



# Installation and Operation Manual



## Jandy® Laminar Jet Pulse Controller LPC4



### **! WARNING**

**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.**

**This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner/operator of this equipment.**



## Table of Contents

Section 1. Safety Information .....4

Section 2. General Information .....5

Section 3. Solenoid Installation .....5

Section 4. Control Panel Installation .....6

Section 5. Low Voltage Wiring Installation.....7

Section 6. Control Panel Operation .....8

Section 7. LPC4 Remote Installation .....8

Section 8. Remote Panel Operation.....8

Section 9. System Wiring Diagrams.....9

Section 10. Parts List and Exploded View..... 13

| <b>EQUIPMENT INFORMATION RECORD</b> |                     |
|-------------------------------------|---------------------|
| DATE OF INSTALLATION _____          |                     |
| INSTALLER INFORMATION _____         |                     |
| LAMINAR JET MODEL _____             | SERIAL NUMBER _____ |
| CONTROL PANEL MODEL _____           | SERIAL NUMBER _____ |
| LAMINAR PULSE CONTROL MODEL _____   | SERIAL NUMBER _____ |
| NOTES: _____                        |                     |
| _____                               |                     |
| _____                               |                     |

## Section 1. Safety Information

### IMPORTANT SAFETY INSTRUCTIONS READ AND FOLLOW ALL INSTRUCTIONS SAVE THESE INSTRUCTIONS

**FOR YOUR SAFETY:** This product must be installed and serviced by authorized personnel qualified in pool/spa installation and maintenance. Improper installation and/or operation will void the warranty.

#### **WARNING**

**Risk of Electrical Shock or Electrocution.** This Control Panel must be installed by a licensed or certified electrician in accordance with the National Electrical Code and all applicable local codes and ordinances. Improper installation will create an electrical hazard which could result in death or serious injury to pool users, installer, or others due to electrical shock, and may also cause damage to property.



**ATTENTION INSTALLER:** This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner/operator of this equipment.

## Section 2. General Information

The Jandy® Laminar Jet Pulse Controller (LPC4) enhances the fiber optic light option used with the Laminar Jets. The LPC4 pulses the fiber optic light providing a burst of color that travels throughout the stream of the jet. Because of the unique microprocessor based electronics, multiple settings can be achieved from timed bursts of light to random operation and finally to patterns that truly create the ultimate in backyard water and light fantasy.

The LPC4 can control up to four solenoid valves that are used to pulse light for up to four Jandy Laminar Flow Jets (p/n JLJ1001). In other words, one (1) solenoid valve per Laminar Flow Jet. The LPC4 kit includes one (1) control panel and two (2) solenoid valves. The LPC4 can be operated by the Jandy AquaLink® RS control systems (with Revision L or newer software) or by the optional LPC4 Remote.

## Section 3. Solenoid Installation

The LPC4 includes the following parts that can be installed in up to two Laminar Jets:

- two (2) 24 VAC Solenoid Valves (model number LPC4-S) with 50 ft cable (see Figure 1)
- four (4) #10 x 5/8" stainless steel screws
- two (2) adhesive backed 3/8" rubber pads

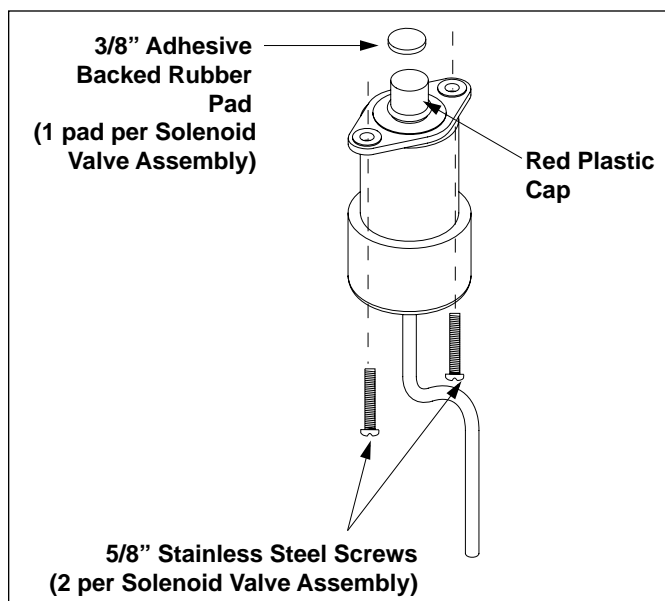


Figure 1. Solenoid Valve Assembly

1. To install the solenoid, turn the Jandy Laminar Flow Jet upside down and locate the three (3) holes molded into the bottom (see Figure 2). The hole in the center is 3/8" in diameter.

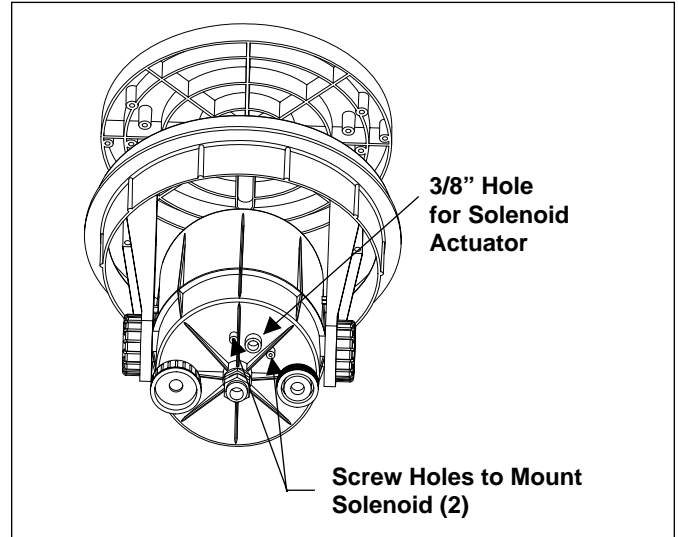


Figure 2. Laminar Jet Assembly - Bottom View

2. Take the 3/8" rubber pad out of the solenoid actuator kit and remove the adhesive strip off the back of the rubber pad. Then press the pad into the center 3/8" hole. The adhesive on the back of the pad will secure the pad in the hole.
3. Carefully remove and discard the red plastic protective plug over the solenoid actuator. Ensure O-ring is on this end (see Figure 3).

