



# IntelliTouch Personality Kit



## Installation Guide

IMPORTANT SAFETY INSTRUCTIONS  
READ AND FOLLOW ALL INSTRUCTIONS  
SAVE THESE INSTRUCTIONS



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## IMPORTANT SAFETY PRECAUTIONS



### Important Notice:

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

**⚠ WARNING** - Before installing this product, read and follow all warning notices and instructions which are included. 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 these instructions.

**⚠ WARNING** - Water temperature in excess of 100 degrees Fahrenheit 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). The symptoms of hyperthermia include drowsiness, lethargy, dizziness, fainting, and an increase in the internal temperature of the body.

The effects of hyperthermia include: 1) Unawareness of impending danger. 2) Failure to perceive heat. 3) Failure to recognize the need to leave the spa. 4) Physical inability to exit the spa. 5) Fetal damage in pregnant women. 6) Unconsciousness resulting in danger of drowning.

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

**⚠ WARNING** - **The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia in hot tubs and spas.**

**⚠ WARNING** - Control System 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** - 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 10 feet (3.05 m) away, adjacent to, and within sight of, the unit.

**⚠ CAUTION** - Except for listed spa-side remote controls, install a minimum of five (5) feet from the inside wall of the pool and spa.

## IMPORTANT SAFETY PRECAUTIONS (Continued)

**⚠ FCC Regulatory Safety Notice** - The MobileTouch wireless control panel device 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. This device 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 equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment 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.
- Modifications not expressly approved by the party responsible for FCC compliance could void the user's authority to operate the 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. If this system is used to control underwater lighting fixtures, a ground-fault interrupter (GFCI) must be provided for these fixtures. Conductors on the load side of the ground-fault circuit-interrupter shall **not** occupy conduit, junction boxes or enclosures containing other conductors unless such conductors are also protected by a ground-fault circuit-interrupter. Refer to local codes for details.
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 or 3.3 mm). 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 feet (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 Section 422-20 of the National Electrical Code, ANSI/NFPA 70.1987. The disconnecting means must be readily accessible to the tub occupant but installed at least 10 ft. (3.05 m) from the inside wall of the pool.
6. Supply conductor must be sized to support all loads. Maximum supply conductor current must be 125 Amps at 125 VAC or 63 Amps at 240 VAC.

## Introduction

Welcome! Your Pentair IntelliTouch pool and spa control system will change the way you view pool and spa controls. This innovation in pool and spa automation offers complete freedom for you while having full automation control over your pool, spa, lights, heater, cleaners and much more. You can now schedule multiple start and stop times to control your lights, heater, spa jets, and filter pumps. Using the Indoor Control Panel or MobileTouch wireless controller you can control your pool, spa, and lights from anywhere inside or outside your home. Optional controllers are also available such as the ScreenLogic wireless Digital Tablet or Personal Digital Assistant (PDA), and in-wall Touch Screen that can interface with your PC. IntelliTouch is a scalable system that can be upgraded to a completely integrated home automation solution including audio, security, climate, irrigation and more.

## IntelliTouch System Overview

IntelliTouch systems offer the flexibility to handle from 5 to 40 circuits (high voltage relays) that can be used to control any combination of pumps, lights, water features, etc. As an added benefit, user-configurable circuits can also be used to control these combinations of features and more. The Feature Macro circuits feature allows any number of circuits to be combined on a single button. This gives you the ability to set up “themes” with custom names all with a press of a button. *(Not available with IntelliTouch model i5 or i5S).*

IntelliTouch users can also dim any high voltage incandescent light such as Pentair Amerlites and SpaBrites up to eight levels using the IntelliTouch Dimmer Module (P/N 520406). The dimmer module supports multiple lights from 100 watts up to 1,000 watts and installs in a standard relay location. Any number of dimmers (up to 10 maximum) may be used with a maximum combined load of 4,000 Watt in a single Load Center.

