PRODUCT DATASHEET

ES-SM-A02-080S-T2P39NM-750W-004

AC Servo Motors

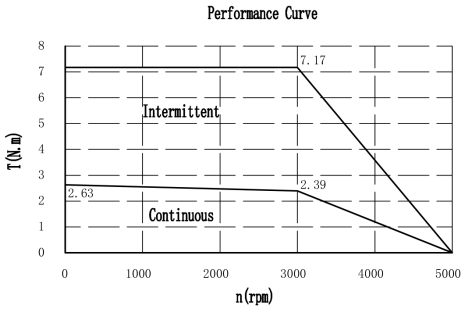
AC Servo Motors | ES-SM-A02-080S High-Response 80 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 2.39 N·m, instantaneous Maximum Torque 7.17 N·m and rated Speed 3000 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	2.39	N·m
Instantaneous Maximum Torque	7.17	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	750	W
Instantaneous Maximum Current	11.7	A
Flange Size	80	mm
Torque Constant	0.662	N·m/A
Rated Voltage	220	V AC
Rated Line Voltage	220	V



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	2.39	N·m
Instantaneous Maximum Torque	7.17	N·m
Rated Speed	3000	rpm
Continuous Rated Output Power	750	W
Torque Constant	0.662	N·m/A
Rated Power	750	W
ELECTRICAL		
Rated Voltage	220	V AC
Rated Line Voltage	220	V
Instantaneous Maximum Current	11.7	A
Back EMF Constant	40	V/krpm

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Position Feedback Device	2500 PPR incremental encoder	
Insulation Class	F	
Maximum Allowed Voltage Slew Rate	8	KV/μs
Pole Pairs	3	
Rated Current	3.9	A
Rotational Back-EMF Constant	40	V/krpm
Electrical Time Constant	5.35	ms
Motor Outlet Mode	HFO21 + HFO18 aviation connectors	
MECHANICAL		
Flange Size	80	mm
Inertia Level	Low inertia	

Technical Specifications

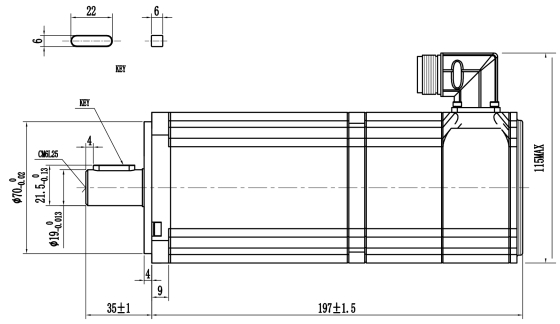
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Holding Brake Available	With holding brake		
Mechanical Time Constant	0.75	ms	
Rotor Inertia	1.385 kg·cm² / 1.36 Kg·cm2		Brake Configuration: without_brake
Bearing Radial Force Capacity	335	N	
Bearing Axial Force Capacity	167.5	N	
ENVIRONMENTAL			
Altitude and Derating Rule	Maximum altitude 4000 m; above 1000 m, power derates 1.5% per 100 m		
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		

Dimensional & Integration Overview

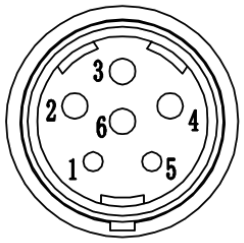
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	80	mm
Inertia Level	Low inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	0.75	ms
Rotor Inertia	1.385 kg·cm² / 1.36 Kg·cm2	
Bearing Radial Force Capacity	335	N

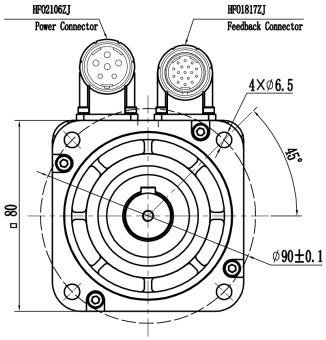
Dimensional Drawings



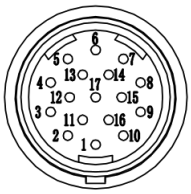
Mechanical View 1



Power Connector Pinout



Mechanical View 3



Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Key length	22
	Key width	6
	Key height	
	Key label	Key
	Maximum overall height	115 maximum
	Shaft shoulder diameter	Diameter 70 with +0/-0.02 tolerance
	Shaft section length	21.5 with +0/-0.13 tolerance
	Output shaft diameter	Diameter 19 with +0/-0.013 tolerance
	End face step offset	4
	Front step length	9
	Main body length	197 ±1.5
	Shaft extension length	35 ±1
Mechanical View 3	Mounting hole quantity and diameter	4 holes, diameter 6.5
	Mounting hole angular position	45 degrees
	Square flange outside size	Square 80
	Mounting hole pitch circle diameter	Diameter 90 ±0.1

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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.