

MEASUREMENT



TRANSMISSION



EVALUATION



SHORT FORM CATALOG 2022

Contents

KÜBLER SHORT PROFILE

Our pulses for innovations	4
Product portfolio – Made in Germany	5

MEASUREMENT

Encoders	8
Bearingless encoders	18
Motor Feedback Systems	20
Linear measuring systems	22
Shaft copying systems	28
Inclinometers	30

TRANSMISSION

Slip rings	34
Signal converters and optical fiber modules	36
Cables and connectors	38

EVALUATION

Displays and counters	44
Process devices	58
Safe speed monitors	62

SERVICES

66

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.

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

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



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
- Inclometers

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 18



MOTOR FEEDBACK SYSTEMS FOR SERVO MOTORS

from page 20

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 22



SHAFT COPYING SYSTEMS

from page 28



INCLINOMETERS

from page 30



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



The intelligent networking of all components is based on the use of smart sensors. Numerous Kübler encoders allow industry 4.0 concepts to be realized today.

Find out more at:
kuebler.com/iiot

Find the right Kübler accessories



Cables, connectors and pre-assembled cordsets



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



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



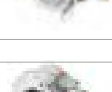
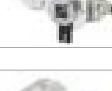
Connection of motor and encoder:
coupling, flexible shaft coupling



SSI displays, safe speed monitors

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

Incremental encoders

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in ppr	Push-pull	RS422	SinCos	Open Collector	Ø Hollow shaft max. in mm [inch]	Speed max. in min ⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	Pulse frequency max. in kHz	RoHS compliant	Approvals
	Miniature, optical 2400 (shaft) 2420 (hollow shaft)	24 [0.94]	–	•	1.024	•	–	–	–	6	12.000	-20 ... +85 [-4 ... +185]	IP64	cable	5 ... 24 8 ... 30	160	•	cUL _{US}
	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	•	cUL _{US}
	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	•	cUL _{US}
	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	•	cUL _{US} Ex _{2/22}
	Standard, optical Sendix Base KIS50 (shaft) Sendix Base KIH50 (hollow s.)	58 [2.28]	–	•	5.000	•	•	–	•	15	6.000	20 ... +70 [-4 ... +158]	IP65	cable M12 M23	4.7 ... 30 5 ... 30 10 ... 30	300	•	CE
	Standard, optical high temperature 5803 (shaft) 5823 (hollow shaft)	58 [2.28]	–	•	5.000	•	•	–	–	12	12.000	-20 ... +110 [-4 ... +230]	IP65	cable M23 MIL	5 ... 30 10 ... 30	300	•	cUL _{US}
	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 ... 30 10 ... 30	180	•	cUL _{US}
	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 ... 30 10 ... 30	400	•	cUL _{US} 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 ... 30 10 ... 30	400	•	cUL _{US}

1) We offer for all encoders configured with the underlined preferential options our free of charge 24one delivery promise.

Orders placed on working days before 9AM CET are manufactured and ready for dispatch the same day. The 24one delivery promise is limited to 20 pieces per delivery.

