Product Overview

Rotary Encoders
For High Shaft Loads
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.

<table>
<thead>
<tr>
<th></th>
<th>Shaft load</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Axial</td>
<td>Radial</td>
<td></td>
</tr>
<tr>
<td>ROD 1930</td>
<td>150 N</td>
<td>200 N</td>
<td></td>
</tr>
<tr>
<td>RIQ 425</td>
<td>100 N</td>
<td>125 N</td>
<td></td>
</tr>
<tr>
<td>IQN 425</td>
<td>100 N</td>
<td>140 N</td>
<td></td>
</tr>
<tr>
<td>Bearing assembly</td>
<td>150 N</td>
<td>350 N</td>
<td></td>
</tr>
</tbody>
</table>

Overview: Rotary encoders with 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.

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.

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

### Specifications

<table>
<thead>
<tr>
<th>ROQ 1930</th>
<th>RIQ 425</th>
<th>IQN 425</th>
<th>Bearing assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTL</td>
<td>EnDat 2.1</td>
<td>SSI</td>
<td>EnDat 2.1</td>
</tr>
<tr>
<td></td>
<td>8 192 (13 bits)</td>
<td>–</td>
<td>8 192 (13 bits)</td>
</tr>
<tr>
<td></td>
<td>4 096 (12 bits)</td>
<td>–</td>
<td>4 096 (12 bits)</td>
</tr>
<tr>
<td></td>
<td>1 VPP</td>
<td>32</td>
<td>1 VPP</td>
</tr>
<tr>
<td>±1/10 grating period</td>
<td>±100”</td>
<td>–</td>
<td>±100”</td>
</tr>
<tr>
<td>10 V to 30 V DC</td>
<td>3.6 V to 14 V DC</td>
<td>10 V to 30 V DC</td>
<td>3.6 V to 14 V DC</td>
</tr>
<tr>
<td></td>
<td>100 m/s² (EN 60068-2-6)</td>
<td>2000 m/s² (EN 60068-2-27)</td>
<td>100 m/s² (EN 60068-2-6)</td>
</tr>
<tr>
<td></td>
<td>Housing: IP 67</td>
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</tr>
<tr>
<td></td>
<td>Shaft inlet: IP 66</td>
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</tr>
</tbody>
</table>

1 Vibration 25 Hz to 200 Hz

### Notes

- 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
- 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/s² (EN 60068-2-6)
- ≤ 2000 m/s² (EN 60068-2-27)
- ≤ 300 m/s² (EN 60068-2-6)
- ≤ 2000 m/s² (EN 60068-2-27)

### Additional Features

- Housing: IP 67
- Shaft inlet: IP 66
- IP 64
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
**Encoders for Servo Drives**

Contents:
- Rotary encoders
- Angle encoders
- Linear encoders

Brochure
**Modular Magnetic Encoders**

Contents:
- Incremental encoders
  - ERM

Product Information
**RIQ 425**

Product Information
**IQN 425**

This Product Information supersedes all previous editions, which thereby become invalid.
The basis for ordering from HEIDENHAIN is always the catalog edition valid when the contract is made.