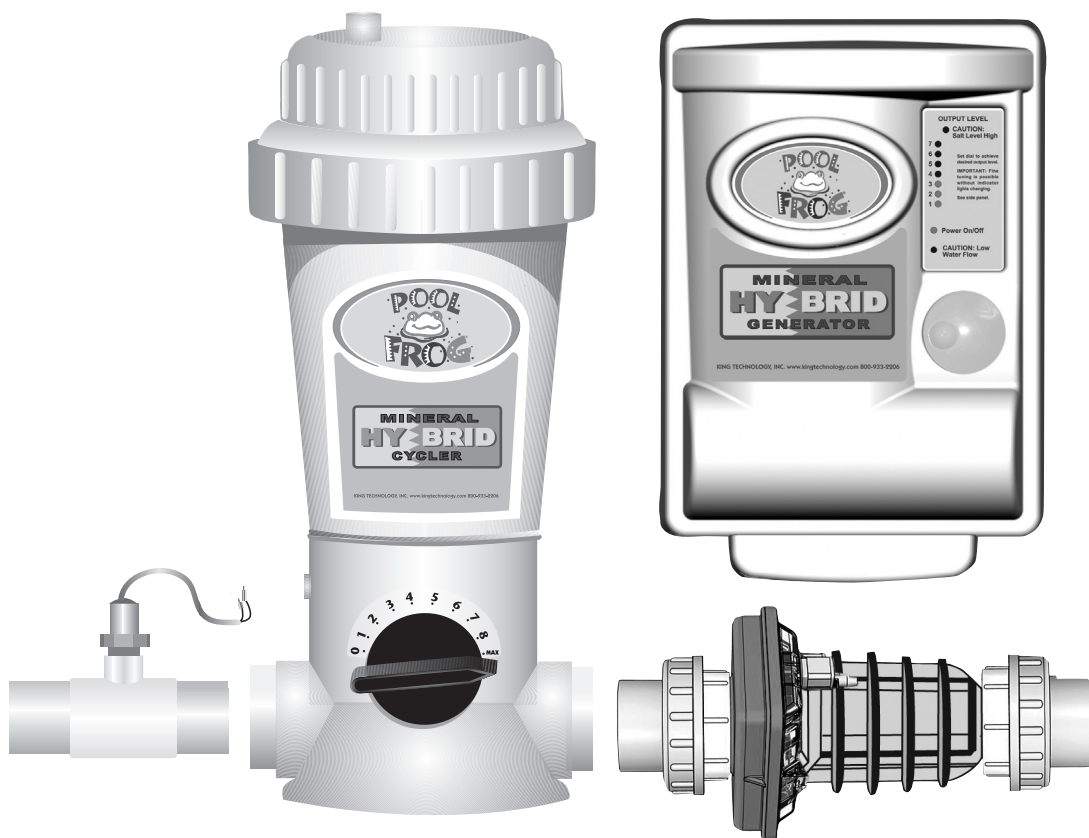


POOL FROG®

Mineral HyBrid

Installation Manual



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www.kingtechnology.com

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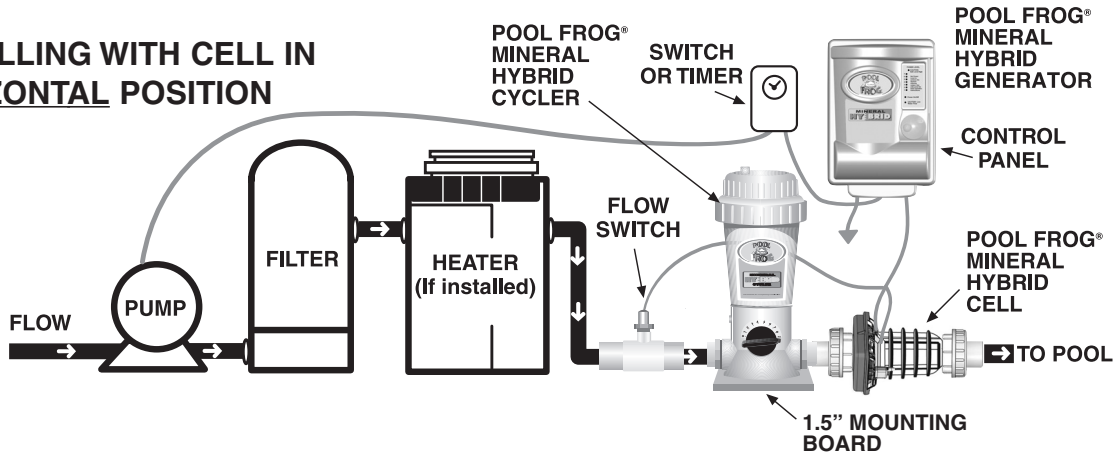
WARNING — SAFETY FIRST

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

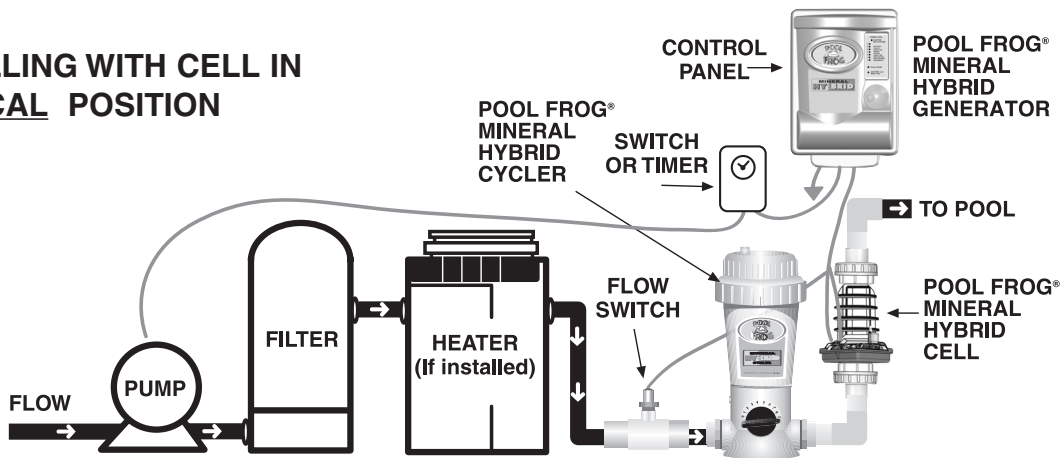
- DO NOT OPEN THE GENERATOR BOX – NOT A SERVICABLE UNIT.
- READ AND FOLLOW ALL INSTRUCTIONS.
- Disconnect all AC power before installation.
- WARNING – To reduce the risk of injury, do not permit children to use this product.
- Always adhere to all local and national regulatory installation requirements.
- The control panel must be mounted vertically on a flat surface and a minimum of 5 ft (1.5m) horizontal distance (or more, if local codes require) from the pool/spa.
- In Canada and some other regions, local codes require the unit be connected only to a circuit that is protected by a ground-fault circuit-interrupter (GFCI). The installer should provide this GFCI requirement. The GFCI should be tested on a regular basis by pushing the test button. If the GFCI fails to operate correctly, there is ground current flowing indicating the possibility of an electric shock. Do not use this unit. Disconnect unit and have a qualified professional correct the problem before using.
- The power cable must be hardwired to the time clock so that the system cannot operate without the pump.
- A build-up of flammable fumes can result in a hazardous condition if the cell is allowed to operate without flow. This machine must be operated only with an approved in-line flow sensor.
- The flow sensor must be installed immediately before the POOL FROG® Mineral Hybrid Cyclor followed by the POOL FROG® Mineral Hybrid Cell.
- ALWAYS ADD ACID TO WATER, NEVER WATER TO ACID.
- SAVE THESE INSTRUCTIONS.

