

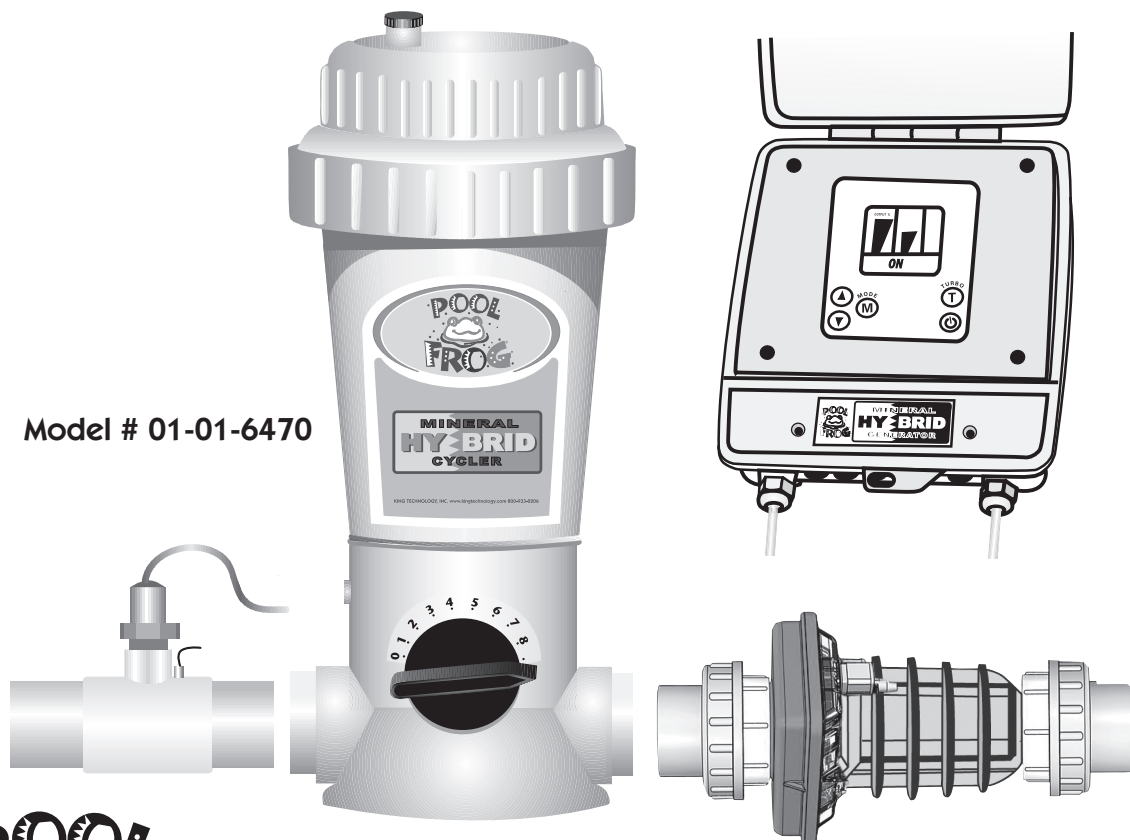
# POOL FROG® Mineral HyBrid

## Installation Manual For Certified Professionals

For best performance, install cyclers with a minimum 4 psi back pressure to ensure proper water flow through the minerals.

### IMPORTANT:

Pump run times of at least 6 hours per day at high speed are recommended for proper performance. If running the pump less than 6 hours per day on high speed, bleed air while the pump is running by unscrewing the cap knob on the Mineral Hybrid Cycler until water appears, then screw the knob back on. Repeat process each time the cap knob is removed.



This is an installation **ONLY** manual for qualified installers.  
A separate operating manual is included for the homeowner.

