

PRODUCT DATASHEET

ES-SM-A03-180G-T28NM-4400W-004

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 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
Rated Voltage	380	V AC
Instantaneous Maximum Current	41.25	A
Flange Size	180	mm
Torque Constant	1.87	Nm/A
Altitude and Derating Rule	highest altitude2000m,1000mabove,every rise100m,Power drop1.5%	

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	1.87	Nm/A
Rated Power	4400	W
ELECTRICAL		
Rated Voltage	380	V AC
Instantaneous Maximum Current	41.25	A
Back EMF Constant	113	V/krpm
Insulation Class	F	
Motor Outlet Mode	Standard socket	
Pole Pairs	5	
Rated Current	16.5	A
Rotational Back-EMF Constant	113	V/krpm
Electrical Time Constant	14.4	ms

Technical Specifications

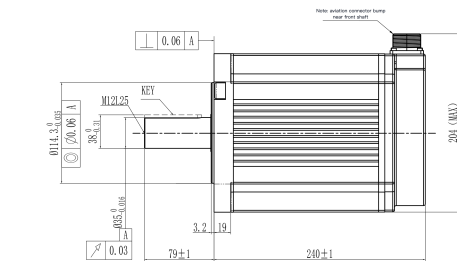
PARAMETER	SPECIFICATION	UNIT	NOTES
ELECTRICAL			
Position Feedback Device	23-bit multi-turn communication optical absolute encoder		
MECHANICAL			
Flange Size	180	mm	
Inertia Level	High inertia		
Holding Brake Available	With holding brake		
Mechanical Time Constant	1.04 / 0.94	ms	Brake Configuration: without_brake
Rotor Inertia	73.5 / 67	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

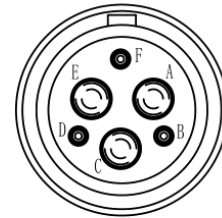
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	180	mm
Inertia Level	High inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	1.04 / 0.94	ms
Rotor Inertia	73.5 / 67	Kg·cm ²
Bearing Radial Force Capacity	1470	N

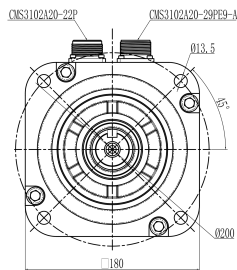
Dimensional Drawings



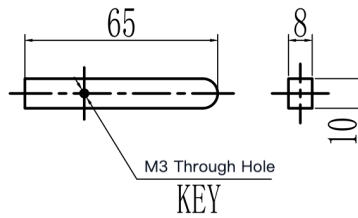
Mechanical View 1



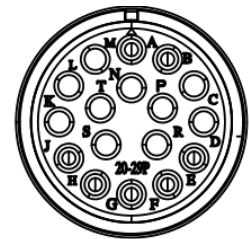
Power Connector Pinout



Mechanical View 3



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Installation note	Note: aviation connector bump near front shaft
	Perpendicularity tolerance	$\perp 0.06 A$
	Keyway identifier	KEY
	Mounting bolt specification	M12L25
	Maximum envelope dimension	204 (MAX)
	Datum A	
	Shaft diameter with tolerance	$\varnothing 114 +3/-0.035$
	Shaft section dimension	38 -0.31
	Concentricity/Runout tolerance	0.06
	Shaft diameter with tolerance	$\varnothing 35 0/-0.016$
	Keyway width	3.2
	Keyway length	19
	Angularity tolerance	$\angle 0.03 A$
	Overall length dimension 1	79 $\pm$ 1
	Overall length dimension 2	240 $\pm$ 1
Mechanical View 3	Mounting hole diameter	$\varnothing 13.5$
	Flange diameter	$\varnothing 200$
	Flange width	180

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 4	Shaft length	65
	Shaft diameter	Φ8
	Shaft end diameter	Φ10
	Through hole specification	M3 through hole
	Keyway indicator	Keyway present

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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.