PRODUCT DATASHEET

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

AC Servo Motors

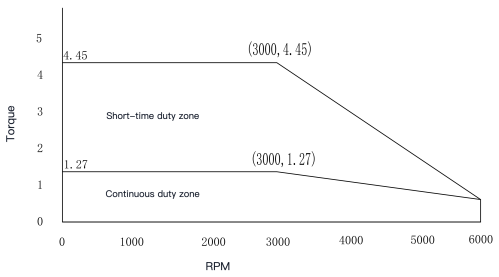
AC Servo Motors | ES-SM-A03-060D Compact 60 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 1.27 N·m, instantaneous Maximum Torque 4.45 N·m and rated Speed 3000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	1.27	N·m
Instantaneous Maximum Torque	4.45	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	400	W
Rated Voltage	220	V AC
Instantaneous Maximum Current	9	A
Flange Size	60	mm
Torque Constant	0.6	N·m/A
Altitude and Derating Rule	highest altitude2000m(1000mfor each increase above100m,Power drop1.5%)	



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	1.27	N·m
Instantaneous Maximum Torque	4.45	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	400	W
Torque Constant	0.6	N·m/A
Rated Power	400	W
ELECTRICAL		
Rated Voltage	220	V AC
Instantaneous Maximum Current	9	A
Back EMF Constant	36	V/krpm
Insulation Class	F	
Motor Outlet Mode	Standard socket	
Pole Pairs	5	
Rated Current	2.3	A
Rotational Back-EMF Constant	36	V/krpm
Electrical Time Constant	1.93	ms

Technical Specifications

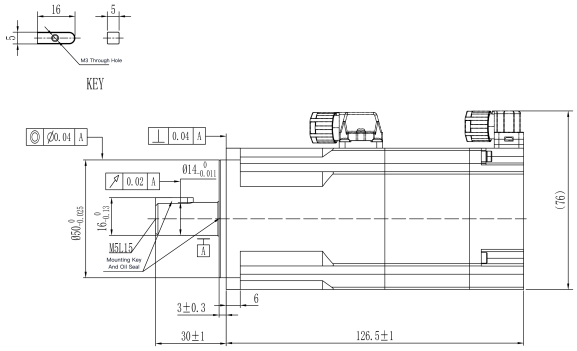
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Position Feedback Device	17-bit multi-turn communication magnetic absolute encoder		
MECHANICAL			
Flange Size	60	mm	
Inertia Level	Medium inertia		
Holding Brake Available	With holding brake		
Mechanical Time Constant	1.03 / 0.99	ms	Brake Configuration: without_brake
Rotor Inertia	0.51 / 0.49	Kg·cm 2	Brake Configuration: without_brake
Bearing Radial Force Capacity	245	N	
Bearing Axial Force Capacity	74	N	
ENVIRONMENTAL			
Altitude and Derating Rule	highest altitude2000m(1000mfor each increase above100m,Power drop1.5%)		
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	IP65, 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

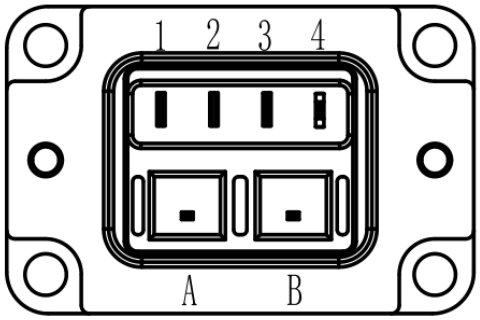
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	60	mm
Inertia Level	Medium inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	1.03 / 0.99	ms
Rotor Inertia	0.51 / 0.49	Kg·cm2
Bearing Radial Force Capacity	245	N

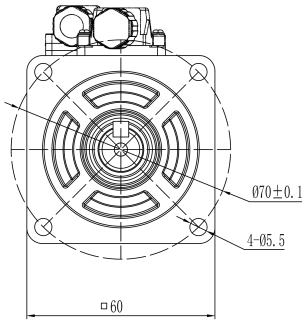
Dimensional Drawings



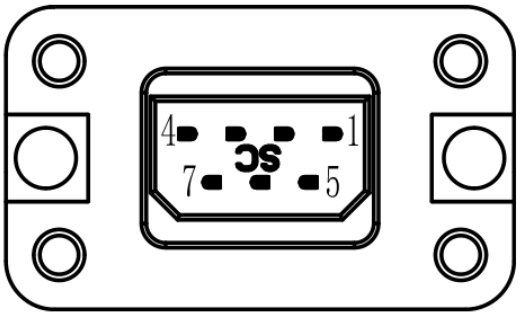
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key slot length	16
	Key slot width	5
	M3 through hole	
	Key feature label	Key
	Geometric tolerance with diameter zone to datum A	Geometric tolerance: diameter 0.04 relative to datum A
	Perpendicularity tolerance to datum A	Perpendicularity 0.04 to datum A
	Shaft diameter	Diameter 14 with upper deviation 0 and lower deviation -0.011
	Geometric tolerance 0.02 to datum A	Geometric tolerance 0.02 relative to datum A
	Keyway related 16 dimension with unilateral tolerance	16 with upper deviation 0 and lower deviation -0.13
	Diameter 50 fit dimension	Diameter 50 with upper deviation 0 and lower deviation -0.025
	Mounting thread specification	M5 thread, length 15
	Datum A	
	Mounting note	Mounting key and oil seal
	Step or spacing dimension	6
	End offset dimension	3 ±0.3
	Main body length	126.5 ±1
	Front interface length	30 ±1
	Reference envelope height	Reference height 76

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
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 mounting flange size	Square flange size □60

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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.