

# Absolute Encoders – Multiturn

ATEX, 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

## Safe

- “Flameproof-enclosure” version: approved for zone 1, 2 and 21, 22
- Zone 1, 2 and 21, 22:
- 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

## Compact

- Can be used even when space is tight
- Minimal installation depth, diameter 70 mm
- Compact cable outlet axial or radial

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<b>Order code</b>	<b>8.7068 . 1 X 3 X . 31 11 . XXXX</b>						
<b>Shaft version</b>	Type	a	b	c	d	e	f <sup>1)</sup>
<b>a Flange</b>	1 = clamping-synchronous flange ø 70 mm, IP67						
<b>b Shaft (ø x L)</b>	1 = 12 x 25 mm, with keyway for 4 x 4 mm key 2 = 10 x 20 mm, with flat						
<b>c Interface / Power supply</b>	3 = Profibus-DP V0 / 10 ... 30 V DC						
<b>d Type of connection</b>	1 = axial cable (2 m PUR) 2 = radial cable (2 m PUR) A = axial cable (length > 2 m) B = radial cable (length > 2 m) (preferred lengths, see <b>f</b> , e.g.: 0100 = 10 m)						
<b>e Fieldbus profile</b>	31 = Profibus-DP V0 encoder profile Class 2						
							<b>f Cable length in dm <sup>1)</sup></b> 0050 = 5 m 0100 = 10 m 0150 = 15 m
							optional on request - special cable length

## Mounting accessory for shaft encoders

<b>Coupling</b>	Bellows coupling ø 19 mm for shaft 10 mm	<b>8.0000.1101.1010</b>
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Further accessories can be found in the Accessories section or in the Accessories area of our website at: [www.kuebler.com/accessories](http://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](http://www.kuebler.com/connection_technology).

1) Not applicable with connection types 1 and 2

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Explosion protection	
<b>EC type-examination certificate</b>	PTB09 ATEX 1106 X
<b>Category (gas)</b>	II 2G Ex d IIC T6
<b>Category (dust)</b>	II 2D Ex tD A21 IP6X T85°C
<b>Directive 94/9 EC</b>	EN 60079-0; DIN EN 60079-1 EN 61241-0; DIN EN 61241-1

Mechanical characteristics	
<b>Max. speed</b>	6 000 min <sup>-1</sup> continuous
<b>Starting torque</b>	< 0.05 Nm
<b>Rotor moment of inertia</b>	4.0 x 10 <sup>-6</sup> kgm <sup>2</sup>
<b>Load capacity of shaft</b>	radial 80 N axial 40 N
<b>Weight</b>	approx. 0.6 kg
<b>Protection EN 60 529</b>	IP67
<b>Working temperature range</b>	-40°C ... +60°C
<b>Materials</b>	shaft stainless steel flange / housing seawater-resistant Al, type AISiMgMn (EN AW-6082) or stainless steel cable PUR
<b>Shock resistance</b> acc. EN 60068-2-27	2500 m/s <sup>2</sup> , 6 ms
<b>Vibration resistance</b> acc. EN 60068-2-6	100 m/s <sup>2</sup> , 55 ... 2000 Hz

General electrical characteristics	
<b>Power supply</b>	10 ... 30 V DC
<b>Current consumption</b> (w/o output load)	max. 120 mA
<b>Reverse polarity protection for power supply</b> (U <sub>B</sub> )	yes
<b>CE compliant</b> acc. to	EN 61000-6-2, EN 61000-6-4 and EN 61000-6-3
<b>RoHS compliant</b> acc. to	EU guideline 2002/95/EG

Interface characteristics Profibus-DP	
<b>Resolution Singleturn</b>	1 ... 65536 (16 bit), scaleable 1 ... 65536 Default value: 8192 (13 bit)
<b>Total resolution</b>	28 bit (scaleable 1 ... 2 <sup>28</sup> steps), Default: 25 bit
<b>Number of revolutions</b>	4096 (12 bit), scaleable 1 ... 4096
<b>Code</b>	Binary
<b>Interface</b>	Specification according to Profibus-DP 2.0 / Standard (DIN 19245 Part 3) / RS485 galvanically isolated
<b>Protocol</b>	Profibus Encoder Profile V1.1 Class1 and Class 2 with manufacturer-specific add-ons
<b>Baud rate</b>	maximum 12 Mbit/s
<b>Device address</b>	software controlled setting of the device address via the SSA-service with a CLASS 2-Master. Default address: 125
<b>Termination</b>	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

