

# **Installation Manual**



# AquaLink<sup>®</sup> RS All Button and OneTouch<sup>™</sup> Control Systems



**Dual Equipment Systems** 



FOR YOUR SAFETY - This product must be installed and serviced by a professional pool/ spa service technician. The procedures in this manual must be followed exactly. Failure to follow warning notices and instructions may result in property damage, serious injury, or death.

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### EQUIPMENT INFORMATION RECORD

DATE OF INS	STALLATION		
INITIAL PRESSURE GAUGE READING (WITH CLEAN FILTER)			
PUMP MODE	E	HORSEPOWER	
FILTER MODEL		SERIAL NUMBER	
CONTROL PANEL MODEL		SERIAL NUMBER	
NOTES:			



# Section 1. Important Safety Instructions

# READ AND FOLLOW ALL INSTRUCTIONS

# Lire la notice technique.

All electrical work must be performed by a licensed electrician and conform to all national, state, and local codes. When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

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To reduce the risk of injury, do not remove the suction fittings of your spa or hot tub. Never operate a spa or hot tub if the suction fittings are broken or missing. Never replace a suction fitting with one rated less than the flow rate marked on the equipment assembly.

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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.

# A WARNING

### To Reduce the Risk of Injury -

- a) The water in a spa should never exceed 104°F (40°C). Water temperatures between 100°F (38°C) and 104°F (40°C) are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.
- b) Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperatures to 100°F (38°C).
- c) Before entering a spa or hot tub, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature-regulating devices varies.
- d) The use of alcohol, drugs, or medication before or during spa or hot tub use may lead to unconsciousness with the possibility of drowning.
- e) Obese persons and persons with a history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a spa.
- f) Persons using medication should consult a physician before using a spa or hot tub since some medication may induce drowsines while other medication may affect heart rate, blood pressure, and circulation.

# 

**Risk of electric shock -** install the power center at least five (5) feet (152.4cm) from the inside wall of the pool and/or hot tub using non-metallic plumbing. Canadian installations must be at least three (3) meters from the water.

Children should not use spas or hot tubs without adult supervision.

Do not use spas or hot tubs unless all suction guards are installed to prevent body and hair entrapment.

People using medications and/or having an adverse medical history should consult a physician before using a spa or hot tub.

## 

**Danger d'electrocution -** Les installations canadiennes doivent se trouver à au moins trois (3) mètres de l'eau. Ne pas laisser les enfants utiliser une cuve de relaxation sans surveillance.

Pour éviter que les cheveux ou une partie du corps puissent être aspirés, ne pas utiliser une cuve de relaxation si les grilles de prise d'aspiration ne sont pas toutes en place.

Les personnes qui prennent des médicaments ou ont des problèmes de santé devraient consulter un médecin avant d'utiliser une cuve de relaxation.

# A WARNING

People with infectious diseases should not use a spa or hot tub.

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To avoid injury, exercise care when entering or exiting the spa or hot tub.

Do not use drugs or alcohol before or during the use of a spa or hot tub to avoid unconsciousness and possible drowning.

Pregnant or possibly pregnant women should consult a physician before using a spa or hot tub.

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

Before entering a spa or hot tub measure the water temperature with an accurate thermometer.

Do not use a spa or hot tub immediately following strenuous exercise.

Prolonged immersion in a spa or hot tub may be injurious to your health.

Do not permit any electric appliance (such as a light, telephone, radio, or television) within 5 feet (1.5 m) of a spa or hot tub.

The use of alcohol, drugs or medication can greatly increase the risk of fatal hyperthermia in hot tubs and spas. Water temperature in excess of 100°F/38°C may be hazardous to your health.

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Les personnes atteintes de maladies infectieuses ne devraient pas utiliser une cuve de relaxation.

Pour éviter des blessures, user de prudence en entrant dans une cuve de relaxation et en sortant.

Pour éviter l'évanouissement et la noyade éventuelle, ne prendre ni drougue ni alcool avant d'utiliser une cuve de relaxation ni quand on s'y trouve.

Les femmes enceintes, que leur grossesse soit confirmée ou non, devraient consulter un médecin avant d'utiliser une cuve de relaxation.

