



SOLUTIONS FOR MOBILE AUTOMATION

ENCODERS, DRAW-WIRE ENCODERS
INCLINOMETERS, SLIP RINGS
COUNTERS AND PROCESS DEVICES

Solutions for mobile automation

Mobile automation is more diverse than any other industry. There are various requirements for the sensors due to the numerous applications. For many years, Kübler has offered a broad portfolio of encoders, draw-wire encoders, inclinometers as well as slip rings suitable for transmitting loads, signals and data. Every product stands for premium quality, robustness and a long service life. We are also happy to take on individual challenges and implement modifications and special solutions quickly and easily. With us, you will find the right solution for your application.



Contents

Application examples

Fire trucks / Ladder trucks / Rescue platforms	4
Automatic guided vehicles	6
Agricultural and forestry machinery	10
Construction machinery / Concrete pumps	12
Working platforms	14
Mobile cranes	16

Products for Mobile Automation

Encoders	18
Inclinometers	20
Slip rings	21
Draw-wire encoders	22
Counters and process devices	25

Company

Product portfolio – Made in Germany	26
Kübler Service for worldwide planning reliability	27

Fire trucks / Ladder trucks / Rescue platforms

Every minute counts more crucially in the deployment of rescue vehicles or municipal vehicles more than in most other fields of mobile automation. Sensors play a decisive role here. Kübler encoders, draw-wire encoders, inclinometers as well as slip rings ensure a permanent and error-free use of your vehicles. Our products stand for sturdiness as well as durability and have been used for many years in countless applications of mobile automation for positioning, angle detection and transmission.

Ladder rotation / Ladder length ①

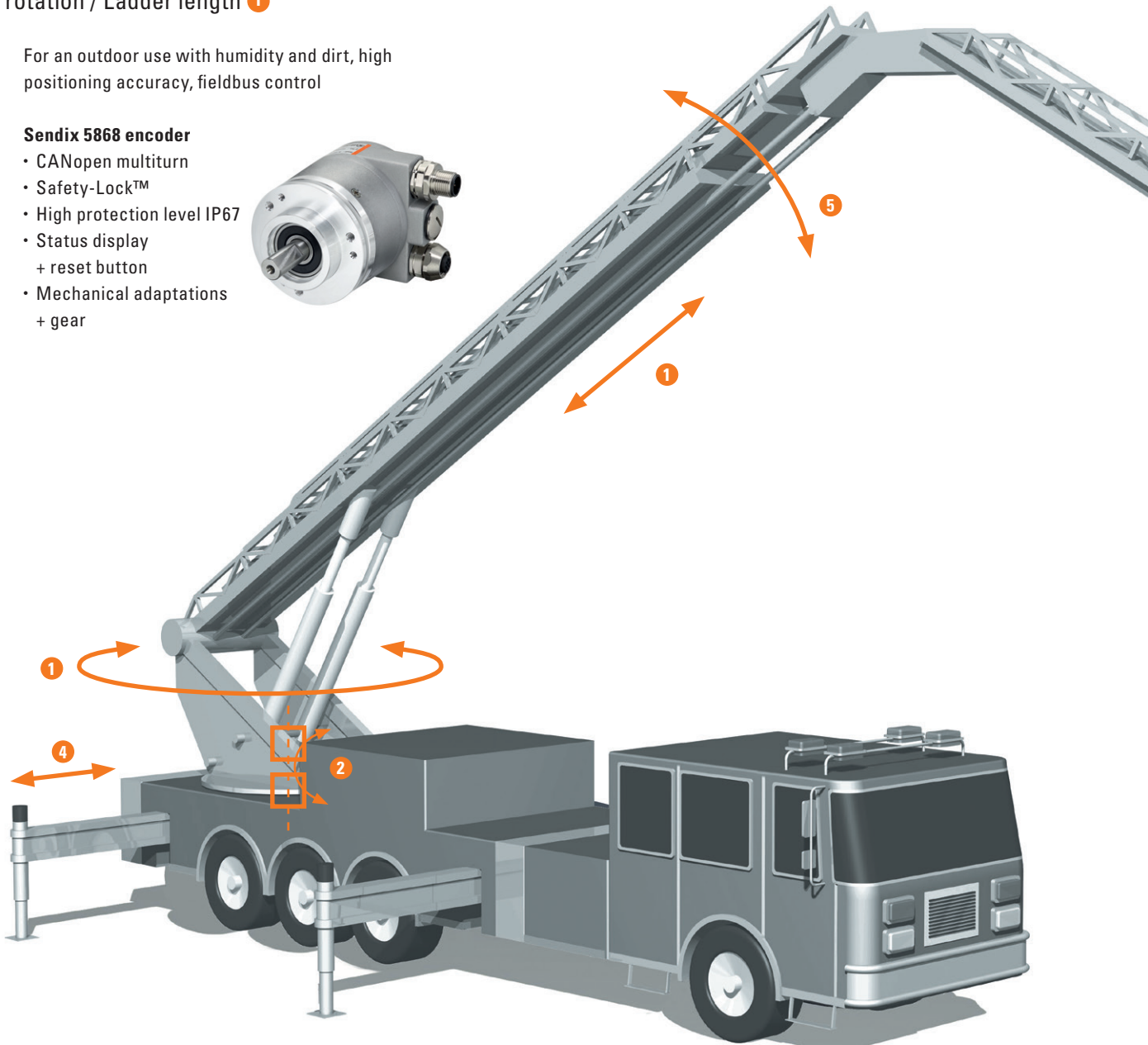


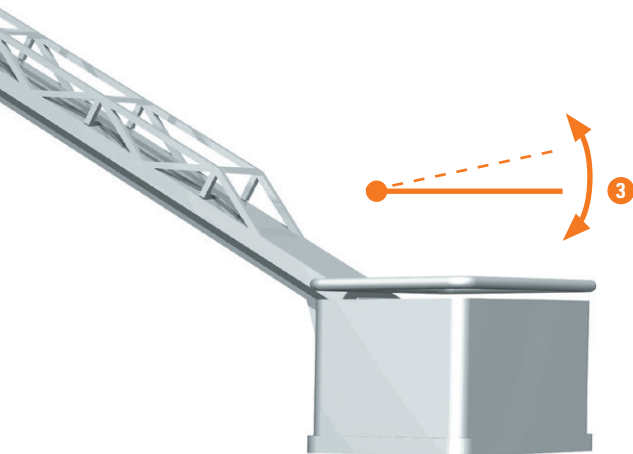
For an outdoor use with humidity and dirt, high positioning accuracy, fieldbus control



Sendix 5868 encoder

- CANopen multiturn
- Safety-Lock™
- High protection level IP67
- Status display + reset button
- Mechanical adaptations + gear





Data / load transmission 2



Transmission of load, signal and fieldbus communication from the undercarriage to the rotary platform, additionally with media lead-through in air or hydraulic variant

Slip ring SR160

- Robust: aluminum or stainless steel housing
- Transmission of up to 30 channels (load, data, signal, fieldbus or Ethernet)
- Max. load current 50 A
- High protection level IP65, high-quality seals



Horizontal basket position 3



Dynamic measurement for the correction of the horizontal operator basket position, inclinometer with high IP protection level and stable measuring value throughout time and temperature

Inclinometer IN71

- Analog interface
- High protection level IP69k
- 1- and 2-axis measurement



Leg position 4



Linear measurement of the stroke up to 2 m, accurate speed and position with a compact size

Miniature draw-wire encoders

A40 / A41

- Analog output
- Measuring length 2 m



Ladder elevation angle 5



For an outdoor use with humidity for absolute angle measurement with fieldbus control, robust encoder requiring little space

