

Absolute Encoders – Multiturn

Standard, optical / magnetic

5860 (Shaft / Hollow shaft)

DeviceNet



The multiturn encoder 5860 with DeviceNet interface and combined optical/magnetic sensor technology is the right solution for all applications in DeviceNet networks.

These encoders are available with a solid shaft up to max. 10 mm diameter or a blind hollow shaft up to 15 mm.



High rotational speed



Temperature



High IP value



High shaft load capacity



Shock / vibration resistant



Short-circuit proof



Reverse polarity protection

Adaptable

- Variants with shaft or blind hollow shaft
- Programmable via Bus

User-friendly

- M12 connector
- Programmability of all relevant parameters

Order code Shaft version

8.5860 . XX 1 2 . 1001
Type a b c d e

a Flange
1 = clamping flange
2 = synchro flange

b Shaft (ø x L), with flat
1 = ø 6 x 10 mm
2 = ø 10 x 20 mm

c Interface / Power supply
1 = DeviceNet / 10 ... 30 V DC

e Fieldbus profile
1001 = DeviceNet 2.0

d Type of connection
2 = M12 connector

Order code Hollow shaft

8.5860 . XX 1 2 . 1001
Type a b c d e

a Flange
A = with spring element
B = with double-winged stator coupling

b Blind hollow shaft
A = ø 10 mm
B = ø 12 mm
C = ø 14 mm
D = ø 15 mm
E = ø 9.5 mm (3/8")
F = ø 12.7 mm (1/2")

c Interface / Power supply
1 = DeviceNet / 10 ... 30 V DC

e Fieldbus profile
1001 = DeviceNet 2.0

d Type of connection
2 = M12 connector

Delivery includes: EDS file and manual on CD.

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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		With fixing thread	8.0010.4700.0000
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Connection Technology

Connector, self-assembly (straight)	Coupling M12 for Bus in	8.0000.5116.0000
	Connector M12 for Bus out	8.0000.5111.0000
Cordset, pre-assembled with 2 m PVC cable	M12 for Bus in	8.0000.6V81.0005
	M12 for Bus out	8.0000.6V88.0005

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		
Speed ¹⁾		max. 6000 min ⁻¹
Rotor moment of inertia		approx. 1.8 x 10 ⁻⁶ kgm ²
Starting torque		< 0.01 Nm
Load capacity of shaft at shaft extension ²⁾	adial	80 N
	axial	40 N
Weight		approx. 0.7 kg
Protection EN 60 529		IP65
Working temperature range		-20°C ... +80°C
Materials	shaft	stainless steel
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 (U _B)		10 ... 30 V DC
Power consumption		max. 0.29 A
Recommended fuse		T 0.315 A
Divisions		up to 8192 (13 bit) per revolution, 4096 (12 bit) revolutions
Linearity		± 1/2 LSB (±1 LSB at resolution 13, 14, 25 bit)
Code		Binary
Interface		CAN HIGH-Speed acc. to ISO/DIS 11898, Basic and Full-CAN; CAN specification 2.0 B (11 and 29 bit Identifier)
DeviceNet Profile for Encoder Release V 2.0		
Baud rate		programmable via DIP switches 10 ... 1000 Kbit/s CAN DNET 125/250/500 kbit/s
Basic identifier/node number		programmable via DIP switches
CE compliant acc. to		EN 61000-6-2, EN 61000-6-4, EN 61000-6-3
Performance against magnetic influence acc. to		EN 61000-4-8, severity of inspection 5
UL-certified		File 224618
RoHS compliant acc. to		EU guideline 2002/95/EG

DeviceNet Encoder profile

General description

The DeviceNet Device Profile describes the functionality of the communication and of that part of the DeviceNet fieldbus system specific to the manufacturer. The Encoder Profile applies to encoders and defines the individual objects independently of the manufacturer. In addition the profile makes provision for additional extended functions specific to the manufacturer.

The following parameters can be programmed:

- Direction of rotation
- Scaling factor
- Number of pulses/rotation 1 ... 8192
- Total resolution
- Number of revolutions 1 ... 4096
- Preset value
- Diagnostics mode

The following functionality is integrated:

- Galvanic isolation of the Fieldbus-stage with DC/DC converter
- Line Driver acc. to RS485
- Addressing via DIP switches or software
- Diagnostics LED network and mode
- Baud rate 125, 250 and 500 kbit/s programmable via DIP switches
- Node address 0 ... 63 and baud rate programmable via DIP switches
- Baud rate and node address programmable
- Polled mode
- Cyclic mode
- Change of state mode (COS)
- Combination of Polled mode and Cyclic mode
- Combination of Polled mode and COS mode
- Offline connection set
- Device heartbeat

"Out of box" Configuration:

- MAC-ID and Baud rate preset value, MAC-ID = 63
- Baud rate = 125 kbit/s
- 2 I/O Assembly: Position value / Position value and status

Fieldbus encoders can be used in the following applications:

Elevators, construction machines, cranes, agricultural vehicles, special-purposes vehicles, industrial automation.

