

PRODUCT DATASHEET

ES-SM-A02-180D-T22NM-3500W-002

AC Servo Motors

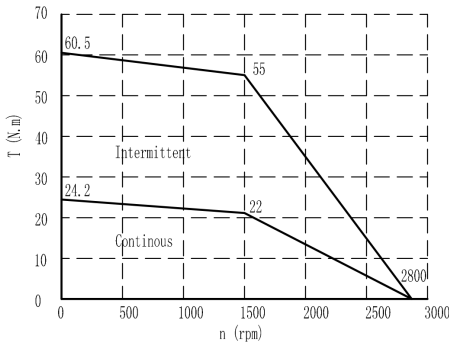
AC Servo Motors | ES-SM-A02-180D High-Response 180 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 22 N·m, instantaneous Maximum Torque 55 N·m and rated Speed 1500 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	22	N·m
Instantaneous Maximum Torque	55	N·m
Rated Speed	1500	rpm
Continuous Rated Output Power	3500	W
Instantaneous Maximum Current	25.75	A
Flange Size	180	mm
Torque Constant	2.23	N·m/A
Rated Voltage	380	V AC
Rated Line Voltage	380	V



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	22	Nm
Instantaneous Maximum Torque	55	Nm
Rated Speed	1500	rpm
Continuous Rated Output Power	3500	W
Torque Constant	2.23	Nm/A
Rated Power	3500	W
ELECTRICAL		
Rated Voltage	380	V AC
Rated Line Voltage	380	V
Instantaneous Maximum Current	25.75	A
Back EMF Constant	135	V/krpm

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Insulation Class	F	
Maximum Allowed Voltage Slew Rate	8	KV/ μ s
Motor Outlet Mode	YL-series aviation connector	
Pole Pairs	4	
Rated Current	10.3	A
Rotational Back-EMF Constant	135	V/krpm
Electrical Time Constant	12.08	ms
Position Feedback Device	2500 PPR incremental encoder	
MECHANICAL		
Flange Size	180	mm
Inertia Level	Medium inertia	

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Holding Brake Available	With holding brake		
Mechanical Time Constant	2.89	ms	
Rotor Inertia	82.2 kgcm ² / 82 Kg·cm ²		Brake Configuration: without_brake
Bearing Radial Force Capacity	1600	N	
Bearing Axial Force Capacity	800	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		

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Front flange outside diameter	Diameter 200 $\pm$ 0.15
	Keyway width	12
	Keyway length	65
	Keyway size	8
	Shaft step length	65
	Shaft shoulder length	6
	Maximum body height	204 max
	Shaft diameter	Diameter 42 +0/-0.016
	Pilot diameter	Diameter 114.3 +0/-0.035
	Shaft extension length	79 $\pm$ 0.1
	Threaded hole size	M8 thread, depth 25
	End step or clearance dimension	4
	Mounting through hole quantity and diameter	4 holes diameter 13
	Front offset length	17
	Mounting hole angular spacing	45 degrees
	Motor body length	332 $\pm$ 1.5
	Front interface length	84.5 $\pm$ 1
	Mounting hole center distance	2 directions, 180

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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.