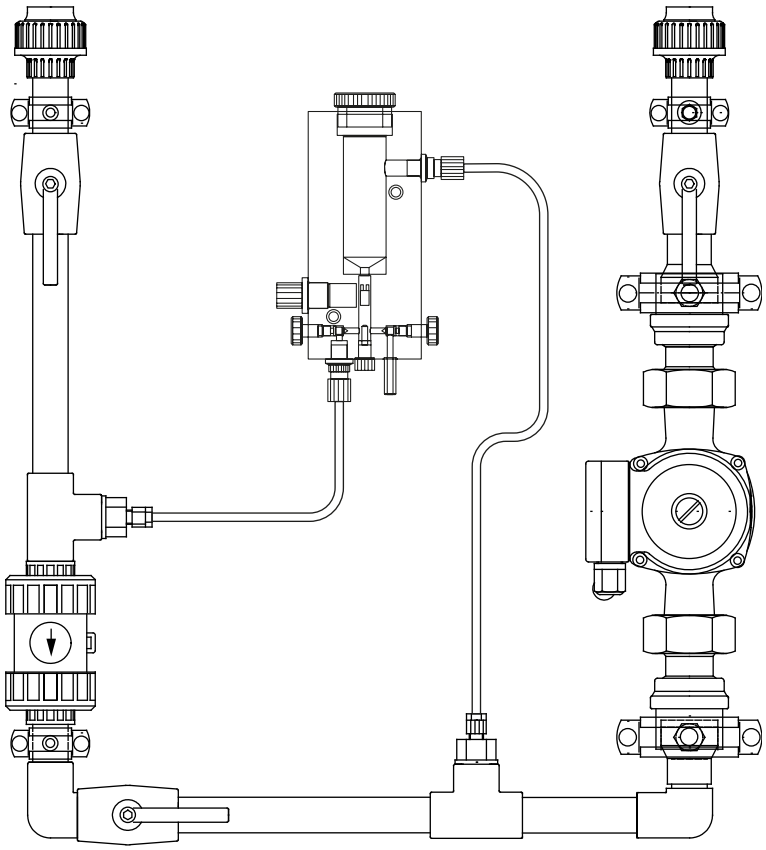
AQC-D6

ClO_2 measuring cell / measuring module

Installation and operating instructions



Original installation and operating instructions

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Warning

Prior to installation, read these installation and operating instructions. Installation and operation must comply with local regulations and accepted codes of good practice.

Note

These complete installation and operating instructions are also available on www.grundfos.com.

1. Symbols used in this document

Warning

If these safety instructions are not observed, it may result in personal injury.

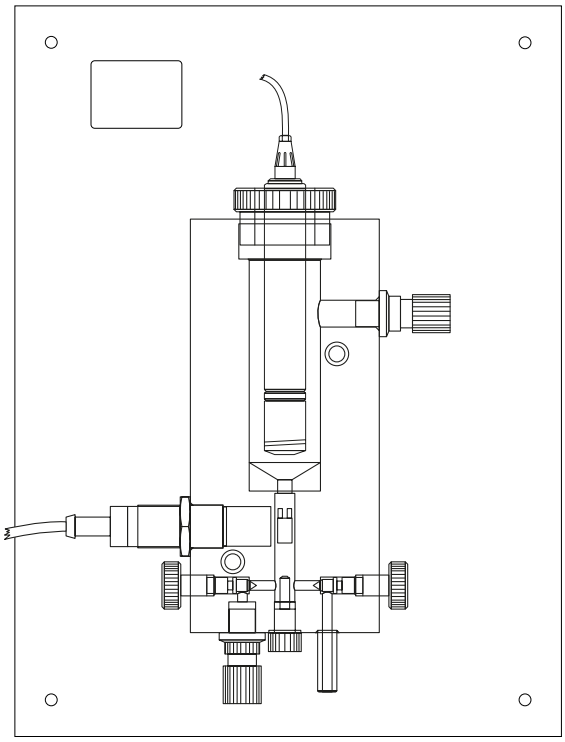
Caution

If these safety instructions are not observed, it may result in malfunction or damage to the equipment.

Note

Notes or instructions that make the job easier and ensure safe operation.

2. Device description



TM06 8109 4616

Fig. 1 AQC-D6 measuring cell

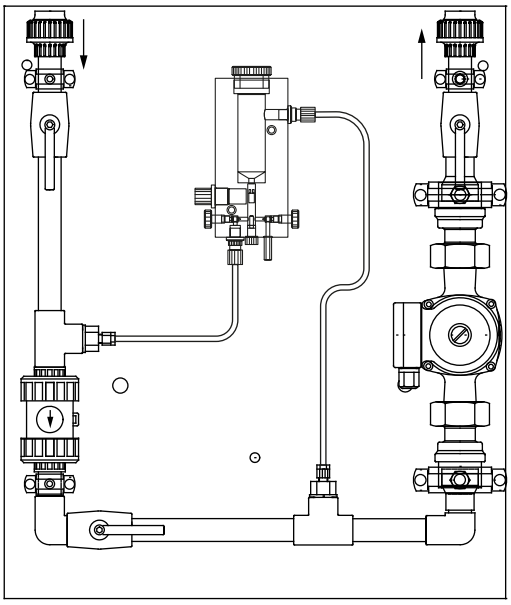


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Fig. 2 Measuring module

3. General information

These installation and operating instructions contain all information important for users of the AquaCell AQC-D6 measuring cells and the measuring module:

- technical data
- instructions for commissioning, use and maintenance
- safety information.

Should you require further information or should you encounter problems that are not handled in sufficient depth in this manual, please contact Grundfos.

We shall be pleased to support you with our comprehensive know-how in the fields of measurement and control as well as water treatment.

We always welcome suggestions on how to optimise our installation and operating instructions to satisfy our customers.

4. Applications

The AQC-D6 measuring cells are used for measuring the concentration of chlorine dioxide in water within the scope of the potential applications described in this manual.

Warning

Other applications are not approved and not permitted. Grundfos cannot be held liable for any damage resulting from incorrect use.

5. Safety

5.1 Obligations of the owner/operations manager

The owner/operations manager is responsible for:

- compliance with country-specific safety regulations
- training of operating personnel
- provision of prescribed protective gear
- implementation of regular maintenance.

