

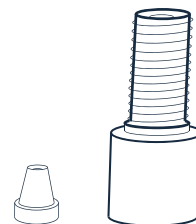
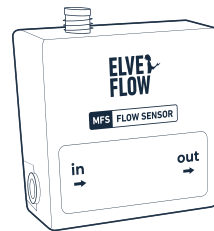
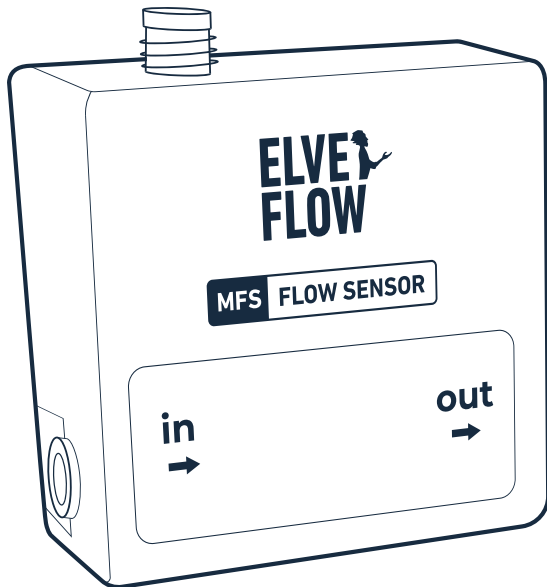
USER GUIDE



MFS Microfluidic flow sensor

Thermal based flow sensor for water and oils

Elveflow.com/MFS-flow-sensor/





READ THIS MANUAL CAREFULLY BEFORE USING THE INSTRUMENT

This manual must be read by any person who is or will be responsible for using, maintaining or repairing the MFS flow sensor.

Important flow sensor safety notices:

1. The flow sensor must be used in a **clean and dry environment**, with up to 60% relative humidity and ventilated room.
2. Do not use **chemicals which are incompatible with PEEK and glass** (quartz for sensors #1, #2 and #3; borosilicate for sensors #4 and #5).
3. **No solids** should enter the flow sensor.
4. The flow sensors, and in particular the flow sensors #1 and #2 must be used in a clean, dry, dust-free environment and **with filtered solutions**. Due to the very small size of their inner capillary, they may clog easily if these measures are not observed.
5. **Do not exceed the maximum pressure** that can be applied to a flow sensor. Check the dedicated section for the pressure limits of each flow sensor model.
6. Always **clean the flow sensor** before storing it. Follow the recommended cleaning protocol in this user guide.
7. Gently tighten the **1/4-28 fittings** to the flow sensor to obtain a perfect sealing. Tightening the fittings too strongly may break internal parts.
8. Do not let **liquid dry** in the flow sensor capillary.
9. Always store the sensor with their **protective caps**.

User safety

Working with systems or equipment containing liquids or gases under pressure can entail risks, especially with pressurized reservoirs containing corrosive, toxic or explosive liquids and even with water.

Due to the nature of the materials used, transport, and handling of reservoirs by the end user, Elvesys cannot guarantee the integrity and strength of the provided reservoirs (for any type: Eppendorf, Falcon, glass...) beyond atmospheric pressure.

If the conditions listed here are not met, the user is exposed to dangerous situations and the instrument can undergo permanent damage. Elveflow and its partners cannot be held responsible for any damage related to the incorrect use of the instruments.

Flow rate quality improvement

Following practical sensor installation and connection to the elements or to your setup, a final tuning has to be made. In particular, the **Flow Resistance** has to be checked and amended accordingly using ESI Tuning Resistance Module. This will stabilize your system and **greatly improve flow rate quality**.

Then the PID settings of the feedback loop also have to be tuned, because the default factory setting may make them appear poorly reactive.

To help you with that matter, please follow the documentation provided in the **USB key** that comes with every instrument:

- PID & Flow Resistance Tuning.mov : a step by step video tutorial available at <https://we.tl/t-oA46U3bhPZ>
- Tutorial - Module Tuning Resistance.pdf
- How to get a better flow control using flow resistance_.pdf
- PID parameters tuning.pdf
- How to Choose Flow Regulation Parameters_.pdf

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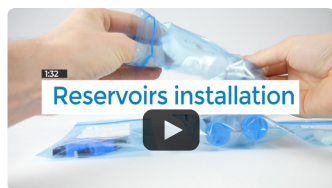
Need help to install?

A series of videos produced specifically to provide our customers with the best experience.

How to install:

[Elveflow.com/unboxing-OB1/](https://www.elflow.com/unboxing-OB1/)

Step by step, we guide you to install your OB1 pressure controller, install and connect reservoirs and flow sensors. A dedicated part shows the ESI software installation and the calibration needed as you use it for the first time.



