

ifm electronic



Operating instructions
Mechatronic flow sensor

efector300[®]

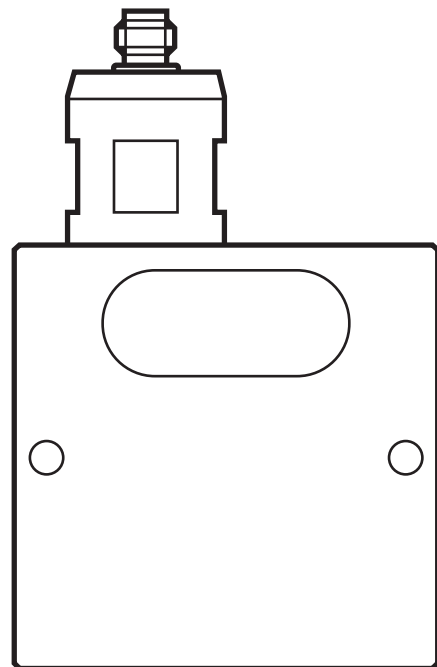
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11374541 / 00 08 / 2014



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1 Preliminary note

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



Important note

Non-compliance may result in malfunction or interference.



Information

Supplementary note.

2 Safety instructions

- Please read this document prior to set-up of the unit. Ensure that the product is suitable for your application without any restrictions.
- Improper or non-intended use may lead to malfunctions of the unit or to unwanted effects in your application. That is why installation, electrical connection, set-up, operation and maintenance of the unit must be carried out by qualified personnel authorised by the machine operator.

- In order to guarantee the correct condition of the unit for the operating time it is necessary to use it only for media to which the wetted materials are sufficiently resistant (→ Technical data).
- The responsibility whether the measurement devices are suitable for the respective application lies with the operator. The manufacturer assumes no liability for consequences of misuse by the operator. Improper installation and use of the devices result in a loss of the warranty claims.
- During installation or in case of a fault (housing damage), media under high pressure or hot media can leak from the system.
 - ▶ Install the unit according to the applicable rules and regulations.
 - ▶ 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.

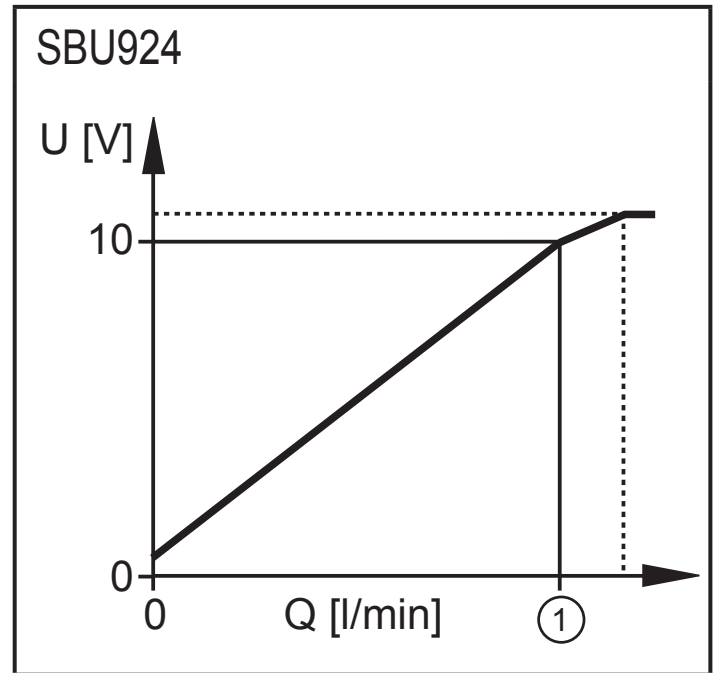
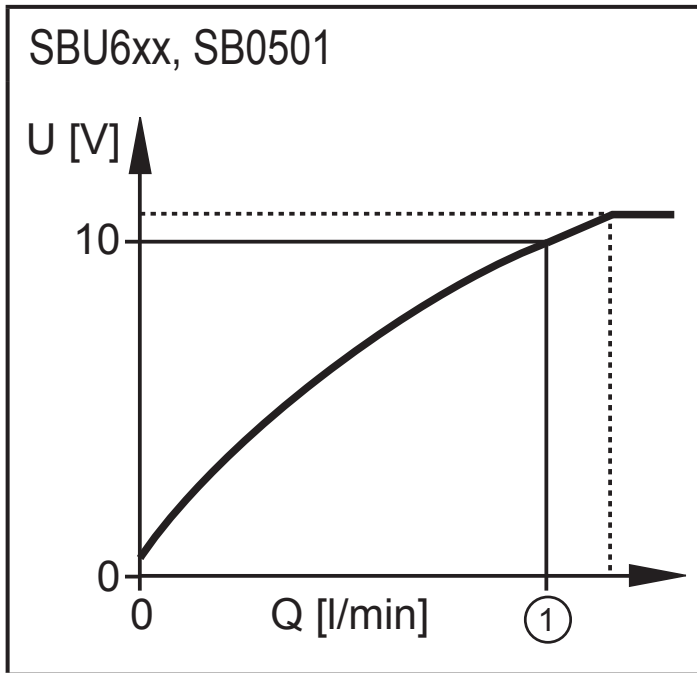
3 Functions and features

