SHORT FORM CATALOG 2024

pulses for automation

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Our pulses for innovations

The Kübler Group is one of the world's leading manufacturers and specialists for encoders and sensors to measure position, motion, and inclination, as well as slip rings for transmitting power, signals, and data.

The portfolio of premium products is rounded off by counters, process devices, and reliable speed monitors to record and evaluate various measured variables.

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

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.

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

Over 500 dedicated people worldwide make this success possible and ensure that customers can continue to place their trust in our company.

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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:


DRIVE TECHNOLOGY


ELEVATOR TECHNOLOGY


MOBILE AUTOMATION


HEAVY INDUSTRY


WIND TURBINES


SOLAR INDUSTRY

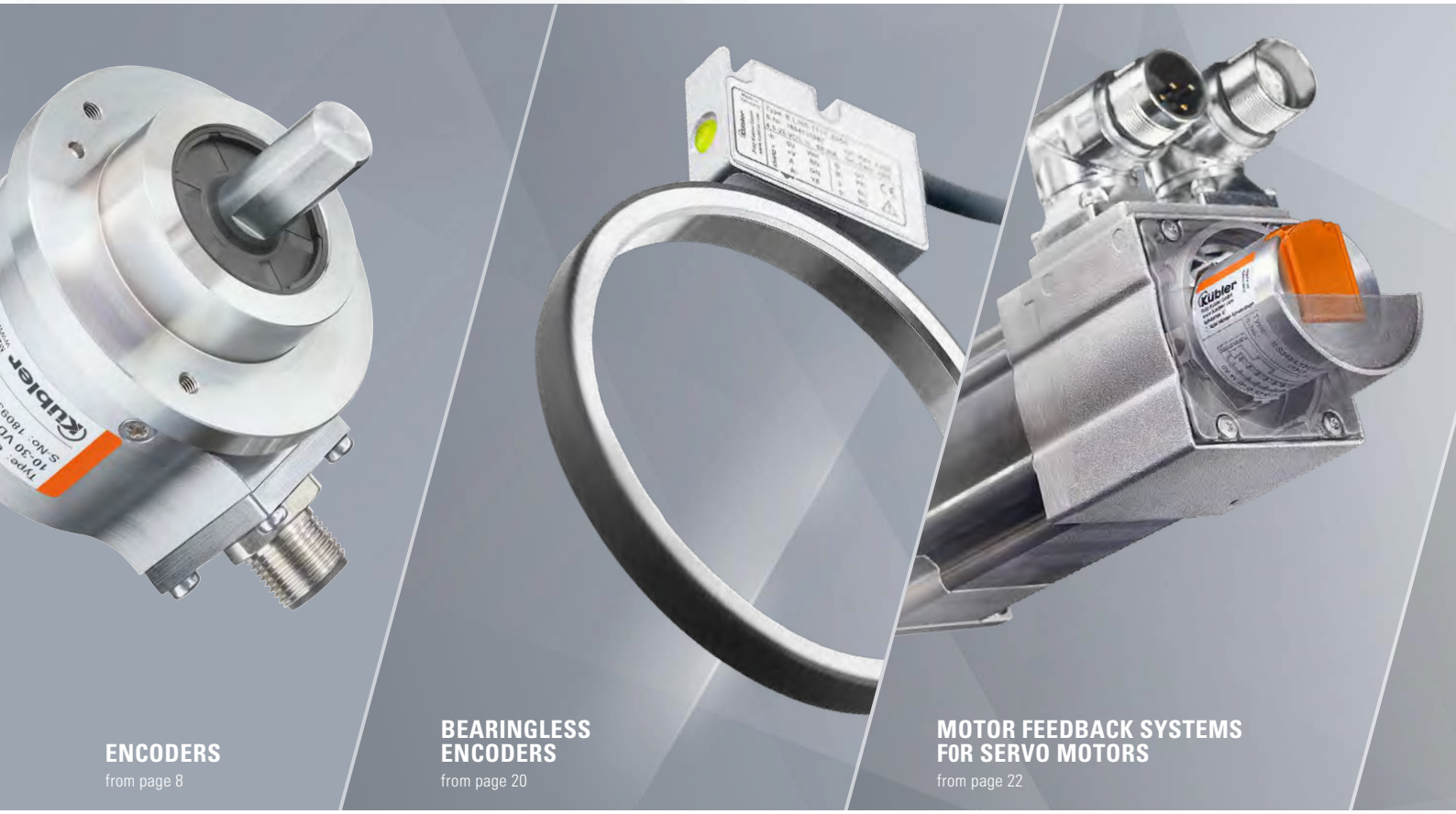

PACKAGING INDUSTRY


BOTTLING PLANTS

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

kuebler.com/industries

MEASUREMENT



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MOTOR FEEDBACK SYSTEMS FOR SERVO MOTORS
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With Kübler you can reliably record every movement in your application.
From rotary speed measurement and position detection to linear position and speed detection for lengths up to 42.5 m, and even the angle of inclination. Kübler sensors are the result of the highest quality awareness, careful material selection, and the guiding principle of always offering you added value. Our sensors are used in a variety of industries, creating trust worldwide with high performance, robustness, and long service life. Find the right sensor solution for your application.

kuebler.com/measurement

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Encoders

Speed measurement and position detection using incremental and absolute encoders.
Choose the perfect encoder for your application from a variety of sizes and ordering options. The Sendix encoder – made in Germany – is the result of the highest quality awareness and careful selection of materials. It has proved its value in many industries as a robust and precise sensor technology. Design your plants, machines, or motors with Kübler. Your application is our priority: Your modifications and special solutions are implemented flexibly and quickly. We look forward to your challenge.

kuebler.com/encoders

INDUSTRIE 4.0
IIoT READY
Connectivity Identification
Diagnostics Adaptability

The intelligent networking of all components is based on the use of smart sensors. Numerous Kübler encoders allow industry 4.0 concepts to be realized today.
Find out more at:
kuebler.com/iiot

Find the right Kübler accessories

Cables, connectors and pre-assembled cordsets

Fixing components for hollow shaft encoders: spring element, torque stop, stator coupling, tether arm, isolation insert

Fixing components for shaft encoders: flange, robust bearing unit, bearing box

Connection of motor and encoder: coupling, flexible shaft coupling

SSI displays, safe speed monitors

Enter order code of your encoder and find accessories:
kuebler.com/accessories

Incremental encoders

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in ppr	Push-pull	RS422	SinCos	Open Collector	Ø Hollow shaft max. in mm [inch]	Speed max. in min^{-1}	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	Pulse frequency max. in kHz	RoHS compliant	Approvals
	Miniature, optical **2400** (shaft) **2420** (hollow shaft)	24 [0.94]	–	•	1.024	•	–	–	–	6	12.000	-20 ... +85 [-4 ... +185]	IP64	cable	5 ... 24 8 ... 30	160	•	cULus
	Miniature, magnetic **2430** (shaft) **2440** (hollow shaft)	24 [0.94]	•	–	256	–	•	–	–	6	12.000	-20 ... +85 [-4 ... +185]	IP64	cable	5	300	•	–
	Compact, optical **Sendix Base KIS40** (shaft) **Sendix Base KIH40** (hollow s.)	40 [1.57]	–	•	2.560	•	•	–	•	8	4.500	-20 ... +70 [-4 ... +158]	IP64	cable	5 5 ... 30 10 ... 30	250	•	cULus
	Compact, optical **3610** (shaft) **3620** (hollow shaft)	36 [1.43]	–	•	2.500	•	•	–	–	8	12.000	-20 ... +85 [-4 ... +185]	IP64	cable M12	5 5 ... 18 8 ... 30	300	•	cULus
	Standard, optical **Sendix 5000** (shaft) **Sendix 5020** (hollow shaft) 24**one** [1]	58 [2.28]	–	•	5.000	•	•	–	•	15 15.87	12.000	-40 ... +85 [-40 ... +185]	IP67	cable M12 M23 MIL Sub-D	5 5 ... 30 10 ... 30	300	•	cULus Ex 2/22
	Standard, optical **Sendix Base KIS50** (shaft) **Sendix Base KIH50** (hollow s.)	58 [2.28]	–	•	5.000	•	•	–	•	15	6.000	-20 ... +70 [-4 ... +158]	IP65	cable M12 M23	5 4.7 ... 30 5 ... 30 10 ... 30	300	•	CE
	Standard, optical high temperature **5803** (shaft) **5823** (hollow shaft)	58 [2.28]	–	•	5.000	•	•	–	–	12	12.000	-20 ... +110 [-4 ... +230]	IP65	cable M23 MIL	5 10 ... 30	300	•	cULus
	Standard, optical sine wave output + reference signal **5804** (shaft) **5824** (hollow shaft)	58 [2.28]	–	•	5.000	–	–	•	–	12	12.000	-20 ... +85 [-4 ... +185]	IP65	cable M23	5 10 ... 30	180	•	cULus
	Standard, optical sine wave output, highly interpolable **Sendix 5814** (shaft) **Sendix 5834** (hollow shaft)	58 [2.28]	–	•	1.024 and 2.048	–	–	•	–	15	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12	5 10 ... 30	400	•	cULus
	Standard, optical Motor-Line **Sendix 5834** (tapered shaft)	58 [2.28]	–	•	1.024 and 2.048	–	–	•	–	10 tap. shaft	12.000	-40 ... +90 [-40 ... +194]	IP67	cable PCB connector	5 10 ... 30	400	•	cULus

1) We offer for all encoders configured with the underlined preferential options our free of charge 24one delivery promise.
Orders placed on working days before 9AM CET are manufactured and ready for dispatch the same day. The 24one delivery promise is limited to 20 pieces per delivery.

Incremental encoders

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in ppr	Push-pull	RS422	SinCos	Open Collector	Ø Hollow shaft max. in mm [inch]	Speed max. in min⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	Pulse frequency max. in kHz	RoHS compliant	Approvals
	Standard, optical sine wave output, SIL2 / PLd **Sendix 5814FS2** (shaft) **Sendix 5834FS2** (hollow shaft)	58 [2.28]	–	•	1.024 and 2.048	–	–	•	–	14	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	400	•	cULus SIL2 PLd
	Standard, optical sine wave output, SIL3 / PLe **Sendix 5814FS3** (shaft) **Sendix 5834FS3** (hollow shaft)	58 [2.28]	–	•	1.024 and 2.048	–	–	•	–	14	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	400	•	cULus SIL3 PLe
	Standard, optical high resolution **5805** (shaft) **5825** (hollow shaft)	58 [2.28]	–	•	36.000	•	•	–	–	12	12.000	-20 ... +105 [-4 ... +221]	IP65	cable M23	5 10 ... 30	800	•	cULus
	Standard, optical stainless-steel **Sendix 5006** (shaft) **Sendix 5026** (hollow shaft)	58 [2.28]	–	•	5.000	•	•	–	–	15	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	5 5 ... 30 10 ... 30	300	•	cULus
	Standard, optical ATEX / IECEx – zone 1 / 21 **7000** (shaft) **7020** (hollow shaft)	70 [2.76]	–	•	5.000	•	•	–	–	14	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	5 5 ... 30 10 ... 30	300	•	Ex IECEx
	Standard, optical ATEX / IECEx – mining **7100** (shaft) **7120** (hollow shaft)	70 [2.76]	–	•	5.000	•	•	–	–	14	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	5 5 ... 30 10 ... 30	300	•	Ex IECEx

Incremental encoders

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in ppr	Push-pull	RS422	SinCos	Open Collector	Ø Hollow shaft max. in mm [inch]	Speed max. in min^{-1}	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	Pulse frequency max. in kHz	RoHS compliant	Approvals
	Large hollow shaft, optical **A020** (hollow shaft)	100 [3.94]	–	•	5.000	•	•	•	–	42	3.000	-40 ... +70 [-40 ... +140]	IP65	cable M12 M23	5 5 ... 30 10 ... 30	300	•	cULus
	Large hollow shaft, optical robust **A02H** (hollow shaft)	100 [3.94]	–	•	5.000	•	•	•	–	42	6.000	-40 ... +80 [-40 ... +176]	IP65	cable M12 M23 MIL	5 5 ... 30 10 ... 30	300	•	cULus GL
	Heavy Duty, optical **Sendix H120** (hollow shaft)	100 [3.94]	–	•	5.000	•	•	–	–	28	6.000	-40 ... +100 [-40 ... +212]	IP67	cable [1] M12 M23	5 10 ... 30	300	•	–

1) With terminal box.

