PRODUCT DATASHEET

# ES-HG-S18-F17-R120

Precision Transmission Component

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

## Product Overview

Precision Transmission Component with rated Torque 31 N·m, instantaneous Maximum Torque 112 N·m and start/Stop Peak Torque 70 N·m.

## Key Specifications

| PARAMETER | VALUE | UNIT |
|---|---|---|
| Rated Torque | 31 | N·m |
| Instantaneous Maximum Torque | 112 | N·m |
| Start/Stop Peak Torque | 70 | N·m |
| Reduction Ratio | 120 | |
| Backlash | ≤20 | arc sec |
| Maximum Input Speed | 7300 | r/min |
| Allowable Average Torque | 51 | N·m |
| Frame Size | 17 | |
| Weight | 0.62 | kg |

# Technical Specifications

| PARAMETER | SPECIFICATION | UNIT | NOTES |
|---|---|---|---|
| **PERFORMANCE** | | | |
| Rated Torque | 31 | N·m | Frame Size: 17; Reduction Ratio: 120; Size: 17 |
| Instantaneous Maximum Torque | 112 | N·m | Frame Size: 17; Reduction Ratio: 120; Size: 17 |
| Start/Stop Peak Torque | 70 | N·m | Frame Size: 17; Reduction Ratio: 120; Size: 17 |
| Backlash | ≤20 | arc sec | Frame Size: 17; Reduction Ratio: 120; Size: 17 |
| Allowable Average Torque | 51 | N·m | Frame Size: 17; Reduction Ratio: 120; Size: 17 |
| **MECHANICAL** | | | |
| Frame Size | 17 | | Frame Size: 17; Reduction Ratio: 120; Size: 17 |
| Weight | 0.62 | kg | Frame Size: 17; Reduction Ratio: 120; Size: 17 |
| **RELIABILITY** | | | |
| Design Life | 15000 | h | Frame Size: 17; Reduction Ratio: 120; Size: 17 |
| **CONFIGURATION** | | | |
| Variant Style | Simple Integrated Hollow-Shaft Type | | Frame Size: 17; Reduction Ratio: 120 |
| Unit Structure | Complete Unit | | Frame Size: 17; Reduction Ratio: 120 |
| Series Family | High-Torque Hat-Type Harmonic Gear Series | | Frame Size: 17; Reduction Ratio: 120 |

# Technical Specifications

| PARAMETER | SPECIFICATION | UNIT | NOTES |
|---|---|---|---|
| ADDITIONAL SPECIFICATIONS | | | |
| Reduction Ratio | 120 | | Frame Size: 17; Reduction Ratio: 120; Size: 17 |
| Maximum Input Speed | 7300 | r/min | Frame Size: 17; Reduction Ratio: 120; Size: 17 |
| Average Input Speed | 3500 | r/min | Frame Size: 17; Reduction Ratio: 120; Size: 17 |
| Angle Transmission Accuracy | 1.5 | arcmin | Frame Size: 17; Reduction Ratio Min: 50; Size: 17 |
| Torsional Rigidity K2 | 1.4 | ×10⁴ N·m/rad | Frame Size: 17; Reduction Ratio: 120; Rigidity Scope: reduction ratio above 50; Size: 17 |
| Torsional Rigidity K1 | 1 | ×10⁴ N·m/rad | Frame Size: 17; Reduction Ratio: 120; Rigidity Scope: reduction ratio above 50; Size: 17 |
| Torsional Rigidity K3 | 1.6 | ×10⁴ N·m/rad | Frame Size: 17; Reduction Ratio: 120; Rigidity Scope: reduction ratio above 50; Size: 17 |
| Torsional Rigidity T2 | 12 | N·m | Frame Size: 17; Rigidity Scope: all reduction ratios; Size: 17 |
| Hysteresis Loss | 1 | arcmin | Frame Size: 17; Reduction Ratio Min: 50; Size: 17 |
| Torsional Rigidity T1 | 3.9 | N·m | Frame Size: 17; Rigidity Scope: all reduction ratios; Size: 17 |
| Starting Torque | 3.4 | N·m | Frame Size: 17; Reduction Ratio: 120; Size: 17 |

# Dimensional & Integration Overview

## Mechanical Overview

| PARAMETER | VALUE | UNIT |
|---|---|---|
| Frame Size | 17 | |
| Weight | 0.62 | kg |

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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.