PRODUCT DATASHEET

ES-SM-L02-060D-V48-T1P27NM-400W-002

Low-Voltage Servo Motors

Low-Voltage Servo Motors | ES-SM-L02-060D Compact 48V 60 mm Low-Voltage Servo Motor Series

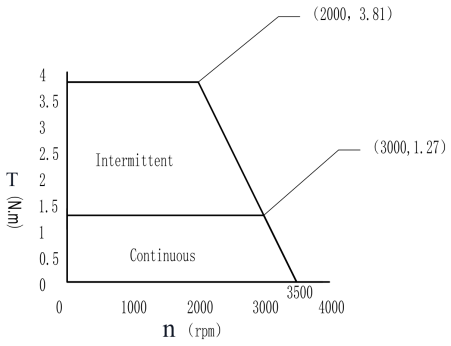
Product Overview

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	A
Instantaneous Maximum Current	32	A
Flange Size	60	mm
Allowable Axial Force	70	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	A
Instantaneous Maximum Current	32	A
Pole Pairs	5	
Rotational Back-EMF Constant	8.5	V/krpm
Electrical Time Constant	1.89	ms
Insulation Class	F	
Motor Outlet Mode	Communication encoder connector	
MECHANICAL		
Flange Size	60	mm
Inertia Level	Medium inertia	

Technical Specifications

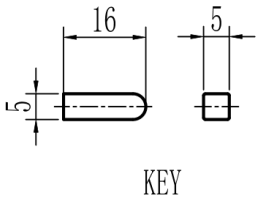
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Allowable Radial Force	115	N	
Mechanical Time Constant	1.03	ms	Brake Configuration: with_brake / Brake Configuration: without_brake
Rotor Inertia	0.43	Kg·cm 2	Brake Configuration: without_brake / Brake Configuration: with_brake
Allowable Axial Force	70	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	IP54		
CONFIGURATION			
Output Shaft Type	Keyed shaft		
Motor Version	Ultra-short version		
ADDITIONAL SPECIFICATIONS			
Cooling Method	Fully enclosed, self-cooled		

Dimensional & Integration Overview

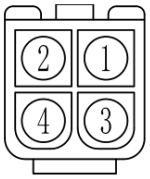
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	60	mm
Inertia Level	Medium inertia	
Allowable Radial Force	115	N
Mechanical Time Constant	1.03	ms
Rotor Inertia	0.43	Kg·cm2
Allowable Axial Force	70	N

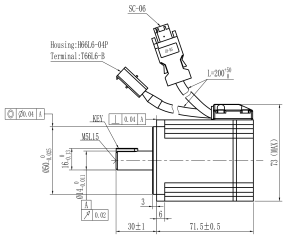
Dimensional Drawings



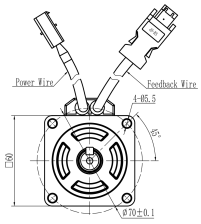
Mechanical View 1



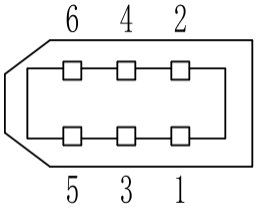
Power Connector Pinout



Mechanical View 3



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Keyway length	16 mm
	Keyway width	5 mm
	Keyway depth	
Mechanical View 3	Cable length	200 +50/0 mm
	Position tolerance	Position ⊕0.04 relative to datum A
	Keyway identifier	KEY
	Perpendicularity tolerance	Perpendicularity 0.04 relative to datum A
	Mounting bolt specification	M5 thread, 15mm length
	Maximum outer diameter	73 mm maximum
	Shaft diameter	Ø50 0/-0.025 mm
	Keyway depth	16 0/-0.13 mm
	Mounting hole diameter	Ø14 0/-0.011 mm
	Datum A	
	Circular runout tolerance	Circular runout 0.02
	Dimension value	3 mm
		6 mm
	Axial dimension	30±1 mm
	Overall length	71.5±0.5 mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 4	Mounting hole diameter and quantity	4× Ø5.5 mm holes
	Hole angular distribution	45° angular spacing
	Square section dimension	60 mm × 60 mm square
	Mounting hole pitch circle diameter	Ø70 ±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.