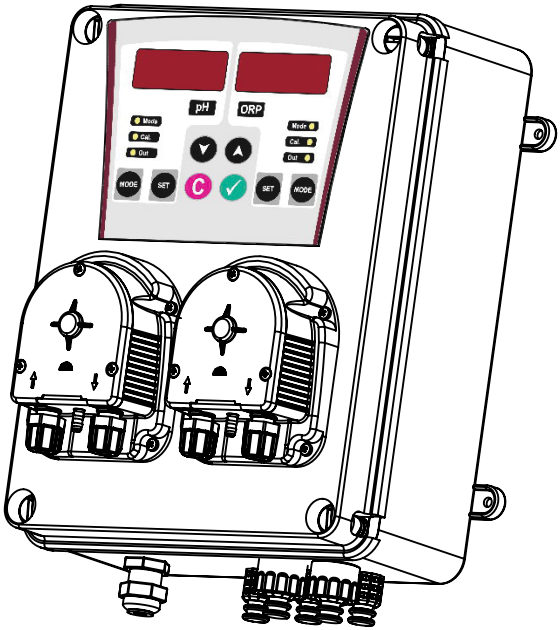
AQUATIC
MEASURING AND CONTROL DEVICE
USER MANUEL



KK_KK_003_R3

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2 Introduction

Please read the following information carefully and completely. This information shall ensure that you benefit from operating instructions at optimum level.

These instructions define the functions of technical data.

2.1 Explanation of Safety Warnings

These operating instructions give information about the technical data and functions of the product, and provide detailed safety information.

Safety warnings and notes are categorized as below. Pictographs are used here as adapted for different circumstances. These pictographs are only examples.



DANGER!
Type and source of danger
Result: Death or severe injury.
Measures to be taken to prevent such danger.

Defines the danger that directly creates the threat. Causes death or severe injury unless prevented.



WARNING!
Type and source of danger
Possible Result: Death or severe injury.
Measures to be taken to prevent such danger.

Defines a possible dangerous situation. Causes death or grave injury unless prevented.



CAUTION!
Type and source of danger
Possible Result: Light or insignificant injuries. Material damage.
Measures to be taken to prevent such danger.

Defines a possible dangerous situation. Causes light or insignificant injury unless prevented. Can also be used for material damage warning.



NOTE!
Type and source of danger
Result: Causing damage to the product or individuals.
Measures to be taken to prevent such danger.

Defines a possible damaging action. Causes damage to the product or individuals unless prevented.



INFORMATION!

Operational tips and additional information
Source of information. Additional measures.

Defines operational tips and other useful information. Not given for a dangerous or harmful situation.

2.2 User Competence

WARNING!
Danger of injury in case of personnel incompetence!
Operator of device/facility is responsible for complying with competencies.
Incompetent personnel working with the device or keeping the device in danger zone might cause severe injuries or material losses.
- All operations should be handled by competent personnel
- Keep away incompetent personnel from danger zones

Training	Description
Informed Person	Defines a person that has been informed about possible hazards in case of unruly behaviors contrary to duties assigned, and informed about relevant situations and informed about necessary protection equipment and measures.
Trained User	Defines a person that meets the standards of an informed person and plus trained by the manufacturer or another authorized sales partner
Trained Expert	Defines a person that can recognize possible hazards and evaluate the duties assigned thanks to his/her knowledge of rules in addition to the training, information and experience in that field. The activities based on years of experience in that field can be taken into consideration while assessing someone as an expert.
Electricity Expert	Defines a person that can work in electrical facilities, and recognize and prevent possible dangers thanks to his/her knowledge of regulations and standards in place in addition to the training, information and experience. Electricity experts should have received training on the field of work and have knowledge on important standards and regulations. Electricity expert should fulfill the provisions of legal regulations for preventing accidents.
Customer Services	The service technicians that are trained and authorized for operations in the facility by the manufacturer are described as customer services.

3 Safety and Responsibility

3.1 General Safety Warnings

Following warnings are given for assisting you to eliminate possible dangers that might arise while using the product. Risk prevention measures are always valid independent of any special action.
Safety instructions that give warning against certain activities or situations are given in relevant sub-sections.



DANGER

Life-threatening danger due to electric shock
Falsely wired, exposed or damaged cables might injure you.
Replace damaged cables immediately.
Do not use extension cables.
Do not bury cables.
Fix cables to prevent damage to other equipment.