Absolute encoders
Singleturn

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in bit	SSI	BiSS INTERFACE	Analog output	IO-Link	Additional incremental track	Speed max. in min⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
	Miniature, magnetic **2450** (shaft) **2470** (hollow shaft)	24 [0.94]	•	–	12	•	–	–	–	–	12.000	-20 ... +85 [-4 ... +185]	IP64	cable	5	•	–
	Compact, magnetic **Sendix M3651A** (shaft) **Sendix M3671A** (hollow shaft)	36 [1.43]	•	–	12	–	–	4 ... 20 mA 0 ... 10 V 0 ... 5 V	–	–	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	10 ... 30 15 ... 30	•	E1 cULus
	Compact, magnetic **Sendix M3653A** (shaft) **Sendix M3673A** (hollow shaft)	36 [1.43]	•	–	14	•	–	–	–	–	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	10 ... 30	•	cULus
new 	Compact, magnetic **Sendix M3658A** (shaft) **Sendix M3678A** (hollow shaft) INDUSTRIE 4.0 IIoT READY Connectivity Identification Diagnostics Adaptability	36 [1.43]	•	–	14	–	–	–	•	–	6.000	-40 ... +85 [-40 ... +185]	IP67	M12	18 ... 30	•	cULus
new 	Compact, magnetic robust **Sendix M3651AR** (shaft)	36 [1.43]	•	–	12	–	–	4 ... 20 mA 0 ... 10 V 0 ... 5 V	–	–	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30 15 ... 30	•	E1 cULus
new 	Compact, magnetic robust **Sendix M3653AR** (shaft)	36 [1.43]	•	–	14	•	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30	•	cULus
	Compact, optical **Sendix F3653** (shaft) **Sendix F3673** (hollow shaft)	36 [1.43]	–	•	17	•	•	–	–	Sin Cos RS422	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12	5 10 ... 30	•	cULus
	Standard, magnetic **Sendix M5851A** (shaft)	58 [2.28]	•	–	12	–	–	4 ... 20 mA 0 ... 10 V 0 ... 5 V	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30 15 ... 30	•	E1 cULus
	Standard, magnetic **Sendix M5853A** (shaft)	58 [2.28]	•	–	14	•	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30	•	cULus
new 	Standard, magnetic **Sendix M5858A** (shaft) INDUSTRIE 4.0 IIoT READY Connectivity Identification Diagnostics Adaptability	58 [2.28]	•	–	14	–	–	–	•	–	4.000	-40 ... +85 [-40 ... +185]	IP65	M12	18 ... 30	•	cULus

Absolute encoders
Singleturn

		Ø **Dimensions** in mm [inch]	**Magnetic** (accuracy ±1°)	**Optical** (accuracy ≤ ±0.015°)	**Resolution** max. in bit	SSI	BiSS INTERFACE	**Parallel interface**	**Additional incremental track**	**Speed** max. in min^{-1}	**Temperature range** in °C [°F]	**Protection** max.	**Type of connection**	**Power supply** in V DC	**RoHS compliant**	**Approvals**
	Standard, optical parallel, highspeed **5852** (shaft) **5872** (hollow shaft)	58 [2.28]	–	•	14	–	–	•	–	12.000	-20 ... +85 [-4 ... +185]	IP66	cable M23	5 10 ... 30	•	cULus
	Standard, optical **Sendix 5853** (shaft) **Sendix 5873** (hollow shaft)	58 [2.28]	–	•	21	•	•	–	SinCos RS422	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	•	cULus
	Standard, optical Motor-Line **Sendix 5873** (Konuswelle)	58 [2.28]	–	•	21	•	•	–	SinCos RS422	12.000	-40 ... +90 [-40 ... +194]	IP65	cable PCB connector	5 10 ... 30 4.5 ... 5.5	•	cULus
	Standard, optical SIL2 / PLd **Sendix 5853FS2** (shaft) **Sendix 5873FS2** (hollow shaft)	58 [2.28]	–	•	17	•	•	–	SinCos	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	cULus SIL2 PLd
	Standard, optical SIL3 / PLe **Sendix 5853FS3** (shaft) **Sendix 5873FS3** (hollow shaft)	58 [2.28]	–	•	17	•	•	–	SinCos	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	cULus SIL3 PLe
	Standard, optical ATEX / IECEx – zone 1 / 21 **Sendix 7053** (shaft) **Sendix 7073** (hollow shaft)	70 [2.76]	–	•	17	•	•	–	–	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	Ex IECEx
	Standard, optical ATEX / IECEx – mining **Sendix 7153** (shaft) **Sendix 7173** (hollow shaft)	70 [2.76]	–	•	17	•	•	–	–	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	Ex IECEx

Absolute encoders
Singleturn
Fieldbus

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in bit	CANopen	SAE J1939	PROFIBUS	Speed max. in min⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
	Compact, magnetic **Sendix M3658A** (shaft) **Sendix M3678A** (hollow shaft)	36 [1.43]	•	–	14	•	•	–	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	10 ... 30	•	
new 	Compact, magnetic, robust **Sendix M3658AR** (shaft)	36 [1.43]	•	–	14	•	•	–	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30	•	
	Compact, optical **Sendix F3658** (shaft) **Sendix F3678** (hollow shaft)	36 [1.43]	–	•	16	•	–	–	12.000	-40 ... +85 [-40 ... +185]	IP67	cable	10 ... 30	•	
	Standard, optical **Sendix 5858** (shaft) **Sendix 5878** (hollow shaft) INDUSTRIE 4.0 IIoT READY Connectivity Identification Diagnostics Adaptability	58 [2.28]	–	•	16	•	–	•	9.000	-40 ... +85 [-40 ... +185]	IP67	cable M12 M23	10 ... 30	•	
	Standard, magnetic **Sendix M5858A** (shaft)	58 [2.28]	•	–	14	•	•	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30	•	
	Standard, optical ATEX/IECEx – zone 1/21 **Sendix 7058** (shaft) **Sendix 7078** (hollow shaft)	70 [2.76]	–	•	16	•	–	•	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	
	Standard, optical ATEX/IECEx – mining **Sendix 7158** (shaft) **Sendix 7178** (hollow shaft)	70 [2.76]	–	•	16	•	–	•	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	

Absolute encoders
Singleturn
Industrial Ethernet

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in bit	EtherCAT Conformance tested	PROFINET	PROFIsafe	EtherNet/IP	Speed max. in min⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
	Standard, optical **Sendix 5858** (shaft) **Sendix 5878** (hollow shaft) INDUSTRIE 4.0 IIoT READY	58 [2.28]	–	•	16	•	•	–	–	9.000	-40 ... +85 [-40 ... +185]	IP67	M12	10 ... 30	•	cULus
new 	Standard, optical electronic singleturn **Sendix F5858** (shaft) **Sendix F5878** (hollow shaft) INDUSTRIE 4.0 IIoT READY	58 [2.28]	–	•	19	–	•	–	•	9.000	-40 ... +80 [-40 ... +176]	IP67	M12	10 ... 30	•	cULus
new 	Standard, optical **Sendix S5858** (shaft) **Sendix S5878** (hollow shaft) INDUSTRIE 4.0 IIoT READY	58 [2.28]	–	•	15 (safe) 24 (non safe)	–	•	•	–	9.000	-40 ... +80 [-40 ... +176]	IP67	M12	10 ... 30	•	cULus SIL3 PLe

Absolute encoders
Multiturn

		Ø **Dimensions** in mm [inch]	**Magnetic** (accuracy ±1°)	**Optical** (accuracy ≤ ±0.015°)	**Resolution** max. in bit ST+MT	SSI	BiSS INTERFACE	Analog output	IO-Link	**Additional incremental track**	**Speed** max. in min^{-1}	**Temperature range** in °C [°F]	**Protection** max.	**Type of connection**	**Power supply** in V DC	RoHS compliant	**Approvals**
	Compact, magnetic electronic multiturn **Sendix M3661** (shaft) **Sendix M3681** (hollow shaft)	36 [1.43]	•	–	12+16	–	–	4 ... 20 mA 0 ... 10 V 0 ... 5 V	–	–	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	10 ... 30 15 ... 30	•	E1 cULus
	Compact, magnetic electronic multiturn **Sendix M3663** (shaft) **Sendix M3683** (hollow shaft)	36 [1.43]	•	–	14+24	•	–	–	–	–	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	10 ... 30	•	cULus
new 	Compact, magnetic electronic multiturn **Sendix M3668** (shaft) **Sendix M3688** (hollow shaft) INDUSTRIE 4.0 IoT READY Connectivity Identification Diagnostics Adaptability	36 [1.43]	•	–	14+18	–	–	–	•	–	6.000	-40 ... +85 [-40 ... +185]	IP67	M12	18 ... 30	•	cULus
	Compact, magnetic robust, electronic multiturn **Sendix M3661R** (shaft)	36 [1.43]	•	–	12+16	–	–	4 ... 20 mA 0 ... 10 V 0 ... 5 V	–	–	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30 15 ... 30	•	E1 cULus
	Compact, magnetic robust, electronic multiturn **Sendix M3663R** (shaft)	36 [1.43]	•	–	14+24	•	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30	•	cULus
	Compact, optical electronic multiturn **Sendix F3663** (shaft) **Sendix F3683** (hollow shaft)	36 [1.43]	–	•	17+24	•	•	–	–	SinCos RS422	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12	5 10 ... 30	•	cULus
	Standard, optical mechanical multiturn **Sendix 5863** (shaft) **Sendix 5883** (hollow shaft)	58 [2.28]	–	•	19+12	•	•	–	–	SinCos RS422	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	•	cULus
	Standard, magnetic electronic multiturn **Sendix M5861** (shaft)	58 [2.28]	•	–	12+16	–	–	4 ... 20 mA 0 ... 10 V 0 ... 5 V	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30 15 ... 30	•	E1 cULus
	Standard, magnetic electronic multiturn **Sendix M5863** (shaft)	58 [2.28]	•	–	14+24	•	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30	•	cULus
new 	Standard, magnetic electronic multiturn **Sendix M5868** (shaft) INDUSTRIE 4.0 IoT READY Connectivity Identification Diagnostics Adaptability	58 [2.28]	•	–	14+18	–	–	–	•	–	4.000	-40 ... +85 [-40 ... +185]	IP65	M12	18 ... 30	•	E1 cULus

Absolute encoders
Multiturn

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in bit ST+MT	SSI	BiSS INTERFACE	Analog output	Additional incremental track	Speed max. in min^{-1}	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
	Standard, optical electronic multiturn **Sendix F5863** (shaft) **Sendix F5883** (hollow shaft)	58 [2.28]	–	•	17 +24	•	•	–	SinCos RS422	12.000	-40 ... +85 [-40 ... +185]	IP67	cable M12 M23	5 10 ... 30	•	cULus
	Standard, optical Motor-Line electronic multiturn **Sendix F5883M** (hollow shaft)	58 [2.28]		•	17 +24	•	–	–	SinCos RS422	9.000	-40 ... +85 [-40 ... +185]	IP65	cable	5 10 ... 30	•	cULus
	Standard, optical mechanical multiturn SIL2 / PLd **Sendix 5863FS2** (shaft) **Sendix 5883FS2** (hollow shaft)	58 [2.28]	–	•	17 +12	•	•	–	SinCos	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	cULus SIL2 PLd
	Standard, optical mechanical multiturn SIL3 / PLe **Sendix 5863FS3** (shaft) **Sendix 5883FS3** (hollow shaft)	58 [2.28]	–	•	17 +12	•	•	–	SinCos	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	cULus SIL3 PLe
	Standard, optical mechanical multiturn ATEX / IECEx – zone 1 / 21 **Sendix 7063** (shaft) **Sendix 7083** (hollow shaft)	70 [2.76]		•	17 +12	•	•	–	–	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	Ex IECEx
	Standard, optical mechanical multiturn ATEX / IECEx – mining **Sendix 7163** (shaft) **Sendix 7183** (hollow shaft)	70 [2.76]		•	17 +12	•	•	–	–	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	Ex IECEx
	Large hollow shaft **AX**	–	• [1]	• [1]	17 + 24	• [1]	• [1]	• [1]	• [1]	4.500	–	IP64	• [1]	• [1]	•	–

1) Depends on the encoder used.