Customer Service 800-222-0169  
[www.kingtechnology.com](http://www.kingtechnology.com)

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## IMPORTANT SAFETY INSTRUCTIONS

### Read and Follow All Instructions

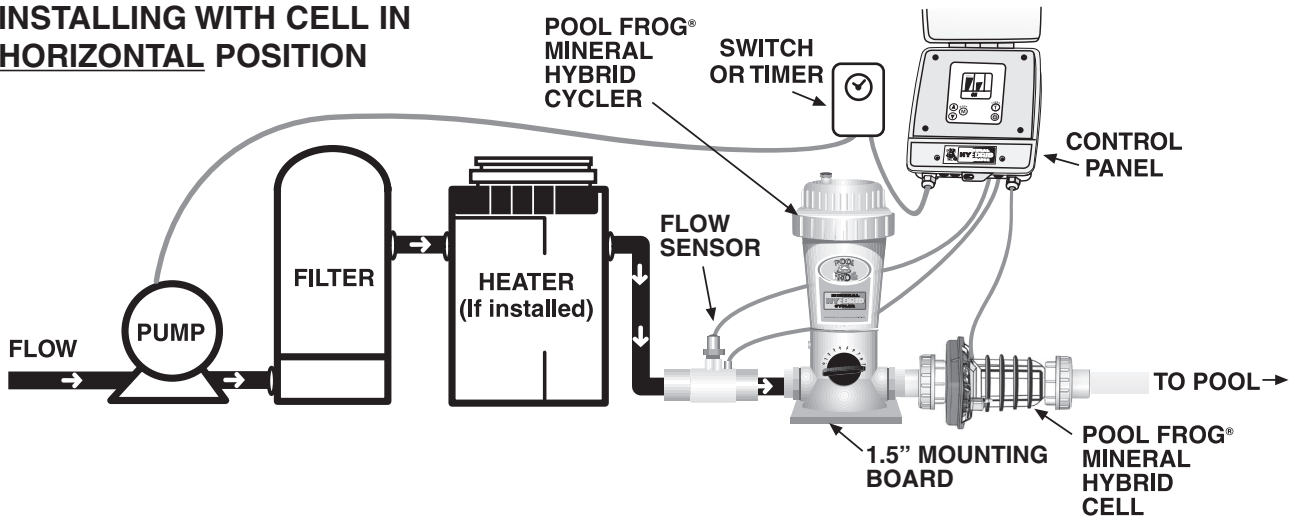
All electrical work must be performed by a licensed electrician and conform to all national, state, and local codes. Improper use or installation can badly harm the unit and its surroundings. When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:.

### DO NOT OPEN THE DISPLAY COVER OF THE BOX – NOT A SERVICABLE UNIT

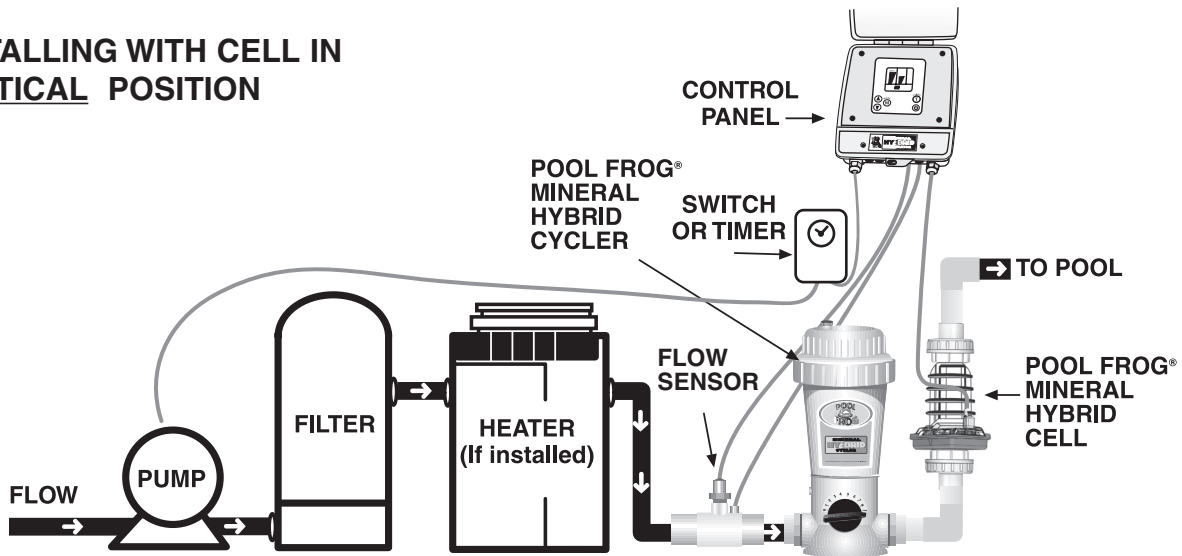
- Disconnect all AC power before installation.
- WARNING – To reduce the risk of injury, do not permit children to use this product.
- The Control Box must be mounted vertically on a flat surface and at a minimum horizontal distance of 5 ft (1.5m) (or more, if local codes so require) from the pool/spa.
- WARNING — Risk of electric shock. Connect only to a grounding type circuit protected by a ground-fault circuit-interrupter (GFCI) outlet. The installer should provide this GFCI requirement. The GFCI should be rated for minimum 6 Amps and 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 electric shock. Do not use this unit. Disconnect unit and have a qualified professional correct the problem before using.
- The Input circuit (LN1 & N/LN1) must be connected only after OVERCURRENT DEVICES, such as fuse or circuit breaker to limit the amperage in the input wire to the maximum that is permitted by the National Electrical Code.
- The Unit must be permanently connected, with copper wire, not less than 1.5 mm (14 Awg).
- The wiring of the unit must be performed according to the wiring instructions on page 9 or on the front box cover.
- A build-up of flammable fumes can result in a hazardous condition if the cell is allowed to operate with out flow. This device 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.
- Ensure that equipment and materials used in or around the pool and spa are compatible with salt-based sanitation systems. Certain materials may be susceptible to salt and chlorine damage.
- 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



