

Translation of the original assembly instructions

EN

Stainless steel measuring chamber

| ACCESSORIES |



The completeness and accuracy of this documentation have been carefully checked. We reserve the right to make technical changes at any time. These changes may result in deviations from the information provided in this documentation.

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1 General information

For the sake of simplicity, this documentation refers to the product "Stainless steel measuring chamber" simply as the **product**.

1.1 Documentation

This documentation provides important warnings, safety precautions, and instructions for the safe and proper operation of the product.

- ▷ Before operating the product, read this documentation carefully and ensure that you fully understand its contents.
- ▷ Always keep this documentation readily available for reference purposes.

1.2 Symbols and labels used

The following markings and symbols are used in this documentation:

Labeling/symbol	Usage
Text	Important text passages are highlighted
 2 Security	Cross-reference to text passage, figure or chapter
•	Enumeration, list element
▷	Call to action as part of an instruction. Can also be numbered.
✓	Final or intermediate result of an instruction
✗	Final or intermediate result of an instruction that has not been achieved
!	Note on an intermediate result

Table 1: Symbols and labels used

1.3 Safety instructions and notes

	DANGER Indicates an imminent danger. Death or very serious injuries may result.
	WARNING Indicates a potentially dangerous situation. Death or serious injury may result.
	CAUTION Indicates a potentially dangerous situation. Slight or minor injuries may result.
	NOTICE Indicates a potentially dangerous situation. Material or environmental damage may result.
	NOTE Indicates important information, application tips, and useful information for proper working.



2 Security

The product has been designed, manufactured, and functionally tested in accordance with applicable safety regulations.

To ensure operational safety, please observe the following:

- Chapter "Intended use"
- Chapter "Organizational measures to be taken by the operator"
- Chapter "Residual hazards"

Regardless of the instructions provided in this manual, all applicable country-specific occupational health and safety regulations must be observed.

2.1 Intended use

The operational safety of the product supplied is only guaranteed if it is used as intended.

This product is designed for the measurement of the dew point in compressed air systems up to 50 bar. It is integrated into the process air line and enables a suitable dew point sensor to be supplied with process air in a controlled manner.

The product is considered to be used as intended, in particular, if

- the dew point sensor used is suitable for the operating pressure, measured medium, and measuring range,
- the measured medium is compatible with all materials in contact with it,
- the bypass flow can be safely vented to the environment,
- the product is installed properly and in a pressure-tight manner, and
- the technical specifications and permissible environmental conditions are observed.

Any use outside these conditions is considered improper and may result in malfunctions or irreversible damage.

Any use beyond or contrary to these instructions is considered improper. The manufacturer assumes no liability for any resulting damage.

Intended use also includes:

- Adherence to the supplied documentation
- Compliance with all inspection and maintenance requirements specified by the manufacturer

Reasonably foreseeable misuse includes, in particular:

- Use with unsuitable media, e.g., aggressive, corrosive, or contaminated media
- Use as a climbing aid
- Operation outside the technical specifications
- Any modifications to the product that do not correspond to the intended and described procedures

2.2 Organizational measures of the operator

The operator must ensure that the product is used as intended and only when it is in perfect working order. Damaged or improperly modified products must not be used.

Instructions

The operator must make the instructions available at all times to persons assigned to perform tasks on the product. The operator must ensure that the applicable guidelines for the respective tasks are followed.

Personnel

The operator may only assign persons who possess the knowledge and qualifications required for their tasks. They must be instructed on the hazards involved and the necessary protective measures.

Before starting work, these individuals must have read and understood the sections of the instructions relevant to their tasks. This also applies to individuals who work on the product only occasionally.

Safety regulations

The operator must ensure compliance with the safety and occupational safety regulations applicable at the site of use. In doing so, the specific requirements of the respective application as well as hazards posed by the equipment, the environment, and, where applicable, any substances used must be taken into account.

2.3 Residual risks



DANGER

Risk of injury due to insufficiently qualified personnel

Improper handling of the product can lead to serious personal injury and damage to property. All work described in these instructions may only be carried out by qualified specialists.

