PRODUCT DATASHEET

ES-SM-L01-040S-V48-T0P16NM-50W-004

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	Feedback device: Multi-turn communication magnetic absolute encoder

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	0.16	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	50	W
Rated Voltage	48	VDC
Rated Line Voltage	48	V
Continuous Rated Current	1.5	A
Instantaneous Maximum Current	5.5	A
Flange Size	40	mm
Allowable Axial Force	60	N

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	0.16	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	50	W
ELECTRICAL		
Rated Voltage	48	VDC
Rated Line Voltage	48	V
Continuous Rated Current	1.5	A
Instantaneous Maximum Current	5.5	A
Pole Pairs	5	
Rotational Back-EMF Constant	7	V/krpm
Electrical Time Constant	1.1	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	1	ms	Brake Configuration: with_brake / Brake Configuration: without_brake
Rotor Inertia	0.018	Kg·cm 2	Brake Configuration: with_brake / Brake Configuration: without_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	1	ms
Rotor Inertia	0.018	Kg·cm2
Allowable Axial Force	60	N

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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.