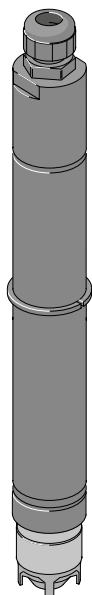


DULCOTEST® Sensor CGE, Type:
CGE 3-mA-2 ppm; CGE 3-mA-10 ppm

EN



A1953

Please carefully read these operating instructions before use! · Do not discard!
The operator shall be liable for any damage caused by installation or operating errors!
Technical changes reserved.

General non-discriminatory approach

In order to make it easier to read, this document uses the male form in grammatical structures but with an implied neutral sense. It is aimed equally at both men and women. We kindly ask female readers for their understanding in this simplification of the text.

Supplementary information

Read the following supplementary information in its entirety!

The following are highlighted separately in the document:

■ Enumerated lists

—> Instructions

⇒ Results of the instructions

Information



This provides important information relating to the correct operation of the system or is intended to make your work easier.

Safety information

Safety information are provided with detailed descriptions of the endangering situation, see ⓘ *Chapter 1.1 'Explanation of the safety information' on page 4*

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1 Introduction

These operating instructions provide information on the technical data and functions of the DULCOTEST® Sensor for Organically Bound Chlorine, Type CGE 3.

Standard scope of supply

- Sensor complete with sensor cap, protective cap and clamp ring
- Bottle of electrolyte
- Spare membrane cap
- Operating instructions
- Screw driver

1.1 Explanation of the safety information

Introduction

These operating instructions provide information on the technical data and functions of the product. These operating instructions provide detailed safety information and are provided as clear step-by-step instructions.

The safety information and notes are categorised according to the following scheme. A number of different symbols are used to denote different situations. The symbols shown here serve only as examples.



DANGER!

Nature and source of the danger

Consequence: Fatal or very serious injuries.

Measure to be taken to avoid this danger

Danger!

- Denotes an immediate threatening danger. If this is disregarded, it will result in fatal or very serious injuries.



WARNING!

Nature and source of the danger

Possible consequence: Fatal or very serious injuries.

Measure to be taken to avoid this danger

Warning!

- Denotes a possibly hazardous situation. If this is disregarded, it could result in fatal or very serious injuries.

**CAUTION!****Nature and source of the danger**

Possible consequence: Slight or minor injuries, material damage.

Measure to be taken to avoid this danger

Caution!

- Denotes a possibly hazardous situation. If this is disregarded, it could result in slight or minor injuries. May also be used as a warning about material damage.

**Type of information**

Hints on use and additional information

Source of the information, additional measures

Information!

- *Denotes hints on use and other useful information. It does not indicate a hazardous or damaging situation.*

**NOTICE!****Nature and source of the danger**

Damage to the product or its surroundings

Measure to be taken to avoid this danger

Note!

- Denotes a possibly damaging situation. If this is disregarded, the product or an object in its vicinity could be damaged.

1.2 Users' qualifications



WARNING!

Danger of injury with inadequately qualified personnel!

The operator of the plant / device is responsible for ensuring that the qualifications are fulfilled.

If inadequately qualified personnel work on the unit or loiter in the hazard zone of the unit, this could result in dangers that could cause serious injuries and material damage.

- All work on the unit should therefore only be conducted by qualified personnel.
- Unqualified personnel should be kept away from the hazard zone

Training	Definition
Instructed personnel	An instructed person is deemed to be a person who has been instructed and, if required, trained in the tasks assigned to him/her and possible dangers that could result from improper behaviour, as well as having been instructed in the required protective equipment and protective measures.
Trained user	A trained user is a person who fulfils the requirements made of an instructed person and who has also received additional training specific to the system from ProMinent or another authorised distribution partner.
Trained qualified personnel	A qualified employee is deemed to be a person who is able to assess the tasks assigned to him and recognize possible hazards based on his/her training, knowledge and experience, as well as knowledge of pertinent regulations. The assessment of a person's technical training can also be based on several years of work in the relevant field.

