



Solutions for the Packaging Industry

- Slip Rings
- Incremental Encoders
- Absolute Encoders
- Linear Measuring Technology
- Counters and Process Devices



Kübler solutions for the packaging industry.

For the countless diverse requirements of the packaging industry the Kübler Group offers special products that are used by many reputable manufacturers of filling and packaging machines.

Kübler Sendix encoders are ideal for positioning and speed monitoring in packaging machines, above all due to their reliable, rugged construction and clock frequencies up to 10 MHz for high speeds. Stainless-steel versions for food and beverage use are also available, as are measuring wheels for monitoring linear motion.

Kübler slip rings are specially tailored to the requirements of horizontal flow pack machines for the transmission of power, signals or data, pneumatics and hydraulics.

Whether compact and economical or highly robust with many options and special types – the optimal solution is available for every application.

Counting and process technology from Kübler offers turn-key solutions for decentralised display and control. They permit fast fault recognition without a PLC thanks to local display and control.

They comply with operating conditions where the highest hygiene levels are paramount and programming using gloves is also possible.





Kübler Headquarters, Villingen-Schwenningen, Germany



Slip Rings

For the rotary transmission of load current, signal or data, pneumatics and hydraulics

P. 4



Kübler Encoder Solutions

- Incremental and absolute encoders
- Technologies for the packaging industry

P. 6

P. 8



Linear Measuring Systems - Counting and Process Devices

- Linear measuring systems
- Counting and process devices

P. 10

P. 11

Kübler Service

- Kübler Service for planning dependability
- Tailor-made solutions – Kübler Design System

P. 12

P. 13

The Kübler Group belongs today to the leading specialists worldwide in the fields of position and motion sensors, counting and process technology as well as transmission technology.

Founded in the year 1960 by Fritz Kübler, the family business is now led by the next generation of the family, his sons Gebhard and Lothar Kübler.

Proof of the strong international focus lies in the fact that exports currently account for over 60 percent of turnover, with 8 international group members and distributors in more than 50 countries.

Over 380 dedicated people worldwide, of whom 290 are in Germany, make this success possible. They ensure that customers can place their trust in our company. The Kübler Group has a clear, long-term strategy to continue as an independent, owner-managed family business.

Slip rings – for the rotary transmission of load current, signals or data, pneumatics and hydraulics

In general slip rings are used to transmit power, signals or data, pneumatic and hydraulic, from a stationary to a rotating platform. The transmission between the stator and rotor takes place via sliding contacts and is extremely reliable. The construction is modular and offers the greatest flexibility in a variety of applications.

The modular all-rounder: SR085

Flexible and rugged

- Modular construction system, power and signal/data channels can be combined as desired
- Rugged GFPC housing (glass-reinforced polycarbonate), 30% glass-fibre content for industrial usage
- Long service life and long maintenance cycles

Reliable with Safety-Trans™ Design

- Two-cavity system for power and signal transmission
- Labyrinth seal
- High vibration resistance
- Fieldbus signals such as Profibus, CANopen etc. up to 12 Mbit/sec

Characteristics

- Hollow shaft diameter up to \varnothing 30 mm
- Power channels up to 25 A and 400 V AC/DC
- Protection level IP64
- Speed up to 800 rpm
- Operating temperature -30°C ... $+80^{\circ}\text{C}$
- Up to 20 transmission paths
- Maintenance cycles after max. 50 mio. revolutions



Technology in detail

Easily accessible connections



Practical maintenance window



IP64 version with rotor and stator protective cover



Hollow shaft mounting with pneumatic rotatable connector



Version with media leadthrough (air, hydraulics)





The flow-pack specialist: SR060

The SR060 is a compact, economical slip ring for up to 3 power and 2 signal transmissions from a stationary to a rotating platform.



