

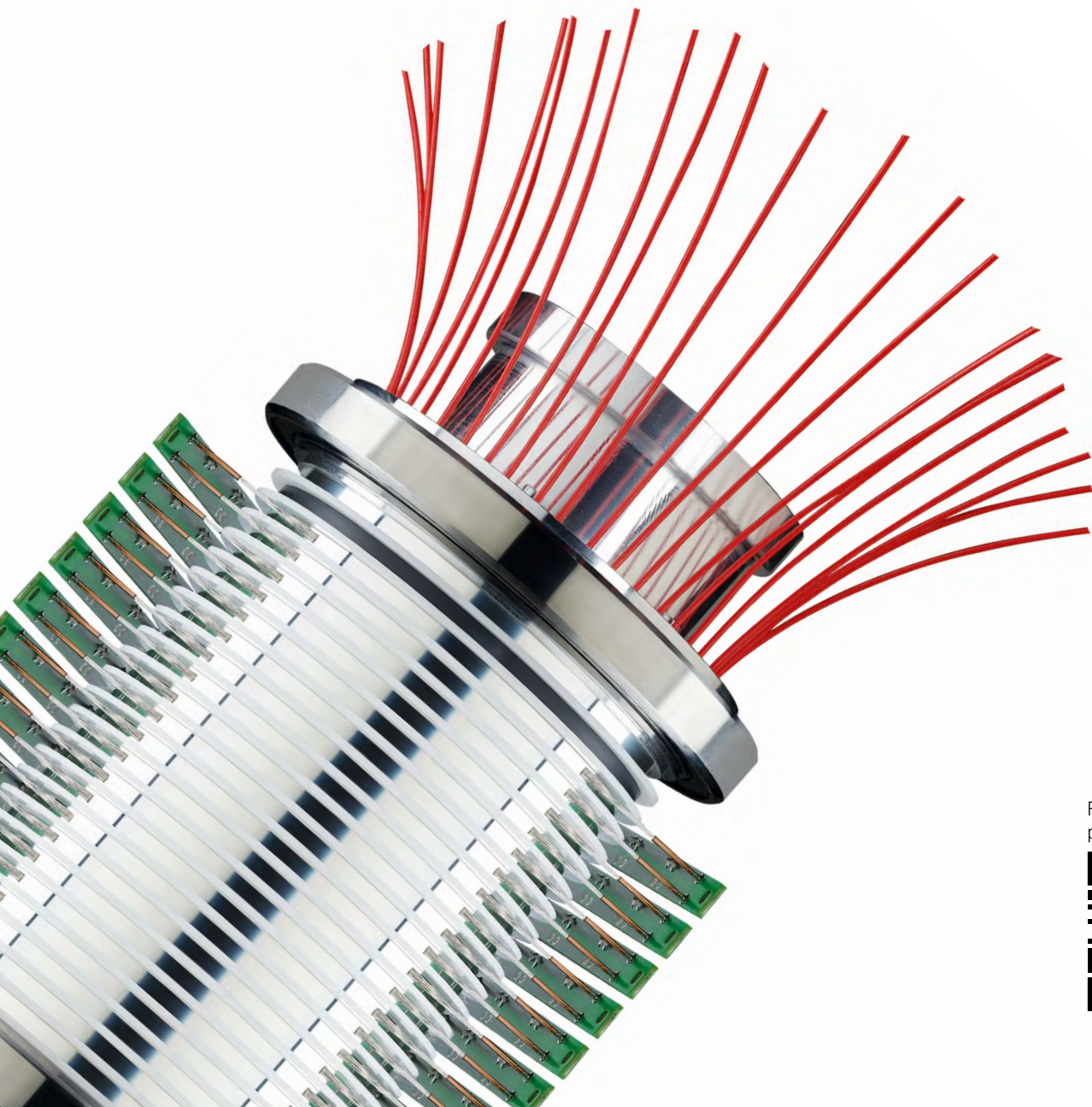


SOLUTIONS FOR THE PACKAGING INDUSTRY

ENCODERS AND LINEAR MEASURING SYSTEMS
COUNTERS AND PROCESS DEVICES
SLIP RINGS

Maximum system efficiency with Kübler

A high yield under efficient production conditions is crucial for the economic operation of modern production facilities in the packaging industry. Key factors to the economic efficiency of production are: Increased plant performance by accelerating individual processes, optimized control of production orders and minimization of downtimes. Kübler has offered suitable products for this purpose for years, which renowned manufacturers of packaging machines, rotary indexing tables or filling plants use. From encoders to linear measuring systems and slip rings to counters and process controllers. Regardless of which product you choose – every single one of them meets the high requirements of the food industry and is thus the ideal solution for your plant.



