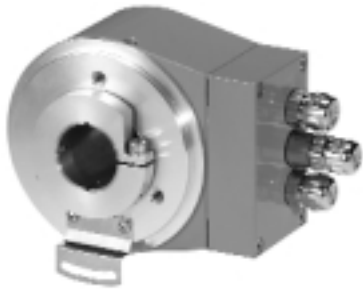


## Multiturn Type 9080 CANopen



- Field bus interface: **CANopen**
- Hollow shaft up to Ø 28 or shaft Ø 12 mm
- Shock resistant up to 250 g
- Only 60 mm clearance needed
- Patented integrative technology®
- Very easy mounting of the hollow shaft version. The encoder is mounted directly on the drive shaft without coupling. This saves up to 30 % cost and 50 % clearance compared to shaft versions.
- Divisions: up to 8192 (13 bits) per revolution, 4096 (12 bits) revolutions
- Contactless multiturn gear with new Intelligent-Sensing-Technology (IST)
- Simply connection patent pending connecting system with removable socket box
- Integrated T-coupler
- Protection: IP 65

### Mechanical characteristics:

Speed: <sup>1)</sup>	max. 6000 min <sup>-1</sup>
Rotor moment of inertia:	appr. 72 x 10 <sup>-6</sup> kgm <sup>2</sup>
Starting torque hollow shaft version:	< 0,2 Nm
Starting torque shaft version:	< 0,05 Nm
Radial load capacity of shaft: <sup>2)</sup>	radial: 80 N, axial 40 N
Weight:	appr. 0,9 kg
Protection acc. to EN 60 529:	IP 65
Working temperature:	-10° C ... +70 °C
Operating temperature:	-10° C ... +80 °C
Shaft:	stainless steel
Shock resistance acc. to DIN-IEC 68-2-27	2500 m/s <sup>2</sup> , 6 ms
Vibration resistance acc. to DIN-IEC 68-2-6:	100 m/s <sup>2</sup> , 10 ... 2000 Hz

<sup>1)</sup> for continuous operation 3000 min<sup>-1</sup>

<sup>2)</sup> shaft version only (at shaft end)

### Electrical characteristics:

Supply voltage (U <sub>B</sub> ):	10 ... 30 V DC
Current consumption type:	max. 0,29 A
recommended fuse	T 0,315 A
Linearity	±1/2 LSB (± 1 LSB at 13, 14, 25 or 26 bit resolution)
Code	Binary
Interface	RS 485
Protocol	<b>CANopen, encoder profile class 2</b>
Rate	max. 12 Mbit/s
Address	adjustabl with DIP-switches
Conforms to CE requirements acc. to EN 50082-2, EN 50081-2, EN 55011 Class B and EN 61000-4-8	
Performance against magnetic influence acc. to EN61000-4, 5	

### CANopen-Device -Profile:

The basic functions of the CANopen are only described in extracts in here. For additional information, please refer to the standards on Device Profile DSP 406 i.e. ISO 11898

### The following parameters can be programmed:

- Polling mode/auto mode/cycle time
- Resolution
- Direction
- number of pulse/rotation
- total resolution
- Preset value
- Offset value

### The following functionality is integrated:

- Class C2 functionality
- NMT-Slave
- Diagnostics 2 Bit
- CAN-LED for bus status
- CAN-LED for operating mode

