



NEW 2016 2017

- Incremental Encoders
- Absolute Encoders
- Bearingless Encoders
- Linear Measuring Technology
- Inclinometers
- Functional Safety
- Slip Rings
- Counters and Process Devices

Our Pulses for Innovations



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

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

Ten international group members and distributors in more than 50 countries offer local product know-how, service and advice throughout the world.

Innovative product and sector solutions, as well as solutions for functional safety and a high level of service, are the reasons behind our global success.

The strict focus on quality ensures the highest levels of reliability and a long service life for our products in the field.

Over 480 dedicated people worldwide make this success possible and ensure that customers can continue to place their trust in our company.



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.)

48h **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.

Kübler Germany / Austria +49 7720 3903 952
 Kübler France +33 3 89 53 45 45
 Kübler Italy +39 026 423 345
 Kübler Poland +48 61 84 99 902

Sample Service

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

FS Safety Services

- Adapted service packages
- Individual customer solutions

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 Turkey +90 216 999 9791
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Our Product Portfolio



Position and Motion Sensors

- Incremental and absolute encoders
- Fieldbus and Industrial Ethernet encoders
- Bearingless encoders
- Explosion protected encoders ATEX / IECEx
- Linear magnetic measuring systems
- Draw-wire encoders
- Inclinometers
- Connection technology

Transmission Technology

- Slip rings, modular system
- Slip rings, bearingless modular system
- Slip rings, contactless transmission
- Slip rings, compact and low-maintenance
- Slip rings, Ethernet transmission
- Optical fiber signal transmission modules
- Cables, connectors and pre-assembled cordsets

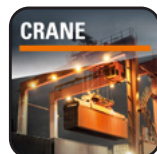
Functional Safety

- Certified incremental and absolute encoders
- Certified explosion-protected encoders ATEX / IECEx
- Modules for safe drive monitoring
- Safe fieldbus gateways
- Safe speed monitors
- Adapted service packages
- Connection technology

Counters and Process Devices

- Pulse counters and preset counters
- Hour meters and timers
- Frequency meters and tachometers
- Combination time and energy meters
- Position displays
- Process displays and controllers for temperature, analog signals and strain-gauge
- Setpoint adjuster

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:

www.kuebler.com/industries

New for 2016 / 2017

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Increased Flexibility – Increased Performance

Sendix 5000 / 5020 Incremental Encoders

Flexibility redefined. The popular encoders of the Sendix 5000 / 5020 family have been technically improved and supplemented with additional options. As a result, they present the ideal solution for even more applications. Special highlight: **24one** delivery promise.



The Benefit of Flexibility

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> + Greater variety of flanges, couplings, and shafts + Greater variety of connector types and cable lengths.
And now: multiple cable/connector combinations | <ul style="list-style-type: none"> ▶ For flawless connection to the application shaft ▶ Quick, easy, and safe installation |
| <ul style="list-style-type: none"> + More pulse counts | <ul style="list-style-type: none"> ▶ No compromises for positioning tasks |
| <ul style="list-style-type: none"> + More options for specific environmental conditions | <ul style="list-style-type: none"> ▶ Salt spray tested surface protection, stainless steel housing (Sendix 5006 / 5026 series), explosion proof classification 2/22 |
| <ul style="list-style-type: none"> + Many convenient and clever details | <ul style="list-style-type: none"> ▶ A collar on the shaft makes the clamping ring on hollow shaft encoders undetachable ▶ Tangential cable outlet – saves space and allows cable layout at any angle |

The Benefit of Performance & Durability

- | | |
|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> + Optical sensor | <ul style="list-style-type: none"> ▶ Highest precision and 100% resistant to magnetic fields |
| <ul style="list-style-type: none"> + Rugged bearing construction with Safety-Lock™ design | <ul style="list-style-type: none"> ▶ Corrects mounting errors – guarantees long service life |
| <ul style="list-style-type: none"> + Increased operating temperature range and more IP protection levels | <ul style="list-style-type: none"> ▶ Operating temperatures to -40°C with IP67 and IP66 ▶ High operating temperatures to +85°C allow higher operating speeds |
| <ul style="list-style-type: none"> + Increased resistance to shock and vibration | <ul style="list-style-type: none"> ▶ Long service life and excellent reliability |
| <ul style="list-style-type: none"> + Increased shaft load capacity | <ul style="list-style-type: none"> ▶ Increased service life, especially in applications with measuring wheels or belts |
| <ul style="list-style-type: none"> + Isolation inserts for hollow shaft encoders | <ul style="list-style-type: none"> ▶ Protection against shaft currents with simultaneous thermal protection – can also be used as reducers |

24one

ONE DAY.
ONE MILLION VARIANTS.
YOUR ENCODER.

INDIVIDUAL SAME-DAY MANUFACTURING
FOR INCREMENTAL ENCODER FAMILY SENDIX 5000 / 5020.

**Maximum Flexibility – Minimum Delivery Time.
Your ideal encoder is ready for you in 24 hours!**

With the unique model diversity of the Sendix 5000 / 5020 family of incremental encoders, you will always find the optimum encoder for your application – with lightning fast shipping to boot.

