

SeaSide Automation

POOLWARDEN

**Automated Pool & Spa Chemical Controller
And Data Recorder**

**Installation Manual
Including
PW-Plus and TrueDPD**

SeaSide Automation

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Manuals also available at:
www.seasideautomation.com/support/documents

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IMPORTANT WARNING AND SAFETY INSTRUCTIONS

- 1 READ AND FOLLOW ALL INSTRUCTIONS
- 2 SAVE THESE INSTRUCTIONS
- 3 **WARNING** – To reduce the risk of injury, do not permit children to use this product
- 4 **DANGER** – Risk of injury
 - 4.1 Replace damaged cord immediately.
 - 4.2 Do not bury cord.
 - 4.3 Connect to a grounded, grounding type receptacle only.
 - 4.4 Do not use an extension cord.
- 5 **WARNING** – This product is provided with a ground-fault circuit-interrupter at the end of the power cord. The GFCI must be tested before each use. Turn the PoolWarden off by placing the ON/OFF switch to the OFF position. Next, push the test button on the GFCI and place the ON/OFF switch to the ON position. The PoolWarden should not operate. Now push the reset button on the GFCI and the PoolWarden should now operate normally. When the product fails to operate in this manner, there is a ground current flowing indicating the possibility of an electric shock. Disconnect the power until the fault has been identified and corrected.
- 6 It is very important to follow the safety guidelines in this manual to ensure safe installation and programming. Safety of any system incorporating this equipment is the responsibility of the assembler of the system. Upon installation, it is important to properly train all personnel basic water quality management techniques, proper operation and programming to anyone who operates or services PoolWarden.
- 7 All applicable local installation codes and ordinances must also be adhered to. Improper installation will create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrical shock, and may also cause damage to property. The PoolWarden must be installed by a licensed or certified electrician or a qualified pool professional:
 - 7.1 United States: National Electrical Code (NEC), NFPA 70
 - 7.2 Canada: Canadian Electrical Code (CEC), CSA C22.1.

IMPORTANT WARNING AND SAFETY INSTRUCTIONS

- 8 **WARNING** – Disconnect all power to PoolWarden prior to any service including the main AC power and any other AC sources that may be connected to the AUX relays. Never apply power when PoolWarden service door is unlocked or in the open position. Only qualified and licensed technicians should perform any service or repair.
- 9 **WARNING** – Do not install load bearing leads and/or sensor cables longer than 3 meters.
- 10 **WARNING** – Always mount PoolWarden in safe and dry area. Never mount PoolWarden above any other electrical equipment.
- 11 **WARNING** – Install PoolWarden in a location that is not accessible to the public.
- 12 **WARNING** – Pool and Spa Chemical Safety
 - 12.1 Never mix sodium hypochlorite and muratic acid!
 - 12.2 When mixing acid and water, always add acid to the water, never add water to the acid.
- 13 **CAUTION** – TEST THE GROUND FAULT CIRCUIT INTERRUPTER BEFORE EACH USE OF THE POOL/SPA
- 14 **CAUTION** – CONNECT ONLY TO A CIRCUIT PROTECTED BY A CLASS A GROUND FAULT CIRCUIT INTERRUPTER
- 15  Do not dispose in trash.

- 1 : TOUJOURS VÉRIFIER L'EFFICACITÉ DU **DISJONCTEUR DIFFÉRENTIEL** AVANT D'UTILISER LE BAIN
- 2 : LIRE LA NOTICE TECHNIQUE
- 3 **AVERTISSE** : DÉCONNECTER DU CIRCUIT D'ALIMENTATION **ÉLECTRIQUE AVANT** L'ENTRETIEN
- 4 : CONNECTER UNIQUEMENT À UN CIRCUIT PROTÉGÉ **PAR UN DISJONCTEUR DIFFÉRENTIEL DE CLASSE A**

PoolWarden Overview

PoolWarden measures pH, sanitizer and temperature on up to two bodies of water and will control the appropriate feed equipment to keep the measurements within a preprogrammed range. Using ORP (oxidation reduction potential) technology the control of sanitizer takes into account the effects of pH, and a pH lockout feature is also included for high pH values. Controls chemical feed equipment using relays to keep the pool or spa water in balance. Water measurements are taken continuously while PoolWarden's internal relay programming determines if chemical adjustments are needed. PoolWarden then communicates the adjustment signals through relays which control the chemical feed equipment. PoolWarden also contains additional dry-contact auxiliary relays that can be used to control heaters, pumps, chlorine backup and external alarm notifications.

PoolWarden Plus

When adding the PW-Plus communication module, the software feature set will also be updated. Where there are differences that will be pointed out.

System Components

- ◆ **CONTROLLER:** PoolWarden is a microprocessor based, modular automation system that is capable of continuous monitoring locally onsite or remotely offsite.
- ◆ **INTERFACE:** PoolWarden uses a 16-button built in keypad, and an easy to read 80 character liquid crystal display. The display's internal back-light provides controller viewing in pool rooms with low light.
- ◆ **MEMORY:** PoolWarden is designed with nonvolatile memory which preserves all internal programming in case of power loss. Internal memory is preserved for up to 10 years without having power applied.
- ◆ **RELAYS:** PoolWarden S (single pool) includes 4 relays (2 of which are dry contact relays). PoolWarden D (two pools) includes 8 relays. Four of the 8 relays are dry contact relays (2 for each body of water).
- ◆ **SENSORS:** ORP, pH, Temperature, flow and optional free chlorine.
- ◆ **VOLTAGE:** Requires 120VAC input voltage in North America and 240VAC input voltage in Europe.
- ◆ **SECURITY:** PoolWarden is designed with a lockable enclosure and provides up to four levels of password security protection (Admin, Tech, Service and Guest) for both local onsite and remote offsite interaction with the controller.
- ◆ **COMMUNICATION:** PoolWarden can connect to the Internet for direct monitoring, setup, and data interface by adding the PW-Plus communication module which adds WIFI and Ethernet.
- ◆ **DATA:** PoolWarden will record up to 8192 lines of data with the built in internal memory. There is no limit when adding the PW-Plus communication device.
- ◆ **HEATERS:** Auxiliary relays can control pool heaters with up to two set-points for each day to facilitate energy management.
- ◆ **PUMP CONTROL:** Auxiliary relays can be setup as a simple timer for controlling the on/off state of main pumps.
- ◆ **OVERFEED PROTECTION:** PoolWarden is designed with 2 types of overfeed protection. Standard overfeed limits the amount of time a relay can turn on feed equipment in a 24-Hour period.
- ◆ **PROPORTIONAL/SPAN CONTROL:** Proportionally reduces the on-time as the measurement gets closer to the set-point to prevent overshoot.
- ◆ **E-MAIL ALERTS:** The data server provides support for 4 email addresses and 4 phone numbers for texts.
- ◆ **AUXILIARY RELAYS:** Auxiliary relays can control additional / backup sanitizer or acid feed pumps.
- ◆ **PRINTING:** Bluetooth printing when adding the PW-Plus communication module.
- ◆ **SOFTWARE UPDATING:** PW-Plus supports immediate software updating over the Internet.