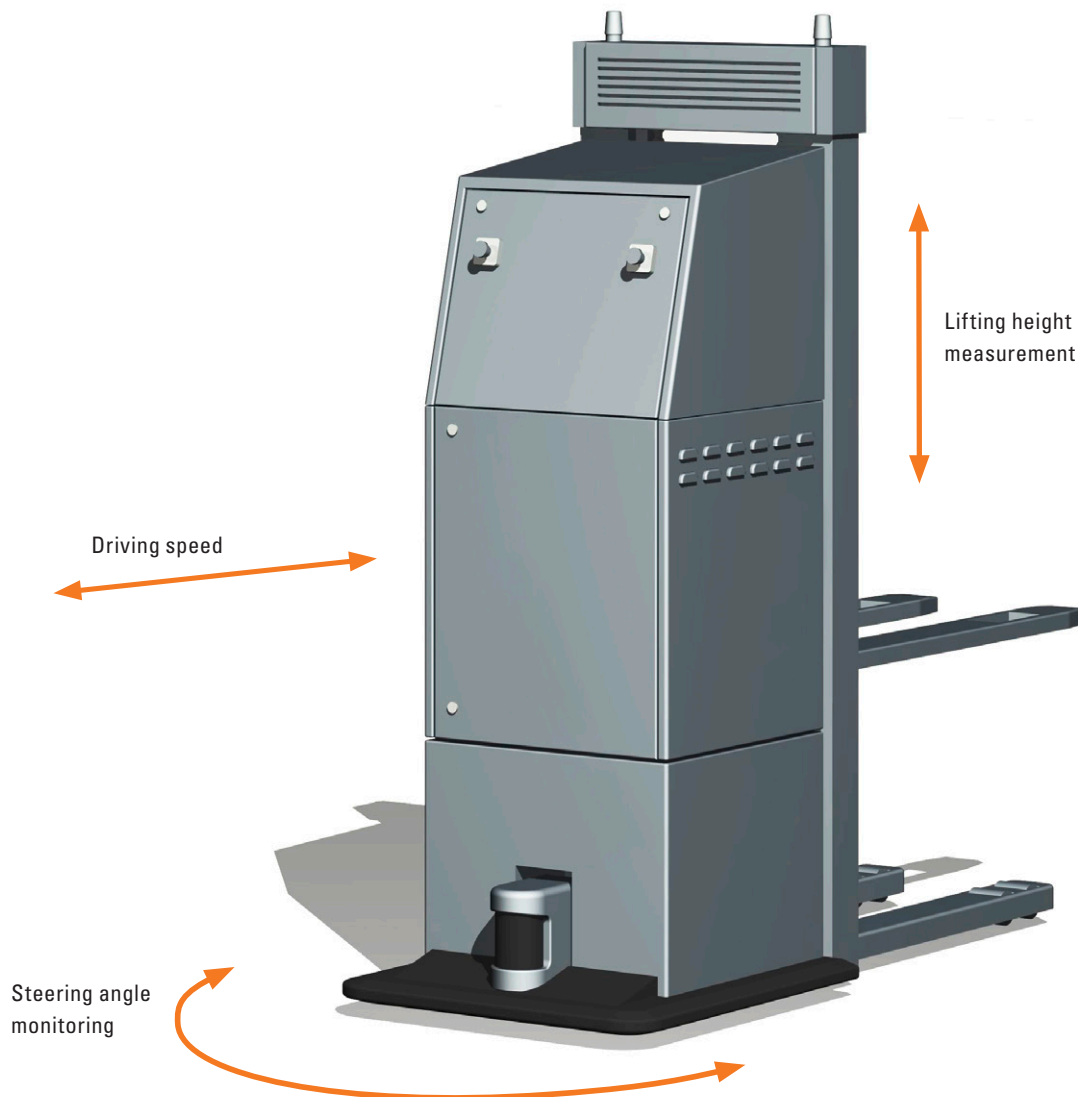
Sendix M36 encoders

- ø 36 mm size
- CANopen interface
- Magnetic scanning
- Safety-Lockplus™
- High protection level IP69k
- Status display



Automatic guided vehicles

Materials handling vehicles, also called automatic guided vehicles (AGV), have been used successfully in modern logistics centers for many years – a growing trend. Goods and materials of different loads are transported to defined locations, stacked and either put into storage or removed. Logistics centers are only made more efficient if automatic guided vehicles are steered precisely. Sensors play an essential role here. Kübler encoders are successfully used here for speed detection and precise steering angle monitoring. Draw-wire encoders ensure an exact position of the load carrier and thus for a precise measuring of the lift height. Precise and reliable sensors result in an optimal travel speed and flawless storage and retrieval of goods.



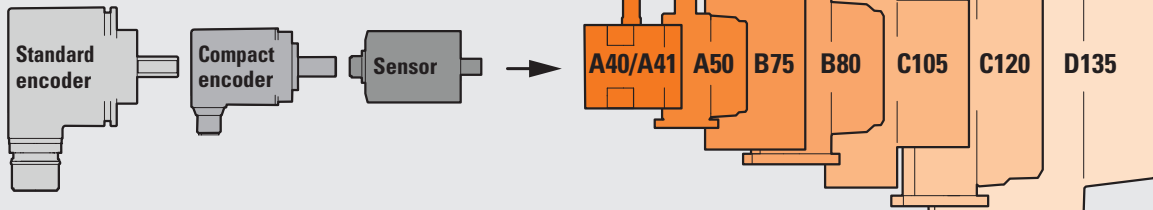
DRAW WIRE ENCODERS COMPACT & PERFORMANCE

Encoder / Sensor

Incremental
Analog
SSI
CANopen
SAE J1939
IO-Link
PROFIBUS DP
EtherCAT
PROFINET IO
EtherNet/IP
Modbus

Incremental
Analog
SSI
CANopen
SAE J1939
IO-Link

Analog



Draw wire mechanics

Lifting height measurement



Linear measurement up to 3 or 6 m, absolute value acquisition via fieldbus, high accuracy

Draw-wire encoder A41

- Measuring length 2 m
- CANopen interface
- Robust housing
- High dynamic up to 1 m/s



Draw-wire encoder B75

- Measuring length 3 m
- Fieldbus interface
- With optical multiturn encoder
- Robust housing
- Linearity up to $\pm 0.35\%$ of the measuring range



