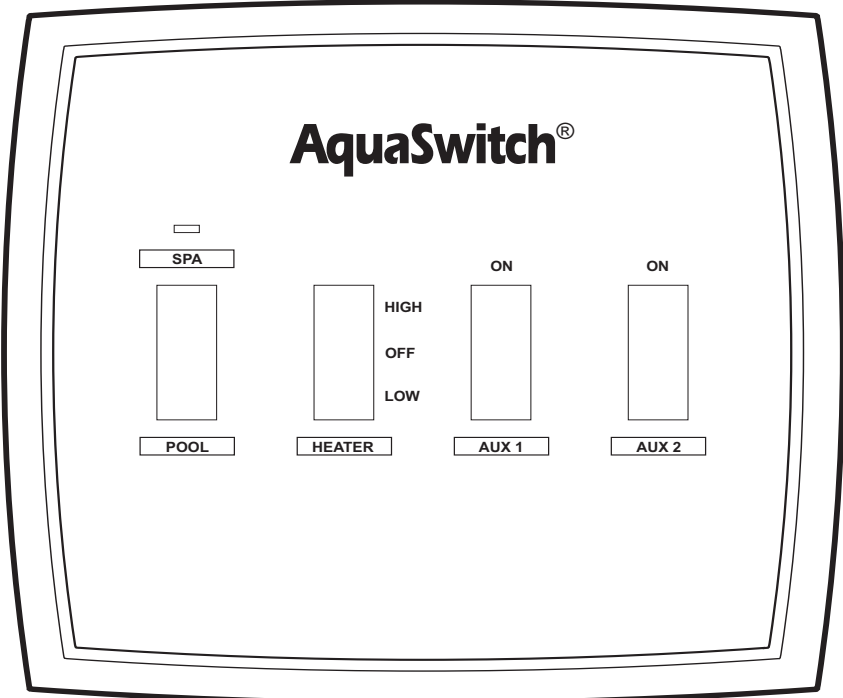


# INSTALLATION MANUAL



# AquaSwitch®



# Important Safety Precautions

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

- 1. READ AND FOLLOW ALL INSTRUCTIONS.**  
**LIRE LA NOTICE TECHNIQUE.**
- 2. DANGER** - to reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.
- All electrical work must be performed by a licensed electrician and must conform to all national, state, and local codes.
- 4. WARNING: Water temperature in excess of 100°F/38°C may be injurious to your health.**  
**AVERTISSEMENT: Il peut être dangereux pour la santé de se plonger dans de l'eau à plus de 38°C/100°F.** Prolonged immersion in hot water may induce hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6° F. The symptoms of hyperthermia include dizziness, fainting, drowsiness, lethargy, and an increase in the internal temperature of the body. The effects of hyperthermia include: 1) unawareness of impending danger; 2) failure to perceive heat; 3) failure to recognize the need to exit spa; 4) physical inability to exit spa; 5) fetal damage in pregnant women; 6) unconsciousness resulting in a danger of drowning.  
**WARNING - The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia in hot tubs and spas. La consommation d'alcool ou de drogue augmente considérablement les risques d'hyperthermie mortelle dans une cuve de relaxation.**
- Install to provide drainage of compartment for electrical components.
- Install at least five (5) feet from the inside wall of the pool and tub.  
Canadian installations must be at least three (3) meters from the water.  
*Les installations canadiennes doivent se trouver à au moins trois (3) mètres de l'eau.*
- A ground-fault circuit-interrupter must be provided if this device is used to control underwater lighting fixtures. The conductors on the load side of the ground-fault circuit-interrupter shall not occupy conduit, boxes or enclosures containing other conductors unless the additional conductors are also protected by a ground-fault circuit-interrupter. Refer to local codes for complete details.
- A terminal bar marked GROUND is provided within the Power Center. To reduce the risk of electrical shock, connect this terminal bar to the grounding terminal of your electric service or supply panel with a continuous green insulated copper wire equivalent in size to the circuit conductors supplying this equipment, but no smaller than No. 12 AWG (3.3 mm<sup>2</sup>). In addition, a second wire connector should be bonded with a No. 6 AWG (4.115 mm) copper wire to any metal ladders, water pipes, or other metal within 5 feet (1.52 m) of the tub.
- CONTROL SYSTEM IS INTENDED TO CONTROL HEATERS WITH BUILT-IN HIGH LIMIT CIRCUITS ONLY.
- 10. PLEASE SAVE THESE INSTRUCTIONS.**

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## SPECIFICATIONS:

POWER SUPPLY: 120 Volts A.C.; 60 Hz.; 3 amps.