Further information
packaging industry



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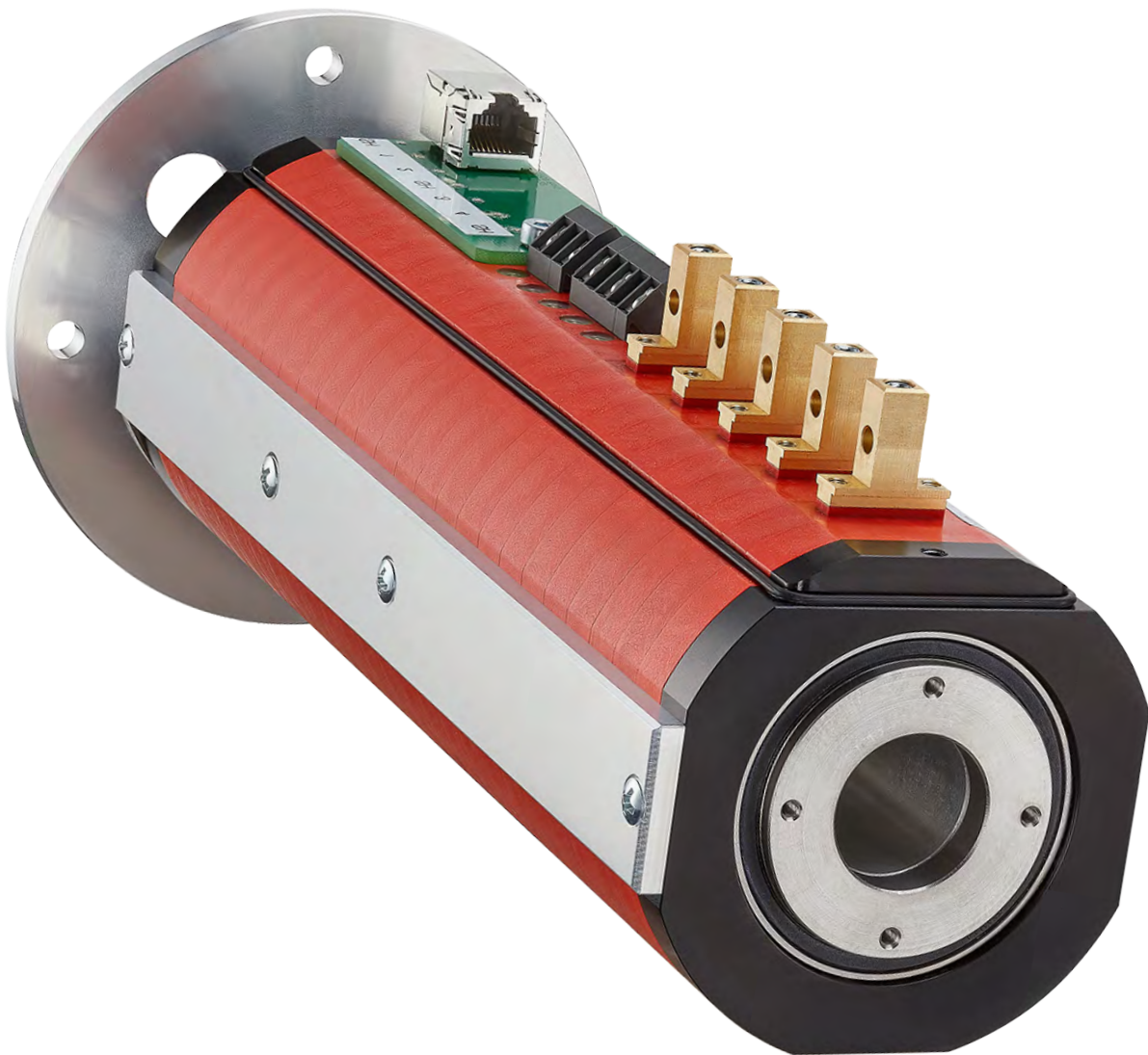
Counters and process devices

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Modular slip ring SR085 / SR085IE

Carousels are used in highly-dynamic plants for various process steps. Each carousel must be supplied with power and be connected to the control system accordingly. Kübler slip rings are the ideal solution. They stand for a reliable transmission of power, signals and data. When combined with a media lead-through, fluids and gases (hydraulic and pneumatic) are also transmitted.





