

Incremental Encoders

Functional Safety, optical **Sendix 5814 SIL/5834 SIL (Shaft / Hollow shaft)** **SinCos**



The incremental encoders Sendix 5814 SIL and 5834 SIL are perfectly suited for use in safety-related applications up to SIL3 according to DIN EN ISO 61800-5-2 or PLe to DIN EN ISO 13849.

These encoders are particularly suited for applications in the field of safe drive engineering.



Incremental Encoders

Safety-Lock™	High rotational speed	Temperature -40° + 90°	High IP value	High shaft load capacity	Shock / vibration resistant	Magnetic field proof	Reverse polarity protection	SinCos	Seawater-resistant version on request

Certified Safety

- Certified by the BGIA - Institute for Occupational Safety and Health
- Suitable for SIL3 applications acc. to DIN EN ISO 61800-5-2
- Suitable for PLe applications acc. to DIN EN ISO 13849
- With incremental SinCos tracks

Flexible

- Shaft and Hollow shaft versions
- Cable and connector variants
- Various mounting options available

Order code **8.5814SIL . 1 XXX . XXXX**
Shaft version Type a b c d e

If for each parameter of an encoder the underlined preferred option is selected, then the delivery time will be 10 working days for a maximum of 10 pieces.
 Qts. up to 50 pcs. of these types generally have a delivery time of 15 working days.



- | | | | |
|--|--|---|--|
| <p>a Flange
 <u>1 = clamping flange, ø 58 mm, IP65</u></p> <p>b Shaft (ø x L)
 <u>2 = 10 x 20 mm, with flat</u>
 A = 10 x 20 mm, with feather key shaft slot</p> | <p>c Interface / Power supply
 1 = SinCos / 5 V DC
 <u>2 = SinCos / 10 ... 30 V DC</u></p> | <p>d Type of connection
 1 = axial cable (1 m PVC)
 <u>2 = radial cable (1 m PVC)</u>
 3 = M23 connector, 12 pin, axial
 4 = M23 connector, 12 pin, radial
 5 = M12 connector, 8 pin, axial
 6 = M12 connector, 8 pin, radial</p> | <p>e Pulse rate
 1024, <u>2048</u></p> <p><i>optional on request</i>
 - seawater-resistant
 - special cable length</p> |
|--|--|---|--|

Order code **8.5834SIL . XXXX . XXXX**
hollow shaft Type a b c d e

If for each parameter of an encoder the underlined preferred option is selected, then the delivery time will be 10 working days for a maximum of 10 pieces.
 Qts. up to 50 pcs. of these types generally have a delivery time of 15 working days.



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|--|--|--|--|
| <p>a Flange
 A = with torque stop set, IP65
 <u>B = with stator coupling, IP65</u></p> <p>b Hollow shaft
 3 = ø 10 mm
 <u>4 = ø 12 mm</u>
 5 = ø 14 mm
 K = ø 10 mm, tapered shaft</p> | <p>c Interface / Power supply
 1 = SinCos / 5 V DC
 <u>2 = SinCos / 10 ... 30 V DC</u></p> | <p>d Type of connection
 <u>2 = radial cable (1 m PVC)</u>
 4 = M23 connector, 12 pin, radial
 6 = M12 connector, 8 pin, radial
 E = tangential cable outlet
 cable length 1 m (PVC cable)</p> | <p>e Pulse rate
 1024, <u>2048</u></p> <p><i>optional on request</i>
 - seawater-resistant
 - special cable length</p> |
|--|--|--|--|

Connection Technology

Connector, self-assembly (straight)	M12	05.CMB-8181-0
	M23	8.0000.5012.0000
Cordset, pre-assembled with 2 m PVC cable	M12	05.WAKS8-2/P00
	M23	8.0000.6901.0002

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.

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Notes regarding "Functional Safety"
 These encoders are suitable for use in safety-related systems up to SIL3 to DIN EN ISO 61800-5-2 and PLe to DIN EN ISO 13849 in conjunction with controllers or evaluation units, which possess the necessary functionality. Additional functions can be found in the operating manual.

