PRODUCT DATASHEET

ES-SM-A03-080D-T3P18NM-1000W-002

AC Servo Motors

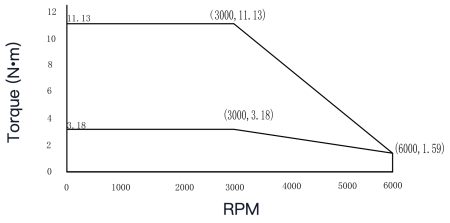
AC Servo Motors | ES-SM-A03-080D Compact 80 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 3.18 N·m, instantaneous Maximum Torque 9.54 N·m and rated Speed 3000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	3.18	N·m
Instantaneous Maximum Torque	9.54	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	1000	W
Rated Voltage	220	VAC
Continuous Rated Current	5.5	A
Instantaneous Maximum Current	16.9	A
Flange Size	80	mm
Torque Constant	0.64	N·m/A



Torque-Speed Curve

Technical Specifications

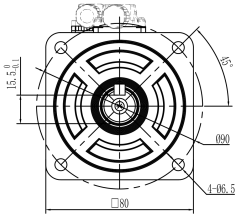
PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	3.18	N·m
Instantaneous Maximum Torque	9.54	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	1000	W
Torque Constant	0.64	N·m/A
ELECTRICAL		
Rated Voltage	220	VAC
Continuous Rated Current	5.5	A
Instantaneous Maximum Current	16.9	A
Pole Pairs	5	
Rotational Back-EMF Constant	39	V/krpm
Electrical Time Constant	3.6	ms
Insulation Class	F	
Position Feedback Device	17-bit multi-turn communication magnetic absolute encoder	
Motor Outlet Mode	Standard socket	
MECHANICAL		
Flange Size	80	mm
Mechanical Time Constant	0.87	ms
Bearing Radial Force Capacity	392	N
Bearing Axial Force Capacity	147	N
CONFIGURATION		
Output Shaft Type	Keyed shaft	

Dimensional & Integration Overview

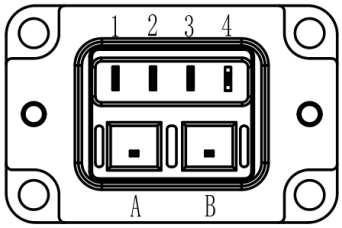
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	80	mm
Mechanical Time Constant	0.87	ms
Bearing Radial Force Capacity	392	N
Bearing Axial Force Capacity	147	N

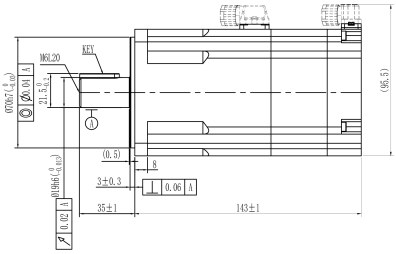
Dimensional Drawings



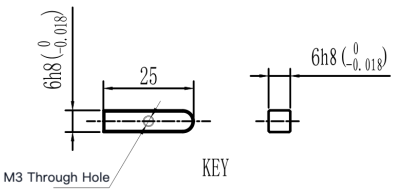
Mechanical View 1



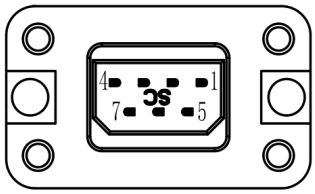
Power Connector Pinout



Mechanical View 3



Mechanical View 4



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Output shaft protrusion length	15.5 0/-0.1
	Mounting face chamfer angle	45°
	Mounting hole bolt circle diameter	Ø90
	Mounting hole quantity and diameter	4-Ø6.5
	Mounting flange square dimension	□80

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Keyway identifier	KEY
	Mounting bolt specification	M6L20
	Datum A	
	Output shaft large end diameter with tolerance	Ø70h7 (0/-0.03)
	Circularity tolerance	Ø0.04
	Output shaft small end length with tolerance	21.5 (0/-0.2)
	Shaft shoulder fillet radius	R0.5
	Keyway width	8
	Output shaft small end diameter with tolerance	Ø19h6 (0/-0.013)
	Shaft step depth	3±0.3
	Concentricity tolerance to datum A	0.06 A
	Perpendicularity tolerance of end face to datum A	0.02 A
	Small shaft end total length	35±1
	Output shaft total length	143±1
	Distance from shaft end to mounting face	95.5

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 4	Shaft diameter tolerance	6h8 (-0.018)
	Keyway length	25 mm
	Mounting hole specification	M3 Through Hole
	Keyway identifier	KEY

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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.