PRODUCT DATASHEET

ES-SM-A03-180G-T19P1NM-3000W-001

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 19.1 N·m, instantaneous Maximum Torque 57.3 N·m and rated Speed 1500 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	19.1	N·m
Instantaneous Maximum Torque	57.3	N·m
Rated Speed	1500	rpm
Continuous Rated Output Power	3000	W
Rated Voltage	380	VAC
Continuous Rated Current	10.6	A
Instantaneous Maximum Current	31.8	A
Flange Size	180	mm
Torque Constant	1.98	N·m/A

Technical Specifications

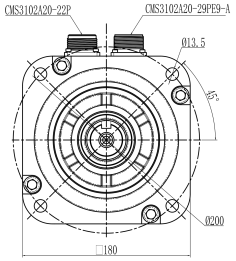
PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	19.1	N·m
Instantaneous Maximum Torque	57.3	N·m
Rated Speed	1500	rpm
Continuous Rated Output Power	3000	W
Torque Constant	1.98	N·m/A
ELECTRICAL		
Rated Voltage	380	VAC
Continuous Rated Current	10.6	A
Instantaneous Maximum Current	31.8	A
Pole Pairs	5	
Rotational Back-EMF Constant	120	V/krpm
Electrical Time Constant	13.8	ms
Insulation Class	F	
Position Feedback Device	17-bit multi-turn communication magnetic absolute encoder	
Motor Outlet Mode	Standard socket	
MECHANICAL		
Flange Size	180	mm
Mechanical Time Constant	1.11	ms
Bearing Radial Force Capacity	1470	N
Bearing Axial Force Capacity	490	N
CONFIGURATION		
Output Shaft Type	Keyed shaft	

Dimensional & Integration Overview

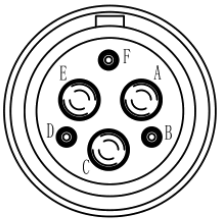
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	180	mm
Mechanical Time Constant	1.11	ms
Bearing Radial Force Capacity	1470	N
Bearing Axial Force Capacity	490	N

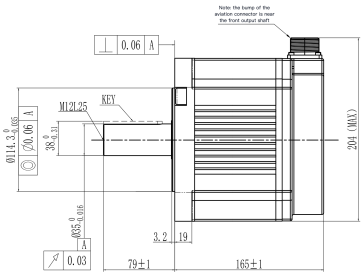
Dimensional Drawings



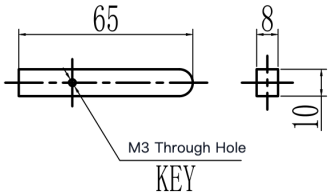
Mechanical View 1



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
	Motor Flange Bolt Circle Diameter	Ø200
	Motor Flange Width / Side Length	180

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Aviation connector bump position note	Connector bump near front shaft
	Face perpendicularity tolerance	⊥ 0.06 to datum A
	Keyway identifier	Keyway present
	Mounting bolt hole specification	M12 thread, 25mm depth
	Maximum overall length	204 max
	Housing face perpendicularity	⊥ 0.06 to datum A
	Concentricity or position tolerance zone diameter	Ø0.06 tolerance zone
	Motor housing flange diameter (vertical callout)	Ø114.3 +0/-0.035
	Shaft journal diameter	Ø35 +0/-0.016
	Datum A	
	Position tolerance	Position 0.03 relative to A
	First section length	79 ±1
	Second section length	165 ±1
	Shaft section width	19
	Shaft step depth	3.2
	Local dimension	38 +0/-0.31

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 4	Overall length	65 mm
	Mounting hole width	8 mm
	Mounting hole height	10 mm
	M3 through hole	
	Keyway position 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.