PRODUCT DATASHEET

ES-HG-S28-F20-R80

Precision Transmission Component

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

Product Overview

Precision Transmission Component with rated Torque 24 N·m, instantaneous Maximum Torque 89 N·m and start/Stop Peak Torque 51 N·m.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	24	N·m
Instantaneous Maximum Torque	89	N·m
Start/Stop Peak Torque	51	N·m
Reduction Ratio	80	
Maximum Input Speed	6500	r/min
Allowable Average Torque	33	N·m
Frame Size	20	
Weight	1.14	kg
Average Input Speed	3500	r/min

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
PERFORMANCE			
Rated Torque	24	N·m	Frame Size: 20; Reduction Ratio: 80; Size: 20
Instantaneous Maximum Torque	89	N·m	Frame Size: 20; Reduction Ratio: 80; Size: 20
Start/Stop Peak Torque	51	N·m	Frame Size: 20; Reduction Ratio: 80; Size: 20
Allowable Average Torque	33	N·m	Frame Size: 20; Reduction Ratio: 80; Size: 20
Angle Transmission Accuracy	1	arc min	Frame Size: 20; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 20
Hysteresis Loss	1	arc min	Frame Size: 20; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 20
MECHANICAL			
Frame Size	20		Frame Size: 20; Reduction Ratio: 80; Size: 20
Weight	1.14	kg	Frame Size: 20; Reduction Ratio: 80; Size: 20
RELIABILITY			
Design Life	10000	h	Frame Size: 20; Reduction Ratio: 80; Size: 20

Technical Specifications

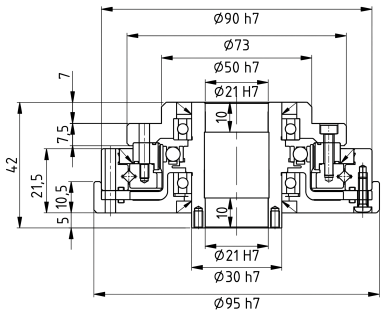
PARAMETER	SPECIFICATION	UNIT	NOTES
ADDITIONAL SPECIFICATIONS			
Reduction Ratio	80		Frame Size: 20; Reduction Ratio: 80; Size: 20
Maximum Input Speed	6500	r/min	Frame Size: 20; Reduction Ratio: 80; Size: 20
Average Input Speed	3500	r/min	Frame Size: 20; Reduction Ratio: 80; Size: 20
Torsional Rigidity K2	0.94	×10⁴ N·m/rad	Frame Size: 20; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 20; Source Condition: ratio>50
Torsional Rigidity K1	0.84	×10⁴ N·m/rad	Frame Size: 20; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 20; Source Condition: ratio>50
Torsional Rigidity K3	1.3	×10⁴ N·m/rad	Frame Size: 20; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 20; Source Condition: ratio>50
Torsional Rigidity T2	12	N·m	Frame Size: 20; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 20; Source Condition: all ratios
Torsional Rigidity T1	3.9	N·m	Frame Size: 20; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 20; Source Condition: all ratios

Dimensional & Integration Overview

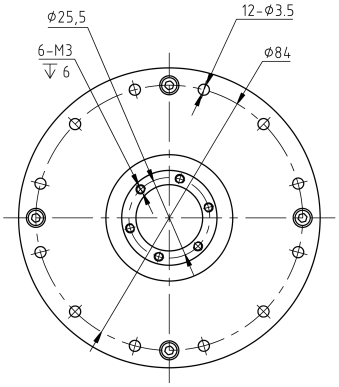
Mechanical Overview

PARAMETER	VALUE	UNIT
Frame Size	20	
Weight	1.14	kg

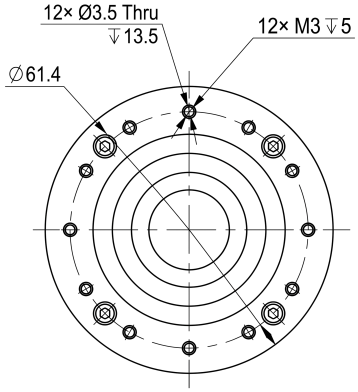
Dimensional Drawings



Mechanical View 1



Mechanical View 2



Mechanical View 3

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Outer fitted diameter	Diameter 90 h7
	Diameter dimension	Diameter 73
	Outer fitted diameter	Diameter 50 h7
	Local linear dimension	7
	Fitted bore diameter	Diameter 21 H7
	Local linear dimension	10
		7.5
	Overall or envelope height	42
	Local linear dimension	21.5
		10.5
		5
	Outer fitted diameter	Diameter 30 h7
		Diameter 95 h7
Mechanical View 2	12-hole diameter	12 holes, diameter 3.5 mm
	mounting hole pitch circle diameter	Pitch circle diameter 25.5 mm
	threaded hole quantity and size	6 threaded holes, M3
	outer hole pitch circle diameter	Pitch circle diameter 84 mm
	depth or surface texture value	Value 6 associated with the symbol

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	12 through hole diameter	12 holes, diameter 3.5, through
	hole depth callout	Depth 13.5
	12 M3 tapped holes depth	12 M3 tapped holes, depth 5
	bolt circle diameter	Bolt circle diameter 61.4

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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.