

MEASUREMENT



TRANSMISSION



EVALUATION



SHORT FORM CATALOG 2021

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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.

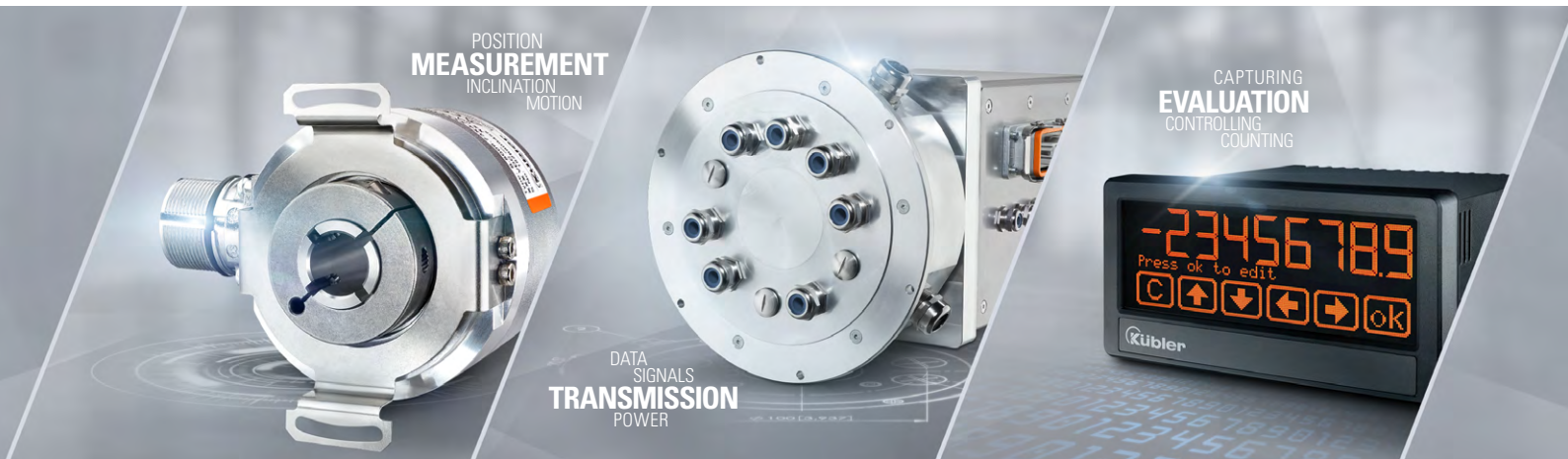
The strict focus on quality ensures the highest levels of reliability and a long service life for our products in the field.

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

Over 490 dedicated people worldwide make this success possible and ensure that customers can continue to place their trust in our company.



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 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



ENCODERS

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BEARINGLESS ENCODERS

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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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SYSTEMS**
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**SHAFT COPYING
SYSTEMS**
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INCLINOMETERS
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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:
www.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 (shaft/hollow shaft)	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]	IP67	cable	5	300	•	–
	Compact, optical Sendix Base KIS40 (shaft) Sendix Base KIH40 (hollow s.)	40 [1.57]	–	•	2.500	•	•	–	•	8	4.500	20 ... +70 [-4 ... +158]	IP64	cable	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 ... 18 8 ... 30	300	•	cULus
	Compact, optical plastic housing 3700 (shaft) 3720 (hollow shaft)	37 [1.46]	–	•	1.024	•	•	–	–	8	6.000	20 ... +70 [-4 ... +158]	IP65	cable	5 ... 30 10 ... 30	250	•	CE UL
	Standard, optical Sendix 5000 (shaft) Sendix 5020 (hollow shaft) 24one ¹⁾	58 [2.28]	–	•	5.000	•	•	–	•	15 15.87	12.000	-40 ... +85 [-40 ... +185]	IP67	cable M12 M23 MIL Sub-D	5 ... 30 10 ... 30	300	•	cULus
	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	4.7 ... 30 5 ... 30 10 ... 30	300	•	CE Ex 2/22
	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 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 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 10 ... 30	400	•	cULus Ex 2/22
	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 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 (shaft/hollow shaft)	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/ 9.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	400	•	cUL ^{US} Ex ^{2/22} SIL2 PLd
	Standard, optical sine wave output, SIL3 / PLc Sendix 5814FS3 (shaft) Sendix 5834FS3 (hollow shaft)	58 [2.28]	–	•	1.024 and 2.048	–	–	•	–	14	12.000/ 9.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	400	•	cUL ^{US} Ex ^{2/22} SIL3 PLc
	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	•	cUL ^{US}
	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	•	cUL ^{US} Ex ^{2/22}
	Standard, optical ATEX / IECEx – zone 1/21 7000 (shaft) 7020 (hollow shaft)	70 [2.76]	–	•	5.000	•	•	–	–	14	6.000/ 3.000	-40 ... +60 [-40 ... +140]	IP67	cable	5 5 ... 30 10 ... 30	300	•	Ex ^{2/22} IECEx
	Standard, optical ATEX / IECEx – mining 7100 (shaft) 7120 (hollow shaft)	70 [2.76]	–	•	5.000	•	•	–	–	14	6.000/ 3.000	-40 ... +60 [-40 ... +140]	IP67	cable	5 5 ... 30 10 ... 30	300	•	Ex ^{2/22} IECEx
	Standard, optical large hollow shaft 5821 (hollow shaft)	58 [2.28]	–	•	5.000	•	•	–	–	28	2.500	-20 ... +70 [-4 ... +158]	IP64	cable M12	5 8 ... 30	300	•	–
	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	•	cUL ^{US}
	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	•	cUL ^{US} Ex ^{2/22} GL
	Heavy Duty, optical Sendix H100 (shaft)	115	–	•	3.600	•	•	–	–	–	6.000	-40 ... +100	IP66	cable ¹⁾	5 10 ... 30	300	•	Ex ^{2/22}
	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	•	Ex ^{2/22}

1) With terminal box.

