

Absolute encoders - singleturn

Standard optical	Sendix 5858 / 5878 (shaft / hollow shaft)	PROFINET IO
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The singleturn encoders 5858 and 5878 with PROFINET interface and optical sensor technology are ideal for use in all applications with a PROFINET interface.

The encoder supports the IRT mode and is therefore ideal for real-time applications.



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

Reliable

- Ideally suited for all PROFINET applications thanks to the use of encoder profile 4.1.
- Perfect for use in harsh outdoor environments, as a result of IP67 protection and rugged housing construction.

Flexible

- IRT-Mode.
- Cycle time ≤ 1 ms.
- Firmware updater allows for easy expansion of characteristics without having to disassemble the encoder.
- M12 connector ensures fast, simple, error-free connection.

Order code	8.5858	. X X C 2 . C 2 12	<p>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>					
Shaft version	Type	<table border="1"> <tr> <td style="text-align: center; font-size: small;">a</td> <td style="text-align: center; font-size: small;">b</td> <td style="text-align: center; font-size: small;">c</td> <td style="text-align: center; font-size: small;">d</td> <td style="text-align: center; font-size: small;">e</td> </tr> </table>	a	b	c	d	e	
a	b	c	d	e				
a Flange	<p><u>1 = clamping flange, IP65 ø 58 mm [2.28"]</u> 3 = clamping flange, IP67 ø 58 mm [2.28"] <u>2 = synchro flange, IP65 ø 58 mm [2.28"]</u> 4 = synchro flange, IP67 ø 58 mm [2.28"] 5 = square flange, IP65 □ 63.5 mm [2.5"] 7 = square flange, IP67 □ 63.5 mm [2.5"]</p>	<p>b Shaft (ø x L), with flat</p> <p><u>1 = 6 x 10 mm [0.24 x 0.39"]</u>¹⁾ <u>2 = 10 x 20 mm [0.39 x 0.79"]</u>²⁾ 3 = 1/4" x 7/8" 4 = 3/8" x 7/8"</p>	<p>c Interface / power supply</p> <p><u>C = PROFINET IO / 10 ... 30 V DC</u></p>	<p>e Field bus profile</p> <p><u>C2 = PROFINET IO</u></p>				
		<p>d Type of connection</p> <p>removable bus terminal cover</p> <p><u>2 = 3 x M12 connector</u></p>	<p>Optional on request</p> <ul style="list-style-type: none"> - Ex 2/22 - surface protection salt spray tested 					

Order code	8.5878	. X X C 2 . C 2 12	<p>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>					
Hollow shaft	Type	<table border="1"> <tr> <td style="text-align: center; font-size: small;">a</td> <td style="text-align: center; font-size: small;">b</td> <td style="text-align: center; font-size: small;">c</td> <td style="text-align: center; font-size: small;">d</td> <td style="text-align: center; font-size: small;">e</td> </tr> </table>	a	b	c	d	e	
a	b	c	d	e				
a Flange	<p>1 = with spring element, long, IP65</p> <p>2 = with spring element, long, IP67</p> <p>3 = with stator coupling, IP65 ø 65 mm [2.56"]</p> <p>4 = with stator coupling, IP67 ø 65 mm [2.56"]</p> <p><u>5 = with stator coupling, IP65 ø 63 mm [2.48"]</u></p> <p>6 = with stator coupling, IP67 ø 63 mm [2.48"]</p>	<p>b Blind hollow shaft</p> <p>3 = ø 10 mm [0.39"]</p> <p><u>4 = ø 12 mm [0.47"]</u></p> <p>5 = ø 14 mm [0.55"]</p> <p>6 = ø 15 mm [0.59"]</p> <p>8 = ø 3/8"</p> <p>9 = ø 1/2"</p>	<p>c Interface / power supply</p> <p><u>C = PROFINET IO / 10 ... 30 V DC</u></p>	<p>e Field bus profile</p> <p><u>C2 = PROFINET IO</u></p>				
		<p>d Type of connection</p> <p>removable bus terminal cover</p> <p><u>2 = 3 x M12 connector</u></p>	<p>Optional on request</p> <ul style="list-style-type: none"> - Ex 2/22 - surface protection salt spray tested 					

1) Preferred type only in conjunction with flange type 2.
2) Preferred type only in conjunction with flange type 1.