**CAUTION**

Be sure not to lose the metal striker and spring assembly.

**NOTE** The metal striker, spring, and o-ring must be installed for unit to operate.

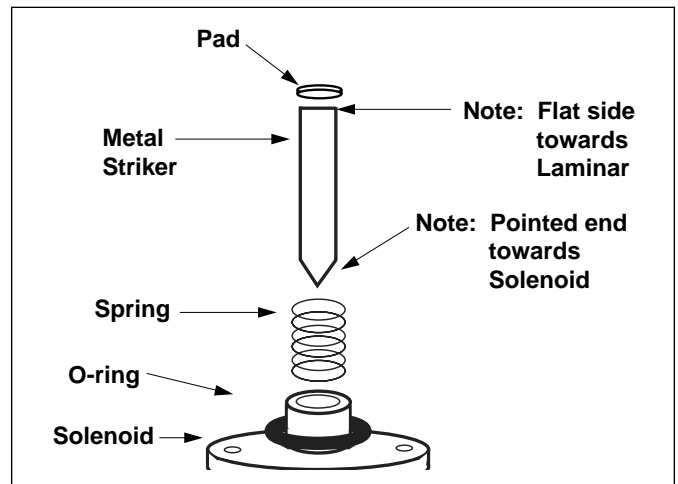
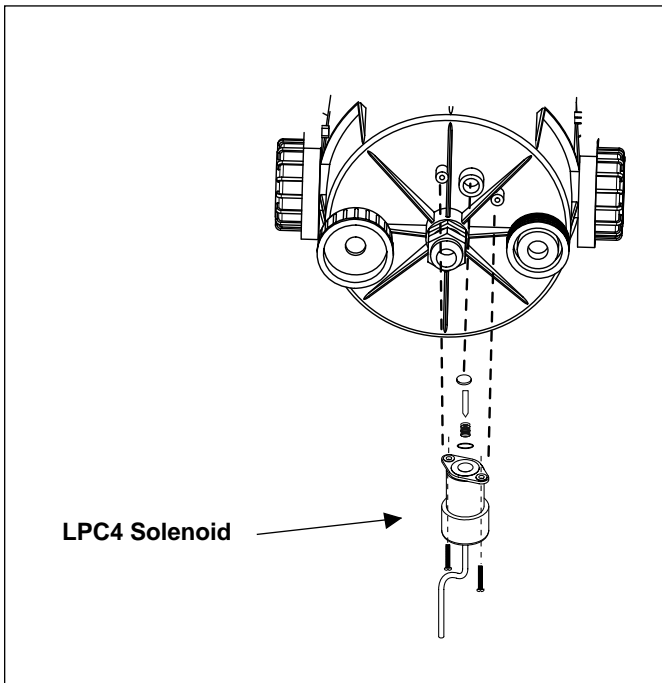


Figure 3. Solenoid Spring Assembly

- Slip the solenoid and striker into the 3/8" hole and align the two (2) screw holes. Secure in place with two #10 x 5/8" stainless steel screws (see Figure 4).



**Figure 4. Laminar Jet Assembly - Solenoid Mounted**

**NOTE** On the Laminar Jet Deck Box, ensure that conduit for the fiber optic/electrical cables is plumbed to the port marked **Electrical**.

- Route the wiring cable from the solenoid assembly through the Laminar Jet Deck Box port marked **Electrical** and through the conduit to the LPC4 control panel.

## Section 4. Control Panel Installation

### **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. Connect only to a circuit protected by a ground fault circuit-interrupter (GFCI).

All wiring must be done in accordance with the National Electric Code (NEC), NFPA-70. All applicable local installation codes and regulations must be followed.

**NOTE** The control panel should be mounted vertically on a flat surface. Locate the control panel at least one (1) foot (305mm) above the ground and at least 5 feet away from a pool, spa or fountain. Ensure that the fiber optic and LPC4 control wiring is hardwired to the fiber optic light source, unless using an AquaLink RS control system. If using in an AquaLink RS control system, ensure the fiber optic and LPC4 control wiring is connected to the load side of an AUX relay in the Power Center.

- Open the cover to the box of the control panel and remove the two (2) screws holding the control panel.
- Remove the green 10-pin terminal bar located on the printed circuit board (PCB), on back of the control panel. Set control panel aside.

**NOTE** This control panel requires listed (for example, UL, CSA) and properly rated 1/2" watertight conduit fittings for all wiring conduits. These conduit fittings are not provided with the product.

- Locate the knockouts on the bottom of the control panel. Using a screwdriver, tap out the knockout on the control panel at desired conduit locations. Remove any burrs of plastic in opening.

**NOTE** Connect the conduit hub to the conduit *before* connecting the hub to the control panel. This will eliminate any stress placed upon the plastic controller enclosure from the incoming conduit and hubs.

- Install the fitting securely into control panel conduit opening, making sure that the fitting is seated flat against the control panel. This will ensure a watertight seal.
- Locate the three (3) mounting holes available on the control panel. Mount the control panel to a vertical surface.
- On the lower right-hand side of the control panel, locate the green ground wire. Connect the ground wire securely to incoming ground on the transformer using the provided wire nut. Refer to the wiring diagram in Figure 5.
- Connect the input power source, either 110VAC or 220VAC, using the wiring diagram in Figure 5 as a reference.

