

MEASUREMENT



TRANSMISSION



EVALUATION



SHORT FORM CATALOG 2020

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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.

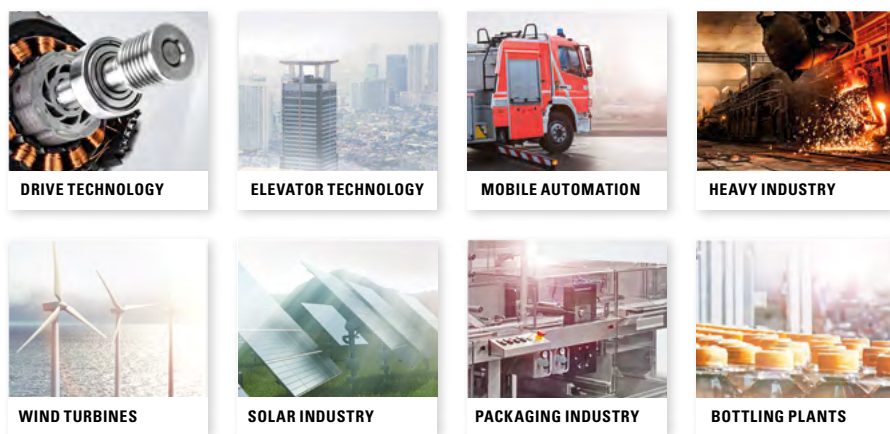
- Slip rings
- Slip rings, customized solutions
- Signal converters and optical fiber modules
- Cables and connectors

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
from page 8



BEARINGLESS ENCODERS
from page 16



MOTOR FEEDBACK SYSTEMS FOR SERVO MOTORS
from page 18

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



LINEAR MEASURING SYSTEMS
from page 20



SHAFT COPYING SYSTEMS
from page 24



INCLINOMETERS
from page 26



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



















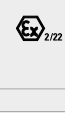


Enter order code of your encoder and find accessories: kuebler.com/accessories

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	•	
	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 KI40 (hollow s.)	40 [1.57]	-	•	2.500	•	•	-	•	8	4.500	20 ... +70 [-4 ... +158]	IP64	cable	5 5 ... 30 10 ... 30	250	•	
	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	•	
	Compact, optical plastic housing 3700 (shaft) 3720 (hollow shaft)	37 [1.46]	-	•	1.024	•	-	-	-	8	6.000	20 ... +70 [-4 ... +158]	IP65	cable	5 5 ... 30 10 ... 30	250	•	
	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 5 ... 30 10 ... 30	300	•	
	Standard, optical Sendix Base KIS50 (shaft) Sendix Base KI50 (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	•	 
	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	•	
	Standard, optical sine wave output, with zero pulse 5804 (shaft) 5824 (hollow shaft)	58 [2.28]	-	•	5.000	-	-	•	-	12	12.000	-20 ... +85 [-4 ... +185]	IP65	cable M23	5 10 ... 30	180	•	
	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	•	 
	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	•	











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	•	
	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	•	
	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	•	
	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	•	
	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	•	
	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	•	
	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	•	
	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	•	
	Heavy Duty, optical Sendix H100 (shaft)	115	-	•	3.600	•	•	-	-	-	6.000	-40 ... +100	IP66	cable ¹⁾	5 10 ... 30	300	•	
	Heavy Duty, optical Sendix H120 (hollow shaft)	100 [3.94]	-	•	5.000	•	•	-	-	28	6.000	-40 ... +100 [-40 ... +212]	IP67	cable ¹⁾ M12 M23 LWL	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 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	•	–	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	•	e1 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	•	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	•	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	•	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 4.5 ... 5.5	•	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	•	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	•	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°)	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	•	
	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	•	
	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, 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	•	
	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	•	 

