



Operating instructions
Vortex flow meter

GB

SV3x51
SV4x51
SV5x51
SV6x51
SV7x51
SV8x51

Contents

1	Preliminary note	3
1.1	Symbols used	3
1.2	Warnings.	3
2	Safety instructions.	4
3	Intended use	5
3.1	Application area	5
4	Installation.	6
4.1	Interference.	7
5	Electrical connection	9
6	Maintenance, repair and disposal	10

1 Preliminary note

You will find instructions, technical data, approvals and further information using the QR code on the unit / packaging or at documentation.ifm.com.

1.1 Symbols used

- ✓ Requirement
- Instructions
- ▷ Reaction, result
- [...] Designation of keys, buttons or indications
- Cross-reference
-  Important note
Non-compliance may result in malfunction or interference.
-  Information
Supplementary note

1.2 Warnings

Warnings indicate the possibility of personal injury and damage to property. This enables safe product handling. Warnings are graded as follows:



WARNING

Warning of serious personal injury

- ▷ If the warning is not observed, fatal and serious injuries are possible.



CAUTION

Warning of minor to moderate personal injury

- ▷ If the warning is not observed, minor to moderate injuries are possible.

ATTENTION

Warning of damage to property

- ▷ If the warning is not observed, damage to property is possible.

2 Safety instructions

- The unit described is a subcomponent for integration into a system.
 - The system architect is responsible for the safety of the system.
 - The system architect 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 architect 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 (→ Intended use).
- Only use the product for permissible media.
- 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.

3 Intended use

The device monitors the flow in liquid media according to the vortex measuring principle.

The device detects the flow velocity and the volume flow (volumetric flow quantity/time).

Devices with 4-wire connection also detect the temperature as a Pt1000 resistance value ([→ Electrical connection](#) [□ 9](#)).

The device provides an analogue signal proportional to the process value.



Pressure Equipment Directive (PED):

The units comply with the Pressure Equipment Directive and are designed and manufactured for group 2 fluids in accordance with the sound engineering practice. Use of media from group 1 fluids on request.

3.1 Application area

Liquids with the following properties:

- Water
- Hydrous media (deionised water, cooling water)



Adding an additive that influences the viscosity of the medium leads to an increase in measurement inaccuracy.

→ Compare curves and diagrams in the data sheet at documentation.ifm.com.

4 Installation



CAUTION

If the medium temperature is above 50 °C (122 °F), parts of the housing can increase in temperature to over 65 °C (149 °F).

► Risk of burns.

► Protect the housing against contact with flammable substances and unintentional contact.

- Make sure that no pressure is applied to the system.
- Ensure that no media can leak at the mounting location during installation.
- Fit the device in the pipe in accordance with the flow direction (arrow on the device).
- Mount the device in a way that no mechanical forces are exerted on the pipe. To do so, use angle brackets if required.

Nominal width of the device	Maximum tightening torque
DN6, DN8, DN10, DN12, DN20	12 Nm
DN25	15 Nm

Tab. 1: Maximum tightening torque depending on the device type



Information about available accessories at www.ifm.com

Recommended installation position:

- Install in front of or in a rising pipe.
- Avoid deposits, accumulated gas and air in the pipe system.
- Install the unit so that the measuring pipe is always completely filled.
- Make sure that pipe and sensor have the same internal diameter.

Non-recommended installation position:

- Directly in front of a falling pipe.
- In a falling pipe.
- Directly in front of the spout of a pipe.
- Directly in front of a valve.
- On the suction side of a pump.
- At the highest point of the pipe system.