Absolute encoders Singleturn

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in bit	SSI interface	BiSS interface	Analog / RS485 interface	Parallel interface	Additional incremental track	Speed max. in min ⁻¹ (shaft / hollow shaft)	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]	IP67	cable	5	•	–
	Compact, magnetic analog Sendix 3651 (shaft) Sendix 3671 (hollow shaft)	36 [1.43]	•	–	12	–	–	4 ... 20 mA 0 ... 10 V	–	–	6.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30 15 ... 30	•	E ₁ Ex _{2/22}
	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	•	c _{UL} US
	Standard, optical parallel, highspeed 5852 (shaft) 5872 (hollow shaft)	58 [2.28]	–	•	14	–	–	–	•	–	12.000/ 6.000	-20 ... +85 [-4 ... +185]	IP66	cable M23	5 10 ... 30	•	c _{UL} US
	Standard, optical Sendix 5853 (shaft) Sendix 5873 (hollow shaft)	58 [2.28]	–	•	21	•	•	–	–	Sin Cos RS422	12.000/ 9.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	•	c _{UL} US Ex _{2/22}
	Standard, optical Motor-Line Sendix 5873 (tapered shaft)	58 [2.28]	–	•	21	•	•	–	–	Sin Cos RS422	12.000	-40 ... +90 [-40 ... +194]	IP65	cable PCB connector	5 10 ... 30 4.5 ... 5.5	•	c _{UL} US
	Standard, optical SIL2/PLd Sendix 5853FS2 (shaft) Sendix 5873FS2 (hollow shaft)	58 [2.28]	–	•	17	•	•	–	–	Sin Cos	12.000/ 9.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	c _{UL} US Ex _{2/22} SIL2 PLd
	Standard, optical SIL3/PLe Sendix 5853FS3 (shaft) Sendix 5873FS3 (hollow shaft)	58 [2.28]	–	•	17	•	•	–	–	Sin Cos	12.000/ 9.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	c _{UL} US Ex _{2/22} SIL3 PLe
	Standard, optical ATEX/IECEx – zone 1/21 Sendix 7053 (shaft) Sendix 7073 (hollow shaft)	70 [2.76]	–	•	17	•	•	–	–	–	6.000/ 3.000	-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/ 3.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	Ex IECEx

Absolute encoders

Singleturn

Fieldbus & Industrial Ethernet

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	IO-Link new	CANopen	SAE J1939 new	PROFIBUS DP	EtherCAT	PROFINET IO	EtherNet/IP	Resolution max. in bit	Speed max. in min ⁻¹ (shaft / hollow shaft)	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
	Compact, magnetic Sendix M3658 (shaft) Sendix M3678 (hollow shaft)	36 [1.43]	•	–	–	•	•	–	–	–	–	14	6.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	8 ... 30	•	
new 	Compact, magnetic Sendix M3658A (shaft) Sendix M3678A (hollow shaft) 	36	•	–	•	–	–	–	–	–	–	14	6.000	-40 ... +85 [-40 ... +185]	IP67	M12	18 ... 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) 	58 [2.28]	–	•	–	•	–	•	•	•	–	16	9.000	-40 ... +80 [-40 ... +176]	IP67	cable M12 M23	10 ... 30	•	 
new 	Standard, magnetic Sendix M5858A (shaft) 	58	•	–	•	–	–	–	–	–	–	14	4.000	-40 ... +80 [-40 ... +176]	IP65	M12	18 ... 30		
new 	Standard, optical electronic singleturn Sendix F5858 (shaft) Sendix F5878 (hollow shaft) 	58 [2.28]	–	•	–	–	–	–	•	•	•	16	8.000	-40 ... +80 [-40 ... +176]	IP65	M12	10 ... 30	•	 
	Standard, optical ATEX/IECEx – zone 1/21 Sendix 7058 (shaft) Sendix 7078 (hollow shaft)	70 [2.76]	–	•	–	•	–	•	–	–	–	16	6.000/ 3.000	-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/ 3.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	 

Absolute encoders

Multiturn

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in bit	SSI interface	BiSS interface	Analog / RS485 interface	Additional incremental track	Speed max. in min ⁻¹ (shaft / hollow shaft)	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	•	  
	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	•	  
	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	•	  
	Compact, magnetic robust, electronic multiturn Sendix M3663R (shaft)	36 [1.43]	•	–	14 + 24	•	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30	•	  
	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	•	 
	Standard, optical mechanical multiturn Sendix 5863 (shaft) Sendix 5883 (hollow shaft)	58 [2.28]	–	•	17 + 12	•	•	–	SinCos RS422	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	•	 
	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	•	 
	Standard, magnetic electronic multiturn Sendix M5863 (shaft)	58 [2.28]	•	–	14 + 24	•	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30	•	 
	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	•	 
	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	•	

Absolute encoders Multiturn

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in bit ST+MT	SSI interface	BiSS interface	Analog / RS485 interface	Additional incremental track	Speed max. in min ⁻¹ (shaft / hollow shaft)	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
	Standard, optical mechanical multiturn SIL2 / PLd Sendix 5863FS2 (shaft) Sendix 5883FS2 (hollow shaft)	58 [2.28]	–	•	17 +12	•	•	–	SinCos	12.000/ 9.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	cUL ^{US} Ex ^{2/22} SIL2 PLd
	Standard, optical mechanical multiturn SIL3 / PL _e Sendix 5863FS3 (shaft) Sendix 5883FS3 (hollow shaft)	58 [2.28]	–	•	17 +12	•	•	–	SinCos	12.000/ 9.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	cUL ^{US} Ex ^{2/22} SIL3 PL _e
	Standard, optical mechanical multiturn ATEX / IECEx – zone 1/21 Sendix 7063 (shaft) Sendix 7083 (hollow shaft)	70 [2.76]		•	17 +12	•	•	–	–	6.000/ 3.000	-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/ 3.000	-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⁾	•	–

Absolute encoders Multiturn Fieldbus & Industrial Ethernet

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in bit ST+MT	CANopen	CANopenlift	SAE J1939 new	PROFIBUS DP	MODBUS RTU	EtherCAT	PROFINET IO	EtherNet/IP	Speed max. in min ⁻¹ (shaft / hollow shaft)	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 +24	•	–	•	–	–	–	–	–	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	10 ... 30	•	E _i cUL ^{US} Ex ^{2/22}
	Compact, magnetic robust, electronic multiturn Sendix M3668R (shaft)	36 [1.43]	•	–	14 +24	•	–	•	–	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30	•	E _i cUL ^{US} Ex ^{2/22}

1) Depends on the encoder used.

