





## Kübler impulses for lift systems. Smooth-running and safe.

#### Measuring systems

The mechanical loading experienced by the encoder within the lift mechanics is quite considerable. And here the prefabricated LM lift systems prove their worth. Belt pulleys with duplex bearings, smooth-running toothed belts and a vibration-resistant encoder mounting fixture guarantee very quiet, smooth operation of the system.

#### Encoders

Sendix encoders from Kübler control the rotational speed and drive position, offer accurate shaft copying and monitor the speed limiters. Thus, they contribute essentially to the long service life and low maintenance requirements of lifts.

#### Counting technology

An extensive choice of trip counters and hour meters allows for the precise and highly reliable definition of service intervals.











#### **Encoders for Gearless Drives**



Encoders for Gearless Drives	
With new mounting solution	P. 4
Lift Systems for Shaft-copying	
<ul> <li>Measuring system for shaft-copying</li> <li>Measuring system LM2</li> <li>Measuring system LM3</li> <li>Measuring system LM5</li> </ul>	P. 6 P. 8 P. 10 P. 12
Solutions for Functional Safety	
· Systems and components for Functional Safety	P. 14
Kübler Encoders	
Incremental encoders, absolute encoders     Kübler Counting Technology	P. 16
Multifunctional counters, trip counters and hour-run meters     Solutions and Accessories for Retrofitting	P. 18
Robust bearing unit, fixing technology, cables and connectors	P. 19

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.

The Kübler Group belongs today to the leading specialists worldwide

# **Encoders for gearless drives with new mounting solution**

Kübler developed an innovative solution for mounting the absolute singleturn encoders on gearless drives.

Its great advantage with respect to the mounting versions used until now lies in its easy and fast mounting, thanks to an innovative torque stop. A set button allowing a fast start-up and the open absolute BiSS-C interface – including an incremental SinCos track – are further highlights of these encoders.

This solution offers the manufacturers of gearless lifts new possibilities for reducing notably the assembly work, as well in production as in operation.



#### www.kuebler.com/sendix-gearless





#### Sendix absolute 5873

#### Easy mounting on gearless drives

With SinCos track, tapered shaft and set key

- Tapered shaft for a high-accuracy direct coupling to the gearless drive
- Singleturn resolution up to max. 17 bits with BiSS-C or SSI interface
- Optional zero point setting button for an easy start-up
- SinCos incremental track with 2048 pulses/revolution

SET button for a fast start-up

Tapered shaft fastened on the drive shaft by a central tightening screw

**IBISS**INTERFACE

Quick assembly thanks to the innovative torque stop

Tangential cable outlet for optimal connection

#### BiSS-C interface

- · Easy integration with the assistance of the Kübler experts team
- The existing standard control hardware can be used
- Open Source
- · Real-time feedback of position and speed
- 100 times faster than standard field bus systems
- · Fully digital and bidirectional

The Open Source BiSS-C (Bidirectional/Serial/Synchronous) interface is based on a protocol for achieving a real-time interface for a digital, serial and secured communication between a controller and sensors and actuators.

The BiSS-C protocol has been designed for industrial applications, in which transmission speeds, safety (CRC), flexibility and minimized implementation work are required.

Weblink: http://www.kuebler.com/biss-c-interface

#### **BiSS-C** features

- Hardware compatible with the SSI standard (Synchronous Serial Interface)
- Cyclic read-out of sensor data up to 64 bits per slave
- Isochronous, real-time capable data transmission
- · Bidirectional communication using two unidirectional links
- · Point-to-point or multislave networks
- Maximum user data rate, driver and line-dependent transmission values of e.g. 10 MHz up to 100 m
- CRC-secured communication
- Continuous uninterrupted data transmission thanks to the switching of operating modes
- · Control of actuators on the bus during sensor data transmission

## Lift systems for shaft-copying

Safety and silence in motion with the LM mechanical lift systems from Kübler.

Lift systems have to achieve a fine balance between many differing demands: key amongst these are reliability and a very high level of safety, not forgetting at the same time a long service life, highest profitability and tranquil smooth-running.

