HEIDENHAIN

Encoders for Medical Technology

A variety of solutions for critical applications

www.heidenhain.com/industries/medical

Encoders for tomorrow's medical technology

Encoders from HEIDENHAIN, along with its brands AMO, LTN, NUMERIK JENA, RENCO, and RSF, have proven themselves in medical technology applications for many years. Their reliability and failsafe performance are key benefits in therapeutic and diagnostic equipment. An increasingly important factor is also the high accuracy of these rotary, angle, and linear encoders.

Watch the video

Your applications and our providers

- Diagnostic imaging
- In-vitro diagnostics
- Radiation therapy
- Lab automation
- Lab equipment
- Dialysis machines
- Ventilators
- Blood and metering pumps
- Ophthalmic surgery
- Surgery robots
- Exoskeletons

HEIDENHAIN
Linear encoders, rotary encoders, angle encoders, and angle encoder modules

AMO
Inductive linear and angle encoders for large equipment

LTN
Resolvers and slip rings

NUMERIK JENA
Ultra-compact linear measurement systems

RENCO
Rotary encoders for stepper and BLDC motors

RSF
Versatile linear and angle encoders

Rotary encoders from RENCO

Your reliable solution for limited installation space

To ensure high throughput and reliable operation in your lab automation and liquid handling applications, harness the R35i and R35iL rotary encoders from RENCO. These incremental, bearingless encoders enable fast and accurate stepper and BLDC motor positioning on the many axes and belts used in blood-testing machines. With 40000 measuring steps per revolution, they are the ideal motor feedback solution for these applications.

Just 8.6 mm in height, the RENCO R35iL is one of the flattest rotary encoders on the market, making it perfect for the space constraints of dialysis machines, blood pumps, and metering pumps. Both the R35iL and R35i include an integrated self-centering mechanism for fast and precise alignment on the motor shaft, making installation easy even under challenging conditions. After installation, you can use the PWT 101 testing device and its integrated traffic-light mounting assistant to check for proper installation.

Benefits of the RENCO R35i and R35iL

- Fast and easy installation thanks to their built-in mounting aid
- Electronic adjustment of the motor commutation signals at the push of a button
- Safe and reliable operation thanks to monitoring and diagnostics functions never before implemented as such in incremental rotary encoders
- Exact measurement of the rotor position of BLDC motors
- High-accuracy output of the UVW track sequence for electronic commutation in motors with up to 32 pole pairs

HEIDENHAIN LIC 4100 exposed linear encoders

High dynamic performance and accuracy

Does your application require measuring steps at the nanometer level along with high dynamic performance and maximum throughput? The LIC 4100 exposed linear encoder is ideal for these scenarios, such as systems for in-vitro diagnostics and high-content screening. In such highly automated microscopy applications, HEIDENHAIN linear encoders enable fast, detailed and jerk-free imaging for reliable, error-free findings.

As an absolute encoder, the LIC 4100 provides the position value immediately upon switch-on without a reference run, ensuring high process reliability even in complex, long-running automated analyses. Reliability is further enhanced by signal processing from the encoder's built-in HEIDENHAIN Signal Processing ASIC (HSP 1.0), which eliminates the effects of contamination on the measuring standard. A functional safety option expands the encoders' range of possible applications.

Benefits of the HEIDENHAIN LIC 4100

- Ideal design for high-speed linear axes
- HSP 1.0 ASIC for high contamination immunity
- Version with tiny measuring steps of less than 1 nm
- Versions for high-vacuum environments
- Versions with functional safety

Scale-tape solutions from AMO

Reliable measurement for large medical equipment

Large medical equipment is a valuable investment requiring safe, reliable, and long-term operation. Inductive system solutions from AMO are ideal for meeting these demands at the measurement technology level. Models are available for linear and rotary axes with long measuring distances.

For applications such as CT scanners, AMO encoders with custom diameters of up to several meters can be used. The encoders are available in absolute versions (WMKA and LMKA) and in incremental versions (WMK and LMK). Radial scanning of the measuring standard can be performed with the scanning head mounted on the inside or outside. With axial scanning, the scanning head is mounted laterally. Designers enjoy unparalleled configuration possibilities.