Il peut être dangereux pour la santé de se plonger dans de l'eau à plus de 38°C/100°F.

Avant d'utiliser une cuve de relaxation mesurer la témperature de l'eau à l'aide d'un thermomètre précis.

Ne pas utiliser une cuve de relaxation immédiatement après un exercice fatigant.

L'utilisation prolongée d'une cuve de relaxation peut être dangereuse pur la santé.

Ne pas placer d'appareil électrique (luminaire, téléphone, radio, téléviseur, etc) à moins de 1.5m de cette cuve de relaxation.

La consommation d'alcool ou de drogue augmente considérablement les risques d'hyperthermie mortelle dans une cuve de relaxation.

Il peut etrê dangereux pour la santé de se plonger dans de l'eau à plus de 38°C/100°F.

# 

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 copper conductor having green insulation and one that is 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.

# 

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.

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Control system is intended to control heaters with built-in high limit circuits only.



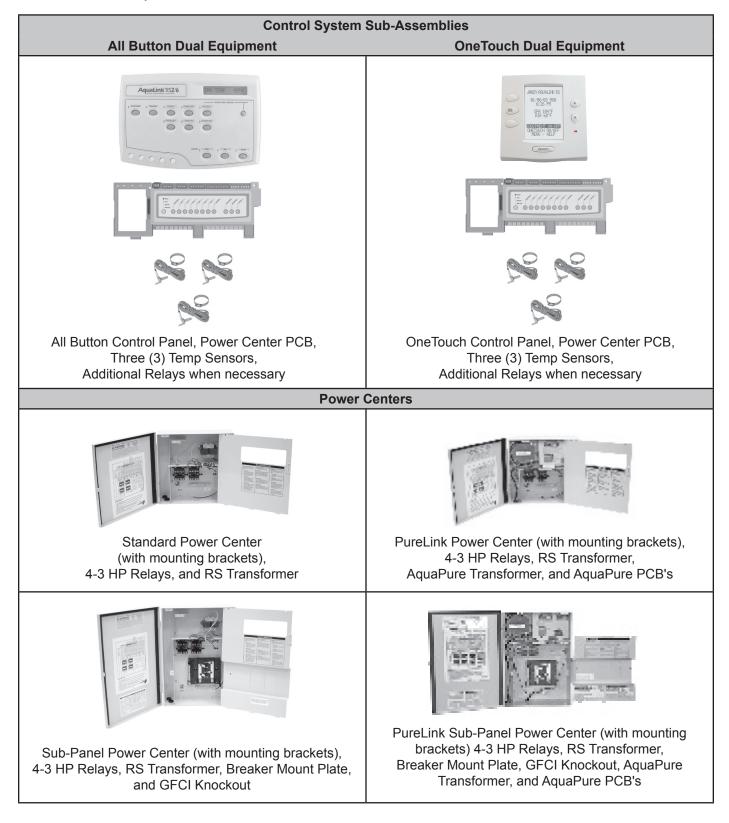
Attention installer: Install to provide drainage of compartment for electrical components.

# SAVE THESE INSTRUCTIONS

# Section 2. System Overview

### 2.1 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.

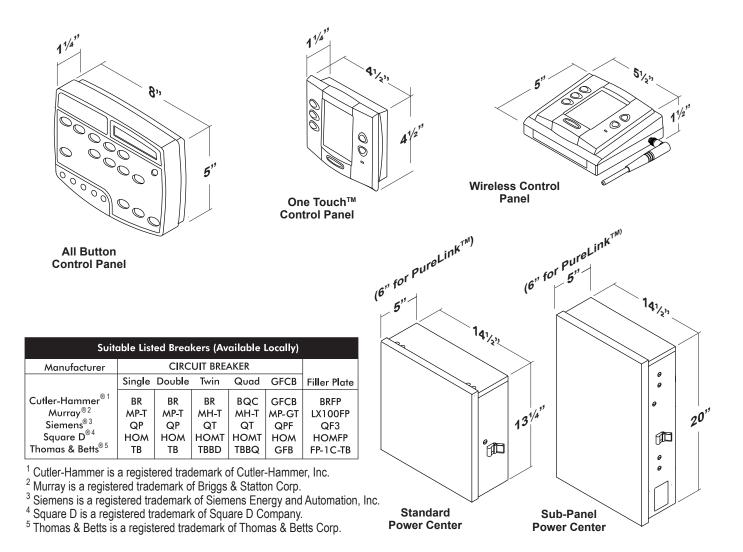


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### 2.2 System Component Specifications and Dimensions

