

Operating Instructions

CPY7B

Electrolyte vessel

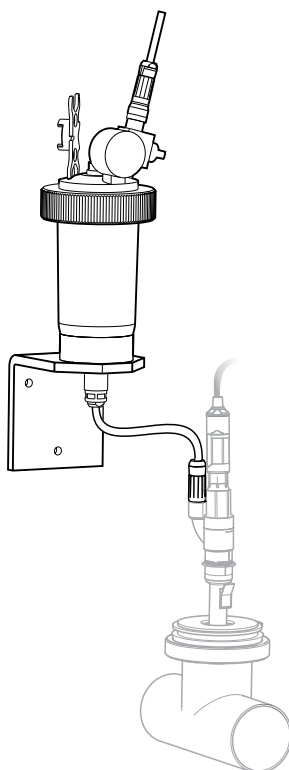






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1 Document information

1.1 Warnings

Structure of information	Meaning
 DANGER Causes (/consequences) Consequences of non-compliance (if applicable) ► Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation will result in a fatal or serious injury.
 WARNING Causes (/consequences) Consequences of non-compliance (if applicable) ► Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid the dangerous situation can result in a fatal or serious injury.
 CAUTION Causes (/consequences) Consequences of non-compliance (if applicable) ► Corrective action	This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or more serious injuries.
 NOTICE Cause/situation Consequences of non-compliance (if applicable) ► Action/note	This symbol alerts you to situations which may result in damage to property.


1.2 Symbols

Symbol	Meaning
	Additional information, tips
	Permitted or recommended
	Not permitted or not recommended
	Reference to device documentation
	Reference to page
	Reference to graphic
	Result of a step

2 Basic safety instructions

2.1 Requirements for the personnel

- Installation, commissioning, operation and maintenance must only be carried out by technical personnel trained to perform these tasks.
- The technical personnel must be authorized by the plant operator to carry out the specified activities.
- The technical personnel must have read and understood these Operating Instructions and must follow the instructions contained therein.
- Faults may be repaired only by authorized and specially trained personnel.

 Repairs not described in the Operating Instructions provided must be carried out only directly at the manufacturer's site or by the service organization.

2.2 Designated use

The electrolyte vessel is designed:

- To provide unpressurized or pressurized electrodes with a top-up supply of liquid electrolyte
- To create an electrolyte bridge in measuring devices with reference electrodes.

Use of the device for any purpose other than that described, poses a threat to the safety of people and of the entire measuring system and is therefore not permitted.

The manufacturer is not liable for damage caused by improper or non-designated use.

2.3 Occupational safety

As the user, you are responsible for complying with the following safety conditions:

- Installation guidelines
- Local standards and regulations

2.4 Operational safety

1. Before commissioning the entire measuring point, verify that all connections are correct. Ensure that electrical cables and hose connections are undamaged.
2. Do not operate damaged products, and safeguard them to ensure that they are not operated inadvertently. Label the damaged product as defective.
3. If faults cannot be rectified:
Take the products out of operation and safeguard them to ensure that they are not operated inadvertently.

2.5 Product safety

2.5.1 State of the art

The product is designed to meet state-of-the-art safety requirements, has been tested, and left the factory in a condition in which it is safe to operate. The relevant regulations and European standards have been observed.

3 Incoming acceptance and product identification

3.1 Incoming acceptance

1. Verify that the packaging is undamaged.
 - ↳ Notify your supplier of any damage to the packaging.
Keep the damaged packaging until the matter has been settled.
2. Verify that the contents are undamaged.
 - ↳ Notify your supplier of any damage to the delivery contents.
Keep the damaged products until the matter has been settled.
3. Check the delivery for completeness.
 - ↳ Check it against the delivery papers and your order.
4. Pack the product for storage and transportation in such a way that it is protected against impact and moisture.
 - ↳ The original packaging offers the best protection.
The permitted ambient conditions must be observed (see "Technical data").

If you have any questions, please contact your supplier or your local sales center.

3.2 Product identification

3.2.1 Nameplate

The nameplate provides you with the following information on your device:

- Manufacturer identification
 - Order code
 - Extended order code
 - Serial number
 - Safety information and warnings
- ▶ Compare the data on the nameplate with your order.