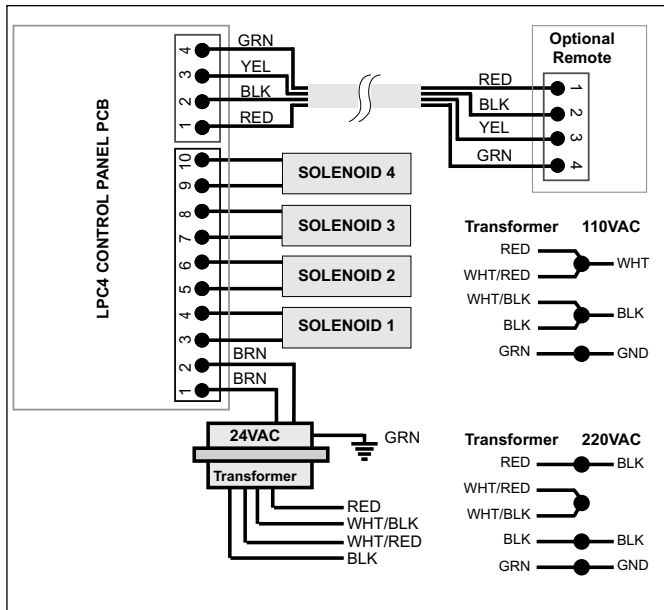


Figure 5. LPC4 Wiring Diagram

## Section 5. Low Voltage Wiring Installation

Ensure the solenoid valve is installed in the Laminar Flow Jet prior to starting the following procedure.

1. Route the solenoid cable in the same conduit as the fiber optic.
2. Connect the wires of each solenoid into the green 10-pin terminal bar. Refer to Figure 5 for the connection location for each solenoid wire.

**NOTE** Use 1/8" screwdriver to tighten terminal screws firmly. Route the solenoid wires on left side of control panel.

3. If using the LPC4 Remote or a Jandy AquaLink RS control panel, connect the 4-conductor wire to the red terminal bar in the control panel. Refer to Figure 5 for the connection location for each wire. Tighten the terminal screws firmly.

**NOTE** A jumper is included in the LPC4 Remote Control Panel (LPC4-R) that allows the control panel to provide power to the LPC4 Remote. Install this jumper on the 2-pin header on the control panel PCB **only** when connecting the LPC4 control panel to the LPC4 Remote or connecting multiple control panels to the remote panel (see Figure 6).

**⚠ CAUTION**

When connecting multiple control panels to the LPC4 Remote, install the jumper on the header of **only** one control panel.

**Do not** install this jumper if connecting the LPC4 control panel to a Jandy AquaLink RS system.

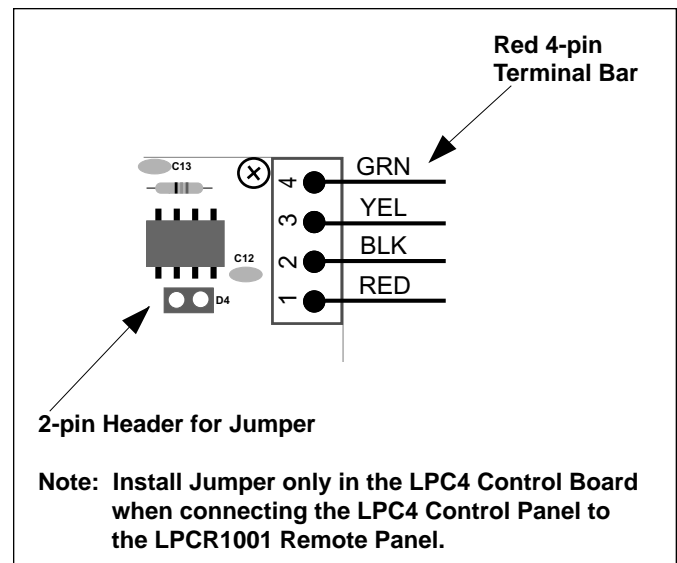
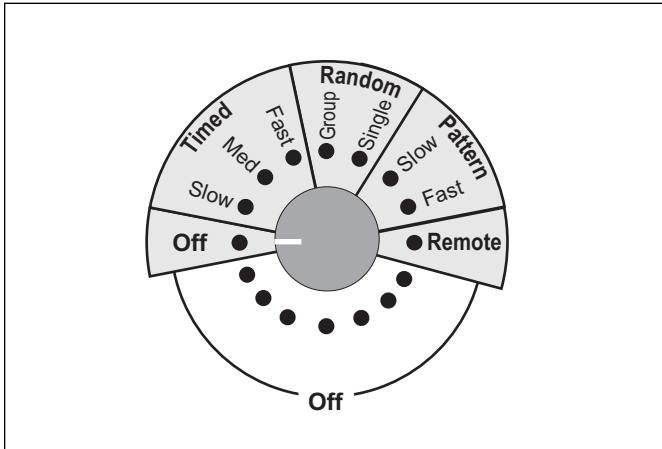


Figure 6. Jumper Installation in the LPC4 Control Board - Cut Away View

4. Reconnect the 10-pin terminal bar to the back of the control panel. Install the top cover using the two (2) screws removed in *Section 4, Step 1*.