DANGER

Do not use the product in explosive environments.



WARNING

Caustic burns due to dosage material or other types of burns!

Dosage starts after connection to the mains power.

Connect dosage lines before connecting to mains power.

Make sure that all screws are tightened and sealed properly.



WARNING

While working on dosage head, valves and connections, you might get in touch with dosage liquid.
Use sufficient personal protective equipment.
Rinse the product with a liquid that doesn't bear any risk (e.g. water). Make sure that the liquid is in line with the dosage material.
Do not look at the exposed ends of attached pipe lines and valves without protective goggles.



WARNING

Product materials and system hydraulic parts should be compliant to dosage liquid. Make sure that the materials are suitable for the dosage material.



CAUTION

Increased accident risk due to lack of qualification on personnel side!
Product and accessories can only be mounted, operated and maintained by staff with sufficient qualifications.
Make sure that all actions are taken by personnel with sufficient and appropriate qualifications.
Prevent access to system by unauthorized persons.



CAUTION

Personal injury and material damage hazard!
Changing the dosage liquid might cause unforeseeable reactions.
In order to prevent chemical reactions, clean dosage pumps and hoses thoroughly.

3.2 Hazards arising from non-compliance with safety instructions

Non-compliance with safety instructions will bring risks not only for the staff but also for environment and the unit.
Here are some specific consequences:
Failure of vital functions in product and system,
Failure of necessary maintenance and repair methods,
Danger for individuals due to dangerous dosage material,
Environmental hazard due to leaking materials.

3.3 Safe operation

There are more safety rules in addition to the safety instructions stated in this operating manual and they should be followed:
Accident prevention regulations safety and operating provisions
Safety measures for using dangerous items
Environmental protection provisions,
Applicable standards and legislation.

3.4 Personal protective equipment

You might be exposed to dosage liquid. You should use relevant protective equipment depending on the type of work and degree of risk.

As minimum, following protective equipment is provided:



Protective Clothing



Protective Gloves



Protective Goggles

The operator should use protective equipment during these tasks:
Assigning,
When device is working,
Demounting, maintenance works, disposal.

3.5 Personnel competence

Any staff member working on the device should have specific knowledge and skills.
Anyone working on the device should meet the following conditions:
- Participation in all training courses,
- Personal fitness to the specific task,
- Personal competence for the specific task,
- Training for the use of device,
- Safety equipment data and mode of operation
- This Operating Manual and especially the safety instructions relevant to this work with sub-sections,
- Knowledge on basic arrangements relevant to health, safety and accident-prevention.

All persons should have following qualifications as minimum:
-Receive training as expert to work on the product independently,
-Receive sufficient training to work on the product under the guidance and surveillance of a trained expert.
This Operating Manual differentiates user groups:
(see 2.2 User Competence Page 4)

4 Appropriate and Desired Use

4.1 Notes about product warranty

Undefined use of the product in any way might risk the function or desired protection of the product. This shall invalidate warranty claims!

Please remember that responsibility lies with the user in following cases:

- Use of the product in an inconsistent way with the section titled "appropriate and desired use" especially with regards to safety
- Unauthorized changes on the device by the user

4.2 Principles

- Usage and environmental information (See 5.4 Technical Data Page 8).
- Product is not designed for outdoors unless appropriate protective measures are taken.
- Avoid liquid and dust leakage into product and also direct sunlight exposure.
- Do not operate the product in a potentially explosive environment unless there is EC Certificate of Conformity for potentially explosive atmospheres.

4.3 Foreseeable wrong use

You can find below information about unaccepted product practices or relevant equipment practices. This section has been designed to detect and prevent possible wrong uses beforehand.
Foreseeable wrong use will affect product life:

4.3.1 Wrong assembly

Wrong or loose screwing.

4.3.2 Wrong installation

Wrong connection of sensors due to wrong material or improper connections.

Damage in cable lines due to twisting or excessive tightening.
Use of damaged parts,

4.4 Wrong electrical wiring

Unsafe mains or mains voltage that do not comply with standards.
Wrong connection cables for mains voltage.
Installation where it is not possible to cut off power supply immediately or easily.

