

Absolute Encoders – Multiturn

ATEX, optical	Sendix 7063 (Shaft)	SSI / BiSS-C
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The Sendix 7063 absolute singleturn encoders offer Ex protection in a compact 70 mm seawater resistant housing, with an SSI or BiSS-C interface and optical sensor technology.

These shock and vibration-resistant encoders operate flexibly with a resolution of up to 29 bits; they are also available with axial and radial cable outlets.



Ex approval



Mechanical drive



Safety-Lock™



High rotational speed



High IP value



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:
 Ex II 2G Ex d IIC T6 and Ex II 2D Ex tD A21 IP6X T85°C
- 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

Order code	8.7063	1	X	2	X	X	X	2	1	XXXX
Shaft version	Type	a	b	c	d	e	f	g	h	i ¹⁾

a Flange

1 = clamping-synchronous flange ø 70 mm, IP67

b Shaft (ø x L)

1 = 12 x 25 mm, with keyway for 4 x 4 mm key
 2 = 10 x 20 mm, with flat

c Interface / Power supply

2 = SSI or BiSS-C / 10... 30 V DC

d Type of connection

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 i, e.g.: 0100 = 10 m)

e Code

B = SSI, Binary
 C = BiSS, Binary
 G = SSI, Gray

f Resolution ²⁾

A = 10 bit ST
 1 = 11 bit ST
 2 = 12 bit ST
 3 = 13 bit ST
 4 = 14 bit ST
 7 = 17 bit ST

g Inputs / Outputs ²⁾

2 = SET, DIR input
 additional status output

h Options

1 = no option

i Cable length in dm ¹⁾

0050 = 5 m
 0100 = 10 m
 0150 = 15 m

optional on request
 - special cable length

Mounting accessory for shaft encoders

Coupling

Bellows coupling ø 19 mm for shaft 10 mm

8.0000.1101.1010

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

2) Resolution, preset value and counting direction factory-programmable

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

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

General electrical characteristics	
Power supply	10 ... 30 V DC
Current consumption (w/o output load)	max. 50 mA
Reverse polarity protection for power supply (U_B)	yes
CE compliant acc. to	EN 61000-6-2, EN 61000-6-4 and EN 61000-6-3
RoHS compliant acc. to	EU guideline 2002/95/EG

SSI Interface	
Output driver	RS485 Transceiver type
Permissible load/channel	max. 20 mA
Signal level	high typ 3.8 V low at I _{Load} = 20 mA typ 1.3 V
Short-circuit proof outputs	yes ¹⁾
Singleturn resolution	10 ... 14 bit and 17 bit ²⁾
Number of revolutions	4096 (12 bit)
Code	Binary or Gray
SSI clock rate	< 14 bit: 50 kHz ... 2 MHz
Monoflop time	< 15 µs ²⁾
Note: if clock starts cycling within monoflop time a second data transfer starts with the same data. If clock starts cycling after monoflop time, the data transfer starts with updated values. The update rate depends on clock speed, data length and monoflop time.	
Data refresh rate	up to 14 bit < 1 µ for 15 ... 17 bit < 4 µs
Status and Parity bit	upon request

SET Input	
Input	high active
Input type	Comparator
Signal level	high min. 60 % of +V max. +V low max. 25 % of +V (+V = Power supply)
Input current	< 0.5 mA
Min. pulse duration (SET)	10 ms
Timeout after SET signal	14 ms
Response time (DIR input)	1 ms
The encoder can be set to zero at any position by means of a High signal on the SET input. Other preset values can be factory-programmed. The SET input has a signal delay time of approximately 1 ms. Once the SET function has been triggered, the encoder requires an internal processing time of approximately 15 ms before the new position data can be read.	

DIR Input	
A High signal switches the direction of rotation from the default cw to ccw. The reverse function can also be factory-programmed. If DIR is reversed when the device is already switched on, this will be interpreted as an error. The status output switches to Low.	

Status output	
Output driver	Open Collector, internal pull-up resistor 22 kOhm
Permissible load	max. 20 mA
Signal level	high +V low < 1 V
Active at	low
The status output serves to display various alarm or error messages. The status output is high (Open Collector with internal pull-up 22k) in normal operation.	

Power-ON delay	
After Power-On, the device requires a time of approximately 150 ms before valid data can be read.	

BiSS-C Interface	
Singleturn resolution	10 ... 14 bit and 17 bit, Programmable at the customer ²⁾
Number of revolutions	4096 (12 bit)
Code	Binary
Clock rate	up to 10 MHz
Max. update rate	< 10 µs, depends on the clock rate and the data length
Data refresh rate	≤ 1 µs
Note:	– Bidirectional, programmable parameters are: resolution, code, direction, alarms and warnings – Multi-cyclic data output, e.g. for temperature – CRC data verification

1) Short-circuit with 0V or output, only one channel at a time, supply voltage correctly applied
2) Other options upon request

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Terminal assignment

for output circuit 1 or 2

Signal	GND	+V	+C	-C	+D	-D	SET	DIR	Stat	PE	PE
Cable marking	1	2	3	4	5	6	7	8	9	yellow/green	shield

+V: Encoder power supply +V DC

GND: Encoder Ground GND (0V)

+C, -C: Clock signal

+D, -D: Data signal

SET: Set input. The current position becomes defined as position zero.

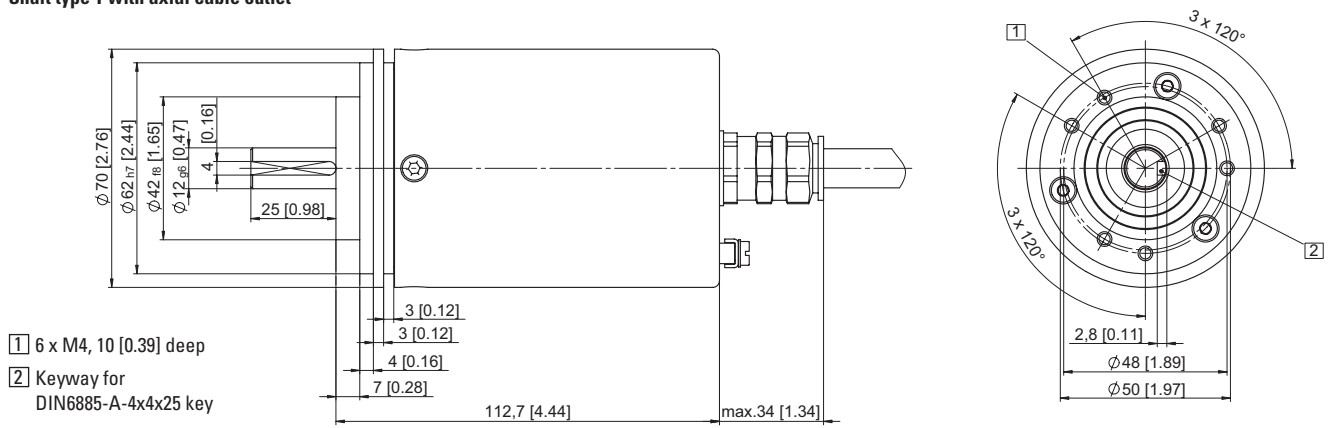
DIR: Direction input. If this input is active, output values are decreasing when shaft is turned clockwise

Stat: Status output

PE: Protective earth

Dimensions

Shaft type 1 with axial cable outlet



Shaft type 2 with radial cable outlet

