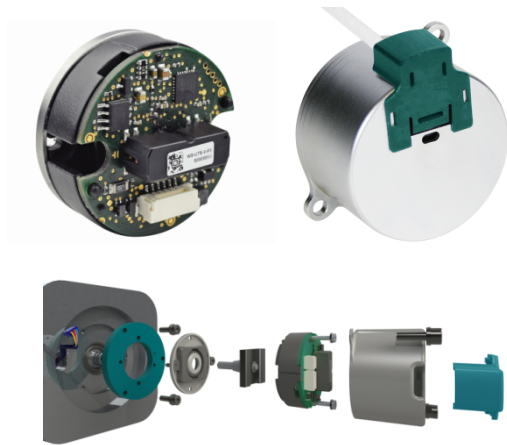


# POSITAL

## FRABA

KCD-S101B-1617-U01X-JAQ



### IXARC Kit Encoder With SSI Interface

- Kit Encoder for Integration to Motors, Robots and Machinery<sup>1</sup>
- Electrical Resolution: Up To 17 bit
- Multiturn Range: Up To 32 Bit
- 36 mm Diameter
- Energy-Harvesting-System Based On Wiegand Effect
- No Battery – No Maintenance
- Easy Installation with Self-Calibration

## 1. Interface

Interface	SSI
Programming Functions	Electronic Calibration, Counter Test
Min Interface Cycle Time	50 µs

## 2. Electrical Data

Supply Voltage	4.75-15 V DC
Power Consumption	≤ 0.3 Watt
Start-up time	Max 1 s
Clock Input	RS 422
Clock Frequency	200 kHz - 1 MHz
Reverse Polarity Protection	Yes
Short Circuit Protection	Yes
MTTF	20 years
Max. Permissible Electrical Speed	12.000 RPM

<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.

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KCD-S101B-1617-U01X-JAQ

### 3. Sensor

Singleturn Technology	Magnetic
Electrical Resolution Singleturn	17 bit
Multiturn Technology	Self powered magnetic pulse counter (no battery, no gear)
Multiturn Range	16 bit
Accuracy (INL)	$\pm 0.0878^\circ$ ( $\leq 12$ bit)
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	$\leq 200$ g (half sine 6 ms, EN 60068-2-27)
Permanent Shock Resistance	$\leq 20$ g (half sine 16 ms, EN 60068-2-29)
Vibration Resistance	$\leq 30$ g (10 Hz – 1000 Hz, EN 60068-2-6)

### 5. Mechanical Data

Housing Material	Steel
Housing Coating	Cathodic corrosion protection
Stator Type	POSITAL standard
Rotor Type	POSITAL standard
Max. Permissible Mechanical Speed	12,000 RPM

### 6. Electrical Connection

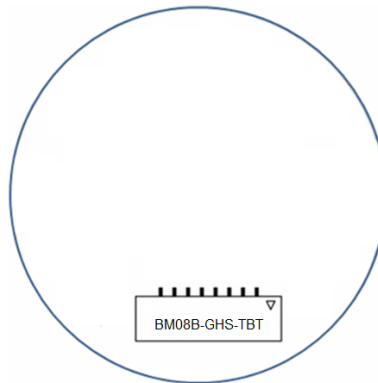
Connection Orientation	Axial
Connector	JST BM08B-GHS-TBT

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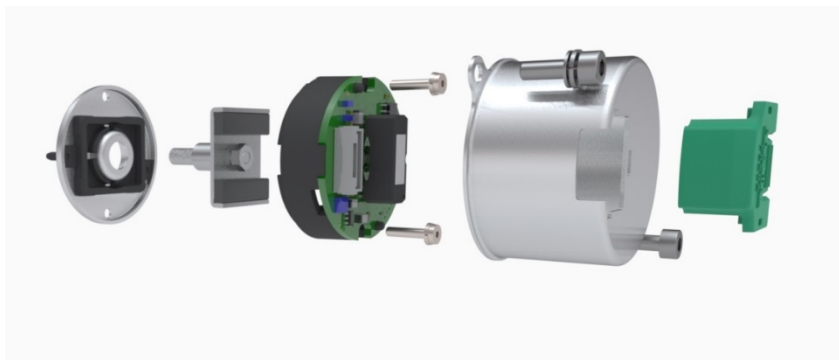
KCD-S101B-1617-U01X-JAQ

### 7. Connection Plan



Pin	Signal
1	GND
2	Preset (default 0 position value)
3	Config (Kit Control box, serial communication)
4	Data +
5	Data -
6	CLOCK -
7	CLOCK +
8	VCC

### 8. Dimensional Drawing for Type KCD-S101B-1617-U01C-xxx



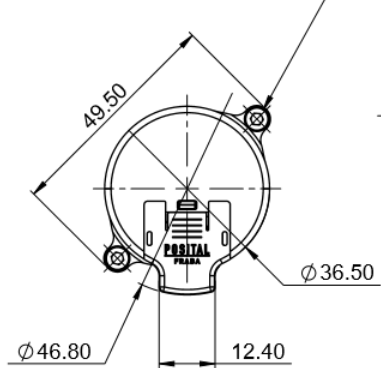
This kit version contains 4 main parts to be assembled from left to right side: shielding, magnet, carrier with PCB and housing.