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 2, 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 2, 1 A @ 24 VAC	
Emergency Service Switch	All Circuits (located at Power Center in Service Mode)	
Dimensions		



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## 2.3 Plumbing Diagrams

### 2.3.1 Basic Plumbing

Refer to Figure 1 when plumbing two separate sets of equipment. The basic setup consists of one pump, filter and heater for the pool and another set for the spa.

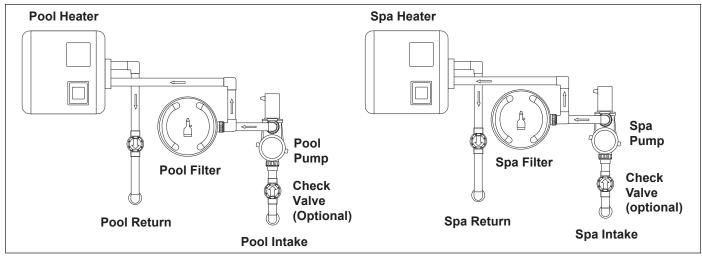


Figure 1. Basic Plumbing for Dual Equipment

### 2.3.2 Plumbing - Sharing One Heater

When the system setup is using only one heater, plumb the equipment as shown in Figure 2.

Please note that for this type of plumbing a new bezel decal must be applied over the existing decal in order to identify the correct labeling for the HEATER and VALVE buttons. **NOTE** When connecting to the AquaLink RS, plug the JVAs into the Intake, Return and Cleaner JVA sockets. Slide DIP Switch S1-6 to the ON position. See wiring diagram in Section 4, Figure 5.

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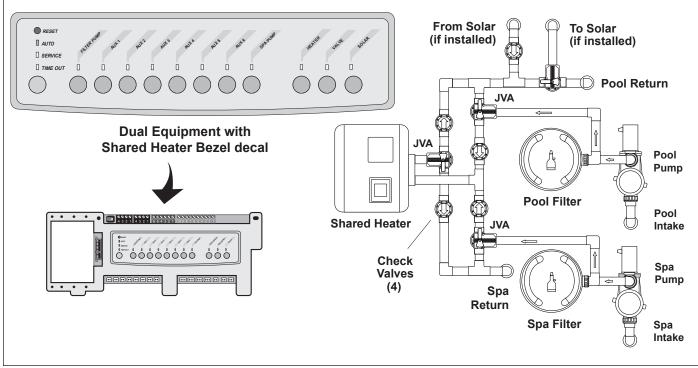


Figure 2. Dual Equipment System with One Heater



# Section 3. Power Center Connection (Low Voltage)

#### 3.1 Connecting Power and Mounting Bezel

### A WARNING

**Risk of Electric Shock which can result In Serious Injury or Death.** Before attempting installation or service, ensure that all power to the circuit supplying power to the system is disconnected or turned off at the circuit breaker.

All wiring must be done in accordance with the National Electrical Code (NEC), NFPA-70. In Canada, the Canadian Electrical Code (CEC), CSA C22.1, must be followed. All applicable local installation codes and regulations must be followed.

1. Plug the orange 24 VAC power plug from the transformer into its 3-pin terminal on the back of the Low Voltage Bezel. Mount the Bezel to the Power Center with the screws provided (see Figure 3).

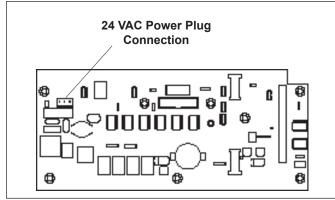


Figure 3. Power Center PCB (back view)

- 2. *(Shared Heater Setup only)* Mount JVAs & run wires to Power Center.
- **NOTE** Refer to the JVA manual to install JVAs. Run JVA wires back to the low voltage compartment of the Power Center, through low voltage raceway, and plug the JVAs into their sockets. See Figure 2 for JVA placement.

