

PRODUCT DATASHEET

ES-FM-U01-OD085-T1NM-001

85 mm Frameless Torque Motor

Ultra Thin Frameless Torque Motors | ES-FM-U01-OD085 Ultra-Thin 85 mm Frameless Torque Motor Series

Product Overview

85 mm outer diameter, 42 mm rotor bore, 8 mm axial stack ultra thin frameless torque motor.

Typical Applications	Robot joints Direct-drive rotary axes Integrated actuator modules
Configuration Context	DC link: 48 V DC Temperature sensor: None Lead wire: 100 mm lead, no connector

Key Specifications

PARAMETER	VALUE	UNIT
Rated Speed	3000	rpm
Continuous Rated Output Power	314	W
DC link voltage	48	V DC
Body Outer Diameter	85	mm
Rotor Inner Diameter	42	mm
Axial Stack Length	8	mm
Lead Wire Configuration	100 mm lead, no connector	
Maximum Rotational Speed	4100	rpm
Maximum Speed	4100	rpm

Technical Specifications

PARAMETER	SPECIFICATION	UNIT
PERFORMANCE		
Rated Speed	3000	rpm
Continuous Rated Output Power	314	W
Rated Power	314	W
Maximum Rotational Speed	4100	rpm
ELECTRICAL		
DC link voltage	48	V DC
Rated Current	8.8	A
THERMAL		
Temperature Sensor	None	
MECHANICAL		
Body Outer Diameter	85	mm

Technical Specifications

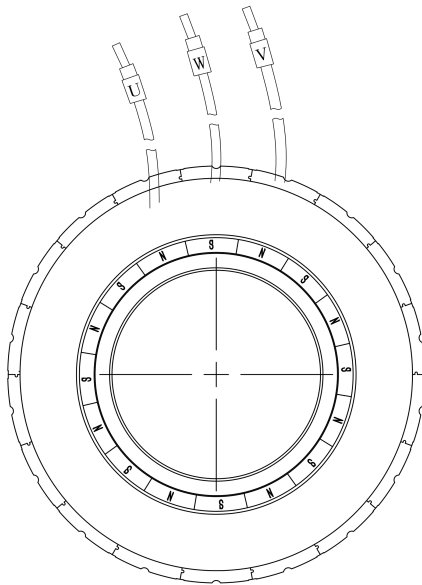
PARAMETER	SPECIFICATION	UNIT
MECHANICAL		
Rotor Inner Diameter	42	mm
Axial Stack Length	8	mm
INTEGRATION		
Lead Wire Configuration	100 mm lead, no connector	
Number of Pole Pairs	8 pole pairs / 8	
CONFIGURATION		
Motor Version	S version	
ADDITIONAL SPECIFICATIONS		
Maximum Speed	4100	rpm
Number of Poles	16	
Line-to-Line Resistance	0.28	Ω

Dimensional & Integration Overview

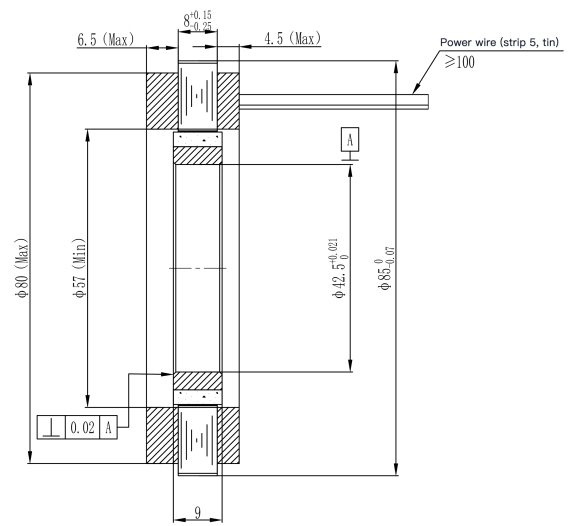
Mechanical Overview

PARAMETER	VALUE	UNIT
Body Outer Diameter	85	mm
Rotor Inner Diameter	42	mm
Axial Stack Length	8	mm

Dimensional Drawings



Mechanical View 1



Mechanical View 2

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Rotor magnetic pole marking	12 magnetic poles alternating N-S pattern
Mechanical View 2	Shaft diameter with tolerance	$\Phi 8 +0.15/-0.25$
	Shaft extension length (left side max)	6.5 mm max
	Shaft extension length (right side max)	4.5 mm max
	Motor outer diameter maximum	$\Phi 80$ mm max
	Motor inner bore minimum	$\Phi 57$ mm min
	Mounting hole diameter with tolerance	$\Phi 42.5 +0.021/0$
	Mounting outer diameter with tolerance	$\Phi 85 0/-0.07$
	Perpendicularity tolerance	Perpendicularity 0.02 relative to datum A
	Datum A (shaft centerline)	Datum A

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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.