HEIDENHAIN

Product Information

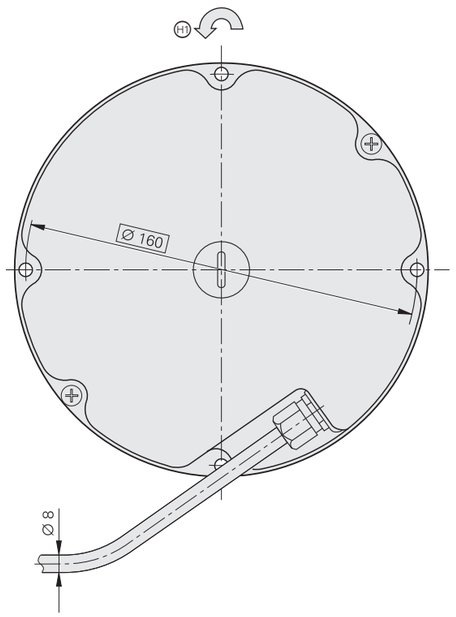
RON 905

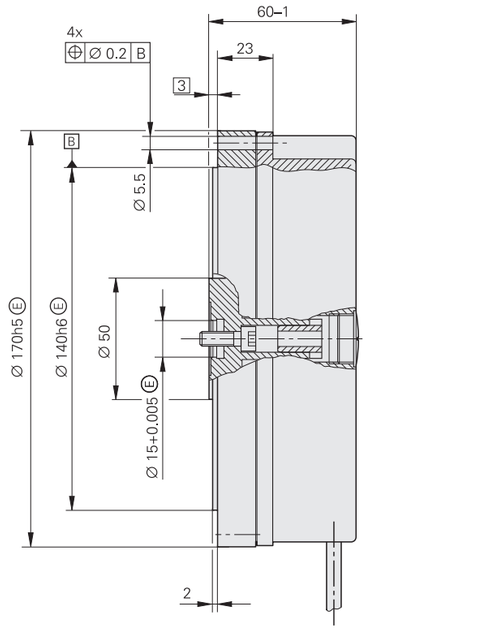
High-Accuracy
Incremental Angle Encoder
with Integral Bearing

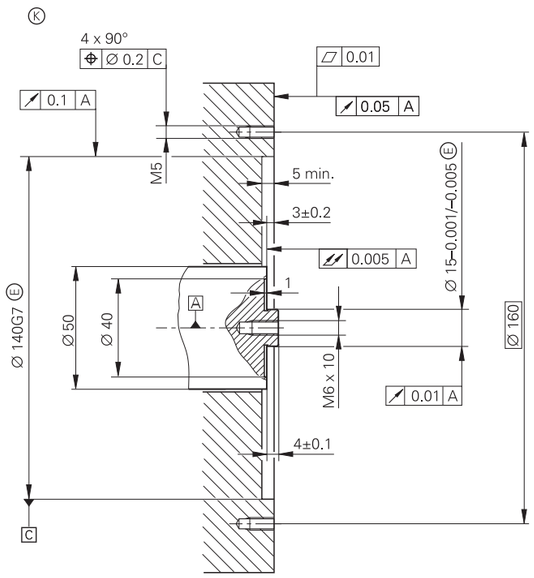
06/2022

RON 905

- **Integrated stator coupling**
- **Blind hollow shaft**
- **System accuracy: ±0.4″**







mm
Tolerancing ISO 8015
ISO 2768:1989-mH
≤ 6 mm: ±0.2 mm

Radial cable (can also be used axially)
A = Bearing
K = Required mating dimensions
1 = Direction of shaft rotation for the output signals I_2 lagging I_1

