PRODUCT DATASHEET

ES-SM-L03-130G-V96-T9P55NM-3000W-002

Low-Voltage Servo Motors

Low-Voltage Servo Motors | ES-SM-L03-130G 96V 130 mm Low-Voltage Servo Motor Series

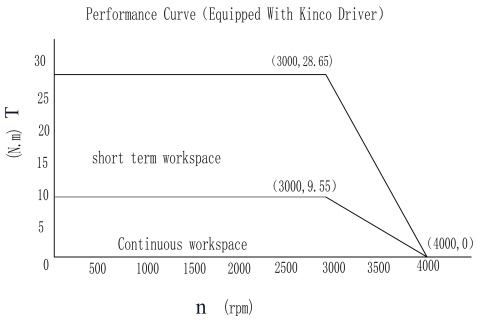
Product Overview

Low-Voltage Servo Motors with rated Torque 9.55 N·m, rated Speed 3000 rpm and continuous Rated Output Power 3000 W.

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

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	9.55	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	3000	W
Rated Voltage	96	VDC
Rated Line Voltage	96	V
Continuous Rated Current	40	A
Instantaneous Maximum Current	142	A
Flange Size	130	mm
Allowable Axial Force	196	N



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	9.55	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	3000	W
ELECTRICAL		
Rated Voltage	96	VDC
Rated Line Voltage	96	V
Continuous Rated Current	40	A
Instantaneous Maximum Current	142	A
Pole Pairs	5	
Rotational Back-EMF Constant	17.35	V/krpm
Electrical Time Constant	4.76	ms
Insulation Class	F	
Motor Outlet Mode	Communication encoder connector	
MECHANICAL		
Flange Size	130	mm

Technical Specifications

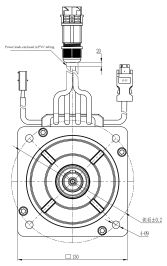
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Inertia Level	High inertia		
Allowable Radial Force	686	N	
Mechanical Time Constant	1.73 / 1.634	ms	Brake Configuration: with_brake / Brake Configuration: without_brake
Rotor Inertia	22.85	Kg·cm 2	Brake Configuration: with_brake / Brake Configuration: without_brake
Allowable Axial Force	196	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	IP54		
CONFIGURATION			
Output Shaft Type	Keyed shaft		
ADDITIONAL SPECIFICATIONS			
Cooling Method	Fully enclosed, self-cooled		

Dimensional & Integration Overview

Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	High inertia	
Allowable Radial Force	686	N
Mechanical Time Constant	1.73 / 1.634	ms
Rotor Inertia	22.85	Kg·cm2
Allowable Axial Force	196	N

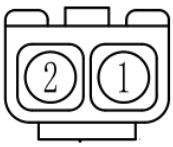
Dimensional Drawings



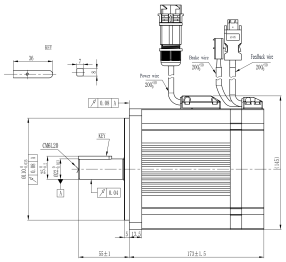
Mechanical View 1



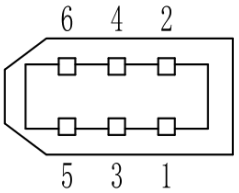
Power Connector Pinout



Power Connector Pinout



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Power cable lead length	20 mm
	Mounting hole pitch circle diameter	Ø145±0.2 mm
	Mounting hole specification	4 holes × Ø9 mm
	Motor front face width	130 mm
Mechanical View 4	Key length	36 mm
	Key width	7 mm
	Key depth/height	8 mm
	Position tolerance (top callout)	Position 0.08 A
	Shaft diameter with lower tolerance	Ø22 -0.013 mm
	Shaft length with tolerance	25 -0.2 mm
	Flange mounting diameter with tolerance	Ø110 -0.035 mm
	Shaft end boss width	5 mm
	Shaft end boss depth	13.5 mm
	Left section overall length	55±1 mm
	Motor body overall length	173±1.5 mm
	Overall height (reference)	145 mm (reference)
	Datum A	

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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.