### In the home

The IntelliTouch system can utilize multiple wired and wireless controllers including the Digital Tablet, Personal Digital Assistant (PDA), the wired in-wall Touch Screen, Indoor Control Panel, and the wireless MobileTouch control panel, and even your existing home PC. A maximum of four ScreenLogic interfaces can be used. For example, four Tablets, or four PDA's, or four in-wall Touch Screen's, or four PC's in any combination.

### Around the pool

Located near your spa, the IntelliTouch, iS10 or iS4 spa-side remote provide control buttons for various pool and spa functions. The iS10 spa-side remote also provides a temperature display.

### At the equipment pad

Near the pump, filter, and other equipment will be located a metal box known as the Load Center or Power Center. This is where high voltage from the circuit breaker panel junction box at the home is distributed to the IntelliTouch Load Center or Power Center. The pool service person can periodically check pool operations from this unit. The Load Center is also where the various IntelliTouch controllers interface with the other equipment.

Mounted on of top the valves you may also find motorized valve actuators used to change the flow of water through the plumbing. There are also temperature sensors and cable that connect to the heater. There should be no need for anyone other than your service person to periodically check this equipment.

## IntelliTouch System Components

The main required components of an IntelliTouch system are, the Load Center or Power Center, IntelliTouch Personality Kits, and the Interfaces:

### Load or Power Center

- **Load Center:** Provides a larger footprint (17" W x 23" H x 4.8" D) Includes built-in sub panel (125 AMPS) capable of holding up to eight 1" breakers. Also includes five 25 AMP three HP relays, 110/240 V transformer with secondary side circuit protection. Multiple knockouts for different sizes of conduit are supplied as well as a GFCI side knockout. The Load Center provides ample space for all high and low voltage wiring needs.
- **Power Center:** Offers a smaller footprint (17" W x 17" H x 4.8" D) than the Load Center. The Power Center does not include a circuit breaker base. Users should choose this enclosure if they already have existing circuit breakers/sub-panel for their equipment.
- **Expansion Kits:** Models i5X and i10X, offer five or ten additional Auxiliary Circuits for systems i9+3, i9+3S and i10+3D. Each IntelliTouch Expansion Kit requires a Load Center (P/N 520136) or Power Center (P/N 520137). Up to three Expansion Kits and Load or Power Centers may be added to a system, for control of up to 38 Auxiliary Circuits (40 auxiliary circuits for i10+3D).

### IntelliTouch Personality Kits

There are several types of IntelliTouch control systems available for different pool/spa configurations:

- **Shared Equipment: Pool and spa combinations with shared filtration system** – Pool owners can enjoy the convenience of motorized valves for water flow separation between pool and spa. The Personality Kit models are:
  - **i5 (P/N 520505)** – Four auxiliary circuits plus filter pump operation. Five relays are included in the Load Center.
  - **i7+3 (P/N 520507)** – Six auxiliary circuits plus filter pump operation and the +3 option (create a Feature circuit for valve actuators without using an existing output auxiliary circuit, and special light functions for color lighting). Two relays are included in the kit and five in the Load Center.
  - **i9+3 (P/N 520509)** – Eight auxiliary circuits plus filter pump operation and the +3 option (create a Feature circuit for valve actuators without using an existing output auxiliary circuit, and special light functions for color lighting). Four relays are included in the kit and five in the Load Center.
- **Dual Equipment: Pool and Spa with Dual Sets of Equipment** – The IntelliTouch i10+3D (P/N 520510) system provides advanced automation for a pool and spa using two separate sets of equipment. This IntelliTouch Personality Kit can control up to 10 pumps and/or lighting circuits, plus two heater circuits. The Personality Kit includes, eight auxiliary circuits plus a filter pump. The +3 option (create a Feature Macro circuit for valve actuators without using an existing output auxiliary circuit). Five relays are included in the kit and five in the Load Center. You can create a Feature circuit for valve actuators without using an existing output auxiliary circuit, and special light functions for color lighting. This model also allows Hi/Low Temperature control settings.