# POSITAL

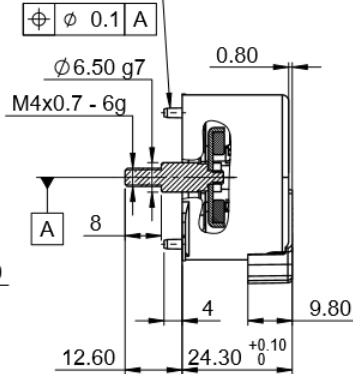
## FRABA

KCD-S101B-1617-U01X-JAQ

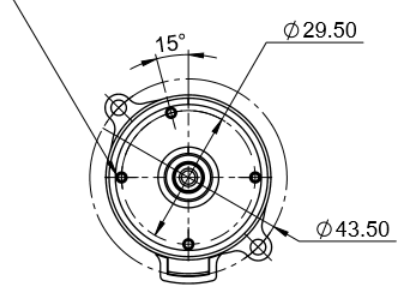
2 x Screw DIN 912 – M3 x 10 – 8.8  
Tightening torque  $1 \pm 0.1$  Nm



Centering pins  
2 x  $\varnothing 2.20$



2 x Screw ISO 14580 – M2 x 8 – A4  
Tightening torque  $0.3 \pm 0.1$  Nm



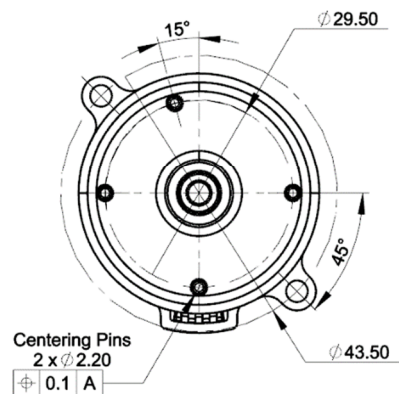
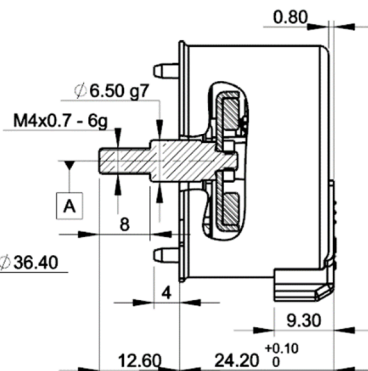
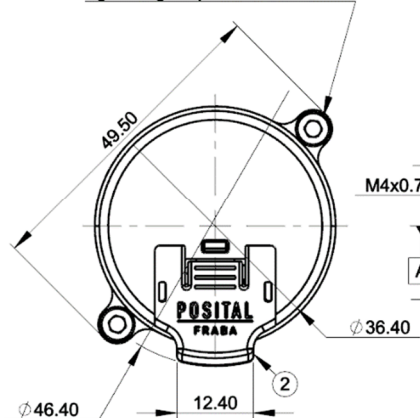
All dimension in [inch] mm. This drawing and the information contained is for general presentation purposes only. Please refer to the "Download" section for detailed technical drawings.

### 9. Dimensional Drawing for Type KCD-S101B-1617-U01K-xxx



This kit version is quite easy to mount and contains 3 main parts to be assembled, from left to right side: shielding, magnet and housing with pre-assembled carrier inside.

2 x Screw DIN 912 - M3 x 10 - 8.8  
Tightening torque  $1 \pm 0.1$  Nm



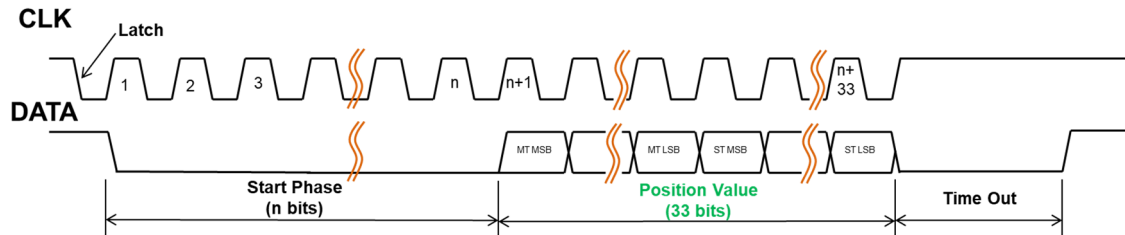
All dimension in [inch] mm. This drawing and the information contained is for general presentation purposes only. Please refer to the "Download" section for detailed technical drawings.

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## FRABA

KCD-S101B-1617-U01X-JAQ

### 10. Interface



Interface	SSI
Software Programming Functions via Config Pin	Electronic Calibration, WIEGAND pulse test, Preset
Min Interface Cycle Time	50 $\mu$ s
SSI Time out	6 $\mu$ s
Ring Shift Mode	Not available
SSI Data Format	Start Phase (8 start bit as "0") + Multi-Turn (16 bit) + Single-Turn (17 bit) For more details see manual.

#### 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 (both, singleturn and multiturn) is set to the desired preset value. The preset can be triggered via hardware or software. See manual for more detailed information.

#### Config Pin

The config pin is used for serial data communication. Via this interface an optional re-calibration and WIEGAND pulse testing of the kit encoder can be conducted after motor installation. A preset value can be applied as a software command. The protocol for communication is described in the manual. As alternative a graphical user interface with a Kit Control Box can be used for easy configuration and hardware setup, see website for more details.

<https://www.posital.com/en/products/kit-encoders/kit-control-box.php>

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KCD-S101B-1617-U01X-JAQ

### 11. Version Space

KCD-S101B-1617-U01K-JAQ\*

3-part assembly, PCB connector exit

KCD-S101B-1617-U01K-2RW\*

3-part assembly, PCB connector and accessory 2 m PVC cable

KCD-S101B-1617-U01C-JAQ

4-part assembly, PCB connector exit

KCD-S101B-1617-U01C-2RW

4-part assembly, PCB connector and accessory 2 m PVC cable

**\*Types recommended for new design.**

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