The modular all-rounder: SR085

Flexible and rugged

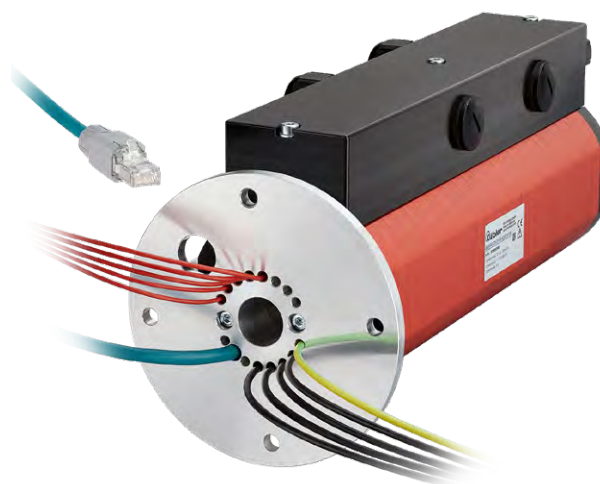
- Modular construction system, load and signal / data channels can be combined as desired
- Rugged glass-reinforced polycarbonate housing
- Flange mounting or simple plug-on through a hollow shaft - the application determines the mechanical connection
- Prepared for a wide range of applications, even with high current loads
- Individual configuration for all applications

Innovative contact materials

- Long service life and long maintenance cycles
- Easy maintenance – without contact oil
- Fieldbus signals such as Profibus, CANopen etc. up to 12 Mbit/s

Characteristics

- Hollow shaft up to \varnothing 30 mm
- Load channels up to 25 A and 400 V AC/DC
- Protection level up to IP64
- Speed up to 800 min⁻¹
- Operating temperature -35 °C ... +85 °C
- Up to 20 transmission paths
- Long maintenance cycles, only every 100 million revolutions



For Industry 4.0. concepts: Optional Ethernet module

With the SR085IE product variant, reliable transmission of Industrial Ethernet is now also possible in the 85 mm housing size.

- Optional Ethernet module for transmission of all common Industrial Ethernet protocols
- Transmission of Industrial Ethernet up to 100 Mbit/s
- Fast connection via RJ45 connector with CAT5e cable
- Quick and easy replacement by user



Plug & Play: Slip ring SR060E with Easy Connect module

Ideal for heating sealing rollers. Specifically designed for this task, the Kübler slip ring SR060E has been used by leading manufacturers for years and has proven to be a reliable and durable solution for transmitting loads and signals.

The Flow-Pack slip ring specialist SR060E in the 60 mm size is now also available with the new Easy Connect module - a pre-wired connection cap with connectors.

Without time-consuming wiring, the slip ring can be quickly and safely integrated into the system on site. It can also be easily replaced via „plug and play“.





The compact solution: SR060E

The SR060E is a compact and economical slip ring for up to 3 load and 2 signal transfers. New innovative contact materials ensure a long service life and extremely low-maintenance operation. The round design with smooth surfaces and high protection class allows easy cleaning.

- Dimensions 60 x 98 mm
- Can be used as a pair starting from just 60 mm shaft distance of the sealing rollers.
- Various component configurations for the transmission paths, max. 3 x load and 2 x signal transmission
- Easily accessible connections
- Standard version V100 with load current up to 20 A
- Maintenance cycles only every 100 million revolutions
- No contact oil required
- Easy cleaning – high protection level IP64



With pluggable connections: SR060E-V200

SR060E-V200 variant with pluggable connections for fast and safe plug & play directly at the application.

