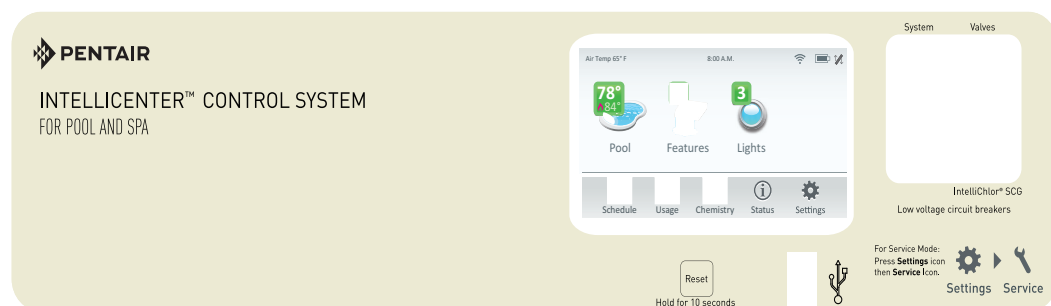




# INTELLICENTER<sup>®</sup>

## CONTROL SYSTEM

# INSTALLATION GUIDE



IMPORTANT SAFETY INSTRUCTIONS  
READ AND FOLLOW ALL INSTRUCTIONS  
SAVE THESE INSTRUCTIONS

To access additional information, as well as digital copies of all IntelliCenter manuals, scan or click the provided QR code.

Pour accéder à des informations supplémentaires, ainsi qu'à des copies numériques de tous les manuels IntelliCenter, scannez ou cliquez sur le code QR fourni.

Para acceder a información adicional, así como copias digitales de todos los manuales de IntelliCenter, escanee o haga clic en el código QR proporcionado.



# IMPORTANT SAFETY INSTRUCTIONS



This guide provides installation and operation instructions. Consult Pentair with any questions regarding this equipment (refer to *CUSTOMER SERVICE / TECHNICAL SUPPORT*, page iv).

**Attention Installer:** This guide contains important information about the installation, operation and safe usage of this product. Give this guide to the owner and/or operator of this equipment after installation.

**Attention User:** This guide contains important information that will help you in operating and maintaining this product. Retain this document for future reference. Read the entire Installation Guide and all related warning labels before installing, servicing or using this product.



**This is a safety alert symbol. When you see this symbol in this manual or on the product, look for one of the following signal words; DANGER, WARNING, or CAUTION and comply with the information. Be alert to the potential hazard. Make sure to read and comply with all warnings in this manual.**

This product is designed and manufactured for safe and reliable service when installed, operated and maintained according to the information and installation codes referred to in this Guide.



**WARNING** SERIOUS BODILY INJURY OR DEATH CAN RESULT IF THIS PRODUCT IS NOT INSTALLED AND USED CORRECTLY.



**WARNING** INSTALLERS, POOL OPERATORS AND POOL OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS BEFORE USING THIS PRODUCT.



**WARNING** This product is intended for use in swimming pool applications only.



**WARNING** Most states and local codes regulate the construction, installation, and operation of public pools and spas, and the construction of residential pools and spas. It is important to comply with these codes, many of which directly regulate the installation and use of this product. Consult your local building and health codes for more information.



**WARNING** Read the operating instructions and warnings for all equipment filtration system before operating. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. Call (800) 831-7133 for additional free copies of this guide or replacement safety labels.



**RISK OF ELECTRICAL SHOCK OR ELECTROCUTION!** Always disconnect power at the circuit breaker before servicing the load/power center. Improper installation can create an electrical shock hazard that can result in death or serious injury.



This product must be installed by a licensed or certified electrician or a qualified service professional in accordance with the current National Electrical Code (NEC) or Canadian Electrical Code (CEC). All applicable local installation codes and ordinances must also be adhered to. Improper installation will create an electrical hazard which could result in death or serious injury to pool users, installers or others due to electrical shock, and may also cause damage to property. Always disconnect the power to the pool light at the circuit breaker before servicing the light. Failure to do so could result in death or serious injury to serviceman, pool users or others due to electrical shock.



**WARNING** The electrical supply for this product must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors to comply with the current National Electrical Code (NEC) or the Canadian Electrical Code (CEC). All applicable local installation codes and ordinances must also be adhered to. The disconnecting means must be readily accessible to the tub occupant but installed at least 5 feet [1.5 m] in US, or 3 meters [9.75 ft] in Canada, from the inside wall of the pool.



**WARNING** Use only copper supply conductor's rated for 60C/75C based on ampacity to support all loads (refer to NEC tables). Load/power center input supply to be protected by 150 Amp Maximum, 240 VAC Main Circuit Breaker.



**WARNING** Water temperature in excess of 100°F [37.7°C] may be hazardous to your health. Prolonged immersion in hot water may induce hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above normal body temperature of 98.6°F [37°C]. Effects of hyperthermia include: (1) Unawareness of impending danger. (2) Failure to perceive heat. (3) Failure to recognize the need to leave the spa. (4) Physical inability to exit the spa. (5) Fetal damage in pregnant women. (6) Unconsciousness resulting in danger of drowning. The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia in hot tubs and spas.

## IMPORTANT SAFETY INSTRUCTIONS

### **WARNING**

The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia in hot tubs and spas. This product is intended to control heaters with built-in high limit circuits **ONLY**. Failure to do so may cause property damage or personal injury.

### **WARNING**

Do not use this product to control an automatic pool cover. Swimmers may become entrapped underneath the cover.

### **WARNING**

Except for UL listed spa-side remote controls, install all electrical equipment a minimum of 5 ft. [1.5 m] from the inside wall of the pool and spa.

### **WARNING**

Do not permit children to use this product.

### **WARNING**

For units intended for use in other than single-family dwellings, a clearly labeled emergency switch shall be provided as part of the installation. The switch shall be readily accessible to the occupants and shall be installed at least 5 ft. [1.5 m] away, adjacent to, and within sight of, the unit.

### **CAUTION**

**For Installation of Electrical Controls at Equipment Pad (ON/OFF Switches, Timers and Automation Load Center).**

Install all electrical controls at equipment pad, such as on/off switches, timers, and control systems, etc. to allow the operation (startup, shut-down, or servicing) of any pump or filter so the user does not place any portion of his/her body over or near the pump strainer lid, filter lid or valve closures. This installation should allow the user enough space to stand clear of the filter and pump during system start-up, shut down or servicing of the system filter.



### **WARNING**

**HAZARDOUS PRESSURE: STAND CLEAR OF PUMP AND FILTER DURING START UP.**

Pool filtration systems operate under high pressure. When any part of the filtration system (i.e. locking ring, pump, filter, valves, etc.) is serviced, air can enter the system and become pressurized. Pressurized air can cause the pump housing cover, filter lid, and valves to violently separate which can result in severe personal injury or death. Filter tank lid and strainer cover must be properly secured to prevent violent separation. Stand clear of all filtration system equipment when turning on or starting up pump.



Before servicing equipment, make note of the filter pressure. Be sure that all controls are set to ensure the system cannot inadvertently start during service. Turn off all power to the pump. **IMPORTANT: Place filter manual air relief valve in the open position and stand clear of the filter until all pressure has been relieved and the pressure gauge reads 0 psi.**

Before starting the system, fully open the manual air relief valve and place all system valves in the “open” position to allow water to flow freely from the tank and back to the tank. Stand clear of all equipment and start the pump.

**IMPORTANT: Do not close filter manual air relief valve until all pressure has been discharged from the valve and a steady stream of water appears.** Observe filter pressure gauge and be sure it is not higher than the pre-service condition.

### **Qualifications for Installers and Users**

This product must be installed by a qualified service professional in accordance with all applicable local codes and ordinances. It must be serviced by someone who fully understands its operation. Improper installation or servicing could result in death or serious injury to pool users, installers, servicers, or others and may also cause damage to property.

If you are not familiar with your pool filtering system and/or heater, do NOT attempt to adjust or service without consulting your dealer or a qualified pool technician.

## IMPORTANT SAFETY INSTRUCTIONS

**FCC Standard** - 47 CFR Part 15, Subpart C (Section 15.247). This version is limited to chapter 1 to chapter 11 by specified firmware controlled in the U.S.A.

In order to comply with FCC RF Exposure requirements, a minimum separation distance of 8 in (20 cm) must be maintained between the equipment and all persons during normal operation.

**Canada - Industry Canada (IC)** - The IntelliCenter Control System complies with RSS210 of Industry Canada. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

The device complies with industry Canada's License Exempt RSSs. Operation is subject to the following: (1) This device may not cause interference; and (2) This device must accept interference that may cause undesired operation of the device.

Le dispositif est conforme à la licence d'Industrie Canada Exempt CNR. Le fonctionnement est soumis à la suivante. (1) Ce ne doit pas provoquer d'interférences ; et (2) Cet appareil doit accepter les interférences qui peuvent causer un mauvais fonctionnement de l'appareil.


This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada. The term "IC" before the certification / registration number only signifies that the Industry Canada technical specifications were met.

**Instruction to user** - The IntelliCenter Control System has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. The IntelliCenter Control System generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by switching the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Note:** Changes and modifications made to the IntelliCenter Control System without the approval of the manufacturer could void the user's authority to operate this equipment.

### General Installation Information

1. All work must be performed by a licensed electrician, and must conform to all national, state, and local codes.
2. Install to provide drainage of compartment for electrical components.
3. Underwater luminaires should be installed according to requirements outlined in NEC 680.
4. A terminal bar stamped  is located inside the supply terminal box. To reduce the risk of electric shock, this terminal must be connected to the grounding means provided in the electric supply service panel with a continuous copper wire equivalent in size to the circuit conductors supplying this equipment (no smaller than 12 AWG). The bonding lug(s) provided on this unit are intended to connect a minimum of one No. 8 AWG for US installation and two No. 6 AWG for Canadian installations solid copper conductor between this unit and any metal equipment, metal enclosures or electrical equipment, metal water pipe, or conduit within 5 ft. [1.5 m] of the unit.
5. The electrical supply for this product must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors to comply with in accordance with the current National Electrical Code (NEC) or the Canadian Electrical Code (CEC). All applicable local installation codes and ordinances must also be adhered to. The disconnecting means must be readily accessible to the tub occupant but installed at least 10 ft. [3.1 m] from the inside wall of the pool.
6. This automation control system is designed to supply high voltage (120 VAC / 240 VAC) to a gas heater and override the thermostat in the heater's control circuit. This automation control system is intended to control gas heaters with a high temperature limit switch(s) safety circuit.



# CUSTOMER SERVICE / TECHNICAL SUPPORT

**Hours:** 9:00AM to 7:00PM EST (6:00AM - 4:00PM PST)

**Call:** (800) 831-7133

**Visit:** [www.pentair.com](http://www.pentair.com)

**Fax:** (800) 284-4151

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Your feedback could play an important role in Pentair's goal to continuously improve our instructional material, and better support those who install, maintain, and use our products everyday.

Scan or click the QR code to take a quick survey and help us provide the most easy-to-use and accurate product manuals possible!



# INTRODUCTION

## General Features

- 4" x 3" color touchscreen.
- Up to 100 programmable schedules/programs for easy system scheduling
- 32 Feature Circuits: Allows additional speeds/programs for a variable speed pump or for an actuator to be assigned without using an existing auxiliary circuit.
- 16 Groups: Assign groups of lights and AUX circuits to allow control by a single button
- Supports up to 16 IntelliFlo® Pumps
- Supports up to four SpaCommand® or iS10, two iS4, or one QuickTouch® II wireless remotes.
- Supports up to two Indoor Control Panels
- Valves: Intake/Return plus A and B valve circuits. Expandable up to 10 valves (shared equipment).
- Supports RS-485 connected heaters
- 39 Auxiliary Circuits (up to three Expansion Enclosures)
- Can allow automation of two bodies of water
- Multiple heater capability
- Over-The-Air Software Updates
- Spa Side Control Enable/Disable
- Solar Heating Option/Support
- 16 Heat Pump Support
- Heat Pump Cooling Support
- Assignable and Customizable Circuit Names
- Special Circuit Types/Function
- Two Speed Pump Support
- USB port compatible with standard flash drives
- Optional WiFi Connectivity

## Flexible Demand Features

IntelliCenter includes Flexible Demand features offering an opportunity, only with the user's consent, for the user to participate in energy provider incentive programs to offset system energy usage.

Participating in one of these programs may provide an incentive to the user, such as a monetary reward or electrical bill credit.

When enrolled in one of these programs, these features allow the energy provider (or other entities authorized by the user) the ability to automatically schedule, shift, or even curtail the system's energy consumption (including filtration pumps, booster pumps, water feature pumps, and heat pumps) during times when electricity is more expensive, the electrical grid is stressed, and/or when there is an abundance of renewable energy on the grid.

Following one of these scenarios, the system will then adjust its operation to maintain proper filtration and chemical dispersion.

To learn more about Flexible Demand features and how to enroll, scan or press the provided QR code.



# INSTALLATION

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## General Installation Guidelines

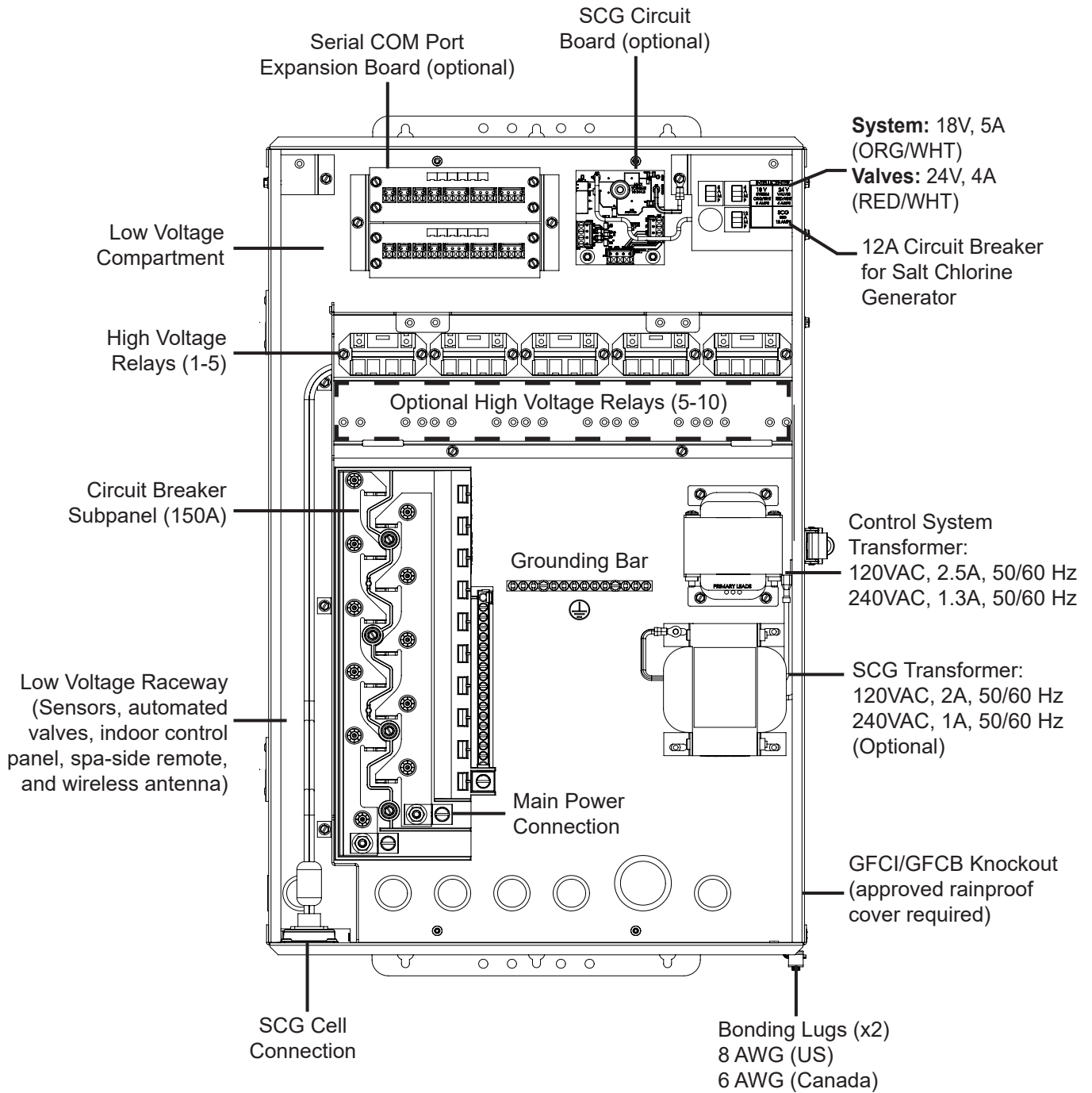


**WARNING** RISK OF ELECTRICAL SHOCK. BEFORE REMOVING THE HIGH VOLTAGE COVER PANEL FROM THE ENCLOSURE, DISCONNECT ALL POWER TO INTELLICENTER AT THE MAIN CIRCUIT BREAKER.

- The IntelliCenter Load/Power Center must be installed at the equipment pad.
- Main power for the Load/Power Center must be provided from the main circuit breaker panel.
- All electrical equipment, except for UL Listed spa-side remotes, must be installed no less than 5 feet [1.5 m] in US, or 3 meters [9.75 ft] in Canada, from the pool and/or spa, and comply with all national, state, and local codes.
- Install the Load/Power Center at least 5 feet [1.5 m] from pool, spa, and/or hot tub.
- Provide enough space for the operator to stand clear of the filter and pump during system start-up.
- Before permanently installing the enclosure, consider the length of all of the conductors that will have be connected. Make sure to consider cable lengths for the sensors to the Load/Power Center location. The air temperature sensor cable is 3 feet [91.4 cm] long and the water temperature sensor cable is 25 feet [7.6 m] long.
- Use 22 AWG four conductor cable to the Load/Power Center. The preferred wire color scheme is: Red, Yellow, Green, and Black. The maximum recommended cable length is 2,000 feet [607 m].
- Mount the Load/Power Center on a flat vertical surface so the wiring knockouts are facing downwards. Upper and lower brackets are provided to mount the enclosure.
- NEVER mount the enclosure horizontally. Water can enter the wiring knockouts and damage the system.
- Consider the Load/Power Center location when routing power conduit to the Load/Power Center and additional high voltage equipment.
- Install the Load/Power Center so that drainage is provided for all electrical components.
- Provide at least 5 feet [1.5 m] in front of the Load/Power Center.
- The Load/Power Center includes a grounding bar for grounding all equipment. All equipment including the Load/Power Center enclosure must be bonded to earth ground.

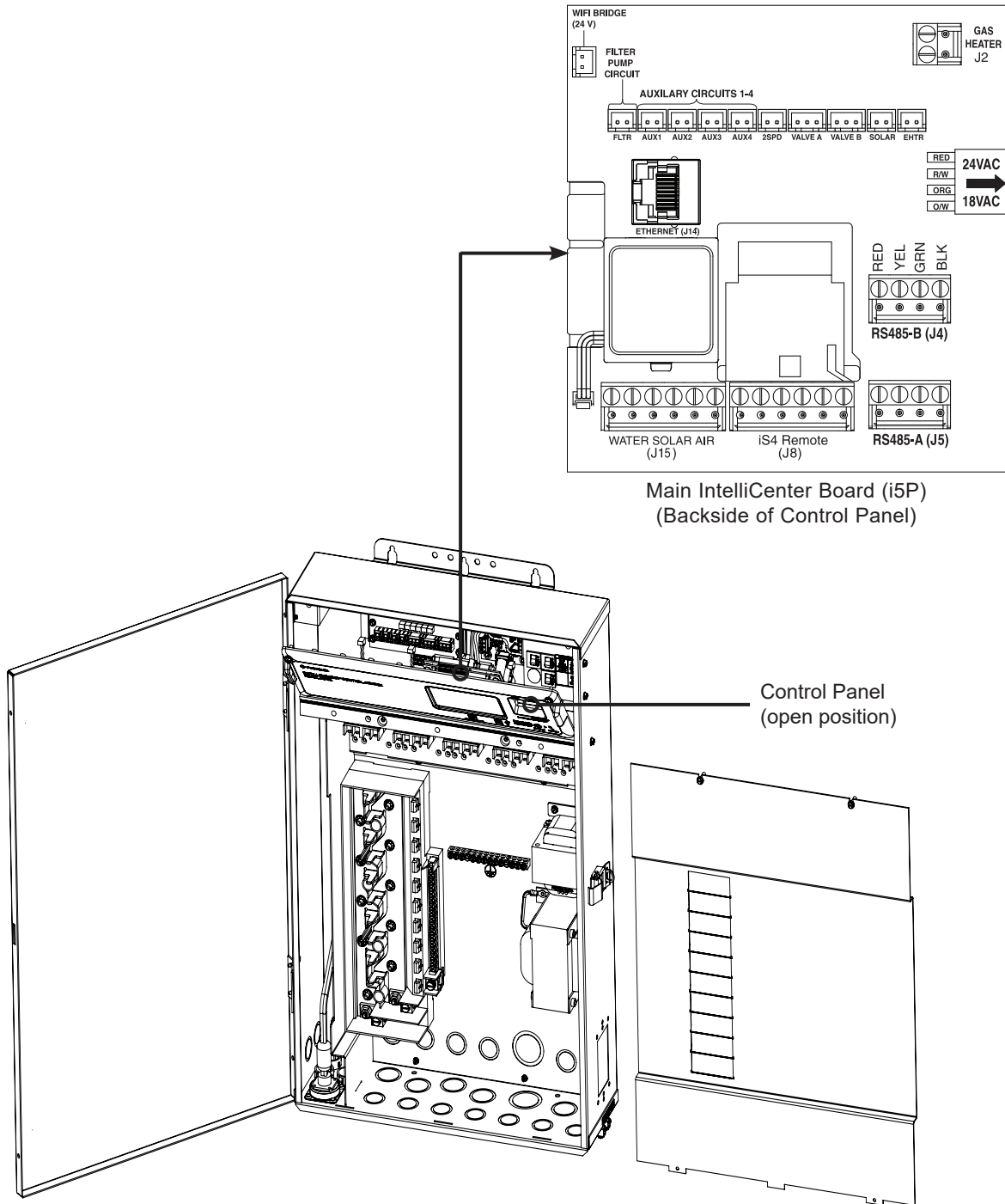
## Control System Load Center (with built-in subpanel)

Power to the load center is provided from the main breaker panel.