- **Single Equipment: Pool Only or Spa Only Applications** – The IntelliTouch i5S (P/N 520506) and i9+3S provide advanced automation for a single body of water. The i5S (P/N 520506) Personality Kits includes eight auxiliary circuits plus filter pump operation. Five relays in the Load Center. The i9+3S (P/N 520508) Personality Kits includes four auxiliary circuits plus filter pump operation and the +3 option (create a Feature Macro circuit for valve actuators without using an existing output AUX circuit). Four relays are included in the kit and five in the Load Center. You can create a Feature circuit for valve actuators without using an existing output auxiliary circuit, and special light functions for color lighting. This model also allows Hi/Low Temperature settings.

## IntelliTouch Personality Kit Contents

The following items are included in the IntelliTouch Personality Kit. If any item is missing or damaged in the IntelliTouch kit, contact your authorized dealer, or contact Pentair Technical Support (page 9).

- An IntelliTouch interface (see page 4)
- Outdoor Control Panel. Includes motherboard and Personality board.
- Power Relays - (Models i5, i5S no relays, i7+3 Qty. 2, i9+3, i9+3S Qty 4, i10+3D Qty 5, i5x (no relays, i10x (5 relays)
- Valve Actuators - Qty 2 (Models i5, i7+3, i9+3)
- Temperature Sensors - Water Sensor (with long cable, including o-ring and hose clamp), Air Sensors (with short cable). For i10+3D only, two Water Sensor (with long cable)
- Wiring Diagram Label for models i5S and i9+3S and i10+3D. For models i5, i7+3, i9+3, refer to the Load Center and Power Center inside front door.
- Load Center or Power Center parts bag: Includes relay screws. (see page 2)
- Label Sheet - A set of adhesive labels for custom identification (for outdoor control panel buttons). Use a pair of fine-tip tweezers to remove the labels from the sheet.
- IntelliTouch Personality Kit Installation Guide (this manual)

## In this Installation Guide

Use the information in this manual for installing the IntelliTouch Personality Kit contents.

- For Load Center and Power Center installation instructions, refer to the Load Center and Power Center Installation Guide (P/N 520100).
- For Accessory installation and operation instructions, refer to the user's guide provided with the accessory.

**Note:** For IntelliTouch Indoor and MobileTouch Controller, refer to the IntelliTouch System User's Guide (P/N 520102).

## IntelliTouch Interfaces

You can choose one or more of the following interface options to control the IntelliTouch system throughout the home.

- **iTC15 Kit (P/N 520500)** – Includes Protocol Interface Adapter and wireless router that connects to existing Desktop or Laptop PC. This allows control of IntelliTouch pool and spa systems via PC (requires PC with an Ethernet connection, and Windows XP operating system).
- **iTC25 Kit (P/N 520501)** – Includes Wireless Personal Digital Assistant (PDA) with 3.5" color touch screen custom configured for IntelliTouch systems, wireless router, and a Protocol Interface Adapter.
- **iTC35 Kit (P/N 520502)** – Includes in-wall color touch screen with Ethernet (RJ45) connection and Protocol Interface Adapter and wireless router. The in-wall Touch screen is custom configured for IntelliTouch systems. Requires an Ethernet cable to router.
- **iTC45 Kit (P/N 520503)** – Includes wireless Tablet with color touch screen, Protocol Interface Adapter, and wireless router. The Tablet is custom configured for IntelliTouch systems.



In-Wall Touch Screen



Digital Tablet



PDA

- **Indoor Control Panel (P/N 520138)** – 3.75” monochrome backlit LCD control panel. Connects to the Personality board in the Load Center.
- **MobileTouch (P/N 520340)** – 3.75” monochrome backlit LCD wireless control panel with transceiver antenna . Allows any IntelliTouch wired system to also have a wireless remote with all the capabilities of the Indoor Control Panel. With an average range of 300 feet, pool owners have system control anywhere around the home or yard. Powered by a rechargeable lithium-ion battery. Includes an AC adapter for recharging.
- **QuickTouch Wireless Remote (QT4):** Four-function wireless remote for pool and spa functions of your choice. This radio transmitter operates up to 150 feet range from the Load Center or Power Center.
- **iS10 and iS4:** 10-function (iS10) and 4-function (iS4) Spa-Side remote controller for pool and spa functions of your choice. The controllers can operate up to 150 feet range from the Load or Power Center.
- **i-Link Protocol Interface Adapter:** Connects to wireless router via Ethernet connection and to Personality board (Load Center or Power Center) via Serial cable (Four-wire).

