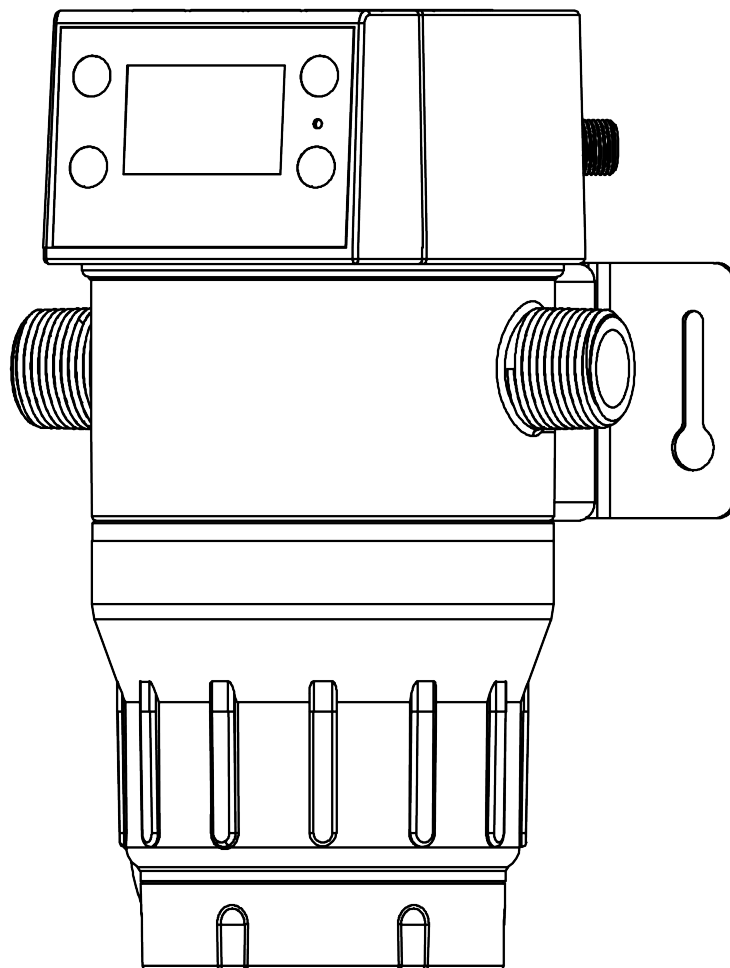


BioSure

PROFESSIONAL

Automatic POST-FILTRATION DISINFECTION SYSTEM

EOS7177 Series



DEMO VERSION

Thank you for purchasing BioSure product

Please read the instructions carefully and follow the safety precautions when using this product. Before using this product please pay special attention to the "IMPORTANT SAFETY INFORMATION".

PREFACE

Described in this manual is the BioSure EOS7177 Series, Post-Filtration Disinfection Systems (PFDS).

BioSure Professional is a division of Biotek Environmental Science Ltd. (BES Group). BES Group is a global leading electrolytic product manufacturer with pioneering ozone application technology and currently holds many exclusive patents for its electrolytic ozone generators and products worldwide.

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Manual Number: 1st edition, September 2019

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IMPORTANT SAFETY INFORMATION

This Manual provides installation and operation instructions for BioSure PFDS Series System. Consult Biotek Environmental Science Ltd. with any questions regarding this equipment.

Attention Installer: This Manual contains important information about the installation, operation and safe usage of this product. This information should be given to the owner and/or operator of this equipment after installation.

Attention User: This Manual contains important information that will help you in operating and maintaining this filter. Please retain it for future reference.

In order to prevent accidents or injuries to the installer, user, other people, and damage to property, please follow these safety instructions below:

Explanation of Safety and Notice Symbols

WARNING

WARNING indicates a hazardous situation which, if not avoided, **COULD** result in death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **COULD** result in injury or property damage.

NOTICE

NOTICE is used to address practice that is required and must be followed.

READ AND SAVE THESE INSTRUCTIONS

Electrical Safety and Basic Safeguards

- All service work must be performed by an authorized and qualified technician. NEVER attempt to disassemble, repair or remodel the unit yourself. Doing so will void your valuable warranty and can lead to a fire or electric shock. If the product malfunctions or has been damaged in any manner, unplug the unit and contact the manufacturer customer service or its authorized local service agent or dealer to arrange service or repair.
- Do NOT damage the Power Cord and/or Power Plug. A damaged Power Cord or Power Plug can cause a fire or electric shock.
 - Never stretch, bend, pull, twist, fold, tie or attempt to modify the power cord or power plug.
 - When unplugging, pull by the molded part of power plug, not the power cord only.
- Do NOT use or operate the unit with a damaged Power Cord or Power Plug. If the Power Cord is damaged, it must be replaced by the manufacturer, its authorized service agent or dealer or similarly qualified persons in order to avoid hazard. It must be replaced using appropriate cord or assembly made available by the manufacturer or its authorized service agent or dealer.
- Do NOT use in a manner that exceeds the rating of the power outlet or connected equipment. Plugging too many devices into the same outlet may cause the electrical outlet to overheat and result in a fire.

IMPORTANT SAFETY INFORMATION

- Do NOT use a power supply voltage other than being specified on the product. Use of any other power supply voltage may cause a fire or electric shock.
- To prevent accidental shock we recommend this product always be used on a GFCI (Ground fault Circuit Interrupter) outlet.