## CANopen

### Specification to ISO 11898

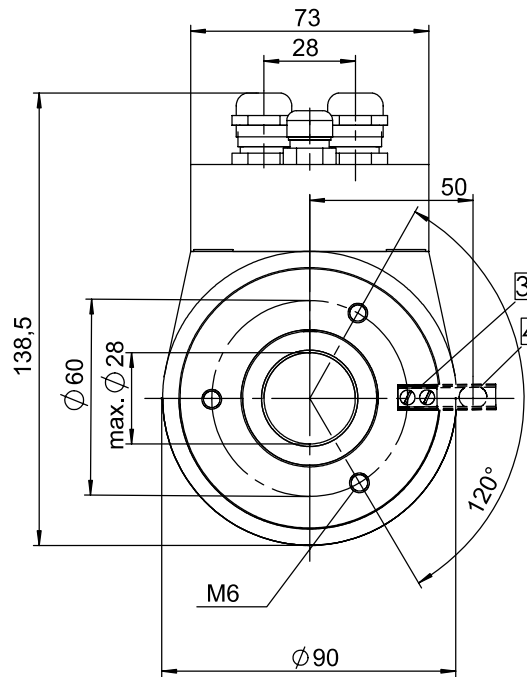
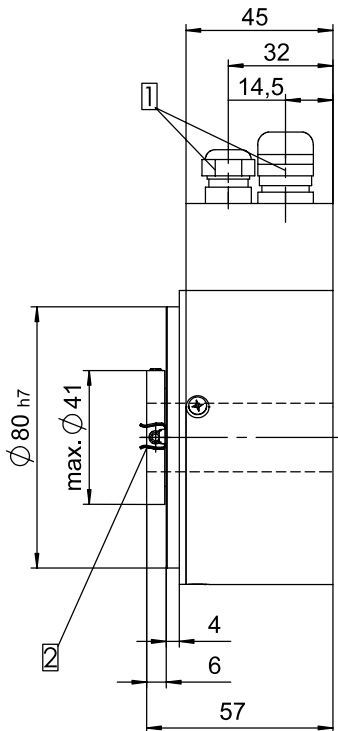
## Multiturn Type 9080 CANopen

### Terminal assignment

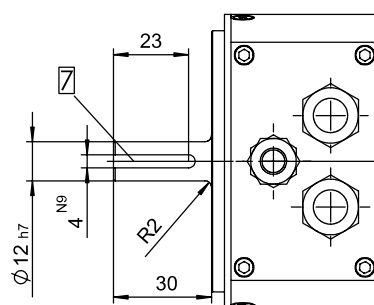
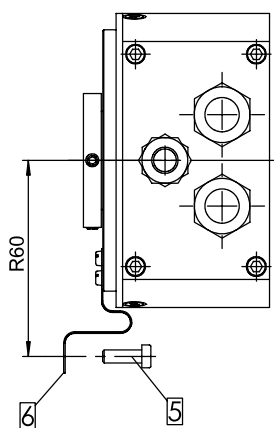
Signal:	ENC.		Bus IN			Bus OUT			ENC.		Shield <sup>1)</sup>	
	+V DC	GND	GND	B	A	A	B	GND	GND	+V DC		
Pin:	1	2	3	4	5	6	7	8	9	10	11	12

<sup>1)</sup> only Device-Net Profile (Device Net in preparation)

### Dimensions



Shaft version Ø12x30 mm



### Mounting advice:

Do not connect encoder and drive rigidly to one another at shafts and flanges.

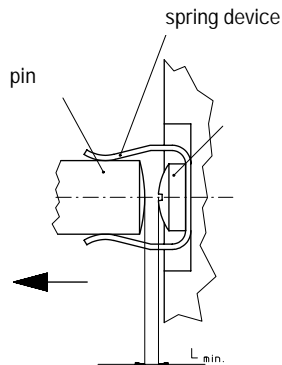
- 1 Cable fitting
- 2 Spring device for pin acc. to DIN 6325 Ø6
- 3 spring device short (Flange no. 2)
- 4 spring device long (Flange no. 3)
- 5 Slotted hole for M4 screws
- 6 Mounting bracket (Flange no. 4)
- 7 2.5 mm deep

## Multiturn Type 9080 CANopen

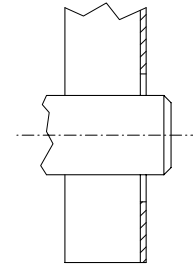
### Max. permissible drive shaft impact:

Flange type:	Permissible axial impact	Permissible radial impact	Permissible angular play
Flange type 2 (short spring device):	max. $\pm 1$ mm <sup>1)</sup>	max. $\pm 0,3$ mm	max. $\pm 2^\circ$
Flange type 3 (long spring device):	$\infty$ <sup>2)</sup>	max. $\pm 0,3$ mm	max. $\pm 2^\circ$
Flange type 4 (mounting bracket):	max. $\pm 0,5$ mm	max. $\pm 0,3$ mm	max. $\pm 2^\circ$

<sup>1)</sup>When mounting the encoder make sure that the dimension  $L_{min.}$  is larger than the maximum axial play of the drive in the direction of the arrow. Danger of mechanical collision !