- No time-consuming wiring work on the application, pre-wired connection cables are connected via plug connectors (Plug & Play)
- Time and cost savings during installation
- High level of system safety due to reverse polarity protection of the connectors
- Quick and easy replacement by user

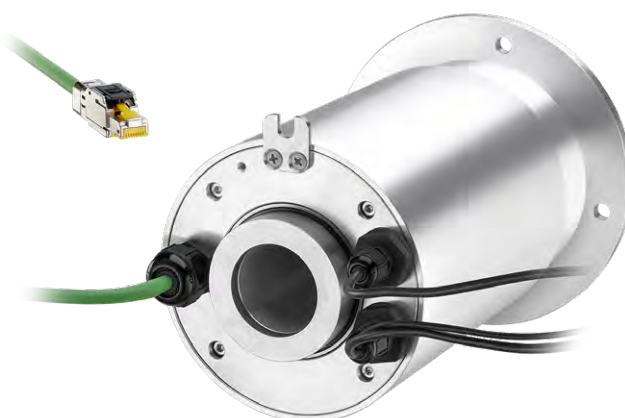
“High-end” transmission for Industry 4.0 – slip ring SR130

Due to the increasing networking of all components of a plant / machine and the associated complexity of machine controllers through to the implementation of Industry 4.0 concepts such as Condition Monitoring, the demand for high-end data transmission is increasing.

Following this trend, Kübler has developed a new, future-proof slip ring platform, which on the one hand is equipped with reliable „high-end” transmission technology in a maximum compact design and on the other hand has a 1 Gbit module.

This operates without further electronic components and thus enables interference-free, reliable and direct transmission.





Individual and flexible: SR130

The modular slip ring SR130 is designed for a freely usable hollow shaft of up to 50 mm or flange mounting. Furthermore, any form of customer-specific adaptation is possible both mechanically and electrically.

Individual configuration for all applications

- Transmission of signals, data and loads up to 800 V and 80 A per transmission path
- The application determines the mechanical and electrical connection
- Particularly suitable for high-end applications
- Design of the connections as cables, plugs or terminals
- Not only electrical currents and signals - also for the transmission of liquids and gases always an optimal solution integrated in the slip ring
- Robust overall concept

Integrated sensors

In addition to the transmission of electrical currents as well as pneumatics and hydraulics, other functions for speed, position, vibration or temperature monitoring can be integrated into the slip ring concept. Such as Kübler incremental and absolute encoders or bearingless encoders.

With 1 Gbit module

The new slip ring platform is equipped with a so-called 1 Gbit module. This operates without any additional electronic components and thus enables interference-free, reliable and direct transmission. The Ethernet module is a bus-independent and cost-optimized solution.

i Industry 4.0 ready



The intelligent networking of all components is based on the use of smart sensors. Smart Kübler slip rings with integrated sensors are understood to be industry 4.0 enablers. Thanks to condition monitoring and the predictive maintenance associated with this, for example, they ensure greater system availability.

Find out more at:
kuebler.com/iiot

Kübler incremental encoders

Incremental encoders deliver a certain number of pulses per shaft revolution. The speed of a movement is determined by measuring the period or counting the pulses per time unit. The Sendix encoder – made in Germany – is the result of the highest quality awareness and careful selection of materials. It has proved its value in many industries as a robust and precise sensor technology.



Miniature encoders

2400 / 2420 (optical) and 2430 / 2450 (magnetic)

- Miniature size of \varnothing 24 mm
- Robust bearing design
- Resolution max. 1024 ppr
- Shaft / blind hollow shaft up to 6 mm
- Sturdy cable outlet with multiple clamping
- Protection level IP67



Economical encoders

Sendix Base KIS40 / KIH40

- Optical
- Compact size of \varnothing 40 mm
- Robust Safety-Lock™ bearing design
- Resolution max. 2500 ppr
- Short-circuit proof outputs
- Polarity protection of the supply voltage
- Protection level max. IP64



Standard encoders

Sendix 5000 / 5020

- Optical
- Size of \varnothing 50 mm
- Robust Safety-Lock™ bearing design
- Resolution max. 5000 ppr
- Shaft up to max. 12 mm / hollow shaft up to max. 15 mm
- Wide variety of connectors and cables
- Protection level max. IP67
- Unique variant diversity



Stainless steel encoders

Sendix 5006 / 5026

- Optical
- Size of \varnothing 50 mm
- Robust Safety-Lock™ bearing design
- Sturdy stainless steel housing (V2A)
- High-quality seals
- Stainless steel connector
- Resolution max. 5000 ppr
- Protection level max. IP67

Kübler absolute encoders

With absolute singleturn and multiturn encoders, up to 24 bits of unique angular positions are output per revolution. The number of revolutions is also recorded for the multiturn version. The unambiguous position is available even after the encoder has been disconnected from the power supply. The Sendix encoder – made in Germany – is the result of the highest quality awareness and careful selection of materials. It has proved its value in many industries as a robust and precise sensor technology.