CONTACT RATING: (High Volt.) 25 amp; 3 h.p. @ 240 Volts A.C., 1½ h.p. @ 120 Volts A.C.; 1500 Watts Incandescent

CONTACT RATING: (Low Volt.) Class Two, 1 amp at 24 Volts A.C.

EMERGENCY SERVICE SWITCHES: All circuits.

FUSE: 3.15A GMA

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## DIMENSIONS:

**Power Center:**

Height - 13 3/4"; Width - 14 1/2"; Depth - 5".

**Wall Unit Control Panel:**

Height - 5 1/2"; Width - 5 1/2"; Depth - 3/8".

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# Basic Installation

**BASIC INSTALLATION:** (Read instructions completely before beginning installation.)

1. **BE SURE THAT POWER IS TURNED OFF BEFORE WIRING POWER CENTER.**
2. Remove Power Center and brackets from their shipping box. Mount brackets to the back of the Power Center. Secure Power Center to a sturdy surface.
3. Determine the best location for the AquaSwitch (switch plate) and mount a double gang box at this location. If the AquaSwitch switch plate will be installed outdoors, use a weather-tight double gang box. Seal all unused openings at the top and sides of the weather-tight box with silicone sealer and provide a small drain hole (1/8") at the bottom.
4. Run electrical conduit with sweep elbows between the Power Center and the double gang box.
5. Open the Power Center door; unscrew and remove both the faceplate and the Low Voltage Panel which the faceplate covers. The orange transformer connector should already be on "J1" (3-pin). The time clock should already be wired and its switch (not its motor) should be connected to the "F. PUMP" socket (SK1) on the underside of the circuit board.
6. Run 8-conductor wire through conduit between AquaSwitch Wall Unit Control Panel and Power Center. This wire and the cables from the JVAs run through the Low Voltage raceway on left side of Power Center. (See AquaSwitch Wiring Diagram on Page 8.) Do not run high voltage (line power) wires in this raceway.
7. Strip each of the 8-conductor wires no more than 3/8". Follow Wiring Diagram to connect these 8 wires to terminals 1 through 11 (skip terminals 5, 7 and 8).
8. **HEATER WIRING CONNECTIONS**

**Dual Thermostat:** Connect three 18 AWG wires rated for 105 degrees C in parallel with the heater's thermostats (See **Fig. 3 - Dual Thermostat Heater Connection** on Page 7). Set the heater's thermostats to desired pool and spa temperatures and place heater's selector switch in the **OFF** position.

**Single Thermostat:** Connect two 14-18 AWG wires rated for 105 degrees C in series with the heater's thermostats. Turn the heater's thermostat to desired spa temperature and set the selector switch to **ON**. (See **Fig. 4 - Single Thermostat Heater Connection** on Page 7).
9. **JVA 2440** - Mount JVAs on Intake, Return and Cleaner (if applicable) valves and feed wire through low voltage raceway to the circuit board. Plug in cord according to Wiring Diagram.
10. Wire the filter pump and other high voltage equipment to the relay contacts as shown in the Wiring Diagram on Page 8 for the Aux 1 Relay (Line, Load for 120 VAC - Line 1, Load 1, Line 2, Load 2 for 220 VAC). Plug relay coil wires into appropriate relay sockets. For example, plug the coil wires connected to the relay controlling the filter pump into the F. PUMP socket. Connect equipment grounds, and wire system power to 120 VAC.
11. **AquaSwitch Connection** - Go to the double gang box location, strip each of the 8 wires and using wire nuts, connect them to the rocker switches per the Wiring Diagram on Page 8. Install the AquaSwitch switch plate with the gasket seal (see gasket seal installation instructions on Page 6) into double gang box. Do not put on decal until testing has been completed.
12. Close panel, turn on power and test system, including rocker switches at the AquaSwitch switch plate. Set the time clock(s) by rotating clocks clockwise only.

