PRODUCT DATASHEET

ES-SM-L01-040S-V48-T0P16NM-50W-001

Low-Voltage Servo Motors

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

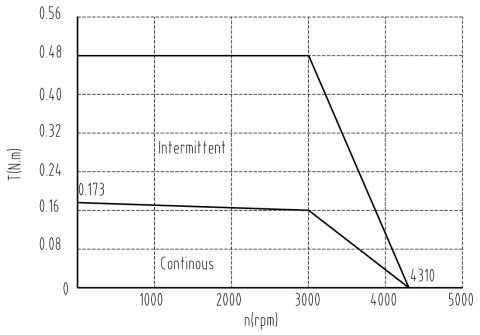
Product Overview

Low-Voltage Servo Motors with rated Torque 0.16 N·m, rated Speed 3000 rpm and continuous Rated Output Power 50 W.

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

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	0.16	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	50	W
Rated Voltage	48	V DC
Rated Line Voltage	48	V
Instantaneous Maximum Current	5.5	A
Flange Size	40	mm
Instantaneous Maximum Torque	0.48 N·m / 0.48 Nm	
DC link voltage	48	V



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	0.16	N·m
Instantaneous Maximum Torque	0.48 N·m / 0.48 Nm	
Rated Speed	3000	rpm
Continuous Rated Output Power	50	W
Stall Torque	0.176	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	5.5	A
Back EMF Constant	7	V/krpm
Electrical Time Constant	1.1	ms
Position Feedback Device	ME16MHM-04	
Insulation Class	F	
Maximum voltage rise	8	kV/µs

Technical Specifications

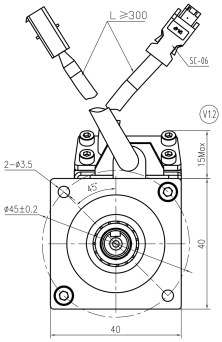
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Motor Outlet Mode	Communication encoder connector		
Number of Poles	10		
Pole Pairs	5		
Rated Current	1.5	A	
Stall Current	1.65	A	
Line-to-line inductance	4.5	mH	
Line-to-line resistance	4.1	Ω	
Rotational Back-EMF Constant	7 V/krpm		
THERMAL			
Temperature Sensor	n.a.		
MECHANICAL			
Flange Size	40	mm	
Weight	0.4	kg	
Inertia Level	Low inertia		
Mechanical Time Constant	1 (With brake) ms / 1	ms	Brake Configuration: with_brake / Brake Configuration: without_brake
Mechanical Time Constant, Without Brake	1	ms	
Mechanical Time Constant, With Brake	1	ms	

Dimensional & Integration Overview

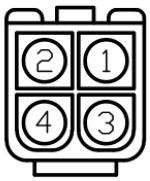
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	40	mm
Weight	0.4	kg
Inertia Level	Low inertia	
Mechanical Time Constant	1 (With brake) ms / 1	ms
Mechanical Time Constant, Without Brake	1	ms
Mechanical Time Constant, With Brake	1	ms

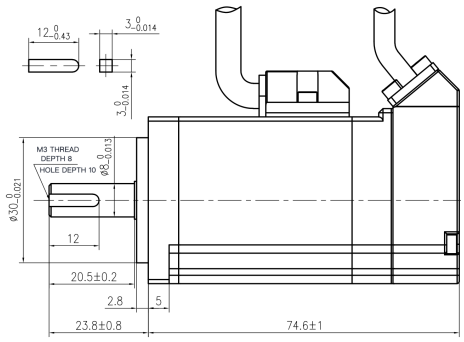
Dimensional Drawings



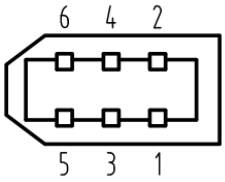
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Version label	Version V1.2
	Maximum protrusion height	15 mm max
	Mounting hole quantity and diameter	2 × Ø3.5 mm holes
	Mounting hole angular position	45 degrees
	Mounting circle diameter	Ø45 ±0.2 mm
	Mounting face height	40 mm
	Mounting face width	

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Keyway or flat feature length	12 mm, +0 / -0.43
	Keyway or flat feature width	3 mm, +0 / -0.014
	Keyway or flat feature depth	
	Shaft diameter	Diameter 8 mm, +0 / -0.013
	Threaded hole size and thread depth	M3 thread, thread depth 8 mm
	Hole depth	Hole depth 10 mm
	Outer diameter	Diameter 30 mm, +0 / -0.021
	Shaft-end slot length	12 mm
	Shaft extension length	20.5 mm ±0.2
	Step or clearance length	2.8 mm
	End step length	5 mm
	Main body length	74.6 mm ±1
	Front extension overall length	23.8 mm ±0.8

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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.