



AquaLink[®] RS

All Button and OneTouch[™] Control Systems

Installation Manual

Pool/Spa Combination Systems
and Pool/Spa Only Systems



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Safety Information


1. Important Safety Information

1.1. READ AND FOLLOW ALL INSTRUCTIONS.

Lire la notice technique.


- 1.2.  **DANGER-** To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

- 1.3. All electrical work must be performed by a licensed electrician and must conform to all national, state, and local codes.

- 1.4.  **WARNING-** Water temperature in excess of 100°F/38°C may be injurious to your health.

AVERTISSEMENT: *Des Températures de l'eau supérieures à 38°C/100°F peuvent présenter un danger pour la santé.*

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 include dizziness, fainting, drowsiness, lethargy, and an increase in the internal temperature of the body. The effects of hyperthermia include unawareness of impending danger, failure to perceive heat, failure to recognize the need to exit the spa, physical inability to exit the spa, fetal damage in pregnant women, and 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 & spas. *La consommation d'alcool ou de drogue augmente considérablement les risques d'hyperthermie mortelle dans une cuve de relaxation.*

- 1.5. Install to provide drainage of compartment for electrical components.

- 1.6. Install the Power Center at least five (5) feet (152.4cm) from the inside wall of the pool and/or hot 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.*

- 1.7. 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.

- 1.8. 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 (3.3mm). In addition, a second wire connector should be bonded with a No. 8 AWG (4.115mm) copper wire to any metal ladders, water pipes, or other metal within five (5) feet (1.52m) of the tub.

- 1.9. **CONTROL SYSTEM IS INTENDED TO CONTROL HEATERS WITH BUILT-IN HIGH LIMIT CIRCUITS ONLY.**

- 1.10 PLEASE SAVE THESE INSTRUCTIONS.

System Overview

1. Package Contents

Package contents will depend on which AquaLink RS System you are installing. All Jandy AquaLink RS Systems come complete with the appropriate number of 3HP relays needed.

Control System Sub-Assemblies		
All Button	OneTouch	Wireless OneTouch
   <p>All Button Control Panel, Power Center PCB, Two (2) Temp Sensors, Additional Relays, Two (2) JVAs (Pool/ Spa Combo Systems)</p>	   <p>OneTouch Control Panel, Power Center PCB, Two (2) Temp Sensors, Additional Relays, Two (2) JVAs (Pool/ Spa Combo Systems)</p>	   <p>Wireless OneTouch Control Panel, Outdoor Transceiver J-box, Power Center PCB, Two (2) Temp Sensors, Additional Relays, Two (2) JVAs</p>
Power Centers		
 <p>Standard Power Center (with mounting brackets)</p>		 <p>Sub-Panel Power Center (with mounting brackets)</p>

System Overview

2. System Component Specifications and Dimensions

Specifications (USA and Canada):

Power Supply: 120 VAC; 60 Hz; 3 A
 Contact Rating: High voltage - 25 A; 3HP @ 240 VAC
 1½ HP @ 120 VAC
 1500 Watts Incandescent
 Low Voltage - Class Two, 1 A @ 24 VAC

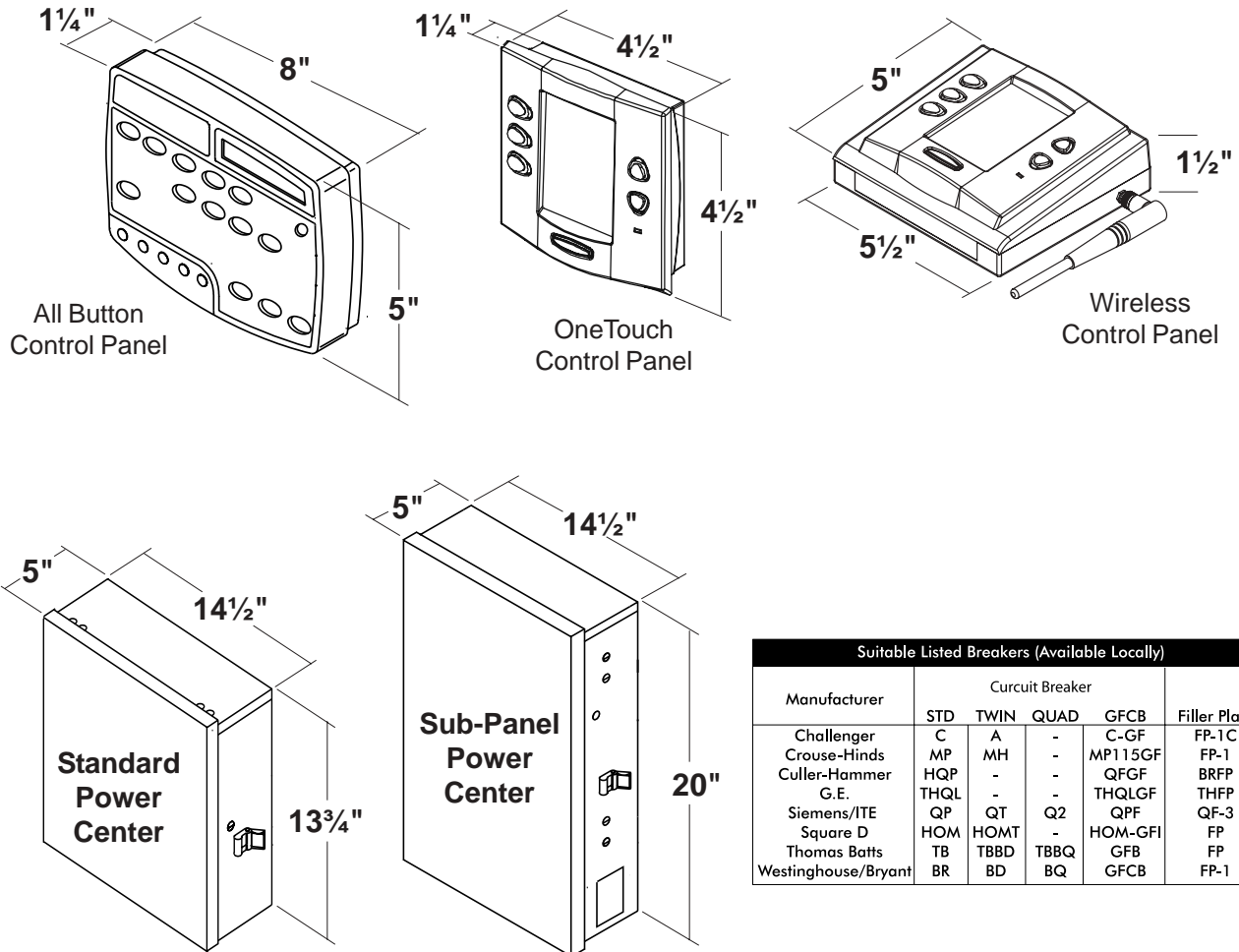
Emergency Service Switch: All Circuits (located at Power Center in Service Mode)

Specifications (European):

Power Supply: 230-240VAC; 50/60 Hz; 3 A
 Contact Rating: High voltage - 25 A; 3HP @ 240 VAC
 Low Voltage - Class Two, 1 A @ 24 VAC

Emergency Service Switch: All Circuits (located at Power Center in Service Mode)

Dimensions:



Suitable Listed Breakers (Available Locally)					
Manufacturer	Circuit Breaker				Filler Plate
	STD	TWIN	QUAD	GFCB	
Challenger	C	A	-	C-GF	FP-1C
Crouse-Hinds	MP	MH	-	MP115GF	FP-1
Culler-Hammer	HQP	-	-	QFGF	BRFP
G.E.	THQL	-	-	THQLGF	THFP
Siemens/ITE	QP	QT	Q2	QPF	QF-3
Square D	HOM	HOMT	-	HOM-GFI	FP
Thomas Batts	TB	TBBD	TBBQ	GFB	FP
Westinghouse/Bryant	BR	BD	BQ	GFCB	FP-1

System Overview

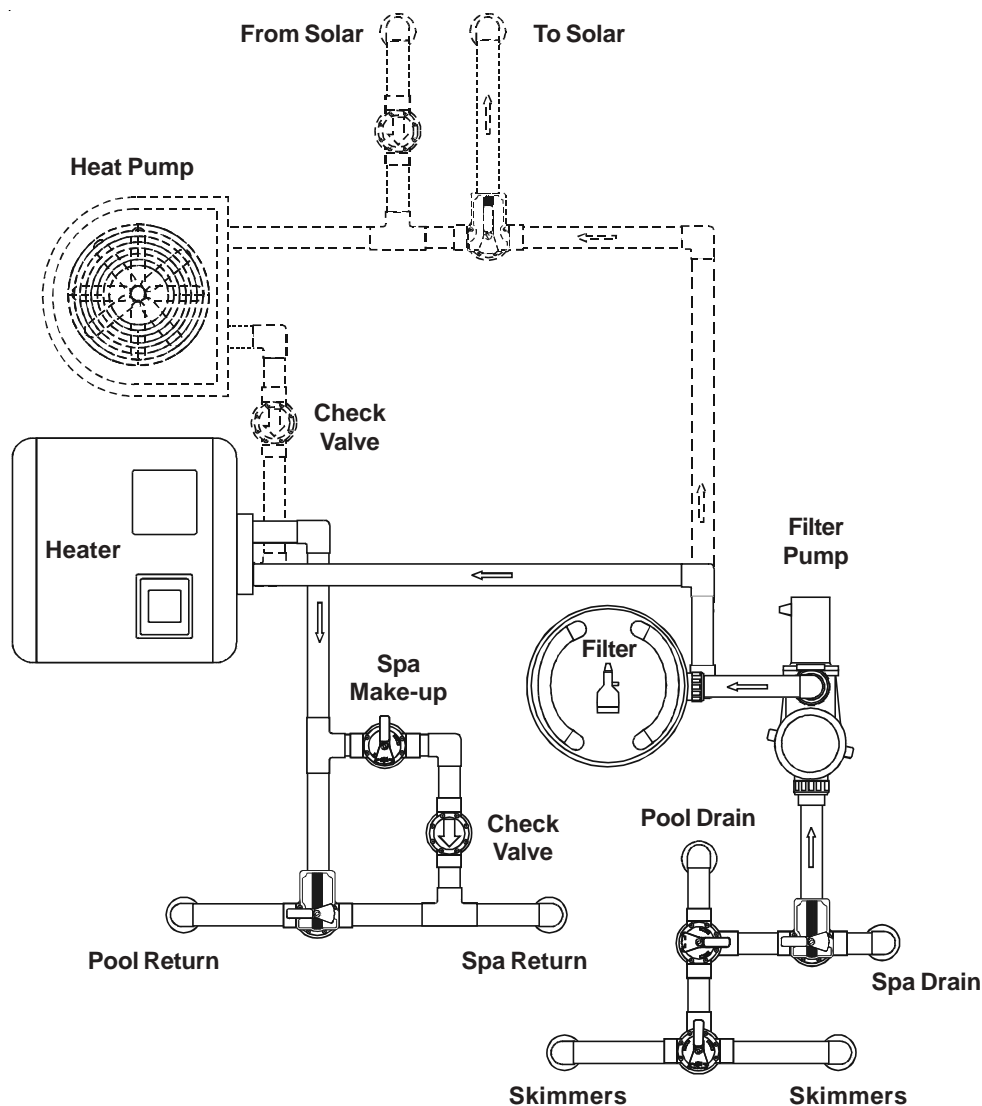
3. Basic Plumbing

3.1. This is a simplified version of a standard plumbing setup for a pool and spa that share the same filter pump, filter, and heater. The intake and return JVA's turn simultaneously so when the Spa button is pressed on the AquaLink RS Control Panel, water circulation switches between pool and spa (consult the Jandy JVA Installation Manual to ensure that the JVA's are "in sync" and rotate properly). Please consult the Jandy Valve Plumbing Manual for further examples of pool/spa plumbing.

Please note that if you have a pool only or a spa only, the diagram does not apply, and if your pool and spa have separate sets of equipment, you should install an AquaLink RS Dual Equipment model, designed to control separate equipment sets.

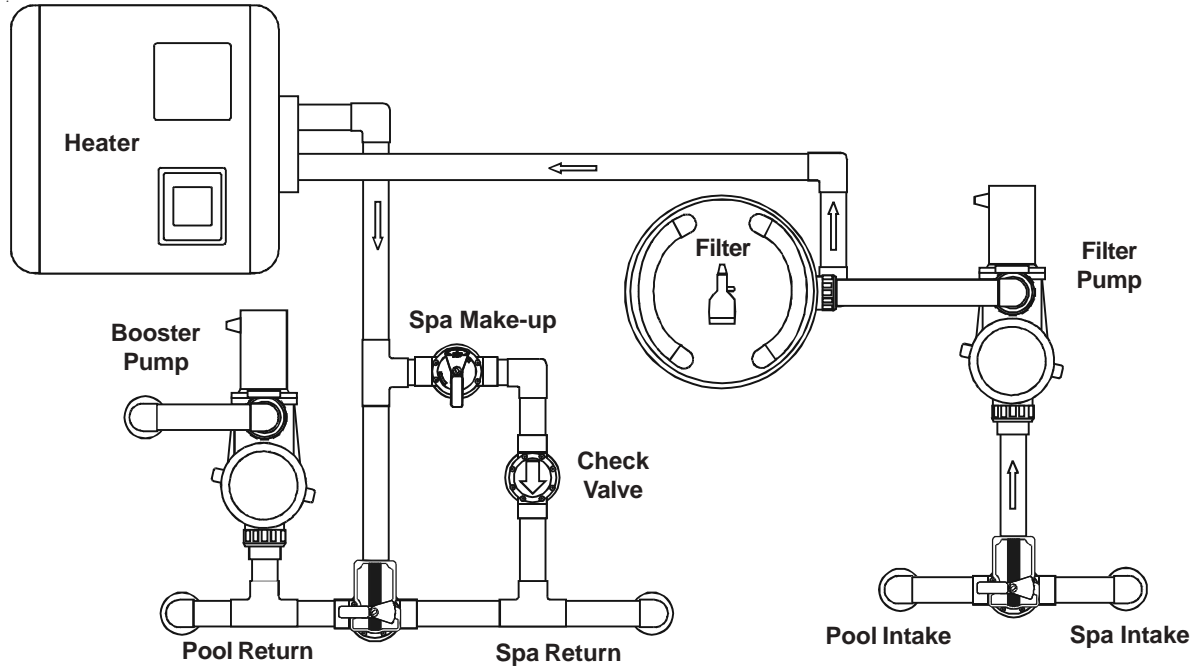
Note: When the filter system is shared (a Pool/Spa Combo), the spa water must be able to overflow back to the pool.