3.2.2 Product identification

The order code and serial number of your product can be found in the following locations:

- On the nameplate
- In the delivery papers

Obtaining information on the product

1. Go to the product page for your product on the Internet.
2. At the bottom of the page, click the link **Online Tools** and then select **Access device specific information**.
 - ↳ An additional window opens.
3. Enter the order code from the nameplate into the search field and then select **Show details**.
 - ↳ You will receive information on each feature (selected option) of the order code.

3.3 Scope of delivery

- 1 electrolyte vessel
- 1 spacer tube
- 3 m (9.8 ft) PTFE pressure hose 4/6
- 1 open-ended wrench, hybrid, SW17/19
- 1 Operating Instructions BA00128C
- Additionally, depending on the version:
 - 1 fixing bracket (CPY7B-A0, CPY7B-B0, CPY7B-C0)
 - 1 threaded joint Pg 9 (CPY7B-A0, CPY7B-B0, CPY7B-C0)
 - 2 hose couplings with check valve (CPY7B-B0, CPY7B-C1, CPY7B-C0, CPY7B-C1)
 - 1 air pump connection (CPY7B-B0, CPY7B-C1, CPY7B-C0, CPY7B-C1)
 - 0.5 m (1.7 ft) spiral pressure hose (PA12W) (CPY7B-B1, CPY7B-C1)
 - 1 hose connector (CPY7B-B1, CPY7B-C1)

If you have any questions, please contact your supplier or your local sales center.

4 Installation

4.1 Installation conditions

Instructions for installing in pressurized systems

General

- ▶ Only the pressure-resistant versions – CPY7B-B or CPY7B-C – should be operated in pressurized systems.
- ▶ Never exceed the maximum permitted pressure of 11 bar (160 psi) at an ambient temperature of 30 °C (86 °F).
- ▶ Only use the pressure hose supplied.
- ▶ Regularly check the couplings, valves and hoses for leaks and damage.

Before installing or removing the electrolyte vessel or filling the vessel:

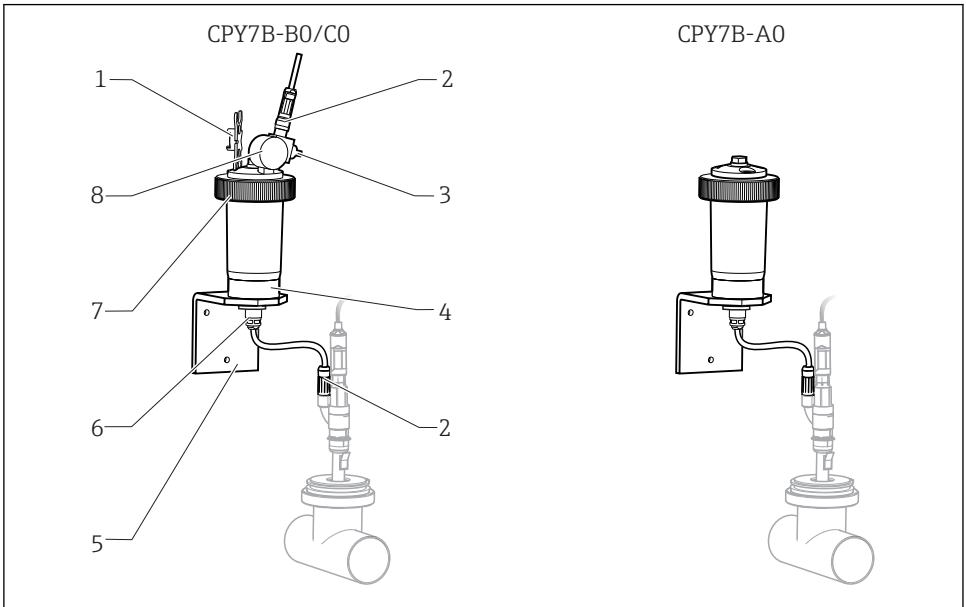
- ▶ Ensure the system is unpressurized and vent the vessel where necessary.

In the event of severely fluctuating medium pressure:

- ▶ Regulate the pressure in the electrolyte vessel in such a way that it is always above the medium pressure.