24one Delivery Promise

This free service increases your flexibility. Your preconfigured incremental encoder will be manufactured and prepared for shipping on the same day. In comparison to other commercially available bearing models, the need for compromise is history.

Your Benefits at a Glance

- + **Ideal encoder for your application**
- + **Increased flexibility thanks to reduced production time**
- + **Increased planning reliability**
- + **Reduce your machine downtime to a minimum in the event of an emergency**

We offer the free 24one delivery promise for all encoders preconfigured with the underlined preferred options. The encoder will be manufactured and prepared for shipping on the same day for orders placed by 9:00 a.m. CET. The 24one delivery promise is limited to 20 units per delivery.



PERFORMANCE
COST DOWN UP



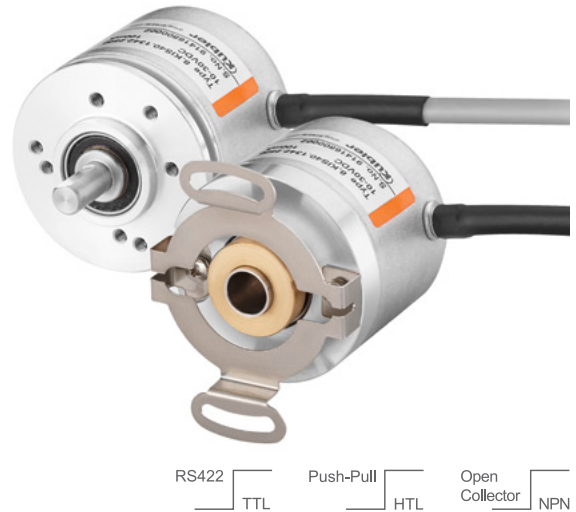
www.kuebler.com/24one

Efficiency in a Compact Size of \varnothing 40 mm

Sendix Base KI40 Encoders

Performance up - cost down.

The optical and incremental Sendix Base KI40 encoders unite high efficiency with parts based on sophisticated Sendix technology. They set new standards for cost-sensitive applications. Designed for simple applications, these encoders are suitable for numerous fields of application.



Characteristics

Rugged bearing construction with Safety-Lock™ design

Optical sensors, max. resolution of 2500 pulses/revolution

Aluminum housing, high protection level (IP64) and wide temperature range from -20°C to +70°C

Short-circuit protected outputs and reverse polarity protection for the power supply

Compact size of only \varnothing 40 mm

Your Benefits

▶ Resistant to installation errors, shock, and vibrations

▶ High precision and 100% resistant to magnetic fields

▶ Suitable for industrial environments

▶ Protection against installation errors

▶ Suitable for tight installation spaces and smaller machines

Applications

Demands for sensors differ across the globe. Yet they all have something in common: They must be compact and efficient. Incremental Sendix Base KI40 encoders meet these demands. With their compact design, they are especially suitable for tight installation spaces.

Sendix Base KI40 encoders demonstrate their capabilities in the following applications: small printing machines, plastics processing machines, textile processing machines, automatic gates, packaging machines, cutting and welding systems, as well as smaller drives and stepper motors.



Efficiency in a Standard Size of \varnothing 58 mm

Sendix Base KI50 Encoders



RS422 TTL Push-Pull HTL Open Collector NPN

Focus on the essential.

The optical and incremental Sendix Base KI50 encoders unite high efficiency with parts based on sophisticated Sendix technology. Designed for mid-size and larger machines and motors.

Characteristics

Rugged bearing construction with Safety-Lock™ design

Optical sensors, max. resolution of 5000 pulses/revolution

Rugged housing, high protection level (IP65) and wide temperature range from -20°C to +70°C

Short-circuit protected outputs and reverse polarity protection for the power supply

Through hollow shaft to max. 15 mm

Your Benefits

▶ Resistant to installation errors, shock, and vibrations

▶ High precision and 100% resistant to magnetic fields

▶ Suitable for industrial environments

▶ Protection against installation errors

▶ Suitable for drives with large shafts and larger machines

Applications

Demands for sensors differ across the globe. Yet they all have something in common: They must be efficient. Incremental Sendix Base KI50 encoders meet these demands.

Sendix Base KI50 encoders demonstrate their capabilities in the following applications: general automation, factory automation, drive technology, logistics, and material handling.



Powerful and Reliable Sendix F58 EtherNet/IP Encoders



Increased performance. Optical absolute singleturn and multiturn Sendix F58 EtherNet/IP encoders are designed for time-critical applications. With their special features, they not only support the performance and availability of a system, but also contribute significantly to time and cost savings.

Characteristics	Your Benefits
Rugged bearing construction with Safety-Lock™ design	▶ Protection against installation errors, shock, and vibrations
Actual value transmitted 5 times faster than other commercially available encoders → RPI time of 1 ms	▶ Ideal for time-critical applications without expenditure for “CIP motion”
Quick and easy start-up, configuration using cyclic services possible	▶ Cost and time savings
Fast encoder start-up	▶ Increased system performance and availability, fewer costly disruptions
Device level ring (DLR) ring redundancy of the network thanks to two network ports	▶ Functionality is maintained even if the ring structure is disrupted

Applications

Industrial Ethernet is increasingly becoming accepted as the new communication standard in automation technology. The goal is to create a vertical integration – that is to say: only one core computer, from the control level up to the industrial production plants – that will be able to control any device.

