Manual retractable assembly
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**SENSOFIT RET 5000**

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1.1 Intended use

**CAUTION!**
Responsibility for the use of the 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 SENSOFIT RET 5000 retractable assembly is designed to be fixed to containers, tanks, tubings or pipelines. A sensor will be inserted into the process liquid with the aid of the immersion tube with sensor cage. The retractable immersion tube is operated by hand. Maintenance can be carried out whilst the process is running.

1.2 Certifications

**CE marking**

The device meets the essential requirements of the EU directives. The CE marking indicates the conformity of the product with the union legislation applying to the product and providing for CE marking.

For full information of the EU directives and standards and the approved certifications, please refer to the EU declaration on the KROHNE website.
1.3 Safety instructions from the manufacturer

1.3.1 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.

The manufacturer tries always to observe the copyrights of others, and to draw on works created in-house or works in the public domain.

The collection of personal data (such as names, street addresses or e-mail addresses) in the manufacturer’s documents is always on a voluntary basis whenever possible. Whenever feasible, it is always possible to make use of the offerings and services without providing any personal data.

We draw your attention to the fact that data transmission over the Internet (e.g. when communicating by e-mail) may involve gaps in security. It is not possible to protect such data completely against access by third parties.

We hereby expressly prohibit the use of the contact data published as part of our duty to publish an imprint for the purpose of sending us any advertising or informational materials that we have not expressly requested.

1.3.2 Disclaimer

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.
1.3.3 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.

1.3.4 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.
1.3.5 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.

1.4 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: Scope of delivery](image)

1. Ordered assembly
2. Documentation

**Consumables / Spare parts available**
- O-ring set EPDM
- O-ring set FPM
- O-ring set FFKM
- Immersion tube
- Ball valve (incl. process connection and double thread nipple / cleaning connection)
- Replacement sensor holder

**INFORMATION!**
For further information contact your local sales office.
2.2 Device description

Figure 2-2: Device description

1. Cable feedthrough
2. Handle
3. Bayonet locking
4. Assembly lever
5. Rinsing chamber
6. Ball valve
7. Process connection
8. Immersion tube with protection cage

2.3 Nameplate

Figure 2-3: Example for a nameplate on the assembly body

1. Website, observe the operation and installation instruction
2. Max. retractable operation pressure / max. static pressure, max. test pressure, max. temperature, TAG
3. Order code, serial number
4. Device name
5. Manufacturer address
6. Manufacturing date

INFORMATION!
Look at the device nameplate to ensure that the device is in accordance with your order.
3.1 General notes on installation

**DANGER!**
For devices used in hazardous areas, additional safety notes apply; please refer to the Ex documentation.

**DANGER!**
Only devices with ATEX approval may be used in the corresponding hazardous areas.

**DANGER!**
No use in areas with potential flammable surroundings.

**CAUTION!**
Do not expose the assembly to intense vibration.

**CAUTION!**
If using abrasive media or processes which lead to accelerated wearing, check the assembly in shorter intervals.

**INFORMATION!**
The threat connection below and above the ball valve are secured connection (glued). Do not try to open them.

**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.
The mounting position of the assembly should ensure, that when installed, the sensor is typically at an angle of 0...75 degrees from the vertical.

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

Ensure for the measuring point that

- the process is switched off.
- there is sufficient working space available for operation of the retractable assembly.
- containers or pipelines are depressurised, empty and clean.
- the connection flange and the retractable assembly process connection fit together.
- the process O-ring is lying on the connection flange.
- the device must not be heated by radiated heat (e.g. exposure to the sun) to a electronics housing 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 assembly that

- the ball valve is closed.
- the sliding device is separated from the rinsing chamber.
The cleaning chamber connections must be closed by blanking plugs or the cleaning connection have to be closed and its valve can withstand the process pressure. Otherwise the assembly may not be immersed into the process!