Absolute encoders

Multiturn

Fieldbus & Industrial Ethernet

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ±0.015°)	Resolution max. in bit ST+MT	IO-Link new	CANopen	CANopenlift	SAE J1939 new	PROFIBUS DP	MODBUS RTU	EtherCAT	PROFINET IO	EtherNet/IP	Speed max. in min ⁻¹ (shaft / hollow shaft)	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
new	 Standard, magnetic electronic multiturn Sendix M3668 (shaft) Sendix M3688 (hollow shaft) 	36 [1.43]	•	–	14 + 18	•	–	–	–	–	–	–	–	–	6.000	-40 ... +85 [-40 ... +185]	IP67	M12	18 ... 30	•	c  
	 Compact, optical electronic multiturn Sendix F3668 (shaft) Sendix F3688 (hollow shaft)	36 [1.43]	–	•	14 + 24	–	•	–	–	–	–	–	–	–	12.000	-40 ... +85 [-40 ... +185]	IP67	cabl	10 ... 30	•	c 
	 Standard, optical mechanical multiturn Sendix 5888 (shaft) Sendix 5888 (hollow shaft) 	58 [2.28]	–	•	16 + 12	–	•	•	–	•	–	•	•	–	9.000	-40 ... +85 [-40 ... +185]	IP67	cabl M12 Sub-D	10 ... 30	•	c  
	 Standard, magnetic electronic multiturn Sendix M5868 (shaft)	58 [2.28]	•	–	14 + 24	–	•	–	•	–	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cabl M12	10 ... 30	•	 
new	 Standard, magnetic electronic multiturn Sendix M5868 (shaft) 	58 [2.28]	•	–	14 + 18	•	–	–	–	–	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP67	M12	18 ... 30	•	
new	 Standard, optical electronic multiturn Sendix F5868 (shaft) Sendix F5888 (hollow shaft) 	58 [2.28]	–	•	16 + 16	–	•	–	–	•	–	•	•	•	12.000/ 9.000	-40 ... +80 [-40 ... +176]	IP67	cabl M12	10 ... 30	•	c  
	 Standard, optical Motor-Line electronic multiturn Sendix F5888M (hollow shaft)	58 [2.28]	–	•	16 + 16	–	•	–	–	–	–	–	–	–	9.000	-40 ... +85 [-40 ... +185]	IP65	cabl	10 ... 30	•	c 
	 Standard, optical mechanical multiturn ATEX/IECEx – zone 1/21 Sendix 7068 (shaft) Sendix 7088 (hollow shaft)	70 [2.76]	–	•	16 + 12	–	•	–	•	–	–	–	–	–	6.000/ 3.000	-40 ... +60 [-40 ... +140]	IP67	cabl	10 ... 30	•	 
	 Standard, optical mechanical multiturn ATEX/IECEx – mining Sendix 7168 (shaft) Sendix 7188 (hollow shaft)	70 [2.76]	–	•	16 + 12	–	•	–	•	–	–	–	–	–	6.000/ 3.000	-40 ... +60 [-40 ... +140]	IP67	cabl	10 ... 30	•	 



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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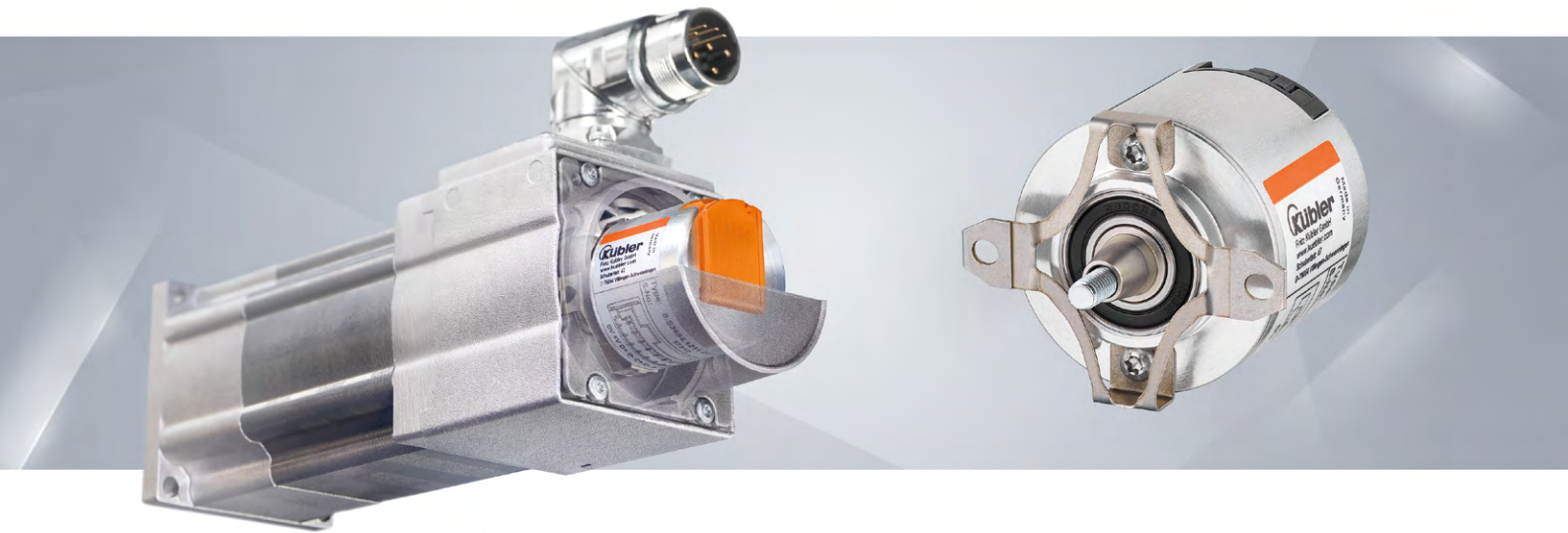
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Bearingless encoders Incremental

		Hollow shaft max. in mm ["]	Magnetic (accuracy $\pm 1^\circ$)	With reference signal	Resolution max. in ppr	Push-pull RS422	Speed max. in min ⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	Pulse frequency max. [kHz]	RoHS compliant
	Standard, magnetic RLI20 (hollow shaft)	30 [1.18]	•	–	3.600	• •	12.000	-20 ... +80 [-4°F ... +176°F]	IP69k	cable	4.8 ... 26 4.8 ... 30	250	•
	Standard, magnetic reference signal RLI50 (hollow shaft)	35 [1.38]	•	•	3.600	• •	12.000	-20 ... +80 [-4°F ... +176°F]	IP69k	cable	4.8 ... 26 4.8 ... 30	250	•
	Large hollow shaft, magnetic RLI200 (hollow shaft)	390 [15.35]	•	–	16.000	• •	12.000	-20 ... +80 [-4°F ... +176°F]	IP69k	cable	4.8 ... 26 4.8 ... 30	250	•
	Large hollow shaft, magnetic reference signal RLI500 (hollow shaft)	350 [13.78]	•	•	6.400	• •	12.000	-20 ... +80 [-4°F ... +176°F]	IP69k	cable	4.8 ... 26 4.8 ... 30	250	•

Bearingless encoders Absolute

		Hollow shaft max. in mm ["]	Magnetic (accuracy $\pm 1^\circ$)	With reference signal	Resolution max. in ppr	SSI CANopen	Speed max. in min ⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	Pulse frequency max. [kHz]	RoHS compliant
	Standard, magnetic singleturn, RLA50 (hollow shaft)	30 [1.18]	•	–	16.000	• •	1.000	-10 ... +70 [+14 ... +158]	IP40	M12	10 ... 30	–	•



Motor Feedback Systems for servo motors

A constant dimension of 36.5 mm means enormous benefits for you.

