

## INSTALLATION LEAFLET

### 22 MM KIT ENCODERS WITH BISS C / SSI INTERFACE

#### General Information

This leaflet is provided for BiSS C / SSI Encoder Kits with type key KCD-BCxxB-xx17-xxxF-xxx / KCD-S1xxB-xx17-xxxF-xxx, with x as placeholder. 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.

#### Safety

- The encoder must be installed by qualified personnel only, exhibiting knowledge in electronics and mechanics.
- Consider all safety and accident regulations valid for your country.
- Switch off the supply voltage of all devices connected to the encoder before installation.
- Avoid an electrical supply voltage while connecting the encoder.
- Avoid exerting shocks on motor shaft and mounting flange to prevent the encoder from being mechanically damaged.
- Rotary machine shafts may catch hair and cloths and cause injury.
- Mount the encoder in an ESD-conform fashion, avoid high voltages, e.g. static electricity discharged from a human body.
- Consider the specifications of the encoder. The device must be operated in the specified range.

#### Mounting

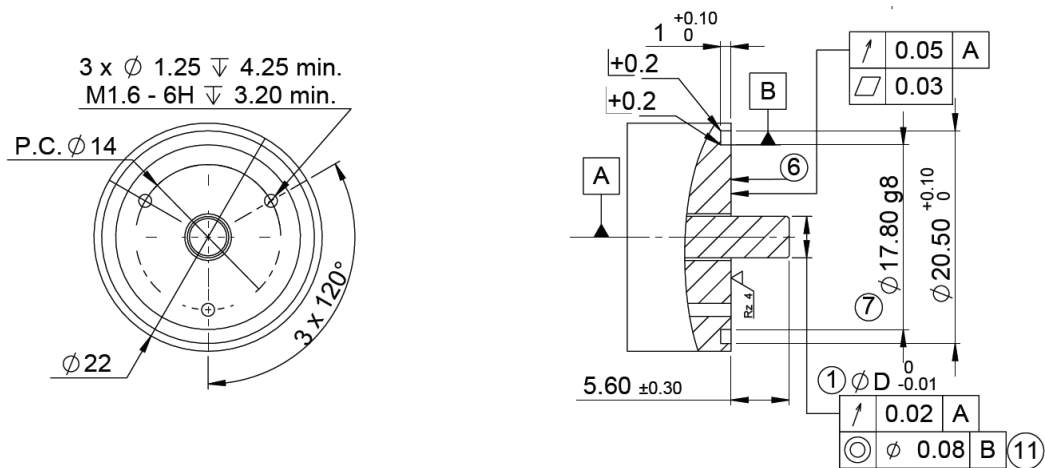
- Ensure that all device components are free of metal chips and metallic dust.
- For the version KCD-xxxxB-xx17-JxxF-xxx, position the bottom shield (4) on top of the motor flange (5). Note, that all mechanical tolerances must be complied with.
- Fix the base carrier (3) with the three base screws (6) by applying torque of 0.12 Nm. Be aware, that the length of the screws for the version with and without the shield, differs. Application of unsuitable screws may result in a loose installation. It is also recommended to use a thread-locking adhesive Loctite 221 or Loctite 222 to fix the screw in the motor flange.
- Mount the magnet assembly (2) on the motor shaft. For the installation of the version with the press shaft KCD-xxxxB-xx17-xPxF-xxx, applied force needs to be adjusted to the motor shaft specifications. For the version with the set screws KCD-xxxxB-xx17-xExF-xxx, fix the magnet assembly in place by applying torque of 0.12 Nm to the two set screws (9) in the shaft. When the magnet assembly is mounted correctly, it's top surface should align with the top edge of the base carrier. At all times, prevent the magnet from undergoing any mechanical shock and/or contact with sharp objects.
- Mount the sensor module (1) over the base carrier with the help of alignment pins. Ensure that there is no gap between the base carrier and the sensor module.
  - ⚠ Attention: Do not remove the insert out of the sensor module
- Fix the sensor module with the two self tap screws (7) by applying torque of 0.2 Nm.
  - ⚠ Be aware that removing the sensor module and mounting it on the same base carrier which already has a thread made during the first installation, may lead to damage of the base carrier. Perform the installation of the sensor module only once on the same base carrier, if possible.
- Mount the counter-connector from the cable (8) to the connector of the encoder kit.