Draw-wire encoder B80

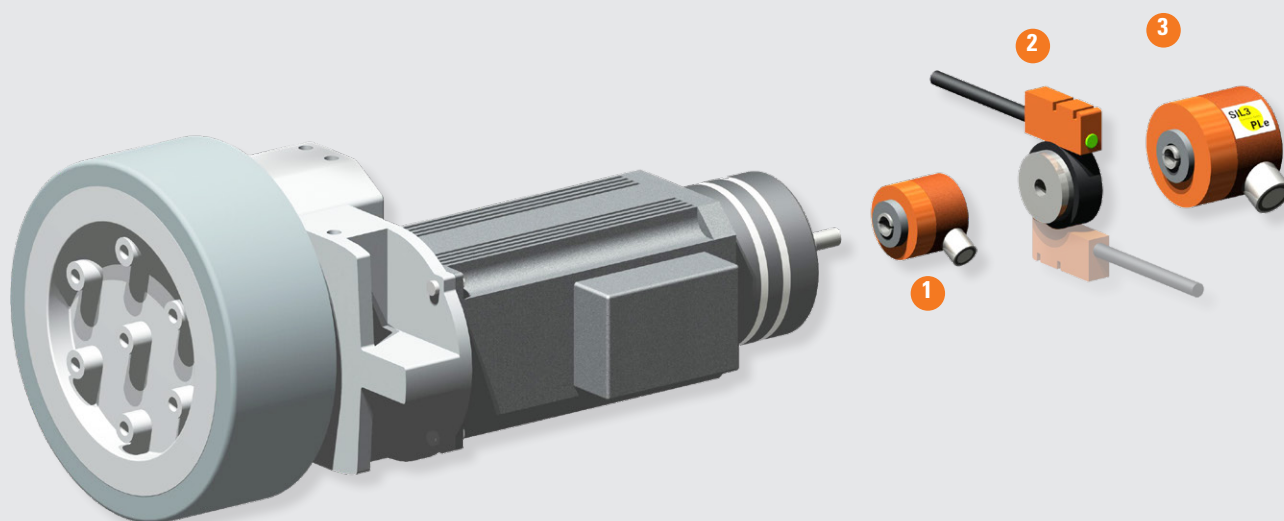
- Measuring length 3 m
- Fieldbus interface
- Interchangeable installation
- With optical multiturn encoder
- Robust housing
- Linearity up to $\pm 0.02\%$ of the measuring range



Draw-wire encoder C120

- Measuring length 6 m
- Fieldbus interface
- Interchangeable installation
- With optical multiturn encoder
- Robust housing
- Linearity up to $\pm 0.02\%$ of the measuring range





Driving speed



Dynamic rotary speed measurement with reduced space requirements in hollow shaft version

Sendix S3674 Motor Feedback System ¹

- Singleturn encoder \varnothing 36 mm
- SIL2/PLd
- Operating temperature -30°C ... +120°C
- Accurate optical scanning
- Tapered shaft \varnothing 8 mm



Sendix Base KIH40 encoder ¹

- Incremental encoder \varnothing 40 mm
- Optical scanning
- Safety Lock™
- Resolution max. 2500 ppr



RIM bearingless encoder ²

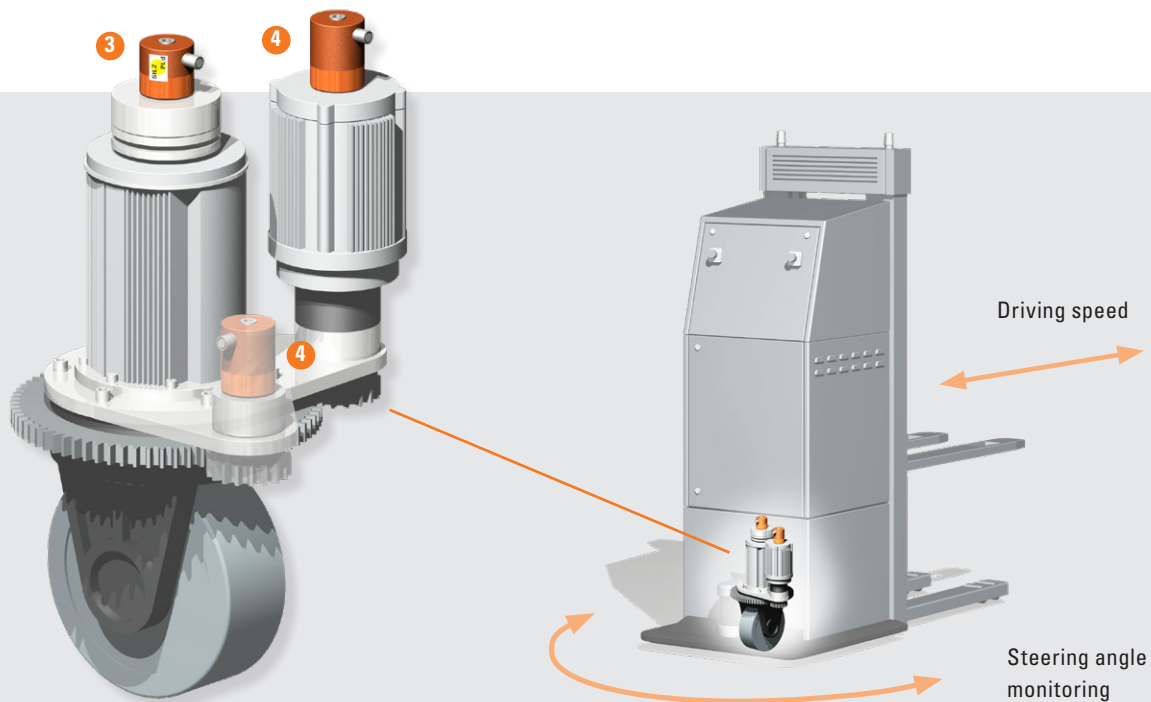
- Magnetic scanning
- Resolution max. 999 999 ppr
- High protection level up to IP69k
- High signal quality
- Resolution can be flexibly adjusted by the customer (via programming device)



Sendix 5834FS encoder ³

- Incremental encoder \varnothing 58 mm
- Accurate optical scanning
- SIL2/PLd, SIL3/PLe
- Resolution max. 2048 ppr





Steering angle monitoring



Absolute angle measurement with fieldbus control, robust encoder with reduced space requirements

Sendix M36 encoders 4

- ø 36 mm size
- CANopen interface
- Magnetic scanning
- Safety-Lockplus™
- High protection level IP69k
- Status display