Incremental encoders

		Ø Dimensions in mm [inch]	Magnetic (accuracy ±1°)	Optical (accuracy ≤ ±0.015°)	Resolution max. in ppr	Push-pull	RS422	SinCos	Open Collector	Ø Hollow shaft max. in mm [inch]	Speed max. in min ⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	Pulse frequency max. in kHz	RoHS compliant	Approvals
	Standard, optical sine wave output, SIL2 / PLd Sendix 5814FS2 (shaft) Sendix 5834FS2 (hollow shaft)	58 [2.28]	–	•	1.024 and 2.048	–	–	•	–	14	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	400	•	cUL ^{US} Ex ^{2/22} SIL2 PLd
	Standard, optical sine wave output, SIL3 / PLe Sendix 5814FS3 (shaft) Sendix 5834FS3 (hollow shaft)	58 [2.28]	–	•	1.024 and 2.048	–	–	•	–	14	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	400	•	cUL ^{US} Ex ^{2/22} SIL3 PLe
	Standard, optical high resolution 5805 (shaft) 5825 (hollow shaft)	58 [2.28]	–	•	36.000	•	•	–	–	12	12.000	-20 ... +105 [-4 ... +221]	IP65	cable M23	5 10 ... 30	800	•	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	-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	-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 [-40 ... +212]	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 ≤ ±0.15°)	Resolution max. in bit	SSI interface	BiSS interface	Analog / RS485 interface	Parallel interface	Additional incremental track	Speed max. in min ⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
	Miniature, magnetic 2450 (shaft) 2470 (hollow shaft)	24 [0.94]	•	–	12	•	–	–	–	–	12.000	-20 ... +85 [-4 ... +185]	IP67	cable	5	•	–
	Compact, magnetic Sendix M3651A (shaft) Sendix M3671A (hollow shaft)	36 [1.43]	•	–	12	–	–	4 ... 20 mA 0 ... 10 V	–	–	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	10 ... 30 15 ... 30	•	CE UL US Ex 2/22
	Compact, magnetic Sendix M3653A (shaft) Sendix M3673A (hollow shaft)	36 [1.43]	•	–	14	•	–	–	–	–	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	10 ... 30	•	CE UL US Ex 2/22
	Compact, magnetic robust Sendix M3651AR (shaft)	36 [1.43]	•	–	12	–	–	4 ... 20 mA 0 ... 10 V 0 ... 5 V	–	–	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30 15 ... 30	•	CE UL US Ex 2/22
	Compact, magnetic robust Sendix M3653AR (shaft)	36 [1.43]	•	–	14	•	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30	•	CE UL US 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	•	CE UL US
	Standard, optical parallel, highspeed 5852 (shaft) 5872 (hollow shaft)	58 [2.28]	–	•	14	–	–	–	•	–	12.000	-20 ... +85 [-4 ... +185]	IP66	cable M23	5 10 ... 30	•	CE UL US
	Standard, optical Sendix 5853 (shaft) Sendix 5873 (hollow shaft)	58 [2.28]	–	•	21	•	•	–	–	Sin Cos RS422	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	•	CE UL US Ex 2/22
	Standard, magnetic Sendix M5851A (shaft)	58 [2.28]	•	–	12	–	–	4 ... 20 mA 0 ... 10 V 0 ... 5 V	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30 15 ... 30	•	CE UL US Ex 2/22
	Standard, magnetic Sendix M5853A (shaft)	58 [2.28]	•	–	14	•	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30	•	CE UL US Ex 2/22

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	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
	Standard, optical Motor-Line Sendix 5873 (tapered shaft)	58 [2.28]	–	•	21	•	•	–	–	SinCos RS422	12.000	-40 ... +90 [-40 ... +194]	IP65	cable PCB connector	5 10 ... 30 4.5 ... 5.5	•	c 
	Standard, optical SIL2 / PLd Sendix 5853FS2 (shaft) Sendix 5873FS2 (hollow shaft)	58 [2.28]	–	•	17	•	•	–	–	Sin Cos	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	c   SIL2 PLd
	Standard, optical SIL3 / PLc Sendix 5853FS3 (shaft) Sendix 5873FS3 (hollow shaft)	58 [2.28]	–	•	17	•	•	–	–	Sin Cos	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M23	5 10 ... 30	•	c   SIL3 PLc
	Standard, optical ATEX/IECEx – zone 1/21 Sendix 7053 (shaft) Sendix 7073 (hollow shaft)	70 [2.76]	–	•	17	•	•	–	–	–	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	 
	Standard, optical ATEX/IECEx – mining Sendix 7153 (shaft) Sendix 7173 (hollow shaft)	70 [2.76]	–	•	17	•	•	–	–	–	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	 

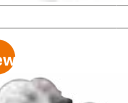
Absolute encoders Singleturn Fieldbus & Industrial Ethernet

		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	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
	Compact, magnetic Sendix M3658A (shaft) Sendix M3678A (hollow shaft)	36 [1.43]	•	–	•	–	–	–	–	–	–	14	6.000	-40 ... +85 [-40 ... +185]	IP67	M12	18 ... 30	•	c  
	Compact, magnetic Sendix M3658A (shaft) Sendix M3678A (hollow shaft)	36 [1.43]	•	–	–	•	•	–	–	–	–	14	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	10 ... 30	•	 c  
	Compact, magnetic, robust Sendix M3658AR (shaft)	36 [1.43]	•	–	–	•	•	–	–	–	–	14	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30	•	 c  