Easily accessible connections



Compact

- Dimensions 60 x 98 mm
- Can be used as a pair starting from just 60 mm shaft gap between the sealing rollers
- Various component configurations for the transmission paths, max. 3 x power and 2 x signal transmission

Efficient

- Economical – thanks to minimization of individual components, favourable mounting and component part design to suit
- Fully encapsulated in high-grade glass reinforced plastic housing shells
- Ideally suited for the heating of sealing drums (rollers) in packaging machines

Characteristics

- Hollow shaft diameter up to \varnothing 25 mm
- Voltage/current loading
 - Power channels 240 V AC/DC, max. 16 A
 - Signal channels 48 V AC/DC, max. 2 A
- Speed up to 500 rpm
- Operating temperature 0°C ... +75°C
- Protection level IP50
- Maintenance cycles after max. 50 mio. revolutions

Kübler encoder solutions

Safe, quick, diverse and compact – qualities that make Kübler encoders ideally suited for use in packaging machines.

The sturdy bearing construction in Safety-Lock™ Design with extra strong outer bearings increases the service life and avoids downtimes and repairs.

Optical sensor technology that is resistant to magnetic fields, with a high clock speed (up to 10 MHz) guarantees optimal signal accuracy. The unique modular design of the Kübler encoders results in a wide choice of versions. The numerous connection and fixing possibilities as well as the comprehensive choice of accessories allow for flexible and universal use.



Incremental encoders

Sendix 5000/5020

Universal – with shaft or hollow shaft

- Extremely compact housing with 50 mm outside diameter
- Flange compatible with all 58 mm standard flanges
- Resolution up to 5000 ppr
- Short-circuit proof outputs
- High scanning rate (300 kHz)
- Shaft diameter 6 ... 12 mm
Hollow shaft diameter 6 ... 15,87 mm (through shaft)
- Speed max. 12000 ppr
- Load capacity radial 80 N

Absolute singleturn encoders

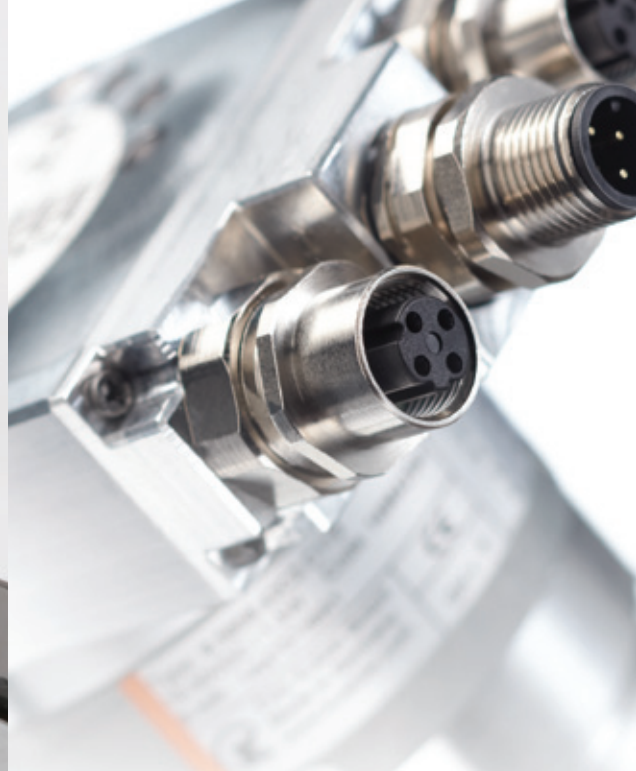
The classic bestseller, with parallel interface – 5852/5872

- Divisions: up to 2000 Gray Excess or up to 16384 (14 bit) Gray, singleturn
- Housing \varnothing 58 mm
- IP67 / temperature range -20°C ... $+80^{\circ}\text{C}$
- Change of count direction
- Electronic temperature and ageing compensation
- Short-circuit proof outputs
- High shock resistance: $>2500\text{ m/s}^2$, 6 ms to DIN IEC 68-2-27

The fast, efficient encoder with High Speed SSI

Sendix 5853/5873

- Sendix SSI technology permits super fast positioning. Your benefit: less cabling required than with parallel encoders. You save money and installation time.
- 360 step resolution or up to 17 bits
 - Update rate $> 100\text{ kHz}$, Jitter $1\ \mu\text{s}/5\ \mu\text{s}$
 - SSI Clock speed 50 kHz ... 2 MHz
 - With additional 2048 incremental or SinCos track
 - 1 status output
 - Also digital BiSS-C interface option (up to 10 MHz)



