

KCD-B20XB-2417-XXXX-XXX  
KCD-B40XB-2417-XXXX-XXX



#### IXARC Kit Encoder With BiSS Line Interface

- Kit Encoder for Integration to Motors, Robots and Machinery<sup>1</sup>
- Electrical Resolution: Up to 17 bit
- Multiturn Range: Up to 24 bit
- 36 mm Diameter
- Energy-Harvesting-System Based On Wiegand Effect
- No Battery – No Maintenance
- Easy Installation with Self-Calibration

### 1. Interface

Interface	BiSS Line 2-wire / 4-wire
Programming Functions	Electronic Calibration, Wiegand Sensor Test, Preset, FEC (Forward Error Correction)
Min Interface Cycle Time	62.5 $\mu$ s

### 2. Electrical Data

Supply Voltage	BiSS Line 2-wire: 7.0-12.5 VDC BiSS Line 4-wire: 4.75-12.5 VDC
Power Consumption	$\leq$ 0.3 Watt
Start-up time	Max 100 ms
Output Driver	RS-485
Bit Rate	12.5 MHz
Reverse Polarity Protection	Yes
Short Circuit Protection	Yes
MTTF	23 years (estimated for max. operational temperature)
Max. Permissible Electrical Speed	12.000 RPM
EMC	Kit encoder is a sub-assembly and not considered to be an independent system, therefore compliance with CE requirements has to be ensured by the integrator for the overall set-up.

<sup>1</sup> The use of these kit encoders for the production of industrial rotary encoders is prohibited. Applications in rotary encoders are protected by several worldwide patents (such as WO 2004/046735 A1) and require licensing.

KCD-B20XB-2417-XXXX-XXX

KCD-B40XB-2417-XXXX-XXX

### 3. Sensor

Singleturn Technology	Magnetic
Electrical Resolution Singleturn	17 bit
Multiturn Technology	Self-powered magnetic pulse counter (no battery, no gear)
Multiturn Range	24 bit
Accuracy (INL)	$\pm 0.0878^\circ$ ( $\leq 12$ bit) measured after calibration at room temperature
Counting Direction (Default)	Clockwise shaft movement (front view on shaft)

### 4. Environmental Specifications

Operating Temperature	-40 °C (-40 °F) – +105 °C (221 °F)
Shock Resistance	$\leq 100$ g (half sine 6 ms, EN 60068-2-27)
Vibration Resistance	$\leq 10$ g (10 Hz – 1000 Hz, EN 60068-2-6)

### 5. Mechanical Data

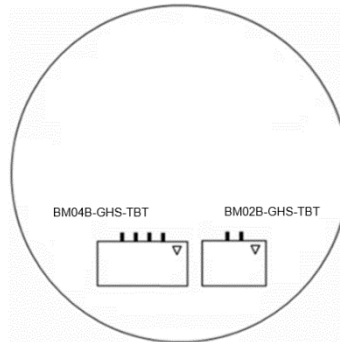
Top Shield Material	Steel
Top Shield Coating	Cathodic corrosion protection
Stator Type	POSITAL standard
Rotor Type	POSITAL standard

### 6. Electrical Connection

Connection Orientation	Axial
Connectors	JST BM04B-GHS-TBT JST BM02B-GHS-TBT

KCD-B20XB-2417-XXXX-XXX  
 KCD-B40XB-2417-XXXX-XXX

## 7. Connection Plan



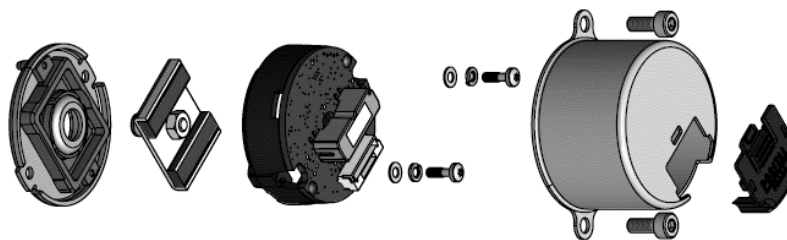
### Connector Interface

Pin	Signal BiSS Line 2-wire	Signal BiSS Line 4-wire
1	Reserved (do not connect)	GND
2	Data- / GND	Data-
3	Data+ / VCC	Data+
4	Reserved (do not connect)	VCC