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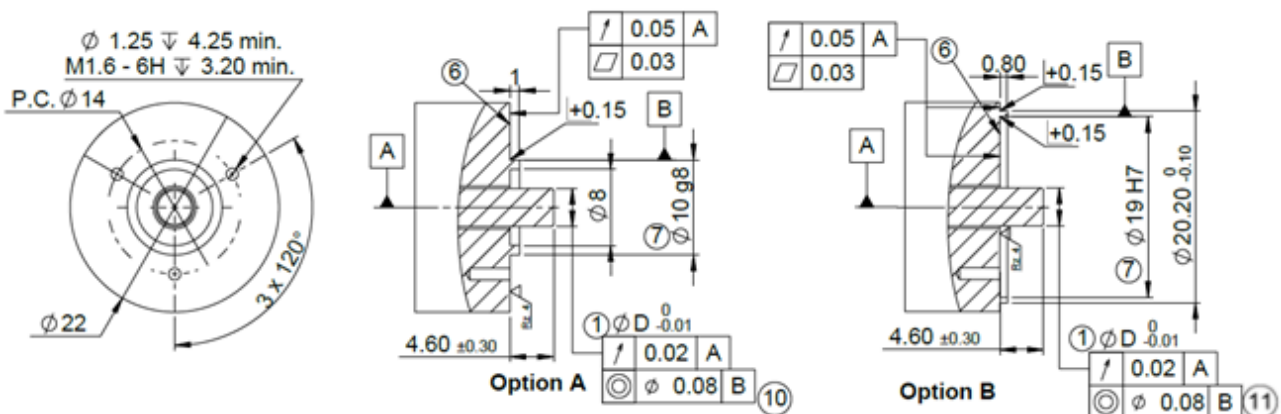
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#### Bottom Shield/ Base Carrier Interface and Flange

Version with bottom shield KCD-xxxxB-xx17-JxxF-xxx:



Version without bottom shield KCD-xxxxB-xx17-lxxF-xxx:



**A** = Bearing

① = Different shaft sizes can be adapted (D=2,3,4)

