

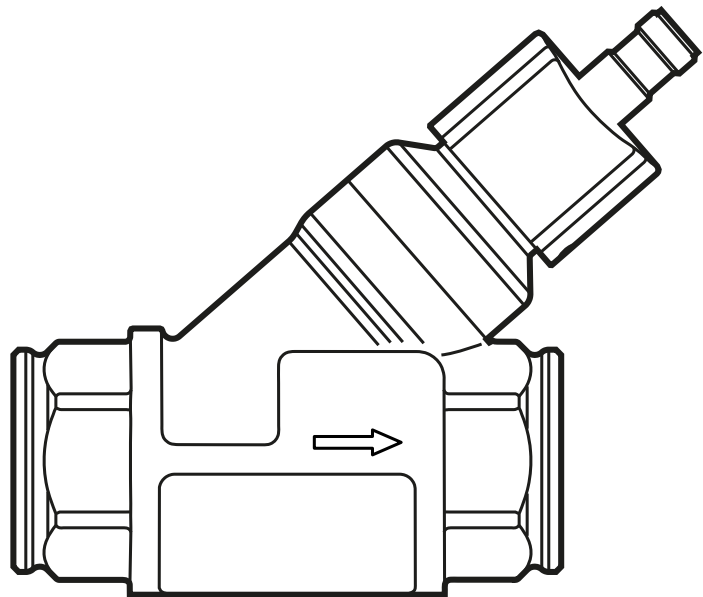
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Operating instructions
Mechatronic flow sensor

SBx4xx

UK

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1 Preliminary note

- ▶ Instructions
- > Reaction, result
- Cross-reference



Important note

Non-compliance may result in malfunction or interference.



Information

Supplementary note.



CAUTION

Warning of personal injury.
Slight reversible injuries may result.

2 Safety instructions

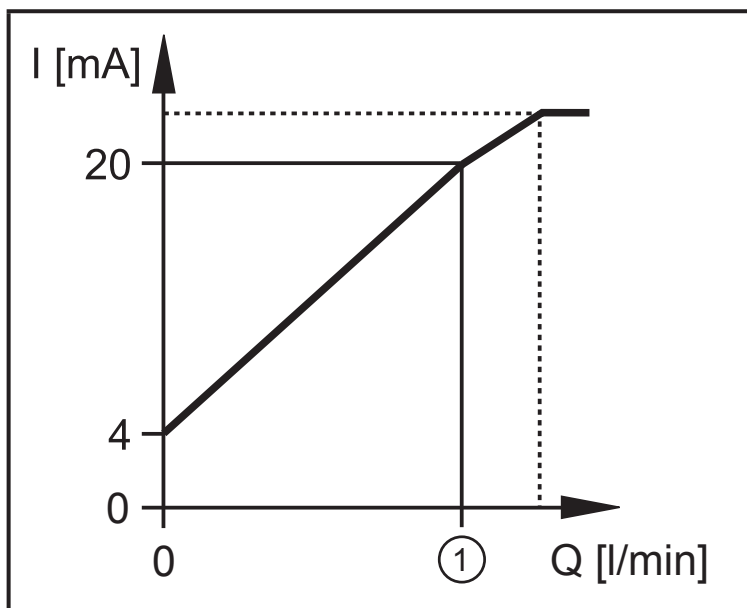
- The device described is a subcomponent for integration into a system.
 - The manufacturer is responsible for the safety of the system.
 - The system manufacturer undertakes to perform a risk assessment and to create a documentation in accordance with legal and normative requirements to be provided 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).
- Only use the product for permissible media (→ Technical data).
- 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, operation and maintenance of the product must be carried out by qualified personnel authorised by the machine operator.
- Protect units and cables against damage.

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3 Functions and features

The unit monitors liquid media (water, glycol solutions, industrial oils, coolants). It detects the volumetric flow using the principle of differential pressure and converts it into an analogue output signal (4...20 mA).

4 Function



1: final value of the measuring range

The analogue signal for water (20 °C) is linear from 4 mA (= no flow) to 20 mA (= final value of the measuring range, see Technical Data).

For an output signal > 20 mA the volumetric flow is above the final value of the measuring range.