Plumbing for Pool and Spa Combination

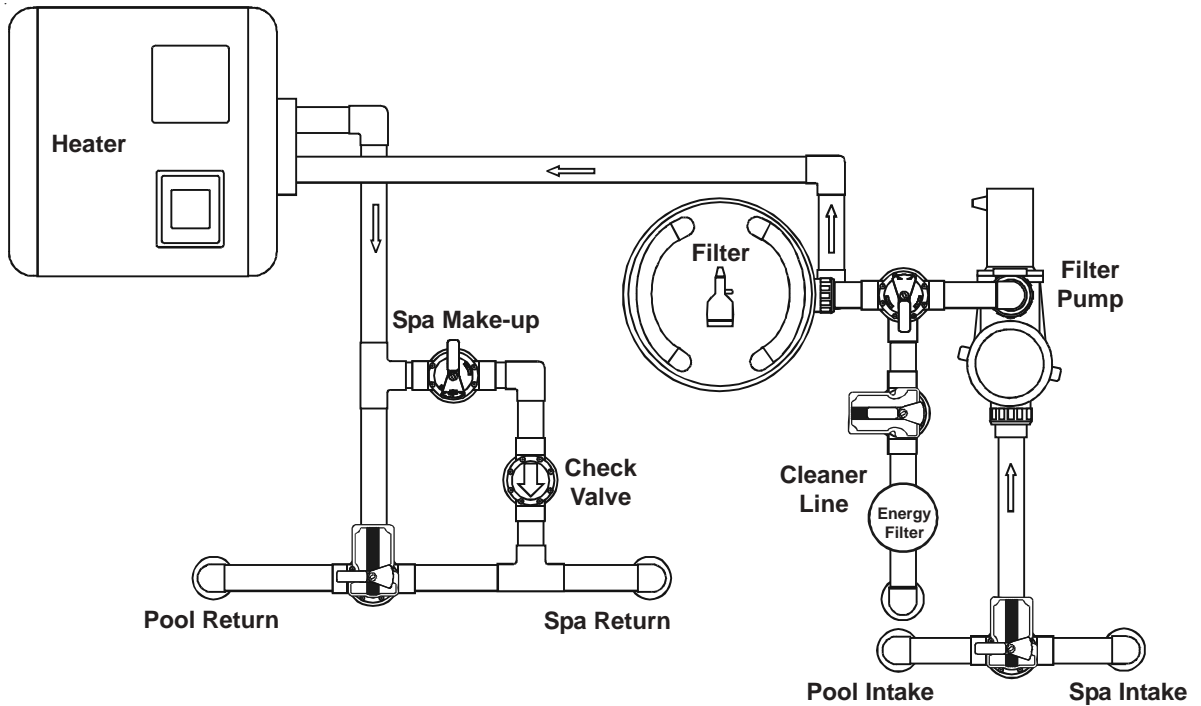


System Overview

Booster Pump Pool Cleaner Plumbing



Non-Booster Pump Pool Cleaner Plumbing



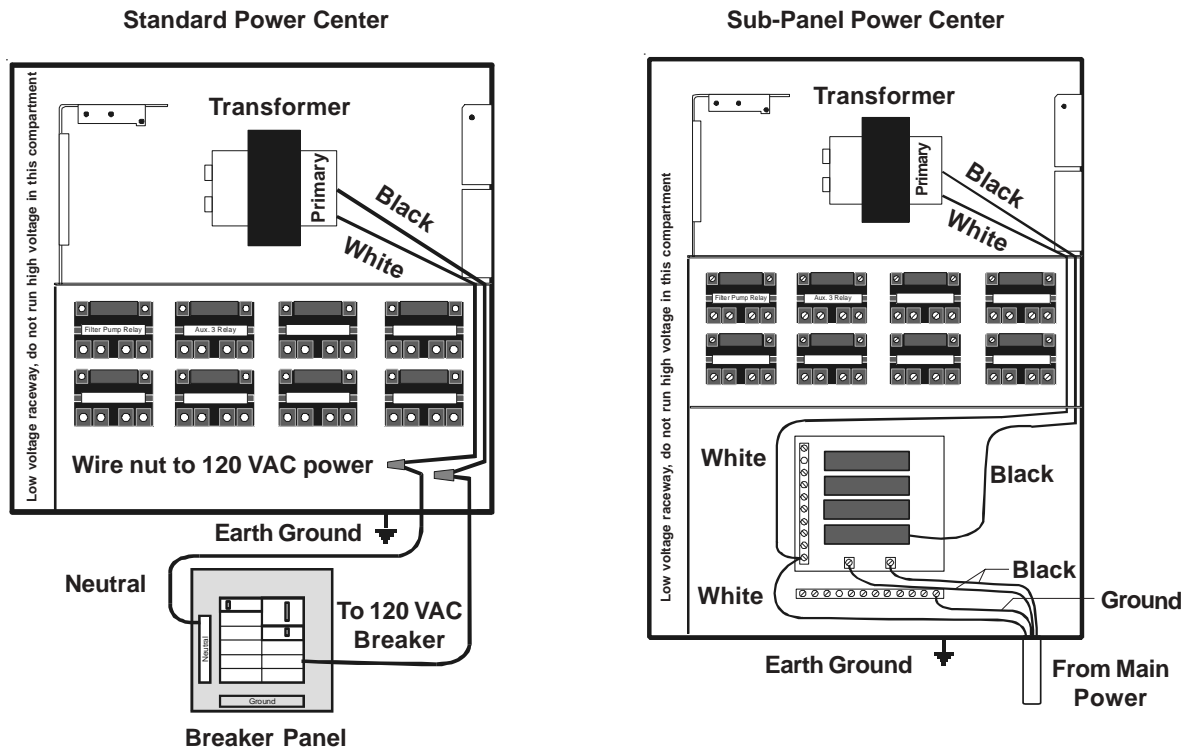
Installation

1. Power Center Mounting

- 1.1. The Power Center should be located at or near the equipment pad. Locate the Power Center at least five (5) feet or more away from pool/spa and five (5) feet off the ground. All national, state, and local codes are applicable.
- 1.2. Use the mounting brackets and instructions provided with the Standard Power Center and/or Sub-Panel Power Center.
- 1.3. Sub-Panel Power Centers have special code requirements. Be sure to follow all applicable local and state codes to insure safe installation.

2. High Voltage Wiring

- 2.1. *System Power-* Depending on the amount of equipment being controlled, run ½" or ¾" conduit from the power supply panel to the bottom of the Power Center. If you are using the Sub-Panel Power Center, wire power to the appropriate breakers. Pull in appropriate wire for equipment. Each piece of equipment requires its own high voltage relay. Connect 120 volts to the Power Center terminals. Connect equipment ground(s).



Installation

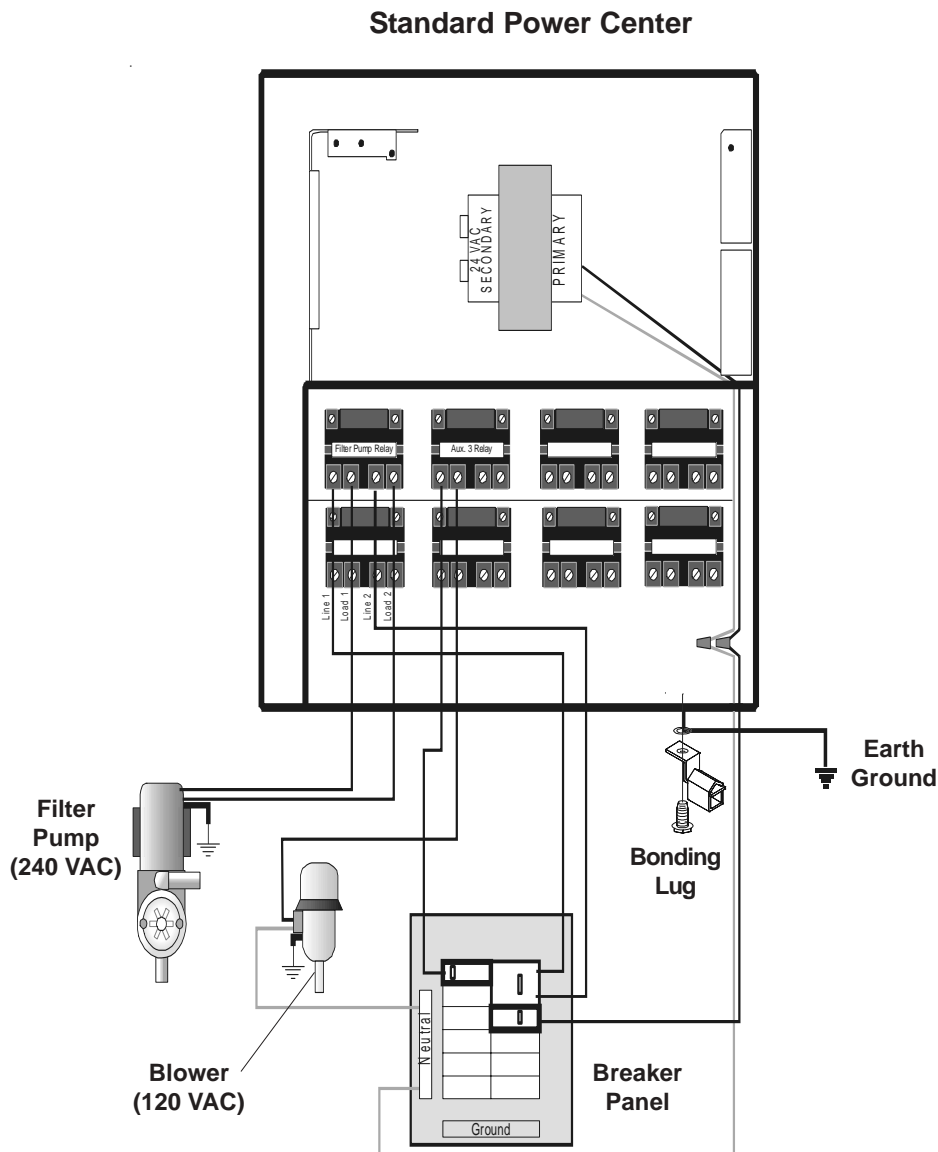
- 2.2. *3HP (Standard) Relays-* For each piece of **240 volt** equipment to be controlled, **connect line power to the two (2) line terminals** and **connect equipment power to the two (2) load terminals** on the same relay. For each piece of **120 volt** equipment, **connect power to a line terminal** and **connect equipment to a load terminal** on the same relay.

Contact Ratings (DO NOT exceed any ratings):

- *3HP (Standard) Relay*

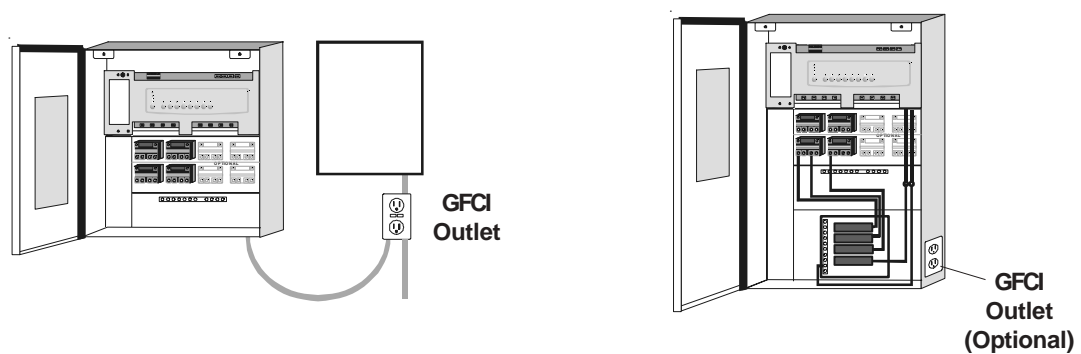
3 HP @ 240 VAC; 1½ HP @ 120 VAC; 25 Amps; 1500 Watts

- 2.3. *Bonding the Power Center-* Install a bonding lug to the Power Center enclosure. Connect the bond lug, using a #8 solid copper core wire, to an approved earth ground (an approved ground stake, grid, or conducting metal water pipe buried to a sufficient depth).



Installation

- 2.4. *Underwater Lighting*- High voltage pool/spa lights require Ground Fault Circuit Interrupter (GFCI) protection. To meet code requirements the pool/spa light must be connected directly to the GFCI. Do not use a GFCI circuit breaker.
- 2.4.1. For a Standard Power Center, install a GFCI receptacle next to the breaker panel. For a Sub-Panel Power Center install a GFCI receptacle in the Power Center (use the knockout provided on the right side of the Sub-Panel Power Center).
 - 2.4.2. Connect neutral and hot wire (from circuit breaker) to the LINE side of the GFCI.
 - 2.4.3. Connect neutral (white wire) and the hot (black wire) from the light to the LOAD side of the GFCI.
 - 2.4.4. Connect ground from the light to the grounding bar inside the Power Center.