# Installation of Optional Equipment

**NOTE:** When using a *Series 1, 2™*, or *Lite™* Dual Thermostat Heater, a remote wiring harness, Part No. 7522 (included with the AquaSwitch) must be installed, to switch thermostats connected to the system.

## **INSTRUCTIONS FOR INSTALLING OPTIONAL OR UNCOMMON EQUIPMENT:**

- *To install a second time clock (Part Number 7152):*  
A second time clock can control the spa switch-over, pool cleaner pump, pool cleaner JVA or either of the auxiliary circuits. If a second time clock is installed, plug its switching wires into the appropriate socket, according to the desired function (marked on the circuit board). (See **Fig. 1 - Back View of Circuit Board**, Page 5).
- *Electric Heater socket and TB2 (for use with a high voltage electric heater or heat pump):*  
The Electric Heater socket and TB2 are used only if a high voltage electric heater or heat pump with a 120 VAC thermostat is installed. If so, plug the coil wires for the relay which will drive that heater into this socket. Connect the two wires from the HEATER switch (middle and upper terminals) on the AquaSwitch Wall Unit Control Panel to TB2; do this instead of using the HEATER switch wiring shown on the Wiring Diagram on Page 8. In this case, TB1 pins 9 through 14 will have no wires connected to them (See **Fig. 1 - Back View of Circuit Board**, Page 5).
- *Heater Cool Down Option (JP1):*  
Normally, the filter pump is kept running for about 5 minutes, after the SPA switch is turned off, or after the filter pump time clock turns off. This allows the heater to cool down safely. If this is not needed (for use with heat pumps or electric heaters which do not retain residual heat), move the slide-on jumper to pins 1 and 2 of JP1; in that position, the filter pump turns off immediately. JP1 is located on the back side of the circuit board, near the corner by the Electric Heater socket (See **Fig. 1 - Back View of Circuit Board**, Page 5).
- *Freeze Protection:*  
Mount the Freeze Sensor in the Low Voltage raceway, as per instructions included in Freeze Sensor Kit, Part No. 7026. Without letting the capillary tube of the Freeze Sensor kink or bend, carefully uncoil and extend it outside through the knockout hole at the bottom of Power Center. Connect Freeze Sensor switch to terminals 7 and 8 on TB1. (See **AquaSwitch Wiring Diagram** on Page 8 for location of TB1.) A second Freeze Sensor Kit (Part No. 7026) is needed if Auxiliary equipment needs to be protected.
- *Pressure-Side Non-Booster Pump Cleaner:*  
When installing a non-booster pump cleaner, you will need an additional JVA, Part Number 4424. Plug it into the cleaner JVA socket (See **AquaSwitch Wiring Diagram** on Page 8). The Cleaner JVA is switched either by the cleaner time clock socket or from an auxiliary on the switch plate, if it is wired to TB1, Pin 5. Set the JVA so that the pool cleaner is off. When the cleaner time clock engages, the valve will open. When the SPA is engaged and the cleaner is on, the AquaSwitch will automatically close the cleaner JVA and turn off the cleaner booster pump.

**NOTE:** To allow the pool cleaner to operate less time than the filter pump, you will need to install a second time clock, Part No. 7152, and a relay, Part No. 6581. Remove the jumper between pins 5 and 8 on the TB1 if a cleaner time clock is installed.