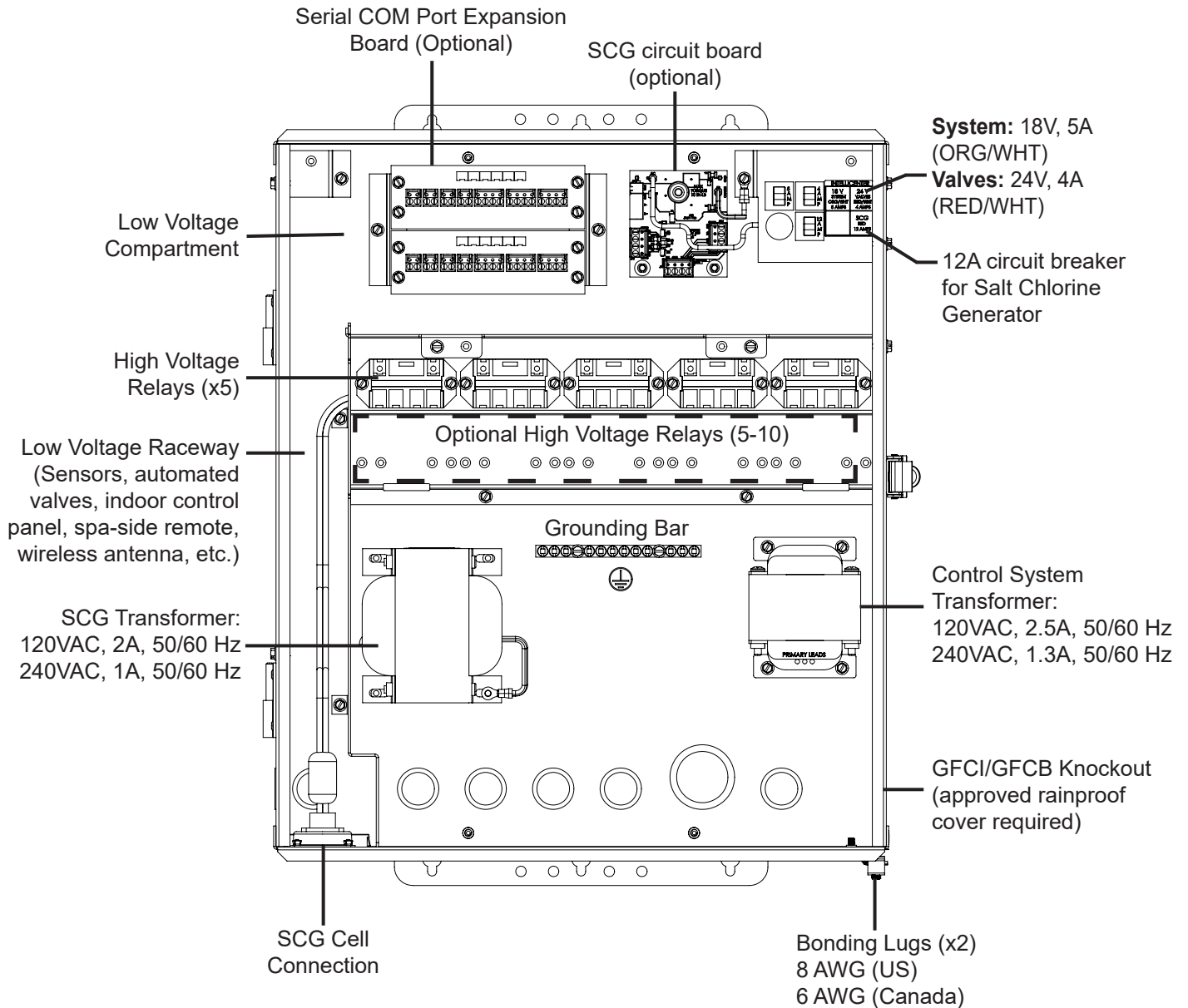
## IntelliCenter Load Center

## Control System Load Center (with built-in subpanel) Continued



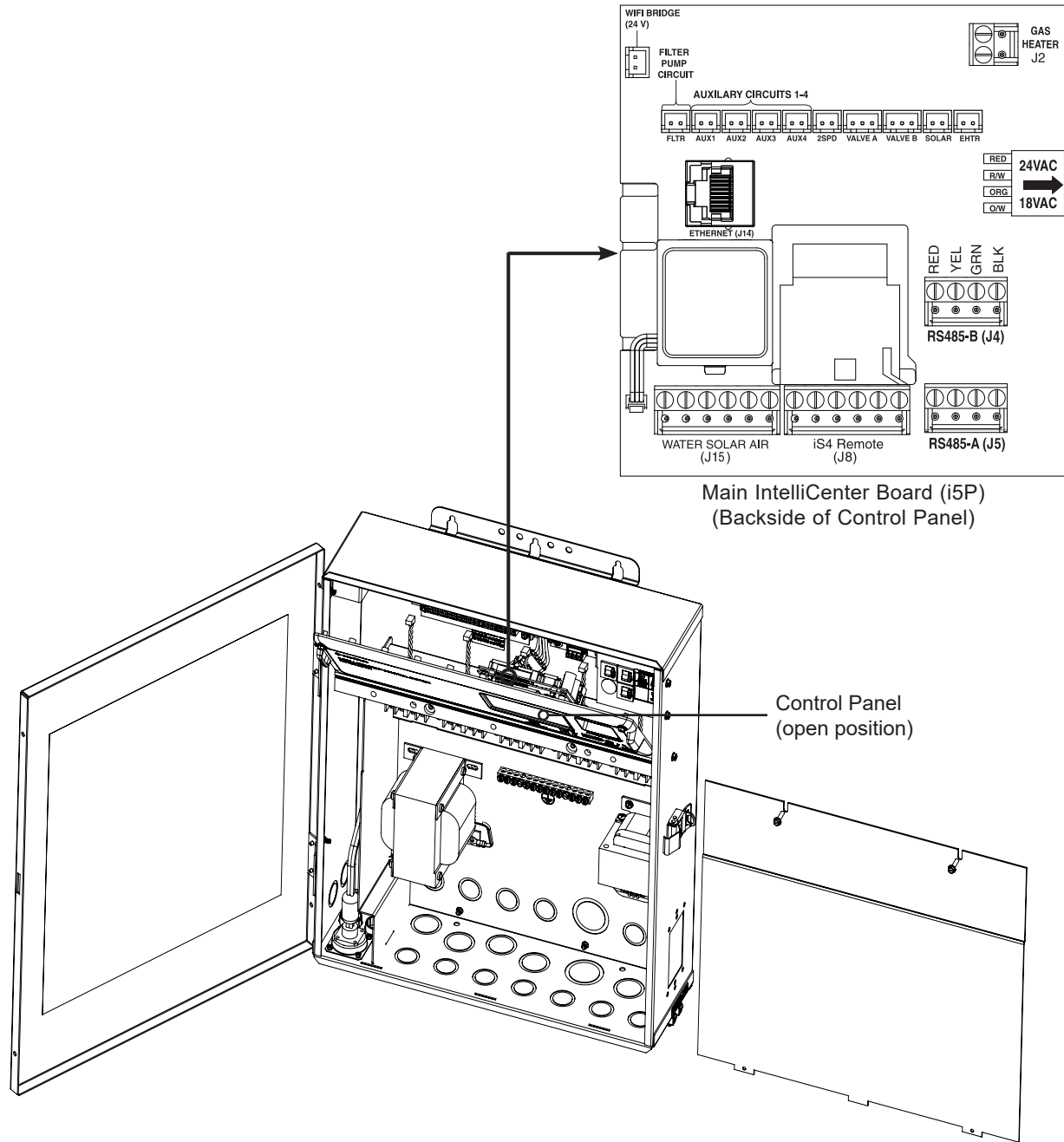
## Control System Power Center (without built-in subpanel)

Power to the IntelliCenter is provided from an external breaker subpanel installed at the equipment pad. The Power Center should be installed next to this subpanel.





## Control System Power Center (without built-in subpanel) Continued

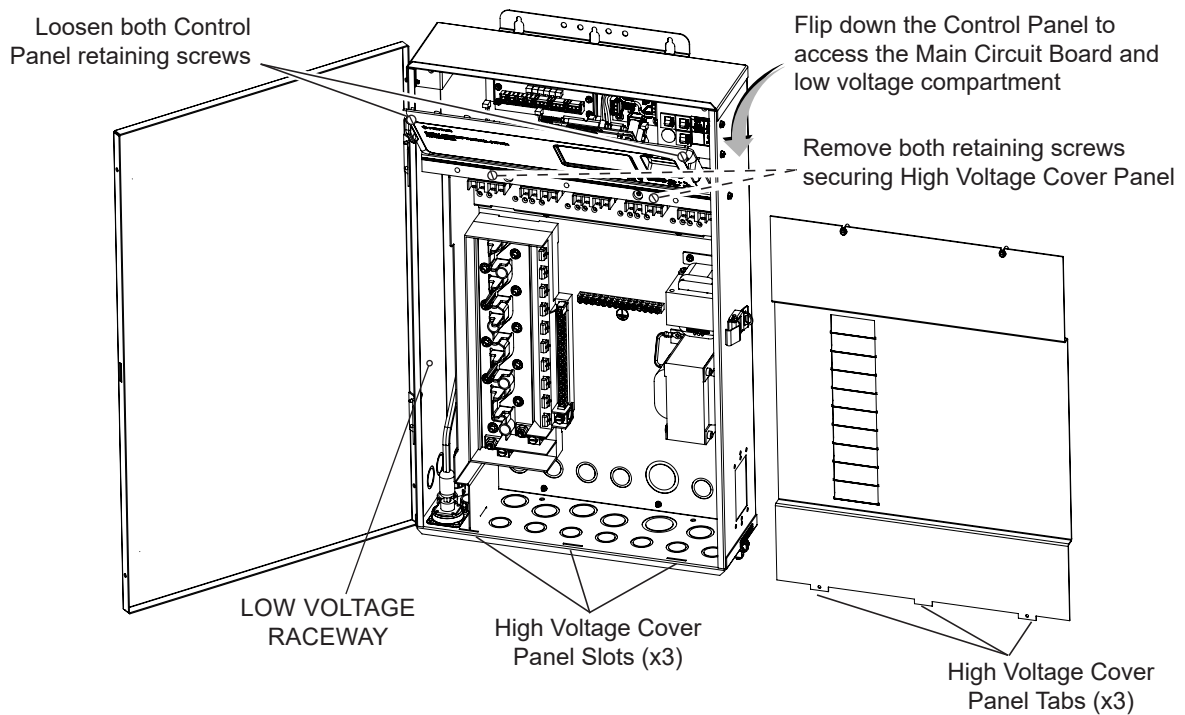


## Preparing the Load/Power Center Enclosure



**WARNING** BEFORE INSTALLING THE LOAD/POWER CENTER, ALWAYS SWITCH OFF THE MAIN POWER at the main circuit breaker.

1. Open the enclosure door.
2. Remove the two retaining screws from the High Voltage Cover Panel and remove the panel from the enclosure.
3. Loosen the two retaining screws securing the top edge of the Control Panel and fold down the Control Panel to access the control board and electrical connections.
4. Refer to the necessary section for equipment wiring and install instructions
  - **Mounting the Load/Power Center**, page 8
  - **Load Center Wiring Knockouts**, page 9
  - **Power Center Wiring Knockouts**, page 10
  - **Power Center Wiring Knockouts (P/Ns 523910 and 523911)**, page 11
  - **Installing Conduit and Conductors**, page 12
  - **System Power Connections**, page 13
  - **Load/Power Center High Voltage Connections**, page 14
  - **Accessing Control Boards and Electronics**, page 16
  - **Connecting Load/Power Center Relays**, page 17
5. After electrical connections have been completed, close the Control Panel and tighten the two retaining screws.
6. Insert the panel's three tabs into the slot at the bottom of the enclosure.
7. Secure the panel using the two retaining screws.
8. Close and the enclosure door.



## Mounting the Load/Power Center

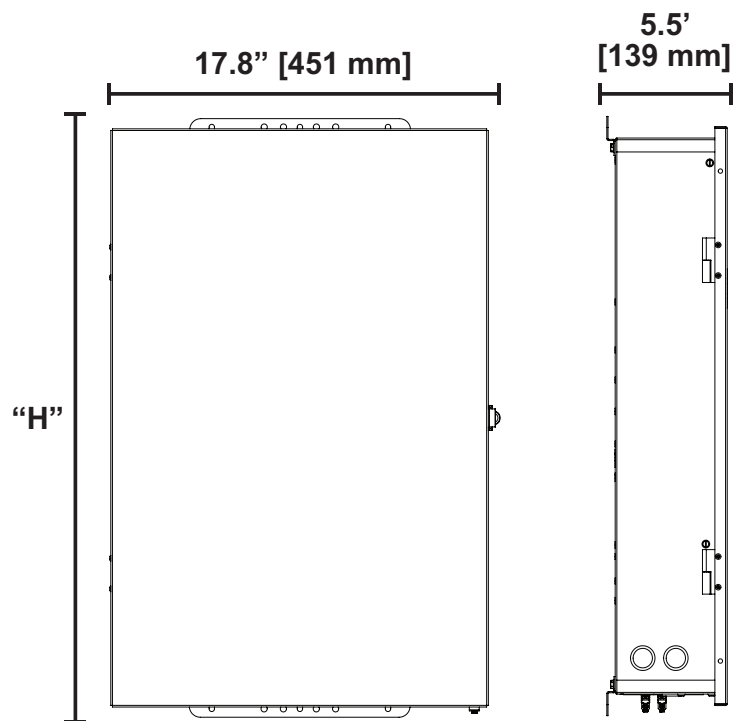
Mount the IntelliCenter Load/Power Center on a vertical wall or post at least 5 feet [1.5 m] in US, or 3 meters [9.8 ft.] in Canada, from the inside wall of the pool or spa.

1. If connecting IntelliCenter to a WiFi network, ensure the desired install location receives a strong and stable WiFi signal.

**Note:** If signal strength is insufficient due to distance between the IntelliCenter antenna and WiFi router, install a WiFi extender or consider an alternative mounting location.

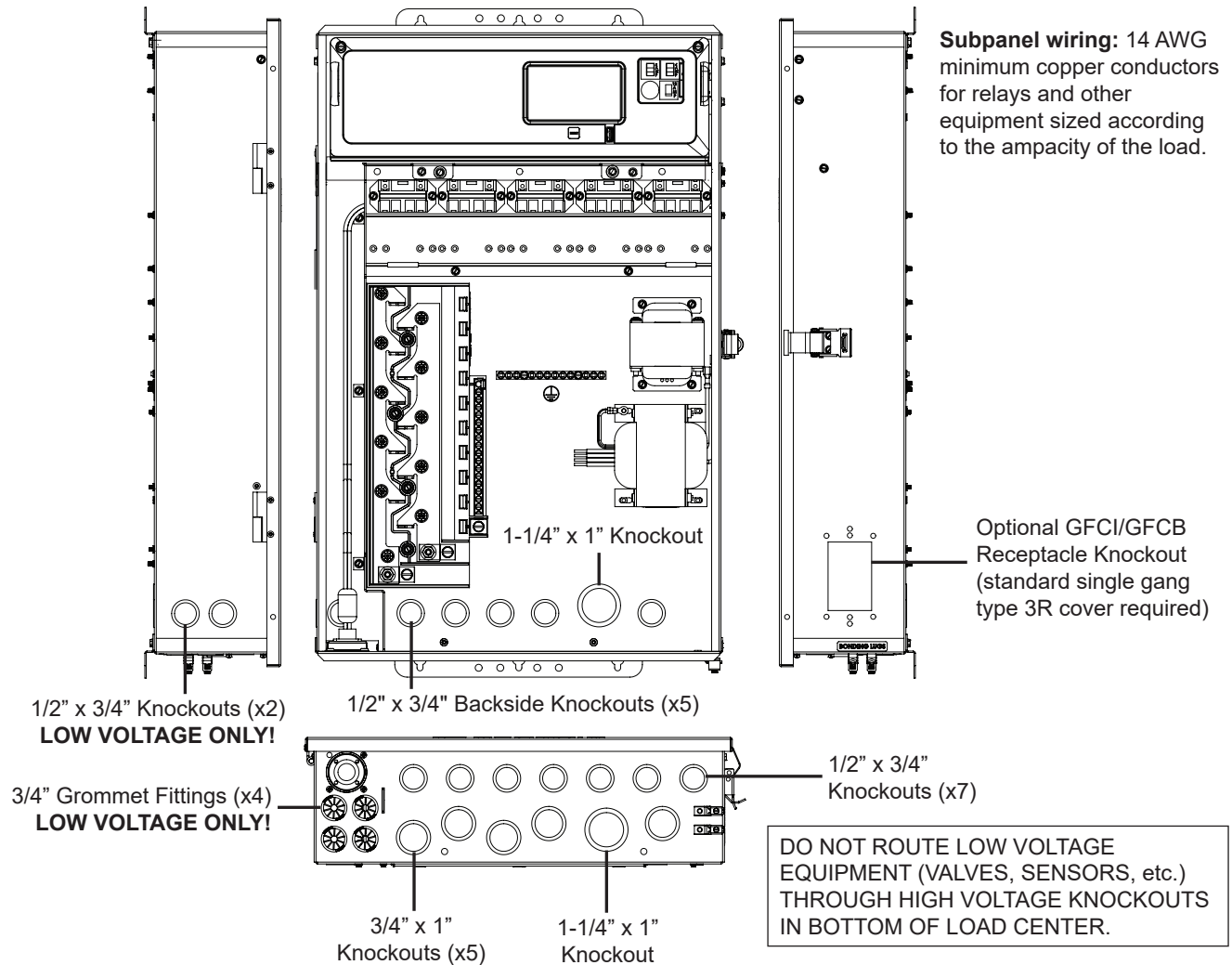
2. Position the enclosure against a vertical flat surface.  
If wall anchors are being used, support the enclosure in place (horizontally level and square) against the surface.
3. Mark the enclosure mounting points.
4. If using wall anchors, drill and set the anchors, then secure the enclosure with three screws in both the top and bottom mounting brackets.

"H" Dimension	
Load Center	26.9" [684 mm]
Power Center	21" [532 mm]
Power Center (P/N 523910 / 523911)	17.4" [443 mm]



## Load Center Wiring Knockouts

- Determine the number of low voltage and high voltage connections needed at the Load Center. Conduit size and runs will be based on the size and number of conductors within the conduit.
- Ensure the enclosure has been mounted at least 5 feet [1.5 m] in US, or 3 meters [9.8 ft] in Canada, from the inside wall of the pool or spa.
- The Low Voltage Raceway features two 1/2" x 3/4" knockouts on the left side of the enclosure.
- The High Voltage Compartment features twelve 1/2" x 3/4" knockouts, five 3/4" x 1" knockouts, and two 1-1/4" x 1" knockouts.
- Use 1-1/4" x 1" conduit for the main power conductors.

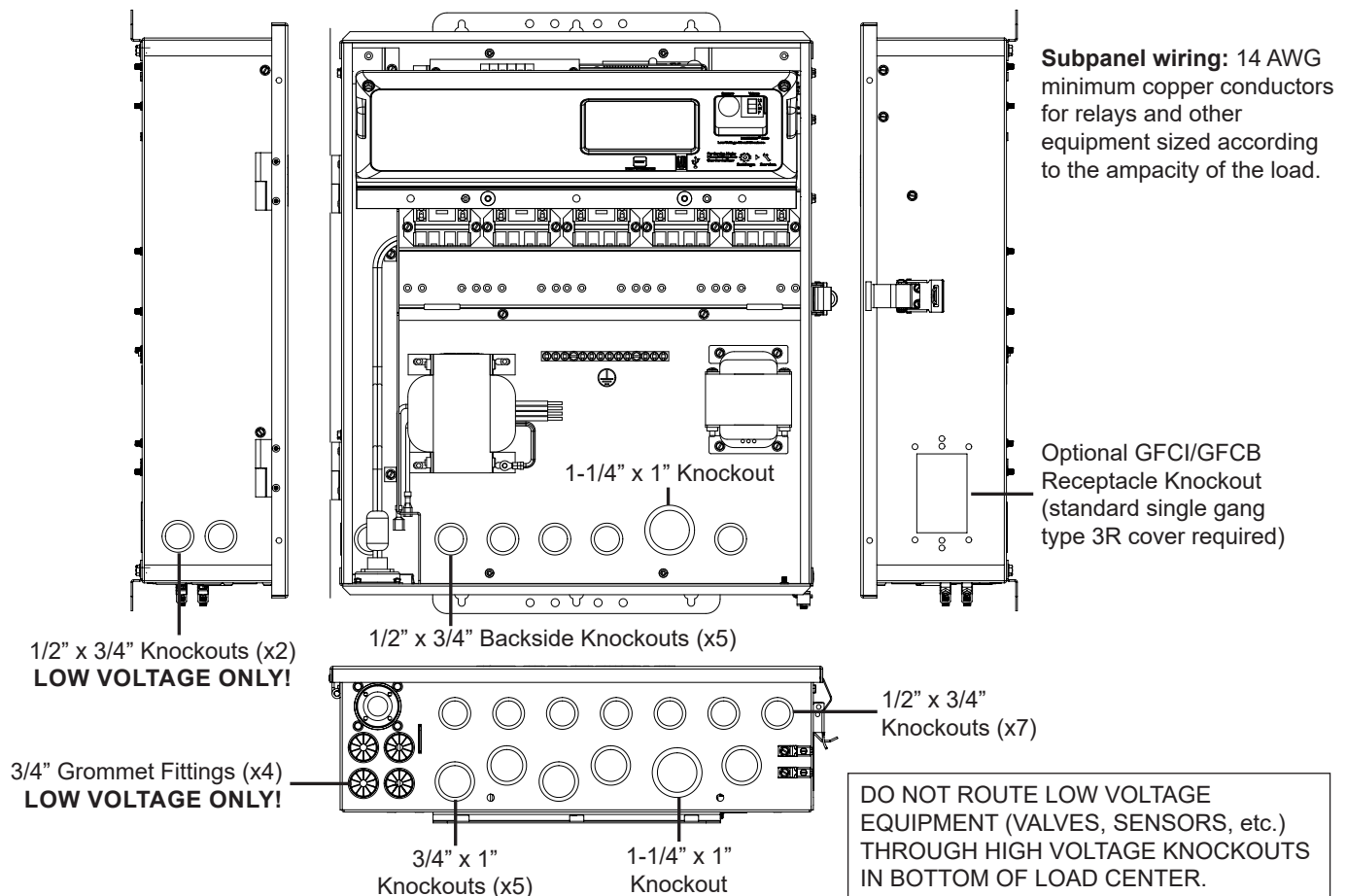


**Load Center Knockout Locations**

## Power Center Wiring Knockouts

- Determine the number of low voltage and high voltage connections needed at the Power Center. Conduit size and runs will be based on the size and number of conductors within the conduit.
- Ensure the enclosure has been mounted at least 5 feet [1.5 m] in US, or 3 meters [9.8 ft] in Canada, from the inside wall of the pool or spa.
- The Low Voltage Raceway features two 1/2" x 3/4" knockouts on the left side of the enclosure.
- The High Voltage Compartment features twelve 1/2" x 3/4" knockouts, five 3/4" x 1" knockouts, and two 1-1/4" x 1" knockouts.
- Use 1-1/4" x 1" conduit for the main power conductors.

