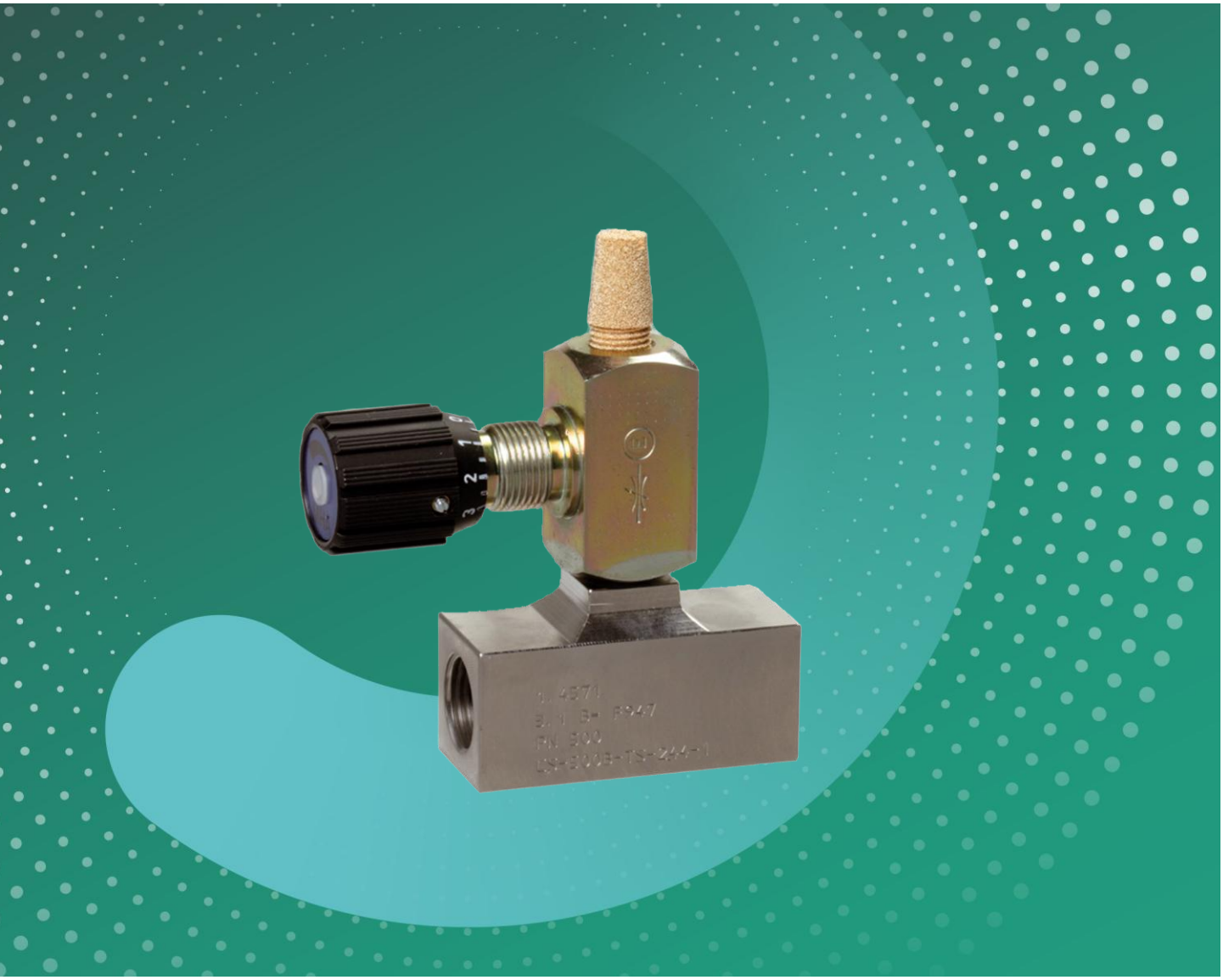
CS INSTRUMENTS

Translation of the original assembly instructions

EN

High-pressure measuring chamber

| ACCESSORIES |



Edition and revision status: 07/2026 | V1.00 | 020006440

Table of contents

1 General information

For the sake of simplicity, this documentation refers to the product "High-pressure 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 high-pressure compressed air systems up to 350 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 product may only be used if it is in perfect technical condition. It may no longer be used if it has been technically modified or damaged.