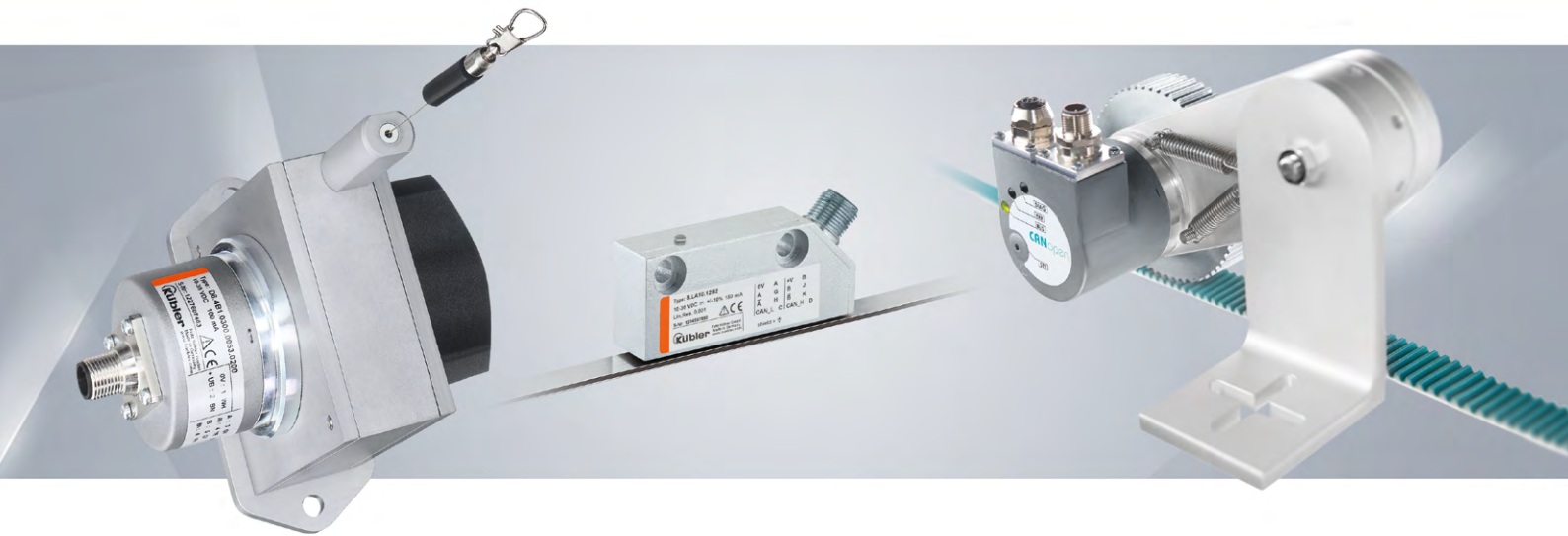
With requirements from industry and many years of experience in drive technology, Kübler presents its new product family of Motor Feedback Systems. Kübler has developed its new Motor Feedback Systems in close cooperation with prominent manufacturers of servo motors and converters. They are based on a 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.

kuebler.com/motor-feedback-systems

Motor Feedback Systems

	ø Dimensions in mm [inch]	Optical (accuracy $\leq \pm 0.015^\circ$)	Resolution max. in bit	RS485 interface 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® kompatibel.
 Hiperface® is a registered trademark of Sick Stegmann GmbH.



Linear measuring systems

Linear position and speed measurement realized with different technologies.

Whether incremental or absolute – Kübler offers both magnetically robust and optically precise measuring solutions. Our portfolio ranges from a large selection of draw-wire encoders and magnetic length measuring systems to custom length measuring sets and SIL3 certified shaft copying systems. Kübler always provides you with the optimum sensor technology for your application. That's why we have countless ordering options and the readiness to realize modifications and special solutions for you.

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For length measuring systems:
measuring wheels



For measuring wheels:
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Draw-wire encoders

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

Magnetic length measuring systems

	Measuring length max. in m	Accuracy max.	Resolution max. in μm	Dimensions in mm [inch]	Incremental RS422 / Push-Pull	Incremental SinCos	Absolute SSI / BiSS	Absolute fieldbus	Traverse speed max. in m/s	Temperature range in $^{\circ}\text{C}$ [$^{\circ}\text{F}$]	Protection max.	Type of connection
Incremental												
 Sensor head, magnetic band Limes LI20/B1	70	dep. on measuring length 0.08 mm for 1 m	10	10 x 25 x 40 [0.39 x 0.98 x 1.57]	•	–	–	–	25	-20 ... +80 [-4 ... +176]	IP69k	cable
 Sensor head, magnetic band Limes LI50/B2	70	dep. on measuring length 0.1 mm for 1 m	5	10 x 25 x 40 [0.39 x 0.98 x 1.57]	•	–	–	–	16	-20 ... +80 [-4 ... +176]	IP69k	cable
Absolute												
 Sensor head, magnetic band Limes LA10/BA1	8	dep. on measuring length 0.03 mm for 1 m	1	16 x 30 x 70 [0.63 x 1.18 x 2.76]	–	•	•	•	10	-10 ... +70 [+14 ... +158]	IP64	M12
 Sensor head, magnetic band Limes LA50/BA5	20	dep. on measuring length 0.17 mm for 1 m	10	24 x 26 x 75 [0.94 x 1.02 x 2.95]	–	–	•	•	4	-10 ... +70 [+14 ... +158]	IP40	cable

Measuring wheel systems Length measuring sets

	Measuring length max. in m	Resolution max. in mm	Dimensions in mm [inch]	Incremental RS422 / Push-Pull	Incremental SinCos	Absolute analog	Absolute SSI/BiSS	Absolute fieldbus	Traverse speed max.	Temperature range in °C [°F]	Protection max.	Type of connection
 MWE01 Mini measuring wheel system, incremental incl. encoder	8	0.1	74x50x52 [2.91 x 1.97 x 2.05]	•	•	–	–	–	2.000 min ⁻¹	-20 ... +80 [-4 ... +176]	IP64	cable
 MWE02 Compact measuring wheel system incremental incl. encoder	8	0.08	dep. on the measuring wheel	•	•	–	–	–	4.500 min ⁻¹	-20 ... +70 [-4 ... +158]	IP64	cable
 Length measuring set with measuring wheel incremental / absolute incl. encoder and preset counter	8	0.04	dep. on the measuring wheel	•	•	–	•	–	2.000 min ⁻¹	-25 ... +80 [-13 ... +176]	IP67	cable M12 M23 MIL
 Limes KIT TB1 Length measuring set with toothed belt and pulley	8	0.1	–	•	•	•	•	•	5 m/s	-25 ... +80 [-13 ... +176]	IP67	cable M12 M23 MIL
 Length measuring set with rack and pinion incremental / absolute incl. encoder and preset counter	8	0.1	dep. on the measuring wheel	•	•	–	•	–	2.000 min ⁻¹	-25 ... +80 [-13 ... +176]	IP67	cable M12 M23 MIL