Benefits of AMO encoders

- Custom sizes for long measuring lengths
- Variety of scanning options: incremental/absolute, axial/radial, and internal/external
- Touchless, wear-free measurement
- Contamination immunity
- Robust measurement, even within magnetic fields
- Special solutions available for exposure to radiation
- Versions with functional safety

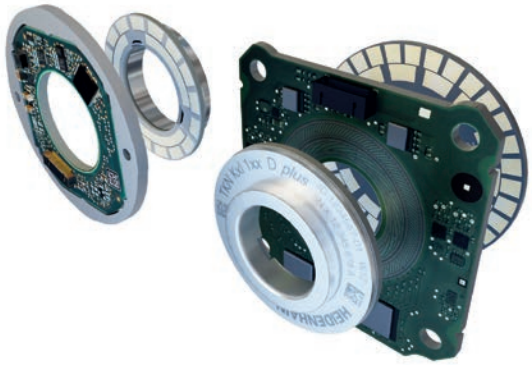
Angle and linear encoders
With special characteristics

HEIDENHAIN KCI 1300/KCI 1300

Rotary encoders for compact motors

For robotics applications, HEIDENHAIN offers the KCI 1300 and KBI 1300 inductive rotary encoders. Along with the scanning head, they are available with a single, screw-on circular scale or a press-fit disk/hub assembly. For a variety of medical technology applications, these encoders offer the following benefits:

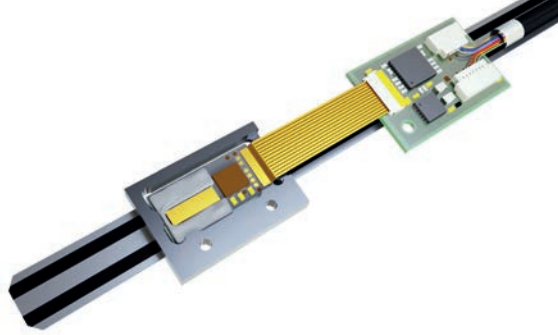
- Compact design and low weight
- Immunity to contamination and magnetic fields
- Easy installation with wide tolerances
- Safe and secure physical mounting
- Versions with functional safety



HEIDENHAIN KCI 120D*plus*

Two encoders in one

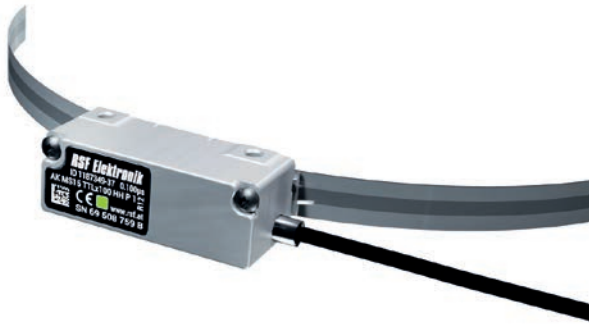
Developed for robotics applications, the KCI 120D*plus* dual encoder provides motor feedback and position measurement in a single device. To achieve this dual functionality, the encoder employs a single scanning unit and two separate circular scales. Compact and easy to integrate, these solutions are therefore ideal for surgery robots and exoskeletons. The KCI 120*Dplus* is also available in a version with functional safety.



NUMERIK JENA *LIKselect*

The ultra-compact linear measurement system

The *LIKselect* from NUMERIK JENA is an exposed linear measurement system designed for tight installation spaces combined with high accuracy requirements. Its remarkably small and light scanning head measures just 28 mm x 13 mm x 7.5 mm and weighs only 10 g. High accuracy is ensured by a grating period of 20 µm and measuring steps of down to 78.125 nm. The *LIKselect* can be individually configured.



RSF MCS 15/MSS 15

Modular encoders for maximum versatility

Due to their modular design, linear and angle encoders from RSF offer maximum integration versatility encompassing a variety of interfaces and physical designs. Medical applications benefit from their wide mounting tolerances and easy installation. RSF products for motor speed and position control under challenging installation conditions include the MCS 15 (absolute) and MSS 15 (incremental) modular angle encoders.

Find out more about our products for your medical technology applications

HEIDENHAIN
Measurement and control technology for rigorous positioning tasks
www.heidenhain.com

AMO
Robust linear and angle encoders for long measuring lengths
www.amo-gmbh.com

LTN
Slip rings and resolvers available as custom or serial solutions
www.ltn-servotechnik.com

NUMERIK JENA
Compact systems for distance, position and angular measurement
www.numerikjena.de

RENCO
Extremely compact rotary encoders for stepper and BLDC motors
www.renco.com

RSF
Versatile angle and linear encoders for dynamic applications

HEIDENHAIN

DR. JOHANNES HEIDENHAIN GmbH
Dr.-Johannes-Heidenhain-Str. 5
83301 Traunreut, Germany
☎ +49 8669 31-0
FAX +49 8669 32-5061
info@heidenhain.de

www.heidenhain.com

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