



# SENSEFIT FLOW 1000 Y

Handbook

Flow-through assembly

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## 1.1 Intended use

**CAUTION!**

*Responsibility for the use of the measuring devices with regard to suitability, intended use and corrosion resistance of the used materials against the measured fluid lies solely with the operator.*

**INFORMATION!**

*The manufacturer is not liable for any damage resulting from improper use or use for other than the intended purpose.*

The flow-through assembly SENSOFIT FLOW 1000 is installed as part of the piping system. The flow-through assembly serves for mounting a sensor in such a way that it immerses into the process fluid in order to measure chemical or physical properties. The material characteristics of the flow-through assembly, the gaskets, the sensors and the housing must be chosen depending on the process characteristics (e.g. pressure, temperature, abrasivity). The flow-through assembly has to be maintained on a regular basis. Establish a maintenance plan which is adjusted to your process.

## 1.2 Safety instructions from the manufacturer

### 1.2.1 Copyright and data protection

The contents of this document have been created with great care. Nevertheless, we provide no guarantee that the contents are correct, complete or up-to-date.

The contents and works in this document are subject to copyright. Contributions from third parties are identified as such. Reproduction, processing, dissemination and any type of use beyond what is permitted under copyright requires written authorisation from the respective author and/or the manufacturer.

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The manufacturer will not be liable for any damage of any kind by using its product, including, but not limited to direct, indirect or incidental and consequential damages.

This disclaimer does not apply in case the manufacturer has acted on purpose or with gross negligence. In the event any applicable law does not allow such limitations on implied warranties or the exclusion of limitation of certain damages, you may, if such law applies to you, not be subject to some or all of the above disclaimer, exclusions or limitations.

Any product purchased from the manufacturer is warranted in accordance with the relevant product documentation and our Terms and Conditions of Sale.

The manufacturer reserves the right to alter the content of its documents, including this disclaimer in any way, at any time, for any reason, without prior notification, and will not be liable in any way for possible consequences of such changes.

### 1.2.3 Product liability and warranty

The operator shall bear responsibility for the suitability of the device for the specific purpose. The manufacturer accepts no liability for the consequences of misuse by the operator. Improper installation or operation of the devices (systems) will cause the warranty to be void. The respective "Standard Terms and Conditions" which form the basis for the sales contract shall also apply.

### 1.2.4 Information concerning the documentation

To prevent any injury to the user or damage to the device it is essential that you read the information in this document and observe applicable national standards, safety requirements and accident prevention regulations.

If this document is not in your native language and if you have any problems understanding the text, we advise you to contact your local office for assistance. The manufacturer can not accept responsibility for any damage or injury caused by misunderstanding of the information in this document.

This document is provided to help you establish operating conditions, which will permit safe and efficient use of this device. Special considerations and precautions are also described in the document, which appear in the form of icons as shown below.

### 1.2.5 Warnings and symbols used

Safety warnings are indicated by the following symbols.



**DANGER!**

*This warning refers to the immediate danger when working with electricity.*



**DANGER!**

*This warning refers to the immediate danger of burns caused by heat or hot surfaces.*



**DANGER!**

*This warning refers to the immediate danger when using this device in a hazardous atmosphere.*



**DANGER!**

*These warnings must be observed without fail. Even partial disregard of this warning can lead to serious health problems and even death. There is also the risk of seriously damaging the device or parts of the operator's plant.*



**WARNING!**

*Disregarding this safety warning, even if only in part, poses the risk of serious health problems. There is also the risk of damaging the device or parts of the operator's plant.*



**CAUTION!**

*Disregarding these instructions can result in damage to the device or to parts of the operator's plant.*



**INFORMATION!**

*These instructions contain important information for the handling of the device.*



**LEGAL NOTICE!**

*This note contains information on statutory directives and standards.*



• **HANDLING**

This symbol designates all instructions for actions to be carried out by the operator in the specified sequence.

➡ **RESULT**

This symbol refers to all important consequences of the previous actions.