4.5 Purpose of production

Aquatic is an automatic measurement and control device for special needs of swimming pools. It is used for viewing and controlling pH and ORP parameters that are measured thanks to peristaltic dosage pumps on it.

5 Product Description

5.1 Product Data

Aquatic is an automatic measurement and control device for special needs of swimming pools. It is used for viewing and controlling pH and ORP parameters that are measured thanks to peristaltic dosage pumps on it.

It has been designed after careful consideration of the status and conditions of pool chambers.

pH and ORP set values can be adjusted entering calibration screen and using buttons.

There are liquid level sensor inputs of channels. In case a sensor is attached, outputs will be closed when dosage liquid is finished.

There is full microprocessor technology.

This will keep the pool water at desired level.

5.2 Mechanical Design

Device has been designed to be installed on a wall or panel.

Made of plastic material, the device box consists of upper and lower parts. There is the card with screen and keyboard on the upper side while there is the card with power supply, processor and pre-amplifier circuits on the lower part.

You can use the cable unions on the lower side of the box for power connection. In this way, power connection is covered.

Use BNC sockets on the right lower part of the box for electrode connection. There are 4 connection elements on the upper rear part of the device for wall mount.

You can connect hoses to peristaltic dosage pumps that ensure chemical dosing on the device.

5.3 Electrical Design

Device will process input pulses taking user settings into consideration. Results will be shown on the screen and check dosage pumps.

Device doesn't require an additional power switch. It will be ready once powered.

Device complies with electrical devices regulations.

Device complies with following standards:

Electrical safety

TS EN 60950-1 / EN 60950-1(2001)
TS 3033 / EN60529

Electromagnetic compliance
TS 3327 EN 55011:1995 /
EN55011:1998+A1:1999+A2:2002

5.4 Technical Data

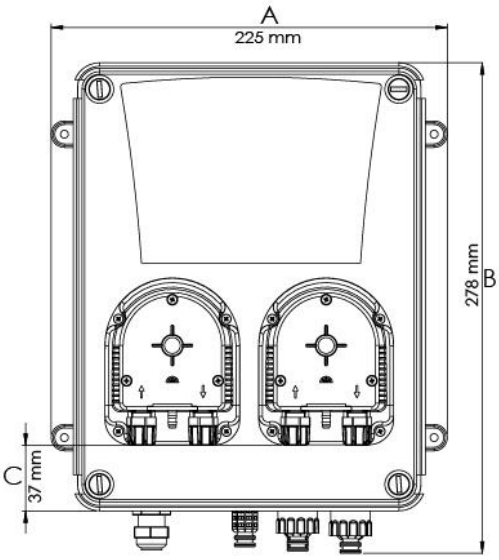
AQUATIC Technical Specifications		
	pH	ORP
Permitted Operating Temperature	0-50°C	
Measurement Interval	00,00 – 14,00 pH	0000 – 1600 mV
Solubility	0,01 pH	1 mV
Measurement accuracy	0,5% of input interval	
Measurement input	Standard BNC terminal	
Liquid level and flow sensor input	Standard BNC terminal	
Power supply	230V 50Hz AC	
Power consumption	13 W	
Operating temperature interval	0-50°C	
Body	IP65	
Unions	PP	
Protective Lid	PC	
Hose	Norprene 4,8x8 Silicone 3,2x6,4	
Screen	7 Segment LED Display	
Dimensions	87 mm	
Weight	~2,3 Kg	