Sendix F5888 encoder 4

- ø 58 mm size
- CANopen interface
- Optical scanning



4 For safety applications – Sendix S58 PROFIsafe encoders

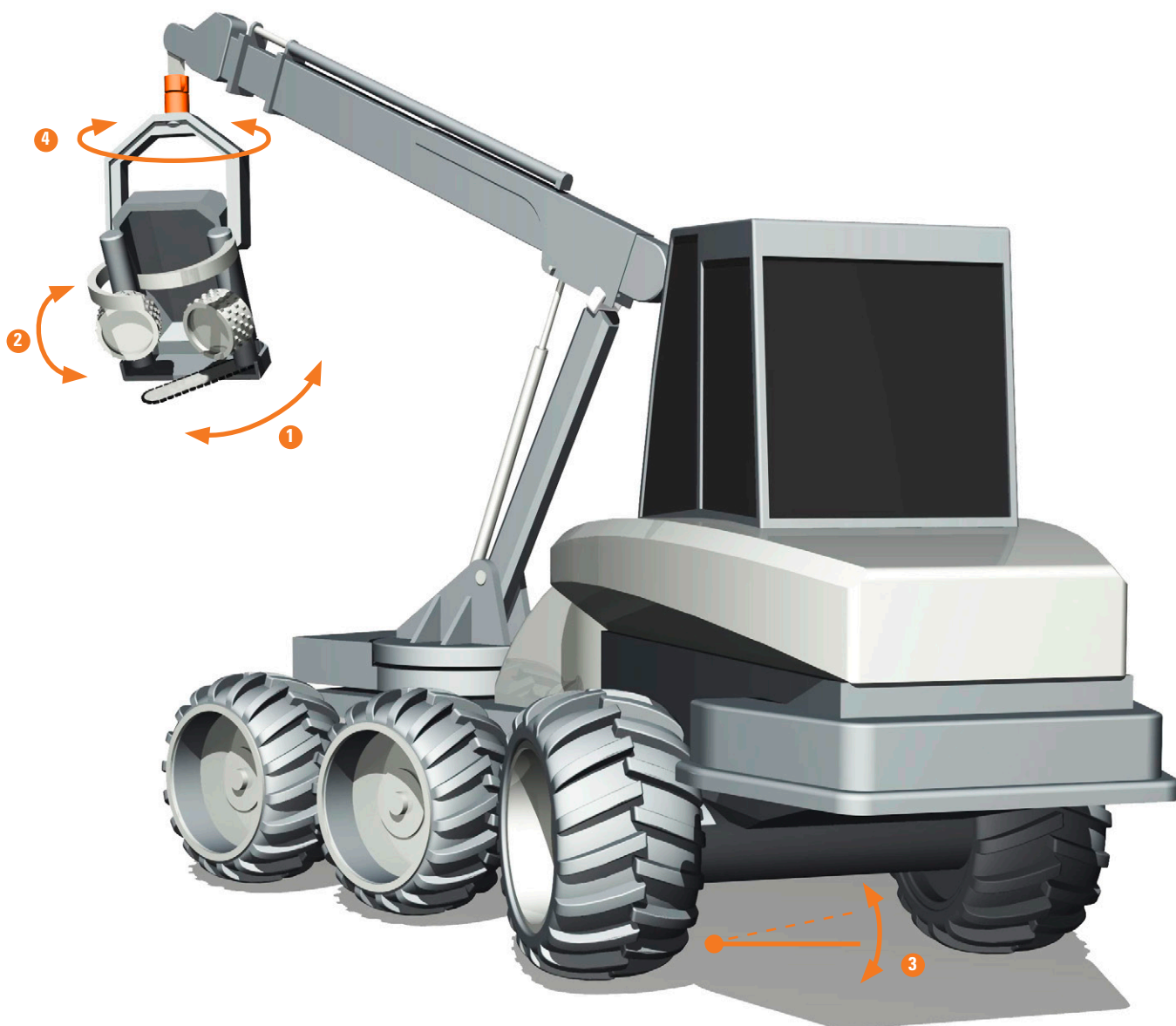


- Sturdy bearing construction in Safety-Lock™ Design for resistance against vibration and installation errors.
- High resolution: Singleturn 15 bit (safe) or 24 bit (non safe). Multiturn 12 bit (safe).
- SIL3, Performance Level PLe, Safety Category Cat. 3.
- Fully redundant multiturn information due to redundant multiturn gearbox.
- Transmission via safety telegrams 36/37, according to BP and XP.
- Implement features and adaptations quickly and easily.
- Cyber Security update in preparation / High system availability, protection against misuse (acc. IEC 62443).



Agricultural and forestry machinery

Kübler encoders and inclinometers, which meet high requirements, have been successfully used for many years to ensure a safe and precise function of machinery in the field of agriculture and forestry. Inclinometers monitor the horizontal position of the vehicle and issue warnings if the incline is too steep. Encoders measure the adjustment angle as well as the speed and the feed rate of the work equipment. Compact miniature encoders are integrated into the existing design at the customer's request and make a big difference with intelligent extras.



Saw blade setting angle ¹



For an outdoor use with humidity, absolute angle measurement with fieldbus control, robust encoder requiring little space

Sendix M36 encoders

- ø 36 mm size
- SAE J1939 interface
- Magnetic scanning
- Safety-Lockplus™
- High protection level IP69k
- Status display



Feedrate and position ²



Trunk length measurement at the feed wheel, dynamic rotational speed measurement requiring little space

Sendix 5000 encoder

- Incremental encoder ø 50 mm
- Safety-Lock™
- Operating temperature -40°C ... +85°C
- High shaft load: 50 N axial and 100 N radial



Vehicle balance control ³



Dynamic balance display via an analog value with high protection against humidity

Inclinometer IN71

- Analog interface
- High protection level IP69k
- 1- and 2-axis measurement



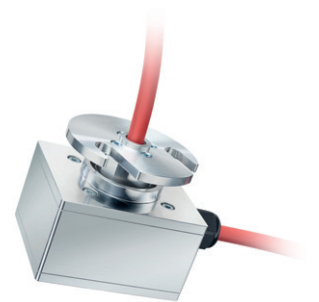
Endless rotating harvester head ⁴



Transmission of load, data and signals from the boom to the endless rotating harvester head

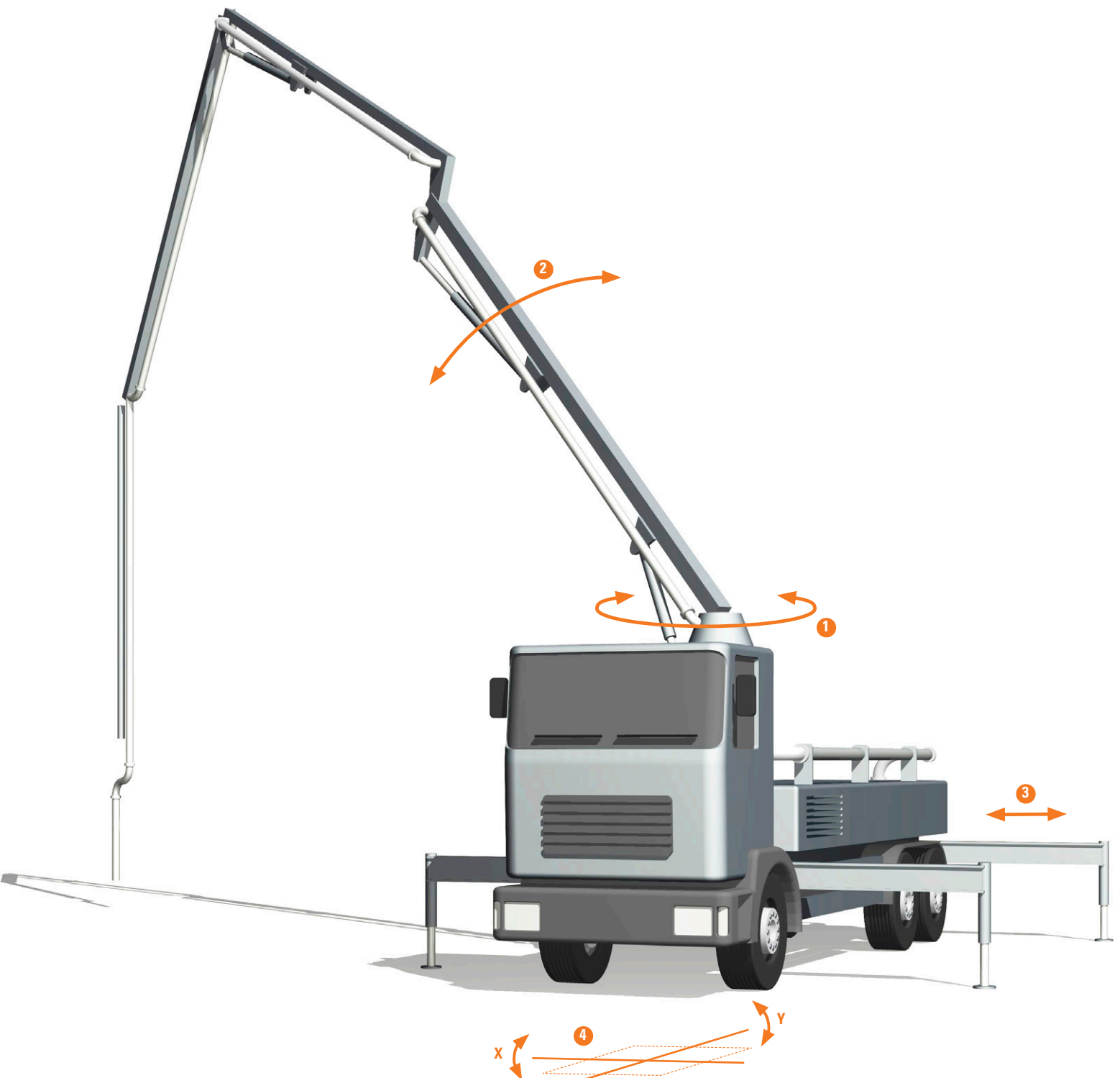
Slip ring SR075

- Individual slip ring solution
- Compact and robust
- Transmission of load, data and signals



Construction machinery / Concrete pumps

Whether on the construction site or underground – every vehicle must perform its duties continuously. Sensors play an important role here. For any conceivable job, Kübler offers the right solution which is based on robustness, premium quality and reliability. Encoders, inclinometers or also draw-wire encoders have been characterized as reliable components for years in mobile automation.



