

PRODUCT DATASHEET

ES-SM-A03-180G-T35NM-5500W-002

AC Servo Motors

AC Servo Motors | ES-SM-A03-180G Compact 180 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 35 N·m, instantaneous Maximum Torque 87.5 N·m and rated Speed 1500 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	35	N·m
Instantaneous Maximum Torque	87.5	N·m
Rated Speed	1500	rpm
Continuous Rated Output Power	5500	W
Rated Voltage	380	V AC
Instantaneous Maximum Current	50.75	A
Flange Size	180	mm
Torque Constant	1.9	Nm/A
Altitude and Derating Rule	highest altitude2000m,1000mabove,every rise100m,Power drop1.5%	

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	35	Nm
Instantaneous Maximum Torque	87.5	Nm
Rated Speed	1500	rpm
Continuous Rated Output Power	5500	W
Torque Constant	1.9	Nm/A
Rated Power	5500	W
ELECTRICAL		
Rated Voltage	380	V AC
Instantaneous Maximum Current	50.75	A
Back EMF Constant	115	V/krpm
Insulation Class	F	
Motor Outlet Mode	Standard socket	
Pole Pairs	5	
Rated Current	20.3	A
Rotational Back-EMF Constant	115	V/krpm
Electrical Time Constant	15.5	ms

Technical Specifications

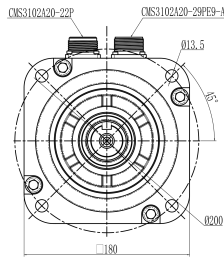
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Position Feedback Device	17-bit multi-turn communication magnetic absolute encoder		
MECHANICAL			
Flange Size	180	mm	
Inertia Level	High inertia		
Holding Brake Available	With holding brake		
Mechanical Time Constant	0.92 / 0.86	ms	Brake Configuration: without_brake
Rotor Inertia	104.43 / 98	Kg-cm ²	Brake Configuration: without_brake
Bearing Radial Force Capacity	1470	N	
Bearing Axial Force Capacity	490	N	
ENVIRONMENTAL			
Altitude and Derating Rule	highest altitude 2000m, 1000m above, every rise 100m, Power drop 1.5%		
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 (Note: with shaft-end oil seal IP54, without oil seal IP50)		
CONFIGURATION			
Output Shaft Type	Keyed shaft		
ADDITIONAL SPECIFICATIONS			
Holding Brake	1		

Dimensional & Integration Overview

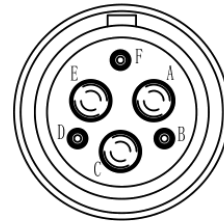
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	180	mm
Inertia Level	High inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	0.92 / 0.86	ms
Rotor Inertia	104.43 / 98	Kg·cm ²
Bearing Radial Force Capacity	1470	N

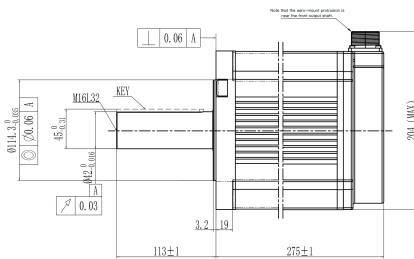
Dimensional Drawings



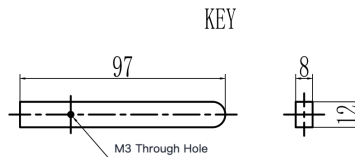
Mechanical View 1



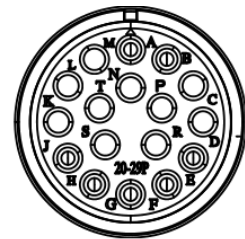
Power Connector Pinout



Mechanical View 3



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Mounting hole diameter	Ø13.5
	Mounting hole angular spacing	45°
	Flange bolt circle diameter	Ø200
	Flange width	180
Mechanical View 3	Aviation connector protrusion position note	Connector protrusion near front shaft
	Perpendicularity to datum A	⊥0.06 A
	Keyway specification	M16L32
	Overall length maximum	204 mm max
	Datum A	
	Shaft end diameter	Ø14.3 -0.035
	Shaft extension length	45 -0.31
	Cylindricity or runout to datum A	Ø0.06 A
	Main shaft diameter	Ø42 0/-0.016
	Runout tolerance	Runout 0.03
	Mounting feature dimension 1	3.2
	Mounting feature dimension 2	19
	First section overall length	113±1
	Total overall length	275±1

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 4	Keyway identifier	KEY
	Keyway length	97 mm
	Keyway width	8 mm
	Keyway depth	12 mm
	Through hole specification	M3 through hole

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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.