Absolute Rotary Encoder, Single Turn

Hollow shaft model

- Max. speed: 6000 rpm
- Shaft: Ø 10/12 mm
- Max. resolution: 14 bit
- Code: gray/gray excess
- Interface: parallel
- Connector
- Supply: 10-30 V_{DC}
- Max. temperature: +85 °C
- Protection type: IP 66

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Model:
ZDA-SH

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 motion while the encoder is turned off is detected when the encoder is turned on again; the correct position is then 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:

- Mounting technology
- Feeders and handling machines for electrical components
- Test equipment
- Medical engineering, for example stirring machines
- Inserting plant/letter opening machines
- Inspection platforms
- Labelling machines
- Pipe inspection machines (camera control)

Technical Details:

Max. speed:	6000 rpm
Moment of inertia of rotor:	approximately 6 x 10^{-6} kgm^2
Initial torque:	< 0.05 Nm
Hollow shaft:	Ø10 mm or Ø12 mm stainless steel
Mechanical connection:	flange with through shaft
Impact resistance:	2500 m/s^2, 6 ms
Vibration resistance:	100 m/s^2, 10 - 2000 Hz
Operating temperature range:	- 20 to + 80 °C
Working temperature range:	- 20 to + 85 °C
Interface:	parallel short-circuit-proof
Output driver:	push-pull
Electrical connection:	17-pin plug connector, radial
Word switching rate:	40 000 s^{-1}
Supply:	10 - 30 V_{DC}
Current consumption:	max. 159 mA
Permissible load / channel:	max. ±10 mA
Signal level high:	min. U_B -2.8
Signal level low:	max. 1.8 V
Rise / fall time:	max. 1 µs
Divisions and code:	360 and 1440 (0.25°) gray excess 1024 (10 bit), 4098 (12 bit) and 16384 (14 bit) gray
Protection type:	IP 66
Weight:	approximately 0.4 kg

Order details (Example: **ZDA-SH 14 P 7 G10**)

Model	Description	Hollow shaft	Interface	Electrical connection	Division / code
ZDA-SH...	Absolute rotary encoder, single turn in hollow shaft model	**14** = Ø 10 mm **15** = Ø 12 mm	**P** = Parallel	**7** = 17-pole plug connector, radial	**E03** = 360 gray excess **E14** = 1440 (0,25°) gray excess **G10** = 1024 (10 bit) gray **G12** = 4096 (12 bit) gray **G14** = 16 384 (14 bit) gray
ZDZ-G7	17-pole mating connector				

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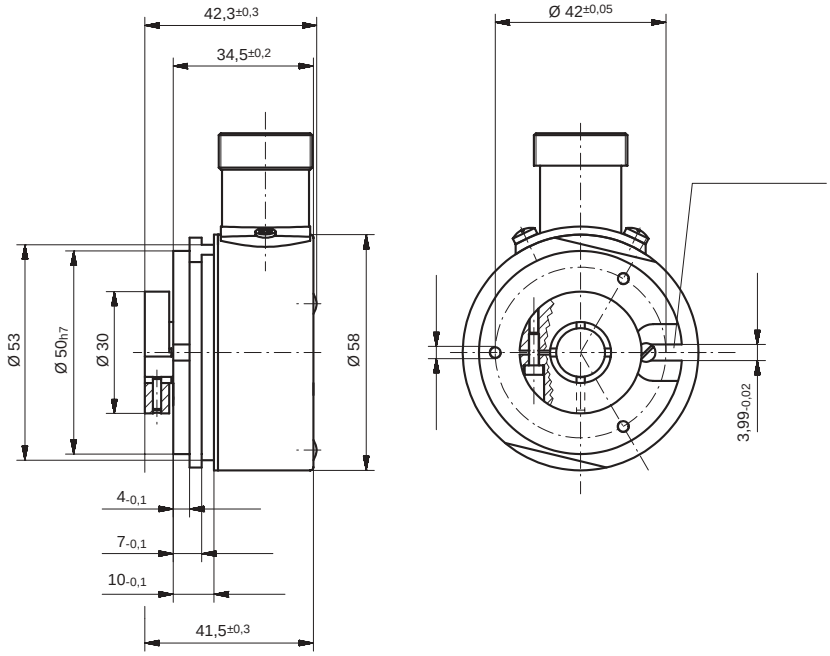
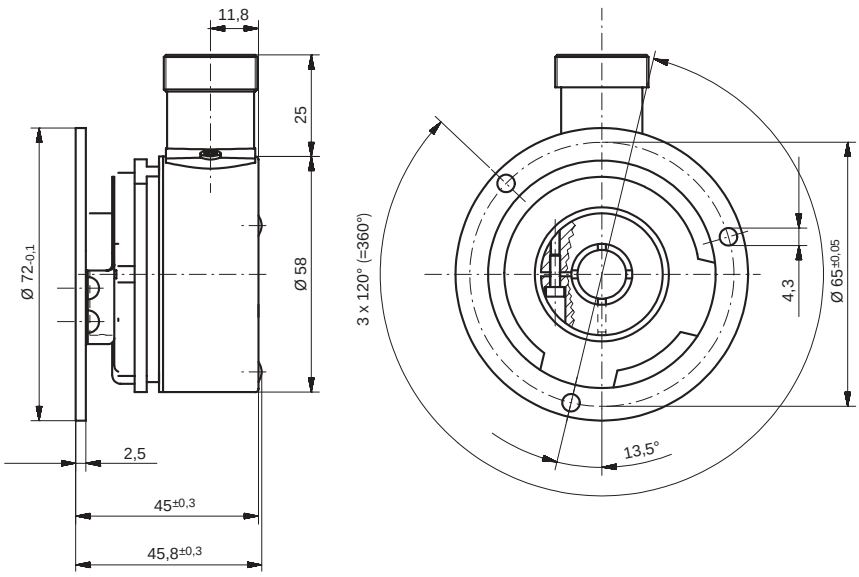
Dimensions:





Please refer to our brochure A1...

...for analytical measurement, pH, redox, conductivity

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