Do not coil JVA cable inside Power Center. To shorten cable, remove JVA lid and disconnect the cable. Shorten, strip, and reconnect.

### 3.2 Connecting Control Panel Cable to PCB

- 1. Make provisions for Jandy Control Panel Cable to be run between the Control Panel and the Power Center.
- **NOTE** When cable will be run underground or in concrete, it must be run in conduit. Never run high voltage and low voltage cables in the same conduit.
  - 2. Pull the Control Panel Cable into the low voltage compartment.
  - 3. Strip back cable jacket 6". Strip each wire  $\frac{1}{4}$ ".
  - 4. Wire according to the Power Center PCB wiring diagram (see Section 5, Figure 5).

### 3.3 Connecting Sensors to Terminals

### 3.3.1 Water Temperature Sensor

- Drill 3/8" hole in pipe between filter pump and filter. Insert the sensor and use the clamp provided to hold the sensor in place. Make sure the O-ring is in place.
- 2. Connect the sensor wires to the 10 pin terminal bar as shown in dual equipment wiring diagram (see Section 5, Figure 5).

# 3.3.2 Freeze/Air Temperature Sensor (Required)

Install the Freeze/Air Temperature Sensor outdoors where it will be subjected to outdoor temperatures, but not in direct sun. Connect the sensor wires to the 10 pin terminal bar as shown on the Power Center wiring diagram. Connect the other sensors to the 10 pin terminal bar as shown in the wiring diagram (see Figure 5).

### 3.3.3 Solar Temperature Sensor (Optional)

Install the sensor adjacent to the solar panels. Connect the sensor wires to the 10 pin terminal bar (pins 7 & 8) as shown in the wiring diagram. Connect the other sensors to the 10 pin terminal bar as shown in the wiring diagram (See Figure 5).

**NOTE** If a solar system is installed, the Freeze/Air Sensor will become the Solar Sensor. A special Freeze Sensor Kit (Part #6996) is needed. Follow instructions included with the Kit.

## 3.4 Connecting Heater to Low Voltage Terminal

- **NOTE** Millivolt, electronic ignition, or heat pump with thermostatic circuitry of 24 VAC or less.
  - 1. If you are connecting a Low Voltage pool heater (for example, a Jandy Brand heater), connect two 14 gauge wires, designed for use in hot environments, to the proper terminals on the 10 pin terminal bar (see Figure 4). If you are connecting a High Voltage pool heater, contact Jandy for instructions.

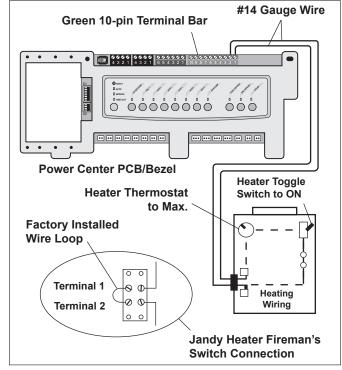


Figure 4. Jandy Heater Connection

- 2. Bring the 2 heater wires from the PCB over to the heater and wire nut in series with heater circuitry as if you were wiring a fireman's switch or a heater delay.
- 3. Turn the heater thermostat to the Spa position and maximum setting.
- 4. Turn heater toggle switch on.
- 5. Do not disconnect high limit or pressure switches.
- **NOTE** For Spa Heater, make connection to the Spa heater Interface Board and plug it into the Spa Heater socket.

# 3.5 Connecting Equipment to PCB

Connect the high voltage relay plugs into their appropriate sockets according to the wiring diagram located on the inside of the Power Center door (see Section 5, Figure 5).

**NOTE** Pool filter pump socket is on the far left of the PCB and the spa filter pump relay socket is on the right after aux 6 socket.

## 3.6 Setting DIP Switches

See the wiring diagram in Figure 5 to set all DIP Switches for optional operation features.

# 3.7 Installing Power Center Faceplate

Use the screws provided to install and secure the Power Center Faceplate onto the Power Center. Connect the Power Center can to the main circuit breaker and restore power to the unit and check it for proper operation.