5.2 Avoidance of danger

Warning

Installation and connection of the device and the associated supplementary component must only be carried out by authorised personnel.

Switch off the power supply before connecting the power supply cable and the relay contacts!

Do not dismantle the device!

Cleaning, maintenance and repairs must only be carried out by authorised personnel!

The local safety regulations must be observed!

6. Technical data

6.1 General data on the AQC-D6

Design (measuring cells)	95708118 (314-181): Chlorine dioxide measuring cell, consisting of a 95708117 (314-180) sensor, flow fitting and water sensor, mounted on a plate
Housing material	PEEK, PVDF, acrylic and silicone rubber, resistant to surfactants and similar water additives
Measuring range	0.00 - 2.00 mg/l
Cross-sensitivity	Cross-sensitivity if chlorine is present: approximately 2 % Cross-sensitivity if chlorite is present: < 1 %
Resolution	0.01 mg/l
Response time	T_{90} ~ 30 seconds
Temperature drift	Temperature-compensated measuring signal
Permissible process water temperature	+5 to +70 °C
Sample water flow rate	Minimum 30 l/h
Maximum permitted pressure	8 bar
Permissible ambient temperature	+5 to +35 °C
Maximum permitted relative humidity	80 %, no condensation

6.2 General data on the measuring module

Design (measuring module)	95708029 (550-2000-1): Measuring module, consisting of a 95708117 (314-180) sensor, flow fitting and water sensor, sample water bypass with feed and outlet line for the flow fitting, spring-loaded taper seat check valve, circulating pump for compensation of any pressure drops that occur, as well as stop valves at the input and output, mounted on a plate
Material of the measuring module	• Pipework: PP, PP/brass • Gaskets: FPM/PTFE • Circulating pump: bronze
Permissible process water temperature	+5 to +70 °C
Sample water flow rate	At least 30 l/h
Maximum permitted pressure	8 bar
Permissible ambient temperature	+5 to +35 °C
Maximum permitted relative humidity	80 %, no condensation
Weight	15 kg
Measuring module input / output	Connection for DN 20 pipe in PP or PVC

6.2.1 Electrical data of the UPS 25-60N circulating pump

Supply voltage	230 V, single-phase
Frequency	50/60/70 Hz
Maximum power consumption	50 W / 60 W / 70 W
Enclosure class	IP44

6.2.2 Factory settings of the measuring module as supplied

The bypass measuring module is fitted on the wall mounting plate and tested for leaks. The fixing accessories supplied allow the wall mounting plate to be attached to a solid brick or concrete wall.

The connection cable of the circulating pump is not included in the scope of delivery.

The circulating pump is preset to level 3.