#### Application areas

- · Passenger lifts
- · Goods lifts
- · Automatic storage systems

#### Complete systems

- · Quick, easy mounting
- · With accessories all from one source

#### Reliable

- · Rugged construction
- Reduced load on encoder bearings due to separate belt pulley bearings
- · Non-slip

#### Minimal noise generation

- · Smooth-running toothed belt
- · Vibration-free operation

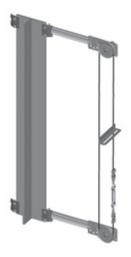
#### **Guided-belt systems LM2 / LM3**

With the guided-belt system, the encoder mounting fixture with the measuring wheels is located onto the lift car.

#### **Circumferential system LM5**

With the circumferential system, an encoder mounting fixture with measuring wheel is located at both the top and the bottom of the lift shaft. The encoder can be mounted either at the top or at the bottom as preferred.







LM2, LM3 and LM5 are the names of three – ready-made, pre-assembled – Kübler complete systems for shaft-copying, which make a significant contribution to increased safety and reliability in lift technology, thanks to their innovative bearing design. And which also ensure considerably more "peace and quiet in the shaft" – thanks to an innovative vibration-resistant encoder mounting fixture and a smooth-running toothed belt.

They thus offer quiet, smooth-running handling characteristics, which do justice to the lift's claim to be the calling card of the building.

LM2, LM3 and LM5 - three different systems for different applications.

## LM2 - rugged

The rugged solution

- · Guided-belt shaft copying
- · Up to heights of 120 m
- $\cdot$   $\,$  Up to 6 m/sec lift car speed

#### LM3 - compact

The compact solution

- · Guided-belt shaft copying
- · Up to heights of 53 m
- $\cdot$   $\,$  Up to 1.6 m/sec lift car speed
- · For smaller lifts



#### LM5 - flexible

The flexible solution

- · Circumferential shaft copying
- · Up to heights of 120 m
- · Up to 6 m/sec lift car speed
- Suitable for mounting either at the top or at the bottom



# LM2: Guided-belt shaft copying for heights up to 120 m

 $LM2 is a particularly rugged measuring system for shaft-copying up to heights of 120 \, m, with a complete mechanical kit in proven toothed belt technology.$ 

A smooth-running toothed belt and a vibration-resistant encoder mounting fixture ensure quiet operation. The belt pulley benefits from separate bearing supports in the mounting fixture, so protecting the installed encoder from mechanical overloading.

#### **Encoder mounting fixture LM2**

Encoder mounting fixture with measuring wheels for fixing at the lift car

- · Belt pulley with duplex bearings
- · Tensioning rollers with belt guide
- Separation of bearing load and sensor technology ensure high level of protection for the installed encoder
- · Bracket with lateral reinforcement
- · Smooth-running toothed-belt ensures extremely quiet operation

## Complete encoder mounting fixture Comprising:

- Encoder mounting fixture with mounted measuring wheel
- · Belt guide
- · Belt fixing and tensioning set
- Screws and other small components

Order-No 8.LM2.01



#### Suitable encoders:

Incremental encoder:
 Calculation of pulse rate::

 $\frac{300 \text{ mm}}{\text{Resolution,e.g. } 0.5 \text{ mm}} = 600$ 

Absolute encoders: SSI: CANopen:

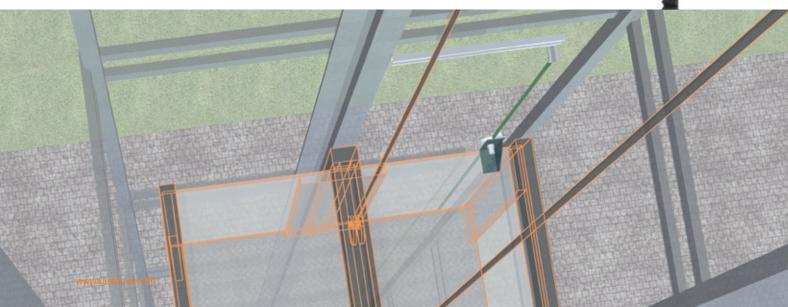


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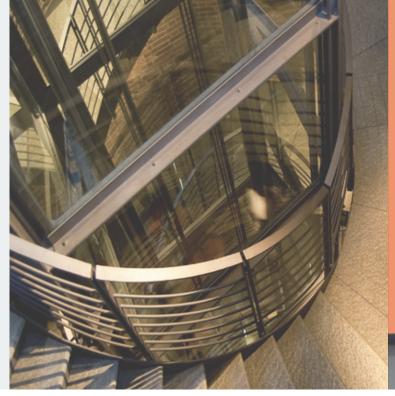
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\* see catalogue