## Section 6. Control Panel Operation



**Figure 7. LPC4 Control Panel Knob**

The LPC4 control panel knob has nine (9) operable settings (see Figure 7). The operating positions are as follows:

- **OFF** - Turns off *all* pulse control to all Laminar Jets.
- **Timed** - Provides a synchronous pulse to *all* Laminar Jets in any one of the following three (3) timed settings.
  - Slow** - Pulse occurs every eight (8) seconds
  - Medium** - Pulse occurs every four (4) seconds
  - Fast** - Pulse occurs every one (1) second
- **Random** - Provides pulse to Laminar Jets at random time intervals.
  - Group** - *All* Laminar Jets pulse at random
  - Single** - *Each* Laminar Jet pulses at random
- **Pattern** - Provides a pulse sequence to *all* Laminar Jets in any one of the following two (2) timed settings.
  - Slow** - Sequence is time delayed at slow speed
  - Fast** - Sequence is time delayed at rapid speed
- **Remote** - Transfers control of all functions to the optional Remote Panel or Jandy AquaLink RS control panel.

## Section 7. LPC4 Remote Installation

The LPC4 Remote allows you to operate the control panel from alternate locations.

1. Remove the four (4) screws located under the spring-loaded cover on the remote panel. Remove the cover and set aside.

**NOTE** The remote panel PCB is located on the back of the cover.

2. Locate the four (4) mounting holes available on the remote panel. Mount the remote panel to a vertical surface.
3. Install a conduit fitting securely into the remote panel knockout, making sure that the fitting is seated flat against the remote panel. This will ensure a watertight seal.
4. Run a 4-conductor 22-gauge, color-coded cable in a conduit from the LPC4 control panel to the location for the LPC4-R remote panel.
5. On the remote panel PCB, locate the red, 4-pin terminal bar. Connect the 4-conductor wire to the terminal bar on the remote panel (see Figure 5, page 7). Tighten the terminal screws firmly.
6. Install the remote panel cover using the four (4) screws removed in *Step 1*.

## Section 8. Remote Panel Operation

To transfer control to the remote panel or the Jandy AquaLink RS, turn the LPC4 control panel knob to the **Remote** operating position (see Figure 7). The remote panel can then control the pulse functions of the Laminar Jets.



## Section 9. System Wiring Diagrams

The LPC4 system can be configured for various system set ups, including the following:

- Single controller
- Single controller with LPC4-R Remote Panel
- Multiple controllers and one LPC4-R Remote Panel
- Single controller operated by the Jandy AquaLink RS
- Multiple controllers operated by the Jandy AquaLink RS

**NOTE** When connecting to a Jandy AquaLink RS, ensure that the LPC4 control panel PCB is revision P090r4 or later.

Refer to the wiring diagrams, Figures 8 through 12, on the following pages to view system configurations.