INSTALLATION DIAGRAMS

INSTALLING WITH CELL IN HORIZONTAL POSITION



INSTALLING WITH CELL IN VERTICAL POSITION



MODEL CONFIRMATION: Confirm you have the correct model for your pool size by checking the model number on the cell:
 FROG® 6425 for pools up to 25,000 gallons (100,000 liters)
 FROG® 6440 for pools up to 40,000 gallons (150,000 liters)

Installing these components in the most sheltered position from sun and water will protect them from extreme weather conditions for years to come.

Safety Measures

1. This system must be installed with an approved flow sensor.
2. See safety measures and warnings on page 2 of this manual.

Additional Materials Required

1. PVC solvent cement and priming fluid
2. Hacksaw or pipe cutters
3. Screwdrivers
4. Drill
5. Tape Measure
6. Pipe Wrench
7. Teflon Tape (a.k.a. Plumber's Tape)
8. Electrical Lubricant
9. Silicone Sealant (DO NOT USE silicone glue or petroleum jelly.)
10. Pipe adaptors (i.e. reducer couplings) if needed for systems with 1 1/2 inch plumbing
11. Mounting Board at least 1.5" thick

Options For Horizontal Installation

1. 8" x 8" x 1.5" treated wood mounting board with #10 x 1 1/4" Phillips pan head screws and washers
2. Two 45° fittings

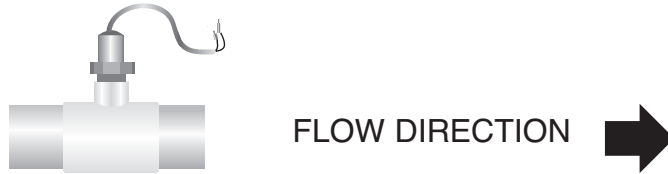
CONFIRM LAYOUT: Lay out equipment pieces to be sure there is enough pipe space between the last piece of equipment (ie: heater or filter) and the tees in the return line to fit the flow sensor, cyclor and the cell. A Vertical installation may be used to save space (see diagrams page 3).

INSTALLING IN-LINE COMPONENTS

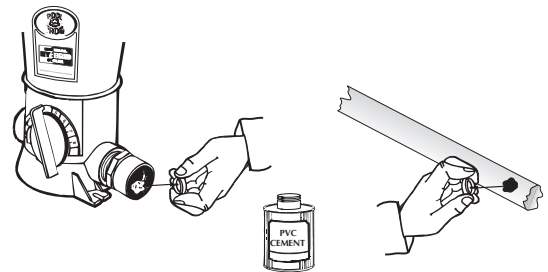
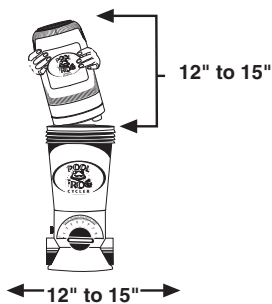
All in-line components must be installed downstream from the filter and heating devices but before any tees in the return line. The cell may be installed horizontally or vertically so long as the cell is pointed in the direction of flow and is installed immediately after the flow sensor and cyclor (see diagrams page 3).

INSTALL THE FLOW SENSOR

1. Install the flow sensor immediately before the cyclor and the cell (if installed after the cell, damage to the sensor may result). When possible, install on a horizontal pipe.
2. Mark two lines on the pipe 3 inches (76 mm) apart and cut with a hacksaw or pipe cutters.
3. Clean and glue the "T" connector (included) to the pipe making sure that the threaded end with the sensor is on the topside of the pipe.
4. Be sure the arrow on the top of the flow sensor is pointing in the direction of flow, and that no glue touches the paddle inside the sensor as it may cause it to jam.