Prior to use

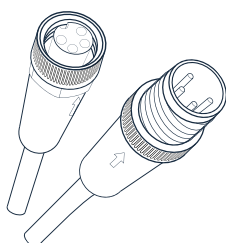
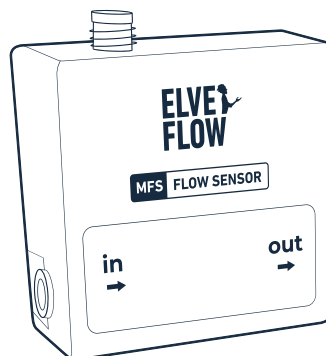
Package content checking

Before setting up your MFS flow sensor, please check the package content to verify that you have received the items below:

1. MFS Flow sensor

five models exist with a specific flow rate range:

- MFS 1 0** to $\pm 1.5 \mu\text{L}/\text{min}$ • Inner diameter $\varnothing 25 \mu\text{m}$
- MFS 2 0** to $\pm 7 \mu\text{L}/\text{min}$ • Inner diameter $\varnothing 150 \mu\text{m}$
- MFS 3 0** to $\pm 80 \mu\text{L}/\text{min}$ • Inner diameter $\varnothing 430 \mu\text{m}$
- MFS 4 0** to $\pm 1 \text{ mL}/\text{min}$ • Inner diameter $\varnothing 1.0 \text{ mm}$
- MFS 5 0** to $\pm 5 \text{ mL}/\text{min}$ • Inner diameter $\varnothing 1.8 \text{ mm}$



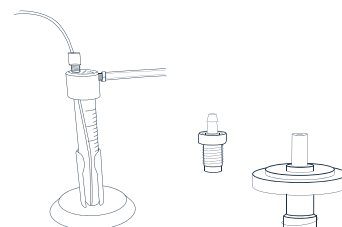
2. Cable connection

3. USB flash drive

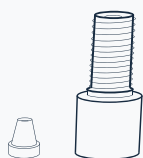
with user guides inside



Optional Accessories:



Optional



PFA (Teflon)/ETFE 1/4"-28 UNF
thread fitting + ferrule for 1/8" OD
tubing

You may have ordered some additional elements (e.g. pressure controller, reservoirs, tubing) so please check that you have received all the corresponding items.

If any parts are missing or damaged, please get in touch with Elveflow® support immediately:

customer@elveflow.com

or contact@elveflow.com

to complete a new purchase



Note that because of the small inner diameter of the capillaries inside the sensors (especially **MFS 1** and **MFS 2**), the sensors will act as flow resistance with a significant pressure drop. Take it into account to design your setup.

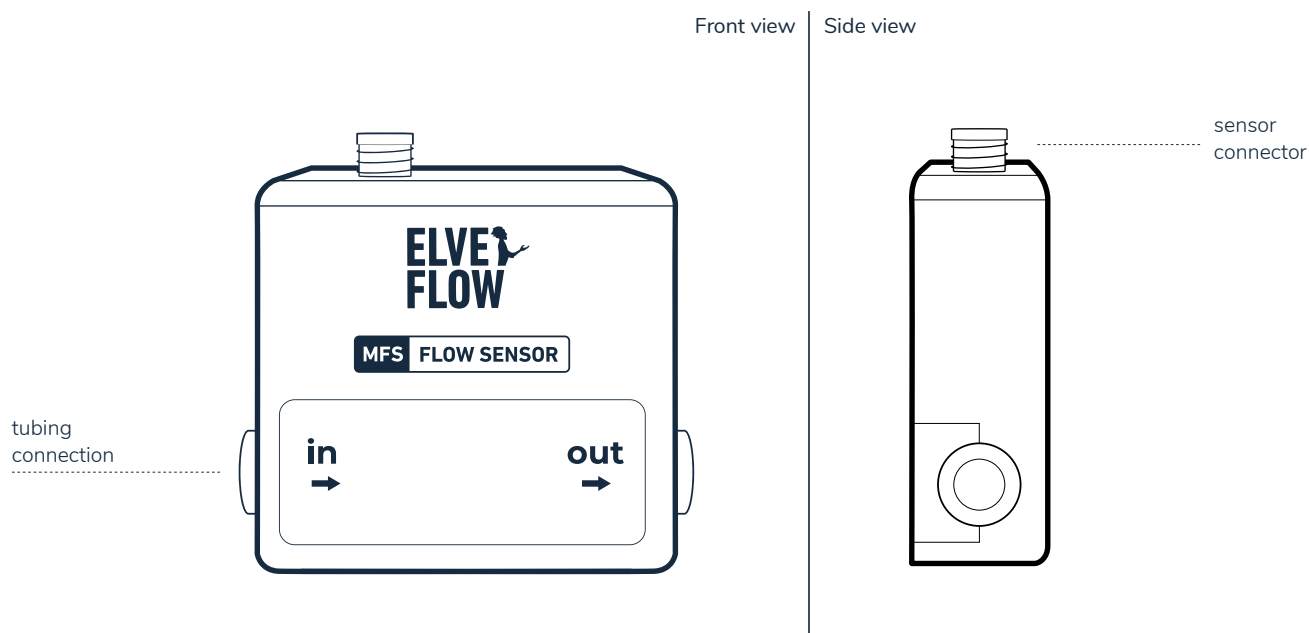
Setup and use

Getting started

Technical specifications might change depending of your order. We showcase here one flow sensor, however your sensor might have a smaller tubing connection input depending of the sensor flow rate range.

Instrument description

The flow sensors are designed to monitor flow rates in different ranges for a wide variety of demanding microfluidic applications. It is monitored by a computer through an interfacing device such as an Elveflow® flow reader, or one of the Elveflow® pressure regulators, using the ESI software that allows you to perform real-time creation, monitoring and modifications on complex flow rate profiles such as sine, square, triangle, ramp, pulse or sawtooth. Last but not least, the ESI software allows recording and exporting the data generated by all the Elveflow® instruments connected and involved in your experiment.

