

Absolute Encoders - Singleturn

Standard, optical

Sendix 5858 / 5878 (Shaft / Hollow shaft)

EtherCAT



The singleturn encoders 5858 and 5878 with EtherCAT interface and optical sensor technology are ideal for use in all applications with an EtherCAT interface.

These encoders are ideally suited for use in real time applications and offer a maximum resolution of 16 bits.

These encoders are available with blind hollow shaft up to 15 mm.



Absolute Encoders
Singleturn

Reliable

- Perfect for use in applications such as in wood and metal processing industries
- Ideally suited for use in harsh outdoor environments, thanks to IP67 protection and rugged housing construction

Flexible

- Use of CoE (CAN over EtherNet)
- Cycle time for Sync 0 pulse min. 125 µs or 62.5 µs
- Faster, easier error-free connection thanks to M12 connectors

Order code Shaft version

8.5858 . X X B 2 . B1 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.



a Flange

- 1 = clamping flange, ø 58 mm, IP65
2 = synchro flange, ø 58 mm, IP65
3 = clamping flange, ø 58 mm, IP67
4 = synchro flange, ø 58 mm, IP67
5 = square flange, 63.5 mm (2.5"), IP65
7 = square flange, 63.5 mm (2.5"), IP67

b Shaft (ø x L), with flat

- 1 = 6 x 10 mm ¹⁾
2 = 10 x 20 mm ²⁾
3 = 6,35 x 22,2 mm (1/4" x 7/8")
4 = 9,5 x 22,2 mm (3/8" x 7/8")

c Interface / Power supply

B = EtherCAT / 10 ... 30 V DC

e Fieldbus profile

B1 = EtherCAT with CoE
(CAN over EtherNet)

d Type of connection

removable bus terminal cover
2 = 3 x M12 connector

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

Order code Hollow shaft

8.5878 . X X B 2 . B1 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.



a Flange

- 1 = with torque stop set, IP65
2 = with torque stop set, IP67
3 = with stator coupling, ø 65, IP65
4 = with stator coupling, ø 65, IP67
5 = with stator coupling, ø 63, IP65
6 = with stator coupling, ø 63, IP67

b Blind hollow shaft

- 3 = ø 10 mm
4 = ø 12 mm
5 = ø 14 mm
6 = ø 15 mm
8 = ø 9.5 mm (3/8")
9 = ø 12.7 mm (1/2")

c Interface / Power supply

B = EtherCAT / 10 ... 30 V DC

e Fieldbus profile

B1 = EtherCAT with CoE
(CAN over EtherNet)

d Type of connection

removable bus terminal cover
2 = 3 x M12 connector

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

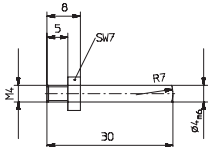
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Mounting accessory for shaft encoders

Coupling	Bellows coupling ø 19 mm for shaft 6 mm	8.0000.1101.0606
	Bellows coupling ø 19 mm for shaft 10 mm	8.0000.1101.1010

Mounting accessory for hollow shaft encoders

Cylindrical pin, long for torque stops		8.0010.4700.0000
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Connection Technology

Connector, self-assembly (straight)	Coupling M12 for Port A and Port B Connector M12 for supply voltage	05.WASCSY4S 05.B8141-0
Cordset, pre-assembled with 2 m PUR cable	M12 for Port A and Port B M12 for power supply	05.00.6031.4411.002M 05.WAK4-2/S90

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.

Mechanical characteristics		
Max. speed		
without shaft seal (IP65) up to 70°C		9 000 min ⁻¹ , 7 000 min ⁻¹ (continuous)
without shaft seal (IP65) up to T _{max}		7 000 min ⁻¹ , 4 000 min ⁻¹ (continuous)
with shaft seal (IP67) up to 70°C		8 000 min ⁻¹ , 6 000 min ⁻¹ (continuous)
with shaft seal (IP67) up to T _{max}		6 000 min ⁻¹ , 3 000 min ⁻¹ (continuous)
Starting torque without shaft seal (IP65)		< 0.01 Nm
Starting torque with shaft seal (IP67)		
shaft version		< 0.05 Nm
hollow shaft version		< 0.03 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. 0.50 kg
Protection EN 60 529	housing side	IP67
	shaft side	IP65, opt. IP67
EX approval for hazardous areas		optional Zone 2 and 22
Working temperature range		-40°C ... +80°C
Materials	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

