PRODUCT DATASHEET

ES-SM-L01-080S-V48-TTBDNM-1000W-001

Low-Voltage Servo Motors

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

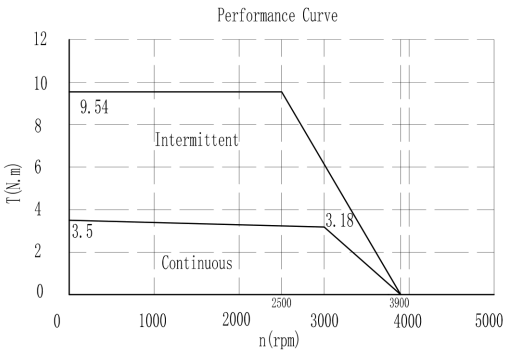
Product Overview

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

Configuration Context	DC link: 48 V

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	3.18	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	1000	W
Rated Voltage	48	V DC
Instantaneous Maximum Current	88	A
Flange Size	80	mm
Instantaneous Maximum Torque	9.54	N·m
DC link voltage	48	V
Weight	2.2	kg



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	3.18	N·m
Instantaneous Maximum Torque	9.54	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	1000	W
Bearing Axial Force	167.5	N
Bearing Radial Force	335	N
Stall Torque	3.5	N·m
Torque Constant	0.13	N·m/A
ELECTRICAL		
DC link voltage	48	V
Rated Voltage	48	V DC

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Instantaneous Maximum Current	88	A
Back EMF Constant	7.8	V/krpm
Electrical Time Constant	4.13	ms
Position Feedback Device	Incremental 2500pprMagnetic Encoder	
Insulation Class	F	
Number of Poles	10	
Pole Pairs	5	
Rated Current	26.4	A
Stall Current	29	A
Line-to-line inductance	0.215	mH

Technical Specifications

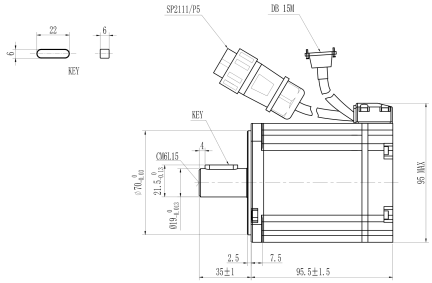
PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Line-to-line resistance	0.057	Ω
Motor Outlet Mode	Three-row 15-pin metal-shell encoder connector	
MECHANICAL		
Flange Size	80	mm
Weight	2.2	kg
Inertia Level	Low inertia	
Mechanical Time Constant	0.56	ms
Rotor Inertia	1.027	kg·cm²
Holding Brake Available	Without holding brake	
ENVIRONMENTAL		
Protection Rating	IP54	
CONFIGURATION		
Output Shaft Type	Keyed shaft	

Dimensional & Integration Overview

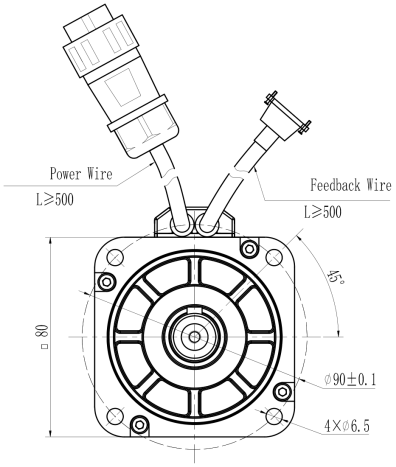
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	80	mm
Weight	2.2	kg
Inertia Level	Low inertia	
Mechanical Time Constant	0.56	ms
Rotor Inertia	1.027	kg·cm²
Holding Brake Available	Without holding brake	

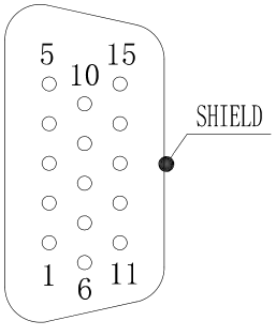
Dimensional Drawings



Mechanical View 1



Mechanical View 2



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Keyway Length	22 mm
	Keyway Width	6 mm
	Keyway Depth	
	Keyway Label	Keyway
	Shaft Diameter with Tolerance	Ø70 0/-0.03 mm
	Shaft Length with Tolerance	21.5 0/-0.13 mm
	Hole Diameter with Tolerance	Ø19 0/-0.013 mm
	Maximum Height	95 mm MAX
	Mounting Dimension 1	2.5 mm
	Mounting Dimension 2	7.5 mm
	Mounting Dimension with Tolerance	35±1 mm
	Overall Length with Tolerance	95.5±1.5 mm
Mechanical View 2	Mounting flange square dimension	80 × 80 mm square flange
	Mounting hole pitch circle diameter	Ø90 ±0.1 mm
	Mounting hole diameter and quantity	4 × Ø6.5 mm holes

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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.