### 3.4 Install the assembly

**DANGER!**

*It should be noted that the rinsing function will work properly only when being operated with sufficient pressure (max. 6 bar). Take process pressure into account (flange versions). Make sure that all components come with a sufficient pressure rating and are mounted pressure-tight.*

To avoid backflow of process fluid into the rinsing hose consider installing a check-valve.

**Make sure that**

1. the system is prepared.
   - For more information refer to *Pre-installation requirements* on page 12.
2. the assembly is prepared.
   - For more information refer to *Pre-installation requirements* on page 12.

**The ball valve is installed as follows**

1. Put the ball valve onto the process connection (place an O-ring between them).
2. Tighten the process connection securely.
3.4.1 Install the sensor

**WARNING!**
*Do not operate the assembly without sensor. Always install the sensor before installing the immersion tube.*

All sensors with a diameter of 12 mm, a connection thread of PG 13.5 and a length of 120 mm like the analogue and digital sensors from KROHNE fit into the assembly. For other sensors check the dimensions.

**Step 1**

- Take off the cable gland at the top of the immersion tube.

At the bottom end of the immersion tube there is a protection cage including a sensor holder.

- Remove this sensor holder by turning it in an anti-clockwise direction.

**Step 2**

![Figure 3-2: Remove the sensor holder](image)

- Hold the handle while unscrewing the sensor holder from the immersion tube.
Step 3

- Screw the sensor into the sensor holder.
- Screw the sensor cable fed through the immersion tube onto the sensor.

Step 4

- Screw the sensor holder into the immersion tube and tighten it securely.
- Tighten the cable gland on the top of the immersion tube.
3.4.2 Adjust the immersion depth

**CAUTION!**
The immersion tube can be unfastened by the process pressure if the bayonet unit is not correctly installed!
Risk of injury to the user caused by the immersion tube springing out. The bayonet unit must be properly installed.

The assemblies immersion depth can be steplessly adjusted in order to achieve the optimal measuring position for the sensor.

**Step 1**

- Open the socket head screw on the bayonet socket with an allen key.

**Step 2**

- Move the immersion tube until the desired immersion depth has been reached.
- Tighten the socket head screw on the bayonet socket firmly (6 Nm / 4.43 ft lb).
3.4.3 Install the sliding device

**CAUTION!**
Clean the assembly and the sensor to prevent burns or chemical burns depending on the properties of the process fluid. A sensor must be installed before installing the sliding device into the assembly! Process fluid can escape through the immersion tube if no sensor is installed!

The sliding device is installed as follows.

**Step 1**

- Pull the immersion tube out to the end stop in the sliding device.

**Figure 3-7: Move the immersion tube**

**Step 2**

- Screw the immersion tube onto the rinsing chamber and make sure that the ball valve remains closed.
- Tighten the sliding device with the help of the assembly lever!
- The sliding device is now installed and the retractable assembly is ready for use.

**Figure 3-8: Install the immersion tube**
3.4.4 Install the flush tube

**DANGER!**

It should be noted that the rinsing function will work properly only when being operated with sufficient pressure (max. 6 bar). Take process pressure into account (flange versions). Make sure that all components come with a sufficient pressure rating and are mounted pressure-tight.

To avoid backflow of process fluid into the rinsing hose consider installing a check-valve.

The sensor can be flushed without the need to remove it from the assembly. For this purpose, flushing fluid must be supplied to and drained out of the flushing chamber. If no flush tubes are installed then the flushing connections must be closed using blanking plugs.

**CAUTION!**

Clean the assembly and the sensor to prevent burns or chemical burns depending on the properties of the process fluid.

A sensor must be installed before installing the sliding device into the assembly! Process fluid can escape through the immersion tube if no sensor is installed!

**DANGER!**

Only suitably trained personnel should handle these types of assemblies.

**CAUTION!**

If the process pressure is higher than the flushing pressure then the process fluid can run into the rinsing lines.

The flush tubes must be installed with a shut-off valve at the flushing connections!