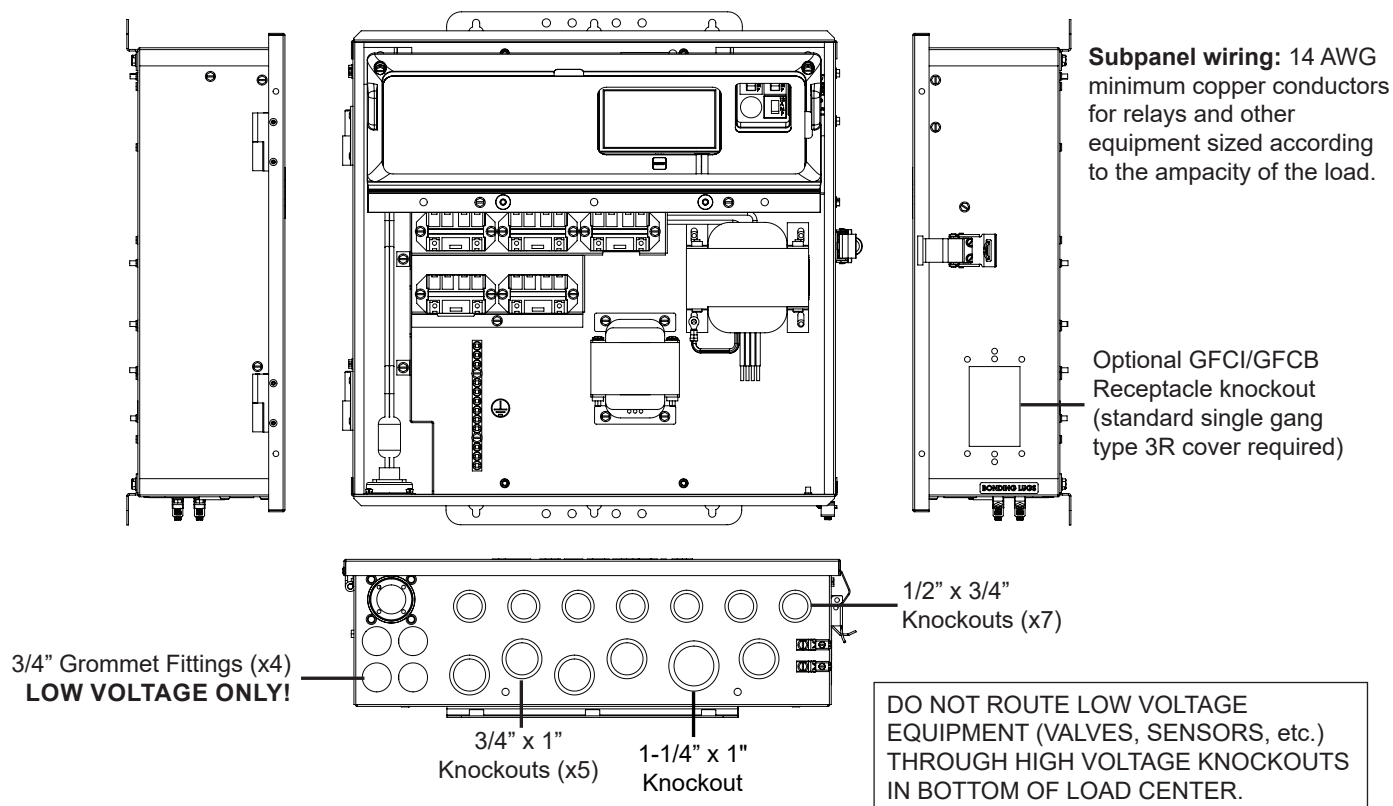
**For IntelliCenter P/Ns 523910 and 523911 knockouts:** Refer to *Power Center Wiring Knockouts (P/Ns 523910 and 523911)*, page 11.



### Power Center Knockout Locations

## Power Center Wiring Knockouts (P/Ns 523910 and 523911)

- Determine the number of low voltage and high voltage connections needed at the Power Center. Conduit size and runs will be based on the size and number of conductors within the conduit.
- Ensure the enclosure has been mounted at least 5 feet [1.5 m] in US, or 3 meters [9.8 ft] in Canada, from the inside wall of the pool or spa.
- The High Voltage Compartment features seven 1/2" x 3/4" knockouts, five 3/4" x 1" knockouts, and one 1-1/4" x 1" knockout.
- Use 1-1/4" x 1" conduit for the main power conductors.



## Power Center Knockout Locations (P/Ns 523910 and 523911)

## Installing Conduit and Conductors

Before installing electrical conduit to the enclosure, read the following recommended guidelines:

**Note:** Electrical installation of the IntelliCenter Control System **MUST BE PERFORMED BY A QUALIFIED SERVICE PROFESSIONAL AND/OR UNDER DIRECT SUPERVISION OF A QUALIFIED PROFESSIONAL** in accordance with the National Electrical Code or Canadian Electric Code, as well as any local codes at the time of installation.

- Determine the number of low and high voltage circuits being used in the IntelliCenter Load/Power Center. The conduit length is based on the conductor size, and the number of conductors within the conduit. **The number of pieces of equipment to be controlled will dictate the size of the conduit. DO NOT RUN HIGH VOLTAGE AND LOW VOLTAGE CONDUCTORS IN THE SAME CONDUIT.**
- Use 14 AWG minimum to 6 AWG maximum, 140°F/158°F [60°C/70°C] rated copper conductors for relay circuits depending on the required load. Follow NEC guidelines concerning the number and size of conductors that can be installed in various sizes of conduit.
- Supply conductor must be sized to support all loads. The maximum supply current is 150 Amps at 120 VAC/240 VAC.
- Supply circuit must be protected by suitable breaker rated no higher than 150 Amps. If a single relay is used for more than one device, verify the total load does not exceed the rating of the circuit.
- The IntelliCenter circuit board requires 120 VAC, 3 Amp power to operate control circuits and the optional salt chlorine generator. This power should be connected to one of the circuit breakers in the subpanel.
- Complete conduit installation before concrete is poured. Underground conduit should be positioned in well compacted soil. Ensure that all conduit joints are well sealed.



## System Power Connections

### WARNING

Do NOT connect main power to the Load/Power Center until all other electrical connections (heaters, pumps, actuator valves, lights, etc.) have been completed.

### Main Power Connection (Load Center with Built-in Breaker Subpanel)

IntelliCenter Load Center with circuit breaker subpanel is rated for 150 Amps maximum. Run properly rated conductors from the main breaker panel to the main power connections on the built-in Load Center breaker subpanel. The connection at the main breaker panel should be to a 240 VAC circuit breaker rated at 150 Amps maximum.

### Grounding Connections

Connect a ground conductor from the main breaker electrical panel to the Load/Power Center Grounding Bar inside the enclosure. Also ground all high voltage equipment that is connected to the Load/Power Center relays or circuit breakers.

### Bonding Connections

Also connect the Load/Power Center to the pool bonding system using 8 AWG (6 AWG for Canada) conductor. There are two Bonding Lugs on the bottom of the Load/Power Center.

### Circuit Breakers (Load Center with Built-in Breaker Subpanel)

Circuit Breakers are to be supplied and installed by the installer. For recommended circuit breaker types, refer to the circuit breaker chart on the inside of the Load/Power Center door.

Some pool equipment requires connection to ground fault circuit breakers (GFCI). Check all local and national codes for these requirements.

Follow all breaker manufacturer rating requirements. **To determine conductor size, refer to the recommendations listed on the circuit breaker label.**

## Load/Power Center High Voltage Connections

### **⚠ WARNING**



Do NOT connect main power to the Load/Power Center until all other electrical connections (heaters, pumps, actuator valves, lights, etc.) have been completed.

- Use three conductors, red, black, and white (or red, red and black for 240 VAC) for main power to the Load/Power Center. Maximum load is 150 Amps at 120/240 VAC. These conductors should be secured to the supply side of circuit breaker.
- For main power conduit, use the 1-1/4" x 1" knockout located directly under the internal breaker panel.
- Use the rectangular knockout on the right side of the Load/Power Center enclosure to mount an approved GFCI or GFCB with rainproof type 3R cover (supplied by installer) for direct connection of underwater lights.
- Use one of the four 3/4" low voltage grommet fittings located in the bottom of the enclosure for temperature sensor connections.
- For IntelliCenter wiring diagrams, refer to pages 32-34 or the label on the inside of the Load/Power Center door.
- To rewire the Salt Chlorine Generator transformer for 120 VAC, refer to *Rewiring the SCG Transformer for 120 VAC*, page 30.

## Rewiring the Control System Transformer for 240 VAC

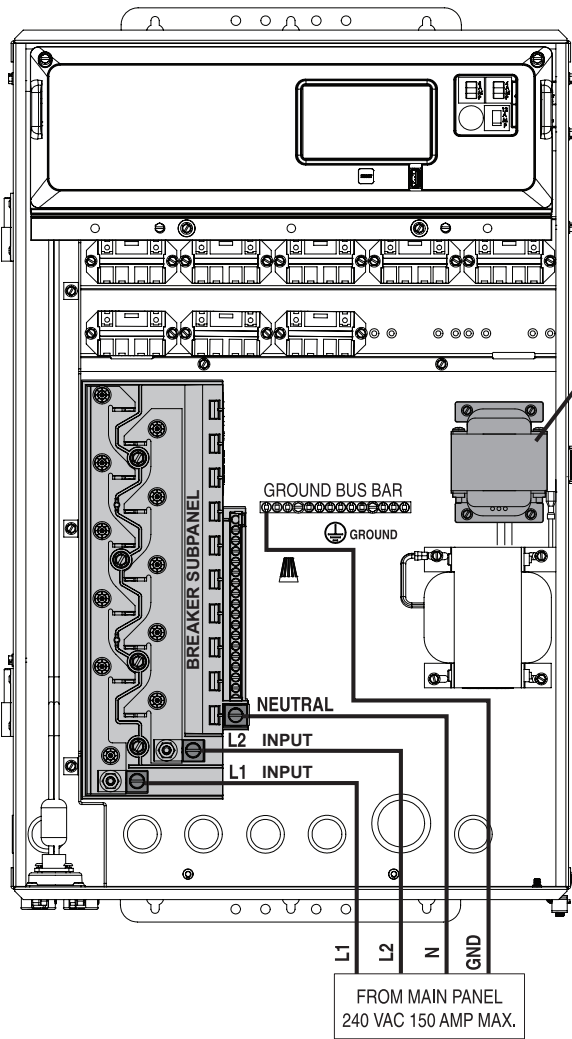
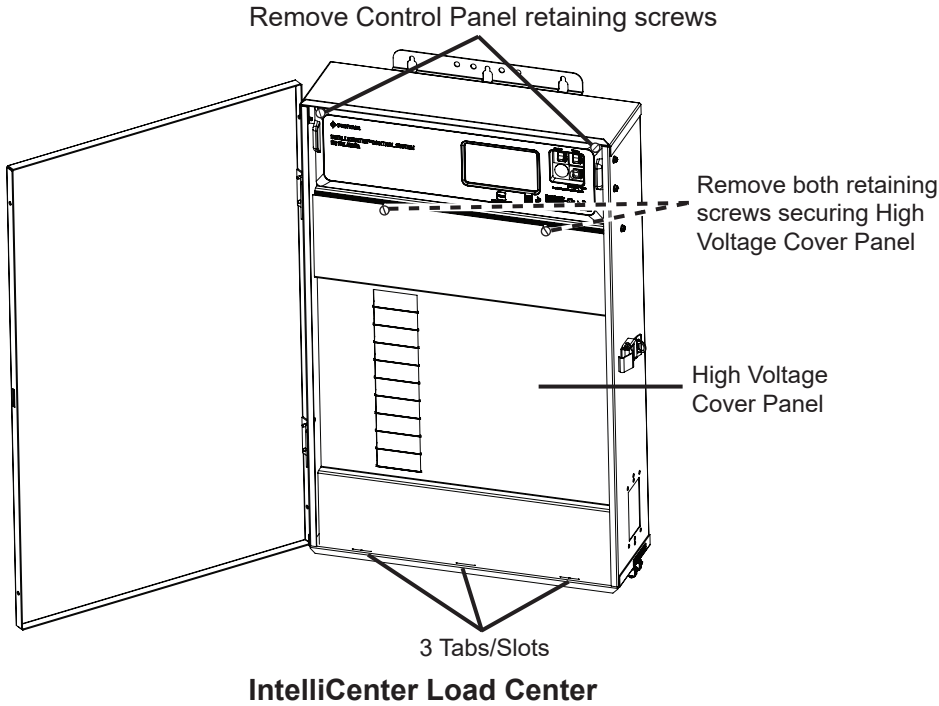
The IntelliCenter Load/Power Center system transformer is wired for 120 VAC at the manufacturer. To rewire the transformer for 240 VAC, refer to the instructions below and the wiring diagram on page 15.

### **⚠ WARNING**

BEFORE REMOVING THE HIGH VOLTAGE COVER PANEL, disconnect power to the IntelliCenter at the main circuit breaker.

1. Disconnect power to the Load/Power Center at the main circuit breakers.
2. Open the enclosure and remove the two retaining screws securing the High Voltage Cover Panel.
3. Remove the High Voltage Cover Panel from the enclosure.
4. Rewire the Control System Transformer for 240 VAC as shown in the wiring diagram on page 15.
5. Insert the high voltage panel's three tabs into the slots at the bottom of the enclosure.
6. Reinstall the two retaining screws securing the High Voltage Cover to the enclosure.
7. Close and secure the enclosure door.

Rewiring the Control System Transformer for 240 VAC (Continued)

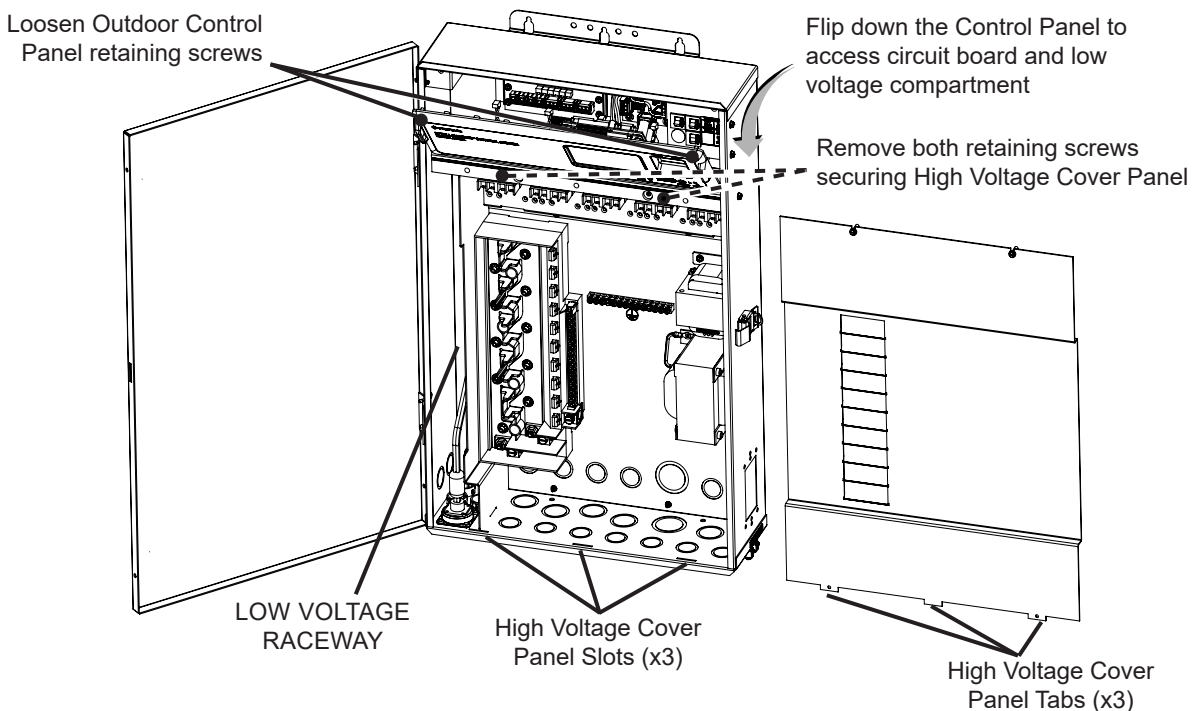


## Accessing Control Boards and Electronics

The system control board, optional personality kits, and other low voltage connections are located behind the control panel.

### To access the control boards and low voltage connections:

1. Open the enclosure door.
2. Remove the two retaining screws from the High Voltage Cover Panel and remove the panel from the enclosure.
3. Loosen the two retaining screws securing the top edge of the Control Panel.
4. Fold down the Control Panel to access the control board.
5. Refer to the necessary sections to connect filtration system components to IntelliCenter.
  - **IntelliCenter Load/Power Center Relays**, page 17
  - **Valve Actuators**, page 19
  - **IntelliValve Valve Actuators**, page 20
  - **Temperature Sensors**, page 21
  - **Standard Gas Heater**, page 23
  - **IntelliFlo Pump**, page 24
  - **Heat Pump or Hybrid Heater**, page 25
  - **Salt Chlorine Generator**, page 26
  - **IntelliChem Chemical Controller**, page 28
6. After electrical connections have been completed, close the Control Panel and tighten the two retaining screws.
7. Insert the panel's three tabs into the slot at the bottom of the enclosure.
8. Secure the panel using the two retaining screws.
9. Close and secure the enclosure door.



## Connecting Load/Power Center Relays

The standard IntelliCenter Load/Power Center features five pre-installed high voltage relays, four auxiliary (AUX) circuits, and one filter pump circuit.

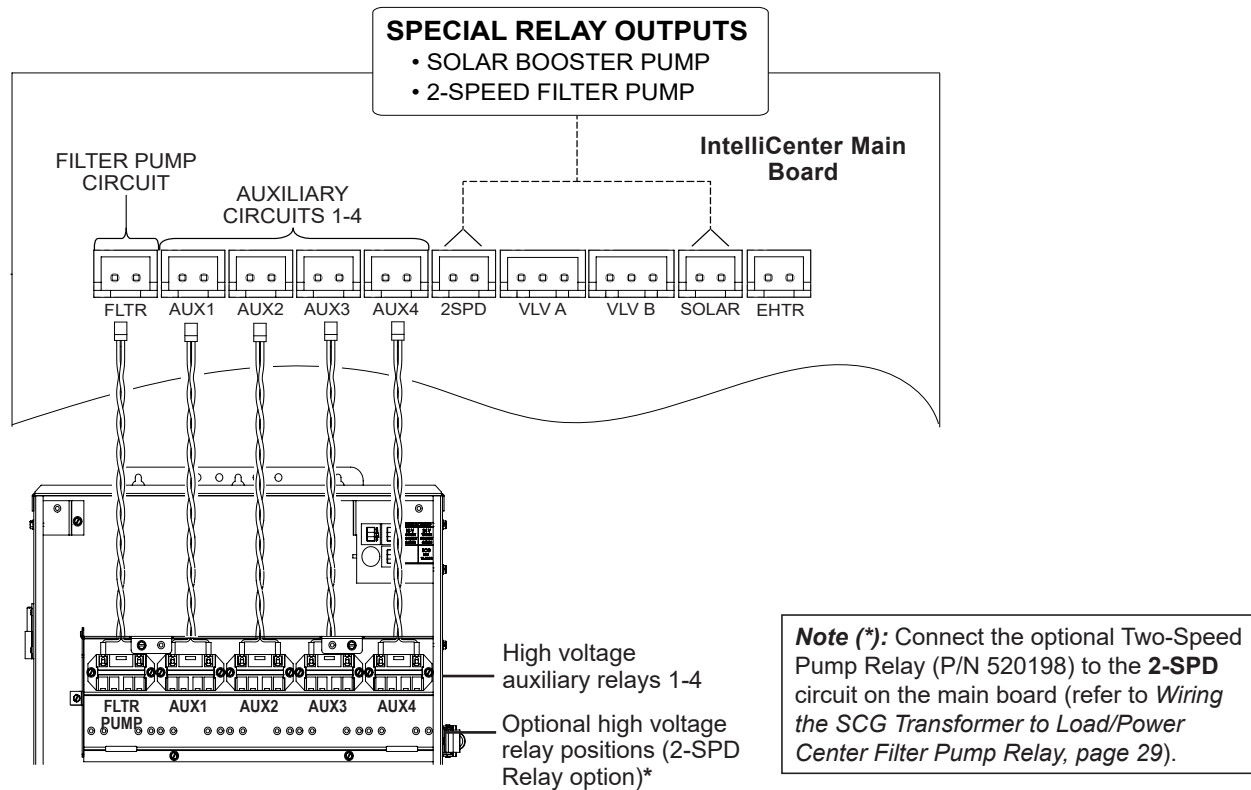
1. **Single Equipment: Pool Only or Spa Only** – Intended to control a single body of water (LO-TEMP and HI-TEMP).
  - **i5P (P/N 521909)** – Main System Board. Includes four AUX circuits and one dedicated filter pump circuit.
  - **i8P (P/N 521910)** – Includes three additional AUX circuits, for a total of seven auxiliary circuits and one dedicated filter pump circuit.
  - **i10P (P/N 521911)** – Includes five additional AUX circuits, for a total of nine auxiliary circuits plus one dedicated filter pump circuit.
2. **Shared Equipment: Pool and spa combinations with shared filtration system** – Intended to control water flow between a pool and spa the share a filtration system.
  - **i5PS (P/N 521912)** – Added to i5P main board for pool/spa combination systems.
  - **i8PS (P/N 521913)** – Added to i5P main board for pool/spa combination systems. Includes three additional AUX circuits, for a total of seven auxiliary circuits.
  - **i10PS (P/N 521914)** – Added to i5P main board for pool/spa combination systems. Includes five additional AUX circuits, for a total of nine auxiliary circuits.
3. **Dual Equipment: Pool and Spa with Dual Sets of Equipment** – Intended to control two separate sets of pool equipment. Each set of a equipment (Pool or Spa) can control one temperature setting.
  - **i10D (P/N 521915)** – Added to i5P main board for dual body systems. Includes five additional AUX circuits and a dedicated filter pump circuit, for a total of nine auxiliary circuits and two dedicated filter pump circuits.