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Mounting accessory for shaft encoders		Order no.
Coupling	bellows coupling ø 19 mm [0.75"] for shaft 6 mm [0.24"]	8.0000.1102.0606
	bellows coupling ø 19 mm [0.75"] for shaft 10 mm [0.39"]	8.0000.1102.1010

Mounting accessory for hollow shaft encoders		Order no.
Cylindrical pin, long for torque stops	with fixing thread 	8.0010.4700.0000

Connection technology		Order no.
Connector, self-assembly (straight)	coupling M12 for port 1 and port 2 connector M12 for power supply	05.WASCSY4S 05.B8141-0
Cordset, pre-assembled	M12 for port 1 and port 2, 2 m [6.56'] PUR cable M12 for power supply, 2 m [6.56'] PUR cable	05.00.6031.4411.002M 05.00.6061.6211.002M

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.

Technical data

Mechanical characteristics		
Maximum speed		
IP65 up to 70°C [158°F]	9000 min ⁻¹ , 7000 min ⁻¹ (continuous)	
IP65 up to T _{max}	7000 min ⁻¹ , 4000 min ⁻¹ (continuous)	
IP67 up to 70°C [158°F]	8000 min ⁻¹ , 6000 min ⁻¹ (continuous)	
IP67 up to T _{max}	6000 min ⁻¹ , 3000 min ⁻¹ (continuous)	
Starting torque - at 20°C [68°F]	IP65 < 0.01 Nm	
	IP67 < 0.05 Nm	
Mass moment of inertia		
shaft version	3.0 x 10 ⁻⁶ kgm ²	
hollow shaft version	6.0 x 10 ⁻⁶ kgm ²	
Load capacity of shaft	radial 80 N	
	axial 40 N	
Weight	approx. 0.50 kg [17.64 oz]	
Protection acc. to EN 60529	housing side IP67	
	shaft side IP65, opt. IP67	
Working temperature range	-40°C ... +85°C [-40°F ... +185°F]	
Material	shaft/hollow shaft stainless steel	
	flange aluminium	
	housing zinc die-cast	
Shock resistance acc. to EN 60068-2-27	2500 m/s ² , 6 ms	
Vibration resistance acc. to EN 60068-2-6	100 m/s ² , 55 ... 2000 Hz	

Interface characteristics PROFINET IO	
Resolution	1 ... 65535 (16 bit), scalable default: 8192 (13 bit)
Code	binary
Protocol	PROFINET IO

Link 1 and 2, LED (green / yellow)		
Two colored	green	active link
	yellow	data transfer

Error LED (red) / PWR LED (green)	
Functionality see manual	

Electrical characteristics	
Power supply	10 ... 30 V DC
Power consumption (no load)	max. 200 mA
Reverse polarity protection of the power supply	yes
UL approval	file 224618
CE compliant acc. to	EMC guideline 2014/30/EU RoHS guideline 2011/65/EU

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General information about PROFINET IO

The PROFINET encoder implements the encoder profile 4.1. (according to the specification Encoder Version 4.1 Dec 2008“)

It permits scaling and preset values, as well as many other additional parameters to be programmed via the PROFINET bus.

When switching on, all parameters are loaded from an EEPROM, where they were saved previously to protect them against power-failure, or taken over by the controller in the start-up phase.

Position, speed and many other states of the encoder can be transmitted.

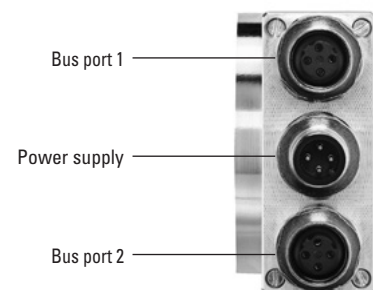
PROFINET IO

The complete encoder profile according to profile encoder version 4.1 as well as the identification & maintenance functionality version 1.16 has been implemented. IM blocks 0, 1, 2, 3 and 4 are supported.

The **M**edia **R**edundancy **P**rotokoll is implemented here. Basically, the advantage of MRP is that the functionality of the components, which are wired in a ring structure, is maintained in case of a failure or of a breakage of the wires in any location.

