

# Absolute encoders - singleturn

<b>Compact magnetic</b>	<b>Sendix M3658A/M3678A (shaft / hollow shaft)</b>	<b>IO-Link</b>
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The Sendix M36 is a magnetic singleturn encoder in compact design. It is characterized by robustness, reliability and cost-efficiency.

With Smart Sensor Profile for easy and fast integration into the application.



Safety-Lock™	High rotational speed	Temperature range -40°... +85°C	High protection level IP	High shaft load capacity	Shock / vibration resistant	Reverse polarity protection	Surface protection salt spray-tested optional

## Reliable and insensitive

- Sturdy bearing construction in Safety-Lock™ design for resistance against vibration and installation errors.
- Reduced number of components ensures magnetic insensitivity.
- IP67 protection and wide temperature range -40 °C ... +85 °C.

## Up-to-the-minute performance

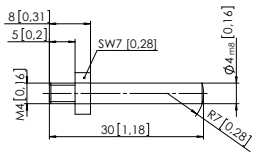
- Operation possible with any IO-Link master.
- Point-to-point communication in automation networks.
- Use of cost-effective unshielded cables possible.
- Automatic saving of device parameters.
- Firmware update via IO-Link.

<b>Order code</b>	<b>8.M3658A</b>	<b>.XX4X</b>	<b>.41X2</b>	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>Shaft version</b>	Type	a b c d	e f		
<b>a Flange</b>	1 = clamping flange, IP67, ø 36 mm [1.42"] 3 = clamping flange, IP65, ø 36 mm [1.42"] 2 = synchro flange, IP67, ø 36 mm [1.42"] <u>4 = synchro flange, IP65, ø 36 mm [1.42"]</u>	<b>c Interface / power supply</b> <u>4 = IO-Link / 18 ... 30 V DC</u>	<b>f Profile</b> <u>2 = Standard Profile</u> <sup>1)</sup> 3 = Smart Sensor Profile <sup>2)</sup>	Optional on request - Ex 2/22 - surface protection salt spray tested	
<b>b Shaft (ø x L), with flat</b>	1 = ø 6 x 12.5 mm [0.24 x 0.49"] <u>3 = ø 8 x 15 mm [0.32 x 0.59"]</u> 5 = ø 10 x 20 mm [0.39 x 0.79"] 2 = ø 1/4" x 12.5 mm [0.49"]	<b>d Type of connection</b> 3 = axial M12 connector, 4-pin <u>4 = radial M12 connector, 4-pin</u>			
		<b>e Fieldbus profile</b> <u>41 = IO-Link</u>			

<b>Order code</b>	<b>8.M3678A</b>	<b>.XX4X</b>	<b>.41X2</b>	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>Hollow shaft</b>	Type	a b c d	e f		
<b>a Flange</b>	<u>2 = with stator coupling, IP65, ø 46 mm [1.81"]</u> 3 = with spring element, long, IP65 5 = with stator coupling, IP67, ø 46 mm [1.81"] 6 = with spring element, long, IP67	<b>c Interface / power supply</b> <u>4 = IO-Link / 18 ... 30 V DC</u>	<b>f Profile</b> <u>2 = Standard Profile</u> <sup>1)</sup> 3 = Smart Sensor Profile <sup>2)</sup>	Optional on request - Ex 2/22 - surface protection salt spray tested	
<b>b Blind hollow shaft (insertion depth max. 18.5 mm [0.73"])</b>	1 = ø 6 mm [0.24"] 3 = ø 8 mm [0.32"] <u>4 = ø 10 mm [0.39"]</u> 2 = ø 1/4"	<b>d Type of connection</b> 3 = axial M12 connector, 4-pin <u>4 = radial M12 connector, 4-pin</u>			
		<b>e Fieldbus profile</b> <u>41 = IO-Link</u>			

1) Delivered with default setting for Standard Profile (switchable to Smart Sensor Profile).  
2) Delivered with default setting for Smart Sensor Profile (switchable to Standard Profile).

