ENCODER

Profinet Multiturn

Series 8.5868, 8.5888

Key-Features:

- Solid shaft: maximum diameter 10 mm
- Blind hollow shaft: maximum diameter 15 mm
- Housing diameter 58 mm
- Interface: Profinet IO
- Protection class up to IP67
- Total resolution up to 28 Bit
- Maximum revolution speed 9000 turns/min
- Temperature range -40...+80°C

Content:

17.12.14

WayCon Positionsmesstechnik

Standard mechanical Multiturn, optical | **Sendix 5868 / 5888 (Shaft / Hollow shaft)** | **PROFINET IO**

The multiturn encoders Sendix 5868 and 5888 with PROFINET interface and optical sensor technology are ideal for use in all applications with a PROFINET interface.

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

Easy start-up thanks to the "Ezturn for PROFINET" software supplied with the encoder.

Mechanical drive | Safety-Lock™ | High rotational speed | Temperature range - 40° + 85° | High protection level IP | High shaft load capacity | Shock / vibration resistant | Magnetic field proof | Reverse polarity protection | Optical sensor | Seawater-resistant version on request

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.
- Faster, easier error-free connection thanks to M12 connectors

Order code Shaft version

8.5868	.	X	X	C	2	.	C2	12
Type		a	b	c	d		e	

a *Flange*

1 = clamping flange, IP65 ø 58 mm [2.28"]
3 = clamping flange, IP67 ø 58 mm [2.28"]
2 = synchro flange, IP65 ø 58 mm [2.28"]
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"]

b *Shaft (ø x L), with flat*

1 = 6 x 10 mm [0.24 x 0.39"] 1)
2 = 10 x 20 mm [0.39 x 0.79"] 2)
3 = 1/4" x 7/8"
4 = 3/8" x 7/8"

c *Interface / Power supply*

C = PROFINET IO / 10 ... 30 V DC

d *Type of connection*
removable bus terminal cover

2 = 3 x M12 connector, 4-pin

e *Field bus profile*

C2= PROFINET IO

optional on request
- Ex 2/22
- seawater-resistant

Order code Hollow shaft

8.5888	.	X	X	C	2	.	C2	12
Type		a	b	c	d		e	

a *Flange*

1 = with spring element long, IP65
2 = with spring element long, IP67
3 = with stator coupling, IP65 ø 65 mm [2.56"]
4 = with stator coupling, IP67 ø 65 mm [2.56"]
5 = with stator coupling, IP65 ø 63 mm [2.48"]
6 = with stator coupling, IP67 ø 63 mm [2.48"]

b *Blind hollow shaft*

3 = ø 10 mm [0.39"]
4 = ø 12 mm [0.47"]
5 = ø 14 mm [0.55"]
6 = ø 15 mm [0.59"]
8 = ø 3/8"
9 = ø 1/2"

c *Interface / Power supply*

C = PROFINET IO / 10 ... 30 V DC

d *Type of connection*
removable bus terminal cover

2 = 3 x M12 connector, 4-pin

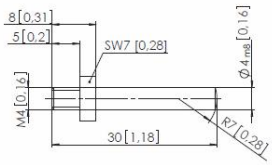
e *Field bus profile*

C2= PROFINET IO

optional on request
- Ex 2/22
- seawater-resistant

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

Standard mechanical Multiturn, optical	Sendix 5868 / 5888 (Shaft / Hollow shaft)	PROFINET IO

Mounting accessory for shaft encoders		Order No.
Coupling	Bellows coupling ø 19 mm [0.75"] for shaft 6 mm [0.24"]	**8.0000.1101.0606**
	Bellows coupling ø 19 mm [0.75"] for shaft 10 mm [0.39"]	**8.0000.1101.1010**
Mounting accessory for hollow shaft encoders		
Cylindrical pin, long for torque stops	 With fixing thread	**8.0010.4700.0000**
Connection technology		
Connector, self-assembly (straight)	Coupling M12 for Port 1 and Port 2	**05.WASCSY4S**
	Connector M12 for power supply	**05.B8141-0**
Cordset, pre-assembled	M12 for Port 1 and Port 2, 2 m [6.56'] PUR cable	**05.00.6031.4411.002M**
	M12 for power supply, 2 m [6.56'] PUR cable	**05.00.6061.6211.002M**