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	•	
	Standard, optical mechanical multiturn SIL3 / PLe 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	•	
	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	•	
	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	•	
	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 & 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	•	  
	Compact, magnetic robust, electronic multiturn Sendix M3668R (shaft)	36 [1.43]	•	–	14 +24	•	–	•	–	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30	•	  
	Compact, optical electronic multiturn Sendix F3668 (shaft) Sendix F3688 (hollow shaft)	36 [1.43]	–	•	14 +24	•	–	–	–	–	–	–	–	12.000	-40 ... +85 [-40 ... +185]	IP67	cable	10 ... 30	•	
	Standard, magnetic electronic multiturn Sendix M5868 (shaft)	58 [2.28]	•	–	14 +24	•	–	•	–	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30	•	
	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	cable M12	10 ... 30	•	 
	Standard, optical Motor-Line electronic multiturn Sendix F5888M (hollow shaft)	58 [2.28]	–	•	16 +16	•	–	–	–	–	–	–	–	9.000	-40 ... +85 [-40 ... +185]	IP65	cable	10 ... 30	•	
	Standard, optical mechanical multiturn Sendix 5868 (shaft) Sendix 5888 (hollow shaft)	58 [2.28]	–	•	16 +12	•	•	–	•	–	•	•	–	9.000	-40 ... +85 [-40 ... +185]	IP67	cable M12 Sub-D	10 ... 30	•	 
	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	cable	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	cable	10 ... 30	•	 



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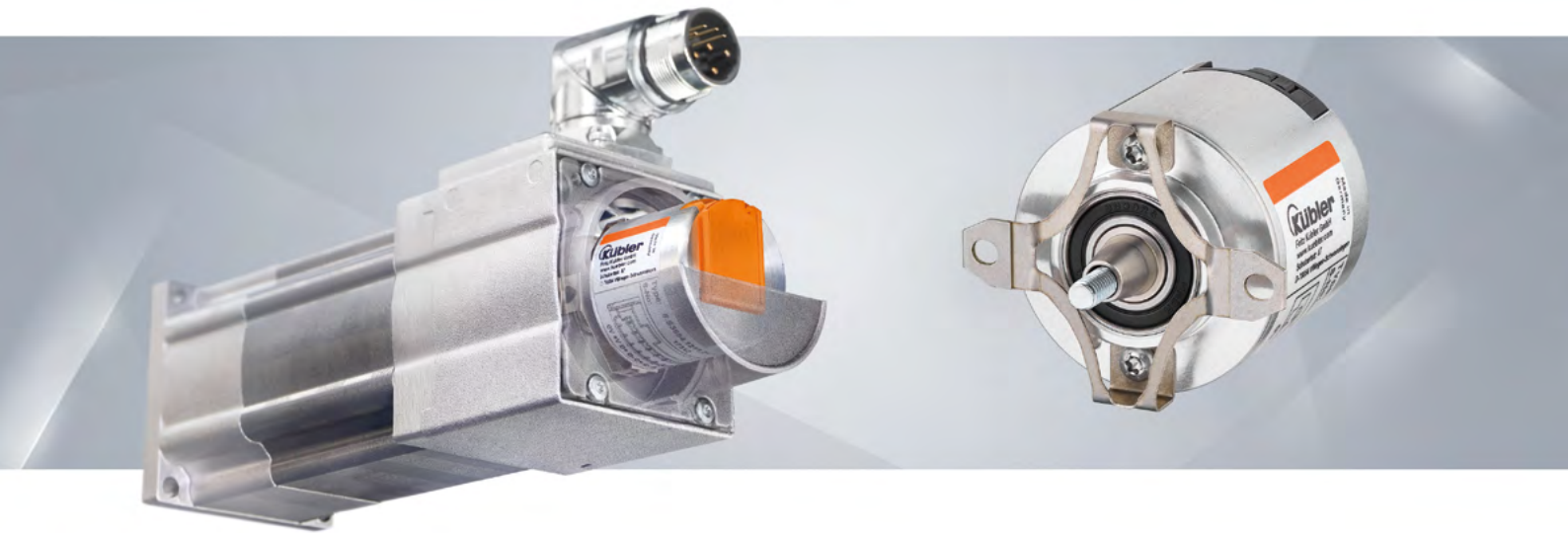
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Bearingless encoders Incremental