Training	Definition
Electrician	Electricians are deemed to be people, who are able to complete work on electrical systems and recognize and avoid possible hazards independently based on his/her technical training and experience, as well as knowledge of pertinent standards and regulations. Electricians should be specifically trained for the working environment in which they are employed and know the relevant standards and regulations. Electricians must comply with the provisions of the applicable statutory directives on accident prevention.
Customer Service department	Customer Service department refers to service technicians, who have received proven training and have been authorised by ProMinent to work on the system.



Note for the system operator

The pertinent accident prevention regulations, as well as all other generally acknowledged safety regulations, must be adhered to!

1.3 General safety information



WARNING!

Unauthorised access!

Possible consequence: Fatal or very serious injuries

- Measure: Ensure that there can be no unauthorised access to the unit
- The sensor may only be fitted, installed, serviced and operated by personnel trained for this



CAUTION!

Functional limitations

Possible consequence: Slight or minor injuries, material damage

- Check the sensor regularly for dirt and impurities
- Check the membrane cap regularly for air bubbles adhering to it
- Observe all applicable national regulations relating to maintenance, service and calibration intervals.



CAUTION!

Prerequisites for operation

Possible consequence: Slight or minor injuries, material damage

- The sensor may only be used in flow gauges that ensure the correct flow parameters.
- There must be a free outlet or at most a counter pressure of 1 bar at the outlet of the flow gauge. The maximum operating pressure of the respective single components must be observed.
- The sensor's voltage supply may not be interrupted
- Following longer interruptions to the voltage supply (> 2 h), allow the sensor to run-in again and recalibrate it

1.4 Intended Use



NOTICE!

Intended use

- Only use the sensor to determine and regulate the concentration of free chlorine or chlorine bound to cyanuric acid in swimming pool water or water of a similar quality.
- Any other uses or modifications to the system are prohibited
- The sensor is not a safety component in the sense of DIN EN ISO 13849-1:2008-12. If there is a critical process in your measurement and control system, then it is your responsibility to make sure this process is safe.

1.5 Information in the event of an emergency

- In the event of an emergency, switch off the controller
- If liquid escapes from the continuous flow gauge, close the stopcocks on the inlet and outlet installed by the customer.
- Observe the plant operator's safety information before opening the continuous flow gauge.

2 Brief Description of the Functions

Brief description of the functions

The DULCOTEST® CGE is a membrane-covered, amperometric two-electrode sensor. Use the DULCOTEST® CGE to measure the concentration of total available chlorine in swimming pool water or water of a similar quality.

The chlorine compounds dissolved in the water pass through the sensor membrane and are electrochemically transformed on the working electrode. The primary current signal resulting from the transformation can be evaluated to determine the concentration (of chlorine).

The integral sensor signal transformer converts the primary sensor current into an output signal of 4 ... 20 mA.

Typical applications:

- Measurement of total available chlorine in swimming pool water
 - from stabilised chlorine (chloro (iso) cyanuric acid derivatives), also in combination with free chlorine from electrolysis processes, with and without diaphragm between the anode and the cathode.

The measuring signal of the CGE3 sensor follows the value determined by the DPD-1.

2.1 Measured variable

The sensor measures the concentration of total available chlorine in swimming pool water. This is understood as being the total chlorine, bound to organic carrier molecules (e.g. cyanuric acid) and the resulting free chlorine released (HOCl and OCl^-). The sensor measures independently of the content of combined chlorine (chloramines)