The Sendix F58 EtherNet/IP encoders demonstrate their abilities in the following application examples: automotive production, logistics, metalworking, textile, printing, and packaging machines.



Ready for Extremes!

Sendix M58 Multiturn Encoders

Standard flange and low profile. The magnetic Sendix M58 multiturn encoders are especially rugged and precise due to the energy harvesting technology used, an extremely rugged mechanical design, and a high resolution of up to 38 bits. Whether you choose the analog, SSI or CANopen model, this encoder is perfectly adaptable to your application.



Characteristics	Your Benefits
Extremely rugged bearing construction with Safety-Lockplus™ design, extra large bearing, mechanically protected shaft seal	▶ Resistant to installation errors, shock and vibrations, reliable in harsh environments
Energy harvesting technology – no mechanical gears, no battery	▶ Wear-resistant and durable, high system availability
Purely magnetic optical scanning, IP65 protection level, and wide temperature range from -40°C ... +85°C	▶ Impervious to environmental influences, wide range of uses
Standard installation with 58 mm flange and low profile	▶ Ideal for use in tight installation spaces, quick and easy installation

Applications

Maximum durability and adaptability in a single device. The magnetic Sendix M58 multiturn encoder was developed for demanding applications. The energy harvesting technology eliminated the need for many mechanical components. The encoder is more impervious and cost-efficient as a result.

The Sendix M58 demonstrates its strengths in the following applications: general automation, logistics, metalworking, and textile machines.

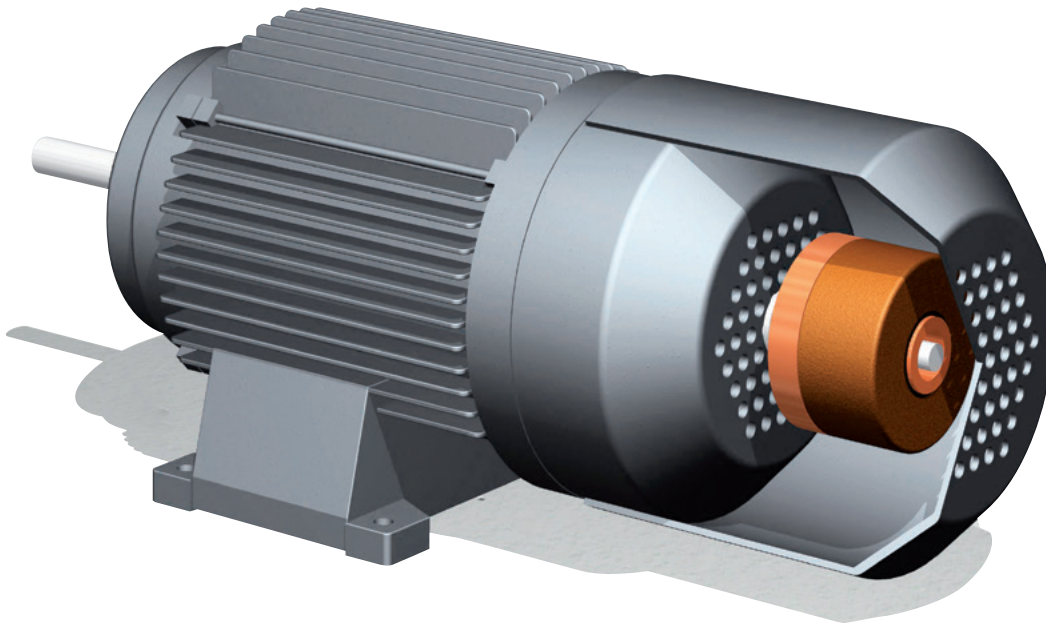


Sendix Encoders for Asynchronous Motors

Asynchronous motors are true multi-purpose drives.

There is a drive for every requirement and a suitable Kübler encoder for every drive. Whether as a small 63-size fan motor or a 225-size geared motor, asynchronous motors place special demands on encoders, especially with regards to mechanical and electrical durability.

The extremely durable Sendix encoders stand the test of time again and again, especially in harsh operating conditions.



Application-Specific Requirements

Mounting	The mechanics can become overloaded and cause damage to the encoder, especially during installation, which in turn reduces the average service life.
Motor Options	If a motor is to be equipped with additional sensors beyond the encoder, the motor shaft must pass through the encoder.
Temperature Range	Extreme temperature ranges place increased stress on the sensors and their mountings when using asynchronous motors.
Magnetic Fields	The motor as well as the electromagnetic brakes produce stray fields that can impact the sensors.

Flattest Multiturn Encoder

Sendix F5888M Motor-Line Encoder



For drive technology. An extremely low profile of only 43 mm and a through hollow shaft of max. 15 mm characterize the optical Sendix F5888M Motor-Line encoder. This opens up new possibilities for motor dimensions as well as installation in tight spaces. Kübler encoders and motors – a perfect match.