Mechanical characteristics	
Max. speed, shaft version	
without shaft seal (IP65) up to 70°C	12 000 min ⁻¹ , 10 000 min ⁻¹ (continuous)
without shaft seal (IP65) up to T _{max}	8 000 min ⁻¹ , 5 000 min ⁻¹ (continuous)
with shaft seal (IP67) up to 70°C	11 000 min ⁻¹ , 9 000 min ⁻¹ (continuous)
with shaft seal (IP67) up to T _{max}	8 000 min ⁻¹ , 5 000 min ⁻¹ (continuous)
Max. speed, hollow shaft version	
without shaft seal (IP65) up to 70°C	9 000 min ⁻¹ , 6 000 min ⁻¹ (continuous)
without shaft seal (IP65) up to T _{max}	6 000 min ⁻¹ , 3 000 min ⁻¹ (continuous)
with shaft seal (IP67) up to 70°C	8 000 min ⁻¹ , 4 000 min ⁻¹ (continuous)
with shaft seal (IP67) up to T _{max}	4 000 min ⁻¹ , 2 000 min ⁻¹ (continuous)
Starting torque, shaft version	
without shaft seal (IP65)	< 0.01 Nm
with shaft seal (IP67)	< 0.05 Nm
Starting torque, hollow shaft version	
without shaft seal (IP65)	< 0.03 Nm
Moment of inertia	
Shaft version	4.0 x 10 ⁻⁶ kgm ²
Hollow shaft version	7.0 x 10 ⁻⁶ kgm ²
Load capacity of shaft	radial / axial 80 N / 40 N
Weight	approx. 0.45 kg
Protection EN 60 529	housing side IP67 shaft side IP65, opt. IP67
Working temperature range	-40°C ... +90°C ¹⁾
Materials	shaft / hollow shaft stainless steel flange aluminium housing zinc die-cast housing cable PVC
Shock resistance acc. EN 60068-2-27	2500 m/s ² , 6 ms
Vibration resistance acc. EN 60068-2-6	100 m/s ² , 55 ... 2000 Hz

Electrical characteristics		
Supply voltage	5 V DC ± 5%	10 ... 30 V DC
Current consumption (no load)	max. 70 mA	max. 45 mA
Reverse polarity protection of the power supply (U _B)	yes	
UL certified	File 224618	
Conforms to CE requirements acc. to	EN 61000-6-2, EN 61000-6-4, EN 61000-6-3	
RoHS compliant acc. to	EU guideline 2002/95/EG	

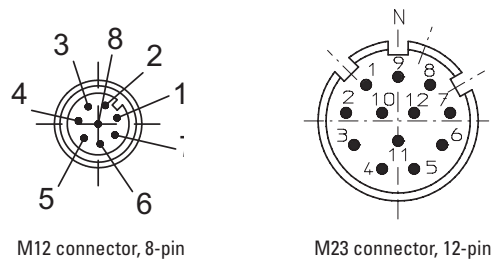
Output SinCos (A / B)	
Max. frequency -3dB	400 kHz
Signal level	1 V _{pp} (± 20%)
Short circuit proof	yes ²⁾

Terminal assignment

Signal:	GND	+V	A	A inv	B	Binv	shield
Cable colour:	WH	BN	GN	YE	GY	PK	shield
M23 connector:	10	12	5	6	8	1	PH ³⁾
M12	1	2	3	4	5	6	PH ³⁾

- +V: Encoder Power Supply +V DC
- GND: Encoder Power Supply Ground (0V)
- PE: Protective earth
- PH: Plug connector housing (Shield)
- A, Ainv: Sine output
- B, Binv: Cosine output

Top view of mating side, male contact base



1) Cable version: -30°C ... +90°C fixed installation
 2) Short circuit to 0V or to output, one channel at a time, supply voltage correctly applied
 3) PH = Shield is attached to connector housing

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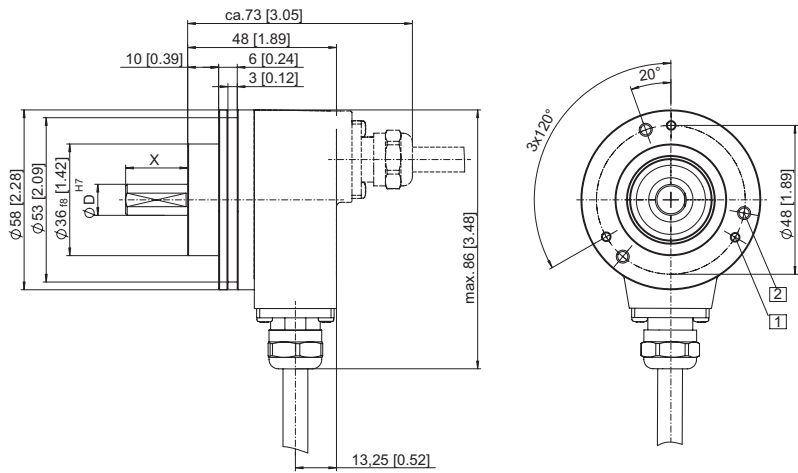
Dimensions shaft version

Clamping flange

Flange type 1 with shaft type 2

(Drawing with cable)