6.3 Dimensional sketch / drilling diagram

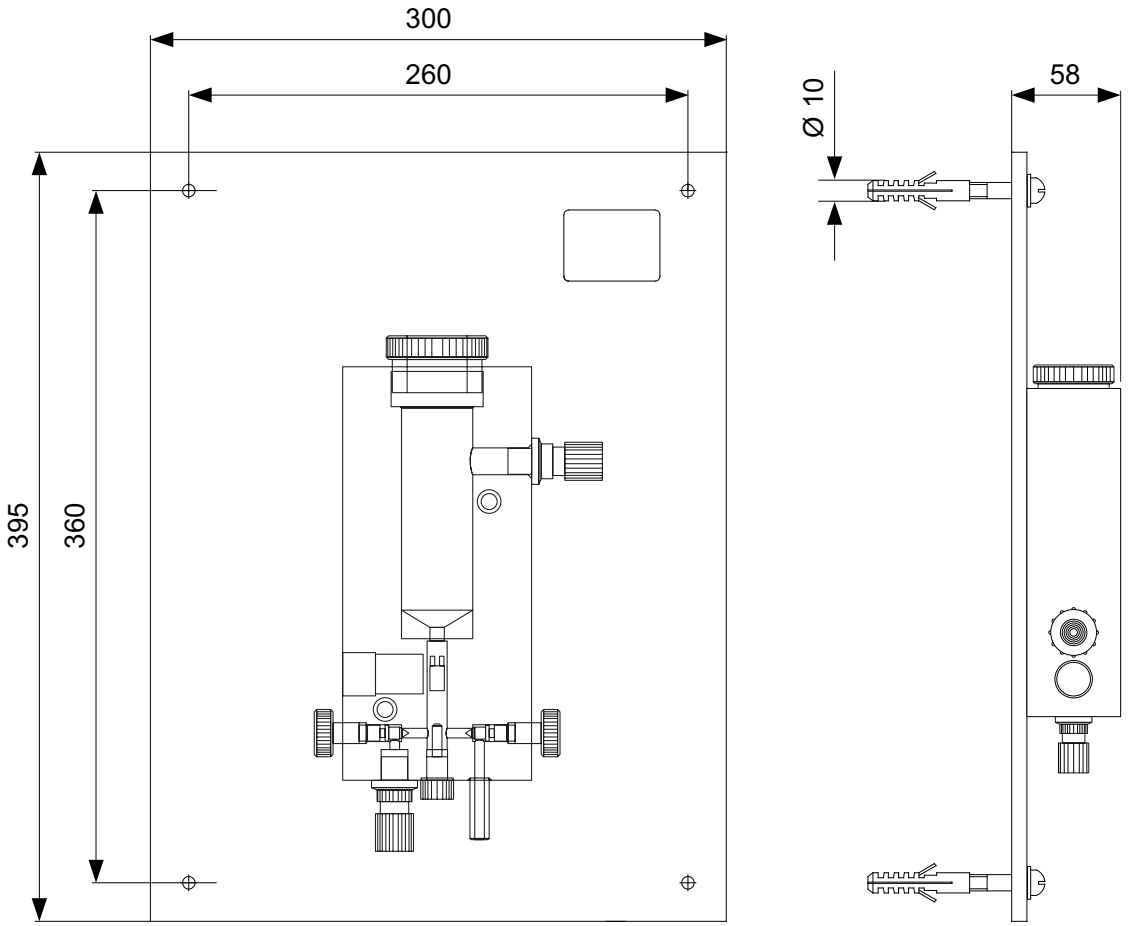

Fig. 3 AQC-D6

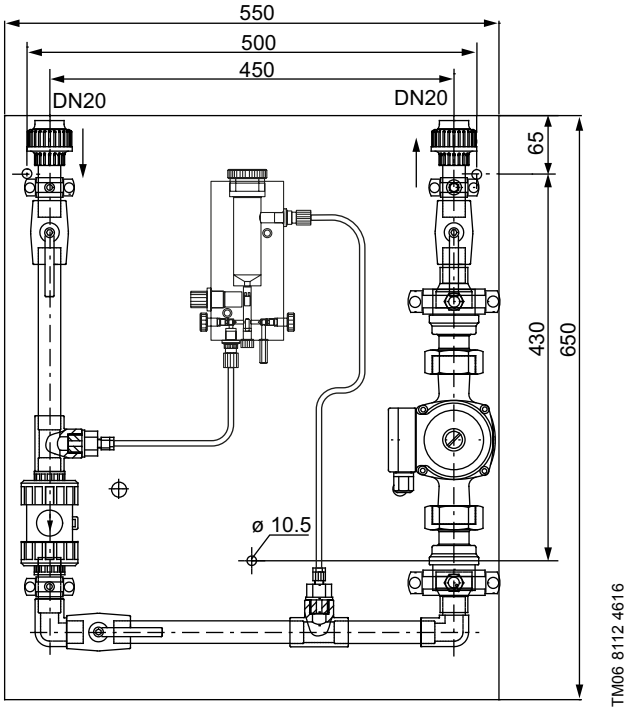

Fig. 4 Measuring module

Height	Width	Depth
650	550	180

All dimensions in mm.

7. Function

7.1 Description of the AQC-D6

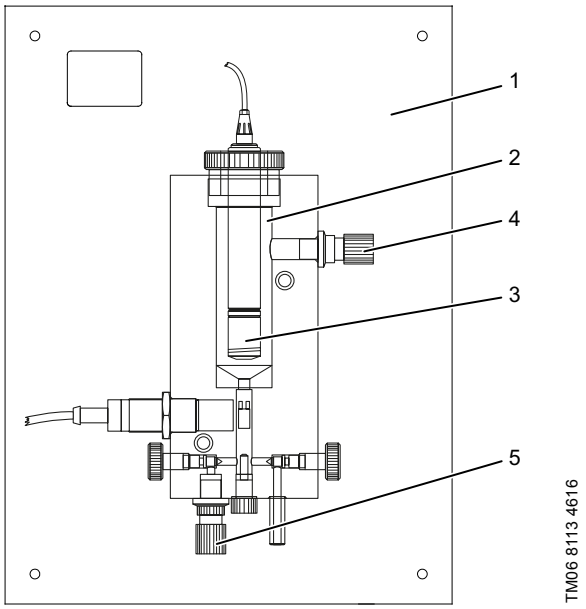

Fig. 5 AQC-D6

Pos.	Description
1	Base plate
2	Flow fitting
3	Measuring cell
4	Connection for sample water outlet, hose 6/8 mm
5	Connection for sample water inlet, hose 6/8 mm

7.2 Design of the measuring cell

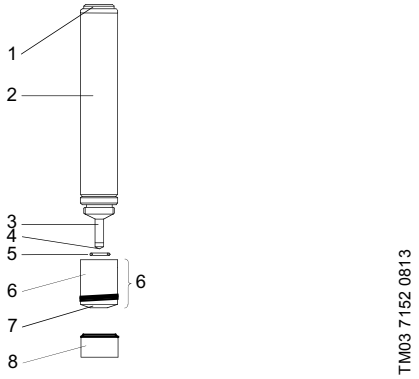

Fig. 6 Measuring cell

Pos.	Description
1	Four-pole connection bush
2	Electrode adapter with integrated electronics
3	Reference electrode
4	Measuring electrode
5	O-ring 14 x 1.8 mm
6	Electrolyte chamber
7	Measurement opening
8	Protection cap

7.3 Function of the AQC-D6

The AQC-D6 measuring cell is used to determine the chlorine dioxide concentration in potable water.

Sample water is taken at a representative position and fed to the measuring cell.

- The sample water flow rate can be adjusted on the flow fitting.
- A water sensor can, for example, be used to trigger an alarm or to switch off the control functions if there is insufficient sample water.
- The substance to be determined (ClO_2) is measured on the noble-metal electrode.

The material to be determined (ClO_2) generates an electric current:

- The electric current is in the µA range.
- The electric current is proportional to the concentration of the ClO_2 parameter.

The measuring cell is controlled with a potentiostat integrated in the measuring amplifier.

A precisely defined potential of the measuring electrode is retained through a reference system. This results in a linear response for the measuring cell as well as a stable zero point for the measurement.

The measuring amplifier and regulator of the Oxiperm Pro chlorine dioxide system:

- amplifies the current
- calculates it using the calibration parameters
- displays the chlorine dioxide concentration as a numerical value
- controls a dosing pump as an actuator.

7.4 Design of the measuring module

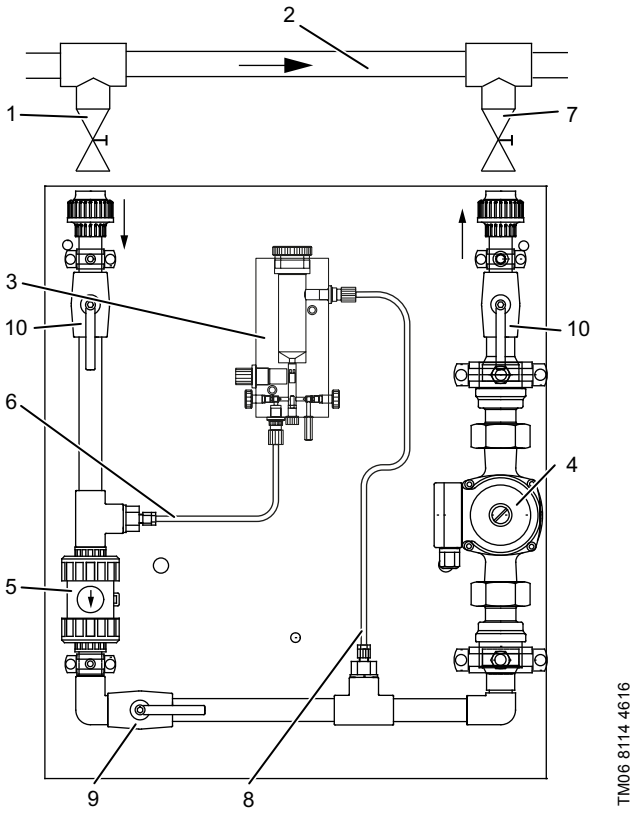

Fig. 7 AQC-D6

Pos.	Description
1	Extraction fitting (supplied by the customer)
2	Main water line (supplied by the customer)
3	Flow fitting / AQC-D6 measuring cell
4	Circulating pump
5	Taper seat check valve
6	Sample water removal
7	Feed fitting (supplied by the customer)
8	Sample water recirculation
9	Throttle valve
10	Isolating valves

