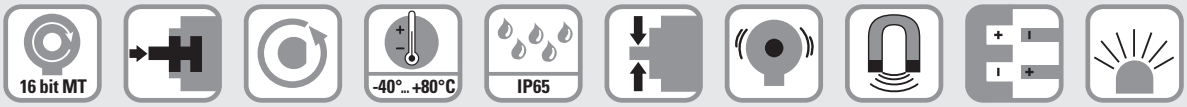
Standard
electronic multiturn, optical | **Sendix F5868 / F5888 (shaft / hollow shaft)** | **EtherNet/IP**

The Sendix F58 multiturn with patented Intelligent Scan Technology™ is a particularly high resolution optical encoder without gears and with 100 percent magnetic insensitivity.

32 bits total resolution, shaft up to 10 mm, blind hollow shaft up to 15 mm and certified EtherNet/IP functionality.

c UL us pending | Ex 2/22 | RoHS | EtherNet/IP™



Multiturn resolution | 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

Up-to-the-minute EtherNet/IP functionality

- Fast, easy commissioning and configuration possible thanks to cyclic services.
- Low RPI time, of 1 ms minimum – makes the encoder suitable for time-critical applications up to an update frequency of 1000 Hz.
- Faster encoder start after applying the power – increases plant performance.

Reliable and insensitive

- Sturdy bearing construction in Safety-Lock™ Design for resistance against vibration and installation errors.
- Patented Intelligent Scan Technology™ with all singleturn and multiturn functions on one single OptoASIC - offering the highest reliability, a high resolution up to 32 bits and 100% magnetic field insensitivity.
- Thanks to the implementation of DLR (Device Level Ring) a single cable break does not lead to plant stoppage.

Order code Shaft version

8.F5868	.	X	X	A	N	.	A2	2	2
Type		a	b	c	d		e		

a *Flange*
1 = clamping flange, IP65 ø 58 mm [2.28“]
2 = synchro flange, IP65 ø 58 mm [2.28“]
5 = square flange, IP65 □63.5 mm [2.5“]

b *Shaft (ø x L), with flat*
1 = 6 x 10 mm [0.24 x 0.39“]
2 = 10 x 20 mm [0.39 x 0.79“]
3 = 1/4“ x 7/8“
4 = 3/8“ x 7/8“

c *Interface / Power supply*
A = EtherNet IP / 10 ... 30 V DC

d *Type of connection*
N = 3 x axial M12 connector, 4-pin

e *Fieldbus profile*
A2 = EtherNet/IP

Optional on request
- Ex 2/22

Order code Hollow shaft

8.F5888	.	X	X	A	N	.	A2	2	2
Type		a	b	c	d		e		

a *Flange*
1 = with spring element long, IP65
3 = with stator coupling, IP65 ø 65 mm [2.56“]
5 = with stator coupling, IP65 ø 63 mm [2.48“]

b *Blind hollow shaft (insertion depth max. 30 mm [1.18“])*
A = ø 10 mm [0.39“]
B = ø 12 mm [0.47“]
C = ø 14 mm [0.55“]
D = ø 15 mm [0.59“]
E = ø 3/8“
F = ø 1/2“

c *Interface / Power supply*
A = EtherNet IP / 10 ... 30 V DC

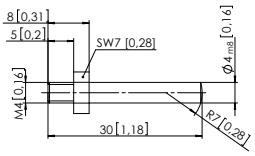
d *Type of connection*
N = 3 x axial M12 connector, 4-pin

e *Fieldbus profile*
A2 = EtherNet/IP

Optional on request
- Ex 2/22

Standard electronic multiturn, optical	Sendix F5868 / F5888 (shaft / hollow shaft)	EtherNet/IP

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)	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: kuebler.com/accessories.
Additional connectors can be found in the connection technology section or in the connection technology area of our website at: kuebler.com/connection_technology.

Technical data

Mechanical characteristics

Max. speed shaft version		
	IP65 up to 70°C	8000 min^{-1}, 6000 min^{-1} (continuous)
	IP65 up to T_{max}	6000 min^{-1}, 4000 min^{-1} (continuous)
Max. speed hollow shaft version		
	IP65 up to 70°C	6000 min^{-1}, 4000 min^{-1} (continuous)
	IP65 up to T_{max}	4000 min^{-1}, 3000 min^{-1} (continuous)
Starting torque at 20°C [68°F]		< 0.01 Nm
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. 0.45 kg [15.87 oz]
Protection acc. to EN 60529		IP65
Working temperature range		-40°C ... +80°C [-40°F ... +176°F]
Material	shaft/hollow shaft	stainless steel
	flange	aluminum
	housing	aluminum
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. 250 mA
Reverse polarity protection of the power supply (+V)	yes
UL approval	File no. E224618
CE compliant acc. to	EMC guideline 2014/30/EU RoHS guideline 2011/65/EU