### To connect the relays to the IntelliCenter main board AUX plugs:

1. Route the power relay conductors into the low voltage compartment and to the main control board.
2. Connect the conductors to the desired AUX terminal (**FLTR PUMP**, **AUX1**, **AUX2**, **AUX3**, **AUX4**).

**Note:** For AUX terminal locations, refer to the diagram on the next page.

## Connecting Load/Power Center Relays (Continued)



### IntelliCenter Relay-to-AUX Connections

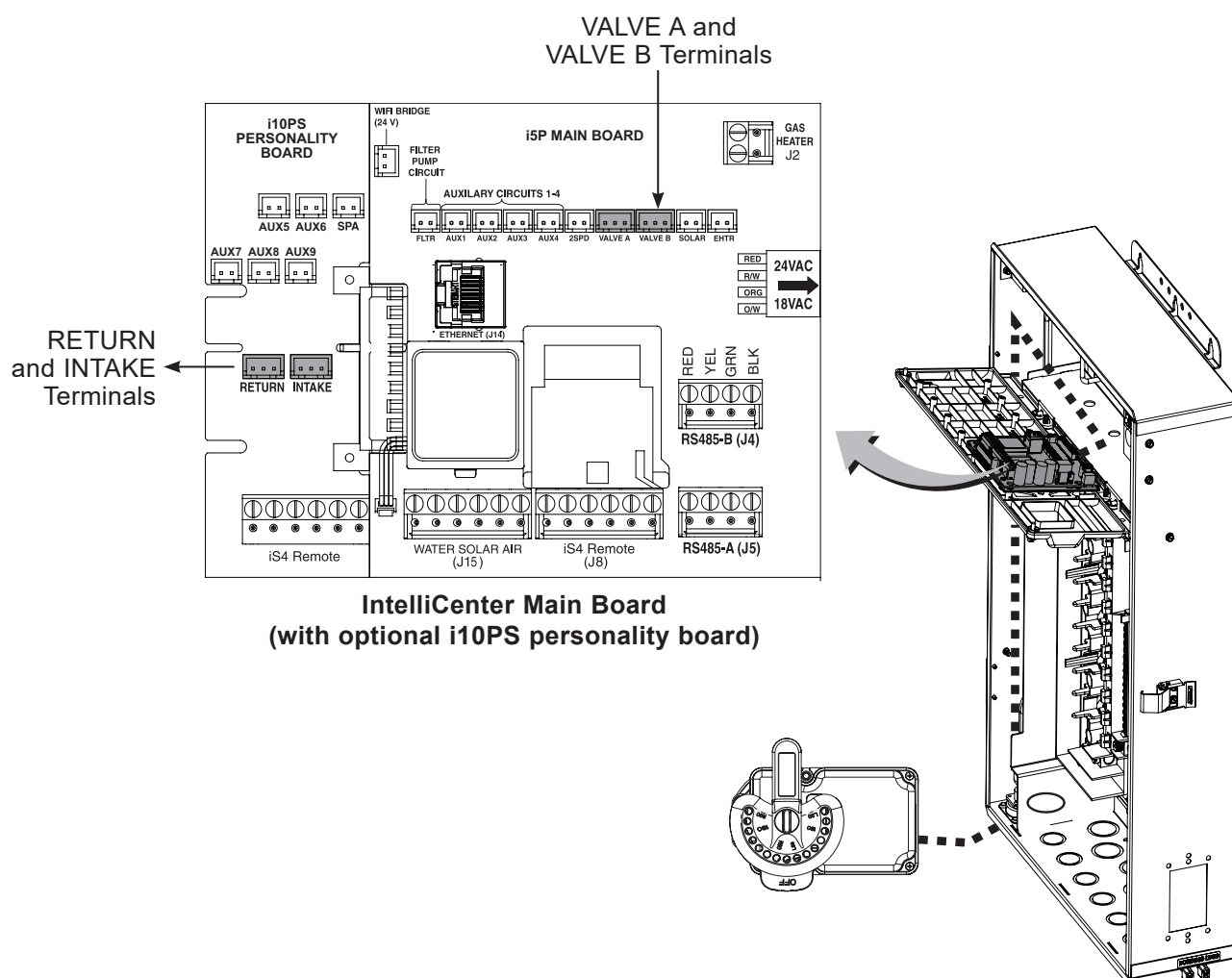
## Connecting a Standard Valve Actuator

1. At the Load/Power Center, route the actuator cable to the through the low voltage raceway along the left-side of the enclosure to the IntelliCenter board.
2. **General Purpose Valves (solar, water-feature, in-floor cleaner, etc.):** Connect the Valve A actuator to the **VALVE A** terminal on the IntelliCenter main board, and the Valve B actuator to the **VALVE B** terminal. See below for terminal locations.
3. **Pool/Spa Intake and Return Valves:** Connect the Intake Valve actuator to the **INTAKE** terminal on the installed PS-series personality board, and the Return Valve actuator to the **RETURN** terminal. See below for terminal locations.

**Note:** RETURN and INTAKE terminals are only available on Share Equipment (PS-Series) personality boards.

**Note:** Excess cable should be coiled in the low voltage raceway in the left-side of the enclosure. Do not coil the cable in the upper low voltage compartment.

If additional valves connections are needed, a Valve Expansion Kit (P/N 522038z) can be purchased and installed. This expansion board will allow control of up to 10 valves.





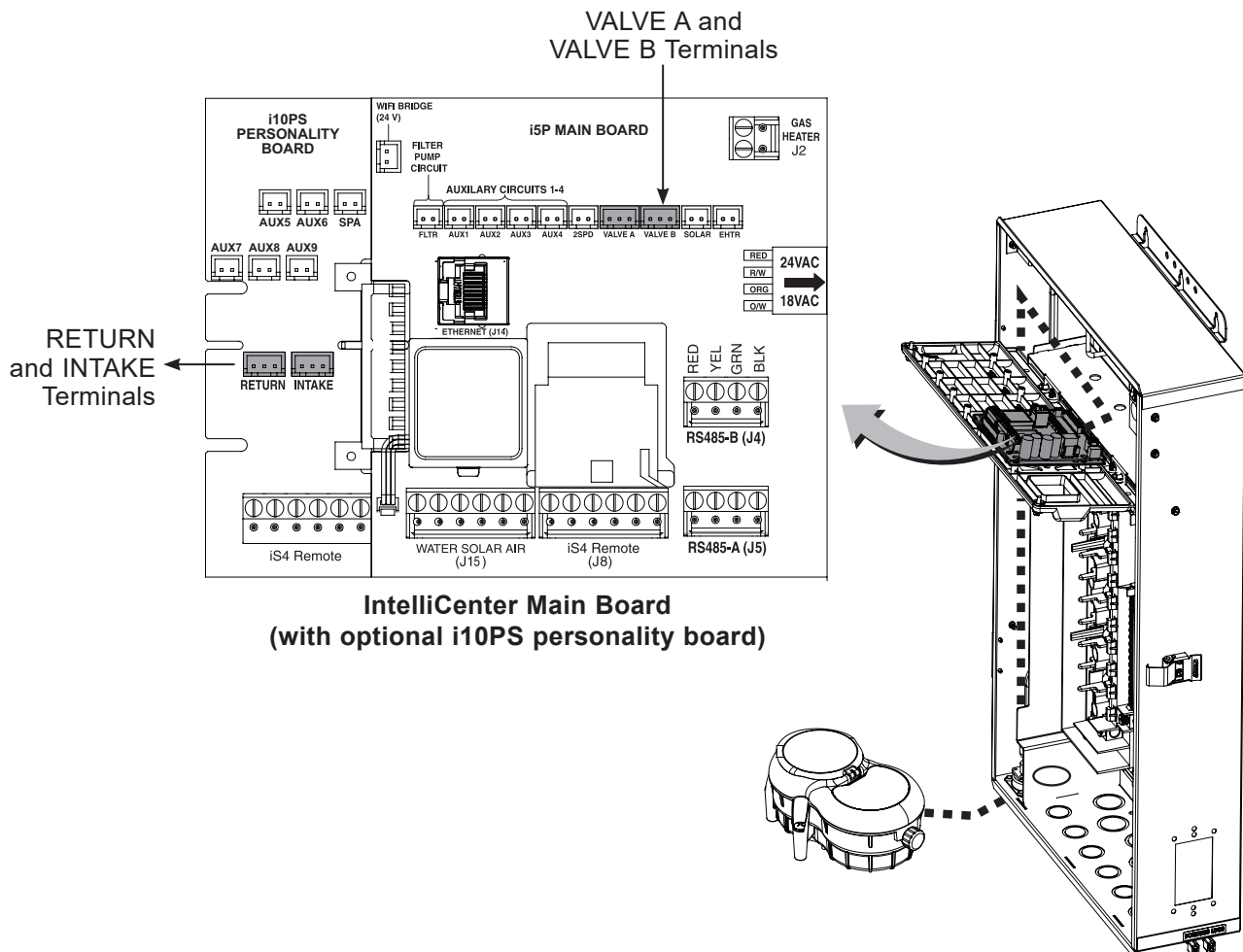
## Connecting an IntelliValve Valve Actuator

1. At the Load/Power Center, route the actuator cable through the low voltage raceway to the IntelliCenter board.
2. **General Purpose Valves (solar, water-feature, in-floor cleaner, etc.):** Connect the Valve A actuator to the **VALVE A** terminal on the IntelliCenter main board, and the Valve B actuator to the **VALVE B** terminal. See below for terminal locations.
3. **Pool/Spa Intake and Return Valves:** Connect the Intake Valve actuator to the **INTAKE** terminal on the installed PS-series personality board, and the Return Valve actuator to the **RETURN** terminal. See below for terminal locations.

**Note:** RETURN and INTAKE terminals are only available on Share Equipment (PS-Series) personality boards.

**Note:** Excess cable should be coiled in the low voltage raceway in the left-side of the enclosure. Do not coil the cable in the upper low voltage compartment.

If additional valves connections are needed, a Valve Expansion Kit (P/N 522038z) can be purchased and installed. This expansion board will allow control of up to 10 valves.

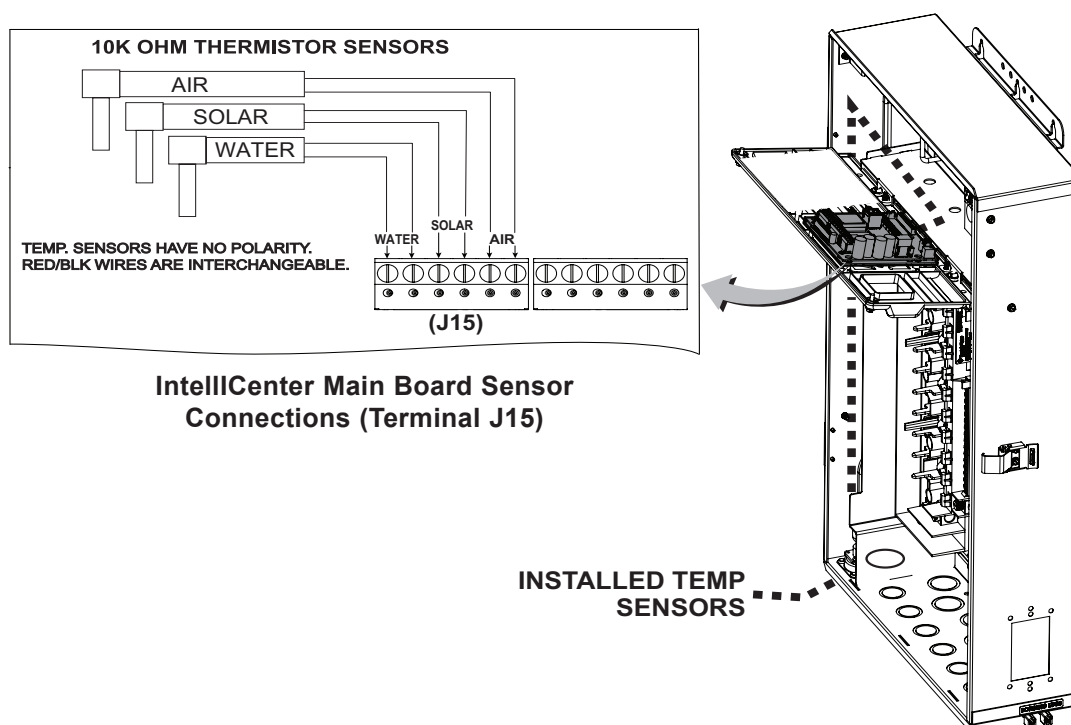


## Installing a Water Temperature Sensor

1. Select a convenient location to mount the water sensor in the plumbing system between the filter pump and filter. Drill a 3/8-inch diameter hole in one side of the pipe.
2. Insert tip of sensor into the hole. Use the band clamp to secure the sensor to the pipe. Tighten the clamp just enough so that the O-ring begins to flatten. Do not overtighten
3. Fasten the cable to the plumbing with cable ties.
4. Run the provided 22 AWG cable from the sensor to the Load/Power Center and route the cable through the low voltage raceway to the circuit board.
5. Strip necessary conductors 1/4-inch [6.4 mm] and cut off unused conductors.
6. Secure the conductors into the **WATER** screw terminals at the **J15** terminal block. Refer to diagram below.

## Installing an Air Temperature Sensor

1. Mount the sensor in a shaded area, away from air conditioners.
2. Run the provided 22 AWG cable from the sensor to the Load/Power Center and route the cable through the low voltage raceway to the circuit board.
3. Strip necessary conductors 1/4-inch [6.4 mm] and cut off unused conductors.
4. Secure the conductors into the **AIR** screw terminals at the **J15** Terminal Block. Refer to diagram below.



## Installing a Solar Temperature Sensor

**⚠ CAUTION** DO NOT DRILL HOLES OR CLAMP SENSOR INTO A SOLAR PIPE.

1. Mount the sensor on a flat surface, with similar exposure to sun. Do not let the sensor touch the panels. For glazed panels, install the sensor between collector and glazing.
2. If necessary, splice a two-conductor extension conductor to the sensor. Run two-conductor cable between the sensor and the enclosure. Use waterproof connectors to connect the sensor to the cable. Use 20 AWG outdoor rated sensor wiring and be sure the conductor connections are protected from the environment. Use shielded cable for long runs or runs near other electrical wiring.
3. Strip necessary conductors 1/4-inch [6.4 mm] and cut off unused conductors.
4. Secure the conductors into the **SOLAR** screw terminals at the **J15** terminal block. Refer to diagram on previous page.

## Temperature vs. Resistance Data

IntelliCenter uses 10k Ohm thermistor sensors. When the solar sensor is disconnected from the control system, the sensor will read 10k Ohm at 77°F [25°C].

Refer to the table below for resistance at other temperatures. A properly functioning sensor should be accurate to  $\pm 0.2^{\circ}\text{C}$ .

TEMPERATURE	RESISTANCE ( $\Omega$ )
-30°F (-34°C)	234,100
-25°F (-32°C)	196,300
-20°F (-29°C)	165,100
-15°F (-26°C)	139,300
-10°F (-23°C)	118,000
-5°F (-21°C)	100,200
0°F (-18°C)	85,350
5°F (-15°C)	72,910
10°F (-12°C)	62,480
15°F (-9°C)	53,640
20°F (-7°C)	46,230
25°F (-4°C)	39,910
30°F (-1°C)	34,560
35°F (2°C)	30,000
40°F (5°C)	26,100
45°F (7°C)	22,760
50°F (10°C)	19,900

TEMPERATURE	RESISTANCE ( $\Omega$ )
55°F (13°C)	17,440
60°F (16°C)	15,310
65°F (18°C)	13,480
70°F (21°C)	11,880
75°F (24°C)	10,500
77°F (25°C)	10,000
80°F (27°C)	9,298
85°F (29°C)	8,250
90°F (32°C)	7,331
95°F (35°C)	6,530
100°F (38°C)	5,826
105°F (41°C)	5,209
110°F (43°C)	4,663
115°F (46°C)	4,182
120°F (49°C)	3,757

## Connecting a Standard Gas Heater to the Load/Power Center

IntelliCenter features low voltage dry contacts that can be connected to most gas heaters or heat pumps with 24 VAC control circuits. The following connection instructions are for gas heaters and heat pumps with low voltage thermostats.

1. Switch OFF power to the heater.

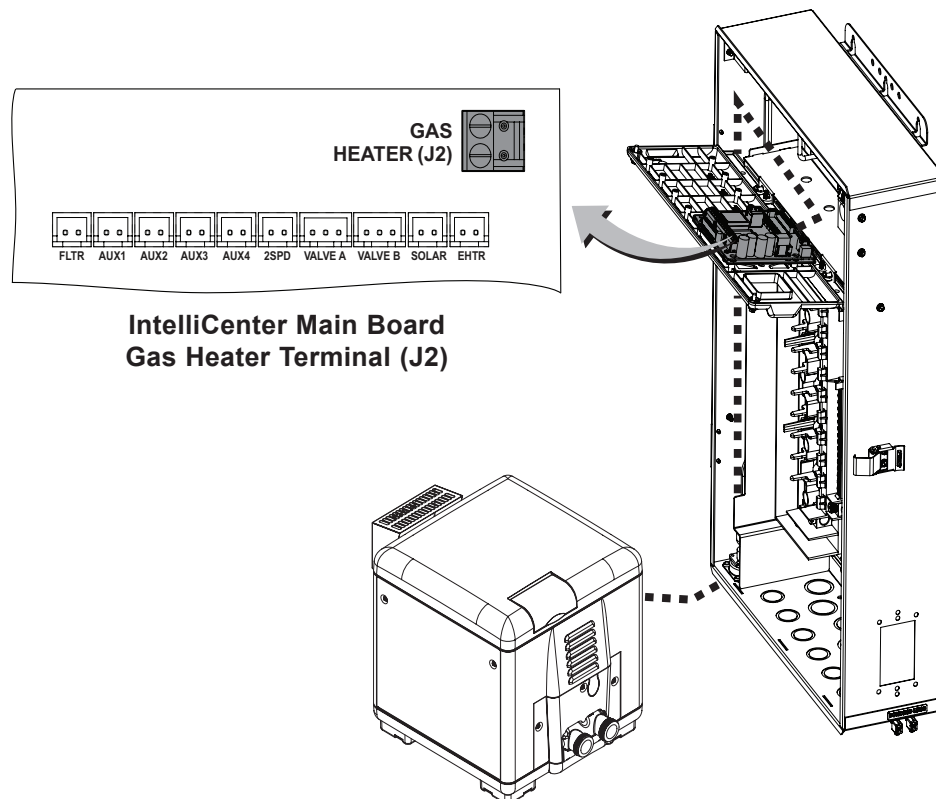
**CAUTION** DO NOT disconnect the conductor from the thermostat, pressure switch, high limit switch, or other safety devices.

2. Remove the factory installed jumper from the heater Fireman's Switch.
3. At the heater, connect the conductors in accordance with heater manufacturer's instructions. For older heaters without instructions for remote operation, connect the conductors to the Fireman's Switch in series with the thermostat, pressure switch, and other safety switches.
4. Run a two-conductor cable from the heater Fireman's Switch connector through the low voltage raceway to the Load/Power Center circuit board, as shown below.

**Note:** Use 221°F [105°C] rated conductor for connections to the heater. When connecting conductors inside the heater, be cautious of HOT internal parts of the heater. Refer to the minimum temperature rating for conductors recommended by the manufacturer. Refer to the heater owners manual for details.

5. Strip each conductor 1/4-inch [6.4 mm].
6. Insert the conductors into the **GAS HEATER (J2)** two-screw terminal on the main IntelliCenter board. Refer to diagram below.

**CAUTION** Ensure conductors from the heater to the IntelliCenter Load/Power Center are isolated from any line voltage conductors in the heater. Failure to follow these instructions may cause heater malfunction.

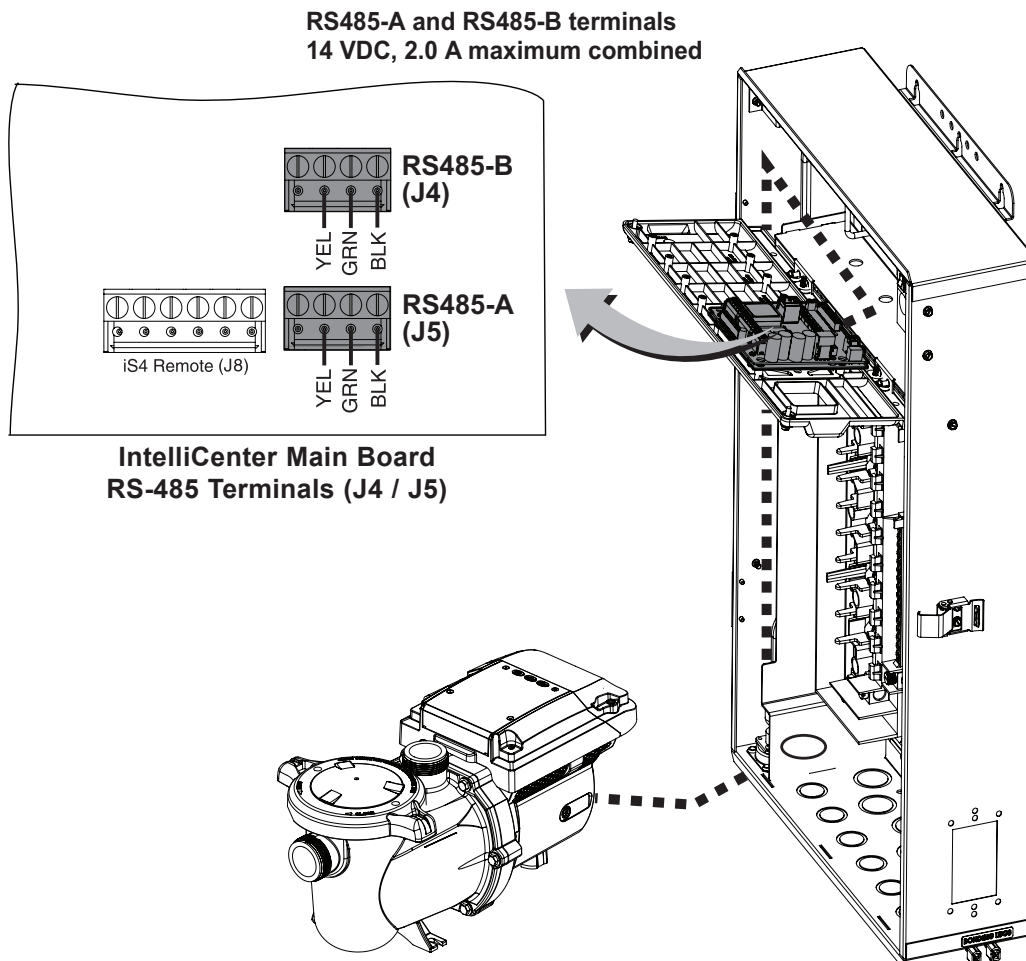


## Connecting an IntelliFlo Pump to the Load/Power Center

IntelliCenter filter pump output is rated at 120 VAC, 15 Amp maximum. Check the electrical rating marked on the pump motor before connecting it to the system.