Qualified personnel are persons with appropriate training and in-depth knowledge of measurement, control, regulation and compressed air technology. They must also be familiar with the applicable national regulations, standards and directives and be able to assess risks independently.



DANGER

Risk of injury from escaping fluid and unsecured equipment components

Media escaping under pressure and system components coming loose can cause serious or fatal injuries.

- ▷ Before performing installation or maintenance work, disconnect the affected system components from all power sources. Safely discharge any stored energy and verify that the system is de-energized. Secure the system components against unintentional energization.
- ▷ Use installation materials suitable for the medium and operating pressure, as well as appropriate, serviceable tools.
- ▷ Inspect the system components for damage and ensure that all screw connections are tight. Tighten any loose screw connections in accordance with the specified tightening torques.
- ▷ Lay and secure piping properly.
- ▷ Open valves and shut-off devices in a controlled manner to prevent sudden changes in pressure or flow.
- ▷ Ensure that any escaping medium does not endanger people or damage property.
- ▷ Avoid transmitting excessive vibrations, oscillations, and impacts to the product.
- ▷ Before commissioning, perform a leak test in accordance with the specifications for the system.



WARNING

Danger during operation outside the specified limit values

Exceeding or falling below the permissible operating, storage or transportation limits can endanger people and property. There is a risk of malfunctions and operating faults as well as falsified measurement results.

- ▷ Only operate the product within the limit values specified on the rating plate and in the technical data.
- ▷ Observe the permissible storage and transportation conditions.



WARNING

Risk of injury due to unauthorized modifications

Unauthorized modifications to the product may cause injury and result in the loss of the approval. The product may only be operated using original components.

- ▷ Unauthorized modifications are not permitted and lead to the exclusion of any warranty and liability by the manufacturer (CS INSTRUMENTS).



CAUTION

Danger due to product malfunctions

Incorrect installation can lead to malfunctions that impair the function of the product.

- ▷ Observe all applicable national regulations and safety regulations during installation and operation.

3 Stainless steel measuring chamber

The product is connected to the compressed air line. A defined partial flow of the measured medium enters the measuring chamber through the process connection and flows past the dew point sensor.

The partial flow is released into the atmosphere in a controlled manner via the outlet. The continuous flow allows the dew point sensor to measure the dew point of the measured medium.

The partial flow through the measuring chamber is factory-set.

3.1 Product overview

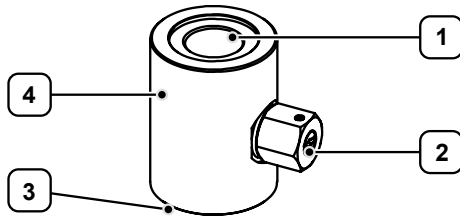


Figure 1: Stainless steel measuring chamber (example)

- | | | | |
|---|---------------------|---|--------------------|
| 1 | Sensor connection | 3 | Process connection |
| 2 | Outlet (vent screw) | 4 | Measuring chamber |

3.2 Scope of delivery

The package includes the following components:

- Stainless steel measuring chamber
- Sealing ring with NBR insert
- Translation of the original assembly instructions



4 Transportation and storage

**NOTE**

Improper transport, improper storage, or improper commissioning may cause damage to or malfunctions in the product, for which the manufacturer, (CS INSTRUMENTS), assumes no liability and provides no warranty.

4.1 Delivery

Transport damage

- ▷ Check the delivered components for any visible transportation damage.
- ▷ Report any transportation damage to the following parties immediately:
 - the carrier
 - the manufacturer's customer service (CS INSTRUMENTS)
- ▷ Ensure that the product is handled properly during transportation.

Packaging

- ▷ Keep the original packaging for any future transportation or storage.

4.2 Storage

To prevent damage caused by environmental factors, the product must be stored properly when not in use.

- ▷ If possible, store the product in its original packaging.
- ▷ Store the product in dry, dust-free rooms.
- ▷ Keep the product away from direct sunlight, heat sources, and corrosive or aggressive chemicals.