Maximum Electrical Specifications

ITEM	DESCRIPTION	LIMIT
Input Voltage	Maximum input AC voltage	240 VAC, 50-60 Hz
Input Current	Maximum input current	10 A
Relay Voltage	Maximum relay voltage	240 VAC
Relay Current	Maximum Relay Current	2.5 A
Fuse Rating	F1	5A, 250V, 05x20
Fuse Rating	F2	5A, 250V, 05x20
Fuse Rating	F3	1A, 250V, 05x20
Standby Current	Maximum operating current	0.1 A Max
pH	Measurement of pH	4.22 to 9.98
ORP	Oxidation Reduction Potential	0 to 999 mV
Free Chlorine - PPM	With optional TrueDPD sensor NSF Certified Range 0 to 6.0 PPM 10%	
Free Chlorine - PPM	Extended non-NSF Certified Range	6.0 to 9.5 PPM 20%

Environmental Specifications

ITEM	DESCRIPTION	LIMIT
Elevation	Not to be used above	2000 m
Temperature	Minimum/Maximum Operating Temperature	30/110 °F
Temperature	Water temperature measurement.	32 to 122 °F
IP Rating	Suitable for Outdoor Use	IPX3
Pollution	Pollution Degree	2

Certifications



5024561
 Conforms to
 UL STD 1563
 Certified to CSA STD
 C22.2 No. 218.1



Certified to
 NSF/ANSI Standard 50

NSF/ANSI 50 - Equipment
 for Swimming Pools, Spas,
 Hot Tubs and Other
 Recreational Water Facilities
<http://info.nsf.org/Certified/Pool/Lists.aspx?Company=C0214550&Standard=050&>

Models and Options

ITEM	DESCRIPTION
PW-SMTD	PoolWarden controller with flow cell and sensors, pre-mounted white backboard
PW-DMTD	Adds second pool flow cell and sensors - 2 pool control
PW+SMTD	Add PW-Plus communication module to PW-SMTD
PW+DMTD	Add PW-Plus communication module to PW-DMTD
PW-SFAC	PW-SMTD with single pool TrueDPD free chlorine sensor
PW-DFAC	PW-DMTD with 2 pool TrueDPD free chlorine sensor
PW+SFAC	Adds PW-Plus communication to PW-SFAC
PW+DFAC	Adds PW-Plus communication to PW-DFAC

PoolWarden Installation

Mounting PoolWarden

Turn off any heaters, pool or spa circulation systems, chemical feed pumps or any related shut-off valves or equipment and relieve pressure from the filtration system. Find a suitable mounting location near a 120/240 VAC power source that meets the following criteria:

- ◆ Facilitates a combined (influent & effluent) maximum tubing run of 30'.
- ◆ Do not mount controller above electrical sources or electrical equipment.
- ◆ At least 10' away from any pool, spa or body of water and not accessible to the public.
- ◆ Away from corrosive materials including fumes and physical hazards.
- ◆ Not in direct sunlight or directly above or near any heat source.
- ◆ For 240 VAC, ability to hard wire with GFCI (ground fault circuit interrupter) protection.

Securely mount controller, or the optional controller backboard, vertically on the wall using supplied screws or appropriate fasteners for the wall construction. Product shall be positioned such that the power supply cord plug, which is the disconnect device, can be easily accessible.

Flow Cell To Circulation Plumbing

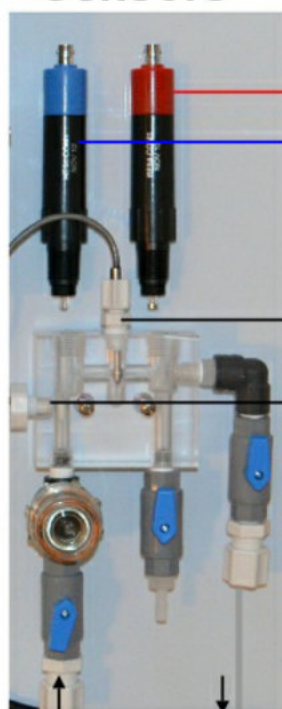
There are many ways to connect the flow cell tubing to the circulation plumbing. Always make sure the input source to the flow cell is well upstream from any chemical injection points. Successful flow cell installation requires a pressure differential, or there will be no water flowing through the cell. The Flow cell input should be filtered water and therefore after the filter. Never install the input to the flow cell between the main circulation pump and filter as that will be very high pressure which may damage the sensors and provide the most debris to the flow cell. PoolWarden is equipped with a strainer to filter out any debris that does get past the filter. Periodically check and clean the strainer. Install the flow cell return after the heater, there will be a pressure drop across that should be sufficient to provide flow through the flow cell. If there is no heater, the next choice is the suction plug in the pumps strainer, make sure to adjust the return valve on the flow cell to keep the pressure in the flow cell positive.

- ◆ Flow Cell Input: Drill & tap a connection point in the circulation system at a location just after the filter. The best location is where there is a pipe fitting as that will provide the most threads. Install a tube connector and run tubing to the input side of the flow cell.
- ◆ Flow Cell Output: Drill & tap a connection point in the circulation system at a location with reduced pressure just after the heater. Install a tube connector and run tubing to the return side of the flow cell.

CAUTION: Maximum pressure across the sensors should be 10 PSI (pressure gauge may be required). Always expose the sensors to positive pressure. Prevent exposing the sensors to suction or a vacuum by connecting the flow cell output tubing to the suction side of the pump as the vacuum may suck the sensor gel from the sensors rendering the sensors inoperable in a very short period of time.

- ◆ If not pre-mounted, find a suitable location to mount the acrylic flow cell within 3 feet of the controller. Mount and assemble flow cell parts according to the following figures. If the TrueDPD is being installed there will be a few additional fittings for the flow cell to connect to the TrueDPD inlet.
- ◆ Remove pH (Blue) and ORP (Red) sensors from the boxes. Use Teflon tape on sensor threads and all other flow cell parts to ensure water tight connection and fasten accordingly. **REMOVE THE SENSOR GUARDS FROM THE SENSORS!**
- ◆ Install the appropriate 1/2" or 3/8" hard vinyl input and output tubing from the pools circulation system connection points to the "In" and "Out" connection points on the flow cell.
- ◆ Once connected, turn circulating pump back on, test for leaks at all connection points, and make sure all air evacuates from the tubing.

