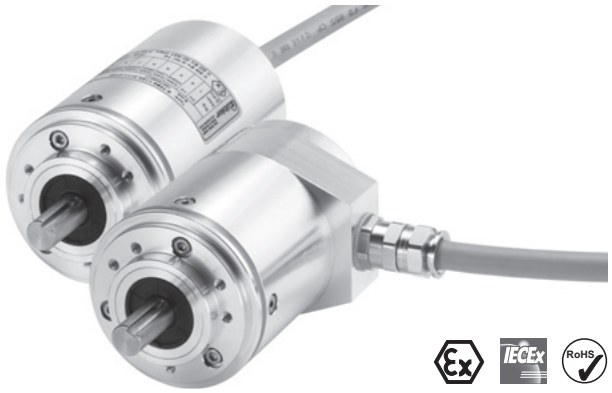
Standard
ATEX/IECEx – mining, optical | **Sendix 7158 (Shaft)** | **PROFIBUS DP**



The Sendix 7158 absolute singleturn encoders in a compact 70 mm stainless-steel housing, with a PROFIBUS interface and optical sensor technology have an ATEX/IECEx mining approval.

These shock and vibration-resistant encoders operate flexibly with a resolution of up to 16 bits; they are also available with axial and radial cable outlets.

Ex approval | Safety-Lock™ | High rotational speed | High protection level | High shaft load capacity | Shock / vibration resistant | Magnetic field proof | Short-circuit proof | Reverse polarity protection | Optical sensor | Seawater-resistant

Compact and Safe

- Can be used even when space is tight
- Minimal installation depth, diameter 70 mm
- Compact cable outlet axial or radial
- Can be operated in marine environments – housing and flange manufactured from stainless steel
- Remains sealed even in harsh everyday use and ensures highest safety against field breakdowns (IP67 protection)

Explosion protection

- Mining approval
- "Flame-proof enclosure" construction
- ATEX with EC type examination certificate
- IECEx with Certificate of Conformity (CoC)

Order code Shaft version

8.7158	.	2	X	3	X	.	31	11	.	XXXX
Type		a	b	c	d		e			f 1)

a *Flange*
2 = clamping-synchronous flange, IP67, ø 70 mm [2.76"]

b *Shaft (ø x L)*
2 = 10 x 20 mm [0.39 x 0.79"], with flat
1 = 12 x 25 mm [0.47 x 0.98"], with keyway for 4 x 4 mm [0.16 x 0.16"] key

c *Interface / Power supply*
3 = PROFIBUS DP V0 / 10 ... 30 V DC

d *Type of connection*
1 = axial cable, 2 m [6.56'] PUR
2 = radial cable, 2 m [6.56'] PUR
A = axial cable, length > 2 m [6.56']
B = radial cable, length > 2 m [6.56']
preferred length see **f**, e. g.: 0100 = 10 m [32.81']

e *Fieldbus profile*
31 = PROFIBUS DP V0 encoder profile Class 2

f *Cable length in dm* 1)
0050 = 5 m [16.40']
0100 = 10 m [32.81']
0150 = 15 m [49.21']

optional on request
- special cable length

1) Not applicable with connection types 1 and 2

Absolute Encoders - Singleturn

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Technical data

Explosion protection ATEX

EC type-examination certificate	IBExU 14 ATEX 1047 X
Category	Ex I M2 Ex d I/IIC T4 - T6 Mb
Directive 94/9/EC	EN 60079-0: 2012; EN 60079-1: 2007

Explosion protection IECEx

Certificate of Conformity (CoC)	IECEx IBE 14.0023 X
Category	I M2 Ex d I/IIC T4 - T6 Mb
IECEx	IEC 60079-0:2011; IEC 60079-1:2007

Mechanical characteristics

Max. speed		continuous 6 000 min^{-1}
Starting torque – at 20°C [68°F]		< 0.05 Nm
Moment of inertia		4.0 x 10^{-6} kgm^2
Load capacity of shaft	radial	80 N
	axial	40 N
Weight		approx. 1.3 kg [45.86 oz]
Protection acc. to EN 60529		IP67
Working temperature range		-40°C ... +60°C [-40 ... +140°F]
Material	shaft	stainless steel
	flange / housing	stainless steel
	cable	PUR
Shock resistance acc. to. EN 60068-2-27		2500 m/s^2, 6 ms
Vibration resistance acc. to EN 60068-2-6		100 m/s^2, 55 ... 2000 Hz

