

ENCODER

Analog Multiturn Encoder



Serie 8.M5861

Key-Features:

- Shaft with max. 10 mm diameter
- 0...10 V, 4...20 mA, 0...5 V analog output
- extra large bearings
- Housing diameter 58 mm
- Protection class IP65
- Singleturn accuracy $\pm 1^\circ$
- Maximum revolution speed 4000 turns/min
- Temperature range -40...+85°C

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Absolute encoders – multiturn

Standard electronic multiturn, magnetic

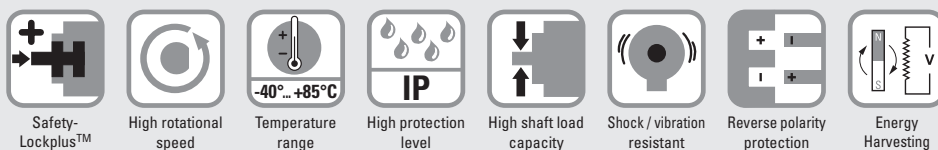
Sendix M5861 (shaft)

Analog



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 8.M5861.XX.XX.XX12
Shaft version Type

- | | | |
|---|--|--|
| <p>a Version</p> <p>3 = clamping flange, IP65, ø 58 mm [2.28"]
 4 = synchro flange, IP65, ø 58 mm [2.28"]</p> <p>b Shaft (ø x L), with flat</p> <p>1 = ø 6 x 12.5 mm [0.24 x 0.49"]
 5 = ø 10 x 20 mm [0.39 x 0.79"]</p> <p>c Output circuit ¹⁾</p> <p>3 = current output
 4 = voltage output</p> | <p>d Type of connection</p> <p>2 = radial cable, 1 m [3.28'] PVC
 B = radial cable, special length PVC *)
 4 = radial M12 connector, 5-pin</p> <p>*) 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)</p> <p>e Interface / resolution / power supply</p> <p>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</p> | <p>f Measuring range</p> <p>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</p> <p><i>Optional on request</i>
 - Ex 2/22 (only for connection type 4)</p> |
|---|--|--|

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

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

Absolute encoders – multiturn

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Technical data

Electrical characteristics current interface 4 ... 20 mA	
Power supply	10 ... 30 V DC
Current consumption (no load)	max. 30 mA
Reverse polarity protection of the power supply	yes
Short-circuit proof outputs	yes ¹⁾
Measuring range	factory setting 2 ⁴ revolutions optionally scalable up to 2 ¹⁶ revolutions
DA converter resolution	12 bit
Singleturn accuracy, at 25°C [77°F]	±1°
Temperature coefficient	< 100 ppm/K
Repeat accuracy, at 25°C [77°F]	±0.2°
Output load	at 10 V DC max. 200 Ohm at 24 V DC max. 900 Ohm at 30 V DC max. 1200 Ohm
Setting time	< 1 ms, R _{Burden} = 900 Ohm, 25°C [77°F]
LEDs (green/red)	<ul style="list-style-type: none"> - 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
Options	<ul style="list-style-type: none"> - 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
PowerON Time	< 1 s
Update rate	1 ms
UL approval	File 224618
CE compliant acc. to	EMC guideline 2014/30/EU RoHS guideline 2011/65/EU