WARNING

- Do NOT plug or unplug the Power Cord if your hands are wet. Doing so can cause electric shock or injury.
- Do NOT use the product if the Power Plug is loosely inserted into the electrical outlet. A loosely inserted Power Plug may cause a fire, electric shock or short circuit. Before using, make sure the Power Plug are inserted into the electrical outlet completely and securely.
- If the blades or surface of the Power Plug become soiled, wipe them clean before using. A dirty Power Plug may cause a fire.
- Keep the product and Power Cord away from heated or hot surfaces including space heaters, stoves, and similar electrical appliances.
- Do NOT put the machine in water or spray water onto it. Otherwise it may damage the unit or cause electric shock.
- To safeguard against fire, electric shock and possible injury risks, keep the Power Cord, Power Plug and the product away from water or other liquids.
- Stop using the product immediately if you notice any of the following symptoms indicating abnormality or malfunction:
 - The Power Cord or Power Plug is damaged.
 - The Power Cord or Power Plug becomes very hot.
 - The Body of product is abnormally hot or deformed.
 - Smoke is arising from the product or there is burning smell.
 - Some part of the product is cracked, loose or unstable.
 - Lighting indications become abnormal.
- If any of the above symptoms occurred, unplug the product immediately and return to the store where you purchased it for service and repair. Continued use of the product may cause a fire, electric shock or injury.

CAUTION

- All permanent electrical connections should be made by a qualified electrician. Follow all applicable electrical codes.
- All plumbing or connections should be completely set up before plugging power to power on. Ensure the water output is properly connected to a correctly determined corresponding position.
- To maintain cosmetic integrity, protect this unit from direct prolonged sunlight exposure.

- For your safety, Do NOT operate the device with any panels or covers removed.
- The system should be sized appropriately for its intended use by a qualified professional familiar with the application.
- Ensure power and water supply meet requirements as indicated in the product specifications. Failure to install, operate and maintain this device as instructed could void warranty and result in injury or product damage.

NOTICE

- **A short Power Cord is provided for your safety. To reduce risks from entanglement or tripping, using longer Power Cord is not recommended. Extension cord should only be used if care is exercised.**
- **In cases If extension cord is used:**
 - The marked electrical rating of the extension cord should be at least as high as the electrical rating of the product.
 - The extension cord should have a ground-type 3-pronged plug.
 - The extension cord should not drape over the countertop or tabletop where it can cause tripping over the cord.

PFDS Specific Safety Information

For your own personal safety and to prevent accidental damage to the product please ensure that you read and understand our Directions for Use in this Manual.

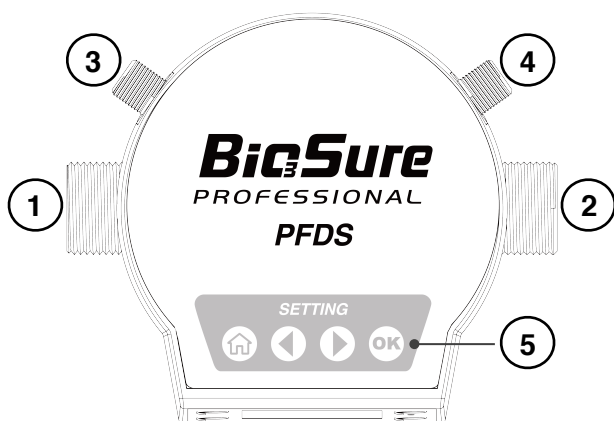
PRODUCT INFORMATION

PRODUCT DESCRIPTION

BioSure PFDS Series units are automatic germicidal systems designed for post-filtration water-stream and water-line sanitation treatment, removing or reducing unwanted microbial contaminants in filtered water, or providing sanitation water for use. These systems apply a revolutionary Advanced Oxidation Process (AOP) technology, which features automatic and on-demand operations, and contributes reliable sanitizing benefits of dissolved ozone in effective and safe manners in water treatment establishments for both instant and residual sanitation.

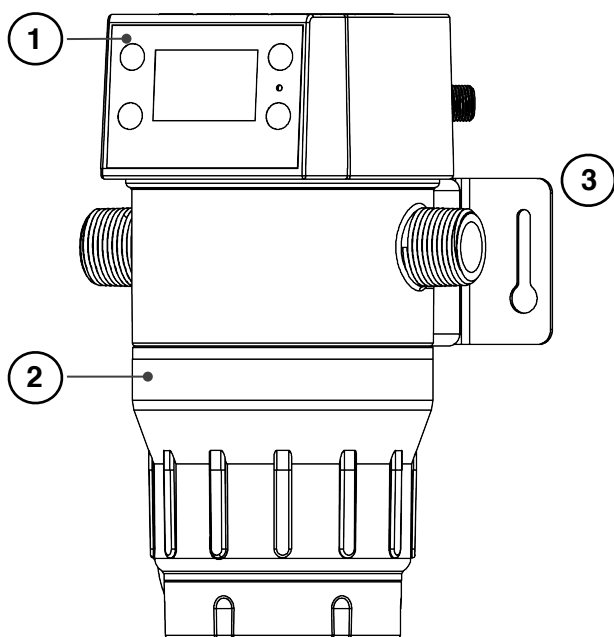
KEY COMPONENTS

Head - All Models

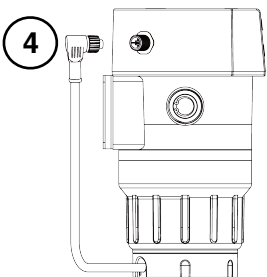


ITEM#	PART NAME
1	Water Inlet (3/4" NPT)
2	Water Outlet (3/4" NPT)
3	Cell Power Socket
4	Main Power Socket
5	Control Keys Panel

Overall - All Models

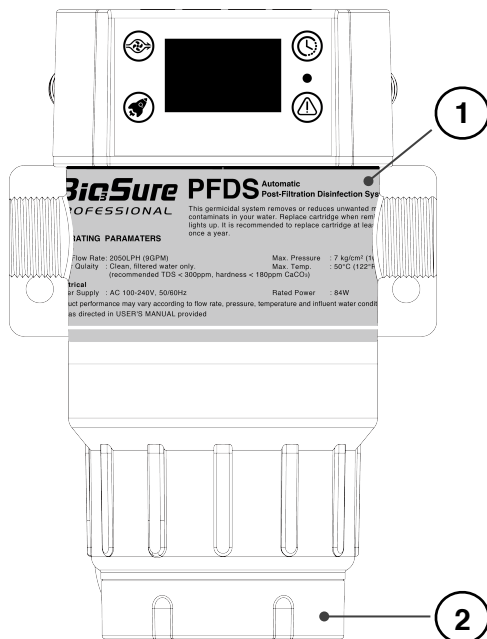


ITEM#	PART NAME
1	Display Panel
2	Replaceable Cell Cartridge
3	Mounting Bracket
4	Cell Power Plug



