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 PROFINET technology.

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

Ex 2/22 | cULus | RoHS | PROFINET


Mechanical drive


Safety-Lock™


High rotational speed

Temperature range

High protection level


High shaft load capacity


Shock / vibration resistant


Magnetic field 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

- Easy setting of a preset value using a control bit (telegram 860).
- IRT-Mode.
- Cycle time ≥ 1 ms.
- Firmware updater allows for easy expansion of characteristics without having to disassemble the encoder.

Order code Shaft version

8.5868	.	X	X	C	2	.	C2	12
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.

10 by 10

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 *Fieldbus profile*
- **C2= PROFINET IO**

Optional on request
- Ex 2/22
- surface protection salt spray tested

Order code Hollow shaft

8.5888	.	X	X	C	2	.	C2	12
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.

10 by 10

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 (insertion depth max. 30 mm [1.18"])*
- 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**

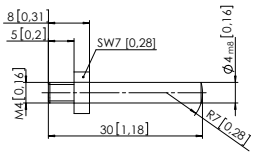
e *Fieldbus profile*
- **C2= PROFINET IO**

Optional on request
- 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.

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“]	**8.0000.1102.0606**
	bellows coupling ø 19 mm [0.75“] for shaft 10 mm [0.39“]	**8.0000.1102.1010**

Mounting accessory for hollow shaft encoders	Dimensions in mm [inch]	Order no.
Cylindrical pin, long for flange with spring element (flange type 1 + 2)	with fixing thread 	**8.0010.4700.0000**

Connection technology		Order no.
Cordset, pre-assembled	M12 male connector with external thread for port 1 and port 2, 4-pin 2 m [6.56'] PUR cable	**05.00.6031.4411.002M**
	M12 female connector with coupling nut for power supply, 4-pin 2 m [6.56'] PUR cable	**05.00.6061.6211.002M**
Connector, self-assembly (straight)	M12 male connector with external thread for port 1 and port 2, 4-pin	**05.WASCSY4S**
	M12 female connector with coupling nut for power supply, 4-pin	**05.B8141-0**

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	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
Working temperature range		-40°C ... +85°C [-40°F ... +185°F]
Material	shaft/hollow shaft	stainless steel
	flange	aluminum
	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

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 no. E224618
CE compliant acc. to	EMC guideline 2014/30/EU RoHS guideline 2011/65/EU

Interface characteristics PRROFINET IO

Resolution singleturn	1 ... 65536 (16 bit), scalable default: 8192 (13 bit)
Number of revolutions (multiturn)	max. 4096 (12 bit) scalable only via the total resolution
Total resolution	1 ... 268.435.456 (28 bit), scalable default: 33.554.432 (25 bit)
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

Standard
mechanical multiturn, optical | **Sendix 5868 / 5888 (shaft / hollow shaft)** | **PROFINET IO**

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.

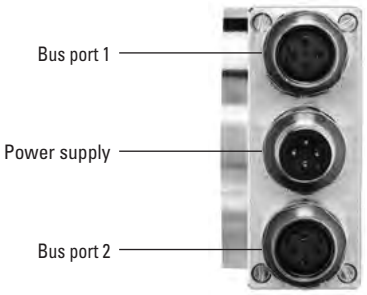
PROFINET IO

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**rotocol 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, 4-pin					
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	



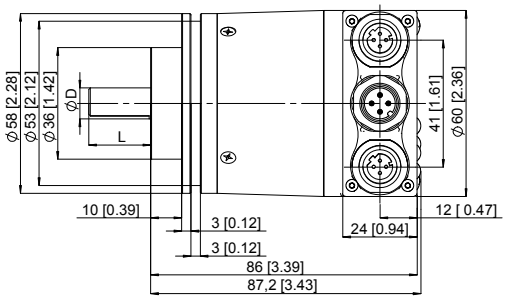
Standard mechanical multiturn, optical | **Sendix 5868 / 5888 (shaft / hollow shaft)** | **PROFINET IO**

