

HEIDENHAIN



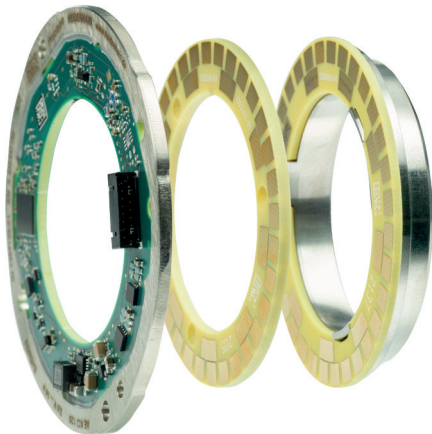
**Encoders for
Advanced Robotics**

KCI 120/KBI 136 KCI 1319/KBI 1335

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Absolute inductive rotary encoder with hollow shaft

For motor feedback



Areas of application

- Robotics industry
- Compact servomotors

Characteristics

- Hollow shaft sizes: 25 mm, 30 mm, 40 mm
- Wide mounting tolerances
- Compact form factor
- Available with functional safety
- Rotor mounting: screw-fastened or press-fitted
- Connectivity for external temperature sensor

Specifications

- Measuring steps/rev.
- Revolutions (KBI)
- System accuracy
- Safety category

KCI 1319: 19 bits, *KCI 120:* 20 bits
16 bits

KCI 1300: $\pm 90''$, *KCI 120:* $\pm 45''$

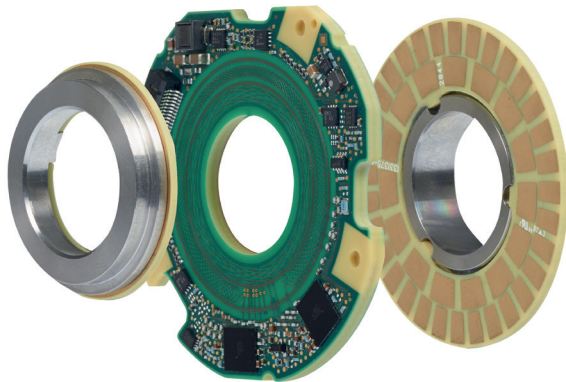
SIL 2 as per EN 61508; Category 3, PL d,
as per EN ISO 13849-1:2008
(up to SIL 3 with additional measures)

Interface

- EnDat 2.2

Absolute inductive dual encoder

Two rotary encoders in one: motor feedback and position measurement



Areas of application

- Robotics industry
- In compact drive systems

Characteristics

- Compensation of gearbox hysteresis
- Wide mounting tolerances
- Compact form factor
- Automatable mounting
- Available with functional safety
- Hubs with an inside diameter of 16 mm to 34 mm

Specifications

- Measuring steps/rev.
- System accuracy
- Safety category

At output: 20 bits, at motor: 19 bits

At output: $\pm 40''$, at motor: $\pm 120''$

SIL 2 as per EN 61508; Category 3, PL d,
as per EN ISO 13849-1:2008
(up to SIL 3 with additional measures)

Interface

- EnDat 2.2

Absolute optical angle encoder

Accurate and versatile



Areas of application

- Medical technology systems and applications
- Torque motors and production equipment
- General motor technology

Characteristics

- Graduation carrier: drum or tape
- Easy installation
- Customized version available
- Full circle or segment

Specifications

- | | |
|--------------------------|------------------------------|
| • System accuracy | $\pm 20''/\pm 15''/\pm 10''$ |
| • Hollow shaft diameters | 50 mm to 330 mm |
| • Shaft speed | Up to 14 000 rpm |

Interfaces

- | | |
|-------------|--------------|
| • EnDat 2.2 | • Mitsubishi |
| • Fanuc | • BiSS/C |
| • Panasonic | • Yaskawa |

Modular incremental angle encoder

For position and speed measurement



Areas of application

- Robotics
- Metrology
- General motor technology

Characteristics

- Online signal stabilization
- Integrated signal quality indicator
- Continuous scanning-signal monitoring
- High signal quality

Specifications

- System accuracy $\pm 10''$
- Hollow shaft diameters 60 mm to 350 mm
- Shaft speed Up to 5000 rpm

Interfaces

- 1 V_{PP}
- TTL

Absolute inductive angle encoder

Insensitive to contamination



Areas of application

- Rotary axes for large work envelopes
- Swivel heads
- Robots

Characteristics

- Large hollow-shaft diameters
- Low mass moment of inertia
- Also available with functional safety

Specifications

- | | |
|-----------------------|--------------------------------------------|
| • Graduation accuracy | Down to $\pm 3 \mu\text{m/m}$ (arc length) |
| • Grating period | 1000 μm |
| • Diameter | 81 mm to 10000 mm |
| • Protection rating | IP67 |

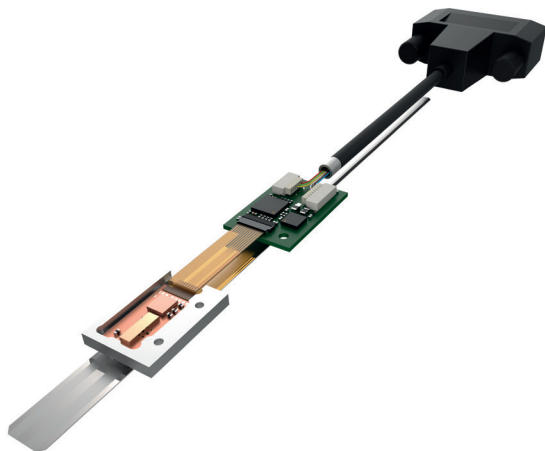
Interfaces

- | | |
|--------------|--------------|
| • EnDat 2.2 | • Mitsubishi |
| • Fanuc | • BiSS/C |
| • DRIVE-CLiQ | • SSI |

DRIVE-CLiQ is a registered trademark of Siemens AG.

Incremental exposed linear encoder

For limited installation space



Areas of application

- Robotics
- Linear motors and linear guideways
- Medical technology

Characteristics

- Wide range of variants
- Easy installation
- Sturdy scanning

Specifications

- Signal period 20 μm
- Measuring step Down to 78.125 nm
- Accuracy class $\pm 3 \mu\text{m/m}$; $\pm 5 \mu\text{m/m}$
- Maximum length 2480 mm (more upon request)

Interfaces


- 1 V_{pp}
- TTL
- RS-422

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