

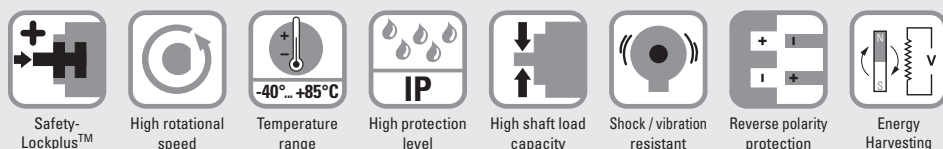
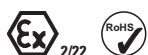
Absolute encoders – multiturn

Standard electronic multiturn, magnetic	Sendix M5861 (shaft)	Analog
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The Sendix M58 with Energy Harvesting Technology is an electronic multiturn encoder without gear and without battery – in the standard format with 58 mm flange.

High robustness and high resolution make this encoder the ideal device for use in demanding applications.



Highest robustness

- Sturdy bearing construction in Safety-Lockplus™ design for particularly high resistance.
- Extra large bearings.
- Mechanically protected shaft seal.
- Wide temperature range -40°C ... +85°C.
- Without gear and without battery, thanks to the Energy Harvesting technology.

Application oriented

- Current output 4 ... 20 mA.
- Voltage output 0 ... 10 V or 0 ... 5 V.
- Measuring range scalable.
- Limit switch function.

Order code Shaft version

8.M5861 . **XXXX.XX12**
Type

a Version

- 3 = clamping flange, IP65, ø 58 mm [2.28"]
- 4 = synchro flange, IP65, ø 58 mm [2.28"]

b Shaft (ø x L), with flat

- 1 = ø 6 x 12.5 mm [0.24 x 0.49"]
- 5 = ø 10 x 20 mm [0.39 x 0.79"]

c Output circuit¹⁾

- 3 = current output
- 4 = voltage output

d Type of connection

- 2 = radial cable, 1 m [3.28'] PVC
- B = radial cable, special length PVC *)
- 4 = radial M12 connector, 5-pin

*) Available special lengths (connection types B):
2, 3, 5, 8, 10, 15 m [5.56, 9.84, 16.40, 26.25, 32.80, 49.21']
order code expansion .XXXX = length in dm
ex.: 8.M5861.3132.3112.0030 (for cable length 3 m)

e Interface / resolution / power supply

- 3 = 4 ... 20 mA / 12 bit / 10 ... 30 V DC
- 4 = 0 ... 10 V / 12 bit / 15 ... 30 V DC
- 5 = 0 ... 5 V / 11 bit / 10 ... 30 V DC

f Measuring range

- 1 = 16 revolutions / cw
- 2 = 16 revolutions / ccw
- 3 = scalable up to 65,536 revolutions, with limit switch function / cw
- 4 = scalable up to 65,536 revolutions, without limit switch function / cw
- 5 = scalable up to 65,536 revolutions, with limit switch function / ccw
- 6 = scalable up to 65,536 revolutions, without limit switch function / ccw

Optional on request

- Ex 2/22 (only for connection type 4)

Connection technology		Order no.
Coupling	Bellows coupling ø 19 mm [0.75"] for shaft 10 mm [0.39"]	8.0000.1102.1010
Connection technology		Order no.
Cordset, pre-assembled	M12 female connector with coupling nut, 5-pin, 2 m [6.56'] PVC cable	05.00.6081.2211.002M
Connector, self-assembly (straight)	M12 female connector with coupling nut, 5-pin	8.0000.5116.0000

Further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories.

Additional connectors can be found in the connection technology section or in the connection technology area of our website at: www.kuebler.com/connection_technology.

1) Output circuit "3" only in conjunction with interface "3",
output circuit "4" only in conjunction with interface "4" or "5".

