



CDM1 Salt Chlorinator with Dosing Module and Salinity Measurement

Manual for Installation and Commissioning

Version 1.5



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Introduction

Thank you for choosing the Poolmatix pool automation system. The system and its components are designed to be as easy as possible to install and operate as long as you follow these instructions. This manual will give you a complete overview of the correct installation and maintenance of the Poolmatix CDMI salt chlorinator with dosing module.

This document serves as a complete guide for installation and commissioning and will give you some useful tips, especially on the following topics:

- How to install the CDMI unit
- How to take care of the CDMI unit

Please read the manual for the installation of the main control unit carefully before installing the CDMI unit.

Important Note

Please carefully read the document and follow its instructions. Incorrect installation or improper use of the Poolmatix system components may result in material damage or health hazards. Improper handling of the system will void the product warranty.

Please ensure that the installation must be done by an individual with adequate experience and who is thoroughly familiar with this manual. Any installation involving mains electrical components and connections must be performed by a certified electrician. In case of any doubts about your individual pool installation, configuration, or operation, please contact your Poolmatix dealer.

1 Product Characteristics

CDMI is a pool water treatment device that employs saltwater electrolysis for water disinfection, and includes one or two dosing pumps for controlled dosing of pool chemicals. Additionally, the device is equipped with interfaces for a pH electrode, as well as for ORP or free chlorine electrodes.

Please note that the CDMI unit may only be used in combination with the Poolmatix intelligent control unit. The product cannot be used as a stand-alone water treatment device.

1.1. Product Features

The CDMI is a compact and highly integrated pool water treatment unit designed specifically for the Poolmatix pool automation system.

It offers a wide range of features:

- Super Easy Installation
- Automatic Water Salinity Measurement
- Isolated High-Precision Electrode Amplifiers
- Precision Dosing Pumps with Pharmed® Tubing
- Protection of the Chlorinator Against Low/High Salinity
- Safety Shutdown upon Gas in the Cell
- Remote Control of Chlorine Output
- Self-Cleaning Function of the Electrodes (Polarity Reversal)
- Manual Dosing Test Buttons
- Error Detection Functions

1.2. Functional Parts of the Main Unit

Fig. 1 Functional parts of the CDM1 main unit



- | | |
|---|---|
| 1 Dosing Pump A | 8 Dosing Pump B - Manual Control |
| 2 Dosing Pump A - Inlet Connection Port | 9 Poolmatix Control Data Cable Connection (RS-485) - Output |
| 3 Dosing Pump A Outlet Connection Port | 10 Poolmatix Control Data Cable Connection (RS-485) - Input |
| 4 Dosing Pump A - Manual Control | 11 pH Electrode Connection |
| 5 Dosing Pump B | 12 ORP / Free Chlorine Electrode Connection |
| 6 Dosing Pump B - Inlet Connection Port | 13 230 V Connection for Poolmatix Water Treatment Units |
| 7 Dosing Pump B Outlet Connection Port | 14 Connection of the Electrolytic Cell |

1.3. Technical Data

Single dosing pump version: CDM1-10-11, CDM1-16-11

Dual dosing pump versions: CDM1-10-21, CDM1-16-21

Basic Data

Supply Voltage	AC 230 V + 10 % / -15 %, 50 ÷ 60 Hz
Input Power	CDM1-10 - 130 W, CDM1-16 - 200 W
Power and Status Display	RGB LED Bar
IP Protection Class	IP52
Operating Temperature	-15 °C - +45 °C
Storage Temperature	-20 °C - +55 °C
Operating Humidity	20 - 90%, No Condensation
Operating Position	Vertical (Main Unit)
Mounting Method	Wall Mounting, Screws
Dimensions - Main Unit	300 x 182 x 125 mm (W x H x D)
Dimensions - Electrolytic Cell	335 x 470 x 130 mm (W x H x D)
Net Weight - Main Unit	CDM1-10-11 - 1900 g CDM1-10-21 - 2450 g CDM1-16-11 - 1950 g CDM1-16-21 - 2500 g
Net Weight - Electrolytic Cell incl. Cable	CDM1-10 - 1300 g, CDM1-16 - 1350 g
Chlorine Output	CDM1-10 - 2 - 10 g / hour CDM1-16 - 3 - 16 g / hour
Dosing Flow Rate	2 ml/h to 2000 ml/h (set by the Poolmatix control logic)
Dosing Tube Size	6 x 4 x 1 mm
Maximum Outlet Fluid Pressure	200 kPa
Permissible Water Salinity	0.35 % - 0.60 % At a minimum water temperature of 12 °C
Recommended Water Salinity	0.40 ÷ 0.50%
Applicable Standards	EN 60950-1 ed. 2, IEC 62368-1, RoHS

2 Installation and Commissioning

This chapter will guide you through the installation of the CDM1 unit.

2.1. Installation Process

Please refer to the manual for the installation of the main control unit for the instructions for the correct installation of the salt electrolysis cell, electrodes, and injection valves.

Please refer to the manual for the installation of the main control unit for the connection the CDM1 unit to the Poolmatix main control unit.

- 1 Attach the CDM1 main unit to the wall of the technical room within reach of the Poolmatix main control unit and the electrolytic cell.
- 2 First, carefully remove the dosing pump heads. To remove the pump head, squeeze it with your fingers on both sides and pull it out. Connect the dosing pump outlet connection ports to the injection valves using PE metering tubing. Connect the inlet connection ports of the dosing pump to the dosing tubing leading to the pool chemical canisters. Secure the dosing hoses by tightening the union nut. Fit the pump heads back on the dosing pumps.