Absolute encoders
Multiturn
Fieldbus

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in bit ST+MT	CANopen	CANopen LIFT	SAE J1939	PROFIBUS	Modbus	Speed max. in min⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
	Compact, magnetic electronic multiturn **Sendix M3668** (shaft) **Sendix M3688** (hollow shaft)	36 [1.43]	•	–	14 +29	•	–	•	–	–	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	10 ... 30	•	E1 cULus
	Compact, magnetic, robust, electronic multiturn **Sendix M3668R** (shaft)	36 [1.43]	•	–	14 +29	•	–	•	–	–	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30	•	E1 cULus
	Compact, optical electronic multiturn **Sendix F3668** (shaft) **Sendix F3688** (hollow shaft)	36 [1.43]	–	•	16 +16	•	–	–	–	–	12.000	-40 ... +85 [-40 ... +185]	IP67	cable	10 ... 30	•	cULus
	Standard, optical mechanical multiturn **Sendix 5868** (shaft) **Sendix 5888** (hollow shaft) INDUSTRIE 4.0 IoT READY Connectivity Identification Diagnostics Adaptability	58 [2.28]	–	•	16 +12	•	•	–	•	–	9.000	-40 ... +85 [-40 ... +185]	IP67	cable M12 Sub-D	10 ... 30	•	cULus
	Standard, magnetic electronic multiturn **Sendix M5868** (shaft)	58 [2.28]	•	–	14 + 29	•	–	•	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30	•	E1 cULus
	Standard, optical electronic multiturn **Sendix F5868** (shaft) **Sendix F5888** (hollow shaft)	58 [2.28]	–	•	16 +16	•	–	–	–	•	12.000	-40 ... +80 [-40... +176]	IP67	cable M12	10 ... 30	•	cULus
	Standard, optical Motor-Line electronic multiturn **Sendix F5888M** (hollow shaft)	58 [2.28]	–	•	19 + 24	•	–	–	–	–	9.000	-40 ... +85 [-40 ... +185]	IP65	cable	10 ... 30	•	cULus
	Standard, optical mechanical multiturn ATEX/IECEx – zone 1/21 **Sendix 7068** (shaft) **Sendix 7088** (hollow shaft)	70 [2.76]	–	•	16 +12	•	–	–	•	–	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	Ex IECEx
	Standard, optical mechanical multiturn ATEX/IECEx – mining **Sendix 7168** (shaft) **Sendix 7188** (hollow shaft)	70 [2.76]	–	•	16 +12	•	–	–	•	–	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	Ex IECEx

Absolute encoders
Multiturn
Industrial Ethernet

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in bit ST+MT	EtherCAT Conformance tested	PROFINET	PROFIsafe	EtherNet/IP	Speed max. in min^{-1}	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
	Standard, optical mechanical multiturn **Sendix 5868** (shaft) **Sendix 5888** (hollow shaft) INDUSTRIE 4.0 IoT READY Connectivity Identification Diagnostics Adaptability	58 [2.28]	–	•	16 +12	•	•	–	–	9.000	-40 ... +85 [-40 ... +185]	IP67	M12	10 ... 30	•	cULus
new 	Standard, optical electronic multiturn **Sendix F5868** (shaft) **Sendix F5888** (hollow shaft) INDUSTRIE 4.0 IoT READY Connectivity Identification Diagnostics Adaptability	58 [2.28]	–	•	16 +16	–	•	–	•	12.000	-40 ... +80 [-40... +176]	IP67	M12	10 ... 30	•	cULus
new 	Standard, optical electronic multiturn **Sendix S5868** (shaft) **Sendix S5888** (hollow shaft) INDUSTRIE 4.0 IoT READY Connectivity Identification Diagnostics Adaptability	58 [2.28]	–	•	15 (safe) 24 (non safe) + 12	–	•	•	–	9.000	-40 ... +80 [-40... +176]	IP67	M12	10 ... 30	•	cULus SIL3 PLe

Bearingless encoders

Reliable speed measuring with magnetic sensor solution.
Bearingless encoders are the perfect alternative to bearing mounted encoders, due to their compact design and easy mounting options on almost any shaft diameter. Bearingless encoders from Kübler are already used today in drive and elevator technology, for asynchronous motors or external rotor motors, or in generators, large motors, and wind turbines. Our smart technology is available for the highest signal quality. Digital real-time signal processing compensates for possible signal errors and optimizes drive control. Design your plants, machines, or motors with Kübler!

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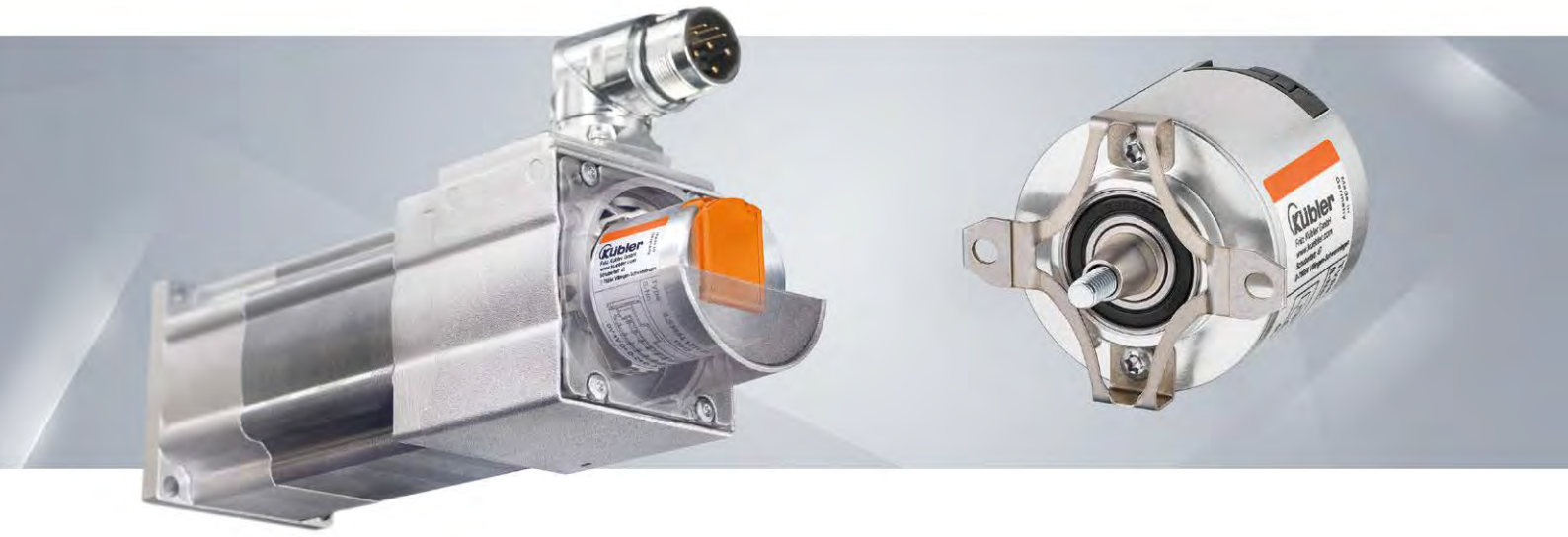
Bearingless encoders
Magnetic
Incremental

		Distance sensor head/ magnetic ring max. in mm	**Pole distance magnetic ring** in mm	**Hollow shaft max.** in mm [“]	**Resolution** max. in ppr	**Accuracy** max.	**Speed** max. in min^{-1}	Push-Pull HTL	RS422 TTL	**Temperature range** in °C [°F]	**Protection** max.	**Type of connection**	**Power supply** in V DC	**Pulse frequency** max. in kHz	**RoHS compliant**
new		**RIM200** (hollow shaft)	1	2	390	999.999	±0.02°	12.000	•	•	-25 ... +85 [-13 ... +185]	IP68/ IP69k	cable	4.8 ... 26.4	250	•
new		**RIM500** (hollow shaft)	2	5	350	999.999	±0.02°	12.000	•	•	-25 ... +85 [-13 ... +185]	IP68/ IP69k	cable	4.8 ... 26.4	250	•
new		**RIM2000** (hollow shaft) Programmable in the field	1	2	390	999.999	±0.02°	12.000	•	•	-25 ... +85 [-13 ... +185]	IP68/ IP69k	cable	4.8 ... 26.4	250	•
new		**RIM5000** (hollow shaft) Programmable in the field	2	5	350	999.999	±0.02°	12.000	•	•	-25 ... +85 [-13 ... +185]	IP68/ IP69k	cable	4.8 ... 26.4	250	•
		**Programming unit** For programming in the field														



Motor Feedback Systems for servo motors

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With requirements from industry and many years of experience in drive technology, Kübler presents its new product family of Motor Feedback Systems. Kübler has developed its Motor Feedback Systems in close cooperation with prominent manufacturers of servo motors and converters. They are based on a unique platform that offers a multitude of possibilities and benefits for servo motors. From the reduction in number of motor variants and the standardization of the mechanical connection between encoder and drive to cost savings along the entire value chain. You also get maximum flexibility when selecting the electrical interfaces.

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Motor Feedback Systems

		ø Dimensions in mm [inch]	Optical (accuracy ≤ ±0.015°)	Resolution max. in bit	RS485 Sin/Cos 1)	BiSS INTERFACE	Speed max. in min^{-1}	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant
	Singleturn Motor-Line compact, optical / magnetic **Sendix S3674** (hub shaft/tapered shaft)	36	•	24 ST	•	•	12.000	-40 ... +120 [-40 ... + 248]	IP40	PCB connector, radial	5 7 ... 30	•
	Multiturn Motor-Line compact, optical / magnetic **Sendix S3684** (hub shaft/tapered shaft)	36	•	24 ST + 12 MT	•	•	12.000	-40 ... +120 [-40 ... + 248]	IP40	PCB connector, radial	5 7 ... 30	•

1) Hiperface® compatibel.
Hiperface® is a registered trademark of Sick Stegmann GmbH.

Linear measuring technology

Linear position and speed measurement realized with different technologies.
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Accessories for measuring wheel systems:
O-rings, mounting brackets

System components for measuring wheel systems:
measuring wheels, encoder spring arms, rack and pinion

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Draw-wire encoders

		Measuring length max. in m	**Dimensions mechanics** in mm [inch] Depth depending on sensor type	**Linearity** max. [±% of measuring range]	**Traverse speed** max. in m/s	**Wire diameter** in mm [inch]	**Temperature range** in °C [°F]	**Protection** (sensor) max.	**Combinable with Sendix encoder**	**Interchangeable installation**	**Absolute digital**	**Absolute analog**	**Incremental**	**Redundant sensors**	**Integrated inclinometer**	**Type of connection**
Performance Line																
	**A50**	1.25	50 x 50 [1.97 x 1.97]	±0.02	10	0.5	-20 ... +85 [-4... +185]	IP65	•	–	•	•	•	–	–	cable M12
	**B80**	3	80 x 80 [3.15 x 3.15]	±0.02	10	0.5	-20 ... +85 [-4... +185]	IP65	•	•	•	•	•	–	–	cable M12 M23
	**C120**	6	120 x 120 [4.72 x 4.72]	±0.02	10	0.5	-20 ... +85 [-4... +185]	IP65	•	•	•	•	•	–	–	cable M12 M23
	**D135**	42.5	135 x 135 [5.32 x 5.32]	±0.02	10	0.5	-20 ... +85 [-4... +185]	IP65	•	•	•	•	•	–	–	cable M12 M23
Robust Line																
	**C60**	4	60 x 60 [2.36 x 2.36]	±0.1	3	1	-40 ... +85 [-40... +185]	IP69k	–	–	•	•	•	•	–	cable M12
	**D120**	10	120 x 120 [4.72 x 4.72]	±0.1	3	1.5	-40 ... +85 [-40... +185]	IP69k	–	–	•	•	•	•	–	cable M12
Compact Line																
	**A30**	0.6	30 x 30 [1.18 x 1.18]	±0.35	0.8	0.36	-10 ... +80 [+14 ... +176]	IP50	–	–	–	•	–	–	–	cable
	**A40/A41**	2	41 x 41 [1.61 x 1.61]	±0.25	1	0.45	-10 ... +80 [+14 ... +176]	IP65	•	–	•	•	•	–	–	cable M12 M23
new 	**B75**	3	75 x 75 [2.95 x 2.95]	±0.2	0.8	0.6	-40 ... +85 [-40... +185]	IP65	•	•	•	•	•	•	–	cable M12 M23
new 	**C105**	6	105 x 85 [4.13 x 3.35]	±0.2	3	0.6	-20 ... +85 [-4... +185]	IP65	•	•	•	•	•	•	–	cable M12 M23
Base Line																
	**C100**	5	100 x 100 [3.94 x 3.94]	±0.5	1	0.9	-40 ... +85 [-40... +185]	IP67	–	–	•	•	•	•	•	M12
	**D125**	10	125 x 125 [4.92 x 4.92]	±0.5	1	0.9	-40 ... +85 [-40... +185]	IP67	–	–	•	•	•	•	•	M12

Magnetic length measuring systems Incremental

		Distance sensor head/ magnetic band max. in mm	Pole distance magnetic band in mm	Resolution max. in µm	Speed max. in m/s	Accuracy in µm for measuring length 1 m	Measuring length max. in m	Push-Pull HTL	RS422 TTL	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant
	**Limes LI20/B1** (sensor head/magnetic band)	1	2	10	25	35	70	•	•	-20 ... +85 [-4 ... +185]	IP68/ IP69k	cable	4.8 ... 26 4.8 ... 30	•
	**Limes LI50/B2** (sensor head/magnetic band)	2	5	5	16	35	70	•	•	-20 ... +85 [-4 ... +185]	IP68/ IP69k	cable	4.8 ... 26 4.8 ... 30	•
new 	**Limes LI200/B1** [1] (sensor head/magnetic band)	1	2	0.25	40	35	70	•	•	-20 ... +85 [-4 ... +185]	IP68/ IP69k	cable	4.8 ... 26.4	•
new 	**Limes LI500/B2** [1] (sensor head/magnetic band)	2	5	1.00	40	35	70	•	•	-20 ... +85 [-4 ... +185]	IP68/ IP69k	cable	4.8 ... 26.4	•
new 	**Limes LI2000/B1** [1] (sensor head/magnetic band) Programmable in the field	1	2	0.25	40	35	70	•	•	-20 ... +85 [-4 ... +185]	IP68/ IP69k	cable	4.8 ... 26.4	•
new 	**Limes LI5000/B2** [1] (sensor head/magnetic band) Programmable in the field	2	5	1.00	40	35	70	•	•	-20 ... +85 [-4 ... +185]	IP68/ IP69k	cable	4.8 ... 26.4	•
	**Programming unit** For programming in the field													

1) Planned availability as of Q3/2024.