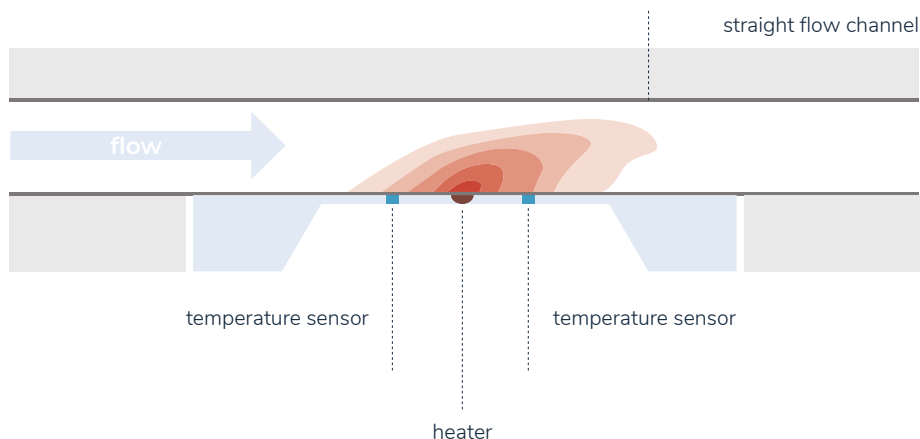


The flow sensors have “in” and “out” markings which indicate the flow direction. Thus, “in” is generally connected to a reservoir, while “out” is connected to a microfluidic chip. It can read flow in both directions. A positive value indicates that the fluid is flowing from “in” to “out”, and a negative value indicates flow in the opposite direction, i.e., from “out” to “in”.

Principle

The flow sensor working principle is based on locally heating the fluid and measuring its temperature through a glass capillary. The measurement quality highly depends of the capillary surface cleanliness. Therefore, deposits on the capillary wall can reduce heat transfer for both heating and temperature measurements and lead to a measurement deviation and/or an offset.

Cleaning flow sensors after use ensures their longevity and measurement quality.



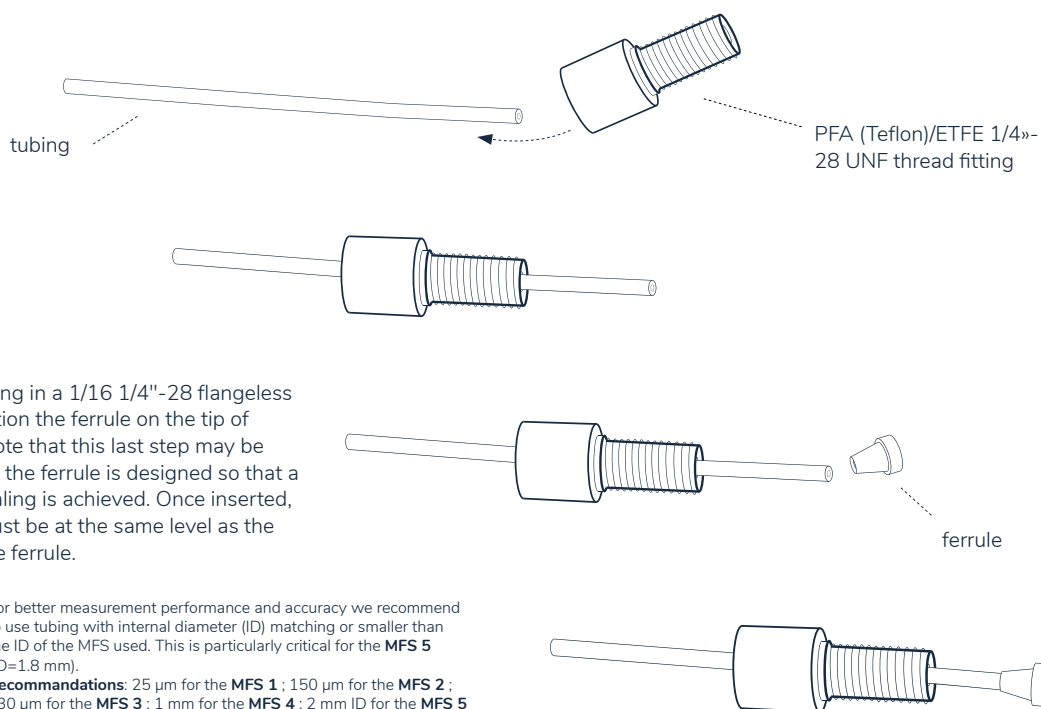
Connect the instrument

Connect microfluidic tubing

Connect the flow sensor inside your setup.

1 Microfluidic connection

A



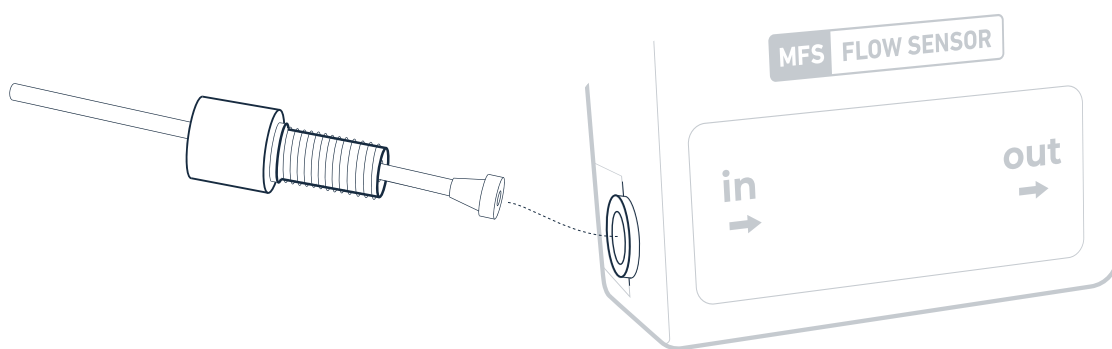
Place the tubing in a 1/16 1/4"-28 flangeless nut then position the ferrule on the tip of the tubing. Note that this last step may be difficult, since the ferrule is designed so that a maximum sealing is achieved. Once inserted, the tubing must be at the same level as the flat face of the ferrule.