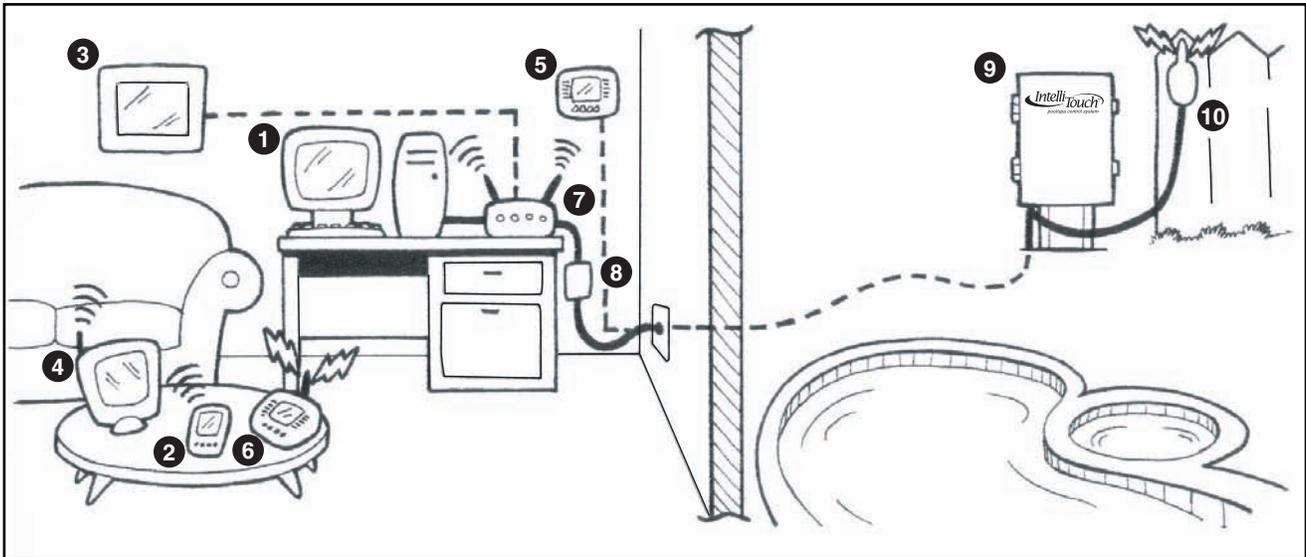


Indoor Control Panel

i-Link Protocol  
Interface Adapter

MobileTouch Wireless Controller

QuickTouch wireless  
remoter (QT4)



## IntelliTouch in your home

- 1 **Personal Computer (PC):** Existing home owner's PC or Laptop. Connects to a wireless router and the IntelliTouch Protocol adapter for control of IntelliTouch pool/spa systems. Requires a PC/Laptop (Windows XP) with Ethernet/RJ45 adapter installed.
- 2 **Personal Digital Assistant (PDA):** This wireless PDA with a color touch screen enables you to control your pool and spa features using the IntelliTouch ScreenLogic interface. The PDA is custom configured for IntelliTouch systems.
- 3 **In-wall Touch Screen:** A color display with Ethernet (RJ45) connector. Connects to the provided wireless router and Protocol adapter via Ethernet (RJ45) for control of IntelliTouch pool and spa systems. The in-wall Touch Screen is custom configured for IntelliTouch systems.
- 4 **Wireless Tablet:** This control panel consists of a color touch screen. Receives and transmits commands via wireless router and Protocol adapter for control of IntelliTouch pool/spa systems. The Tablet is custom configured for IntelliTouch systems.
- 5 **Indoor Control Panel:** This control panel consists of a 3.75" monochrome backlit LCD and connects to the Personality Board in the Load Center or Power Center for control of IntelliTouch pool and spa systems.
- 6 **MobileTouch:** This wireless control panel has a 3.75" monochrome backlit LCD. Receives and transmits commands via the Transceiver antenna located at the Load or Power Center.
- 7 **Wireless router:** Connects to the PC or Laptop via Ethernet connection to the Protocol adapter.
- 8 **Protocol adapter:** Connects to wireless router via Ethernet connection and to Personality board (Load/Power Center) via a four-wire 22-AWG cable.
- 9 **Load Center or Power Center.** The main control center. Includes the Outdoor Control Panel that controls pump, heater, and light relays. Receives commands via Protocol adapter, and wireless and wired control panels connected to the Personality board.
- 10 **MobileTouch Transceiver antenna:** This antenna is connected to the Personality board. Sends and receives commands to and from the MobileTouch control panel.

