

# Absolute Encoders - Singleturn

<b>Compact Magnetic</b>	<b>Sendix 3650 / 3670 (Shaft / Hollow shaft)</b>	<b>SSI</b>
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The Sendix 3650 and Sendix 3670 singleturn encoders with SSI interface and magnetic sensor technology boast a resolution of 9 bits.

With a protection rating of up to IP69k, these encoders are resistant to shock and to extreme fluctuations in temperature, making them ideal for use in the most demanding outdoor applications.



Absolute Encoders Singleturn

Safety-Lock™	High rotational speed	Temperature range -40°...+85°C	High protection level IP	High shaft load capacity	Shock / vibration resistant	Short-circuit proof	Reverse polarity protection	Magnetic sensor	Seawater-resistant version on request

### Safe use

- Non-contact measurement system offers a long-service life, free of wear
- Rugged die-cast housing and protection up to IP69k for an exceptional tightness
- High resistance to shock and vibration for excellent durability

### Compact and powerful

- Outer diameter of only 36 mm
- Hollow shaft version can accommodate a blind hollow shaft of up to 10 mm, which can be fixed individually via a torque stop pin or stator coupling
- 360° divided in 512 different positions

<b>Order code Shaft version</b>	<b>8.3650</b> Type	<b>. 2 X 2 2 . B9 X X</b> a b c d e f g	If for each parameter of an encoder the <u>underlined preferred option</u> 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.	
<b>a</b> Flange <u>2 = synchro flange, ø 36 mm [1.42"]</u>	<b>c</b> Interface / Power supply <u>2 = SSI / 5 ... 30 V DC</u>	<b>e</b> Code type and division <u>B9 = 9 bit binary</u>	<b>g</b> Option 2 <u>1 = IP67</u> 2 = IP69k	optional on request - seawater-resistant - special cable length
<b>b</b> Shaft (ø x L), with flat <u>3 = ø 6 x 12.5 mm [0.24 x 0.49"]</u> 5 = ø 1/4" x 12.5 mm [1/4" x 0.49"]	<b>d</b> Type of connection <u>2 = radial cable, 1 m [3.28'] PUR</u>	<b>f</b> Option 1 <u>1 = count direction cw <sup>1)</sup></u> 2 = count direction ccw <sup>2)</sup>		

<b>Order code Hollow shaft</b>	<b>8.3670</b> Type	<b>. X X 2 2 . B9 X X</b> a b c d e f g	If for each parameter of an encoder the <u>underlined preferred option</u> 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.	
<b>a</b> Flange 2 = with spring element long <u>5 = with stator coupling ø 46 mm [1.77"]</u>	<b>c</b> Interface / Power supply <u>2 = SSI / 5 ... 30 V DC</u>	<b>e</b> Code type and division <u>B9 = 9 bit binary</u>	<b>g</b> Option 2 <u>1 = IP67</u> 2 = IP69k	optional on request - seawater-resistant - special cable length
<b>b</b> Hollow shaft <u>2 = ø 6 mm [0.24"]</u> 4 = ø 8 mm [0.32"] 6 = ø 10 mm [0.39"] 3 = ø 1/4"	<b>d</b> Type of connection <u>2 = radial cable, 1 m [3.28'] PUR</u>	<b>f</b> Option 1 <u>1 = count direction cw <sup>1)</sup></u> 2 = count direction ccw <sup>2)</sup>		

1) cw = Increasing code values when shaft turning clockwise (cw). Top view on shaft.  
2) ccw = Increasing code values when shaft turning counterclockwise (ccw). Top view on shaft.

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Mounting accessory for shaft encoders		Order No.
<b>Coupling</b>	Bellows coupling $\varnothing$ 19 mm [0.75"] for shaft 6 mm [0.24"]	<b>8.0000.1101.0606</b>
Mounting accessory for hollow shaft encoders		
<b>Cylindrical pin, long</b> for torque stops	<p>With fixing thread</p>	<b>8.0010.4700.0000</b>

Further accessories can be found in the accessories section or in the accessories area of our website at: [www.kuebler.com/accessories](http://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](http://www.kuebler.com/connection_technology)

## Technical data

Mechanical characteristics	
<b>Max. speed</b>	6000 min <sup>-1</sup>
<b>Starting torque – at 20°C [68°F]</b>	< 0.06 Nm
<b>Load capacity of shaft</b>	radial 40 N axial 20 N
<b>Weight</b>	approx. 0.2 kg [7.06 oz]
<b>Protection acc. to EN 60529/DIN 40050-9</b>	IP67 / IP69k
<b>Working temperature range</b>	-40°C ... +85°C [-40°F ... +185°F]
<b>Material</b>	shaft / hollow shaft stainless steel flange aluminium housing zinc die-cast housing cabel PUR
<b>Shock resistance acc. EN 60068-2-27</b>	5000 m/s <sup>2</sup> , 6 ms
<b>Vibration resistance acc. EN 60068-2-6</b>	300 m/s <sup>2</sup> , 10 ... 2000 Hz
<b>Permanent shock resistance acc. EN 60068-2-27</b>	1000 m/s <sup>2</sup> , 2 ms
<b>Vibration (broad-band random) acc. EN 60068-2-64</b>	5 ... 2500 Hz, 100 m/s <sup>2</sup>

