PRODUCT DATASHEET

ES-SM-A02-110D-T5NM-1570W-001

AC Servo Motors

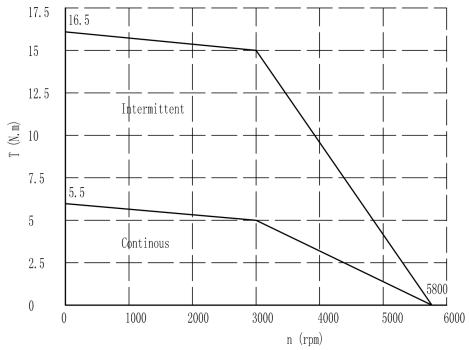
AC Servo Motors | ES-SM-A02-110D High-Response 110 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 5 N·m, instantaneous Maximum Torque 15 N·m and rated Speed 3000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	5	N·m
Instantaneous Maximum Torque	15	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	1570	W
Instantaneous Maximum Current	17.4	A
Flange Size	110	mm
Torque Constant	0.91	N·m/A
Rated Voltage	380	V AC
Rated Line Voltage	380	V



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	5	N·m
Instantaneous Maximum Torque	15	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	1570	W
Torque Constant	0.91	N·m/A
Rated Power	1570	W
ELECTRICAL		
Rated Voltage	380	V AC
Rated Line Voltage	380	V
Instantaneous Maximum Current	17.4	A
Back EMF Constant	55	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/μs
Motor Outlet Mode	YL-series aviation connector	
Pole Pairs	4	
Rated Current	5.8	A
Rotational Back-EMF Constant	55	V/krpm
Electrical Time Constant	7.5	ms
MECHANICAL		
Flange Size	110	mm
Inertia Level	Medium inertia	

Technical Specifications

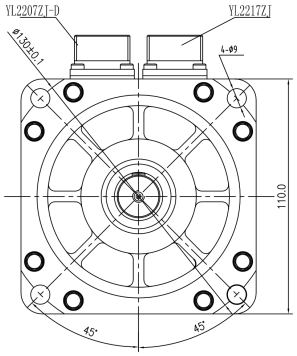
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Holding Brake Available	Without holding brake		
Mechanical Time Constant	1.57	ms	
Rotor Inertia	7.2 kg·cm² / 7.2 Kg·cm2		Brake Configuration: without_brake
Bearing Radial Force Capacity	630	N	
Bearing Axial Force Capacity	315	N	
ENVIRONMENTAL			
Altitude 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

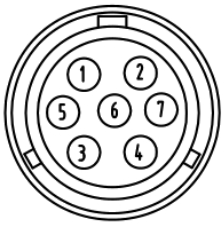
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	110	mm
Inertia Level	Medium inertia	
Holding Brake Available	Without holding brake	
Mechanical Time Constant	1.57	ms
Rotor Inertia	7.2 kg·cm² / 7.2 Kg·cm2	
Bearing Radial Force Capacity	630	N

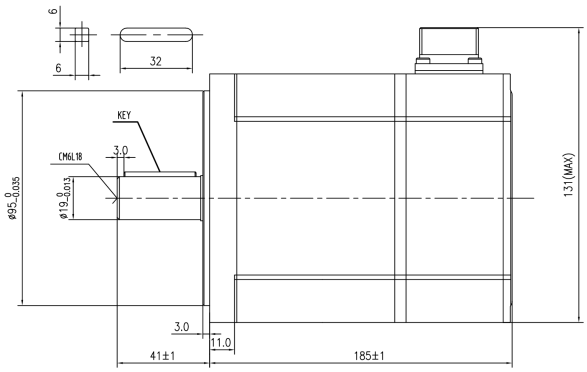
Dimensional Drawings



Mechanical View 1



Power Connector Pinout



Mechanical View 3

Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Mounting hole quantity and diameter	4 holes of Φ9 mm
	Mounting hole bolt circle diameter	Φ110.0 mm PCD
	Mounting hole angular distribution	45° angular offset
Mechanical View 3	Upper mounting hole horizontal spacing	6 mm
	Keyway identifier	KEY
	Keyway depth	3.0 mm
	Output shaft outer diameter with tolerance	φ95 0/-0.035 mm
	Shaft bore diameter with tolerance	φ19 0/-0.013 mm
	Bottom mounting boss height	3.0 mm
	Bottom mounting boss width	11.0 mm
	Bottom first section length	41±1 mm
	Total length	185±1 mm
	Maximum height	131 mm (MAX)

View Product Online **Request Engineering Data** **Request a Quote**

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.