Absolute multiturn encoder

First multiturn encoder in 58 standard format

Sendix 5863/5883, SSI

With gear module and through hollow shaft

- Gear module made from special materials, first stage with double bearing layer and specially developed gear teeth
- High rotational speed up to 9000 rpm
- Minimal wear
- High temperatures
- Hollow shafts up to 14 mm, as well as 15 mm as blind hollow shaft

Fieldbus encoder

Sendix absolute singleturn – type 5858/5878

Sendix absolute multiturn – type 5868/5888

- The right type of connector to suit every application
- The latest fieldbus profiles
- Genuine time-synchronous position detection of several axes is possible
- Position, speed, acceleration and working area available in realtime
- Fast error-free start-up
- User-friendly version with bus cover for easy integration into complex fieldbus networks

Technologies for the packaging industry

Innovations from tradition. Kübler products benefit from 50 years experience in automation technology.

Over time they have been subject to continual development and optimised for applications in drive engineering, special purpose machinery manufacture and not least in packaging machines. Small details make a big difference. Our products feature many intelligent top-quality extras and offer our customers crucial benefits. In doing so they make a significant contribution to the high availability of the plant.

Stainless-steel encoders

Ideal for the food and beverage market

We offer a comprehensive range of stainless-steel encoders to meet the requirements of the food and beverage, dairy, pharmaceutical and chemical industries.

All the external components of the encoder housing are made from stainless, austenitic nickel-chromium steel, which meets food regulation requirements. Electrical connections for the encoder are made via a high quality durable cable or connector.

The high IP66 protection together with the NIRO steel ensure high levels of hygiene and safety against aggressive media.



Small dimensions – great performance

Incremental miniature encoder

- Just 24 mm outside diameter with high performance
- Wide temperature range (-20°C ... +85°C)
- Sturdy cable outlet with multiple clamping
- Temperature compensation
- Broad input voltage range (5 ... 24 V or 8 ... 30 V)
- Highly flexible cable (can be used with drag chains from 0°C ... +70°C)
- Low power consumption despite high scanning rate
- Short-circuit proof
- Solid or blind hollow shaft up to 6 mm

Absolute, compact multiturn encoder

The Sendix F36 is a highly accurate, optical encoder without gears, which at the same time is 100% resistant to magnetic fields. Even when installation space is very limited, it is ideal for integration into drive components.

- 36 mm size
- Highly integrated singleturn / multiturn scanning in a single ASIC
- 17 bits singleturn + 24 bits multiturn = 41 bits total resolution
- Interfaces: SSI, CANopen, BiSS-C, additional incremental outputs RS422 and SinCos
- -40°C up to +90°C with IP67 protection level
- Sturdy bearing construction in Safety-Lock™ Design





Safety-Lock™

The reliable Sendix encoders, with their long service life, offer a very sturdy, rugged bearing construction as a result of the Kübler Safety-Lock™ technology.

Encoders with Safety-Lock™ tolerate installation errors and high loads on the shaft, such as occur with wide temperature fluctuation or vibration.

Interlocked, positive-fitting bearings, large bearing spans and a special assembly technique make a contribution here.

A rugged die-cast housing rounds off the package.



Optical sensor systems without a battery

100% resistant to magnetic fields – extremely compact design. Even strong magnetic fields, as occur in the vicinity of brakes or drive motors, pose no problems for the sensor technology of optical single- or multiturn devices.

The technology dispenses with any components that may be susceptible to magnetic influences.

As a result of the proven drive, the encoder has no need of a battery to store the number of revolutions.



Shock and vibration resistant

Kübler encoders avoid serious, expensive failures right from the start – even with increased levels of axial loading, shock and vibration.

This can eliminate enormous service costs and expensive downtimes in applications worldwide. The high IP67 protection level leaves the devices unimpressed by wet conditions outdoors, by temperatures between -40°C and +90°C or by altitudes over 3000 meters above sea-level.

Insensitive to interference: OptoASICs

The resistant Kübler OptoASIC technology offers a very high integration density of components.