Terminal assignment bus

Interface	Type of connection	Function	M12 connector					Diagram
			Signal:	Transmit data+	Receive data+	Transmit data -	Receive data -	
C	2 (3 x M12 connector)	Bus port 1	Signal:	Transmit data+	Receive data+	Transmit data -	Receive data -	
			Abbreviation:	TxD+	RxD+	TxD-	RxD-	
			Pin:	1	2	3	4	
		Power supply	Signal:	Voltage +	-	Voltage -	-	
			Abbreviation:	+ V	-	0 V	-	
			Pin:	1	2	3	4	
		Bus port 2	Signal:	Transmit data+	Receive data+	Transmit data -	Receive data -	
			Abbreviation:	TxD+	RxD+	TxD-	RxD-	
			Pin:	1	2	3	4	



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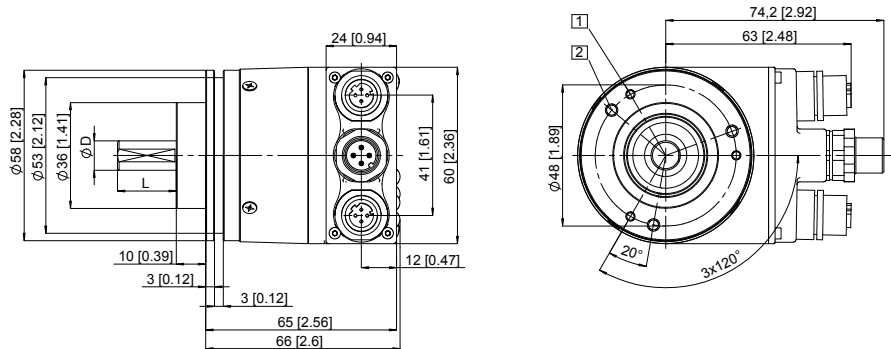
Dimensions shaft version, with removable bus terminal cover

Dimensions in mm [inch]

Clamping flange, \varnothing 58 [2.28]
Flange type 1 and 3

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

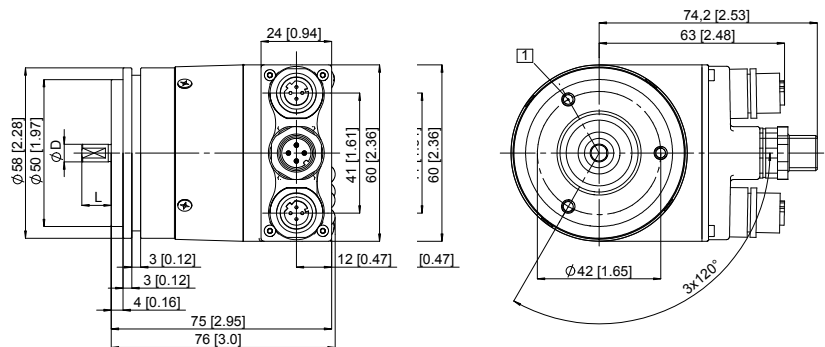
D	L	Fit
6 [0.24]	10 [0.39]	h7
10 [0.39]	20 [0.79]	f7
1/4"	7/8"	h7
3/8"	7/8"	h7