Electrical characteristics SSI interface	
<b>Sensor</b>	
<b>Power supply</b>	5 ... 30 V DC <sup>1)</sup>
<b>Current consumption (no load)</b>	max. 41 mA
<b>Reverse polarity protection of the power supply</b>	yes
<b>Measuring range</b>	360°
<b>Resolution</b>	9 bit / Binary (512 steps)
<b>Linearity</b>	< 1.0 %
<b>Repeat accuracy, 25°C [77°F]</b>	< 0.2 %
<b>Status LED</b>	green reference point display turns ON at 2.1°
<b>CE compliant acc. to</b>	EMC guideline 2004/108/EC
<b>RoHS compliant acc. to</b>	guideline 2011/65/EU
<b>SSI interface</b>	
<b>SSI clock rate</b>	100 kHz ... 750 kHz
<b>Output driver</b>	RS485
<b>Monoflop time</b>	typ / max. 16 $\mu$ s / 20 $\mu$ s
<b>Short circuit proof outputs</b>	yes <sup>2)</sup>
<b>Permissible load / channel</b>	typ. 120 Ohm (acc. to RS485)

## Terminal assignment

Interface	Type of connection	Cable (Isolate unused wires individually before initial start-up)								
		Signal:	0 V	+Vsens	0 Vsens	+V	C+	C-	D+	D-
2	2	Cable colour:	WH	BN	BU	RD	GN	YE	GY	PK

- +V: Encoder power supply +V DC
- 0 V: Encoder power supply ground GND (0 V)
- 0 Vsens / +Vsens: Using the sensor outputs of the encoder, the voltage present can be measured and if necessary increased accordingly.
- C+, C-: Clock signal
- D+, D-: Data signal

1) The power supply at the encoder input must not be less than 4.75 V DC (5 V DC - 5%).  
 2) Short-circuit proof to 0 V or output, only one channel at a time, when power supply is correctly applied.

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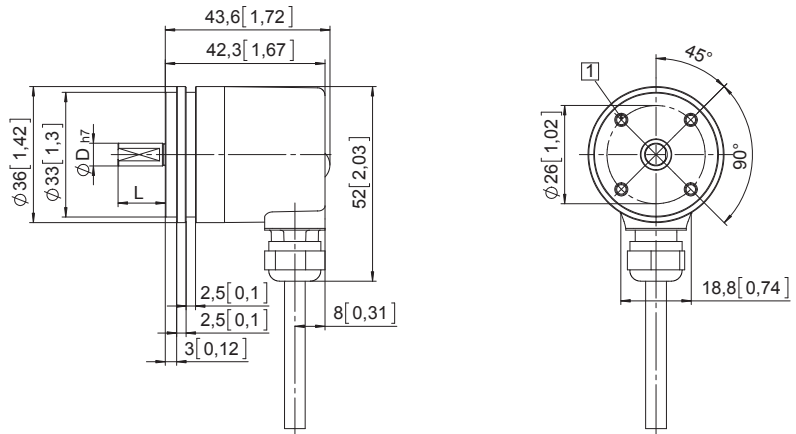
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## Dimensions shaft version

Dimensions in mm [inch]

### Synchro flange, $\varnothing$ 36 [1.42] Flange type 2

- 1 M3, 6 [0.24] deep



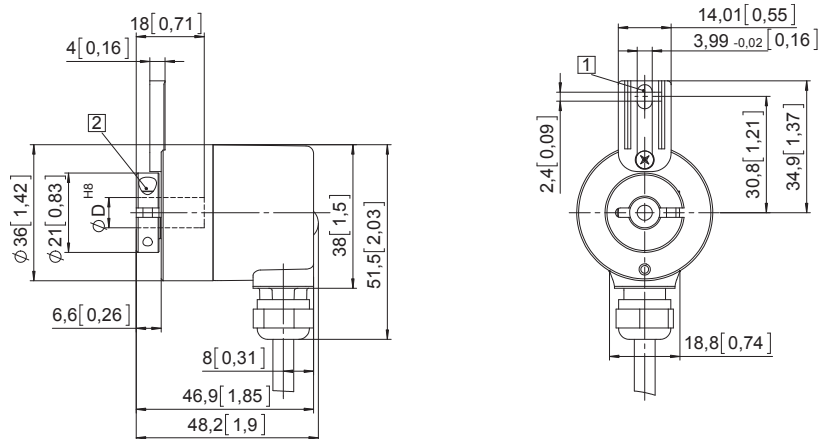
D	L	Fit
6 [0.24]	12.5 [0.49]	h7
1/4"	12.5 [0.49]	h7

## Dimensions hollow shaft version

Dimensions in mm [inch]

### Flange with spring element long Flange type 2

- 1 Torque stop slot  
Recommendation:  
Cylindrical pin DIN 7,  $\varnothing$  4 [0.16]
- 2 Recommended torque for the  
clamping ring 0.7 Nm



### Flange with stator coupling, $\varnothing$ 46 [1.81]

#### Flange type 5

- 1 Recommended torque for the  
clamping ring 0.7 Nm

