

Installation instructions

Original language: German

Flow monitor ST-5

Product code: all variants



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www.rm-suttner.com

Technical data

Water temperature permanently	80°C
Ambient temperature	bis max. 60°C
Power	250 V
Max. flow intensity	3,0 A (ohmsh)
Max. permissible current flow	5,0 A
Power	120 VA
Protection class	IP65 (für alle)
Switching time	4 ms
Dimensions (W / H / D)	102 x 48 x 34
pH-Value water	6,5 - 8,0
elec. Conductance water	max. 2000 µS/cm at 20°C
Max. size of solids	50µm

Abbreviations and symbols	
FT; MT	Female thread; male thread
T	Whitworth pipe thread according to DIN ISO 228, ident. BSP= British Standard Pipe
NPT	National Pipe Thread (American thread standard)
kg	Kilogram
V	Volt
A	Ampere
VA	Volt ampere
mS	Millisecond
µm	Micrometer

  	The flow monitor is designed for permanent use up to approx. 80°C. If the water temperature is more than 45°C, the user must wear suitable protective clothing, for example, in the form of gloves, shoes and goggles. The local safety regulations currently in force should always be observed.
 	Please read these Installation Instructions carefully before using the equipment! Keep the Operating Instructions in a safe place for future use or for the next user! These Operating Instructions were prepared with great care. However, SUTTNER GmbH cannot be held responsible for any possible errors in the Operating Instructions or for any consequences arising thereof!

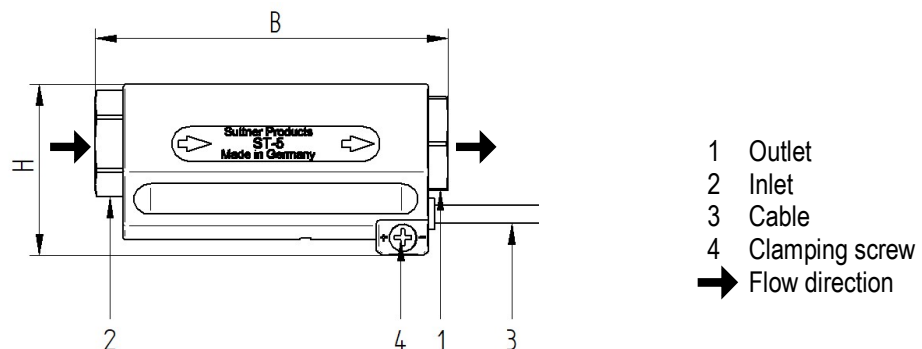


Illustration shows standard variant

Description

Flow monitor

The Suttner flow monitor can be used as a signaller or switch. Inside, there is a float equipped with magnets. The reed switch is on the outside of the housing. During the through-flow, the float is moved vertically upwards when the flow rate reaches a certain level. The magnet mounted to the float enters the area of the reed switch and triggers the switching.

The Suttner flow monitor is a high-quality technical flow monitor. No additional components are required for commissioning. The housing is made from high-quality stainless steel. The material used for the housing is resistant to decalcifying or cleaning agents. All other components are manufactured from appropriate resistant materials. The connection cable complies with the DIN VDE 0285-525-2-11 guideline.

The electrical specifications apply to ohmic loads. Capacitive, inductive and lamp loads must be operated with a protective circuit.

Intended use

The flow monitor is designed exclusively for use as a flow monitor. Any other or additional use is deemed inappropriate. The manufacturer / supplier shall not be liable for any resulting damages. The risk is borne solely by the user. Please follow the instructions provided by the manufacturer of the decalcifying or cleaning agent. In case of doubt, please contact the manufacturer.

Use flow monitors only in a technically perfect condition, for their intended use, safely, aware of the dangers and with full observance of the instruction manual!



Dispensing flammable, explosive, caustic or toxic substances is forbidden!

The flow monitor may not be used with abrasive substances.

To avoid damaging the flow monitor, install a fine filter with a recommended mesh size of 50 µm into the water inlet to the pump. Where there are ferritic parts in the water, a magnetic filter must be used!

The flow monitor must only be used in a technically perfect condition, unmodified in any way, for the purpose intended, in the awareness of safety requirements and potential hazards in compliance with these Operating Instructions. Only adults trained in handling flow monitors may use the flow monitor.

Also comply with the operating instructions for equipment and accessories connected to the flow monitor and with the applicable regulations for cleaning agents.

Normative references

- The product is classed as a pressure-maintaining component within the terms of Pressure Equipment Directive 2014/68/EU.
- The product complies with the requirements of EN 61010-1.
- Due to the operating parameters, it comes under the scope of Article 4 / Paragraph 3 of this guideline ("good engineering practice") and therefore no Declaration of Conformity and CE marking are allowed!
- The circulation valve must not be installed in equipment complying with the Pressure Equipment Directive 2014/68/EU.
- The component is a standard component within the terms of Machinery Directive 2006/42/EC!