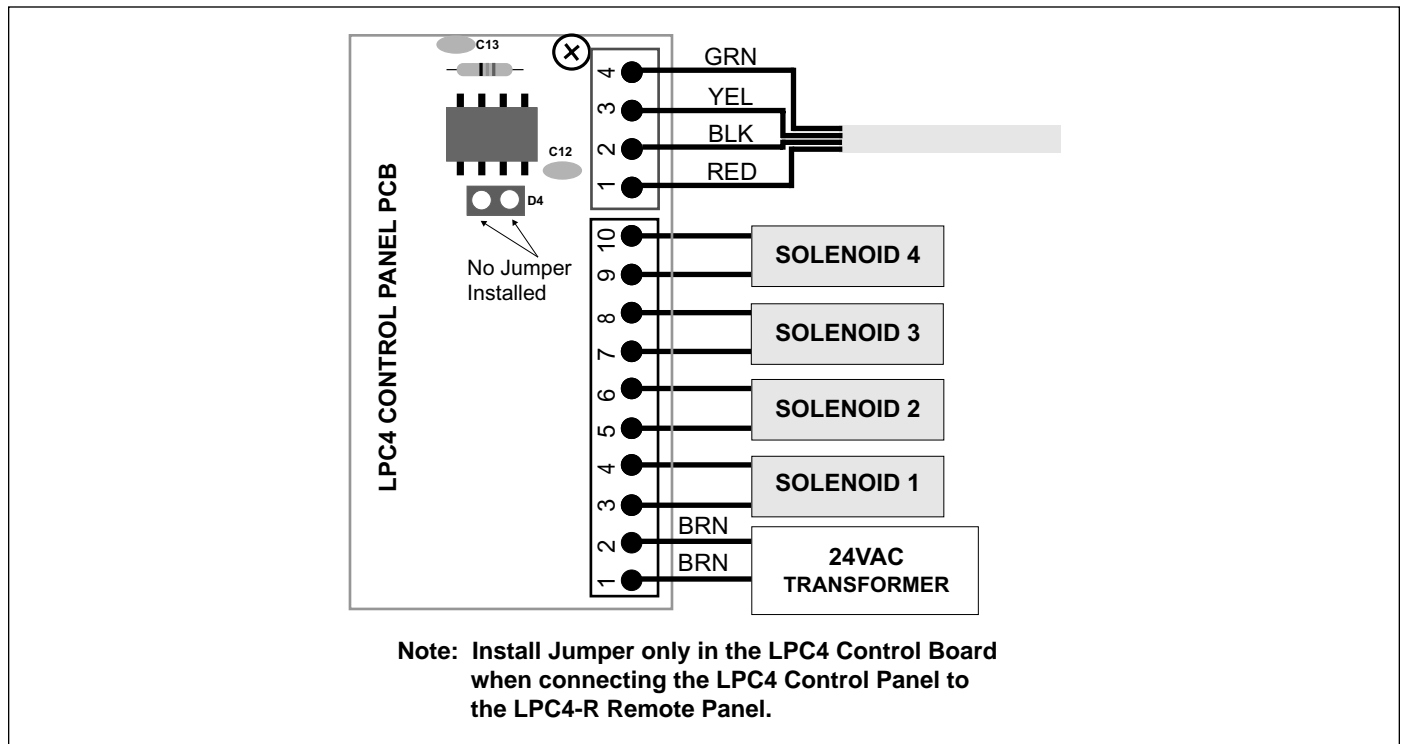


Figure 8. LPC4 Wiring, Single Controller

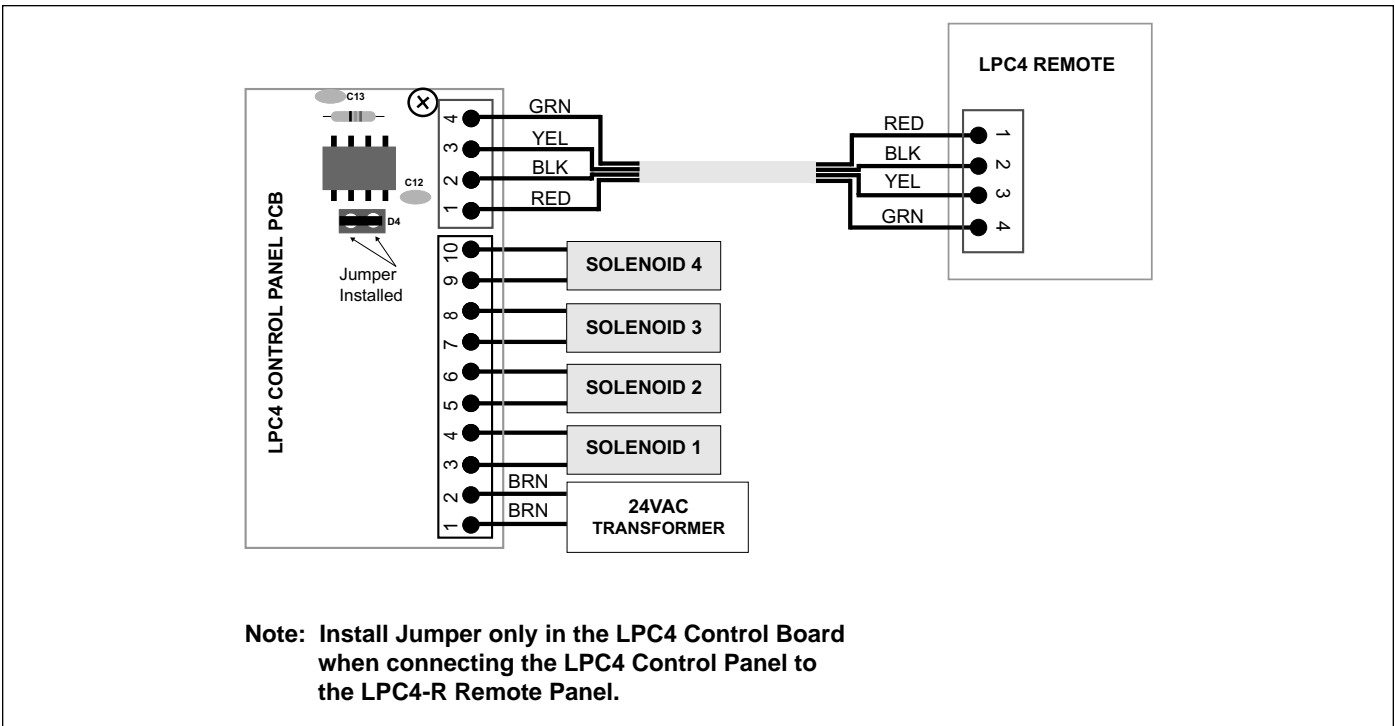


Figure 9. LPC4 Wiring, One Controller with an LPCR1001 Remote Panel

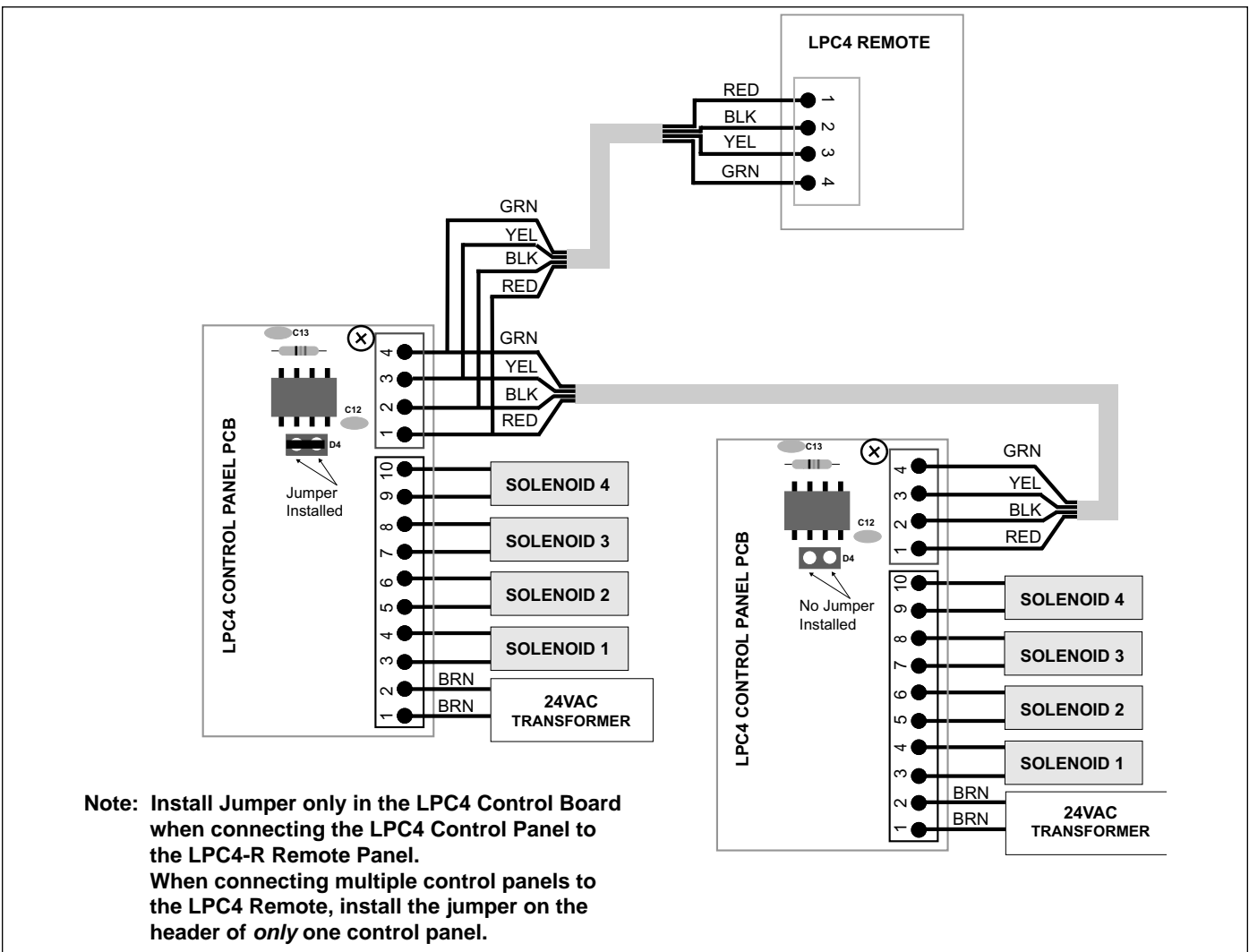


Figure 10. LPC4 Wiring, Multiple Controllers with an LPCR1001 Remote Panel

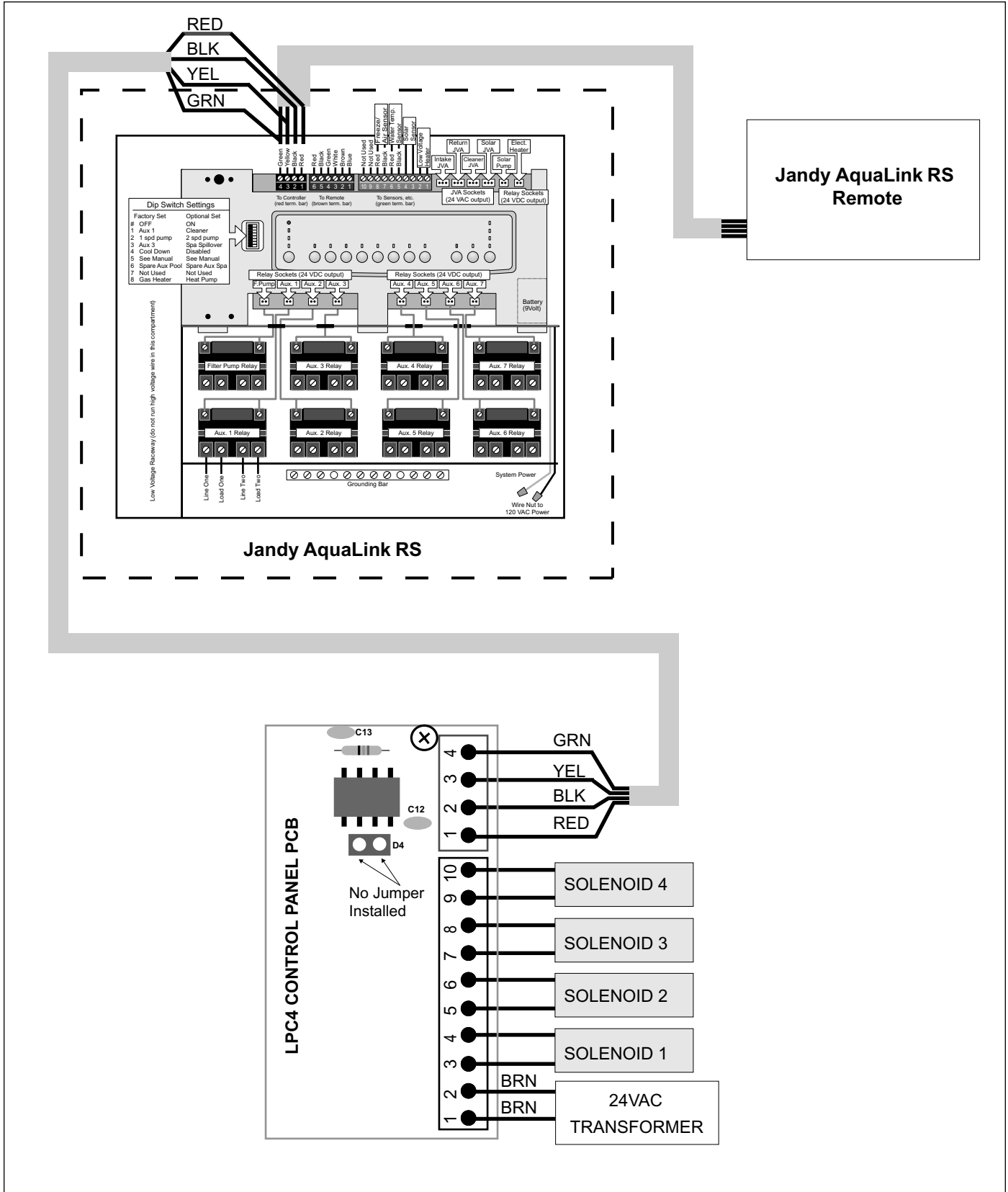


Figure 11. LPC4 Wiring, One Controller with a Jandy AquaLink RS

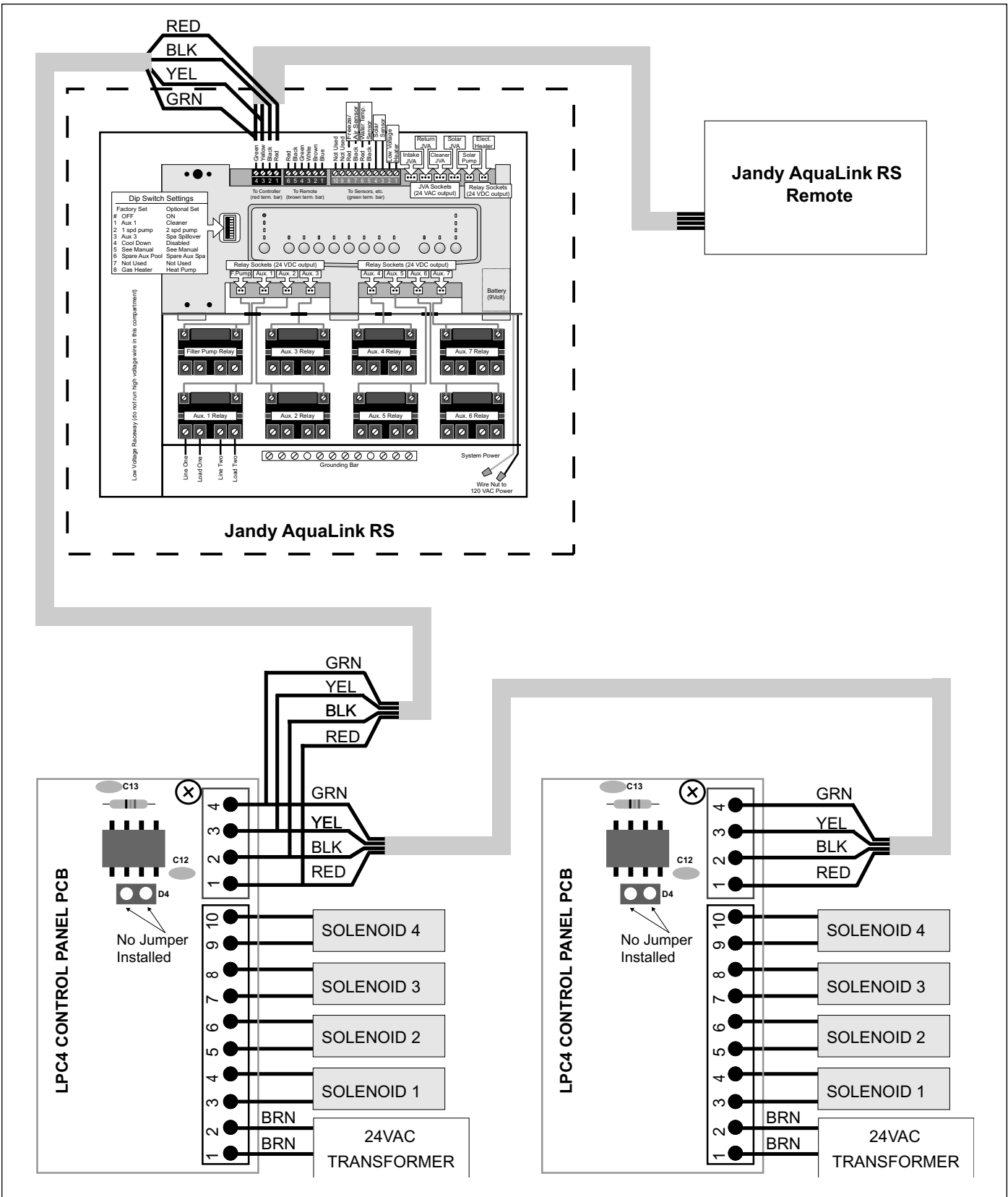


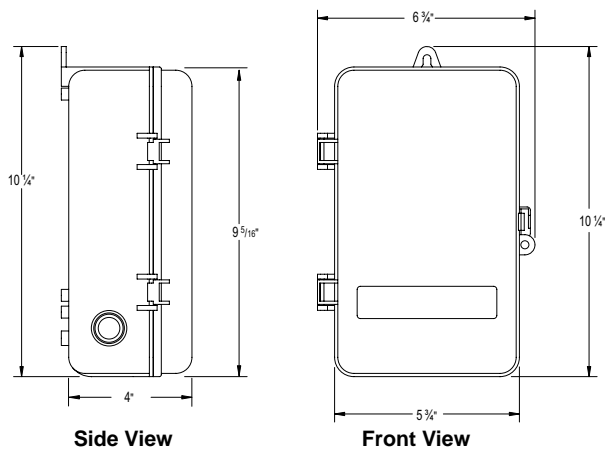
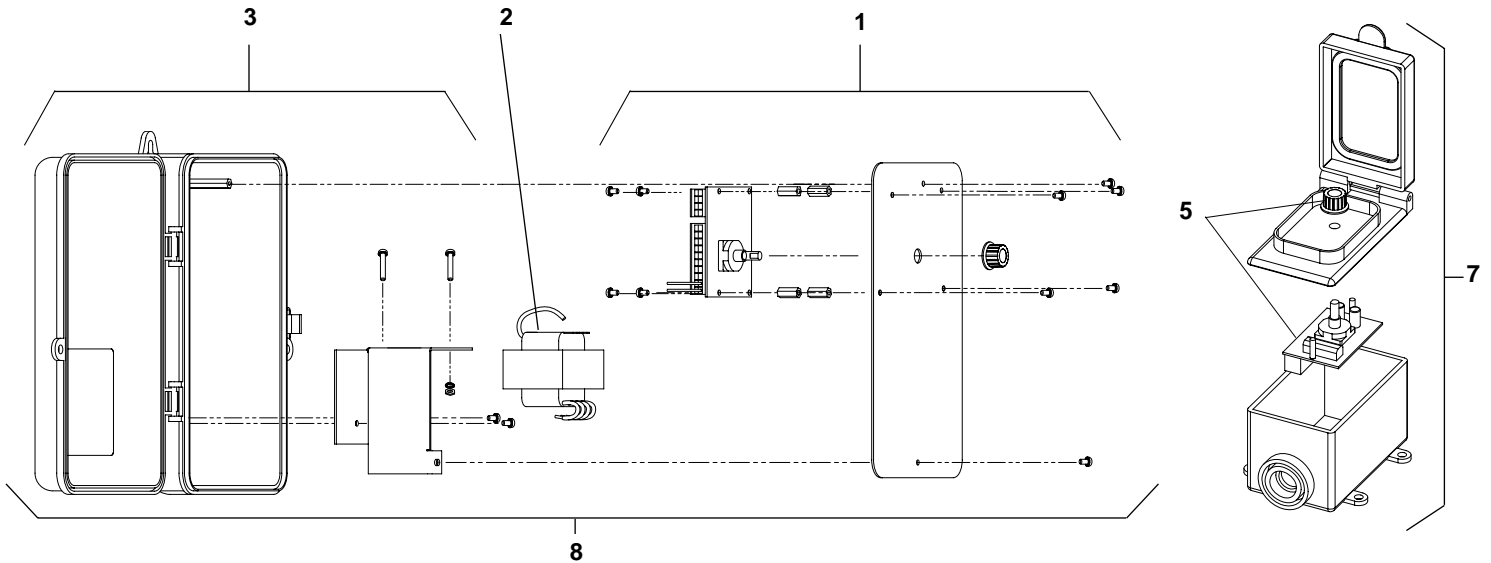
