

PRODUCT DATASHEET

ES-HG-S09-F45-R160

Precision Transmission Component

Hollow Shaft Harmonic Gearboxes | High-Torque Hollow Shaft Gear Unit

Product Overview

Precision Transmission Component with reduction Ratio 160, frame Size 45 and angular Transmission Accuracy 1 arcmin.

Key Specifications

PARAMETER	VALUE	UNIT
Reduction Ratio	160	
Frame Size	45	
Angular Transmission Accuracy	1	arcmin
Hysteresis Loss	1	arcmin
Torsional Rigidity K1	18	×10 ⁴ N·m/rad
Torsional Rigidity K2	29	×10 ⁴ N·m/rad
Torsional Rigidity K3	33	×10 ⁴ N·m/rad
Torsional Rigidity T1	76	N·m
Torsional Rigidity T2	275	N·m

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
PERFORMANCE			
Angular Transmission Accuracy	1	arcmin	Frame Size: 45; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 45
Hysteresis Loss	1	arcmin	Frame Size: 45; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 45
MECHANICAL			
Frame Size	45		Frame Size: 45; Reduction Ratio: 160; Size: 45
ADDITIONAL SPECIFICATIONS			
Reduction Ratio	160		Frame Size: 45; Reduction Ratio: 160; Size: 45
Torsional Rigidity K2	29	$\times 10^4$ Nm/rad	Frame Size: 45; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 45
Torsional Rigidity K1	18	$\times 10^4$ Nm/rad	Frame Size: 45; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 45
Torsional Rigidity K3	33	$\times 10^4$ Nm/rad	Frame Size: 45; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 45
Torsional Rigidity T2	275	Nm	Frame Size: 45; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 45
Torsional Rigidity T1	76	Nm	Frame Size: 45; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 45

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Overall Length	85 mm
	Internal Width	70 mm
	Mounting Boss Width	42 mm
	Left Mounting Boss Depth	15 mm
	Right Mounting Boss Depth	12 mm
	Left Side Outer Diameter	Φ195 h7
	Left Side Inner Diameter	Φ64 h7
	Central Bore Diameter	Φ52 H7
	Middle Shaft Diameter	Φ120 h7
	Reference Diameter	Φ160
	Right Side Outer Diameter	Φ190 h7
	Bottom Mounting Boss Depth	15 mm
	Central Mounting Zone Width	35 mm
Mechanical View 2	M8 Threaded Hole Pattern	12 holes, M8 threaded, depth 10mm
	φ9.0 Through Hole Pattern	12 holes, φ9.0mm diameter, depth 27mm
	Bolt Circle Diameter	φ140mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	18 holes, diameter 6.5mm, evenly distributed on $\Phi 180$ bolt circle	18 holes $\times \Phi 6.5$ on $\Phi 180$ PCD
	Outer circle diameter / bolt circle diameter	$\Phi 180$
	Center bore diameter	$\Phi 58$
	6 $\times$ M4 threaded holes with countersink depth 8.0mm	6 $\times$ M4 threaded holes, countersink depth 8.0mm

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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.