7.5 Functional principle of measurement module

The measuring module is used to feed sample water to the AQC-D6 measuring cell for determining the chlorine dioxide concentration in potable water. Please refer to section *7.3 Function of the AQC-D6*. Here the sample water is taken from the main water line using a bypass and then fed back.

The sample water is taken from the main water line (pos. 2) using a extraction fitting (pos. 1), from where it flows through the bypass and a feed fitting (pos. 7) back into the main water line (pos. 2). The spring-loaded taper seat check valve (pos. 5) prevents the sample water from flowing back. The stream of sample water can be blocked off using the isolating valves (pos. 10). The circulating pump (pos. 4) drives the stream of sample water through the bypass. It is designed specifically for compensating the internal pressure drops. The extraction and feed line must therefore be kept as short as possible.

Sample water is then taken from this bypass via the sample water extraction (pos. 6), from where it flows through the flow fitting (pos. 3) to the measuring cell and is then fed back to the bypass through the sample water recirculation fitting (pos. 8). To do this, the throttle valve (pos. 9) restricts the flow of water in the bypass until enough sample water flows through the sample water extraction section (pos. 6) to the flow fitting / AQC-D6 (pos. 3) measuring cell.

8. Installation

8.1 Transport and storage

- Transport the device carefully, do not drop!
- Store the electrodes with electrolyte filling and protection cap fitted.
- Store at a dry location, protected from direct sunlight.
  – Storage temperature for measuring modules: -5 °C to +50 °C.

8.2 Unpacking

- When unpacking, be aware of loose parts.
- Check the delivery to ensure that no parts are missing.
- Also check for transport damage. Never fit or connect any damaged parts.
- Install as soon as possible after unpacking.

Note Do not allow foreign bodies to enter any parts that carry water.

Note Retain the packing material or dispose of it according to local regulations.

8.3 Installation requirements

Note The measuring module should be fitted as close as possible to the main water line.

Note The installation of the sample-water feed pipe must not contain any copper. Copper interferes with the measurement and can damage the electrodes.

- Ambient temperature of +5 to 35 °C at the installation site.
- Vibration-free location.

8.4 Installation

Caution Always fit the AQC-D6 measuring cell or measuring module on a flat and stable surface. Do not twist or distort the base plate.

- The fixing accessories supplied include hanger bolts, dowel pins, compression springs and nuts.
- Attach the AQC-D6 measuring cell or the measuring module to a stone or concrete wall using the fixing accessories supplied. Do not twist or distort the devices.
- Nuts may be attached behind the base plate to ensure that the module is free from distortion when attached to an uneven wall.

1. Mark the location of the boreholes, and then drill them (∅10 mm). See section *6.3 Dimensional sketch / drilling diagram*.
2. Insert the dowel pins, and screw the AQC-D6 measuring cell or the measuring module onto the wall.

9. Commissioning

9.1 Water connections

Caution Observe the maximum permissible pressures and temperatures for materials used! The measuring cell must never be exposed to shock pressure. It can be operated up to a maximum of 8 bar.

Caution When selecting the supply and discharge conduits, please observe their resistance against the temperature and pressure occurring in your application.

Note For the best possible accuracy of the measured value, keep the flow of sample water as constant as possible.

Note To keep the system short and prevent drops in pressure, the connection lines to the measuring cell or the measuring module should be kept as short as possible.

9.1.1 AQC-D6 water connections

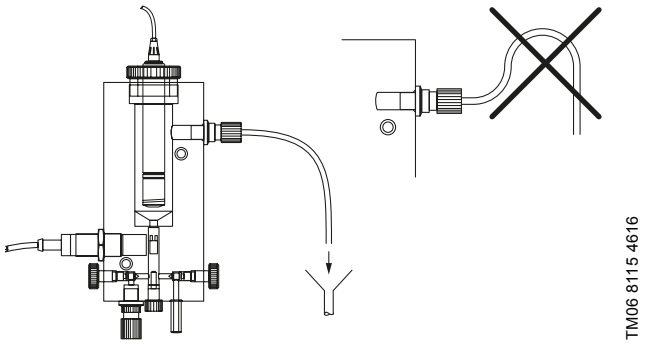

Fig. 8 AQC-D6 with open water outlet

- Connect the sample water supply line (hose 6/8 mm).
- Connect the sample water drain line.
- Do one of the following:
  – When a drain is available, connect (hose 6/8 mm) to a suitable drain.
  – Feed the fluid back to the pipework.

9.1.2 Measuring module water connections

The standard scope of delivery includes one PP and one PVC insertion section each for the input and output of the measuring module for connecting a pipe in DN 20.

When installing, do one of the following:

- Weld on a PP pipe.
- Glue on a PVC pipe (only suitable for cold water).

9.1.3 Water sensor of the AQC-D6

1. Screw the water sensor into the thread all the way to the stop.
2. Secure with the PVDF ring.

9.2 Electrical connections

Warning

Incorrect electrical connections can result in serious injury and damage to property!

Electrical connections may only be set up by authorised personnel!

Warning

Switch off the power supply before connecting the power supply cable and the relay contacts!

Observe the local safety regulations!

Protect the cable connections and plugs against corrosion and moisture.

Before connecting the power supply cable, check that the supply voltage specified on the nameplate corresponds to the local conditions.

An incorrect supply voltage may destroy the device!

Caution

To guarantee electromagnetic compatibility (EMC), the input and current output cables must be screened.