		Hollow shaft max. in mm ["]	Magnetic (accuracy ±1°)	With zero pulse	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 zero pulse 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 zero pulse 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 ±1°)	With zero pulse	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

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Motor Feedback Systems

	Ø Dimensions in mm [inch]	Optical (accuracy ≤ ±0.015°)	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
  <p>Singleturn Motor-Line compact, optical / magnetic Sendix S3674 (hub shaft/tapered shaft)</p>	36	•	23 ST	•	•	12.000	-30 ... +120 [-22 ... +248]	IP40	PCB connector, radial	5 ²⁾ 7 ... 30	•
  <p>Multiturn Motor-Line compact, optical / magnetic Sendix S3684 (hub shaft/tapered shaft)</p>	36	•	23 ST + 12 MT	•	•	12.000	-30 ... +120 [-22 ... +248]	IP40	PCB connector, radial	5 ²⁾ 7 ... 30	•

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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 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
Absolut												
 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	Accuracy max.	Resolution max. in mm	Dimensions in mm [inch]	Incremental RS422 / Push-Pull	Incremental SinCos	Absolute analogue	Absolute SSI/BISS	Absolute fieldbus	Traverse speed max.	Temperature range in °C [°F]	Protection max.	Type of connection
 Mini measuring wheel system, incremental incl. encoder	8	±0.015°	0.1	74 x 50 x 52 [2.91 x 1.97 x 2.05]	•	•	-	-	-	2.000 min ⁻¹	-20 ... +80 [-4 ... +176]	IP64	cable
 Rack and pinion incremental/ absolute incl. encoder / preset counter	8	0.5mm	0.1	dep. on rack	•	•	-	•	-	0.5 m/s	-20 ... +80 [-4 ... +176]	IP67	cable M12 M23 MIL
 With measuring wheels incremental/ absolute incl. encoder / preset counter	8	±0.015°	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

	Circumference / ø / width [mm]					Suitable for									
	200 ±0.2 / ø 63.7 / 12	500 ±1.0 / ø 159.2 / 25	6" (152.4 ±0.2) / ø 48.38 / 12 new	12" (304.8 ±0.2) / ø 97.02 / 12 new	12" (304.8 ±0.2) / ø 97.02 / 10	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
 Coating: diamond knurl (aluminum)	•	•	•	•	-	•	•	•	-	-	-	-	•	-	-
 Coating: plastic (polyurethane) smooth	•	•	-	•	-	•	•	•	•	•	•	-	-	•	-
 Coating: tufted rubber (polyurethane)	•	•	-	•	-	•	•	•	•	•	-	•	-	-	-
 Coating: plastic (polyurethane) corrugated	•	•	-	•	-	•	•	•	•	•	•	-	-	-	•
 Coating: natural rubber (NR) smooth	-	-	-	-	•	•	•	-	•	•	-	-	-	-	-



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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Mounting kit consisting of:
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Shaft copying systems

	Measuring length max. in m	Traverse speed in m/s	SIL3	EN 81-20/21/50	Incremental	Absolute	Resolution max. in mm	Dimensions in mm [inch]	CANopen Lift (DS417)	CANopen (DS406)	CAN	SSI	RS485	Protection level	Type of connection	Approvals
 <p>Ants Base Absolute measuring system for slip-free positioning Ants LEB02</p>	392	8	-	-	-	•	1	126 x 55 x 37 [4.96 x 2.71 x 1.46]	•	-	•	•	•	IP54	cable	
 <p>Ants Safe SIL3 certified solute measuring system for slip-free positioning Ants LES02</p>	392	12	•	•	-	•	0.5	126 x 55 x 37 [4.96 x 2.71 x 1.46]	-	•	-	-	-	IP54	cable	SIL3 EN 61
 <p>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</p>	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)	SIL3 EN 61



