PRODUCT DATASHEET

ES-SM-L02-080D-V48-T1P27NM-400W-001

Low-Voltage Servo Motors

Low-Voltage Servo Motors | ES-SM-L02-080D Compact 80 mm Low-Voltage Servo Motor Series

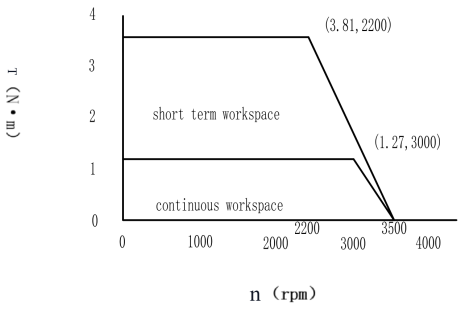
Product Overview

Low-Voltage Servo Motors with rated Torque 1.27 N·m, rated Speed 3000 rpm and continuous Rated Output Power 400 W.

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

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	1.27	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	400	W
Rated Voltage	48	VDC
Rated Line Voltage	48	V
Continuous Rated Current	10.3	A
Instantaneous Maximum Current	33	A
Flange Size	80	mm
Allowable Axial Force	90	N



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	1.27	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	400	W
ELECTRICAL		
Rated Voltage	48	VDC
Rated Line Voltage	48	V
Continuous Rated Current	10.3	A
Instantaneous Maximum Current	33	A
Pole Pairs	5	
Rotational Back-EMF Constant	8.4	V/krpm
Electrical Time Constant	2.84	ms
Insulation Class	F	
Motor Outlet Mode	Communication encoder connector	
MECHANICAL		
Flange Size	80	mm
Inertia Level	Medium inertia	

Technical Specifications

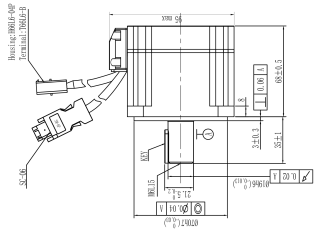
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Allowable Radial Force	235	N	
Mechanical Time Constant	1.4	ms	Brake Configuration: with_brake / Brake Configuration: without_brake
Rotor Inertia	0.87	Kg·cm 2	Brake Configuration: with_brake / Brake Configuration: without_brake
Allowable Axial Force	90	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	-5 to 40	°C	
Protection Grade	IP54		
CONFIGURATION			
Output Shaft Type	Keyed shaft		
Motor Version	Ultra-short version		
ADDITIONAL SPECIFICATIONS			
Cooling Method	Fully enclosed, self-cooled		

Dimensional & Integration Overview

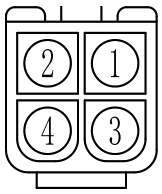
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	80	mm
Inertia Level	Medium inertia	
Allowable Radial Force	235	N
Mechanical Time Constant	1.4	ms
Rotor Inertia	0.87	Kg·cm2
Allowable Axial Force	90	N

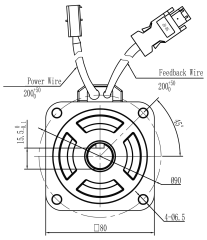
Dimensional Drawings



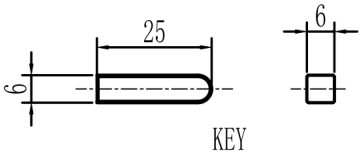
Mechanical View 1



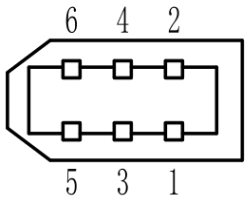
Power Connector Pinout



Mechanical View 3



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Maximum overall length	95 max
	Body height	68±0.5
	Geometric tolerance related to datum A	0.06 relative to A
	Local dimension	3±0.3
	Body width	35±1
	Datum A	
	Position tolerance	Position 0.02 relative to A
	Shaft diameter with tolerance fit	Φ19h6 (0/-0.013)
	Thread specification	M6L15
	Mounting interface dimension	21.5 (0/-0.2)
	Position tolerance	Position 0.04 relative to A
	Output shaft diameter with tolerance fit	Φ70h7 (0/-0.03)
Mechanical View 3	Shaft Diameter	Ø15.5 +0/-0.1 mm
	Mounting Flange Circle Diameter	Ø90 mm
	Mounting Hole Pattern	4 × Ø6.5 mm holes
	Flange Side Length	80 × 80 mm square

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 4	Keyway width	6
	Keyway length	25
	Keyway depth	6

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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.