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. Pipe adapters (i.e. reducer couplings) if needed for systems with 1 1/2 inch plumbing
8. Power Supply Wire and Stress Relief Bushing

### 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

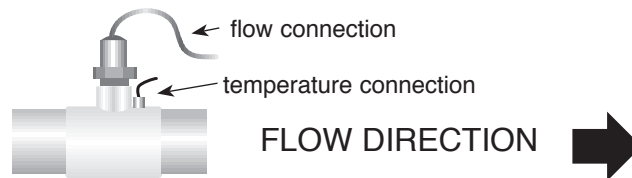
# INSTALLATION / PLUMBING

**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).

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).

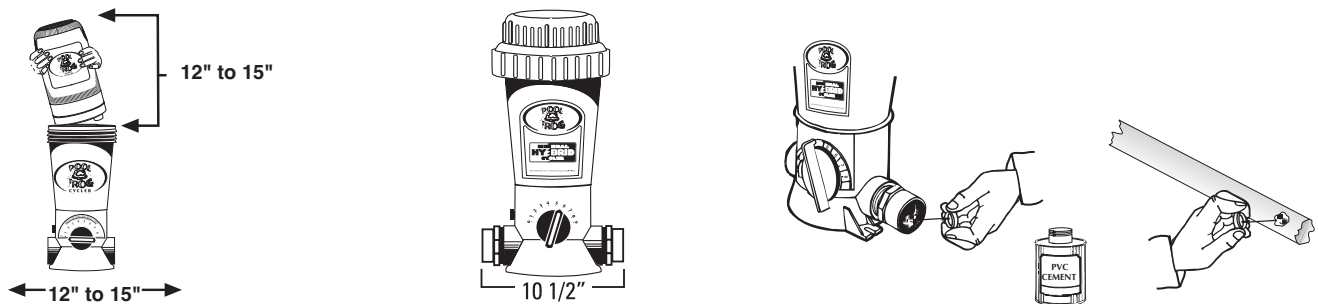
## INSTALLING THE FLOW/TEMP SENSOR

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.



## INSTALLING THE CYCLER

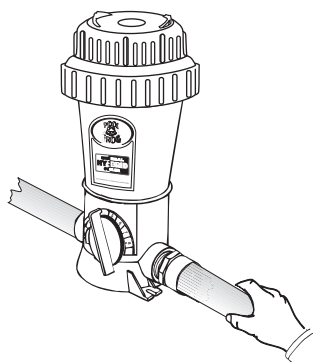
For best performance, install cyclor with a minimum 4 psi back pressure to ensure proper water flow through the minerals.