PRODUCT INFORMATION

Model Variations



ITEM#	1	2
PART NAME	Placard Sticker	Replaceable Cell Cartridge base
COLOR & VARIATION	Silver - 5 GPM Series	White - Standard Models
	Cool Grey - 10 GPM Series	Cool Grey - Performance Models

SPECIFICATIONS

Model Applications

APPLICATION CATEGORY	MODEL NUMBER	
	Standard	Performance
Beverage Water and Waterlines	EOS7177-B	EOS7177-PB
Dental Unit Water and Waterlines	EOS7177-D	EOS7177-PD
Faucet Integration	EOS7177-F	EOS7177-PF
Laundry Integration	EOS7177-L	EOS7177-PL
Misting System Integration	EOS7177-M	NA
Pool System Integration	EOS7177-P	EOS7177-PP
Storage Water Tank/Tower Integration	EOS7177-Q	EOS7177-PQ

Refer to application guide in page xx for specific application configurations.

Certifications



PRODUCT INFORMATION

SPECIFICATIONS (Cont'd)

SPECIFICATION		Standard Models	Performance Models	
MODEL NO.#		EOS7177-B EOS7177-D EOS7177-F EOS7177-L EOS7177-M EOS7177-P EOS7177-Q	EOS7177-PF	EOS7177-PB EOS7177-PD EOS7177-PM EOS7177-PL EOS7177-PP EOS7177-PQ
ELECTROLYTIC OZONE PRODUCTION		60 mg/hr (±10%)	80 mg/hr (±10%)	
STARTING FLOW		60 LPH (0.26 GPM)		100 LPH (0.44 GPM)
MAX. FLOW		1150 LPH (5.0 GPM)		2300 LPH (10.0 GPM)
WATER SUPPLY	Quality	Clean or filtered water ONLY (filtered to 1µm) Recommended TDS < 300 ppm, Hardness < 180 ppm CaCO ₃		
	Pressure	Min. 0.5 kg/cm ² – Max. 7.0 kg/cm ² (Min. 8 - Max. 100 psi)		
	Temp.	Min. > 0°C — Max. 50°C (Min. > 32°F — Max. 122°F)		
ELECTRICAL	Power	Adaptor Input: AC 100 - 240V, 50/60Hz, 1 Phase Adaptor Output: DC24V, 4A		
	Rate	100W		
AMBIENT AIR	Temp.	Min. > 0°C — Max. 40°C (Min. > 32°F — Max. 104°F)		
	Humidity	0-90% non-condensing humidity		
DIMENSIONS	W x D x H	140 x 128.5 x 210.5 mm		
		(5.51” x 5.06” x 8.23”)		
WEIGHT	Net	2.0 kg (4.4 lbs)	2.2 kg (4.9 lbs)	
	Filled	2.5 kg (5.5 lbs)	2.7 kg (6.0 lbs)	
IP CLASS		IP56		
CONNECTIONS		3/4” NPT Water Inlet & Outlet		

INSTALLATION

The PFDS Series are engineered for easy integration into existing piping and waterlines.

GENERAL

Unpacking

1. Remove the product and all packing materials from the shipping carton.
2. Remove all packing materials and protective coverings from the product.

NOTE: If any parts are damaged, contact your supplier IMMEDIATELY. Do NOT install damaged parts.

Equipment Setup

When placing the unit into service, pay attention to the following guidelines:

- Do NOT immerse cord or plug in water.
- Keep cord away from heated surfaces.

Suggested Tools and Supplies for Installation

The following tools and supplies are greatly helpful to the installation:

- Screwdriver
- Drill with bits
- Tape measure
- Pipe wrenches
- Adjustable wrenches
- Level
- Pipe dope or thread seal tape

Electrical

Ensure that the line voltage corresponds to the stated voltage on the units specification label. Make sure that the plug on the power cord from the product and the outlet are matched. For proper operation, and to ensure the best performance of application from the product, make sure that the system is not connected to a switched electrical outlet.

Plumbing

NOTE: This product is designed to use tap water that is pre-filtered to 1 μ m and is not to exceed 50°C (°F) or 7 kg/cm² (100 psi).

The PFDS unit uses the following connections:

- Water inlet - 3/4" NPT
- Water outlet - 3/4" NPT

When making a plumbing connection to the product, always use a good quality, approved pipe sealant or thread seal tape on pipe threads. Be careful not to get the pipe sealant inside the pipe when making the connections.

INSTALLATION

Do NOT over tighten the connections. It is recommended that plastic fittings be used when connecting to the plastic connections of the product. This will reduce the possibility of cracking the connections due to over-tightening. The use of union (O-ring seal) connections is highly recommended for ease of installation and future servicing.

CAUTION

Water pressure must not exceed 7 kg/cm² (100 psi). To reduce water pressure, install a water pressure regulator and set water pressure to suit application.

Before Installing

Observe these guideline to ensure optimal device functions and performances.

1. Select a location for the PFDS so:
 - It will be in an upright position.
 - LED Lights and cartridge are visible and accessible.
 - Equipment or objects will not press against the device.
2. Ensure adequate back-flow protection is provided to comply with all national and local standards and codes.
3. It is highly recommended that a water shut-off valve be installed before and near the PFDS unit.
4. For best result, clean and sanitize the connecting waterlines thoroughly before installing.