5.5 Scope of delivery

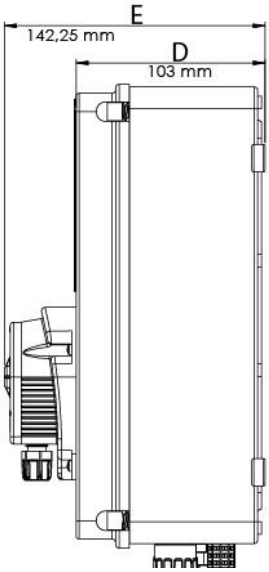
Aquatic
User's Manual

6 Dimensions

6.1 Dimensions



Picture 1 Device Front Side Dimensions



Picture 2 Device Lateral Side Dimensions

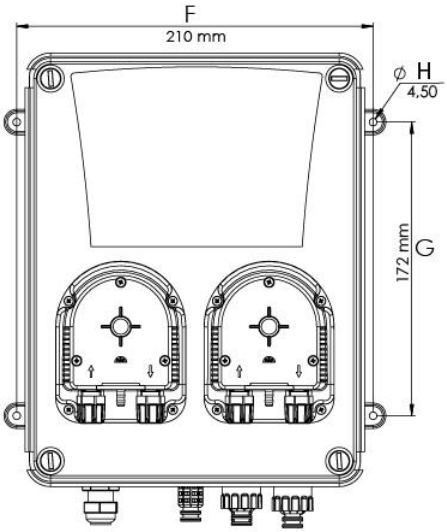
A. 225mm B. 278mm C. 37mm

D. 103mm E. 142,25mm

7 Installation

7.1 Mechanical Installation

7.1.1 Assembly Hole Dimensions



Picture 3 Device Assembly Hole Dimensions

F.210mm G.172mm H.Ø 4,5mm

Wall Mount

Necessary materials:
4 Screws 4x45 (Cross Rec. Pan Head)
4 Wall Plugs 8mm

Drill 4 holes in 8mm as per A and B dimensions on the panel. Nail the pins inside the slots. Fix to the wall using screws.

Assembly on Plastic Panel

Necessary materials:
2 Screws 4x13 (Cross Rec. Pan Head)

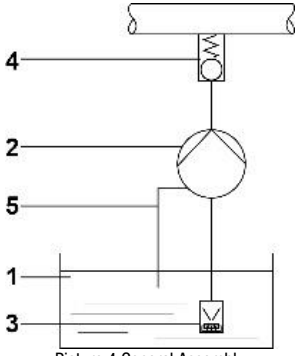
Drill 4 holes in 2mm as per A and B dimensions on the panel. Fix to the wall using screws and shims.

WARNING

Assembly Site and Conditions

- Device meets IP65 protection and sealing if all seals and screws are placed correctly.
- Electrical assembly should be performed after mechanical assembly.
- Please choose a site that will lend easy access to control panel.
- Do not permit direct sunlight on the device.
- Operating environmental temperature: -20/+60°C and 90% relative humidity (non-condensing)
- Allowed working temperatures of other sensors and actors should be considered.
- This device has been designed only for indoor use. Place it inside a panel to protect from external factors for outdoor use.

7.1.2 General Installation



Picture 4 General Assembly

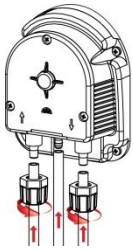
1- Chemical Tank
2- Peristaltic Pump
3- Filtered Suction Line
4- Pumping Line
5- Pump Chemical Discharge

7.1.3 Placing the Hoses



Picture 5 Mounting Hoses

Removing Unions



Placing the Hoses

Cut the tips of hose properly
Turn and dismantle hose passage unions.
Place PVC hose to chemical dosage pump inlet tip (suction tip) and discharge tip, and place PE hose to tip to enter the line (Pumping Tip) by sliding.
Turn and tighten hose passage unions.
Cut the excess of suction side of hose.
Direct the hose that has been mounted on discharge tip towards the chemical tank.

7.2 Electrical Installation

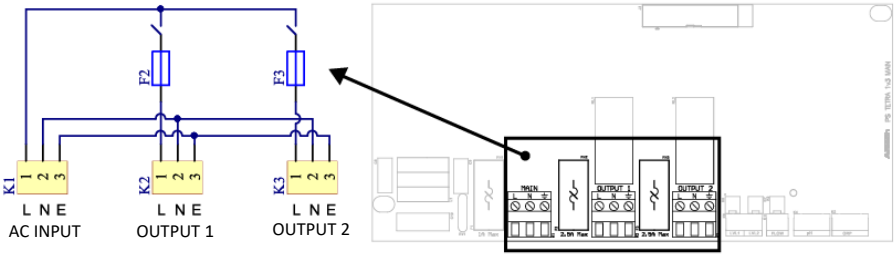
WARNING

Exposure to Electricity

Possible Result: Death or severe injury.

Do not connect to power before assembling the device! Disconnect power before dismantling the device.