Measuring wheel systems Measuring wheels

Measuring wheel systems

Measuring wheels

		Circumference / ø / width [mm]						Suitable for									
		200 ±0.2 / Ø 63,7 / 6,5	200 ±0.2 / Ø 63,7 / 12	500 ±1,0 / Ø 159,2 / 25	6" (152,4 ±0.2) / Ø 48,38 / 6,5	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	•	•	•	•	—	•	•	•	•	•	•	•	—	—	•	—
	O-ring (NBR70)	•	—	—	•	—	—	•	•	•	•	•	•	—	—	—	—
	tufted rubber (polyurethane)	—	•	•	—	—	•	•	•	•	•	•	—	•	—	—	—
	plastic (polyurethane) corrugated	—	•	•	—	—	•	•	•	•	•	•	—	—	—	—	•



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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Coded band



Mounting kit consisting of:
rail mounting, snap hook, tension spring, car mounting, mounting material



EMC shield terminal

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Shaft copying systems

		Measuring length max. in m	Traverse speed max. in m/s	SIL3	EN 81	Incremental	Absolut	Resolution max. in mm	Dimensions in mm [inch]	CANopen Lift (DS417)	CAN	SSI	RS485	Protection level	Type of connection	Approvals
	Ants Base Absolute measuring system for slip-free positioning Ants LEB02	392	8	–	–	–	•	1	126 x 55 x 37 [4.96 x 2.71 x 1.46]	•	•	•	•	IP54	cable	
	Ants Safe SIL3 certified solute measuring system for slip-free positioning Ants LES02	392	12	•	•	–	•	0.5	126 x 55 x 37 [4.96 x 2.71 x 1.46]	–	–	–	–	IP54	cable	
	Safe System Realization of elevator and safety functions in compliance with EN 81-20/21/50 by the combination of Ants LES02 with evaluation unit PSU02	392	12	•	•	–	•	0.5	116 x 96 x 31 [4.57 x 3.78 x 1.22] (evaluation unit)	•	•	–	–	IP20 (mounted in cabinet)	PicoMax (Push-In)	



Inclinometers

Precise and reliable detection – even in harsh environments.

Kübler inclinometers can be used for any conceivable application. Their robust housing, high degree of protection and wide temperature range contribute to reliable and long-lasting operation. Their flat design makes installation flexible and simple. Their high accuracy is a special feature because it remains stable even in the harshest environments and with temperature fluctuations. So you always have an optimal and reliable measurement in your plant or machine.

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Inclinometers

		Measuring angle max.	Accuracy max.	Resolution max.	Dimensions in mm [inch]	Absolute analog	CANopen	Modbus	SAE J1939 new	Reaction time in s	Temperature range in °C [°F]	Protection max.	Type of connection	RoHS compliant	Approvals
1-dimensional															
	MEMS, capacitive IN81	360°	±0.2°	12 bit	80 x 60 x 23	4 ... 20 mA 0.1 ... 4.9 V 0.5 ... 4.5 V 0 ... 5 V 0 ... 10 V	–	–	–	0.1	-40 ... +85 [-40...+185]	IP69k	M12	•	
	MEMS, capacitive IN88	360°	±0.4°	0.01°	80 x 60 x 23	–	•	•	•	0.1	-40 ... +85 [-40...+185]	IP69k	M12	•	
	MEMS, capacitive IS40	360°	±0.5°	0.15°	60 x 30 x 20	4 ... 20 mA 0.1 ... 4.9 V	–	–	–	0.1	-30 ... +70 [-22...+158]	IP69k	M12	•	–
2-dimensional															
	MEMS, capacitive IN81	±85°	±0.2°	12 bit	80 x 60 x 23	4 ... 20 mA 0.1 ... 4.9 V 0.5 ... 4.5 V 0 ... 5 V 0 ... 10 V	–	–	–	0.1	-40 ... +85 [-40...+185]	IP69k	M12	•	
	MEMS, capacitive IN88	±85°	±0.4°	0.01°	80 x 60 x 23	–	•	•	•	0.1	-40 ... +85 [-40...+185]	IP69k	M12	•	
	MEMS, capacitive IS40	±60°	±0.5°	0.15°	60 x 30 x 20	4 ... 20 mA 0.1 ... 4.9 V 2 % ... 98 %	–	–	–	0.1	-30 ... +70 [-22...+158]	IP69k	M12	•	–

TRANSMISSION



SLIP RINGS
from page 30

**CABLES AND
CONNECTORS**
from page 34

With Kübler you can always reliably transmit power, signals, and data.

The increasing degree of automation and the increasing networked communication demand trouble-free and reliable transmission. Kübler offers high-quality slip rings that transmit power, signals, data, and other media from stationary to rotating platforms. A broad portfolio of signal converters as well as suitable cable and plug connectors round off this offer. Find the right solution for your application.

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**SIGNAL CONVERTERS AND
OPTICAL FIBER MODULES**
from page 32



Slip rings

Reliable power, signal, and data transmission with Kübler.

When it comes to transferring electrical signals, energy, gases, or liquid media from a static to a rotating component, Kübler slip rings offer the optimum solution. High current load capacity, reliable signal and data transmission with high transfer rates, long service life, and ease of handling are some of the essential requirements that Kübler slip rings meet. The Kübler slip ring – made in Germany – is the result of the highest quality awareness and careful selection of materials.

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Smart slip rings with integrated sensors for intelligent industry 4.0 concepts



Contactless data transmission

- Up to 1000BASE-T Ethernet (1 GBit/s).
- For all common fieldbus systems with Ethernet protocol such as Profinet A, B and C, Powerlink, Bluecom, EtherCAT and Sercos III Ethernet, CAN bus, Profibus, RS422.

FORJ Fibre Optical Rotary Joint, Single- and Multimode

- For wavelengths 1310 / 1550 nm (SM) or 850 / 1300 nm (MM).
- Single- or multi-channel up to 60 paths possible.
- Video transmission up to 8K.