Synchro flange, \varnothing 58 [2.28]
Flange type 2 and 4

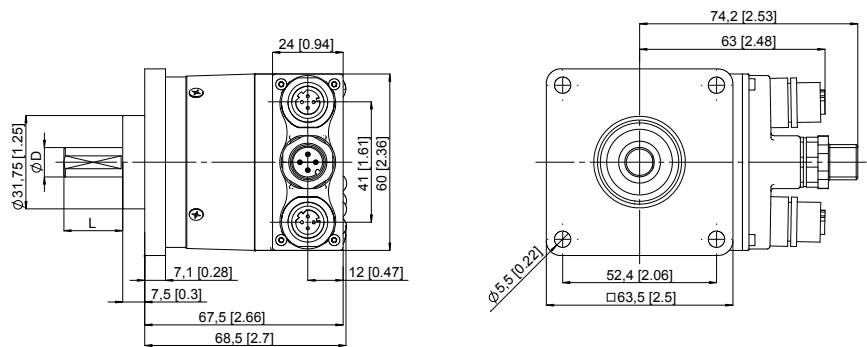
- 1 3 x M4, 6 [0.24] deep

D	L	Fit
6 [0.24]	10 [0.39]	h7
10 [0.39]	20 [0.79]	f7
1/4"	7/8"	h7
3/8"	7/8"	h7



Square flange, \square 63.5 [2.5]
Flange type 5 and 7

D	L	Fit
6 [0.24]	10 [0.39]	h7
10 [0.39]	20 [0.79]	f7
1/4"	7/8"	h7
3/8"	7/8"	h7



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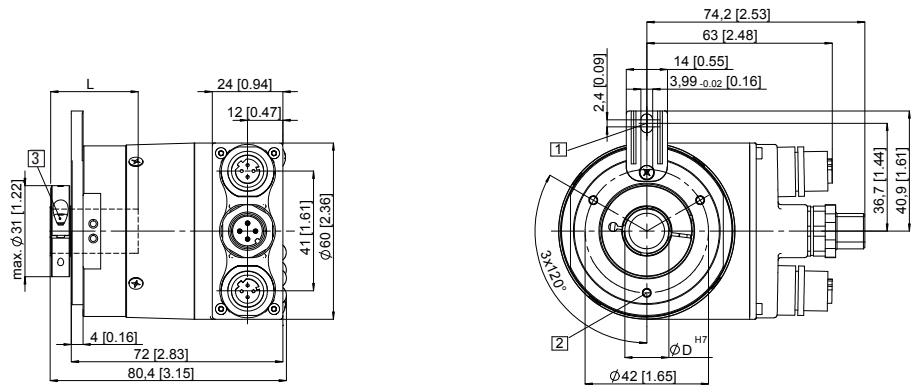
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Dimensions hollow shaft version (blind hollow shaft), with removable bus terminal cover

Dimensions in mm [inch]

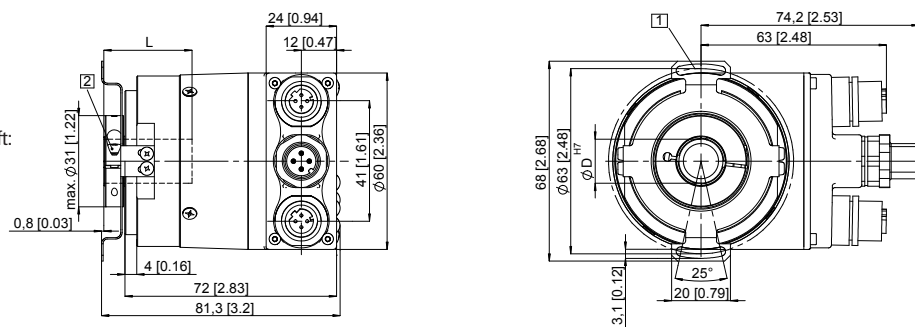
Flange with spring element, long Flange type 1 and 2

- 1 Torque stop slot, recommendation: cylindrical pin DIN 7, $\varnothing 4$ [0.16]
 - 2 3 x M3, 5.5 [0.21] deep
 - 3 Recommended torque for the clamping ring 0.6 Nm
- L: Insertion depth for blind hollow shaft: 30 [1.18]



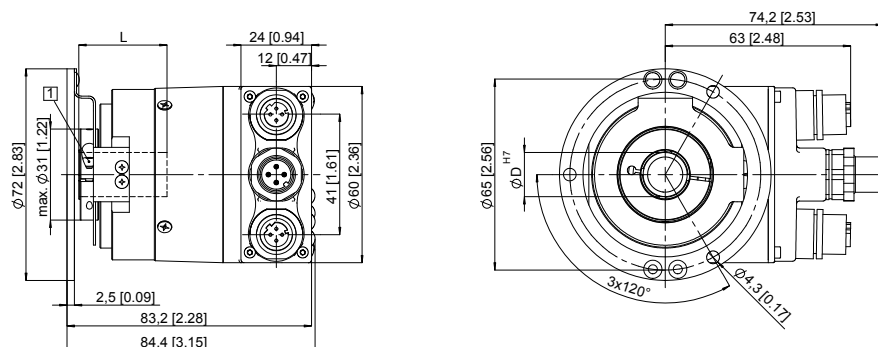
Flange with stator coupling, $\varnothing 63$ [2.48] Flange type 5 and 6

- 1 Fixing screws DIN 912 M3 x 8 (washer included in delivery)
 - 2 Recommended torque for the clamping ring 0.6 Nm
- L: Insertion depth for blind hollow shaft: 30 [1.18]



Flange with stator coupling, $\varnothing 65$ [2.56] Flange type 3 and 4

- 1 Recommended torque for the clamping ring 0.6 Nm
- L: Insertion depth for blind hollow shaft: 30 [1.18]



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