Multiturn Type 9080 Profibus-DP

- Field bus interface: **PROFIBUS-DP**
- 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
- Non-contact multiturn gear with new Intelligent-Sensing-Technology (IST)
- Simple connection via connecting system (patent pending) - with removable socket box
- Integrated T-coupler
- Protection: IP 65

Mechanical characteristics:

Speed: [1]	max. 6000 min^{-1}
Rotor moment of inertia:	approx. 72 x 10^{-6} kgm^2
Starting torque hollow shaft version:	< 0.2 Nm
Starting torque shaft version:	< 0.05 Nm
Radial load capacity of shaft: [2]	radial: 80 N, axial 40 N
Weight:	approx. 0.9 kg
Protection acc. to EN 60 529:	IP 65
EX approval for hazardous areas:	optional zone 2 and 22
Working temperature:	–10° C ... +70 °C [3]
Shaft:	stainless steel, hollow shaft H7
Shock resistance acc. to DIN-IEC 68-2-27	2500 m/s^2, 6 ms
Vibration resistance acc. to DIN-IEC 68-2-6:	100 m/s^2, 10 ... 2000 Hz

1) For continuous operation 3000 min^{-1}
2) Shaft version only (at shaft end)
3) Non-condensing

Specification to Profibus-DP 2.0 standard (DIN 19245 Part 3)

Electrical characteristics:

Supply voltage (U_B):	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 bit resolution)
Code	Binary
Interface RS	485
Protocol	**Profibus-DP, encoder profile class 2**
Baud rate	max. 12 Mbit/s
Address	adjustable with DIP-switches
Conforms to CE requirements acc. to EN 61000-6-2, EN 61000-6-4 and EN 61000-6-3	
Performance against magnetic influence acc. to EN61000-4, 5	
UL certified	File 224618 (version with terminal box)
RoHS compliant acc. to EU guideline 2002/95/EG	

Profibus Encoder-Profile:
The basic functions of the PROFIBUS DP are only described in extracts in here. For additional information, please refer to the standards on PROFIBUS DP, i.e. DIN 19245-3 and EN 50170 respectively or see page 35-

The following parameters can be programmed:

- Direction of rotation
- Scaling factor
  – number of pulse/rotation
  – total resolution
- Preset value
- Diagnostics mode

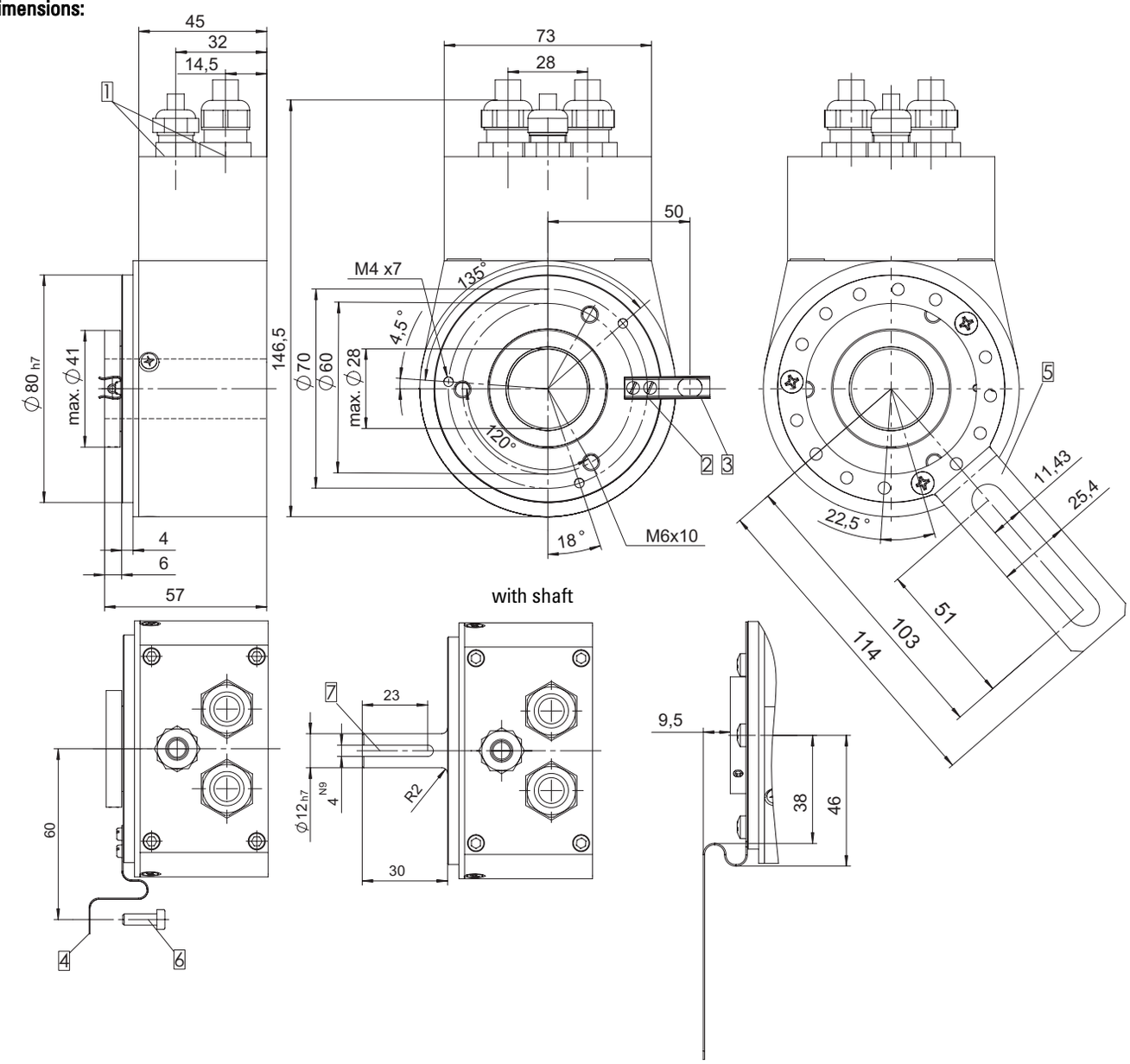
The following functionality is integrated:

- Galvanic isolation of the Fieldbus stage with DC/DC converter
- Line driver according to RS 485 max. 12 MB
- Addressing by means of rotary switches
- Diagnostics LED
- Full Class 1 and Class2 functionality

Multiturn Type 9080 Profibus-DP

Signal :	ENC.			BUS IN			BUS OUT			ENC.				Shield
	+V	C	GND	GND	B	A	A	B	GND	GND	+V	C	D	
Pin:	1		2	3	4	5	6	7	8	9	10	11	12	

Dimensions:

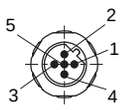


1 Socket box
2 Spring device for pin acc. to DIN 6325 Ø6
3 Spring device short (Flange No. 2)
4 Spring device long (Flange No. 3)
5 Slotted hole for screw M4
6 Mounting flange (Flange No. 4)
7 2,5 mm deep

Mounting advice:
The flanges and shafts of the encoder and drive should not both be rigidly coupled together at the same time!

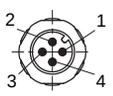
Multiturn Type 9080 Profibus-DP

Terminal assignment M12 Connector version:



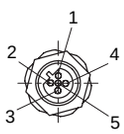
Bus in:

Signal :	–	BUS-A	–	BUS-B	–
Pin:	1	2	3	4	5



Power supply:

