

Absolute Encoders – Multiturn

Standard ATEX, mechanical Multiturn, optical	Sendix 7068 (Shaft)	PROFIBUS DP
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The Sendix 7068 absolute multiturn encoders offer Ex protection in a compact 70 mm seawater resistant housing, with a Profibus interface and optical sensor technology.

These shock and vibration-resistant encoders operate flexibly with a resolution of up to 28 bits; they are also available with axial and radial cable outlets.



Ex approval	Mechanical drive	Safety-Lock™	High rotational speed	High protection level	High shaft load capacity	Shock / vibration resistant	Magnetic field 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 seawater-resistant aluminium
- Remains sealed even in harsh everyday use and ensures highest safety against field breakdowns (IP67 protection)

Explosion protection

- “Flameproof-enclosure” version
- ATEX with EC type examination certificate
- IECEx with Certificate of Conformity (CoC)

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Multiturn

Order code	Shaft version	8.7068 . 1 X 3 X . 31 11 . XXXX
	Type	a b c d e f ¹⁾
a Flange	d Type of connection	f Cable length in dm ¹⁾
1 = clamping-synchronous flange, IP67, ø 70 mm [2.76"]	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']	0050 = 5 m [16.40'] 0100 = 10 m [32.81'] 0150 = 15 m [49.21']
b Shaft (ø x L)	e Fieldbus profile	optional on request - special cable length
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	31 = PROFIBUS DP V0 encoder profile Class 2	
c Interface / Power supply		
3 = PROFIBUS DP V0 / 10 ... 30 V DC		

Mounting accessory for shaft encoders	Order No.
Coupling	8.0000.1101.1010
Bellows coupling ø 19 mm [0.75"] for shaft 10 mm [0.39"]	

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

1) Not applicable with connection types 1 and 2

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Technical data

Explosion protection ATEX	
EC type-examination certificate	PTB09 ATEX 1106 X
Category (gas)	II 2 G Ex d IIC T4 - T6 Gb
Category (dust)	II 2D Ex tb IIIC T135°C - T85°C Db IP6x
Directive 94/9/EC	EN 60079-0: 2009; EN 60079-1: 2007; EN 60079-31: 2009

Explosion protection IECEx	
Certificate of Conformity (CoC)	IECEx PTB 13.0026 X
Category (gas)	Ex d IIC T4 - T6 Gb
Category (dust)	Ex tb IIIC T135°C - T85°C Db IP6x
IECEx	IEC 60079-0:2007; IEC 60079-1:2007; IEC 60079-31:2008

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]
Materials	shaft stainless steel flange / housing seawater-resistant Al, type AlSiMgMn (EN AW-6082) (stainless steel on request) 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. 120 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 2002/95/EC

Interface characteristics PROFIBUS DP	
Resolution Singleturn	1 ... 65536 (16 bit), scaleable Default value 8192 (13 bit)
Total resolution	1 ... 268.435.456 (28 bit), skalierbar, Default: 25 bit
Number of revolutions	4096 (12 bit), skalierbar 1 ... 4096
Code	Binary
Interface	Specification according to PROFIBUS DP 2.0 / Standard (DIN 19245 Part 3) / RS485 galvanically isolated
Protocol	Profibus Encoder Profile V1.1 Class 1 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

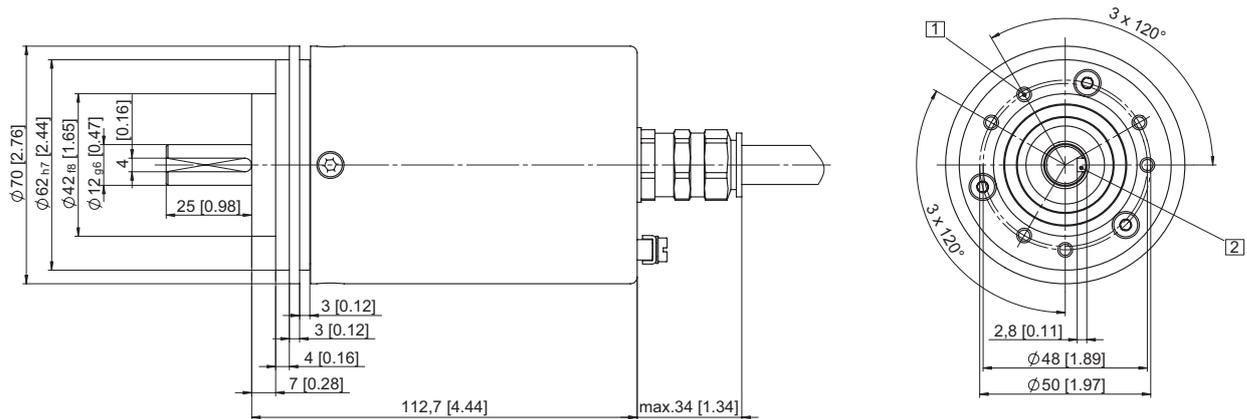
Interface	Type of connection	Cable (isolate unused wires individually before initial start-up)								
		Signal:	0 V	+V	PB_A IN	PB_B IN	BUS_GND	BUS_VDC	PB_A OUT	PB_B OUT
3	1, 2, A, B	Cable marking:	1	2	4	5	6	7	8	9

Dimensions

Dimensions in mm [inch]

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

- 1 6 x M4, 10 [0.39] deep