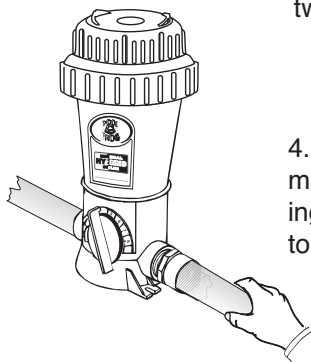
INSTALL THE CYCLOR



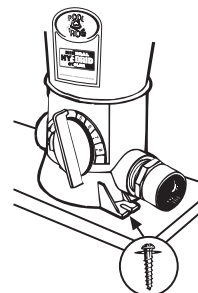
1. Leave 12" to 15" above and around cyclor to allow room for easy replacement of POOL FROG® Mineral Reservoir.

2. Mark two lines on the pipe 7 1/2" (19.5 cm) which is 3" less than the width of the cyclor. Cut with a hacksaw or pipe cutters on the two marks.

3. Following PVC cement directions brush inside of male adapters and to ends of the pipe.



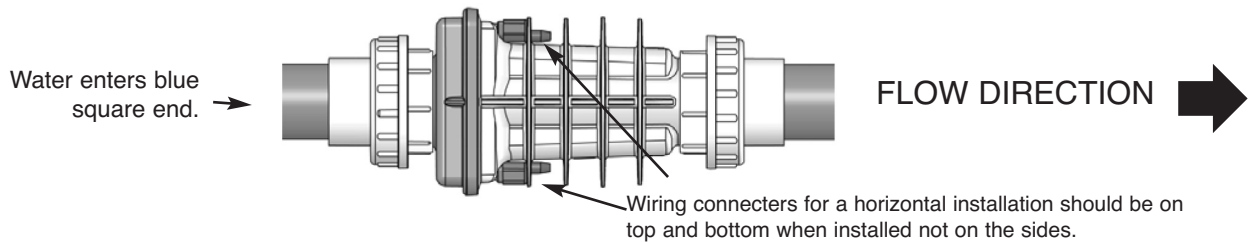
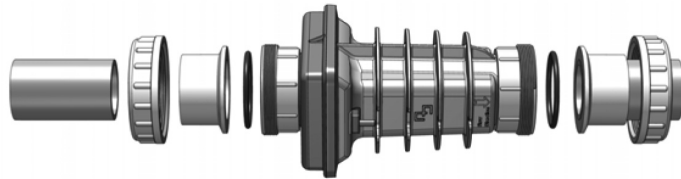
4. Insert PVC pipe into male adapters with a twisting action. Hold in place 5 to 10 seconds to bond.



5. If installing the cell horizontally, the cyclor may be mounted on a board at least 1.5" thick or install two 45° fittings in order to line up properly with the cell. Use pan head screws. Do not over tighten.

INSTALL THE CELL

1. Approximately 15 inches (381 mm) of available pipe length will be needed for horizontal installations of the cell. Vertical installations can be made to take less space.
2. On the pipe where the cell will be installed, mark two lines 11 3/4" (300 mm) apart and cut out using hacksaw or pipe cutters.
3. Make sure water enters the cell from the blue square end and the electrical connectors must be on top and bottom for a horizontal installation.
4. Unscrew and remove the barrel unions (i.e. barrel nuts and slip connections) from either end of the cell. Slide one of the barrel nuts over the pipe and prime and glue its slip connection to the cut pipe.
5. Hold up the cell with the second union to gauge the proper distance before sliding the second nut over the other section of pipe and priming and gluing the second slip connection.
6. After the glue had sufficient drying time, place the cell with the o-rings into the opening between the two ends of the pipe and tighten the unions making sure that the cell is installed with the arrow pointing in the same direction as the flow (i.e. water should enter from the side with the blue cap).