**CAUTION!**

If the flushing fluid pressure rises to more than 12 bar then the assembly may be damaged.

Check besides the technical data of the cleaning valve the one of the used sensor.

If required, install a pressure regulator!

**CAUTION!**

Dirty flushing fluid can damage the sensor.

Install a rinsing line with dirt trap at the rinsing connection!
Step 1

The flush tubes are installed as follows:
- Install a valve and dirt trap in the flush tube for the intake of the flushing fluid.
- Remove the blanking plug installed at the factory and install the flush tube for intake.
- Install a valve in the flush tube for the draining of the flushing fluid.
- Remove the blanking plug installed at the factory and install the draining pipe.
- Check to ensure all connections are tight.

**INFORMATION!**
The rinsing fluid pressure must be at least 1 bar in order to ensure that the sensor is properly cleaned!
Step 2

1. Firmly hold the immersion tube when loosening the bayonet locking as process pressure may potentially cause the tube to retract through the ball valve at a high velocity.

2. Having retracted the immersion tube and closed the ball valve, flush out the cleaning chamber with a suitably safe liquid. If the ball valve or components are damaged fluid may leak. This can cause a hazard to personnel.
4.1 Put the assembly into operation

**DANGER!**
It should be noted that the rinsing function will work properly only when being operated with sufficient pressure [max. 6 bar]. Take process pressure into account (flange versions). Make sure that all components come with a sufficient pressure rating and are mounted pressure-tight. To avoid backflow of process fluid into the rinsing hose consider installing a check-valve.

**CAUTION!**
Risk of injury caused by escaping process fluid!

**CAUTION!**
Wear safety glasses and protective clothing!

**CAUTION!**
Check all O-rings and all connections to the valve before starting the process.

Make sure of the following before start-up:
- O-rings are complete and are functioning properly.
- Sensor is installed and securely tightened.
- Sliding device is installed and securely tightened.
- Flushing connections are closed with blanking plugs or flush tubes are installed and closed with valves.
4.2 Moving the assembly manually

CAUTION!
Wear safety glasses and protective clothing when operating the assembly!

CAUTION!
Make sure that the process pressure is not higher than 4 bar / 58 psi [only non-Ex devices] during manual operation!

CAUTION!
The immersion tube can be unfastened by the process pressure if the bayonet unit is not correctly installed!
Risk of injury to the user caused by the immersion tube springing out. The bayonet unit must be properly installed.

CAUTION!
Clean the assembly and the sensor to prevent burns or chemical burns depending on the properties of the process fluid.

Figure 4-1: Open the ball valve

- Fully open the ball valve and push the immersion tube to the "measuring" position.
4.3 Removing the sensor

There may be residual fluid in the rinsing chamber when removing the sensor!

**DANGER!**
*Check the process pressure to make sure that the process pressure is not higher than 4 bar / 58 psi. (only non-Ex devices)*

**DANGER!**
*Do not operate the assembly without sensor. Always install the sensor before opening the ball valve.*

**CAUTION!**
*Wear safety glasses and protective clothing!*

**CAUTION!**
*Clean the assembly and the sensor to prevent burns or chemical burns depending on the properties of the process fluid.*

Make sure of the following first:
- The immersion tube is pulled out of the process up to the stop.
- The ball valve is completely closed.

Step 1

*Figure 4-2: Remove the sliding device*

**INFORMATION!**
*Be aware of the correct handling of the assembly lever. Lift the assembly lever that it fits to the upper jaw to turn.*

- Unscrew the cable feedthrough from the handle.
- Remove the sliding device from the flushing chamber. This is done with the aid of the assembly lever.
Step 2

Figure 4-3: Remove the sensor holder

Step 3

• Unscrew the sensor holder from the immersion tube and remove the sensor cable.

