PRODUCT DATASHEET

ES-SM-L01-080S-V48-T3P18NM-1000W-004

Low-Voltage Servo Motors

Low-Voltage Servo Motors | ES-SM-L01-080S 48V 80 mm Low-Voltage Servo Motor Series

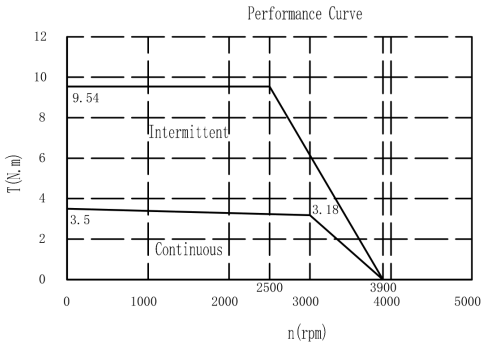
Product Overview

Low-Voltage Servo Motors with rated Torque 3.18 N·m, rated Speed 3000 rpm and continuous Rated Output Power 1000 W.

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

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	3.18	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	1000	W
Rated Voltage	48	VDC
Rated Line Voltage	48	V
Continuous Rated Current	26.4	A
Instantaneous Maximum Current	83	A
Flange Size	80	mm
Allowable Axial Force	167.5	N



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	3.18	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	1000	W
ELECTRICAL		
Rated Voltage	48	VDC
Rated Line Voltage	48	V
Continuous Rated Current	26.4	A
Instantaneous Maximum Current	83	A
Pole Pairs	5	
Rotational Back-EMF Constant	8	V/krpm
Electrical Time Constant	4.26	ms
Insulation Class	F	
Motor Outlet Mode	Communication encoder connector	
MECHANICAL		
Flange Size	80	mm

Technical Specifications

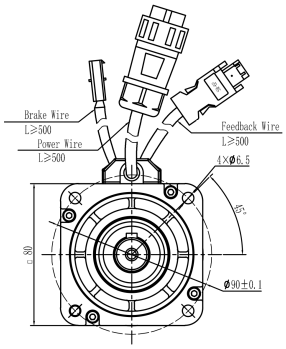
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Inertia Level	Low inertia		
Allowable Radial Force	335	N	
Mechanical Time Constant	0.66 / 0.63	ms	Brake Configuration: with_brake / Brake Configuration: without_brake
Rotor Inertia	1.36	Kg·cm 2	Brake Configuration: with_brake / Brake Configuration: without_brake
Allowable Axial Force	167.5	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

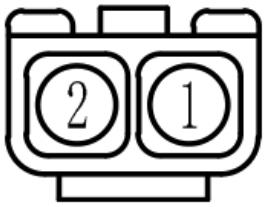
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	80	mm
Inertia Level	Low inertia	
Allowable Radial Force	335	N
Mechanical Time Constant	0.66 / 0.63	ms
Rotor Inertia	1.36	Kg·cm2
Allowable Axial Force	167.5	N

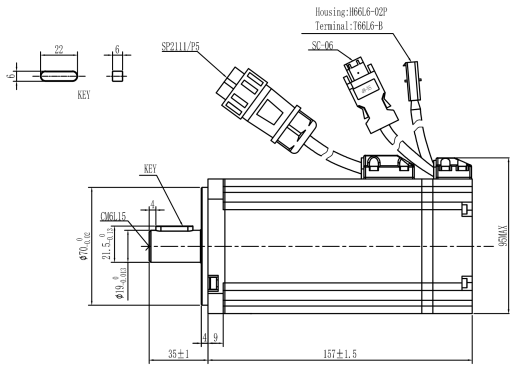
Dimensional Drawings



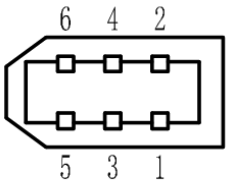
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Mounting hole quantity and diameter	4 holes, diameter 6.5
	Mounting hole angular position	45 degrees
	Square flange envelope size	Square 80
	Mounting hole pitch circle diameter	Diameter 90 ± 0.1
Mechanical View 3	Key length	22 mm
	Shaft key indication	KEY
	Thread specification	CM6L15
	Pilot diameter	Diameter 70 mm, +0 / -0.02
	Shaft extension length	21.5 mm, +0 / -0.13
	Shaft diameter	Diameter 19 mm, +0 / -0.013
	End face offset dimension	9 mm
	Motor body length	157 mm ±1.5
	Front shaft axial length	35 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.