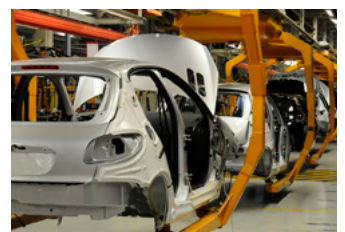


Characteristics	Your Benefits
Rugged bearing construction with Safety-Lock™ design	▶ Resistant to installation errors, shock, and vibrations
Low profile of 43 mm, tangential cable outlet	▶ Influences the motor length, suitable for tight installation spaces, easy installation
Through hollow shaft to max. 15 mm and A- and B-side clamping	▶ Suitable for common drive shafts for gear motors, flexible installation
A variety of electrical interfaces	▶ Flexible connection to a frequency inverter
CANopen with additional 2048 ppr incremental track	▶ Two-in-one: Absolute positioning and rotational speed measurement, cost-optimized solution

Applications

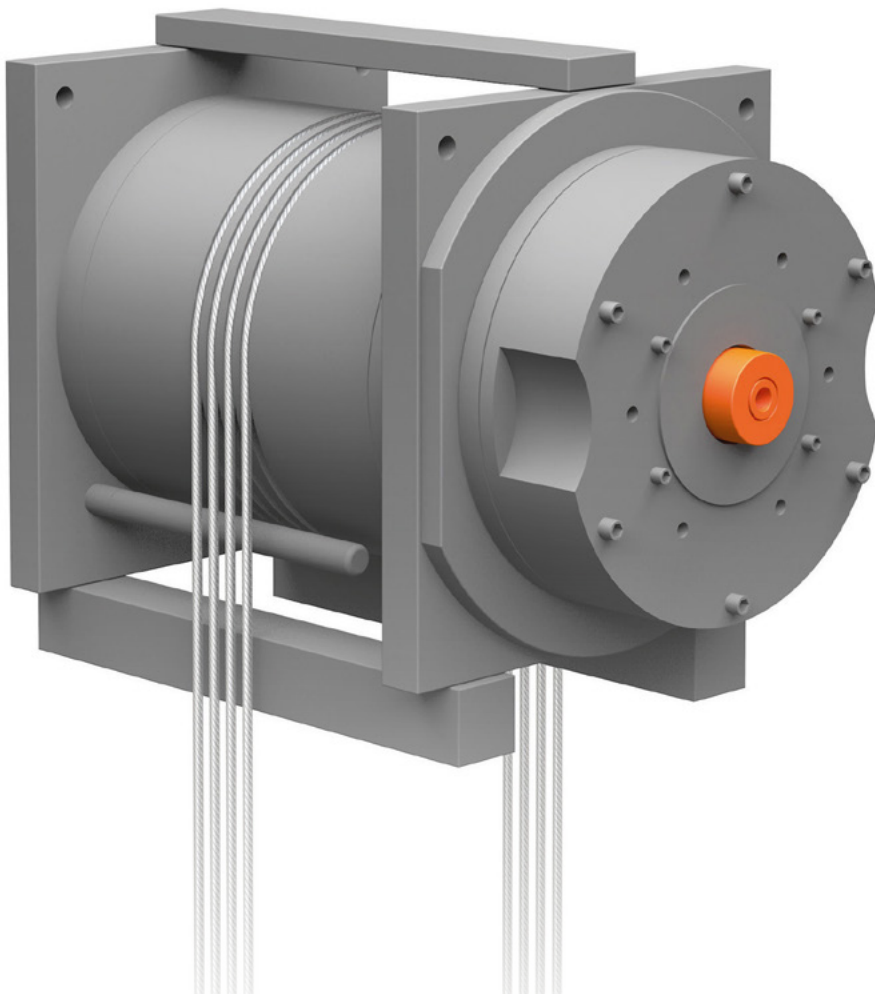
Both incremental and absolute encoders are used in gear motors. One of the benefits of incremental encoders is their low profile. The Sendix F5888M Motor-Line encoder achieved this low profile in a compact design.

Thanks to this low profile, these multiturn encoders continue to demonstrate their strengths in the following applications: standard motors, gear motors, and large motors.



Sendix Encoders for Gearless Drives

The encoders for gearless drives are above all flexible. They feature the appropriate encoder technology, optimum mechanical installation and an electrical interface. The drive and/or the system determine the right encoder.



BiSS – the Predestined Interface for Direct Drives

- Fully digital and bidirectional.
Option to set the measurement system to a predefined setpoint.
- Open source - not proprietary.
- Position and status data available in real time.
- Motor data and maintenance information can be stored and read in the encoder.
- Condition monitoring via register communication.



The Standard for Gearless Drives

Sendix 5873 Motor-Line Encoders



Powerful. The optical Sendix 5873 Motor-Line singleturn encoders are specifically designed to be mounted onto gearless drives. The 21 bit fully digital high-resolution or 17 bit + 2048 ppr SinCos ensures optimum drive control. Simple plug-and-play start-up.



Characteristics

Stator or expanding coupling, tangential cable outlet, tapered shaft

Plug-and-play incl. electronic data sheet and the option to set the measurement system to a predefined setpoint

Actual value $\leq 1\mu\text{s}$, resolution 21 bit fully digital, short control cycles

Rugged bearing construction with Safety-Lock™ design

PCB connectors – starting April 2017

Your Benefits

▶ Easy, perfect installation, reliable connection to the drive shaft

▶ Quick and easy start-up

▶ Increased drive control efficiency

▶ Resistant to installation errors, shock, and vibrations

▶ Flexible connection, cost-optimized solution

Applications

Because direct drives have a high torque coupled with low rotary frequencies and smooth, quiet running properties they are ideally suited for use in elevator technology.