## IntelliTouch Interface Kits

The following items are included in the IntelliTouch interface kits. If any item is missing or damaged in the IntelliTouch kit, contact your authorized dealer, or contact Pentair Technical Support (page 9).

### PC Interface (iT15 Kit - P/N 520500)

- Protocol adapter for use with existing Desktop or Laptop PC
- Wireless router (802.11b/g) with AC adapter
- IntelliTouch ScreenLogic User's Guide
- CD-ROM containing IntelliTouch ScreenLogic PC user interface software

### Personal Digital Assistant (PDA) (iT25 Kit - P/N 520501)

- Personal Digital Assistant (PDA) with built-in Wi-Fi 802.11b wireless LAN adapter with antenna. Refer to the manufacturers documentation for kit contents
- Wireless router (802.11b/g) with AC adapter
- Protocol adapter
- IntelliTouch ScreenLogic User's Guide
- CD-ROM containing IntelliTouch ScreenLogic PC user interface software

### In-Wall Touch Screen (iT35 Kit - P/N 520502)

- In-wall Digital Tablet, and AC adapter
- Wireless router (802.11b/g) with AC adapter
- Protocol adapter
- IntelliTouch ScreenLogic User's Guide
- CD-ROM containing IntelliTouch ScreenLogic PC user interface software

### Digital Wireless Tablet (iT45 Kit - P/N 520503)

- Digital Tablet (with internal battery pack), stylus, built-in Wi-Fi 802.11b wireless LAN adapter with antenna.
- Wireless router (802.11b/g) with AC adapter
- Protocol adapter
- IntelliTouch ScreenLogic User's Guide
- CD-ROM containing IntelliTouch ScreenLogic PC user interface software

## IntelliTouch ScreenLogic Interface Accessory Kits

Up to a total of four ScreenLogic interfaces can be used with an IntelliTouch system, as shown above. If you need additional interfaces, first order one of the ScreenLogic interface kits, then order one or more of the following accessory interfaces accessory kits:

- PDA, CD-ROM and manual (P/N 520497)
- In-Wall Touch Screen, CD-ROM and manual (P/N 520498)
- Tablet, CD-ROM and manual (P/N 520499)

**Note:** The above Accessory Kits interfaces do not include a Protocol adapter or wireless router.

## Installation Steps Summary

**Note:** The following installation instructions assume that the Load Center or Power Center is installed at the equipment pad. For Load Center and Power Center installation instructions, refer to the Load Center and Power Center Installation Guide (P/N 520100).

The recommended installation steps for the Personality Kit parts are as follows:

- 1 Install the Outdoor Control Panel (page 16):** Install the Personality board in the Load Center or Power Center. Also, review the high voltage connection locations in the Power/Load Center.
- 2 Connect pre-installed relays (page 17):** Connect the relay plugs to the Personality board. The four relays are pre-installed in the Power/Load Center.
- 3 Install auxiliary relays (page 18):** Install and connect the relay(s). The number of relays included in the Personality Kit depend on the Outdoor Control Panel model (i5, i5S (none), i7+3 (Qty. 2), i9+3, i9+3S (Qty. 4), i10+3D (Qty. 5).
- 4 Install Valve Actuators (page 19):** Install the valve actuators on the valve assembly and connect to the Personality board.
- 5 Install Temperature Sensors (page 20):** Install the water and air sensors and connect the cable plugs to the Personality board.
- 6 Install Heat Thermostat (page 21):** Connect the heater thermostat cable plug to the Personality board.
- 7 Connect the Transformer (page 21):** Connect the transformer cable plug to the Personality board.
- 8 Install the Indoor Control Panel (page 22):** Wall-mount the Indoor Control Panel and connect to the Personality board.
- 9 Install the MobileTouch Wireless Control Panel (page 26):** Mount the transceiver and connect to the Personality board.
- 10 Affixing the System Wiring Diagram Label (page 31):** Affix the wiring diagram on the inside of the front door of the Power/Load Center (for models i5S, i9+3S, i10+3D only).