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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 ... 20mA 0.1 ... 4.9V 0.5 ... 4.5V 0 ... 5V 0 ... 10V	-	-	-	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 ... 20mA 0.1 ... 4.9V	-	-	-	0.1	-30 ... +70 [-22...+158]	IP69k	M12	•	-
2-dimensional															
	MEMS, capacitive IN81	±85°	±0.2°	12 bit	80 x 60 x 23	4 ... 20mA 0.1 ... 4.9V 0.5 ... 4.5V 0 ... 5V 0 ... 10V	-	-	-	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 ... 20mA 0.1 ... 4.9V 2 % ... 98 %	-	-	-	0.1	-30 ... +70 [-22...+158]	IP69k	M12	•	-

TRANSMISSION



SLIP RINGS
from page 30

CABLES AND CONNECTORS
from page 34

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



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- Sensors to measure temperature or humidity.

Slip rings

		Power (load)	Signal (analog/digital)	Pneumatics	Hydraulics	N° of channels max.	∅ 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 ... +75 [+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 25 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	•	•	–	–	3 load 3 temp.	30	240 V 25 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	50	400 V 25 A	IP64	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	•	•	•	•	on request	–	400 V 50 A	IP65	150	-35 ... +85 [-31 ... +185]
 Fig. SR250H	Dimension 250 mm and larger 100% customer-specific, condition monitoring, integration of sensor systems	•	•	•	•	on request	–	1000 V 150 A	IP65	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	IP64	150	0 ... +75 [+32 ... +167]



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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









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Cables, unprepared, cut to length

		PVC cable	PUR cable	TPE cable	Cross section in mm ²	Cable diameter in mm	For incremental encoders	For absolute encoders	For safety modules	For ATEX zone 2/22	RoHS compliant
	5 core + shield	•	•	–	5 x 0.14 [AWG25] 5 x 0.75 [AWG18]	approx. 4.7 approx. 7.5	•	–	–	–	•
	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	–	•	–	–	•
	PROFIBUS DP CANopen EtherCAT, PROFINET IO, EtherNet/IP	•	•	–	2 x 0.34 [AWG25] 3 x 2 x 0.25 [AWG23] 2 x 2 x 0.34 [AWG22]	approx. 7.6 approx. 6.2 approx. 4.8	–	•	•	–	•

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
from page 40

PROCESS DEVICES
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SAFE SPEED MONITORS
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Pulse counters
electronic


		Pulse	Time	Frequency	Tachometer	Position	Serial interface (S/I)	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.	•		
	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.	•		
	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.	•		
	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	•		
	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	•		
	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 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	•		
	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	•		
	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	•		
	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 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	30 x 20 [1.18 x 0.79] panel mount	27 x 14 [1.06 x 0.55]	-10...+60 [+14...+140]	IP65	DC	•	–
	K 66 / K 67 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	•	–
	K 04 / K 05 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	•	
	K 06 / K 07 / AK 07 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	•	
	SK 07 high shock resistance, for DIN rail	•	–	–	–	–	•	•	–	7	30 x 65 [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 34 x 23 [1.34 x 0.91]	from 31 x 20 [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 34 x 23 [1.34 x 0.91]	from 31 x 20 [1.22 x 0.79]	-10...+50 [+14...+122]	IP41	AC/DC	•	–
Standard counters																	
	Bk 14 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	•	–
	B 16 / B 18 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	•	–
	Mk 14 / Mk 16 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																	
	HC 77 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	•	
	SHC 77 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	•	
	HW 66 / HW 66 M 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] 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
	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 0 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.	•	CE, RoHS
	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	•	CE, RoHS
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	•	CE, RoHS
	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
	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	•