This technology requires encoders to have specific benefits: short control cycles, high resolution, and reliability.

These characteristics make the Motor-Line version of the optical Sendix 5873 encoders the ideal solution for gearless drives.





Kubler
Fritz Kubler GmbH
www.kuebler.com

Made in Germany

Type: B.L150 1111 2050
S-Nr: 1804711087
4-8-25 VDC 50 mA

shield	0V	WH	B	GN	01
+	+V	BN	0	GN	01
A	A	GN	0	GN	01
A1	A1	YE	0	GN	01

Lim. Res. 5.0kΩ
Int. P. 100Ω

CE

△

Customizable and Durable Bearingless encoders, incremental and absolute

Non-contact measuring principle.

These magnetic bearingless encoders are wear resistant and extremely durable. Their compact shape is especially suitable for tight installation spaces. In contrast to encoders with bearings, magnetic bearingless encoders can be designed with a large hollow shaft up to 390 mm, which in turn facilitates the best possible integration of bearingless encoders for any application.



Characteristics

Rugged: magnetic non-contact measuring principle, shock and vibration resistant, protection level to IP69k

Compact design consisting of sensor and magnetic ring

Mounting with slotted holes allows easy adjustment

Magnetic rings to max. 390 mm for hollow shafts

Your Benefits

▶ Reliable and durable

▶ Ideally suited to the tightest installation spaces

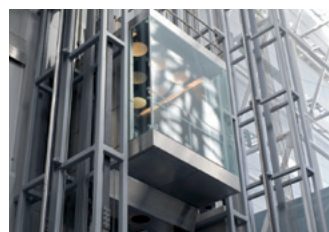
▶ Quick and easy installation ensures optimum operation of the measurement system

▶ Customized solutions, adapted to your application

Applications

In the area of drive technology, smaller designs are in demand. This is why we created a slim motor design. The bearingless encoders from Kübler are the perfect solution. Its compact shape ideally integrates with space-saving designs.

These incremental, bearingless encoders are used in drive and elevator technology, wind turbines, and mobile automation (cranes).



Rugged and Compact Draw Wire System with Sendix M36 Encoder

Reliable. Many draw wire systems from the extensive Kübler portfolio can now be combined with the compact, magnetic Sendix M36 multiturn encoder. Analog models of the Sendix M36 are much more compact than conventional system sensors. The scalable measurement range allows a flexible integration into the application.

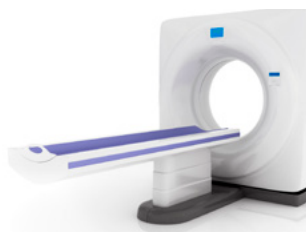
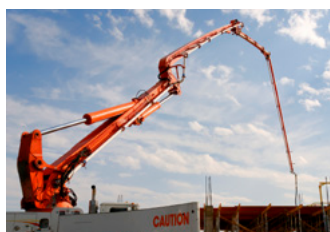
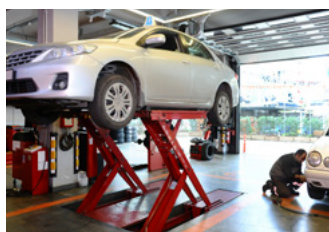


Characteristics	Your Benefits
Diverse draw wire portfolio with measurement ranges of 0.3 m to 4.5 m	▶ The right performance for your application
Magnetic Sendix M36 multiturn encoder in a rugged and compact shape measuring only 36 mm	▶ Suitable for tight installation spaces, same size for analog, SSI and CANopen models
Cost-efficient and reliable with energy harvesting technology	▶ No mechanical gears, no battery
Interchangeable installation: Easy encoder installation to the draw wire mechanics, easy encoder replacement (e.g., changing from incremental to absolute encoder)	▶ Saves time and cost – maximum adaptability during continuous operation – maximum flexibility

Applications

The precise control and monitoring of positions in various applications requires accurate position measurement. Sensors should be affordable yet rugged and provide the highest possible repeat accuracy.

With these properties, Kübler draw wire encoders demonstrate their strengths in the following applications, among others: lift tables, construction machinery, medical technology, mobile cranes.



Extremely Rugged and Efficient Draw Wire Encoders D120, Measuring Range 3...10 m

For outdoor applications. The new draw wire encoders D120 are especially reliable and durable thanks to their extremely rugged design, high protection level (IP69k), and wide temperature range. The extensive selection of housing and wire types, wide measurement range, and various interfaces reflect flexibility and adaptability. An additional highlight is the possibility of redundancy.



