PRODUCT DATASHEET

ES-HG-S28-F17-R80

Precision Transmission Component

Ultra-Thin Harmonic Gearboxes | Ultra-Short Hollow Shaft Gear Unit

Product Overview

Precision Transmission Component with rated Torque 15 N·m, instantaneous Maximum Torque 61 N·m and start/Stop Peak Torque 29 N·m.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	15	N·m
Instantaneous Maximum Torque	61	N·m
Start/Stop Peak Torque	29	N·m
Reduction Ratio	80	
Maximum Input Speed	7300	r/min
Allowable Average Torque	19	N·m
Frame Size	17	
Weight	0.87	kg
Average Input Speed	3500	r/min

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
PERFORMANCE			
Rated Torque	15	N·m	Frame Size: 17; Reduction Ratio: 80; Size: 17
Instantaneous Maximum Torque	61	N·m	Frame Size: 17; Reduction Ratio: 80; Size: 17
Start/Stop Peak Torque	29	N·m	Frame Size: 17; Reduction Ratio: 80; Size: 17
Allowable Average Torque	19	N·m	Frame Size: 17; Reduction Ratio: 80; Size: 17
Angle Transmission Accuracy	1.5	arc min	Frame Size: 17; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 17
Hysteresis Loss	1	arc min	Frame Size: 17; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 17
MECHANICAL			
Frame Size	17		Frame Size: 17; Reduction Ratio: 80; Size: 17
Weight	0.87	kg	Frame Size: 17; Reduction Ratio: 80; Size: 17
RELIABILITY			
Design Life	10000	h	Frame Size: 17; Reduction Ratio: 80; Size: 17

Technical Specifications

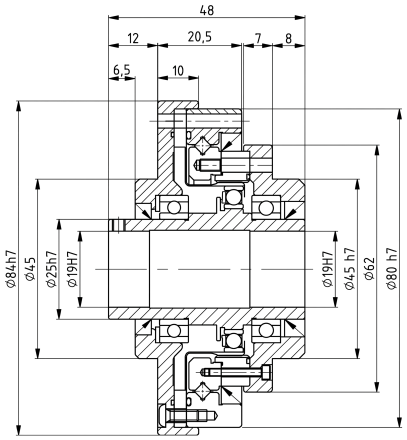
PARAMETER	SPECIFICATION	UNIT	NOTES
ADDITIONAL SPECIFICATIONS			
Reduction Ratio	80		Frame Size: 17; Reduction Ratio: 80; Size: 17
Maximum Input Speed	7300	r/min	Frame Size: 17; Reduction Ratio: 80; Size: 17
Average Input Speed	3500	r/min	Frame Size: 17; Reduction Ratio: 80; Size: 17
Torsional Rigidity K2	0.44	×10⁴ N·m/rad	Frame Size: 17; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 17; Source Condition: ratio>50
Torsional Rigidity K1	0.4	×10⁴ N·m/rad	Frame Size: 17; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 17; Source Condition: ratio>50
Torsional Rigidity K3	0.61	×10⁴ N·m/rad	Frame Size: 17; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 17; Source Condition: ratio>50
Torsional Rigidity T2	6.9	N·m	Frame Size: 17; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 17; Source Condition: all ratios
Torsional Rigidity T1	2	N·m	Frame Size: 17; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 17; Source Condition: all ratios

Dimensional & Integration Overview

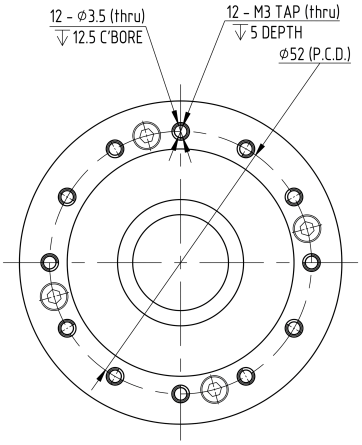
Mechanical Overview

PARAMETER	VALUE	UNIT
Frame Size	17	
Weight	0.87	kg

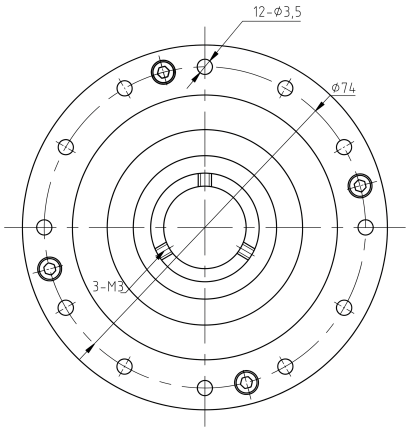
Dimensional Drawings



Mechanical View 1



Mechanical View 2



Mechanical View 3

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Overall length	48 mm
	Center section length	20.5 mm
	Left section length	12 mm
	Right section length	8 mm
	Internal feature width	10 mm
	Left protrusion length	6.5 mm
	Left outer shaft diameter with h7 tolerance	Φ84h7 mm
	Left center shaft diameter	Φ45 mm
	Left inner shaft diameter with h7 tolerance	Φ25h7 mm
	Left bore diameter with H7 tolerance	Φ19H7 mm
	Right bore diameter with H7 tolerance	
	Right inner shaft diameter with h7 tolerance	Φ45h7 mm
	Right center shaft diameter	Φ62 mm
	Right outer shaft diameter with h7 tolerance	Φ80h7 mm
Mechanical View 2	M3 tapped holes quantity, specification and depth	12 holes, M3 tap, through hole, 5mm depth
	Through holes quantity, diameter and counterbore specification	12 holes, Φ3.5mm through, 12.5mm counterbore
	Pitch Circle Diameter (P.C.D.) of mounting holes	Φ52mm P.C.D.

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Mounting hole pattern - outer circle	12 holes, Φ3.5mm diameter
	Outer diameter - flange	Φ74mm
	Threaded hole pattern	3 holes, M3 thread

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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.