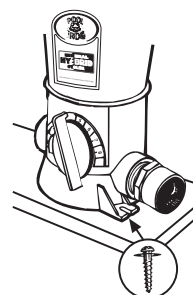
1. Leave 12" to 15" above and around cyclor to allow room for easy replacement of POOL FROG® Mineral Reservoir.

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 the ends of the pipe.



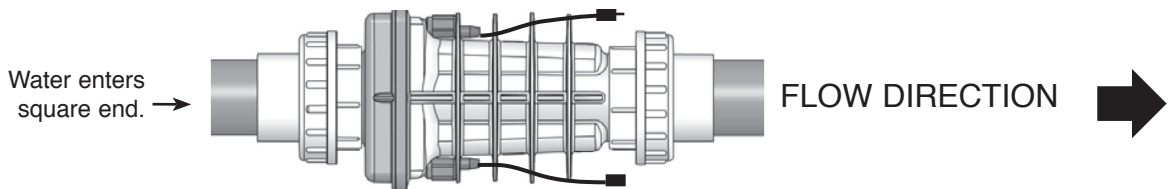
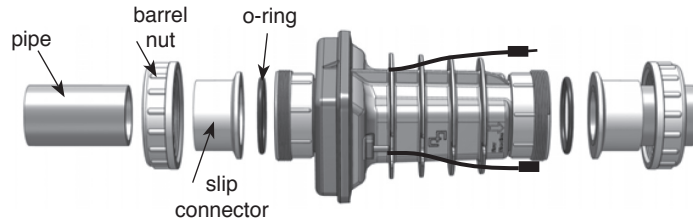
4. Insert PVC pipe into male adapters with a twisting action. Hold in place 5 to 10 seconds to bond.



5. If installing the cell horizontally, the cyclor must 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.

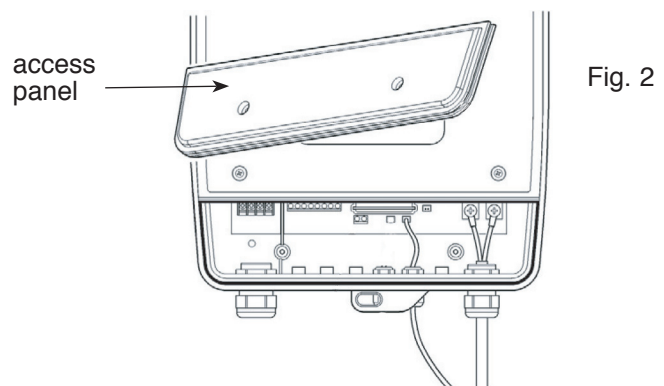
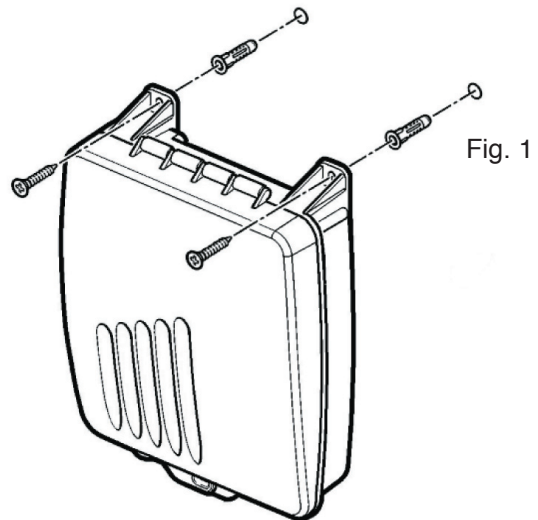
# INSTALLING THE CELL

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 square end.
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 square end).