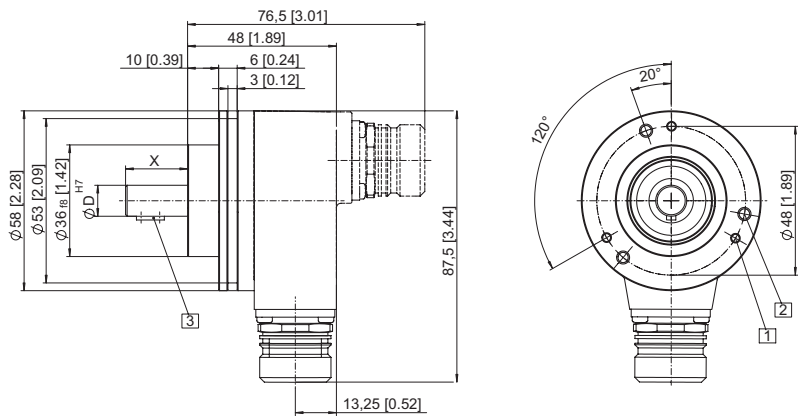
- 1 3 x M3, 6 [0.24] deep
- 2 3 x M4, 8 [0.32] deep



Flange type 1 with shaft type A

(Drawing with M23 connector)

- 1 3 x M3, 6 [0.24] deep
- 2 3 x M4, 8 [0.32] deep
- 3 Feather key DIN 6885 - A - 3x3x6
optional: Feather key DIN 6885 - A - 4x4x8



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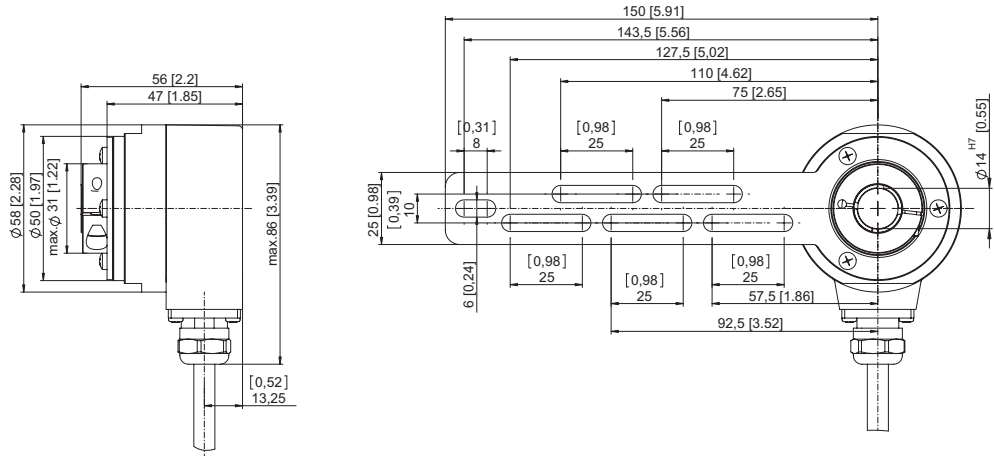
Sendix 5814 SIL / 5834 SIL (Shaft / Hollow shaft)

SinCos

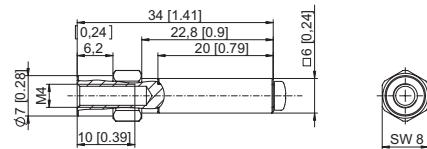
Dimensions hollow shaft version

**With torque stop set
flange type A**

(Drawing with cable)



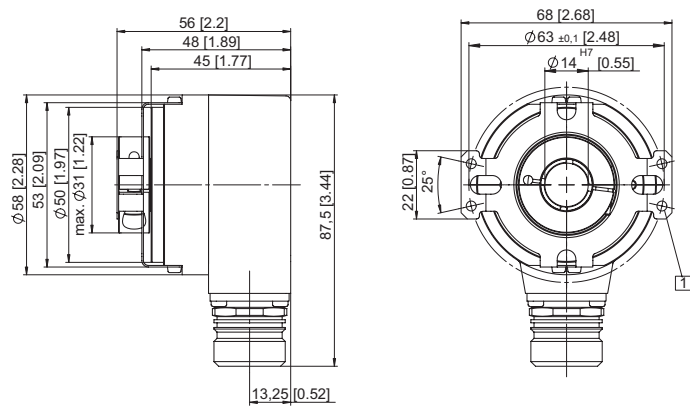
Torque pin with rectangular sleeve
with M4 thread, 10 deep



**Flange with stator coupling and hollow shaft
Flange type B**

(Drawing with M23 connector)

1 for (4x) M3 screw



**Flange with stator coupling and tapered shaft
Flange type B**

(Drawing with tangential cable outlet)

1 for (4x) M3 screw

2 Status LED

3 SET button