This means that, on the one hand, the reliability in the application can be increased significantly and, on the other hand, the technology demonstrates quality EMC characteristics and shock resistance.

Availability with SIL3 certification

Safety is – not least since the new EU Machinery Directive – an “integral part of the construction of drives”.

Sendix SSI absolute encoders with additional incremental SinCos output and SinCos versions of incremental encoders are available SIL3 certified.

But safety goes further than this: safer components are characterised by a robust, reliable interface and by the ability to cope with high mechanical and electronic loads.

On the basis of their design that has been optimised with respect to safety, Sendix encoders make an important contribution to increasing the availability of packaging equipment.

Linear measuring systems - counting and process devices

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.

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

Linear measuring system LIMES

- 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



Length measuring system: measuring wheel + encoder

For direct detection on the running material or conveyor belt.

Measuring wheel system

- New fixing solution for measuring wheels permits freely adjustable contact pressure
- Can be mounted in all positions
- Allows for greater distance between wheel and running material
- Measuring point can also be in the centre
- Can be combined with all standard encoders (Incremental, SSI, Fieldbus, ...)



Mini-measuring wheelsystem

- With incremental interface
- Very compact (74 mm x 50 mm x 52 mm)
- Simple to install: one unit – screw on, connect, ready
- Economical



Codix preset counters for decentralised 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

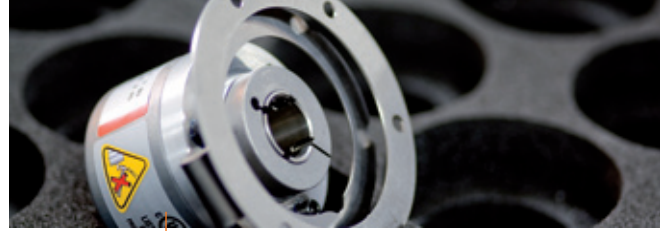
- Pulse counters for piece, batch and position
- Also available as dual counters

Hour meters for monitoring service intervals

- Tamper-proof
- With optional service preset
- Manual or electrical reset

Process displays for analogue standard signals, temperature and strain-gauge inputs – very easy to programme

- With galvanically isolated inputs and outputs for high measurement accuracy
- 2 relay outputs for limit value monitoring



Presales

Kübler – the service specialists for every industrial sector and application – supplying complete integrated solutions – globally on your doorstep

Sample Service – Fast delivery of customised versions

Selection tool
Kübler website: Product Finder

Delivery Service: 10 by 10,
48 h Express and Repair Service



Kübler Service for planning dependability

Fast, reliable service and professional advice have top priority at Kübler. We are globally on your doorstep in 6 service and application centres and offer our customers planning dependability.

We deliver from stock within one day. We can manufacture your special orders within 48 hours. Moreover, 10 by 10 is our delivery offensive, which ensures that – for quantities of up to 10 pieces – you will receive all catalogue products so marked within 10 days. Our processes and services are certified and are constantly being improved.

10 by 10

With our 10 by 10 Service we will manufacture 10 encoders within 10 working days.

The benefits to you: easier to order, the delivery can be calculated, flexibility for small production batches.



Technical Hotline

Our Hotline will answer your technical questions Mon-Fri within normal working hours:



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Kübler France	+33 3 89 53 45 45
Kübler Italy	+39 0 26 42 33 45
Kübler China	+86 10 5134 8680
Kübler India	+91 9819 457 872
Kübler Poland	+48 6 18 49 99 02

Sample and Repair Service

The Kübler Service Centre can quickly manufacture special, customised versions within a short space of time.

We are happy to help you with the practicalities of using our products – at your location if desired. We can carry out repairs within a maximum of 5 working days.



48 h Express Service

Short delivery times, a high level of on-time delivery, guaranteed quality and enthusiastic, service-oriented employees – these are what our customers can depend on.