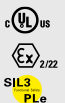
Absolute encoders Singleturn Fieldbus & Industrial Ethernet

		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	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
	Compact, optical Sendix F3658 (shaft) Sendix F3678 (hollow shaft)	36 [1.43]	–	•	–	•	–	–	–	–	–	16	12.000	-40 ... +85 [-40 ... +185]	IP67	cable	10 ... 30	•	cUL _{US}
	Standard, optical Sendix 5858 (shaft) Sendix 5878 (hollow shaft) 	58 [2.28]	–	•	–	•	–	•	•	•	–	16	9.000	-40 ... +85 [-40 ... +185]	IP67	cable M12 M23	10 ... 30	•	cUL _{US} 
	Standard, magnetic Sendix M5858A (shaft) 	58 [2.28]	•	–	•	–	–	–	–	–	–	14	4.000	-40 ... +85 [-40 ... +185]	IP65	M12	18 ... 30	•	cUL _{US} 
	Standard, magnetic Sendix M5858A (shaft)	58 [2.28]	•	–	–	•	•	–	–	–	–	14	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30	•	Ei cUL _{US} 
	Standard, optical electronic singleturn Sendix F5858 (shaft) Sendix F5878 (hollow shaft) 	58 [2.28]	–	•	–	–	–	–	–	•	•	19	9.000	-40 ... +80 [-40 ... +176]	IP67	M12	10 ... 30	•	cUL _{US} 
	Standard, optical Sendix S5858 (shaft) Sendix S5878 (hollow shaft) 	58 [2.28]	–	•	–	–	–	–	–	+ PROFIsafe	–	15 (safe), 24 (non safe)	9.000	-40 ... +80 [-40 ... +176]	IP67	M12	10 ... 30	•	cUL _{US}  SIL3 PL _e
	Standard, optical ATEX/IECEx – zone 1/21 Sendix 7058 (shaft) Sendix 7078 (hollow shaft)	70 [2.76]	–	•	–	•	–	•	–	–	–	16	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	 
	Standard, optical ATEX/IECEx – mining Sendix 7158 (shaft) Sendix 7178 (hollow shaft)	70 [2.76]	–	•	–	•	–	•	–	–	–	16	6.000	-40 ... +60 [-40 ... +140]	IP67	cable	10 ... 30	•	 

Absolute encoders 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	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
		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	•	Ⓔ cUL _{US} Ex _{2/22}
		36 [1.43]	•	–	14 + 24	•	–	–	–	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	10 ... 30	•	cUL _{US} Ex _{2/22}
		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	•	Ⓔ cUL _{US} Ex _{2/22}
		36 [1.43]	•	–	14 + 24	•	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP69k	cable M12	10 ... 30	•	cUL _{US} Ex _{2/22}
		36 [1.43]	–	•	17 + 24	•	•	–	SinCos RS422	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12	5 10 ... 30	•	cUL _{US}
		58 [2.28]	–	•	19 + 12	•	•	–	SinCos RS422	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	•	cUL _{US} Ex _{2/22}
		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	•	Ⓔ cUL _{US} Ex _{2/22}
		58 [2.28]	•	–	14 + 24	•	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30	•	cUL _{US} Ex _{2/22}
		58 [2.28]	–	•	17 + 24	•	•	–	SinCos RS422	12.000	-40 ... +85 [-40 ... +185]	IP67	cable M12 M23	5 10 ... 30	•	cUL _{US} Ex _{2/22}
		58 [2.28]	•	–	17 + 24	•	–	–	SinCos RS422	9.000	-40 ... +85 [-40 ... +185]	IP65	cable	5 10 ... 30	•	cUL _{US}

