

Absolute encoders – multiturn

Large hollow shaft optical / magnetic	9080 (hollow shaft)	CANopen / DeviceNet
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The multiturn encoder 9080 with CANopen interface and combined optical / magnetic sensor technology is perfect for CANopen applications, where a large hollow shaft is required.

This through hollow shaft is available with a diameter up to 28 mm. The maximum resolution of the 9080 is 25 bits.



High rotational speed	Temperature range	High protection level	High shaft load capacity	Shock / vibration resistant	Short circuit proof	Reverse polarity protection

Adaptable

- With cable gland or M12 connector.
- Hollow shaft of 12 up to 28 mm.
- Programmable over the bus.

User-friendly

- All relevant parameters programmable.
- Wide selection of shafts and fixing options.

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multiturn

Order code	8.9080	. XXXX .	XXXX
Hollow shaft	Type	a b c d	e

- | | | | |
|---|--|--|---|
| <p>a Flange</p> <ul style="list-style-type: none"> 1 = without mounting aid 2 = with spring element, short 3 = with spring element, long 4 = with mounting flange 5 = with tether arm, long | <p>b Through hollow shaft</p> <ul style="list-style-type: none"> 1 = ø 12 mm [0.47"] 2 = ø 15 mm [0.59"] 9 = ø 16 mm [0.63"] 3 = ø 20 mm [0.79"] 4 = ø 24 mm [0.94"] C = ø 25 mm [0.98"] 5 = ø 28 mm [1.10"] 6 = ø 5/8" 7 = ø 1" | <p>c Interface / power supply</p> <ul style="list-style-type: none"> 1 = DeviceNet / 10 ... 30 V DC 2 = CANopen / 10 ... 30 V DC <p>d Type of connection, removable bus terminal cover</p> <ul style="list-style-type: none"> 1 = with cable gland M16 ¹⁾ 2 = with 3 x M12 connector, 5-pin | <p>e Fieldbus profile</p> <ul style="list-style-type: none"> 1001 = DeviceNet 2001 = CANopen |
|---|--|--|---|

Includes EDS-file and documentation on CD
Use **couplings** for the **BUS-IN** connection and **connectors** for the **BUS-OUT** connection.

1) Only in conjunction with CANopen.

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CANopen - Device profile

General description

The CANopen Device profiles describe the functionality of the communication and of that part of the CANopen fieldbus system specific to the manufacturer. Device profile 406 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; using devices that interface with CANopen offers the advantage of acquiring systems today that are prepared for the needs of the future.

The following functionality is integrated:

- Class C2 functionality.
- NMT slave.
- Diagnostics (internal) 2 bit.
- CAN LED for bus status.
- CAN LED for operating mode.

The following parameters can be programmed:

- Polling mode or auto mode with adjustable time.
- Code sequence (direction).
- Number of pulses/rotation 1 ... 8192.
- Number of revolutions 1 ... 4096.
- Total resolution.
- Preset.
- Offset.
- Number of revolutions.

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.
- Resolution.

The following functionality is integrated:

- Galvanic isolation of the fieldbus stage with DC/DC converter.
- Addressing via DIP switches or software.
- Diagnostic LED for 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.
- 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 following applications:

CANopen

- Elevators.
- Construction plant.
- Cranes.
- Agricultural vehicles.
- Mobile plant.
- Special purposes vehicles.

DeviceNet

Especially suitable for applications in the USA.

Terminal assignment terminal box

Interface	Type of connection	Terminal box												
		Signal:		ENC.			BUS IN			BUS OUT			ENC.	
1, 2	1		+V DC	0 V	0 V	B	A	A	B	0 V	0 V	+V DC	±	
		Terminal:	1	2	3	4	5	6	7	8	9	10	11	12

Terminal assignment M12 connector version

Interface	Type of connection	Function	M12 connector, 5-pin						Diagram
			Signal:	DRAIN	+ V DC	- V DC	CAN_H	CAN_L	
1, 2	2	Bus in	Pin:	1	2	3	4	5	
			Core color:	GY	RD	BK	WH	BU	
			Signal:	DRAIN	+ V DC	- V DC	CAN_H	CAN_L	
		Bus out	Pin:	1	2	3	4	5	
			Core color:	GY	RD	BK	WH	BU	
			Signal:	DRAIN	+ V DC	- V DC	CAN_H	CAN_L	