Figure 4-4: Remove the sensor

• Remove the sensor from the sensor holder.
4.4 Troubleshooting

Assembly does not move

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bayonet tightened</td>
<td>Unlock bolt and turn rotary handle</td>
</tr>
<tr>
<td>Ball valve is closed</td>
<td>Open the ball valve</td>
</tr>
<tr>
<td>Process pressure is too high</td>
<td>Reduce the process pressure</td>
</tr>
<tr>
<td>Immersion tube is fully inserted</td>
<td>Reduce the immersion depth</td>
</tr>
<tr>
<td>Immersion tube or protection cage are blocked</td>
<td>Remove the flushing chamber from the ball valve and clean it</td>
</tr>
</tbody>
</table>

Frequent contamination of sensor

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning chamber is blocked</td>
<td>Pressure must be between 1...12 bar / 14.5...174 psi</td>
</tr>
<tr>
<td>Cleaning not adequate</td>
<td>Choose suitable cleaning liquid</td>
</tr>
<tr>
<td>Cleaning frequency too short</td>
<td>Increase cleaning frequency</td>
</tr>
<tr>
<td>Cleaning interval too long</td>
<td>Reduce the cleaning interval</td>
</tr>
</tbody>
</table>

Sensor breaks frequently

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor too long</td>
<td>Choose correct type sensor</td>
</tr>
<tr>
<td>O-rings are missing</td>
<td>Ensure all O-rings are fitted</td>
</tr>
</tbody>
</table>

Leakage of process liquid

<table>
<thead>
<tr>
<th>Possible cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-rings are defective</td>
<td>Replace the O-rings</td>
</tr>
<tr>
<td>Damages on the immersion tube</td>
<td>Replace the immersion tube</td>
</tr>
</tbody>
</table>
5.1 Maintenance

5.1.1 Replace the O-rings

**DANGER!**
Process fluid will leak if the ball valve is not completely closed.

**CAUTION!**
Ensure the system is depressurised.

**CAUTION!**
Pay attention to the correct installation direction.

**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!**
Empty and clean the pipelines or containers before starting maintenance work.

**CAUTION!**
Clean the assembly and the sensor to prevent burns or chemical burns depending on the properties of the process fluid. Wear safety glasses and protective clothing! Check all O-rings and all connections to the valve before starting the process.

**INFORMATION!**
All O-rings and sliding rings have to be lightly lubricated before use.
Necessary preparation prior replacement of O-rings

• Remove the assembly from the process connection. For more information refer to Removing the sensor on page 23.

Replace the O-rings of the sensor holder

![Diagram of O-rings in the sensor holder]

Figure 5-1: O-rings in the sensor holder

1. O-ring (10.78 x 2.62 mm / 0.424 x 0.102“)
2. O-ring (18.6 x 2.4 mm / 0.732 x 0.094“)

• Loose the cable protection at the top of the immersion tube.
• Remove the sensor holder.
• Remove the sensor from the sensor holder.
• Replace the O-ring.
Replace the O-rings of the sliding device

Figure 5-2: O-rings in the sliding device

1. O-ring (29.99 x 3.53 mm / 1.18 x 0.139")
2. PTFE ring (29 x 3.3 mm / 1.14 x 0.130")
3. O-ring (33.05 x 1.78 mm / 1.30 x 0.7")

- Loosen the cable protection at the top of the immersion tube.
- Remove the sensor holder at the bottom of the immersion tube.
- Remove the immersed tube from the housing with the bayonet locking.

Replace the O-ring ①
- Remove the O-rings carefully with a little hook and a pick tool (not part of delivery).
- Do not scratch the inside material of the sliding device.
- Position the new O-ring in the groove.
- Move your finger clockwise along the groove until the new O-ring is placed completely.

Replace the PTFE ring ②
- Remove the PTFE ring carefully with a little hook and a pick tool (not part of delivery).
- Do not scratch the inside material of the sliding device.
- Position the new PTFE ring in the groove.
- Move your finger clockwise along the groove until the new PTFE ring is placed completely.