1. Switch power OFF to the Load/Power Center at the main circuit breakers.
2. Route an RS-485 cable from the pump to the Load/Power Center.
3. Route the cable through one of the grommet fittings located in the lower left side of the enclosure.
4. Route the cable up the low voltage raceway to the main IntelliCenter board, as shown below.
5. Strip the cable jacket 4-inches [102 mm].
6. Strip each conductor 1/4-inch [6.4 mm].
7. Wire the conductors into the desired RS-485 terminals on the IntelliCenter main board as shown below.
8. Secure the conductors into the terminal. For wiring details, refer to the pin configuration shown below.

**Note:** Multiple conductors may be inserted into a single screw terminal.



## Connecting a Heat Pump or Hybrid Heater to the Load/Power Center

Verify the heat pump terminal block conductor colors and pinouts (located on the back of the control board) before connecting it to an IntelliCenter RS-485 terminal. Refer to the wiring table below for the pin configuration.

**IMPORTANT: DO NOT connect PIN 4 (RED) to the IntelliCenter RS-485 terminal. This pin will not be used.**

Description	IntelliCenter RS-485 Terminal (J4 / J5)	Heat Pump Terminal (J1 or J8)
GROUND	PIN 1 - BLACK	PIN 1 - BLACK
- DATA	PIN 2 - GREEN	PIN 2 - GREEN
+ DATA	PIN 3 - YELLOW	PIN 3 - YELLOW
+15 VDC	PIN 4 - RED (DO NOT USE)	PIN 4 - RED (DO NOT USE)

## Connecting a Salt Chlorine Generator (SCG) Power Cable to the Enclosure

SCG cell power is connected at the bottom of the IntelliCenter Load Center (shown below) or Power Center enclosure.

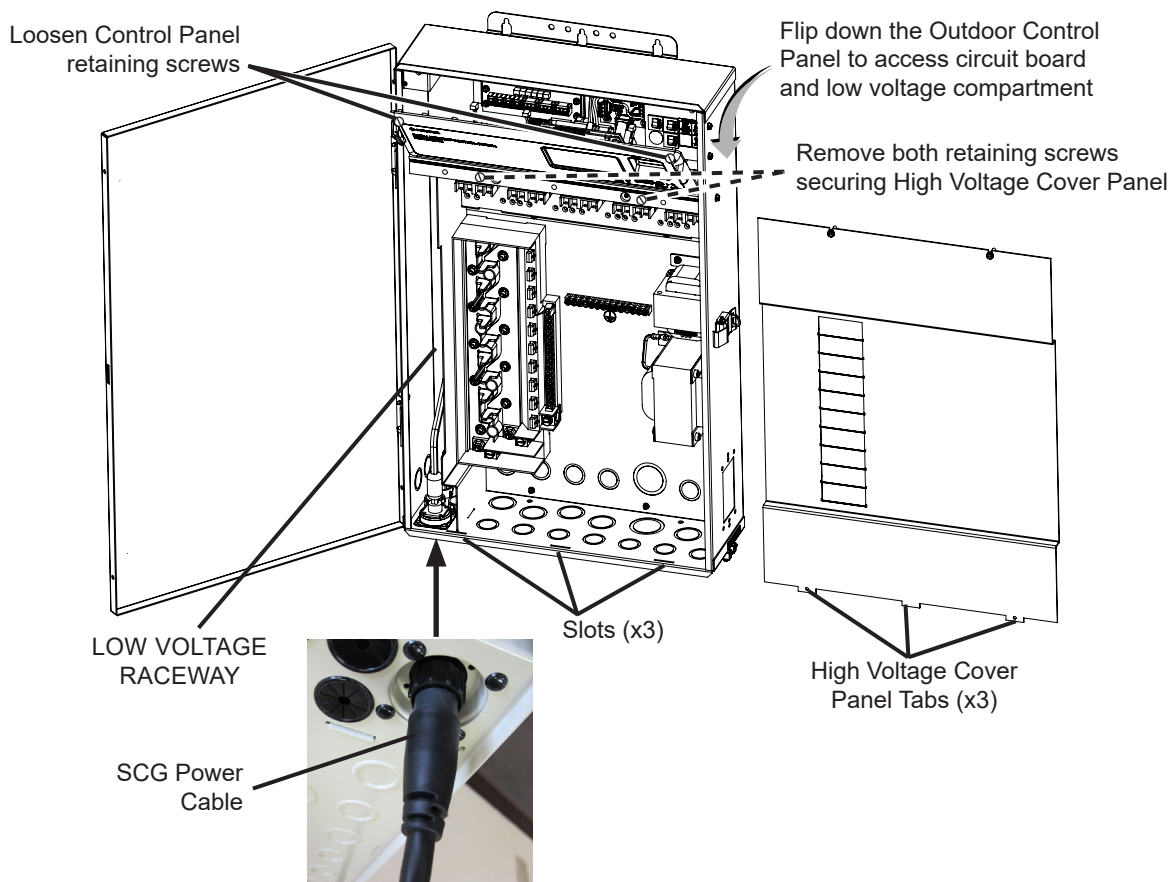


**WARNING** BEFORE REMOVING THE HIGH VOLTAGE COVER FROM THE LOAD/POWER CENTER, switch the main power OFF at the main circuit breaker and switch OFF main power to the Load/Power Center.



**WARNING** TO AVOID AN ELECTRICAL HAZARD AND EQUIPMENT DAMAGE TO THE ENCLOSURE AND SCG CELL, DISCONNECT ALL POWER TO INTELLICENTER AT THE CIRCUIT BREAKER BEFORE CONNECTING THE SCG POWER CABLE.

1. Switch OFF power to the enclosure at the main circuit breaker.
2. Open the enclosure.
3. Remove the two retaining screws from the High Voltage Cover Panel.
4. Remove the high voltage cover panel.
5. Loosen the two retaining screws securing from the top edge of the Control Panel.
6. Fold down the Control Panel to access the circuit board electrical connections.
7. Align the four pins of the SCG power cable with the socket at the bottom of the enclosure and insert the cord connector into the socket.
8. Rotate the socket nut until it locks the connector in place. Hand tighten only.
9. Proceed to the next page.



**IntelliCenter Load Center with SCG Option**



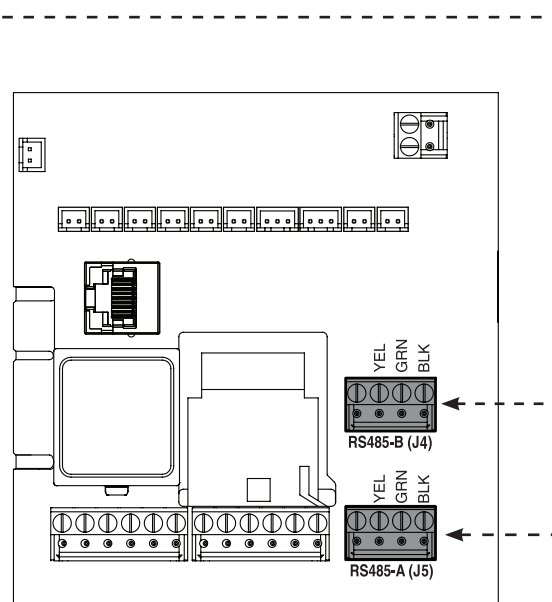
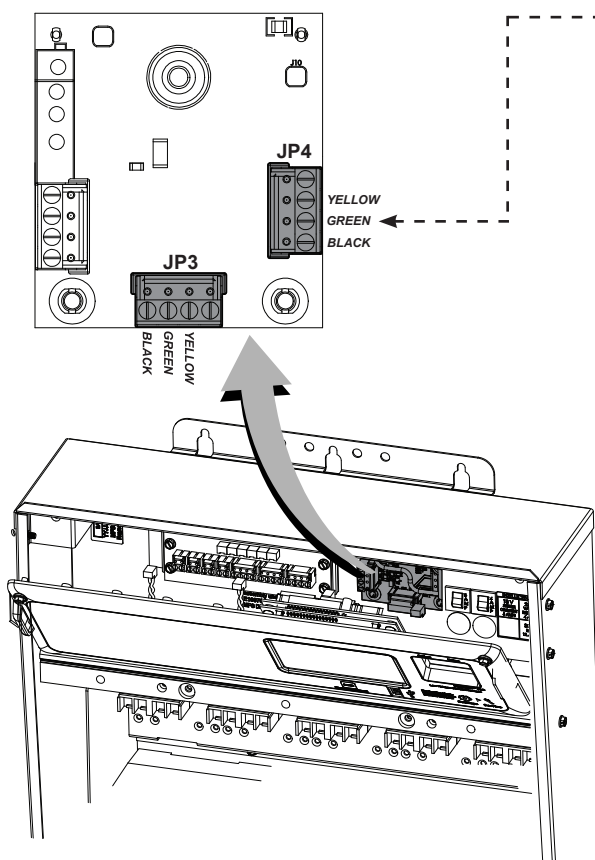
## Connecting a Salt Chlorine Generator (SCG) to IntelliCenter via RS-485

The SCG cell communicates with IntelliCenter via a four conductor, 22 AWG RS-485 cable. This cable connects to the RS-485 terminals on the SCG board and main control board.

**⚠ WARNING** TO AVOID AN ELECTRICAL HAZARD AND EQUIPMENT DAMAGE, DISCONNECT ALL POWER TO INTELLICENTER AT THE CIRCUIT BREAKER BEFORE CONNECTING THE SCG COMMUNICATION CABLE.

1. Connect the SCG communication cable to an RS-485 terminal (**JP3 or JP4**) on the IntelliCenter SCG board.
2. Connect the opposite end of the cable to an RS-485 terminal (**J4 or J5**) on the IntelliCenter main board according to the table below.
3. After electrical connections have been completed, close the Outdoor Control Panel and tighten the two retaining screws.
4. Reinstall the High Voltage Cover Panel and secure the panel with the two retaining screws.
5. Close the front door and secure with the latch.
6. Restore power to the load/power center at the circuit breaker.

**IntelliCenter SCG Board**



**IntelliCenter Main Board (i5P)**

Description	SCG Board (JP3 / JP4)	Main Board (J4 / J5)
+15 VDC	RED (DO NOT USE)	RED (DO NOT USE)
+ DATA	YELLOW	YELLOW
- DATA	GREEN	GREEN
GROUND	BLACK	BLACK

## Connecting an IntelliChem Controller to IntelliCenter

Verify each conductor color between IntelliChem Controller and the IntelliCenter Load/Power Center as shown in the following wiring table.

Description	IntelliChem COM Port Wire Color	Main Board RS-485 Terminal (J4 / J5)
<b>+15 VDC</b>	<b>RED (DO NOT USE)</b>	<b>RED (DO NOT USE)</b>
+ DATA	YELLOW	YELLOW
- DATA	GREEN	GREEN
GROUND	BLACK	BLACK

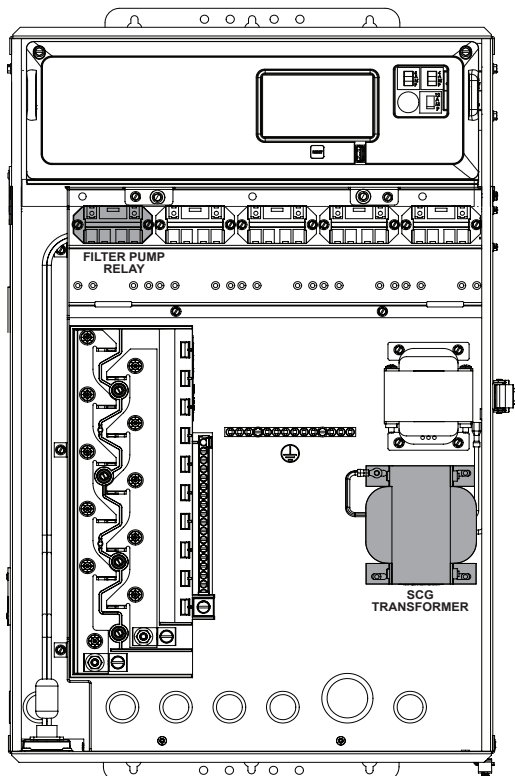
## Wiring the SCG Transformer to Load/Power Center Filter Pump Relay

**IMPORTANT! When using the IntelliCenter with integrated SCG transformer, ENSURE THE SCG TRANSFORMER CONDUCTORS ARE CONNECTED TO THE LOAD SIDE OF THE FILTER PUMP RELAY. This ensures that the SCG cell only produces chlorine when the pool/spa filter pump is on.**

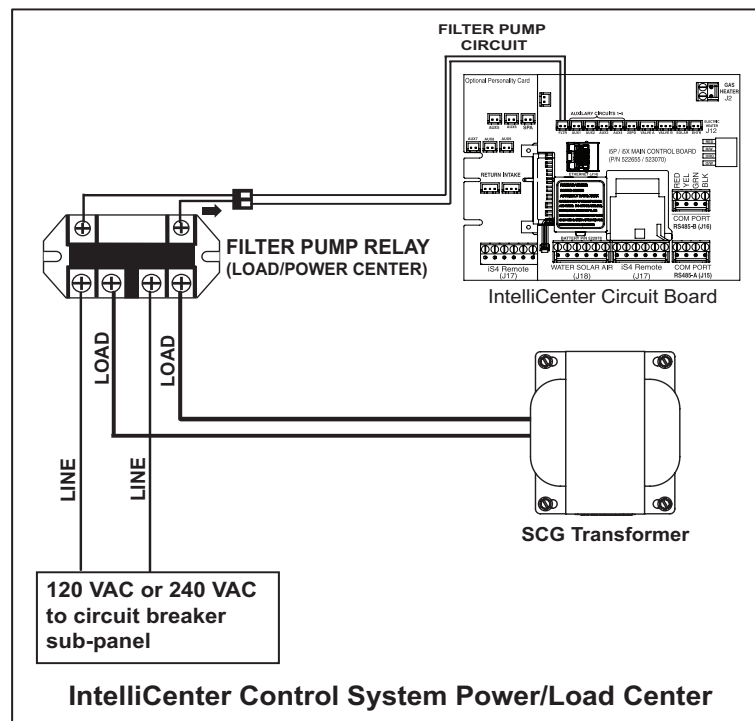
**⚠ WARNING** BEFORE REMOVING THE HIGH VOLTAGE COVER FROM THE LOAD/POWER CENTER, switch main power OFF at the circuit breaker.

**⚠ WARNING** TO AVOID AN ELECTRICAL HAZARD AND EQUIPMENT DAMAGE TO THE ENCLOSURE AND SCG CELL, DISCONNECT ALL POWER TO INTELLICENTER AT THE CIRCUIT BREAKER BEFORE CONNECTING THE SCG POWER CABLE.

1. Switch OFF power to the enclosure at the main circuit breaker.
2. Open the enclosure.
3. Remove the two retaining screws from the High Voltage Cover Panel and remove the panel.
4. Loosen the two retaining screws securing the top edge of the Control Panel and .
5. Fold down the Control Panel to access the circuit board electrical connections.
6. Remove the panel from the enclosure.
7. **Locate the FILTER PUMP RELAY. Connect the SCG transformer conductors to the LOAD SIDE of the relay as shown below.**
8. After electrical connections have be completed, insert the panel's three tabs into the slots at the bottom of the enclosure.
9. Secure the panel with the two retaining screws.
10. Close and latch the enclosure door.
11. Reconnect power to the load/power center.



**IntelliCenter Load Center  
(with SCG transformer)**

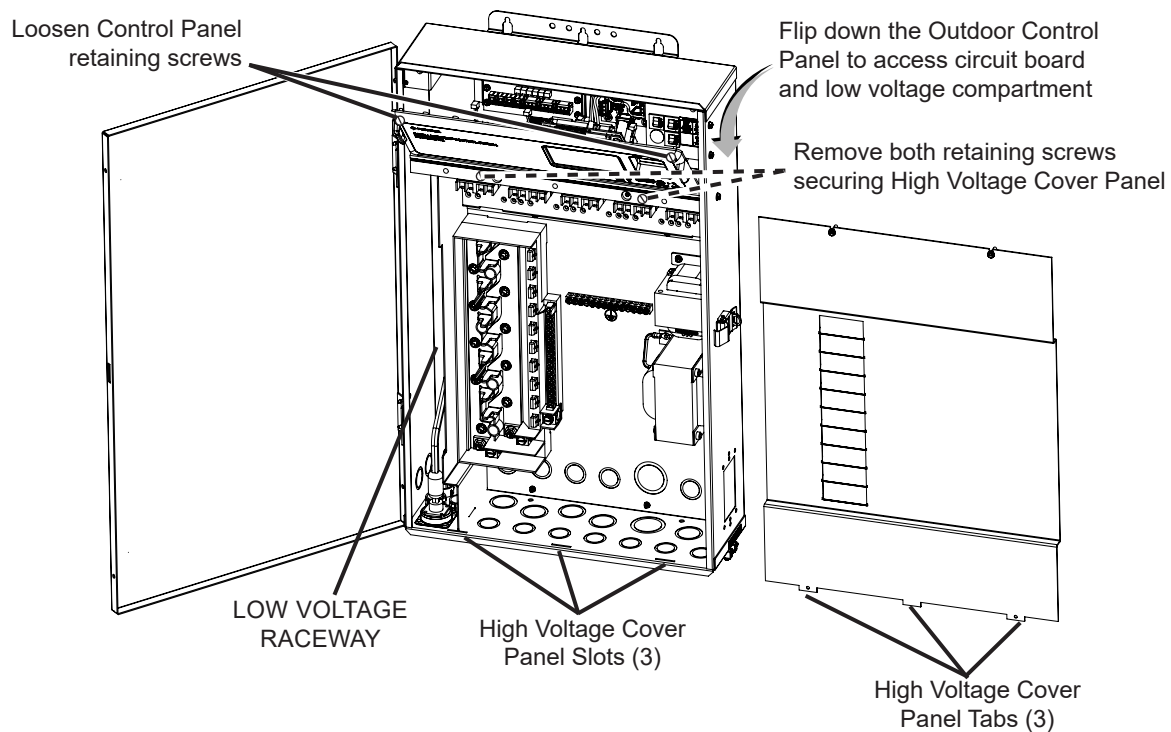


## Rewiring the SCG Transformer for 120 VAC

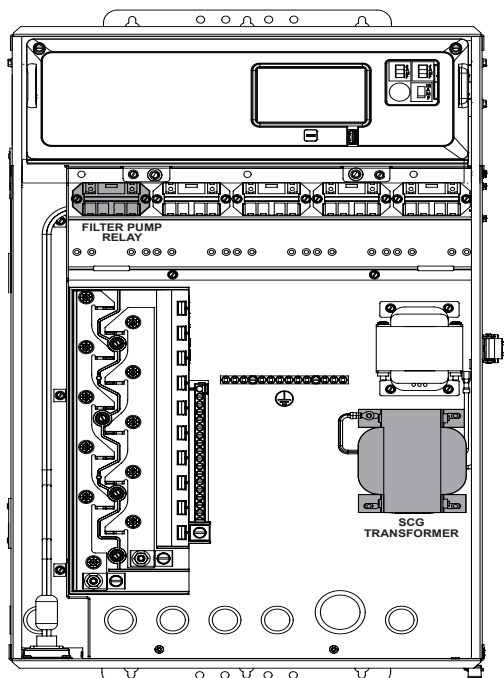
The SCG power supply transformer is located in the IntelliCenter Load/Power Center is pre-wired for 240 VAC at 1.3 A but can be wired for 120 VAC at 2.5 A.

**⚠ WARNING** BEFORE REMOVING THE HIGH VOLTAGE COVER PANEL FROM THE LOAD/POWER CENTER ENCLOSURE switch OFF the power at the main breaker box.

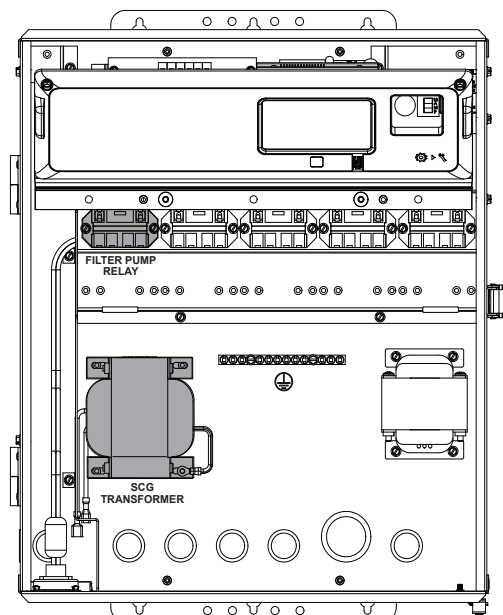
1. Switch OFF power to the enclosure at the main circuit breaker.
2. Unlatch the front door latch and open the front door.
3. Remove the two retaining screws from the High Voltage Cover Panel and remove the panel.
4. Loosen the two retaining screws securing from the top edge of the Outdoor Control Panel.
5. Fold down the Outdoor Control Panel to access the circuit board sockets connectors for the electrical connections. Remove the panel from the enclosure, as shown below.
6. Rewire the SCG transformer for 120 VAC as shown in the wiring diagram on page 31.
7. Reinstall the High Voltage Panel and secure with the two retaining screws.
8. Close the front door and secure with the latch.
9. Restore power to the load/power center.



## Rewiring the SCG Transformer for 120 VAC (Continued)



IntelliCenter Load Center  
(with SCG transformer)



IntelliCenter Power Center  
(with SCG transformer)

### SALT CHLORINE GENERATOR OPTION FOR OUTDOOR USE ONLY

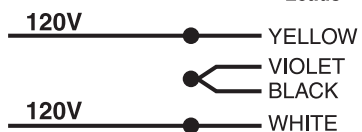
INPUT: 120 VAC AT 2.5 A, 50/60 Hz  
240 VAC AT 1.3 A, 50/60 Hz

WIRING CONFIGURATION  
IS FACTORY SET FOR 240V.