"Position and Motion Sensors"





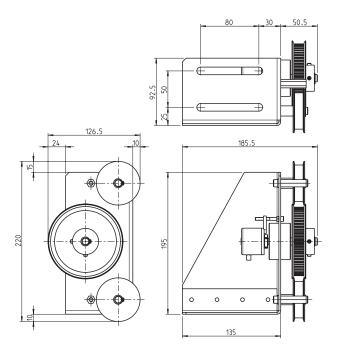




#### **Technical data**

Resolution in the shaft depends on the resolution of the encoder

e.q.	Incremental encoder with	3000 PPR = 0.1 mm	
0.9.	Absolute encoder	12 x 12 bit < 0.1 mm	
Lift car speed		max. 6 m/s	
Max. height of lift		120 m	
Effective circumference of belt pulley		300 mm	
Working temperature range		-20° +85°C	



#### **Fixing kit**



Complete kit consists of: C-Rails, 700 mm, brackets, screws and other small components

Order-No **8.BLM2.01** 

#### **Toothed belt**

- · Width 10 mm
- · Polyurethane with single parallel steel cords
- · Low belt-stretch / high resistance to abrasive wear
- · Resistant to the effects of UV radiation
- · Maintenance-free / resistant to ageing
- $\cdot~$  Temperature range -10°C ... +80°C
- Calculation of the required length of toothed belt =
   Lift height + approx. 5 m (depending on the distance between top and bottom fixing)



#### Order-No **05.ZAR1.XXX**

XXX = Length in metres, Standard delivery lengths: 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100 and 120 m (other lengths on request)

#### **Guard plate**



Protects the mechanics from external influences as well as safeguarding against accidental contact.

Order-No **8.0000.7000.0050** 

# LM3: Guided-belt shaft copying for heights up to 53 m

LM3 is a compact measuring system for shaft-copying up to heights of 53 m, with complete mechanical kit in proven toothed belt technology.

A smooth-running toothed belt and a vibration-resistant encoder mounting fixture ensure quiet operation. The belt pulley can be mounted directly on the encoder shaft. With the guided-belt system, the encoder mounting fixture and the measuring wheels are located onto the lift car.

## **Encoder mounting fixture LM3**

Simple encoder mounting fixture with measuring wheel, for fixing on the lift car:

- · Tensioning rollers with belt guide
- Smooth-running toothed-belt ensures extremely quiet operation
- · Quick, easy mounting

## Complete encoder mounting fixture Comprising:

- Encoder mounting fixture with mounted measuring wheel
- · Belt guide
- $\cdot\;$  Belt fixing and tensioning set
- · Screws and other small components

Order-No 8.LM3.01



#### Suitable encoders:

Incremental encoder:
 Calculation of pulse rate:

 $\frac{300 \text{ mm}}{\text{Resolution, e.g. 0.5 mm}} = 600$ 

Absolute encoders:
 SSI:
 CANopen / CANLift:

CANOpen



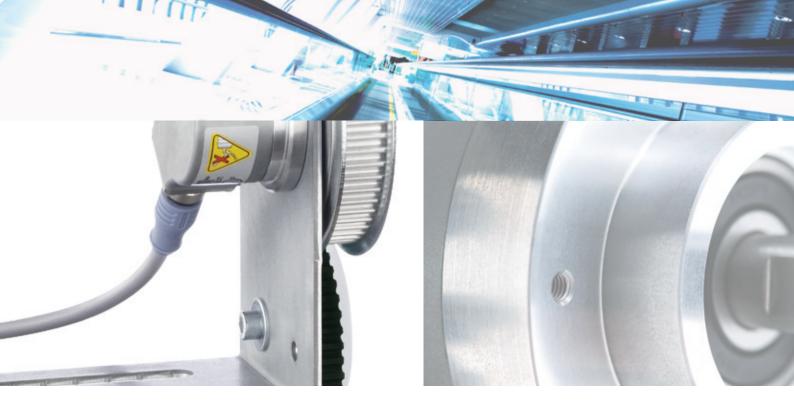
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Order-No 8.5863.12XX.XXXX \*

