Absolute Encoders - Singleturn

ATEX, optical | **Sendix 7058 (Shaft)** | **CANopen**

The Sendix 7058 absolute singleturn encoders offer Ex protection in a compact 70 mm seawater resistant housing, with a CANopen interface and optical sensor technology.

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

RoHS

CANopen®

Ex approval | Safety-Lock™ | High rotational speed | High IP value | High shaft load capacity | Shock / vibration resistant | Magnetic field proof | Short-circuit 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 Shaft version

8.7058	.	1	X	2	X	.	21	11	.	XXXX
Type		a	b	c	d		e			f 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 = CANopen DS301 V4.02 / 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 **f**, e.g.: 0100 = 10 m)

e *Fieldbus profile*
21 = CANopen encoder profile DS406 V3.2

f *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 ø19 mm for shaft 10 mm	**8.0000.1101.1010**

Programming set

including:	- Interface converter USB-CAN - Connection cable from interface converter to encoder - Power supply 90 ... 250 V AC - DVD with Ezturn® software	**8.0010.9000.0015**

Minimum System Requirements:
Operating system: WinXP SP3 or higher, Win7 in preparation
Processor: 1 GHz
RAM : 512 MB
Required disk space: 500 MB

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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Explosion protection	
EC type-examination certificate	PTB09 ATEX 1106 X
Category (gas)	Ex II 2G Ex d IIC T6
Category (dust)	Ex 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		6 000 min^{-1} continuous
Starting torque		< 0.05 Nm
Moment of inertia		4.0 x 10^{-6} kgm^2
Load capacity of shaft	radial axial	80 N 40 N
Weight		approx. 0.6 kg
Protection EN 60 529		IP67
Working temperature range		-40°C ... +60°C
Materials	shaft flange / housing cable	stainless steel seawater-resistant Al, type AlSiMgMn (EN AW-6082) or stainless steel 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. 90 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

Interface characteristics CANopen	
Resolution	1 ... 65536 (16 bit), (scalable: 1 ... 65536)
Default value	8192 (13 bit)
Code	Binary
Interface	CAN High-Speed according to ISO 11898, Basic- and Full-CAN, CAN Specification 2.0 B
Protocol	CANopen Profile DS406 V3.2 with manufacturer-specific add-ons
Baud rate	10 ... 1000 kbit/s (Software configurable)
Node address	1 ... 127 (Software configurable)
Switchable termination	Software configurable

General information about CANopen

The CANopen encoders support the latest CANopen communication profile according to DS301 V4.02 .

In addition, device-specific profiles like the encoder profile DS406 V3.2 are available.

The following operating modes may be selected: Polled Mode, Cyclic Mode, Sync Mode and a High Resolution Sync Protocol. Moreover, scale factors, preset values, limit switch values and many other additional parameters can be programmed via the CANbus. When switching the device on, all parameters are loaded from an EEPROM, where they were saved previously to protect them against power-failure.

As output values **position**, **speed**, **acceleration** as well as the **working area status** may be combined freely as PDO (PDO mapping)

CANopen Communication Profile DS301 V4.02

Among others, the following functionality is integrated:

Class C2 functionality
- NMT Slave
- Heartbeat Protocol
- High Resolution Sync Protocol
- Identity Object
- Error Behaviour Object
- Variable PDO Mapping self-start programmable (Power on to operational), 3 Sending PDO's
- Node address, baud rate and CANbus Programmable termination

CANopen Encoder Profile DS406 V3.2

The following parameters can be programmed:

- Event mode
- Units for speed selectable (Steps/Sec or RPM)
- Factor for speed calculation (e.g. measuring wheel circumference) Integration time for speed value of 1...32
- 2 work areas with 2 upper and lower limits and the corresponding output states
- Variable PDO mapping of position, speed, acceleration, working area status
- Extended failure management for position sensing with integrated temperature control
- User interface with visual display of bus and failure status - 3 LED's
- Optional - 32 CAMs programmable
- Customer-specific memory - 16 Bytes

Terminal assignment

Signal	0 V	+V	CAN High	CAN Low	CAN GND	CAN High	CAN Low	CAN GND
Cable marking	1	2	4	5	6	7	8	9

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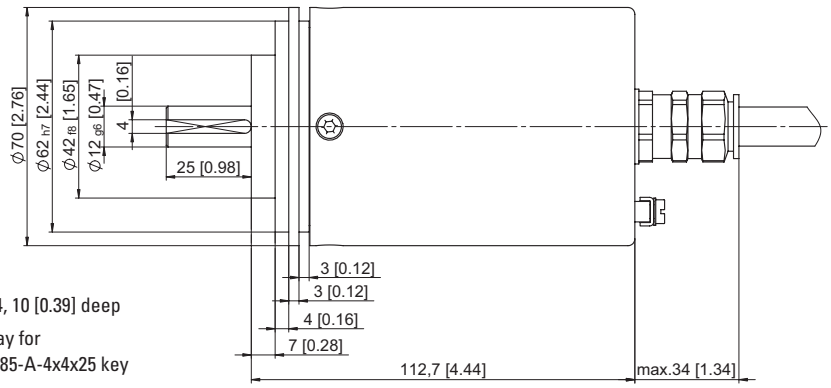
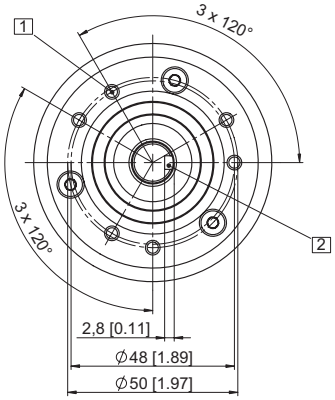
Dimensions

Shaft type 1 with axial cable outlet

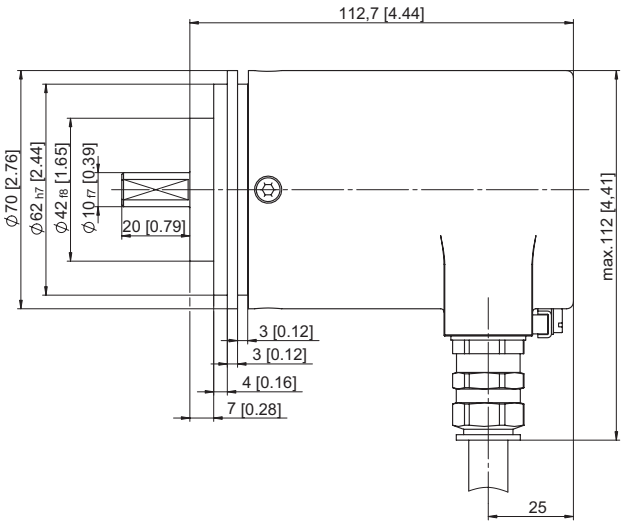


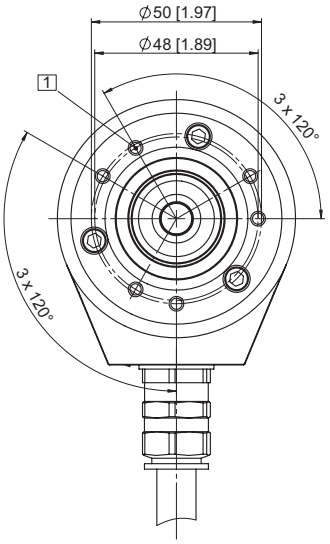


1 6 x M4, 10 [0.39] deep

2 Keyway for DIN6885-A-4x4x25 key

Shaft type 2 with radial cable outlet





1 6 x M4, 10 [0.39] deep