#### TRANSFORMER WIRING

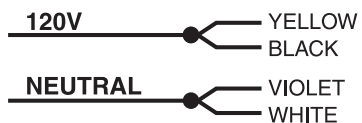
##### 240V Line Voltage

##### Transformer Leads

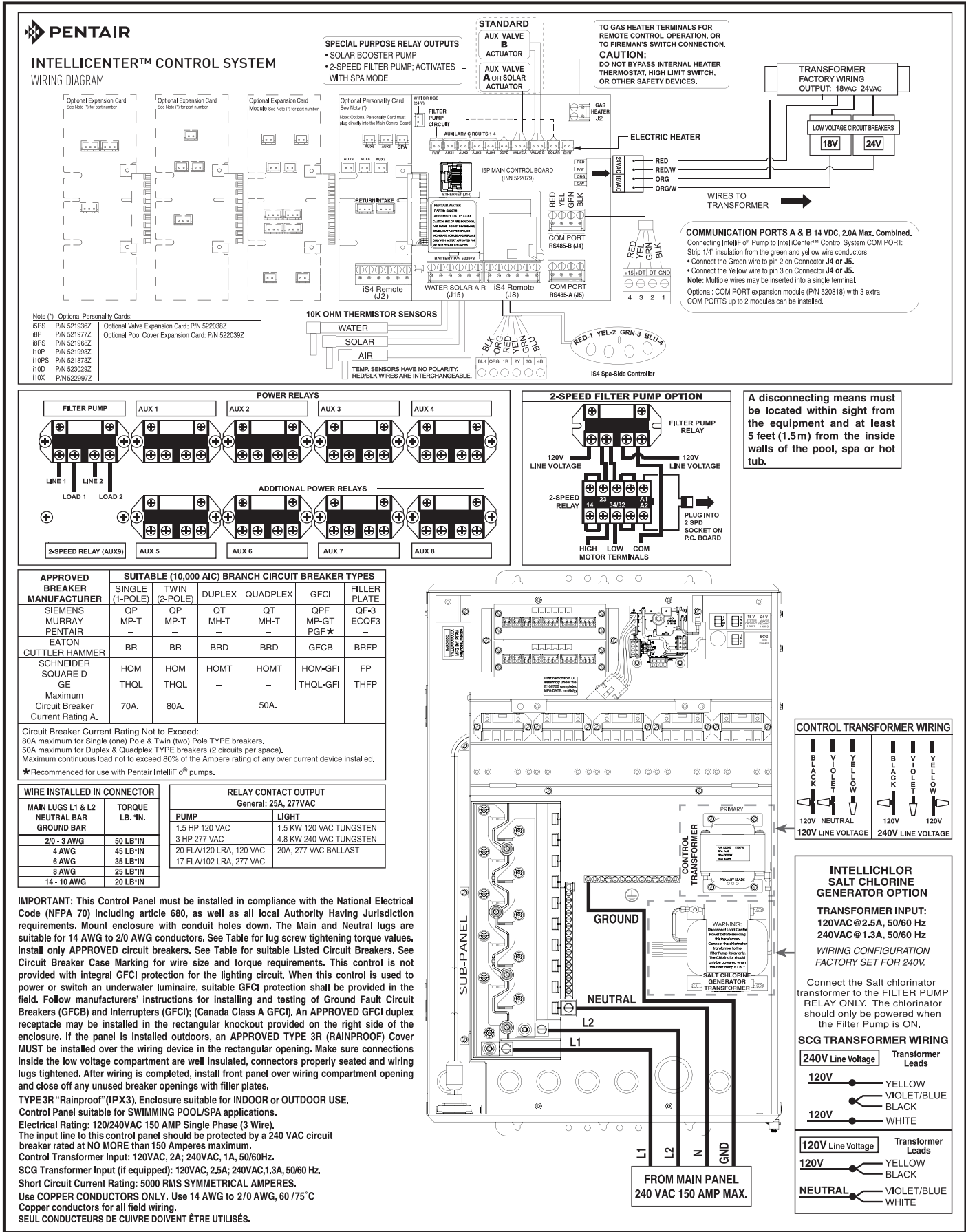


##### 120V Line Voltage

##### Transformer Leads



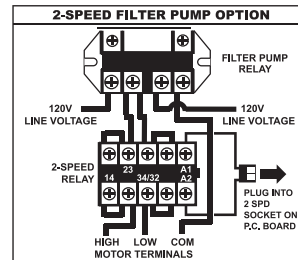
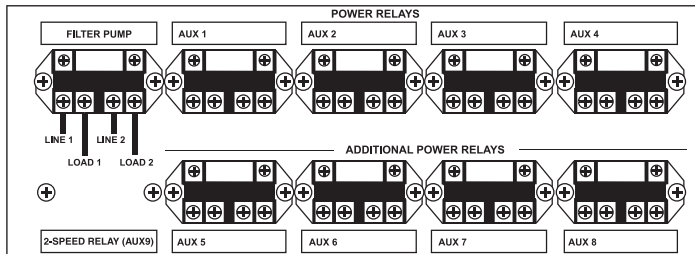
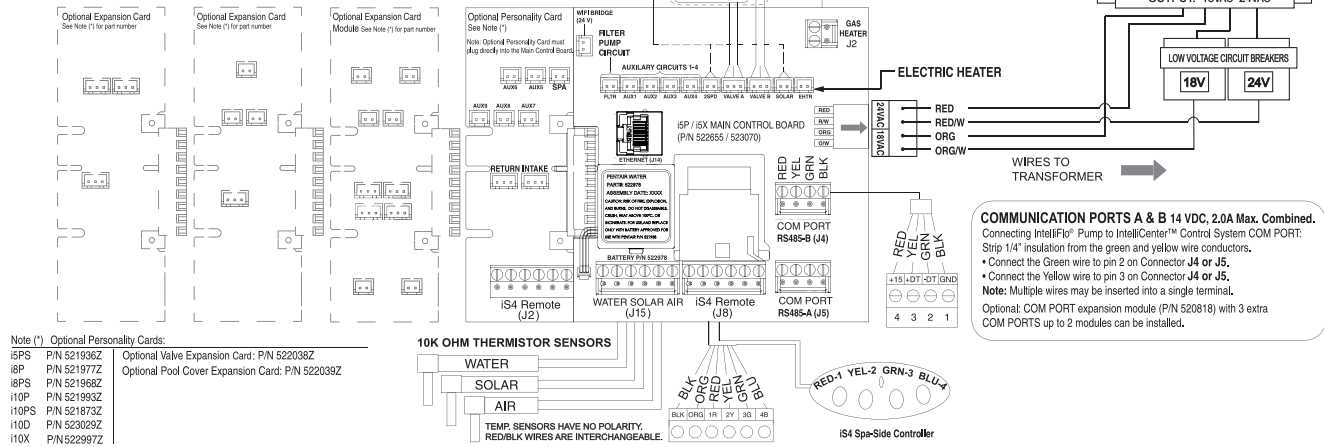
Load Center Wiring Diagram



# Power Center Wiring Diagram



## INTELLICENTER™ CONTROL SYSTEM WIRING DIAGRAM



RELAY CONTACT OUTPUT	
General: 25A, 277VAC	
PUMP	LIGHT
1.5 HP 120 VAC	1.5 KW 120 VAC TUNGSTEN
3 HP 277 VAC	4.8 KW 240 VAC TUNGSTEN
20 FLA/120 LRA, 120 VAC	20A, 277 VAC BALLAST
17 FLA/102 LRA, 277 VAC	

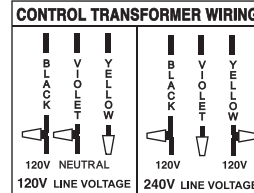
**IMPORTANT:** This Control Panel must be installed in compliance with the National Electrical Code (NFPA 70) including article 680, as well as all local Authority Having Jurisdiction requirements. Mount enclosure with conduit holes down. This control is not provided with integral GFCI protection for the lighting circuit. When this control is used to power or switch an underwater luminaire, suitable GFCI protection shall be provided in the field. Follow manufacturers' instructions for installing and testing of Ground Fault Circuit Breakers (GFCB) and Interrupters (GFCI); (Canada Class A GFCI).

An APPROVED GFCI duplex receptacle may be installed in the rectangular knockout provided on the right side of the enclosure.

If the panel is installed outdoors, an APPROVED TYPE 3R (RAINPROOF) Cover MUST be installed over the wiring device in the rectangular opening. Make sure connections inside the low voltage compartment are well insulated, connectors properly seated and wiring lugs tightened. After wiring is completed, install front panel over wiring compartment opening.

**A disconnecting means must be located within sight from the equipment and at least 5 feet (1.5 m) from the inside walls of the pool, spa or hot tub.**

**TYPE 3R "Rainproof" (IPX3).** Enclosure suitable for INDOOR or OUTDOOR USE. Control Panel suitable for SWIMMING POOL/SPA applications. Electrical Rating: 120/240VAC 150 AMP Single Phase (3 Wire). The input line to this control panel should be protected by a 240VAC circuit breaker rated at NO MORE than 150 Amperes maximum. Control Transformer Input: 120VAC, 2A; 240VAC, 1A, 50/60Hz. SCG Transformer Input (if equipped): 120VAC, 2.5A; 240 VAC, 1.3A, 50/60 Hz. Short Circuit Current Rating: 5000 RMS SYMMETRICAL AMPERES. Use COPPER CONDUCTORS ONLY. Use 14 AWG to 6 AWG, 60/75°C Copper conductors for all field wiring.



**INTELLICHLOR SALT CHLORINE GENERATOR OPTION**

**TRANSFORMER INPUT:**  
120VAC @ 2.5A, 50/60 Hz - 240VAC @ 1.3A, 50/60 Hz  
WIRING CONFIGURATION FACTORY SET FOR 240V.

**WARNING! DISCONNECT LOAD CENTER BEFORE SERVICING SCG TRANSFORMER.** Connect this chlorinator transformer to the FILTER PUMP RELAY ONLY. The chlorinator should only be powered when the Filter Pump is ON.

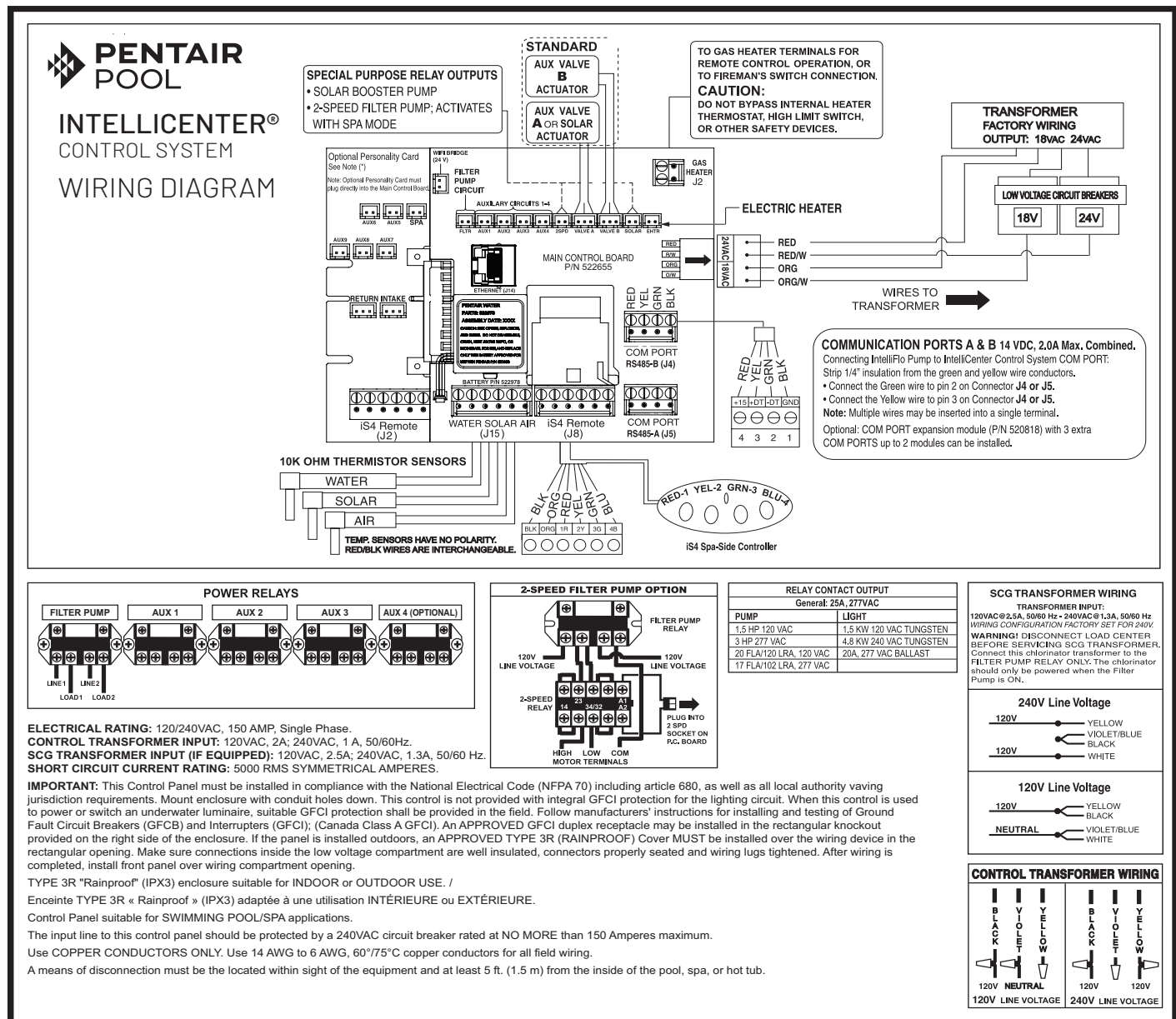
**SCG TRANSFORMER WIRING**

**240V Line Voltage** Transformer Leads: YELLOW, VIOLET/BLUE, BLACK, WHITE

**120V Line Voltage** Transformer Leads: YELLOW, BLACK, VIOLET/BLUE, WHITE

**NEUTRAL** Transformer Leads: YELLOW, BLACK, VIOLET/BLUE, WHITE







# INITIAL SETUP

The following information describes how to configure the IntelliCenter and connected equipment using the step-by-step Setup Wizard, as well how to pair IntelliCenter to a home WiFi network.

For information regarding navigation and operation of the IntelliCenter after initial setup, refer to the *IntelliCenter User's Guide (P/N 522990)*.

## Initial System Start-Up

After all equipment has been connected to the IntelliCenter, apply power to the system at the main panel circuit breaker.

The outdoor control panel will display the PENTAIR END USER LICENSE AGREEMENT. To continue, tap the Down arrow on the right side of the screen to scroll down to the end of the agreement and tap **I Accept**. The Home screen will then display.

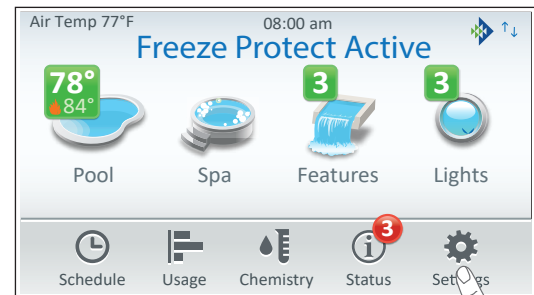
## Setup Wizard Overview

The IntelliCenter Setup Wizard provides step-by-step instructions to assist in setting up your equipment after installation. If you are unsure how to answer a question, you can skip the question and return to the Wizard later to add or modify information.

While in the Setup Wizard, if a power outage occurs or the screen times out, the system will revert to the Home Screen. Any changes made in the Wizard before power loss will be saved.

### To access the Setup Wizard:

1. At the IntelliCenter Home Screen, tap the **Settings Icon (⚙️)** at the bottom right of the screen.
2. Scroll to and tap **Advanced System Configuration**.
3. Scroll to and tap **Wizard**.
4. Continue to *Setup Wizard Navigation, page 36*.



## Setup Wizard Navigation

The diagram shows a 'What is your Zip code / Location' screen. A blue progress bar is at the top left, with a callout 1 pointing to it. The screen contains the following fields:

What is your Zip code / Location	
Zip Code 11220	Brooklyn, NY United States
Latitude Y Coordinate	40.65°
Longitude Y Coordinate	-73.94°
Time Zone Eastern Time (US & Canada)	UTC/GMT -5
2 ? Help/ Menu	3 ✕ Exit Wizard
4 ← Back/ Home	5 → Next/ Summary

**1 PROGRESS BAR:** The blue progress bar indicates how much of the setup wizard has been completed.

**2 HELP/MENU:** Brief informative information for the current Setup Wizard screen.

**3 EXIT WIZARD:** Displays the following choices:

- **No:** Remain in the Setup Wizard and continue with the Setup Wizard configuration.
- **Yes:** Save any changes made up to this point, exit the Setup Wizard and return to the Home Screen.
- **Discard:** Discard all changes made in the Setup Wizard, exit the Setup Wizard and return to the Home screen.

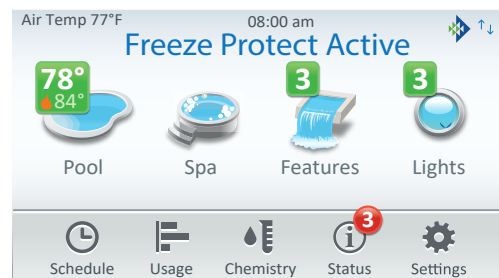
**4 BACK/HOME:** Return to the previous screen.

**5 NEXT/SUMMARY:** Move to the next screen or step.

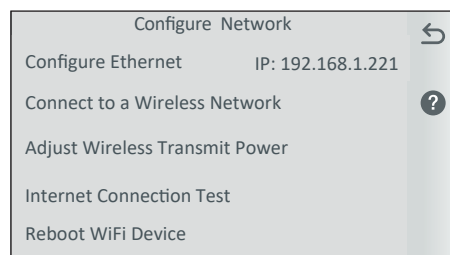
**Number of Configured Devices:** Displayed on the first of each Wizard option screen are the number of devices that have been configured. As you progress the message corresponds to how many options have been updated.

## NETWORK AND WIFI SETUP

1. At the IntelliCenter Home Screen, tap the *Settings Icon* (⚙️) at the bottom right of the screen.
2. Scroll to and tap *Advanced System Configuration*.
3. Scroll to and tap *Network and WiFi Setup*.



### Network and WiFi Setup Home Screen



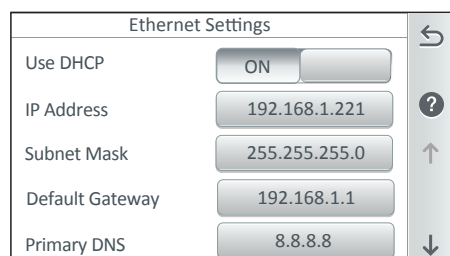
**Configure Ethernet:** Used to configure a 900 MHz Wireless Link Kit or direct Ethernet connection. Refer to *Configure Ethernet* below.

**Connect to a Wireless Network:** Used to configure a WiFi Bridge and Antenna connection. Refer to *Connect to a Wireless Network*, page 38.

**Adjust Wireless Transmit Power:** Wireless antenna transmit strength is no longer adjustable.

**Internet Connection Test:** Test the strength of the Internet connection between IntelliCenter and the paired WiFi router.

### Configure Ethernet



#### Use DHCP:

- **ON (Default):** IntelliCenter automatically determines the IP address and automatically fills in the remaining information.
- **OFF:** Network information must be entered manually.

**IP address:** The IP Address assigned to IntelliCenter.

**Subnet Mask:** 255.255.255.0

**Default Gateway:** Obtained automatically if using DHCP. If not, it must be manually entered.

**Primary DNS:** Server should be provided by the Internet Service Provider.

**Secondary DNS:** A primary DNS server should be configured for a zone, but you may have multiple secondary servers. Both primary and secondary servers provide the same data.

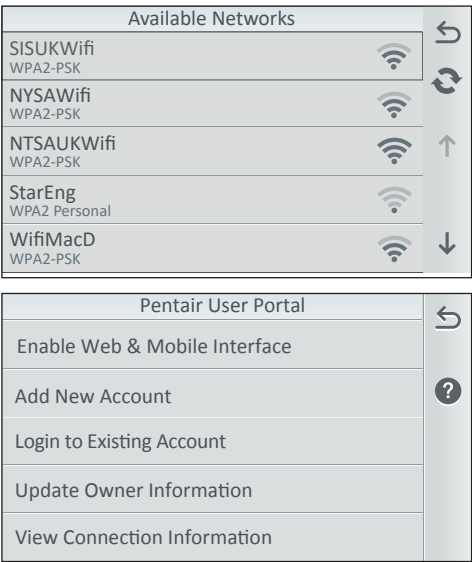


Scan or press QR code for a brief instructional video regarding configuring a 900 MHz Wireless Connection

# NETWORK AND WIFI SETUP (CONTINUED)

## Connect to a Wireless Network

1. At the Network and WiFi Setup Home screen, tap *Connect to a Wireless Network*.
2. Select the desired network. If you do not see the network, tap the Refresh Icon (↺).
3. Enter the network password.
4. Return to the Network and WiFi Setup Home Screen and tap *Internet Connection Test*.
5. From the IntelliCenter Home Screen, tap the *Settings Icon* (⚙) at the bottom right.
6. Tap *Pentair User Portal*.
7. Tap *Enable Web and Mobile Interface* and toggle to ON.



## Control System Menu Tree

### HOME SCREEN

- **Pool Screen**
- **Spa Screen**
- **Features** (Individual/Groups)
- **Lights** (Individual/Groups)
- **Schedules** (Weekly, One Time Only, Schedule)
- **Usage**
- **Chemistry** (Chemical Controller / SCG)
- **Status**
- **Settings:** Refer below for Settings menu.

### SETTINGS MENU

- **Service Mode**
- **Vacation Mode**
- **Support**
- **General:** Location, Date & Time, Temperature Units, Features and Lights List Order, General List Order, Backlight (wireless control panel only), Temperature Sensor Calibration, Day/Night Themes, Manual Operation Priority, Manual Heat, Chemistry Readings, Badge Colors.
- **Alerts and Notifications:** Choose which system status, alerts and warnings badges to display on the Home screen Status icon.
- **Security** (Password Protect)
- **Pentair User Portal** ([www.intellicenter2.com](http://www.intellicenter2.com))
- **Groups:** Configure groups of AUX circuits, Light circuits and Feature circuits.
- **Reboot This Panel**
- **Advanced System Configuration:** Refer below for Advanced System Configuration menu.