POOL1 = SPA Sensors



ORP1

pH1

Temp1

Flow1

Pool 1 uses flow
inputs 1 & 2

pH1

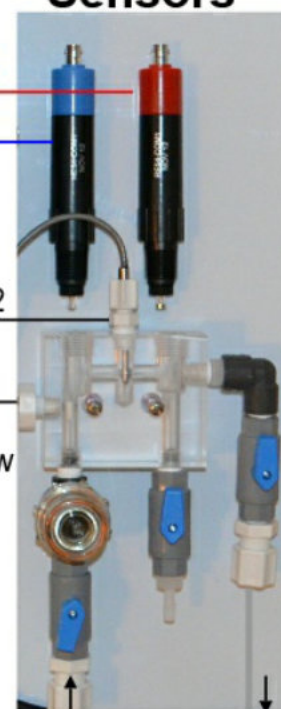
ORP1

pH2

Pool 2 uses flow
inputs 3 & 4

110/220
VAC

POOL2 = POOL Sensors



ORP2

pH2

Temp2

Flow3

POOL2 = POOL

Filter

Pool without heater

Pump

CL

ACID

**PoolWarden pH/ORP
2 Pool Control**

POOL1 = SPA

Heater

Filter

Pool with heater

Pump

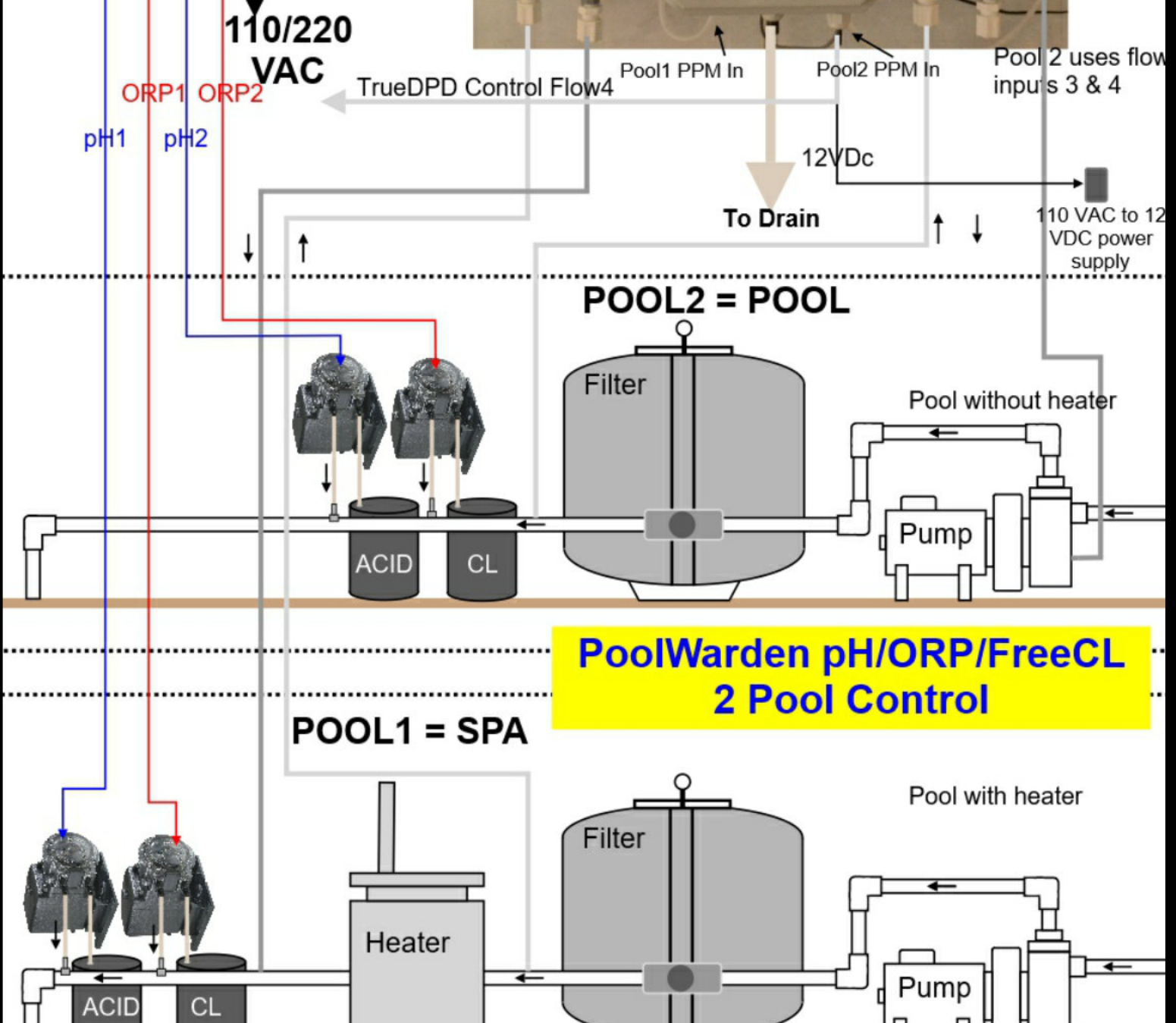
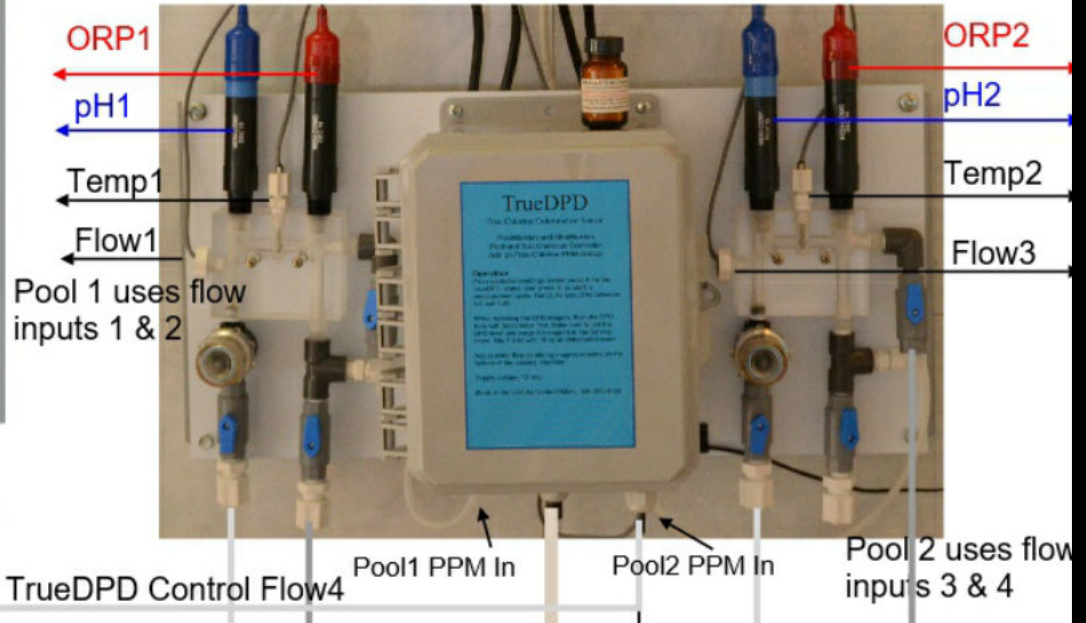
CL

