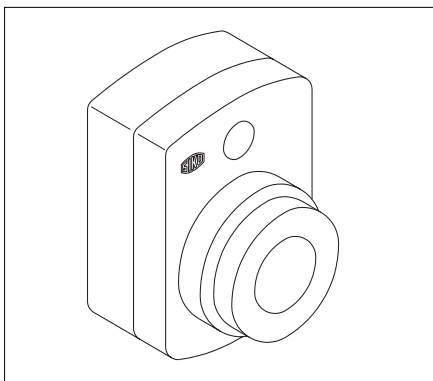


IG09

Incremental encoder



ENGLISH

1. Safety information

In order to carry out installation correctly, we strongly recommend this document is read very carefully. This will ensure your own safety and the operating reliability of the device.

- Your device has been quality controlled, tested and is ready for use. Please respect all warnings and information which are marked either directly on the device or in this document.
- Warranty can only be claimed for components supplied by SIKO GmbH. If the system is used together with other products, the warranty for the complete system is invalid.
- Repairs should be carried out only at our works. If any information is missing or unclear, please contact the SIKO sales staff.

2. Identification

Please check particular type of unit and type number from the identification plate. Type number and the corresponding execution are indicated in the delivery documentation.

e.g. IG09-0023
 └───┬───┘ type number
 └───┘ type of unit

3. Installation

The unit should be used only up to the IP-protection level stated. Protect the unit, if necessary, against environmental influences such as sprayed water, dust, knocks, extreme temperatures.

Stick gasket to encoder's mounting face. Slide IG09 onto the solid shaft, insert torque pin into the prebored mounting hole and use grub screw to fix the IG09's hollow shaft to the machine's solid shaft (see fig. 1).

- Ensure sliding fit between solid shaft and IG09.
- Ensure accurate shaft alignment and mount the IG09 without force. Do not exceed the values for the maximum axial and radial shaft load. If the shaft is not correctly aligned, strain on the bearings will result, which may cause overheating and irreparable damage.
- Especially when using torque pin type A for fixing, ensure that IG09 does not jam and that it is mounted without strain. Please remember this when choosing the IG09's bore diameter.
- Avoid knocking the unit.

Torque pin type A : pin \varnothing 6 h9
 type B : bore \varnothing 10 +0.8

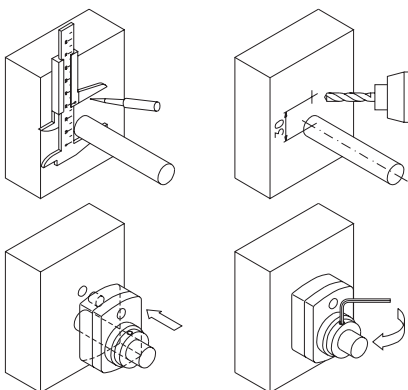


Fig. 1: Mounting instructions

If encoder IG09 is to be mounted with an **intermediate plate (option)** first fix the plate as described above and then mount the encoder.

4. Electrical connection

- Switch power off before any plug is inserted or removed!
- Any wiring must only be carried out without power.

- Provide stranded wires with ferrules.

Interference and distortion

All connections are protected against the effects of interference. **The location should be selected to ensure that no capacitive or inductive interferences can affect the encoder or the connection lines!** Interference can be caused by motors, switch gear, cyclic controls and contactors. Suitable wiring layout and choice of cable can minimise the effects of interference. When using encoders with **operating voltage +5 V** ensure that the operating voltage does not fall below the **tolerance limit** or the encoder will not function correctly! In case of long connection lines (>3 m) and 5 V operating voltage it **must** always be guaranteed that the encoder's **operating supply is within the defined tolerances!** (Safe solution: use 10-pole cable to extend encoder's cable head; connect +U_B and GND respectively with one sense line)

The following points should be observed:

- Only screened cable should be used. Wire cross section is to be at least 0,14 mm², max. 0,5 mm².
- Wiring to the screen and ground (0V) must be secured to a good point. Ensure that the connection of the screen and earth is made to a large surface area with a sound connection to minimise impedance.
- The sensor should be positioned well away from cables with interference; if necessary a **protective screen or metal housing** must be provided. The running of wiring parallel to the mains supply should be avoided.
- Contactor coils must be linked with spark suppression.

Power supply

Supply voltage depends on the unit type and is indicated in the delivery documentation and on the identification plate.

Eg.:

10 ... 30 V d.c., with polarity protection
5 V d.c. ±5% without polarity protection

4.1 Connection type E1..

Pin connection OP, LD5

Color	Designation
yellow	channel A
pink	channel /A
white	channel B
blue	channel /B
green	channel 0
red	channel I
brown	+UB
grey	GND

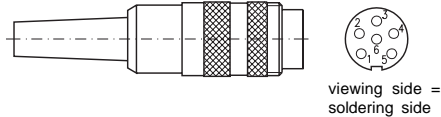
Pin connection PP

Color	Designation
grey	GND
yellow	channel A
white	channel B
green	channel 0/I
brown	+UB
black	screening

4.2 Connection type E2..

Pin connection PP :

Connection E2.. with coupling (plug); Binder series 680.