Connect the screening to the screen ground on one side.

Refer to the wiring diagram!

Route the input, current output and power supply cables in separate cable channels

- Connect the cable with four-pole screw-on connection to the measuring cell. Please refer to fig. 10.

9.2.1 Connecting the measuring cell to Oxiperm Pro

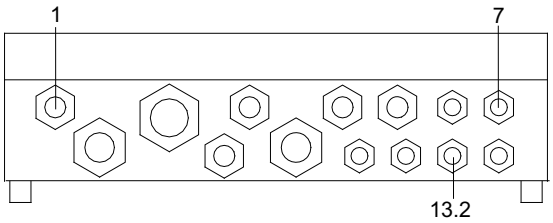

Fig. 9 Cable connection block on the base of the Oxiperm Pro

Pos.	Description
1	Power supply
7	Measuring cell
13.2	Water sensor

1. Connect the measuring cell to Oxiperm Pro (connection 1).
2. Connect the power supply cable.

Connecting to the connection block of the Oxiperm Pro, up to software version V0.19

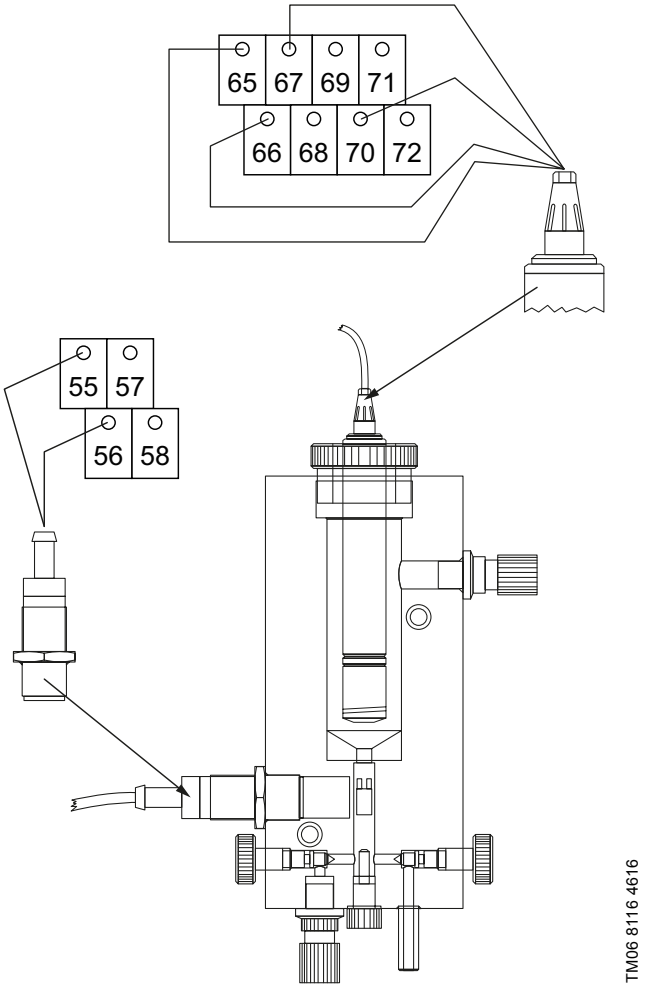

Fig. 10 Connecting to the connection block of the Oxiperm Pro, up to software version V0.19

Pos.	Connection	Description
AQC-D6 measuring cell		
65	- 12 V	Brown
66	⊥	White
67	M	Yellow
70	⊥	Green
Water sensor		
55	+	Black
56	-	White

1. Connect any current output cables as required.
2. Connect any relay contacts as required.

Always observe the Oxiperm Pro installation and operating instructions.

3. Connect the power supply cable.

Connecting to the connection block of the Oxiperm Pro, from software version V0.20

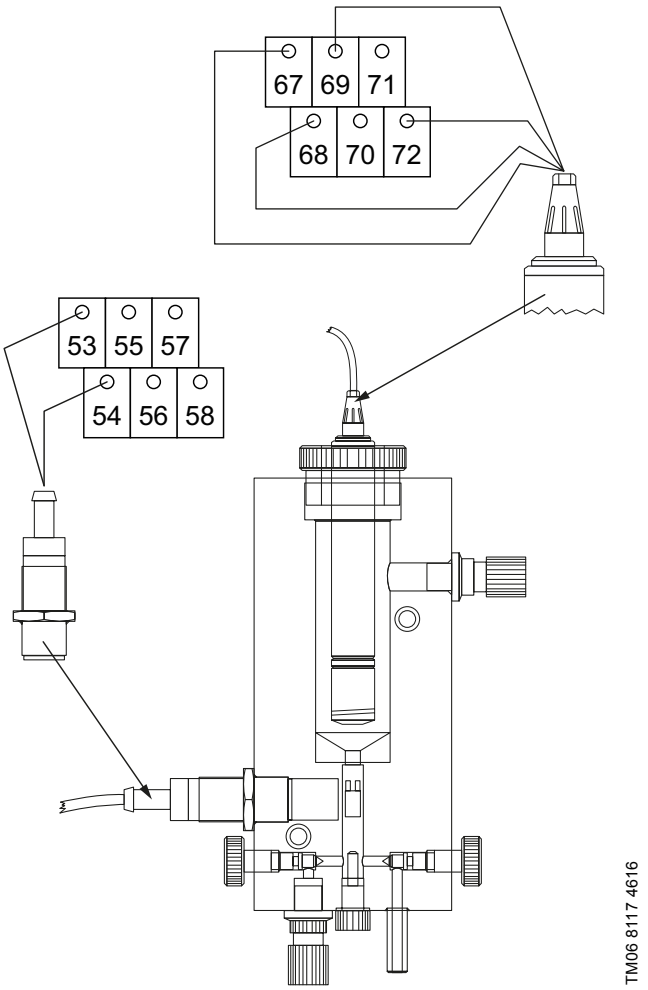

Fig. 11 Connecting to the connection block of the Oxiperm Pro, from software version V0.20

Pos.	Connection	Description
AQC-D6 measuring cell		
67	- 12 V	Brown
68	⊥	White
69	M	Yellow
72	⊥	Green
Water sensor		
54	+	Black
53	-	White

1. Connect any current output cables as required.
2. Connect any relay contacts as required.

Always observe the Oxiperm Pro installation and operating instructions.