INSTALLING THE UNIT

Mounting the Unit

The PFDS unit is pre-assembled to a Mounting Bracket. The Mounting Bracket has mounting holes to secure the body of the unit to a wall. When mounting the system, pay attention to the following guidelines:

- Note the location of the water supply, and an appropriate electrical outlet when choosing a mounting location.
- Note the existing waterline piping layout and flow direction when connecting appropriate size of tubing on the "WATER IN" and "WATER OUT" sides of the unit.
- Allow sufficient access for cartridge replacement. Recommended minimum "Vertical Clearance" is 30cm (12").
- Mount the system near but NOT above an electrical outlet.
- Do NOT mount the system above any electrical equipment or items that may be damaged if they get wet.
- Mount the system after all water filtration processes.
- Secure the Mounting Bracket into wall studs or with the appropriate heavy duty mounting hardware.

INSTALLATION

Plumbing Water In & Out

NOTE: Use 3/4" fitting for "WATER IN" and "WATER OUT" connections. Connecting smaller diameter tubing will increase dynamic flow loss in the output performance.

Before connecting the fitting to the System Inlet, the plumbing to the unit must be flushed clear of all debris.

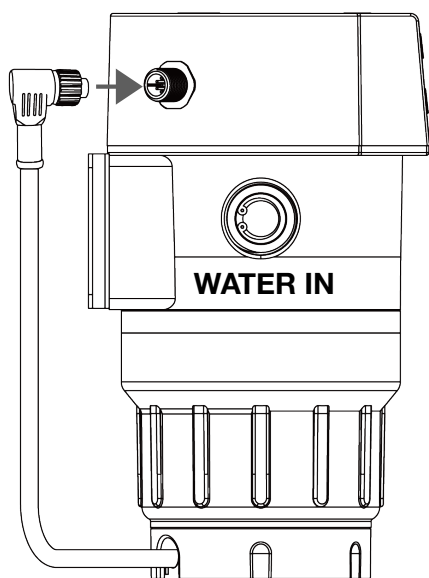
Note the flow direction. Connect appropriate size of tubing on the "WATER IN" and "WATER OUT" sides of the unit.

A shut-off valve (not supplied) should be installed in the line leading to the product as inlet water valve. The valve should be mounted close to the system inlet and sized properly for the inlet plumbing line. This valve will allow for the following two functions:

1. Easier servicing and future cell cartridge replacement.
2. Configuring flow as well as dissolved ozone concentrations. (Required for some applications. Refer to P.15 for details)

Connecting Cell Power

Connect the Cell Power Plug to the Cell Power Socket on the Head.



Starting the Unit

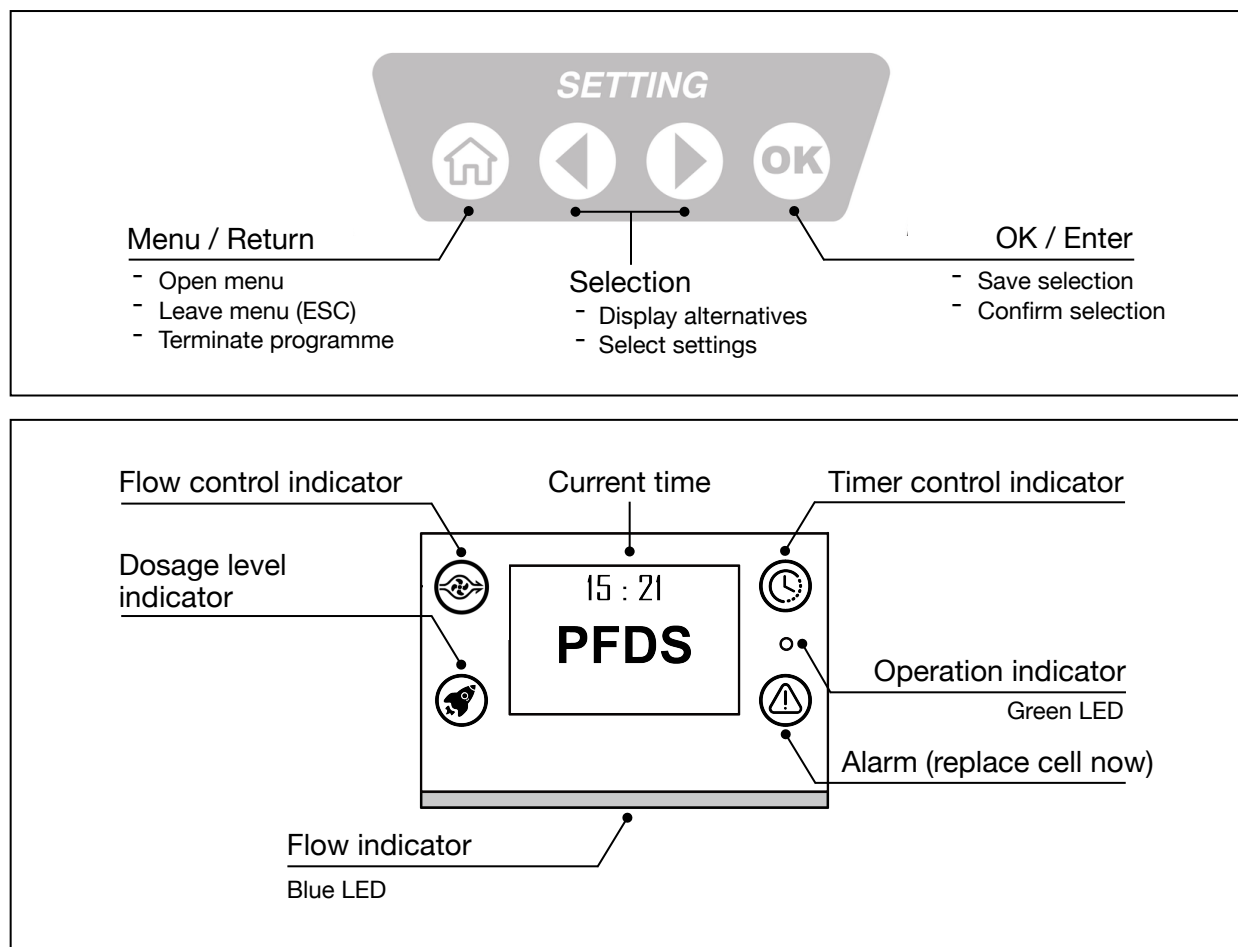
There is no ON/OFF control switch with the unit. The unit is switched ON by connecting the cord into wall electrical outlet (power supply).

