

 Quick Installation Guide for SONIC-VIEW



Every **SONIC-VIEW** is fabricated and shipped from factory under stringent quality control. In order to maintain its design performance throughout its life, this Quick Installation Guide offers the operator the minimal necessary installation, operation and maintenance information. *Always read the complete operating instructions carefully prior to installing the new product (download the PDF from the website [www.massflow-online.com](http://www.massflow-online.com)).* Always adhere to the instructions contained herein, especially the safety instructions, otherwise there is a potential risk of personal injury and damage to instruments and systems. Even though we provide assistance through the respective literature, it is the responsibility of the customer to verify the suitability of the product for the specific application. With this verification all hazards and risks are transferred to our customers; our warranty is not valid.



**1** The SONIC-VIEW is a non-contact flow sensor. The measurement is performed using ultrasound and works without any moving parts. The SONIC-VIEW is used for measuring or metering water or aqueous solutions. The operational safety of the device supplied is only guaranteed by intended use. The specified limits on the datasheet may under no circumstances be exceeded.



**2 Unpacking and inspecting the delivery**

The SONIC-VIEW is delivered in special protective packaging. Keep this protective packaging for sending the instrument for repairs to the manufacturer or disposing the packaging under the official rules of the public waste disposal system of your area. **Inspect the delivery first.**

Standard delivery of SONIC-VIEW:

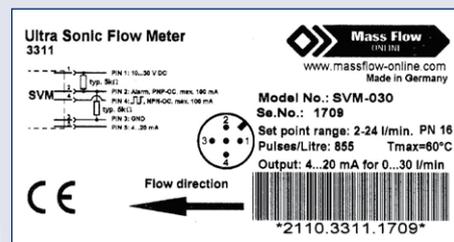
- 1 x Flow sensor with 3 yellow protection caps
- 1 x Quick Installation Guide (this guide)
- 2 x Flat gasket
- 1 x Packaging
- 1 x Manual



**3 Confirm nameplate**

Product code and ratings appear on the bottom side of the meter (see fig.1). Make sure that the ratings shown conform to your specifications.

Fig. 1



**4 Qualified personnel**

- a) The personnel entrusted with installing, operating and maintaining the SONIC-VIEW have to be suitably qualified. The personnel have to be familiar with the contents of these instructions, which have to be available to them at all times.
- b) The electrical connection should only be carried out by a fully qualified electrician.



**5 Special safety instructions**

- a) All work has to be carried out in accordance with existing national regulations on accident prevention and safety at work and with any internal regulations of the operator, even if they are not specified in these instructions.
- b) Ensure that conditions at the place of use correspond to the IP54 degree of protection.
- c) Prior to installation, ensure whether the material of the flow sensor is suitable for the medium which is to be measured.
- d) Ensure that the max. specified operating pressure is not exceeded.
- e) Never remove a flow sensor from a pipe system under pressure.
- f) Ensure that the max. specified operating temperatures are not exceeded.
- g) Select suitable measures to prevent the medium from freezing in the flow sensor.
- h) **Caution: voltages!**  
Always de-energize the system before connecting the connector cable.
- i) It is prohibited to remove or make type plates or any other information attached to the equipment indecipherable, otherwise all warranties and the responsibility of the manufacturer no longer apply.
- j) **Caution:** Ensure that the maximum electrical load specified on the type plate is never exceeded, otherwise the electronic unit will be damaged.
- k) **Attention:** Do not use SONIC-VIEW in processes in which a disturbance possibly causes a risk for health and live of people.
- l) The customer is to verify the applicability of the product on the basis of our technical details. By this checking, hazards and risks are subrogated to the customer and our warranty expires.



**6 Material specifications of components**

Prior to installation, ensure whether the wetted components are suitable for the medium which is to be measured!

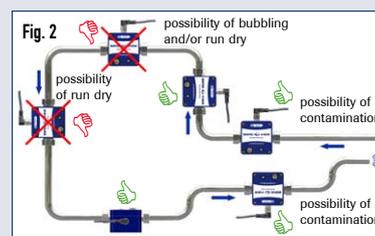
Components	Materials	Contact type
Process connections	Stainless Steel 1.4404	Permanently
Measuring pipe	Stainless Steel 1.4404	Permanently
Gasket	NBR	Permanently
Housing	Aluminium pressure diecasted	Indirect

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**Installation of the flow sensor**