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- Encoders (incremental or absolute multiturn) with the highest resolution and protection level, all common transmission protocols such as SSI, HTL, TTL, Profibus DP, CANopen, EtherCAT, SAE J1939, and optionally in a SIL2 / SIL3 model.
- Sensors to measure temperature or humidity.

Slip rings

		Power (load)	Signal (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]
 Fig. SR060E	Dimension 60 mm compact, slim, low-maintenance, standardized with a wide range of options for 24/7 operation	•	•	—	—	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	IP64	800	-35 ... +85 [-31 ... +185]
 Fig. SRI085	Dimension 85 mm, contactless modular, wide range of variants, extreme service life, especially for 24/7 operation, contactless signal transmission for high speeds	•	•	•	—	6 load 3 temp.	30	240 V 16 A	IP64	800	-30 ... +85 [-22 ... +185]
Customer-specific slip ring solutions											
 Fig. SR120	Dimension 120 mm customer-specific structure with a modular construction, supports all common fieldbuses up to 100 Mbit/s	•	•	•	•	on request	25	400 V 20 A	IP67	300	-35 ... +85 [-31 ... +185]
 Fig. SR130	Dimension 130 mm Compact with through hollow shaft, supports all common fieldbus systems up to 100 Mbit/s (contacting) or 1 Gbit/s (contactless)	•	•	•	•	on request	50	750 V 25 A	IP67	100	-35 ... +85 [-31 ... +185]
 Fig. SR160	Dimension 160 mm customer-specific design with an individual interface layout, up to 3 paths for gigabit fieldbuses	•	•	•	•	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	•	•	•	•	on request	on request	1000 V 150 A	IP67	150	-35 ... +85 [-31 ... +185]
 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

Error-free and reliable signal transmission.

Signal converters in various models and fiber optic modules enable reliable communication – with a wide variety of interfaces – between controllers and sensors. In addition to encoders, linear sensors, and inclinometers from Kübler, these products are a suitable addition to the overall range of sensors. Take advantage of the new possibilities for a comprehensive overall concept from a single source.

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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]
	Signal converter SK 1SC-1D	SinCos	incremental HTL / TTL / RS422	–	18 ... 30	5.5	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

The right connection technology for every application.

Cables and connectors play a decisive role in the reliable operation of your systems, machines, or motors. High-quality and adaptable – this is what Kübler cables and connectors stand for. A comprehensive product range is available for selection, from cables as unassembled yard ware and self-assembly connectors such as M12, M23, MIL, Sub-D or RJ45, through to pre-assembled cable sets such as printed circuit board connectors.

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Cables, unprepared,
cut to length

Cables, unprepared, cut to length		PVC cable	PUR cable	TPE cable	Cross section in mm²	Cable diameter in mm	SSI, BiSS	Analog, HTL/TTL, SinCos	Open Collector	Parallel, Parallel Highspeed	PROFIBUS	CANopen	PROFINET	EtherCAT	Ethernet/IP	SAE J1939	Modbus	IO-Link	For ATEX zone 2/22	RoHS compliant
	2 core + shield	–	•	–	2 x 0.34 [AWG25]	approx. 7.6	–	–	–	–	•	–	–	–	–	–	–	–	–	•
	4 core + shield	•	•	–	2 x 2 x 0.34 [AWG22]	approx. 4.8	–	–	–	–	–	•	•	•	•	–	–	•	–	•
	5 core + shield	•	•	–	5 x 0.14 [AWG25] 5 x 0.75 [AWG18]	approx. 4.7 approx. 7.5	–	–	–	–	–	•	–	–	–	•	•	•	–	•
	6 core + shield	•	–	–	3 x 2 x 0.25 [AWG23]	approx. 6.2	–	–	–	–	–	•	–	–	–	–	–	–	–	•
	8 core + shield	–	•	–	8 x 0.14 [AWG25] 3 x 2 x 0.14 [AWG25] + 2 x 0.5 [AWG20]	approx. 5.5 approx. 7.4	•	•	–	–	–	–	–	–	–	–	–	–	–	•
	10 core + shield	–	•	–	4 x 2 x 0.25 [AWG23] + 2 x 1 [AWG17]	approx. 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]	approx. 6.9 approx. 6.7 approx. 7.5 approx. 8.5 approx. 7.3 approx. 5.8	•	•	•	–	–	–	–	–	–	–	–	•	•	
	18 core + shield	•	–	–	18 x 0.14 [AWG25]	approx. 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
	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