<sup>2)</sup>When mounting as shown, else see flange type 2



### Patented "Integrated Technology®" uses single board construction, deliberate assembly techniques, and two ASIC design:

- Shock up to 250gs
- Higher vibration specs and thermal shock performance
- Lower parts count, elimination of potentiometers
- Higher resistance to EMI

### Electronic multiturn increases performance, eliminates gears

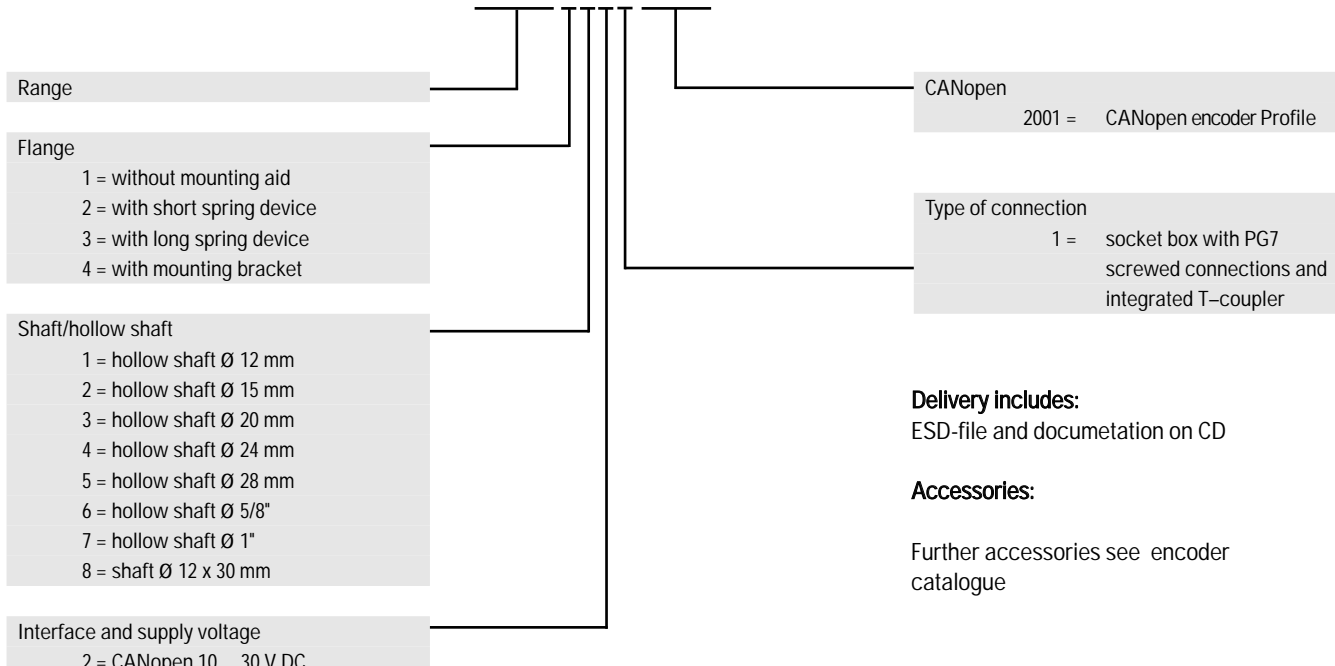
- Reliability - No backlash errors, resistant to EMI, lower parts count
- Higher life - No mechanical wear, lower internal temperature
- Higher performance - Higher operating speeds
- Lower profile - compact size, hollow shaft
- Economical - Lower cost

### Patented "Intelligent Sensing Technology®"

- Multiturn design that protects encoder from EMI and increases battery life to 10 years.
- The battery outlasts both application requirements and system components (LEDs & bearings)
- Redundant multiturn sensors and counters increase reliability & life
- Active system output monitoring using digital filters to compare data to logical & target bits.

### Order code:

8.9080.XXXX.XXXX



### Delivery includes:

ESD-file and documentation on CD

### Accessories:

Further accessories see encoder catalogue