Angle of rotation of the concrete distribution mast ¹



Outdoor use with humidity and dirt, high positioning accuracy, fieldbus control

Sendix M3668R encoder

- CANopen multiturn
- Safety-Lockplus™
- High protection level IP69k
- Status display + reset button
- Measuring pinion on the encoder shaft



Elevation angle ²



Dynamic measurement of the elevation angle of the mast, inclinometer with high IP protection level and stable measuring value throughout time and temperature

Inclinometer IN71

- Analog interface
- High protection level IP69k
- 1- and 2-axis measurement



Leg position ³



Position measurement of the telescopic leg, linear measurement of the stroke up to 5 m, speed and position control via BUS

Draw-wire encoder C100

- CANopen interface
- High protection level IP67
- Redundant sensors
- Measuring length 1 m ... 5 m
- Easy mounting
- Operating temperature -40°C ... +85°C



Vehicle balance control ⁴



Dynamic and exact balance display via CANopen, high protection against humidity and dirt

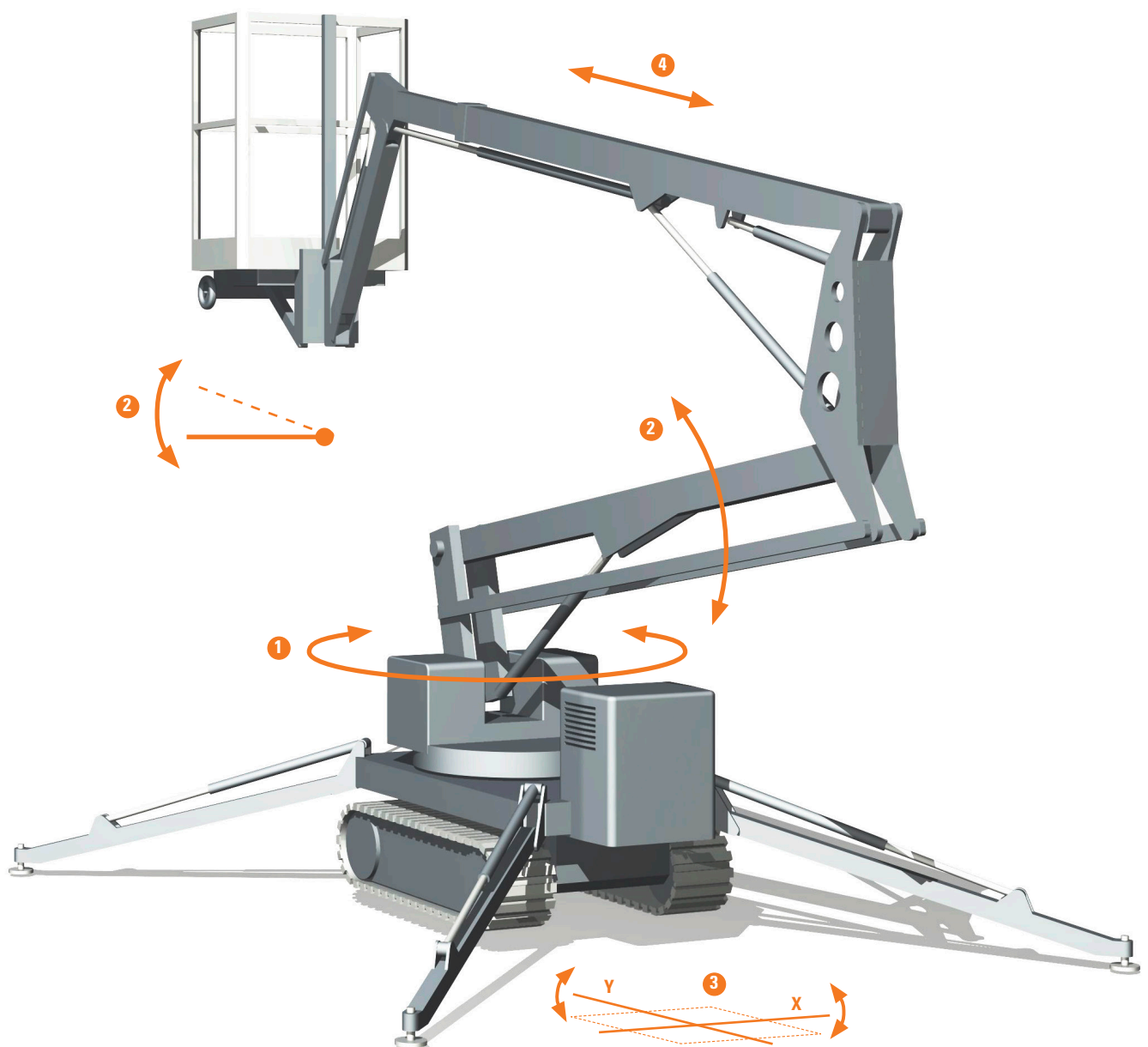
Inclinometer IN88

- CANopen interface
- High protection level IP69k
- 2-axis measurement



Working platforms

Flexibility, speed and safety are the most important characteristics of working platforms. The requirements for fast erection and access as well as absolute stability regardless of the inclination or condition of the ground require precisely fitting sensors for monitoring and automation. Wherever people are deployed, only the highest safety standards are an option. Kübler sensors monitor the position of the cage and the leveling of the chassis – for work platforms with their own drive as well as mounted on a trailer or truck.



Angle of rotation of the mast ¹



Outdoor use with humidity and dirt, high positioning accuracy, fieldbus control

Sendix M3661 encoder

- Analog multiturn encoder
- Safety-Lock™
- High protection level IP67
- Status display + reset button
- Measuring pinion on the encoder shaft



Mast elevation angle ²



Dynamic measurement of the elevation angle of the mast, inclinometer with high IP protection level and stable measuring value throughout time and temperature

Inclinometer IN71

- Analog interface
- High protection level IP69k
- 1- and 2-axis measurement



Chassis balance control ³



Dynamic balance display via an analog value for self-levelling of the chassis, high protection against humidity

Inclinometer IN81

- Analog output
- High protection level IP69k
- 2-axis measurement



Telescopic mast length ⁴



Linear measurement of the stroke up to 2 m, accurate speed and position with a compact construction