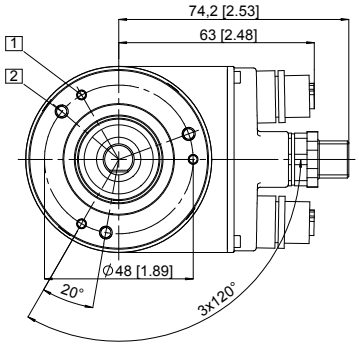
Dimensions shaft version, with removable bus terminal cover

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

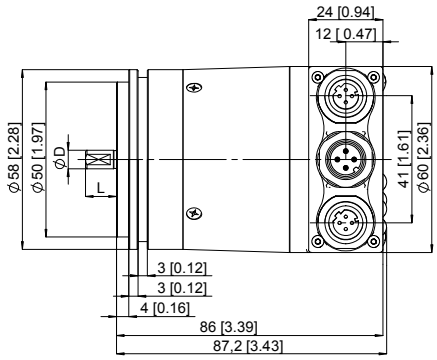


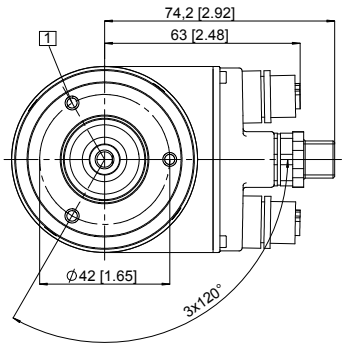


D	Fit	L
6 [0.24]	h7	10 [0.39]
10 [0.39]	f7	20 [0.79]
1/4"	h7	7/8"
3/8"	h7	7/8"

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

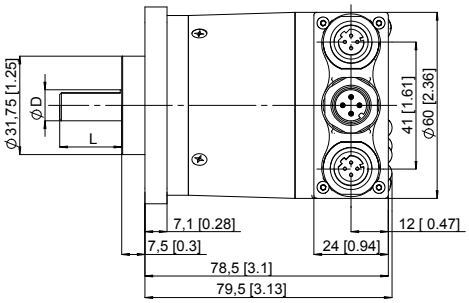
1 3 x M4, 6.0 [0.24] deep

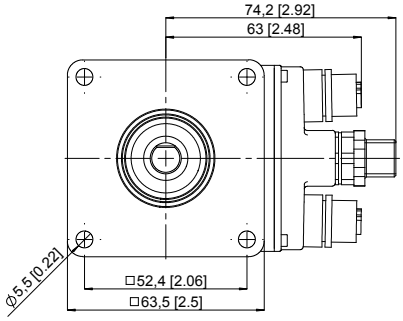




D	Fit	L
6 [0.24]	h7	10 [0.39]
10 [0.39]	f7	20 [0.79]
1/4"	h7	7/8"
3/8"	h7	7/8"

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





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

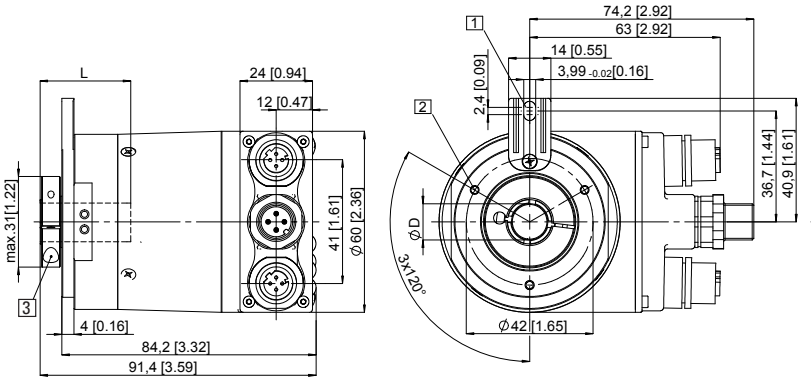
Standard
mechanical multiturn, optical | **Sendix 5868 / 5888 (shaft / hollow shaft)** | **PROFINET IO**