Magnetic length measuring systems Absolute

		Distance sensor head/ magnetic band max. in mm	Pole distance magnetic band in mm	Resolution max. in µm	Speed max. in m/s	Accuracy in µm for measuring length 1 m	Measuring length max. in m	Incremental SinCos	Absolute SSI/BiSS	Absolute fieldbus	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant
	**Limes LA10/BA1** (sensor head/magnetic band)	2	1	1	10	30	8	•	•	•	-10 ... +70 [+14 ... +158]	IP64	M12	10 ... 30	•
	**Limes LA50/BA5** (sensor head/magnetic band)	1.5	5	10	4	170	20	–	•	•	-10 ... +70 [+14 ... +158]	IP40	cable	10 ... 30	•

Measuring wheel systems

		Spring force max. [N]	Spring travel max. [mm]	Flexible encoder mounting in 30° steps	Recommended incremental encoders	Recommended absolute encoders	Circumference measuring wheel: 100 mm	200 mm	6"	300 mm	12"	500 mm	Surfaces measuring wheel: Knurled	Smooth	Nubbed	Corrugated	O-ring	Double O-ring
Compact Line																		
	 **MWE11** Smallest size	10	10	–	2400	–	•	–	–	–	–	–	•	•	–	–	–	–
new	 **MWE21** Adjustable preload	20	16	•	KIS40 3610	M366x F366x	–	•	•	–	–	–	•	•	–	–	•	–
new	 **MWE31** Internal springs	15	10	•	KIS40 3610	M366x F366x	–	•	•	–	–	–	•	•	–	–	•	–
Performance Line																		
new	 **MWE41** Internal springs	25	10	•	KIS50 5000 5805	M586x F586x 586x	–	•	–	•	•	•	•	•	•	•	•	•
new	 **MWE61** Highest contact force	40	80	•	KIS50 5000 5805	M586x F586x 586x	–	•	–	•	•	•	•	•	•	•	•	•
new	 **MWE62** Double measuring wheel system	40	80	•	KIS50	–	–	•	–	•	•	•	•	•	•	•	•	•

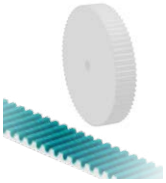
Measuring wheel systems
System components
Spring arms, spring bracket

		Spring force max. [N]	Spring travel max. [mm]	For encoder Clamping flange / shaft	Circumference Measuring wheel
Compact Line					
new 	**MWE20** Spring arm Adjustable contact force Flexible mounting options	20	16	ø 36 or 40 mm / ø 6 mm	200 mm 6“
new 	**MWE30** Spring bracket Compact design Internal springs	15	10	ø 36 or 40 mm / ø 6 mm	200 mm
Performance Line					
new 	**MWE40** Spring bracket Compact design Internal springs	25	10	ø 58 mm / ø 10 mm	300 mm 12“
new 	**MWE60** Spring arm Highest contact force, adjustable	40	80	ø 58 mm / ø 10 mm	200, 300, 500 mm 12“

Measuring wheel systems
System components
Measuring wheels

		Circumference / ø / width [mm]							Suitable for									
		200 ±0.2 / Ø 63.7 / 5.5	200 ±0.2 / Ø 63.7 / 12	300 ±0.2 / Ø 95.5 / 12	500 ±1.0 / Ø 159.2 / 25	6" (152.4 ±0.2) / Ø 48.38 / 5.5	6" (152.4 ±0.2) / Ø 48.38 / 12	12" (304.8 ±0.2) / Ø 97.02 / 12	Cardboard	Wood	Textile	Paper	Plastic (PVC, PE, ...)	Painted surfaces	Carpet, cables, nonwoven	Rubber, soft plastic	Wire, greased metals, steel profiles, leather	Greased metals, glass, floor coverings
	Diamond knurl (aluminum)	•	•	•	•	•	•	•	•	•	•	–	–	–	–	•	–	–
	Plastic (polyurethane) smooth	•	•	•	•	•	–	•	•	•	•	•	•	•	•	–	–	•	–
	Single O-ring (NBR70)	•	•	•	–	•	–	•	•	•	•	•	•	•	•	–	–	–	–
	Double O-ring (NBR70)	–	•	•	–	–	–	•	•	•	•	•	•	•	•	–	–	–	–
	Tufted rubber (polyurethane)	–	•	•	•	–	–	•	•	•	•	•	•	•	–	•	–	–	–
	Plastic (polyurethane) corrugated	–	•	•	•	–	–	•	•	•	•	•	•	•	•	–	–	–	•

Pinion with rack
· 100 % slip-free
· For encoder shaft 6 mm [0.24"] and 10 mm [0.39"]
· Rack 1 m [3.94"], stackable
· Pitch circumference = 50 mm [1.97"]



Belt pulley with Toothed belt
· 100 % slip-free
· For encoder size ø 58 mm [2.28"]
· Toothed belt up to 100 m [32.8']
· Pitch circumference = 360 mm [14.14"]

Shaft copying systems

Absolute positioning of the elevator car for travel heights up to 392 m.
The contactless absolute measuring system for shaft copying – also called shaft information or positioning system – has an extremely compact, very robust design. In addition to the sensor, which detects the position of the elevator car 100 % slip-free, it also includes the appropriate evaluation unit, a so-called Position Supervisor Unit (PSU). The safe system therefore consists of a SIL3-certified sensor and a suitable evaluation unit. This enables elevator and safety functions to be implemented in accordance with EN 81-20/21/50.

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Easy installation - Ants shaft copying systems. Installed in the elevator shaft in just a few steps. Your benefits - cost and time savings over the entire length.
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Mounting kit consisting of:
rail mounting, snap hook, tension spring, car mounting, mounting material

Configuration strips for LES03

EMC shield terminal

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Shaft copying systems
Sensors

		Measuring lenght max. in m	Traverse speed max. in m/s	SIL3	EN 81	ASME	Absolute	Resolution max. in mm	Dimensions in mm [inch]	CANopen Lift (DS417)	CAN	SSI	RS485	Protection level	Type of connection	Approvals
Ants Base																
	**Ants LEB02** Absolute position detection	392	8	–	•	–	•	1	126 x 55 x 37 [4.96 x 2.71 x 1.46]	•	–	•	•	IP54	cable Sub-D	
Ants Safe																
	**Ants LES02** Safe position detection	392	12	•	•	–	•	0.5	126 x 55 x 37 [4.96 x 2.71 x 1.46]	–	•	–	–	IP54	cable	SIL3 EN 81
new 	**Ants LES02D** Safe, redundant position detection Dual CAN	392	12	•	•	•	•	0.5	126 x 55 x 37 [4.96 x 2.71 x 1.46]	–	•	–	–	IP54	cable RJ45	SIL3 EN 81 ASME A17
	**Ants LES03** Safe position and speed detection	392	12	•	•	–	•	0.5	126 x 55 x 37 [4.96 x 2.71 x 1.46]	–	•	–	–	IP54	cable	SIL3 EN 81

Shaft copying systems
Safe systems

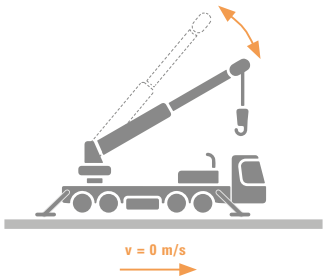
SIL3 Functional Safety EN 81

		Realizable elevator and safety functions																				
		Absolute position feedback	Final limit switch	Retardation control	Unintended Car Movement	Door bridging	Two redundant signals for the door zone	Door zone signalization in case of evacuation	Overspeed pretripping	Triggering electromech. safety gear in case overspeed	Status control of electromechanical safety gear	Reset control of electromech. safety gear	Triggering safety gear in case of upwards movement	Triggering safety gear in case of activating emergency braking switch	Inspection limit switch within reduced shaft head / pit	Shield Modus: ensuring refuge space	Triggering switch for opening safety circuit	Reset device control	Refuge space during scaffoldless installation	Functional safety already from wiring	Overspeed during inspection	Safe configuration management for accelerated approval process
	**Safe-System LES02 / PSU02** Safety functions according to EN 81-20/21/50	•	•	•	•	•	•	–	•	–	–	–	–	–	•	–	–	–	–	•	•	–
new 	**Safe-System LES03 / SGT02** Electronic overspeed governor	•	–	–	–	–	–	–	•	•	•	•	•	•	•	•	•	•	•	•	•	•
new 	**Safe-System LES03 / SGT02 / PSU02** Safety functions with electronic overspeed governor	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

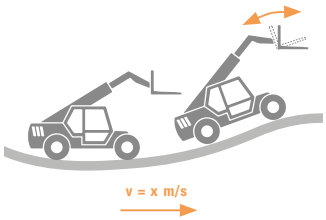
Inclinometers

Precise and reliable measuring – even in harsh environments.
The right solution for every application. Whether static or dynamic applications, Kübler offers the right sensor technology for both 1-axis and 2-axis inclination measurement. Compared to alternative measuring systems, inclinometers offer more flexibility and degrees of freedom in system design, as the sensor does not require a mechanical connection to a shaft or rotary axis. The advantage: simple installation and fewer sources of error. The sensors can be individually adapted to the respective application using simple tools.

Static applications



Dynamic applications



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Inclinometers 1- and 2-axis measurement

		Measuring angle max., 1-dimensional	Measuring angle max., 2-dimensional	Accuracy max.	Resolution max.	Analog output	PNP/NPN	IO-Link	CANopen	SAE J1939	Modbus	Parameterization via Easy Teach	Parameterization via FDT/IODD	Dimensions in mm [inch]	Temperature range in °C [°F]	Protection max.	Type of connection	RoHS compliant	Approvals
For static applications																			
new	 **IN61** Analog outputs, plastic housing	360°	±85°	±0.2°	16 bit	•	–	(•) [1]	–	–	–	•	•	71.6 x 62.6 x 20	-40 ... +85 [-40... +185]	IP68/ IP69k	M12	•	cULus
new	 **IN62** 2 switching outputs, plastic housing	360°	±85°	±0.2°	16 bit	–	•	(•) [1]	–	–	–	–	•	71.6 x 62.6 x 20	-40 ... +85 [-40... +185]	IP68/ IP69k	M12	•	cULus
new	 **IN68** IO-Link interface (CANopen)[1], plastic housing	360°	±85°	±0.2°	0.01 °	–	–	•	(•) [2]	–	–	–	•	71.6 x 62.6 x 20	-40 ... +85 [-40... +185]	IP68/ IP69k	M12	•	cULus
	 **IN81** Analog outputs, metal housing	360°	±85°	±0.2°	12 bit	•	–	–	–	–	–	•	–	80 x 60 x 23	-40 ... +85 [-40... +185]	IP67/ IP69k	M12	•	E1 cULus
	 **IN88** Fieldbus interface, metal housing	360°	±85°	±0.2°	0.01°	–	–	–	•	•	•	–	–	80 x 60 x 23	-40 ... +85 [-40... +185]	IP67/ IP69k	M12	•	E1 cULus
For dynamic applications																			
new	 **IN71** Analog outputs, plastic housing	360°	±85°	±0.2°	16 bit	•	–	(•) [1]	–	–	–	•	•	71.6 x 62.6 x 20	-40 ... +85 [-40... +185]	IP68/ IP69k	M12	•	cULus
new	 **IN72** 2 switching outputs, plastic housing	360°	±85°	±0.2°	16 bit	–	•	(•) [1]	–	–	–	–	•	71.6 x 62.6 x 20	-40 ... +85 [-40... +185]	IP68/ IP69k	M12	•	cULus
new	 **IN78** IO-Link interface (CANopen)[1], plastic housing	360°	±85°	±0.2°	0.01 °	–	–	•	(•) [2]	–	–	–	•	71.6 x 62.6 x 20	-40 ... +85 [-40... +185]	IP68/ IP69k	M12	•	cULus

1) IO-Link communication for parameterization via FDT/IODD with corresponding software (e.g. PACTware).
2) Planned availability as of Q3/2024.