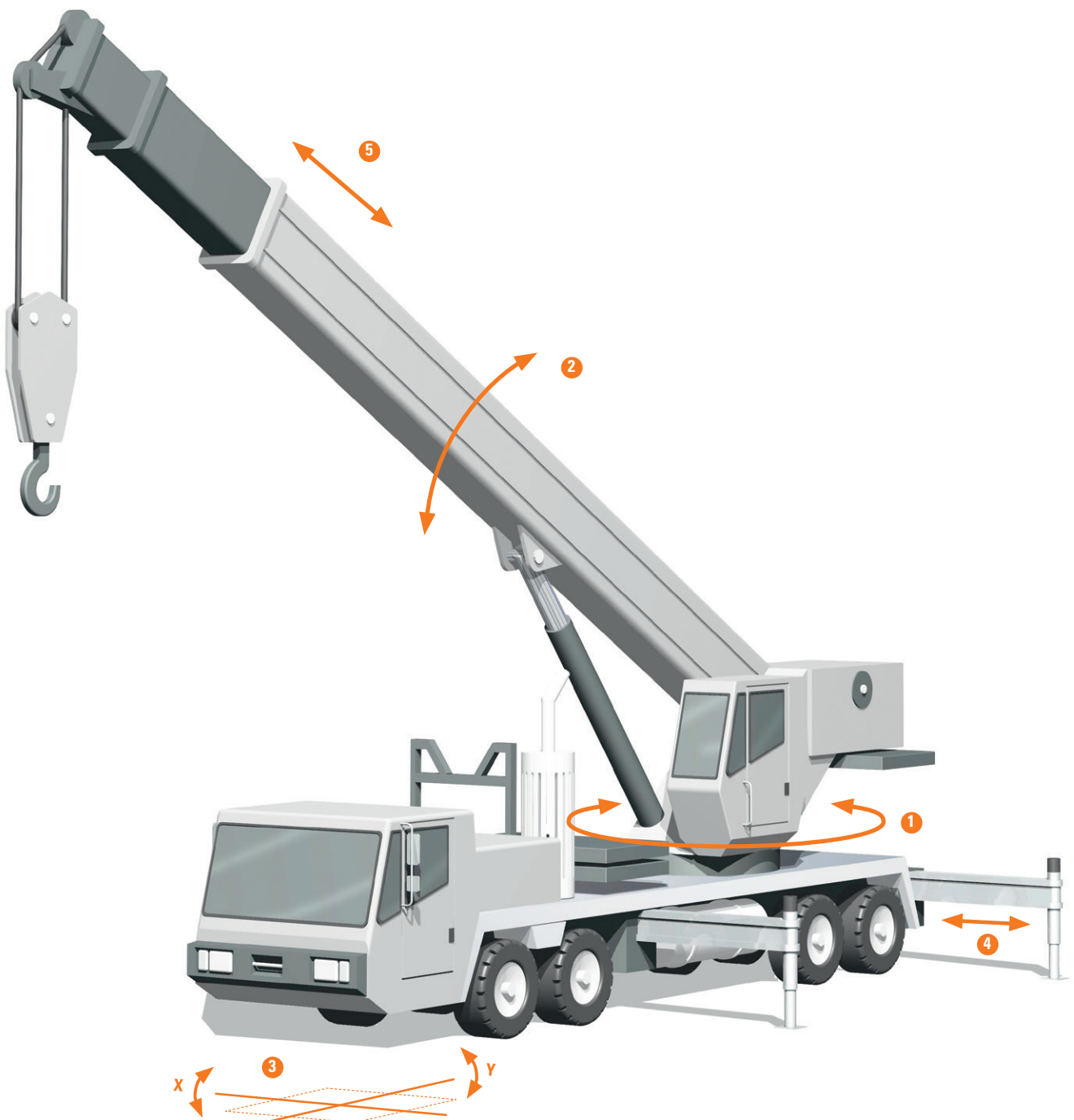
Miniature draw-wire encoder A40 / A41

- Analog output
- Measuring length 2 m



Mobile cranes

Mobile cranes are in use everywhere that heavy loads need to be moved – whether on public roads or on rough terrain. Mobile jib cranes must have a high level of reliability and safety. Sensors play an important role here. For any conceivable job, Kübler offers the right solution which is based on robustness, premium quality and a long service life. Our encoders, draw-wire encoders and inclinometers reliably detect any movement, thus ensuring a flawless use of your mobile cranes. Benefit from countless ordering options and the variety of suitable interfaces, from analog to CANopen.



Turret rotation ¹



Outdoor use with dirt, high positioning accuracy, fieldbus control

Sendix M5868 encoders

- Magnetic scanning
- Electronic, multiturn gearless encoder
- CANopen interface



Boom elevation + vehicle levelling ² + ³



Dynamic and accurate measurement of the vehicle leveling and of the mast elevation angle via BUS interface

Inclinometer IN88

- CANopen interface
- High protection level IP69k
- 2-axis measurement



Outriggers ⁴



Position measurement of the telescopic outriggers, linear measurement up to 5 m, speed and position control via BUS interface

Draw-wire encoder A41 / C100

- A41 compact size with CANopen interface
- C100 redundant sensors with integrated inclinometer



Boom length and elevation ⁵ + ²



Dynamic and accurate measurement of the mast elevation angle and extension length in one device



Draw-wire encoder D125

- Redundant sensors
- Integrated inclinometer
- Measuring length up to 10 m



Encoders

Encoders are used everywhere lengths, positions, rotary speeds and angles are to be measured. They convert mechanical movements into electrical signals. Incremental encoders deliver signal periods whose number can be a measure for the rotary speed, the length or the position. In absolute encoders, a unique code pattern is assigned to every position. Even after power failure, the current position is immediately available after re-powering.

Absolute singleturn / multiturn encoders



	Sendix M36	Sendix M36R	Sendix F5868 / F5888	Sendix 5868 / 5888
Characteristics	<ul style="list-style-type: none"> • Compact and robust angle sensor • EHT multiturn technology without battery and without gear 	<ul style="list-style-type: none"> • Compact and robust multiturn encoder • EHT multiturn technology without battery and without gear 	<ul style="list-style-type: none"> • Multiturn encoders acc. to industry standard • Through hollow shaft available • Accurate optical scanning and interference-free electronic IST multiturn technology 	<ul style="list-style-type: none"> • Multiturn encoders acc. to industry standard • Variable connection technology • Accurate optical scanning • Interference-free multiturn gear
Size	ø 36 mm	ø 36 mm	ø 58 mm	ø 58 mm
Measuring principle	Magnetic, absolute	Magnetic, absolute	Optical, absolute	Optical, absolute
Electrical interface	Analog SSI CANopen SAE J1939	Analog SSI CANopen SAE J1939	CANopen EtherNet/IP PROFINET IO	CANopen PROFIBUS DP PROFINET IO EtherCAT
Resolution max.	14 bit singleturn	13 bit singleturn (max. 14 bit) 12 bit multiturn (max. 24 bit)	13 bit singleturn (max. 16 bit) 12 bit multiturn (max. 16 bit)	13 bit singleturn (max. 16 bit) 12 bit multiturn
Protection level	IP67, IP69k	IP67, IP69k	IP65, IP67	IP65, IP67
Type of connection	Cable M12 connector	Cable M12 connector	Cable M12 connector	Cable M12 connector M23 connector Fieldbus hood

Incremental encoders



	2400 / 2420	Sendix Base KIS40 / KI40	Sendix 5000 / 5020	RIM200x / RIM500x
Characteristics	<ul style="list-style-type: none"> • High-resolution miniature encoder • Ideal for use in restricted spaces or for integration in gear limit switches 	<ul style="list-style-type: none"> • Incremental compact encoder with optical sensors • For small devices and machines • Robust bearing structure 	<ul style="list-style-type: none"> • Robust and versatile incremental encoder 	<ul style="list-style-type: none"> • Bearingless and extremely slim incremental encoder • Rings flexibly adaptable to the shaft diameter • Resolution can be flexibly adjusted by the customer (via programming device)
Size	ø 24 mm	ø 40 mm	ø 50 mm	Sensor head 40 x 10 x 25 mm
Measuring principle	Optical, incremental	Optical, incremental	Optical, incremental	Magnetic, incremental
Electrical interface	Push-pull	RS422 Push-pull Open collector	RS422 Push-pull Open collector	RS422 Push-pull
Resolution max.	1.024 ppr	2.500 ppr	5.000 ppr	999.999 ppr
Protection level	IP50, IP64 (housing IP65)	IP64	IP65, IP67	IP67, IP68/IP69k
Type of connection	Cable	Cable	Cable M12 connector M23 connector MIL connector	Cable

You will find further encoders on our Internet website under kuebler.com/encoders

Inclinometers

Inclinometers are used to measure deviations with respect to a horizontal rotation axis over an angular range that can reach 360°. Kübler inclinometers are based on the MEMS technology (Micro-Electro-Mechanical System).



