

PRODUCT DATASHEET

ES-SM-L01-040S-V48-TOP32NM-100W-001

Low-Voltage Servo Motors

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

Product Overview

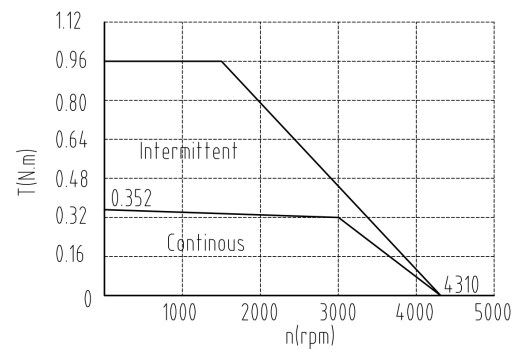
Low-Voltage Servo Motors with rated Torque 0.32 Nm, rated Speed 3000 rpm and continuous Rated Output Power 100 W.

Configuration Context

DC link: 48 V | Temperature sensor: n.a.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	0.32	Nm
Rated Speed	3000	rpm
Continuous Rated Output Power	100	W
Rated Voltage	48	V DC
Rated Line Voltage	48	V
Instantaneous Maximum Current	11.5	A
Flange Size	40	mm
Instantaneous Maximum Torque	0.96 Nm / 0.96 Nm	
DC link voltage	48	V



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	0.32	Nm
Instantaneous Maximum Torque	0.96 Nm / 0.96 Nm	
Rated Speed	3000	rpm
Continuous Rated Output Power	100	W
Stall Torque	0.352	Nm
Torque Constant	0.11 Nm/A / 0.11 Nm/A	
ELECTRICAL		
DC link voltage	48	V
Rated Voltage	48	V DC
Rated Line Voltage	48	V
Instantaneous Maximum Current	11.5	A
Back EMF Constant	7	V/krpm
Electrical Time Constant	1.27	ms
Position Feedback Device	ME16MHM-04	
Insulation Class	F	
Maximum voltage rise	8	kV/ μ s

Technical Specifications

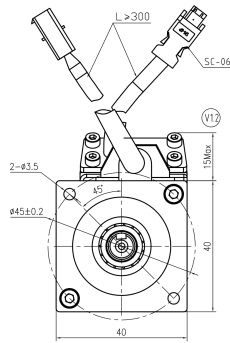
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Motor Outlet Mode	Communication encoder connector		
Number of Poles	10		
Pole Pairs	5		
Rated Current	3.2	A	
Stall Current	3.52	A	
Line-to-line inductance	1.9	mH	
Line-to-line resistance	1.5	Ω	
Rotational Back-EMF Constant	7 V/krpm		
THERMAL			
Temperature Sensor	n.a.		
MECHANICAL			
Flange Size	40	mm	
Weight	0.57	kg	
Inertia Level	Low inertia		
Mechanical Time Constant	0.67 / 0.67 (With brake)	ms	Brake Configuration: with_brake / Brake Configuration: without_brake
Mechanical Time Constant, Without Brake	0.67	ms	
Mechanical Time Constant, With Brake	0.67	ms	

Dimensional & Integration Overview

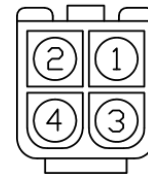
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	40	mm
Weight	0.57	kg
Inertia Level	Low inertia	
Mechanical Time Constant	0.67 / 0.67 (With brake)	ms
Mechanical Time Constant, Without Brake	0.67	ms
Mechanical Time Constant, With Brake	0.67	ms

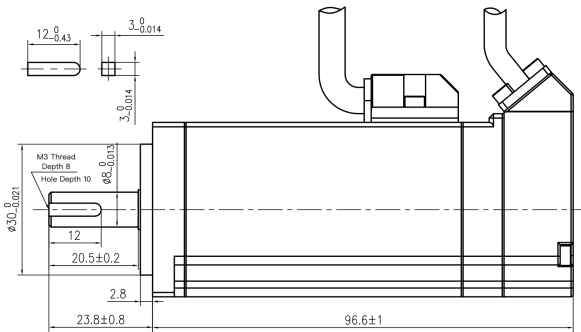
Dimensional Drawings



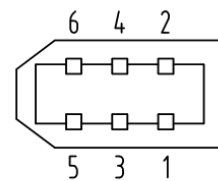
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout



2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Version marker	V1.2
	Maximum height limit	15 max
	Mounting hole quantity and diameter	2 holes, Ø3.5
	Mounting hole angular position	45 degrees
	Mounting hole pitch circle diameter	Ø45 ±0.2
	Mounting base height	40
	Mounting base width	

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	End slot or flat width	3 mm, +0 / -0.014
	End feature length	12 mm, +0 / -0.43
	Vertical slot or flat width	3 mm, +0 / -0.014
	Threaded hole size and thread depth	M3 thread, thread depth 8 mm
	Hole depth	Hole depth 10 mm
	Shaft diameter	Diameter 8 mm, +0 / -0.013
	Mounting pilot diameter	Diameter 30 mm, +0 / -0.021
	Shaft end protrusion length	12 mm
	Shaft shoulder to end length	20.5 mm $\pm$ 0.2
	Front step offset	2.8 mm
	Front mounting face to shaft end length	23.8 mm $\pm$ 0.8
	Overall motor body length	96.6 mm $\pm$ 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.