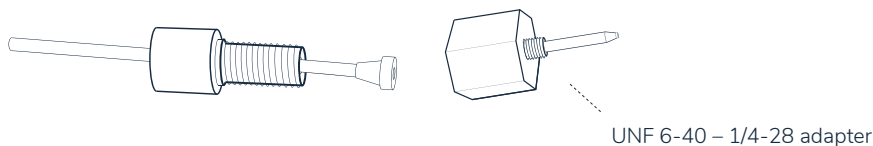
For better measurement performance and accuracy we recommend to use tubing with internal diameter (ID) matching or smaller than the ID of the MFS used. This is particularly critical for the **MFS 5** (ID=1.8 mm).
Recommendations: 25 µm for the **MFS 1**; 150 µm for the **MFS 2**; 430 µm for the **MFS 3**; 1 mm for the **MFS 4**; 2 mm ID for the **MFS 5**

B

Screw the flangeless nut directly into the connector



For a flow sensor with UNF 6-40 connectors first screw the UNF 6-40 – 1/4"-28 adapter to the flow sensor, then screw the flangeless nut to the adapter.

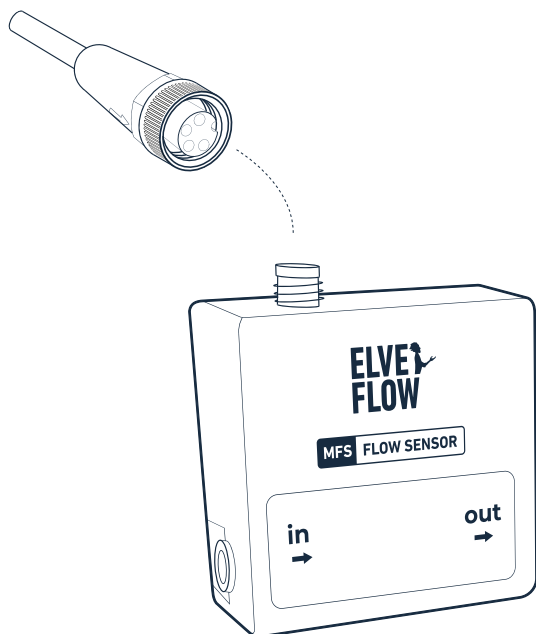


Connect electronic cable

Connect the female part of the cable to the male connector of the flow sensor.

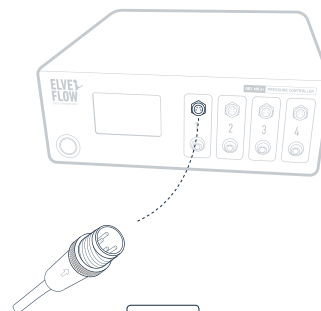
2 Electronic connection

Connect the female part of the cable to the male connector of the flow sensor.



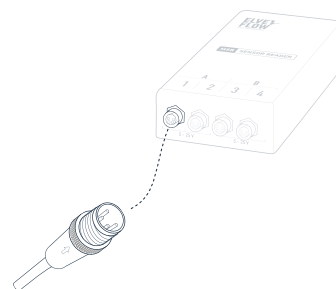
Then, connect the male part of the cable to the female connector on your instrument.

Directly on your OB1 MK3+



or

With a MSR sensor reader connected to the computer only for analogic sensors



Control the instrument

ESI Software and SDK

You are now ready to use your instrument. It can be either controlled by the Elveflow® Smart Interface software or by software development Kit (C++, Python, MATLAB® and LabVIEW® libraries). The Elveflow® Smart Interface's and the SDK main features and options are covered by specific guides. Please refer to those guides for a detailed description.

↓ Next step

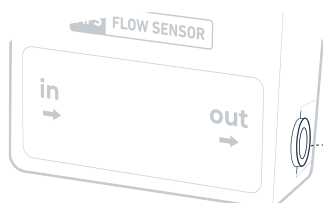
Flow rate control: how to make the best of your setup

A microfluidic resistance could stabilize your system and greatly improve flow rate quality when MFS is used like a feedback loop with the OB1 pressure controller. We provide a diagnostic tool to get a first evaluation of the size of your fluidic resistance.

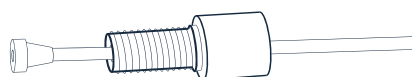
3 Microfluidic resistance (optional), when used with an OB1 MK3+ controller

PID & Flow Resistance Tuning.mov: a step by step video tutorial available at: <https://we.tl/t-oA46U3bhPZ>

A



Connect all your setup and **fill up with water**. There must be water into the whole system including flow sensor and tubing.

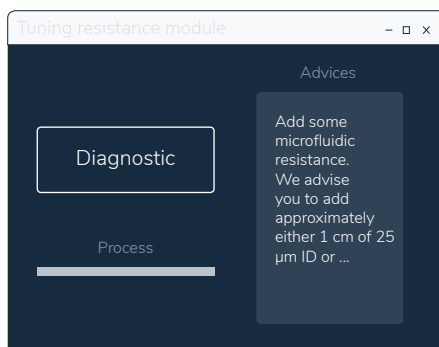


B

Diagnostic tool

Install ESI Elveflow software on your computer, connect your instrument and add the **Tuning resistance module**.