The unit monitors liquids (glycol solutions, industrial oils, coolants).

It detects the flow quantity on the principle of differential pressure and converts it into an analogue output signal.

4 Function

Typical course of the measurement curves for coolants at 20 °C:



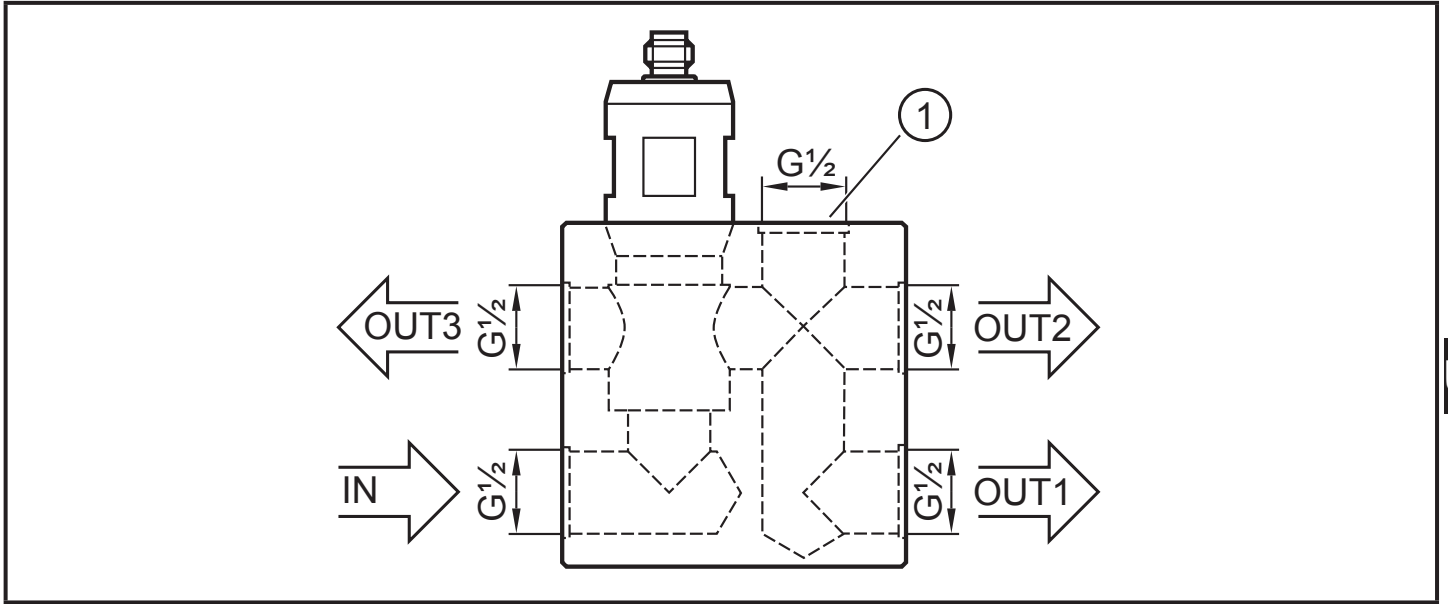
1: Final value of the measuring range

Within the measuring range, the output signal is in the indicated voltage range (→ Technical data).

For an output signal > 10 V the flow quantity is above the final value of the measuring range.

5 Installation

The unit provides 5 connections for pipe thread G 1/2:



1: Connection for additional sensor

IN: Inlet

OUT1...OUT3: 3 x outlet for three different types of connection.



Baffled pipes at the input and output side are not necessary.

5.1 Installation environment

- ▶ Do not install the unit on ferromagnetic materials.
