Kübler

BEARINGLESS ENCODERS

REDUCE SYSTEM COSTS.
SAVE INSTALLATION SPACE.
INCREASE ROBUSTNESS.

From standard applications up to the realization of

SMART MOTORS

pulses for automation

Compact integration

Bearingless encoders. Incremental and absolute.
Thanks to their contactless measuring principle, the magnetic bearingless encoders are at the same time wear-free and robust. They ensure faultless continuous operation of your motors. Their compact design is particularly suitable for tight installation spaces. Unlike encoders with bearings, they allow a large hollow shaft up to Ø 390 mm. This ensures perfect integration of the bearingless encoders in any motor concept.

YOUR BENEFIT

- Space and costs savings
- Faultless continuous operation of your motors
- Sensor solution scalable thanks to different magnetic ring sizes
- Optimal mounting solution in smallest installation spaces

INCREMENTAL BEARINGLESS ENCODERS

Ideal for accurate rotary speed measurement. Resolution of up to 16,000 pulses per revolution and available as HTL or TTL variants. Easy and fast installation thanks to various shaft mounting possibilities such as press-fit, hub screw or screwed flange. Large mounting tolerance between the magnetic ring and the sensor head.

Suitable for shaft diameters ≤ 35 mm

RLI20
RLI50 with zero pulse

Resolution ≤ 3,600 ppr

Suitable for shaft diameters ≤ 390 mm

RLI200
RLI500 with zero pulse

Resolution ≤ 16,000 ppr

ABSOLUTE BEARINGLESS ENCODERS RLA50

Ideal for accurate position and angle measurement.
Resolution of up to 16,000 measuring steps per revolution and available as SSI or CANopen variants. Additional incremental signals for highly dynamic drives.

Smart bearingless encoders

Reduce system costs. Increase robustness. Save installation space.
Kübler will find, together with you, the suitable solution that will allow making your motors even more compact both today and in the future. You will thus reduce your system costs and obtain an individually integrated sensor solution. The Smart Technology provides evaluated data for Condition Monitoring and Predictive Maintenance.

YOUR BENEFIT

- 100% integration in the motor
- Slim motor design
- High assembly tolerance
- Accurate control
- Ready for the Smart Motor

THE SUITABLE SOLUTION FOR EVERY APPLICATION

RLI – PERFORMANCE
The smart bearingless encoder

Smart Technology:
- The digital signal processing with active signal errors correction ensures highest signal quality
- Integrated digital signal filters and electronic nameplate with user memory
- Adjustable line number and application-specifically programmable filters
- Possibility for Condition Monitoring and Predictive Maintenance

FOR HIGH-PERFORMANCE APPLICATIONS
- Very high resolution reaching 2,000,000 ppr
- Direct digital output of position, speed and acceleration
- Highest signal quality over the whole speed range from 0 to 12,000 rpm
- Digital interface SPI, RS485 and BiSS

RLI – STANDARD

FOR STANDARD APPLICATIONS
- Resolution 16,000 ppr
- High signal quality

RLI – BASE

FOR SIMPLE APPLICATIONS
- Resolution up to 500 ppr
- Low signal quality requirements

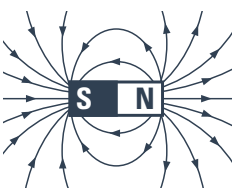
Built-in encoders for asynchronous motors

Asynchronous motors are increasingly used in applications where the available space is limited. In response to this requirement, drives are becoming ever more compact.
To reduce the length, Kübler provides magnetic, bearingless encoders, which can also be integrated customer specifically in the motor. A scope of delivery tailored to customer requirements and comprising sensor head, magnetic ring and shielding (against magnetic effects from the brake) is provided for such purpose.
This modular system consisting of optimally coordinated components allows Kübler to provide solutions for all motor sizes with minimum variance.

YOUR BENEFIT

- 100% integration in the motor
- Slim motor design
- High assembly tolerance
- Accurate control
- Ready for Smart Motor

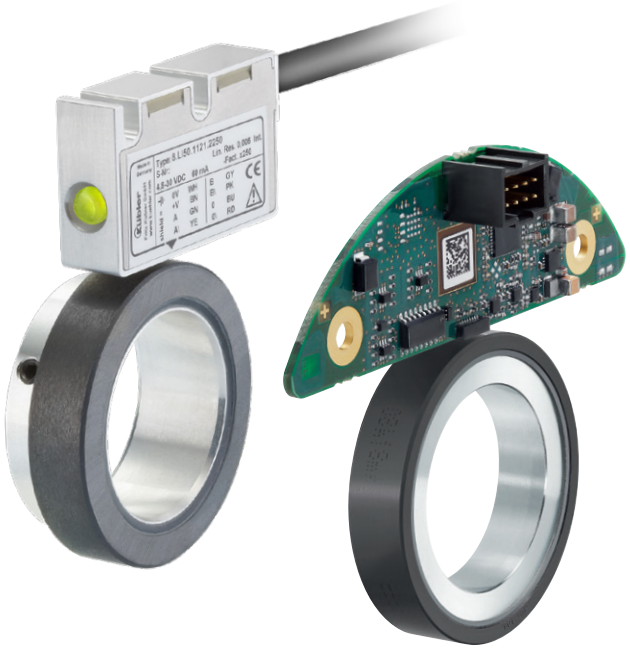
Interference fields – no problem. Kübler shielding technology.



Electromagnetically actuated brakes generate strong magnetic fields, which make the operation of a bearingless magnetic encoder in their immediate proximity impossible.
A shielding method calculated by FEM manages to shield the interference field of the brake at 100 % in the area of the sensor.