# MOUNTING THE CONTROL PANEL

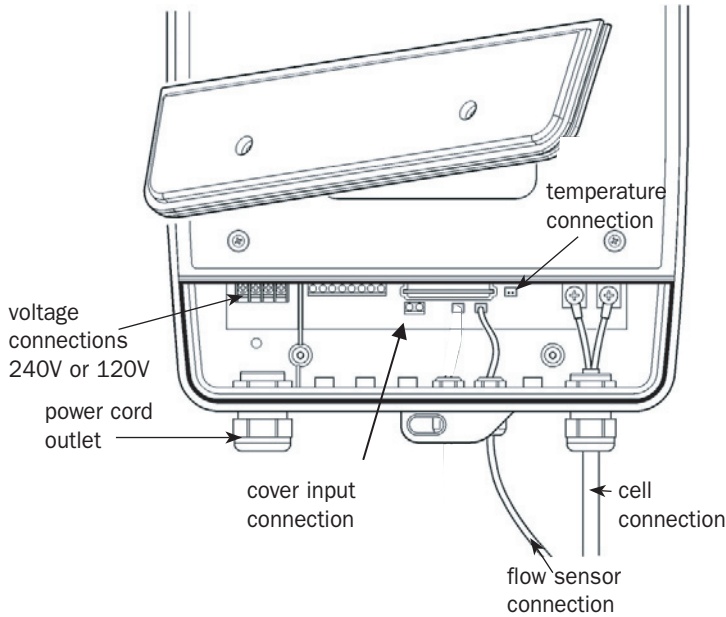
1. The control panel must be mounted vertically on a flat surface and a minimum (horizontal distance) of 5 ft (1.5 meters or more, if local codes require) from the pool/spa.
2. Locate a position for your control panel within 10 ft (3 meters) of where the cell will be installed and within 2 ft (.61 meters) of the power supply.
3. Secure the unit on the wall. See Fig. 1.
4. Open cover and remove the access panel at the lower part of the control panel by removing the two screws that hold it in place. See Fig. 2.
5. See pages 6-7 for wiring diagrams.



**WARNING! Read Carefully.**

Do not mount the system above a heater, inside a panel or tightly enclosed area, this can over-heat and damage the system.

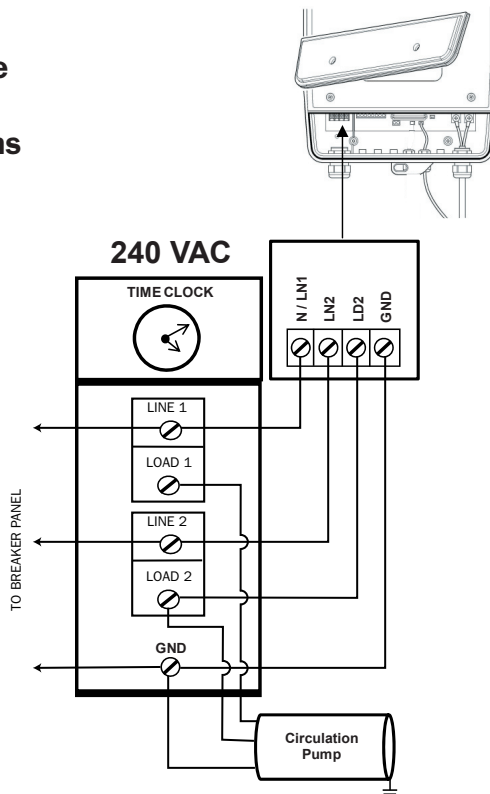
# WIRING



## WARNING: Read Carefully

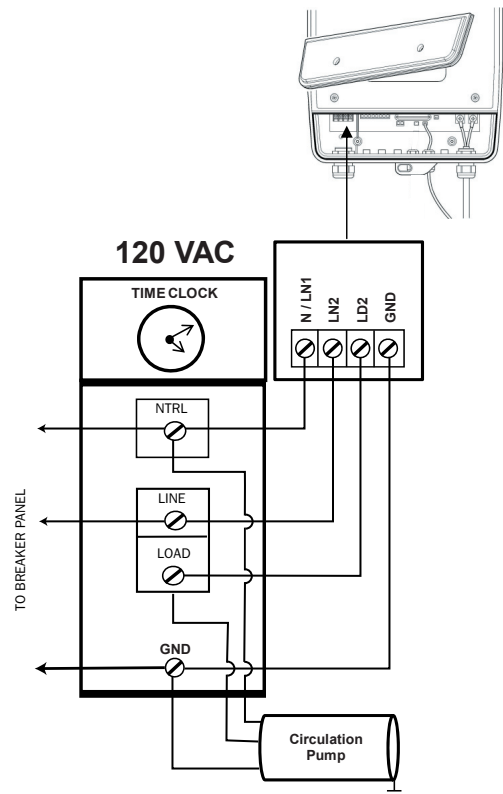
- Disconnect all power supply to the main timer/main power source before hardwiring the input voltage cables to the timer control box.
- Hardwire all accessory equipment: Temp sensor etc., and close the access cover before resupplying main high voltage to the unit.