## 1.3 Safety instructions for the operator



**WARNING!**

*In general, devices from the manufacturer may only be installed, commissioned, operated and maintained by properly trained and authorized personnel.*

*This document is provided to help you establish operating conditions, which will permit safe and efficient use of this device.*

## 2.1 Scope of delivery

**INFORMATION!**

*Inspect the packaging carefully for damages or signs of rough handling. Report damage to the carrier and to the local office of the manufacturer.*

**INFORMATION!**

*Do a check of the packing list to make sure that you have all the elements given in the order.*

**INFORMATION!**

*Look at the device nameplate to ensure that the device is delivered according to your order.*

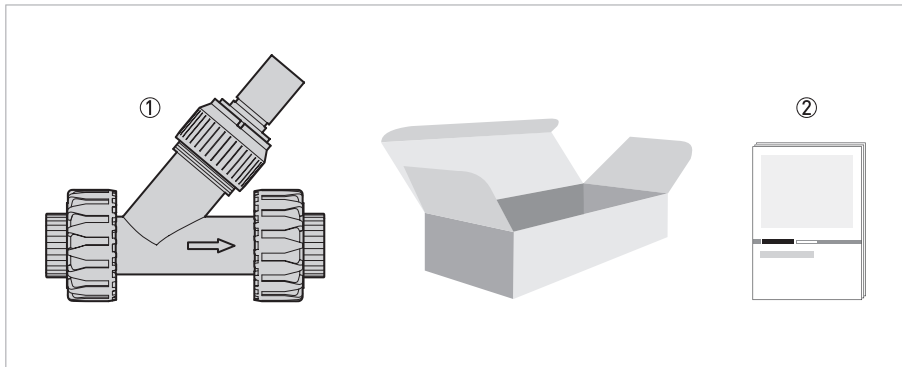


Figure 2-1: Standard scope of delivery

- ① Ordered assembly
- ② Documentation

**INFORMATION!**

*For further information contact your local sales office.*

## 2.2 Device description

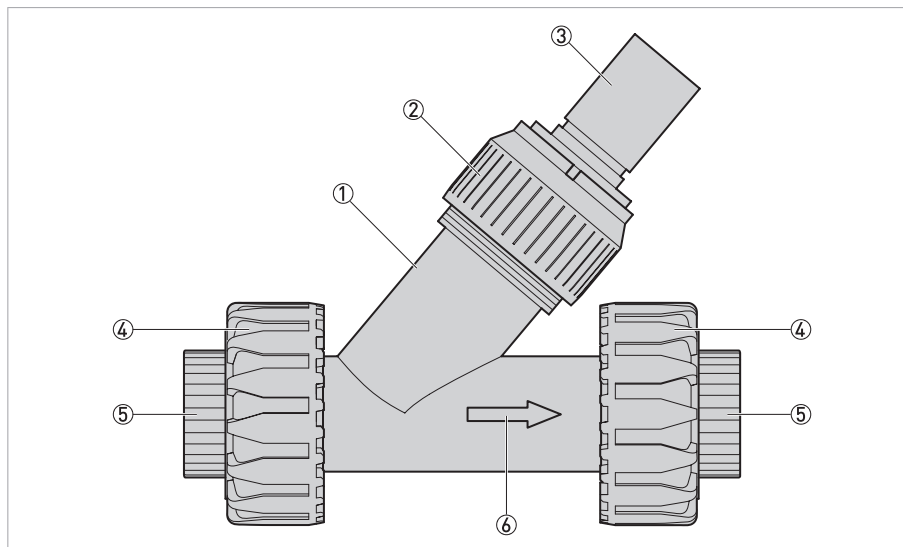


Figure 2-2: Description of the assembly

- ① Flow-through assembly
- ② Union nut for sensor support
- ③ Sensor support
- ④ Union nut for process connection
- ⑤ Process connection
- ⑥ Flow direction

## 2.3 Nameplate

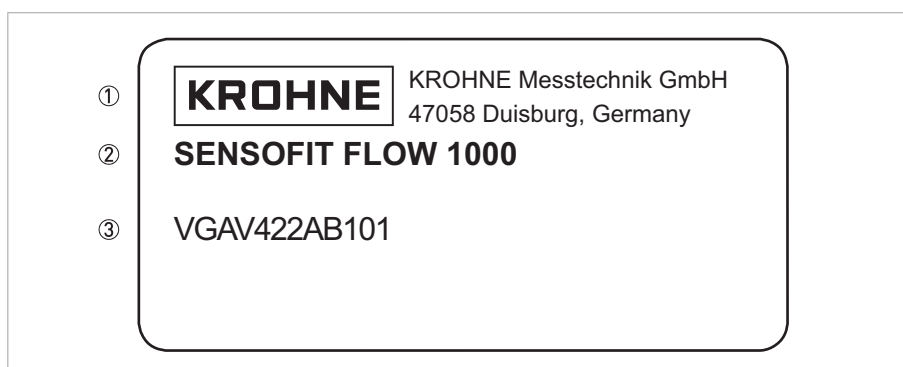


Figure 2-3: Example of a nameplate

- ① Manufacturer
- ② Device name
- ③ Order code



### **INFORMATION!**

*Look at the device nameplate to ensure that the device is delivered according to your order.*