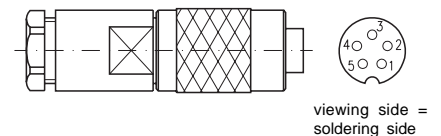


PIN	Designation
1	GND
2	+U _B
3	channel A
4	channel B
5	channel 0/I
6	N.C.

4.3 Connection type E4..; E6..

Pin connection PP :

Connection E4.. with coupling (socket); Binder series 712.



PIN	Color	Designation
1	grey	GND
2	yellow	channel A
3	white	channel B
4	green	channel 0/I
5	brown	+U _B
	black	screen

Connection E6.. with coupling (plug + socket); Binder series 423.

- Slip parts 6 to 10 over outer cable.
- Strip cable.
- Turn down screening.
- Push part 5 onto ferrules.
- Solder stranded wires at part 3 (follow connection diagram).
- Open spacer (part 4) and put it over ferrules, squeeze and push it onto part 3. Slot and keyway of parts 3 and 4 must align.
- Press parts 6 and 5 together; cut protruding screening.
- Push parts 2 and 7 together and screw part 11 using appropriate tool.
- Push part 8 into part 9 and slide both parts into part 7.
- Screw parts 10 and 7 together.
- Push part 1 into part 2.

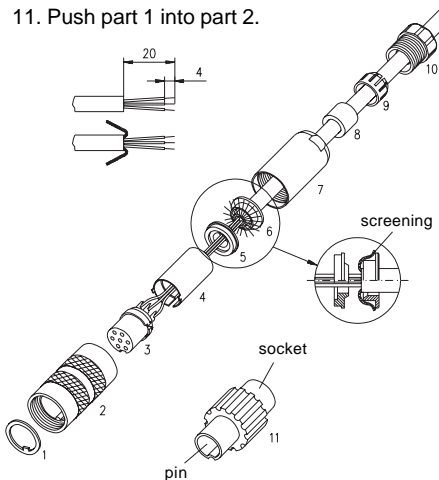
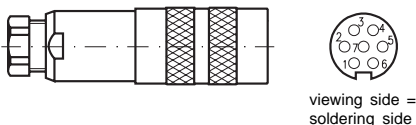


Fig. 2: Mounting of connection type E6..



PIN	Color	Designation
1	grey	GND
2	yellow	channel A
3	white	channel B
4	green	channel 0/I
5	brown	+U _B
6	N.C.	N.C.
7	N.C.	N.C.
	black	screen

4.4 Connection type E8.. (9-pol. D-SUB)

Pin connection PP :

PIN	Designation
1	+U _B
2	channel A
3	channel B
4	channel 0/I
5	GND
6	N.C.
7	N.C.
8	N.C.
9	N.C.

5. Output signals

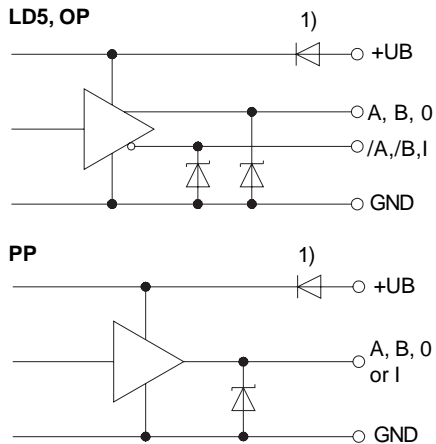


Fig. 3: Output circuit LD5, OP, PP

1) Note! Encoders with U_B=+5V d.c. ±5% are without reversal protection diode.



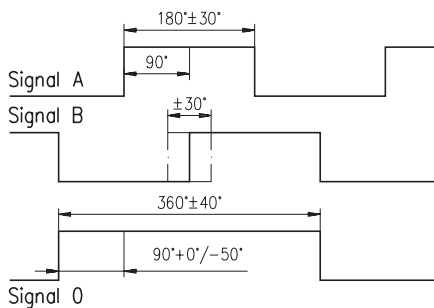


Fig. 4: Phase relation

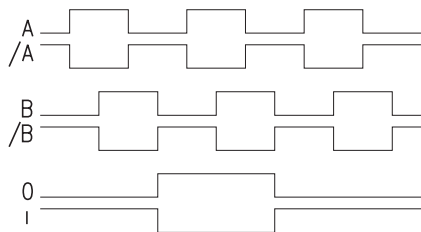


Fig. 5: Signal shape inverted

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