- 3 Install the electrodes and connect them to the BNC connectors of the CDM1 main unit.
- 4 Connect the CDM1 mains cable to the Poolmatix 230V water treatment socket of the Poolmatix main control unit.
- 5 Connect the CDM1 control data cable (RS-485) to the Poolmatix control connection of the Poolmatix main control unit.
- 6 Connect the electrolytic chlorinator cell to the CDM1 main unit using the special cable and connector.

2.2. Commissioning

- 1 Switch on the system. Please note that it may take up to 90 seconds for the Poolmatix system to start.

- 2 Test the function of the dosing pumps using the manual control buttons. Press the "Test" button on each dosing pump. Prime the pumps (run each pump until all air has been removed from the inlet and outlet tubes).
- 3 Start the service sequences "Manual dosing - dosing pump A" and "Manual dosing - dosing pump B" in the iXmanager mobile application or the iXfield web application to test the correct function of the unit.
- 4 Make sure that the circulation pump is running and wait about 15 minutes until the water quality parameters (pH, ORP, FCI) are displayed.

3 Operation

The CDMI salt chlorinator with precision dosing module is fully controlled by the Poolmatix main control unit. No manual settings on the CDMI unit or operations are required.

Fig. 2 Meaning of the the Front Panel Indicator LEDs



Fig. 3 Meaning of the Chlorine Output Indicator LEDs

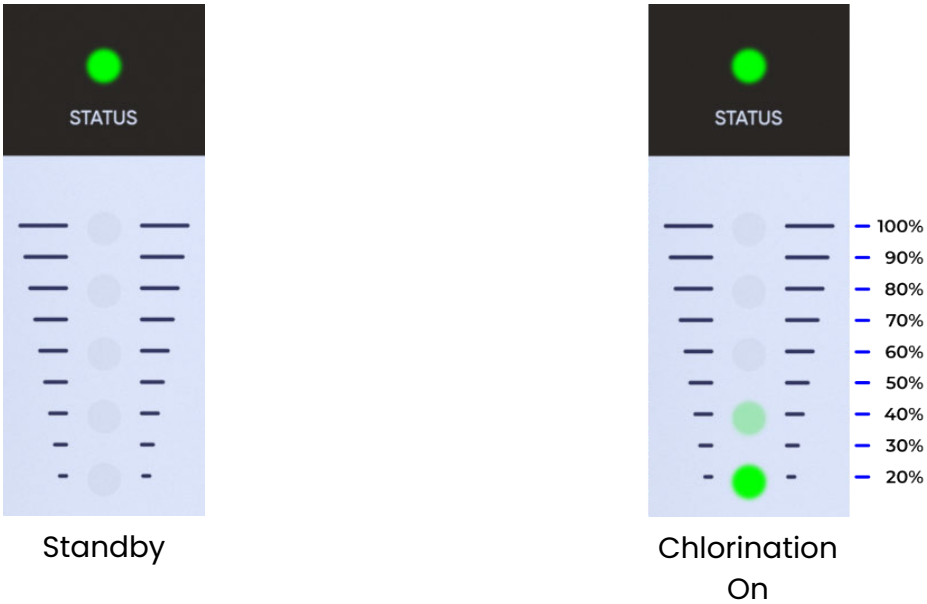


Fig. 4 Meaning of the Dosing Pump Indicator LEDs



4 Maintenance

4.1. Replacing Dosing Pump Heads

We recommend that you replace the dosing pump heads every 2 years. To replace the head, follow these simple steps:

- 1 Disconnect the dosing tubes from the pump head.
- 2 Press the pump head on both sides with your fingers and remove it.
- 3 Connect the dosing tubes to the new dosing head and fit the dosing head onto the main unit. You may need to turn the pump head a little so that it fits onto the pump drive shaft.

Fig. 5 Removing the Dosing Pump Head



4.2. Cleaning the Electrolytic Electrodes

Depending on the hardness of the water in your pool, we recommend that you clean and decalcify the electrolytic electrodes once or twice a year. Follow the steps below:

- 1 Stop the circulation pump and close the valves before and after the electrolytic cell.
- 2 Disconnect the electrolytic cell cable from the CDM1 main unit.
- 3 Loosen the union nut of the electrolytic cell group and remove the electrode group.
- 4 Clean the electrodes in warm water with a standard household detergent.
Immerse the electrodes in a 10% solution of hydrochloric acid for about 15 minutes. Use a glass or plastic container. Please be aware that upon contact, hydrochloric acid solution may cause burns to human skin and damage objects made of wood, fabric, metals, and other materials.
- 5

- 6 Rinse the electrodes thoroughly with clean water.
- 7 Reinstall the electrode group into the cell and reconnect the cable. Resume normal operation of the system.



4.3. Long-Term Non-Use of the Dosing Pumps

If the unit will not be used for an extended period (e.g., during the winter), please remove the inlet dosing tubes from the containers with the pool chemicals and flush the dosing pumps with clean, fresh water using the "Test" button.

4.4. Electrode Calibration

The pH, redox, and free Cl electrodes should be calibrated at least three times a year.

Please use the electrode calibration service sequences in the iXmanager mobile application or the iXfield web application.

Please note that it is necessary to store the pH and ORP electrodes in the original probe storage solution when not in use, e.g. during the winter season.

5 Disposal of Used Product



Used products cannot be disposed of with normal household waste. When disposing of the used product, please follow the European Environmental Standards that define the proper handling of old electrical appliances.

The crossed-out waste bin symbol on the product indicates that waste must be separated and disposed of in an appropriate facility.