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





Service Excellence provided by Kübler application specialists for target sectors

Product security – replacement models at the end of the product life-cycle

Aftersales

Service Centres, globally on your doorstep:
Advice, analysis, support during installation in over 50 countries



« We were able to considerably reduce our average delivery time and I can confirm that delivery schedules were always adhered to. Technical support is very professional, efficient and not at all bureaucratic. »

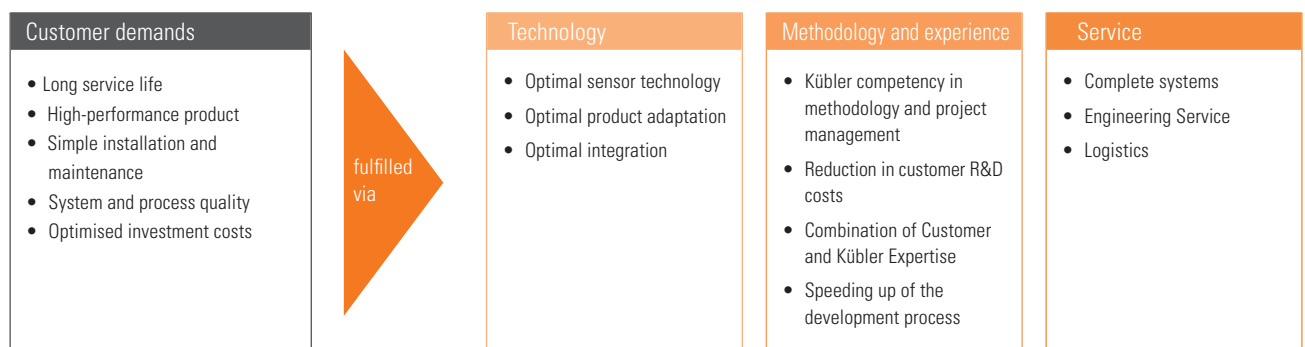
Purchasing Manager, German Producer of Geared Motors

Tailor-made solutions – Kübler Design System

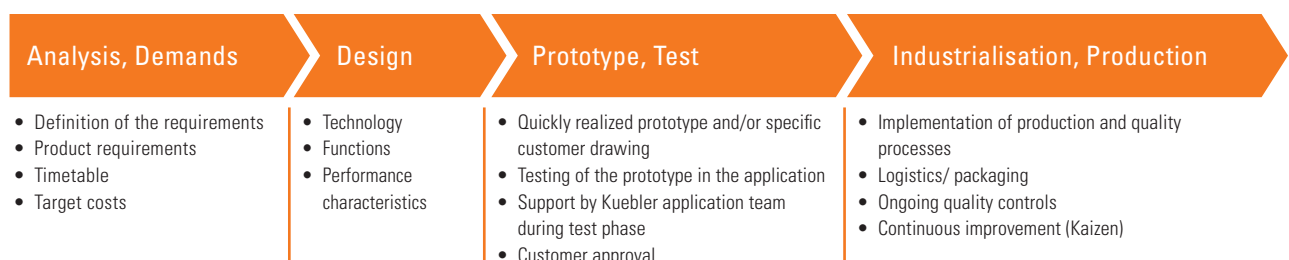
« With the KDS method our customers receive a lasting solution to lowering costs, reducing the number of models available or eliminating quality deficiencies. With KDS we develop product and engineering solutions together. The method stands out because of its structured process; this delivers innovation through experience and cooperation with the customer. »

Gebhard and Lothar Kübler, Managing Directors Kübler GmbH

The Kübler Design System – satisfying customer demands



The 4 phases of the Kübler Design System



Product information

We offer additional information on our products and system solutions in the following main catalogues:

Position and Motion Sensors

- Incremental Encoders
- Absolute Encoders
- Linear Measuring Technology
- Inclinometers
- Connection Technology
- Accessories

Order-No. German **R.100.568**

Order-No. English **R.100.569**



Counters and Process Devices

- Pulse Counters and Preset Counters
- Timers and Preset Hour Meters
- Frequency Meters and Tachometers
- Combination Time and Energy Meters
- Position Displays
- Process Displays and Controllers
- Temperature Displays and Controllers