## Terminal assignment

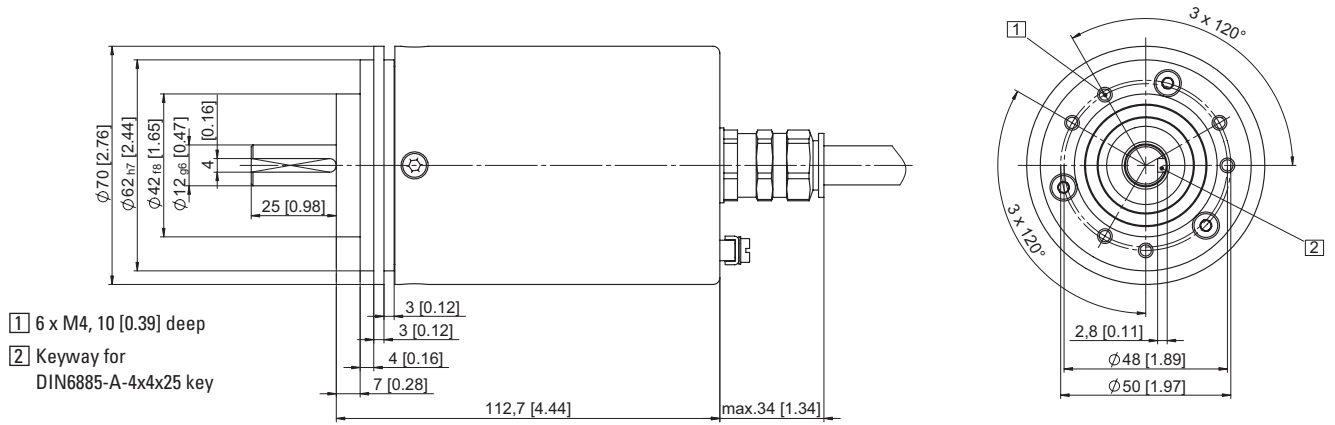
Signal	0 V	+V	BUS A IN	BUS B IN	BUS GND	BUS V DC	BUS A OUT	BUS B OUT
Cable marking	1	2	4	5	6	7	8	9

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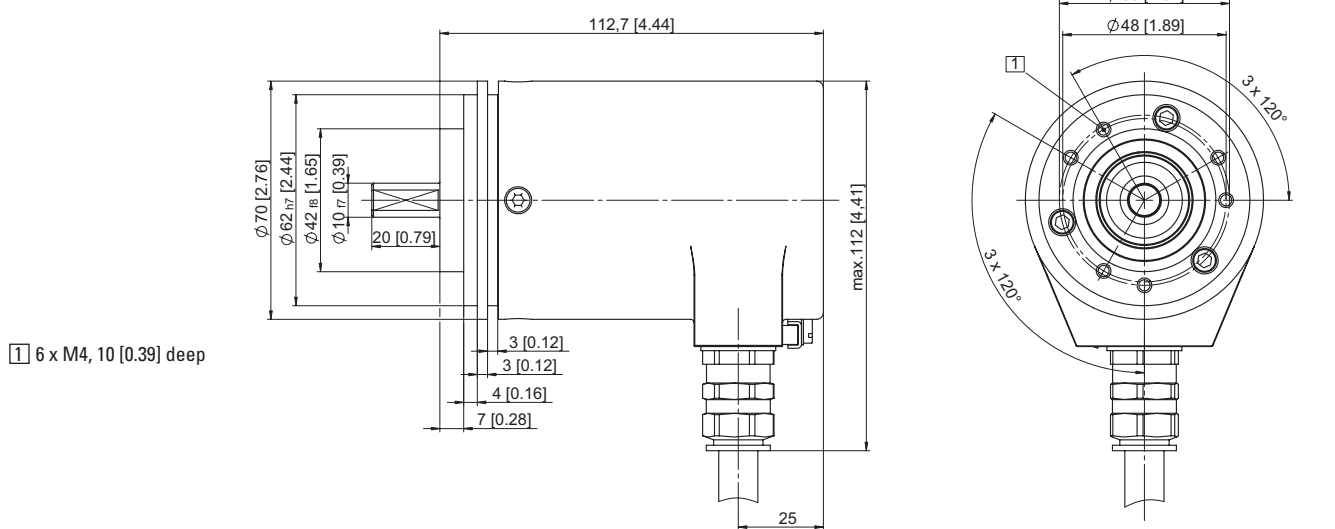
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## Dimensions

### Shaft type 1 with axial cable outlet



### Shaft type 2 with radial cable outlet


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