Technical data

Mechanical characteristics

Max. speed	IP65 up to 70°C [158°F]	9 000 min^{-1}, 7 000 min^{-1} (continuous)
	IP65 up to T_{max}	7 000 min^{-1}, 4 000 min^{-1} (continuous)
	IP67 up to 70°C [158°F]	8 000 min^{-1}, 6 000 min^{-1} (continuous)
	IP67 up to T_{max}	6 000 min^{-1}, 3 000 min^{-1} (continuous)
Starting torque - at 20°C [68°F]	IP65	< 0.01 Nm
	IP67	< 0.05 Nm
Moment of inertia	Shaft version	3.0 x 10^{-6} kgm^2
	Hollow shaft version	7.5 x 10^{-6} kgm^2
Load capacity of shaft	radial	80 N
	axial	40 N
Weight		approx. 0.54 kg [19.05 oz]
Protection acc. to EN 60529		
	housing side	IP67
	shaft side	IP65, opt. IP67
EX approval for hazardous areas		optional Zone 2 and 22
Working temperature range		-40°C ... +85°C [-40°F ... +185°F]
Material	shaft/hollow shaft	stainless steel
	flange	aluminium
	housing	zinc die-cast housing
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

Power supply	10 ... 30 V DC
Power consumption (no load)	max. 200 mA
Reverse polarity protection of the power supply (+V)	yes
UL approval	File 224618
CE compliant acc. to	EMC guideline 2004/108/EC
RoHS compliant acc. to	guideline 2011/65/EU

Device characteristics

Singleturn resolution	1 ... 65535 (16 bit), scaleable
Default value	8192 (13 bit)
Multiturn resolution	max. 4096 (12 bit) scalable only via the total resolution
Total resolution	1 ... 268.435.456 (28 bit), scaleable
Code	binary
Protocol	PROFINET IO

Link 1 and 2, LED (green / yellow)

two coloured	green	active link
	yellow	data transfer

Error LED (red) / PWR LED (green)

Functionality see manual

Ezturn software for PROFINET (supplied with the encoder)

- Monitoring of cyclic data (e.g. position, speed)
- Monitoring of acyclic data (e.g. IMO, electronic name plate, encoder parameters, warnings and error messages, preset)
- Setting of preset values
- Firmware updates via the bus

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.

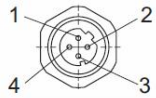
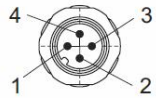
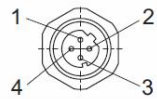
Position, speed and many other states of the encoder can be transmitted.

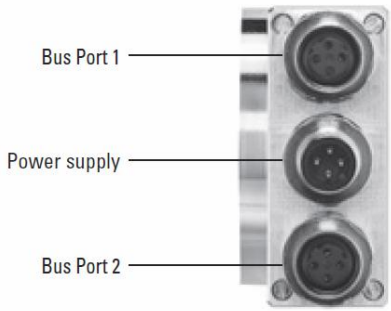
PROFINET IO

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

Interface	Type of connection	Function	M12 connector					
C	2 (3 x M12 connector)	Bus Port 1	Signal:	Transmit data+	Receive data+	Transmit data -	Receive data -	 D coded
			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 -	 D coded
			Abbreviation:	TxD+	RxD+	TxD-	RxD-	
			Pin:	1	2	3	4	