TRANSMISSION

SLIP RINGS
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CABLES AND CONNECTORS
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With Kübler you can always reliably transmit power, signals, and data.
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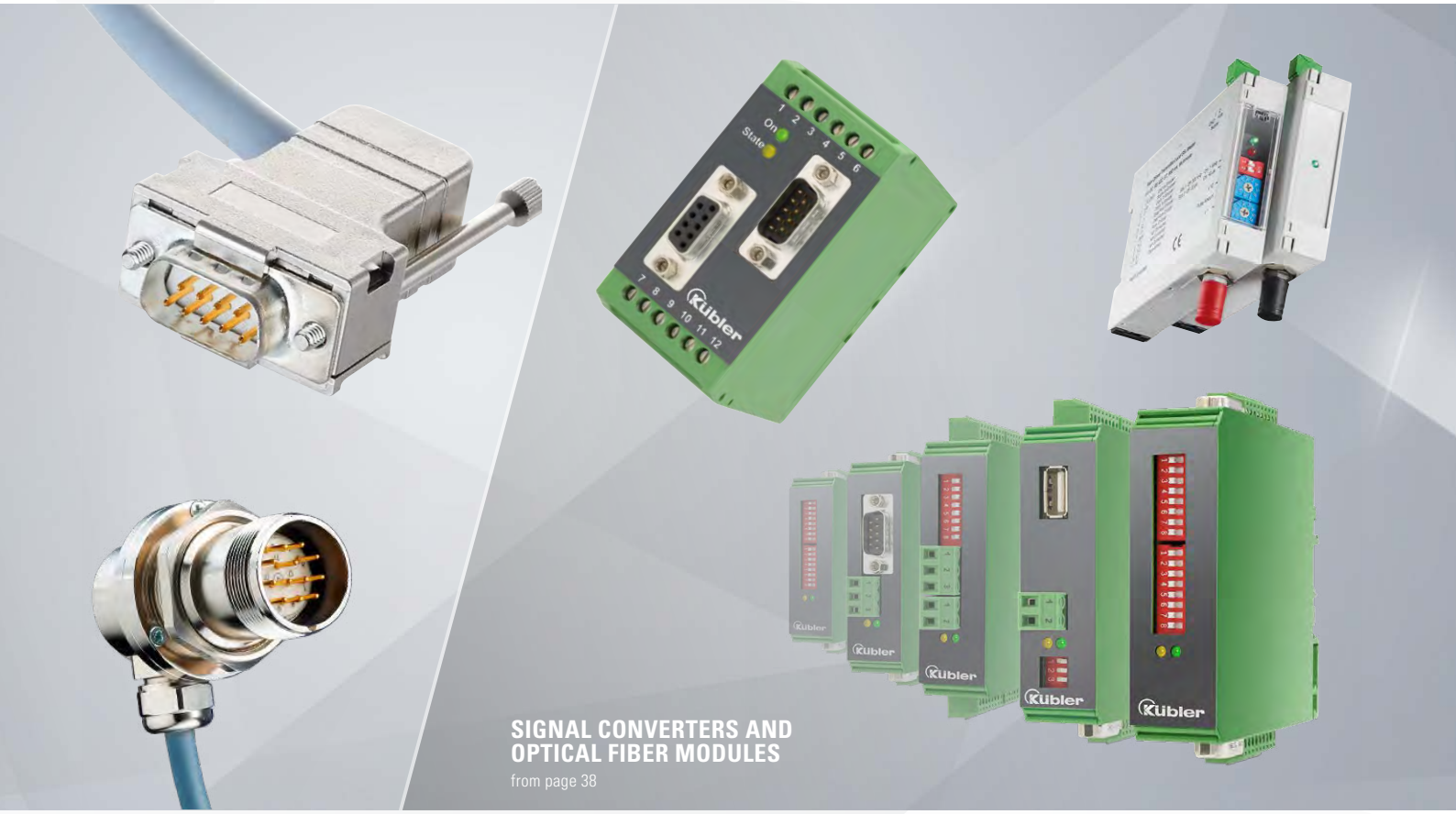

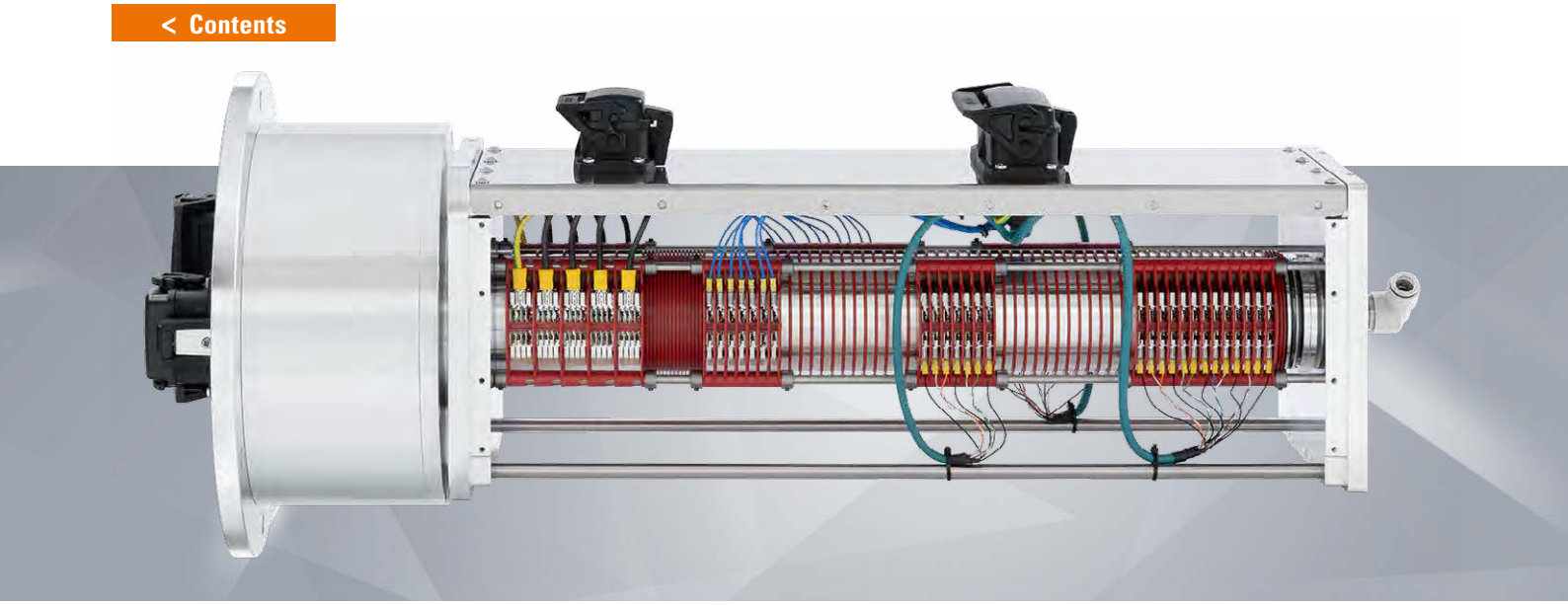

Slip rings

Slip ring platform with Gigabit transmission
Due to the increasing networking of all components of a plant / machine and the associated complexity of machine controllers through to the implementation of Industry 4.0 / IIoT concepts such as Condition Monitoring, the demand for high-end data transmission is increasing. Following this trend, Kübler has developed a new, future-proof slip ring platform, which on the one hand is equipped with reliable „high-end" transmission technology in a maximum compact design and on the other hand has a 1 Gbit module. This operates without further electronic components and thus enables interference-free, reliable and direct transmission.

INDUSTRIE 4.0
IIoT READY
Connectivity Identification
Diagnostics Adaptability

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

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Slip rings

	Power (load)	Signal/data (analog/digital)	Pneumatics	Hydraulics	N° of channels max.	Ø Hollow shaft max. in mm	Load max.	Protection max.	Speed max. in min^{-1}	Temperature range max. in °C [°F]
Base Line										
new  Fig. SR060E **Dimension 60 mm** compact, slim, low-maintenance, standardized with a wide range of options for 24/7 operation New: Version with M12 connector	•	•	–	–	3 load 2 signal	25	240 V 20 A	IP64	500	0 ... +75 [+32 ... +167]
 Fig. SR060U **Dimension 60 mm, with UL approval** compact, slim, low-maintenance, standardized with a wide range of options for 24/7 operation	•	•	–	–	3 load 2 signal	25	240 V 16 A	IP64	500	0 ... +45 [+32 ... +113]
 Fig. SR085 **Dimension 85 mm** modular, wide range of variants, extreme service life, especially for 24/7 operation	•	•	•	•	max. 20	30	400 V 20 A (25 A)	IP64	800	-35 ... +85 [-31 ... +185]
new  Fig. SR085IE **Dimension 85 mm, for Industrial Ethernet up to 100 Mbit/s** modular, wide range of variants, extreme service life, especially for 24/7 operation Single Pair Ethernet System Alliance INDUSTRIE 4.0 IIoT READY Connectivity Identification Diagnostics Adaptability	•	•	•	•	max. 20	30	400 V 20 A (25 A)	IP64	800	-35 ... +85 [-31 ... +185]
Industrial Line										
 Fig. SR120 **Dimension 120 mm** customer-specific structure with a modular construction, supports all common fieldbuses up to 1 Gbit/s INDUSTRIE 4.0 IIoT READY Connectivity Identification Diagnostics Adaptability	•	•	•	•	on request	25	400 V 20 A (25 A)	IP65	300	-35 ... +85 [-31 ... +185]
 Fig. SR160 **Dimension 160 mm** customer-specific design with an individual interface layout, up to 3 paths for gigabit fieldbuses INDUSTRIE 4.0 IIoT READY Connectivity Identification Diagnostics Adaptability	•	•	•	•	on request	on request	400 V 50 A	IP67	150	-35 ... +85 [-31 ... +185]
 Fig. SR250H **Dimension 250 mm and larger** 100% customer-specific, condition monitoring, integration of sensor systems INDUSTRIE 4.0 IIoT READY Connectivity Identification Diagnostics Adaptability	•	•	•	•	on request	on request	1000 V 150 A	IP67	150	-35 ... +85 [-31 ... +185]
Pancake slip rings										
 Fig. SR160P **Pancake slip rings** customer-specific design, large hollow shaft, extremely flat design	•	•	–	–	on request	on request	60 VDC 5 A	IP00	60	0 ... +75 [+32 ... +167]

Signal converters and optical fiber modules

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Signal converters

		Input signals	Output signals	Control inputs	Power supply in V DC	Encoder supply in V DC	Types of connection	Protection max.	Working temperature max. in °C [°F]
	Level converter **PW 1D-1D**	incremental HTL / TTL / RS422	incremental HTL / TTL / RS422	–	5 ... 30	5 ... 30	screw terminals, Sub-D	IP20	0 ... +45 [+32 ... +113]
	Signal splitter **SP 1SC-2SC2D**	SinCos	SinCos, incremental HTL / TTL / RS422	–	17 ... 30	5.2 5 ... 30	screw terminals, Sub-D	IP20	0 ... +45 [+32 ... +113]
	Signal splitter **SP 2D-2D**	incremental HTL / TTL / RS422	incremental HTL / TTL / RS422	2	12 ... 30	5.2 10 ... 28	screw terminals	IP20	-20 ... +60 [-4 ... +140]
	Signal converter **SK 1A-1S1D2RS**	analog	incremental HTL / TTL / RS422, RS232 / RS485, SSI	4	12 ... 30	–	screw terminals, Sub-D, USB	IP20	0 ... +45 [+32 ... +113]
new 	Signal converter **SK 1SC-1D**	SinCos	incremental HTL / TTL / RS422	–	18 ... 30	5.2	screw terminals, Sub-D	IP20	0 ... +45 [+32 ... +113]
	Signal converter **SK 1S-1P**	SSI	parallel	–	18 ... 36 5 12	–	screw terminals, Sub-D	IP20	0 ... +50 [+32 ... +122]
	Signal converter **SK 1S1D-1A2RS**	incremental HTL / TTL / RS422, SSI	analog, RS232 / RS485	1	18 ... 30	5.5	screw terminals, Sub-D	IP20	0 ... +60 [+32 ... +140]
	Frequency divider **FT 1D-1D**	incremental HTL differential / HTL / TTL / RS422	incremental HTL differential / HTL / TTL / RS422	–	9 ... 30	5.5	screw terminals	IP20	0 ... +60 [+32 ... +140]

Optical fiber modules (LWL)

		Interface	Transmission distance in m	Input frequency in kHz	Temperature range in °C [°F]	Power supply in V DC	Power consumption in W
	Optical fiber module, incremental **LWL**	RS422 HTL	2.000	400	-10 ... +60 [+14 ... +140]	5 10 ... 30	2
	Optical fiber module, absolute **LWL.A**	SSI	2.000	1000	-10 ... +70 [+14 ... +158]	5 10 ... 30	1