3. Connect the power supply cable.

9.2.2 Connecting the circulating pump

The circulating pump (asynchronous squirrel cage motor) on the measuring module is powered directly by the power supply and is not connected to the Oxiperm Pro control unit. It is equipped with thermal overload or impedance protection, and therefore external motor protection is not required. The required connected loads are indicated on the nameplate of the circulating pump.

You will also find electrical data in section *6.2.1 Electrical data of the UPS 25-60N circulating pump*.

Note An on/off switch should be connected to the power supply cable to allow the circulating pump to be switched off during long measuring module downtimes.

Caution Dry running will damage the circulating pump!
The pump bearings are lubricated by the liquid flowing through the pump, although the pressure must be at least 0.05 bar (0.5 mWS).

9.3 Preparing the measuring system

Please also observe section *10. Operation*.

The measuring cell (pos. 3) is filled with electrolyte at delivery.

Caution Please observe the precise instructions in section *12.2 Cleaning*!
Risk of incorrect measurement.

Note The protection cap of the measuring cell is filled with electrolyte!

Prepare the flow fitting (pos. 2):

Loosen the PDVF ring with 1" thread (pos. 1).

Fit the measuring cell (pos. 3) in the flow fitting (pos. 2).

1. Remove the protection cap.
2. Slide the measuring cell into the flow fitting until the liquid flows well around it.

Tip: When fitted in its final position, the upper part of the measuring cell should still project around 20 mm out of the flow fitting.

3. Fix the measuring cell (pos. 3) in place using the PVDF ring (pos. 1).

Warning
A sudden failure of the measuring cell can lead to excessive levels of chlorine dioxide! Make sure you have suitable provisions in place for this!

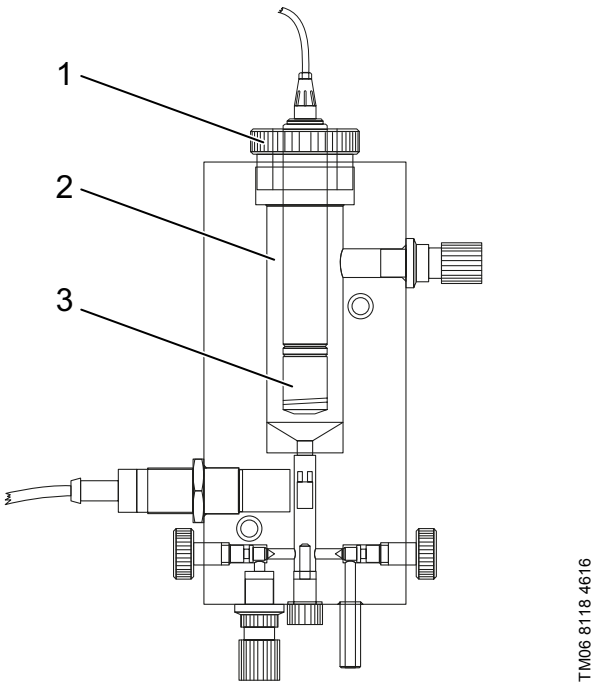

Fig. 12 Flow fitting with measuring cell

Pos.	Description
1	PDVF ring
2	Flow fitting
3	Measuring cell

9.4 Starting up the measuring system

Note

1. Switch on the sample water supply.
2. Start the measurement.

First

1. Check that all electrical connections are connected properly.
2. Check the water connections.

Secondly

3. Start up the sample water supply. For versions with a measuring module, please refer to section *9.5 Starting up the measuring module*.
4. The minimum sample water flow is around 30 l/h.
5. Switch on the power supply, or connect the electrode cable on the measuring cell.

The measuring cell has a running-in period of around one hour.

Note

The first calibration cannot be performed until this time has elapsed.

Check the calibration after about a day and, if necessary, repeat the process!

9.5 Starting up the measuring module

Warning

Only authorised and qualified personnel may commission the measuring module!

Check the installation before starting up the measuring module!

Note

The pressure, temperature and water quality must comply with the requirements of the measuring module!

1. Open the isolating valve.
   – Open all isolating valves between the measuring module input/output and the main water line.
2. Switch on the circulating pump.
   – The circulating pump is switched on separately, i.e. not via the Oxiperm$_t$ Pro control unit.
3. Deaerate the circulating pump.
   – Unscrew the vent plug on the front of the motor.
   – Deaerate for approximately 30 seconds.
   – Screw the vent plug back in.
4. Set the flow rate through the flow fitting.
   – Determine the flow rate in the flow fitting.
   – Slowly close the throttle valve (turn the lever) until the desired flow rate is reached.

9.6 Basic settings

Observe the Oxiperm Pro installation and operating instructions.

1. Use the [Up] and [Down] buttons on the measuring amplifier in the "Setup" menu to select the "Measuring cell" line, and press [OK] to access the corresponding menu.
2. Use the [Up] and [Down] buttons to select the desired AQC-D6 measuring cell, and press [OK] to return to the "Setup" menu.
3. Use the [Up] and [Down] buttons to select the "Measuring ranges" line, and press [OK] to access the corresponding menu.

• The following are available in the "Measuring ranges" menu:
   – 0.00 - 0.50 mg/l
   – 0.00 - 1.00 mg/l
   – 0.00 - 2.00 mg/l
   – Others: freely adjustable from 0.00 to 2.00 mg/l.

4. Use the [Up] and [Down] buttons to select the desired measuring range.
   – You can use the "Others" selection to freely set the measuring range from 0.00 to 2.00 mg/l.

For further settings, please refer to the Oxiperm Pro installation and operating instructions.

9.7 Calibration

Observe the Oxiperm Pro installation and operating instructions.

1. Press the [Cal] button on the measuring amplifier of the Oxiperm Pro to switch to the calibration menu.
   – The LED next to the [Cal] button lights up.
2. Enter the four-digit code number using the [Up] and [Down] buttons based on the access rights assigned for the Oxiperm Pro.

- The following are shown on the display for selection:
  – Cal. meas. value
  – Cal result
  – Cal. cycle.