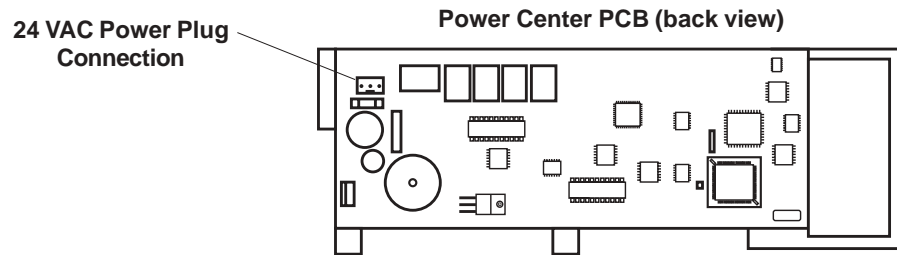


Installation

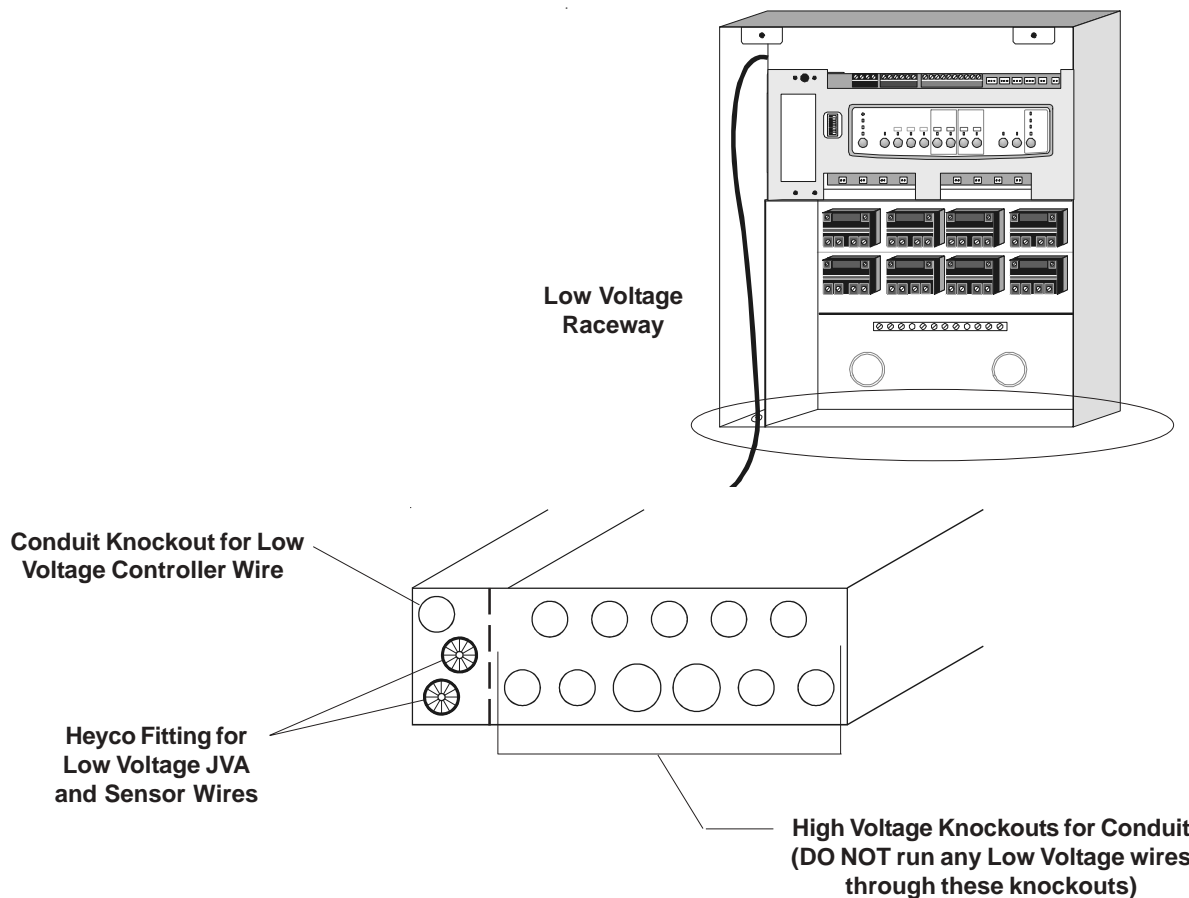
3. Low Voltage Wiring

- 3.1. *Bezel Connection*- Plug the 24 VAC power plug from the transformer into its 3-pin terminal on the back of the Power Center PCB. Mount the Bezel to the Power Center using the screws provided. Keep battery wires from pinching.

DO NOT INSTALL BATTERY until ready to power up system.



- 3.2. *Controller Cable to Power Center PCB*- Make provision for the cable to be run between the indoor Control Panel and the Power Center. **Never run high voltage and low voltage in the same conduit.** Pull cable through the knockout with the Heyco fitting and into the low voltage compartment. Strip back jacket 6". Strip each wire a 1/4" and connect to the red, 4-pin connector on the Power Center PCB. A multiplex kit may be required if there are more than two cables running to a red, 4-pin connector.



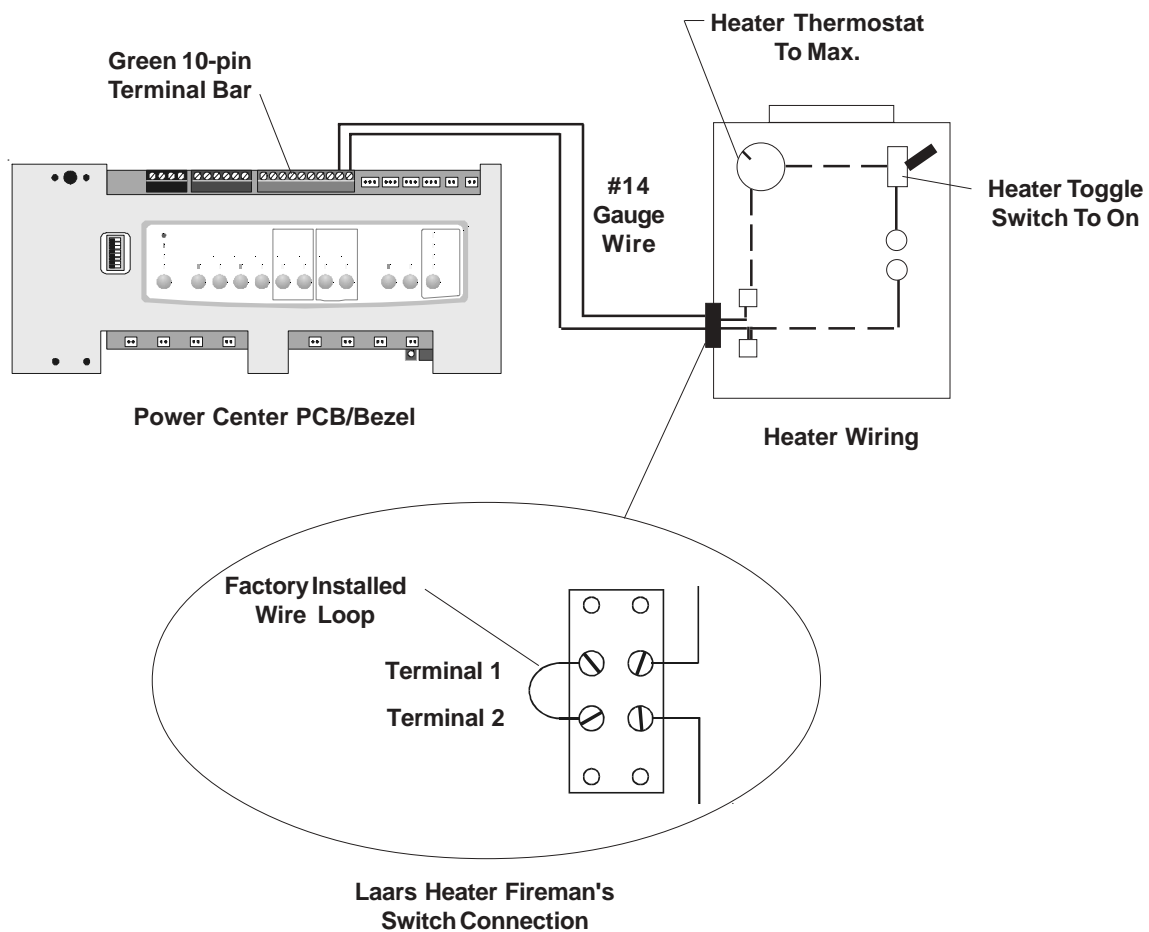
Installation

3.3. *Heater Connection-* This applies to all heaters or heat pumps with thermostatic circuitry of 24 VAC or less (see pages 13 thru 16 for brand specific installation).

NOTE: If you are connecting a heater with thermostatic circuitry of 120 VAC or greater, do not connect to the Green 10-pin Terminal Bar. Instead connect the heater to a high voltage relay in the Power Center and plug the spare relay into the Electric Heater relay socket on the back of the Power Center PCB.

3.3.1 Laars Brand Heater Connections:

1. Connect two #14 gauge wires, designed for use in hot environments, to the #1 and #2 terminals on the Green 10-pin Terminal Bar.
2. Connect the other ends of the #14 gauge wires from Step 1 to the Fireman's Switch terminal bar in place of the factory installed wire loop.
3. Do not disconnect high limit or pressure switches.
4. Turn the heater thermostat(s) to maximum setting.
5. Turn the heater switch to the ON position. For dual thermostat heaters turn switch to Spa position.



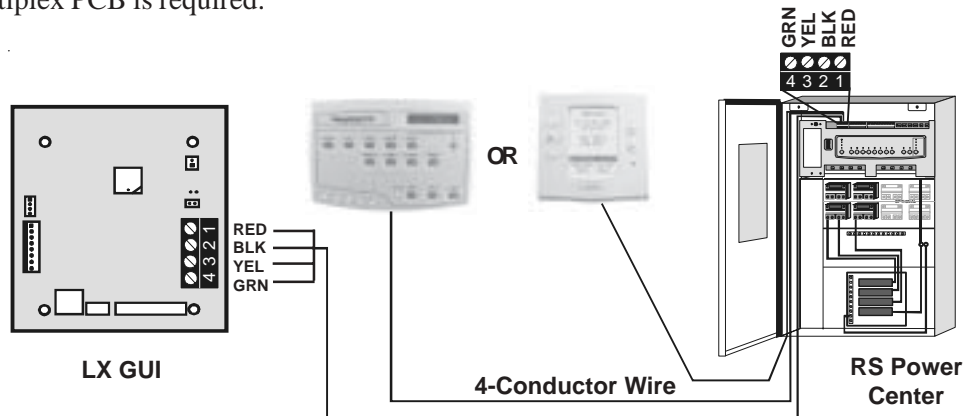
Installation

3.3.2. Guidelines for Sophisticated Diagnostic Communication to Laars LX Heaters:

1. Remove the LX GUI from the heater.
2. Confirm the LX and AquaLink RS software revisions are compatible (see table).
3. Run a 4-conductor cable from the LX GUI red 4-pin connector to the RS power Center red 4-pin connector.

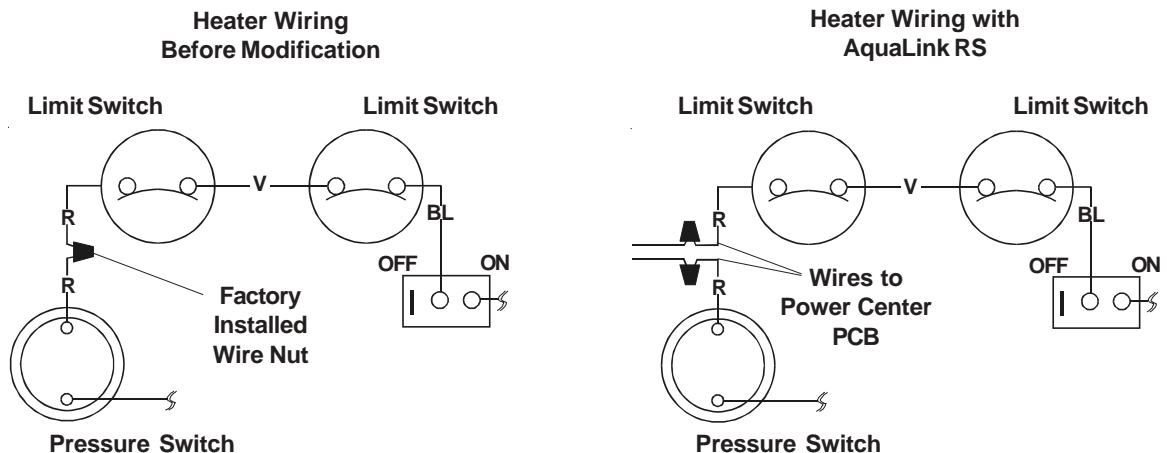
LX Software Revision	AquaLink RS Software Revision
C04 to C08	H or HH
C10, C11 or later	I, JJ, K or later

Note: If connecting more than two (2) items to the RS Power Center red 4-pin connector, a Multiplex PCB is required.



3.3.3. Guidelines for Hayward Heaters:

1. Remove heater service door.
2. Remove factory-installed wire nut between two (2) red wires labeled "CONNECTION FOR FIELD INSTALLED CONTROL SWITCH".
3. Wire nut two (2) heater wires from AquaLink RS P.C. Board to the two (2) red wires of the heater.
4. Set the thermostat selector switch to ON, HIGH, or SPA, and set the heater thermostat(s) to maximum.

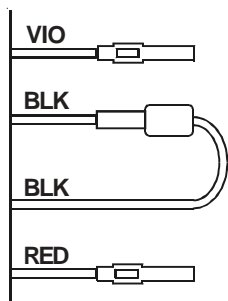


Installation

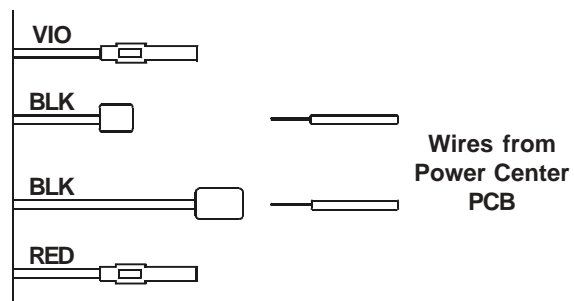
3.3.4. Guidelines for Pentair Heaters:

1. Remove the heater service door.
2. Separate the black wires (common) from each other.
3. Connect the wires from the Power Center PCB to the two black wires on the heater.
4. Turn the heater toggle switch on, and the heater thermostat(s) to max.
5. When connecting an AquaLink RS Control to a Pentair Heater, Pentair requires that you install the low voltage thermostat wires in conduit separate from ANY line voltage wires.

Heater Wiring Before Modification



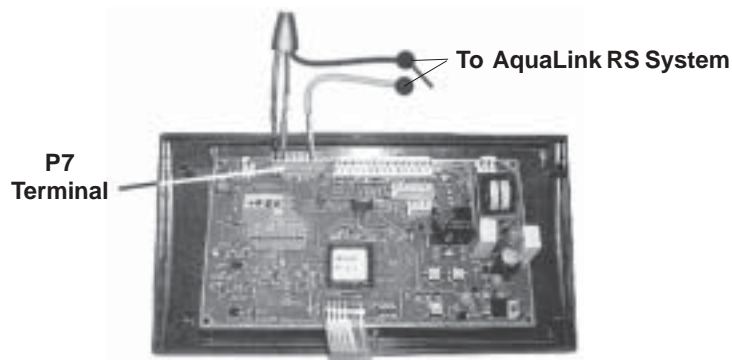
Heater Wiring with AquaLink RS



3.3.5. Guidelines for Raypak Heaters:

1. For the 2-wire/1 function configuration, connect the orange/black and black/orange wires to one contact and the yellow/black wire to the other contact.