### ADVANCED SYSTEM CONFIGURATION MENU:

- **Installation Setup:** Body Configuration, Circuits, Pumps, Heaters, Valves, Chemistry, Pool/Spa Cover
- **Remotes Setup:** iS4, QuickTouch II, iS10, SpaCommand
- **Network and WiFi Setup:** Configure Ethernet, Connect to a Wireless Network, Internet Connection Test, Reboot Wireless Device.
- **IntelliCenter Wireless Remote Setup:** Configure the Address and Panel # for a wireless remote.
- **Delays:** Valve Delay, Heater Cool Down, Freeze Cycle Time, Spa Freeze Override, Override Delays.
- **System:** System Information, Detected Hardware, System Diagnostic Information, Firmware Update, Factory Diagnostics.
- **Import/Export:** Import System Configuration, Export System Configuration.
- **Restore Factory Defaults:** Restore system to factory configuration.
- **Wizard:** Step-by-step system configuration. Refer to *Setup Wizard Navigation*, page 36 for more information.

#### Remotes Pairing

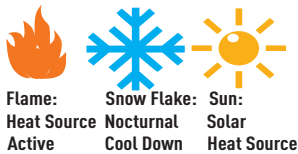
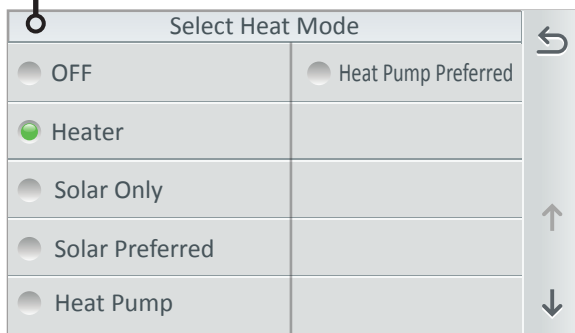
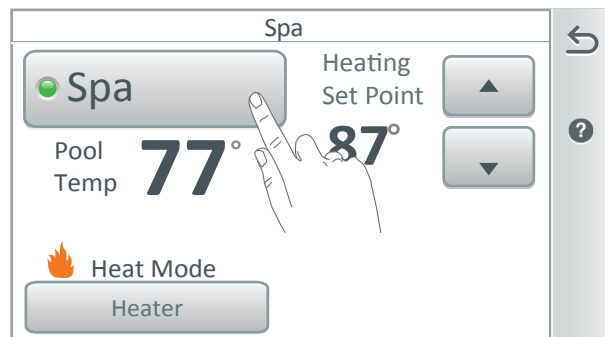
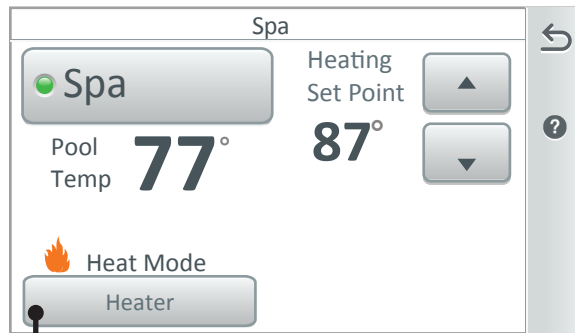
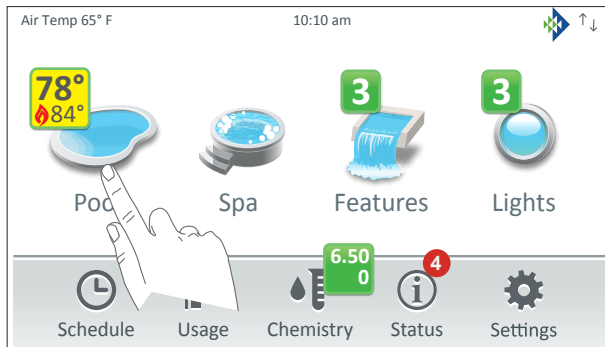
## CONTROL SYSTEM TEST

The following describes how to test the IntelliCenter Outdoor Control Panel to activate the heater, valves and pumps. This test assumes that all system equipment has been properly installed and connected to the IntelliCenter Load/Power Center.

### Testing Valve Actuators and Pumps

Use the following steps to test the valve actuators for proper rotation for i5PS IntelliCenter (shared equipment).

1. Switch on the main circuit breakers to apply power to the load Center.
2. From the Home screen, tap **Pool > Pool** (or tap **Spa > Spa**) to activate the pool pump or spa pump and heater.



**Flame icon:** Displayed with the current heat set point temperature.

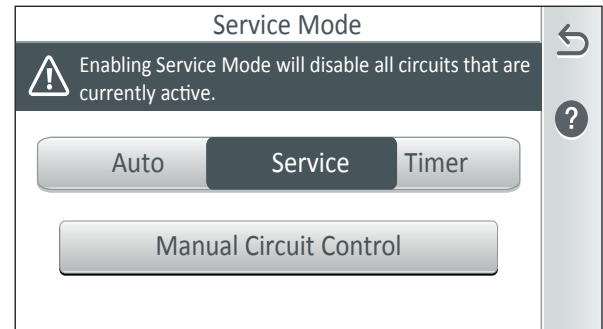
**Snowflake icon:** Indicates the Heat Pump, Hybrid Heater or Solar Heat is in cooling mode.

**Sun icon:** indicates solar heat is active. Select the heat source from the Select Heat Source screen.

**Spa Manual Heat ON/OFF Feature:** Spa Manual Heat ON/OFF Feature: If the Heat Enabled (Default ON) feature is selected (see Spa Body Configuration >Spa Settings) when the Spa pump button (or wireless spa controller) is manually turned on, the pump will turn on and the heater will begin to heat the spa (even if the heater is set to OFF). This feature allows you to program the pool pump to filter daily with the heater set to off, and then be ready to heat whenever the Spa button is pressed.

## Testing Valve Actuators and Pumps (Continued)

3. From the Home screen, tap **Settings > Service Mode > Service**.
4. Tap **Manual Circuit Control**. To test the equipment, tap the displayed circuits (pump, aux, solar, heater) to confirm proper operation. When the filter pump is on water will flow from the pool and returned into the pool. The Green radio button is lit when equipment is manually switched on. Grey indicates the circuit is off.
5. After testing the auxiliary circuits, tap the **Return arrow** to return to the Service Mode screen. Tap **Auto** to return the system to normal operation. Tap and hold the **Return arrow** to return to the Home screen.
6. Manual Test Valve Actuators: Set both valve actuators (CVA-24T) for suction and return. Use the toggle switch on the rear of the CVA-24 to withdraw and return water from the pool.  
**Note:** With the filter pump operating, if the water is not being removed and returned to the pool, it may be necessary to toggle the valve ON1 and ON2 switch (or vice versa).



## Solar Valve Test

1. Reestablish power to the load/power center at the main circuit breaker.
2. Ensure the Solar Valve is in the solar bypass position, diverting water away from solar panels. If Solar Valve is staged incorrectly (diverting water to the solar panels), reverse the switch on the back of the Valve Actuator (change from ON1 to ON2, or vice-versa). The Valve Actuator will automatically rotate to the correct position.
3. Ensure the Solar Valve has rotated from the “solar bypass” position to the “solar” position, diverting water through the solar panels.
4. The system is now ready for normal operation.

**HEATER CONNECTIONS (iS5PS/i10D):** It does not matter which body of water is connected to each heater connector. The heater on the main i5P board is for body 1 (pool or spa), and the heater on the i10D board is for body 2 (pool or spa).





## Over-The-Air (OTA) Firmware Updates

IntelliCenter can receive firmware updates via your home wireless router. When available, firmware updates are automatically downloaded. Once this process has been completed, all Subpanels will display a message indicating a new software update is ready to install.

**Note:** For system firmware versions before version 0.20, configure/enable all system subpanels according to *Enabling All System Panels*, page 45 to receive over-the-air software updates.

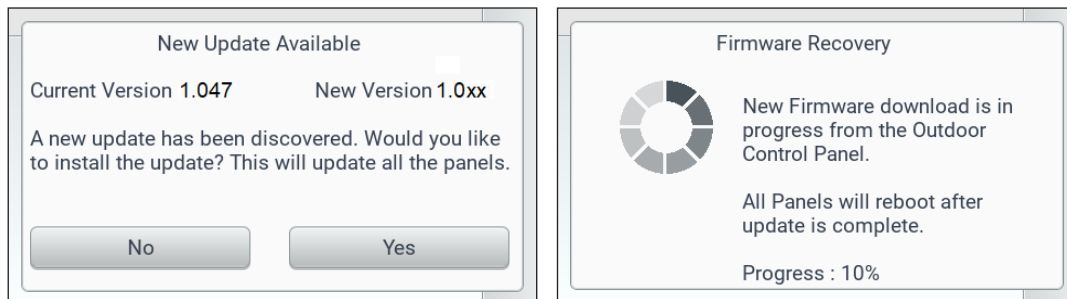
**Control Panel Home Screen:** When an IntelliCenter firmware update message is displayed, a firmware update has been downloaded and is ready to install. The update can be accepted or rejected.

During the download process, the firmware download icon and completion percentage will display in the top right of screen. After the download process has been completed the following dialog boxes are displayed.

- **No:** Do not accept the specific firmware update at this time. This update will not occur until the next firmware update is available.
- **Yes:** Accept and begin the firmware update for all configured panels.

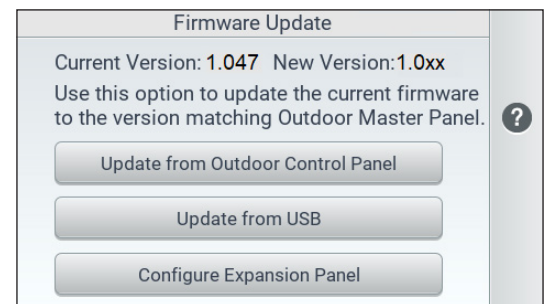
**Note:** If necessary, refer to *Enabling All System Panels*, page 45 for panel configuration instructions.

**Note:** Pumps and other equipment operating on schedules will momentarily reset after the firmware update is complete.



- **Manual Firmware Update Option (USB) Update Later:** If you choose not to install the latest firmware update, you can copy it to a USB device from the outdoor panel and install it onto other panels that are mismatched and not yet updated.
- **Download Firmware Updates:** If you chose not to install the latest firmware update when it was available, you can download the latest version from [www.pentair.com/poolsoftwaredownloads](http://www.pentair.com/poolsoftwaredownloads). Copy the file to a USB device from the outdoor panel and install it onto other Expansion panels that were not updated.

**Note:** If necessary, refer to *Enabling All System Panels*, page 45 for panel configuration instructions.



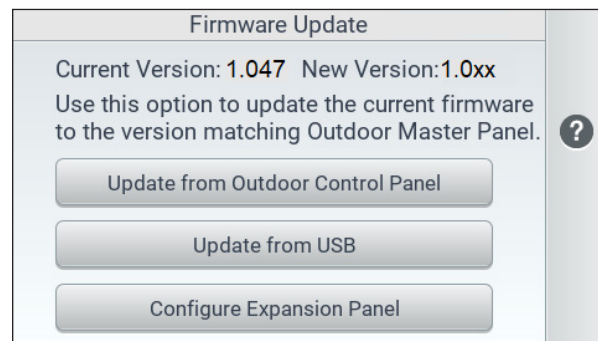
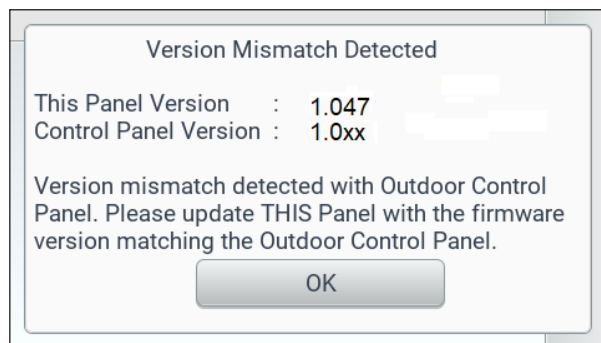
## Panel Mismatch

If a firmware update was unsuccessfully installed, Version Mismatch Detected is displayed.

**Note:** If for example the wireless remote was asleep when a firmware update was attempted, the system will indicate there is a firmware mismatch between the main OCP and wireless remote.

Firmware Update Dialog Box (manual USB option): From this dialog box update the mismatch panel as follow:

- Download the latest firmware from [www.pentair.com/poolsoftwaredownloads](http://www.pentair.com/poolsoftwaredownloads), then copy this update file to a USB device.
- Tap “Update from USB” to install the latest firmware onto the mismatched panel.
- Configure Expansion Panel: Use this option to configure a Subpanel that is not configured to accept OTA firmware updates.



## Enabling All System Panels

For software versions up to 1.047 the IntelliCenter can receive software updates via a wireless router connection. Software updates will automatically push to the indoor and outdoor control panel, wireless remotes and expansion panels while the system is operating.

**To receive over-the-air software updates, configure all the system panels as described below:**

1. **Configure the ICP on both OCP and ICP:** From the Outdoor Control Panel Home screen, tap Settings > Advanced System Configuration > IntelliCenter Indoor Panel Setup > Indoor Panel #1 (Repeat if a second ICP (#2) is connected). Repeat this procedure again for the ICP, starting from the ICP Home Screen. Select Assign this Panel to Indoor Panel #1 (on the Indoor Panel Enable screen). If configuring a second ICP (#2), then select Assign this Panel to Indoor Panel #2.
2. **Configure the WCP on both OCP and WCP:** From the Main OCP Home screen, tap Settings > Advanced System Configuration > IntelliCenter Wireless Remote Setup. Tap Enable Panel (On). Use the Wireless Channel button to select an address.
 

**Note:** Be sure to match the same Channel # for the WCP and OCP. Repeat this procedure again for the WCP, starting from the WCP Home Screen.

**Note:** If the wireless channel is changed, ensure the Wireless Repeater channel to match.
3. **Configure the XCP from the OCP Home Screen (#1, #2, or #3 if system has more than 1 XCP):**
  - a. Tap Settings > Advanced System Configuration > Installation Setup > Body Configuration.
  - b. Select Expansion 1 (disabled) XCP1 (for XCP#1).
  - c. On the Panel Identification screen, select Enable/Disable and tap the Enable button.
  - d. Tap the Return button, then select i5x (5 Relays).
  - e. If the i10x kit is installed, select i10x on the Expansion Panel Daughter Card screen instead of i5x.
  - f. On the Expansion Panel Daughter Card screen, tap Return.
4. **Configure Expansion Panels (XCP #1, #2, or #3):**
  - a. Tap Settings > Advanced System Configuration > Installation Setup > Body Configuration.
  - b. Repeat steps 3a to 3f, with the exception of 3c:
  - c. After selecting Enable/Disable, select Assign this Panel to Expansion 1 (if this is XCP #1) and tap the Return button.
  - d. Repeat Steps 4a to 4b to configure XCP #2 and XCP #3
5. **Once all the Panels are configured, check that the system panels have the same firmware version and are fully functional.**

**Important Note:** Use following IntelliCenter Firmware V1.040 update instructions for a *FIRST TIME SYSTEM INSTALL* or after a *SYSTEM FACTORY RESET*. Enable all System Panels: Outdoor Control Panel (OCP), (Indoor Control Panel (ICP), Expansion Panel (XCP) and Wireless Control Panel (WCP).

# REPLACEMENT PARTS / ACCESSORIES

## Load/Power Center Options

- 522041 Load Center, with SCG Transformer
- 522042 Power Center, with SCG Transformer
- 522043 Load Center, without SCG Transformer
- 522044 Power Center, without SCG Transformer

## Upgrade Kits

### Systems Manufactured Before 2012:

- 522045 IntelliTouch/EasyTouch Upgrade Kit – i10P
- 522046 IntelliTouch/EasyTouch Upgrade Kit – i10PS

### Systems Manufactured After 2012:

- 522047 IntelliTouch/EasyTouch Upgrade Kit – i10P
- 522048 IntelliTouch/EasyTouch Upgrade Kit – i10PS

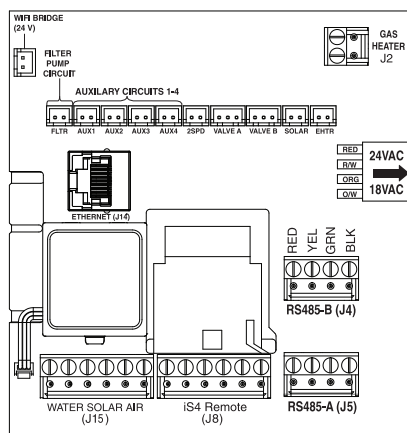
## Personality Kits

The base IntelliCenter configuration is the i5P and features four auxiliary pool circuits and a filter pump circuit intended for a single body of water.

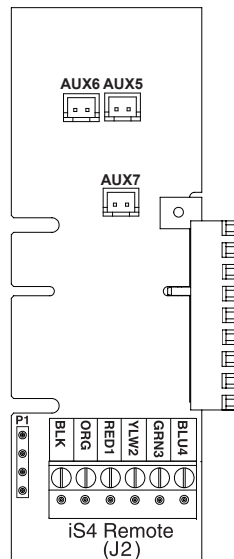
By adding Personality Kit, the system can be expanded to support additional auxiliary connections, additional bodies of water, or dual equipment filtration systems.

**Single Equipment:** Intended to control a single body of water

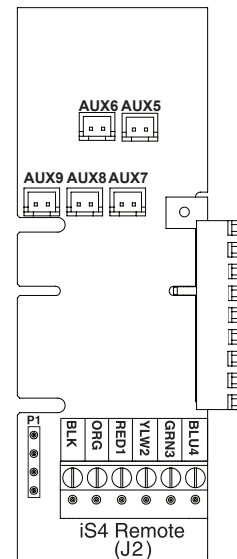
- **i5P (P/N 521909)** – Standard Option. Features four auxiliary circuits and one dedicated filter pump relay.
- **i8P (P/N 521910)** – Provides three additional auxiliary circuits (seven total).
- **i10P (P/N 521911)** – Provides five additional auxiliary circuits (nine total).



i5P (P/N 521909)



i8P (P/N 521910)

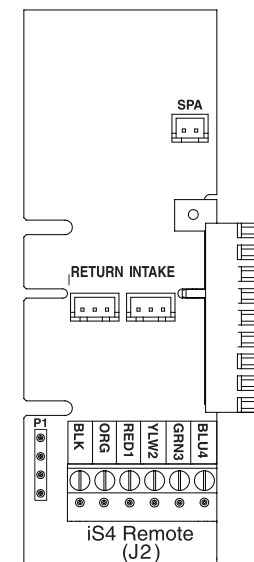


i10P (P/N 521911)

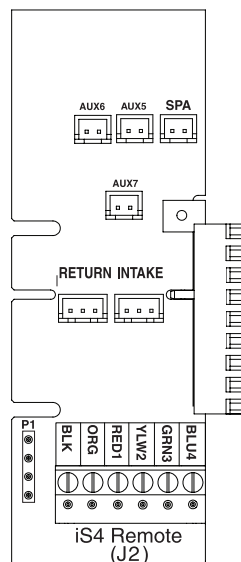
## Personality Kits (continued)

**Shared Equipment:** Intended to control water flow between a pool and spa the share a filtration system.

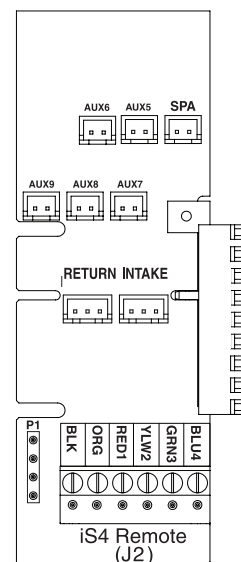
- **i5PS (P/N 521912)** – Allows for spa control when installed onto an i5P main board.
- **i8PS (P/N 521913)** – Provides three additional auxiliary circuits (seven total).
- **i10PS (P/N 521914)** – Provides five additional auxiliary circuits (nine total)



i5PS (P/N 521912)



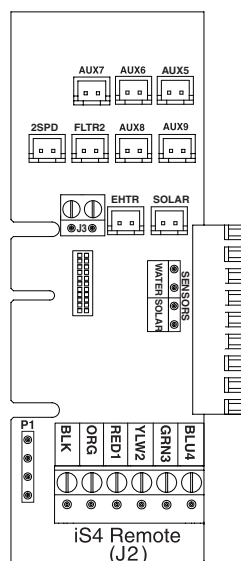
i8PS (P/N 521913)



i10PS (P/N 521914)

**Dual Equipment:** Intended to control two separate sets of pool equipment. Each set of equipment (Pool or Spa) can control one temperature setting.

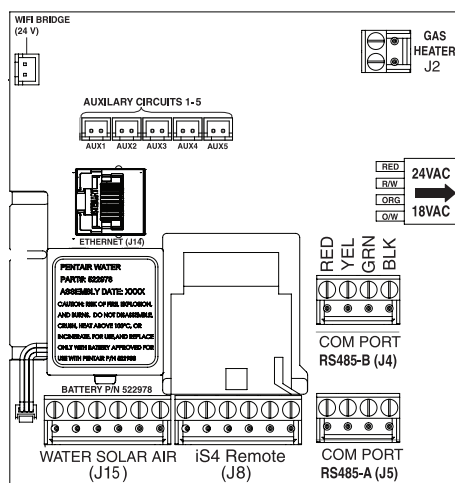
- **i10D (P/N 521915)** – Provides five additional auxiliary circuits and an additional filter pump relay.



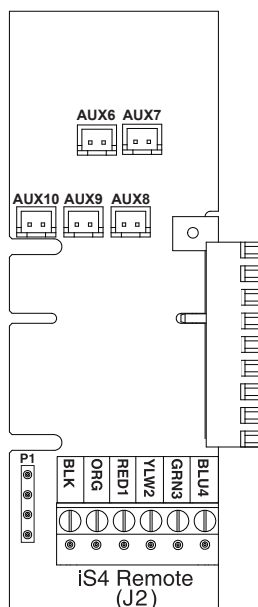
i10D (P/N 521915)

## Expansion Kits

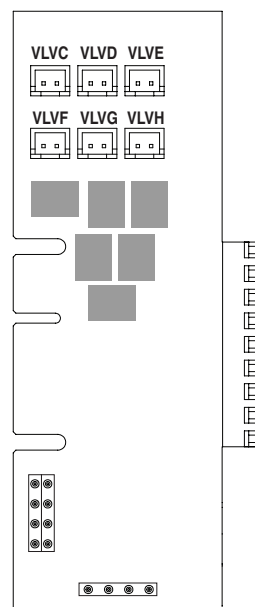
The i5X and i10X expansion kits provide five or ten additional Auxiliary Circuits.