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<b>Mounting accessory for shaft encoders</b>		Order no.
<b>Coupling</b>	Bellows coupling $\varnothing$ 19 mm [0.75"] for shaft 8 mm [0.32"]	<b>8.0000.1102.0808</b>
<b>Mounting accessory for hollow shaft encoders</b> Dimensions in mm [inch]		Order no.
<b>Torque pin, <math>\varnothing</math> 4 mm</b> for flange with spring element (flange type 3 + 6)	with fixing thread 	<b>8.0010.4700.0000</b>
<b>Cables and connectors</b>		Order no.      Bestell-Nr.
<b>Preassembled cables</b>	M12 female connector with coupling nut, 4-pin, A coded, straight single-ended 2 m [6.56'] PUR cable	<b>05.00.6061.6211.002M</b>
<b>Connectors</b>	M12 female connector with coupling nut, 4-pin, A coded, straight	<b>05.B8141-0</b>

Further Kübler accessories can be found at: [kuebler.com/accessories](http://kuebler.com/accessories)  
 Further Kübler cables and connectors can be found at: [kuebler.com/connection-technology](http://kuebler.com/connection-technology)

<b>Technical data</b>	
<b>Mechanical characteristics</b>	
<b>Maximum speed</b>	
shaft or blind hollow shaft version	6000 min <sup>-1</sup>
without shaft seal (IP65)	3000 min <sup>-1</sup> (continuous)
shaft or blind hollow shaft version	4000 min <sup>-1</sup>
with shaft seal (IP67)	2000 min <sup>-1</sup> (continuous)
<b>Starting torque</b> at 20 °C [68 °F]	
without shaft seal	< 0.007 Nm
with shaft seal (IP67)	< 0.01 Nm
<b>Shaft load capacity</b>	radial 40 N
	axial 20 N
<b>Weight</b>	approx. 210 g [7.41 oz]
<b>Protection</b> acc. to EN 60529	IP65 or IP67
<b>Working temperature range</b>	-40 °C ... +85 °C [-40 °F ... +185 °F]
<b>Materials</b>	shaft / hollow shaft stainless steel
	flange aluminum
	housing zinc die-cast
<b>Shock resistance</b> acc. to EN 60068-2-27	2500 m/s <sup>2</sup> , 6 ms
<b>Vibration resistance</b> acc. to EN 60068-2-6	300 m/s <sup>2</sup> , 10 ... 2000 Hz
<b>Electrical characteristics</b>	
<b>Power supply</b>	18 ... 30 V DC
<b>Current consumption</b> (no load)	max. 40 mA
<b>Reverse polarity protection of the power supply</b>	ja
<b>Interface characteristics IO-Link</b>	
<b>Resolution singleturn</b>	1 ... 16.384 (14 bit), scalable default: 16.384 (14 bit)
<b>Angular measurement deviation</b> <sup>1)</sup>	$\pm 0,5^\circ$
<b>Repeat accuracy</b>	$\pm 0,2^\circ$
<b>Interface</b>	IO-Link version 1.1 acc. to IEC 61131-9
<b>Profile</b> (details see manual)	Kübler Standard Profile or Smart Sensor Profile
<b>Port classe</b>	Type A
<b>Approvals</b>	
<b>UL compliant</b> in accordance with	File no. E224618
<b>CE compliant</b> in accordance with	
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU
ATEX Directive	2014/34/EU (for Ex 2/22 variants)
<b>UKCA compliant</b> in accordance with	
EMC Regulations	S.I. 2016/1091
RoHS Regulations	S.I. 2012/3032
UKEX Regulations	S.I. 2016/1107 (for Ex 2/22 variants)

1) Over the whole temperature range.

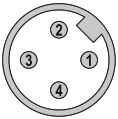
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## Terminal assignment

Interface	Type of connection	M12 connector, 4-pin				
4	3, 4	Signal:	Power supply +V DC	Reserved (no function)	Power supply 0 V (GND)	IO-Link communication (Data line)
		Abbreviation:	L+	res.	L-	C/Q
		Pin:	1	2	3	4

## Top view of mating side, male contact base



M12 connector, 4-pin

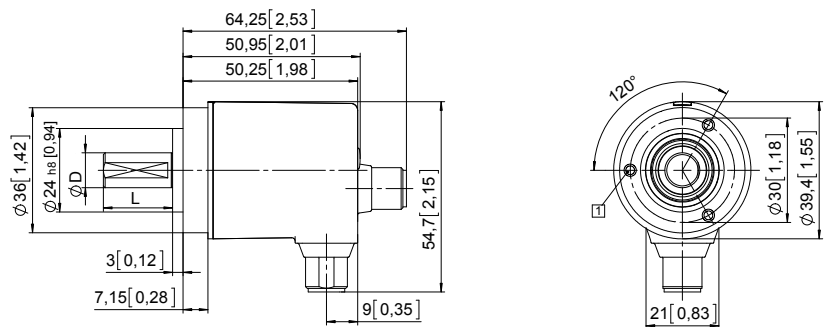
## Dimensions shaft version

Dimensions in mm [inch]