Click on **Diagnostic**



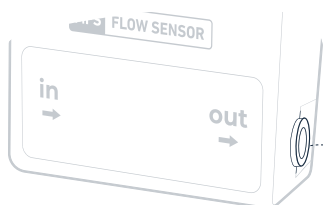
The tuning resistance module allows the user to realize a first tuning of his setup to perform tuning of PID parameters and improve flow control.

This tool is not a wizard but gives you a first estimate for very simple fluidic configurations.

and add some **microfluidic resistance** if the diagnostic recommends it.

C

The flow resistance must be added at the outlet of the MFS for optimum performances.



Flow resistance

MORE USER GUIDES ?

You will also find dedicated user guides for:

- The other instruments of the Elveflow® product line;
- Sensors and feedback loops;
- Accessories for microfluidics (reservoirs, flow restrictors, etc.).



Inside USB flash drive

Technical specifications

FLOW SENSOR	MFS 1	MFS 2	MFS 3	MFS 4	MFS 5			
Media calibration	water	water	IPA	water	IPA	water	IPA	water
Flow rate range	0 to ± 1.5 µL/min	0 to ± 7 µL/min	0 to ± 70 µL/min	0 to ± 80 µL/min	0 to ± 500 µL/min	0 to ± 1 mL/min	0 to ± 10 mL/min	0 to ± 5 mL/min
Accuracy m.v. - measured value applies to negative values (bi-directional)	7 nL/min between [0 to 75] nL/min	20 nL/min between [0 to 0.42] µL/min	210 nL/ min between [0 to 4.2] µL/min	120 nL/ min between [0 to 2.4] µL/min	5 µL/min between [0 to 25] µL/min	2 µL/min between [0 to 0.04] mL/min	100 µL/ min between [0 to 0.5] mL/min	10 µL/min between [0 to 200] µL/min
	10 % m.v. between [75 to 1,500] nL/min	5 % m.v. between [0.42 to 7] µL/min	20 % m.v. between [4.2 to 70] µL/min	5 % m.v. between [2.4 to 80] µL/min	20 % m.v. between [25 to 500] µL/min	5 % m.v. between [0.04 to 1] mL/min	20 % m.v. between [0.5 to 10] mL/min	5 % m.v. between [0.2 to 5] mL/min
Repeatability m.v. - measured value applies to negative values (bi-directional)	0.9 nL/min between [0 to 80] nL/min	3.5 nL/ min between [0 to 0.7] µL/min	7 nL/min between [0 to 0.7] µL/min	8 nL/min between [0 to 1.4] µL/min	0.25 µL/ min between [0 to 25] µL/min	0.2 µL/ min between [0 to 0.04] mL/min	5 µL/min between [0 to 0.5] mL/min	1 µL/min between [0 to 0.2] mL/min
	< 1 % m.v. between [80 to 1,500] nL/min	0.5 % m.v. between [0.7 to 7] µL/min	1 % m.v. between [0.7 to 70] µL/min	0.5 % m.v. between [1.4 to 80] µL/min	1 % m.v. between [25 to 500] µL/min	0.5 % m.v. between [0.04 to 1] mL/min	1 % m.v. between [0.5 to 10] mL/min	0.5 % m.v. between [0.2 to 5] mL/min
Sensor inner diameter	25 µm	150 µm		430 µm	1.0 mm		1.8 mm	
Operating pressure	200 bar			100 bar	15 bar		15 bar	
Burst pressure	400 bar			200 bar	30 bar		30 bar	
Microfluidic fitting type	UNF 1/4-28							
Wetted material	PEEK							
Internal sensor capillary material	Quartz					Borosilicate glass		

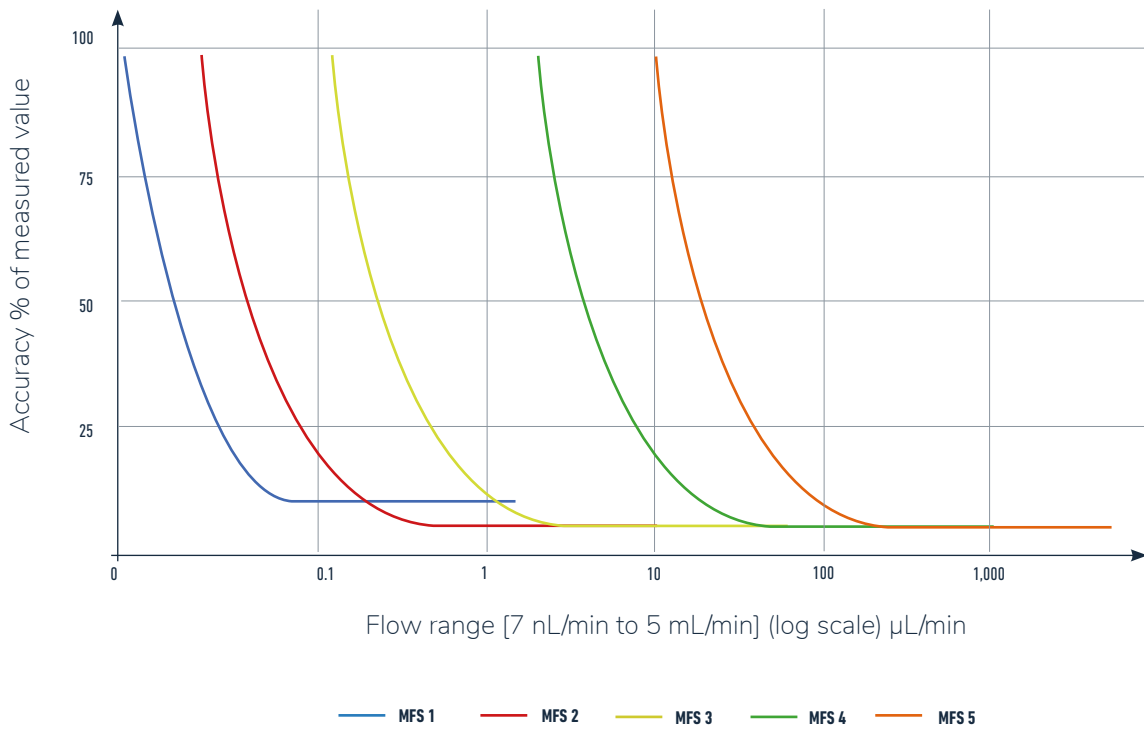
Non-contractual information, may be changed without notice.