5 Installation



CAUTION

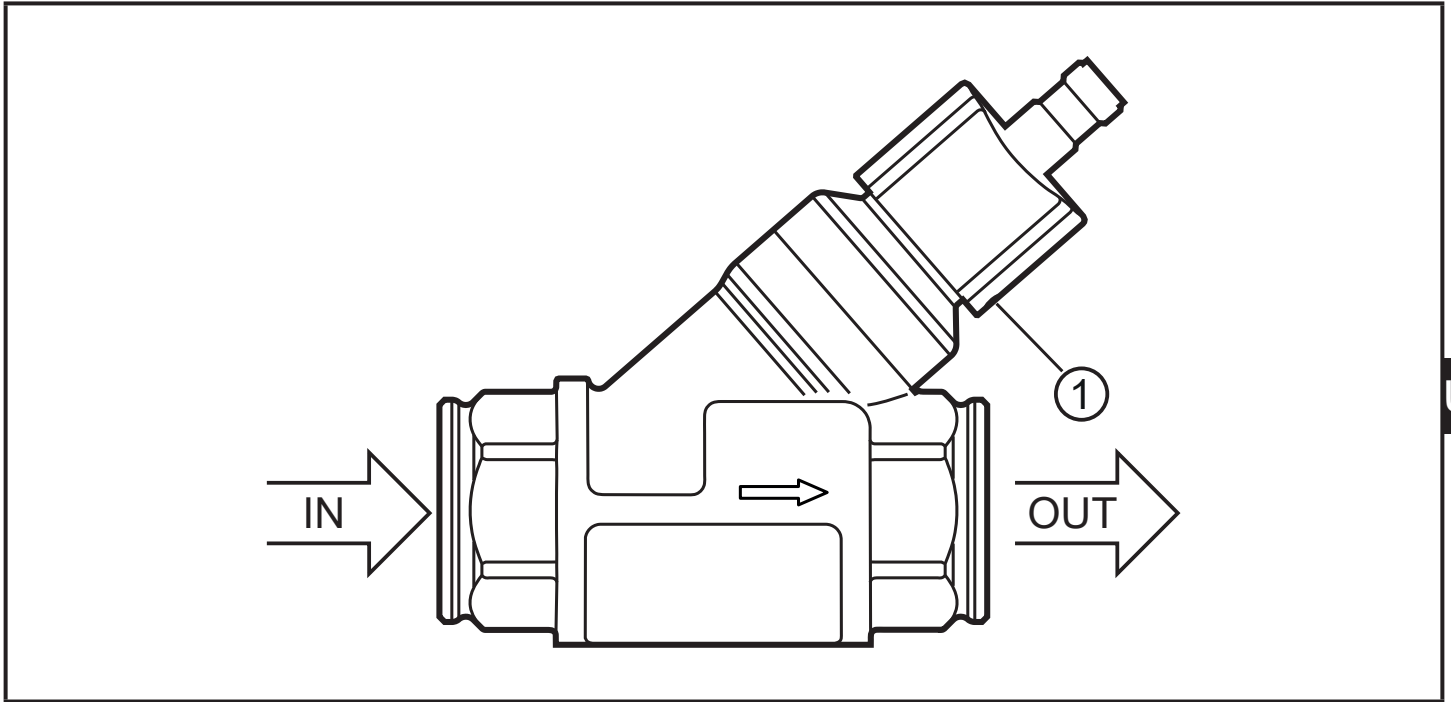
During installation or in case of a fault (e.g. housing damage) media under high pressure or hot media can leak from the system.

- ▶ Ensure that the system is free of pressure during installation.
- ▶ Ensure that no media can leak at the mounting location during installation.
- ▶ Equip the unit with suitable protection (e.g. cover) to avoid hazard to personnel from leaking media.



Loosening the socket head screw (1) and moving the protective cover do not change the setting of the sensor. However, moving the protective cover may be useful to read the label.

- ▶ Insert the unit into the pipe according to the direction of flow (arrow) and tighten.



IN = inlet; OUT = outlet



Calming sections on the sensor's inlet or outlet side are not necessary.