Cables and connectors

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Cables, unprepared, cut to length

		PVC cable	PUR cable	TPE cable	Cross section in mm²	Cable diameter in mm	SSI, BiSS INTERFACE	Analog output Sin/Cos, Push-Pull RS422 TTL, HTL, Open Collector NPN	Parallel, Parallel Highspeed	PROFIBUS	CANopen	SAE J1939	Modbus	IO-Link	For ATEX zone 2/22	RoHS compliant
	2 core + shield	–	•	–	2 x 0.34	appr. 7.6	–	–	–	•	–	–	–	–	–	•
	5 core + shield	•	•	–	5 x 0.14 5 x 0.75	appr. 4.7 appr. 7.5	–	–	–	–	•	•	•	•	–	•
	6 core + shield	•	–	–	3 x 2 x 0.25	appr. 6.2	–	–	–	–	•	–	–	–	–	•
	8 core + shield	–	•	–	8 x 0.14 3 x 2 x 0.14 + 2 x 0.5	appr. 5.5 appr. 7.4	•	•	–	–	–	–	–	–	–	–	•
	10 core + shield	–	•	–	4 x 2 x 0.25 + 2 x 1	appr. 7.9	•	•	–	–	–	–	–	–	–	–	•
	12 core + shield	•	•	•	10 x 0.14 [AWG25] + 2 x 0.5 [AWG20] 12 x 0.14 [AWG25] 6 x 2 x 0.14 [AWG25] 5 x 2 x 0.14 [AWG25] + 2 x 0.5 [AWG20] 6 x 2 x 0.14 [AWG25] 4 x 0.1 [AWG27] + 4 x 2 x 0.14 [AWG25]	appr. 6.9 appr. 6.7 appr. 7.5 appr. 8.5 appr. 7.3 appr. 5.8	•	•	•	–	–	–	–	–	–	•	•
	18 core + shield	•	–	–	18 x 0.14 [AWG25]	appr. 7.8	–	–	•	–	–	–	–	–	–	•

Connectors, self-assembly

		N° of pins	Housing	Connection technology	Cable diameter Ø in mm	Straight connector	Right angle connector	Wall/panel lead-through	For fieldbus	For ATEX zone 2/22	For ATEX zone 1/21
	M12	4/5/8/12	Metal, Plastic	Screw terminals	6 - 8	•	•	•	•	•	•
	M23	12/17	Metal	Solder pins	5.5 - 10.5	•	•	•	–	–	–
	MIL	7/10	Metal	Solder pins	5 - 8	•	–	–	–	–	–
	RJ45	8	Plastic	Crimp connection	4.5 - 8	•	–	–	•	–	–
	Sub-D	9	ABS metallized	Solder pins	3.5 - 8.6	–	•	–	–	–	–

Cordsets, pre-assembled

	PVC cable	PUR cable	TPE cable	Optical fiber	Straight connector	Right angle connector	For incremental encoders	For absolute SSI / BiSS encoders	For fieldbus	For analog interfaces
 with M12 connector	•	•	–	–	•	•	•	•	•	•
 with M23 connector	•	•	•	–	•	–	•	•	–	•
 with PCB connector	•	–	–	–	–	–	•	•	–	–
 Simplex patch cable optical fiber	–	–	–	•	•	–	•	•	–	–
 with RJ45 connector	–	•	–	–	–	–	–	–	•	–
 with Sub-D connector	•	•	–	–	–	•	•	•	•	–

EVALUATION

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Pulse counters electronic

	Pulse	Time	Frequency	Tachometer	Position	Serial interface (SI) Fieldbus (FB)	Presets: o = optocoupler; r = relay	Reset manual	Reset electrical	Programmable	Display	Number of digits	Dimensions front in mm [inch]	Panel cut-out in mm [inch]	Depth in mm [inch]	Temperature range in °C [°F]	Protection max.	Power supply	RoHS compliant	Approvals
LCD pulse counters																				
 **Codix 130** adding or subtracting, AC/DC	•	–	–	–	–	–	–	•	•	–	LCD	8	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	47.7 [1.88]	-10...+60 [+14 ... +140]	IP65	batt.	•	cULus
Codix 131 count direction or difference counter, AC/DC	•	–	–	–	–	–	–	•	•	–	LCD	8	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	47.7 [1.88]	-10...+60 [+14 ... +140]	IP65	batt.	•	cULus
Codix 132 count direction, AC	•	–	–	–	–	–	–	•	•	–	LCD	8	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	47.7 [1.88]	-10...+60 [+14 ... +140]	IP65	batt.	•	cULus
 **Codix 140** adding 0...9999999	•	–	–	–	–	–	–	•	•	–	LCD	7	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	47.7 [1.88]	-20...+65 [-4 ... +149]	IP65	DC	•	–
LCD service counter																				
 **Codix 142** service counter 0...9999999	•	–	–	–	–	–	1o	•	•	•	LCD	7	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	47.7 [1.88]	-20...+65 [-4 ... +149]	IP65	DC	•	–
LED pulse counters																				
 **Codix 520** adding	•	–	–	–	–	–	–	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	cULus
Codix 521 6 count modes	•	–	–	–	•	–	1o	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	cULus
Codix 524 multifunctional	•	•	•	•	•	–	1o	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	cULus
Codix 52U with dual functions in 4 combinations	•	•	•	•	–	–	–	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	cULus
Codix 52P + Frequency 6 count modes	•	–	•	•	•	–	–	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	cULus
Codix 52T / 52C 2 totalizers with separate scaling; 52C with separate inputs	•	–	–	–	–	–	–	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	cULus
 **Codix 540** adding	•	–	–	–	–	–	–	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	cULus
Codix 541 6 count modes	•	–	–	–	•	–	1o	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	cULus
Codix 544 multifunctional	•	•	•	•	•	–	1o	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	cULus
Codix 54U with dual functions in 4 combinations	•	•	•	•	–	–	–	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	cULus
Codix 54P + Frequency 6 count modes	•	–	•	•	•	–	–	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	cULus
LCD modules																				
 **190** PCB mounting	•	–	–	–	–	–	–	–	•	–	LCD	7	32x18 [1.26 x 0.71]	–	5 [0.20]	-40...+80 [-40 ... +176]	–	DC	•	–
192 PCB mounting	•	–	–	–	–	–	–	–	•	–	LCD	6	32x18 [1.26 x 0.71]	–	5 [0.20]	-40...+85 [-40 ... +185]	–	DC	•	–
LCD touch counter																				
 **571T** multifunctional (also reciprocal) analog output, serial interface	•	•	•	•	•	SS FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20...+60 [-4 ... +140]	IP65	AC/DC	•	–

Pulse counters electromechanical

		Pulse	Time	kWh	Panel mounting	PCB mounting	Base mounting	DIN rail mounting	Reset	Number of digits	Dimensions in mm [inch]	Panel cut-out in mm [inch] (for front panel version)	Standard temperature range in °C [°F] (extended on request)	Protection max.	Supply type	RoHS compliant	Approvals
Micro counters																	
	**K46 / K47** high shock resistance	•	–	–	•	•	–	–	–	6 / 7	30 x 20 [1.18 x 0.79] panel mount	27 x 14 [1.06 x 0.55]	-10 ... +60 [+14 ... +140]	IP65	DC	•	cULus
	**K66 / K67** high shock resistance, magnetic field resistant	•	–	–	•	•	–	–	–	6 / 7	30 x 20 [1.18 x 0.79] panel mount	27 x 14 [1.06 x 0.55]	-10 ... +60 [+14 ... +140]	IP65	DC	•	–
	**K04 / K05** high shock resistance	•	–	–	•	•	–	–	–	4 / 5	26 x 15 [1.02 x 0.59] panel mount	24 x 13 [0.94 x 0.51]	-10 ... +60 [+14 ... +140]	IP65	AC/DC	•	cULus
	**K06 / K07 / AK07** high shock resistance	•	–	–	•	•	•	–	–	6 / 7	32 x 15 [1.26 x 0.59] panel mount	30 x 13 [1.18 x 0.51]	-10 ... +60 [+14 ... +140]	IP65	AC/DC	•	cULus
	**SK07** high shock resistance, for DIN rail	•	–	–	–	–	•	•	–	7	30 x 65 [1.18 x 2.56]	–	-10 ... +60 [+14 ... +140]	IP50	AC/DC	•	cULus
Mini counters																	
	**W15** also in DIN format 48 x 24 mm [1.89 x 0.94"]	•	–	–	•	–	–	–	manual	5	from 34 x 23 [1.34 x 0.91]	from 31 x 20 [1.22 x 0.79]	-10 ... +50 [+14 ... +122]	IP40	AC/DC	•	–
	**W16 / W17** also in DIN format 48 x 24 mm [1.89 x 0.94"]	•	–	–	•	•	–	–	–	6 / 7	from 34 x 23 [1.34 x 0.91]	from 31 x 20 [1.22 x 0.79]	-10 ... +50 [+14 ... +122]	IP41	AC/DC	•	–
Robust counters																	
	**Bk14** very long service life	•	–	–	•	–	–	–	manual	4	from 37 x 28 [1.46 x 1.10]	from 33.3 x 25 [1.31 x 0.98]	-10 ... +60 [+14 ... +140]	IP40 IP41	AC/DC	•	–
	**B16 / B18** very long service life	•	–	–	•	–	–	•[1]	manual (only B16)	6 / 8	from 50 x 25 [1.97 x 0.98]	50 x 25 [1.31 x 0.87]	-10 ... +60 [+14 ... +140]	IP40 IP41	AC/DC	•	–
	**Mk14 / Mk16** very long service life	•	–	–	•	–	–	–	manual electrical	4 / 6	from 37 x 26 [1.46 x 1.02]	from 33.3 x 22 [1.46 x 1.02]	-10 ... +45 [+14 ... +113]	IP40 IP41	AC/DC	•	–
Dual function counters																	
	**HC77** combination hour meter and totalizer	•	•	–	•	–	–	–	–	2 x 7	from 48 x 48 [1.89 x 1.89]	45 x 45 [1.77 x 2.78] ø 50.5 [1.99]	-15 ... +50 [+5 ... +122]	IP65	AC/DC	•	cULus
	**SHC77** combination hour meter and totalizer	•	•	–	–	–	–	•	–	2 x 7	48.5 x 61.5 [1.91 x 2.42]	–	-15 ... +50 [+5 ... +122]	IP52	AC/DC	•	cULus

1) With mounting frame.

Pulse counters pneumatic

		Panel mounting	PCB mounting	Base mounting	DIN rail mounting	Reset	Number of digits	Panel cut-out in mm [inch] (for front panel version)	Signal	Protection max.	Count frequency max. in Hz	RoHS compliant
	**PMk14 / PMk16 / PMk18** Totalizer	•	–	–	–	manual (PMk 14, PMk 16)	4/6/8	33.3 x 22 [1.31 x 0.87] 48 x 24 [1.89 x 0.94]	L signal = 1.5 ... 8 bar O signal ≤ 0.15 bar	IP41	17 / 50	•

Preset counters electronic

		Pulse	Time	Frequency	Tachometer	Position	Serial interface (SI) Fieldbus (FB)	Presets: o = optocoupler; r = relay	Reset manual	Reset electrical	Programmable	Display	Number of digits	Dimensions front in mm	Panel cut-out in mm	Depth in mm	Temperature range in °C	Protection max.	Power supply	RoHS compliant	Approvals
LCD preset counters																					
	**901** 1 preset – pulse, time (battery)	•	•	–	–	–	–	1r	•	•	•	LCD	2x6	48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77]	63.2 [2.49]	-20 ... +65 [-4 ... +149]	IP65	batt.	•	cULus
	**Codix 907 / 908** multicolor display (optional), decade keyboard count frequency 5 kHz	•	•	–	–	•	–	1r 2r	•	•	•	LCD/ LED Look	2x6	48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77]	91 [3.58]	-10 ... +50 [+14 ... +122]	IP65	AC/DC	•	–
	**Codix 923 / 924** multicolor display (optional), decade keyboard count frequency 65 kHz	•	•	•	•	•	–	up to 4r 6o	•	•	•	LCD/ LED Look	2x6	48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77]	91 [3.58]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
LCD touch preset counters																					
	**570T** SSI absolute encoder display, analog output, serial interface	–	–	•	•	•	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–
	**571T** multifunctional (also reciprocal) analog output, serial interface	•	•	•	•	•	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–
LED preset counters																					
	**Codix 560** LED multifunction preset counters, 14 segment LED, automatic help texts, opt. serial interface	•	•	•	•	•	SS FB	2r	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	91 [3.58]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus

Preset counters electromechanical

		Pulse	Time	Panel mounting	PCB mounting	Base mounting	DIN rail mounting	Presets	Reset	Number of digits	Dimensions in mm [inch]	Panel cut-out in mm [inch] (for front panel version)	Temperature range in °C [°F]	Protection max.	Supply type	RoHS compliant
	**BVa 15** adding with preset constantly visible	•	–	•	–	–	•[1) 2)]	1	manual	2 x 5	from 50 x 50 [1.97 x 1.97]	50 x 50 [1.97 x 1.97]	-10 ... +60 [+14 ... +140]	IP40	AC/DC	•
	**MVs 13** subtracting	•	–	•	–	–	–	1	manual electrical	2 / 3	from 39 x 55 [1.54 x 2.17]	33.3 x 50 [1.31 x 1.97]	-10 ... +45 [+14 ... +113]	IP40	AC/DC	•

1) With mounting frame G300 003.
2) With DIN rail mount G300002.