- Device can only be opened by qualified staff.
- Take necessary measures so that device is not powered during service.
- Device can only be powered after assembled to a wall or panel.
- Dismount 4 plastic pieces in corners to open the device.
- Upper part is connected to lower part with a flat cable. Take out that flat cable from the socket to separate upper part from lower part.
- Electrical connections are only found in the lower part. There will be no connection on the upper part.
- There are 3 terminals from left to right in lower part.
- Tighten the cable unions by moving power cables of dosage pumps and power input cable through the cable unions below the device.
- Connect the cables according to the symbols in front of the terminals using a screwdriver.



Picture 6 Power Connection

7.2.1 Electrode Selection

There are standard combined pH and ORP electrodes and liquid level sensor in the device. Connections are made with BNC connector. It is marked on the device which electrode and which liquid level sensor is to be connected where.

8 Operation

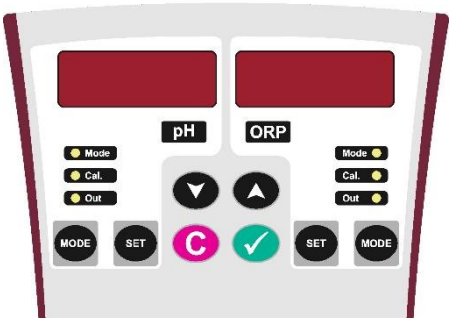
Control device features 2 different 7 segment LED displays. All values and processes are visible on this screen. You can change set values using the buttons below the screen. Moreover, LEDs below the screen will show information about the action at that moment.

8.1 LEDS and Their Meanings

LED	Status of LEDs		
	If it's on	If it's off	If it's blinking
Mode	Pump is in continuous operating mode.	Pump doesn't work.	Pump will operate automatically based on the comparison of set values and values read by Aquatic
Cal.	Device is in SET mode		Device is in Calibration mode
Out	Pump is powered.	Pump is not powered.	

8.2 Mode Setting

There are two **MODE** buttons on the control panel. Each adjusts the operation of pump on their side. There are three different modes.



Picture 7 Mode Setting

STOP Pump will not work.

AUTO : Pump will operate automatically based on the comparison of set values and values read by **Aquatic**

RUN : Pump will continuously work.

8.3 Adjusting Set Values

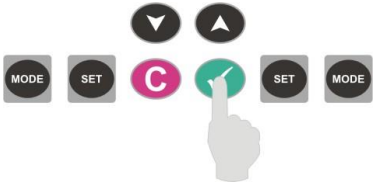


Picture 8 Adjusting Set Values

Press the SET button on the side to be adjusted for the set value.



Bring the set value to desired value using up ▲and down ▼ buttons.



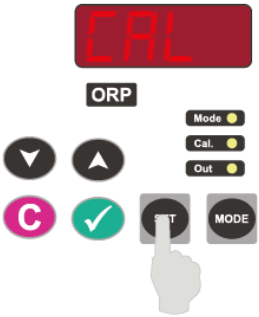
Return to main screen pressing ✓ button again.

You will not see any image on other part during all these actions.

8.4 Electrode Calibration

Device calibration is made single point for ORP channel and double point for pH channel.
Single point and double point calibration is made as follows.

8.4.1 Single Point Calibration



Picture 9 Single Point Calibration

Use 2nd Buffer solution parameter (P004) for single point calibration. Adjust the parameter value based on buffer solution before starting.

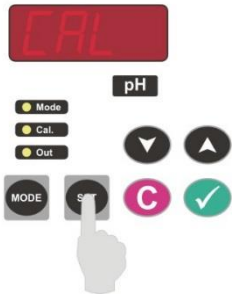
Press SET button on the calibration side until you see CAL message on the screen.



You will see buffer solution value on the screen and device will start showing non-calibrated electrode value. In the meanwhile, electrode should be dipped into buffer solution.

Wait until the change on the screen stops and press ✓ button.

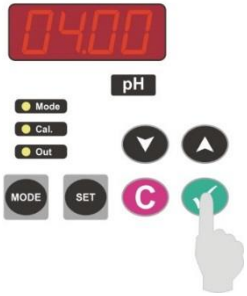
8.4.2 Double Point Calibration



Picture 10 Double Point Calibration

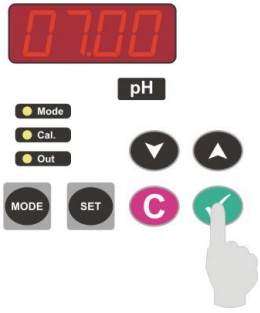
You should adjust 1st buffer (P003) and 2nd buffer (P004) solutions from parameters section according to buffer solutions at hand before starting calibration.