ACID



POOL1 = SPA Sensors

POOL2 = POOL Sensors



- ◆ There is a small magnet in the flow cell that is held in place with a piece of tape. Remove the tape and make sure the magnet remains in the hole above the filter / strainer. If using a digital flow sensor the magnet will not be needed.

IMPORTANT NOTE: There needs to be enough flow (0.5 gpm) through the flow cell to raise the flow magnet inside the flow cell to make contact with the flow sensor. To test this, turn the “input” shut-off valve to the off position and watch the flow magnet drop from the flow sensor. Next, turn the input shut-off valve back on and watch the flow magnet rise to the flow sensor. If the flow magnet rises abruptly and pings/ knocks the flow cell acrylic then the flow is too high. To reduce flow, perform the same exercise, but now open the shut-off valve slowly and stop when you see the magnet “slowly” rise to make connection with the flow sensor. Leave the shut-off valve in that position.

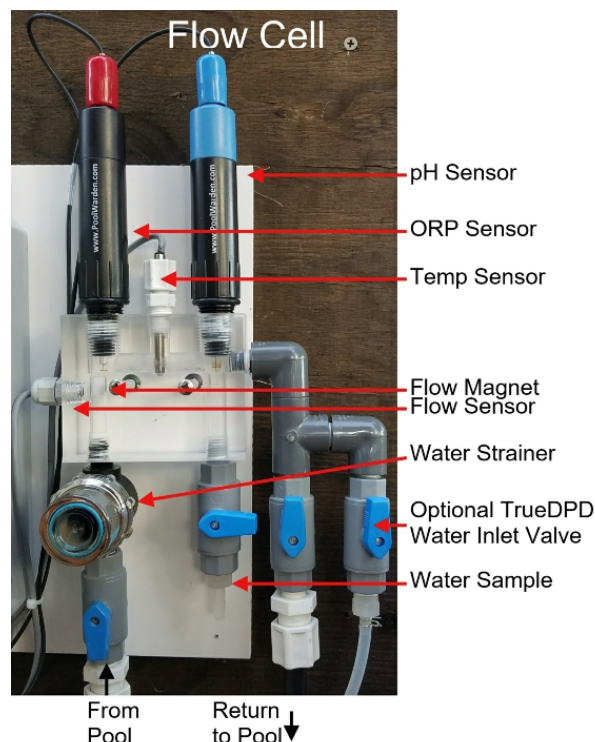
Sensor Wire Connection

If not pre-mounted, route the pH (Blue Sensor Wires), ORP (Red Sensor Wires), flow sensor and temp sensor wires through the cable grips at the bottom of controller and connect as labeled inside the controller. **Note: Black wires are always negative (-) and the Clear or Red wires are always positive (+).**

REQUIRED Flow Sensor Connections: Connect flow sensor wires for pool #1 to flow.

Optional Flow Sensor Connections:

Flow switch 2 & 4 are auxiliary switches for Pool #1 and Pool #2 respectively. For powered 3 wire digital flow meters or water level indicators use the 18VDC connection on the left of the main board, note that it has a 1 amp fuse.



Supply 110/240 Vac Input Selection

The PoolWarden supports both 110 VAC and 240 VAC. For 110 VAC the power cord includes a GFCI on the end of the cord that plugs in. For 240 VAC the cord should be removed and the PoolWarden should be hardwired to a circuit breaker with a GFCI by a licensed electrician. The cord can be returned to ControlOMatic for a credit.

- ◆ **VAC Selector:** The red switch in the center of the bottom circuit board must have the switch notch up for 110 VAC, and down for 240 VAC. Incorrect selection will damage the PoolWarden.
- ◆ A good solid earth ground is required for PoolWarden to work properly. Without a solid ground connection the sensors may drift.
- ◆ The ORP and pH relay are directly connected to the input VAC. If you have the PoolWarden set for 240 VAC then the loads must also be 240 VAC.

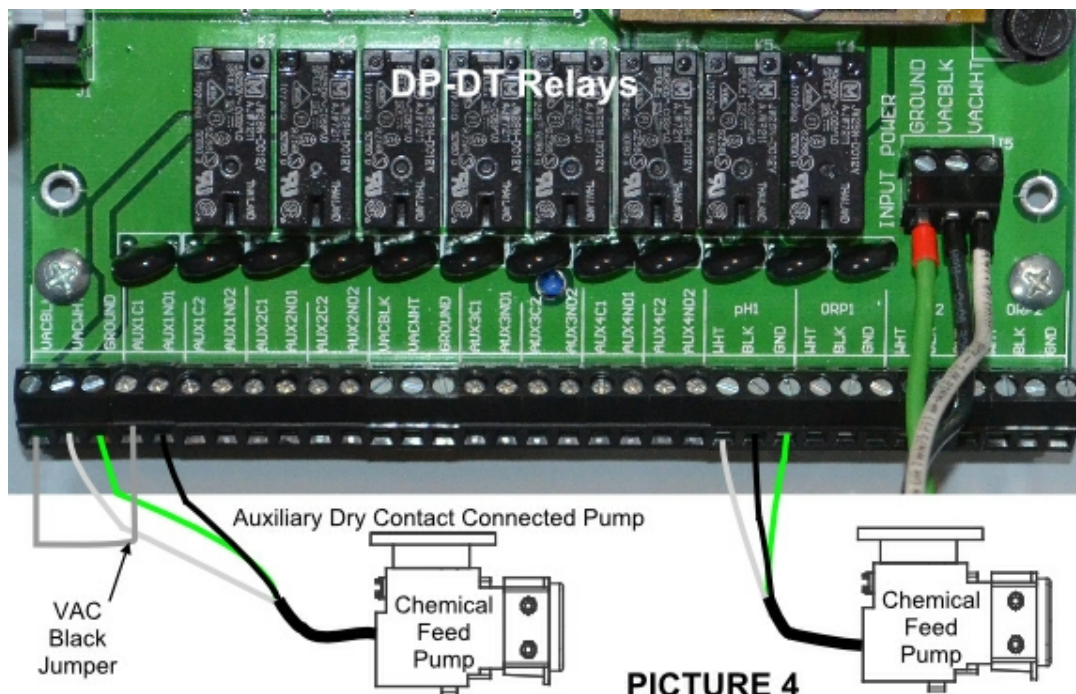
For 240 VAC operation, the neutral line will be connected to the Red 240 VAC wire and the Line connection will be to the Black 240 VAC wire. The Neutral connection for pH and ORP relays switches

- ◆ the Neutral input VAC wire. The relays are double pole double throw and break both lines.