	Incremental **RON 905**
Measuring standard	DIADUR circular scale with incremental track
Line count	36 000
System accuracy	±0.4″
Position error per signal period	≤ ±0.3″
Interface	~ 11 μA_{PP}
Reference mark	One
Cutoff frequency –3 dB	≥ 40 kHz
Electrical connection	Cable (1 m) with 9-pin M23 connector (male)
Supply voltage	DC 5 V ±0.25 V/≤ 250 mA (without load)
Cable length[1)]	≤ 15 m
Shaft	Blind hollow shaft
Mech. permissible speed	≤ 100 rpm
Starting torque	≤ 0.05 Nm at 20 °C
Moment of inertia of rotor	$0.345 \cdot 10^{-3}$ kgm^2
Permiss. axial motion of the drive shaft[2)]	≤ ±0.2 mm
Natural frequency	≥ 350 Hz
Vibration 55 to 2000 Hz **Shock** 6 ms	≤ 50 m/s^2 (EN 60068-2-6) ≤ 200 m/s^2 (EN 60068-2-27)
Operating temperature	10 °C to 30 °C
Protection EN 60529	IP64
Mass	≈ 4 kg

[1)] With HEIDENHAIN cable
[2)] Range includes mounting tolerances and thermal expansion; No dynamic motion permitted

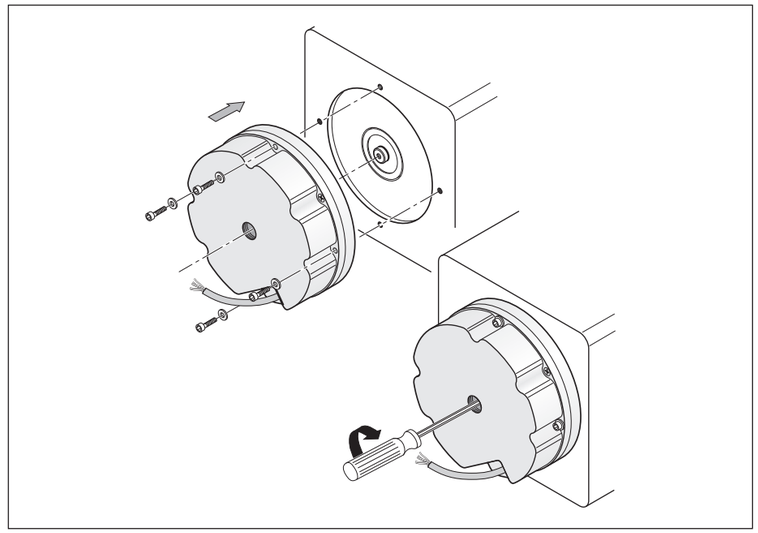
Mechanical design types and mounting

The **RON 905** angle encoders feature an integral bearing and a stator-side coupling. The measured shaft is directly connected to the shaft of the angle encoder.

Setup
The circular scale is rigidly affixed to the hollow shaft. The scanning unit rides on the shaft on ball bearings and is connected to the housing with a coupling on the stator side. The stator coupling and the sealing design greatly compensate for axial and radial mounting errors without restricting functionality or accuracy. This simplifies the mounting process. During angular acceleration of the shaft, the stator coupling must absorb only the torque resulting from friction within the bearing. Angle encoders with a stator coupling therefore provide excellent dynamic performance.

Mounting
The housing is firmly connected to the mounting surface of the machine component via a mounting flange and a centering collar.

- **RON 905 shaft coupling**
  The RON 905 features a blind hollow shaft. The shaft is connected by an axial central screw.



Mounting an RON 905

Materials to be used for mounting
The machine shaft and the fastening components must be made of steel. The material must exhibit a coefficient of thermal expansion of $\alpha = 10 \cdot 10^{-6}\ K^{-1}$ to $16 \cdot 10^{-6}\ K^{-1}$.
Additionally, the material must meet the following specifications:

- With a hollow shaft connection
  $R_m \geq 650\ N/mm^2$
  $R_{p0.2} \geq 370\ N/mm^2$
- With a housing connection
  $R_{p0.2} \geq 370\ N/mm^2$

HEIDENHAIN

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

More information:

Comply with the requirements described in the following documents to ensure correct and intended operation:

- Brochure: *Angle Encoders with Integral Bearing* 591109-xx
- Brochure: *Interfaces of HEIDENHAIN Encoders* 1078628-xx
- Brochure: *Cables and Connectors* 1206103-xx

For brochures and Product Information documents, visit *www.heidenhain.com*.

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