Interface characteristics EtherNet/IP

Resolution singleturn	1 ... 65.536 (16 bit), scalable default: 8.192 (13 bit)
Number of revolutions (multiturn)	65.536 (16 bit) scalable only via the total resolution
Total resolution	1 ... 4.294.967.296 (32 bit), scalable default: 33.554.432 (25 bit)
Protocol	EtherNet/IP

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General information about EtherNet/IP

EtherNet/IP conformance tested acc. to	version CT-12 of 11. Dez. 2014
EtherNet/IP specification	Vol 2, Ed 1.17
CIP specification	Vol 1, Ed 3.16

The following functionalities are integrated

Adjustable parameters

- Preset
- Count direction
- Resolution
- Unity of speed
- IP address
- Number of revolutions
- Position
- Diagnosis
- Position limit
- Warning messages

Objects (CIP Objects)

- Identity Object
- Message Router
- Assembly Object
- Connection Manager
- Position Sensor Object
- Qos Object
- Port Object
- TCP / IP Interface Object
- EtherNet Link Object

EtherNet/IP features

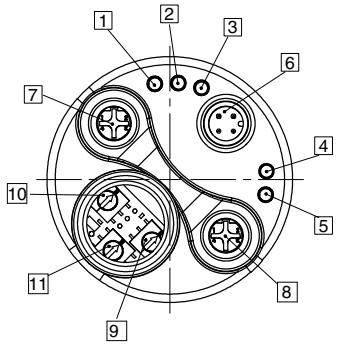
- DLR (Device Level Ring) possible
- Qos (Quality of Service) possible
- ACD (Address Conflict Detection)
- Multicast and unicast capability

Terminal assignment bus

Interface	Type of connection	Function	M12 connector, 4-pin					
A	N (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	

Rear side connections and display elements

1 LED: Link 2
2 LED: Mod.
3 LED: Net.
4 LED: Encoder
5 LED: Link 1
6 Power
7 Port 2
8 Port 1
9 Switch: x1
10 Switch: x100
11 Switch: x10



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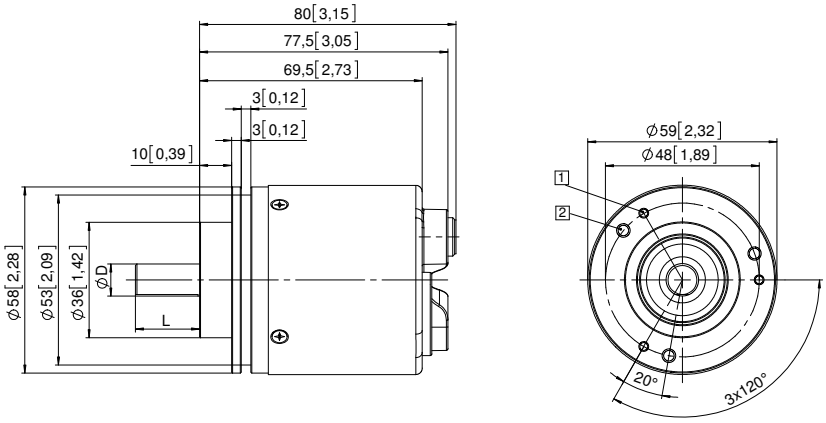
Dimensions shaft version

Dimensions in mm [inch]

Clamping flange, ø 58 [2.28]
Flange type 1

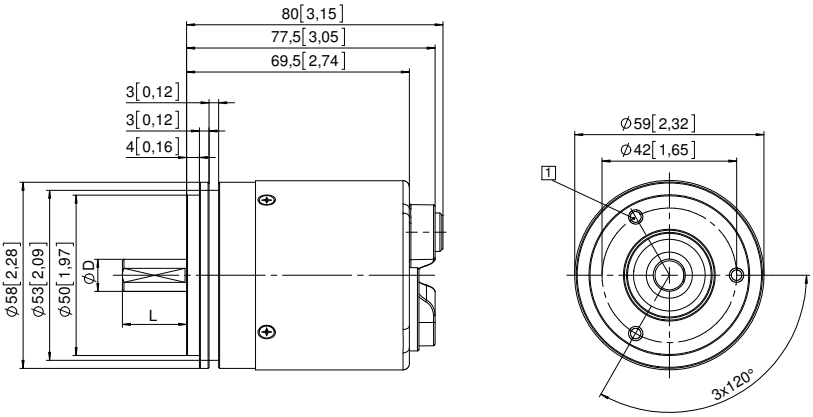
1 3 x M3, 6 [0.24] deep
2 3 x M4, 8 [0.31] deep