Replace the O-ring ③
- Remove the O-ring from the groove.
- Position the new O-ring in the 6 o’clock position in the groove. The O-ring is oversized so that the O-ring seals against the outer flanks of the groove.
- Hold the new O-ring in the 6 o’clock position and press the new O-ring with two fingers in the 3 and 9 o’clock position in the groove.
- To compress the O-ring move your fingers along the groove to 4 and 8 o’clock position.
- Press the O-ring in the 12 o’clock position in to the groove.
- Move your finger clockwise along the groove to check that the new O-ring is placed completely.
• Guide the immersion tube through the housing with the bayonet locking.
• Connect the sensor and mount the sensor holder to the immersion tube.
• Screw the sliding device to the flushing chamber. This is done with the aid of the assembly lever.
• Open the ball valve and insert the assembly into the process. Ensure that the pressure does not exceed 4 bar / 58 psi. (only non-Ex devices)
• Screw the cable protection on the top of the immersion tube.

5.1.2 Checking for functionality and leakage

A functionality and leak test must be carried out following any changing of the O-rings. To do this, proceed as follows:

**Functionality test:**
- Install a sensor into the immersion tube.
- Insert the immersion tube into the flushing chamber/ball valve moving it backwards and forwards checking for any resistance or noise.

**Leak test:**
- Install a sensor into the immersion tube.
- With the ball valve closed, insert the immersion tube into the flushing chamber and allow a cleaning liquid to pass through the chamber for 10 minutes.

5.1.3 Service instruction

**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.*

**INFORMATION!**
*If using abrasive media or processes which lead to accelerated wearing, check the assembly in shorter intervals.*

For standard applications we recommend the following schedule.
5.2 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.

\[\text{INFORMATION!}\]
For more precise information, please contact your local sales office.

5.3 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.

5.4 Returning the device to the manufacturer

5.4.1 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.

\[\text{WARNING!}\]
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.

\[\text{WARNING!}\]
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.

---

**Maintenance schedule**

<table>
<thead>
<tr>
<th>Maintenance action</th>
<th>Once every three months</th>
<th>Once a year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual check of the assembly</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Change wetted O-rings</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
5.4.2 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.

<table>
<thead>
<tr>
<th>Company:</th>
<th>Address:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department:</td>
<td>Name:</td>
</tr>
<tr>
<td>Tel. no.:</td>
<td>Fax no. and/or Email address:</td>
</tr>
<tr>
<td>Manufacturer’s order no. or serial no.:</td>
<td></td>
</tr>
</tbody>
</table>

The device has been operated with the following medium:

<table>
<thead>
<tr>
<th>This medium is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>radioactive</td>
</tr>
<tr>
<td>water-hazardous</td>
</tr>
<tr>
<td>toxic</td>
</tr>
<tr>
<td>caustic</td>
</tr>
<tr>
<td>flammable</td>
</tr>
</tbody>
</table>

We checked that all cavities in the device are free from such substances.
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.

<table>
<thead>
<tr>
<th>Date:</th>
<th>Signature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stamp:</td>
<td></td>
</tr>
</tbody>
</table>

5.5 Disposal

CAUTION!
Disposal must be carried out in accordance with legislation applicable in your country.
## 6.1 Technical data

### Technical data of the assembly

#### Design

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>770 mm / 30.32” or 1170 mm / 46.06”</td>
</tr>
<tr>
<td>Diameter</td>
<td>320 mm / 12.6”</td>
</tr>
<tr>
<td>Cleaning ports without hose or pipe connections (optional)</td>
<td>G1/8 female thread with blanking plug (with NBR sealing)</td>
</tr>
<tr>
<td>Cleaning ports with hose or pipe connections (optional)</td>
<td>G1/4 or 1/4-18 NPT female thread with blanking plug (with NBR sealing)</td>
</tr>
<tr>
<td>Requirements to the sensor</td>
<td>Process screw connection: PG13.5</td>
</tr>
<tr>
<td></td>
<td>Sensor diameter: 12 mm / 0.47”</td>
</tr>
<tr>
<td></td>
<td>Sensor length: 120 mm / 4.7”</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 3 up to 15 kg / 6.6 up to 33 lb</td>
</tr>
</tbody>
</table>

