PRODUCT DATASHEET

ES-SM-L03-130G-V96-T4P775NM-1500W-002

Low-Voltage Servo Motors

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

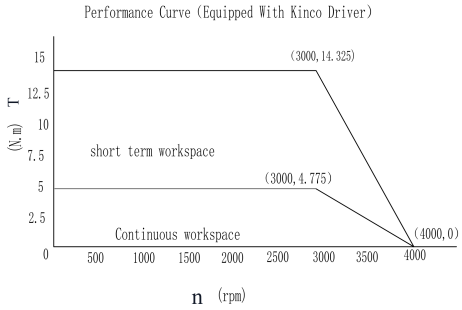
Product Overview

Low-Voltage Servo Motors with rated Torque 4.775 N·m, rated Speed 3000 rpm and continuous Rated Output Power 1500 W.

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

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	4.775	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	1500	W
Rated Voltage	96	VDC
Rated Line Voltage	96	V
Continuous Rated Current	21	A
Instantaneous Maximum Current	70	A
Flange Size	130	mm
Allowable Axial Force	196	N



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	4.775	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	1500	W
ELECTRICAL		
Rated Voltage	96	VDC
Rated Line Voltage	96	V
Continuous Rated Current	21	A
Instantaneous Maximum Current	70	A
Pole Pairs	5	
Rotational Back-EMF Constant	17.2	V/krpm
Electrical Time Constant	4.26	ms
Insulation Class	F	
Motor Outlet Mode	Communication encoder connector	
MECHANICAL		
Flange Size	130	mm

Technical Specifications

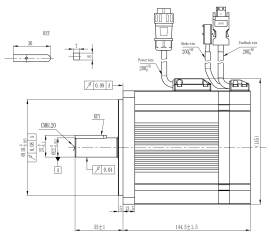
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Inertia Level	High inertia		
Allowable Radial Force	686	N	
Mechanical Time Constant	2.37 / 2.13	ms	Brake Configuration: without_brake / Brake Configuration: with_brake
Rotor Inertia	11.56	Kg·cm 2	Brake Configuration: without_brake / Brake Configuration: with_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

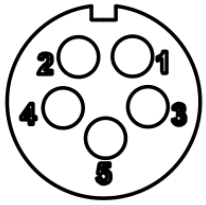
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	130	mm
Inertia Level	High inertia	
Allowable Radial Force	686	N
Mechanical Time Constant	2.37 / 2.13	ms
Rotor Inertia	11.56	Kg·cm2
Allowable Axial Force	196	N

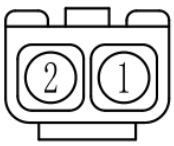
Dimensional Drawings



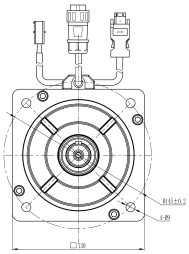
Mechanical View 1



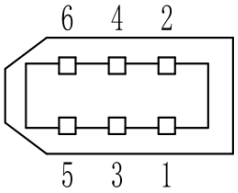
Power Connector Pinout



Power Connector Pinout



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key feature label	Key feature indicated
	Key length	36 mm
	Key width	7 mm
	Upper position tolerance	Position tolerance 0.08 relative to datum A
	Shaft key feature label	Key feature indicated on shaft
	Thread or mounting hole callout	CM6L20
	Left-side position tolerance	Position tolerance 0.08 relative to datum A
	Locating outer diameter	Diameter 110 mm, +0/-0.035
	Shaft step length	25 mm, +0/-0.2
	Shaft end diameter	Diameter 22 mm, +0/-0.013
	Datum A	
	Shaft end position tolerance	Geometric tolerance 0.04
	End step length	13.5 mm
	Shaft extension length	55 mm ±1
	Motor body length	144.5 mm ±1.5
	Reference height	145 mm reference

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 4	Mounting hole pitch circle diameter	Diameter 145 ±0.2
	Mounting hole quantity and diameter	4 holes, diameter 9
	Square flange side length	Square 130

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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.