Instructions

The information on commissioning, operation, and maintenance provided in these instructions must be followed. These instructions should always be kept accessible with the product.

Personnel

People working on the product must read these instructions, particularly the chapter entitled "2 Security", before starting work. This also applies to people who only work occasionally.

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

Danger from escaping compressed gas

Contact with escaping pressurized gas or unsecured system parts can lead to serious injury or death.

- ▷ Only use pressure-resistant installation material and suitable tools that are in perfect condition.
- ▷ Before pressurizing, check all system parts and tighten all screw connections.
- ▷ Always open valves slowly to avoid pressure surges.
- ▷ Secure the pipes so that they cannot move unintentionally.
- ▷ Ensure that people and objects cannot come into contact with escaping compressed gas.
- ▷ Carry out a leak test of the system before commissioning.

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 High-pressure measuring chamber

3.1 Product overview

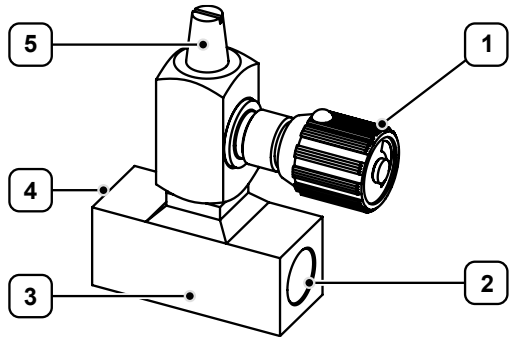


Figure 1: High-pressure measuring chamber (example)

1 Throttle valve

2 Sensor connection

3 Measuring chamber

4 Process connection

5 Vent filter

3.2 Product description

The product is connected to the high-pressure 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 through the vent filter. This ensures that the dew point sensor is continuously supplied with process air and can measure the dew point of the measured medium.

The throttle valve is factory-set and limits the flow through the measuring chamber.

3.3 Scope of delivery

The package includes the following items:

- High-pressure measuring chamber
- 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

Danger from escaping compressed gas

Contact with escaping pressurized gas or unsecured system parts can lead to serious injury or death.

- ▷ Only use pressure-resistant installation material and suitable tools that are in perfect condition.
- ▷ Before pressurizing, check all system parts and tighten all screw connections.
- ▷ Always open valves slowly to avoid pressure surges.
- ▷ Secure the pipes so that they cannot move unintentionally.
- ▷ Ensure that people and objects cannot come into contact with escaping compressed gas.
- ▷ Carry out a leak test of the system before commissioning.

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 high-pressure measuring chamber

Prerequisite

- The system has been depressurized.
- The point of measurement is prepared.
- The connection thread is clean and undamaged.

▷ Screw the high-pressure measuring chamber into the prepared point of measurement via the process connection.

- ⓘ Process connection: G ¼" female thread
- ⓘ 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 used.

Install the sensor

▷ Screw the sensor into the sensor connection of the high-pressure measuring chamber so that it is pressure-tight.

▷ 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.

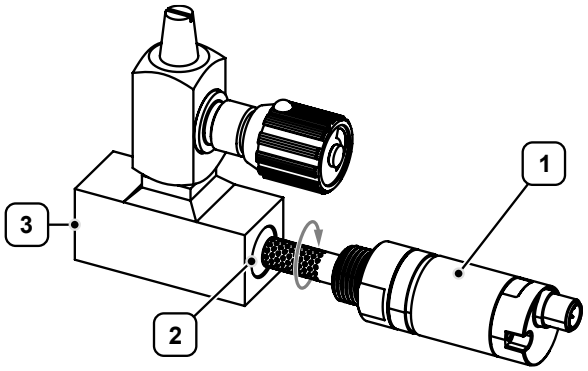


Figure 2: Installing the sensor (example)

1	Sensor	**3**	Process connection
2	Sensor connection		

5.2 Initial commissioning

Putting the product into service

The high-pressure measuring chamber releases a defined partial flow of the process air into the environment via the vent filter.

