

PRODUCT DATASHEET

ES-SM-A02-180D-T28NM-4400W-001

AC Servo Motors

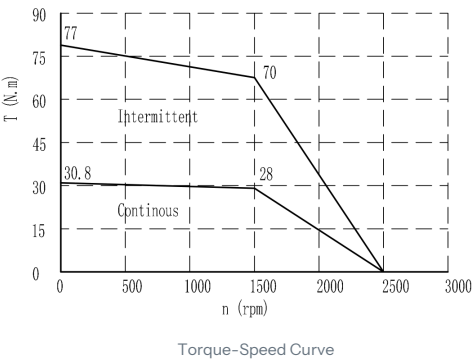
AC Servo Motors | ES-SM-A02-180D High-Response 180 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 28 N·m, instantaneous Maximum Torque 70 N·m and rated Speed 1500 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	28	N·m
Instantaneous Maximum Torque	70	N·m
Rated Speed	1500	rpm
Continuous Rated Output Power	4400	W
Instantaneous Maximum Current	29.75	A
Flange Size	180	mm
Torque Constant	2.48	N·m/A
Rated Voltage	380	V AC
Rated Line Voltage	380	V



Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	28	Nm
Instantaneous Maximum Torque	70	Nm
Rated Speed	1500	rpm
Continuous Rated Output Power	4400	W
Torque Constant	2.48	Nm/A
Rated Power	4400	W
ELECTRICAL		
Rated Voltage	380	V AC
Rated Line Voltage	380	V
Instantaneous Maximum Current	29.75	A
Back EMF Constant	150	V/krpm
Insulation Class	F	
Maximum Allowed Voltage Slew Rate	8	KV/ μ s
Motor Outlet Mode	YL-series aviation connector	
Pole Pairs	4	
Rated Current	11.9	A

Technical Specifications

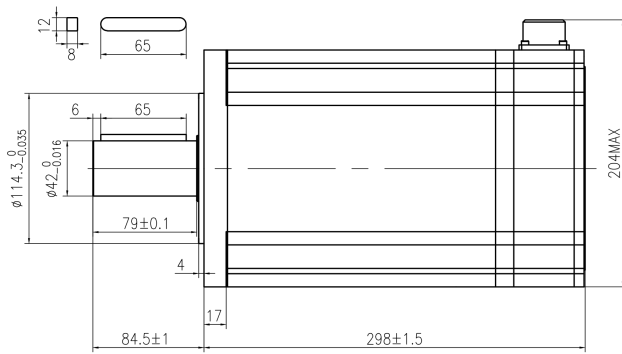
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Rotational Back-EMF Constant	150	V/krpm	
Electrical Time Constant	13.37	ms	
Position Feedback Device	2500 PPR incremental encoder		
MECHANICAL			
Flange Size	180	mm	
Inertia Level	Medium inertia		
Holding Brake Available	Without holding brake		
Mechanical Time Constant	2.23	ms	
Rotor Inertia	118 kg·cm ² / 118 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		

Dimensional & Integration Overview

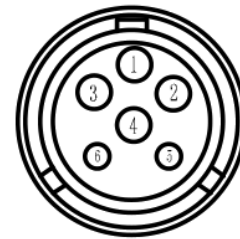
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	180	mm
Inertia Level	Medium inertia	
Holding Brake Available	Without holding brake	
Mechanical Time Constant	2.23	ms
Rotor Inertia	118 kgcm ² / 118 Kg·cm ²	
Bearing Radial Force Capacity	1600	N

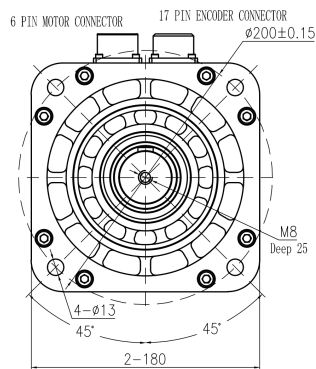
Dimensional Drawings



Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Keyway or key cross-section height	12 mm
	Keyway or key feature length	65 mm
	Keyway or key cross-section width	8 mm
	Shaft shoulder step length	6 mm
	Shaft keyway length	65 mm
	Maximum outside diameter or body height	204 mm maximum
	Flange or shaft shoulder outside diameter	Diameter 114.3 mm, upper deviation 0, lower deviation -0.035 mm
	Output shaft diameter	Diameter 42 mm, upper deviation 0, lower deviation -0.016 mm
	Shaft end length	79 mm $\pm$ 0.1 mm
	End face clearance or shoulder offset	4 mm
	Front transition length	17 mm
	Shaft end to body front overall length	84.5 mm $\pm$ 1 mm
	Motor body length	298 mm $\pm$ 1.5 mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Outer diameter with tolerance	Diameter 200 $\pm$ 0.15
	Threaded mounting hole size and depth	M8 threaded hole, depth 25
	Mounting through-hole quantity and diameter	4 holes, diameter 13
	Right-side mounting hole angular position	45 degrees
	Left-side mounting hole angular position	
	Mounting hole center spacing	2-180 as shown

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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.