### 3.1 General notes on installation

**INFORMATION!**

*Inspect the packaging carefully for damages or signs of rough handling. Report damage to the carrier and to the local office of the manufacturer.*

**INFORMATION!**

*Do a check of the packing list to make sure that you have all the elements given in the order.*

**INFORMATION!**

*Look at the device nameplate to ensure that the device is delivered according to your order.*

### 3.2 Storage and transport

- Store the assembly in its original packaging.
- Store and transport the device in a dry, dust-free environment.
- Store and transport the device in an environment with a temperature between -20...+70°C / -4...+158°F.
- The original packing is designed to protect the equipment. It has to be used if the device is transported or sent back to the manufacturer.

### 3.3 Pre-installation requirements

**CAUTION!**

*Choosing the right gasket for the process connection as well as for the sensor connection depends on the process conditions; (e.g. pressure, temperature, chemically aggressive media).*

**CAUTION!**

*The device must not be heated by radiated heat (e.g. exposure to the sun) to a surface temperature above the maximum permissible ambient temperature. If it is necessary to prevent damage from heat sources, a heat protection (e.g. sun shade) has to be installed.*

**Ensure for the measuring point that**

- the process is switched off.
- there is sufficient working space available for mounting of the assembly.
- pipelines are de-pressurised, empty and clean.
- the assembly connection and the process connection fit together.

**Ensure for the assembly that**

- the sensor is available and fits to the flow-through assembly.

### 3.4 Installing the assembly

**Make sure that**

1. the measuring point is prepared.
2. the assembly is prepared.

For more information refer to *Pre-installation requirements* on page 9.

Note the correct flow direction for the device. This is indicated by an arrow on the body of the assembly.

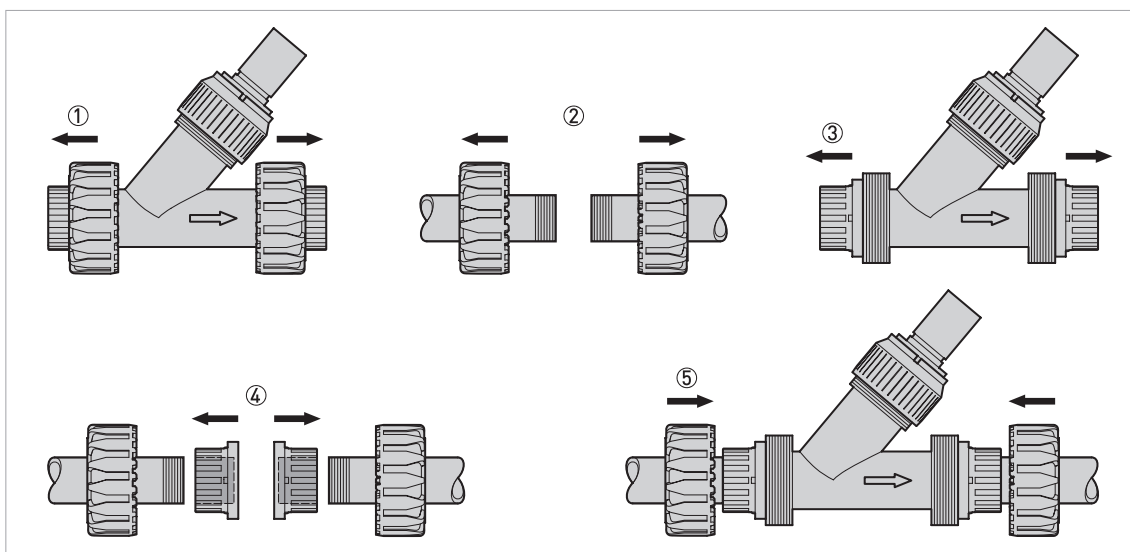


Figure 3-1: Installing the assembly

**Steps to install the assembly**

1. Unscrew the union nuts ①.
2. Slide the union nuts onto the pipes ②.
3. Remove the process connection ③.
4. Screw the process connectors onto the pipes ④.
5. Insert an appropriate gasket and tighten the union nuts in the prepared installation position onto the flow-through assembly ⑤.

For removing the assembly, repeat the steps above in reverse order.