Plug the Power Adapter into the wall electricity outlet. Then, connect the Power-Supply Cord into the Main Power Socket behind "Water Out" . The Screen and LEDs on the controller (the Head) will light up, indicating the unit has power.

NOTE: Before connecting the unit to power supply, ensure all plumbing connections are secure and leak-free, from shut-off valve to outlet.

OPERATION

CONTROL KEYS & SCREEN DISPLAY



Flow control indicator

ON - Flow-starting is activated. The operation is driven by inlet flow.

OFF - Flow-starting is deactivated.

Timer control indicator

ON - Timer-controlling is activated. The operation is driven by timer (configured schedule and frequency).

OFF - Flow-starting is deactivated.

Dosage level indicator

ON - Boost is activated. Dissolved ozone dosage is increased by 50%.

OFF - Standard dissolved ozone dosage.

Alarm ON - Replace cell cartridge now.

Flow indicator

ON - System standby / no flow detected.

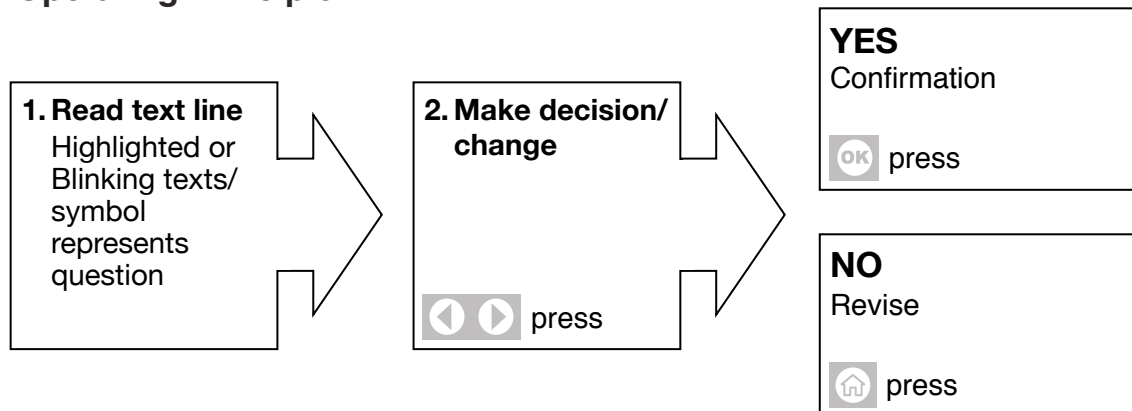
Blinking - Flow is detected.

Operation indicator ON - dissolved ozone dosage is activated.