## 1. Hardwire Voltage Connections



240V wired to Line side of time clock with a separate load wire from load side of clock.

OR



120V wired to Line side of time clock with a separate load wire from load side of clock.

**NOTE: Wiring Rule:** Either diagram above requires four (4) wires connected to the control box:

240V requires 2-lines, 1-load, 1-ground

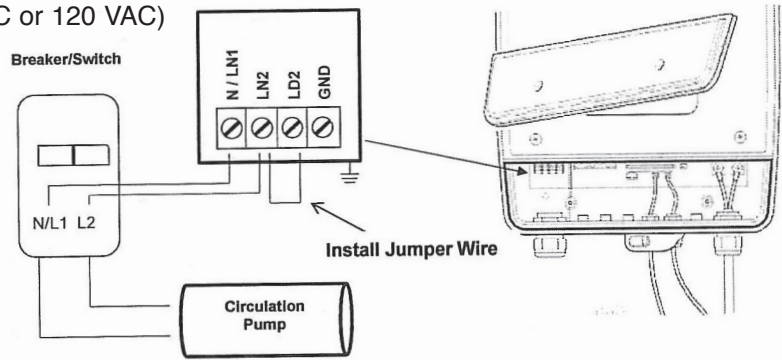
120V requires 1-neutral, 1-line, 1-load, and 1-ground

If connecting to an automatic-control panel, connect the wires to the pool pump relay in the same manner as above.

## 2. Wiring Directly to Breaker/Switch

Jumper wire installed from LN2 to LD2 when a load wire is not available.

(240 VAC or 120 VAC)



## 3. Hardwire Flow Sensor and Cell

• All connections are color coded plugs with matching sockets. (Red, Blue & White)

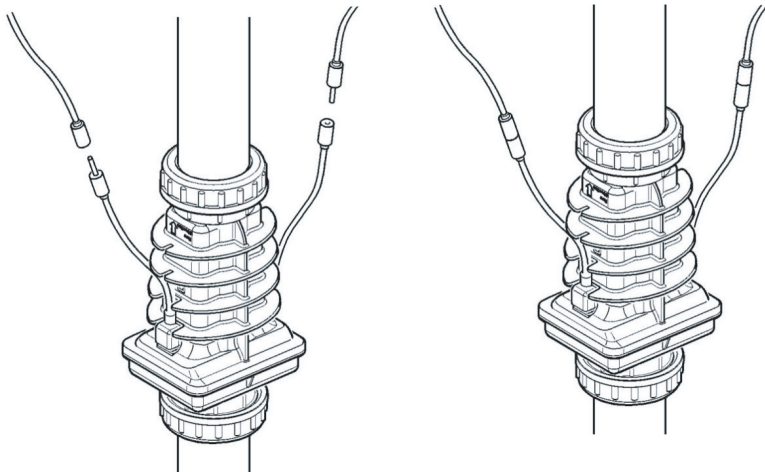
**NOTE:** Stress-relief bushings are already attached to the wire of each accessory. **DO NOT REMOVE** the bushings from the wire.

A. Remove the nut from the bushing then insert the wire and bushing through the Control Panel and tighten the nut to the bushing.