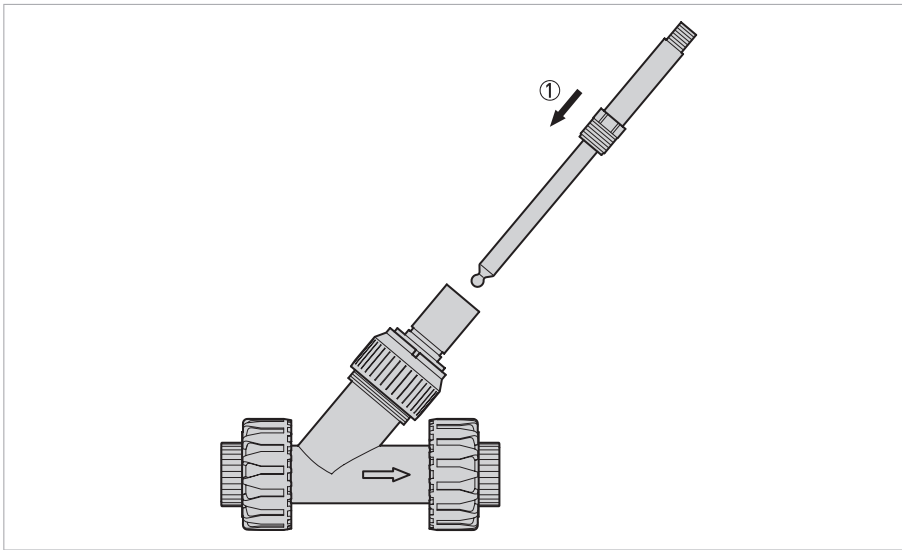


Figure 3-2: Example of installation



### Steps to install the sensor

- Screw the sensor into the sensor support ①.

### Check the correct installation

1. Check that all connections are tight.
2. Check that no fluid escapes when the process starts again.

## 4.1 Maintenance

### 4.1.1 Availability of services

The manufacturer offers a range of services to support the customer after expiration of the warranty. These include repair, maintenance, technical support and training.



**INFORMATION!**

*For more precise information, please contact your local sales office.*

### 4.1.2 Spare parts availability

The manufacturer adheres to the basic principle that functionally adequate spare parts for each device or each important accessory part will be kept available for a period of 3 years after delivery of the last production run for the device.

This regulation only applies to spare parts which are subject to wear and tear under normal operating conditions.

### 4.1.3 Service instructions



**CAUTION!**

*Installation, assembly, start-up and maintenance may only be performed by appropriately trained personnel. The regional occupational health and safety directives must always be observed.*



**CAUTION!**

*Pressurised pipes have to be depressurised before removing the device.  
In the case of devices used for measuring aggressive or hazardous media, appropriate safety precautions must be taken with regard to residual liquids in the measuring unit.  
New gaskets have to be used when re-installing the device in the piping.*

For standard applications we recommend the following schedule.

#### Maintenance schedule

Maintenance action	Once every three months	Once a year
Visual check of the assembly	X	
Check wetted O-rings		X

## 4.2 Returning the device to the manufacturer

### 4.2.1 General information

This device has been carefully manufactured and tested. If installed and operated in accordance with these operating instructions, it will rarely present any problems.



**WARNING!**

*Should you nevertheless need to return a device for inspection or repair, please pay strict attention to the following points:*

- *Due to statutory regulations on environmental protection and safeguarding the health and safety of the personnel, the manufacturer may only handle, test and repair returned devices that have been in contact with products without risk to personnel and environment.*
- *This means that the manufacturer can only service this device if it is accompanied by the following certificate (see next section) confirming that the device is safe to handle.*



**WARNING!**

*If the device has been operated with toxic, caustic, radioactive, flammable or water-endangering products, you are kindly requested:*

- *to check and ensure, if necessary by rinsing or neutralising, that all cavities are free from such dangerous substances,*
- *to enclose a certificate with the device confirming that it is safe to handle and stating the product used.*

### 4.2.2 Form (for copying) to accompany a returned device


**CAUTION!**

*To avoid any risk for our service personnel, this form has to be accessible from outside of the packaging with the returned device.*

Company:		Address:	
Department:		Name:	
Tel. no.:		Fax no. and/or Email address:	
Manufacturer's order no. or serial no.:			
The device has been operated with the following medium:			
This medium is:	<input type="checkbox"/>	radioactive	
	<input type="checkbox"/>	water-hazardous	
	<input type="checkbox"/>	toxic	
	<input type="checkbox"/>	caustic	
	<input type="checkbox"/>	flammable	
	<input type="checkbox"/>	We checked that all cavities in the device are free from such substances.	
	<input type="checkbox"/>	We have flushed out and neutralized all cavities in the device.	
We hereby confirm that there is no risk to persons or the environment through any residual media contained in the device when it is returned.			
Date:		Signature:	
Stamp:			