Press SET button on the calibration side until you see CAL message on the screen.



You will see first buffer solution value on the screen and device will start showing non-calibrated electrode value. In the meanwhile, electrode should be dipped into first buffer solution.

Wait until the change on the screen stops and press ✓ button.

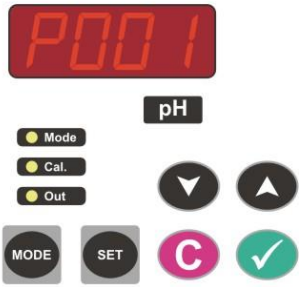


This time, device will show second buffer solution value on the screen and start showing non-calibrated value. In the meanwhile, electrode should be dipped into second buffer solution.

Wait until the change on the screen stops and press ✓ button.

Your device has been calibrated. Device will start showing normal pH and ORP values on the main screen. These actions should be performed separately for each side.

8.5 Parameter Settings



Picture 11 Parameter Settings

Press **MODE** button on the parameter change side until you see **P001** message on the screen.



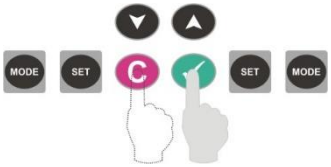
Select the parameter to be changed using ▲ up and ▼down buttons.



✓ You can bring parameter value to screen with button.



Change the value as you desire using ▲ up and ▼ down buttons.



Save parameter value with ✓ button and return to Parameter menu. Press **C** button to exit without saving.



Use **C** button to return to main screen.

8.6 Parameters

Par.No	Name	Description	Value
P001	Set_Offset	Offset value for control	0-100
P002	Ratio_Diff	Ratio control difference setting	0-250
P003	Buf_Sol_1	1st Buffer solution	0-1000 ORP 0-14,00 pH
P004	Buf_Sol_2	2nd Buffer solution	0-1000 ORP 0-14,00 pH
P005	Control_Mode	Control Mode 0: Relay Increase 1: Relay Decrease 2: Ratio Increase 3: Ratio Decrease	0-3
P006	Password	Password (password to be reset if Value 0)	0-999
P007	Disable Run Mode	0: Run Mode 1 min Active 1: Run Mode Continuous Active	0-1
P008	Limit Low	Low Limit value	0-14,00 pH 0-1600 ORP
P009	Limit High	High Limit value	0-14,00 pH 0-1600 ORP
P010	Startup_Delay	Delayed Start	0-60 (min)
P011	TimeOut	Time Out in Reaching Set Value	0-360 (min)
P012	SensType	Liquid level sensor operation mode setting parameter; 0: Normally open 1: Normally closed	0-1
P013	FlowSens	Flow Sensor Parameter 0: Passive 0: Normally Open 1: Normally Closed	0-2
P014	ClO2_App	Chlorine Dioxide 0: Passive 1: Active	0-1
P015	Cal_Type	Calibration Type 0: Single Point Calibration 1: Double Point Calibration	0-1

8.7 Output Control Modes

Device output control modes are adjusted with Control Mode (P005) parameter status and descriptions are shown below.

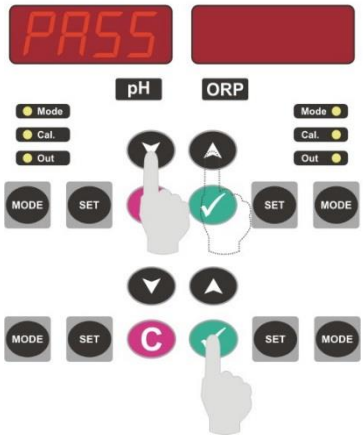
	Cont Mode	Output
1	0	It gives output until read value is above (Set + offset) value. It cuts when exceeded, then waits until it goes below (Set - Offset) value.
2	1	It gives output until read value is below (Set - offset) value. It cuts when it is below, and waits until it goes above (Set + Offset) value.
3	2	If the read value is below (Set-Ratio_Diff), it gives continuous output. It gives ratio output until it exceeds (Set) value. It doesn't give output above (Set) value.
4	3	If the read value is above (Set-Ratio_Diff), it gives continuous output. It gives ratio output until it is below (Set) value. It doesn't give output below (Set) value.