2.2 Construction of the sensor

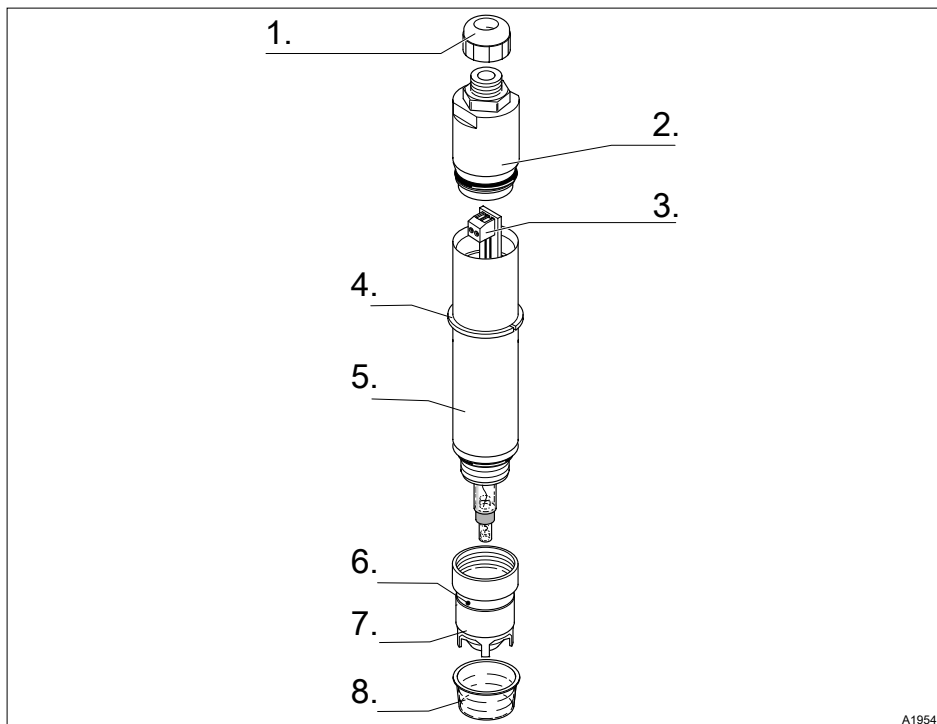


Fig. 1: Construction of the sensor

- | | |
|---------------------------------------|----------------------------|
| 1. Opening for M12 threaded connector | 5. Electrode shaft |
| 2. Adapter | 6. Hose seal |
| 3. 2-wire connection | 7. Membrane cap |
| 4. Clamp disc | 8. Protective membrane cap |

Sensor type CGE3 consists of 2 main parts, the electrode shaft and the membrane cap. The electrolyte-filled membrane cap constitutes the measuring chamber. Measuring electrodes are immersed in the measuring chamber. The measuring chamber is sealed from the measuring medium by a micro-porous membrane. The sensor has integral temperature compensation. The amplifier electronics are located in the upper part of the electrode shaft. The amplifier electronics are cast into a plastic mass. The amplifier electronics transform the primary sensor current into an output signal of 4 ... 20 mA.

3 Transport and Storage

! NOTICE!

Original packaging

Damage to the product

- Only transport, ship and store the sensor in its original packaging
- Retain the packaging in its entirety including the polystyrene inserts

! NOTICE!

Maximum storage period

Damage to the product

If the sensor is stored for a long period of time, return it to ProMinent for checking or servicing. Otherwise the safe operation and measuring accuracy of the sensor can no longer be guaranteed

3.2 Transport

The sensor should be transported in its original packaging and in compliance with the permissible environmental conditions. No further special conditions have to be observed in relation to transport.

3.1 Storage

Permissible ambient temperature: +5 °C to +50 °C

Humidity: maximum 90 % relative air humidity, non-condensing

Other: no dust, no direct sunlight

Maximum storage period of the electrolytes in their original packaging: see label on the bottle

Maximum storage period of the sensor in its original packaging and normal atmosphere: 3 years

4 Assembly

- User qualification: trained user, see
⌘ *Chapter 1.2 'Users' qualifications'*
on page 6

Filling electrolyte



WARNING!

Danger from hazardous substances!

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.



Do not touch the membrane cap and electrodes at the bottom of the electrode shaft

Do not touch or damage the membrane at the bottom of the membrane cap and the electrodes at the bottom of the electrode shaft or bring them into contact with greasy substances.

Otherwise the sensor will no longer work accurately. Replace the membrane cap with a new membrane cap or send the sensor away to have the electrodes cleaned.