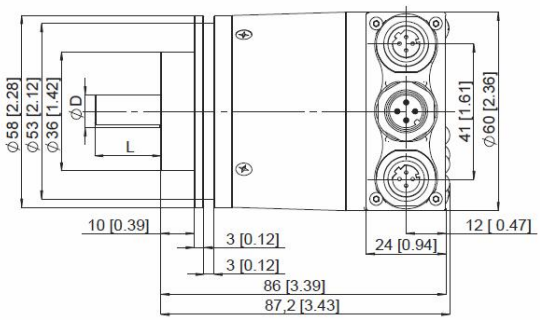
Dimensions shaft version, with removable bus terminal cover

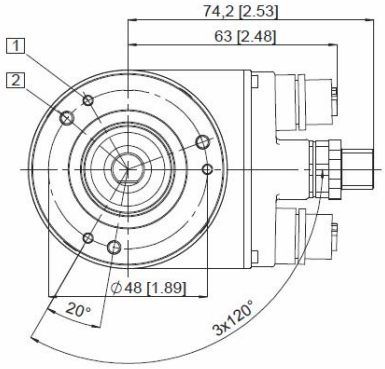
Dimensions in mm [inch]

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

1 3 x M3, 6.0 [0.24] deep

2 3 x M4, 8.0 [0.31] deep

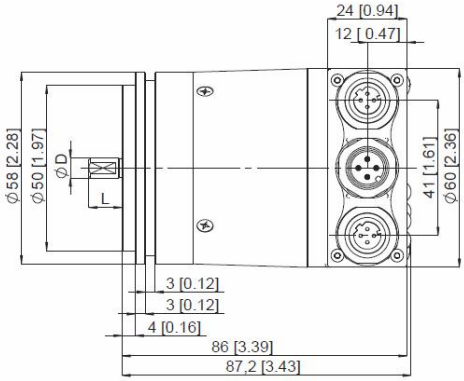


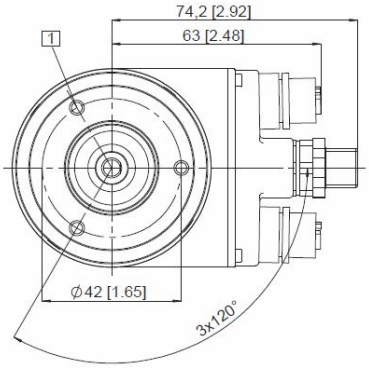


D	L	Fit
6 [0.24]	10 [0.39]	h7
10 [0.39]	20 [0.79]	f7
1/4"	7/8"	h7
3/8"	7/8"	h7

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

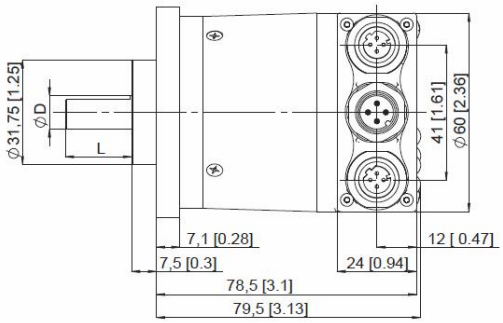
1 M4, 6.0 [0.24] deep

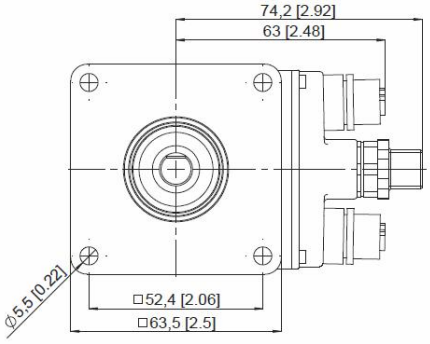




D	L	Fit
6 [0.24]	10 [0.39]	h7
10 [0.39]	20 [0.79]	f7
1/4"	7/8"	h7
3/8"	7/8"	h7

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