5 Installation and commissioning



DANGER

Risk of injury due to insufficiently qualified personnel

Improper handling of the product can lead to serious personal injury and damage to property. All work described in these instructions may only be carried out by qualified specialists.

Qualified personnel are persons with appropriate training and in-depth knowledge of measurement, control, regulation and compressed air technology. They must also be familiar with the applicable national regulations, standards and directives and be able to assess risks independently.



DANGER

Risk of injury from escaping fluid and unsecured equipment components

Media escaping under pressure and system components coming loose can cause serious or fatal injuries.

- ▷ Before performing installation or maintenance work, disconnect the affected system components from all power sources. Safely discharge any stored energy and verify that the system is de-energized. Secure the system components against unintentional energization.
- ▷ Use installation materials suitable for the medium and operating pressure, as well as appropriate, serviceable tools.
- ▷ Inspect the system components for damage and ensure that all screw connections are tight. Tighten any loose screw connections in accordance with the specified tightening torques.
- ▷ Lay and secure piping properly.
- ▷ Open valves and shut-off devices in a controlled manner to prevent sudden changes in pressure or flow.
- ▷ Ensure that any escaping medium does not endanger people or damage property.
- ▷ Avoid transmitting excessive vibrations, oscillations, and impacts to the product.
- ▷ Before commissioning, perform a leak test in accordance with the specifications for the system.



CAUTION

Danger from commissioning a damaged product

If a damaged product is installed or put into operation, this can lead to functional failures or mechanical risks.

- ▷ Always check the product for visible damage, loose parts or missing components before commissioning.
- ▷ Take a defective product out of operation immediately.

5.1 Assemble product



DANGER

Risk of injury from components under pressure

Escaping pressurized gas can cause serious injury or death.

- ▷ Make sure the system is depressurized before assembly.
- ▷ Do not work directly above the product; instead, work to the side of it.
- ▷ Secure the product to prevent it from rotating during installation and removal.



Install the product

Prerequisite

- The system is depressurized.
 - The point of measurement is prepared.
 - The connection threads of the product, the sensor, and the connecting components are compatible with one another.
 - The connection threads are clean and undamaged
- ▷ Connect the product to the prepared point of measurement via the process connection in a pressure-tight manner.
- ❗ It is recommended to install a ball valve as a shut-off device in the connecting line to the process air line.
- ▷ Tighten the connection according to the specifications for the connection thread and sealing material being used.

Install the sensor

- ▷ Remove the installed sealing ring with the NBR insert from the measuring chamber.
- ▷ Slide the sealing ring over the sensor's connection thread until it reaches the sensor's sealing surface.
- ▷ Screw the sensor into the product's sensor connection.
- ❗ Tightening torque: 25-30 Nm
- ▷ Ensure that the sealing ring is properly seated between the sensor and the product.
- ▷ Ensure that the sensor is installed without mechanical stress.
- ❗ For more information on installing the sensor, refer to the operating instructions for the sensor you are using.

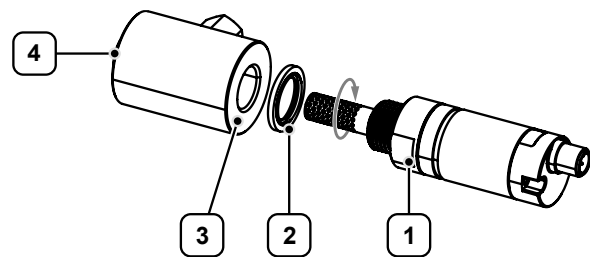


Figure 2: Installing the sensor (example)

- | | | | |
|---|------------------------------|---|--------------------|
| 1 | Sensor | 3 | Sensor connection |
| 2 | Sealing ring with NBR insert | 4 | Process connection |

5.2 Initial commissioning

Putting the product into service

The product releases a defined portion of the process air into the surrounding environment through the outlet.



CAUTION

Risk of injury from escaping partial flow

Process air escapes through the outlet. The escaping partial flow may carry particles or pose a hazard to people in the outlet area.