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	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	-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	-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	-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	-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	IO-Link new	CANopen	CANopenlift	SAE J1939 new	PROFIBUS DP	MODBUS RTU	EtherCAT	PROFINET IO	EtherNet/IP	Speed max. in min ⁻¹	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
new	 Compact, 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	•	 
new	 Compact, magnetic electronic multiturn Sendix M3688 (shaft) Sendix M3688 (hollow shaft)	36 [1.43]	•	–	14 + 29	–	•	–	•	–	–	–	–	–	6.000	-40 ... +85 [-40 ... +185]	IP67	cable M12	10 ... 30	•	  
new	 Compact, magnetic, robust, electronic multiturn Sendix M3668R (shaft)	36 [1.43]	•	–	14 + 29	–	•	–	•	–	–	–	–	–	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]	–	•	16 + 16	–	•	–	–	–	–	–	–	–	12.000	-40 ... +85 [-40 ... +185]	IP67	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	•	 
new	 Standard, magnetic electronic multiturn Sendix M5868 (shaft) 	58 [2.28]	•	–	14 + 18	•	–	–	–	–	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	M12	18 ... 30	•	 
new	 Standard, magnetic electronic multiturn Sendix M5868 (shaft)	58 [2.28]	•	–	14 + 29	–	•	–	•	–	–	–	–	–	4.000	-40 ... +85 [-40 ... +185]	IP65	cable M12	10 ... 30	•	  

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	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	RoHS compliant	Approvals
new	 Standard, optical electronic multiturn Sendix F5868 (shaft) Sendix F5888 (hollow shaft) 	58 [2.28]	–	•	16 + 16	–	•	–	–	•	–	•	•	•	12.000	-40 ... +80 [-40 ... +176]	IP67	cable M12	10 ... 30	•	 
	 Standard, optical Motor-Line electronic multiturn Sendix F5888M (hollow shaft)	58 [2.28]	–	•	19 + 24	–	•	–	–	–	–	–	–	–	9.000	-40 ... +85 [-40 ... +185]	IP65	cable	10 ... 30	•	
new	 Standard, optical electronic multiturn Sendix S5868 (shaft) Sendix S5888 (hollow shaft) 	58 [2.28]	–	•	15 (safe) 24 (non safe) + 12	–	–	–	–	–	–	–	+ PROFIsafe	–	9.000	-40 ... +80 [-40 ... +176]	IP67	M12	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	-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	-40 ... +60 [-40 ... +140]	IP67	cable	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!

kuebler.com/bearingless-encoders

Find the right Kübler accessories



Cables, connectors and pre-assembled cordsets



Position displays



Magnetic rings in different diameters

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

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

Bearingless encoders Absolute														
		Hollow shaft max. in mm ["]	Magnetic (accuracy ±1°)	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 VDC	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 ≤ ±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
 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.

kuebler.com/linear-measuring-systems

Find the right Kübler accessories



Cables, connectors and pre-assembled cordsets



For draw-wire encoders:
guide pulley, extension wire



For magnetoc measuring systems:
displays



Accessories for measuring wheel systems:
O-rings, mounting brackets



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

Enter order code and find
accessories:
kuebler.com/accessories

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	Integrated inclinometer	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 with 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
 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 with 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
 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

Measuring wheel systems		Spring force max. [N]	Spring travel max. [mm]	Encoder orientation adjustable in 30° steps	Recommended circumference measuring wheel [mm]	Recommended incremental encoders	Recommended absolute encoders	Circumference measuring wheel					Surfaces measuring wheel					
								100 mm	200 mm	6"	300 mm	12"	500 mm	Knurled	Smooth	Nubbed	Corrugated	O-ring
	MWE11 Compact-Line with encoder and one measuring wheel	10	10	–	100	2400	–	•	–	–	–	–	–	•	•	–	–	–
	MWE21 Compact-Line with encoder and one measuring wheel	20	16	•	200	KIS40 3610	M366x F366x	–	•	•	–	–	–	•	•	–	–	•
	MWE31 Compact-Line with encoder and one measuring wheel	15	10	•	200	KIS40 3610	M366x F366x	–	•	•	–	–	–	•	•	–	–	•
	MWE41 Compact-Line with encoder and one measuring wheel	25	10	•	300	KIS50 5000 5805	M586x F586x 586x	–	•	–	•	•	•	•	•	(•)	•	•
	MWE51 Performance-Line with encoder and one measuring wheel	30	20	•	300	KIS50 5000 5805	M586x F586x 586x	–	•	–	•	•	•	•	•	(•)	•	•
	MWE52 Performance-Line with encoder and two measuring wheels (both sides)	30	20	•	300	KIS50 5000	–	–	•	–	•	•	•	•	•	(•)	•	•
	MWE61 Performance-Line with encoder and one measuring wheel	40	30	•	300	KIS50 5000 5805	M586x F586x 586x	–	•	–	•	•	•	•	•	(•)	•	•
	MWE62 Performance-Line with encoder and two measuring wheels (both sides)	40	30	•	300	KIS50 5000	–	–	•	–	•	•	•	•	•	(•)	•	•