 IO-Link



Encoders with IO-Link interface

Sendix M36 and Sendix M58

- Singleturn and multiturn encoders with magnetic sensors
- Robust bearing structure in Safety-Lock™ design, magnetic sensors, optional stainless steel housing – long service life even when exposed to significant shocks and vibrations
- Protection level IP67 and temperature range of -40 °C ... +85 °C
- Programmable digital limit switches for position and speed – individual workspaces can be marked, which trigger an event when the value is exceeded or undercut
- IO-Link interface (version 1.1 according to IEC 61131-9)
- Flexible and easy to use for any system and can be integrated into all common fieldbuses

Encoders with SSI or BiSS interface

Sendix 5853 / 5873

- Singleturn, optical
- Size of Ø 58 mm
- Robust Safety-Lock™ bearing design
- High resolution feedback in real time by 21 bit fully digital or incremental outputs SinCos and RS422
- Shaft up to max. 10 mm / hollow shaft up to max. 15 mm
- Cable connection or connector
- Protection level max. IP67



CANopen SSI BISS INTERFACE



PROFINET EtherNet/IP

Gearless absolute encoders

Sendix F36 and Sendix F58

- Optical, singleturn or multiturn
- Compact size of \varnothing 36 mm, size of \varnothing 58 mm
- Robust Safety-Lock™ bearing design
- Intelligent-Scan-Technology™
- All singleturn and multiturn functions on one OptoASIC
- Total resolution max. 41 bit (singleturn max. 17 bit, multiturn max. 24 bit)
- Protection level max. IP67

Industrial Ethernet encoders

Sendix F58xx PROFINET IO / EtherNet/IP

Common encoder base

- Absolute singleturn or multiturn encoders
- Sendix F58, multiturn with patented Intelligent Scan Technology™
- Sendix S58 for functional safety, multiturn with redundant mechanical gear unit
- Robust bearing construction in Safety-Lock™ design
- Options like approvals, surface protection, default configurations, parallel connection to several controllers, fast operational availability, and many more
- Updates possible via integrated web server

For all Industrial Ethernet applications

- Industrial Ethernet protocols such as PROFINET IO, EtherCAT and EtherNet/IP
- Future convergent protocols such as OPC-UA and MQTT
- Application profiles such as PROFIdrive or PROFInergy, as well as PROFI-safe, FSoE or CIP-Safety for functional safety
- Integrated web server and cyber security (in preparation)



Linear measuring systems

Right there on the spot – direct detection on the running material with local control. The linear measuring systems from Kübler offer solutions for direct detection on the running material or conveyor belt using versatile measuring wheels or –easy-to-install magnetic band systems.





Linear measuring systems Limes

- Incremental or absolute
- Simple to operate and mount
- Resolutions from 0.005 mm up to 1 mm
- Very high repeatability
- Magnetic non-contact measuring principle:
 - completely free of wear
 - no pitch or gear backlash errors
 - not affected by oil, dust, grease or fluids



Measuring wheel systems

Measuring wheel systems from Kübler are the ideal solution for reliable speed measurement, position detection and length measurement in applications with linear movements. These are recorded rotationally via the measuring wheel with attached encoder directly on the surface of the material to be measured and converted into linear data. Integrated springs ensure the necessary contact force of the measuring wheel on the surface of the material to be measured for reliable measured value capture.

- The measuring wheel systems with spring arms can be installed vertically, horizontally or overhead. The encoder can be mounted on both sides in different orientations. Thus flexible mounting options on the application
- A wide range of encoders - incremental or absolute – for all interfaces and with resolutions up to 36 000 ppr
- Measuring wheels with different circumferences and coatings
- Spring arms with adjustable contact force for slip-free measuring results

Counters and process devices

The powerful, easy-to-operate Codix preset counters act as decentralized low-cost controllers, from simple piece counting up to the control of welded seams. The compact Codix displays serve to visualize, for example, piece count, time or temperature directly at the place where these occur.





