PRODUCT DATASHEET

ES-SM-L01-040S-V48-T0P32NM-100W-003

Low-Voltage Servo Motors

Low-Voltage Servo Motors | ES-SM-L01-040S 48V 40 mm Low-Voltage Servo Motor Series

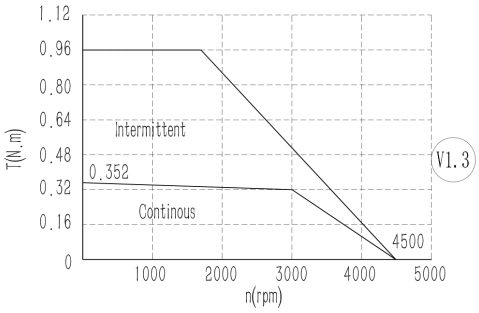
Product Overview

Low-Voltage Servo Motors with rated Torque 0.32 N·m, rated Speed 3000 rpm and continuous Rated Output Power 100 W.

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

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	0.32	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	100	W
Rated Voltage	48	VDC
Rated Line Voltage	48	V
Continuous Rated Current	3.2	A
Instantaneous Maximum Current	11.5	A
Flange Size	40	mm
Allowable Axial Force	60	N



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	0.32	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	100	W
ELECTRICAL		
Rated Voltage	48	VDC
Rated Line Voltage	48	V
Continuous Rated Current	3.2	A
Instantaneous Maximum Current	11.5	A
Pole Pairs	5	
Rotational Back-EMF Constant	7	V/krpm
Electrical Time Constant	1.27	ms
Insulation Class	F	
Motor Outlet Mode	Communication encoder connector	
MECHANICAL		
Flange Size	40	mm

Technical Specifications

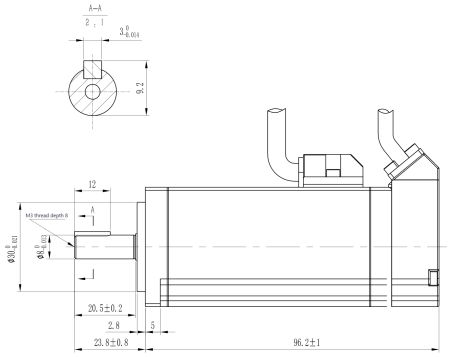
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Inertia Level	Low inertia		
Allowable Radial Force	120	N	
Mechanical Time Constant	0.67	ms	Brake Configuration: with_brake / Brake Configuration: without_brake
Rotor Inertia	0.033	Kg·cm 2	Brake Configuration: without_brake / Brake Configuration: with_brake
Allowable Axial Force	60	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

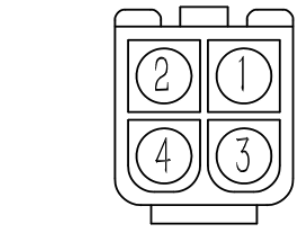
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	40	mm
Inertia Level	Low inertia	
Allowable Radial Force	120	N
Mechanical Time Constant	0.67	ms
Rotor Inertia	0.033	Kg·cm2
Allowable Axial Force	60	N

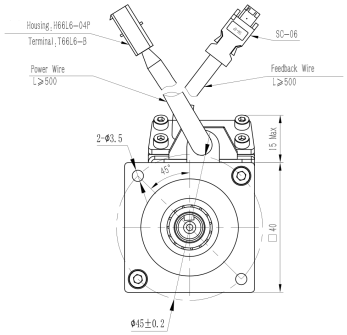
Dimensional Drawings



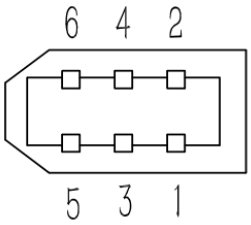
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Section view designation	A-A
	Keyway width	3 0/-0.014
	Shaft diameter	9.2
	Mounting hole spacing	12
	Datum designation	A
	Threaded hole specification	M3 thread depth 8mm
	Shaft outer diameter	Φ30 0/-0.021
	Mounting hole diameter	Φ8 0/-0.013
	Left flange length	20.5±0.2
	End step length	2.8
	End segment length	5
	Left side total length	23.8±0.8
	Overall total length	96.2±1
Mechanical View 3	Mounting Hole Diameter and Quantity	2 holes, φ3.5 mm
	Mounting Hole Angular Position	45°
	Maximum Height	15 mm max
	Envelope Circle Diameter	φ45±0.2 mm
	Width or Depth Dimension	40 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.