EX Absolute Rotary Encoder, Single Turn

Shaft or hollow shaft

- Max. speed: 6000 rpm
- Shaft/hollow shaft: Ø 12 mm
- Max. graduation: 14 bit
- Code: gray
- Interface: parallel
- Cable connection
- Supply: 10-30 V_{DC}
- EEx d IIC T6
- Max. temperature: +60 °C
- Protection type: IP 64

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Model:
ZDA-E

01/0407/Ko/10

Description

The KOBOLD single turn rotary encoder outputs up to 16384 (14 bit) unique positions per turn, depending on the number of divisions. This represents an angular resolution of 0.022° (=1.3'). After a full revolution, encoding starts again at the start position. The devices are suited for angle measurement through a maximum of one shaft rotation (=360°), for example, in robotics, camshaft systems and other controlled rotary motions.

The light emitted from an LED is modulated by a code pattern mounted on a rotating disc, and sensed by a special Opto ASIC. A unique bit pattern, typically available as gray code, is assigned to every position.

The advantage over incremental rotary encoders is that shaft motion while the encoder is turned off is detected when the encoder is turned on again; the correct position is always available.

Advantage: Reference runs, normally needed by incremental systems after switching on, are not required; therefore reliability is increased and no time is wasted.

Areas of application:

- Petrochemical industry
- Chemical industry
- Electricity supply

Technical Details:

Max. speed:	6000 rpm
Moment of inertia rotor:	approx. 8 x 10^{-6} kgm²
Initial torque:	< 0.05 Nm
Radial shaft loadability:	20 N
Axial shaft loadability:	10 N
Shaft/hollow shaft:	Ø 12 mm stainless steel
Mechanical connection:	synchro flange with hollow shaft clamping flange with shaft
Impact resistance:	1000 m/s², 6 ms
Vibration resistance:	100 m/s², 10…2000 Hz
Operating temperature range:	-20 to +60 °C
Working temperature range:	-20 to +60 °C
Interface:	parallel short-circuit-proof
Output driver:	push-pull
Electrical connection:	2 m PVC cable, radial
Ex approval:	EEx d IIC T6 (pressure resistant encapsulation)
Word switching rate:	40 000 s^{-1}
Supply:	10 - 30 V_{DC}
Current consumption:	max. 169 mA
Permissible load/channel:	max. ±10 mA
Signal level high:	min. U_B -2.8
Signal level low:	max. 1.8 V (I_{Load}=10 mA)
Rise time / fall time:	max. 1 µs
Divisions and code:	360 gray excess code 1024 (10 bit), 4098 (12 bit), 8192 (13 bit) and 16384 (14 bit) gray code
Protection type:	IP 64
Weight:	approximately 0.9 kg

Order details (Example: **ZDA-E H25 P 5 E03**)

Model	Description	Type	Interface	Electrical connection	Division / code
ZDA-E...	EX incremental rotary encoder	**H25**= Syncro flange/ hollow shaft Ø 12 mm **W15**= Clamping flange shaft Ø 12 mm	**P**= Parallel	**5**= 2 m PVC cable, radial	**E03**= 360 gray excess **G10**=1024 / gray **G12**=4096 / gray **G13**=8192 / gray **G14**= 16 384 / gray

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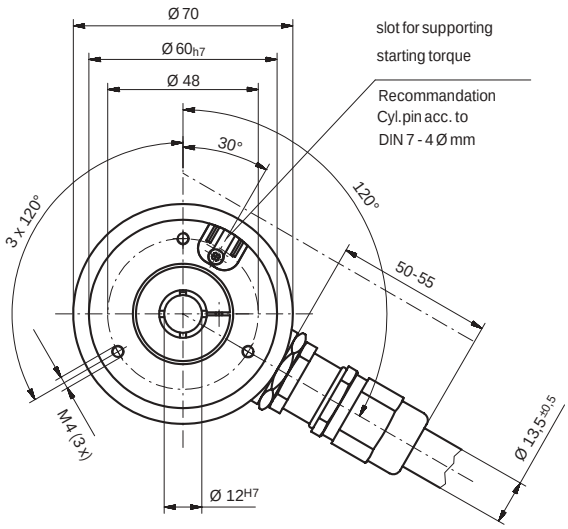
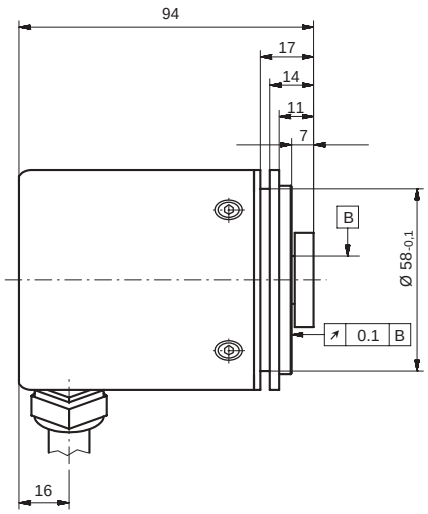
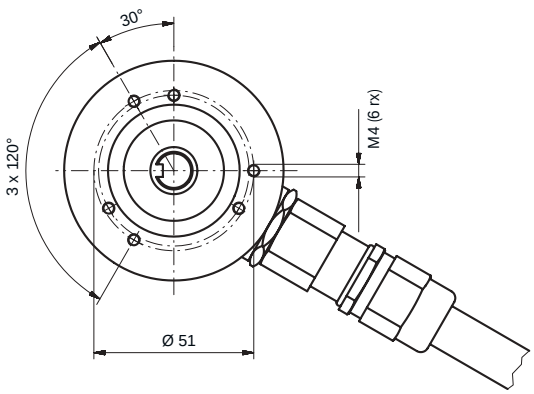
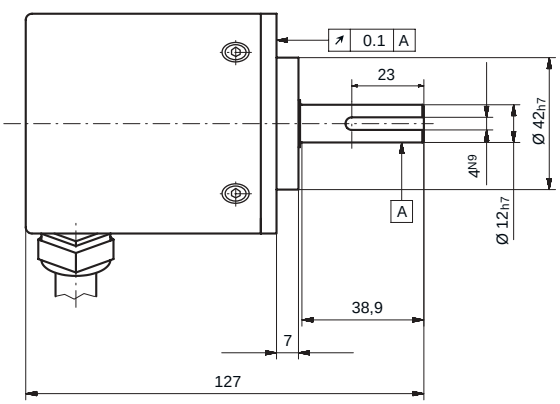
Dimensions:









Please refer to our brochure A3...

...for turbidity measurement

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