ClO_2
Cal. meas. value
Cal result
Cal. cycle

Calibration

1. Select the "Cal. meas. value" line, and switch to the menu of the same name by pressing [OK].

- Besides the input field (value in mg/l) for the analytically determined reference value, the actual cell current is displayed in µA in the lower line.

Cal. meas. value
0.2 mg/l
I cell 40 µA

2. Use the [Up] and [Down] buttons to enter the reference value, and confirm using [OK].
3. Start the calibration by pressing [OK].
   – The sensor data is then read automatically and the calibration performed.
   – The sensitivity of the sensor is calculated.

- As soon as calibration is complete, the calibration results are displayed (first line: "CALDATA" + measured variable):
  – The sensor sensitivity is shown as µA/ppm.

Inquiring about calibration results and setting calibration intervals

1. Press [OK] to switch to the calibration menu (see above).

- Once the calibration process is complete, the sensitivity of the electrode can be shown under "Cal results".

CALDATA ClO_2
Sensitivity
8.53 µA/ppm

- A countdown function is started under "Cal cycle" which triggers the alarm "Calibrate sensor" after a definable time interval of 1-100 days.
  – During calibration, the regulators are switched off and the actuators closed to prevent overdosing.

10. Operation

10.1 Switching on

1. Switch on the sample water supply.
2. Start the measurement (switch on the Oxiperm Pro).

Note

10.2 Operation

All settings must be carried out on the Oxiperm Pro. Observe the Oxiperm Pro installation and operating instructions.

Note

10.3 Interruptions

Oxiperm Pro and the measuring cell must be in operation continuously!
The measuring cell must never be dry!

Caution

10.3.1 Storage and handling when not in use for a long period of time

Taking the measuring module out of service in connection with Oxiperm Pro

The following procedure must be followed:

1. Switch off dosing of the chlorine dioxide solution (Oxiperm Pro).
2. Allow the measuring module to run for around two minutes.
3. Switch off the circulating pump.
4. Close the isolating valves on the measuring module.

Taking the AQC-D6 out of service

1. Switch off the power supply.
2. Switch off the sample water supply.
3. Remove the measuring cell, fill the protection cap with electrolyte, and screw it onto the measuring cell.

10.3.2 Starting up again

1. Clean the electrolyte chamber and electrode.
2. Fill up with electrolyte.
3. Start up the measuring system again.

Clean the electrolyte chamber and electrode, and fill up with electrolyte in accordance with the instructions in section *12.2 Cleaning*. Restart the unit in accordance with the instructions given in section *9.4 Starting up the measuring system*. Otherwise there is a risk that the measuring cell will not work properly!

Caution

11. Fault finding

Observe the Oxiperm Pro installation and operating instructions.

Fault	Cause	Remedy
1. Display frozen.	a) Cable break.	Rectify the cable break.
	b) Calibration fault.	Repeat the calibration.
	c) Incorrect analysis values used for calibration.	Repeat the calibration with correct values.
2. Measured value fluctuating shortly after calibration.	a) Measuring cell not allowed to run in correctly before calibration.	Allow the cell to run in for one hour before calibration.
3. Severely fluctuating measured value.	a) Cable and/or connectors corroded.	Replace the cable(s)/connector(s), and replace the electrode, if necessary.
4. Measured value too high or too low.	a) Air bubbles in electrolyte.	Unscrew the electrolyte chamber, and remove any air bubbles by carefully tapping the electrolyte chamber.
	b) Not enough electrolyte in electrolyte chamber.	Unscrew the electrolyte chamber, fill up with electrolyte and recalibrate.
	c) Severe change in temperature of sample water.	Recalibrate.
	d) Deposits on electrode finger.	Unscrew the electrolyte chamber. Rinse the electrode finger, dry it with a dry paper towel, and carefully clean just the tip of the electrode finger with the special emery paper, then recalibrate.
	e) Air bubbles in front of measurement opening (sample water side).	Check the water supply line.
Measuring module		
5. Either no or not enough sample water flowing through measuring module.	a) Main water line closed off.	Open the main water line.
	b) No sample water present.	Check the sample water extraction point and supply line.
	c) Isolating valve on measuring module input and/or output closed.	Open the isolating valve.
	d) Circulating pump not functioning.	Switch on the circulating pump.
	e) Overheating protection of circulating pump has been triggered.	Allow the circulating pump to cool off, then switch it back on.
	f) Circulating pump defective.	Replace the circulating pump.
6. Not enough sample water flowing through flow fitting / AQC-D6 measuring cell.	a) Circulating pump not running. See above.	See above.
	b) Main current of the measuring module not sufficiently throttled.	Throttle the main current more heavily using the throttle valve until the sample water flow rate is OK.

12. Maintenance

Interval for functional check

- At least once a week.

Interval for cleaning

- Whenever faults occur.
- Every 6 months.

Interval for replacing the electrolyte

- Every 6 months.

Caution Always recalibrate the measuring system after cleaning or maintenance has been performed!

12.1 Functional check

Calibration check

- Recalibrate the measuring cell with an analytically determined value at least once a week.

Observe section *9.7 Calibration* and the Oxiperm Pro installation and operating instructions.

Sample water flow check

- Check and, if necessary, adjust the sample water flow rate through the measuring cell.

Functional check of the measuring module

- Check the bypass for leaks.
- Check the circulating pump for noisy operation.

12.2 Cleaning

To check the fill level of the electrolyte or clean the measuring cell in the event of malfunctions, the electrolyte chamber must first be unscrewed.

When cleaning, the following cleaning steps are performed in sequence.

Please also refer to the measuring cell graphic in section *7.2 Design of the measuring cell*.

12.2.1 Switching off the measuring cell

1. Switch off the power supply. If this is not possible, remove the cable on the measuring cell.
2. Switch off the sample water supply.

12.2.2 Removing the measuring cell

1. Remove the measuring cell from the flow fitting.

12.2.3 Cleaning the electrolyte chamber

1. Unscrew the electrolyte chamber.

In the event of limescale deposits:

2. Soak the electrolyte chamber for a few hours in approximately 1 % hydrochloric acid until clean.
3. Rinse with clean water.

12.2.4 Cleaning the electrode

In the event of heavy soiling, the electrode must be cleaned.