# Section 4. Power Center PCB DIP Switch Settings

## 4.1 DIP Switch Functions

### S1 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".

### S1 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.

### S1 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.

## S1 DIP #4 ON- Heater Cool Down Disabled

Turn this switch ON to disable the heater cool down safety feature on the AquaLink RS.

## 

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.

## S1 DIP #5 ON- Factory Use Only

This switch is used for calibration by Jandy certified technicians only (will momentarily display the solar temperature and if installed, actual FlowLink water pressure). Please leave this switch in the OFF position.

## S1 DIP #6 ON

### (Combo Systems, Pool and Spa)

Change Spare AUX to activate when Filter Pump is on and system is in spa mode.

### (Dual Equipment)

This switch only applies to DUAL EQUIPMENT systems. When OFF a separate heater is used for the pool and spa. When ON the pool and spa share the same heater.

# *S1 DIP #7 ON- Not Used* (Dual Equipment)

Change air sensor to solar sensor - Air temperature no longer displayed. Adjustable Freeze Kit must be added for freeze protection.

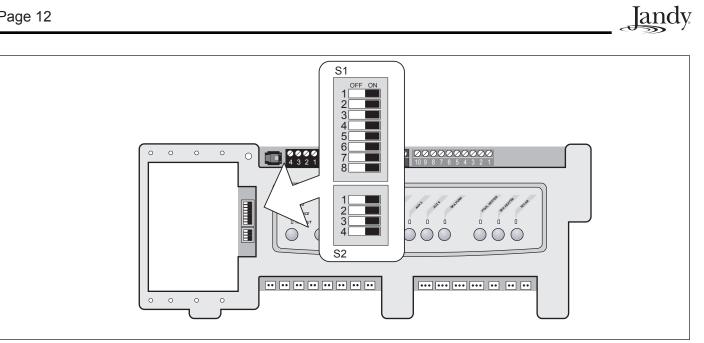
### S1 DIP #8 ON- Heat Pump Instead of Gas Heater

Turn this switch ON if you have installed a heat pump instead of a gas heater. After thermostat setting has been reached, heater will remain OFF for 5 minutes.

### S2 DIP #1 ON- Heat Pump Priority

This switch is used for configuring solar priority or heat pump priority. Set this switch to ON if Heat Pump Priority will be used. Set this switch to OFF if Solar Priority is to be used.

This switch is used f



#### DIP Switch Settings for Pool and Spa Combination 4.2

S1 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	NOT USED	NOT USED
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. <b>Do not leave this switch in the ON position.</b>
6	Separate Pool and Spa heater.	Sharing one heater for pool and spa.
7	No solar system installed. Air temperature is displayed.	Changes air sensor to solar sensor. Air temperature no longer displayed. Adjustable Freese Kit must be added for freeze protection.
8	After thermostat setting has been reached, heater will remain OFF for 3 minutes.	Heat Pump installed; after thermostat setting has been reached, heater will remain OFF for 5 minutes.

S2 DIP Switch #	OFF	ON
1	The AquaLink RS will be able to control a Solar Heating system (If a solar sensor is connected to the solar sensor input).	The AquaLink RS will be able to control a Heat Pump. (The AquaLink RS will not be able to control a Solar Heating system.)
2	NOT USED	
3	NOT USED	
4	NOT USED	

S1 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. <b>Do not leave this switch in the ON position.</b>	
6	Spare	No change	
7	Spare	No change	
8	After thermostat setting has been reached, heater will remain OFF for 3 minutes.	Heat Pump installed; after thermostat setting has been reached, heater will remain OFF for 5 minutes.	
S2 DIP Switch #	OFF	ON	
1	The AquaLink RS will be able to control a Solar Heating system (If a solar sensor is connected to the solar sensor input).	The AquaLink RS will be able to control a Heat Pump. (The AquaLink RS will not be able to control a Solar Heating system.)	
2	NOT USED		
3	NOT USED		
4	NOT USED		