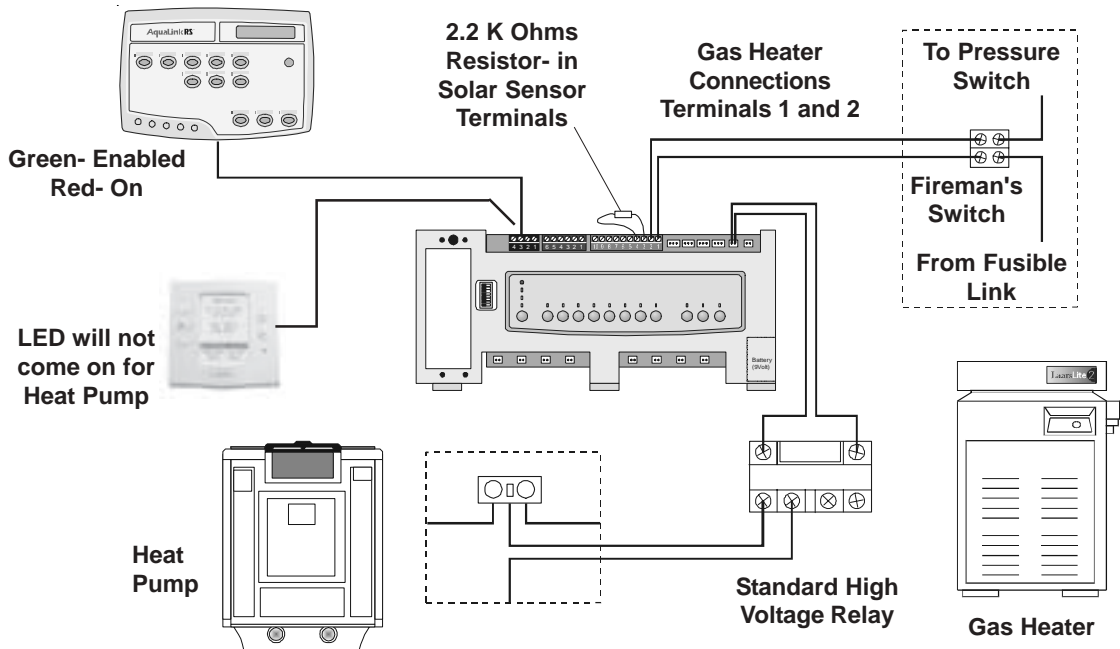
Heater Wiring with AquaLink RS



Installation

3.3.6. Guidelines for a Gas Heater in addition to a Heat Pump:

1. Install a fixed resistor, with a value of 2.2k Ohms, in the solar sensor terminals #3 and #4 of the green 10-pin terminal bar of the AquaLink RS Power Center (see figure below). The RS will auto-relabel Solar as Heat Pump within 24 hours.
2. The Solar/Heat Pump Button will activate the heat pump and the Pool and/or Spa Heater Buttons will activate the gas heater. In this manner the pool or spa can be heated by the heat pump, the gas heater or both.

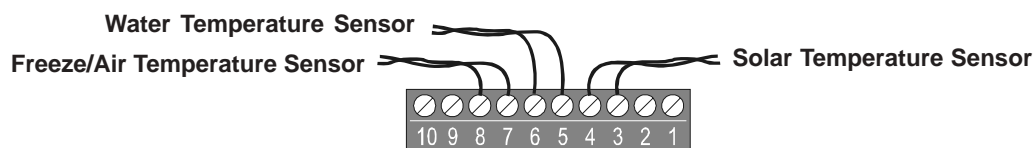


3.4. Temperature Sensors-

- 3.4.1. Drill 3/8" hole in pipe between filter pump and filter and install the **Water Temperature Sensor** per instructions (make certain the o-ring is in place).
- 3.4.2. Install **Air Temperature Sensor** outside the Power Center can, not in direct sunlight and away from motors and other heat sources.
- 3.4.3. Install **Solar Temperature Sensor** (optional) adjacent to solar panels.

Note: if a solar sensor (or a 2.2k Ohms resistor) is not installed, the solar button can be labeled and used as an extra auxiliary.

- 3.4.4. Run the wire to the Power Center, through the low voltage raceway. Cut off excess wire and strip each wire 1/4". Connect sensor wires to the Green 10-pin terminal bar.



Green 10-Pin Terminal Bar (Wiring for a Pool/Spa Combination)

Installation

3.5. *Jandy Valve Actuators*- Mount the JVA's according to the JVA Installation Manual. **JVA cable is type SJW-A marked water resistant class 3 cable and does not require conduit. Knockouts and Heyco fittings are provided in the Low Voltage Raceway.**

- 3.5.1. Route the JVA wire to the Power Center.
- 3.5.2. Run the wire through the low voltage raceway and plug the JVA connectors into their proper sockets (see Wiring Diagram in Appendix). Verify that the JVA on the suction plumbing is connected to the Intake JVA Socket, and the discharge plumbing is connected to the Return JVA Socket.

Note: Do not coil the JVA wires inside Power Center. To shorten the wire, remove the JVA cover and undo the wire nuts. Shorten, strip, and reconnect.

- 3.5.3. For alternate plumbing configurations the JVA cam settings can be adjusted as needed. See JVA Installation Manual, Cam Setting Chart for proper settings.

3.6. *Auxiliary Power Centers*-

AquaLink RS All Button models support one (1) Auxiliary Power Center.

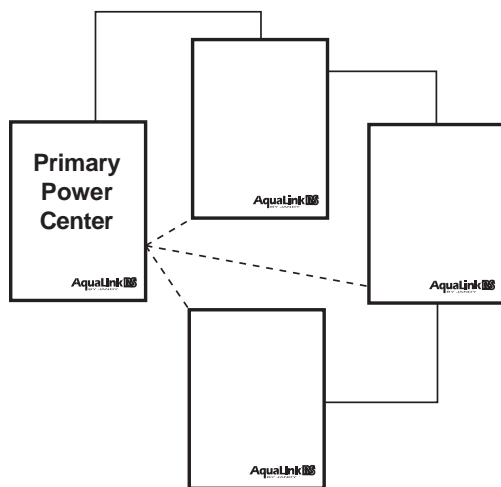
AquaLink RS OneTouch models support a maximum of three (3) Auxiliary Power Centers.

- 3.6.1. The auxiliary power centers may be wired "in series", starting from the Primary Power Center (solid line) or wired "in parallel" from the Primary Power Center (dashed line).
- 3.6.2. Run four conductor cable between the red 4-pin terminal bars in each Power Center.

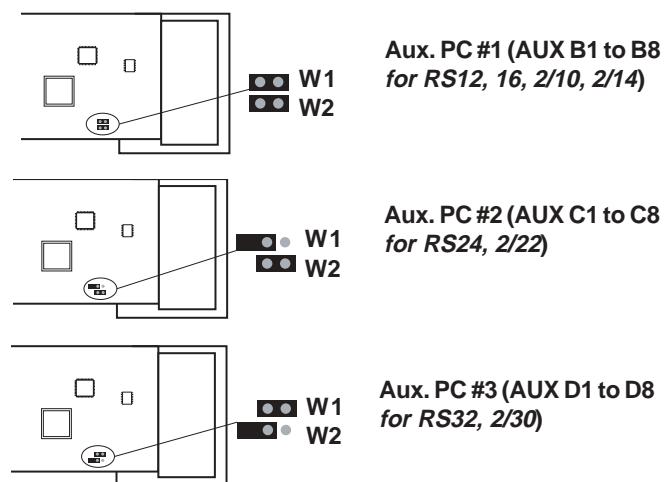
Notes:

1. All temperature sensors, heater connections and the main filter pump must be wired to the Primary Power Center.
2. Never put more than two (2) wires into each of the pins of the red 4-pin terminal bar (use a Jandy Multiplex Board).
3. If more than one Auxiliary Power Center is installed, set the jumpers according to diagram below.

Wiring Multiple Power Centers



Setting Jumpers for Multiple Power Centers
(No Jumpers on the Primary Power Center PCB)

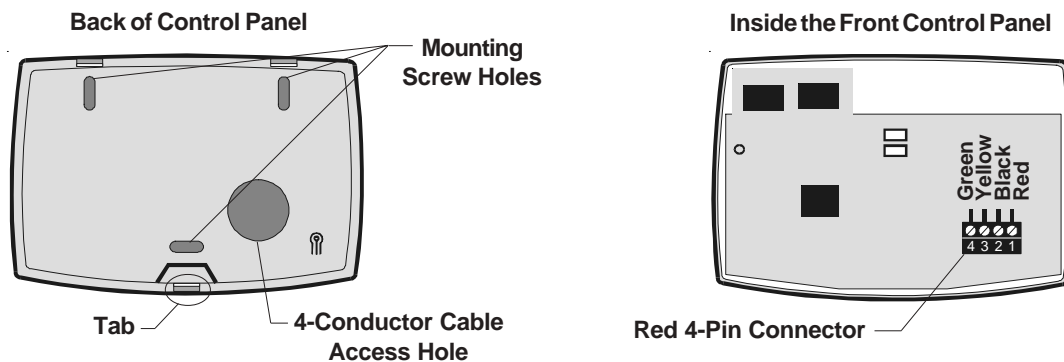


Installation

3.7. All Button Control Panel-

3.7.1. Single Indoor Control Panel:

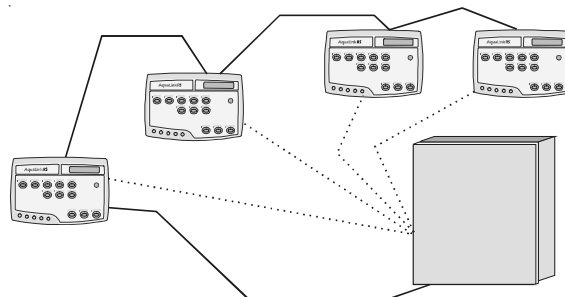
1. With the aid of the homeowner, find the best location for the Control Panel.
2. Open the Indoor Control Panel Assembly by pressing in on the tab at the bottom. Place the back of the control panel against the wall. Level the back of the control panel and mark the three (3) mounting screw holes and the cable access hole.
3. Drill $\frac{1}{4}$ " holes at the three (3) mounting screw marks and insert the plastic anchors. Drill a $1\frac{1}{4}$ " (min.) to 2" (max.) hole for cable access.
4. Mount the back of the control panel housing to the wall and secure in place.
5. Pull the 4-conductor cable through the access hole and tie a loose knot to prevent the cable from slipping back through the access hole. Strip cable jacket 6", and each individual wire $\frac{1}{4}$ ".
6. Remove the red 4-pin terminal bar from the control panel PCB. Connect the 4 conductor cable to the red 4-pin terminal bar. Reconnect the red 4-pin terminal bar back to the Control Panel PCB.
7. Hang the Control Panel front over the two tabs at the top of the control panel back. Swing the bottom of the Control Panel front down and snap into place.



3.7.2. Multiple AquaLink RS All Button Controller Installation:

The AquaLink RS allows each system to support a maximum of 4 indoor controllers. The controllers may be wired "in series" starting from the first controller (Solid Line), or wired "in parallel" from the AquaLink RS Power Center (Dotted Line), or any combination of the two (i.e. any number of Indoor Controllers and/or Power Centers can be connected via the red 4-pin terminal bar in any combination of "series" or "parallel" wiring).

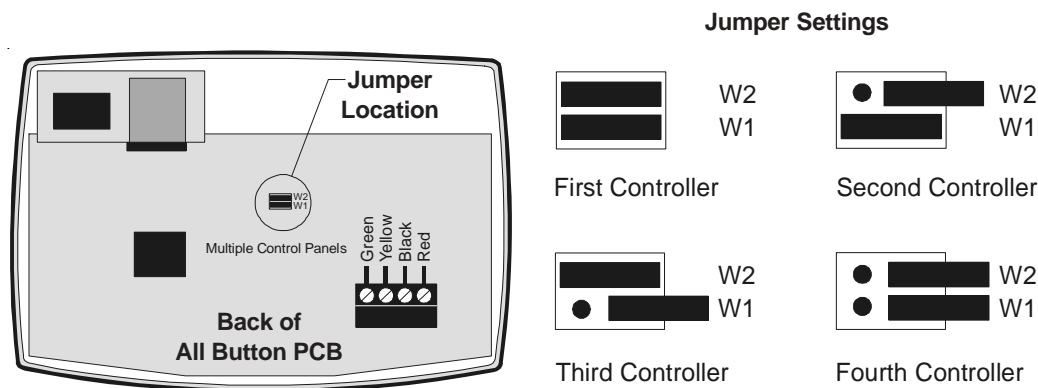
Note: Voltage drop can be a problem when connecting more than one controller. Use large wire (16 or 18 AWG) to minimize voltage loss.



Installation

3.7.3. AquaLink RS Control Panel Jumper Settings:

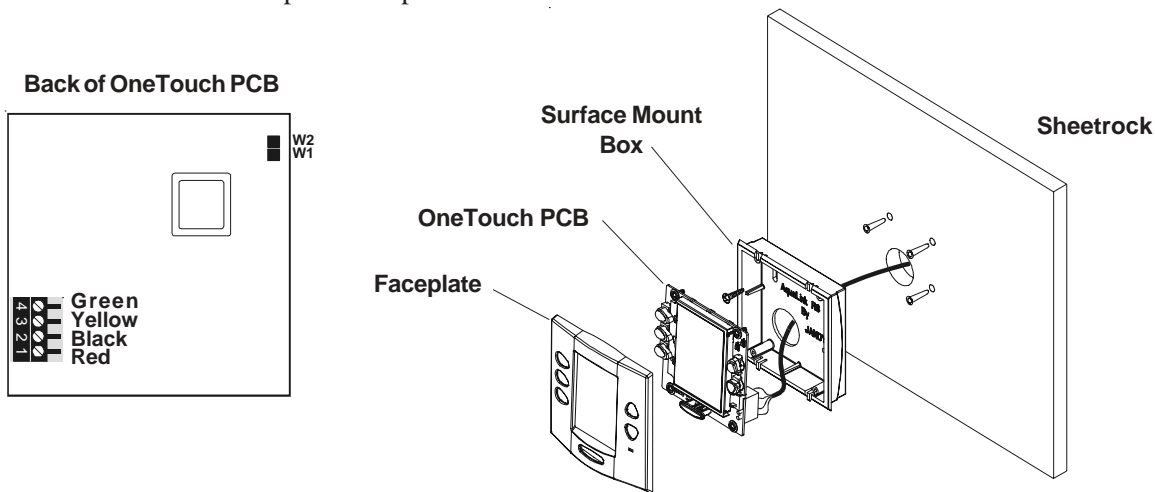
Move these jumpers only when installing more than one controller on a system. The jumpers are used to give each controller a unique system address. When replacing an existing Controller, change the jumper settings to match those on the one being replaced.



