

PRODUCT DATASHEET

ES-SM-A01-060S-T1P27NM-400W-006

AC Servo Motors

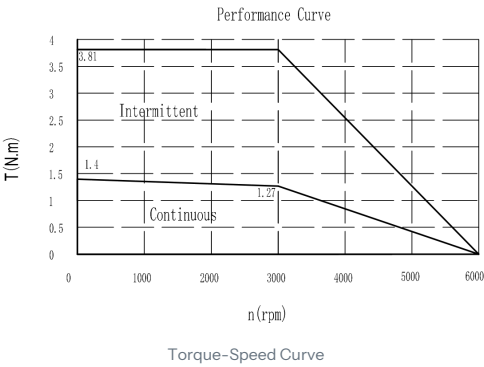
AC Servo Motors | ES-SM-A01-060S Standard 60 mm AC Servo Motor Series

Product Overview

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

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	1.27	N·m
Instantaneous Maximum Torque	3.81	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	300	V AC
Rated Line Voltage	300	V



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
Rated Power	400	W
Torque Constant	0.48	Nm/A
ELECTRICAL		
Rated Voltage	300	V AC
Rated Line Voltage	300	V
Instantaneous Maximum Current	9.3	A
Insulation Class	F	
Maximum Allowed Voltage Slew Rate	8	KV/ μ s
Motor Outlet Mode	Communication encoder socket	
Pole Pairs	5	
Rated Current	2.9	A
Rotational Back-EMF Constant	29	V/krpm

Technical Specifications

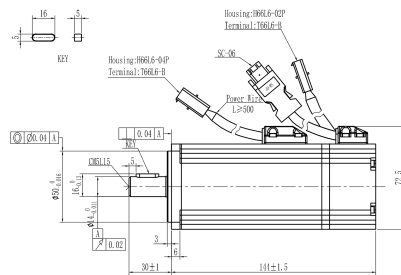
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Electrical Time Constant	2.26	ms	
Position Feedback Device	Single-turn communication optical encoder		
MECHANICAL			
Flange Size	60	mm	
Inertia Level	Low inertia		
Holding Brake Available	With holding brake		
Mechanical Time Constant	1.07 / 1.06	ms	Brake Configuration: without_brake
Rotor Inertia	0.384 kg·cm ² / 0.38 Kg·cm ²		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 (Note: with shaft-end oil seal IP54, without oil seal IP50)		
CONFIGURATION			
Output Shaft Type	Keyed shaft		

Dimensional & Integration Overview

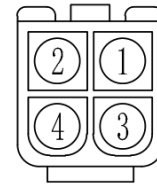
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	60	mm
Inertia Level	Low inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	1.07 / 1.06	ms
Rotor Inertia	0.384 kg·cm ² / 0.38 Kg·cm ²	
Bearing Radial Force Capacity	180	N

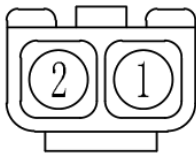
Dimensional Drawings



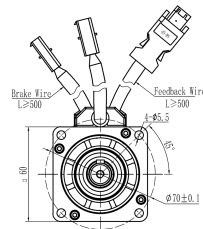
Mechanical View 1



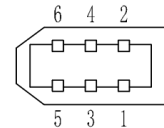
Power Connector Pinout



Power Connector Pinout



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Keyway width	16 mm
	Keyway depth	5 mm
	Perpendicularity tolerance to datum A	$\perp 0.04 A$
	Keyway designation	KEY
	Model designation	CM5L15
	Shaft diameter	$\Phi 50\ 0/-0.016\ \text{mm}$
	Keyway width with tolerance	$16\ 0/-0.13\ \text{mm}$
	Shaft shoulder diameter	$\Phi 14\ 0/-0.011\ \text{mm}$
	Keyway height	5 mm
	Position tolerance to datum A	$\varnothing 0.04 A$
	Datum reference A	Datum A
	Surface flatness/parallelism tolerance	0.02 mm
	Mounting hole spacing	3 mm
	Mounting hole offset	6 mm
	Axial length (local)	$30 \pm 1\ \text{mm}$
	Overall length	$144 \pm 1.5\ \text{mm}$
	Housing diameter/radius	72.5 mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 4	Mounting hole diameter and quantity	4 holes × $\Phi 5.5$ mm
	Mounting hole angular position	45° angular spacing
	Square mounting face dimension	60 mm × 60 mm square
	Mounting hole pattern circle diameter	$\Phi 70 \pm 0.1$ mm PCD

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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.