Load / Equipment Connection & Installation

ORP & pH RELAYS: The chemical feed relays for pH and ORP are internally connected to the input VAC main input which is located on the right side connector on the circuit board through 10 AMP fuses F1 and F2. No voltage is being supplied to the load / equipment when the relay is off, hence, voltage is being supplied to the load / equipment when the relay is on. Any standard chemical feed pump or solenoid can be hard wired directly into the appropriate ORP and pH connection terminals as shown below in PICTURE 4 so long as their voltage matches the input VAC connected to the PoolWarden.

Note: Minimum wire gauge for output relays is 16 gauge.



PICTURE 4

- ◆ VACBLK: Connection to the VAC black (Line) wire
- ◆ VACWHT: For 110 VAC connect to the input white neutral wire. For 240 VAC connect to the red VAC wire.
- ◆ PH / ORP WHT: For 110 connect to the white neutral wire on the load. For 240 connect to one of the Line connections.
- ◆ PH / ORP BLK: For 110 connect to the black line wire on the load. For 240 connect to the other Line connection.
- ◆ PH / ORP GND (⊕): Connect to the green ground wire on the load.

DRY CONTACT RELAYS: A dry contact relay is not connected to any voltage and acts as a switch. To supply power to a load / equipment (such as a chemical pump) through any of the auxiliary dry contact relays, the voltage must be supplied using a jumper to the main input voltage. To facilitate this jump, PoolWarden is equipped with terminals right next to the auxiliary dry contact relay terminals labeled VACBLK, VACWHT and GROUND (⊕). Please note that these VAC terminals are after the 10 AMP fuses F1 and F2.

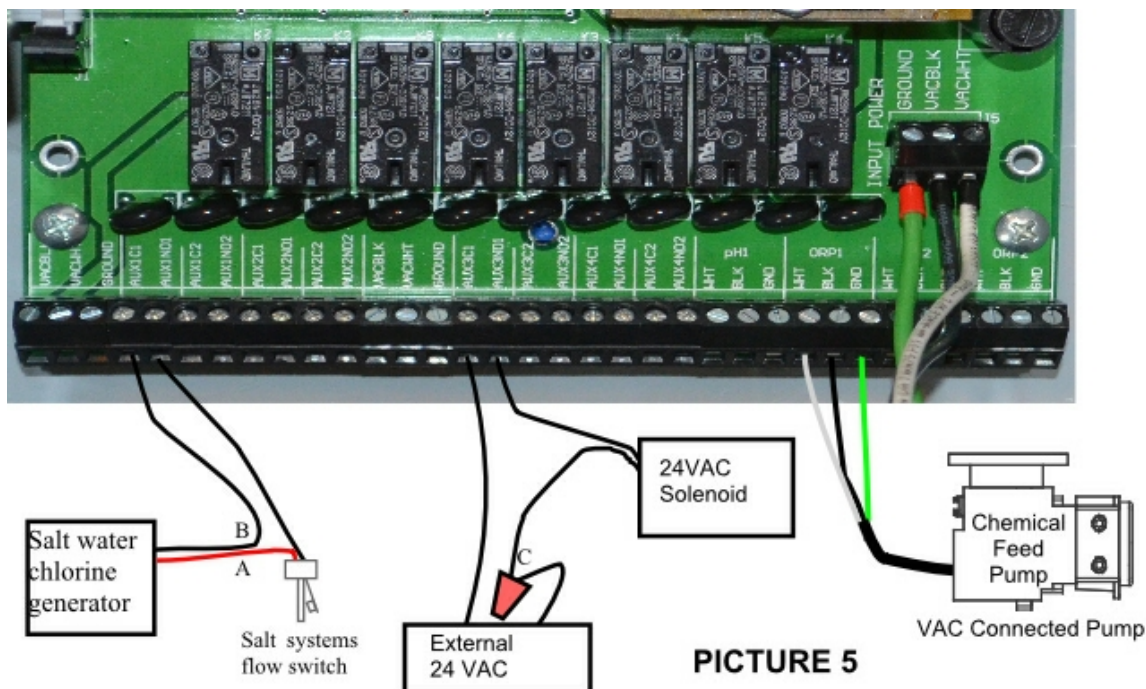
Relay Board Acronyms for the Auxiliary Dry Contact Relays:

- ◆ AUX#NO1: Normally Open aux relay, side 1 of the relay
- ◆ AUX#NO2: Normally Open aux relay, side 2 of the relay
- ◆ AUX#C1: Common connection to relay # side 1.
- ◆ AUX#C2: Common connection to relay # side 2.
- ◆ GROUND (⊕): Connected to the GROUND connection on the input VAC terminal.

- ◆ VACBLK: A convenient connection to the input VAC black line wire.
- ◆ VACWHT: A convenient connection to the input VAC white neutral wire.
- ◆ GROUND: A convenient connection to the green ground wire.

Supported Auxiliary Dry Contact Loads/Equipment:

- ◆ Standard Chemical Feed Pumps: Any Chemical Feed Pump can be connected to an Auxiliary Dry Contact Relay as shown in PICTURE 4 on the previous page. This may be needed to set up a back up sanitizer to the main sanitation control. A black wire 110 VAC jumper is needed to energize the dry contact for 110 VAC operation and two jumpers for 240 VAC operation..
- ◆ Chlorine Generators: A high power chlorine generator should not be powered using PoolWarden's internal power as it may exceed the input 2.5 AMP relay rating. Simply connect an auxiliary dry contact to control the on/off status of the generator. When PoolWarden's relay turns on, while the flow switch is on, then the chlorine generator will turn on. When the relay is turned off it makes the chlorine generator think there is no flow, and the chlorine generator will turn off.
- ◆ Loads / Equipment Using External 24 VAC (Erosion Feeders & Suction Side Cal Hypo): Solenoids are used to control water flow through a chlorine erosion feeders and suction side cal hypo systems and most use 24 VAC. Install a 24 VAC Transformer external to the PoolWarden and connect one of the output leads to an AUX#C1 relay and connect the AUX DRY#NO1 to the solenoid as shown in PICTURE 5. Connect the other 24 VAC Transformer wire to the remaining solenoid wire (C). If the 24 VAC Transformer has a an output ground wire then connect it to one of the Ground terminals on the relay board.
- ◆ Circulation Pumps: Never connect a circulation pump directly to any of the relays inside PoolWarden. Always use an external High-Power Relay that the Auxiliary Dry Contact Relay inside PoolWarden can control. Please refer to the circulation pump's manual for proper set-up and control of a variable speed pump.
- ◆ External Alarms (Light or Sound): If a more noticeable alarm notification is needed beyond the red LED on PoolWarden's front panel, a relay can be set up to output the alarm status to an external buzzer or light.