8.8 Ratio Control

This will enable a softer control by reducing output as the read value approaches set value. Reducing action can be ensured by opening and closing the relay depending on the time.
E.g.; Pump will be always open when ratio is at 100%. It will be open 30 sec and closed 30 sec when 50% is adjusted. It will be 6 sec open and 54 sec closed when 10% is adjusted.

8.9 RUN Mode Cancel Function

When **P007** "**0**" is set, device will return to AUTO status 1 min after being switched to RUN mode. If you would like to use it continuously in RUN mode, you need to switch **P007** to **1**.



Picture 12 Run Mode Cancel

When you see this screen, adjust the password with ▲up and ▼down buttons and press ✓ button.
If the Password is correct, it will be unlocked.

If password parameter (P006) is adjusted different from 0, password protection will be activated. If password protection is activated, device will ask password for any intervention after a while.

If you forget the password, press and hold ▲Up and ▼Down buttons at the same time until you see "rSTP" message, and when you see this message, press and hold C button and see the same message in 3 seconds and the password will be reset.

8.10 Password Use

8.10.1 Warning and Error Notifications

Device is equipped with certain warning and error notifications to notify certain situations that might require possible intervention upon any error and to keep the system under protection.

8.10.1.1 rLO (RangeL) Notification

You will see this warning if the measured value is below measurement threshold limit. This value is below 0.00pH for pH channel and 0000mV for ORP. Alarm channel will not give output until the trouble is eliminated. Check electrode calibration. If the problem is not because of that, please contact authorized service.

8.10.1.2 rHI (RangeH) Notification

You will see this warning if the measured value is above measurement threshold limit. This value is below 14.00pH for pH channel and 1600mV for ORP. Alarm channel will not give output until the trouble is eliminated. Check electrode calibration. If the problem is not because of that, please contact authorized service.

8.10.1.3 LL (Level) Notification

Liquid level error. This warning will activate only when liquid level control sensor is used. This shows that dosage liquid is consumed in the channel where notification is given. Alarm channel will not give output until the trouble is eliminated.

1. Fill up dosage liquid.
2. Check the sensor. If the problem is not because of that, please contact authorized service.

8.10.1.4 FLO (Flow) Notification

Flow error. This warning will activate only when flow sensor is used. This means that flow is interrupted in the installed system. Channels will not give output until the trouble is eliminated.

1. Ensure water flow in the channel to which sensor is installed.
2. Check the sensor. If the problem is not because of that, please contact authorized service.

8.10.1.5 ErC (Timeout) Notification

If the value has not reached set value in the time period set with **P011** Timeout parameter, you will see this warning. User can enter any time interval between 0 and 360 minutes. This generally occurs when system restore duration is long. Alarm channel will not give output until the trouble is eliminated.

1. Check electrode calibration.
2. Enter the value appropriate for the system restore from the parameter. If the time is still not enough, you can deactivate by making **P011** parameter value **"0"**.

8.10.1.6 LLO (Limit Low) Notification

If the measured value is below the value detected with P008 low limit parameter, you will see this screen. Values that are not entered in suitable interval will cause this message. Alarm channel will not give output until the trouble is eliminated.

1. Define the appropriate low limit to the system.
2. Check electrode calibration. If the problem is not because of that, please contact authorized service.

8.10.1.7 LHI (Limit High) Notification

If the measured value is below the value detected with P009 high limit parameter, you will see this screen. Values that are not entered in suitable interval will cause this message. Alarm channel will not give output until the trouble is eliminated.

1. Define the appropriate high limit to the system.

2. Check electrode calibration. If the problem is not because of that, please contact authorized service.

8.10.1.8 t0 (WDT) Notification

Watchdog Timer Error. System error, please contact the authorized service.

8.10.1.9 SdLy (Startup Delay) Notification

Device will not give output in start phase throughout the duration set in **P010** Startup Delay parameter. It will automatically start operating when time is over. *(if in Mode Auto)*

You can press any button if you want to operate the device without waiting for delayed start. Device will start controlling the output depending on the set value.