4.2 Installing the electrolyte vessel

4.2.1 Wall mounting



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1 Wall mounting

1 Hybrid open-ended wrench

2 Hose union

3 Manual valve¹⁾

4 Spacer tube

5 Fixing bracket

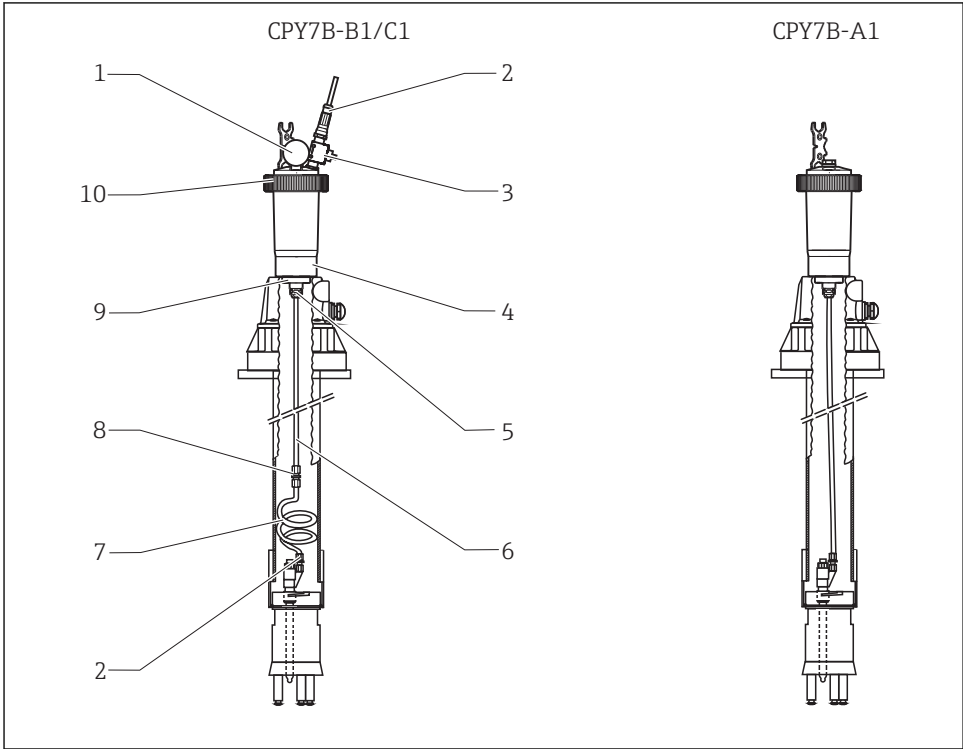
6 Hose union with lock nut

7 Thread adapter nut

8 Pressure gauge

1) Acts as a check valve in the "closed" position.

4.2.2 Installation on an assembly



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2 Installation on the CPA111 assembly head

- | | | | |
|---|----------------------------|----|--------------------|
| 1 | Pressure gauge | 6 | Pressure hose |
| 2 | Hose connection | 7 | Spiral hose |
| 3 | Manual valve ¹⁾ | 8 | Hose connector |
| 4 | Spacer tube | 9 | Lock nut |
| 5 | Hose union | 10 | Thread adapter nut |

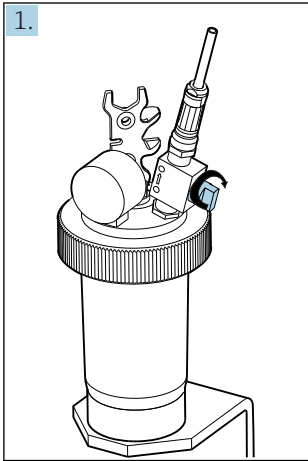
1) Acts as a check valve in the "closed" position.

4.3 Post-installation check

1. After mounting, check all the connections to ensure they are secure and leak-tight.
2. Ensure that the hoses cannot be removed without force.
3. Check the hoses for damage.

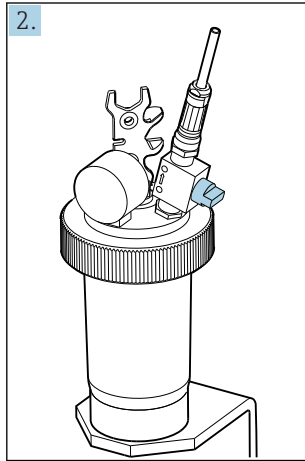
5 Commissioning

5.1 Filling the vessel with electrolyte



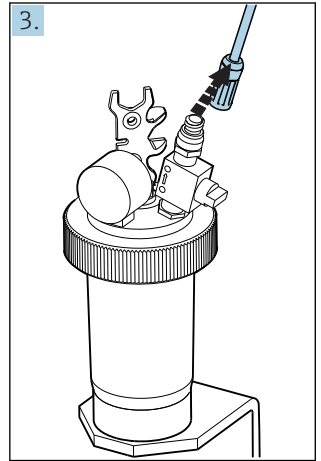
Operational state:

- ▶ Close the manually operated valve

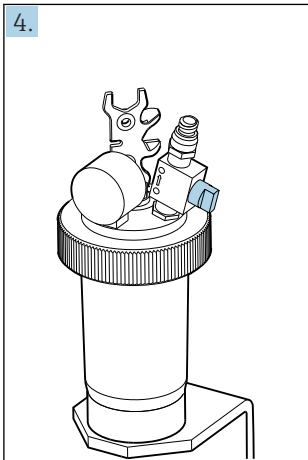


Compressed air cut off:

- ▶ Manually operated valve closed

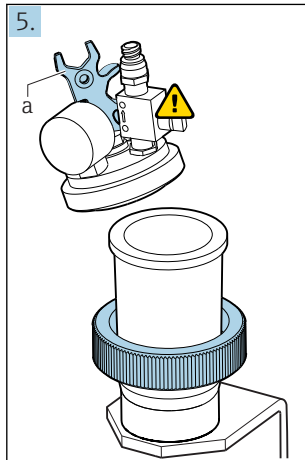


▶ Undo the hose union



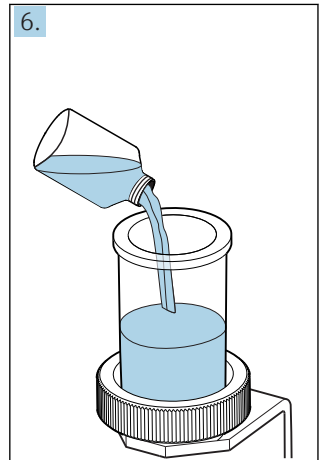
Vent the vessel:

- ▶ Open the manually operated valve



Remove the upper section:

- ▶ Hold by the hybrid open-ended wrench (a) and loosen the coupling nut.



Fill the vessel with electrolyte:

- ▶ Do not overfill the vessel.



The first four steps are not required for the unpressurized version (CPY7B-A).

NOTICE**Rupture of manual valve due to application of force when opening vessel**

- ▶ Hold only by the hybrid wrench, not by the manual valve!

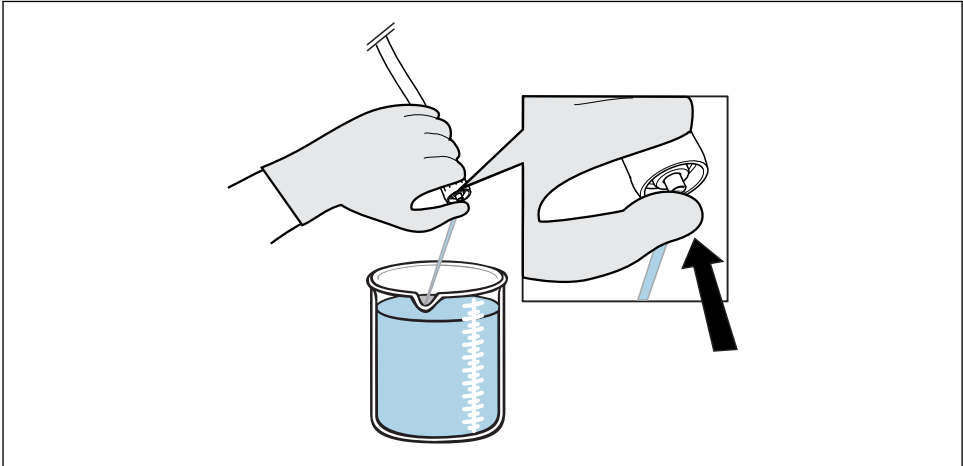
5.2 Venting

Having topped up the electrolyte, you have to vent the electrolyte hose.

CAUTION**Minor skin or eye injuries are possible as a result of contact with the electrolyte**

- ▶ Wear safety gloves and protective goggles.

1. Release the electrolyte hose connection on the sensor.
2. Press in the tappet of the hose union until there is a flow of electrolyte:



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3. Reconnect the electrolyte hose to the sensor.

5.3 Assembly

Follow the sequence for filling the vessel with electrolyte in the reverse order.

1. Fit the top part and tighten the coupling nut (finger-tight, maximum 5 Nm).
2. Close the manually operated valve.
3. Connect the hose union.
4. Open the manually operated valve.