- ▷ Do not direct the outlet toward people.
- ▷ Ensure that the process air can be safely vented to the surrounding area.
- ▷ Do not use the product with toxic, flammable, explosive, or corrosive media.

Prerequisite

- The product is installed correctly.
 - The sensor is installed correctly.
 - The bypass flow can be safely vented to the atmosphere.
- ▷ Check that the product and the sensor are firmly and securely installed.
- ▷ Check that the outlet is unobstructed.
- ▷ Slowly apply pressure to the point of measurement.
- ▷ Check the installation for leaks.
- ▷ Ensure that the escaping process air is safely vented.
- ✓ A slight airflow is escaping from the outlet.

Adjust the bypass flow

The flow rate through the measuring chamber is factory-set. Adjustment is only necessary if the operating pressure or the application requires it.

Prerequisite

- The product and the sensor are properly installed.
- The operating pressure is within the permissible limits.
- The escaping process air can be safely vented.

▷ Loosen the set screw securing the vent screw.

▷ Adjust the desired partial flow by turning the vent screw in small increments:

⚠ Counterclockwise: Increase the partial flow.

⚠ Clockwise: Decrease the flow rate.

▷ After making the adjustment, secure the vent screw again with the set screw.

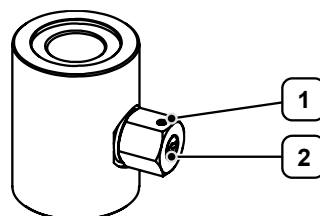


Figure 3: Adjusting the partial flow (example)

1 Set screw

2 Bleed screw



6 Decommissioning and disposal

Decommissioning

In the event of temporary or permanent decommissioning, the product must be safely taken out of service, disassembled, and, if necessary, stored.

- ❗ For further information, see chapter " 4.2 Storage".

Disposal

At the end of its service life, the product must be disposed of properly in accordance with applicable national regulations. The product and its packaging contain recyclable materials that must not be disposed of with general waste.

- ▷ Dispose of the product and packaging via the designated disposal channels.
 - ❗ Follow the local disposal regulations and waste codes applicable to the product.
- ▷ Dispose of the components in an environmentally responsible manner in accordance with local regulations or through a specialized waste disposal company.
 - ❗ For information on environmentally sound disposal, contact local authorities or specialized waste management companies.
- ▷ Alternatively, you can return the product to the manufacturer for proper disposal.

7 Appendix

7.1 Technical data

Parameters	Specification	Unit
Weight	~ 0.5	kg
Application area	2...50	bar
Process connection	Depending on the version: - G 1/4" female thread 1/4" NPT female thread	
Sensor connection	Depending on the version: - G 1/2" female thread 1/2" NPT female thread	
Process air flow	~ 2...3	l/min
Maximum approved operating pressure	≤ 50; limited by the component with the lowest permissible operating pressure	bar
Wetted materials	- Stainless steel 1.4404 (AISI 316L) - NBR (sealing ring insert)	

Table 2: Technical data | Stainless steel measuring chamber

7.2 Dimensions

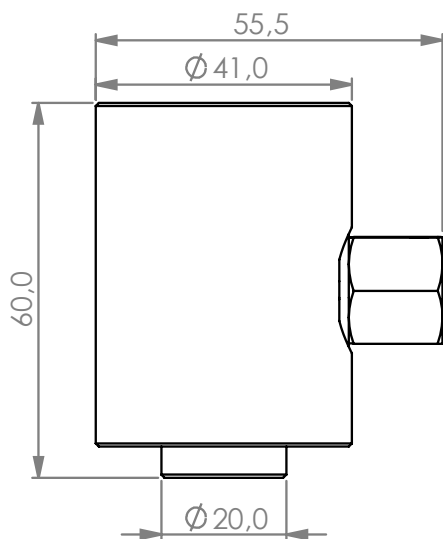


Figure 4: Dimensions | Stainless steel measuring chamber (measurements in mm)



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