(Ferromagnetic materials are all metals exerting an attractive force on test magnets.)
- ▶ Do not operate the unit in the vicinity of magnetic constant and alternating fields (e.g. welding systems).
- ▶ No material which influences the magnetic field of the measuring element is allowed on OUT3 This could affect the measuring accuracy.

5.2 Sealing plugs

The connections 1, OUT2 and OUT3 are equipped with sealing plugs on delivery.

- ▶ Remove the sealing plugs if required.

5.3 Side-by-side installation

If the sensors are installed side by side, observe a minimum distance of 50 mm between the sensor axes.

6 Electrical connection

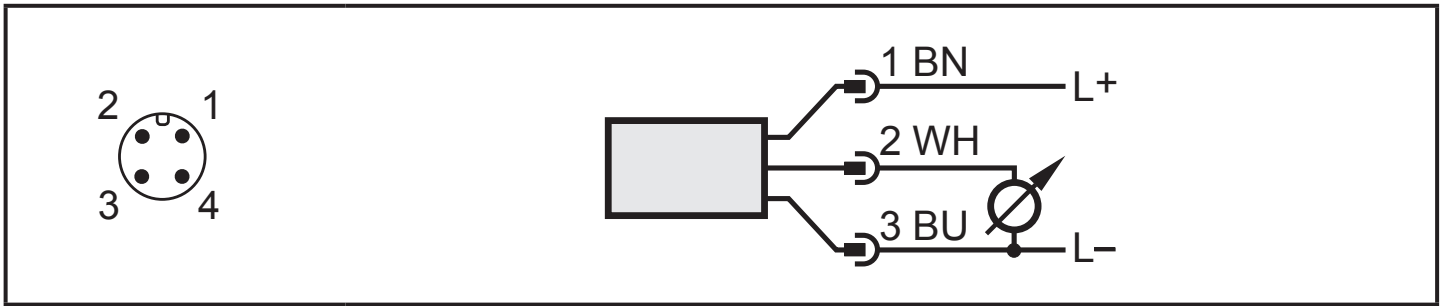


The unit must be connected by a qualified electrician.

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:



Core colours of ifm sockets: 1 = BN (brown), 2 = WH (white), 3 = BU (blue)
Colours to DIN EN 60947-5-2



Information about the available sockets/plugs at www.ifm.com.