# Back View of Circuit Board

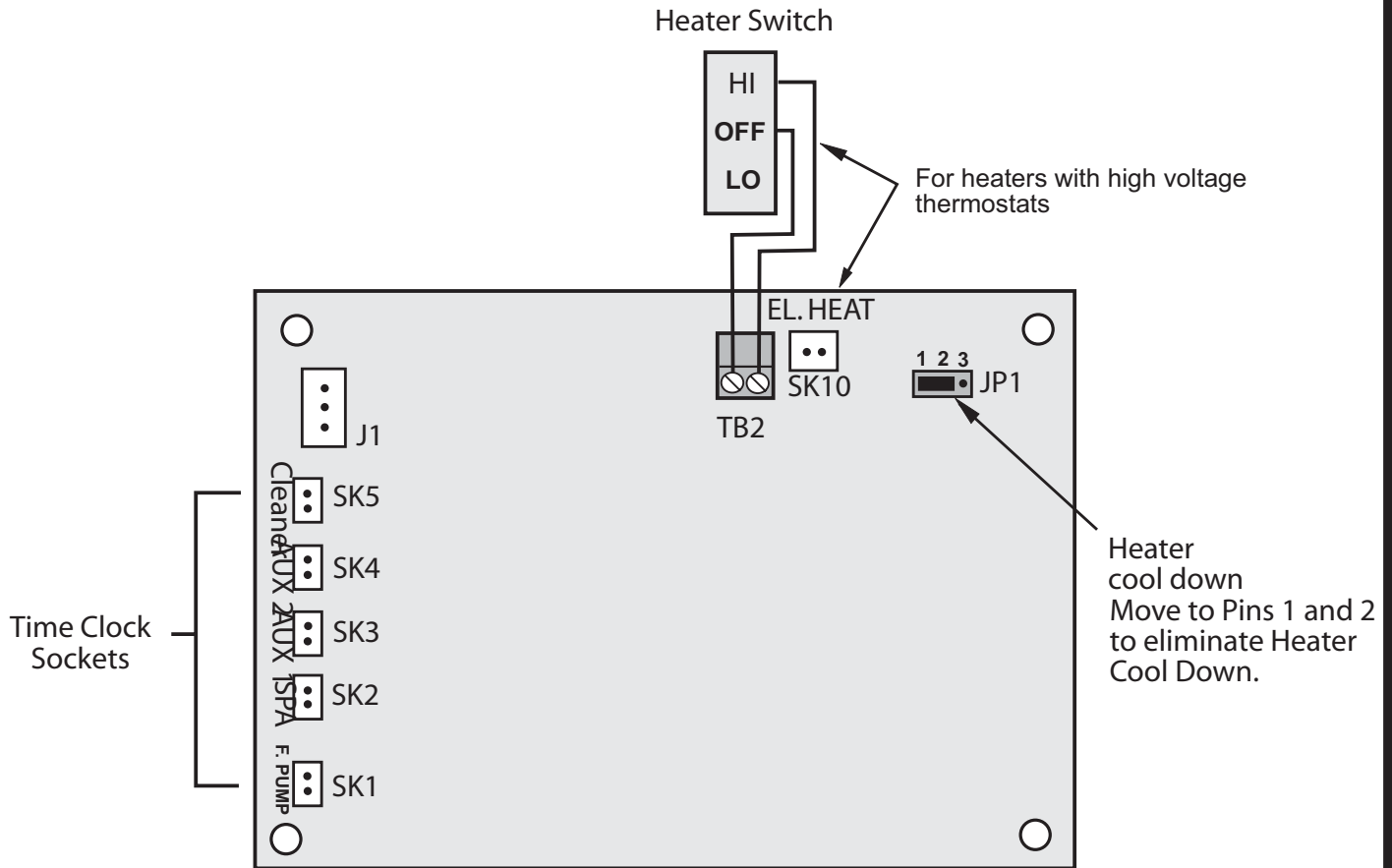


Figure 1. Back View of Circuit Board

## FUNCTIONS OF POWER CENTER SWITCHES:

### **FILTER PUMP Switch -**

- AUTO** Allows normal control of the pump by the time clock, and by a user at the Wall Unit Control Panel (SPA switch position turns on the filter pump, in addition to turning the valves).
- OFF** Keeps the filter pump off. This means the pump cannot be turned on by SPA switch, time clock, cleaner selection, **or even by the Freeze Sensor**. Switching to this **OFF** position also interrupts the Heater Cool Down function, if that is currently keeping the pump on.
- MANUAL** Turns the pump on directly.

**NOTE:** The heater cannot be turned on from the filter pump switch. The time clock must be engaged in order to heat the pool.