- *The electrolyte is sensitive to oxidation: Always keep electrolyte bottle sealed after use. Do not decant electrolytes into other containers*
- *Do not store electrolyte beyond its "Use by" date and note the "Use by" date on the label*
- *Store the electrolyte bottle on its head so that the electrolyte can be easily poured out, as far as possible free of bubbles*
- *As far as is possible, fill the electrolyte so that it is free from bubbles. Small air bubbles are not a problem, larger air bubbles rise to the upper edge of the membrane cap*
- *Only use the membrane cap once*

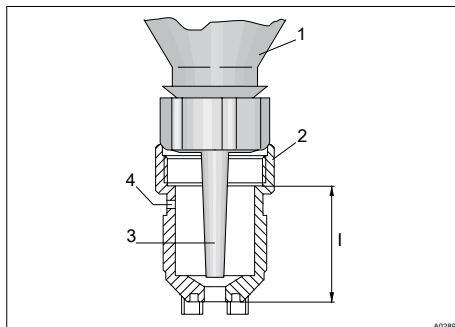


Fig. 2: Filling electrolyte

- 1 Electrolyte filling level
- 1 Electrolyte bottle
- 2 Membrane cap
- 3 Nozzle
- 4 Vent hole

1. ➔ Open the electrolyte bottle and screw on the nozzle

2. ➔ Press out excess air

3. ➔ Fill the membrane cap with electrolyte, avoiding bubbles as far as possible

Place the electrolyte bottle completely on the membrane cap and allow the electrolyte to press out slowly in a stream of liquid from the storage bottle, while at the same time constantly pulling back the storage bottle

- ⇒ the cap is completely full if the electrolyte can be seen at the bottom thread.



Do not use your fingers to close the vent hole beneath the hose seal

4. ➔ Place the electrode shaft vertically onto the filled membrane cap

5. ➔



When screwing shut, allow excess electrolyte to escape unchecked through the air vent hole underneath the hose seal

Turn the membrane cap manually as far as it will go so that there is no gap between the membrane cap and the electrode shaft.

6. ➔ Wipe up any escaped electrolyte with a soft paper towel or similar

7. ➔ Rinse the nozzle through thoroughly and then rinse off with a clean, hot and powerful water jet, so that there is no longer any adhering electrolyte

Installing the sensor in the in-line probe housing



Installation instructions

- Only push in or pull out the sensor slowly to or from the in-line probe housing. Otherwise the membrane could be damaged.
- Do not allow the membrane to touch the in-line probe housing flow resistor
- Always keep the sensor moist after commissioning, that is to say never allow the flow gauge to run dry!



- Do not allow the flow to fall below the minimum flow rate. Monitor the flow of the connected controller. If the measured value is used for control, switch off the control if the flow falls below the minimum flow rate and/or switch to basic load
- Only install the sensor in in-line probe housing type DLG III A, DLG III B or in DGM (25 mm module) to guarantee the necessary flow requirements. No guarantee can be provided if other in-line probe housings are used
- Avoid installations that allow air bubbles to form in the sample water
 - Air bubbles, which adhere to the sensor's membrane, can result in too low a measured value and thus lead to incorrect metering in a control circuit



Observe the instructions and safety information contained in the operating instructions for the in-line probe housing

1. Push the O-ring from below over the sensor up to the clamp disc.
2. DLG III: Insert the sensor into the DLG III and tighten with the threaded rod

- 3.**  DGM: leave a washer in the DGM. Insert the sensor into the DGM and tighten securely with a clamping screw until the O-ring seals
- ⇒ The correct insertion depth of the sensor is defined by the clamp disc.

5 Installation

- User qualification: trained qualified personnel or electrical technician, see  *Chapter 1.2 'Users' qualifications' on page 6*



WARNING!

Connection to external devices

Possible consequence: Fatal or very serious injuries

- Ensure that the measuring device/control device connected is galvanically isolated from the sensor
- Do not allow the supply voltage to fall below 16 V DC, even for short periods of time
 - Ensure that the current source can be loaded with a minimum of 35 mA at a minimum of 16 V DC
 - Too low a supply voltage may result in an incorrect measured value

The interface requirements are automatically met when connecting to ProMinent control devices.



CAUTION!

Incorrect metering

Possible consequence: Slight or minor injuries. Material damage.