B. Tighten the stress-relief bushings on each.

C. Connect the cell cables as shown below.

Fig. C



**Caution: Do not extend cell cables.**

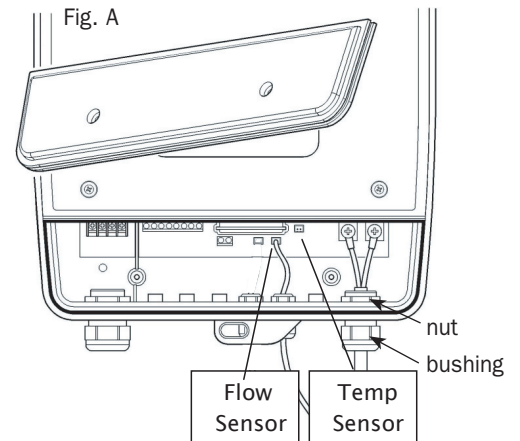
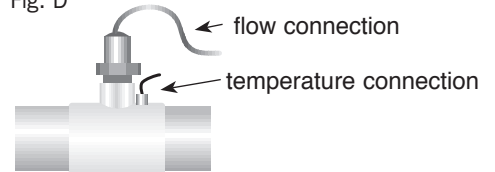


Fig. D

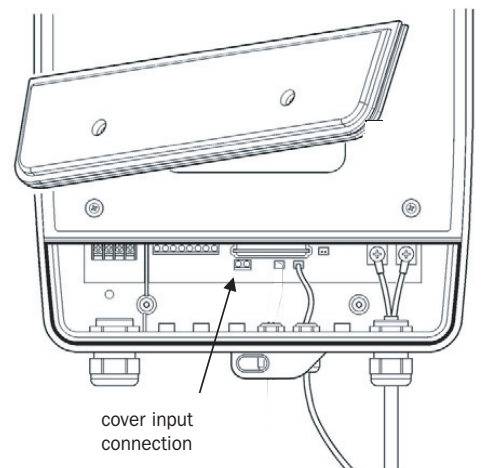


D. Connect the Flow and Temperature connections from the Flow Sensor to the Control Panel.

## Wiring For Advanced Pool Cover Feature

The pool cover function allows the POOL FROG Mineral Hybrid to reduce the chlorine output while the pool is covered. When the pool is covered the generator will automatically reduce chlorine output to 20% from the maximum level and "AUX" note will appear on the display. Pressing ▲ ▼ buttons while the system is in pool cover mode allows you to permanently set new output while the pool is covered. (For example, the default setting is 20%, but you may change the default setting to 40%. The setting will remain 40% for future "pool coverings"). In order to activate this function properly make sure that the chlorine generator is actually getting a "closed" contact from the pool cover control when the pool is covered.

Voltage Connections 240V or 120V



# START-UP PROGRAMMING

Powering up the system for the first time will display the following screen:



SIZE

- Cell—Size will be flashing on the main screen.



5

- Pressing the ▲ ▼ will toggle the available cell size selections between 3" and "5".
- The POOL FROG Mineral Hybrid cell is "5". When "5" is blinking, select it by pressing (M).



COLR

- Cell—Color will now be flashing on the main screen.



ORNG

- Pressing the ▲ ▼ will toggle the available cell color selections from blue to gray to orng. The POOL FROG Mineral Hybrid cell is orange. When orange is blinking, select it by pressing (M).

**NOTE:** If you selected the wrong cell size or color you can go back to this mode by simply holding down the ▲ and ▼ simultaneously until the unit turns off. Pressing the ⏻ will turn the unit back on and the "cell-size" screen will once again be displayed.



**WARNING!** Selecting the wrong cell size may harm the cell plates

## Standby Mode / Installation Test



ST:BY

When the main circulation pump turns off, the system automatically goes into standby mode. This is a safety function that prevents chlorine production without flow to the cell.



MAIN  
ON

Confirm that the system is properly installed by checking that it goes into "ST:BY" mode when the circulation pump is off and into "ON" mode when the circulation pump is on. When turning the generator system on, wait up to 1 minute for the system to test and display the Output % and Salinity readings. A blinking bar in the "Output %" area shows the amount of chlorine the system is trying to produce, while the solid bars show the amount of chlorine the system is actually producing.

**See POOL FROG® Mineral Hybrid Operation Manual  
For Detailed Start-Up and Operating Instructions.**

**KING TECHNOLOGY, INC.**

530 11th Avenue South

Hopkins, MN 55343 USA

952-933-6118 • 800-222-0169 • [www.kingtechnology.com](http://www.kingtechnology.com)

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