7 Operation

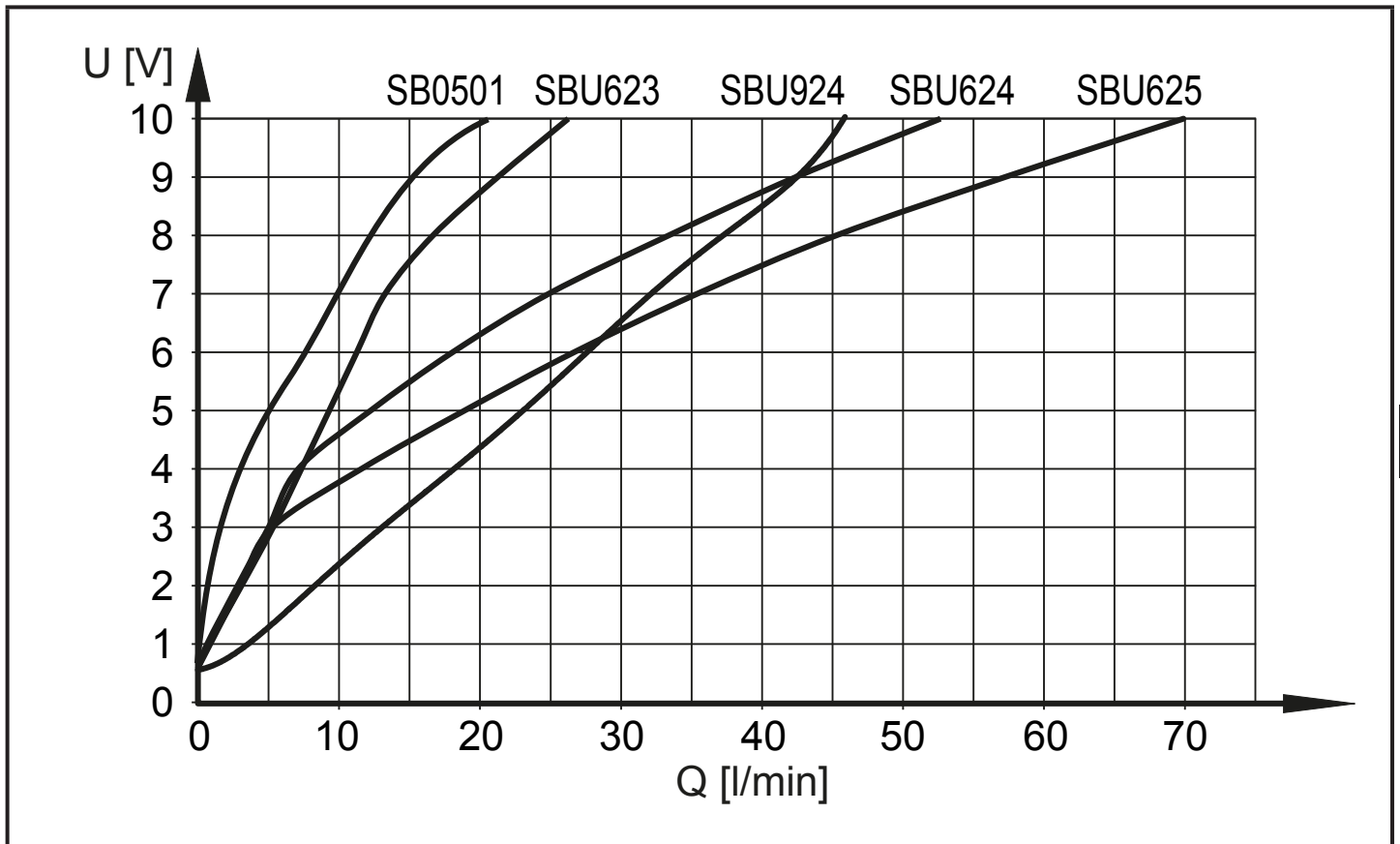


- ▶ Do not bring any magnetised objects (e.g. screwdrivers with a steel blade) close to the unit.

After power on, the unit is ready for operation.

It detects the volumetric flow quantity and generates an analogue output signal.

Typical course of the measurement curves for coolants at 20 °C:



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8 Technical data and scale drawings

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

9 Maintenance, repair, disposal

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

In case of strongly polluted media: mount a filter before the inlet (IN). Recommendation: use a 200-micron filter.

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.

More information at www.ifm.com