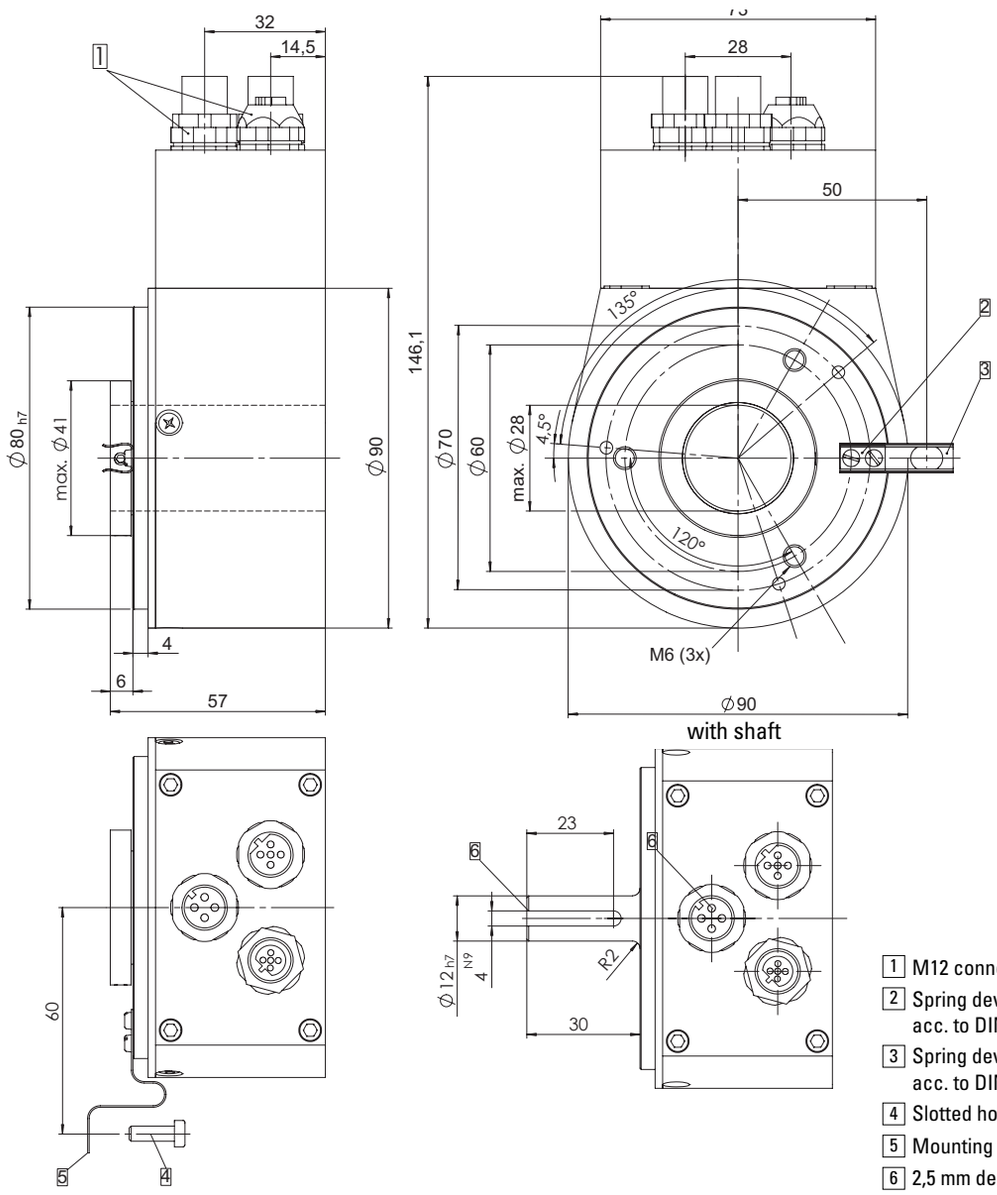
Signal :	U_B	–	0	V	–
Pin:	1	2	3	4	



Bus out:

Signal :	BUS_VDC	BUS-A	BUS_GND	BUS-B	Shield
Pin:	1	2	3	4	5

Dimensions (M12 connector version):



1 M12 connector
2 Spring device short (Flange No. 2) for pin acc. to DIN 6325 ø 6
3 Spring device long (Flange No. 3) for pin acc. to DIN 6325 ø 6
4 Slotted hole for screw M4
5 Mounting flange (Flange No. 4)
6 2,5 mm deep

Multiturn Type 9080 Profibus-DP

Integrative Technology®
Compact construction, higher resistance to shock and EMI together with greater reliability due to:
- Integration of all components on just one PCB board instead of a sandwich structure
- Innovative assembly techniques
- Use of self-balancing Opto ASICs instead of potentiometers

Intelligent-Sensing-Technology (I-S-T)
An innovative principle of operation based on a non-contact electronic multiturn stage overcomes system disadvantages previously associated with encoders that had mechanical gears or with traditional electronic gear technology.

Advantages:
- High operational reliability
- Logic filter and innovative principle of operation compensate for high EMC interference
- Free from wear

Order code:

8.9080.XXXX.XXXX

Type

Flange
- 1 = without mounting aid
- 2 = with short spring device
- **3 = with long spring device**
- **4 = with mounting flange**

Shaft/hollow shaft
- **1 = hollow shaft Ø 12 mm**
- 2 = hollow shaft Ø 15 mm
- **3 = hollow shaft Ø 20 mm**
- 4 = hollow shaft Ø 24 mm
- **5 = hollow shaft Ø 28 mm**
- 6 = hollow shaft Ø 5/8"
- 7 = hollow shaft Ø 1"
- 8 = shaft Ø 12 x 30 mm
- 9 = hollow shaft ø 16 mm
- C = hollow shaft ø 25 mm

Interface and supply voltage
- **3 = Profibus-DP 10 ... 30 V DC**

Profibus DP
- 3001 = Profibus Class 2

Type of connection
- 1 = socket box with PG7 screwed connections and integrated T–coupler
- 2 = M12-Connector

Delivery includes:
GSD-file and documentation on CD
Use Couplings for the connection BUS-IN and Connectors for the connection BUS-OUT.
Compatible self-assembly connectors:
Connector (BUS-OUT): 05.BMSWS.8151-8.5
Coupling (BUS-IN): 05.BMWS.8151-8.5
See also Connection Technology section for cable assemblies.

Stock types
8.9080.4131.3001

Accessories:

Mounting kit
Offers a wide variety of mounting options.

Complete kit
Order No. 8.0010.4A00.0000
The set includes the following individual items, which may also be ordered separately.
1 x parallel pin, long with fixing thread
1 x spring element, long
1 x spring element, short
2 x screws M2.5
Screw M4 x 10
Mounting flange
Washer
For detailed drawings and further information, see Accessories section.

Flexible mounting flange, large
Includes:
- Flexed spring element
- 3 mounting screws

Order No. 8.0010.4E00.000