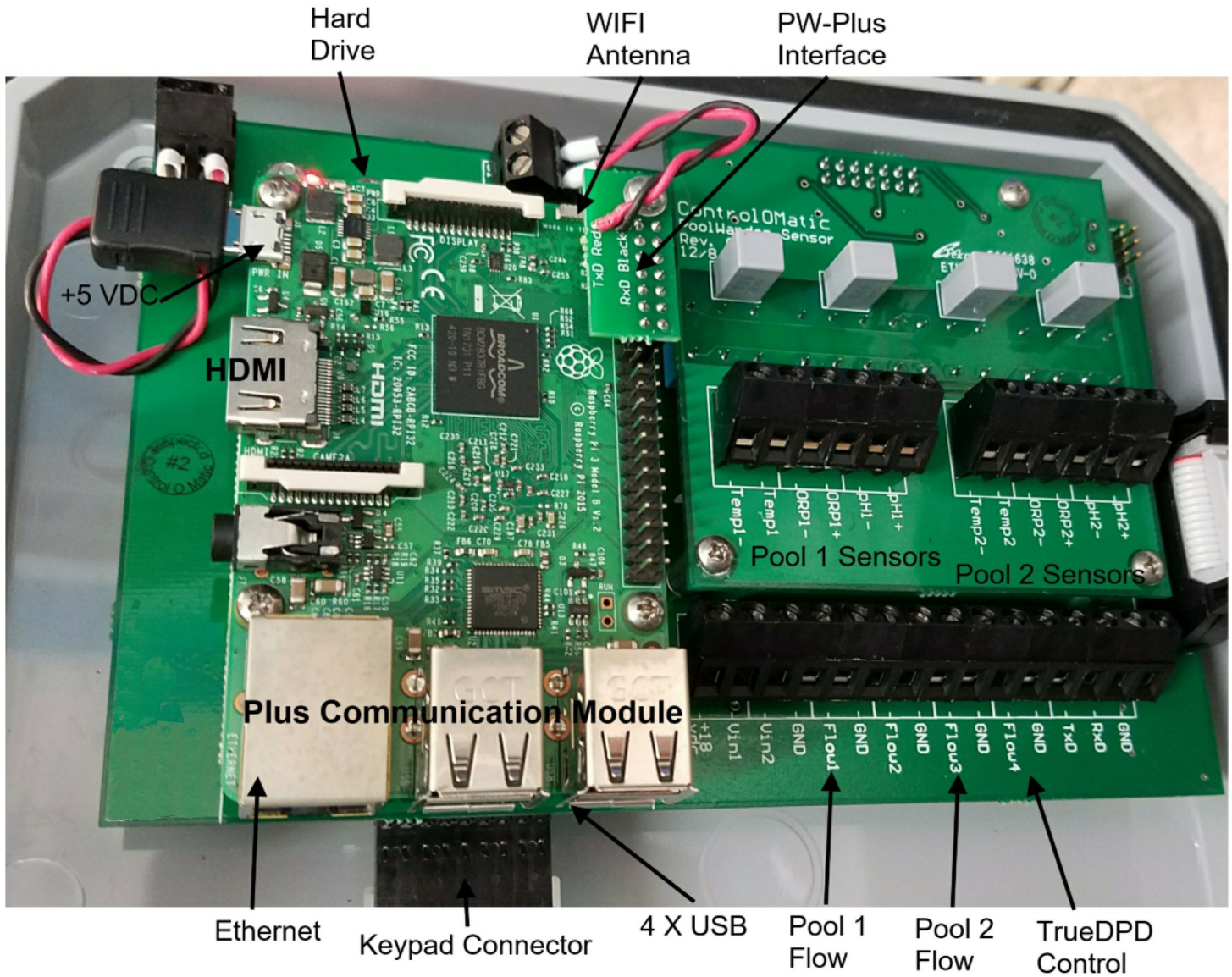


PICTURE 5

PoolWarden Plus - Option

When adding the PW-Plus module some steps are required to activate it. When included with the PoolWarden it will already be activated.

- ◆ Step 1: Install the PW-Plus module, make sure the PoolWarden is off.
- ◆ Step 2: Connect the +5 power connector and the interface connector.
- ◆ Step 3: Turn the PoolWarden on.
- ◆ Step 4: Wait at lease 30 seconds before proceeding.
- ◆ Step 5: Press the down arrow from the readings screen, select enter password and enter 1927192766. That will reconfigure the software for the PW-Plus.
- ◆ The PW-Plus must be connected to the Internet for the time to update. Instructions are in the operation manual.



TrueDPD Free Chlorine Sensor - Option

The **TrueDPD** is an optional accessory that adds a free chlorine measurement. The measurement uses the DPD method and is not affected by pH, cyanuric acid, saltwater chlorine generators or any other variables that affect an ORP or amperimetric measurement. It interfaces with the controller using one of the existing flow switch inputs.

Mounting: Locate a vertical section of wall space close enough to the controller so that the interface cable can reach the controller. Attach to the wall with 4 screws. The TrueDPD must be located close to the flow cell for the tube to reach.

When making a measurement, water will flow through the supply tube for about 20 seconds and for fresh water to reach the sample chamber the supply tube must be as short as possible. Water from the TrueDPD goes to the drain and does not continuously flow to keep the water fresh. With higher sample times, the water in the tube will be less representative of the pool water as time goes on until the next measurement.