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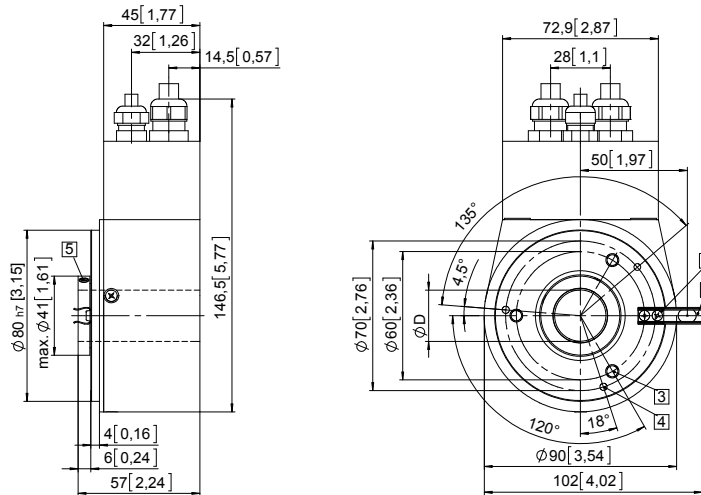
CANopen / DeviceNet

Dimensions

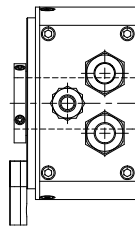
Dimensions in mm [inch]

Flange with spring element

- 1 Spring element, short (flange no. 2) cylindrical pin DIN 6325, \varnothing 6 [0.24]
- 2 Spring element, long (flange no. 3) cylindrical pin DIN 6325, \varnothing 6 [0.24]
- 3 3 x M6, 10 [0.39] deep
- 4 3 x M4, 7 [0.28] deep
- 5 Recommended torque for the clamping ring 1.0 Nm

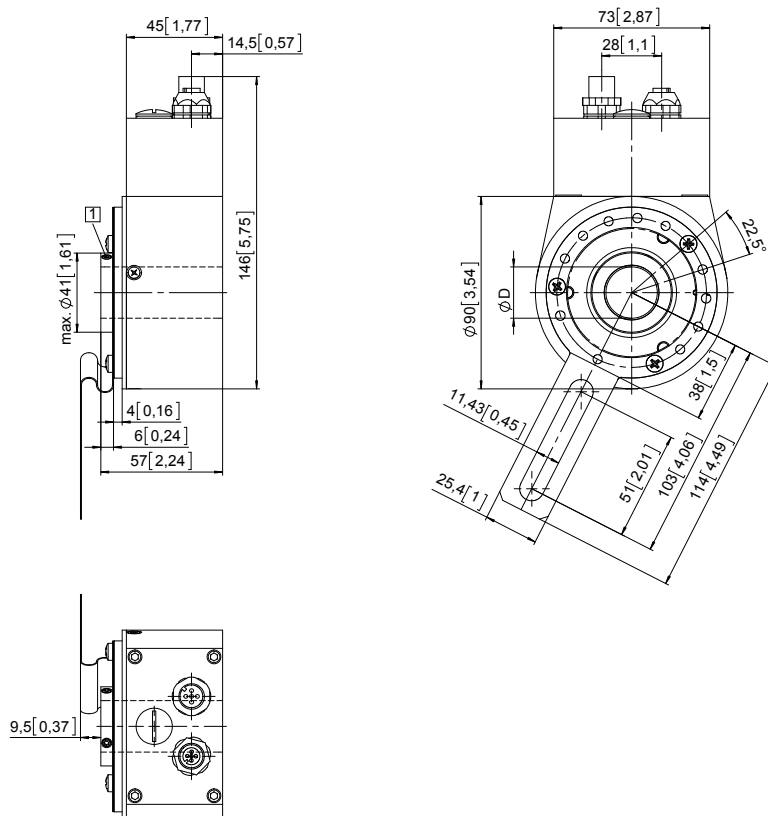


D	Fit
12 [0.47]	H7
15 [0.59]	H7
16 [0.63]	H7
20 [0.79]	H7
24 [0.94]	H7
25 [0.98]	H7
28 [1.10]	H7
5/8"	H7
1"	H7



Flange with tether arm, long

- 1 Recommended torque for the clamping ring 1.0 Nm



D	Fit
12 [0.47]	H7
15 [0.59]	H7
16 [0.63]	H7
20 [0.79]	H7
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