Measuring wheel systems
System components
Encoder spring arms

		Spring force max. [N]	Spring travel max. [mm]	Encoder orientation adjustable in 30° steps	Recommended incremental encoders	Recommended absolute encoders
 	MWE20 Compact-Line	20	16	•	KIS40 3610	M366x F366x
 	MWE30 Compact-Line	15	10	•	KIS40 3610	M366x F366x
 	MWE40 Compact-Line	25	10	•	KIS50 5000 5805	M586x F586x 586x
 	MWE50 Performance-Line	30	20	•	KIS50 5000 5805	M586x F586x 586x
 	MWE60 Performance-Line	40	30	•	KIS50 5000 5805	M586x F586x 586x

Measuring wheel systems

System components

Measuring wheels

Measuring wheel systems System components Measuring wheels		Circumference / ø / width [mm]							Suitable for									
		200 ±0,2 / Ø 63,7 / 5,5 new	200 ±0,2 / Ø 63,7 / 12	300 ±0,2 / Ø 95,5 / 12 new	500 ±1,0 / Ø 159,2 / 25	6" (152,4 ±0,2) / Ø 48,38 / 5,5 new	6" (152,4 ±0,2) / Ø 48,38 / 12	12" (304,8 ±0,2) / Ø 97,02 / 12	Cardboard	Wood	Textile	Paper	Plastic (PVC, PE, ...)	Painted surfaces	Carpet, cables, nonwoven	Rubber, soft plastic	Wire, greased metals, steel profiles, leather	Greased metals, glass, floor coverings
	diamond knurl (aluminum)	•	•	•	•	•	•	•	•	•	•	–	–	–	–	•	–	–
	plastic (polyurethane) smooth	•	•	•	•	•	–	•	•	•	•	•	•	•	–	–	•	–
	Single O-ring (NBR70)	•	•	•	–	•	–	•	•	•	•	•	•	•	–	–	–	–
	Double O-ring (NBR70)	–	•	•	–	–	–	•	•	•	•	•	•	•	–	–	–	–
	tufted rubber (polyurethane)	–	•	–	•	–	–	•	•	•	•	•	•	–	•	–	–	–
	plastic (polyurethane) corrugated	–	•	–	•	–	–	•	•	•	•	•	•	•	–	–	–	•

Length measuring sets

		Spring force max. [N]	Spring travel max. [mm]	Encoder orientation adjustable in 30° steps	Recommended incremental encoders	Recommended absolute encoders	Preset counter	Resolution max. [mm]	Traverse speed max.
	Encoder spring arm + encoder + rack and pinion + counter	25	10	•	5000	—	Codix 923	0.1 mm	2.000 min ⁻¹
	Limes Kit TB1 Encoder spring arm + encoder + toothed belt and pulley	40	30	•	5000	M586x F586x 586x	—	0.1 mm	5 m/s



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.

kuebler.com/shaft-copying-systems



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.
kuebler.com/video-shaft-copying



Find the right Kuebler accessories



Coded band



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



EMC shield terminal

Enter order code and find
accessories:
kuebler.com/accessories

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.

kuebler.com/inclinometers

Find the right Kübler accessories



Cables, connectors and pre-assembled cordsets



Teach adapter

Enter order code and find
accessories:

kuebler.com/accessories

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 34

**CABLES AND
CONNECTORS**
from page 38

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.

kuebler.com/transmission



**SIGNAL CONVERTERS AND
OPTICAL FIBER MODULES**
from page 36



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.