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"

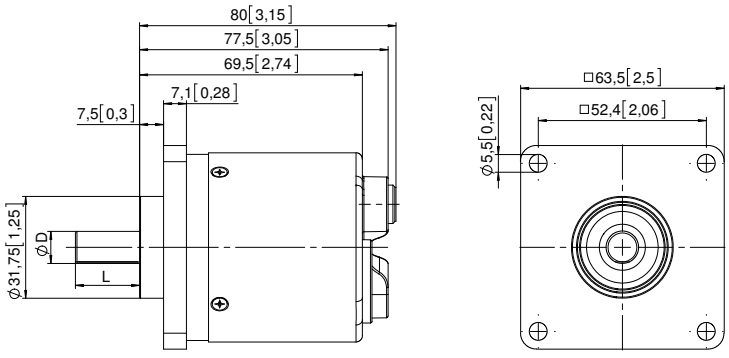
Synchro flange, ø 58 [2.28]
Flange type 2

1 3 x M3, 6 [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



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"

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Dimensions hollow shaft version

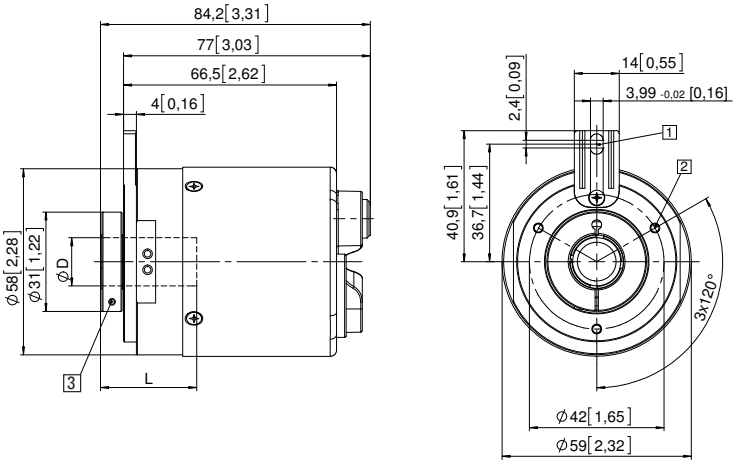
Dimensions in mm [inch]

Flange with spring element, long
Flange type 1

1 Slot spring element, recommendation: cylindrical pin DIN 7, ø 4 [0.16]

2 3 x M3, 5.5 [0.22] deep

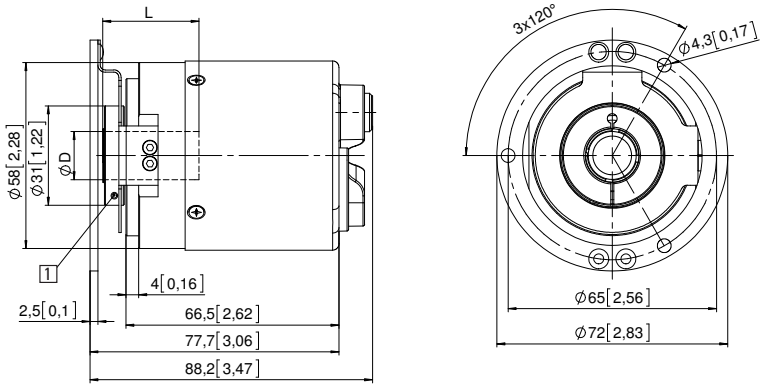
3 Recommended torque for the clamping ring 0.6 Nm



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 65 [2.56]
Flange type 3

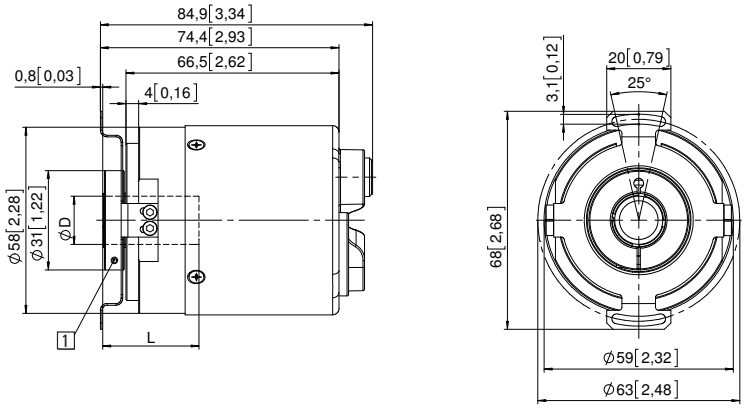
1 Recommended torque for the clamping ring 0.6 Nm



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 63 [2.48]
Flange type 5

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		