Characteristics

Various designs: open, closed housing or housing with perforated plate cover

Protection level to IP69k, wide temperature range from -40°C to +85°C

A variety of stable wire types (from 0.5 to 1.5 mm) and wire fastenings (clip, M4 screw thread and ring)

Excellent linearity up to $\pm 0.1\%$

Potentiometer, 0 ... 5 V, 0 ... 10 V, 4 ... 20 mA, CANopen interfaces

Redundant version available

Your Benefits

▶ The right level of durability for every application ensures reduced downtimes

▶ Reliable and durable outdoor use

▶ Flexible and ideal integration into your application

▶ High performance and cost savings

▶ Common interfaces suitable for your application

▶ High system availability

Applications

Sensors reach their limits in outdoor applications. In addition to maximum durability and precision, they must also be cost-effective. The new draw wire systems now unite these demands in a single device.

Special housing, wire and fastening types ensure reliability and durability in demanding applications with wide measurement ranges – all at very economical prices.



Perfect Interaction

Length Measuring Kit – Limes Kit TB

Focus on your application. Design your own length measuring kit with spring arm, encoder, measuring wheel (pulley) and belt. Take advantage of the unlimited measurement range, free selection of sensors, and simple, flexible mounting options. The Limes Kit TB ensures consistent measurement despite mounting tolerances or irregularities.

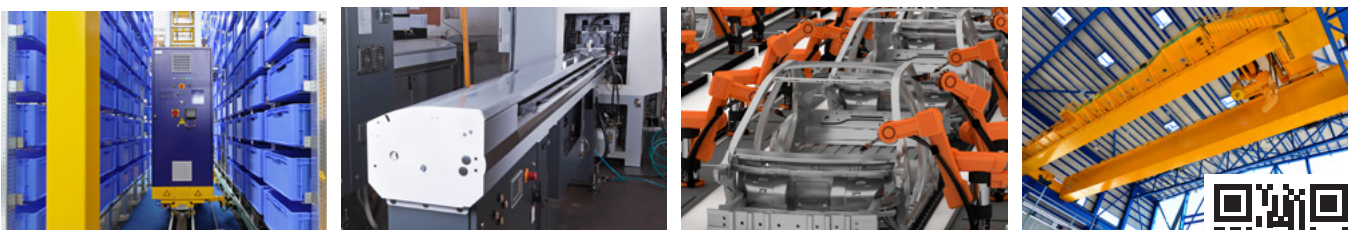


Characteristics	Your Benefits
Stable and temperature-resistant plastic belts	▶ Your application determines the measuring length. You will achieve reliable and consistent results with no restrictions
Encoder (incremental or absolute) and interface options are included	▶ Rugged sensor technology and high accuracy, the right interface for your application
Adjustable encoder spring arm	▶ Easy installation and consistently reliable measurement
Kit system	▶ Cost-efficient solution, easily adaptable to your specific application

Applications

Current measuring systems can sometimes hit their limits. This can have various reasons. Either the measuring length is limited, the design is too large, or the system itself is too costly. The length measuring kit Limes Kit TB from Kübler is easily adaptable to your application. You determine your needs.

The result is an ideal solution with the highest quality at a fair price. The kit is already being used in numerous applications: textile machines, intralogistics, the glass industry, and cranes.



Unwavering Accuracy Inclinometers IN81 / IN88

Rugged and versatile. These inclinometers were specially designed for outdoor use. The rugged housing, high protection level and wide temperature range reinforce their reliability. Their low profile facilitates simple and flexible installation. The special feature of the IN81 / IN88 is its high precision, which remains stable even in harsh environments and during temperature fluctuations. The result is a consistent and optimum measurement for your system.

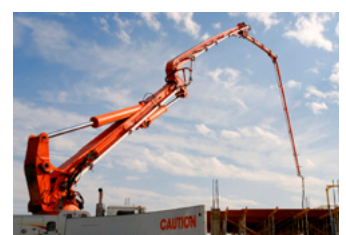


Characteristics	Your Benefits
Rugged: Aluminum housing, protection level IP67 / IP69k, temperature range from -40°C to +85°C	▶ Ideally suited for outdoor use, long service life, high availability
Accurate: stable and highly accurate – resolution 0.01°	▶ Precise measurements in all environments
2-dimensional inclinations in the measurement range of ±85° or 1-dimensional inclinations up to 360°	▶ No restrictions; your application determines the measurement range
Configurable filter settings	▶ Perfectly adapted to your application
Stack assembly for redundancy optional	▶ Easy installation, space-saving

Applications

Inclinometers are primarily used outdoors. This is where sensitive sensor technology meets harsh conditions: shock, vibrations, and changing weather conditions. The inclinometers IN81 / IN88 stands up to the test and demonstrates its capabilities in the following applications:

measurement of the horizontal position of an operator basket on firetrucks or working platforms, levelling of agricultural and forestry vehicles, dynamic measurement of the set-up angle of the boom on tunnel and mining construction machinery, and the solar industry.



Functional Safety



The comprehensive Kübler product portfolio of rotating and linear position and motion sensors as well as corresponding encoder evaluations provide the basis for safe and application-specific drive solutions. Safe individual components alone, however, do not produce a safe overall application. Machine safety compliance begins in the planning stage. Therefore, the technicians and engineers of Kübler Service provide ample support for equipment manufacturers and operators.

Encoders for Functional Safety

The matter of functional safety is simplified by the certified encoders of the Sendix SIL family, which encompasses incremental and absolute as well as ATEX/IECEX encoders. Functional safety have become integral elements of mechanical engineering. In light of directive 2006/42/EC (Machinery Directive), MTTF values are also provided for standard Kübler encoders.

