

PRODUCT DATASHEET

ES-SM-A03-180G-T19P1NM-3000W-003

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 Nm, instantaneous Maximum Torque 57.3 Nm and rated Speed 1500 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	19.1	Nm
Instantaneous Maximum Torque	57.3	Nm
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	Nm/A

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	19.1	Nm
Instantaneous Maximum Torque	57.3	Nm
Rated Speed	1500	rpm
Continuous Rated Output Power	3000	W
Torque Constant	1.98	Nm/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	23-bit multi-turn communication optical 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	

Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Mounting Hole Diameter	Ø13.5 mm
	Mounting Hole Angular Spacing	45°
	Bolt Circle Diameter / Flange Pitch Circle Diameter	Ø200 mm
	Flange Envelope Dimension / Square Side Length	180 mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Installation note	Aviation connector protrusion positioned near front output shaft
	Perpendicularity tolerance to datum A	$\perp 0.06 A$
	Keyway location	Keyway present
	Mounting hole specification	M12 x 25 mm deep threaded hole
	Mounting flange outer diameter	$\varnothing 114.3 0/-0.035 \text{ mm}$
	Perpendicularity tolerance of flange face	$\perp 0.06 A$
	Flange thickness	$38 0/-0.31 \text{ mm}$
	Output shaft diameter	$\varnothing 35 0/-0.016 \text{ mm}$
	Datum A	
	Circular runout tolerance	0.03
	Keyway width	3.2 mm
	Keyway length	19 mm
	Flange to keyway distance	$79 \pm 1 \text{ mm}$
	Overall length	$165 \pm 1 \text{ mm}$
	Maximum overall length	204 mm maximum



2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 4	Keyway Length	65 mm
	Keyway Width	8 mm
	Keyway Depth	10 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.