Codix preset counters for decentralized control tasks

- Economical solution for simple control tasks without a PLC
- Local display and control – fast fault recognition during machine stoppage
- User-friendly: large, bright display, menu-driven programming via keys, versions with interface
- Can be used where hygiene is paramount: can be operated using gloves, high protection rating
- High accuracy: galvanic isolation, resistant to shock and magnetic fields, linearization up to 32 points, scaling, up to 8 digit display

Application examples:

- Mechanical stop adjustment of perforation and roller positioning
- Adhesive application
- Welded seam control

Pulse counters, hour meters, process displays

Pulse counters

- For piece, batch and position
- Also available as dual counters

Hour meters

- For monitoring service intervals
- Tamper-proof
- With optional service preset
- Manual or electrical reset

Process displays

- For analog standard signals, temperature and strain-gauge inputs
- Very easy to program
- With galvanically isolated inputs and outputs for high measurement accuracy
- 2 relay outputs for limit value monitoring and/or optional analog output

Product portfolio – Made in Germany



MEASUREMENT

Rotary speed and position detection, linear position, and speed measurement as well as inclination angle detection.

- Encoders
- Bearingless encoders
- Motor Feedback Systems
- Linear measuring systems
- Shaft copying systems
- Inclinometers

TRANSMISSION

Reliable and interference-free transmission of power, signals, and data. Communication between control system and sensors.

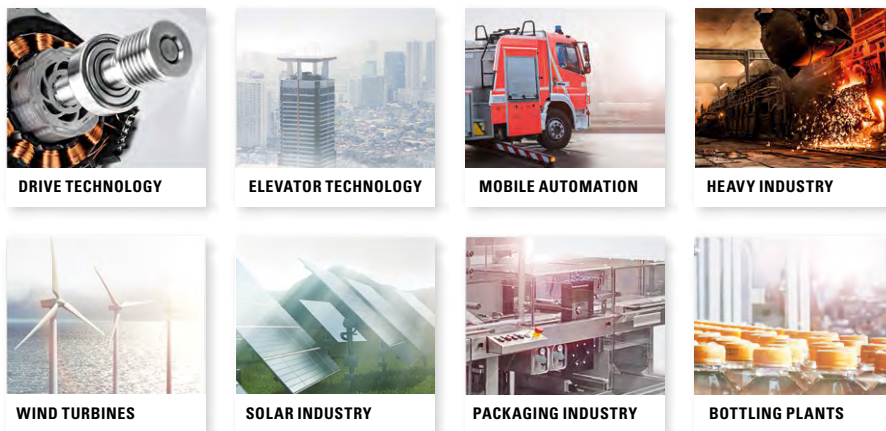
- Slip rings
- Slip rings, customized solutions
- Signal converters and optical fiber modules
- Cables and connectors

EVALUATION

Recording of quantities, counting of units of any kind, and reliable speed and position recording for functional safety.

- Displays and counters
- Process devices
- Safe speed monitors up to SIL3/PLe

We offer solutions for the following industries:



The high performance level and reliability of the Kübler products are based on our long experience in these demanding application sectors. Learn more about our application-specific solutions under:

kuebler.com/industries

Kübler Service for worldwide planning reliability

24one

24one delivery promise

Manufacturing in 24 hours. For orders placed on working days before 9 AM, the product will be ready for dispatch on that same day. 24one is limited to 20 pieces per delivery.

10 by 10

10 by 10

We will manufacture and deliver 10 encoders within 10 working days (365 days a year - with the exception of 24th Dec. until 2nd Jan.)

48 h

48 h Express-Service

We can process your order within 48 hours; we can ship stock items the same day.

📞

Technical Support

Kübler' applications team is present on site all over the world for advice, analysis and support.

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🔧

Sample Service

We manufacture samples of special designs or according to customer specification within shortest time.

FS

Safety Services

Individual customer solutions.

🔑
KDS

Tailor-made Solutions – Kübler Design System (KDS) OEM Products and Systems (OPS)

We develop jointly with our customers product and engineering solutions for customer-specific products, integrated drive solutions, up to complete systems.



KÜBLER WORLDWIDE

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

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