3.8. OneTouch Control Panel (includes both surface and flush mount housings)-

3.8.1. Surface Mount OneTouch Installation:

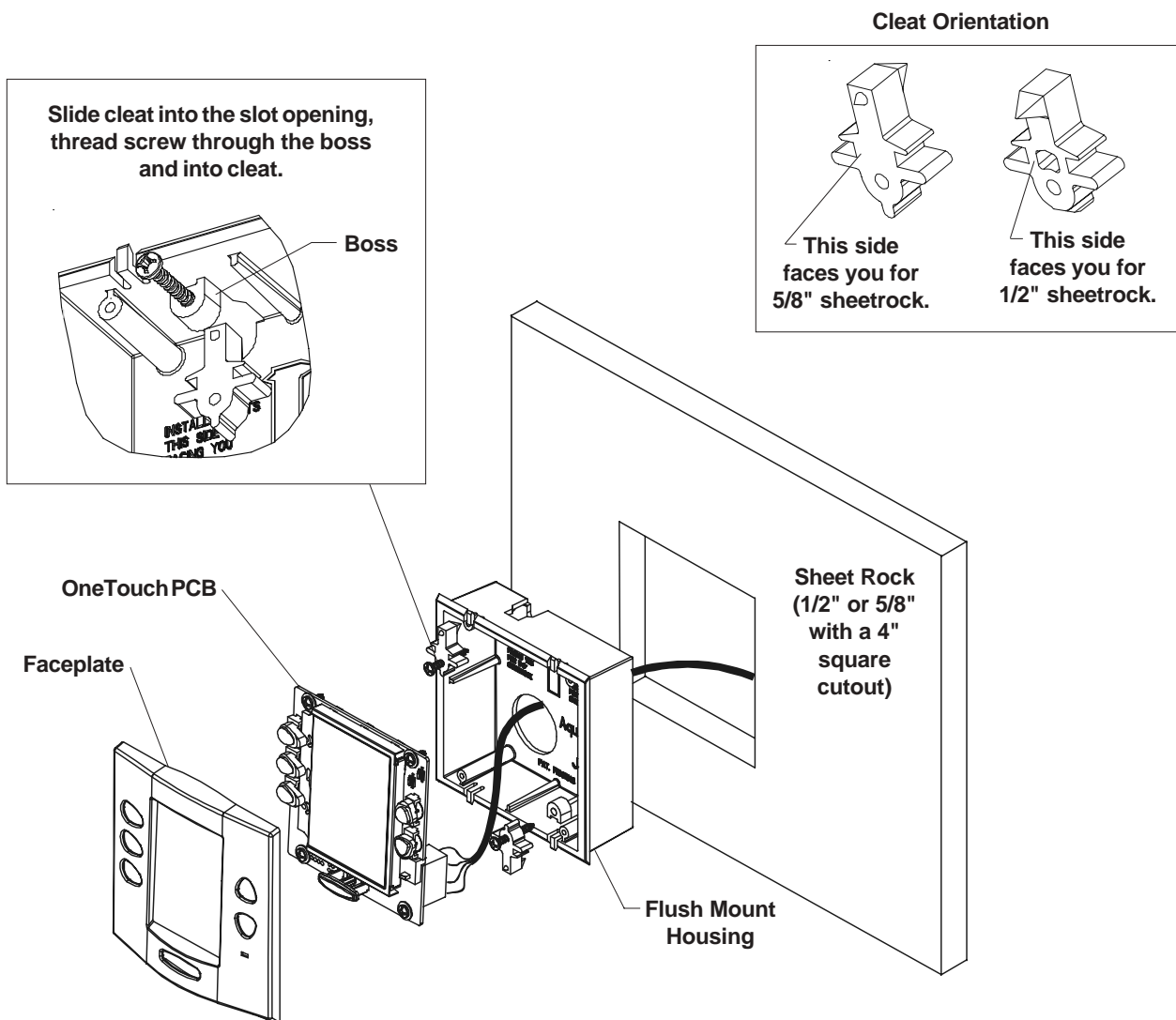
1. With the aid of the homeowner, find the best location for the Control Panel.
2. Place Surface Mount Box in the location chosen for the Control Panel. Mark the holes for drilling. Drill 3/16" holes for the sheet rock anchors and a 1/4" hole for the 4-conductor cable.
3. Run the 4-conductor cable from the Power Center to the location of the Control Panel.
4. Pull the 4-conductor cable through the hole in the wall and the hole in the Surface Mount Box. Mount the box to the wall using the screws provided.
5. Wire the 4-conductor cable to the red 4-pin terminal bar. Push the 4-pin terminal bar onto the back of the OneTouch PCB. Place the PCB with LCD and buttons back into the box. Insert the screws and hand tighten. **Do not overtighten.** Snap the Faceplate into place.



Installation

3.8.2. Flush Mount OneTouch Installation:

1. With the aid of the homeowner, find the best location for the Control Panel.
2. Place the Flush Mount box in the location chosen for the Control Panel. Level the box and trace around the outside of the box with a pencil. Cut the hole being careful not to oversize.
3. Route the 4-conductor cable from the Power Center to the Indoor Control Panel.
4. Pull the 4-conductor cable through the hole in the wall and the hole in the flush mount box. Push the flush mount box into the hole in the wall with the correct orientation.
5. Depending on what size sheet rock (5/8" or 1/2"), determine which side of the cleat is to be facing you.
6. Insert a screw through the screw boss. Put a cleat into the top "U" shaped hole. Hand tighten the screw and repeat the process for the bottom cleat.
7. Wire the 4-conductor cable to the red 4-pin terminal bar. Push the 4-pin terminal bar onto the back of the OneTouch PCB. Place the OneTouch PCB back into the Flush Mount Housing. Insert the screws with rubber washers and hand tighten. **Do not overtighten.** Snap the faceplate into place.

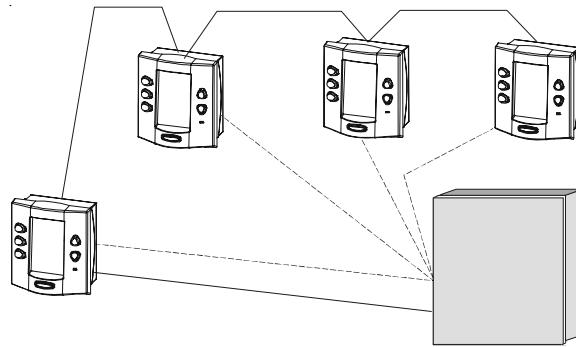


Installation

3.8.3. Multiple AquaLink RS OneTouch Control Panel Installation:

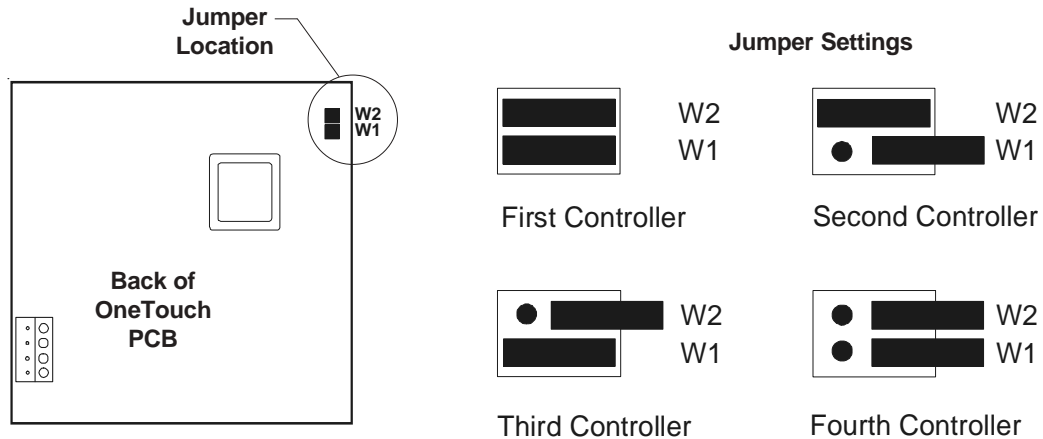
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Note: Voltage drop can be a problem when connecting more than one controller. Use large wire (16 or 18 AWG) to minimize voltage loss or install the optional Booster Power Supply Kit (part #7477).



3.8.4. AquaLink RS OneTouch Control Panel Jumper Settings:

Move these jumpers only when installing more than one controller on a system. The jumpers are used to give each controller a unique system address. When replacing an existing Controller, change the jumper settings to match those on the one being replaced.



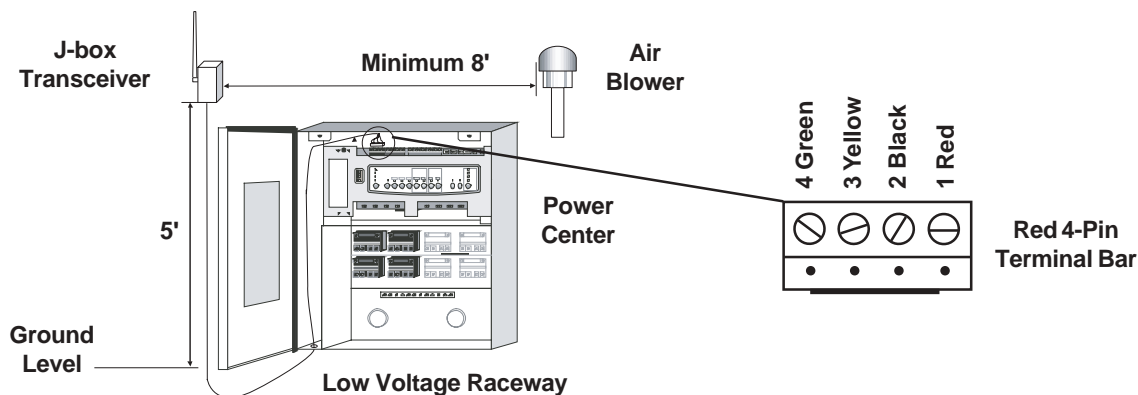
Installation

3.9. Wireless OneTouch Control Panel-

Installation Considerations- The transceivers will transmit through walls and around corners. Steel framing, aluminum siding, wrought iron, cyclone fences, leaded glass may, microwave ovens, and other 2.4 GHz frequency items may inhibit/prevent communication between the Wireless AquaLink RS Control Panel and the Power Center. The transceivers do not require line of sight to communicate. To optimize communication, locate transceivers to minimize interference. The Battery Wireless AquaLink RS system requires OneTouch Indoor PCB revision "E" and firmware revision "B11" in order to work properly.

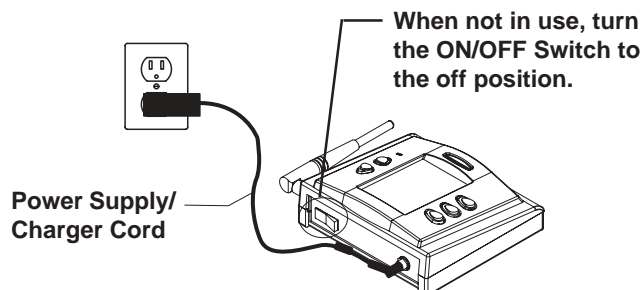
3.9.1. Outdoor Transceiver J-box Installation:

1. Turn off all power to the Power Center.
2. Mount the Outdoor Transceiver J-box at least 5' above the ground and at least 8' from an air blower.
3. Remove the cover from the Transceiver J-box. Use the template provided to drill the mounting holes. Mount the Transceiver J-box and replace the cover.
4. Open the door to the Power Center and remove the dead panel.
5. Feed the four conductor wire into the Power Center through the low voltage raceway.
6. Cut off the excess wire. Strip the jacket back 6" and strip the individual wires approximately ¼". Connect the four conductor wire to the red terminal bar on the Power Center PCB.
7. Install the dead panel to the Power Center and restore all power.



3.9.2. Indoor Control Panel Installation:

1. Connect the transformer to the back of the control panel.
2. Plug the transformer into a wall socket.
3. **Charge for 24 hours before removing the Power Supply/Charger (the system is operational while charging).**

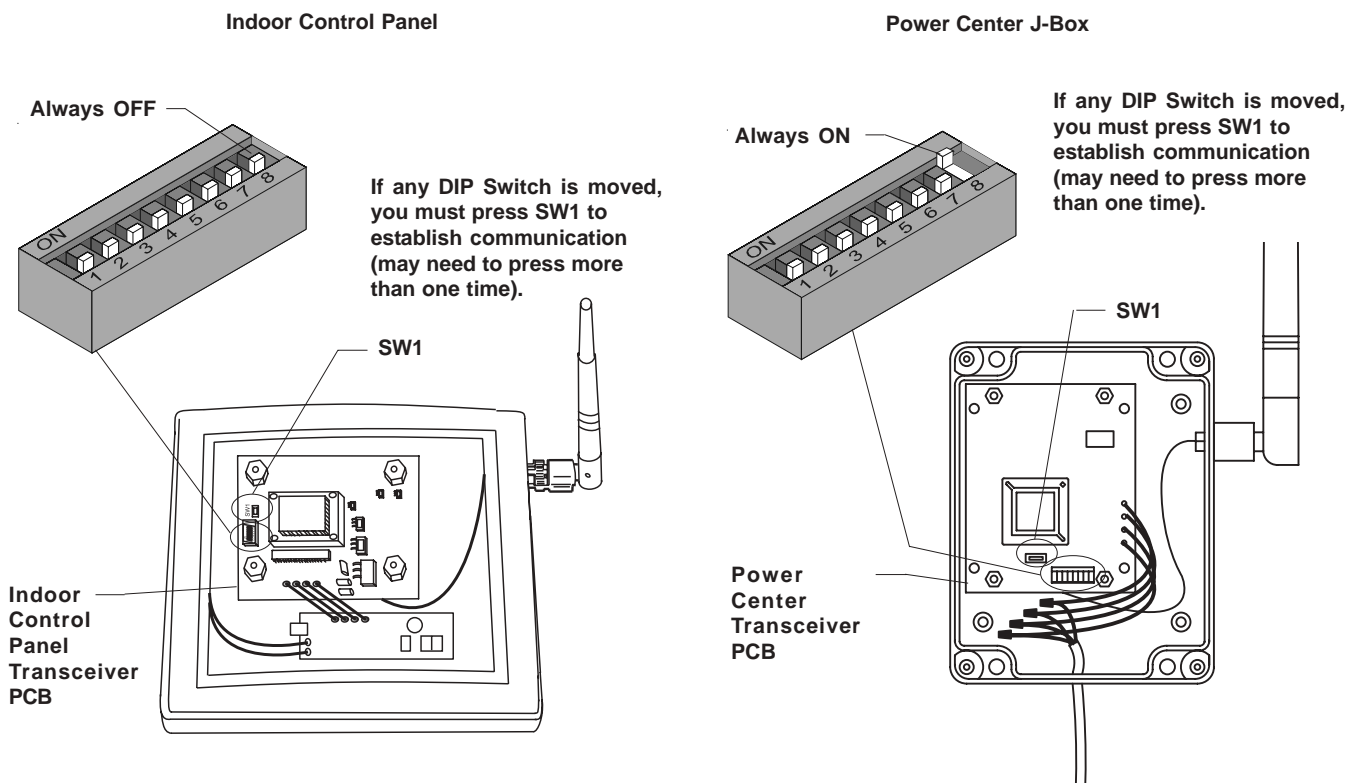


Installation

3.9.3. Changing the Transmission Code:

If your AquaLink RS system is turning items on or off at odd times it may be the result of another AquaLink RS Wireless Controller in close proximity using the same or similar code. To prevent unwanted operation, the code for your AquaLink RS Wireless system can be personalized. Except for dip switch #8, both the Power Center Transceiver and the Control Panel Transceiver must be set to the same code. The Indoor Control Panel Transceiver dip switch #8 must be **OFF** and the Power Center Transceiver dip switch #8 must be **ON**.