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Technical data

Electrical characteristics current interface 4 ... 20 mA			Electrical characteristics voltage interface 0 ... 10 V / 0 ... 5 V		
Power supply	10 ... 30 V DC		Power supply	output 0 ... 5 V	10 ... 30 V DC
Current consumption (no load)	max. 30 mA			output 0 ... 10 V	15 ... 30 V DC
Reverse polarity protection of the power supply	yes		Current consumption (no load)	max. 30 mA	
Short-circuit proof outputs	yes ¹⁾		Reverse polarity protection of the power supply	yes	
Measuring range	factory setting	2 ⁴ revolutions	Short-circuit proof outputs	yes ¹⁾	
	optionally scalable	up to 2 ¹⁶ revolutions	Measuring range	factory setting	2 ⁴ revolutions
DA converter resolution	12 bit			optionally scalable	up to 2 ¹⁶ revolutions
Singleturn accuracy, at 25°C [77°F]	±1°		DA converter resolution	0 ... 10 V	12 bit
Temperature coefficient	< 100 ppm/K			0 ... 5 V	11 bit
Repeat accuracy, at 25°C [77°F]	±0.2°		Singleturn accuracy, at 25°C [77°F]	±1°	
Output load	at 10 V DC	max. 200 Ohm	Temperature coefficient	< 100 ppm/K	
	at 24 V DC	max. 900 Ohm	Repeat accuracy, at 25°C [77°F]	±0.2°	
	at 30 V DC	max. 1200 Ohm	Current output	max. 10 mA	
Setting time	< 1 ms, R _{Burden} = 900 Ohm, 25°C [77°F]		Setting time	< 1 ms, R _{Load} = 1000 Ohm, 25°C [77°F]	
LEDs (green/red)	- system status - current loop interruption – input load too high - reference point display (only with factory settings) at cw: betw. 0° and 1° at ccw: betw. 0° and -1° - status in teach mode		LEDs (green/red)	- system status - reference point display (only with factory settings) at cw: betw. 0° and 1° at ccw: betw. 0° and -1° - status in teach mode	
Options	- output signal scalable via the teach inputs - output signal scalable via the teach inputs + limit switch function		Options	- output signal scalable via the teach inputs - output signal scalable via the teach inputs + limit switch function	
Teach inputs	level = +V for 1 s minimum		Teach inputs	level = +V for 1 s minimum	
PowerON Time	< 1 s		PowerON Time	< 1 s	
Update rate	1 ms		Update rate	1 ms	
CE compliant acc. to	EMC guideline 2014/30/EU RoHS guideline 2011/65/EU		CE compliant acc. to	EMC guideline 2014/30/EU RoHS guideline 2011/65/EU	

Mechanical characteristics		
Maximum speed	4000 min ⁻¹ 2000 min ⁻¹ (continuous)	
Starting torque at 20°C [68°F]	< 0.01 Nm	
Shaft load capacity	radial	80 N
	axial	40 N
Weight	approx. 0.2 kg [7.06 oz]	
Protection acc. to EN 60529/DIN 40050-9	IP65	
Working temperature range	-40°C ... +85°C [-40°F ... +185°F]	
Materials	shaft	V2A
	flange	aluminum
	housing	zinc die-cast
	cable	PVC
Shock resistance acc. to EN 60068-2-27	5000 m/s ² , 4 ms	
Vibration resistance acc. to EN 60068-2-6	300 m/s ² , 10 ... 2000 Hz	

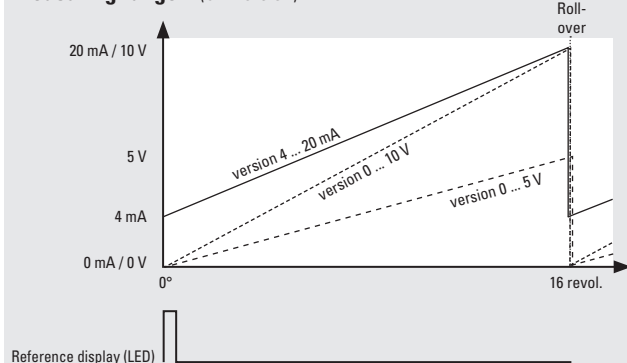
¹⁾ When the power supply is correctly applied.
But not output to +V. Power supply and sensor output signal are not galvanically isolated.

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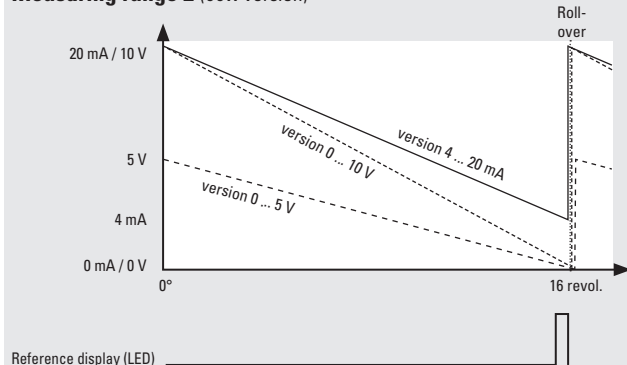
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Example (output signal evolution) – factory setting

Measuring range 1 (cw version)