Order-No. German **R.100.156**

Order-No. English **R.100.157**



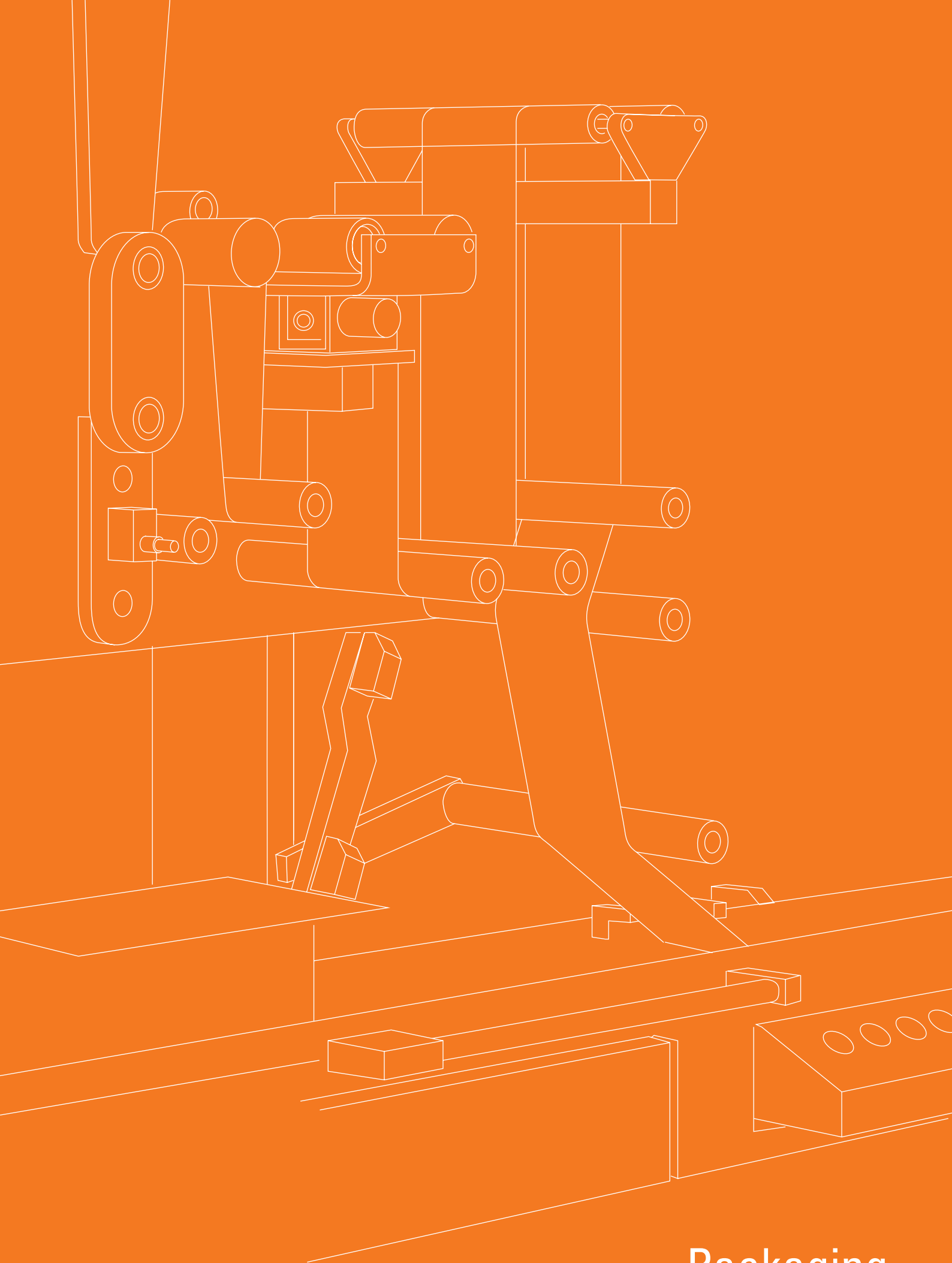
Transmission Technology

- Slip rings
- Optical fibre signal transmission modules
- Cables, connectors and pre-assembled cordsets

Order-No. German **R.600.948**

Order-No. English **R.600.948.001**





Packaging

www.kuebler.com



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■■■ *pulses for automation*

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