### **VALVES Switch -**

- AUTO** Allows normal control of the JVA's from the Wall Unit Control Panel.
- SPA** Turns Intake and Return Valves to the SPA position, but does not turn on the pump.
- DRAIN** Turns the Intake Valve (taking water from the spa) but not the Return Valve.
- FILL** Turns the Return Valve (returning water from the pump to the spa) but not the Intake.

Both these slide switches should normally be left in the **AUTO** position.

# Gasket Seal Installation

## Installing the Gasket Seal Inside the AquaSwitch Switch Plate

If mounting Wall Unit Control Panel indoors, place the black gasket seal inside the switch plate (with cutout for LED facing towards top of unit) before securing switch plate to wall. After switch plate has been attached to the wall with four screws, tear off outer perforated edge of gasket seal extending outside the switch plate.

If the unit is to be installed outdoors, place the gasket seal inside the switch plate and tear off excess material at inner perforation. Be sure cutouts for the drain holes are located at the bottom of switch plate and LED cutout is at the top. Turn the switch plate over and attach to outlet box with four screws.

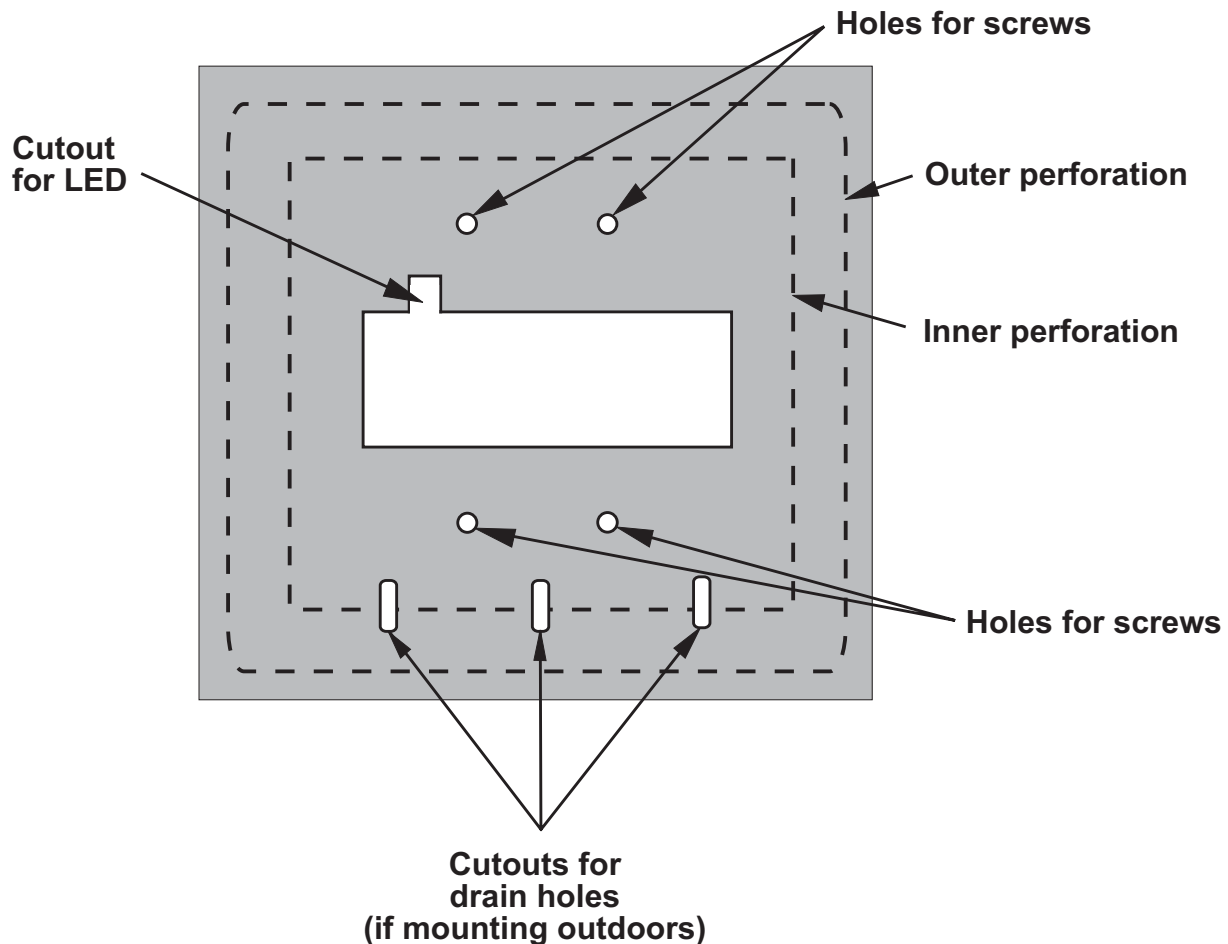


Figure 2. Gasket Seal for Switch Plate



# Heater Wiring Guidelines

## GENERAL HEATER WIRING GUIDELINES

### Electric Heaters and Heat Pumps

The instructions on this page are for low voltage heaters. DO NOT attempt to connect a heater with a high voltage (110 or 220 VAC) thermostat into the low voltage heater terminal bar (See Page 4 for installing high voltage heaters).

### DUAL THERMOSTAT GAS HEATER CONNECTION (Millivolt or electric ignition)

#### At the Heater:

Connect three 18 AWG wires in parallel with the heater toggle switch. DO NOT disconnect or bypass the pressure or limit switches.

Place the heater toggle switch in the OFF position and set the thermostats to the desired temperatures for pool and spa.

#### At the AquaSwitch:

Connect the three wires from the heater into the 14-pin terminal bar as follows: High thermostat into terminal 12, Common of the heater into terminal 13, and Low thermostat into terminal 14.

### SINGLE THERMOSTAT GAS HEATER CONNECTION (Millivolt or electronic ignition)

#### At the Heater:

Connect two 18 AWG wires in series with the heater circuitry as if you were wiring a Fireman's Switch or heater delay. DO NOT disconnect or bypass the pressure or limit switches.

Place the heater toggle switch in the ON position and set the thermostat to the desired temperature.

#### At the AquaSwitch:

Connect the two wires from the heater to terminals 12 and 13 of the 14-pin terminal bar.