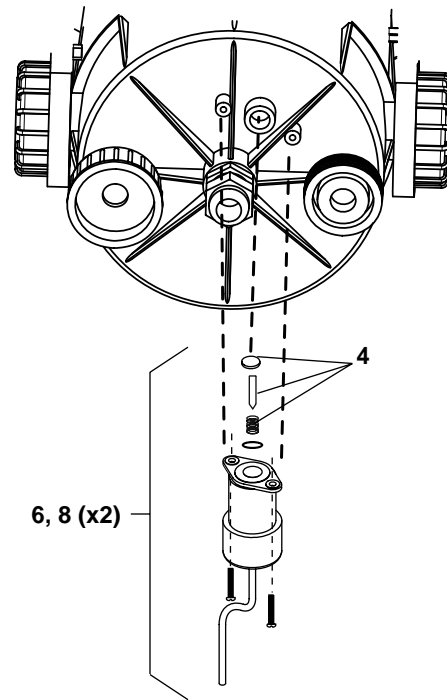
Figure 12. LPC4 Wiring, Multiple Controllers with a Jandy AquaLink RS

**CAUTION**

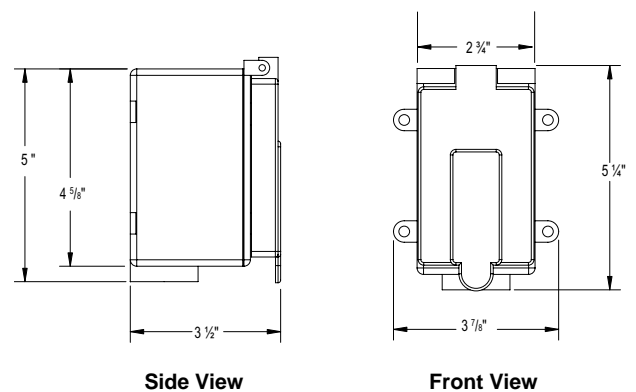
*Do not* install this jumper if connecting the LPC4 control panel to a Jandy AquaLink RS system.

## Section 10. Parts List and Exploded View

| Number | Description  | Part Number |
|--------|--|-------------|
| 1      | LPC4 Control Panel PCB, Dead Panel w/Stand-offs, Knob and Screws | R0410300    |
| 2      | Transformer  | R0410400    |
| 3      | Control Panel Box, w/Brackets and Screws                         | R0410500    |
| 4      | Solenoid Spring, Hammer, and Pad (qty. 4)                        | R0410600    |
| 5      | Remote Panel PCB w/Red Connector and Knob                        | R0410800    |
| 6      | Solenoid w/50 ft cable, Spring, Hammer and Pad                   | LPC4-S      |
| 7      | LPC4 Remote  | LPC4-R      |
| 8      | LPC4 Controller and 2 Solenoids (each Solenoid w/50 ft cable)    | LPC4        |



LPC4 Control Panel Dimensions



LPC4 Remote Panel Dimensions

---

*NOTES*



## LIMITED WARRANTY

Thank you for purchasing Jandy® 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® RS units installed with Jandy Surge Protection Kits will be covered for two years.
- NeverLube® 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.

H0566900A

The logo for Jandy, featuring the word "Jandy" in a large, stylized serif font with a registered trademark symbol. Below the text is a graphic of three curved lines representing water ripples.

Jandy Pool Products, Inc.  
6000 Condor Drive • Moorpark, CA USA 93021 • 707.776.8200 • Fax 707.763.7785

Litho in U.S.A. © Jandy Pool Products, Inc. 0509