General electrical characteristics	
Power supply	10 ... 30 V DC
Power consumption (no load)	max. 110 mA
Reverse connection of the supply voltage (U_B)	yes
UL-certified	File 224618
CE compliant acc. to	EN 61000-6-2, EN 61000-6-4, EN 61000-6-3
RoHS compliant acc. to	EU guideline 2002/95/EG

Device characteristics	
Singleturn resolution	1 ... 65535 (16 bit), (scaleable: 1 ... 65535)
Default value	8192 (13 bit)
Total resolution	scaleable from 1 up to 65535 (16 bit)
Code	binary
Protocol	EtherNet / EtherCAT

Diagnostic LED (red)	
LED is ON with the following fault conditions:	
Sensor error (internal code or LED error), low voltage, over-temperature	

Run LED (green)	
LED is ON with the following conditions:	
Preop-, Safeop and Op-State (EtherCAT Status machine)	

2 x Link LEDs (yellow)	
LED is ON with the following conditions (Port A and B):	
Link detected	

Modes	
Freerun, Distributed Clock (cycle time for Sync 0 pulse min. 125 µs or 62.5 µs with restrictions), Sync-Mode	

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General information about CoE (CAN over EtherNet)

The EtherCAT encoders support the CANopen communication profile according to DS301. In addition device-specific profiles like the encoder profile DS406 are available.

Scaling, preset values, limit switch values and many other parameters can be programmed via the EtherCAT bus.

When switching the device on, all parameters are loaded from an EEPROM, where they were saved previously to protect them against power-failure.

The following output values may be combined in a freely variable way as PDO (PDO mapping): **position**, **speed**, **acceleration** and **temperature**, as well as the **status of the working area**.

CANopen Encoder Profile CoE (CAN over EtherNet)

The following parameters are programmable:

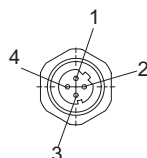
- Units for speed selectable (Steps/Sec or RPM)
- Factor for speed calculation (e.g. circumference of measuring wheel)
- Integration time for the speed value from 1 ... 32
- 2 working areas with 2 upper and lower limits and the corresponding output states
- PDO mapping of position, speed/velocity, acceleration and working area
- Extended error management for position sensing with integrated temperature control
- User interface with visual display of bus and fault status – 4 LEDs
- Alarm and warning messages

Terminal assignment bus

Type of connection 2, D-coded

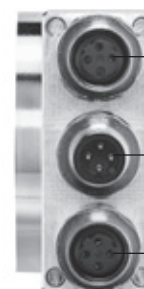
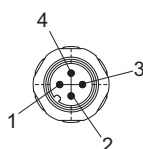
Direction	Port A				Port B			
Signal	Transmit data+	Receive data+	Transmit data -	Receive data -	Transmit data+	Receive data+	Transmit data-	Receive data-
Abbreviation	TxD+	RxD+	TxD-	RxD-	TxD+	RxD+	TxD-	RxD
M12 PIN assignment	1	2	3	4	1	2	3	4

Port A and B



Terminal assignment power supply

Signal	+U _B power supply	n.c.	0 V	n.c.
Abbreviation	+U _B	-	0 V	-
M12 PIN assignment	1	2	3	4