**DISPLAYS AND
COUNTERS**
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PROCESS DEVICES
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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.	•	CE, UL
	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.	•	CE, UL
	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.	•	CE, UL
	 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	•	–	–	–	–	–	10	•	•	•	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	•	CE, UL
	Codix 521 6 count modes	•	–	–	–	•	–	10	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4...+149]	IP65	DC	•	CE, UL
	Codix 524 multifunctional	•	•	•	•	•	–	10	•	•	•	LED	6	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	59 [2.32]	-20...+65 [-4...+149]	IP65	DC	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
	Codix 541 6 count modes	•	–	–	–	•	–	10	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4...+149]	IP65	AC/DC	•	CE, UL
	Codix 544 multifunctional	•	•	•	•	•	–	10	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	83 [3.27]	-20...+65 [-4...+149]	IP65	AC/DC	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
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																	
	K 46 / K 47 high shock resistance	•	–	–	•	•	–	–	–	6 / 7	30x20 [1.18 x 0.79] panel mount	27x14 [1.06 x 0.55]	-10 ... +60 [+14 ... +140]	IP65	DC	•	
	K 66 / K 67 high shock resistance, magnetic field resistant	•	–	–	•	•	–	–	–	6 / 7	30x20 [1.18 x 0.79] panel mount	27x14 [1.06 x 0.55]	-10 ... +60 [+14 ... +140]	IP65	DC	•	–
	K 04 / K 05 high shock resistance	•	–	–	•	•	–	–	–	4 / 5	26x15 [1.02 x 0.59] panel mount	24x13 [0.94 x 0.51]	-10 ... +60 [+14 ... +140]	IP65	AC/DC	•	
	K 06 / K 07 / AK 07 high shock resistance	•	–	–	•	•	•	–	–	6 / 7	32x15 [1.26 x 0.59] panel mount	30x13 [1.18 x 0.51]	-10 ... +60 [+14 ... +140]	IP65	AC/DC	•	
	SK 07 high shock resistance, for DIN rail	•	–	–	–	–	•	•	–	7	30x65 [1.18 x 2.56]	–	-10 ... +60 [+14 ... +140]	IP50	AC/DC	•	
Mini counters																	
	W 15 also in DIN format 48 x 24 mm [1.89 x 0.94"]	•	–	–	•	–	–	–	manual	5	from 34x23 [1.34 x 0.91]	from 31x20 [1.22 x 0.79]	-10 ... +50 [+14 ... +122]	IP40	AC/DC	•	–
	W 16 / W 17 also in DIN format 48 x 24 mm [1.89 x 0.94"]	•	–	–	•	•	–	–	–	6 / 7	from 34x23 [1.34 x 0.91]	from 31x20 [1.22 x 0.79]	-10 ... +50 [+14 ... +122]	IP41	AC/DC	•	–
Standard counters																	
	Bk 14 very long service life	•	–	–	•	–	–	–	manual	4	from 37x28 [1.46 x 1.10]	from 33.3x25 [1.31 x 0.98]	-10 ... +60 [+14 ... +140]	IP40 IP41	AC/DC	•	–
	B 16 / B 18 very long service life	•	–	–	•	–	–	• ¹⁾	manual (only B16)	6 / 8	from 50x25 [1.97 x 0.98]	50x25 [1.31 x 0.87]	-10 ... +60 [+14 ... +140]	IP40 IP41	AC/DC	•	–
	Mk 14 / Mk 16 very long service life	•	–	–	•	–	–	–	manual electrical	4 / 6	from 37x26 [1.46 x 1.02]	from 33.3x22 [1.46 x 1.02]	-10 ... +45 [+14 ... +113]	IP40 IP41	AC/DC	•	–
Dual function counters																	
	HC 77 combination hour meter and totalizer	•	•	–	•	–	–	–	–	2x7	from 48x48 [1.89 x 1.89]	45x45 [1.77 x 2.78] ø 50.5 [1.99]	-15 ... +50 [+5 ... +122]	IP65	AC/DC	•	
	SHC 77 combination hour meter and totalizer	•	•	–	–	–	–	•	–	2x7	48.5x61.5 [1.91 x 2.42]	–	-15 ... +50 [+5 ... +122]	IP52	AC/DC	•	
	HW 66 / HW 66 M combination hour meter and energy meter	–	•	•	•	–	–	• ¹⁾	–	2x6	from 48x48 [1.89 x 1.89]	45x45 [1.77 x 2.78] ø 50 [1.97]	-20 ... +55 [+4 ... +131]	IP65	AC	•	MID

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
Standard counters												
	PMk 14 / PMk 16 / PMk 18 Totalizer	•	–	–	–	manual (PMk 14, PMk 16)	4/6/8	33.3x22 [1.31 x 0.87] 48x24 [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)	Preset: 0 = 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.	•	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 [-4 ... +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	•	UL US
LCD touch preset counter																					
	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	•	UL US
	572 dual preset counters with 4 outputs and analog output, serial interface	•	–	–	–	•	SS	4o	•	•	•	LED	6/8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	141 [5.55]	0 ... +45 [+32 ... +113]	IP65	AC/DC	•	–
	575 SSI o. incremental inputs / 4 outputs with analog output	•	–	–	–	•	SS	4o	•	•	•	LED	6/8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	141 [5.55]	0 ... +45 [+32 ... +113]	IP65	AC/DC	•	–

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
Standard counters																
	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	•
	MVs 16 subtracting	•	–	•	–	–	• ¹⁾	1	manual electrical	6	from 50 x 50 [1.97 x 1.97]	50 x 50 [1.97 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 od. 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.	•	CE, UL
	Codix 135 9999h59m59s oder 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.	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
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	•	—
LCD touch timer																					
	571T multifunctional (also reciprocal) analog output, serial interface	•	•	•	•	•	SI FB	4 o 2 r	•	•	•	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	•	—

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																	
	HK 47 high shock resistance	—	•	—	•	•	—	—	—	7	30x20 [1.18 x 0.79] panel mount	27x14 [1.06 x 0.55]	-10 ... +60 [+14 ... +140]	IP66	DC	•	—
	HK 07 / AHK 07 high shock and impact resistance	—	•	—	•	•	•	—	—	7	32x15 [1.26 x 0.59] panel mount	30x13 [1.18 x 0.51]	-10 ... +60 [+14 ... +140]	IP65	DC	•	—
Timers with DIN dimensions																	
	HK 17 small dimensions	—	•	—	•	—	—	—	—	7 / 8	from 37x26 [1.18 x 0.51]	33x22 [1.30 x 0.87]	-15 ... +50 [+5 ... +122]	IP65	AC/DC	•	
	H 37 also in DIN format 48 x 24 mm [1.89 x 0.94"]	—	•	—	•	—	—	• ¹⁾	—	7 / 8	from 48x24 [1.89 x 0.94]	from 45x22 [1.89 x 0.94]	-15 ... +50 [+5 ... +122]	IP65	AC/DC	•	
	H 57 DIN format 48 x 48 mm [1.89 x 1.89"]	—	•	—	•	—	—	—	—	7 / 8	from 48x48 [1.89 x 1.89]	45x45 [1.77 x 2.78] ø 60 [2.36]	-15 ... +50 [+5 ... +122]	IP65	AC/DC	•	
Timers for DIN rail mounting																	
	AH 57 DIN format 48 x 48 mm [1.89 x 1.89"]	—	•	—	—	—	—	•	—	7 / 8	48.5x61.5 [1.91 x 2.40]	—	-15 ... +50 [+5 ... +122]	IP65	AC/DC	•	
	SHK 07.1 high shock resistance	—	•	—	—	—	—	•	—	7	30x65 [1.18 x 2.56]	—	-10 ... +60 [+14 ... +140]	IP52	AC/DC	•	—
	SH 17 36 mm wide	—	•	—	—	—	—	•	—	7	36x90 [1.42 x 3.54]	—	-10 ... +70 [+14 ... +158]	IP65	AC/DC	•	—
Timers, round design																	
	HR 47 opt. run indicator	—	•	—	•	—	—	—	—	7	ø 58 [2.28]	ø 50 [1.31]	-25 ... +80 [-13 ... +176]	IP65	AC/DC	•	—
	HR 76 high shock resistance	—	•	—	•	—	—	—	—	6	from ø 58.7 [2.31]	ø 50.8 [2.00]	-30 ... +65 [-22 ... +149]	IP65	AC/DC	•	
Standard timers																	
	HB 26 plug-in version, long service life	—	•	—	•	—	—	• ¹⁾	manual	6	from 50x25 [1.97 x 0.98]	50x25 [1.31 x 0.87]	-15 ... +50 [+5 ... +122]	IP41	AC/DC	•	—
	HB 27 long service life	—	•	—	•	—	—	• ¹⁾	—	7	from 50x25 [1.97 x 0.98]	50x25 [1.31 x 0.87]	-15 ... +50 [+5 ... +122]	IP51	AC/DC	•	—
Dual function counters																	
	HC 77 combination hour meter and totalizer	•	•	—	•	—	—	—	—	2x7	from 48x48 [1.89 x 1.89]	45x45 [1.77 x 2.78] ø 50.5 [1.99]	-15 ... +50 [+5 ... +122]	IP65	AC/DC	•	
	SHC 77 combination hour meter and totalizer	•	•	—	—	—	—	•	—	2x7	48.5x61.5 [1.91 x 2.40]	—	-15 ... +50 [+5 ... +122]	IP52	AC/DC	•	
	HW 66 / HW 66 M combination hour meter and energy meter	—	•	•	•	—	—	• ¹⁾	—	2x6	from 48x48 [1.89 x 1.89]	45x45 [1.77 x 2.78] ø 50 [1.97]	-20 ... +55 [-4 ... +131]	IP65	AC	•	MID