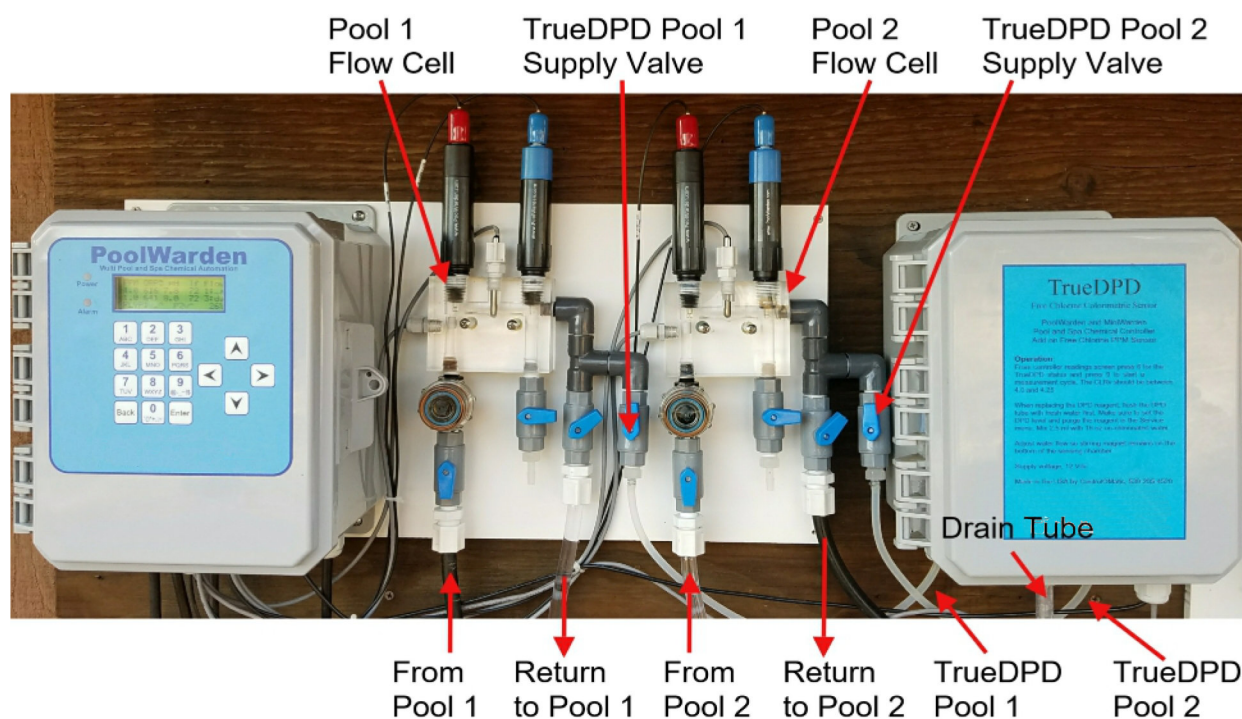
Drain: Attach 1/2" tubing to the drain connection on the front of the measuring cell. The tube needs to be routed through the cable grip near the front bottom center of the box. The tube end should be routed to a waste drain that is lower than the TrueDPD and should have no obstructions. If there is no drain then a bucket can be used but it will need to be emptied a couple times a week.

Water In: Attach a 1/4" "T" to the exit of the flow cell before the shut off valve. Attach the 1/4" NPT to barb into the "T". Route the inlet tube from the TrueDPD and attach to the barb. **WARNING: If the pressure is too high the tube may pop off of the barb fitting. The tube has a barb fitting on the flow cell and inside the TrueDPD enclosure at the small pump. If inside the TrueDPD damage will occur to the motors and circuitry.**

■ Pool1 (PPM1) uses the lower pump on the left and Pool2 (PPM2) uses the pump on the right.

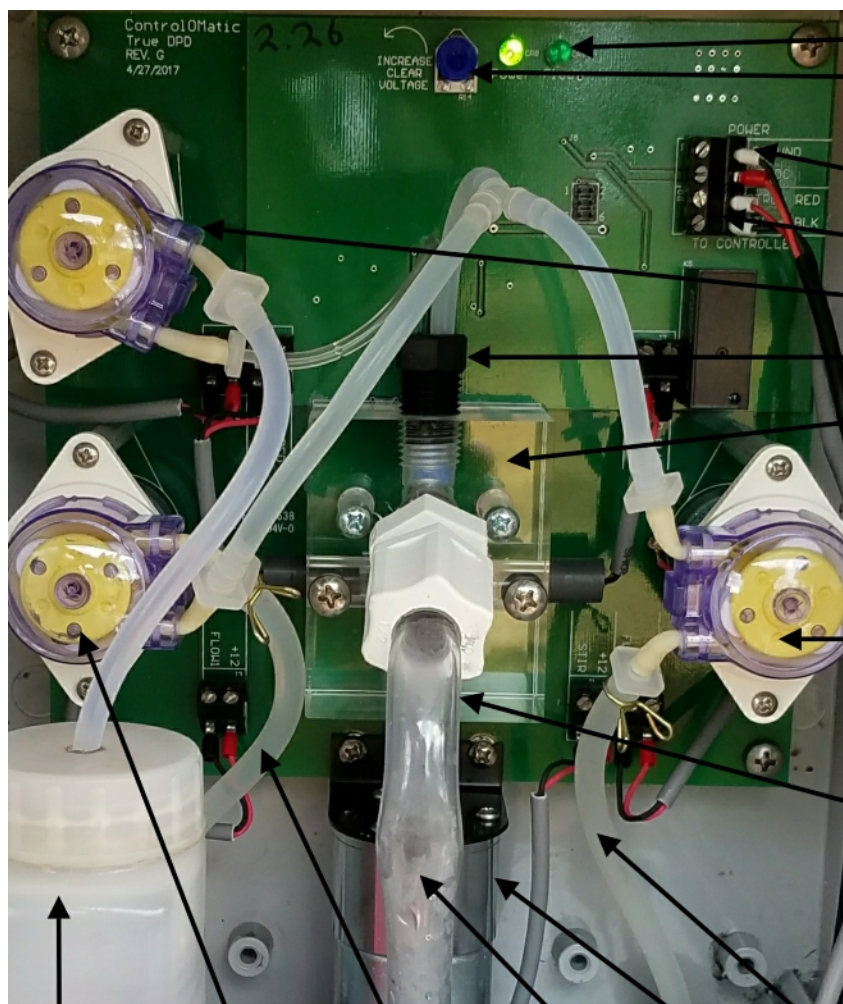
PoolWarden Interface: Connect the red interface wire to the Flow4 input on the PoolWarden display board and the black wire to GND.

Power Supply: Plug the power supply into the power source. The power supply also supports 240 VAC. If power source is 240 VAC then a suitable plug adapter may be needed. If there is no outlet, a short extension cord can be used inside the controller enclosure allowing the 12V power supply to reside inside the enclosure where it has additional protection.



