

PRODUCT DATASHEET

ES-SM-A03-060S-TOP64NM-200W-003

AC Servo Motors

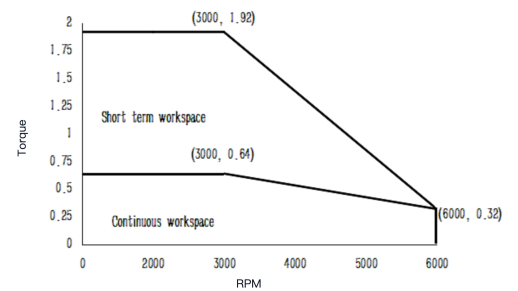
AC Servo Motors | ES-SM-A03-060S Compact 60 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 0.64 Nm, instantaneous Maximum Torque 1.92 Nm and rated Speed 3000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	0.64	Nm
Instantaneous Maximum Torque	1.92	Nm
Rated Speed	3000	rpm
Continuous Rated Output Power	200	W
Rated Voltage	220	V AC
Instantaneous Maximum Current	5	A
Flange Size	60	mm
Torque Constant	0.5	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	0.64	Nm
Instantaneous Maximum Torque	1.92	Nm
Rated Speed	3000	rpm
Continuous Rated Output Power	200	W
Torque Constant	0.5	Nm/A
Rated Power	200	W
ELECTRICAL		
Rated Voltage	220	V AC
Instantaneous Maximum Current	5	A
Back EMF Constant	30	V/krpm
Insulation Class	F	
Motor Outlet Mode	Standard socket	
Pole Pairs	5	
Rated Current	1.55	A
Rotational Back-EMF Constant	30	V/krpm
Electrical Time Constant	1.9	ms

Technical Specifications

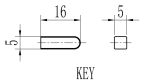
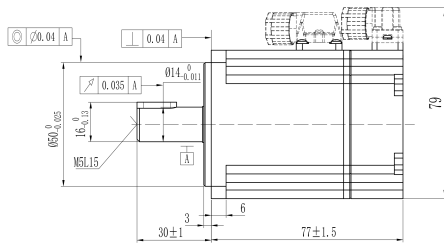
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Position Feedback Device	23-bit multi-turn communication optical absolute encoder		
MECHANICAL			
Flange Size	60	mm	
Inertia Level	Low inertia		
Holding Brake Available	Without holding brake		
Mechanical Time Constant	1.28	ms	Brake Configuration: without_brake
Rotor Inertia	0.174 / 0.17	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	false		

Dimensional & Integration Overview

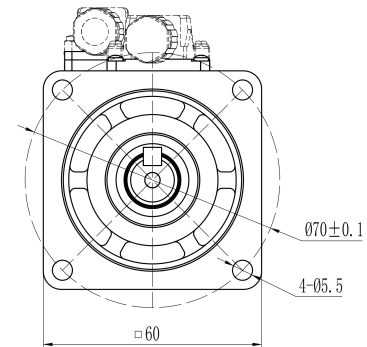
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	60	mm
Inertia Level	Low inertia	
Holding Brake Available	Without holding brake	
Mechanical Time Constant	1.28	ms
Rotor Inertia	0.174 / 0.17	Kg·cm ²
Bearing Radial Force Capacity	180	N

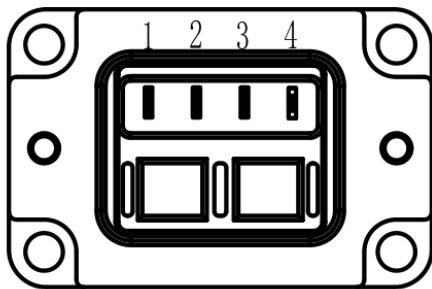
Dimensional Drawings



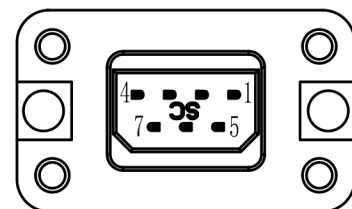
Mechanical View 1



Mechanical View 2



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key length	16
	Key width	5
	Key height or thickness	
	Key feature label	KEY
	Position or coaxiality-type geometric tolerance	Geometric tolerance $\Phi 0.04$ relative to datum A
	Perpendicularity tolerance	Perpendicularity 0.04 relative to datum A
	Shaft end diameter	Diameter 14, upper deviation 0, lower deviation -0.011
	Runout-style geometric tolerance	Runout-style geometric tolerance 0.035 relative to datum A
	Locating diameter	Diameter 50, upper deviation 0, lower deviation -0.025
	Shaft step length	Length 16, upper deviation 0, lower deviation -0.13
	Threaded hole specification	M5 thread, length/depth 15
	Datum A	
	Overall height	79
	End step offset	6
	End face offset	3
	Shaft extension length	30 ± 1
	Main body length	77 ± 1.5

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 2	Mounting hole pitch circle diameter	Pitch circle diameter 70 $\pm$ 0.1 mm
	Mounting hole quantity and diameter	4 holes, diameter 5.5 mm
	Square mounting flange size	Square flange size 60 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.