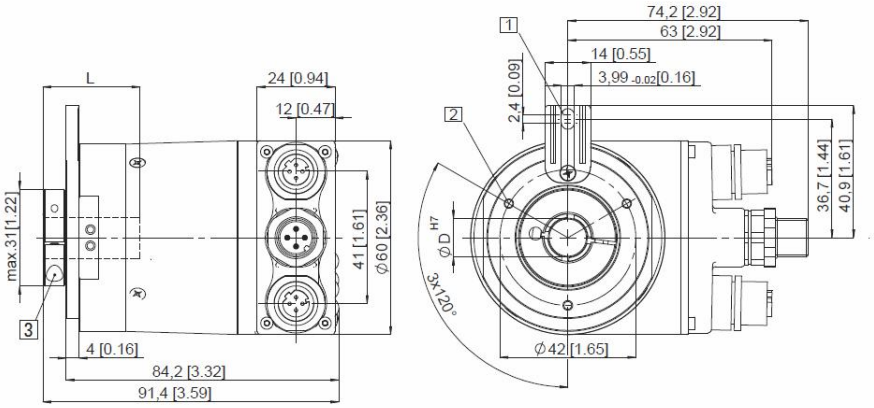
D	L	Fit
6 [0.24]	10 [0.39]	h7
10 [0.39]	20 [0.79]	f7
1/4"	7/8"	h7
3/8"	7/8"	h7

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

Dimensions in mm [inch]

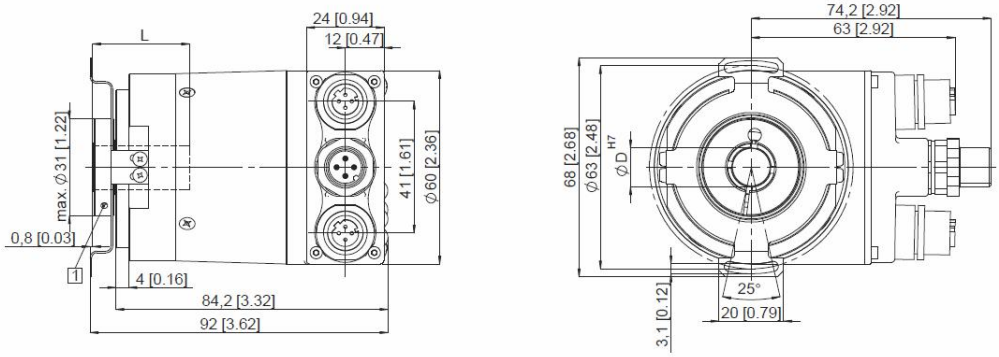
Flange with spring element long
Flange type 1 and 2

[1] Torque stop slot, Recommendation: Cylindrical pin DIN 7, ø 4 [0.16]
[2] 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]



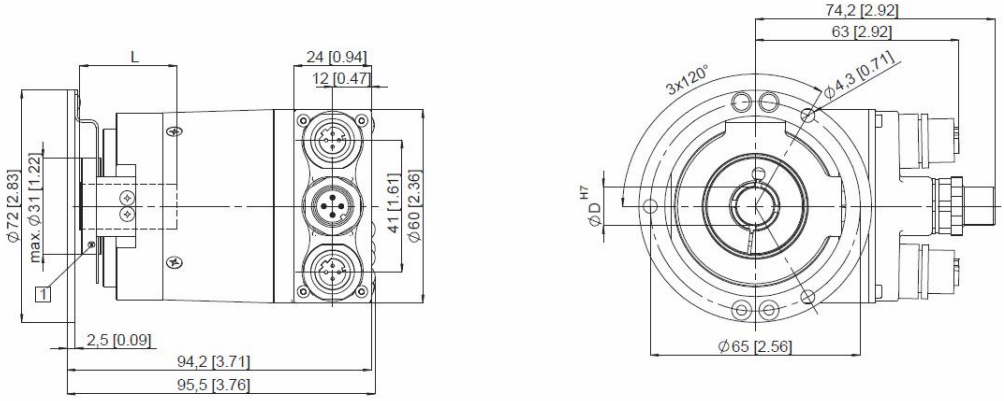
Flange with stator coupling, ø 63 [2.48]
Flange type 5 and 6

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



Flange with stator coupling, ø 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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