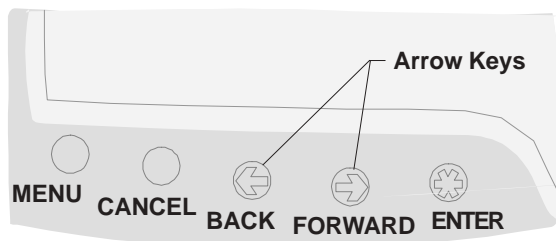
1. Go to the Indoor Control Panel and remove the screws to expose the transceiver PCB.
2. Locate the small set of dip switches on the Control Panel PCB. Except for dip switch #8, turn on one or more dip switches. **Important- before installing the Control Panel cover, press the reset button (SW1).** Note which switches you have turned on then reinstall the cover and screws.
3. At the Outdoor Transceiver J-box, remove the cover to expose the Transceiver PCB and set the dip switches (except #8) to the same settings as the Control Panel Transceiver PCB that is in the house. **Important- before installing the J-box cover, press the reset button (SW1).** Close the cover and test the system.



System Startup

1. All Button Programming

- 1.1. *Basic Programming-* To set a particular piece of equipment to turn on and off at predetermined times, press the MENU button, scroll to the PROGRAM MENU, press ENTER, and then press the button for the equipment that you want to program. The Controller Display will ask you to enter the day. Use the arrow keys to select, and press ENTER. The display will now prompt you for the starting time and ending time. Repeat this process for each piece of equipment that you wish to program. You may enter as many programs as needed for each piece of equipment.



AquaLink RS All Button Controller

- 1.2. *Set the Time-* To set the time, press the MENU button. Use the arrow keys to scroll to the SET TIME menu and press ENTER. Now scroll to the correct year and month and press ENTER. Scroll to the correct hour and minute and press ENTER.

Depending on the version of the AquaLink RS, the following items can be found either in the Main Menu or in a Sub Menu under SETUP.

1.3. *Set the Temperature-*

- 1.3.1. **Pool/Spa Combination:** Press the MENU button, scroll to the SET TEMP menu, and press ENTER. Use the arrow keys to select POOL or SPA and, press ENTER. Once you have selected which heater to set the temperature for, use the arrow keys to select the desired temperature, and press ENTER to complete.
- 1.3.2. **Pool/Spa Only:** Press the MENU button, scroll to the TEMP1 menu, and press ENTER. Press ENTER on SET TEMP1 (TEMP1 must be higher than TEMP2). Use the arrow keys to select the desired temperature, and press ENTER to complete. Press the MENU button, scroll to the SET TEMP menu, and press ENTER. Use the arrow keys to select SET TEMP2 and press ENTER (TEMP1 must be higher than TEMP2). Use the arrow keys to select the desired temperature, and press ENTER to complete.
- 1.3.3. **Maintain Temperature:** Under the SET TEMP menu, scroll to MAINTAIN and press enter. Use an arrow button to select POOL, SPA or OFF. MAINTAIN will run the pump for the choosen body of water to keep the water the desired temperature. If this function is on, as long as the heater is enabled for that body of water, the system will automatically run the pump every couple of hours for just enough time to test whether or not the water is warm enough. If it is warm, the pump will turn back off. If it is cooler than the set temperature, the pump will stay on and the heater will run for enough time to bring the water up to your set temperature, then it will stop.
- 1.3.4. **Maintain Temperature Hours:** sets the part of the day when this function will run (by default, 12AM to 12PM, which lets it run for 24 hour a day). Under SET TEMP scroll to HOURS and press enter. Use the arrow keys to change the HOURS the system will maintain the set temperature.

System Startup

- 1.4. *Label Auxiliary Functions-* Press the MENU button, scroll to SYSTEM SETUP and press ENTER. Scroll to the LABEL AUX menu and press ENTER. Press the button (on the controller) to be labeled (example: AUX1). Scroll to the desired label and press ENTER. Repeat for all functions. **Note 1:** the labels TIMED AUX, AIR BLOWER, and FILL LINE are 30 minute timed functions. **Note 2:** If DIP switch 1,2 or 3 are on, auxiliaries 1, 2 and 3 are labeled CLEANER, LOW SPEED and SPILLOVER respectively and cannot be relabeled.
- 1.5. *Set Freeze Protection-* The AquaLink RS Freeze Protection senses when the air temperature falls below 38° F and will automatically turn on the filter pump to circulate the water. To add freeze protection to other equipment press the MENU button. Scroll to SYSTEM SETUP and press ENTER, then scroll to FRZ PROTECT and press ENTER. Press the button for the equipment you want to protect.
- 1.6. *Assign JVAs-* The assign JVA menu lets you assign Jandy Valve Actuators (JVA) to any auxiliary button. This means that whenever you press that auxiliary button, a valve turns. On pool/spa combination models, there are two JVAs that can be assigned to auxiliary buttons: the Cleaner JVA and the Solar JVA (unless the solar function is installed). On pool only/spa only models, there are four JVAs available. The AquaLink RS installer must set up these JVAs for this feature to operate correctly. Assigning JVAs lets the owner control certain features like diverting water to a waterfall or bank of spa jets.

To assign JVA values, press the MENU button. Use the arrow keys to scroll to SYSTEM SETUP, press ENTER. Use the arrow keys to scroll to ASSIGN JVA menu and press ENTER. The AquaLink RS display will read CLEANER JVA. If both JVAs are being used, you will not be able to use this menu.

Use the arrow keys to choose among the JVAs listed. When the JVA you want to assign to an auxiliary is displayed, press ENTER.

The AquaLink RS display will read SELECT AUX TO ASSIGN JVA TO. Press the button of the auxiliary you want to activate the JVA.

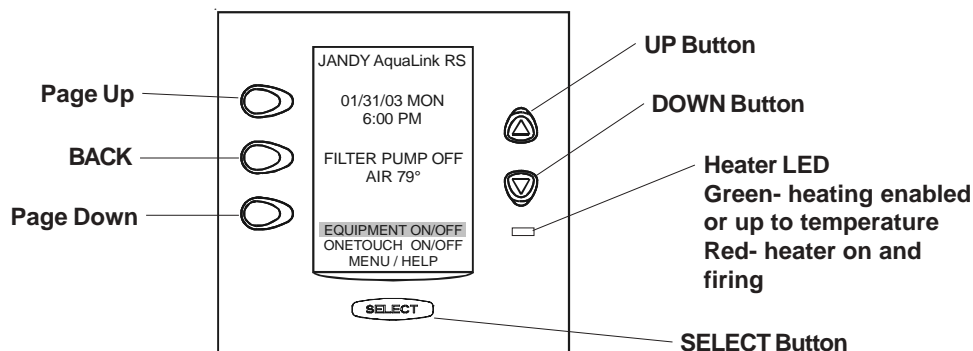
2. All Button Reset and Display Messages

- 2.1. *Reviewing-* To review equipment, press the MENU button, then use the FORWARD arrow key to scroll to the REVIEW menu. Press ENTER, use the arrow keys to scroll to the item you wish to review, and press ENTER again.
- 2.2. *Canceling Items-* If you make a mistake in programming or you want to change, for example, the ON/OFF times for a specific device, you can cancel programs for that piece of equipment. For example, to **cancel a dimmer**, press the CANCEL button; use the arrow keys to advance to DIMMERS and press ENTER. The AquaLink RS display will prompt you to select an Aux. Press the button of the auxiliary for which you want to cancel the dimmer. If you want to cancel a JVA assignment, first press the CANCEL button. Use the arrow keys to scroll to JVA ASSIGNS and press ENTER. The AquaLink RS display will read CLEANER JVA. Use the arrow keys to toggle between JVAs to cancel. When the JVA assignment that you want to cancel is displayed, press ENTER. The AquaLink RS display will read PRESS ENTER TO CANCEL JVA ASSIGNMENT, OR CANCEL TO ABORT. Press ENTER to cancel the JVA assignment, or press CANCEL to abort.
- 2.3. *Resetting the System-* To remove all labeling, programming, assignments, and temperature settings, press the MENU button, use the arrow keys to scroll to SYSTEM SETUP and press ENTER. Scroll to CLEAR MEMORY and press ENTER.

System Startup

3. OneTouch Programming

3.1. *Basic Programming*- To set a particular piece of equipment to turn on and off at predetermined times, highlight MENU/HELP and press SELECT. Highlight PROGRAM and press SELECT. Use the UP or DOWN buttons to highlight the equipment (e.g.: Filter Pump) then press SELECT. Follow the on-screen prompts. Use the UP or DOWN buttons to pick each number, starting with ON hours, press SELECT to enter and move on to the next item to change, including picking what day(s) the program will run. If you make a mistake, use the BACK button to return to a number. If the program is already entered, highlight CHANGE PROGRAM and step through to the entry that should be corrected.



3.2. *Set the Time*- To set the time, highlight the MENU/HELP and press SELECT. Highlight SET TIME and press SELECT. Use the UP or DOWN button to set the values. Press SELECT to continue.

The following items can be found either in the MENU/HELP or in a Sub Menu under SYSTEM SETUP.

3.3. Set the Temperature

- 3.3.1. **Pool/Spa Combination:** Highlight MENU/HELP and press SELECT. Highlight SET TEMP and press SELECT. Use the UP or DOWN button to highlight either POOL or SPA and press SELECT. Use the UP or DOWN button to increase or decrease the temperature and press SELECT. Use the BACK button to return to the main screen.
- 3.3.2. **Pool/Spa Only:** Highlight MENU/HELP and press SELECT. Highlight SET TEMP and press SELECT (TEMP1 must be higher than TEMP2). Press SELECT on TEMP1. Use the UP or DOWN button to increase or decrease the temperature and press SELECT. Highlight TEMP2 and press SELECT. Use the UP or DOWN button to increase or decrease the temperature and press SELECT. Use the BACK button to return to the main screen.
- 3.3.3. **Maintain Temperature:** In the SET TEMP menu, highlighting MAINTAIN and pressing select will turn on (or off) the MAINTAIN function. MAINTAIN will run the pump for the chosen body of water to keep the water at the desired temperature. If this function is on, as long as the heater is enabled for that body of water, the system will automatically run the pump every couple of hours for just enough time to test whether or not the water is warm enough. If it is warm, the pump will turn back off. If it is cooler than the set temperature, the pump will stay on and the heater will run for enough time to bring the water up to your set temperature, then it will stop.

System Startup

3.3.4. **Maintain Temperature Hours:** Sets the part of the day when this function will run (by default, 12AM to 12PM, which lets it run for 24 hour a day). Highlight HOURS and press select. Use the UP or DOWN buttons to change the HOURS the system will maintain the set temperature.

3.4. *Label Auxiliary Functions-* Highlight MENU/HELP and press SELECT. Highlight SYSTEM SETUP and press SELECT. Highlight LABEL AUX and press SELECT. Highlight the AUX you want to label and press SELECT. Highlight GENERAL, LIGHT, WATERFALL or CUSTOM LABEL and press SELECT. Choose a name within these categories by using the UP or DOWN button or the PAGE UP or PAGE DOWN button, press SELECT when you find the correct name. Choose CUSTOM to type in your own names.

3.5. *Set Freeze Protection-* Highlight MENU/HELP and press SELECT. Highlight SYSTEM SETUP and press SELECT. Highlight FREEZE PROTECT and press SELECT. Use the UP or DOWN button to change the temperature. Once the temperature is set press the SELECT button to move to the next screen to assign freeze protection to a selected piece of equipment. Highlight a device and press SELECT; an "X" means it has been assigned.

Note: the filter pump is always assigned to freeze protection.

3.6. *Assign JVAs-* Highlight MENU/HELP and press SELECT. Highlight SYSTEM SETUP and press SELECT. Highlight ASSIGN JVA and press SELECT. Highlight the JVA you wish to assign and press SELECT.

4. OneTouch Reset and Display Messages

4.1. *Restarting the System-* To remove all labeling, programming, assignments and temperature settings, highlight MENU/HELP and press SELECT. Highlight SYSTEM SETUP and press SELECT. Highlight CLEAR MEMORY and press SELECT. Highlight CONTINUE and press SELECT. Use the UP or DOWN button to highlight yes or no and press SELECT. There will be about a 15 second delay before you see the FINISHED screen. Highlight CONTINUE and press SELECT to return to the SYSTEM SETUP.

5. All Button and OneTouch System Defaults and General Modes

Default Temperature (Pool/Spa Combination): Default Pool Temp = 80° F

Default Spa Temp = 102° F

Default Temperature (Pool/Spa Only): Default TEMP1 = 80° F

Default TEMP2 = 60° F

Default Spa Side Switch Settings : Button 1 = Spa (Filter Pump for pool/spa only models)

Button 2 = Spa Heater (Temp1 pool/spa only models)

Button 3 = AUX1

Button 4 = AUX2

Default Freeze Protection Settings: FILTER PUMP: freeze protection ON. ALL OTHER EQUIPMENT, freeze protection OFF. **NOTE:** If you select SPA to be freeze protected, water circulation will switch between pool and spa every 30 minutes during freezing conditions once freeze mode is active.

System Startup

5.1. Power Center Service Switch-

5.1.1. AUTO Mode (automatic)-

- The controller has complete control of all functions.
- All programmed settings will operate.
- All safety delays and equipment protection interlocks are operational.

5.1.2. SERVICE Mode-

- The power center has complete control of all functions.
- Service mode must be turned on/off at the power center.
- No programmed settings will work.

CAUTION: In service mode, the safety interlocks for equipment protection are overridden.

5.1.3. TIMEOUT Mode-

- The power center has complete control for three (3) hours.
- After three (3) hours the system will return to AUTO mode.
- Programmed on/off times will be overridden during the three (3) hours.
- After the three (3) hour "time out", the system will resume any programmed items that were overridden.

5.1.4. *Battery Backup*- A nine-volt battery is located at the power center. **Do not** install the battery in the power center until the system is ready to operate. Battery will drain if power is left off. Review DIAGNOSTICS in the SYSTEM SETUP section of the menu. The DIAGNOSTICS will indicate when the battery needs replacement.