Symbols and their meaning



Hazard!

If these instructions are not followed, there is a danger of physical injury, danger to life and material damage!



Observe the Installation Instructions!

Incorrect operation may lead to severe injury. Read the Installation Instructions before using the equipment.



Wear safety gloves!



Wear protective goggles!



Description of imminent hazard and failure to avoid hazard will result death



Description of hazard and possible resulting injuries or death



Description of hazard that could result in minor or moderate injury

For your safety

This Suttner product is state of the art and complies with generally recognised health and safety regulations. Due to the high pressures and temperatures nonetheless there is the danger of material damage and injury for users and other persons. Please comply with these Installation Instructions at all times and the relevant regulations for machine manufacture. "Personal protective equipment" according to VBG101 must be worn for assembly and maintenance work.

- Malfunctions that may affect safety are to be rectified immediately.
- All assembly or installation work must be carried out by authorised specialist personnel.



Risk of burning or scalding due to hot media!

Do not touch anything which is not insulated if you are working with consumables and additives where the temperature exceeds 45°C.

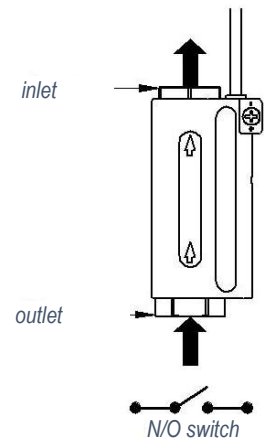
Assembly



Usage notes

Flow monitors are high-quality fittings, which must be handled with particular care. The penetration of foreign bodies into the flow monitor must be avoided during assembly, installation and during operation. The function of a flow monitor can also be impaired by hemp, Teflon tape or other sealants. Incorrect use of the flow monitor during storage, transport and assembly may impede the function of the flow monitor or render it inoperable. Both the flow monitor and removable reed switch must be handled with care since the reed contact inside is surrounded by a fragile glass cylinder.

- The flow monitor may only be installed vertically and in accordance with the flow direction. The inlet is always at the bottom. In order to ensure proper functioning of the flow monitors, they must be installed in such a way that no impermissible static, dynamic or thermal stresses may act on the flow monitor.
- At the inlet and outlet of the flow monitor, a straight stabilizing section with a length of 5 x DN must be provided.
- When assembling the connecting parts, ensure the maximum tightening torque is not exceeded. Screw the connecting parts into the inlet and outlet at approx. 20Nm.
- Make sure the cable is installed stress-free, with minimum bending radii.
- The reed switch reacts sensitively to electromagnetic fields, which is why it is important that there is sufficient distance to engines, electric coils and similar components when the flow monitor is installed.
- The electrical connection may only be carried out by a qualified electrician. The cable of the flow monitor must be incorporated in the machine controller.
- The reed switch is volt-free and does not need an external power source.
- To remove the reed switch, loosen the screw (Pos. 4) by at least one turn.
- Pull the reed switch up and out of the holder.



Risk of injury!

If the high-pressure system has been used with hot water, allow the equipment to cool down to below 45°C due to the risk of scalding or burning before starting assembly and maintenance work!

- Switch the high-pressure generator off before carrying out assembly work on the high-pressure system.
- Secure the high-pressure generator against being unintentionally switched on.
- Turn the water supply off.
- Ensure that system sections and lines to be opened are not under pressure.
- Seal the screw connectors in accordance with your intended use with an appropriate sealant such as Teflon sealing tape or a liquid sealant (see R+M Catalogue, Chapter 06, Adhesives and sealing materials).
- Ensure the equipment meets the requirements of the machine guideline after installing the flow monitor in a machine/system!
- If necessary, set up warning signs to prevent unintentional start-up of the equipment/machines/ systems!
- Carry out the assembly/repair work in accordance with the applicable safety and accident prevention regulations of the employers' liability insurance association!
- Check the correct functioning of the safety devices during commissioning!

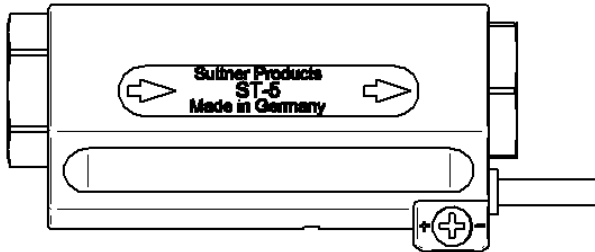
Modification

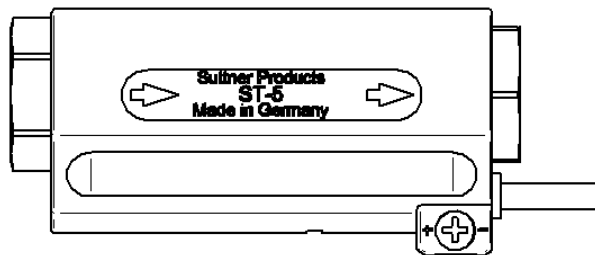
No modifications of any kind are to be made to the flow monitor!