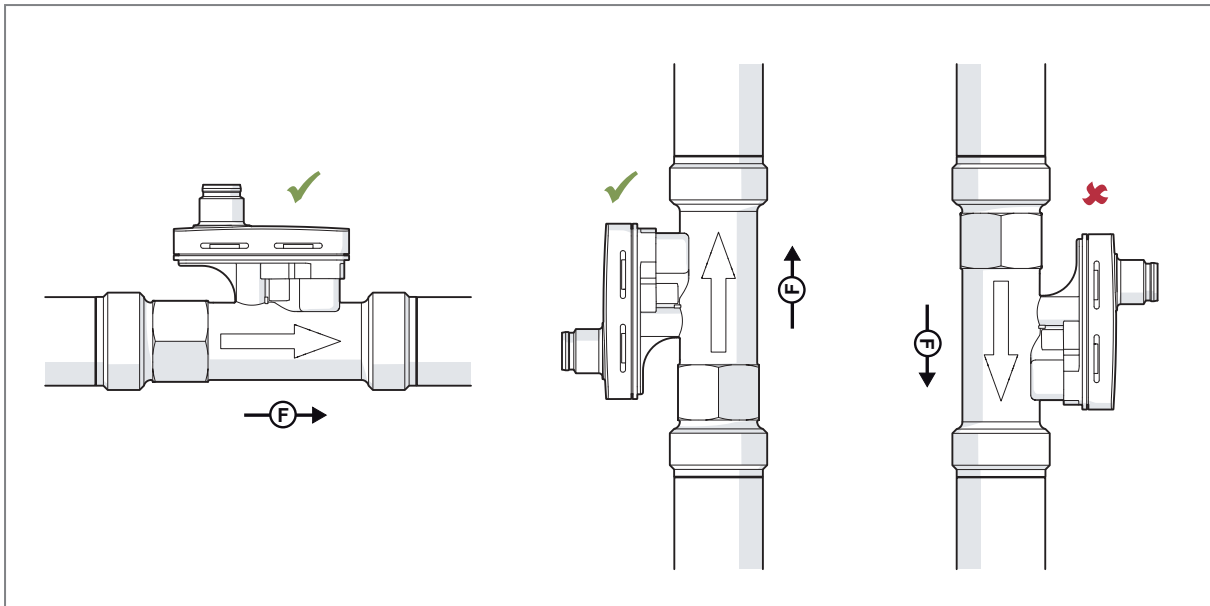


Fig. 1: Recommended and non-recommended installation positions

4.1 Interference

Structures in the pipe, bends, valves, reducing pieces and the like affect the function of the unit.

► Adhere to the distances between sensor and interference.

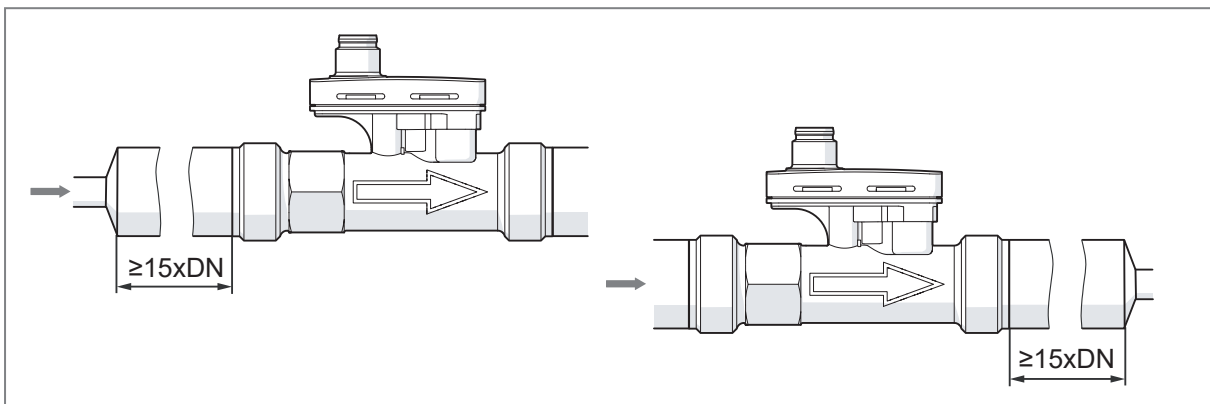


Fig. 2: Minimum distances for inlet and outlet sections when changing the pipe diameter