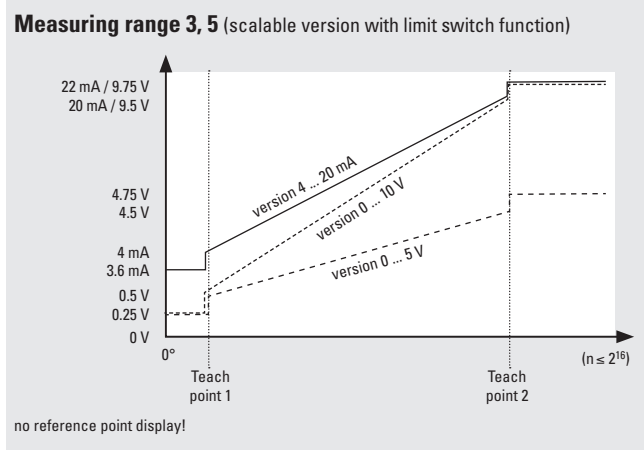
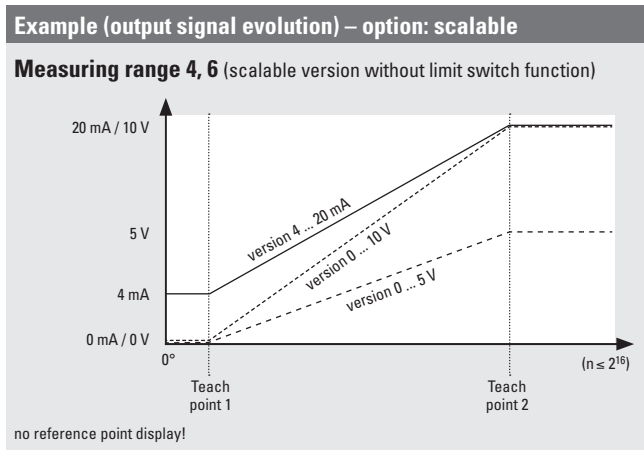
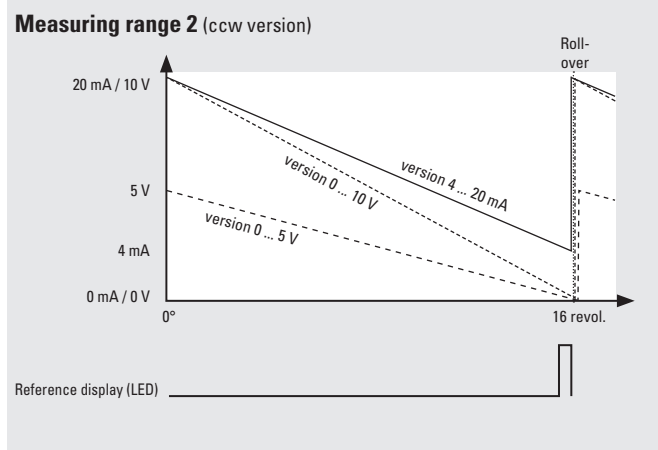
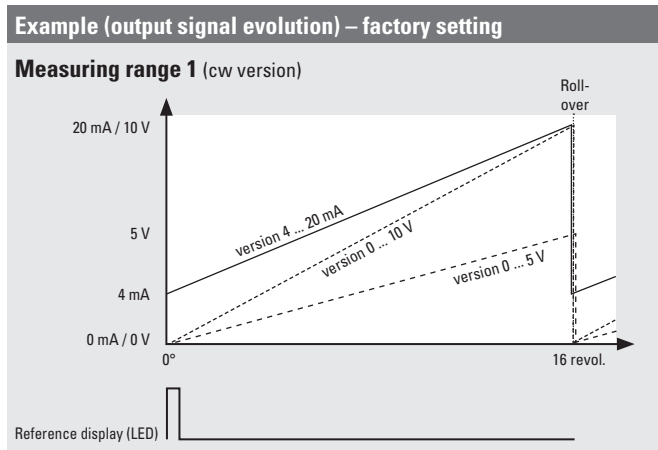
Electrical characteristics voltage interface 0 ... 10 V / 0 ... 5 V	
Power supply	output 0 ... 5 V 10 ... 30 V DC output 0 ... 10 V 15 ... 30 V DC
Current consumption (no load)	max. 30 mA
Reverse polarity protection of the power supply	yes
Short-circuit proof outputs	yes ¹⁾
Measuring range	factory setting 2 ⁴ revolutions optionally scalable up to 2 ¹⁶ revolutions
DA converter resolution	0 ... 10 V 12 bit 0 ... 5 V 11 bit
Singleturn accuracy, at 25°C [77°F]	±1°
Temperature coefficient	< 100 ppm/K
Repeat accuracy, at 25°C [77°F]	±0.2°
Current output	max. 10 mA
Setting time	< 1 ms, R _{Load} = 1000 Ohm, 25°C [77°F]
LEDs (green/red)	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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
PowerON Time	< 1 s
Update rate	1 ms
UL approval	File 224618
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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no reference point display!

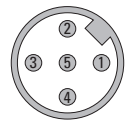
Factory-set measuring range		2 ⁴ revolutions with roll-over		
Limit switch function	version	0 ... 10 V	0 ... 5 V	4 ... 20 mA
	limit switch low	0.25 V	0.25 V	3.6 mA
	limit switch high	9.75 V	4.75 V	22.0 mA

Terminal assignment

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

+V : encoder power supply +V DC +U : voltage SET 1 : set input for teachpoint 1
 0 V : encoder power supply ground GND (0 V) +I : current 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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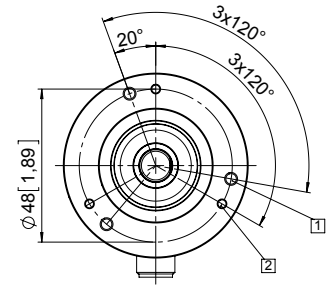
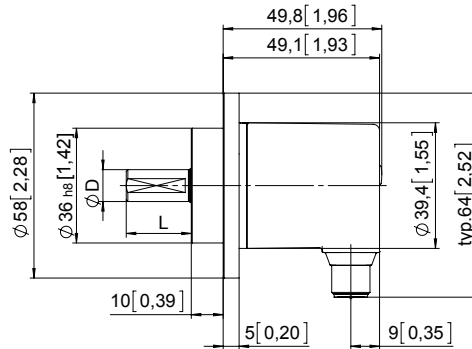
Dimensions

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

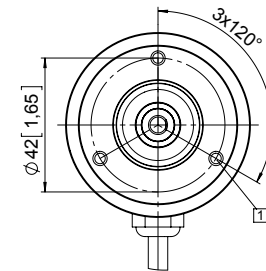
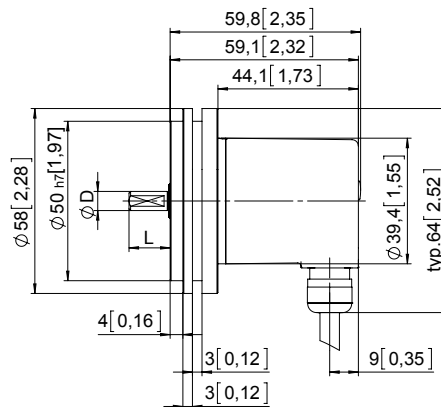
D	Fit	L
6 [0.24]	h7	12.5 [0.49]
10 [0.39]	f7	20 [0.79]



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]



Subject to change without prior notice

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