



HEIDENHAIN



Product Overview

Rotary Encoders For High Shaft Loads

November 2014

Heavy-duty rotary encoders

For applications with high bearing loads

Some applications need bearing loads that exceed the limits of rotary encoders with standard bearings. For these applications, HEIDENHAIN has conceived rotary encoders with especially sturdy bearings.

ROD 1930

This sturdy rotary encoder series focuses in particular on applications on large asynchronous motors in the steel, paper, crane and materials handling technology industries.

Besides their sturdy aluminum housing, the ROD 1930 series rotary encoders are characterized especially by their rugged bearing with a shaft load of 200 N radial 150 N axial. The shaft load was determined at a maximal permissible speed of 4000 rpm during a period of 20 000 hours.

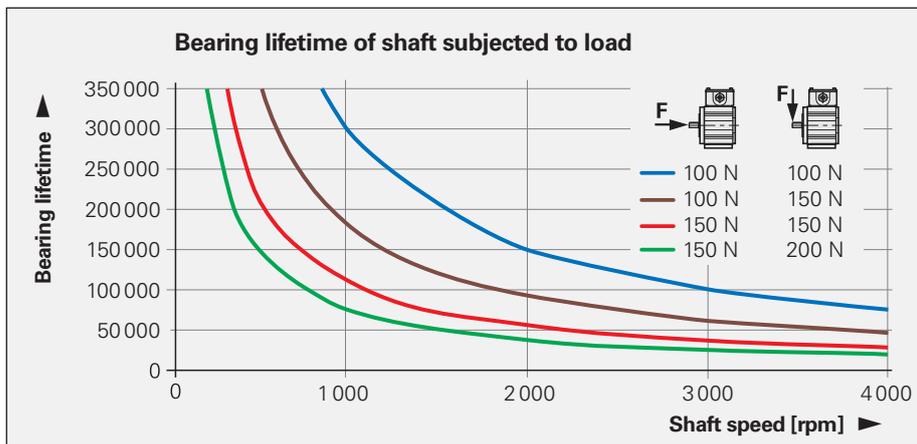
A separate terminal box facilitates electrical connection and can be turned in 90° offsets if required.



ROD 1930

	Shaft load	
	Axial	Radial
ROD 1930	150 N	200 N
RIQ 425	100 N	125 N
IQN 425	100 N	140 N
Bearing assembly	150 N	350 N

Overview: Rotary encoders with sturdy bearings



Service life of the ROD 1930 bearing depending on shaft speed and load

Interface
Position values/revolution
Revolutions
Incremental signals Line counts
System accuracy
Voltage supply
Shaft
Mech. permissible speed
Shaft load
Vibration 55 Hz to 2000 Hz Shock 6 ms
Protection EN 60529

**RIQ 425
IQN 425**

These sturdy absolute multiturn rotary encoders are intended specifically for use in applications in the automation industry, the wind energy sector, for wood machining, tracking systems for photovoltaic facilities and direct measurement of the cabin position in elevators.

The rotary encoders of the RIQ/IQN 425 series are characterized by their contamination-resistant inductive scanning and, in particular, by their robust bearings with an axial shaft load of 100 N and a radial shaft load of 125 N (variants with stub shaft; synchro flange or clamping flange).

The variants with hollow shaft (12 mm, blind or through shaft) were conceived for loads of 100 N axial and 140 N radial. If the encoders are installed with the mounted stator coupling, only the mounting tolerances and radial runout need to be considered.

This makes these encoders more suitable for applications with belt drives, toothed belt drives, or directly coupled gear wheels than standard rotary encoders with optical scanning.

Bearing assembly for the IQN/ERN/ECN/EQN rotary encoders with hollow shaft.

For high shaft loads or for drives using gear wheels or toothed belts, the standard rotary encoders of the ERN/ECN/EQN series with optical scanning should be coupled to a bearing assembly. This is especially so if the shaft loads are higher than those specified for the standard encoders. But even the rotary encoders equipped with sturdy bearings from the IQN 425 series are well-suited for use with the bearing assembly.

The bearing assembly can take on large radial loads and therefore prevents an overload on the encoder bearing.



RIQ 425



IQN 425



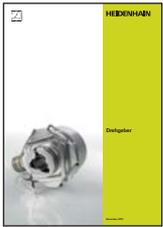
Bearing assembly with mounting bracket

	ROQ 1930	RIQ 425		IQN 425		Bearing assembly
	HTL	EnDat 2.1	SSI	EnDat 2.1	SSI	-
	-	8 192 (13 bits)				-
	-	4 096 (12 bits)				-
	□ HTL 600 to 2 400	~ 1 V _{PP} 32				-
	±1/10 grating period	±100"				-
	10 V to 30 V DC	3.6 V to 14 V DC	10 V to 30 V DC	3.6 V to 14 V DC	10 V to 30 V DC	-
	Stub shaft or solid through shaft, Ø 15 mm with feather key	Clamping flange: Solid shaft Ø 10 mm Synchro flange: Solid shaft Ø 6 mm		Blind hollow shaft or hollow through shaft, Ø 12 mm		Stub shaft Ø 10 mm with flat
	≤ 4 000 min ⁻¹	≤ 12 000 min ⁻¹				≤ 6 000 min ⁻¹
	Axial: ≤ 150 N Radial: ≤ 200 N	Axial: ≤ 100 N Radial: ≤ 125 N		Axial: ≤ 100 N Radial: ≤ 140 N		Axial: ≤ 150 N Radial: ≤ 300 N
	≤ 100 m/s ² (EN 60068-2-6) ¹ ; ≤ 2 000 m/s ¹ (EN 60068-2-27)	≤ 300 m/s ² (EN 60068-2-6); ≤ 2 000 m/s ² (EN 60068-2-27)				
	IP 66	Housing: IP 67 Shaft inlet: IP 66		Housing: IP 67 Shaft inlet: IP 66		IP 64

¹ Vibration 25 Hz to 200 Hz

Further information

For more detailed information, mounting instructions, technical specifications and exact dimensions, as well as descriptions of interfaces, please refer to our brochures and Product Information documents, or visit us on the Internet at www.heidenhain.de.

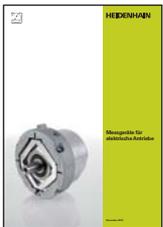


Brochure
Rotary Encoders

Contents:
Incremental Rotary Encoders
ERN, ROD
Absolute rotary encoders
ECN, EQN, ROC, ROQ



Brochure
Interfaces
of HEIDENHAIN Encoders



Brochure
Encoders for Servo Drives

Contents:
Rotary encoders
Angle encoders
Linear encoders



Product Information
RIQ 425



Brochure
Modular Magnetic Encoders

Contents:
Incremental encoders
ERM



Product Information
IQN 425

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