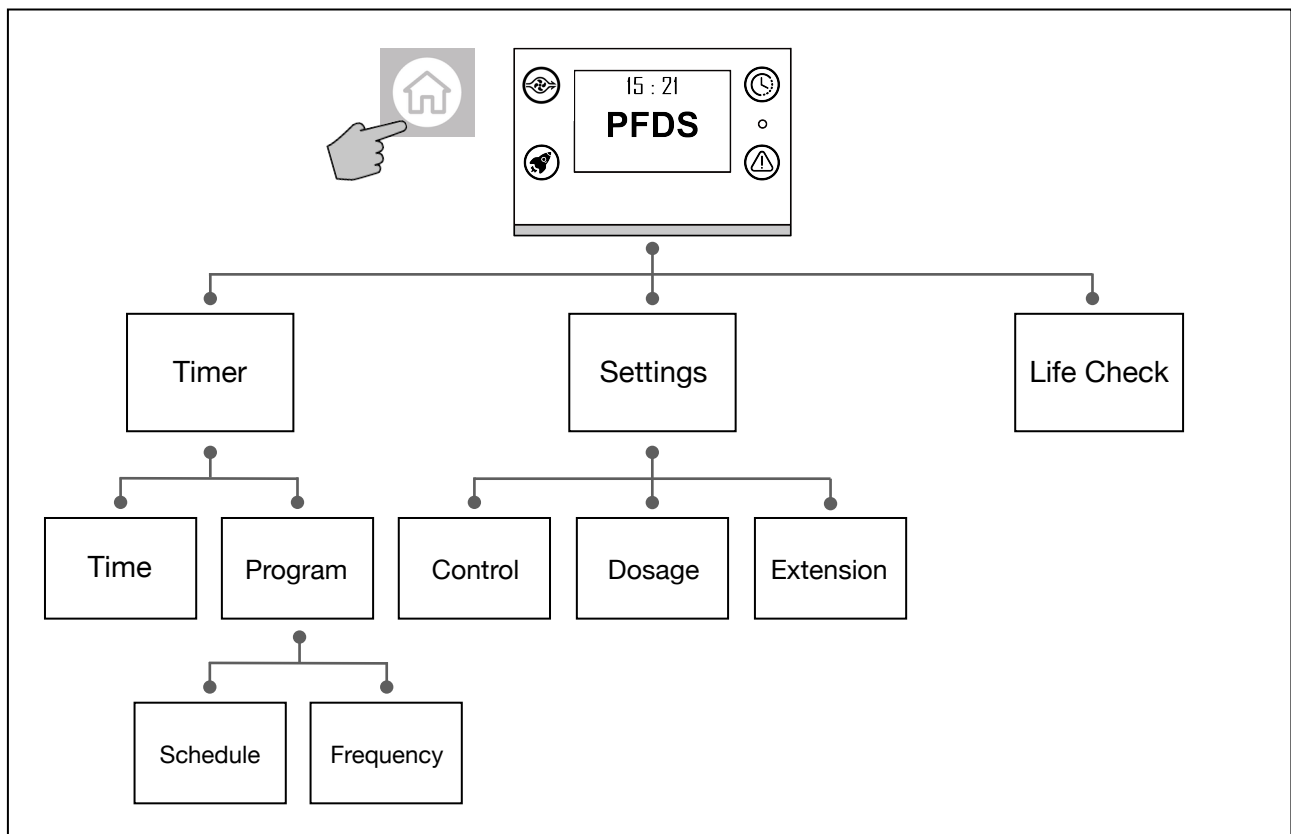
OPERATION

OPERATION MENU

Menu Operating Principle



Menu Overview



Timer - Current time setup and timing control configurations

- Time - Setup or change current time
- Program - Program switching schedule and frequency settings
 - Schedule - Program switching hour on daily basis (00-23 on the hour)
 - Frequency - Program switching frequency in scheduled operating hour, options including:
 - 1) Initial 30-second dosage in 4-minute cycle
 - 2) Initial 50-second dosage in 6-minute cycle
 - 3) Initial 85-second dosage in 10-minute cycle

OPERATION

Settings - Operation strategy configurations

- Control - Select switching controllers, flow-starting, timer-controlling or both (Combo)
- Dosage - Select dosing levels, standard or boost with 50% increase.
- Extension - Extend ozone generation during flow interval for building up concentrations, options including:
 - 1) 30-second extension; 2) 60-second extension; 3) 120-second extension

Life Check - Check the remaining life of cell cartridge, expressed in percentage (%).

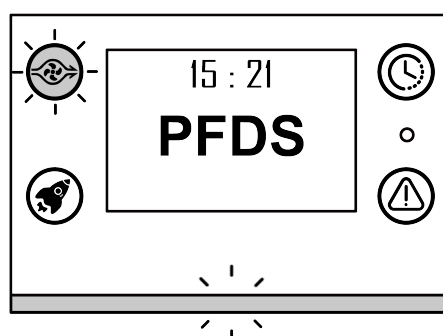
NOTE: The Configured “Program” ONLY functions when the use of “timer-controlling” or “Combo” is selected.

OPERATION SETTINGS & STATUS

Default Settings

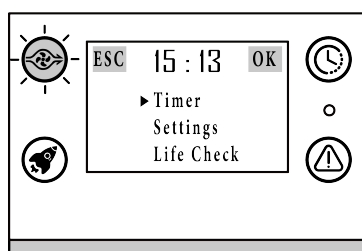
For new unit, the default settings are:

- 1) Flow-started
- 2) Standard dosage
- 3) Extension is off

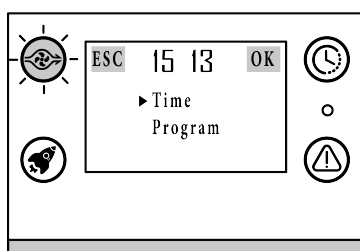


Setting Current Time

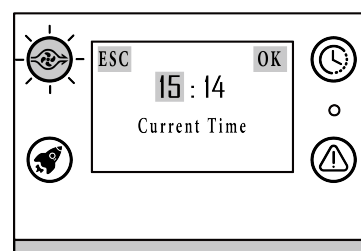
(1) Timer -> (2) Time -> (3) Hour -> (4) Minute -> OK



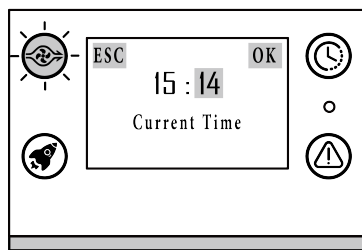
(1) Timer



(2) Time



(3) Hour

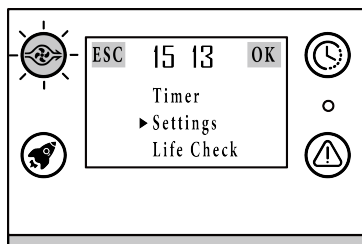


(3) Minute

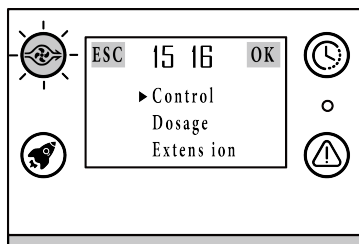
OPERATION

Configuring Control

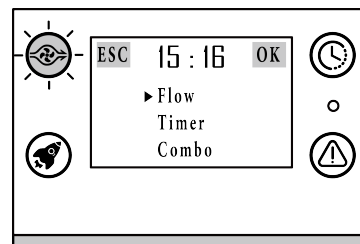
(1) Settings -> (2) Control -> (3) Flow, Timer or Combo -> OK