TrueDPD Replacement Parts

Item	Part Number	Description
1	TrueDPD-DPD	18 gr DPD powder with 0.75ml measuring spoon -
2	TrueDPD-MAG	Stirring motor magnet
3	TrueDPD-Tube-Pk	Set of 3 replacement peristaltic tubes for the TrueDPD pumps
4	TrueDPD-KFS-HB1	Small peristaltic pump for the TrueDPD, 12 vdc
5	TrueDPD-Stir-MTR	TrueDPD Stirring motor assembly, 12 vdc
6	TrueDPD-Tubing	Silicon tubing, 1/4" OD x 1/8" ID
7	TrueDPD-Flow-Cell	TrueDPD machined flow cell block
8	TrueDPD-Bottle-?oz	Reagent bottle, sizes are 4, 8 and 16 oz
9	TrueDPD-Injector	Injector assembly, keeps DPD separate from the sample water
10	TrueDPD-Barbset-S	Set of the tube barb fittings for single pool version, with clamps.
11	TrueDPD-Barbset-D	Set of the tube barb fittings for two pool version, with clamps
12	TrueDPD-Kit-S	2' Silicon tubing, tube barbs for single pool, injector and 2 pump tubes
13	TrueDPD-Kit-S	4' Silicon tubing, tube barbs for two pool, injector and 3 pump tubes



1: DPD Powder



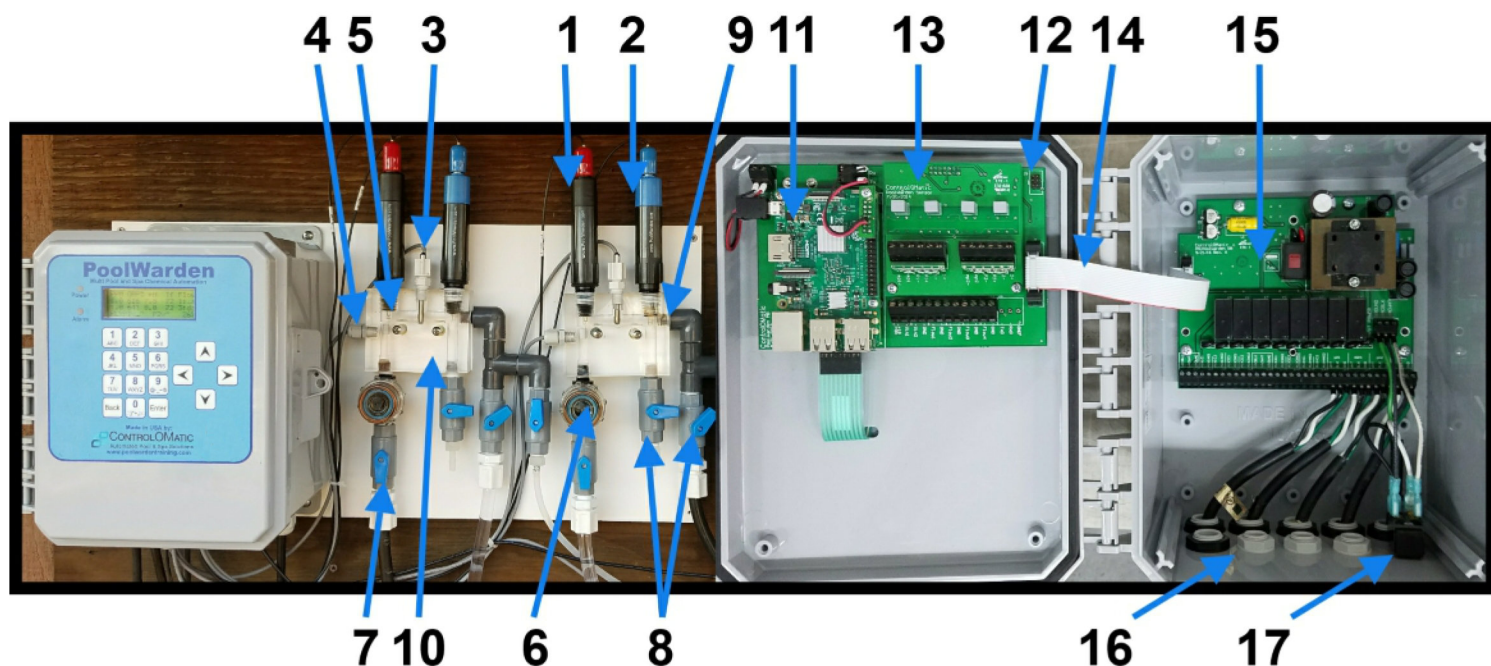
9: Injector



5: Stir Motor

8: Reagent Bottle 4: Pool 1 Pump 6: Pool 1 Water In Drain Tube 5: Stir Motor 6: Pool 2 Water In

PoolWarden Replacement Parts



Item	Part Number	Type	Description
1	ORP-COMP	Sensor	ORP Sensor, platinum band, red sensor body
1	ORP-COMG	Sensor	ORP Sensor, gold disk for salt water chlorinators
2	PH-COM1	Sensor	PH Sensor, blue sensor body
3	PW-T10K-3ft	Sensor	Temperature sensor, 3 foot cable
4	PW-Flow3	Sensor	Flow sensor detector, 3 foot cable
5	PW-FlowCell-MAG	Sensor	Flow sensor magnet
6	PW-Strainer	Flow Cell	Inlet water strainer with stainless steel screen
6	PW-Strainer-Screen	Flow Cell	Stainless steel screen for inlet water strainer
7	1250-070-01	Flow Cell	1/4" FNPTxFNTP, SMC 2-Way Ball Valves
8	1250-080-01	Flow Cell	1/4" Ball Valve FNPT x MNPT, SMC
9	1250-100-01	Flow Cell	1/4" NPT, PP Threaded Nipple
10	2070-010-01	Flow Cell	Machined PoolWarden flow cell acrylic block
11	PW-Plus	Circuit Board	Plus communication module
12	2370-020-07	Circuit Board	PoolWarden motherboard
13	2370-130-06	Circuit Board	PoolWarden sensor card dual pool
13	2370-050-06	Circuit Board	PoolWarden sensor card single pool
14	2570-080-01	Cable	Motherboard to relay board interconnect cable
15	2370-120-10	Circuit Board	PoolWarden dual pool relay board (8 relays)
15	2370-040-10	Circuit Board	PoolWarden single pool relay board (4 relays)
16	1020-080-01	Cable	Cable grip, 1/2" NPT (.23-.47"), GRAY, bottom row
16	1020-070-01	Cable	Cable grip, 3/8" NPT (.20-.39"), GRAY, top row
17	1350-010-01	Switch	PoolWarden only, on / off switch - 20 amp