1) For continuous operation 3000 min⁻¹ at the max. temperature
2) Solid shaft version

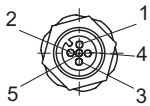
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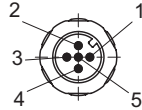
Terminal assignment M12

Signal	DRAIN	+ V DC	– V DC	CAN_H	CAN_L
Pin	1	2	3	4	5
Colour	GY	RD	BK	WH	BU

Bus out



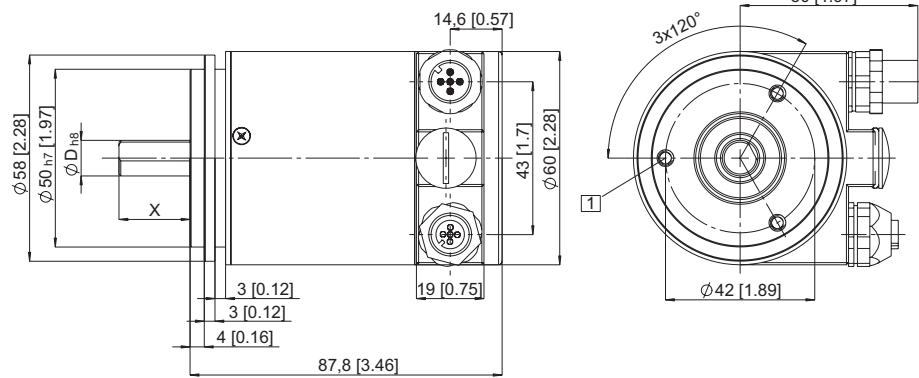
Bus in



Dimensions shaft version

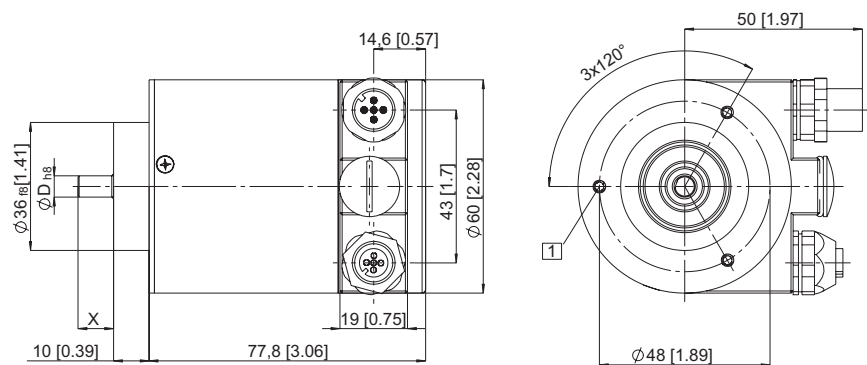
Synchro flange

1 3 x M4, 6 deep



Clamping flange

1 3 x M3, 6 deep



Suitable cable diameters

Supply voltage \varnothing 4.5 ... 6.5 mm
 Data transmission line \varnothing 8 ... 10 mm

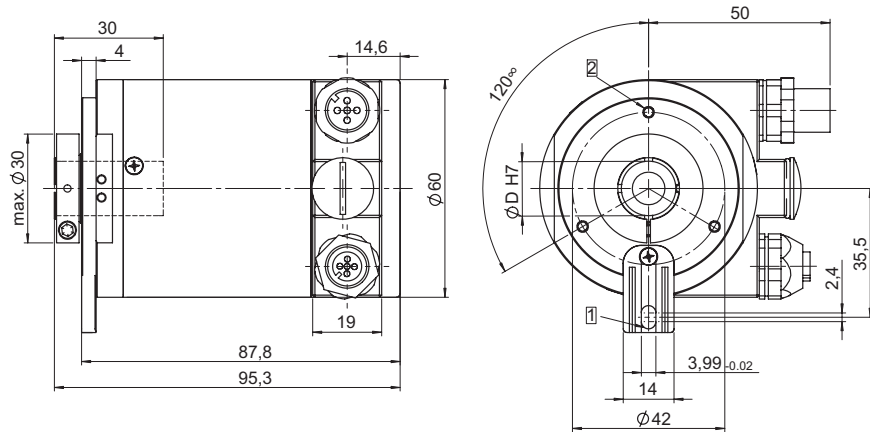
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Dimensions hollow shaft version (blind hollow shaft)

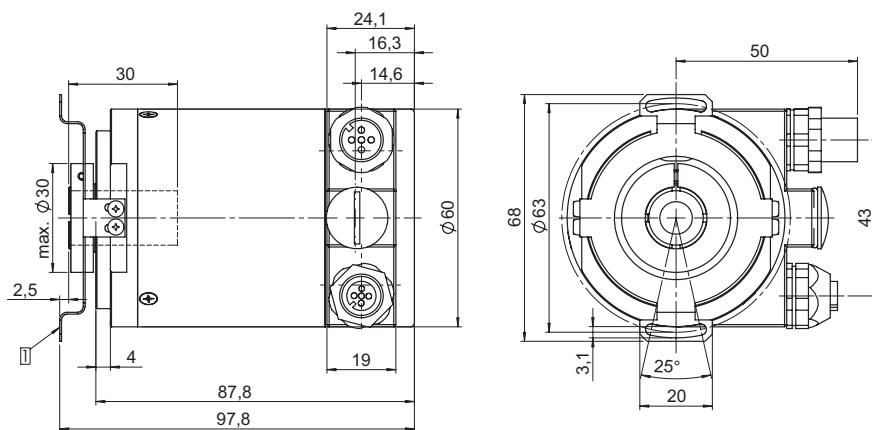
Flange with torque stop set long, ø 58 mm

- 1 Torque stop slot,
Recommendation:
Cylindrical pin DIN 7, ø 4 mm
- 2 M3, 6 deep



Flange with stator coupling, ø 58 mm

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



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