

PRODUCT DATASHEET

ES-SM-A02-110D-T4NM-1250W-002

AC Servo Motors

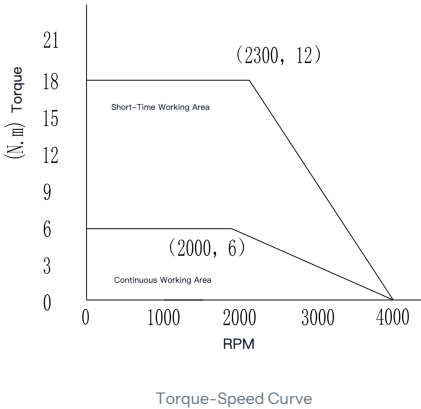
AC Servo Motors | ES-SM-A02-110D High-Response 110 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 4 N·m, instantaneous Maximum Torque 12 N·m and rated Speed 2000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	4	N·m
Instantaneous Maximum Torque	12	N·m
Rated Speed	2000	rpm
Continuous Rated Output Power	1250	W
Instantaneous Maximum Current	18.6	A
Flange Size	110	mm
Torque Constant	0.75	N·m/A
Rated Voltage	220	V AC
Rated Line Voltage	220	V



Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	4	Nm
Instantaneous Maximum Torque	12	Nm
Rated Speed	2000	rpm
Continuous Rated Output Power	1250	W
Torque Constant	0.75	Nm/A
Rated Power	1250	W
ELECTRICAL		
Rated Voltage	220	V AC
Rated Line Voltage	220	V
Instantaneous Maximum Current	18.6	A
Back EMF Constant	45	V/krpm

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Position Feedback Device	2500 PPR incremental encoder	
Insulation Class	F	
Maximum Allowed Voltage Slew Rate	8	KV/ μ s
Motor Outlet Mode	YL-series aviation connector	
Pole Pairs	4	
Rated Current	6.5	A
Rotational Back-EMF Constant	45	V/krpm
Electrical Time Constant	7.9	ms
MECHANICAL		
Flange Size	110	mm
Inertia Level	Medium inertia	

Technical Specifications

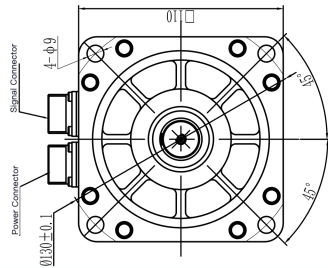
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Holding Brake Available	With holding brake		
Mechanical Time Constant	1.4	ms	
Rotor Inertia	5.85 kg·cm ² / 5.8 Kg·cm ²		Brake Configuration: without_brake
Bearing Radial Force Capacity	630	N	
Bearing Axial Force Capacity	315	N	
ENVIRONMENTAL			
Altitude and Derating Rule	Maximum altitude 4000 m; above 1000 m, power derates 1.5% per 100 m		
Operating Environment	Keep away from corrosive or flammable gases, oil droplets and dust		
Operating Humidity	≤90% RH, non-condensing		
Operating Temperature	-20 to 40°C (no freezing)		
Protection Rating	IP65, shaft end IP54		

Dimensional & Integration Overview

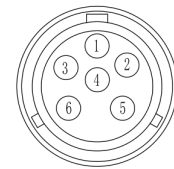
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	110	mm
Inertia Level	Medium inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	1.4	ms
Rotor Inertia	5.85 kg·cm ² / 5.8 Kg·cm ²	
Bearing Radial Force Capacity	630	N

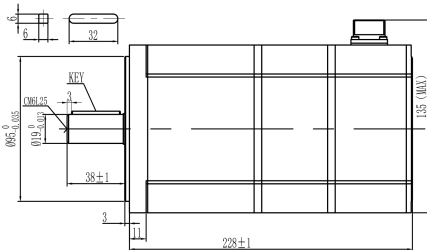
Dimensional Drawings



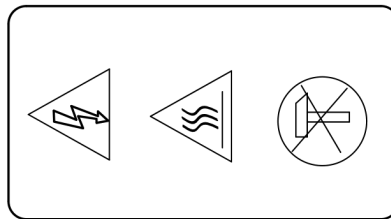
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Mounting flange square dimension	□110
	Mounting hole quantity and diameter	4-φ9
	Mounting hole pitch circle diameter	φ130±0.1
	Mounting hole angular distribution	45°
Mechanical View 3	Shaft diameter	Φ6
	Shaft extension length	6 mm
	Main shaft length	32 mm
	Keyway designation	Keyway present
	Keyway depth	3 mm
	Key type designation	CM6L25
	Mounting flange diameter	Φ95 0/-0.035 mm
	Main shaft diameter	Φ19 0/-0.013 mm
	Mounting face depth	38±1 mm
	End face step height	3 mm
	Flange width	11 mm
	Motor overall length	228±1 mm
	Maximum outer diameter	135 mm maximum

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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.