PRODUCT DATASHEET

ES-SM-L01-040S-V48-T0P32NM-100W-002

Low-Voltage Servo Motors

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

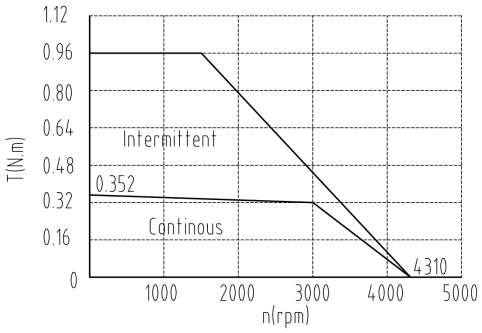
Product Overview

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

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

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	0.32	N·m
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 N·m / 0.96 Nm	
DC link voltage	48	V



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	0.32	N·m
Instantaneous Maximum Torque	0.96 N·m / 0.96 Nm	
Rated Speed	3000	rpm
Continuous Rated Output Power	100	W
Stall Torque	0.352	N·m
Torque Constant	0.11 N·m/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

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
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/µs
Motor Outlet Mode	Communication encoder connector	
Number of Poles	10	
Pole Pairs	5	
Rated Current	3.2	A
Stall Current	3.52	A

Technical Specifications

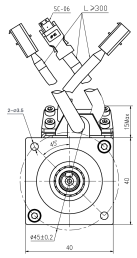
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Line-to-line inductance	1.9	mH	
Line-to-line resistance	1.5	Ω	
Rotational Back-EMF Constant	7 V/krpm		
THERMAL			
Temperature Sensor	n.a.		
MECHANICAL			
Flange Size	40	mm	
Weight	0.77	kg	
Inertia Level	Low inertia		
Mechanical Time Constant	0.67 / 0.67 (With brake)	ms	Brake Configuration: without_brake / Brake Configuration: with_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	0.77	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

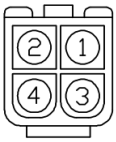
Dimensional Drawings



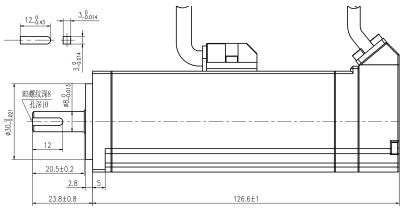
Mechanical View 1



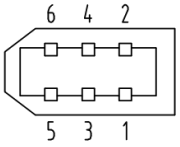
Power Connector Pinout



Power Connector Pinout



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Mounting hole quantity and diameter	2 holes, diameter 3.5
	Maximum height or clearance	15 max
	Mounting angle	45 degrees
	Vertical mounting face size	40
	Locating circle diameter and tolerance	Diameter 45 ±0.2
	Horizontal mounting face size	40
Mechanical View 4	Keyway width	Width 3 mm, upper deviation 0, lower deviation -0.014
	End flat or slot length	Length 12 mm, upper deviation 0, lower deviation -0.43
	Keyway height or depth	Height/depth 3 mm, upper deviation 0, lower deviation -0.014
	Threaded hole specification and depth	M3 threaded hole, thread depth 8 mm, hole depth 10 mm
	Shaft end diameter	Diameter 8 mm, upper deviation 0, lower deviation -0.013
	Main shaft shoulder diameter	Diameter 30 mm, upper deviation 0, lower deviation -0.021
	Shaft end slot length	Length 12 mm
	Shaft end protrusion length	Length 20.5 mm ±0.2
	Step clearance length	Length 2.8 mm
	Shaft shoulder step length	Length 5 mm
	Front mounting reference length	Length 23.8 mm ±0.8
	Motor body overall length	Length 126.6 mm ±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.