Bus connection A

Power supply

Bus connection B

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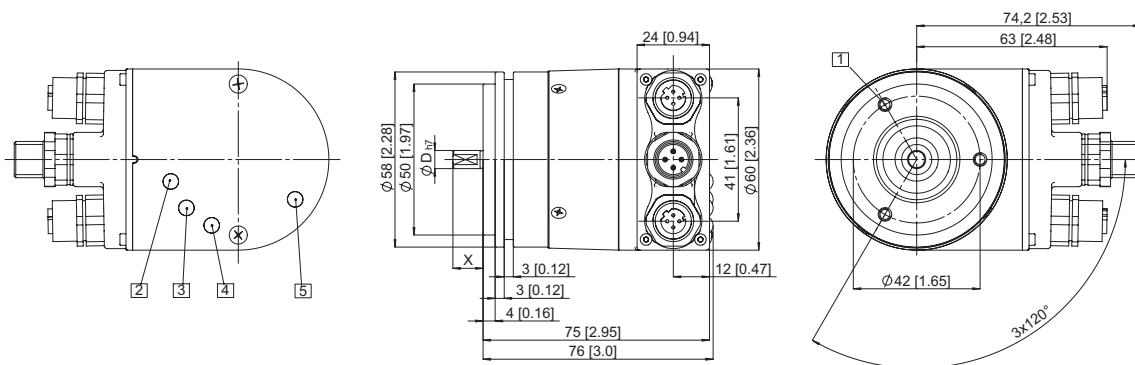
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Dimensions shaft version, with removable bus terminal cover

Synchro flange, \varnothing 58 mm

Flange type 2 and 4

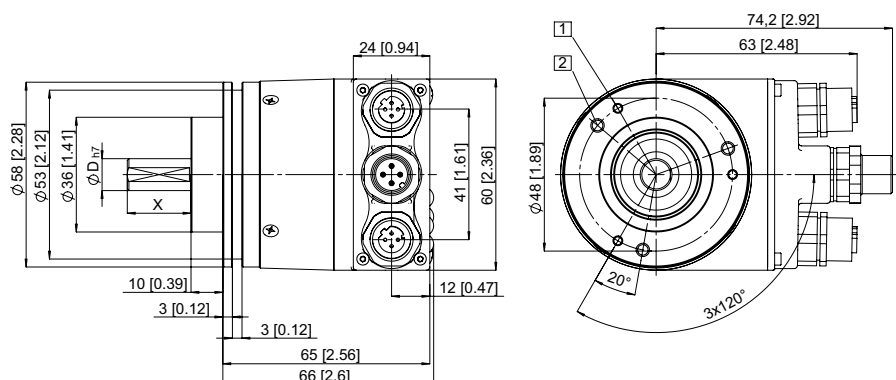
- 1 3 x M4, 6.0 [0.24] deep
- 2 LINK A, yellow LED
- 3 LINK B, yellow LED
- 4 RUN, green LED
- 5 ERR, red LED



