PRODUCT DATASHEET

ES-SM-A02-180D-T48NM-7500W-002

AC Servo Motors

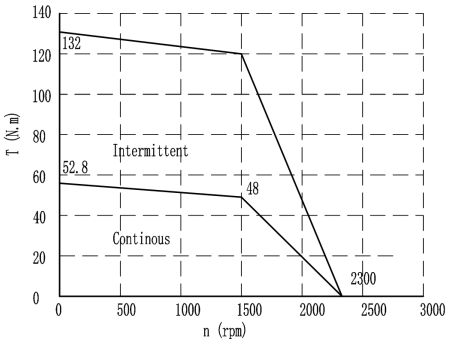
AC Servo Motors | ES-SM-A02-180D High-Response 180 mm AC Servo Motor Series

Product Overview

AC Servo Motors with rated Torque 48 N·m, instantaneous Maximum Torque 120 N·m and rated Speed 1500 rpm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	48	N·m
Instantaneous Maximum Torque	120	N·m
Rated Speed	1500	rpm
Continuous Rated Output Power	7500	W
Instantaneous Maximum Current	47.9	A
Flange Size	180	mm
Torque Constant	2.63	N·m/A
Rated Voltage	380	V AC
Rated Line Voltage	380	V



Torque-Speed Curve

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Torque	48	N·m
Instantaneous Maximum Torque	120	N·m
Rated Speed	1500	rpm
Continuous Rated Output Power	7500	W
Torque Constant	2.63	N·m/A
Rated Power	7500	W
ELECTRICAL		
Rated Voltage	380	V AC
Rated Line Voltage	380	V
Instantaneous Maximum Current	47.9	A
Back EMF Constant	159	V/krpm

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
ELECTRICAL		
Insulation Class	F	
Maximum Allowed Voltage Slew Rate	8	KV/μs
Motor Outlet Mode	YL-series aviation connector	
Pole Pairs	4	
Rated Current	19.2	A
Rotational Back-EMF Constant	159	V/krpm
Electrical Time Constant	15.5	ms
Position Feedback Device	S-MT37 rotary transformer	
MECHANICAL		
Flange Size	180	mm
Inertia Level	Medium inertia	

Technical Specifications

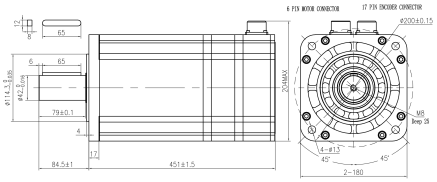
PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Holding Brake Available	With holding brake		
Mechanical Time Constant	1.81	ms	
Rotor Inertia	190.3 kg·cm² / 190 Kg·cm2		Brake Configuration: without_brake
Bearing Radial Force Capacity	1600	N	
Bearing Axial Force Capacity	800	N	
ENVIRONMENTAL			
Altitude 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

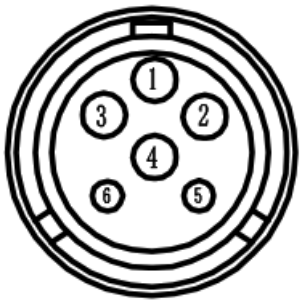
Mechanical Overview

PARAMETER	VALUE	UNIT
Flange Size	180	mm
Inertia Level	Medium inertia	
Holding Brake Available	With holding brake	
Mechanical Time Constant	1.81	ms
Rotor Inertia	190.3 kg·cm² / 190 Kg·cm2	
Bearing Radial Force Capacity	1600	N

Dimensional Drawings



Mechanical View 1



Power Connector Pinout

Feedback Connector Pinout

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Front face outside diameter	Diameter 200 ±0.15
	Keyway length	65
	Keyway width	8
	Distance to keyway start	6
	Keyway effective length	65
	Maximum body height	204 maximum
	Shaft diameter	Diameter 42 +0/-0.016
	Pilot register diameter	Diameter 114.3 +0/-0.035
	Shaft extension length	79 ±0.1
	Threaded mounting hole size and depth	M8 thread, depth 25
	Shaft shoulder step length	4
	Mounting through holes quantity and diameter	4 holes, diameter 13
	Flange to body end offset	17
	Mounting hole angular position	45 degrees
	Front axial length	84.5 ±1
	Motor body axial length	451 ±1.5
	Mounting hole center distance	Two directions, 180 center distance

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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.