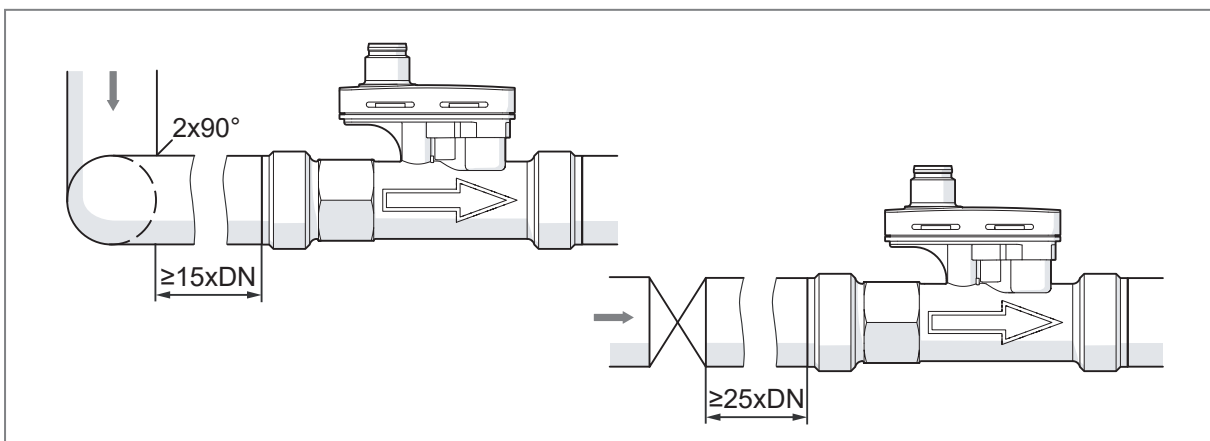


Fig. 3: Minimum distances to 2x90° bends and to pumps

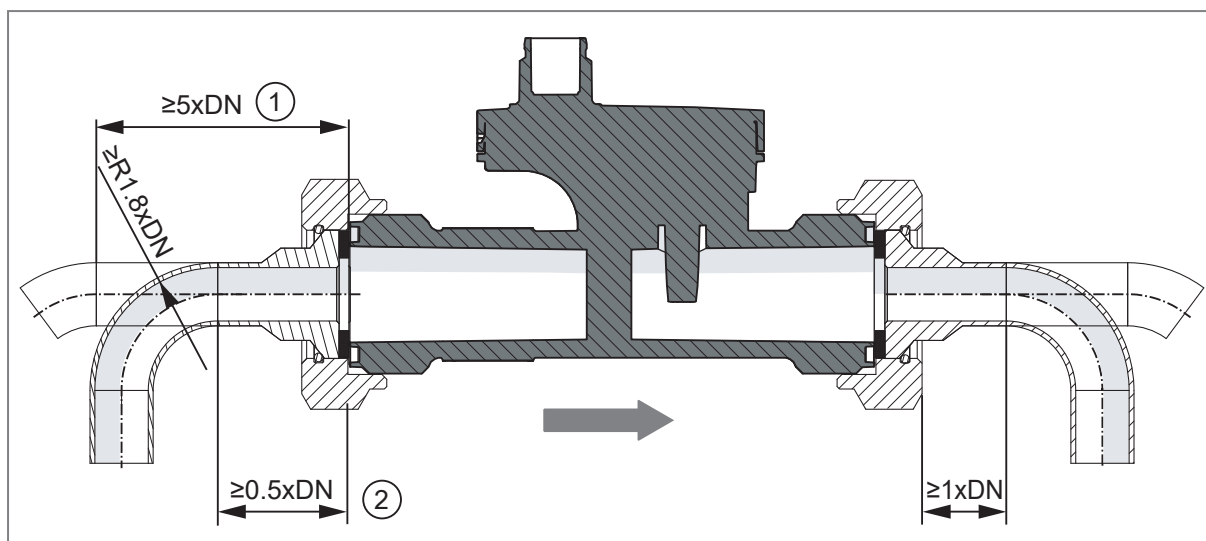


Fig. 4: Minimum distances to bends

- 1: Minimum distance to non-ideal bends
- 2: Minimum distance to ideal 90° bends with at least $R 1.8 x DN$

5 Electrical connection



The unit must be connected by a qualified electrician.

- ▶ Observe the national and international regulations for the installation of electrical equipment.
- ▶ Disconnect power.
- ▶ Connect the unit as follows:

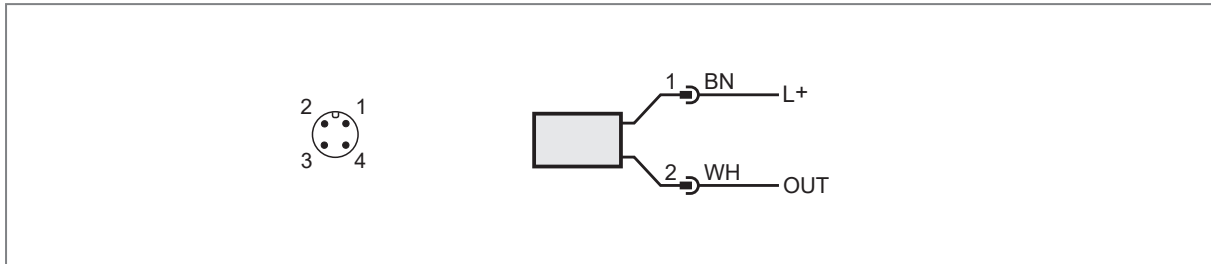


Fig. 5: 2-wire devices (SV3xxx); colours to DIN EN 60947-5-2: BN: brown; WH: white

OUT: Analogue signal for flow

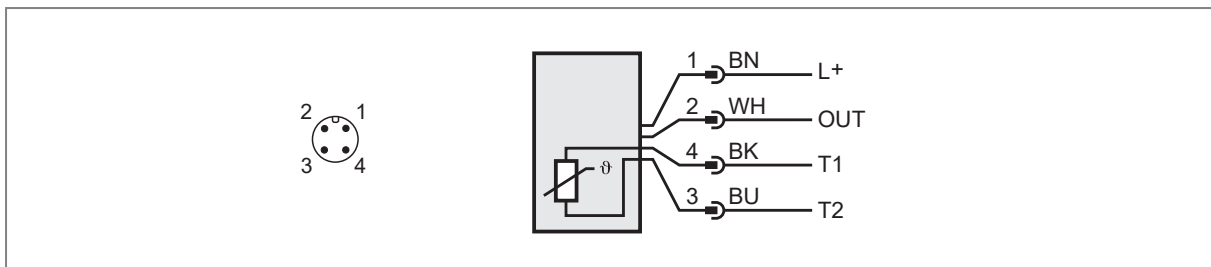


Fig. 6: 4-wire devices; colours to DIN EN 60947-5-2: BN: brown; WH: white; BK: black; BU: blue

OUT: Analogue signal for flow

T1/T2: Pt1000

6 Maintenance, repair and disposal

The operation of the unit is maintenance-free.

Only the manufacturer is allowed to repair the unit.

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