### Connector Resistance Thermometer

Pin	Signal
1	Rext Terminal 1
2	Rext Terminal 2

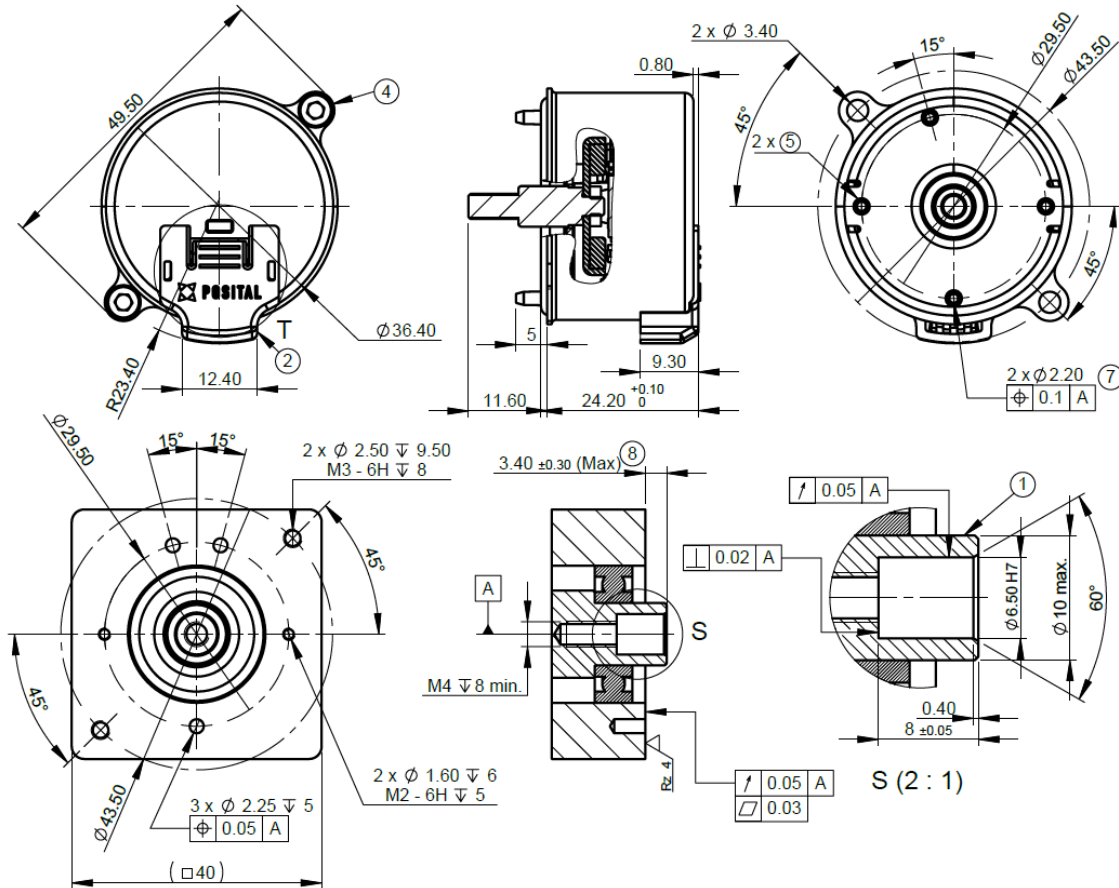
## 8. Dimensional Drawing



This kit version contains 4 main parts to be assembled from left to right side: shielding, magnet, carrier with PCB and Top Shield. The carrier already has pre-mounted screws.

KCD-B20XB-2417-XXXX-XXX

KCD-B40XB-2417-XXXX-XXX



**A** = Center of Rotation

① = Different Shaft Sizes can be adapted

② = Plastic cover, "Detail view T" without cover.

④ = Screw ISO 4762 – M3 x 8 – 8.8, tightening torque 1 ± 10% Nm

⑤ = Screw ISO 14583 – M2 x 7 – A4, tightening torque 0.3 ± 10% Nm

⑦ = Centering Pins

⑧ = Including static and dynamic tolerances, in order to keep the specified accuracy, the dynamic part of the tolerance need to stay below +/- 0.1 mm (movement of shaft after calibration)

- All dimension in [inch] mm. This drawing and the information contained is for general presentation purposes only. Please refer to the "Download" section for detailed technical drawings

## 9. Interface

### Preset Function

The preset function can be used to adapt the encoder position to the mechanical alignment of the system. By performing a preset, the actual position value of the encoder is set to the desired preset value. The preset can be triggered via software. See manual for more detailed information.



KCD-B20XB-2417-XXXX-XXX  
KCD-B40XB-2417-XXXX-XXX

### Resistance Thermometer

A resistance thermometer can be connected to the kit encoder, e.g. to monitor motor temperature.

## 10. Version Space

KCD-B203B-2417-U01C-JAN  
KCD-B403B-2417-U01C-JAN

BiSS Line 2-wire: Carrier screws pre-assembled, PCB connector exit  
BiSS Line 4-wire: Carrier screws pre-assembled, PCB connector exit

### Contact

FRABA America  
T +1 609 750-8705  
[info@posital.com](mailto:info@posital.com)

FRABA EMEA  
T +49 221 96213-0  
[info@posital.eu](mailto:info@posital.eu)

FRABA Asia  
T +65 6514 8880  
[info@posital.sg](mailto:info@posital.sg)

© FRABA B.V., All rights reserved. We do not assume responsibility for technical inaccuracies or omissions. Specifications are subject to change without notice.