Electrical characteristics

Power supply	10 ... 30 V DC
Current consumption (no load)	max. 110 mA
Reverse polarity protection for power supply (+V)	yes
CE compliant acc. to	EMC guideline 2004/108/EC ATEX guideline 94/9/EC
RoHS compliant acc. to	guideline 2011/65/EU

Interface characteristics PROFIBUS DP

Resolution Singleturn	1 ... 65536 (16 bit), scaleable
Default value	8192 (13 bit)
Code	Binary
Interface	Specification according to PROFIBUS DP 2.0 / Standard (DIN 19245 Part 3) / RS485 galvanically isolated
Protocol	Profibus Encoder Profile V1.1 Class1 and Class 2 with manufacturer-specific add-ons
Baud rate	maximum 12 Mbit/s
Device address	software controlled setting of the device address via the SSA-service with a CLASS 2-Master. Default address: 125
Termination	active termination can only be switched on externally

Profibus Encoder-Profile V1.1

The PROFIBUS DP device profile describes the functionality of the communication and the manufacturer-specific component within the PROFIBUS Fieldbus system. 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 use of PROFIBUS compatible devices ensures that the systems of today are ready to meet the demands of the future.

The following parameters can be programmed

- Direction of rotation
- Scaling – number of steps per revolution
- Preset value
- Diagnostics mode

The following functionality is integrated

- Galvanic isolation of the Bus stage with DC/DC converter
- Line Driver acc. to RS485 max. 12 MB
- Full Class 1 and Class 2 functionality
- Speed value

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Terminal assignment

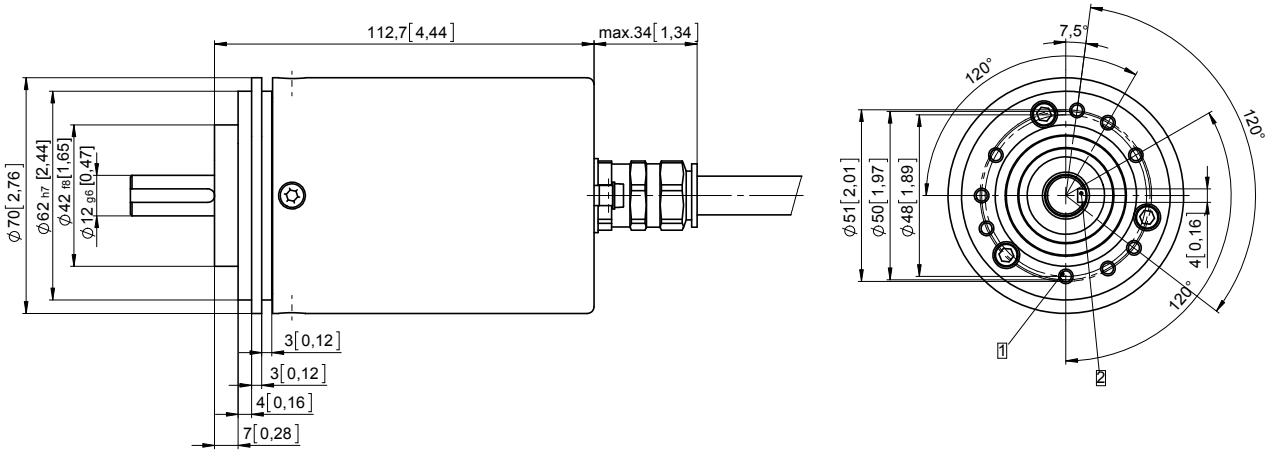
Interface	Type of connection	Cable (isolate unused wires individually before initial start-up)								
3	1, 2, A, B	Signal:	0 V	+V	PB_A IN	PB_B IN	BUS_GND	BUS_ VDC	PB_A OUT	PB_B OUT
		Cable marking:	1	2	4	5	6	7	8	9

Dimensions

Dimensions in mm [inch]

Clamping-synchronous flange, ø 70 [2.76]
Shaft type 1 with axial cable outlet

1 6 x M4, 10 [0.39] deep
2 Keyway for DIN 6885-A-4x4x25 key



Clamping-synchronous flange, ø 70 [2.76]
Shaft type 2 with radial cable outlet

1 6 x M4, 10 [0.39] deep