This allows the user to perform his own calculations according to EN ISO 13849-1.



Safety Modules

The reliable encoder evaluations of the Safety-M family encompass compact speed monitoring devices for simple applications as well as modularly expandable basic modules that can be connected to every higher-level controller by way of a gateway.

This allows for flexible safety release circuits with integrated reliable speed and position monitoring to be achieved for the purpose of creating simple machine safety. Technical safety solutions from Kübler meet high demands for safety and reliability.



Safety Services

Machine or system operators can be exposed to increased potential hazards. These can, however, be minimized through corresponding safety equipment and safety measures.

Safety Services from Kübler provide support throughout the entire life cycle of your machines/systems with special service packages tailored to your requirements.



Quick and Easy Safety-M compact SMC1, SMC2

Speed monitoring. The compact basic modules of the Safety-M compact series are complete speed monitors in a small design. The removable operating and diagnostics display (OLED) allows easy configuration. Integration into existing safety circuits and upgrading of old machines is possible through the secure inputs/outputs and integrated signal splitter.

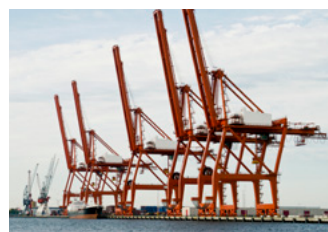
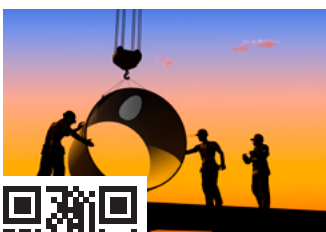


Characteristics	Your Benefits
Connection of incremental encoders (SinCos, TTL/RS422 and HTL/push-pull/proximity switch)	▶ This results in a versatility in drive safety functions
Integrated signal splitter	▶ No complex, external cable routing – simple routing to the controller/frequency inverter
Local diagnosis	▶ With status LED on the front panel and removable OLED touchscreen with plain language display
1 analog output 4 ... 20 mA	▶ Fast internal signal conversion of the speed into analog values

Applications

In order to guarantee safe interaction between man and machine, system and machine engineers are utilizing more and more safety technology. This results in new requirements and machine concepts. The compact base module of the Safety-M compact series impresses with critical functions and is easy to implement.

The modules are used in the following applications: machine and system engineering, cranes, steelworks, wind turbines, stage technology, and storage and conveyor technology.



Ethernet Transmission Slip Ring SR120

Three-chamber system. The SR120 slip ring is ideal for applications with higher transmission rates. The three-chamber system enables the simultaneous transmission of signal, load, data, and Ethernet. A variety of connection options and a rugged and modular design ensure flexibility and reliability. Proven contact technology ensures that the slip ring is particularly low-maintenance and durable.

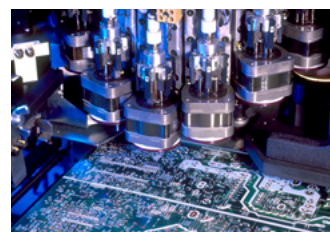


Characteristics	Your Benefits
Rugged: Aluminum or stainless steel housing, high protection level (IP64), high-quality seals	▶ Reliable in harsh environments, no penetration of liquids
Transmission of fieldbus and Ethernet	▶ Reliable through fail-safe transmission
Up to 20 channels (load and power), media flow in air or hydraulic models	▶ Ensures high variability and flexibility
Multitude of connector and cable connections available	▶ Quick and easy installation

Applications

Slip rings take over the rotating transmission of currents, signals, or data between stationary and rotating platforms. Slip rings must be reliable despite their exposure to harsh environments.

The SR120 slip ring is used in the following applications: industrial automation, filling systems, labelling machines, and sealing machines.



Rugged and Flexible Slip Ring SR160

Solutions. The SR160 slip ring is ideally suited for filling systems and labelling machines. Customizable thanks to the rugged modular design and a variety of connections. Innovative contact technology guarantees durability and maintenance-free use.



Characteristics

Rugged: Aluminum or stainless steel housing

High protection level (IP65), high-quality seals

Simultaneous transmission of load, signal, data, and Ethernet, media flow in air or hydraulic models

Multitude of connector and cable connections available

Your Benefits

▶ Reliable in harsh environments, resistant to chemical cleaning agents

▶ No penetration of liquids

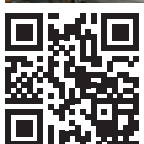
▶ Ensures high variability and flexibility

▶ Quick and easy installation

Applications

Slip rings take over the rotating transmission of currents, signals, or data between stationary and rotating platforms. Slip rings must be reliable despite their exposure to harsh environments.

The SR160 slip ring is suited for these applications: filling systems and labelling and sealing machines.



Powerful and Rugged Slip Ring SR250H

High current up to 80 A. The SR250H slip ring transmits loads up to 80 A, signals and data for powerful drives in parallel. The rugged modular design and a variety of connection options ensure flexibility and reliability. Innovative contact technology ensures that the slip ring is particularly low-maintenance and durable. Custom solutions are no problem for the SR250H – contact us!