Clamping flange, \varnothing 58 mm

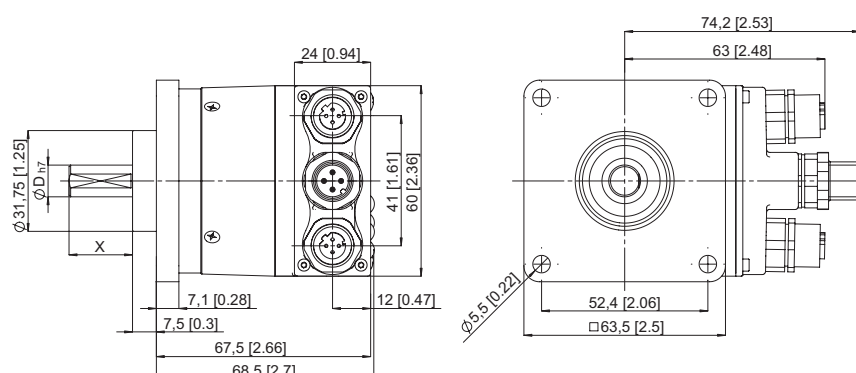
Flange type 1 and 3

- 1 3 x M3, 6.0 [0.24] deep
- 2 3 x M4, 8.0 [0.31] deep



Square flange, \square 63.5 mm

Flange type 5 and 7



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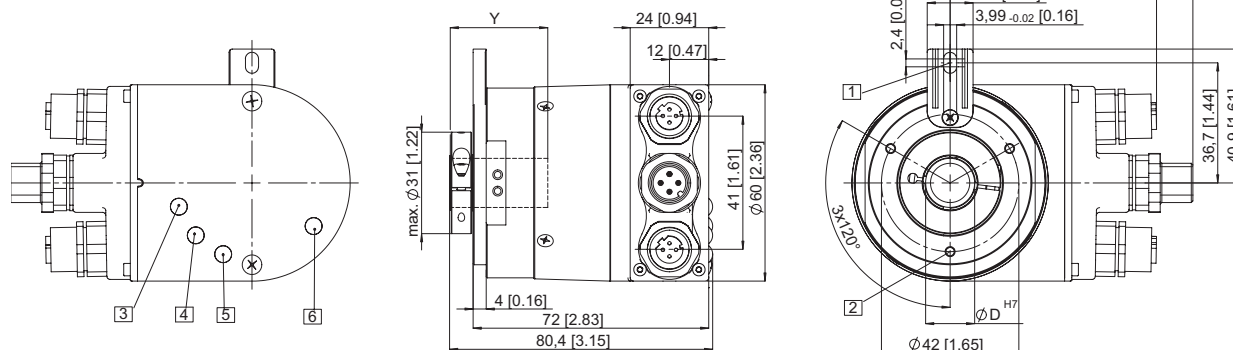
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EtherCAT

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

Flange with torque stop set, \varnothing 58 mm

Flange type 1 and 2



1 Torque stop slot,
Recommendation: Cylindrical pin DIN7, \varnothing 4 mm

2 3 x M3, 5.5 [0.21] deep

3 LINK A, yellow LED

4 LINK B, yellow LED

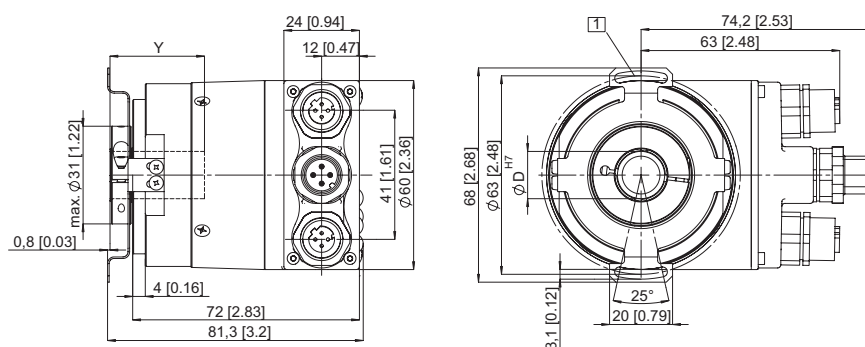
5 RUN, green LED

6 ERR, red LED

Flange with stator coupling, \varnothing 58 mm

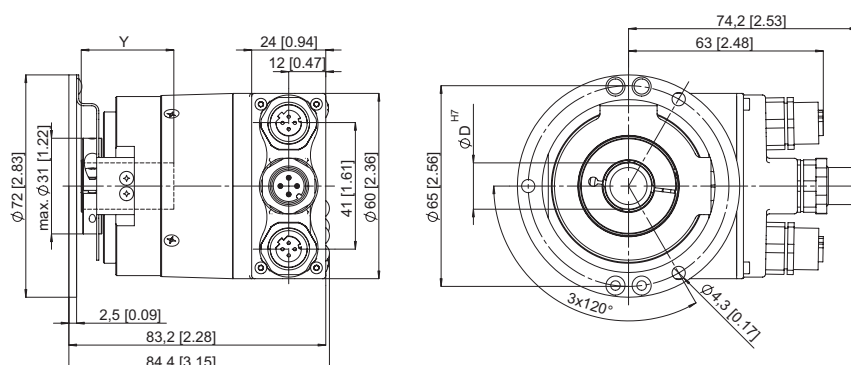
Flange type 5 and 6

1 Fixing screws DIN 912 M3 x 8
(Washer included in delivery)



Flange with stator coupling, \varnothing 58 mm

Flange type 3 and 4



Y: Insertion depth for blind hollow shaft: 30 mm