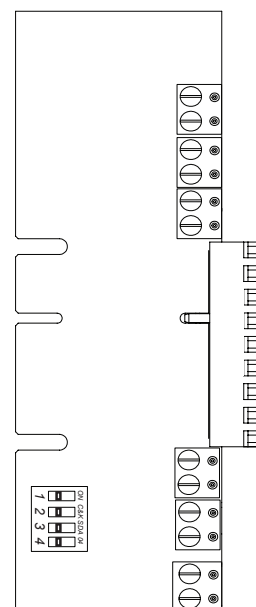
i5X Expansion (P/N 522080)



i10X Expansion  
(P/N 522996)  
(Requires i5X)



Valve Expansion  
(P/N 522038z)



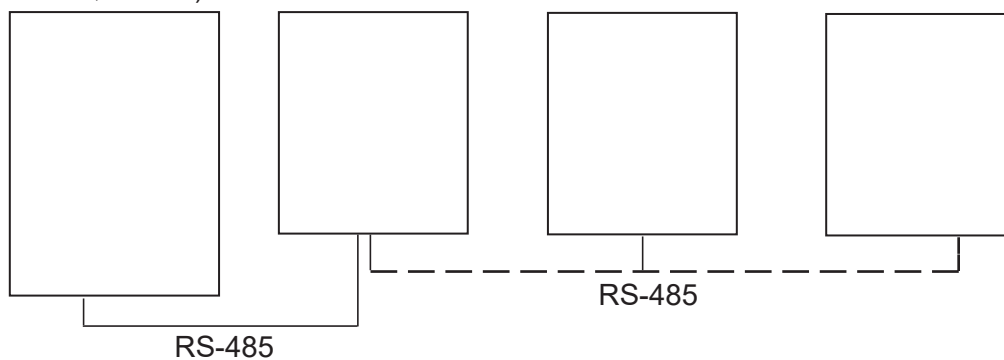
Analog to Digital  
Pool Cover Card  
(P/N 522039z)

Up to three enclosures and expansion kits can be joined, via RS-485 connection, to allow for control of up to 39 auxiliary circuits. **Only one Salt Chlorine Generator may be controlled per system.**

### Primary Load Center

(i5P, i5PS, i8P,  
i8PS, i10P,  
i10PS, or i10D)

### Up to 3 Additional Load/ Power Centers (with i5x or i10x Expansion Kits)



## Replacement Parts

- i5P OCP PCBA w/ Faceplate CLC/CPC - P/N 523050
- i5X Expansion PCBA w/ Faceplate CLC/CPC - P/N 523051
- i5PS Personality PCBA - P/N 521936z
- i8P Personality PCBA - P/N 521977z
- i8PS Personality PCBA - P/N 521968z
- i10P Personality PCBA - P/N 521993z
- i10PS Personality PCBA - P/N 521873z
- i10D Personality PCBA - P/N 523029z
- i10X Expansion Card PCBA - P/N 522997z
- Faceplate, OCP (with overlay) - P/N 522004z
- Faceplate, IT/ET OCP Upgrade - P/N 522005z

## System Accessories

- IntelliCenter Indoor Control Panel Kit - P/N 522035
- IntelliCenter Wireless Control Panel Kit - P/N 522036
- IntelliCenter Valve Expansion Card - P/N 522038z
- IntelliCenter Pool Cover Interface Card - P/N 522039z
- High Power Wireless POE/Ethernet Cable Bundle - P/N 544425z
- SpaCommand Spa Controller - P/N 521176
- Two-Speed 3 HP Relay (up to three additional valve actuators) - P/N 520198
- Three HP Power Relay - P/N 520106
- QuickTouch Wireless Controller Kit - P/N 520148
- QuickTouch II Wireless Controller kit - P/N 521245
- Relocation Kit (PCBA and Enclosure) - P/N 523925
- Relocation Kit (Enclosure only) - P/N 523924

## Configurations and Models

### TYPE    CAPABILITY

---

i5P	Single body of water (Pool or Spa) Filter pump relay + 4 AUX relays Valve A & B Heater control (Gas & Electric) Solar relay output 2-speed relay output Water, Air, Solar Sensor Two RS-485 COM ports Ethernet port iS4 port
i5PS	Shared equipment (Pool and Spa) Intake & Return valves
i8P	Single body of water (Pool or Spa) Filter pump relay + 7 AUX relays
i8PS	Shared equipment (Pool and Spa) Filter pump relay + 7 AUX relays Intake & Return valves
i10P	Single body of water (Pool or Spa) Filter pump relay + 9 AUX relays
i10PS	Shared equipment (Pool and Spa) Filter pump relay + 9 AUX relays Intake and Return valves
i10D	Dual Bodies of water with separate Pumps, Filters and Heaters

### 1 OR 2 BODIES OF WATER:

**OCP0:** Main Circuit board - i5P capability

EXP1: Exp Motherboard - i5X or i10X

EXP2: Exp Motherboard - i5X or i10X

EXP3: Exp Motherboard - i5X or i10X



# TROUBLESHOOTING

## Error Messages and Codes (Standard Gas Heater)

Device Type: Heater

Device Name: Gas Heater

Message	Note
5 Alarms in an hour	Indicates 5 faults have occurred in 1 hour. This fault will automatically reset in one hour or can be manually reset by pressing the ON/OFF button. Press the ON/OFF button to clear the alarm. Check heater over the next few minutes/hours to see if alarm appears again. This alarm most likely caused the five alarms in one hour.
Brownout	Check input voltage to the heater, supply voltage should be between 208 and 260 Volts or have technician inspect heater for bad transformer.
Communication Lost	This usually indicates that the communication cable between heater and the automation system has been disrupted in some manner. Check this wiring.
Defrost Temp Sensor Open	Call technician to verify condition and connection of defrost temp sensor and/or control board.
Defrost Temp Sensor Shorted	Call technician to verify condition and connection of defrost temp sensor and/or control board.
High Refrigerant	Ensure the filter pump is on and verify flow rate is adequate. If equipped with an external bypass plumbing loop, ensure that the bypass valve is closed allowing water to flow through the heater. If these troubleshooting steps do not resolve the problem, call technician.
High Water Temperature	Water temp is above 107°F [41.6°C]. Call technician to verify operation of thermistor and/or control board.
Low Ambient Temperature	Defrost cycle did not complete within allotted time or bad thermistor.
Low Refrigerant	Air and water temperatures may be too cold to operate the heater. Wait until temperatures warm up and check for proper operation. Also ensure the area around the heater is not blocking air flow to the air coil. Check fan for proper operation. If these troubleshooting steps do not resolve the problem, call technician.
Low Water Flow	Ensure the filter pump is on and verify flow rate is adequate. If equipped with an external bypass plumbing loop, ensure that the bypass valve is closed allowing water to flow through the heater. If these troubleshooting steps do not resolve the problem, call technician.
Low Water Temperature	Call technician to verify operation of thermistor and/or control board.
Pool and Spa remote inputs are both enabled	Pool and Spa remote inputs are simultaneously energized. Call technician to correct wiring error.
Water Temp Sensor Open	Verify connection to water temp sensor. Call technician to verify condition and connection of water temp sensor.
Water Temp Sensor Shorted	Verify connection to water temp sensor. Call technician to verify condition and connection of water temp sensor.

## Error Messages and Codes (Solar Heater)

**Device Type: Heater**

**Device Name: Solar Heater**

Message	Note
5 Alarms in an hour	Indicates 5 faults have occurred in 1 hour. This fault will automatically reset in one hour or can be manually reset by pressing the ON/OFF button. Press the ON/OFF button to clear the alarm. Check heater over the next few minutes/hours to see if alarm appears again. This alarm most likely caused the five alarms in one hour.
Brownout	Check input voltage to the heater, supply voltage should be between 208 and 260 Volts or have technician inspect heater for bad transformer.
Communication Lost	This usually indicates that the communication cable between heater and the automation system has been disrupted in some manner. Check this wiring.
Defrost Temp Sensor Open	Call technician to verify condition and connection of defrost temp sensor and/or control board.
Defrost Temp Sensor Shorted	Call technician to verify condition and connection of defrost temp sensor and/or control board.
High Refrigerant	Ensure filter pump is on and verify flow rate is adequate. If equipped with an external bypass plumbing loop, ensure that the bypass valve is closed allowing water to flow through the heater. If these troubleshooting steps do not resolve the problem, call technician.
High Water Temperature	Water temp is above 107°F [41.6°C]. Call technician to verify operation of thermistor and/or control board.
Low Ambient Temperature	Defrost cycle did not complete within allotted time or Bad thermistor.
Low Refrigerant	Air and water temperatures may be too cold to operate the heater. Wait until temperatures warm up and check for proper operation. Also ensure the area around the heater is not blocking air flow to the air coil. Check fan for proper operation. If these troubleshooting steps do not resolve the problem, call technician.
Low Water Flow	Ensure filter pump is on and verify flow rate is adequate. If equipped with an external bypass plumbing loop, ensure that the bypass valve is closed allowing water to flow through the heater. If these troubleshooting steps do not resolve the problem, call technician.
Low Water Temperature	Call technician to verify operation of thermistor and/or control board.
Pool and Spa remote inputs are both enabled	Pool and Spa remote inputs are simultaneously energized. Call technician to correct wiring error.
Water Temp Sensor Open	Verify connection to water temp sensor. Call technician to verify condition and connection of water temp sensor.
Water Temp Sensor Shorted	Verify connection to water temp sensor. Call technician to verify condition and connection of water temp sensor.

## Error Messages and Codes (Hybrid Heater)

Device Type: Heater

Device Name: UltraTemp ETi

Message	Note
5 Alarms in an hour	Indicates 5 faults have occurred in 1 hour. This fault will automatically reset in one hour or can be manually reset by pressing the ON/OFF button. Press the ON/OFF button to clear the alarm. Check Heater over the next few minutes/hours to see if alarm appears again. This alarm most likely caused the five alarms in one hour.
Air Flow Switch	Call technician to troubleshoot heater.
Automatic Gas Shut Off	Ensure the filter pump is on. If pump is on, verify flow rate is adequate. If these troubleshooting steps do not resolve the problem, call technician.
Brownout	Check input voltage to the heater, supply voltage should be between 208 and 260 Volts or have technician inspect heater for bad transformer.
Communication Lost	This usually indicates that the communication cable between heater and the automation system has been disrupted in some manner. Check this wiring.
Condensate Filter	Condensate neutralizer cartridge's effective lifetime has expired. Heater run time has met service interval for condensate neutralizer cartridge. Check pH of gas heater condensate. Replace as necessary and reset alarm/counter.
Condensate Float Switch	Condensate float switch detects water in exhaust stack. Verify proper hose routing from heater base. Ensure there are no loops, kinks or elevated portions between hose exit and heater base. Correct as necessary. If checking the hose routing does not solve problem, call technician to troubleshoot.
Freeze Warning	Ambient air temperature is too low for gas heater operation. Shut down and properly winterize heater. If ambient air temp is not low, call technician to troubleshoot.
High Limit Switch	Ensure filter pump is on and verify flow rate is adequate. If these troubleshooting steps do not resolve the problem, call technician.
High Refrigerant	Ensure filter pump is on and verify flow rate is adequate. If equipped with an external bypass plumbing loop, ensure that the bypass valve is closed allowing water to flow through the heater. Check fan for proper operation. If these troubleshooting steps do not resolve the problem, call technician.
High Water Temperature	Water temp is above 107°F [41.6°C]. Call technician to verify operation of thermistor and/or control board.
ICM Fault	Call technician to troubleshoot heater.
Low Ambient Temperature	Defrost cycle did not complete within allotted time or Bad thermistor.

## Error Messages and Codes (Hybrid Heater) (cont.)

**Device Type: Heater**

**Device Name: UltraTemp ETi**

Message	Note
Low Refrigerant	Air and water temperatures may be too cold to operate the heater. Wait until temperatures warm up and check for proper operation. Also ensure the area around the heater is not blocking air flow to the air coil. Check fan for proper operation. If these troubleshooting steps do not resolve the problem, call technician.
Low Water Flow	Ensure filter pump is on and verify flow rate is adequate. If these troubleshooting steps do not resolve the problem, call technician.
Low Water Temperature	Call technician to verify operation of thermistor and/or control board.
Stack Flue High Temp	Check exhaust vent for obstruction. Verify proper water flow to heater. If these troubleshooting steps do not resolve the problem, call technician.
Stack Flue Open/Short	Call technician to verify condition of stack flue sensor and/or control board.
Suction Temperature Sensor Open/Short	Call technician to verify operation of defrost temp sensor and/or control board.
Thermal Fuse	Thermal fuse is open. Call technician to troubleshoot.
Water Temperature Sensor Open/Short	Call technician to verify operation of thermistor and/or control board.

## Error Messages and Codes (MasterTemp and Max-E-Therm)

Device Type: Heater

Device Name: Max-E-Therm/MasterTemp

Message	Note
Water Pressure Switch	Insufficient flow rate. Increase the water flow. Inspect the pump basket to remove debris. Eliminate other obstructions for water to flow.
High Limit Switch	Water outlet has exceeded 135°F [57.2°C]. Verify water flow rate is above minimum. Service pump and filter to restore proper flow. Verify water inlet temperature is below 104°F [40°C]. Verify internal bypass valve, thermal governor and heat exchanger for blockage.
Air Flow Switch	Insufficient blower air flow. Verify blower operation. Check for any blockage in the blower intake, heat exchanger, and exhaust.
Auto Gas Shutoff Switch	Water outlet has exceed 135°F [57.2°C]. Verify water flow rate is above minimum. Service pump and filter to restore proper flow. Verify water inlet temperature is below 104°F [40°C]. Verify internal bypass valve, thermal governor and heat exchanger for blockage.
Ignition Control Error	Contact a service professional.
Stack Flu Sensor Error Alarm	Excessive stack flue temperature. Contact a service professional.
Stack Flu Sensor Open Alarm	Contact a service professional to verify condition of flue gas sensor.
Stack Flu Sensor Short Alarm	Contact a service professional to verify condition of flue gas sensor.
Water Sensor Open Alarm	Contact a service professional to verify condition of water sensor.
Water Sensor Short Alarm	Contact a service professional to verify condition of water sensor.
Air Flow Fault Alarm	Insufficient blower air flow. Verify blower operation. Check for any blockage in the blower intake, heat exchanger, and exhaust. Contact a service professional to verify condition of air flow switch.
Flame No Call For Heat Alarm	Contact a service professional.
Ignition Lockout Alarm	Contact a service professional.
Weak Flame Alarm	Flame strength is low. Contact a service professional.
Communication Lost	This usually indicates that the communication cable between heater and the automation system has been disrupted in some manner. Check this wiring.

## Error Messages and Codes (IntelliChem)

Device Type: ICHEM

Device Name: IntelliChem

Message	Note
Auto Calibration Failed	Calibration has failed. Ensure the circuit board is clean and dry.
Check ORP Container	ORP chemical tank is running low. It may be time to refill it.
Check pH Container	pH chemical tank is running low. It may be time to refill it.
Communication Lost	IntelliChem has lost communication with the outdoor control panel. Check that the filter pump relay is active and that the communication cable is wired properly.
Invalid Settings	Incompatible setting during pH setup
ORP Dose Limit	IntelliChem has several safeguards built into it to prevent too much chlorine from being dispensed into your pool. One of them is a daily maximum feed limit. If this limit is reached, it will stop allowing chlorine from being dispensed. You may need to increase IntelliChem's daily ORP feed limit to prevent this alarm.
pH Dose Limit	IntelliChem has several safeguards built into it to prevent too much muriatic acid from being dispensed into your pool. One of them is a daily maximum feed limit. If this limit is reached, it will stop allowing muriatic acid or CO <sub>2</sub> from being dispensed. You may need to increase IntelliChem's daily pH feed limit to prevent this alarm.
pH Lockout	IntelliChem is not able to keep your pH level at a low enough level to not have a suppressive effect on your ORP level. To prevent IntelliChem from adding too much chlorine, IntelliChem has stopped adding chlorine until your pH level is decreased. This usually happens when the pH tank has run out of muriatic acid or the CO <sub>2</sub> tank is empty.
pH Low	IntelliChem pH reading is below 7.2. It is rare for pools to stay below the 7.2 pH level. You may need to add a pH up chemical to your pool if the level doesn't rise over time. Consult a service professional.
pH High	pH is above the 7.6 pH level. This could be temporary as IntelliChem signals your muriatic acid or CO <sub>2</sub> feeder to add more to your pool to lower the pH level. If the pH level doesn't lower, this usually means that your acid or CO <sub>2</sub> tank may be empty. Otherwise, you may need to increase IntelliChem's dose amount, lower the mixing time, or change the sensitivity to High.
No Flow	Flow switch has indicated there is no flow to the flow cell where the pH and ORP probes are located. This can be caused by a dirty/clogged pool filter or IntelliChem prefilter or too slow of a pump speed.
ORP High	ORP reading is above 750. If pool consistently measures above 750 ORP and a manual chlorine reading is above 3 ppm, decrease ORP set point to get your chlorine PPM into the desired 1-3 ppm range.
ORP Low	IntelliChem will alert when the ORP level is below 650. If your pool consistently measures below 650 and a chlorine PPM reading is below 1 ppm, you may consider increasing your ORP set point to get your chlorine PPM into the recommended 1-3 ppm range. Also note that ORP probes take at least an hour before the reading stabilizes. It is perfectly normal to start the day at a very low 400-600 ORP reading. Similarly, the probe will read on the high side in the late afternoon and evening hours.

## Error Messages and Codes (IntelliChlor)

**Device Type: SCG**

**Device Name: IntelliChlor**

Message	Note
Clean & Inspect Cell	The Salt Chlorine Generator (SCG) has sensed mineral buildup on its chlorine generating cell blades which is hampering its ability to make chlorine. This is a normal occurrence that happens over time. Refer to the SCG manual for instructions on cleaning the cell blades.
Cold Water Cutoff	SCG won't produce chlorine if water temperature is below 52°F [11.1°C]. When the water is this cold, you should manually add chlorine to your pool if needed.
Communication Lost	Usually indicates that the 4-wire communication cable between the SCG and IntelliCenter has been disrupted in some manner. Check the Cable.
Low Salt	SCG salt level reading is low. Add salt to pool until salt level reaches 3600 ppm. Refer to the SCG manual for estimates of how much salt to add.
Very Low Salt	SCG salt level reading is very low. Add salt to pool until salt level reaches 3600 ppm. Refer to the SCG manual for estimates of how much salt to add.

## Error Messages and Codes (Variable Flow Pump)

**Device Type: PUMP**

**Device Name: VF Pump**

**Alert Type: Error**

Message	Note
Communication Lost	IntelliCenter is not able to communicate with the pump. Verify proper connection at both ends of the RS-485 communication cable.
Drive Over Temperature	The pump has sensed that it is getting too hot. Ensure that the back of the pump is clear of debris and dirt. In very hot climates it may help to shield the pump from direct sunlight.
Over Current	The pump has sensed that it is receiving too much current. Contact a service professional.
Over Voltage	The pump has sensed that voltage is too high. Contact a service professional.
Power Outage	The pump has sensed that a power outage occurred.
Priming Alarm	The pump is having trouble priming. Ensure that the water level of the pool is high enough to fill the skimmer basket. Also check to make sure your skimmer baskets and pump basket are not clogged with leaves or debris. Make sure to bleed air out of the top of your filter as the pump is priming or when running. Always exercise caution when working in close proximity to system components that are under pressure.

## Error Messages and Codes (Variable Speed Pump)

**Device Type: PUMP****Device Name: VS Pump**

Message	Note
Over Current	The pump has sensed that it is receiving too much current. Contact a service professional.
Over Voltage	The pump has sensed that it is receiving too much voltage. Contact a service professional.
Power Outage	The pump has sensed that a power outage occurred.
Priming Alarm	The pump is having trouble priming. Ensure the water level of the pool is high enough to fill the skimmer basket. Also check to make sure your skimmer baskets and pump basket are not clogged with leaves or debris. Make sure to bleed air out of the top of your filter as the pump is priming or when running. Always exercise caution when working in close proximity to system components that are under pressure.
Drive Temperature	The pump has sensed that it is getting too hot. Ensure the back of the pump is clear of debris and dirt. In very hot climates it may help to shield the pump from direct sunlight.



# GLOSSARY

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**Expansion Kit:** Adds additional auxiliaries to an existing Personality Kit. Requires a Load/Power Center for each expansion kit.

**Feature Circuits:** Programmable circuits capable of controlling relays and/or valve actuators.

**High Voltage Panel/Compartment:** Removable panel covering the Load/Power Center high voltage compartment. High voltage wiring includes circuit breakers, relays, GFCI and optional IntelliChlor transformer.

**Indoor Control Panel:** 9 or 13 button remote controller with LCD display wired to the load/power center. The control panel can be wall mounted inside a house.

**IntelliCenter Wireless Controller:** Wireless controller with all the functionality of the Indoor and Control Panel. Connects to the Load/Power center via RS-485.

**Load Center:** Metal enclosure with power relays, transformer, and circuit breakers. Used for distributing power to connected equipment.

**Low Voltage Compartment:** Top wiring compartment of Load/Power Center intended for all low voltage wiring.

**Low Voltage Raceway:** Vertical raceway on the left side of Load/Power Center intended for low voltage wiring.

**Outdoor Control Panel:** System control panel installed in upper portion of Power/Load Center.

**Personality Board:** Circuit board mounted onto the main IntelliCenter circuit board. The Personality board defines system capabilities.

**Personality Kit:** Set of components that define the capability of a system. May include Outdoor Control Panel, temperature sensors, actuators, additional relays, actuators.

**Power Center:** Same as Load Center with the exception of the circuit breaker base.

**Relay Circuits:** Control IntelliCenter relays.

**Salt Chlorine Generator (SCG):** Automated pool chlorinator that sanitizes using salt water.

**Screw Terminal Connector:** Removable connector located on the circuit board that allow connection of controllers and sensors to IntelliCenter. Multiple conductors of a small enough gauge (usually 22 AWG) may be coupled to a single screw terminal.

**SpaCommand Remote:** Spa-side remote capable of controlling spa water temperature. Can be mounted to spa wall or deck. Connects to the Load/Power Center via RS-485.

**Transceiver:** Circuit board mounted antenna capable of sending and receiving wireless signals from a QuickTouch II remote or IntelliCenter Wireless Controller.

# NOTES

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## NOTES

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