Special Note to Startup Person

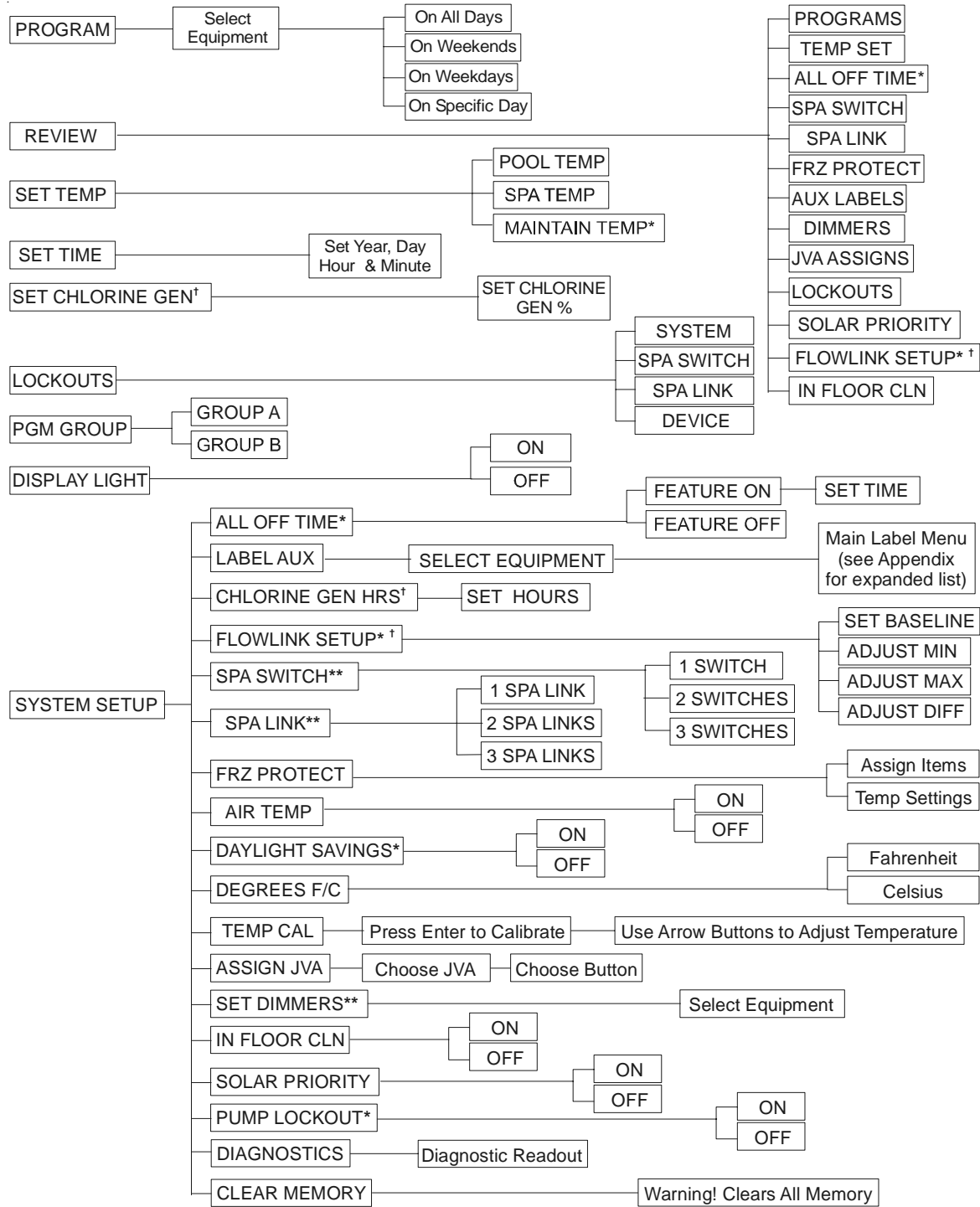
The AquaLink RS allows you two (2) options for operating the pool equipment for the first day of operation:

Option #1- Once all programming of equipment is completed, go to the power center service switch, press the button three (3) times. This will cycle the system from AUTO to SERVICE to TIMEOUT and finally back to AUTO. The AquaLink RS will now "look back" (review) all programs and turn on any equipment which is programmed to be on. Close the Power Center door. It will now operate as programmed.

Option #2- If you want the filter pump or cleaner to operate continually for the first day, leave the power center service button in AUTO mode. Go to the indoor controller and press the AUX buttons for the equipment you want to run. The equipment activated will now run continuously, ignoring the first programmed off time, and will turn off at the programmed off time for the next day (only if a program has been entered).

System Startup

6. All Button, Menu Flow Chart



ALL OFF*

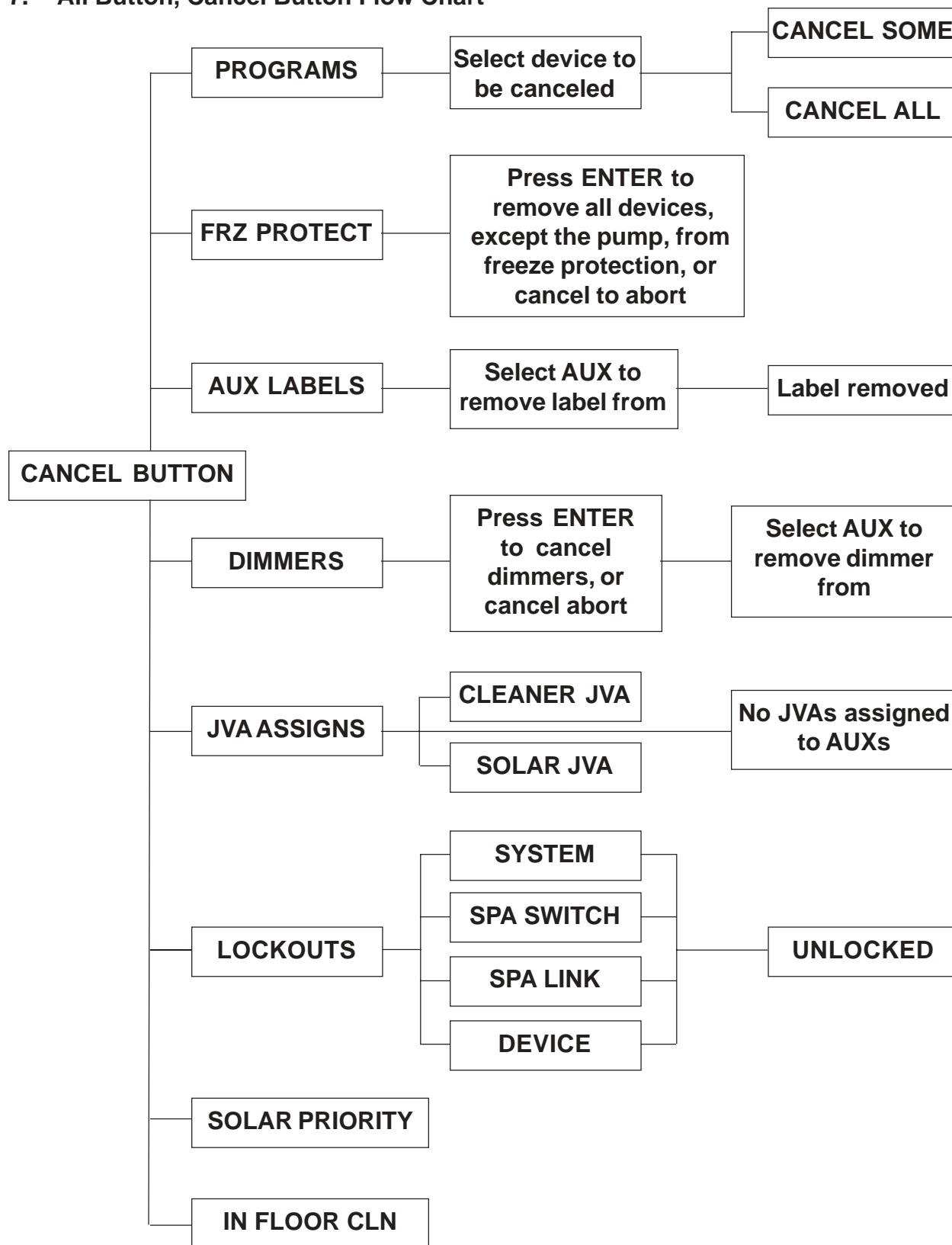
† Items Seen Only With Optional Equipment

* Items Seen Only In Revision "K"

** Not Available on Export Models

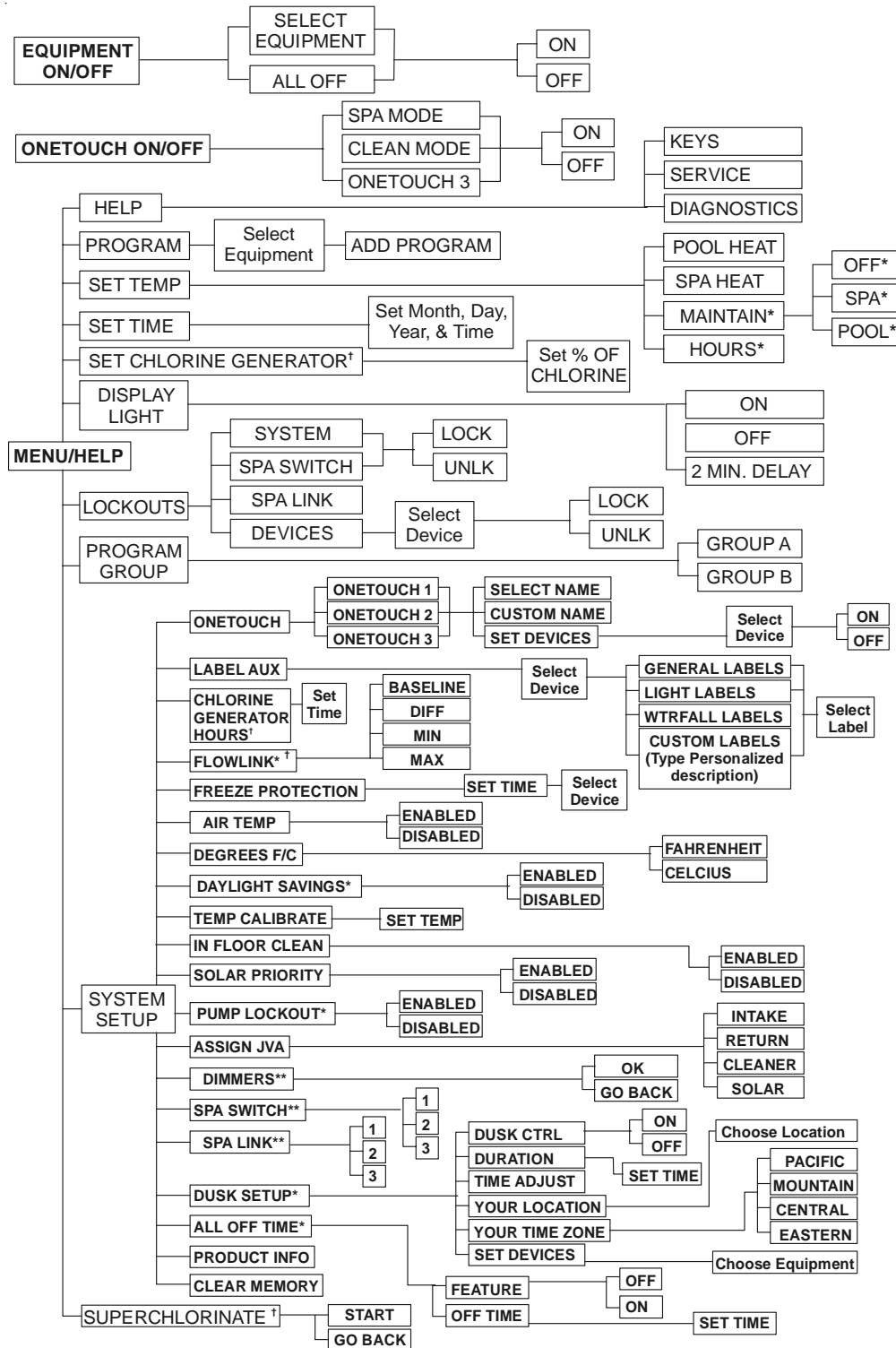
System Startup

7. All Button, Cancel Button Flow Chart



System Startup

8. OneTouch, Menu Flow Chart



† Items Seen Only With Optional Equipment

* Items Seen Only In Revision "K"

** Not Available on Export Models

Troubleshooting

1. All Button and OneTouch Quick Troubleshooting Guide

<u>Symptom</u>	<u>Problem</u>	<u>Possible Solution</u>
Power Center override switches operate when in Service or Time Out Mode, but the controller is completely dead (no lights on, no display).	Power supply problem.	Check connection of the outside two wires (red & green) of the four conductor cable. If wired correctly, check the voltage between these two wires. Voltage for an All Button system should be 7+ VDC and for a OneTouch system, 8+ VDC (use the higher voltage for a mixed system).
All LEDs are on at the controller and the part # and revision letter of the controller software are displayed. The override switches at the power center operate as they should.	Controller is not communicating with the power center PCB.	Check the two center wires (black & yellow) of the four conductor cable. Also check the installation of the PPD on the power center PCB. If the PPD is not seated correctly the system will not communicate.
All LEDs are on at the controller and the part # and revision letter are displayed, but override switches at the power center do not operate at all.	<ol style="list-style-type: none"> 1. Damaged or improperly installed PPD. 2. Damaged power center PCB. 	<ol style="list-style-type: none"> 1. Check alignment of the PPD. 2. If PPD is installed correctly, replace the power center PCB.
Some buttons do not operate from the controller, nor from the power center override switches.	Wrong PPD chip installed at the power center PCB.	Check part number and revision letter by pressing the reset button at the controller. The second part number and revision letter displayed is for the PPD indicating which model.
System locked up.	Microprocessor locked.	Turn off power to the system. Disconnect battery and turn on power. Reconnect the battery and reset time and date.
Programs do not run at the correct time.	AquaLink does not display correct time and date.	At the controller set correct time and date. In Diagnostics check battery level. If LOW BATTERY is displayed, replace battery to ensure correct time and date are maintained.

Troubleshooting

1. All Button and OneTouch Quick Troubleshooting Guide (con't)

<u>Symptom</u>	<u>Problem</u>	<u>Possible Solution</u>
One button on the Four Function Remote or SpaLink RS does not operate.	Check programming first. If the Four Function Remote or SpaLink RS is programmed correctly, the button may be shorted.	Replace the Four Function Remote or SpaLink RS. Use MENU, REVIEW, SPA SWITCH (or SPA LINK) to check programming.
Pool cleaner booster pump turns on without the filter pump being on, and can run with the spa on.	System is not recognizing DIP switch #1 is on. Note: before turning on any DIP switches, first turn off all equipment.	Turn off all equipment buttons, then turn off power to the system, finally turn off, then on, DIP switch #1. Turn on power and test system.
Cannot assign cleaner JVA.	DIP switches not set correctly.	DIP switch #1 must be off, and DIP switch #7 must be on to assign the cleaner JVA to an auxiliary (Revision F or older).
Model is one of the AquaLink RS Dual Equipment, message scrolls "ADJUSTABLE FREEZE SENSOR NOT INSTALLED".	Normal operation when a Dual Equipment AquaLink RS is controlling a solar system and an adjustable freeze sensor is not installed.	Either install the adjustable freeze sensor, or wait 24 hours and this message will go away.
System comes on at times that are not programmed.	Phantom programs.	At the controller press MENU, then scroll to REVIEW. Make note of all programs (the Four Function Remote setting, labels, and temperature settings) then turn off all DIP switches and go to the controller. CLEAR MEMORY, reprogram and try system again.
Heater will not fire. Heater LED will not light in "Service Mode".	Water temperature sensor not installed or defective.	Check water temperature sensor.

