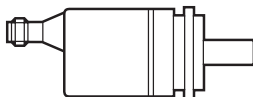




Operating instructions Scalable analogue encoders

UK

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1 Preliminary note

Technical data, approvals, accessories and further information at www.ifm.com.

2 Safety instructions

- The device described is a subcomponent for integration into a system.
 - The manufacturer is responsible for the safety of the system.
 - The system manufacturer is responsible for the proper functioning of the application programs.
 - The system manufacturer undertakes to perform a risk assessment and to create documentation in accordance with legal and normative requirements to be provided to the operator and user of the system. This documentation must contain all necessary information and safety instructions for the operator, the user and, if applicable, for any service personnel authorised by the manufacturer of the system.
- Read this document before setting up the product and keep it during the entire service life.
- The product must be suitable for the corresponding applications and environmental conditions without any restrictions.
- Only use the product for its intended purpose (→ Functions and features).
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- The manufacturer assumes no liability or warranty for any consequences caused by tampering with the product or incorrect use by the operator.
- Installation, electrical connection, set-up, programming, configuration, operation and maintenance of the product must be carried out by personnel qualified and authorised for the respective activity.
- Protect units and cables against damage.

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2.1 Symbols used

- ▶ Instruction
- > Reaction, result
- Cross-reference
-  Important note
Non-compliance may result in malfunction or interference.
-  Information
Supplementary note

3 Functions and features

The encoder converts rotary movements into an analogue current or voltage output. Each angular position of the revolutions is provided as a current or voltage value.

These values allow angular movements to be measured and positions to be determined.

- The unit generates output signals according to the operating mode.

4 Installation

- ▶ Disconnect power.
- ▶ Ensure that the machine stands still.
- ▶ The drive must not be started during installation.
- ▶ Do not hit the shaft; do not use a file or similar tool on the shaft: risk of destruction!

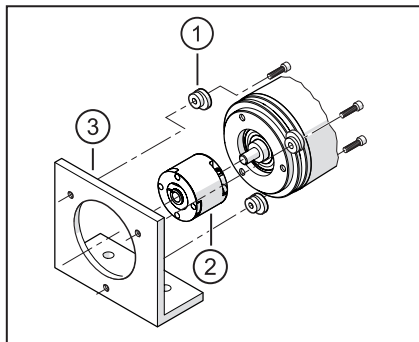
 This product is a precision measuring device. Therefore it has to be handled with care by trained staff. The following warnings apply to influences outside the limit values indicated in the product data sheet.

Damage to the product can be caused by:

- too high forces on the shaft
- humidity and chemical liquids (do not connect any cables oriented upwards)
- extreme temperatures
- too high vibrations and shocks
- short circuit or too high an operating voltage
- impact, shock or any other physical forces

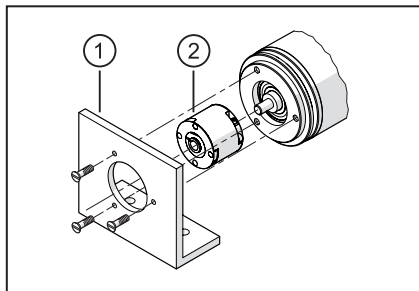
4.1 Mounting drawings

4.1.1 Type with synchro flange and fastening clamps



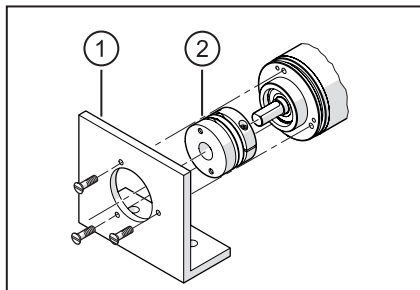
- 1: Fastening clamp (3 pieces) E60041
- 2: Coupling
- 3: Angle bracket (1 piece) E60034

4.1.2 Type with synchro flange



- 1: Angle bracket (1 piece) E60033
- 2: Coupling

4.1.3 Type with clamp flange



1: Angle bracket (1 piece) E60035

2: Coupling

5 Electrical connection



► Disconnect power.

► Connect the device according to the indications on the type label. Voltage supply to EN 50178, SELV, PELV

- Keep potential interfering sources (magnets, heat sources etc.) at a distance.
- Use a shielded cable for maximum protection from electromagnetic interference.
- Ensure that the cable length does not exceed the value indicated in the data sheet.

5.1 Wiring

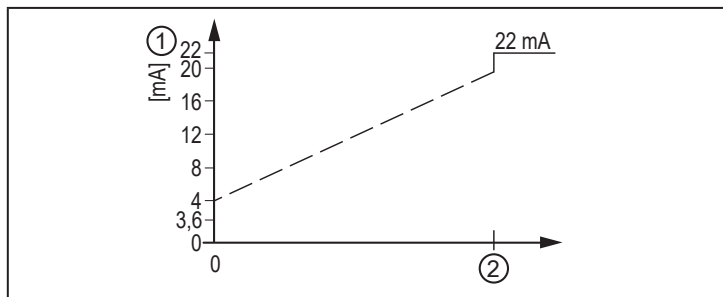
Pin M12	Function
1	L+ supply voltage
2	Out - analogue output
3	L- GND (supply)
4	Set 2
5	Set 1
Shield: M12 connector	

6 Interface

6.1 Current output

The graphics shows the current output of the device (4...20 mA).

Factory setting



1: Analogue output

2: Measuring range

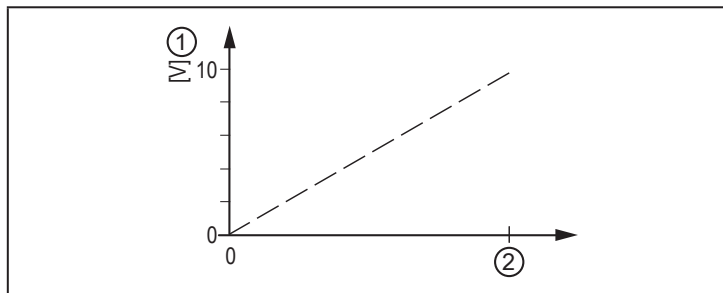


Code sense: Counter clockwise shaft movement (front view on shaft) increases the current value at the analogue output.

6.2 Voltage output

The graphics shows the voltage output of the device (0...10 V).

Factory setting



1: Voltage output

2: Measuring range

7 Scaling functionality

7.1 Scaling of the measuring range

Scale the measuring range (min range of 22.5°) using the Set 1 and Set 2 input signals to define the analogue output range.



Scale the device to the measuring range during set-up. Always apply both signals (Set 1 and Set 2) for scaling one after the other.

- ▶ Turn the encoder shaft to the min position (one end of the measuring range).
- ▶ Connect Set 1 signal to L+ for 1 second (Set 2 not used).
- > On release, the analogue output value jumps to the minimum output value (e.g.: 4 mA).
- ▶ Turn the encoder shaft to the max position (other end of the measuring range).
- ▶ Connect Set 2 signal to L+ for 1 s (Set 1 not used).
- > On release, the analogue output value jumps to the maximum output value (e.g.: 20 mA).
- > The analogue output is scaled to the new measuring range.

8 Maintenance, repair, disposal

The device is maintenance-free.

- ▶ Disconnect the device.
- ▶ Clean the device from dirt using a soft, chemically untreated and dry cloth. Do not use any caustic cleaning agents for this!

8.1 Disposal

- ▶ Dispose of the device in accordance with the national environmental regulations.