#### Operating conditions

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. permissible temperature</td>
<td>+130°C / +266°F</td>
</tr>
<tr>
<td>Max. permissible pressure (process operation)</td>
<td>12 bar / 174 psi</td>
</tr>
<tr>
<td>Max. permissible pressure (retractable function)</td>
<td>4 bar / 58 psi (only non-Ex devices)</td>
</tr>
<tr>
<td>Flushing pressure</td>
<td>1...12 bar / 14.5...174 psi</td>
</tr>
</tbody>
</table>

#### Wetted material

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immersion tube with protection cage</td>
<td>1.4404 / 316L</td>
</tr>
<tr>
<td>Process connection</td>
<td>1.4404 / 316L</td>
</tr>
<tr>
<td>Ball valve</td>
<td>1.4408 / CF8M</td>
</tr>
<tr>
<td>Ball valve sealing</td>
<td>PTFE (glass fibre reinforced)</td>
</tr>
<tr>
<td>O-rings</td>
<td>EPDM, FPM or FFKM</td>
</tr>
<tr>
<td>Sliding rings</td>
<td>PTFE</td>
</tr>
<tr>
<td>Cleaning chamber</td>
<td>1.4404 / 316L</td>
</tr>
<tr>
<td>Adhesive bonding of ball valve threads</td>
<td>Loctite® 648</td>
</tr>
</tbody>
</table>

#### Non-wetted material

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable feedthrough</td>
<td>Polyamide with EPDM sealing</td>
</tr>
<tr>
<td>Handle</td>
<td>PVC</td>
</tr>
<tr>
<td>Bayonet locking</td>
<td>1.4404 / 316L</td>
</tr>
<tr>
<td>Assembly lever</td>
<td>1.4404 / 316L and PVC</td>
</tr>
<tr>
<td>O-rings</td>
<td>EPDM, FPM or FFKM</td>
</tr>
<tr>
<td>Sliding rings</td>
<td>PTFE and bronze</td>
</tr>
</tbody>
</table>

#### Ambient conditions

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>-10...+60°C / +14...+140°F</td>
</tr>
<tr>
<td>Transport and storage temperature</td>
<td>-20...+80°C / -4...+176°F</td>
</tr>
</tbody>
</table>
Approvals and certificates

<table>
<thead>
<tr>
<th>CE</th>
</tr>
</thead>
<tbody>
<tr>
<td>The device meets the essential requirements of the EU directives. The CE marking indicates the conformity of the product with the union legislation applying to the product and providing for CE marking. For full information of the EU directives and standards and the approved certifications, please refer to the EU declaration on the KROHNE website.</td>
</tr>
</tbody>
</table>

Other approvals and standards

<table>
<thead>
<tr>
<th>Pressure Equipment Directive</th>
<th>2014/68/EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex</td>
<td>ATEX: II2G Ex h IIIC T6…T4 Gb</td>
</tr>
</tbody>
</table>

6.2 Temperature - pressure diagram

Figure 6-1: Temperature - pressure diagram

1. Pressure range to operate the assembly (retractable function)
2. Process operation (static)
6.3 Dimensions

Figure 6-2: RET 5000 Dimensions

<table>
<thead>
<tr>
<th></th>
<th>Immersion depth 300 mm / 11.81”</th>
<th>Immersion depth 700 mm / 27.56”</th>
</tr>
</thead>
<tbody>
<tr>
<td>c</td>
<td>320 mm / 12.6”</td>
<td>320 mm / 12.6”</td>
</tr>
<tr>
<td>d</td>
<td>770 mm / 30.32”</td>
<td>1170 mm / 46.06”</td>
</tr>
<tr>
<td>e</td>
<td>ø 30 mm / ø 1.18”</td>
<td>ø 30 mm / ø 1.18”</td>
</tr>
</tbody>
</table>