### 4.3 Disposal


**CAUTION!**

*Disposal must be carried out in accordance with legislation applicable in your country.*

## 5.1 Technical data

### Design

Type of assembly	Flow-through	
Flow direction	180°	
Process connections	G1 (female) screw fitting	
Sensor connection	G3/4 (female) for conductive conductivity sensors SMARTPAT COND 1200 and OPTISENS COND 1200 W	Max. immersion depth 100 mm / 3.94 inch
	PG 13.5 (female)	Max. immersion depth 120 mm / 4.72 inch
	PG 13.5 (female) for chlorine sensors	

### Installation conditions

Operating conditions	Temperature range	0...+95°C / 32...+203°F
	Process pressure	Max. 10 bar at 20°C / 145 psi at 68°F
Ambient conditions	Ambient temperature	0...+70°C / 32...+158°F
	Transport and storage temperature	-20...+70°C / -4...+158°F

### Materials

Assembly	PP
O-Rings	EPDM

## 5.2 Pressure - temperature diagram

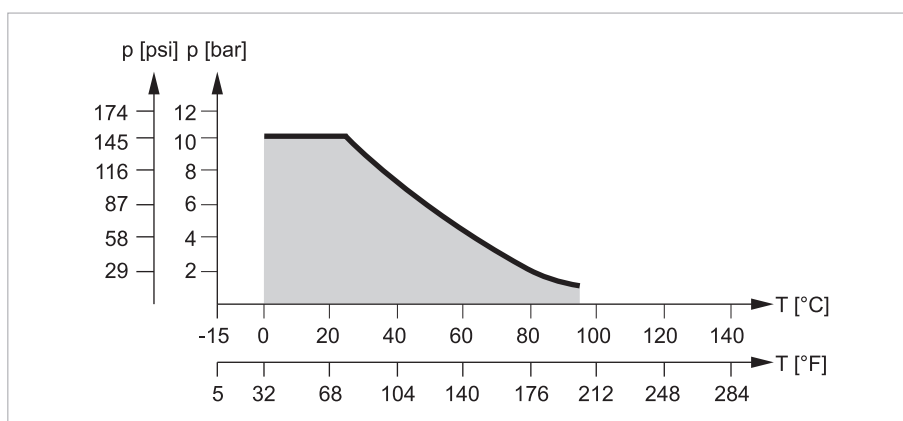


Figure 5-1: Pressure - temperature diagram

Pressure - temperature diagram for water and harmless fluids to which the material is resistant. In other cases a reduction of the rated PN is required.

### 5.3 Dimensions

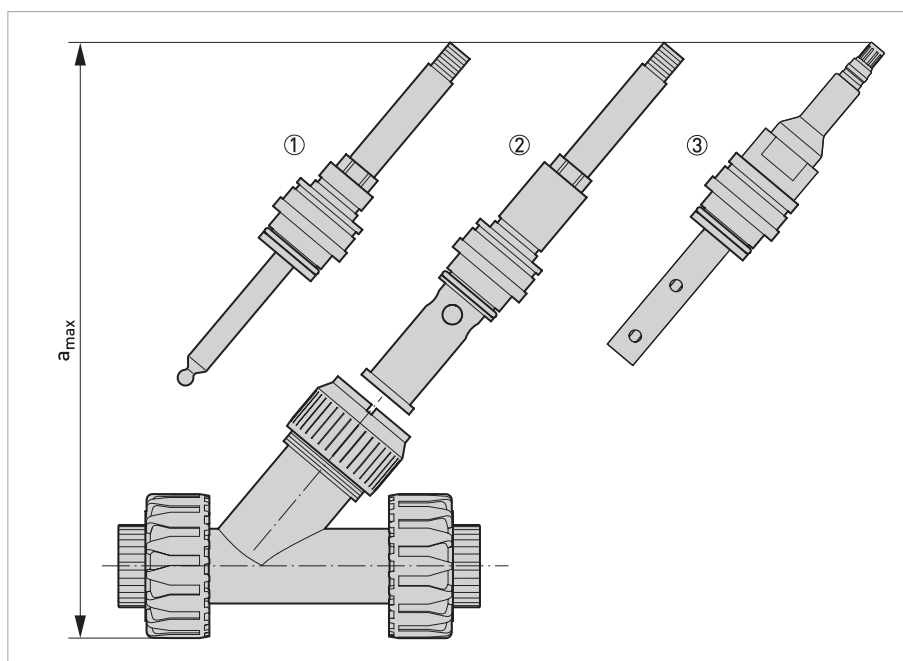


Figure 5-2: Dimensions - Sensor support

- ① PG13.5 for pH sensor
- ② PG13.5 for chlorine sensor
- ③ G3/4 for conductive conductivity sensor (only for SMARTPAT COND 1200 and OPTISENS COND 1200 W)

