PRODUCT DATASHEET

ES-SM-L01-060S-V48-T1P27NM-400W-004

Low-Voltage Servo Motors

Low-Voltage Servo Motors | ES-SM-L01-060S 48V 60 mm Low-Voltage Servo Motor Series

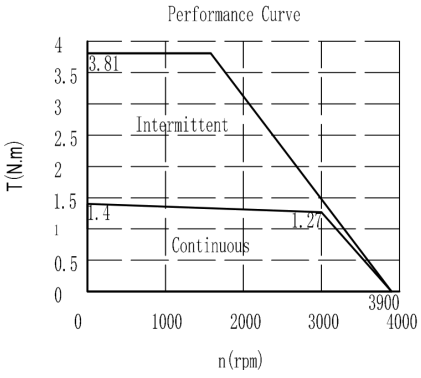
Product Overview

Low-Voltage Servo Motors with rated Torque 1.27 N·m, rated Speed 3000 rpm and continuous Rated Output Power 400 W.

Configuration Context	Feedback device: Multi-turn communication magnetic absolute encoder

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	1.27	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	400	W
Rated Voltage	48	VDC
Rated Line Voltage	48	V
Continuous Rated Current	10.6	A
Instantaneous Maximum Current	33.9	A
Flange Size	60	mm
Allowable Axial Force	90	N



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	1.27	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	400	W
ELECTRICAL		
Rated Voltage	48	VDC
Rated Line Voltage	48	V
Continuous Rated Current	10.6	A
Instantaneous Maximum Current	33.9	A
Pole Pairs	5	
Rotational Back-EMF Constant	8	V/krpm
Electrical Time Constant	2.52	ms
Insulation Class	F	
Motor Outlet Mode	Communication encoder connector	
MECHANICAL		
Flange Size	60	mm

Technical Specifications

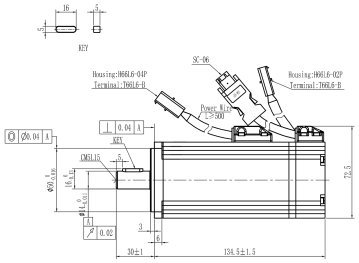
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Inertia Level	Low inertia		
Allowable Radial Force	180	N	
Mechanical Time Constant	1.03 / 1.02	ms	Brake Configuration: with_brake / Brake Configuration: without_brake
Rotor Inertia	0.38	Kg·cm 2	Brake Configuration: without_brake / Brake Configuration: with_brake
Allowable Axial Force	90	N	
INTEGRATION			
Feedback Device	Multi-turn communication magnetic absolute encoder		
ENVIRONMENTAL			
Operating Environment	Free from corrosive or flammable gases, oil droplets, and dust		
Operating Humidity	≤90% RH, non-condensing	%RH	
Altitude and Derating Rule	Maximum 2,000 m; derate power 1.5% per 100 m above 1,000	m	
Operating Temperature	-20 to 40	°C	
Protection Grade	Body IP65; shaft end IP54 without oil seal, IP65 with oil seal		
CONFIGURATION			
Output Shaft Type	Keyed shaft		
ADDITIONAL SPECIFICATIONS			
Cooling Method	Fully enclosed, self-cooled		

Dimensional & Integration Overview

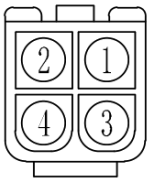
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	60	mm
Inertia Level	Low inertia	
Allowable Radial Force	180	N
Mechanical Time Constant	1.03 / 1.02	ms
Rotor Inertia	0.38	Kg·cm2
Allowable Axial Force	90	N

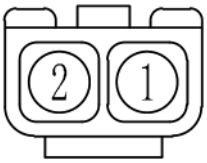
Dimensional Drawings



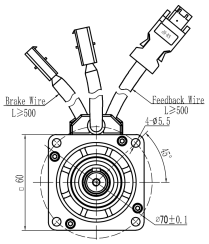
Mechanical View 1



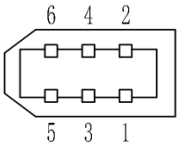
Power Connector Pinout



Power Connector Pinout



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Keyway length	16 mm
	Keyway width	5 mm
	Perpendicularity tolerance	⊥ 0.04 relative to datum A
	Model designation	CM5L15
	Housing height	72.5 mm
	Output shaft diameter	Φ50 0/-0.016 mm
	Shaft extension length	16 0/-0.013 mm
	Shaft journal diameter	Φ14 0/-0.011 mm
	Datum A	Datum A (shaft end face)
	Chamfer or angular tolerance	0.02 (chamfer/angle tolerance)
	Shaft shoulder height	3 mm
	Shaft shoulder width	6 mm
	Shaft end to mounting face distance	30±1 mm
	Motor overall length	134.5±1.5 mm
	Position tolerance	Position tolerance Φ0.04 relative to datum A
Mechanical View 4	Mounting hole quantity and diameter	4 holes, diameter 5.5
	Square mounting face size	Square 60
	Mounting hole pitch circle diameter	Diameter 70 ± 0.1

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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.