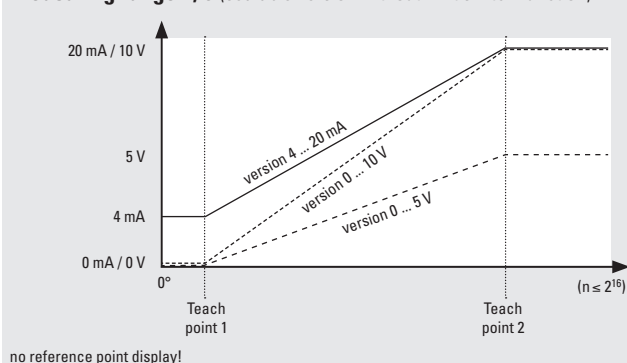


Measuring range 2 (ccw version)

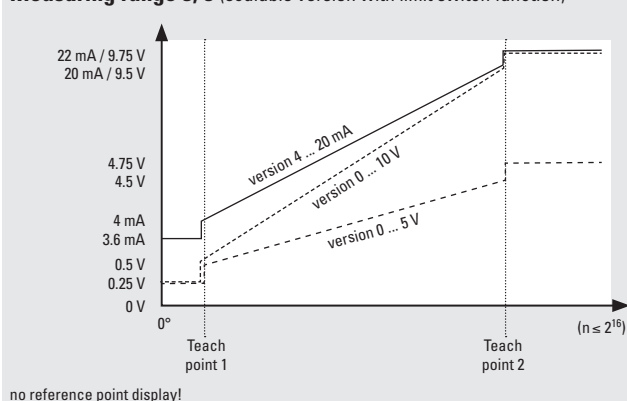


Example (output signal evolution) – option: scalable

Measuring range 4, 6 (scalable version without limit switch function)



Measuring range 3, 5 (scalable version with limit switch function)



Factory-set measuring range

2⁴ revolutions with roll-over

Limit switch function	version	0 ... 10 V	0 ... 5 V	4 ... 20 mA
limit switch low		0.25 V	0.25 V	3.6 mA
limit switch high		9.75 V	4.75 V	22.0 mA

Terminal assignment

Interface	Type of connection	Cable (isolate unused wires individually before initial start-up)					
3 (current)	2, B	Signal:	0 V	+V	+I	SET 1 ¹⁾	SET 2 ¹⁾
		Cable color:	WH	BN	GN	GY	PK
Interface	Type of connection	M12 connector, 5 pin					
3 (current)	4	Signal:	0 V	+V	+I	SET 1 ¹⁾	SET 2 ¹⁾
		Pin:	3	2	1	5	4
Interface	Type of connection	Cable (isolate unused wires individually before initial start-up)					
4, 5 (voltage)	2, B	Signal:	0 V	+V	+U	SET 1 ¹⁾	SET 2 ¹⁾
		Cable color:	WH	BN	GN	GY	PK
Interface	Type of connection	M12 connector, 5 pin					
4, 5 (voltage)	4	Signal:	0 V	+V	+U	SET 1 ¹⁾	SET 2 ¹⁾
		Pin:	3	2	1	5	4

+V: encoder power supply +V DC

0 V: encoder power supply ground GND (0 V)

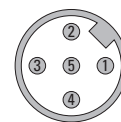
+U: voltage

+I: current

SET 1: set input for teachpoint 1

SET 2: set input for teachpoint 2

Top view of mating side, male contact base



M12 connector, 5-pin

¹⁾ For scalable version.

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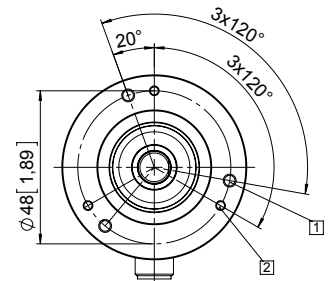
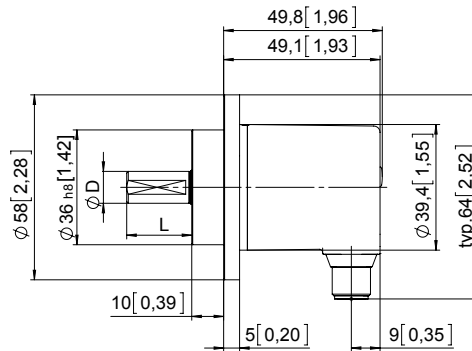
Dimensions

Dimensions in mm [inch]

Clamping flange, ø 58 [2.28] Flange type 3

- 1 3 x M4, 10 [0.39] deep
- 2 3 x M3, 6 [0.24] deep

D	Fit	L
6 [0.24]	h7	12.5 [0.49]
10 [0.39]	f7	20 [0.79]



Synchro flange, ø 58 [2.28] Flange type 4

- 1 3 x M4, 10 [0.39] deep

D	Fit	L
6 [0.24]	h7	12.5 [0.49]
10 [0.39]	f7	20 [0.79]