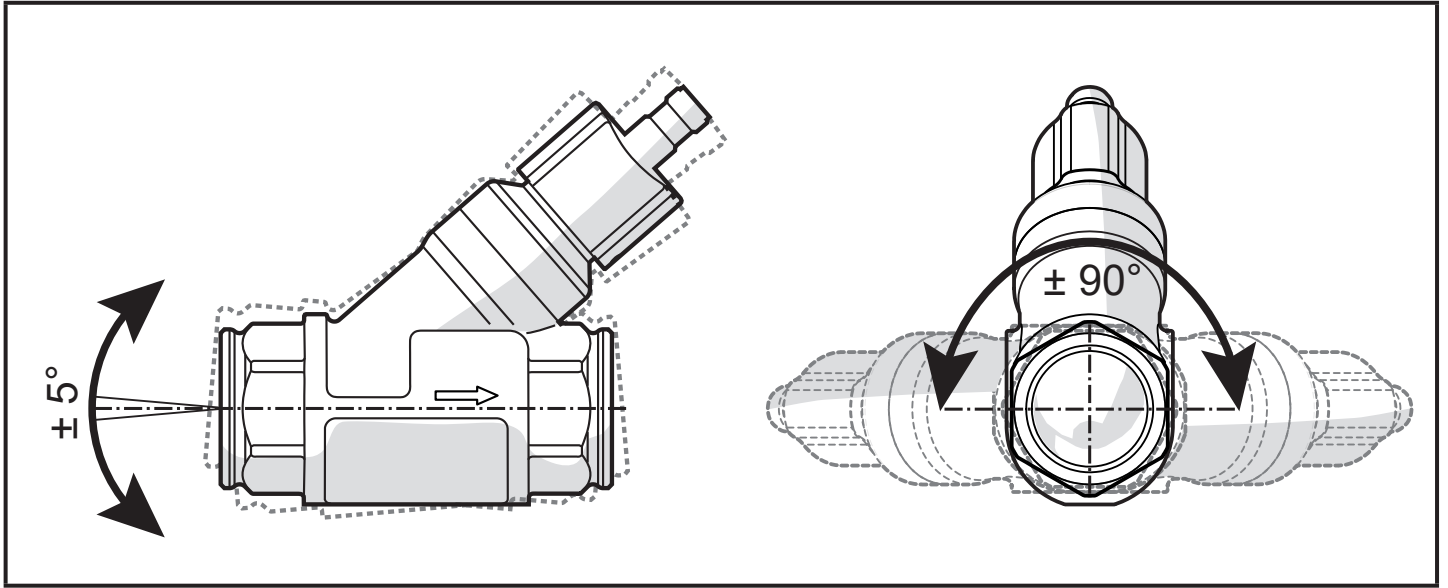
- ▶ Avoid major changes of cross section on the inlet side.
- ▶ Observe the following minimum distances:

Distance between the sensor and ferromagnetic materials.	≥ 30 mm
Distance between the sensor and constant / alternating fields.	≥ 500 mm
Distance between the sensor axes for side-by-side installation.	≥ 50 mm

5.1 Installation in case of water containing dirt

In water containing dirt, horizontal installation is recommended.

► Adhere to the inclination angle to the horizontal axis:



In clean water, installation in vertical pipes is also possible.

6 Electrical connection



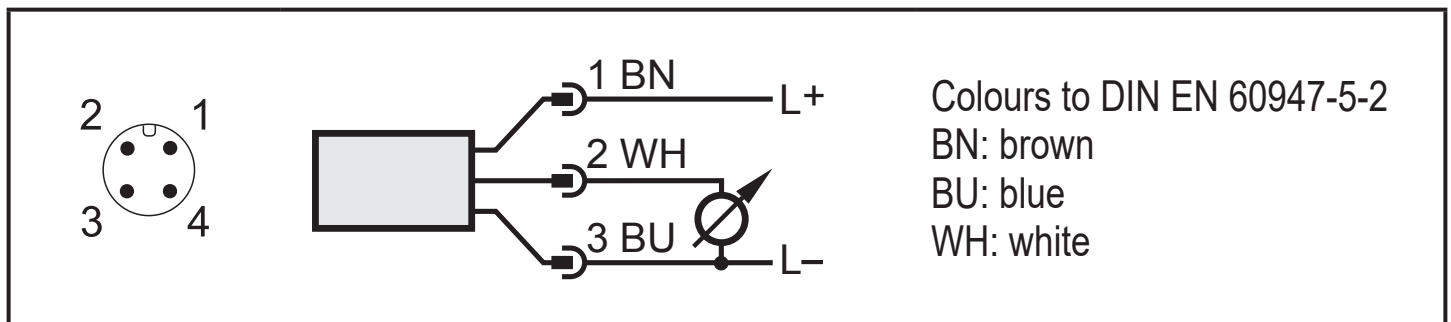
The unit must be connected by a qualified electrician.

The national and international regulations for the installation of electrical equipment must be adhered to.

Voltage supply according to EN 50178, SELV, PELV.

► Disconnect power.

► Connect the unit as follows:



Information about available plugs and sockets at www.ifm.com.

7 Technical data and scale drawings

Technical data and scale drawing at www.ifm.com.

8 Troubleshooting

If there are dirt particles between the float and the housing the display value of the sensor does not return to zero in case of flow standstill. In case of dirt the display value can be up to 30 % of the final value of the measuring range. Corrective action → 9 Maintenance, repair and disposal.

9 Maintenance, repair and disposal

If used correctly, no maintenance and repair measures are necessary.

Only the manufacturer is allowed to repair the unit.