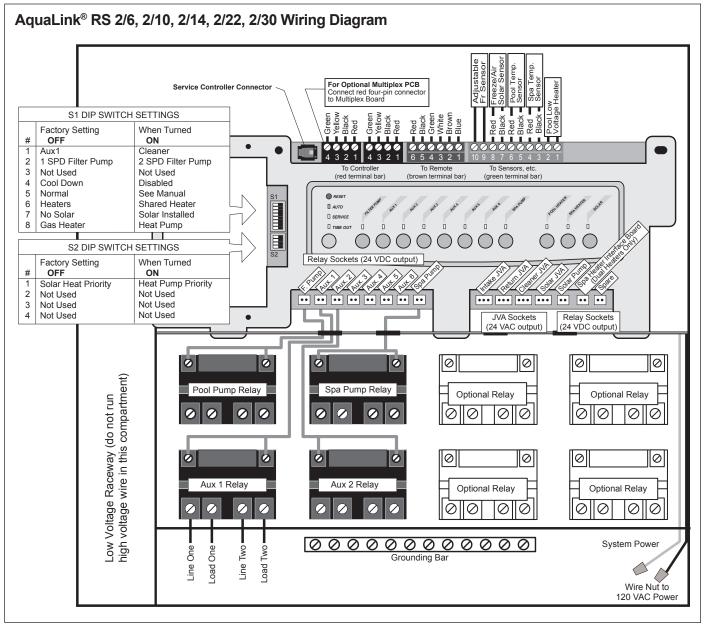
## 4.3 DIP Switch Settings for Pool or Spa Only

## 4.4 DIP Switch Settings for Heat Pump Installation

This table shows how to configure the system for SOLAR PRIORITY or HEAT PUMP PRIORITY.

DIP S2-1	GREEN 10-PIN TERMINAL BAR	RS485 HEAT PUMP	DESCRIPTION
OFF	No sensor installed	Not connected	In this configuration there is no Solar Heating and no Heat Pump. Extra AUX is available.
OFF	Sensor installed	Not connected	In this configuration there is Solar Heating and there is Solar Priority. There is no Heat Pump.
OFF	Sensor installed	Connected	In this configuration there is Solar Heating and there is Solar Priority. There is Heat Pump. There is Heat Pump Priority.
ON	No sensor installed	Not connected	In this configuration there is no Solar Heating. There is a mechanically connected Heat Pump. There is Heat Pump Priority (a limited implementation).
ON	Sensor installed	Not connected	In this configuration there is no Solar Heating. There is a mechanically connected Heat Pump. There is Heat Pump Priority (full implementation).
ON	Sensor installed	Connected	In this configuration there is no Solar Heating. There is an RS485 controlled Heat Pump. There is Heat Pump Priority.

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Figure 5. Dual Equipment Wiring Diagram

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NOTES

# LIMITED WARRANTY

Thank you for purchasing Jandy<sup>®</sup> pool and spa products. Zodiac Pool Systems, Inc. warrants all parts to be free from manufacturing defects in materials and workmanship for a period of one (1) year from the date of retail purchase, with the following exceptions:

- AquaLink® RS units installed with Jandy® Surge Protection Kits will be covered for two (2) years.
- Never Lube® valves are warranted for the life of the pool and/or spa on which they were originally installed.
- AquaPure® Electronic Chlorine Generator Electrolytic Cells carry a five (5) year limited warranty on a prorated basis.
- Heat pumps are covered for two (2) years. There is a lifetime warranty on titanium tubing.
- The heat pump compressor is covered for five (5) years.
- The DuoClear® Electrolytic Cells carry a three (3) year limited warranty on a prorated basis.
- The DuoClear® Vessels carry a three (3) year limited warranty.

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 Zodiac Pool Systems, 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, or any other materials required to make the repair. Refrigerant or other expendables are not covered by the warranty. 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, which are 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 levels between 7.2 and 7.8, with ideal ranges being between 7.4 and 7.6, 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 Zodiac Pool Systems, Inc. No one is authorized to make any other warranties on behalf of Zodiac Pool Systems, 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. ZODIAC POOL SYSTEMS, 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 that 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 to obtain 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 or by calling our technical support department at 1.800.822.7933 in the United States or 1.888.647.4004 in Canada. All returned parts must have a Returned Material Authorization number to be evaluated under the terms of this warranty.