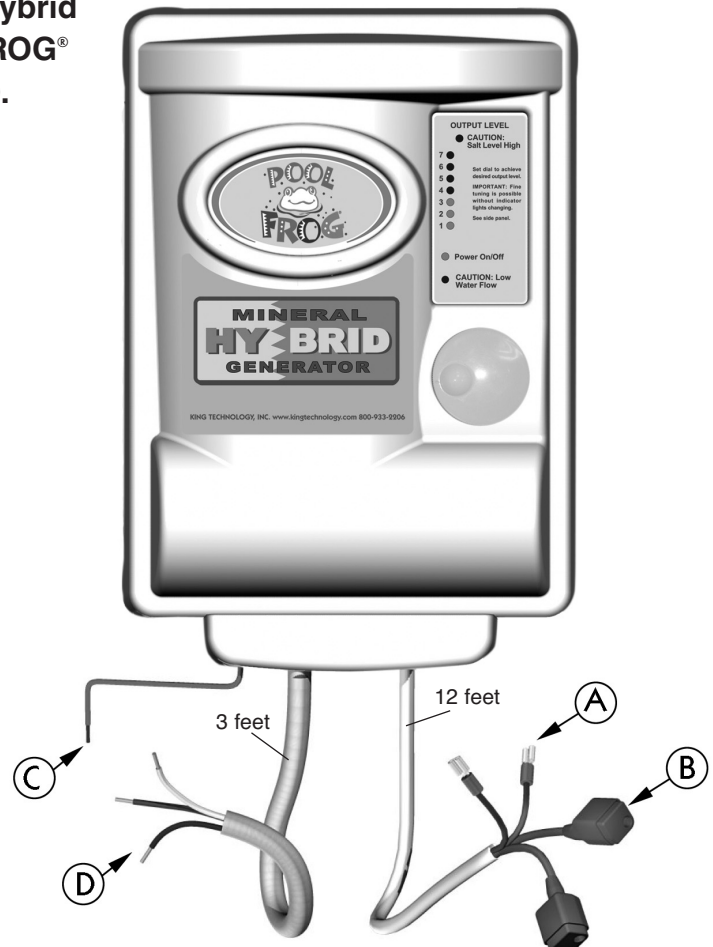


MOUNT THE CONTROL PANEL

There is a specific POOL FROG® Mineral Hybrid Generator Control Panel for each POOL FROG® Mineral Hybrid Cell – Model 6425 and 6440.

1. The control panel must be mounted vertically on a flat surface and a minimum of 5 ft (1.5 meters) horizontal distance (or more, if local codes require) from the pool/spa.
2. Locate a position for your control panel within 10 ft (3 meters) of where the cell will be installed and within 2 ft (.61 meters) of the power supply to ensure enough wire is available.
3. Because the panel acts as a heat sink dispersing heat from inside the panel, do not block the four sides of the control panel. Do Not mount the system inside a panel or tight enclosed area.

- | |
|--------------------|
| A. Flow Sensor |
| B. Cell Connectors |
| C. Bonding |
| D. Power Cord |

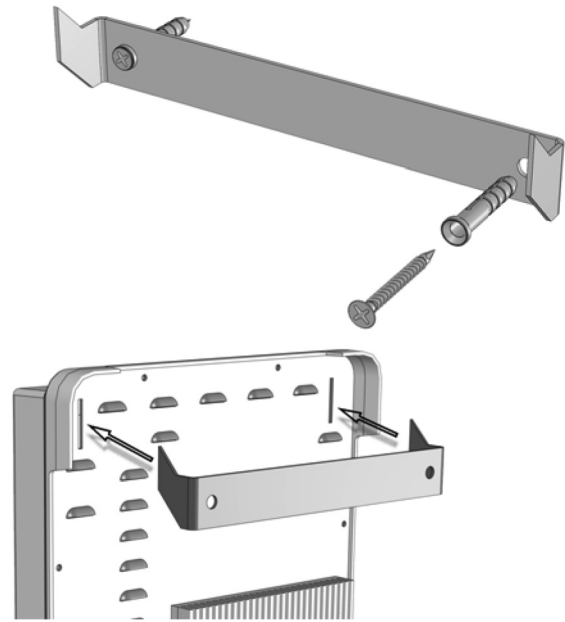


4. Secure the hanging rack on the wall using the enclosed screws and anchors. 1/4" (8 mm) drill bit should be used for the anchor holes.