Your application is our priority: We implement modifications and special solutions quickly and easily.

kuebler.com/slip-rings

INDUSTRIE 4.0 IIoT READY

- Connectivity
- Identification
- Diagnostics
- Adaptability

The intelligent networking of all components is based on the use of smart sensors. Smart Kübler slip rings with integrated sensors are understood to be industry 4.0 enablers. Thanks to condition monitoring and the predictive maintenance associated with this, for example, they ensure greater system availability.

Find out more at:
kuebler.com/iiot

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.

Integrated sensors

- 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. SR1085	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. 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.

kuebler.com/signal-converters

kuebler.com/fiber-optic

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.

kuebler.com/connection-technology

Cables, unprepared,
cut to length

		PVC cable	PUR cable	TPE cable		Cross section in mm ²	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	–	–	–	–	•	–	–	–	–	–	–	–	–	•
	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**
from page 44

PROCESS DEVICES
from page 58

Display, control, monitor and count – accurately and reliably with Kübler.

Kübler is known worldwide in the field of counting technology. Our electromechanical, electronic, and pneumatic displays and counters prove their value in many industries. Electronic process devices for recording, controlling, and monitoring processes round off this product variety. For functional safety we offer compact speed monitors. No matter which product you choose, each one is manufactured with the highest quality consciousness and precision. Find the right solution for your application.

kuebler.com/evaluation



SAFE SPEED MONITORS
from page 62



Displays and counters

Electronic, electromechanical or pneumatic recording, control and evaluation.

Discover the world of displays and counters. We have been developing and manufacturing counting technology for the whole world for 60 years. In addition to the high quality of our products, the variety of options for accurately and reliably recording times, frequencies, energy, and positions as well as controlling processes is particularly impressive. Every display, every meter stands for optimum readability – in all environments. Count with us – count on Kübler.

kuebler.com/counters

Find the right Kübler accessories



Adapter front bezel



Sealing cover, transparent cover



Front bezel, mounting frame



Socket boxes



DIN rail mount

Further accessories such as an enclosure blind, terminal cover, base-mount socket, mounting support, adapter and anti-vibration set, gaskets

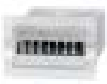
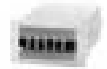
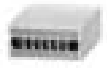
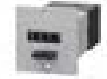
Enter order code and find accessories:

kuebler.com/accessories

Pulse 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 [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	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 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]	-10 ... +55 [+14 ... +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)	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.	•	 
	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	•	 
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	•	 
	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	•

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 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]	-10 ... +55 [+14 ... +131]	IP65	AC	•	MID

1) With mounting frame.

Time preset counters electronic

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.	•	
	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	•	
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	•	
LCD touch time preset counter																					
	571T multifunctional (also reciprocal) analog output, serial interface	•	•	•	•	•	SI FB	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–

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

Frequency displays Tachometers

		Pulse	Time	Frequency	Tachometer	Position	Serial interface (SI) Fieldbus (FB)	Preset: 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	SI FB IO-Link	4o 2r	•	•	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	92x45 [3.62 x 1.77]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–

Position displays with limits

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

Multifunction devices electronic

		Pulse	Time	Frequency	Tachometer	Position	Serial interface (SI) Fieldbus (FB)	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
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	•	cULus
	SHC 77 combination hour meter and totalizer	•	•	–	–	–	–	•	–	2x7	48.5x61.5 [1.91 x 2.42]	–	-15 ... +50 [+5...+122]	IP52	AC/DC	•	cULus
	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]	-10 ... +55 [+14 ... +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 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]	-10 ... +55 [+14 ... +131]	IP65	AC	•	MID

1) With mounting frame.



Process devices

The right solution for any conceivable application.