Timers / Hour meters electronic

		Pulse	Time	Frequency	Tachometer	Position	Serial interface (SI) Fieldbus (FB)	Presets: o = optocoupler; r = relay	Reset manual	Reset electrical	Programmable	Display	Number of digits	Dimensions front in mm [inch]	Panel cut-out in mm [inch]	Depth in mm [inch]	Temperature range in °C [°F]	Protection max.	Power supply	RoHS compliant	Approvals
LCD hour meters																					
	**Codix 134** 99999h59m or 99999.99h	–	•	–	–	–	–	–	•	•	–	LCD	7	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	47.7 [1.88]	-10...+60 [+14 ... +140]	IP65	batt.	•	cULus
	Codix 135 9999h59m59s or 9999999.9s	–	•	–	–	–	–	–	•	•	–	LCD	8	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	47.7 [1.88]	-10...+60 [+14 ... +140]	IP65	batt.	•	cULus
	**Codix 141** 99999.99h	–	•	–	–	–	–	–	•	•	–	LCD	7	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	47.7 [1.88]	-20...+65 [-4 ... +149]	IP65	DC	•	–
LCD service timer																					
	**Codix 143** service timer 99999.99h	–	•	–	–	–	–	1 o	•	•	•	LCD	7	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	47.7 [1.88]	-20...+65 [-4 ... +149]	IP65	DC	•	–
LED timers																					
	**Codix 523** h, min, sec or hh.mm.ss	–	•	–	–	–	–	1 o	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	cULus
	Codix 524 multifunction	•	•	•	•	•	–	1 o	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	cULus
	Codix 52U with dual functions in 4 combinations	•	•	•	•	–	–	–	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	cULus
	**Codix 543** h, min, sec or hh.mm.ss	–	•	–	–	–	–	1 o	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	cULus
	Codix 544 multifunction	•	•	•	•	•	–	1 o	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	cULus
	Codix 54U with dual functions in 4 combinations	•	•	•	•	–	–	–	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	cULus
LCD time modules																					
	**194** PCB mounting	–	•	–	–	–	–	–	–	•	–	LCD	6	32x18 [1.26 x 0.71]	–	5 [0.20]	-40...+80 [-40 ... +176]	–	DC	•	–
	198 PCB mounting	–	•	–	–	–	–	–	–	•	–	LCD	6	32x18 [1.26 x 0.71]	–	5 [0.20]	-40...+85 [-40 ... +185]	–	DC	•	–

Timers / Hour meters electromechanical

		Pulse	Time	kWh	Panel mounting	PCB mounting	Base mounting	DIN rail mounting	Reset	Number of digits	Dimensions in mm [inch]	Panel cut-out in mm [inch] (for front panel version)	Standard temperature range in °C [°F]	Protection max.	Supply type	RoHS compliant	Approvals
Micro timers																	
	**HK47** high shock resistance	–	•	–	•	•	–	–	–	7	30 x 20 [1.18 x 0.79] panel mount	27 x 14 [1.06 x 0.55]	- 10 ... + 60 [+14 ... +140]	IP65	DC	•	–
	**HK07 / AHK07** high shock and impact resistance	–	•	–	•	•	•	–	–	7	32 x 15 [1.26 x 0.59] panel mount	30 x 13 [1.18 x 0.51]	- 10 ... + 60 [+14 ... +140]	IP65	DC	•	–
Timers with DIN dimensions																	
	**HK17** small dimensions	–	•	–	•	–	–	–	–	7 / 8	from 37 x 26 [1.18 x 0.51]	33 x 22 [1.30 x 0.87]	-15 ... +50 [+5... +122]	IP65	AC/DC	•	cULus
	**H37** also in DIN format 48 x 24 mm [1.89 x 0.94"]	–	•	–	•	–	–	•[1]	–	7 / 8	from 48 x 24 [1.89 x 0.94]	from 45 x 22 [1.89 x 0.94]	-15 ... +50 [+5... +122]	IP65	AC/DC	•	cULus
	**H57** DIN format 48 x 48 mm [1.89 x 1.89"]	–	•	–	•	–	–	–	–	7 / 8	from 48 x 48 [1.89 x 1.89]	45 x 45 [1.77 x 2.78] ø60 [2.36]	-15 ... +50 [+5... +122]	IP65	AC/DC	•	cULus
Timers for DIN rail mounting																	
	**AH57** DIN format 48 x 48 mm [1.89 x 1.89"]	–	•	–	–	–	–	•	–	7 / 8	48.5 x 61.5 [1.91 x 2.40]	–	-15 ... +50 [+5... +122]	IP65	AC/DC	•	cULus
	**SHK07.1** high shock resistance	–	•	–	–	–	–	•	–	7	30 x 65 [1.18 x 2.56]	–	- 10 ... + 60 [+14 ... +140]	IP52	AC/DC	•	–
	**SH17** 36 mm wide	–	•	–	–	–	–	•	–	7	36 x 90 [1.42 x 3.54]	–	-10 ... +70 [+14 ... +158]	IP65	AC/DC	•	–
Timers, round design																	
	**HR47** opt. run indicator	–	•	–	•	–	–	–	–	7	ø58 [2.28]	ø50 [1.31]	- 25 ... + 80 [-13 ... +176]	IP65	AC/DC	•	–
	**HR76** high shock resistance	–	•	–	•	–	–	–	–	6	from ø58.7 [2.31]	ø50.8 [2.00]	- 30 ... + 65 [-22 ... +149]	IP65	AC/DC	•	cULus
Robust timers																	
	**HB26** plug-in version, long service life	–	•	–	•	–	–	•[1]	manual	6	from 50 x 25 [1.97 x 0.98]	50 x 25 [1.31 x 0.87]	-15 ... +50 [+5... +122]	IP41	AC/DC	•	–
	**HB27** long service life	–	•	–	•	–	–	•[1]	–	7	from 50 x 25 [1.97 x 0.98]	50 x 25 [1.31 x 0.87]	-15 ... +50 [+5... +122]	IP51	AC/DC	•	–
Dual function counters																	
	**HC77** combination hour meter and totalizer	•	•	–	•	–	–	–	–	2 x 7	from 48 x 48 [1.89 x 1.89]	45 x 45 [1.77 x 2.78] ø50.5 [1.99]	-15 ... +50 [+5... +122]	IP65	AC/DC	•	cULus
	**SHC77** combination hour meter and totalizer	•	•	–	–	–	–	•	–	2 x 7	48.5 x 61.5 [1.91 x 2.40]	–	-15 ... +50 [+5... +122]	IP52	AC/DC	•	cULus
	**HW66M** combination hour meter and energy meter	–	•	•	•	–	–	•[1]	–	2 x 6	from 48 x 48 [1.89 x 1.89]	45 x 45 [1.77 x 2.78] ø50 [1.97]	-10 ... +55 [+14 ... +131]	IP65	AC	•	MID

1) With mounting frame.

Time preset counters electronic

		Pulse	Time	Frequency	Tachometer	Position	Serial interface (SI) Fieldbus (FB)	Presets: o = optocoupler; r = relay	Reset manual	Reset electrical	Programmable	Display	Number of digits	Dimensions front in mm	Panel cut-out in mm	Depth in mm	Temperature range in °C	Protection max.	Power supply	RoHS compliant	Approvals
LCD time preset counters																					
	**901** 1 preset – pulse, time (battery)	•	•	–	–	–	–	1r	•	•	•	LCD	2x6	48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77]	63.2 [2.49]	-20...+65 [-4 ... +149]	IP65	batt.	•	c UL us
	**Codix 907 / 908** multicolor display (optional), decade keyboard, count frequency 5 kHz	•	•	–	–	•	–	1r 2r	•	•	•	LCD/ LED Look	2x6	48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77]	91 [3.58]	-10...+50 [+14 ... +122]	IP65	AC/DC	•	–
	**Codix 923 / 924** multicolor display (optional), decade keyboard, count frequency 65 kHz	•	•	•	•	•	–	up to 4r 6o	•	•	•	LCD/ LED Look	2x6	48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77]	91 [3.58]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	c UL us
LED time preset counter																					
	**Codix 560** LED multifunction preset counters, 14 segment LED, automatic help texts, opt. serial interface	•	•	•	•	•	SI FB	2r	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	91 [3.58]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	c UL us
LCD touch time preset counter																					
	**571T** multifunctional (also reciprocal) analog output, serial interface	•	•	•	•	•	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–

1) With mounting frame G300 003 or DIN rail mount G300002.

Frequency displays
Tachometers

		Pulse	Time	Frequency	Tachometer	Position	Serial interface (SI) Fieldbus (FB)	Presets: o = optocoupler, r = relay	Reset manual	Reset electrical	Programmable	Display	Number of digits	Dimensions front in mm [inch]	Panel cut-out in mm [inch]	Depth in mm [inch]	Temperature range in °C [°F]	Protection max.	Power supply	RoHS compliant	Approvals
LCD frequency display																					
	**Codix 136** in Hz	–	–	•	•	–	–	–	–	–	–	LCD	8	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	47.7 [1.88]	-10 ... +60 [+14 ... +140]	IP65	batt.	•	cULus
LED frequency displays																					
	**Codix 522** 1/sec or 1/min	–	–	•	•	–	–	1o	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20 ... +65 [-4 ... +149]	IP65	DC	•	cULus
	Codix 524 multifunctional	•	•	•	•	•	–	1o	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20 ... +65 [-4 ... +149]	IP65	DC	•	cULus
	Codix 52U with dual functions in 4 combinations	•	•	•	•	–	–	–	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20 ... +65 [-4 ... +149]	IP65	DC	•	cULus
	Codix 52P + Frequency 6 count modes	•	–	•	•	•	–	–	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20 ... +65 [-4 ... +149]	IP65	DC	•	cULus
	**Codix 542** 1/sec or 1/min	–	–	•	•	–	–	1o	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
	Codix 544 multifunctional	•	•	•	•	•	–	1o	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
	Codix 54U with dual functions in 4 combinations	•	•	•	•	–	–	–	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
	Codix 54P + Frequency 6 count modes	•	–	•	•	•	–	–	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
LCD touch frequency displays																					
	**570T** SSI absolute encoder display, analog output, serial interface	–	–	•	•	•	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–
	**571T** multifunctional (also reciprocal) analog output, serial interface	•	•	•	•	•	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–

Frequency displays Tachometers with limits

	Pulse	Time	Frequency	Tachometer	Position	Serial interface (SI) Fieldbus (FB)	Presets: o = optocoupler; r = relay	Reset manual	Reset electrical	Programmable	Display	Number of digits	Dimensions front in mm	Panel cut-out in mm	Depth in mm	Temperature range in °C	Protection max.	Power supply	RoHS compliant	Approvals
LCD tachometer (with multicolor, LED look)																				
 **Codix 923 / 924** multicolor display, decade keyboard, count frequency 65 kHz	•	•	•	•	•	–	up to 4r 6o	•	•	•	LCD/ LED Look	2x6	48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77]	91 [3.58]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
LED tachometers with limits																				
 **Codix 560** LED multifunction preset counters, 14 segment LED, automatic help texts, opt. serial interface	•	•	•	•	•	SI FB	2r	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	91 [3.58]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
LCD touch tachometers with limits																				
 **570T** SSI absolute encoder display, analog output, serial interface	–	–	•	•	•	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–
 **571T** multifunctional (also reciprocal) analog output, serial interface	•	•	•	•	•	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–