Troubleshooting

2. Wireless OneTouch Quick Troubleshooting Guide

2.1. The Wireless AquaLink RS will stop communicating anytime interference (such as from a microwave oven or other 2.4GHz devices) prevents a valid signal transmission. When communication is lost the control panel will lock on "Model Number" until a good link is again achieved, usually within a few seconds. If communication is not reestablished within a few seconds or this happens often, use the troubleshooting information below for suggestions.

Symptom

RS System operation is slow or display is erratic.

Cause

Replace socketed chip in OneTouch printed circuit board with Firmware B09 or newer.

Symptom

LCD screen display stays on "Firmware B11".

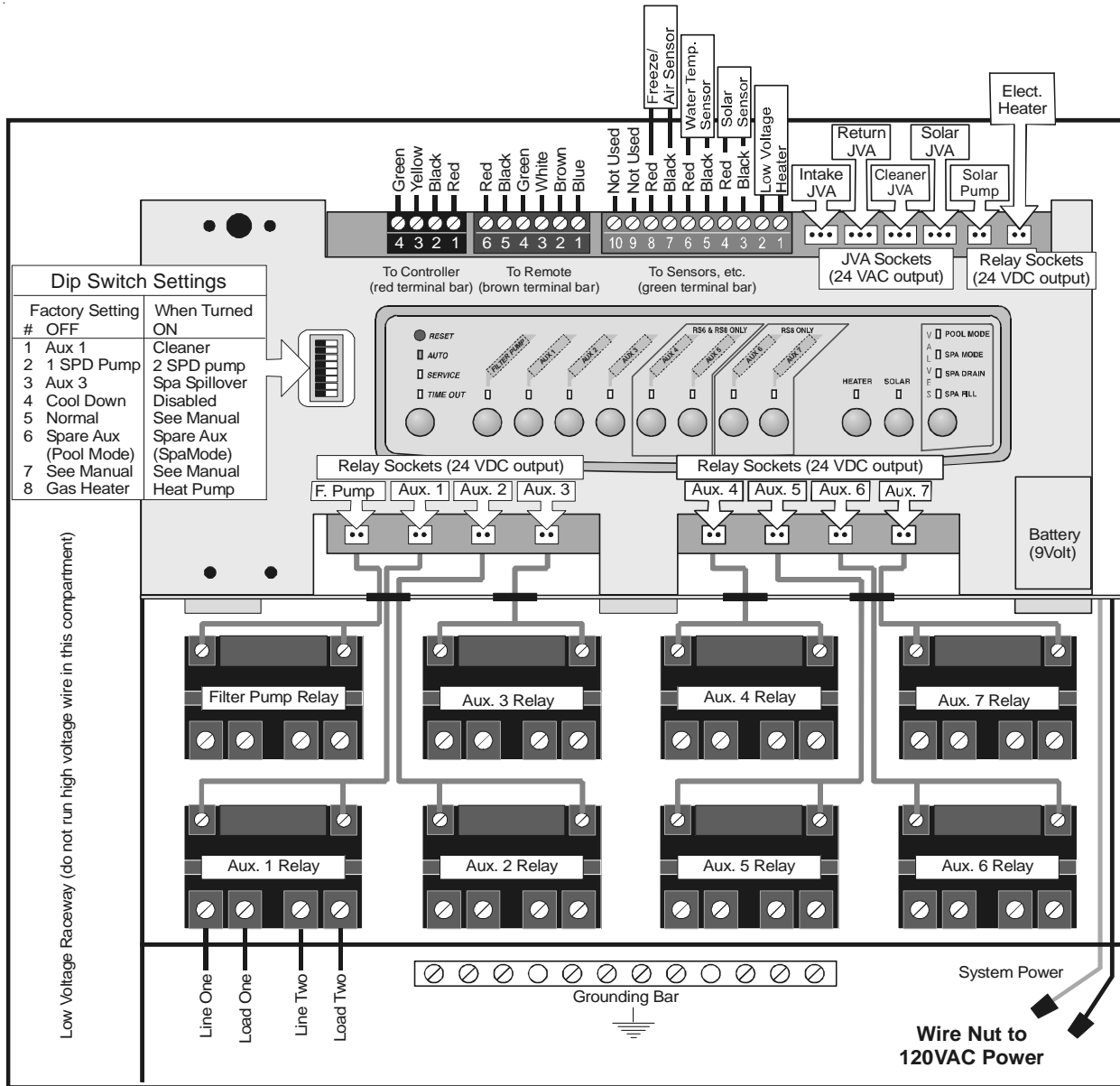
Cause

No communication between indoor Control Panel and Power Center J-box.

1. Confirm dip switch settings on both the Indoor Control Panel Transceiver and Power Center Transceiver are as follows:
 - DIPs 1-7 are set identical
 - DIP 8 is ON at Power Center J-box PCB
 - DIP 8 is OFF at Control Panel Transceiver PCB
2. At the Power Center J-box Transceiver board, press the SW1 setup button and confirm that the green LED flashes approximately 10 times. You may need to press SW1 more than one time or turn the power off and back on to get the LED to flash.
3. Repeat Step 2 for the Indoor Desktop Control Panel.
4. Recheck the Indoor Desktop Control Panel for proper performance.
5. If there is no communication yet, check LED's at the Power Center J-box Transceiver PCB:
 - Red LED must be lit to indicate power. If red LED is not lit check 4-conductor wire connection to the red 4-pin terminal bar at the Power Center.
 - Amber middle LED must blink continually. If not blinking, transceiver needs to be replaced with part #8114 or #8241 depending on the manufacture date. If amber LED is blinking at Power Center J-box Transceiver, go to the Indoor Control Panel.
6. If still no communication, check LED's at the Indoor Control Panel Transceiver PCB.
 - At the Indoor Control Panel Transceiver PCB, confirm that the red LED is on indicating power. If red LED is not lit, confirm unit is plugged into wall socket and 4-conductor wires are connected to the red 4-pin terminal bar on the Indoor Control Panel PCB.
 - If green LED is lit, indicates correct data is being received from the Power Center. If green LED is not lit, there is an obstruction of the RF signal caused by metal barriers.
 - Test Indoor Control Panel in close proximity to Power Center. If the unit tests okay, the placement of one or both transceivers needs to be moved for proper communication.
 - If green LED is lit, verify that the middle amber LED is blinking continuously which indicates data transmission from the Indoor Control Panel to the Power Center.
 - Go to the Power Center and verify that the green LED is lit, indicating correct data being received from the Indoor Control Panel.
 - This completes verification of the data transmission loop from the Power Center to the Indoor Control Panel and back.
7. Wireless Control Panel does not revert to sleep mode after 30 seconds, install OneTouch PCB firmware revision "B11".

Appendix

1. Power Center Wiring Diagram



Appendix

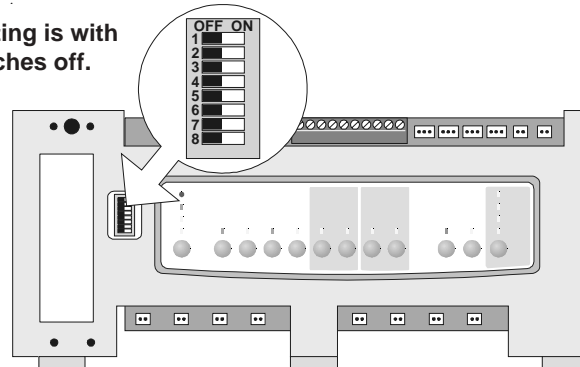
2. Power Center PCB DIP Switch Settings

1. *DIP #1 ON- AUX 1 Controls Pool Cleaner:* If you installed a booster pump for a pool cleaner, the relay coil for the booster pump must be plugged into the AUX 1 relay socket. If a non-booster pump cleaner is installed, plug the JVA into the cleaner JVA socket. Turn ON DIP Switch #1.
 - Main filter pump turns on whenever cleaner turns on.
 - Cleaner will not turn on until filter pump has been on for three (3) minutes (to ensure priming of system).
 - Cleaner turns off when water circulation is to spa.
 - Cleaner turns off when spa spillover feature is activated.
 - Cleaner turns off for three (3) minutes when solar is activated (to ensure air is purged from the system).
 - AquaLink RS Control Panel display reads "CLEANER" rather than "AUX 1".
2. *DIP #2 ON- AUX 2 controls low speed of filter pump:* Turn this switch ON if you want to control both speeds of a two-speed filter pump. With this switch on, the filter pump button on the AquaLink RS Control Panel will control high speed and the AUX 2 button will control low speed. **IMPORTANT:** You must also install a Jandy Two-Speed Relay.
3. *DIP #3 ON- AUX 3 controls spa spillover (operates with pool/spa combination):* Turn this switch ON, and when the AUX 3 button on the AquaLink RS Control Panel (or Spa Side Switch) is pressed, the Return Valve Actuator will rotate to spa circulation. Because the Intake Valve Actuator does not rotate, the spa will fill with water and overflow into the pool. **Note:** leave AUX 3 relay socket empty.
4. *DIP #4 ON- Heater cool down disabled:* Turn this switch ON to disable the heater cool down safety feature on the AquaLink RS. **WARNING:** Turn this DIP Switch ON only if you are using an electric heater or a heat pump that does not retain residual heat. If you are turning this switch ON for service purposes, be sure to turn it back off.
5. *DIP #5 ON- Factory use only:* This switch is used for calibration by Jandy certified technicians only (will momentarily display the solar temperature). If a FlowLink is installed, this will display water pressure. Please leave this switch in the off position.
6. *DIP #6 ON- Change Spare AUX to activate when Filter Pump is on and system is in spa mode (pool/spa combination units only).* Spare AUX socket is on the back side of the Power Center PCB.
7. *DIP #7 ON- Not used*
8. *DIP #8 ON- Heat pump instead of gas heater:* Turn this switch ON if you have installed a heat pump instead of a gas heater.

Appendix

2. Power Center PCB DIP Switch Settings (con't)

Factory setting is with all DIP switches off.



Pool and Spa Combination

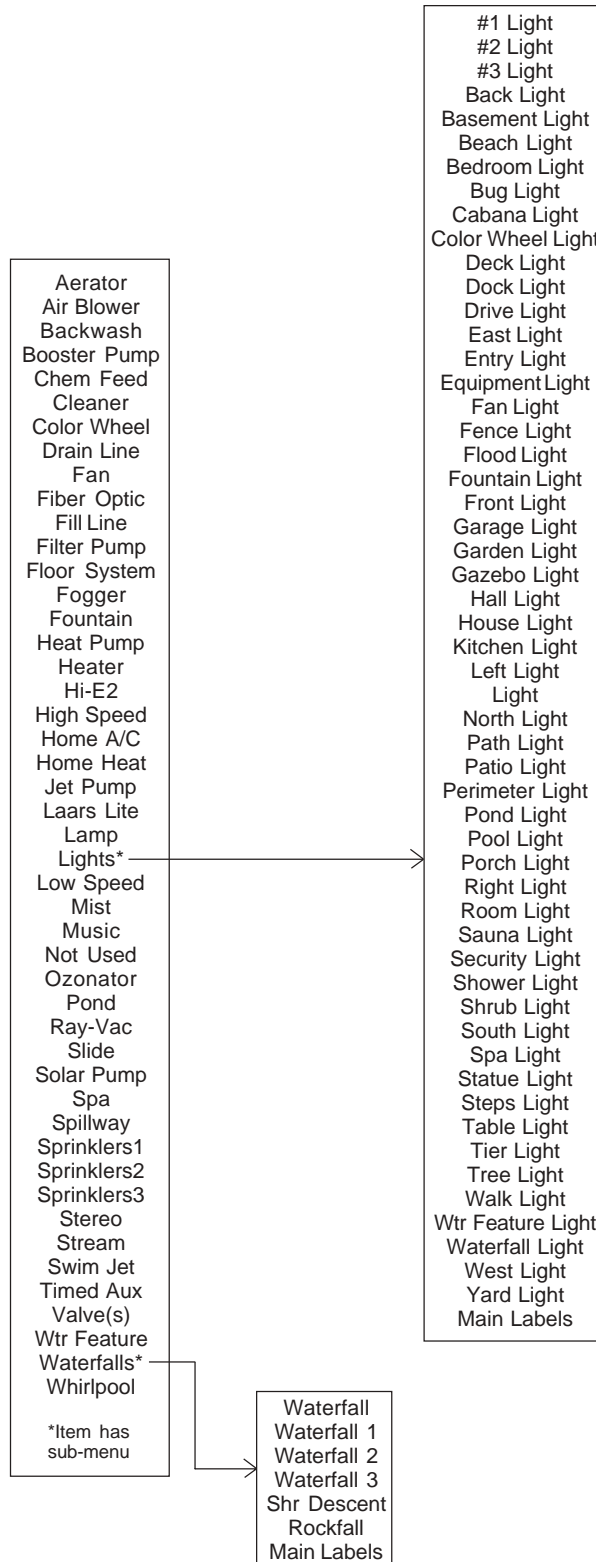
DIP Switch #	OFF	ON
1	AUX1= any equipment	AUX1= Pool Cleaner
2	AUX2= any equipment	AUX2= Low Speed for a two-speed filter pump. Filter pump circuit becomes High Speed.
3	AUX3= any equipment	AUX3= Spa Spillover effect- Combination controls only.
4	Heater cool down operates.	Heater cool down disabled.
5	Normal operation	Factory adjustment- when this switch is on, temperature delays are eliminated and solar temperature is displayed. If a FlowLink is installed, PSI will also be displayed. Do not leave this switch in the ON position.
6	Spare Aux activates with Filter Pump when Spa OFF	No change on Revision "HH" or older PPD. With Revision "I" or newer, Spare AUX operation is reversed.
7	Spare	No change on Combination or Only Controls.
8	After thermostat setting has been reached, heater will remain OFF for 3 minutes.	After thermostat setting has been reached, heater will remain OFF for 5 minutes.

Pool or Spa Only

DIP Switch #	OFF	ON
1	AUX1= any equipment	AUX1= Pool Cleaner
2	AUX2= any equipment	AUX2= Low Speed for a two-speed filter pump. Filter pump circuit becomes High Speed.
3	AUX3= any equipment	No change.
4	Heater cool down operates.	Heater cool down disabled.
5	Normal operation	Factory adjustment- when this switch is on, temperature delays are eliminated and solar temperature is displayed. If a FlowLink is installed, PSI will also be displayed. Do not leave this switch in the ON position.
6	Spare	No change.
7	Spare	No change.
8	After thermostat setting has been reached, heater will remain OFF for 3 minutes.	After thermostat setting has been reached, heater will remain OFF for 5 minutes.

Appendix

3. General, Water Feature and Light Label Menus





Sheet # 6594 Rev. F

6000 Condor Drive, Moorpark, CA, USA 93021 • 707.776.8200 FAX 707.763.7785
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