Order-No **8.5868.12XX.XXX** 

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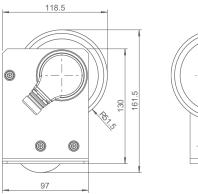
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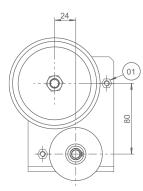


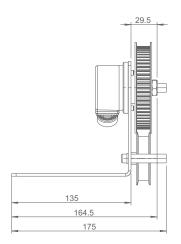
#### **Technical data**

Resolution in the shaft depends on the resolution of the encoder

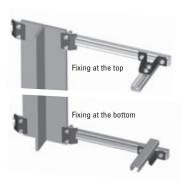
e.g.	Incremental encoder with Absolute encoder	3000 PPR = 0.1 mm 12 x 12 bit < 0.1 mm	
Lift car speed		max. 1.6 m/s	
Max. height of lift		53 m	
Effective circumference of belt pulley		300 mm	
Working temperature range		-20° +85°C	







#### **Fixing kit**



Complete kit consists of: C-Rails, 700 mm, brackets, screws and other small components

Order-No **8.BLM2.01** 

#### **Toothed belt**

- · Width 10 mm
- · Polyurethane with single parallel steel cords
- · Low belt-stretch / high resistance to abrasive wear
- Resistant to the effects of UV radiation
- Maintenance-free / resistant to ageing
- Temperature range -10°C ... +80°C
- Calculation of the required length of toothed belt = Lift height + approx. 5 m (depending on the distance between top and bottom fixing)



## Order-No **05.ZAR1.XXX**

XXX = Length in metres, Standard delivery lengths: 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100 and 120 m (other lengths on request)

## LM5: Circumferential shaft copying for heights up to 120 m

LM5 is a flexible measuring system for shaft-copying, with complete mechanical kit in proven toothed belt technology.

A smooth-running toothed belt and a vibration-resistant encoder mounting fixture ensure quiet operation. The belt pulley benefits from separate bearing supports in the mounting fixture, so protecting the installed encoder from mechanical overloading. With the circumferential system, an encoder mounting fixture with measuring wheel is located at both the top and the bottom of the lift shaft.

The encoder can be mounted either at the top or at the bottom as preferred.

## **Encoder mounting fixture LM5**

Encoder mounting fixture with measuring wheels for fixing in the lift shaft:

- Belt pulley with duplex bearings
- Mounted hollow-shaft encoder
- Separation of bearing load and sensor technology ensures high level of protection for the installed encoder
- Smooth-running toothed-belt ensures extremely quiet operation

#### Complete encoder mounting fixture Comprising:

- · 2 x encoder mounting fixture with mounted measuring wheels
- Belt guide
- Follower bracket set for toothed belt
- Belt fixing and tensioning set
- Screws and other small components

Order-No **8.LM5.01** 

#### Suitable encoders:

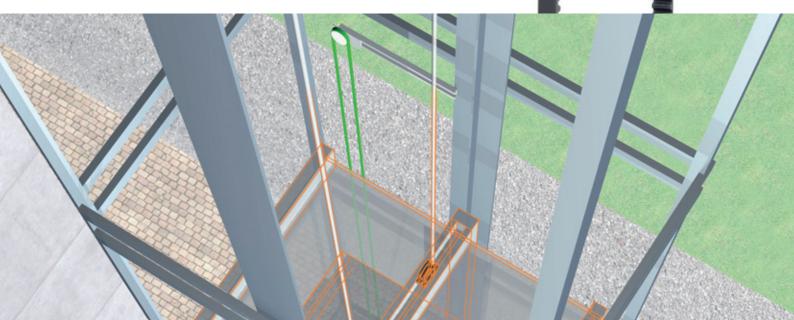
Incremental encoder: Calculation of pulse rate:

300 mm = 600 Resolution, e.g. 0.5 mm

Absolute encoders: CANopen:

CANOPER





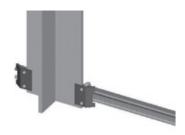


#### **Technical data**

Resolution in the shaft depends on the resolution of the encoder

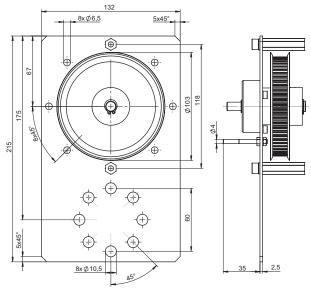
e.g.	Incremental encoder with Absolute encoder	3000 PPR = 0.1 mm 12 x 12 bit < 0.1 mm	
Lift car speed		max. 6 m/s	
Max. height of lift		120 m	
Effective circumference of belt pulley		300 mm	
Working temperature range		-20° +85°C	

#### **Fixing kit**



Complete kit consists of 2 x C-Rails, 700 mm long, 4 x carrier clamps

Order-No **8.BLM5.01** 



# Ø36

#### **Toothed belt**

- · Width 10 mm
- · Polyurethane with single parallel steel cords
- · Low belt-stretch / high resistance to abrasive wear
- Resistant to the effects of UV radiation
- Maintenance-free / resistant to ageing
- Temperature range -10°C ... +80°C
- Calculation of the required length of toothed belt = Lift height + approx. 5 m (depending on the distance between top and bottom fixing)



#### Order-No 05.ZAR1.XXX

XXX = Length in metres, Standard delivery lengths: 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100 and 120 m (other lengths on request)

# **Solutions for Functional Safety**

Just safe single components do not ensure a safe global application. Only the optimal combination of safety sensors and safety monitoring modules brings about reliable solutions, which will meet the necessary safety requirements.

The optimal combination of Kübler's Safety-M safety control modules and Sendix SIL encoders allows an easy implementation of a safe drive monitoring system.

## Safe monitoring of speed, position and ramp

Achievable safety functions up to SIL3 / PLe / Cat. 4			
SSX:	Safe Stop 1 or 2	Monitoring of the braking ramp and switch-off of the motor after standstill (SS1) or monitoring of the braking ramp and SOS after standstill (SS2). Corresponds to Stop Category 1 or 2 according to DIN EN 60204-1.	
SOS:	Safe Operating Stop	Monitoring of the standstill of the active motor.	
SLA:	Safely-Limited Acceleration	Monitoring of an acceleration limit value.	
SLS:	Safely-Limited Speed	Monitoring of a speed limit value.	
SLT:	Safely-Limited Torque	Monitoring of a torque / force limit value.	
SLP:	Safely-Limited Position	The exceeding of a position limit value is monitored.	
SEL:	Safe Emergency Limit	Safe monitoring of the minimum and maximum position or of the allowed position range. $ \\$	
SLI:	Safely-Limited Increment	The respect of a specific step value during the movements is monitored.	
SDI:	Safe Direction	$\label{eq:monotonic} \mbox{Monitoring of the unintended direction of movement of the motor.}$	
SBC:	Safe Brake Control	Safe control and monitoring of an external brake.	
SCA:	Safe Cam	A safe output signal is generated when the motor position is in a specified range.	
SSM:	Safe Speed Monitor	A safe output signal is generated when the motor speed is lower than a specified value.	
SAR:	Safe Acceleration Range	Monitoring of the respect of the acceleration of the motor within specified limit values.	
ECS:	Encoder Status	Error status of the speed / position sensor.	
PDM:	Position Deviation Muting	Muting of the deviation monitoring in case of 2-sensor operation.	





#### A complete encoder family for Functional Safety

#### **Incremental SinCos encoder**

- Sendix 5814SIL (shaft) / Sendix 5834SIL (hollow shaft)
- Sendix 7014SIL (shaft) "flameproof-enclosure", ATEX

#### Absolute Singleturn SSI / SinCos encoder

- Sendix 5853SIL (shaft) / Sendix 5873SIL (hollow shaft)
- Sendix 7053SIL (shaft) "flameproof-enclosure", ATEX

#### Absolute Multiturn SSI / SinCos encoder

- Sendix 5863SIL (shaft) / Sendix 5883SIL (hollow shaft)
- Sendix 7063SIL (shaft) "flameproof-enclosure", ATEX

In order to achieve safe incremental information with the encoder, the controller must monitor the validity of the analogue, 90° phaseshifted sine/cosine signals with the help of the function:  $\sin^2 + \cos^2 = 1$ .