Transportation and storage

Please ensure the flow monitor is cleaned and protected from contamination during transportation and storage. Protect the flow monitor against frost. The effect of frost can damage the flow monitor so badly that it no longer works perfectly.

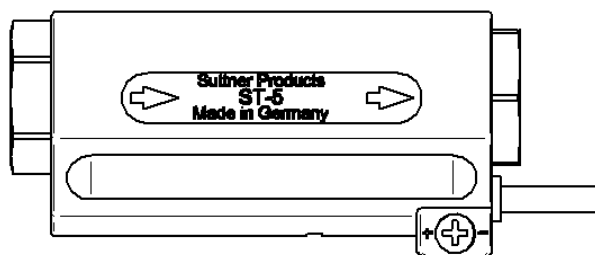
Product variants

Flow monitor ST-5					
Item number	200005501	200005506	200005542	200005556	200005557
Max. permissible pressure	350 bar	350 bar	4380 psi	350 bar	350 bar
Max. Volume flow	30 l/min	30 l/min	30 l/min	30 l/min	30 l/min
Thread connection	G3/8IG	G3/8IG	G3/8IG	G3/8IG	G3/8IG
Switch-on volume flow vertical	4,1 l/min	4,1 l/min	4,1 l/min	0,4 l/min	0,4 l/min
horizontal	-	-	-	-	-
Switch-off volume flow vertical	2,9 l/min	2,9 l/min	2,9 l/min	0,1 l/min	0,1 l/min
horizontal	-	-	-	-	-
Weight	0,48 kg	0,40 kg	0,48 kg	0,40 kg	0,40 kg
Cable length	1,2 m	kein / none	1,2 m	2,0 m	3,5 m
					
Flow monitor ST-5			Flow monitor ST-5 (independent of position, with spring)		
Item number	200005558	200005561	20 0005 601	20 0005 605	20 0005 607
Max. permissible pressure	350 bar	350 bar	350 bar	350 bar	350 bar
Max. Volume flow	30 l/min	30 l/min	30 l/min	30 l/min	30 l/min
Thread connection	G3/8IG	G3/8IG	G3/8IG	G3/8IG	G3/8IG
Switch-on volume flow vertical	0,4 l/min	0,4 l/min	10,8 l/min	7,3 l/min	7,3 l/min
horizontal	-	-	10,9 l/min	5,7 l/min	5,7 l/min
Switch-off volume flow vertical	0,1 l/min	0,1 l/min	8,9 l/min	6,5 l/min	6,5 l/min
horizontal	-	-	8,1 l/min	5,6 l/min	5,6 l/min
Weight	0,47 kg	0,47kg	0,47 kg	0,47 kg	0,70kg
Cable length	1,2 m	2,0 m	1,2 m	1,2 m	1,5 m



Flow monitor ST-5 „high flow“ with spring

Item number	20 0005 701	20 0005 711	20 0005 712
Max. permissible pressure	210 bar	210 bar	210 bar
Max. Volume flow	60 l/min	60 l/min	60 l/min
Thread connection	G1/2IG	G1/2IG	G1/2IG
Switch-on volume flow vertical	2,3 l/min	19,6 l/min	9,3 l/min
horizontal	-	18,0 l/min	8,5 l/min
Switch-off volume flow vertical	1,5 l/min	16,9 l/min	7,0 l/min
horizontal	-	14,9 l/min	6,1 l/min
Weight	0,52 kg	0,52 kg	0,52 kg
Cable length	1,2 m	1,2 m	1,2 m



Cleaning

- Clean the device prior to longer periods of inactivity. To clean the exterior, use a lint-free cleaning cloth and do not use any aggressive cleaning agents.
- Keep the outside of the flow monitor clean at all times and do not use any aggressive cleaning agents
- Rinse the flow monitor with clear water after use to remove any adhesive liquids. In case of doubt, remove the flow monitor.

Maintenance



Assembly, maintenance and repair work may only be carried out by persons trained in maintenance and repair work on high-pressure systems. Use only spare parts approved by Suttner GmbH. Only use high-pressure components (hoses, connectors, etc.) approved for the respective pressure and temperature range.

- Check the flow monitor! Does the reed switch close properly?
- Does the buoyancy body move freely?
- Perform an annual exterior visual inspection to make sure the flow monitor is safe to use.
- Are the markings and inscriptions legible?
- Do the connection points of the flow monitor leak?
- Does the flow monitor show signs of mechanical damage?
- Is the connection line OK?

Disposal



Please dispose of old equipment in an environmentally friendly manner.

Old equipment contains valuable recyclable materials which should be salvaged for recycling. Please, therefore dispose of old equipment at suitable collection points.

Manufacturer

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