	End step length	6
	Front extension length	30 ± 1
	Body length	127.1 ± 1.5
	Overall height	79

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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.