In order to obtain safe information with the encoder regarding the absolute position, the controller counts the incremental pulses and compares the result with the absolute positions also provided by the encoder.

A 100% reliable mechanical connection is required for a safe function in the applications. Suitably sturdy fixing elements can help eliminate the risk of faults.

#### A complete family of safety drive controllers: Safety-M modules

Safety-MS1: Speed monitoring for 1 axis

Safety-MSP1: Speed and position monitoring for 1 axis

Safety-MS2: Speed monitoring for 2 axes

Safety-MSP2: Speed and position monitoring for 2 axes

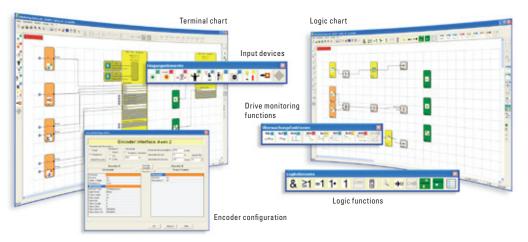
BM:

Field bus extension module for

Profinet, Profibus, EtherCAT and CANopen

Safe motion control for speed or position monitoring in multiaxes operation - the Safety-M modules allow you to implement your safety technique tasks in compliance with the Machinery Directive 2006/42/EC.

Independently from the drive technology, the Safety-M modules offer all functions according to EN 61800-5-2 for drive monitoring and, in addition, practice-oriented function extensions.



The Safe PLC software offers user-friendly graphic programming with function chart and block functions. A parameter editor allows simple parameterising by the end user. It could not be easier: the software generates a specific report for validation purposes.

## Kübler encoder solutions for lift technology

For lifts with a long service life and low maintenance.

Encoders control the rotational speed, drive position and accurate shaft copying and monitor the speed limiters. Sendix encoders from Kübler offer an appropriate, tailor-made technology for these key functions — with proven, extremely rugged quality. Among their most important features are the long service life of the devices - due to their high resistance to shock and vibration and their wide temperature range from -40°C up to +90°C. Thanks to sturdy bearings, short-circuit proof outputs and reverse polarity protection, they are not susceptible to damage during installation.





#### **Controlling of speed and position**

#### Sendix incremental 5000 / 5020

- · Extremely compact housing with 50 mm outside diameter
- · Flange compatible with all 58 mm standard flanges
- · Resolution up to 5,000 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. 12,000 rpm
- · Load capacity radial 80 N

#### For monitoring of speed limiters

#### Miniature incremental encoders 2400 / 2420

- · Only 24 mm outside diameter, high performance
- · Wide temperature range (-20°C ... +85 °C)
- · Sturdy cable outlet
- · Temperature compensation
- · Broad input voltage range (5 ... 24 V or 8 ... 30 V)
- · Highly flexible cable (can be used with drag chains at 0°C ... 70°C)
- · Low power consumption despite high scanning rate
- · Short-circuit proof

#### Lift drives with geared motors

Cost-effective incremental standard encoders from  $\emptyset$  58 mm up to  $\emptyset$  100 mm (also available for retrofitting on handwheels)

- Through hollow shaft up to 42 mm with only 49 mm clearance, and 100 mm in size
- $\cdot$  Through hollow shaft up to 28 mm for 58 mm size
- · Simple to install, simple to replace
- · Always the right encoder
- · Long service life, durable unaffected by rough installation
- Plug & Play: cable with SUB-D connector and corresponding pin layout for all common controllers can be supplied as standard
- Up to 5,000 ppr
- · RS422 (TTL), push-pull (HTL) and SinCos
- · Many fixing options
- Short-circuit proof outputs, reverse connection protection for power supply







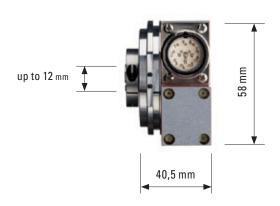






## Absolute shaft copying / Lift car positioning

- · Absolute technology eliminates the need for reference runs requires no additional reference sensors
- · Multiturn encoder with additional incremental track for simultaneous speed control and positioning with just a single device. Save on installation time and money.
- · Ultra flat hollow shaft versions for lift systems with limited installation space - only 40.5 mm clearance required
- Through hollow shaft for a variety of mounting variants.
- Sturdy bearing construction in Safety Lock™ Design for long service life.
- Zero point setting by means of a control input or a SET key for quick and comfortable start-up on site.