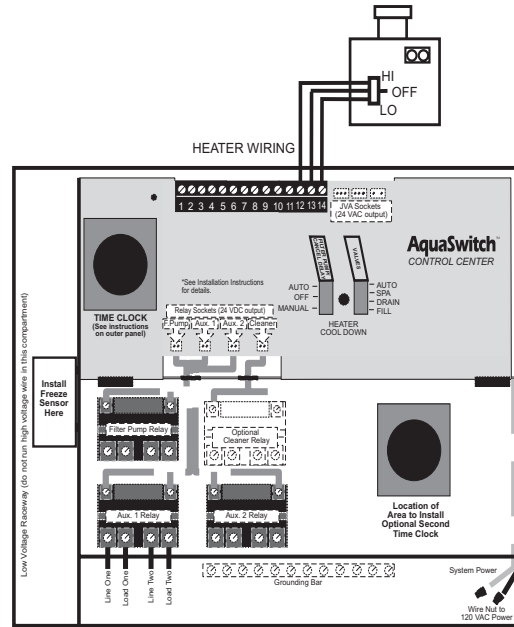


Figure 3. Dual Thermostat Heater Connection

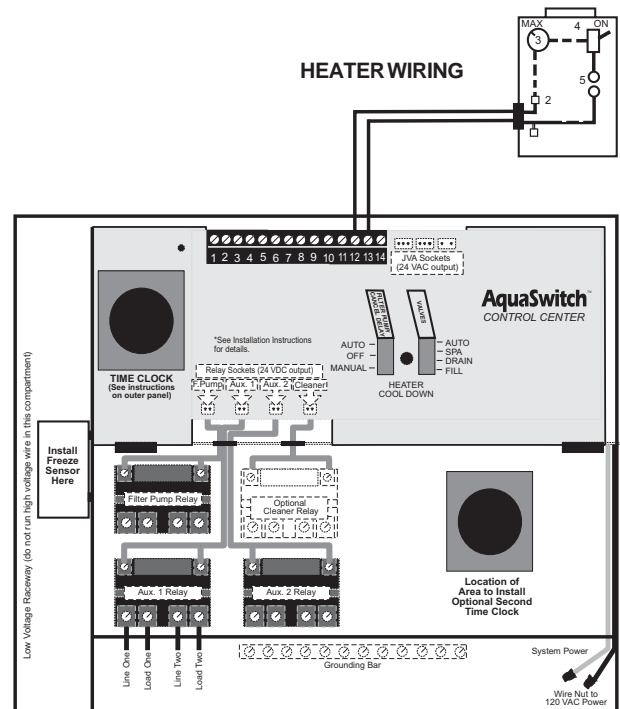
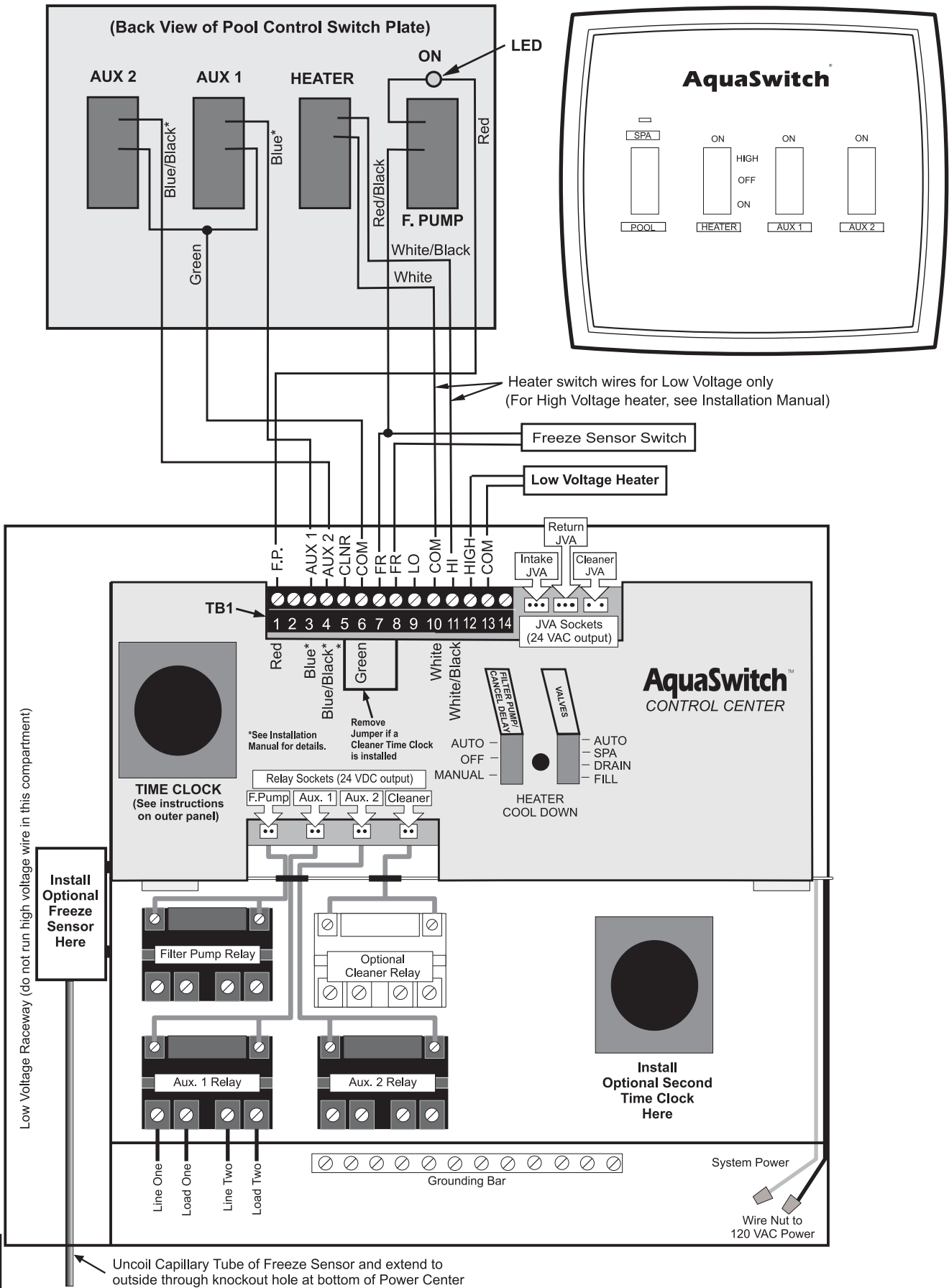