6 Maintenance

Routine checks

Regularly check all couplings for leaks

- ▶ Version CPY7B-A
Visual inspection

Version CPY7B-B, CPY7B-C

1. Cut off the compressed air supply using the manually operated valve (toggle to horizontal position).
2. Observe the pressure gauge on the CPY7B. If the pressure has not dropped after 15 minutes, the couplings are leak-tight.
3. If the pressure has dropped, re-tighten the couplings. Check the seal to ensure it is intact and seated correctly.

NOTICE

Prohibited lubricants

If prohibited lubricants are used, there is a risk of stress cracks forming on the polycarbonate parts.

- ▶ Use only the lubricants approved for the material to lubricate polycarbonate parts, such as couplings.
- ▶ Observe the instructions of the lubricant manufacturer.

Release vessel pressure (only versions CPY7B-B, CPY7B-C)

CAUTION

Minor skin or eye injuries are possible as a result of splashing electrolyte

- ▶ Only ever perform other maintenance work when the system is unpressurized.
- ▶ If using an air pump connection:
Release the valve nipple on the cover by one rotation (AF 19).

If using a compressed air connection:

1. Cut off the compressed air supply at the manually operated valve (toggle bar in horizontal position).
2. Remove the compressed air hose (turn hose union 1 revolution counterclockwise).
3. Release the pressure from the vessel (toggle bar of manually operated valve in vertical position).

7 Repairs

7.1 Spare parts

Pressure hose

- ID 4 (0.16")/AD 6 (0.24"), available by the meter
- Material: PTFE
- Order No. 50013621

Spiral hose

- ID 4 (0.16") / OD 6 (0.24"), length 0.5 m (1.7 ft)
- Material: PA12W, black
- Order No. 71007969

Kit CPY7B, fixing bracket

Order No. 71344486

Mounting kit, compressed air connection for CPY7B-B, CPY7B-C

Order No. 51500507

Mounting kit, air pump connection for CPY7B-B, CPY7B-C

Order No. 51500506

Hose union with check valve

Order No. 71023590

Kit CPY7B, hose connection, O-ring

- Maintenance kit for O-ring replacement, parts are pre-assembled
- Order No. 71344489

Kit CPY7B, coupling nut

Order No. 71344492

Kit CPY7B, cover CPY7B-Ax

Order No. 71344493

Kit CPY7B, cover CPY7B-Bx

Order No. 71344494

Kit CPY7B, cover CPY7-Cx

- Hand valve, nickel-plated brass, pre-assembled
- Order No. 71344495

Kit CPY7B, pressure vessel

Order No. 71344496

7.2 Return

The product must be returned if repairs or a factory calibration are required, or if the wrong product was ordered or delivered. As an ISO-certified company and also due to legal regulations, Endress+Hauser is obliged to follow certain procedures when handling any returned products that have been in contact with medium.

To ensure swift, safe and professional device returns, please read the return procedures and conditions at www.endress.com/support/return-material.

7.3 Disposal

Observe the local regulations.

8 Accessories

KCl solution CPY4

- Top-up electrolyte solution, concentration 1.5 or 3 mol/l
- Volume 100 ml or 1000 ml

Diaphragm pipe CPY6

- For pH/redox measurement with bridge electrolyte
- Order No. 50068478

Pressure gauge

- 0-16 bar, R1/8", D4
- Order No. 71008039

9 Technical data

9.1 Environment

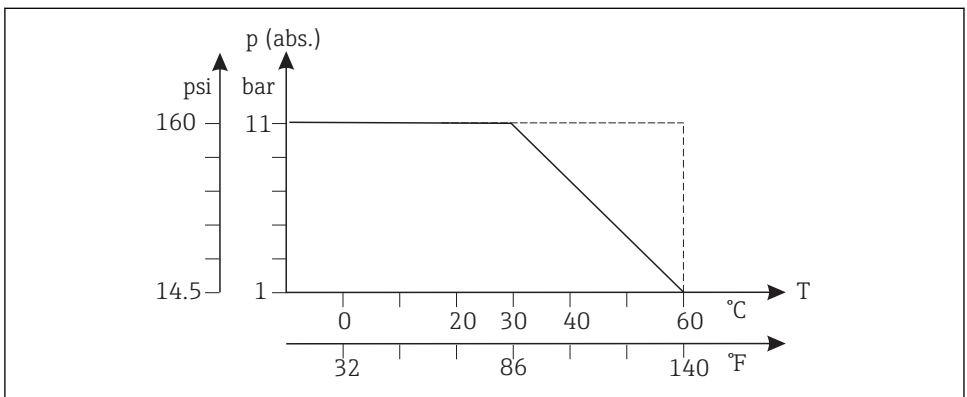
9.1.1 Ambient temperature and applied pressure