5. Hang the control panel on the mounted hanging rack.

6. Hardwire the power cable to the time clock as indicated in the instructions below.

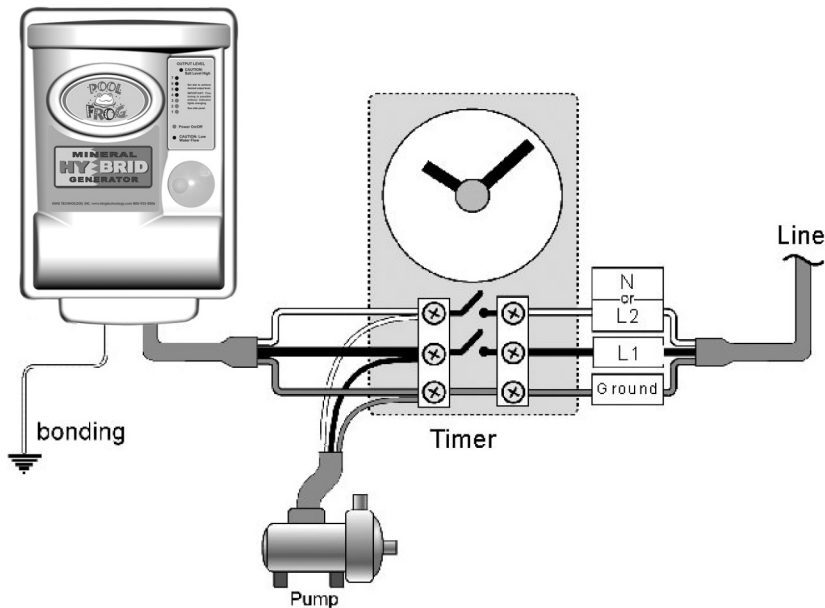
7. Do not extend the cable leading to the cell. This decreases the system's efficiency and will void warranty coverage. Please contact the manufacturer for installations demanding a longer cell cable.



WIRING THE POWER SUPPLY TO STANDARD TIMER

CAUTION: This generator operates on 240 volts. Make sure to wire the system accordingly.

CAUTION: It is critical to wire the chlorine generator in such a way that it can only operate when the pump is operating (i.e. load side). See instructions below for details.



1. Attach the green ground wire to the grounding lug or bar.
2. Connect the black Load wire from the chlorine generator to Load 1 of the time clock.
3. Connect the third wire to Load 2 of the time clock. Bonding is recommended and may be required by local code. The bonding lug is found on the bottom of the control panel.

WIRING THE POWER SUPPLY TO AUTOMATED SYSTEMS

CAUTION: This generator operates on 240 volts. Make sure to wire the system accordingly.

CAUTION: It is critical to wire the chlorine generator in such a way that it can only operate when the pump is operating (i.e. load side). See instructions below for details.

The POOL FROG® Mineral Hybrid can operate with virtually any automated control system as an auxiliary.