- a) The sensor can be installed at any position in the pipe system. Straight sections of piping are preferable, however (see Fig. 2).
- b) The unit can be installed in both horizontal as well as vertical pipelines. The flow sensor is only suitable for use in fully filled piping.
- c) Due to its operating principle, ultrasonic flow sensors do not, for the most part, depend on the flow profile. A calming inlet section is not absolutely necessary. However, to ensure the greatest possible degree of measuring accuracy, straight inlet and outlet pipe of the appropriate nominal diameter (DN) should be used. The inlet pipe should be at least 10 x DN; the outlet pipe 5 x DN respectively.
- d) The degassing of the medium due to a temperature increase should be prevented by taking appropriate measures, e.g. increased system pressure.
- e) When installing the unit, use only the gasket that are provided.
- f) Observe the flow direction indicated on the type plate and the mounting dimensions in the manual.
- g) When tightening screw connections always grip the hexagon nut (see Fig. 3).



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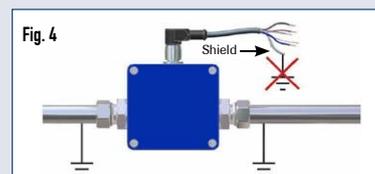


**Electrical connection**

The electrical connection of the SONIC-VIEW is a 5-pin plug M12x1 on the top side. The corresponding connection cable with moulded coupling socket are available as an option.

**Caution: voltages!** Always de-energize the system before connecting the wires.

**Warning:** We recommend the use of shielded connecting cables only. The shield should not be connected to ground. We recommend to ground the pipes directly before and behind the SONIC-VIEW (see Fig. 4).

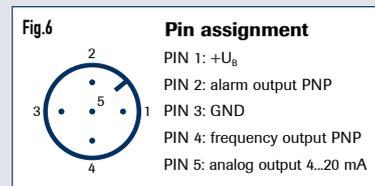
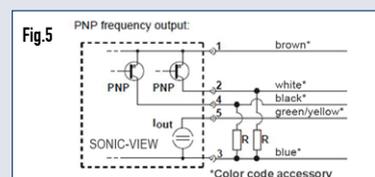


**Electrical connection with 5-pin connector M12x1:**

- a) Screw the 5-pin cable socket M12x1 onto the connector.
- b) Tighten it with a tightening torque of max. 1 Nm.
- c) Connect the connecting cables of the SONIC-VIEW corresponding to Fig. 5.
- d) We recommend using resistors of ~5kΩ and 0.25W for the pull-down wiring.

Please note that the maximum signal current of 100 mA will not be exceeded.

- e) You can find pin assignment in Fig. 6.



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**Measuring mode**

**ATTENTION!** Flows higher than the maximum for SVM-030 (33 l/min) and SVM-110 (140 l/min) will be displayed as considerably lower flow rates. Take proper measures to ensure the maximum flow is not exceeded.

**Initialization** The SONIC-VIEW is initialized when it is switched on. At first, the LED will shine orange for 1...2 s. The LED then blinks for an additional 1...2 s. After ~ 2...5 s the SONIC-VIEW will be in measuring mode and the flow will be measured continuously. Depending on the switchpoint configuration and measured flow, either flow or alarm will be displayed.

**Flow indicator** The LED lights green. The measured flow is greater than the switch point for decreasing flow of the selected switch position (switchpoints alarm output)

**Alarm indicator** The LED lights red. The measurement flow is below the switch point for decreasing flow. The alarm output is activated.

**Fault indicator** The LED blinks red. The SONIC-VIEW has air in the system, dirt in the measuring pipe or has found some other fault. The alarm output is activated.

The frequency output is a flow proportional frequency signal (see Fig. 8). It represents a PNP square-wave output signal whose amplitude roughly corresponds to the supply voltage. The supply voltage and the output signal are not galvanically isolated. The analog output signal provides a flow proportional signal current of 4...20 mA in accordance with NAMUR NE43.

**Using Alarms**

The alarm output is constructed as a PNP open collector and can be connected accordingly.

- The LED and alarm output always switch simultaneously.
- Decreasing flow  $\leftarrow \Delta Q$ : Is the value below the switch point, the alarm outputswitches and the LED lights red.
- Increasing flow  $\Delta Q \rightarrow$ : Only if the switch point is exceeded by more than 0,5 l/min (SVM-030) or 2...5 l/min (SVM-110), the alarm output switch back and the LED lights green.

The hysteresis of 0,5 l/min or 2...5 l/min prevents the LED and alarm output from oscillating during the switch operation.