Characteristics

Rugged stainless steel housing, high protection level (IP64), and high-quality seals

Load transmission up to 80 A

Parallel transmission of load, signal and data, media flow in air or hydraulic models

Multitude of connector and cable connections available

Designed for the highest adaptability

Your Benefits

▶ Reliable in harsh environments, resistant to chemical cleaning agents

▶ Optimum supply of powerful drives

▶ Ensures high variability and flexibility

▶ Quick and easy installation

▶ We create a solution specifically tailored to your needs

Applications

Slip rings take over the rotating transmission of currents, signals, or data between stationary and rotating platforms. Slip rings must be reliable despite their exposure to harsh environments.

The SR250H slip ring is ideally suited for these applications: filling systems, labelling machines, sealing machines, automatic revolving transfer machines, construction machinery, cranes.



Simple and Versatile Multifunctional Display / Control Devices 570T, 571T, 573T

Touchscreen. A benefit of these new multifunctional devices is their user friendliness using simple plain language programming with resistive touchscreen. All metering, measuring and control tasks, such as pulse sensing for quantity, position, frequency, and time (571T). SSI signals for position measurement/control (570T) as well as processing of standard signal inputs and transmitters (573T).



Characteristics	Your Benefits
Plain language programming, touchscreen (color switching), no instruction manual required	▶ Easy and quick start-up – saves costs and time
Four fast transistor and/or two relay switch outputs	▶ Flexible programming of switching states, adapted to your application
High analog output resolution of up to 16 bit	▶ Preparation of measured values as standard signal inputs for further processing
Available RS232 interface	▶ Support for the commissioning or control of your application
Modular design and order number (switch outputs, analog output, and/or interface)	▶ The device only includes the necessary functions

Applications

The displays monitor and control limits or transmit scaled measured values. For example: valve control for gas turbines, measurement of the total length of multilevel crane systems, monitoring of lock gates, blade adjustment for turbines, pitch adjustment for wind turbines, positioning of processing

machines (wood, metal, glass), ice surface processing machines, level indicators in tank systems. Flow monitoring in production systems, dwell time of parts in ovens, for example, beyond the frequency measurement (reciprocal), speed measurement from the run time.



Battery Powered Pulse and Time Preset Counter Type 901

8-year service life. The redesigned 901 pulse preset counter was expanded with the time preset counter function, which makes it perfect for electro-mechanical preset counters. Whether the wide-range counting and reset input of 12 ... 250 AC/DC (electrically isolated) or the new version with NPN inputs, this device uses internal lithium cells to autonomously record, display and evaluate pulses or times.

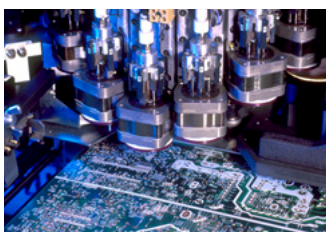


Characteristics	Your Benefits
Addition and subtraction counters	▶ Displays quantities produced or times as well as residual quantities and remaining times
Now with an expanded temperature range from -20°C ... +65°C	▶ For use in even the harshest industrial environments
Wide-range counting and reset input	▶ A replacement for meters with various voltages
Programmable time units, decimal point	▶ Records in the desired unit
Simplest presets and operating interface	▶ Can be installed and operated without previous experience

Applications

Recording and controlling quantities and production processes (e.g., number of press cuts or cuts) on production machines (e.g., row counters for knitting machines), packaging units and

operating hours (e.g., monitoring of service times for filter or oil changes), throughput times (e.g., dwell times in hardening or baking ovens), clocks (e.g., for pasture fences, autonomous).



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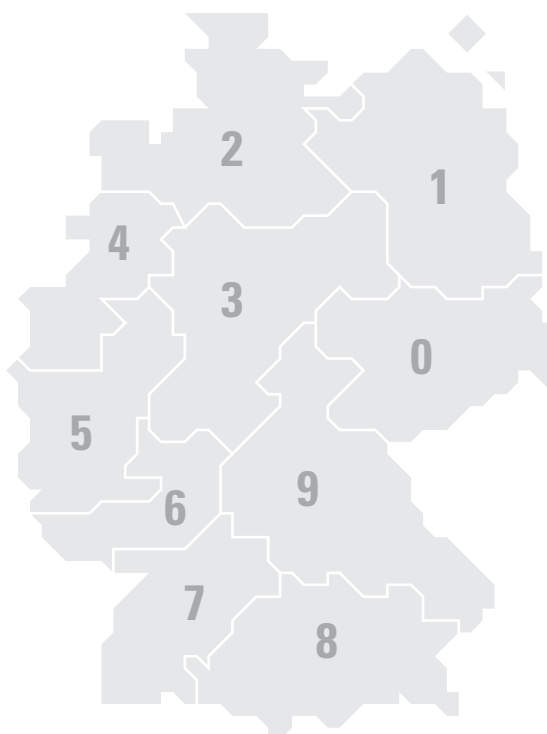
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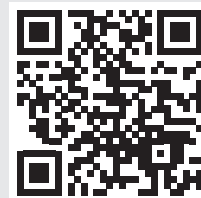
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