Absolute Rotary Encoder, Multi-turn

Shaft or hollow shaft

- Max. speed: 6000 rpm
- Shaft: to Ø 28 mm
- 8192 positions per turn and 4096 turns
- Code: gray
- Interface: SSI, programmable
- Connector
- Supply: 5 - 30 V_{DC}
- Max. temperature: +70 °C
- Protection type: IP 65

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Model:
ZDA-M

Description

The KOBOLD multi-turn rotary encoder outputs up to 8192 (13 bit) unique angular positions per turn. The number of turns is recorded. 4096 (12 bit) unique turns can be made available at the output at present. This represents up to 33.5 million (13x12 bit) unique positions. They are suitable for angle measurement over more than one shaft rotation, for example longer traverse paths, such as high-bay warehouses, in crane construction and machine tools.

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.

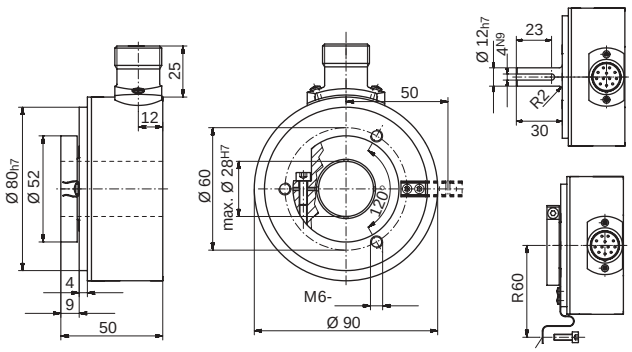
The advantage over incremental rotary encoders is that motion while the encoder is turned off is detected when the encoder is turned on again; the correct position is always available.

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:

- Crane construction
- High-bay warehouses
- Machine tools

Dimensions:



Technical Details:

Max. speed:	6000 rpm
Moment of inertia of rotor:	approx. 65 x 10^{-6} kgm²
Initial torque:	< 0.05 (shaft model) < 0.2 Nm (hollow shaft model)
Shaft / hollow shaft:	stainless steel
Impact resistance:	1000 m/s², 6 ms
Vibration resistance:	100 m/s², 10 ... 2000 Hz
Operating temperature range:	-20 to +70 °C
Working temperature range:	-20 to +70 °C
Interface:	RS485, synchronous serial (SSI) short-circuit-proof
Electrical connection:	12-pole plug connector, radial
SSI clock:	min. 100 kHz / max. 500 kHz
Supply:	10 - 30 V_{DC}
Current consumption:	max. 138 mA
Permissible load / channel:	max. ±20 mA
Signal level high:	typ. 3.8 V
Signal level low:	typ. 1.3 V
Rise / fall time:	max. 100 ns
Code:	gray code
Resolution:	25 bit (8192 positions per turn and 4096 turns)
Protection type:	IP 65
Weight:	approximately 0.7 kg

Order details (Example: **ZDA-M H15 G32**)

Model	Description	Version	Interface	Electrical connection	Code / resolution
ZDA-M...	Absolute rotary encoder, multi-turn	**H15**= flange/hollow shaft Ø 12 mm **H16**= flange/hollow shaft Ø 15 mm **H17**= flange/hollow shaft Ø 20 mm **H1A**= flange/hollow shaft Ø 28 mm **W15**= flange/shaft Ø 12 mm	**S**= Interface RS485 (SSI)	**3**= 12-pole plug connector, radial	**G32**= gray code 25 bit (8192 positions per turn; 4096 turns)
ZDZ-G2	12-pole mating connector				

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