Figure 4. Single Thermostat Heater Connection

**NOTE:** Some heaters require a remote wiring harness; check with the heater manufacturer to determine if this is needed.

For *Jandy* Heaters, use Remote Wiring Harness Part No. 7522, included with AquaSwitch. The connections are as follows: black wire into terminal 13, red wire into terminal 12, yellow wire into terminal 14.

# AquaSwitch® Wiring Diagram



# Notes

## LIMITED WARRANTY

Thank you for purchasing Jandy<sup>fi</sup> pool and spa products. Jandy Pool Products, Inc. warrants all parts to be free from manufacturing defects in materials and workmanship for a period of one year from the date of retail purchase, with the following exceptions:

AquaLink<sup>fi</sup> RS units installed with Jandy Surge Protection Kits will be covered for two years.

NeverLube<sup>fi</sup> valves are warranted for the life of pool and/or spa on which they were originally installed.

AquaPure™ Electronic Chlorine Generator Electrolytic Cells carry a 5 year limited warranty on a prorated basis.

This warranty is limited to the first retail purchaser, is not transferable, and does not apply to products that have been moved from their original installation sites. The liability of Jandy Pool Products, Inc. shall not exceed the repair or replacement of defective parts and does not include any costs for labor to remove and reinstall the defective part, transportation to or from the factory, and any other materials required to make the repair. This warranty does not cover failures or malfunctions resulting from the following:

1. Failure to properly install, operate or maintain the product(s) in accordance with our published Installation, Operation and Maintenance Manuals provided with the product(s).
2. The workmanship of any installer of the product(s).
3. Not maintaining a proper chemical balance in your pool and/or spa [pH level between 7.2 and 7.8, Total Alkalinity (TA) between 80 to 120 ppm, Total Dissolved Solids (TDS) less than 2000 not including salt ppm].
4. Abuse, alteration, accident, fire, flood, lightning, rodents, insects, negligence or acts of God.
5. Scaling, freezing, or other conditions causing inadequate water circulation.
6. Operating the product(s) at water flow rates outside the published minimum and maximum specifications.
7. Use of non-factory authorized parts or accessories in conjunction with the product(s).
8. Chemical contamination of combustion air or improper use of sanitizing chemicals, such as introducing sanitizing chemicals upstream of the heater and cleaner hose or through the skimmer.
9. Overheating; incorrect wire runs; improper electrical supply; collateral damage caused by failure of O-Rings, DE grids, or cartridge elements; or damage caused by running the pump with insufficient quantities of water.

### LIMITATION OF LIABILITY:

This is the only warranty given by Jandy Pool Products, Inc. No one is authorized to make any other warranties on behalf of Jandy Pool Products, Inc. **THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY. JANDY POOL PRODUCTS, INC. EXPRESSLY DISCLAIMS AND EXCLUDES ANY LIABILITY FOR CONSEQUENTIAL, INCIDENTAL, INDIRECT OR PUNITIVE DAMAGES FOR BREACH OF ANY EXPRESSED OR IMPLIED WARRANTY.** This warranty gives you specific legal rights. You may also have other rights which vary by state or province.

### WARRANTY CLAIMS:

For prompt warranty consideration, contact your dealer and provide the following information: proof of purchase, model number, serial number and date of installation. The installer will contact the factory for instructions regarding the claim and to determine the location of the nearest designated service center. If the dealer is not available, you can locate a service center in your area by visiting [www.jandy.com](http://www.jandy.com) or by calling our technical support department at (707) 776-8200 extension 260. All returned parts must have a Returned Material Authorization number to be evaluated under the terms of this warranty.