### Clamping flange, ø 36 [1.42]

#### Flange type 1 and 3

1 3 x M3, 6 [0.24] deep

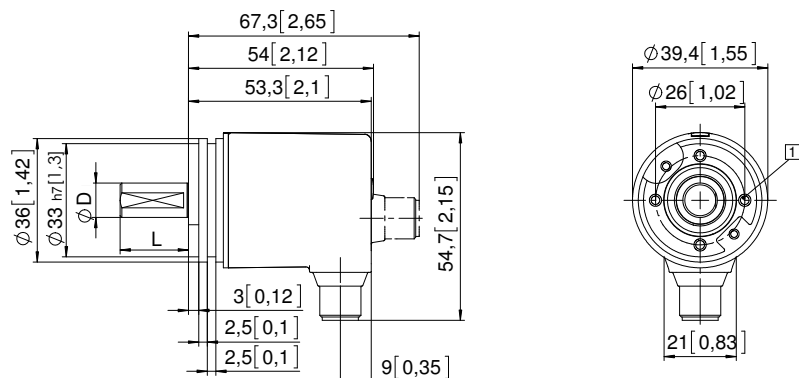


D	Fit	L
6 [0.24]	h7	12,5 [0.49]
8 [0.32]	h7	15 [0.59]
10 [0.39]	f7	20 [0.79]
1/4"	h7	12,5 [0.49]

### Synchro flange, ø 36 [1.42]

#### Flange type 2 and 4

1 4 x M3, 6 [0.24] deep



D	Fit	L
6 [0.24]	h7	12,5 [0.49]
8 [0.32]	h7	15 [0.59]
10 [0.39]	f7	20 [0.79]
1/4"	h7	12,5 [0.49]

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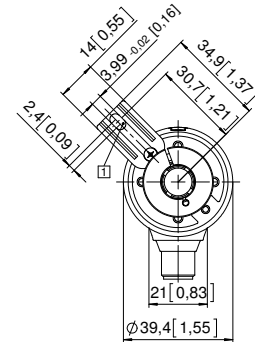
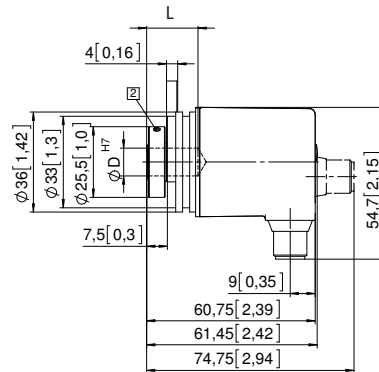
**IO-Link**

## Dimensions hollow shaft version

Dimensions in mm [inch]

### Flange with spring element, long Flange type 3 and 6

- 1 Slot spring element, recommendation: torque pin DIN 7,  $\phi$  4 [0.16]
- 2 Recommended torque for the clamping ring 0.7 Nm

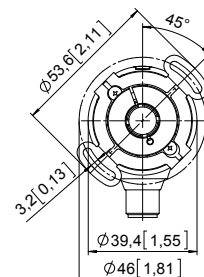
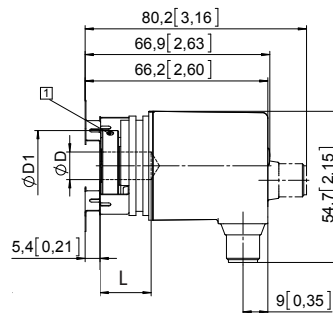


D	Fit	L	D1
6 [0.24]	H7	18,5 [0.73]	24 [0.94]
8 [0.32]	H7	18,5 [0.73]	25,5 [1.00]
10 [0.39]	H7	18,5 [0.73]	25,5 [1.00]
1/4"	H7	18,5 [0.73]	24 [0.94]

L = insertion depth max. blind hollow shaft

### Flange with stator coupling, $\phi$ 46 [1.81] Flange type 2 and 5

- 1 Recommended torque for the clamping ring 0.7 Nm



D	Passung	L	D1
6 [0.24]	H7	18,5 [0.73]	24 [0.94]
8 [0.32]	H7	18,5 [0.73]	25,5 [1.00]
10 [0.39]	H7	18,5 [0.73]	25,5 [1.00]
1/4"	H7	18,5 [0.73]	24 [0.94]

L = insertion depth max. blind hollow shaft