	IN81	IN88	IN61/IN71	IN62/IN72
Characteristics	<ul style="list-style-type: none"> For static applications Robust housing Flexibly adjustable to the application Optional additional adjustable limit switches With 1 x M12 connector and practical teach adapter 	<ul style="list-style-type: none"> For static applications Robust housing Flexibly adjustable to the application Optional additional adjustable limit switches 2 x M12 connectors for easy BUS-in/BUS-out wiring 	<ul style="list-style-type: none"> For static and dynamic applications Robust housing Flexibly adjustable to the application Individual setting via IO-Link master or teach adapter 	<ul style="list-style-type: none"> For static and dynamic applications Robust housing Flexibly adjustable to the application Individual setting via IO-Link master
Measuring ranges	1-axis 0 ... 360° 2-axis ±10°, ±45°, ±60°	1-axis 0 ... 360° 2-axis max. ±85°	1-axis 0 ... 360° 2-axis max. ±85°	1-axis 0 ... 360° 2-axis max. ±85°
Electrical interface	4 ... 20 mA 0,1 ... 4,9 V 0,5 ... 4,5 V 0 ... 5 V 0 ... 10 V Optional switching outputs	CANopen Optional limit switch SAE J1939	4 ... 20 mA 0,1 ... 4,9 V 0,5 ... 4,5 V 0 ... 5 V 0 ... 10 V	2 switching outputs
Setting	<ul style="list-style-type: none"> Zero point setting Measuring range setting Filter matching 	<ul style="list-style-type: none"> Zero point setting Measuring range setting Filter matching 	<ul style="list-style-type: none"> Zero point setting Measuring range setting Filter matching Type of output signals Spirit level function 	<ul style="list-style-type: none"> Zero point setting Individual setting of the switching points Filter matching Spirit level function
Accuracy	±0,1°	±0,1°	±0,1°	±0,1°

You will find further inclinometers on our Internet website under kuebler.com/inclinometers

Slip rings

When it comes to transmitting electrical signals, energy, gases or liquid media from a static to a rotating component, Kübler slip rings offer the optimal solution. High current carrying capacity, reliable signal and data transmission with high transmission rates, combined with long service life and easy handling are some of the main requirements met by Kübler slip rings. Kübler slip rings are the result of highest quality awareness and a careful selection of materials – made in Germany. We focus on your application: we realize modifications and special solutions quickly and simply.



	SR075	SR120	SR160	SR250H
Characteristics	Compact and robust This compact and robust design is ideal for Mobile Automation applications. Optimal combination of fieldbus communication with load transmission in the on-board network area.	Flexible and fast The slip ring SR120 is ideal for applications requiring high transmission rates. Its specially developed shield concept allows parallel transmission of load currents up to 25 A and of data up to 100 Mbit/s.	Powerful and flexible The modular construction and variable connection possibilities allow obtaining a customized product. Load currents up to 50 A combinable with signal, fieldbus and Ethernet transmission. The innovative contact technology ensures a long, low-maintenance and reliable operation.	High-current transmission The SR250H transmits simultaneously currents up to 120 A, signals and fieldbus or Ethernet data. Its robust construction and a wide variety of connection possibilities allow adapting it individually to the application. It convinces with its high reliability.
Size	75 x 85 mm	ø 120 mm	ø 160 mm	ø 250 mm
Protection	IP64 (IP65 on request)	Max. IP65	Max. IP65	Max. IP65
Transmission paths	2 load channels 6 signal channels Fieldbus transmission	Up to 20 load and signal channels Fieldbus transmission Ethernet transmission	Load and signal channels Fieldbus transmission Ethernet transmission	Load and signal channels Fieldbus transmission Ethernet transmission
Contact materials	Gold/Gold	Copper/Brass Silver/Precious metal	Copper/Brass Silver/Precious metal Gold/Gold Silver/Silver	Copper/Brass Silver/Precious metal Silver/Silver
Load current	0 ... 20 A 0 ... 48 V	0 ... 25 A 0 ... 400 V	0 ... 50 A 0 ... 400 V	0 ... 120 A 0 ... 480 V

You will find further slip rings on our Internet website under kuebler.com/slirings

Draw-wire encoders

The core of a draw-wire device is a drum mounted on bearings, onto which a wire is wound. Winding takes place via a spring-loaded device. An encoder measures the number of revolutions.

If the circumference of the drum is known, length can be calculated.




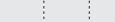















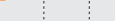



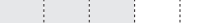




	Draw-wire encoder C100	Draw-wire encoder D125	Draw-wire enc. A40 / A41	Draw-wire encoder B75
Characteristics	Mobile-Robust and cost-effective <ul style="list-style-type: none"> • 0.9 mm thick measuring wire • Protection level IP67 • Temperature range -40°C ... +85°C • All interfaces, also redundant with double sensor electronics • Optionally with integrated inclinometer for measuring the mast elevation angle 	Mobile-Robust and cost-effective <ul style="list-style-type: none"> • 0.8 mm thick measuring wire • Sensor with protection level IP67 • All interfaces, also redundant with double sensor electronics • Optionally with integrated inclinometer for measuring the mast elevation angle 	Compact and cost-effective <ul style="list-style-type: none"> • Most compact draw-wire encoder with 2 m measuring length • Optional as low-temperature version 	Compact and cost-effective <ul style="list-style-type: none"> • Compact construction • Flexible mounting • Wear-free wire exit
Size	108 x 98 x 68.4 mm	approx. 124 x 124 x 94 mm	approx. 50 x 50 x 77 mm	78 x 78 x 55 mm
Measuring lengths	1 m ... 5 m	6 m ... 10 m	1 m, 2 m	3 m
Electrical interface	Analog sensor Incremental output CANopen Relay output Switch output (also with redundant outputs)	Analog sensor CANopen Inclinometer (also with redundant outputs)	Analog sensor CANopen	Analogsensor SSI CANopen SAE J1939 PROFIBUS DP PROFINET IO
Resolution	Analog 12 bit CANopen ≤ 0.3 mm	Analog 12 bit CANopen ≤ 0.6 mm	0.2 mm	0.2 mm
Accuracy / Linearity	Analog approx. ±0.8 % CANopen approx. ±0.5 %	Analog approx. ±0.8 % CANopen approx. ±0.5 %	Approx. ±0.35 %	Approx. ±0.35 %