Screw fitting, G1		
	[mm]	[inch]
$a_{\max}$	300	11.81



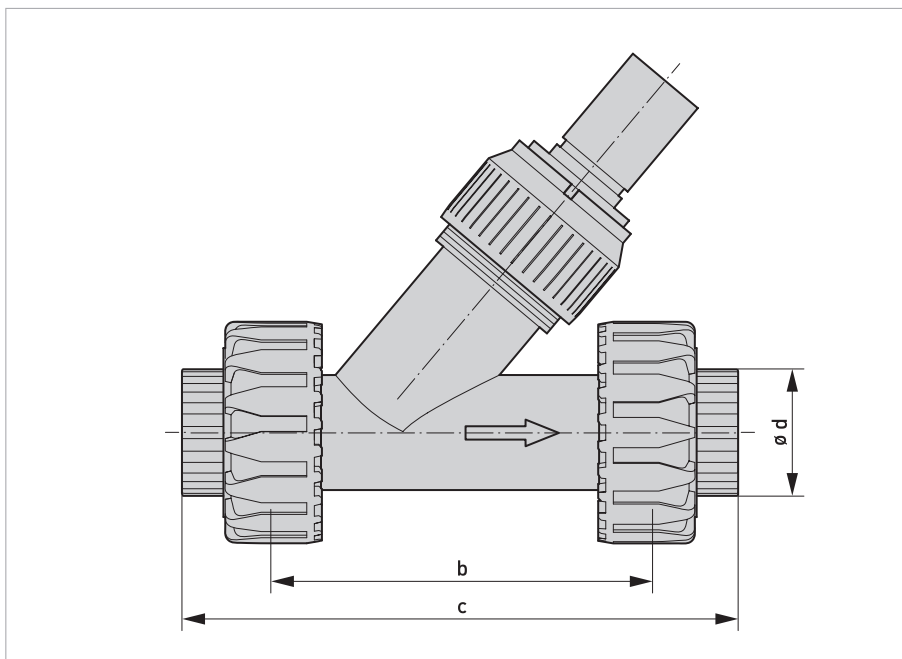


Figure 5-3: Dimensions - Overview

Screw fitting, G1			
		[mm]	[inch]
b		125	4.9
c		175	6.9
d		41	1.61

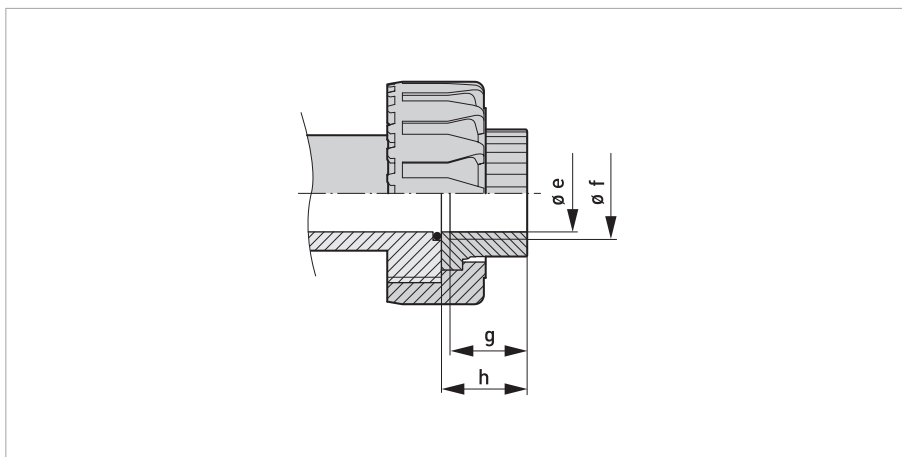


Figure 5-4: Dimensions - Process connection

Screw fitting, G1		
	[mm]	[inch]
e	25	0.98
f	G1	G1
g	22	0.87
h	25	0.98





## KROHNE – Process instrumentation and measurement solutions

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