Standard counters

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, US	
	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, US	
	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, US	
	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, US	
	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, US	
	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, US	
	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, 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	•	CE, UL, US	
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	•	CE, RoHS, UL
	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	•	CE, RoHS, UL
	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	•	CE, RoHS, UL
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	•	CE, RoHS, UL
	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	•	CE, RoHS, UL
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	•	CE, RoHS, UL
	SHC 77 combination hour meter and totalizer	•	•	-	-	-	-	•	-	2x7	48.5x61.5 [1.91 x 2.40]	-	-15 ... +50 [+5 ... +122]	IP52	AC/DC	•	CE, RoHS, UL
	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)	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.	•	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	•	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	Presets	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.	•	CE, UL, US
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	•	CE, UL, US	
	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	•	CE, UL, US	
	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, 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	•	CE, UL, US	
	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	•	CE, UL, US	
	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	•	CE, 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	•	CE, 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	•	CE, UL, US	
LCD touch frequency displays																						
	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)																				
	•	•	•	•	•	–	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																				
	•	•	•	•	•	SI FB	2r	•	•	•	LED	6	96 x 48 [3.78 x 1.89]	92 x 45 [3.62 x 1.77]	91 [3.58]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	CE UL
	–	–	•	•	–	SI	4o	•	•	•	LED	6	96 x 48 [3.78 x 1.89]	92 x 45 [3.62 x 1.77]	141 [5.55]	0 ... +45 [+32 ... +113]	IP65	AC/DC	•	–
LCD touch tachometer with limits																				
	•	•	•	•	•	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96 x 48 [3.78 x 1.89]	92 x 45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–





















Position displays

	Pulse	Time	Frequency	Tachometer	Position (inkremental = i; SSI = s)	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																				
					i			•	•		LCD	8	48x24 [1.89 x 0.94]	45x22.2 [1.77 x 0.87]	47.7 [1.88]	-10 ... +60 [-4 ... +140]	IP65	batt.	•	CE, RoHS, US
LCD position display Codix 133 phase discriminator (quadrature) x1 and x2 evaluation																				
LED position displays																				
	•				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, RoHS, US
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, RoHS, US
Codix 524 multifunctional																				
	•		•	•	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, RoHS, US
Codix 52P + Frequency 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, RoHS, US
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, RoHS, US
Codix 544 multifunctional																				
	•		•	•	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, RoHS, US
Codix 54P + Frequency 6 count modes																				
LCD touch SSI position display																				
					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	•	
new 570T SSI absolute encoder display, 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 571T multifunctional (also reciprocal) analog output, serial interface																				






Position displays with limits

	Pulse	Time	Frequency	Tachometer	Position (inkremental = i; SSI = s)	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	•	UL US
LCD 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	•	UL US
	572 dual preset counters with 4 outputs and analog output, serial interface																				
	•	-	-	-	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	•	-
	575 dual SSI display with 4 outputs and analog output, serial interface																				
	•	-	-	-	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																					
	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	•	-


Multifunction devices
electronic

		Pulse	Time	Frequency	Tachometer	Position	Serial interface (SI) Fieldbus (FB)	Presets: o = opto coupler; 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	•	
 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 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 controllers
Setpoint adjusters

	Standard signal 0...20; 4...20 mA	Standard signal 0...10; 2...10V	Standard signal ± 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	•	UL 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	•	UL 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	•	UL US
LCD touch process controller																
 573T 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	•	UL US

Temperature displays
Temperature controllers

		Temperature Thermocouples	Temperature Resistance thermometers (RTDs)	mV/V sensors / strain gauge input	Input characteristic curve	Presets / limit values	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	•	CE, UL
	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	•	CE, UL
	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	•	CE, UL
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	•	CE, UL

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 controllers													
 Codix 566 Min / Max value detection, 2 limit values with totalizer, tare, analog output	1,0 1,5 2,0 3,0 3,3mV/V	12 S	2 r	•	LED	6	96x48 [3.78 x 1.89]	90.5 [3.56]	-20 ... +65 [-4 ... +149]	IP65	AC/DC	•	



Safe speed monitors

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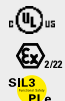
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Safety modules Safety-M compact

		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 PL _e
	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 PL _e
	Speed monitoring 1 axis / 1 encoder system SMC1.3	1	1	8/4	1	2	8 / 4	1 opt.	HTL/TTL	24	50	•	SIL2 PL _d
	Speed monitoring 1 axis / 2 encoder systems SMC2.4	1	2	8/4	1	2	8 / 4	1 opt.	HTL/TTL	24	50	•	SIL3 PL _e

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 (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	•	

Kübler Service for worldwide planning reliability



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