	Draw-wire encoder C60	Draw-wire encoder D120	Draw-wire encoder C120	Draw-wire encoder D135
Characteristics	Robust and versatile <ul style="list-style-type: none"> Protection level up to IP69k Wide temperature range -40°C ... +85°C Titanium-anodized aluminum housing Various constructions: open, closed housing or housing with perforated sheet steel cover Stable measuring wire (stainless steel, V4A) wire diameter up to ø 1 mm - ideal for outdoor applications 	Extremely robust and dynamic <ul style="list-style-type: none"> Draw-wire encoder for outdoor Sensor with protection level IP69k and temperature level -40°C ... +85°C Stable measuring wire (stainless steel, V4A), wire diameter up to 1.5 mm All interfaces, also redundant with double sensor electronics 	Highly accurate and dynamic <ul style="list-style-type: none"> Excellent linearity up to ± 0.02% of the measuring range Robust housing High dynamics up to 10 m/s Customer-specific adaptations possible 	Highly accurate and dynamic <ul style="list-style-type: none"> Measuring lengths up to 42.5 m Can be combined with Kübler Sendix encoders and with analog sensors
Size	60 x 60 x 125 mm	approx. 120 x 125 x 133 mm	approx. 120 x 120 x 120 mm	135 x 135 x 318 mm
Measuring lengths	4 m	3 m ... 10 m	6 m	8 m, 10 m, 12 m, 15 m, 20 m, 25 m, 30 m, 35 m, 40 m, 42.5 m
Electrical interface	Analog sensor CANopen (also with redundant outputs)	Analog sensor CANopen Potentiometer (also with redundant outputs)	Analog sensor CANopen SAE J1939 PROFIBUS DP PROFINET IO Incremental Push-pull/RS422	Analog sensor CANopen SAE J1939 PROFIBUS DP PROFINET IO Incremental Push-pull/RS422
Resolution	Depending on the encoder	Analog 16 bit	0.08 mm	0.08 mm
Accuracy / Linearity	Approx. ±0.1 %	Approx. ±0.1 %	Analog approx. ±0.1 % CANopen approx. ±0.05 %	Analog approx. ±0.1 % CANopen approx. ±0.05 %
You will find further draw-wire systems on our Internet website under kuebler.com/draw-wire_encoders				

Portfolio overview draw-wire encoders

	Characteristics			Draw-wire encoders				Measuring length												
	Linearity max.	Speed [m/s]	Wire diameter [mm]	Measuring length [m]				Short range				Mid range				Long range				
								0	1	2	3	4	5	6	8	10	12	15	max. 42.5	
Performance-Line	±0.02 %	10	0.5		A50	INC ABS	U I R													
					B80	INC ABS	U I R													
					C120	INC ABS	U I R													
					D135	INC ABS	U I R													
Robust-Line	±0.1 %	3	1.0		C60	ABS	U I R	RED												
			1.5		D120	ABS	U I R	RED												
Compact-Line	±0.3 %	3	0.9		A30		U I R													
					A40	INC	U I R													
					A41	ABS	U I R													
					B75	INC ABS	U I R	RED												
					C105	INC ABS	U I	RED												
Base-Line	±0.5 %	1	0.9		C100	INC ABS	U	N RS RED												
					D125	ABS	U	N RED												

INC Incremental

ABS Absolute, digital

U Voltage

I Current

R Potentiometer

N Inclinator

RS Relais / switch output

RED Redundant sensors

Counters and process devices

The main task of the Kübler counters is the direct or scaled display of electronic pulses - in variants with or without switching outputs, with analog output and electronic or electromechanical display.

Process devices are used for displaying, monitoring and scaling standard signals, temperature or strain gauge signals in any desired unit. All functions also with modular, 3-colour touch display.



	HR47, HK07, Codix 13x	HW66M	K07.20, Codix 92x, 57xT	Codix 534, Codix 565
Characteristics	Hour meters for operating time measurement, service intervals, short time measurement	Energy and hour meter	Position acquisition, quantity and piece counting, length counter, rotary speed measurement	Flow measurement, pressure measurement, filling level display, weight monitoring, speed display, temperature monitoring
Applications	Pumps, vibrators, generators, compressors, small machinery, rollers, power sets, lighting	Dehumidifiers, generators and power sets	Fork lifts, cranes, armoring machines, pumps, disconnecting devices, saws	Compressors, pumps, motors, weighing devices, tank installations
Power supply	Battery, DC or AC	115 or 230 V AC	Battery, DC or AC	DC or AC
Protection level	IP65	IP65	IP65	IP65
Size [mm]	ø 58, 30 x 20, 48 x 24	48 x 48	30 x 20, 48 x 48, 96 x 48	48 x 24, 96 x 48
Measuring input	Time ranges: sec, min, h with resolution up to 1 ms	kWh and operating time measurement	Various counting and frequency modes up to max. 1 MHz	Scalable standard signal or strain gauge inputs, temperature inputs
Features	<ul style="list-style-type: none"> • High vibration and shock resistance • Wide temperature range 	<ul style="list-style-type: none"> • High vibration and shock resistance • Wide temperature range 	<ul style="list-style-type: none"> • High vibration and shock resistance • Wide temperature range • Switching and analog outputs 	<ul style="list-style-type: none"> • High vibration and shock resistance • Wide temperature range • Switching and analog outputs

You will find further counters and process devices on our Internet website under kuebler.com/counters

Product portfolio – Made in Germany



MEASUREMENT

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

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

TRANSMISSION

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

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

EVALUATION

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

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

We offer solutions for the following industries:



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

kuebler.com/industries

Kübler Service for worldwide planning reliability

24**ONE**

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

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



48 h 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 France +33 3 89 53 45 45
Kübler Italy +39 026 423 345
Kübler Poland +48 61 84 99 902
Kübler Austria +43 3322 43723 12
Kübler Turkey +90 216 999 9791

International (English speaking)

Kübler Germany +49 7720 3903 849
E-mail support@kuebler.com



Sample Service

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



Safety Services

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 WORLDWIDE

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

EUROPE AUSTRIA · BELARUS · BELGIUM · BULGARIA · CROATIA · CZECH REPUBLIC · DENMARK · ESTONIA · FINLAND · FRANCE · GERMANY · GREAT BRITAIN · GREECE · HUNGARY · ICELAND · IRELAND · LITHUANIA · ITALY · NETHERLANDS · NORWAY · POLAND · PORTUGAL · RUSSIA · SLOVAKIA · SLOVENIA · SPAIN · SWEDEN · SWITZERLAND · TURKEY · UKRAINE
AFRICA ÄGYPT · MOROCCO · SOUTH AFRICA · TUNISIA **NORTH AND SOUTH AMERICA** ARGENTINA · BRAZIL · CANADA · MEXICO · PERU · U.S.A.
OCEANIA AUSTRALIA · NEW ZEALAND **ASIA** CHINA · HONG KONG, CHINA · INDIA · INDONESIA · ISRAEL · LEBANON · MALAYSIA · PHILIPPINES · SINGAPORE · SOUTH KOREA · TAIWAN, CHINA · THAILAND · UNITED ARAB EMIRATES · VIETNAM

KÜBLER GROUP

-  FRITZ KÜBLER GMBH
-  FRITZ KÜBLER SARL
-  KÜBLER ITALIA S.R.L.
-  KÜBLER ÖSTERREICH
-  KÜBLER SP. Z.O.O.
-  KÜBLER TURKEY OTOMASYON TICARET LTD. STI.
-  KÜBLER INC.
-  KÜBLER AUTOMATION INDIA PVT. LTD.
-  KUEBLER (BEIJING) AUTOMATION TRADING CO. LTD.
-  KUEBLER KOREA (BY F&B)
-  KÜBLER AUTOMATION SOUTH EAST ASIA SDN. BHD.
-  KUEBLER PTY LTD

Kübler Group

Fritz Kübler GmbH

Schubertstrasse 47
78054 Villingen-Schwenningen
Germany

Phone +49 7720 3903-0

Fax +49 7720 21564

info@kuebler.com

[kuebler.com](https://www.kuebler.com)