- Do not switch off the measuring system during intermittent operation
 - Switch on feeder assembly with a time delay if necessary
- Ensure that the water to be measured always contains a sufficient quantity of the appropriate feed chemical
 - Otherwise you will have to factor in longer run-in periods

Electrical Installation

1. ➤ Turn the top section of the sensor a quarter turn anticlockwise and remove it
2. ➤ Loosen the clamping screw on the M12 threaded connector and feed through the measuring line from the control device

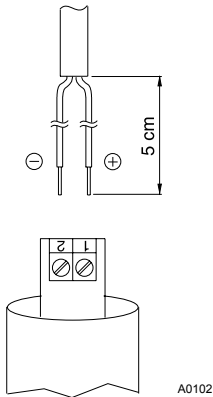


Fig. 3: 2-wire connection

3. ➤ Strip the cable ends, fit the cable ends with cable end sleeves ($\varnothing$ max = 0.5 mm²) and connect the cable ends to the 2-wire connection: 1 = plus, 2 = minus
4. ➤ Bring approx. 5 cm of the measuring line into the sensor.
5. ➤ Tighten the clamping screw on the threaded connector
6. ➤ Push the top section of the sensor right into the sensor shaft and tighten it clockwise up to the stop

6 Putting the Sensor into Operation

- User qualification: trained user, see  Chapter 1.2 'Users' qualifications' on page 6



WARNING!

Danger from hazardous substances!

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.



CAUTION!

Incorrect metering due to sensor failure

Possible consequence: Slight or minor injuries. Material damage.

- If a sensor fails then there may be an incorrect measured value at the input of the controller/measuring instrument
- This may result in uncontrolled metering
- The operator should therefore ensure that no subsequent damage results from this



CAUTION!

Incorrect metering due to premature ageing of the sensor

Possible consequence: Slight or minor injuries. Material damage.

Measure: Do not electrically disconnect the sensor during measuring breaks.

Exception: If there is a break between measurements lasting more than a week and the proportion of disinfectant in the sample water falls during this period to 0 ppm then electrically disconnect the sensor.

- An extra run-in period will be necessary following operation without disinfectant. Switch on feeder assembly with a time delay if necessary.

Run-in period

The sensor requires a specific run-in period to display a steady display value.

Initial commissioning:	1 - 24 h (typically 6 h)*
Recommissioning:	1 - 24 h (typically 3 h)*
Electrolyte or membrane change:	3 h

*** the exact run-in time depends on the application.**

6.1 Calibration



CAUTION!

- Perform a slope calibration every time if the sensor has been tampered with (e.g. electrolyte replacement etc.)!
- Repeat slope calibration at regular intervals to ensure the perfect operation of the sensor! If there are no other regulations, then only calibrate the sensor every 3-4 weeks for use in drinking water and swimming pool water.

- Avoid air bubbles in the sample water! Air bubbles, which adhere to the sensor membrane, can result in too low a measured value and thus lead to dangerous incorrect metering.
- Please note the pertinent national guidelines for calibration intervals!



Prerequisites

- *The sensor is ready for measuring (wait for run-in period)*
- *Constant flow rate at the in-line probe housing*
- *Constant temperature of the sample water*
- *Each time the sensor is removed or inserted, wait until the run-in period has expired and a constant measured value is achieved, a minimum of 15 minutes to avoid drifts caused by temperature compensation.*
- *No concentration fluctuations of the feed chemical in the sample water*
- *Constant pH value within the permissible range*
- *Ensure that the sample is taken at the place the sensor is installed*

Zero point calibration

If the sensor is operated with a ProMinent controller, then zero point calibration is not generally necessary. Zero point calibration is recommended if you wish to use the sensor at the lower threshold of the measuring range.

1. ➤ Place the sensor in a vessel with clean water free of chlorine and oxidising agent (e.g. mineral water without gas).
2. ➤ Use the sensor to stir it until the measured value on the controller remains stable for 5 minutes.
3. ➤ Calibrate the controller to zero in accordance with its operating instructions.
4. ➤ Refit the sensor into the in-line probe housing (DGM; DLG III).