1) With mounting frame.

Time preset counters
electronic

		Pulse	Time	Frequency	Tachometer	Position	Serial interface (SI) Fieldbus (FB)	Preset: 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.	•	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 [-4...+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	•	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	•	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	•	–

Time preset counters
electromechanical

		Pulse	Time	Panel mounting	PCB mounting	Base mounting	DIN rail mounting	Preset	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
Standard preset counter																
	HVa 15 adding	–	•	•	–	–	• ¹⁾	1	manual	2 x 5	from 50 x 50 [1.97 x 1.97]	50 x 50 [1.97 x 1.97]	-15...+50 [+5...+122]	IP42	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.	•		
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	•		
	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	•		
	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	•		
	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	•		
	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	•		
	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	•		
	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	•		
	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	•		
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	•	–

Tachometers Frequency displays 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	•	CE UL
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	•	CE UL
	574 dual frequency display 4 outputs, analog output, serial interface	–	–	•	•	–	SI	4o	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	141 [5.55]	0...+45 [+32...+113]	IP65	AC/DC	•	–
LCD touch tachometer 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.	•	CE, UL
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	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
LCD touch SSI position display																					
	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	•	—
	573T IO-Link 2 inputs (analog) 4 limit values, analog output, serial interface	—	—	•	•	a	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	•	—

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)																				
					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	•	—
					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	•	UL US
LCD touch position preset counters																				
					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	•	UL US
					i	SI	4o	•	•	•	LED	6/8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	141 [5.55]	0...+45 [+32...+113]	IP65	AC/DC	•	—
					s	SI	4o	•	•	•	LED	6/8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	141 [5.55]	0...+45 [+32...+113]	IP65	AC/DC	•	—
LCD touch position preset counters																				
	—	—	•	•	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	•	—
	•	•	•	•	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	•	—
	—	—	•	•	a	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	•	—

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	•	
	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	•	
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.	•	
	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	•	
LED multifunction preset counters																					
	Codix 560 LED multifunction preset counters, 14 segment LED, automatic help texts, opt. serial interface	•	•	•	•	•	SI FB	2 _r	•	•	•	LED	6	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	91 [3.58]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	
LCD touch multifunction preset counter																					
	571T multifunctional (also reciprocal) analog output, serial interface	•	•	•	•	•	SI FB	4 _o 2 _r	•	•	•	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	•	
	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	•	
	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	•	
	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	•	
	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	•	
	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	•	

Multifunction devices Dual function 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)	Temperature range in °C [°F]	Protection max.	Supply type	RoHS compliant	Approvals
	HC 77 combination hour meter and totalizer	•	•	–	•	–	–	–	–	2x7	from 48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77] ø 50.5 [1.99]	-15 ... +50 [+5...+122]	IP65	AC/DC	•	c 
	SHC 77 combination hour meter and totalizer	•	•	–	–	–	–	•	–	2x7	48.5x61.5 [1.91 x 2.42]	–	-15 ... +50 [+5...+122]	IP52	AC/DC	•	c 
	HW 66 / HW 66 M combination hour meter and energy meter	–	•	•	•	–	–	• ¹⁾	–	2x6	from 48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77] ø 50 [1.97]	-20 ... +55 [-4 ... +131]	IP65	AC	•	MID

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
	HW 66 / HW 66 M combination hour meter and energy meter	–	•	•	•	–	–	• ¹⁾	–	2x6	from 48x48 [1.89 x 1.89]	45x45 [1.77 x 1.77] ø 50 [1.97]	-20 ... +55 [-4 ... +131]	IP65	AC	•	MID

1) With mounting frame.



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Process displays

Process controllers

Setpoint adjusters

		Standard signal 0...20; 4...20 mA	Standard signal 0...10; 2...10V	Standard signal $\pm 10V$	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 displays																	
	Codix 534 Min / Max value detection with totalizer	•	•	–	–	linear	–	–	LED	5	48x24 [1.89 x 0.94]	59 [2.32]	-20 ... +65 [-4 ... +149]	IP65	DC	•	cUL US
	Codix 565 standard input signal Min / Max value detection 2 limit values with totalizer, tare, analog output	•	•	•	–	12 S	2 r	•	LED	6	96x48 [3.78 x 1.89]	90.5 [3.56]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cUL US
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	96x48 [3.78 x 1.89]	90.5 [3.56]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	cUL US
LCD touch process controller																	
	573T / 573T IO-Link 2 inputs 4 limit values, analog output, serial interface	•	•	•	SI FB	24 S	4 o 2 r	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–
LED setpoint adjuster																	
	Codix 533 setpoint adjuster 0...12 V output 0...24 mA output manual or time-based operation	–	–	–	–	–	–	–	LED	4	48x24 [1.89 x 0.94]	59 [2.32]	-20 ... +65 [-4 ... +149]	IP65	DC	•	cUL US

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
	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
LED temperature controllers																
	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	Ana log 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 controllers													
 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	•	



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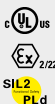
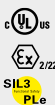
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Safety modules

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 $\pm 1^\circ$)	Optical (accuracy $\leq \pm 0.015^\circ$)	Resolution max. in ppr	Push-pull	RS422	SinCos	Open Collector	Ø Hollow shaft max. in mm [inch]	Speed max. in min ⁻¹ (shaft/hollow shaft)	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/ 9.000	-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/ 9.000	-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 (shaft / hollow shaft)	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	•	•	Sin Cos	12.000/ 9.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	  
	Standard, optical SIL3 / PLe Sendix 5853FS3 (shaft) Sendix 5873FS3 (hollow shaft)	58	–	•	17	•	•	Sin Cos	12.000/ 9.000	-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 / 9.000	-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 / 9.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	  

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