CAUTION

Risk of injury from escaping partial flow

Process air escapes at the vent filter. The escaping partial flow may carry particles or endanger people in the discharge area.

▷ Do not direct the vent filter 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 high-pressure measuring chamber is installed correctly.
- The sensor is installed correctly.
- The bypass flow can be safely vented to the atmosphere.

▷ Slowly apply pressure to the point of measurement.

▷ Check the installation for leaks.

▷ Check that the high-pressure measuring chamber and the sensor are firmly and securely in place.

▷ Ensure that the escaping process air is safely vented.

▷ Check that the vent filter is clear.

✓ A slight stream of air escapes from the vent filter.

Adjust the bypass flow

The outlet pressure is factory-set. Adjusting the partial flow is only necessary if the pressure stage or the application requires it. This adjustment may only be performed by qualified personnel.

- ▷ Loosen the adjustment screw on the throttle valve, which is secured with locking varnish.
- ▷ Set the desired partial flow on the throttle valve.
- ▷ After making the adjustment, secure the adjustment screw again with a suitable locking compound.

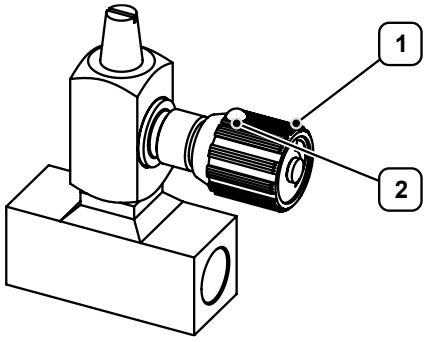


Figure 3: Adjusting the partial flow (example)

1 Throttle valve **2** Adjustment screw

6 Decommissioning and disposal

Decommissioning

Decommissioning refers to an extended time interval during which the product is not in use. During decommissioning, the product must be stored properly and protected from damage and harmful environmental influences.

▷ Pack the product properly if it will not be used for an extended period.

▷ Store the product in a dry place and protect it from extreme temperature fluctuations. Any resulting condensation can cause corrosion.

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.

▷ Separate the components by material.

  ⓘ 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	~ 0.8	kg
Application area	30...350	bar
Process connection	G ¼" female thread	
Sensor connection	G ½" female thread	
Partial flow of process air	~ 2...3	l/min
Maximum permissible operating pressure	≤ 350; limited by the maximum operating pressure of the sensor used	bar
Materials in contact with the medium	Stainless steel 1.4404	

Table 2: Technical Data | High-pressure measuring chamber

7.2 Dimensions

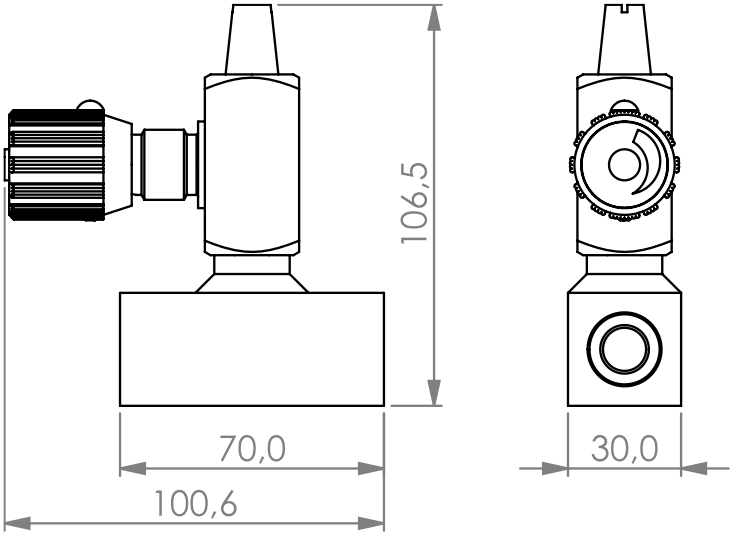


Figure 4: Dimensions | High-pressure measuring chamber (dimensions in mm)

CS INSTRUMENTS GmbH & Co. KG

Zindelsteiner Str. 15 | 78052 VS-Tannheim | GERMANY

Tel. +49 7705 978 99 0 | info@cs-instruments.com

www.cs-instruments.com