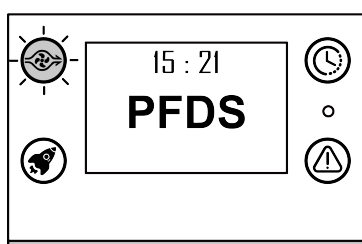
(1) Settings



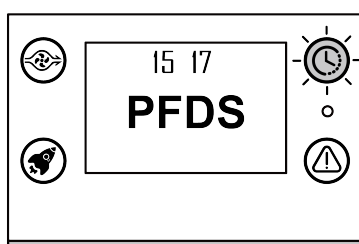
(2) Control



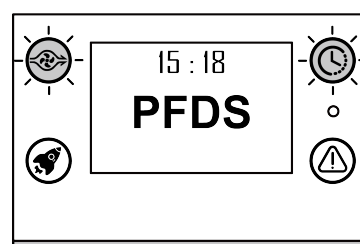
(3) Flow, Timer or Combo



Flow-starting activated



Timer-controlling activated

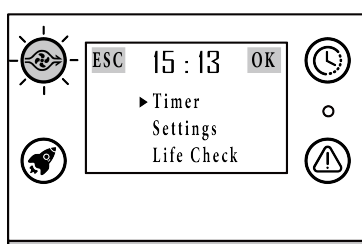


Combo-controlling activated

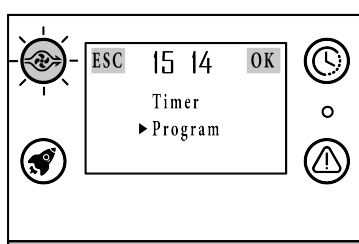
NOTE: When Combo-controlling is activated, the unit is controlled under both the triggering of flow switch and timer program (set schedule and frequency).

Configuring Schedule and Frequency

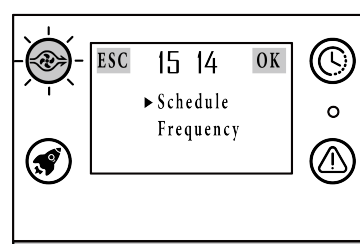
(1) Timer -> (2) Program -> (3) Schedule and/or Frequency -> OK



(1) Timer

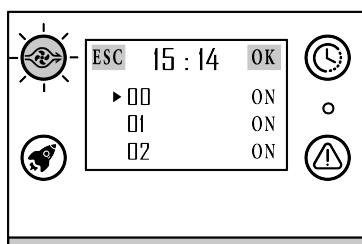


(2) Program



(3) Schedule and/or Frequency

Setting Schedule



Selecting hour



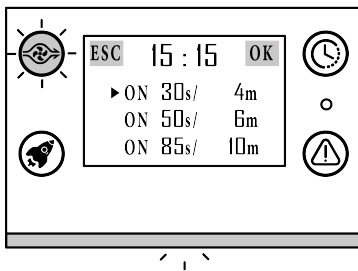
Save selections



Selecting ON/OFF

OPERATION

Setting Frequency



Selecting operation frequency

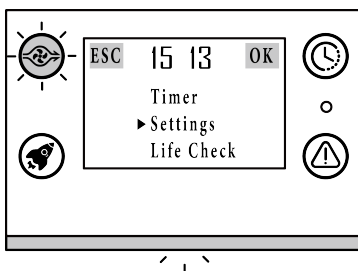


Save selections

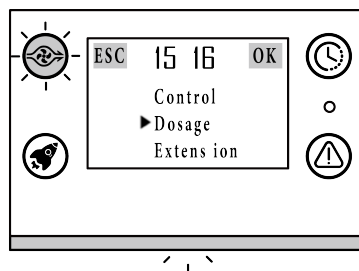
NOTE: The Configured “Program” ONLY functions when the use of “timer-controlling” or “Combo” is selected. Do remember to activate the unit for “timer-controlling” or “Combo” if running on set program is preferred.

Configuring Dosage

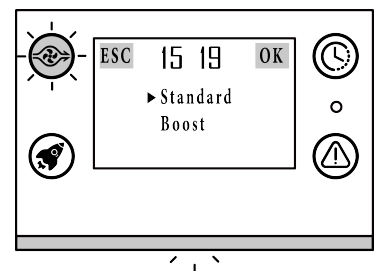
(1) Settings -> (2) Dosage -> (3) Standard or Boost -> OK



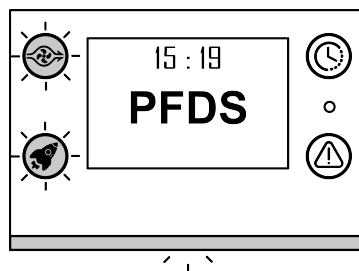
(1) Settings



(2) Dosage



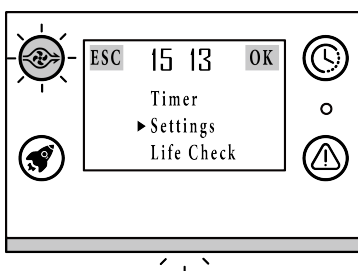
(3) Standard or Boost



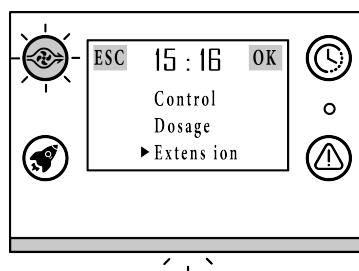
Activation of Boost

Configuring Extension

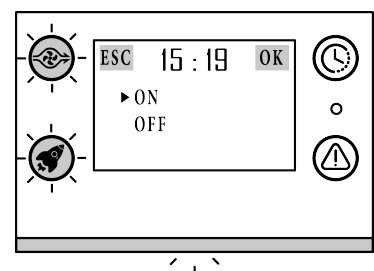
(1) Settings -> (2) Extension -> (3) ON or OFF -> (4) If ON, select time options -> OK



(1) Settings



(2) Extension

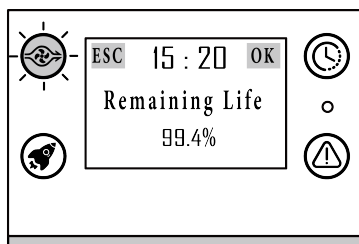
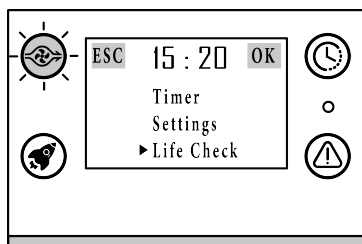