1. Rinse the electrode finger (= measuring electrode) with clean water, and then dry it with a clean paper towel.
2. Use the special emery paper provided to carefully clean the gold tip of the dry electrode finger.
   – Place the emery paper on a dry paper towel, and hold the edge of the emery paper.
   – Hold the measuring cell vertically, and then rub the tip of the electrode carefully over the emery paper two or three times.

Caution The emery paper should only be used to clean the precious metal tip (gold) on the electrode tip of soiling. The remaining surface (metal coating) of the electrode finger must not be sanded or removed!

12.2.5 Filling up with electrolyte

1. Screw the electrolyte chamber onto the measuring cell so that the socket of the electrolyte flange just fits into the gap (approximately 5 mm).
2. Fill electrolyte right up to the overflow, making sure there are no bubbles.
3. Screw on and tighten the electrolyte chamber by hand.
   – There must not be any air bubbles in the electrolyte chamber.
   – The electrolyte is considered safe to handle.

Caution Do not use any other kind of electrolyte! Damaging the electrode by using the wrong kind of liquid voids all warranty claims!

12.2.6 Screwing on the measuring cell

Please refer to section *9.3 Preparing the measuring system*.

12.2.7 Starting up the measuring system after it has been out of service

Please refer to section *9.4 Starting up the measuring system*.

- For details on recalibration, please refer to section *9.7 Calibration*.

13. Spare parts

Accessories and wear parts

Description	Product number
Measuring cell	95708117 (314-180)
Spare parts set, consisting of electrolyte and emery	95708819 (553-1758)
Connecting cable for measuring cell, 2 metres	91835331 (45.10124)
Connecting cable for measuring cell, 5 metres	95708119 (45.10124/5)
Connecting cable for measuring cell, 10 metres	95708120 (45.10124/10)
UPS 25-60N circulator pump	96913085 (53.650-1)
HD-PE hose 6/8 mm, 2 metres	95709109 (526-011/2)
HD-PE hose 6/8 mm, 5 metres	95709110 (526-011/5)
HD-PE hose 6/8 mm, 10 metres	95709108 (526-011/10)

14. Disposal

Note The measuring module and its associated parts must be disposed of in an environmentally sound way!

Note The system may only be dismantled by authorised and qualified personnel!

Note The operator is responsible for environmentally-friendly disposal!

This product or parts of it must be disposed of in an environmentally sound way. Use appropriate waste collection services. If this is not possible, contact the nearest Grundfos company or service workshop.

GB: EU declaration of conformity

We, Grundfos, declare under our sole responsibility that the products AQC-D11, AQC-D12, AQC-D13, AQC-D6, to which the declaration below relates, are in conformity with the Council Directives listed below on the approximation of the laws of the EU member states.

DE: EU-Konformitätserklärung

Wir, Grundfos, erklären in alleiniger Verantwortung, dass die Produkte AQC-D11, AQC-D12, AQC-D13, AQC-D6, auf die sich diese Erklärung beziehen, mit den folgenden Richtlinien des Rates zur Angleichung der Rechtsvorschriften der EU-Mitgliedsstaaten übereinstimmen.

ES: Declaración de conformidad de la UE

Grundfos declara, bajo su exclusiva responsabilidad, que los productos AQC-D11, AQC-D12, AQC-D13, AQC-D6, a los que hace referencia la siguiente declaración cumplen lo establecido por las siguientes Directivas del Consejo sobre la aproximación de las legislaciones de los Estados miembros de la UE.

FR: Déclaration de conformité UE

Nous, Grundfos, déclarons sous notre seule responsabilité, que les produits AQC-D11, AQC-D12, AQC-D13, AQC-D6, auxquels se réfère cette déclaration, sont conformes aux Directives du Conseil concernant le rapprochement des législations des États membres UE relatives aux normes énoncées ci-dessous.

IT: Dichiarazione di conformità UE

Grundfos dichiara sotto la sua esclusiva responsabilità che i prodotti AQC-D11, AQC-D12, AQC-D13, AQC-D6, ai quale si riferisce questa dichiarazione, sono conformi alle seguenti direttive del Consiglio riguardanti il riavvicinamento delle legislazioni degli Stati membri UE.

NL: EU-conformiteitsverklaring

Wij, Grundfos, verklaren geheel onder eigen verantwoordelijkheid dat de producten AQC-D11, AQC-D12, AQC-D13, AQC-D6, waarop de onderstaande verklaring betrekking heeft, in overeenstemming zijn met de onderstaande Richtlijnen van de Raad inzake de onderlinge aanpassing van de wetgeving van de EU-lidstaten.

PL: Deklaracja zgodności UE

My, Grundfos, oświadczamy z pełną odpowiedzialnością, że nasze produkty AQC-D11, AQC-D12, AQC-D13, AQC-D6, których deklaracja niniejsza dotyczy, są zgodne z następującymi dyrektywami Rady w sprawie zbliżenia przepisów prawnych państw członkowskich.

PT: Declaração de conformidade UE

A Grundfos declara sob sua única responsabilidade que os produtos AQC-D11, AQC-D12, AQC-D13, AQC-D6, aos quais diz respeito a declaração abaixo, estão em conformidade com as Directivas do Conselho sobre a aproximação das legislações dos Estados Membros da UE.

RU: Декларация о соответствии нормам ЕС

Мы, компания Grundfos, со всей ответственностью заявляем, что изделия AQC-D11, AQC-D12, AQC-D13, AQC-D6, к которым относится нижеприведённая декларация, соответствуют нижеприведённым Директивам Совета Евросоюза о тождественности законов стран-членов ЕС.

— Low Voltage Directive (2014/35/EU)*.
  Standard used:
  EN 61010-1:2011-07.
— EMC Directive (2014/30/EU).
  Standards used:
  EN 61326-1:2013,
  EN 61000-3-2:2015,
  EN 61000-3-3:2014.

Additional directives and standards applying from 22nd July 2019:

— RoHS Directives (2011/65/EU and 2015/863/EU).
  Standard used: EN 50581:2012

* Only for products with operating voltage > 50 VAC or > 75 VDC.

This EU declaration of conformity is only valid when published as part of the Grundfos installation and operating instructions (publication numbers: 96681458, 96681476, 96681478, 95708229).

Pfinztal, 23 October 2018

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