Discover the variety of electronic process devices from Kübler. These are used reliably worldwide in various applications for the acquisition and control of standard signals, measured temperature values, or the monitoring of measured pressure and weight values. Maximum flexibility: scalable or linear display, multicolor, or modern touch displays are available for you. Kübler process devices stand for highest quality, optimum readability, and long service life. You, too, can count with us – count on Kübler.

kuebler.com/process-devices

Find the right Kübler accessories



Adapter front bezel



Sealing cover, transparent cover



Front bezel, mounting frame



Socket boxes



DIN rail mount

Further accessories such as parameterization software, enclosure blind, terminal cover, base-mount socket, mounting support, adapter and anti-vibration set, gaskets

Enter order code and find accessories:

kuebler.com/accessories

Process displays
 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	•	CE, 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	•	CE, 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	•	CE, UL, US
LCD touch process controller																	
	573T IO-Link 2 inputs 4 limit values, analog output, serial interface	•	•	•	SI FB IO-Link	24 S	4 o 2 r	•	LCD touch 3 color	8	96x48 [3.78 x 1.89]	120 [4.72]	-20 ... +60 [-4 ... +140]	IP65	AC/DC	•	–
	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	•	CE, UL, 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	•	
	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	•	
	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	•	
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	•	

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	•	



Safe speed monitors

Reliable and safe speed monitoring.

The compact base module of the Safety-M compact series is a complete speed monitor in the smallest possible space (50 mm wide). The detachable operating and diagnostic display (OLED) stands for simple parameterization. The safe inputs/outputs and integrated signal splitter allow integration into existing safety circuits and upgrade of old machines.

kuebler.com/safe-speed-monitors



SIL2
PLd

SIL3
PLe

Reliable individual components alone do not lead to a reliable overall application.

A reliable speed monitor and the corresponding reliable sensor technology are required for a reliable connection from the motor to the control unit. Kübler offers SIL2 and SIL3 certified encoders for both incremental and absolute measurements (see pages 64, 65).

kuebler.com/functional-safety

Find the right Kübler accessories



Display and programming unit



Programming cable, set



EMC shield terminal for encoder cable



Cordset pre-assembled



Parameterization software SafeConfig

Enter order code and find accessories:

kuebler.com/accessories

Safety modules

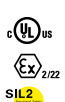
Safety-M compact

	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	Temperature range in °C [°F]	Protection max.	Type of connection	Power supply in V DC	Pulse frequency max. in kHz	RoHS compliant	Approvals
	Standard, optical sine wave output, SIL2 / PLd Sendix 5814FS2 (shaft) Sendix 5834FS2 (hollow shaft)	58 [2.28]	–	•	1.024 and 2.048	–	–	•	–	14	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	400	•	  SIL2 PLd
	Standard, optical sine wave output, SIL3 / PLe Sendix 5814FS3 (shaft) Sendix 5834FS3 (hollow shaft)	58 [2.28]	–	•	1.024 and 2.048	–	–	•	–	14	12.000	-40 ... +90 [-40 ... +194]	IP67	cable M12 M23	5 10 ... 30	400	•	  SIL3 PLe

Absolute encoders for Functional Safety

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

Kübler Service for worldwide planning reliability

24one

24one delivery promise

Manufacturing in 24 hours. For orders placed on working days before 9 AM, the product will be ready for dispatch on that same day. 24one is limited to 20 pieces per delivery.



10 by 10

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



48 h Express-Service

We can process your order within 48 hours; we can ship stock items the same day.



Technical Support

Kübler' applications team is present on site all over the world for advice, analysis and support.

Kübler Germany +49 7720 3903 952
 Kübler France +33 3 89 53 45 45
 Kübler Italy +39 026 423 345
 Kübler Poland +48 61 84 99 902
 Kübler Austria +43 3322 43723 12



Sample Service

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



Safety Services

Individual customer solutions.



Tailor-made Solutions – Kübler Design System (KDS) OEM Products and Systems (OPS)

We develop jointly with our customers product and engineering solutions for customer-specific products, integrated drive solutions, up to complete systems.

Kübler Turkey +90 216 999 9791
 Kübler China +86 10 8471 0818
 Kübler India +91 2135 618200
 Kübler USA +1 855 583 2537



KÜBLER WORLDWIDE

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

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

KÜBLER GROUP

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

Kübler Group

Fritz Kübler GmbH

Schubertstrasse 47
78054 Villingen-Schwenningen
Germany

Phone +49 7720 3903-0
Fax +49 7720 21564
info@kuebler.com

kuebler.com