0 to 60 °C (32 to 140 °F)

Maximum 30 °C (86 °F) at 11 bar (160 psi), absolute

Maximum 60 °C (140 °F) at atmospheric pressure

9.1.2 Temperature-pressure ratings



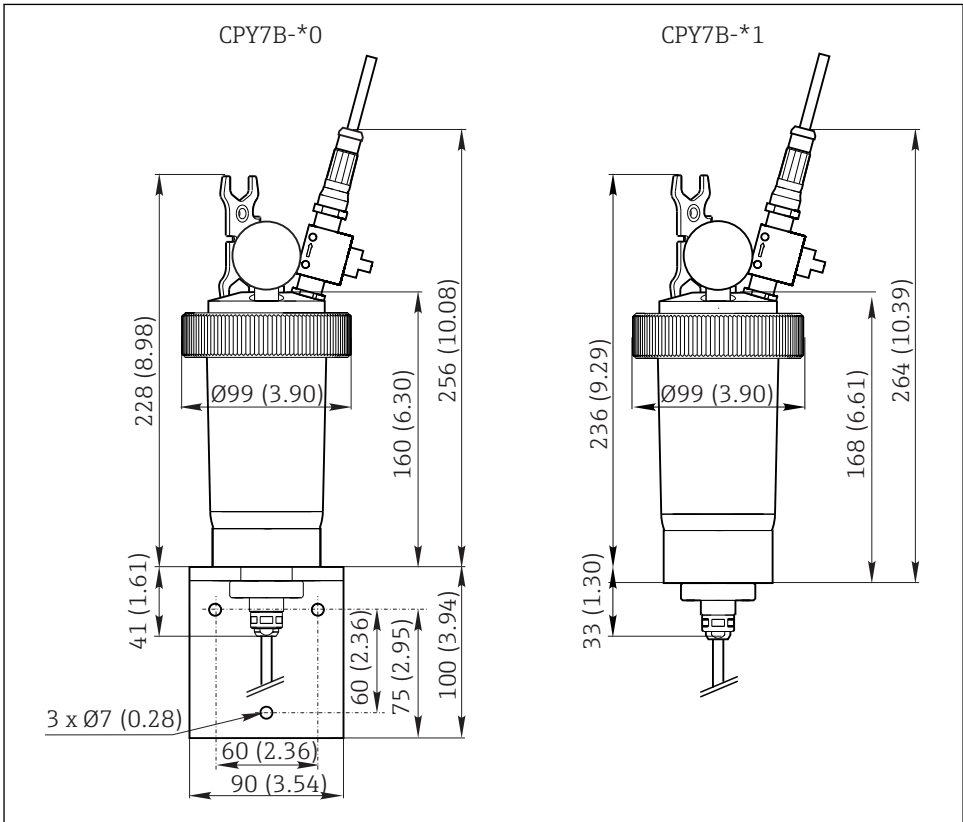
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9.2 Process

i The process temperature limits and process pressure limits for the entire system are determined by the limits of the components used (assembly, electrode, cable, accessories, etc.).

9.3 Mechanical construction

9.3.1 Dimensions ¹⁾



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3 Dimensions in mm (inch)

9.3.2 Effective capacity

200 ml (6.8 fl. oz.)

1) All versions

9.3.3 Weight

0.450 kg (1 lbs)

9.3.4 Materials

Pressure vessel	Polycarbonate
O-rings	EPDM
Unpressurized hose	PTFE
Pressure hose	PTFE
Spiral hose	Polyamide PA12W
Cover (unpressurized version)	PVC, black
Cover (pressure version)	PA6G, black (cast polyamide 6, black)

9.3.5 Pressure connection

Pressure hose	ID 4 (0.16")/AD 6 (0.24")
Valve for air pump	5 mm (0.2") diameter

9.3.6 Electrolyte hose connection

ID 4 (0.16")/AD 6 (0.24")

9.3.7 Reference electrode installation point

Coupling	Pg 13.5
Maximum reference electrode shaft length	120 mm (4.72")



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