ELECTRICAL INPUT: 8V  100 mA **ANALOG OUTPUT:** 0 - 5 V **FLOW SENSOR SIZE** (length x width x height): 58 x 52 x 23 mm **WEIGHT:** 102 g

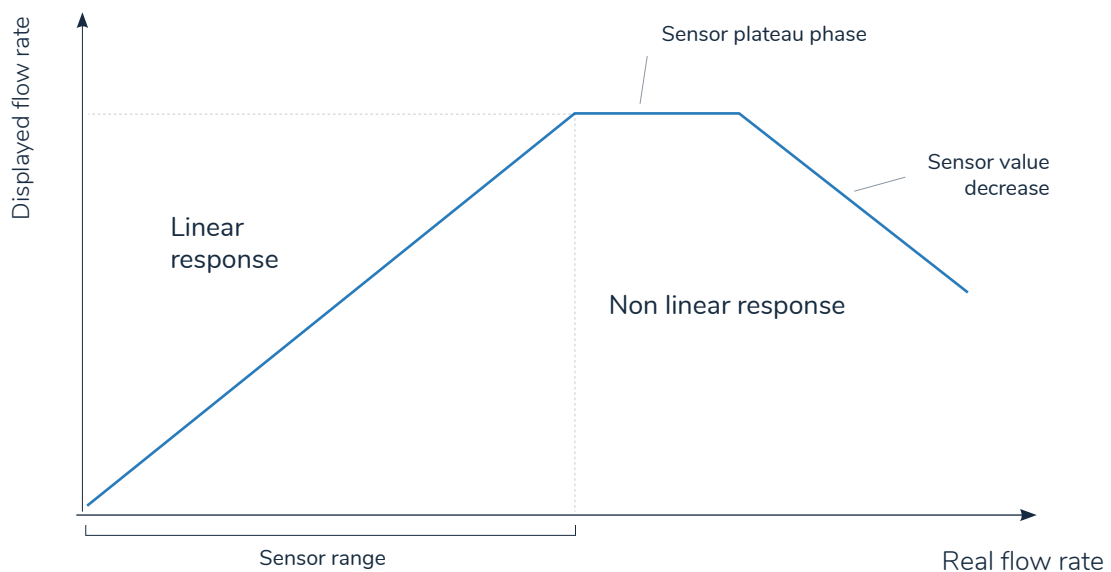
Excellent chemical resistance and bio-compatibility are ensured
Liquid Flow Sensor enables fast, and non invasive measurements of very low liquid flow rate below 5mL/min
The product comes fully calibrated for water
Flow calibration for methanol or other media is available on request (all data for medium H2O, 20°C, 1 bar unless otherwise noted)

The recommended storage temperature range from -10°C to +60°C
The operating temperature is +10°C to +50°C
The flow sensor shows bi-directional and linear transfer characteristics

Accuracy



Response of the sensor



Cleaning and storing

Cleaning the flow sensor after use is mandatory in order to prevent solid depositions in its capillary. These depositions may cause an increase in hydrodynamic resistance, false measurements and eventually render the flow sensor unusable.

The flow sensor is cleaned by simply pushing fluids through its capillary. Never insert any solids in the capillary, e.g. plastic or metallic sticks, in order to clean the flow sensor. You risk scratching the glass capillary and permanently damaging the flow sensor.

Cleaning protocols

The following protocols are general examples. Add washing steps according to the substances used during the experiment. Before washing the flow sensor with any substance, its chemical compatibility with the wetted materials must be checked (see technical data section). Please understand that we can not provide a specific protocol for each case, but rather general recommendations.

When cleaning the flow sensor after flowing substances with additives, such as salts or surfactants, start by flowing the substance without any additive.

Always finish by Isopropyl alcohol flush. IPA is a very volatile solvent and does not leave any residues, as opposed to water and acetone.

Please note that sensor clogging is not a defect but the result of a misuse and is not covered by the warranty.

Example of cleaning procedure

Working with Multiple Liquids

Switching between multiple liquids can leave transient deposits in the form of liquid layers inside the glass capillary. This is especially common for insoluble liquids, but can happen even with miscible liquid combinations. For example, when IPA is followed by water in a sensor without drying in between, large offsets can be observed for hours after switching to water.

If possible, dedicate a separate sensor for each different liquid to be measured. If not possible, use caution when switching media and clean properly.