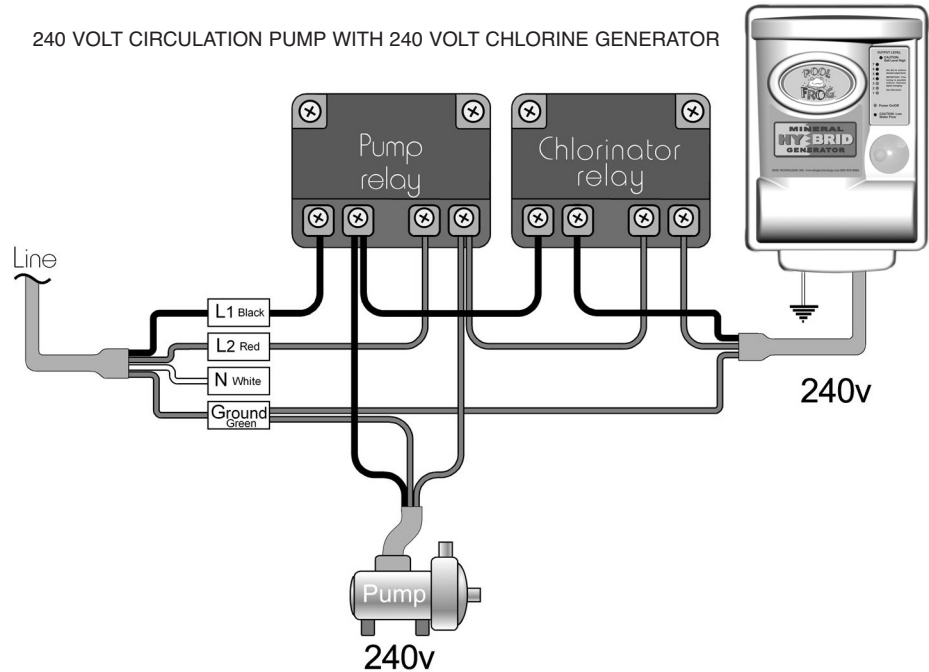
1. Attach the green ground wire to the grounding lug or bar.

2. Connect jumper wires from the Circulation Pump Relay to the Line side of an Auxiliary Relay as depicted in the diagram and in accordance with instructions of the automatic controller manufacturer.

3. Connect the generator control panel to the Load 1 & 2 connectors of the Auxiliary Relay to control the generator's operation.

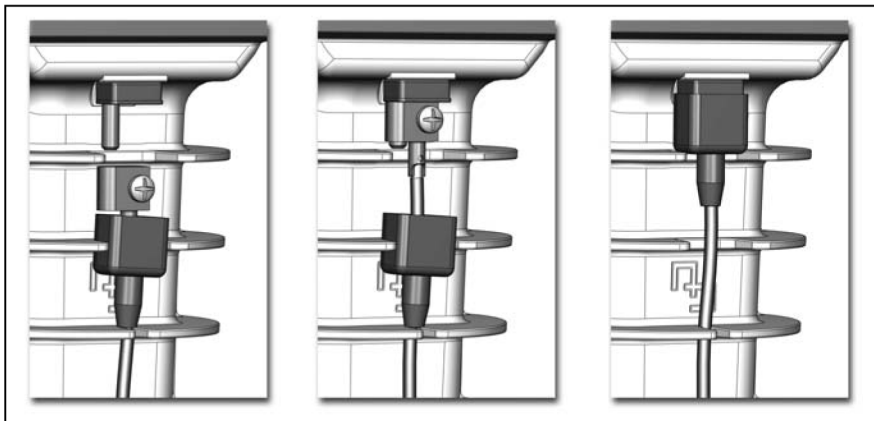
4. Bonding is recommended and may be required by local code. The bonding lug is found on the bottom of the control panel.

5. Set the POOL FROG® Mineral Hybrid Generator Control Panel to Setting #7 (full power), and program the Auxiliary Relay to run the system as needed. (e.g. 100%, 50% or 25% of the time the pump is running).



CELL WIRING

Connect the two black wires from the control panel to the two metal studs on the sides of the cell and tighten firmly with a screwdriver by hand. To avoid damage to the screws, DO NOT use a power screwdriver. Note these wires are interchangeable. Push the plastic terminal covers up to cover the terminal connection until they click into place. This will ensure a watertight connection. Smearing electrical lubricant on these connections helps ease installation and improve the longevity of the connections.



FLOW SENSOR WIRING

Find the two 18 AWG wires with the 1/4" quick connect terminals from the cell cable and push them on their respective connectors on the flow sensor. These wires are interchangeable. Smearing some electrical lubricant on these connections is beneficial.

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