Position displays

		Pulse	Time	Frequency	Tachometer	Position (incremental = i; SSI = s; a = analog)	Serial interface (SI) Fieldbus (FB)	Presets: o = optocoupler; r = relay	Reset manual	Reset electrical	Programmable	Display	Number of digits	Dimensions front in mm	Panel cut-out in mm	Depth in mm	Temperature range in °C	Protection max.	Power supply	RoHS compliant	Approvals
LCD position display																					
	**Codix 133** phase discriminator (quadrature) x1 and x2 evaluation	–	–	–	–	i	–	–	•	•	–	LCD	8	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	47.7 [1.88]	-10 ... +60 [+14 ... +140]	IP65	batt.	•	cULus
LED position displays																					
	**Codix 521** 6 count modes	•	–	–	–	i	–	1o	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20 ... +65 [-4 ... +149]	IP65	DC	•	cULus
	Codix 524 multifunctional	•	•	•	•	i	–	1o	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20 ... +65 [-4 ... +149]	IP65	DC	•	cULus
	Codix 52P + Frequency 6 count modes	•	–	•	•	i	–	–	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20 ... +65 [-4 ... +149]	IP65	DC	•	cULus
	**Codix 541** 6 count modes	•	–	–	–	i	–	1o	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
	Codix 544 multifunctional	•	•	•	•	i	–	1o	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
	Codix 54P + Frequency 6 count modes	•	–	•	•	i	–	–	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
LCD touch SSI position displays																					
	**570T** SSI absolute encoder display, analog output, serial interface	–	–	•	•	s	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–
	**571T** multifunctional (also reciprocal) analog output, serial interface	•	•	•	•	i	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–
new 	**573T IO-Link** 2 inputs (analog) 4 limit values, analog output, serial interface	–	–	•	•	a	SI FB IO-Link	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–

Position displays with limits

	Pulse	Time	Frequency	Tachometer	Position (incremental = i; SSI = s; a = analog)	Serial interface (SI) Fieldbus (FB)	Presets: o = optocoupler; r = relay	Reset manual	Reset electrical	Programmable	Display	Number of digits	Dimensions front in mm	Panel cut-out in mm	Depth in mm	Temperature range in °C	Protection max.	Power supply	RoHS compliant	Approvals
LCD position preset counters (optional with multicolor, LED look)																				
 **Codix 907 / 908** multicolor display (optional), decade keyboard, count frequency 5 kHz	•	•	–	–	i	–	1r 2r	•	•	•	LCD/ LED Look	2x6	48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77]	91 [3.58]	-10 ... +50 [+14 ... +122]	IP65	AC/DC	•	–
 **Codix 923 / 924** multicolor display (optional), decade keyboard, count frequency 65 kHz	•	•	•	•	i	–	up to 4r 6o	•	•	•	LCD/ LED Look	2x6	48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77]	91 [3.58]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
LED touch position preset counters																				
 **Codix 560** LED multifunction preset counters, 14 segment LED, automatic help texts, opt. serial interface	•	•	•	•	i	SI FB	2r	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	91 [3.58]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
LCD touch position preset counters																				
 **570T** SSI absolute encoder display, analog output, serial interface	–	–	•	•	s	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–
 **571T** multifunctional (also reciprocal) analog output, serial interface	•	•	•	•	i	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–
new  **573T IO-Link** 2 inputs (analog) 4 limit values, analog output, serial interface	–	–	•	•	a	SI FB IO-Link	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–

Multifunction devices electronic

		Pulse	Time	Frequency	Tachometer	Position	Serial interface (SI) Fieldbus (FB)	Presets: o = optocoupler; r = relay	Reset manual	Reset electrical	Programmable	Display	Number of digits	Dimensions front in mm	Panel cut-out in mm	Depth in mm	Temperature range in °C	Protection max.	Power supply	RoHS compliant	Approvals
LED multifunction displays																					
	**Codix 524** multifunctional	•	•	•	•	•	–	1_o	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	c UL us
	**Codix 544** multifunctional	•	•	•	•	•	–	1_o	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	c UL us
LCD multifunction preset counters																					
	**901** 1 preset – pulse, time (battery)	•	•	–	–	–	–	1_r	•	•	•	LCD	2x6	48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77]	63.2 [2.49]	-20...+65 [-4 ... +149]	IP65	batt.	•	c UL us
	**Codix 907 / 908** multicolor display (optional), decade keyboard, count frequency 5 kHz	•	•	–	–	•	–	1_r 2_r	•	•	•	LCD/ LED Look	2x6	48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77]	91 [3.58]	-10...+50 [+14 ... +122]	IP65	AC/DC	•	–
	**Codix 923 / 924** multicolor display (optional), decade keyboard, count frequency 65 kHz	•	•	•	•	•	–	up to 4_r 6_o	•	•	•	LCD/ LED Look	2x6	48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77]	91 [3.58]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	c UL us
LED multifunction preset counter																					
	**Codix 560** LED multifunction preset counters, 14 segment LED, automatic help texts, opt. serial interface	•	•	•	•	•	SI FB	2r	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	91 [3.58]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	c UL us
LCD touch multifunction preset counter																					
	**571T** multifunctional (also reciprocal) analog output, serial interface	•	•	•	•	•	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–
LED dual function displays																					
	**Codix 52U** with dual functions in 4 combinations	•	•	•	•	–	–	–	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	c UL us
	Codix 52P + Frequency 6 count modes	•	–	•	•	•	–	–	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	c UL us
	Codix 52T 2 counters with separate scaling	•	–	–	–	–	–	–	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	c UL us
	Codix 52C 2 counters with separate inputs and separate scaling	•	–	–	–	–	–	–	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	c UL us
	**Codix 54U** with dual functions in 4 combinations	•	•	•	•	–	–	–	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	c UL us
	Codix 54P + Frequency 6 count modes	•	–	•	•	•	–	–	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	c UL us

Multifunction devices Electromechanical

	Pulse	Time	kWh	Panel mounting	PCB mounting	Base mounting	DIN rail mounting	Reset	Number of digits	Dimensions in mm [inch]	Panel cut-out in mm [inch] (for front panel version)	Temperature range in °C [°F]	Protection max.	Supply type	RoHS compliant	Approvals
 **HC77** combination hour meter and totalizer	•	•	–	•	–	–	–	–	2x7	from 48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77] ø50.5 [1.99]	-15 ... +50 [+5... +122]	IP65	AC/DC	•	cULus
 **SHC77** combination hour meter and totalizer	•	•	–	–	–	–	•	–	2x7	48.5x61.5 [1.91 x 2.42]	–	-15 ... +50 [+5... +122]	IP52	AC/DC	•	cULus

Energy meters

	Pulse	Time	kWh	Panel mounting	PCB mounting	Base mounting	DIN rail mounting	Reset	Number of digits	Dimensions in mm [inch]	Panel cut-out in mm [inch] (for front panel version)	Temperature range in °C [°F]	Protection max.	Supply type	RoHS compliant	Approvals
 **HW66M** combination hour meter and energy meter	–	•	•	•	–	–	• [1]	–	2x6	from 48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77] ø50 [1.97]	-10 ... +55 [+14 ... +131]	IP65	AC	•	**MID**

1) With mounting frame.

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Process displays
Process controllers

	Standard signal 0...20; 4...20 mA	Standard signal 0...10; 2...10 V	Standard signal ± 10 V	Serial interface (SI) Fieldbus (FB)	Input characteristic curve S = control points	Presets / limit values o = optocoupler; r = relay	Analog output	Display	Number of digits	Dimensions front in mm	Depth in mm	Temperature range in °C	Protection max.	Power supply	RoHS compliant	Approvals
LED process display																
 **Codix 534** Min / Max value detection with totalizer	•	•	–	–	linear	–	–	LED	5	48 x 24 [1.89 x 0.94]	59 [2.32]	-20 ... +65 [-4 ... +149]	IP65	DC	•	cULus
LED process controller																
 **Codix 565 standard input signal** Min / Max value detection 2 limit values with totalizer, tare, analog output	•	•	•	–	12 S	2 r	•	LED	6	96 x 48 [3.78 x 1.89]	90.5 [3.56]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cULus
LCD touch process controller																
new  **573T IO-Link** 2 inputs 4 limit values, analog output, serial interface	•	•	•	SI FB IO-Link	24 S	4 o 2 r	•	LCD touch 3 color	8	96 x 48 [3.78 x 1.89]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–

Setpoint adjusters

	Display	Number of digits	Dimensions front in mm	Depth in mm	Temperature range in °C	Protection max.	Power supply	RoHS compliant	Approvals
LED setpoint adjuster									
 **Codix 533** setpoint adjuster 0...12 V output 0...24 mA output manual or time-based operation	LED	4	48 x 24 [1.89 x 0.94]	59 [2.32]	-20 ... +65 [-4 ... +149]	IP65	DC	•	cULus

Temperature displays
Temperature controllers

		Temperature **Thermocouples**	Temperature **Resistance thermometers (RTDs)**	**mV/V sensors / strain gauge input**	**Input characteristic curve** S = control points	**Presets / limit values** o = optocoupler; r = relay	**Analog output**	**Display**	**Number of digits**	**Dimensions front** in mm [inch]	**Depth** in mm [inch]	**Temperature range** in °C [°F]	**Protection** max.	**Power supply**	**RoHS compliant**	**Approvals**
LED temperature displays																
	**Codix 531** Min / Max value detection	–	Pt100 Ni100	–	–	–	–	LED	5	48 x 24 [1.89 x 0.94]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	cULus
	**Codix 532** Min / Max value detection	J; K; N	–	–	–	–	–	LED	5	48 x 24 [1.89 x 0.94]	59 [2.32]	-20...+65 [-4 ... +149]	IP65	DC	•	cULus
LED temperature controller																
	**Codix 564** Min / Max value detection, 2 limit values, analog output	B; E; J; K; N; R; S; T	Pt100 0...500 Ω	±100 mV	12 S	2 r	•	LED	6	96 x 48 [3.78 x 1.89]	90.5 [3.56]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	cULus

Strain-Gauge controllers

		mV/V sensors / strain gauge input	**Input characteristic curve** S = control points	**Presets / limit values** o = optocoupler; r = relay	**Analog output**	**Display**	**Number of digits**	**Dimensions front** in mm [inch]	**Depth** in mm [inch]	**Temperature range** in °C [°F]	**Protection** max.	**Power supply**	**RoHS compliant**	**Approvals**
LED strain-gauge controller														
	**Codix 566** Min / Max value detection, 2 limit values with totalizer, tare, analog output	1.0 1.5 2.0 3.0 3.3 mV/V	12 S	2 r	•	LED	6	96 x 48 [3.78 x 1.89]	90.5 [3.56]	-20...+65 [-4 ... +149]	IP65	AC/DC	•	c UL us

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Safety modules
Safety-M compact

		Monitoring - number of axes	Encoder systems	Safe digital input lines	Signal splitter / USB programming interface	Relay output lines	Safe digitale output lines	Analog output lines	Encoder interface	Power supply in V DC	Module width in mm [inch]	RoHS compliant	Approvals
	Speed monitoring 1 axis / 1 encoder system **SMC1.1**	1	1	4/2	1	1	8 / 4	1 opt.	SinCos	24	50	•	SIL3 PLe
	Speed monitoring 1 axis / 2 encoder systems **SMC2.2**	1	2	4/2	1	1	8 / 4	1 opt.	HTL/TTL/ SinCos	24	50	•	SIL3 PLe
	Speed monitoring 1 axis / 1 encoder system **SMC1.3**	1	1	8/4	1	2	8 / 4	1 opt.	HTL/TTL	24	50	•	SIL2 PLd
	Speed monitoring 1 axis / 2 encoder systems **SMC2.4**	1	2	8/4	1	2	8 / 4	1 opt.	HTL/TTL	24	50	•	SIL3 PLe

Incremental encoders for Functional Safety

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in ppr	Push-pull	RS422	SinCos	Open Collector	Ø Hollow shaft max. in mm [inch]	Speed max. in min⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	Pulse frequency max. in kHz	RoHS compliant	Approvals
	Standard, optical sine wave output, SIL2 / PLd **Sendix 5814FS2** (shaft) **Sendix 5834FS2** (hollow shaft)	58 [2.28]	–	•	1.024 and 2.048	–	–	•	–	14	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	400	•	
	Standard, optical sine wave output, SIL3 / PLe **Sendix 5814FS3** (shaft) **Sendix 5834FS3** (hollow shaft)	58 [2.28]	–	•	1.024 and 2.048	–	–	•	–	14	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	400	•	

Absolute encoders for Functional Safety

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in bit	SSI interface	BiSS interface	Additional incremental track	Speed max. in min⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
Singleturn															
	Standard, optical SIL2 / PLd **Sendix 5853FS2** (shaft) **Sendix 5873FS2** (hollow shaft)	58	–	•	17	•	•	SinCos	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	
	Standard, optical SIL3 / PLe **Sendix 5853FS3** (shaft) **Sendix 5873FS3** (hollow shaft)	58	–	•	17	•	•	SinCos	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	
Multiturn															
	Standard, optical mechanical multiturn SIL2 / PLd **Sendix 5863FS2** (shaft) **Sendix 5883FS2** (hollow shaft)	58	–	•	17 +12	•	•	SinCos	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	
	Standard, optical mechanical multiturn SIL3 / PLe **Sendix 5863FS3** (shaft) **Sendix 5883FS3** (hollow shaft)	58	–	•	17 +12	•	•	SinCos	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	

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Art. R64063.0002 | Edition 02/2024