Working with Water

When working with water it is recommended not to let the sensor dry out. All salts and minerals in the water will deposit on the glass and are difficult to remove. Although salt solutions are particularly prone to problems, even clean water can still contain enough dissolved minerals to form a deposition layer. Flush with DI water on a regular basis to prevent build-up. If you still encounter problems, occasionally flush the sensor with slightly acidic cleaning agents.

When working with water containing organic materials (sugars, etc.) microorganisms often grow on the walls of the glass capillary and form an organic film that can be difficult to remove. Flush on a regular basis with solvents such as ethanol, methanol or IPA, or with cleaning detergents to remove organic films.

Working with Silicone Oils

When working with silicone oil it is recommended not to let the sensor dry out. Silicone oils can be cleaned out using special cleaners. Check with your silicone oil supplier for cleaning agents compatible with glass surfaces.

Working with Paints or Glues

When working with paints or glues it is critical not to let the sensor dry out. Often, depositions of paints and glues cannot be removed anymore after they have dried. Flush the sensor with cleaning agents recommended by your paint or glue manufacturer that are compatible with glass. Ensure that you have found a good cleaning procedure before performing the first tests, and always clean shortly after emptying the sensor.

Working with Alcohols or Solvents

Unlike most other fluids, alcohols and solvents are not critical and a short flush of isopropanol (IPA) is sufficient to clean the capillary walls.

Identified cleaning solutions

SAMPLE LIQUID	CLEANING SOLUTION	SUPPLIER
Biofilm/cells	Sodium dichloroisocyanurate (1ppm HClO)	Sigma Aldrich ref 218928 link
1% micro-beads of polystyrene in DI Water	Toluene 99.8%	Sigma Aldrich ref 244511 link
Mineral oil	RBSTM 25	Sigma Aldrich ref 83460 link
	Tergazyme	ALCONOX link
Blood	BD FACS CLEAN	BD biosciences link
	RBSTM 25	Sigma Aldrich ref 83460 link
	TERGAZYME	ALCONOX link
Tissues, body fluids, proteinaceous soil (Biological application)	Tergazyme	ALCONOX link
Solvent and bioreactor residue	Tergazyme	ALCONOX link

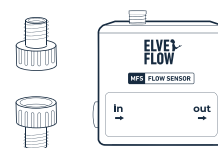
How to use Tergazyme

1. Make a fresh 1% solution (10 grams per liter) in cold or warm water. If available, use warm water below 130 F (55°C). For difficult soils, use very hot water (above 150 F or 65°C) and use double the recommended amount of detergent.
2. Circulate solution slowly for at least 1/2 hour.
3. Rinse thoroughly—preferably with running water.
4. Drying can affect residues and corrosion. Impurities from rinse water can be deposited during evaporation. To minimize this, Dry with techniques that physically remove rinse water from the substrate such as isopropyl alcohol final rinse.

Storing conditions

Always dry the flow sensor with clean, dry air before storing it.

Remove the microfluidic connectors and tubing and connect the caps to prevent dirt and dust from entering the capillary.



Supplementary information

Conditions of use

Terms and conditions of use

We strongly believe in the intrinsic quality of our microfluidic instruments line and we hope that you will be pleased with your purchase. However, in the unlikely event that you should receive damaged or incorrect goods in your delivery, please notify us within 7 days.

You will be offered the option of a refund or an exchange (provided the goods are in stock).

You may be asked to return goods for inspection. In this case we will refund the shipping fees.

Should the damaged or incorrect item be no longer available, you will be given the option of a refund. Please note that goods that become damaged or broken after 7 days of receipt cannot be returned.

Unwanted items

If for any reason you do not wish to keep your purchase and would like a store credit, then please notify us within 7 days.

We cannot accept unwanted returns that have been opened, used or damaged by the customer.

For unwanted goods, we allow up to 14 days for the return of goods. We will only issue a credit

upon receipt of all returned goods.

Please note that we are unable to refund your costs in returning unwanted goods or the delivery costs of sending the goods to you in the first place.

Cancellations

If you wish to cancel your order please email us immediately: contact@elveflow.com.

Privacy Policy

Customer details remain private and confidential and will not be released to a third party unless required to do so by law.

We use the information we collect about you to process orders, to provide a more personalized shopping experience and, if you request it, to notify you about new products, special offers or other information that may be of interest to you. We do not sell or pass on any personal information to any other Companies or Organizations.

Payments & Procedures

Payment from private customers must be paid upfront. Trade orders from registered companies or organizations can be invoiced. Payment is

due strictly within 30 days of the invoice date.

Products & Prices

Please note that some goods may vary in style, color or detail from the image shown. We reserve the right to change prices at any time.

Transport and storage

Be careful not to harm or shake Elveflow® products while moving. Elveflow® products must not be transported when plugged in. Store products in standard conditions in an adapted box (typically the one used to send you the product).

Humidity and temperature must not exceed those of the specifications.

Exclusive remedies

The remedies provided herein are the customer's sole and exclusive remedies. Elveflow® shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory.

Safety Information

THE FOLLOWING GENERAL SAFETY PRECAUTIONS MUST BE FOLLOWED DURING ALL PHASES OF OPERATION, SERVICE, AND REPAIR OF THIS INSTRUMENT. FAILURE TO COMPLY WITH THESE PRECAUTIONS OR WITH SPECIFIC WARNINGS ELSEWHERE IN THIS MANUAL VIOLATES SAFETY STANDARDS OF DESIGN, MANUFACTURE, AND INTENDED USE OF THE INSTRUMENT. ELVESYS ASSUMES NO LIABILITY FOR THE CUSTOMER'S FAILURE TO COMPLY WITH THESE REQUIREMENTS.