#### Sendix absolute with CANopen Lift interface

CANopen Lift interface (profile DS 417 V1.1) for particularly simple implementation of the lift control with suitable special functions such as:

- · Car position unit
- 2 virtual devices: for the position in absolute measuring steps and the position as absolute displacement information in mm
- · Lift number programmable
- · Independent setting of the node address in conjunction with the CAN identifiers
- · Factor for speed calculation (e.g. measuring wheel circumference)
- Integration factor for speed value from 1...32
- 2 working areas with 2 upper and lower limits and the corresponding output states
- · Extended error management
- PDO Mapping of variables in the memory, whether position, speed, acceleration or working area - the user decides, which information is available in real-time
- Node address and baud rate can be adjusted by means of rotary / DIP switches or through software
- Also directly with a SUB-D connector for the easiest connection possible to the control
- Also available with an additional TTL incremental track. This allows achieving simultaneously, with one single encoder, positioning via the CAN network and a direct rotary speed feedback via the incremental track.

## **Counting technology**

Kübler offers an extensive range of trip counters and hour meters for the precise and highly reliable definition of service intervals. The combination of hour meter and trip counter allows a very reliable definition of these periods.

The comprehensive choice of counters includes extremely tamper-proof, compact electromechanical counters, as well as economical LCD counters – also with 230 VAC inputs for direct connection.



#### The universal preset counter Codix 923/924

The ready-to-go control and display solution for pulses, time, position and frequency or as a service counter with total sum display.

Special designs can be used for monitoring and positioning of shaft-copying systems.



#### **Trip counters and hour meters**

Electromechanical trip counters and hour meters. Panel cut-out or DIN rail mount. 100% duty-cycle.

Very economical way of upgrading all lift systems, long service life thanks to high shock resistance and IP 65 protection.



#### **Electronic multifunction devices**

Programmable as:

pulse counter, timer, position display, speed indication, service counter

Programmable as dual function counters: pulses / time, pulses / pulses, time / time, pulses / frequency





#### **Electromechanical combination meters**

HC 77 / SHC 77: trip counters and hour meters for DIN rails in one device. 100% duty-cycle, rugged design.

**HW 66:** hours run and energy consumption for correct costing and billing. Remote readout possible.



## **Solutions and accessories for retrofitting**

Older lift systems with belt shaft copying can easily be retrofitted and additionally protected with the new robust bearing unit. The bearing unit separates the bearing load from the sensor technology and thus makes a significant contribution to lengthening the service life of the lift. It provides the ideal solution, where strong forces exert pressure on the shafts - for example when belts are under high tension. The robust bearing unit is suitable for all Sendix 50xx and 58xx series encoders.





#### Robust bearing unit

Separation of bearing load and sensor component with belt shaft copying:

- Simple to upgrade and retrofit, no mechanical adaptation required
- Long service life, durable unaffected by rough installation
- Versatile
- · Dimensionally compatible with all Sendix encoders of series 50XX and 58XX
- · Quick and simple retrofitting to increase significantly the maximum bearing load
- Versions for retrofitting of shaft encoders
- Versions for hollow shaft encoders, for a particularly reduced mounting depth



#### **Cables and connectors**

#### Plug & Play:

Cable for all common connectors and controllers with corresponding PIN layout can be supplied as standard.

#### **Shaft extension**

Upgrading encoders with handwheels

- · Simple shaft extension for the handwheels
- Option to mount the encoder behind the handwheel
- Reduction of the shaft diameter, enabling use of a standard encoder



#### Fixing technology

Wide-ranging fixing technology ensures quick easy installation and a long service life.