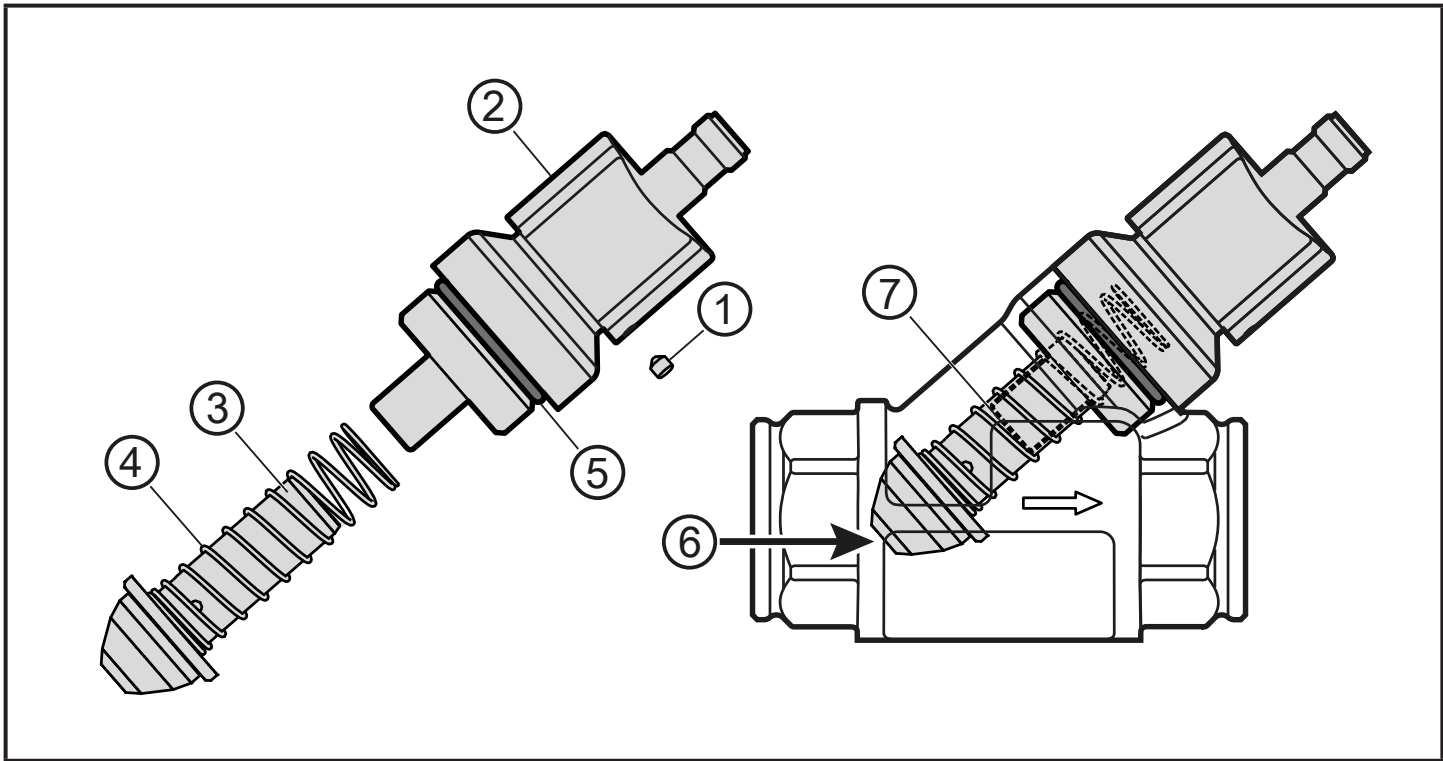
After use dispose of the unit in an environmentally friendly way in accordance with the applicable national regulations.

In case of heavily polluted media:

- ▶ Mount a filter in front of the inlet (IN).
Recommendation: use a 200-micron filter.

If measurement errors occur because of an insufficient filtration cleaning may be required:

- ▶ Loosen socket head screw (1) in the protective cover (2) and unscrew.
- ▶ Unscrew sensor head.
- ▶ Remove float (3) and spring (4).
- ▶ Clean the inside of the float, spring and housing, e.g. by means of compressed air.
- ▶ Before re-assembly check O-ring (5) for damage.
If necessary, replace and grease.
- ▶ After cleaning install components again.
- ▶ Tighten sensor head with a tightening torque of 10 Nm.
- ▶ To restore the measurement accuracy, press the float until you feel a stop (7) using something non magnetic (6), e.g. a finger and hold for at least 2 seconds.
- ▶ Screw and align protective cover and tighten socket head screw with a tightening torque of 0.7 Nm.



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More information at www.ifm.com