9 Maintenance, Repair and Malfunctions

WARNING

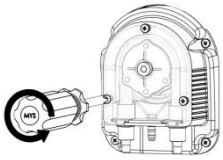
Mechanical Malfunctions!
Possible Result: Material damage that might cause device to be damaged.
Make sure that there is no clogging, adhesion or hose stiffening inside the pump hose before operating the pump after a long break.

9.1 Maintenance

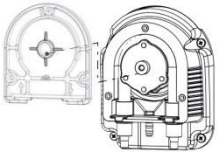
Approximately/Every Three-Six Months
Check whether suction line filter is clogged or not.
Check whether suction and pumping hose unions have loosened or not.
Check whether pump hose leaks or not.
Approximately/ Every Year: Replace pump dosage hose.

Based on Chemical Used!
The intervals of maintenance and hose replacement may vary based on the chemical to be dosed.

9.2 Replacing Pump Hose



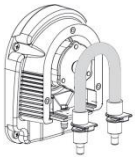
Picture 13 Replacing Pump Hose
Dismounting Protective Lid Screws



Dismounting Protective Lid



Image /Dismounting Hose Passage Union



Removing Hose

-Dismount the screws on Protective Lid.
-Pull and take out the pump hose passage union on suction side.
-Pull and take out the pump hose passage union on pumping side.

To fix the pump hose in place,
Bring the pump to lowest flow setting.
Place the hose passage union on suction side.
Power the pump. In the meanwhile, direct the pump hose on reels and turn off the pump after 1 round.
Place the hose passage union on pumping side.

WARNING

Electrical Malfunctions!
Possible Result: Material damage that might cause device to be damaged.
Disconnect the power before any service action on the device.
Fuses should be replaced with new ones only in appropriate values.
Use 5x20 mm mini cartrdige fuse.

While Placing the Pump Hose!
Oil with silicon grease while placing the pump hose in place.

9.3 Malfunction Cases

1- There is no image on the screen and LEDs are not on.
Check the circuit fuse (first left) in connector cover and power connection and make sure that power is set to 220V AC 50 Hz AC.
2- Device is operating normally however pump is not powered although LEDs are on.
Check the output fuses in connector cover.
3- Value is "0" or abnormal in pH or ORP indicators.
Check electrode connection points and cables.
4- There is wrong value on the screen although electrode calibration has been made.
Replace electrodes with new ones and re-calibrate.
5- If the fault is none those,
Contact the authorized service.

9.4 Warning and Error Notifications Table

Screen	Description	Description
rLO	RangeL	Measured value is below device measurement limits
rHI	RangeH	Measured value is above device measurement limits
LL	Level	Liquid level Error
FLO	Flow	No Flow
ErC	Timeout	If the value has not reached set value in the time period set with Timeout parameter, you will see this warning. This generally occurs when system restore duration is long.
LLO	Limit Low	Measured value is below the value set with Low Limit Parameter. Relay will not give output.
LHI	Limit High	Measured value is above the value set with High Limit Parameter, Relay will not give output.
t0	WDT	Watchdog Timer Error
SdLy	Startup Delay	Device will not give output during the time period set in Startup Delay Parameter.

10 Warranty

10.1 Warranty

Device is under warranty for 2 years against damages arising from material and manufacturing faults according to legal regulations.
Damages arising from normal wear, overloading or undue usage are not covered by warranty.
Damages from material or manufacturing faults shall be compensated by repairing or replacing faulty part or the device completely.
Claims of warranty shall be accepted only if device is returned to the supplier or authorized service in full shape **without disassembly**.



WARNING

Type and source of danger
Warranty Certificate should be filled and approved by the dealer where you buy the device. Please have the certificate stamped by the dealer and keep it.

11 Standards

Device complies with TS 3033 EN 60529 IP-55 standard when installed.
Low voltage devices regulation (73/23/EEC)
Electromagnetic compliance regulation (89/336/EEC)

EN 60950-1	Information technologies devices electrical Safety
TS EN55011:1995 EN 55011:1998+A1:1999+A2:2002 CISPR 11:1997+A1:1997+A2:2002	Electromagnetic compliance
EN 61000-6-1	Immunity Standard for Settlements, Commercial and Light industrial zones
EN 61000-6-2	Immunity for Industrial Zones
EN 61000-6-3	Emission Standard for Settlements, Commercial and Light industrial zones
EN 61000-6-4	Emission Standard for Industrial Zones