**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 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:



Kübler GmbH, Germany +49 7720 3903-35 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. »

## 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

#### Customer demands

- Long service life
- High-performance product
- Simple installation and maintenance
- System and process quality
- · Optimised investment costs



- · Optimal sensor technology
- Optimal product adaptation
- · Optimal integration

- · Kübler competency in methodology and project management
- · Reduction in customer R&D
- · Combination of Customer and Kübler Expertise
- · Speeding up of the development process

- Complete systems
- · Engineering Service
- Logistics

#### The 4 phases of the Kübler Design System

#### Analysis, Demands

#### • Definition of the requirements

- · Product requirements
- Timetable
- Target costs

#### Design

#### Technology Functions

• Performance characteristics

#### Prototype, Test

- · Quickly realized prototype and/or specific customer drawing
- . Testing of the prototype in the application
- Support by Kuebler application team during test phase
- Customer approval

- · Implementation of production and quality processes
- · Logistics/ packaging
- Ongoing quality controls
- Continuous improvement (Kaizen)



## **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

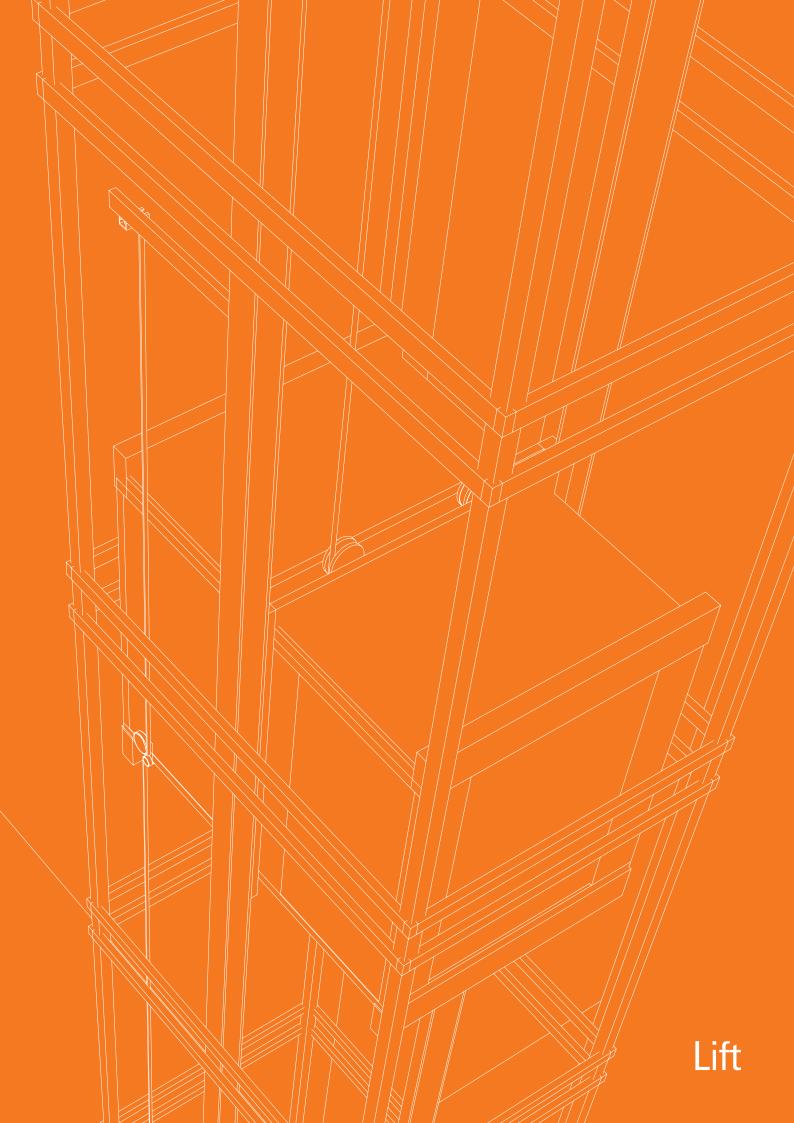


#### **Transmission Technology**

- · Slip rings
- · Fibre Optic Modules
- · Cables, Connectors and Cordsets



Order-No. German R.600.948 



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