

Absolute Rotary Encoder, Single Turn

Shaft model



- Max. speed: 12 000 rpm
- Shaft: Ø 6/10 mm
- Max. resolution: 13 bit
- Code: Gray/Gray excess
- Interface: parallel
- Connector
- Supply: 10-30 V_{DC}
- Max. temperature: +85 °C
- Protection type: IP 65



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KOBOLD Messring GmbH
Nordring 22-24
D-65719 Hofheim/Ts.
☎ (06192) 299-0
Fax (06192) 23398
E-mail: info.de@kobold.com
Internet: www.kobold.com

Model:
ZDA-SW



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 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:

- Mounting technology
- Feeders and handling machines for electrical components
- Test equipment
- Medical engineering (e.g. stirring machines)
- Robot technology
- Vehicle technology

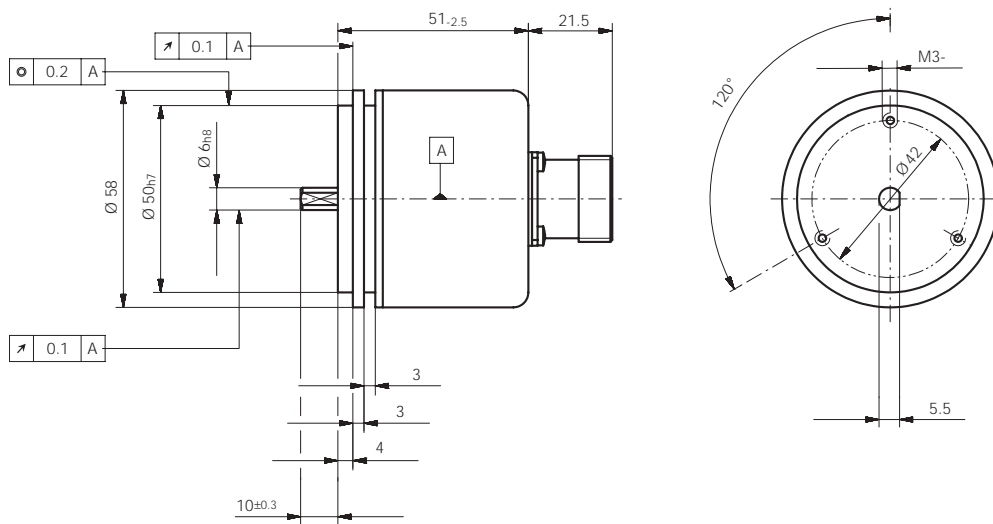
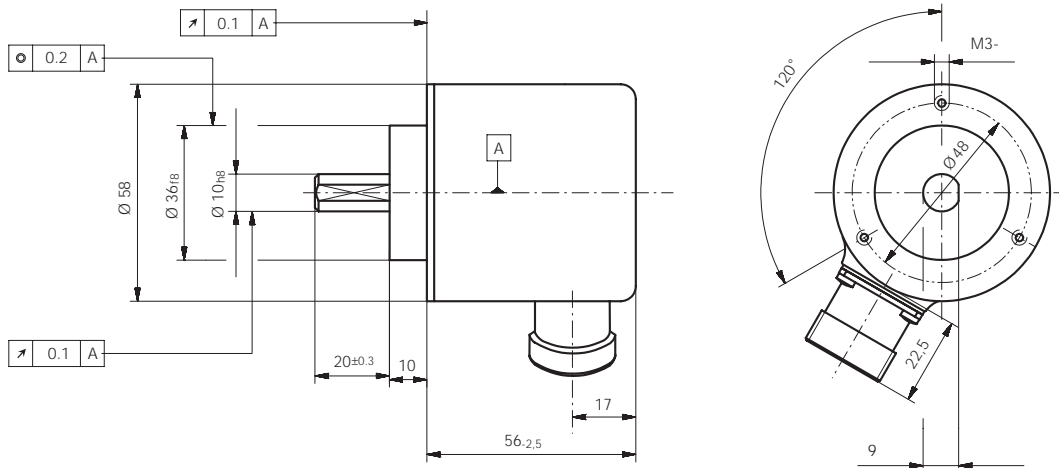
Technical Details:

Max. speed:	12 000 rpm
Moment of inertia of rotor:	approximately 1.8 x 10 ⁻⁶ kgm ²
Initial torque:	< 0.01 Nm
Radial shaft loadability:	80 N
Axial shaft loadability:	40 N
Shaft:	Ø 10 x 20 mm (clamping flange) or Ø 6 x 10 mm (synchro flange) stainless steel
Flange connection:	clamping flange Ø 36 mm or synchro flange Ø 58 mm
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-pole plug connector axial or radial
Word switching rate:	40 000 s ⁻¹
Supply:	10 - 30 V _{DC}
Permissible load/channel:	max. ±10 mA
Signal level high:	min. U _B - 2.8
Signal level low:	max. 1.8 V
Rise time/fall time:	max. 1 µs
Divisions and code:	360 and 1440 (0.25°) gray excess 1024 (10 bit), 4098 (12 bit) and 8192 (13 bit) gray
Protection type:	IP 65
Weight:	approximately 0.4 kg

Order details (Example: **ZDA-SW 14 P 7 E03**)

Model	Description	Hollow shaft	Interface	Electrical connection	Division/code
ZDA-SW...	Absolute rotary encoder, single turn in shaft model	14 = Clamping flange Ø 10 mm 22 = Synchro flange Ø 6 mm	P = Parallel	7 = 17-pole plug connector, radial 8 = 17-pole plug connector, axial	E03 = 360 gray excess E14 = 1440 (0,25°) gray excess G10 = 1024 (10 bit) gray G12 = 4096 (12 bit) gray G13 = 8192 (13 bit) gray
ZDZ-G7	17-pole mating connector				

Dimensions:



Please refer to our brochure **Z1...**



...for valves and fittings