(3) ON/OFF

OPERATION

Cell Cartridge Life Check

Life Check -> OK



APPLICATION GUIDES

Manufacturer Recommendations

Application: Beverage Water and Waterlines

MODEL	FLOW RANGE	CONTROL	DOSAGE	RESIDUAL DO3
EOS7177-B	< 1150 LPH	Flow	Standard	0.025 - 0.035 ppm
EOS7177-PB	< 2300 LPH			

Application: Dental Unit Water and Waterlines

MODEL	FLOW RANGE	CONTROL	DOSAGE	RESIDUAL DO3
EOS7177-D	< 400LPH*	Combo**	Standard	0.2 - 0.4 ppm
EOS7177-PD	< 1000 LPH*			

*Flow regulator applies

**Framed to operating hours; Frequency: 30sec/4min; Extension ON: 30sec (optional)

Application: Faucet Integration

MODEL	FLOW RANGE	CONTROL	DOSAGE	RESIDUAL DO3
EOS7177-F	< 600LPH*	Flow**	Boost	0.5 - 1.0 ppm
EOS7177-PF	< 900 LPH*			

*Flow regulator applies; **Extension ON: 60sec or 2min (optional)

Application: Laundry Integration

MODEL	FLOW RANGE	CONTROL	DOSAGE	RESIDUAL DO3
EOS7177-L	< 1150LPH*	Flow**	Boost	0.5 - 1.0 ppm
EOS7177-PL				

*Flow regulator applies; **Extension ON: 2min

NOTE: Actual system flow will depend on plumbing size and other system components.

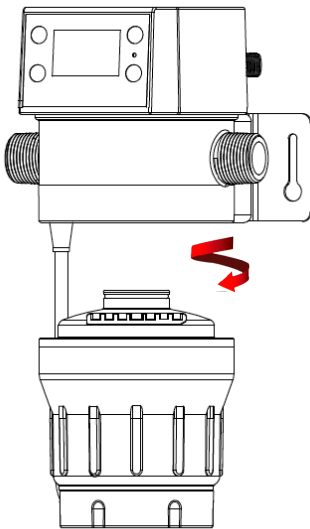
MAINTENANCE

EXPECTED CELL LIFE

The PFDS replaceable cell cartridge is designed to typically last 6-12 months or 1,000 operating hours. Hard water or other factors may shorten the cell life. An alarm LED is present on the display panel of the device to warn when the cell cartridge is approaching the end of its effective life cycle.

CELL CARTRIDGE REPLACEMENT

1. Unplug the device, open the faucet or tap closest downstream to the device.
2. Close the inlet water shut-off valve and allow the system to depressurize.
3. Disconnect the Cell Power Plug from the Cell Power Socket on the Head.
4. Hold body of device steady, untwist the used cartridge, pull to remove for replacement, and dispose of appropriately.
5. Revert the procedures with a new cartridge for replacement.



TROUBLESHOOTING

Use the following guide to self check your problems before requesting repairs. If you decide that trouble has occurred, do NOT attempt to disassemble and repair the product yourself, but contact BioSure Professional or your dealer for support.

Sometimes suspected trouble is remedied by disconnecting the power plug and then re-connecting it.

Problem	Possible Cause	Corrective Action
Unit does not have power. Light effects are absent.	The power cord is not correctly plugged in.	Plug the power cord in correctly.
	The power outlet is not working properly.	Correct the power outlet.
The Control Display is blank.	The power cord is not correctly plugged in.	Plug the power cord in correctly.
	Control panel is inoperable.	Contact your maintenance person or authorized service agency.
	Transformer is inoperable.	
No water comes out of the unit.	Inlet shut-off valve closed.	Open the valve.
Water leaks from system fitting or connection	Fitting broken or loose.	Retighten or replace the fitting.
	Not enough pipe thread sealant used.	Redo the fitting with proper amount of sealant.
Alarm is ON	Cell is due for replacement.	Replace cell cartridge immediately.

Please have the model number and serial number of the device available when calling for support.

WARRANTY INFORMATION

LIMITED WARRANTY

Equipment manufactured by Biotek Environmental Science Ltd. has been constructed of the finest materials available and manufactured to high quality standards. When installed in accordance with manufacturer's recommendations, and under normal use and service, new PFDS units are warranted to be free of defects due to poor materials or workmanship for the period of time listed below (following the date of purchase):

- PFDS Head & Connecting Body: two (2) year parts only.
- PFDS Cell Cartridge: One (1) year parts only.

Exclusions: This warranty does not cover failures due to improper system installation, defects caused by improper storage or handling prior to placing of the equipment into service. This warranty does not include damages due to attempted repairs or installation by unauthorized service agencies or personnel. This warranty does not cover normal maintenance, calibration, or regular adjustments as specified in operating and maintenance instructions of this manual, and/or labor involved in moving adjacent objects to gain access to the Equipment. Biotek Environmental Science Ltd. is not liable under this warranty for repairs or damages due to alterations, abuse, fire, flood, or acts of nature.

Additionally, this warranty may be voided in the case of:

- Failure to follow BES Group instructions for use, care, or maintenance.
- Removal, alteration, or defacing of BES Group-affixed serial number and other labels.
- Mechanical damage.
- Use of fluids other than clean, potable water.

This warranty is conditional upon Biotek Environmental Science Ltd. receiving notice of any defect subject to this warranty within fourteen (14) days of its original discovery by the User/Buyer.

Biotek Environmental Science Ltd. reserves the right to make changes in design or add any improvements on any product. The right is always reserved to modify equipment because of factors beyond our control and government regulations. Changes to update equipment do not constitute a warranty charge.

If shipment is damaged in transit, the purchaser should make a claim directly upon the carrier. Careful inspection should be made of the shipment as soon as it arrives and visible damage should be noted upon the carrier's documentation. Damage should be reported to the carrier. This damage is not covered under this warranty.

Prices and specifications are subject to change without notice.

BioSure
PROFESSIONAL