⑥ = Motor flange reference

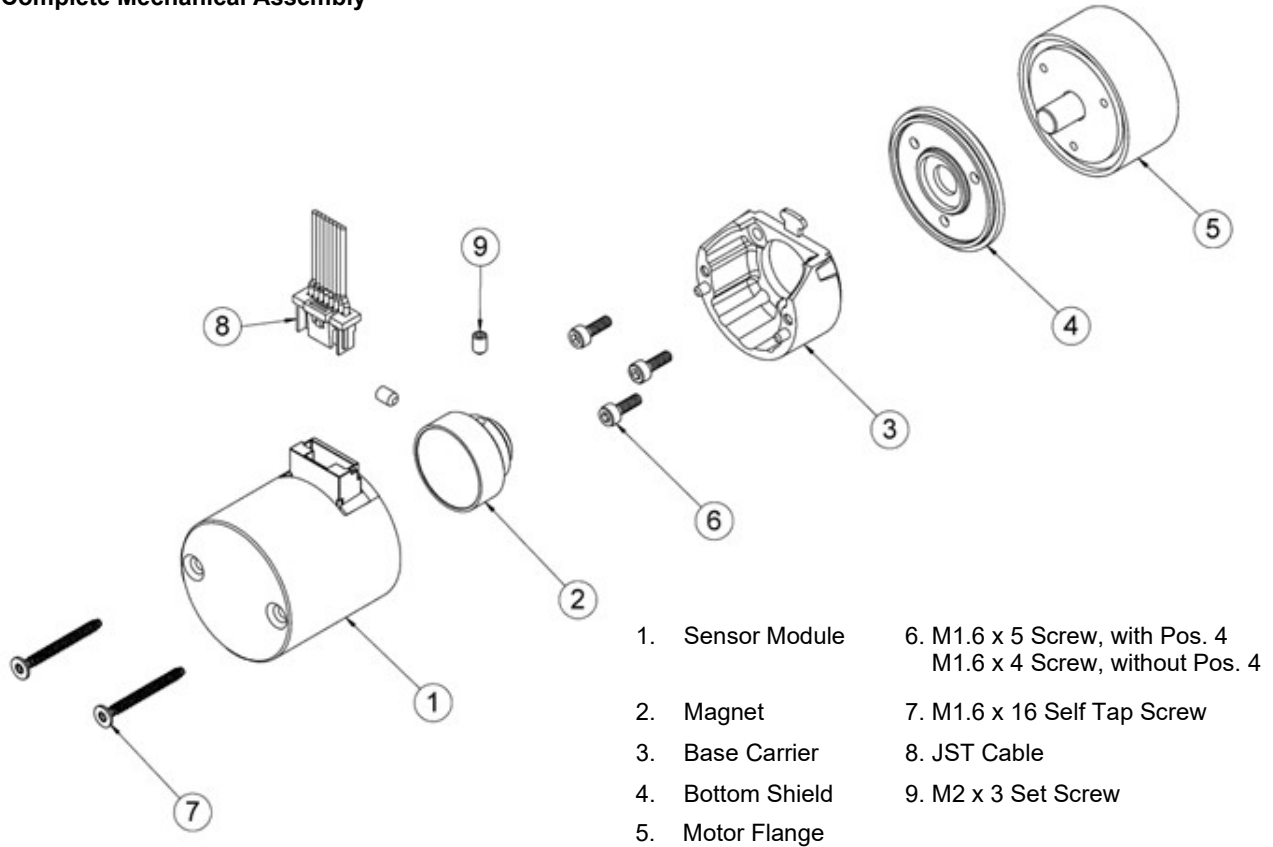
⑦ = Centering Feature

⑪ = Tolerance static+dynamic

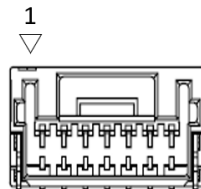
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#### Complete Mechanical Assembly



#### Pin Assignment



Pin	Signal	Wire Color
1	GND	Blue
2	Preset (default 0 position value)	Pink
3	Config (UART)	Gray
4	Data + (SLO+)	Green
5	Data - (SLO-)	Yellow
6	CLOCK - (MA-)	White
7	CLOCK + (MA+)	Brown
8	VCC	Red

#### Electrical Connection

Connection Orientation	Radial
Connector	BM08B-NSHSS -TBT (JST)

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### 22 MM KIT ENCODERS WITH BISS C / SSI INTERFACE


#### Interface

Interface	KCD-BCxxB-xx17-xxxF-GRQ – BiSS C KCD-S1xxB-xx17-xxxF-GRQ - SSI
Programming Functions	Electronic Calibration, Wiegand Pulse Test, Preset
Min Interface Cycle Time	50 $\mu$ s

#### Electrical Data

Supply Voltage	4.5 – 5.5 VDC
Current Consumption	Typ. 90 mA (at 5V) for Version KCD-xx43B-xx17-xxxF-GRQ Typ. 80 mA (at 5V) for Version KCD-xx33B-xx17-xxxF-GRQ
Start-up time	Max. 100 ms
Clock Input	RS 422
Clock Frequency	BiSS C: 80 kHz – 5 MHz with line delay compensation SSI: 300 kHz – 1MHz, up to 10 MHz by usage of configurable pre-byte
Reverse Polarity Protection	No
Short Circuit Protection	No
Max. Permissible Electrical Speed	12 000 RPM
Config Pin	VOL: Output Low level: 0 V ... 0.4 V DC VOH: Output High Level: 2.4 V ... 3.3 V DC VIH: Input High Level: 2 V ... 3.3 V DC VIL: Input Low Level: 0 V ... 0.8 V DC +5.5 V DC level tolerant, do not exceed.
Preset Pin	Low level: 0 V ... 0.8 V DC High Level: 2 V ... 3.3 V DC +3.3 V DC level tolerant, do not exceed.

**In case Kit Configuration Tool is used for configuration, to prevent an encoder kit from electrical damage, please, ensure, that the Configuration Tool has been produced not earlier than in 2020-05 and that the appropriate adapter cable is used. If an older version is available, please, contact us to arrange an update.**

 For more detailed information please refer to the data sheet and manual available on the website.