Important advice

Elveflow® products are for research use only.

No liquid should get into the OB1, otherwise this would void the warranty.

The pressure source connected to the OB1 must be dry, dust and oil free, and of a maximum of 10 bar. Please take the required action to ensure that these conditions are met and maintained.

Conditions of use

This instrument is intended for indoor use. It is designed to operate at a maximum relative humidity of 60% and at altitudes of up to 2000 meters. Operating temperature range is +5 °C to 50 °C.

Do not operate in wet/damp conditions: to avoid electric shock, do not operate this product in wet or damp conditions.

Do not operate in an explosive environment. Do not operate the equipment in the presence of explosive or flammable gases or fumes.

Warning: Do not use this product as safety or emergency stop devices or in any other application where failure of the product could result in personal injury. The protective features of this product may be impaired if it is used in a manner not specified in the operating instructions. Before installing, handling, using or servicing this product, please consult the data sheet and user manual.

Failure to comply with these instructions could result in death or serious injury. If the buyer purchases or uses Elveflow® products for any unintended or unauthorized application, the buyer shall defend, indemnify and hold harmless Elveflow® and its officers, employees, subsidiaries, affiliates and distributors against all claims, costs, damages and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if Elveflow® is allegedly negligent with respect to the design or the manufacture of the product.

Pressurized Equipment

Care must be taken when the Elveflow® pump is pressurized to ensure that the instrument is not damaged in any way.

Protection

Safety glasses and lab coats should be worn at all times when using an Elveflow® pressure pump due to the use of pressurized equipment. This is particularly important when hazardous liquids are used.

Electricity Advice

Use Elveflow® instruments with the provided power unit only. Maintenance should only be attempted by qualified Elveflow® personnel. Removal of the back panel may invalidate any warranty.

Before applying power: verify that the line voltage matches the product's input voltage requirements and that the correct fuse is installed. Use only the specified line cord for this product and make sure the line cord is certified for the country of use.

Fuses: only fuses with the required rated current, voltage, and specified type (normal blow, time delay, etc.) should be used. Do not use repaired fuses or short-circuited fuse holders. To do so could cause a shock or fire hazard.

Keep away from live circuits: operating personnel must not remove instrument covers. Component replacement and internal adjustments must be made by qualified service personnel. Do not replace components with a power cable connected. Under certain conditions, dangerous voltages may exist even with the power cable removed.

To avoid injuries, always disconnect power, discharge circuits and remove external voltage sources before touching components.

ESD precautions: the inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation, take

customary and statutory ESD precautions when handling this product.

Maintenance advice

Maintenance should only be attempted by qualified Elveflow® personnel. Removal of the back panel will invalidate any warranty.

Do not service or adjust alone: do not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.

Do not substitute parts or modify the instrument: because of the danger of introducing additional hazards, do not install substitute parts or perform any unauthorized modification to the instrument.

Return the instrument to an Elveflow® Technologies Sales and Service Office for service and repair to ensure that safety features are maintained.

Instruments which appear damaged or defective should be made inoperative and secured against unintended operation until they can be repaired by qualified Elveflow® personnel.

CE compliance

This product meets the essential requirements of applicable European Directives, as amended for CE marking, as follows:

Electromagnetic Compatibility

COUNCIL DIRECTIVE 89/336/EEC of 3 May 1989

This directive has been amended by the following Council Directives:

1. 92/59/EEC of 29 June 1992 (General Product Safety)
2. 93/68/EEC of 22 July 1993 (CE Marking directive)
3. 99/5/EC: Directive of Radio Equipment & Telecommunications Terminal Equipment (R&TTE).

Warranty



ELVEFLOW is a brand of ELVESYS Microfluidics innovation center.

The ELVESYS hardware products are warranted against defects in materials and workmanship for a period of one year from the date of delivery. ELVESYS software and firmware products, that

are designated by ELVESYS for use with a hardware product and when properly installed on that product, are warranted not to fail to execute their programming instructions due to defects in material and workmanship for a period of 60 days from the date of delivery. During the warranty period ELVESYS will either repair or replace products that prove to be defective. ELVESYS does not warrant that the operation for the software, firmware or hardware shall be uninterrupted or error free. For warranty service, this product must be returned to a service facility designated by ELVESYS. The customer shall prepay shipping charges (and shall pay all duties and taxes) for products returned to ELVESYS for warranty service. Except for products returned to a Customer from another country, ELVESYS

shall pay for return of products to the Customer.

ELVESYS does not assume any liability arising out of any application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. All operating parameters, including without limitation recommended parameters, must be validated for each customer application by the customer's technical experts. Recommended parameters can and do vary in different applications. ELVESYS reserves the right, without further notice, (i) to change the product specifications and/or the information in this document and (ii) to improve reliability, functions and design of this product.

Limitation of warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by the Customer, Customer-supplied software or interfacing, unauthorized modification or misuse, operation outside of the environmental specifications for the product, or improper site preparation and maintenance. In particular, clogging of the sensors or electrical short circuit due to leaking cannot be in any case covered by the warranty.



Technical support

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General information

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Product:

Elveflow.com/microfluidic-flow-control-products/microfluidic-flow-control-module/microfluidic-liquid-mass-flow-sensors/



MAY THE FLOW BE WITH YOU