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

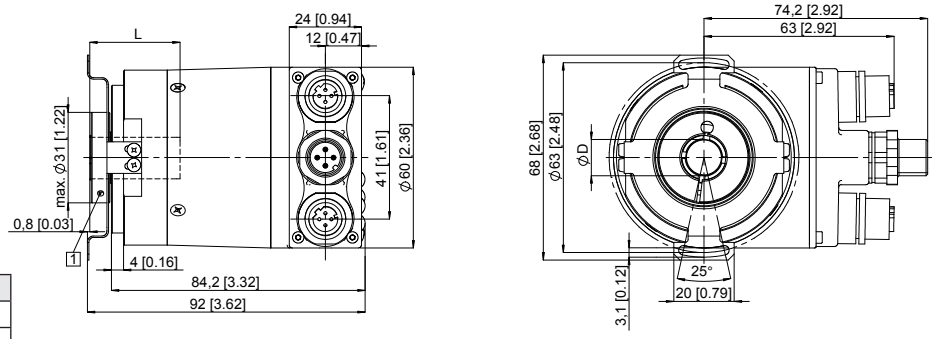
1 Slot spring element recommendation: cylindrical pin DIN 7, ø 4 [0.16]
2 3 x M3, 5.5 [0.22] deep
3 Recommended torque for the clamping ring 0.6 Nm



D	Fit	L
10 [0.39]	H7	30 [1.18]
12 [0.47]	H7	30 [1.18]
14 [0.55]	H7	30 [1.18]
15 [0.59]	H7	30 [1.18]
3/8“	H7	30 [1.18]
1/2“	H7	30 [1.18]
L = insertion depth max. blind hollow shaft		

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

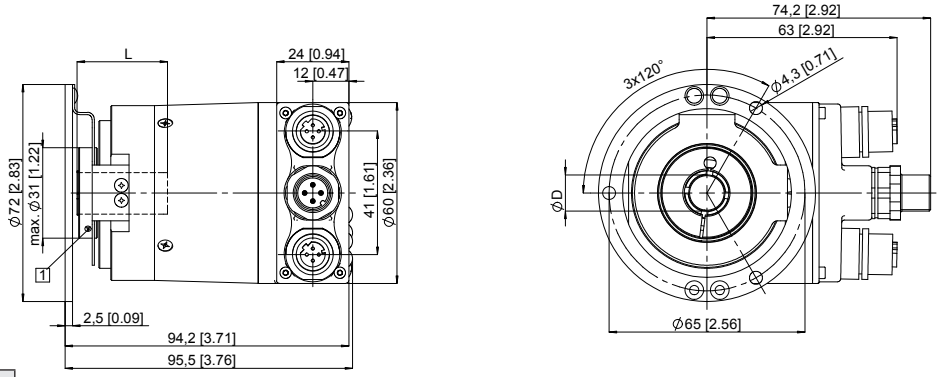
1 Recommended torque for the clamping ring 0.6 Nm



D	Fit	L
10 [0.39]	H7	30 [1.18]
12 [0.47]	H7	30 [1.18]
14 [0.55]	H7	30 [1.18]
15 [0.59]	H7	30 [1.18]
3/8“	H7	30 [1.18]
1/2“	H7	30 [1.18]
L = insertion depth max. blind hollow shaft		

Flange with stator coupling, ø 65 [2.56]
Flange type 3 and 4

1 Recommended torque for the clamping ring 0.6 Nm



D	Fit	L
10 [0.39]	H7	30 [1.18]
12 [0.47]	H7	30 [1.18]
14 [0.55]	H7	30 [1.18]
15 [0.59]	H7	30 [1.18]
3/8“	H7	30 [1.18]
1/2“	H7	30 [1.18]
L = insertion depth max. blind hollow shaft		