Bearingless encoders as 100 % integration in asynchronous motors

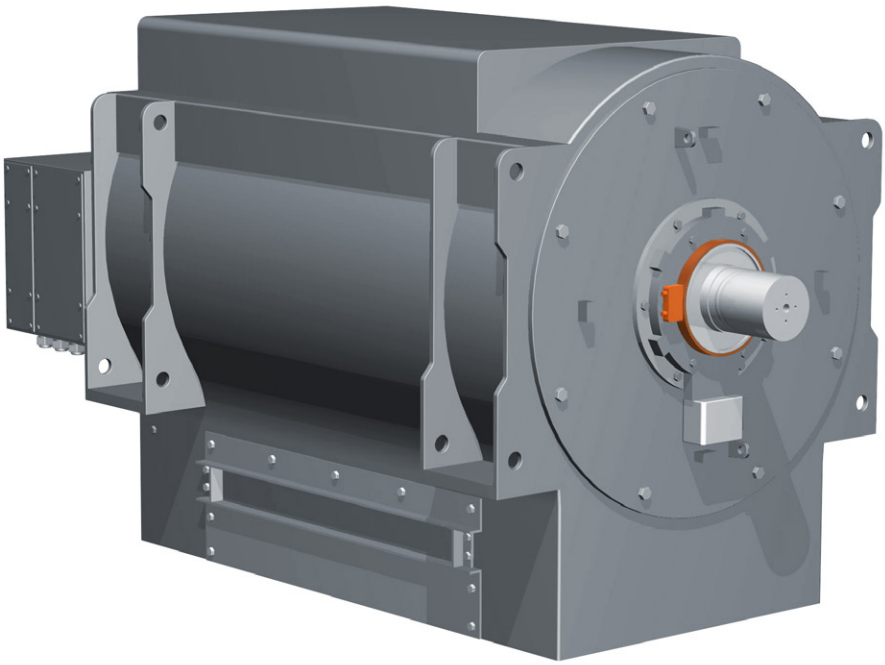
Kübler offers an innovative solution here. It has made the asynchronous motor – the world's most common electrical drive – even smarter and more compact. Thanks to the individually integrated magnetic sensor solution, the dimensions of an asynchronous motor are now significantly reduced – this saving space and costs above all. Smart technology will also make these motors fit for the future. Evaluated data for condition monitoring and predictive maintenance are available.



	RLI20, RLI50	RIL201, RIL501
Electrical interface	Push-pull, RS422, SinCos	Push-pull, RS422, SinCos
Sensor head	Size 40 x 25 mm	Adapted to customer application
Magnetic ring	Ring diameter depends on pulse rates	Adapted to customer application
Resolution max.	On request (resolution depends on ring diameter)	On request (resolution depends on ring diameter)
Speed max.	12000 min^{-1}	On request (customer-specific up to max. 12000 min^{-1})
Temperature range	-20 °C ... +80 °C	typ. -30 °C ... +85 °C
Power supply	4.8 ... 26 V DC (RS422) 4.8 ... 30 V DC (push-pul)	5 V DC (RS422) 5... 30 V DC (push-pul) (or customer-specific)

External encoders for large motors and generators

A tough nut. Accurate speed information is an important measurement for the control loop of a plant. Measuring systems that supply this information are often subjected to harsh environmental conditions but must not suffer any loss of reliability.
Kübler incremental encoders can handle strong vibration or extreme variations in temperature without any problem. Here, their wide-ranging mounting options guarantee easy, safe installation. Kübler offers the complete range of solutions, from the extremely rugged Sendix Heavy Duty encoders through to the compact, bearingless encoders.



Application specific requirements

Ruggedness	The ruggedness of the sensor technology plays a crucial role with large motors and generators. Shocks and vibrations encountered in this class of drives are higher than elsewhere.
Service life / Maintenance	In applications where large motors or generators are used, downtimes are very expensive. For this reason maintenance and any replacement of a component must be very simple.
Weather / environmental conditions	Large motors are employed primarily in harsh environments. The protection class of the sensors is thus correspondingly important, so that breakdowns can be avoided.
High currents	Despite well-earthed machine housings, large motors and generators carry a certain shaft current on the rotor. The equipotential bonding from the rotor to the stator via the encoder bearings can damage the encoder.

Bearingless encoders for large motors and generators

Smart, bearingless encoders offer highest resolutions and allow high control accuracy thanks to the digital real time signal processing with active signal errors correction. The flexible magnetic encoder systems are genuine all-rounders. For example, they provide information about position, rotational speed and acceleration.

Sin Cos | RS422 TTL | Push-Pull HTL | SSI | BiSS INTERFACE | Analog output

Features

- Freely adjustable line count with reference signal(s)
- Status LED, Status output
- Optional integrated vibration sensor (possibility for condition monitoring and predictive maintenance)
- Integrated digital signal filters and electronic type label with user memory

Installation dimensions

- Sensor head 100 x 60 x 25 mm with magnetic ring for mounting on shafts up to ø 740 mm
- Sensor head 170 x 100 x 25 mm with magnetic band for mounting on very large shafts up to ø 3 m

Technical characteristics

- 12000 min^{-1} (acc. to the magnetic ring diameter)
- Temperature range from -20 °C ... +80 °C
- 5 V DC or 10 ... 30 V DC

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500 EMPLOYEES · 4 PRODUCTION SITES · PRESENCE IN OVER 50 COUNTRIES

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