Slope calibration

1. ➤ Use an appropriate reference method (e.g. DPD 1) to determine the chlorine content of the sample water.
2. ➤ Set the determined value on the controller in line with its operating instructions.
 - ⇒ Repeat calibration during commissioning, and on the day following any tampering with the sensor.

7 Information on Troubleshooting and Fault Elimination

User qualification: instructed user, see  Chapter 1.2 'Users' qualifications' on page 6

Error	Possible cause	Remedy
Sensor cannot be calibrated and measured value greater than DPD measurement	Run-in period too short	Observe the run-in period
	Membrane cap damaged	Replace membrane cap
	Troublesome substances in the water	Check water for troublesome substances and remedy this
	Short circuit in the measuring line	Identify short circuit and eliminate the cause
	Distance between membrane/electrode is too great	Screw the membrane cap up to its stop
	DPD chemicals out of date	User new chemicals, repeat calibration
	pH value < pH 5.5	Increase pH value (pH 5.5 ... 9.5)
Sensor cannot be calibrated and sensor measured value less than DPD measurement	Run-in period too short	Observe the run-in period
	Coating on the membrane cap	Replace membrane cap, allow sensor to run in and calibrate
	Sample water flow rate too low	Correct flow rate
	Air bubbles on the outside of the membrane	Increase the flow within the permitted range
	pH value > pH 9.5	Lower pH value (pH 5.5 ... 9.5)
	No electrolyte in the membrane cap	Fill with new electrolyte
	Electrolyte pushed out by gas bubbles in the sample water	Contact ProMinent

Information on Troubleshooting and Fault Elimination

Error	Possible cause	Remedy
Measured value display is '0'	Chlorine content below the lower limit of the measuring range	Add chlorine and then repeat calibration and/or use a suitable sensor
	Measuring line broken	Replace measuring line
	Sensor connected to the controller with incorrect polarity	Connect the sensor correctly to the controller
	Run-in period too short	Observe the run-in period
	Sensor defective	Send sensor in for regeneration
Sensor measured value is unstable	Membrane damaged	Replace membrane cap; allow sensor to run in and calibrate
	Air bubbles on the outside of the membrane	Remove air bubbles by tapping them and increase flow rate if necessary
	Reason lies with the controller	Eliminate cause

When you have tried everything: Check whether the reference electrode at the end of the electrode shaft is silvery-white instead of brownish-grey. The reference electrode is then worn out and needs to be replaced by ProMinent Dosiertechnik GmbH.

8 Maintenance and Repair Work on the Sensor

User qualification: instructed user, see
🔗 *Chapter 1.2 'Users' qualifications'*
on page 6

Maintenance interval



CAUTION!

- Maintain the sensor regularly in order to avoid over-metering in the event of a sensor failure
- Please note the applicable national guidelines for maintenance intervals
- Do not touch the electrodes or bring them into contact with substances containing grease
- Never clean the membrane with alkaline or acidic solutions, cleaning reagents or by mechanical means (brush or similar)

Weekly to monthly, depending on the water quality

Maintenance work

- ➞ Use a suitable measuring instrument (e.g. DPD) to check the measured value displayed on the sensor's controller.
 - ⇒ If necessary, recalibrate the sensor

Cleaning the membrane

If the membrane is dirty and the sensor cannot be calibrated, try to clean the membrane carefully. Firstly dismantle the sensor. Gently remove any adhesive dirt:

1. ➞ Rinse the membrane under a gentle stream of cold water
 2. ➞ Remove deposits (lime scale, rust):
 - Dismantle the membrane cap
 - Rinse the sensor with plenty of water
- ⇒ Now fill the sensor with electrolyte, allow it to run in and recalibrate.



Replacing the membrane

If calibration is no longer possible even after the membrane has been cleaned or if the membrane is damaged, then you need to replace the membrane cap.

Repairing the sensor

The sensor can only be repaired in the factory. Return it to us in its original packaging.

9 Decommissioning and Disposal

- **User qualification:** instructed user, see ⓘ *Chapter 1.2 'Users' qualifications' on page 6*

! NOTICE!

