PRODUCT DATASHEET

ES-SM-A02-060S-T1P27NM-400W-004

AC Servo Motors

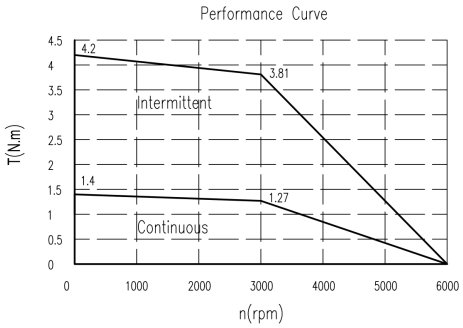
AC Servo Motors | ES-SM-A02-060S High-Response 60 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 1.27 N·m, instantaneous Maximum Torque 3.82 N·m and rated Speed 3000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	1.27	N·m
Instantaneous Maximum Torque	3.82	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	400	W
Instantaneous Maximum Current	9.3	A
Flange Size	60	mm
Torque Constant	0.48	N·m/A
Rated Voltage	220	V AC
Rated Line Voltage	220	V



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	1.27	N·m
Instantaneous Maximum Torque	3.82	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	400	W
Rated Power	400	W
Torque Constant	0.48	N·m/A
ELECTRICAL		
Rated Voltage	220	V AC
Rated Line Voltage	220	V
Instantaneous Maximum Current	9.3	A
Position Feedback Device	2500 PPR incremental encoder	

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Insulation Class	F	
Maximum Allowed Voltage Slew Rate	8	KV/μs
Pole Pairs	3	
Rated Current	3.1	A
Rotational Back-EMF Constant	29	V/krpm
Electrical Time Constant	2.22	ms
Motor Outlet Mode	HFO21 + HFO18 aviation connectors	
MECHANICAL		
Flange Size	60	mm
Inertia Level	Low inertia	
Holding Brake Available	With holding brake	

Technical Specifications

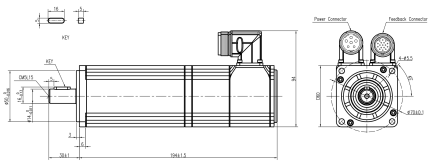
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Mechanical Time Constant	1.35	ms	
Rotor Inertia	0.514 kg·cm² / 0.51 Kg·cm2		Brake Configuration: without_brake
Bearing Radial Force Capacity	180	N	
Bearing Axial Force Capacity	90	N	
ENVIRONMENTAL			
Altitude and Derating Rule	Maximum altitude 4000 m; 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		
CONFIGURATION			
Output Shaft Type	Keyed shaft		

Dimensional & Integration Overview

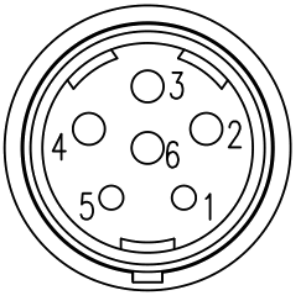
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	60	mm
Inertia Level	Low inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	1.35	ms
Rotor Inertia	0.514 kg·cm² / 0.51 Kg·cm2	
Bearing Radial Force Capacity	180	N

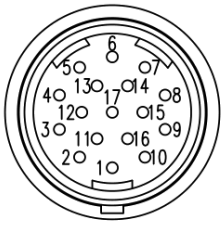
Dimensional Drawings



Mechanical View 1



Power Connector Pinout



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Keyway width	16 mm
	Key notation	Keyway feature
	Mounting holes quantity and diameter	4 holes, φ5.5 mm
	Product model	CM5L15
	Mounting hole angle	45°
	Mounting flange height	94 mm
	Shaft outer diameter with tolerance	φ50 0/-0.016 mm
	Keyway depth with tolerance	16 -0.13 mm
	Shaft hole diameter with tolerance	φ14 -0.011 mm
	Motor outer diameter	D60 mm
	Keyway dimension	3 mm
		6 mm
	Mounting flange hole diameter with tolerance	φ70±0.1 mm
	Overall length with tolerance	194±1.5 mm
	Shaft extension length with tolerance	30±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.