Figure 6-3: Process connection flange with ball valve

<table>
<thead>
<tr>
<th></th>
<th>Immersion depth 300 mm / 11.81”</th>
<th>Immersion depth 700 mm / 27.56”</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>variable 0...325 mm / 0...12.80”</td>
<td>variable 0...725 mm / 0...28.54”</td>
</tr>
<tr>
<td>b</td>
<td>variable 440...920 mm / 17.32...36.22”</td>
<td>variable 443...1320 mm / 17.05...51.96”</td>
</tr>
<tr>
<td>f</td>
<td>DN32 PN16, ANSI 1 1/4 150 lbs, DN50 PN16, ANSI 2 150 lbs</td>
<td></td>
</tr>
</tbody>
</table>
Figure 6-4: Process connection flange without ball valve

<table>
<thead>
<tr>
<th></th>
<th>Immersion depth 300 mm / 11.81&quot;</th>
<th>Immersion depth 700 mm / 27.56&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>variable 0...413 mm / 0...16.22&quot;</td>
<td>variable 0...813 mm / 0...32.00&quot;</td>
</tr>
<tr>
<td>b</td>
<td>variable 357...834 mm / 14.06...32.83&quot;</td>
<td>variable 357...1234 mm / 14.05...48.58&quot;</td>
</tr>
<tr>
<td>f</td>
<td></td>
<td>DN32 PN16, ANSI 1 1/4 150 lbs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DN50 PN16, ANSI 2 150 lbs</td>
</tr>
</tbody>
</table>

Figure 6-5: Process connection thread with ball valve

<table>
<thead>
<tr>
<th></th>
<th>Immersion depth 300 mm / 11.81&quot;</th>
<th>Immersion depth 700 mm / 27.56&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>variable 0...320 mm / 0...12.60&quot;</td>
<td>variable 0...720 mm / 0...28.35&quot;</td>
</tr>
<tr>
<td>b</td>
<td>variable 450...927 mm / 17.72...36.50&quot;</td>
<td>variable 450...1327 mm / 17.72...52.24&quot;</td>
</tr>
<tr>
<td>f</td>
<td></td>
<td>male G1 1/4, 1 1/4-11.5 NPT</td>
</tr>
</tbody>
</table>
Figure 6-6: Process connection thread without ball valve

<table>
<thead>
<tr>
<th>Immersion depth 300 mm / 11.81”</th>
<th>Immersion depth 700 mm / 27.56”</th>
</tr>
</thead>
<tbody>
<tr>
<td>a variable 0…406 mm / 0…15.98”</td>
<td>a variable 0…806 mm / 0…31.73”</td>
</tr>
<tr>
<td>b variable 364…841 mm / 14.33…33.11”</td>
<td>b variable 364…1241 mm / 14.33…48.86”</td>
</tr>
<tr>
<td>f male G 1 1/4, 1 1/4-11.5 NPT</td>
<td>f male G 1 1/4, 1 1/4-11.5 NPT</td>
</tr>
</tbody>
</table>

Figure 6-7: Inner tube housing

<table>
<thead>
<tr>
<th>Dimension [mm]</th>
<th>Dimension [inch]</th>
</tr>
</thead>
<tbody>
<tr>
<td>a 21</td>
<td>ø 0.83</td>
</tr>
<tr>
<td>b 21.8</td>
<td>ø 0.86</td>
</tr>
<tr>
<td>c PG 13.5</td>
<td></td>
</tr>
<tr>
<td>d 18</td>
<td>0.71</td>
</tr>
<tr>
<td>e 45</td>
<td>1.8</td>
</tr>
</tbody>
</table>
KROHNE – Process instrumentation and measurement solutions

- Flow
- Level
- Temperature
- Pressure
- Process Analysis
- Services

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