Decommissioning the sensor

Observe all of the safety information

1. ➤ Disconnect the sensor from the power source
2. ➤ Depressurise the in-line probe housing
3. ➤ Loosen the clamping screw
4. ➤ Remove the sensor slowly from the in-line probe housing
5. ➤ Screw open and empty the membrane cap over a sink or similar vessel
6. ➤ Flush the membrane and electrode with clean water and dry until free of dust
7. ➤ Loosely screw on the membrane cap to protect the electrodes
8. ➤ Replace the membrane protection cap to protect the membrane cap

- **User qualification:** instructed user, see ⓘ *Chapter 1.2 'Users' qualifications' on page 6*

! NOTICE!

Regulations governing disposal of used parts

- Note the current national regulations and legal standards which apply in your country

Dispose of the electrolyte in accordance with the electrolyte's safety data sheet

ProMinent GmbH, Heidelberg will take back decontaminated used devices providing that they are covered by adequate postage.

10 Ordering Information

Standard scope of supply

Sensor CGE3
Bottle with electrolyte (50 ml)
Nozzle for bottle
Spare membrane cap
Operating instructions
Screw driver

Complete set. Only a complete set of sensors can be ordered:

Part	Order number
CGE 3-mA-10 ppm	1047975
CGE 3-mA-2 ppm	1047959

Spare parts and accessories

Part	Order number
Set	740048
■ 2 membrane caps	
– CGE 2-mA-2/10 ppm	
■ Bottle of electrolyte (50 ml)	792862
Set	
■ 1 membrane cap	
– CGE 2-mA-2/10 ppm	792892
■ Bottle of electrolyte (50 ml)	
Bottle of electrolyte (50 ml)	791818
Mounting kit for DGM	

Ordering Information

Part	Order number
Mounting kit for DLG III	815079
Two-wire measuring line, mA version (2 x 0.24 mm ² , Ø 4 mm)	725122
Photometer DT 1B	1039315

11 Technical Data

- Measured variable
 - Free chlorine and organically bound chlorine
- Area of application
 - Drinking water, swimming pool water and water of a similar quality
- Measuring ranges
 - CGE 3-mA-2 ppm;
0.02 ... 2.0 mg/l
 - CGE 3-mA-10 ppm;
0.1 ... 10 mg/l
- pH-range
 - 5.5 ... 9.5
- Temperature range
 - 5 ... 45 °C (temperature-compensated)
 - No sudden changes in temperature
- Storage temperature
 - 5 ... 50 °C
- Resolution
 - corresponds to the lower limit of the measuring range
- Maximum operating pressure
 - DGM: 3.0 bar (free flow), no negative pressure
 - DLG III: 1.0 bar (free flow), no negative pressure
- Flow
 - In-line probe housing DLG III A/ B / DGM
 - Optimum: 30 l/h
 - Minimum: 20 l/h
 - Maximum: 100 l/h
- Cross-sensitivity
 - Bromine, iodine, ozone and ClO_2 , chloramines and other oxidants lead to measuring errors
- Conductivity of sample water
30 $\mu\text{S/cm}$... 10,000 $\mu\text{S/cm}$
- Service life of membrane cap
 - typically 1 year, depending on the water quality
- Material
 - Membrane cap, PPE
 - Electrode holder, PMMA
 - PVC electrode shaft
 - Electronics, electronic components
- Supply voltage
 - 16 ... 24 V DC
 - at least 35 mA at 16 V DC
- Output signal
 - 4 ... 20 mA (mA version)
- Degree of protection
 - IP 65

12 Directives / standards adhered to

EC directives:

- EC EMC Directive (2004/108/EC)

International standards:

- EN 61010-1
- EN 60335-1
- EN 60529
- EN 61326-1

For sensors with a CAN interface, the following specifications also apply:

- CANopen CiA DS 301
- CANopen CiA DSP 305
- CANopen CiA DS 404

You can find the EC Declaration of Conformity as a download under
<http://www.prominent.de/Service/Download-Service.aspx>

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The latest version of the operating instructions is available on our homepage.

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