### Tools required

- 3/16 in. diameter drill (for mounting Indoor Control Panel).
- 5/16 in. diameter drill (for mounting Water Temperature Sensor).

## Accessory Equipment

- 520142 i5X Expansion Kit five Auxiliaries.
- 520142 i10X Expansion Kit ten Auxiliaries.
- 520139 MobileTouch Wireless Control Panel and Transceiver.
- 520149 iS10 Ten-Function Spa-Side remote, Surface/recessed-mount faceplate, 150 ft. cable.
- 520355 Colored Faceplate Kit for surface-mount. Tan, Grey, or Black with label set.
- 520354 Colored Faceplate Kit for recessed-mount. Tan, Grey, or Black with label set.
- 520335 Mud box recessing iS10 into deck or tile.
- 520138 Indoor Control Panel, White.
- 520198 Two-Speed Three HP Relay up to three additional valve actuators.
- 520285 Valve module for controlling three additional actuators.
- 520106 Three HP Power Relay.
- 687000 Two Telephone remote control for any single circuit, usually Spa mode.
- 520148 QuickTouch Four-Function Wireless Remote Kit, Transmitter and Receiver.
- 520406 Dimmer Module. Supports up to 4,000 W max. load (four dimmers handling 1,000W each).

## Technical Support

Contact Technical Support at:

**Sanford, North Carolina** (8 A.M. to 5 P.M.)

Phone: (800) 831-7133

Fax: (919) 566-8920

**Moorpark, California** (8 A.M. to 5 P.M.)

Phone: (800) 831-7133 (Ext. 6502)

Fax: (805) 530-0194

**Web sites:** Visit [www.pentairpool.com](http://www.pentairpool.com) and [www.staritepool.com](http://www.staritepool.com)

## Plumbing Requirements

It is important that the pool and spa plumbing system be in accordance with local codes and the Recommended Hydraulic Schematics (page 11, 12 and 13). Before starting, please review the diagrams and the following recommended guidelines:

- 1 The spa should be at or above the level of the pool.

If the spa is attached to the pool, provide a dam between the two bodies of water to allow the spa to overflow into the pool. If the spa is not attached to the pool, an overflow, sufficient in size to carry a full pump-flow, must be installed at the water level in the spa.

- 2 Plumb a three-port **Intake Valve** on the suction-side of the filter pump, so that the center port of the valve is connected to the pump inlet. Connect the spa suction to one side of the Intake Valve, and the pool suction to the other side.

- 3 Plumb a three-port **Return Valve** on the return-side of the heater, so that the return water will enter the valve through the center port.

Connect the spa return to one side of Return Valve, and the pool return to the other side.

- 4 If required, install a spa make-up line (consisting of a manual gate or ball valve, for elevated spas install a check valve) to bypass the pool return line. This will enable some of the chemically-balanced water from the pool to cycle through the spa. The manual valve will allow the amount of bypass to be adjusted.

- 5 If the spa is to be constructed in concrete, special provision should be made at this time for the installation of the **Spa-Side remote Control**.

Select a convenient location in the deck or above water level in the spa wall (where the Spa-Side remote will not be submerged by the spa water), and install a 6 in. to 12 in. length of one inch PVC pipe to provide a receptacle for the Spa-Side remote. The pipe should be level and protrude beyond the finished surface of the spa. It will be cut back later at installation time. Reduce the pipe size down to ½ in. or ¾ in. conduit, and run it to the proposed Load/Power Center location at the equipment pad. Use sweep elbows for turns.

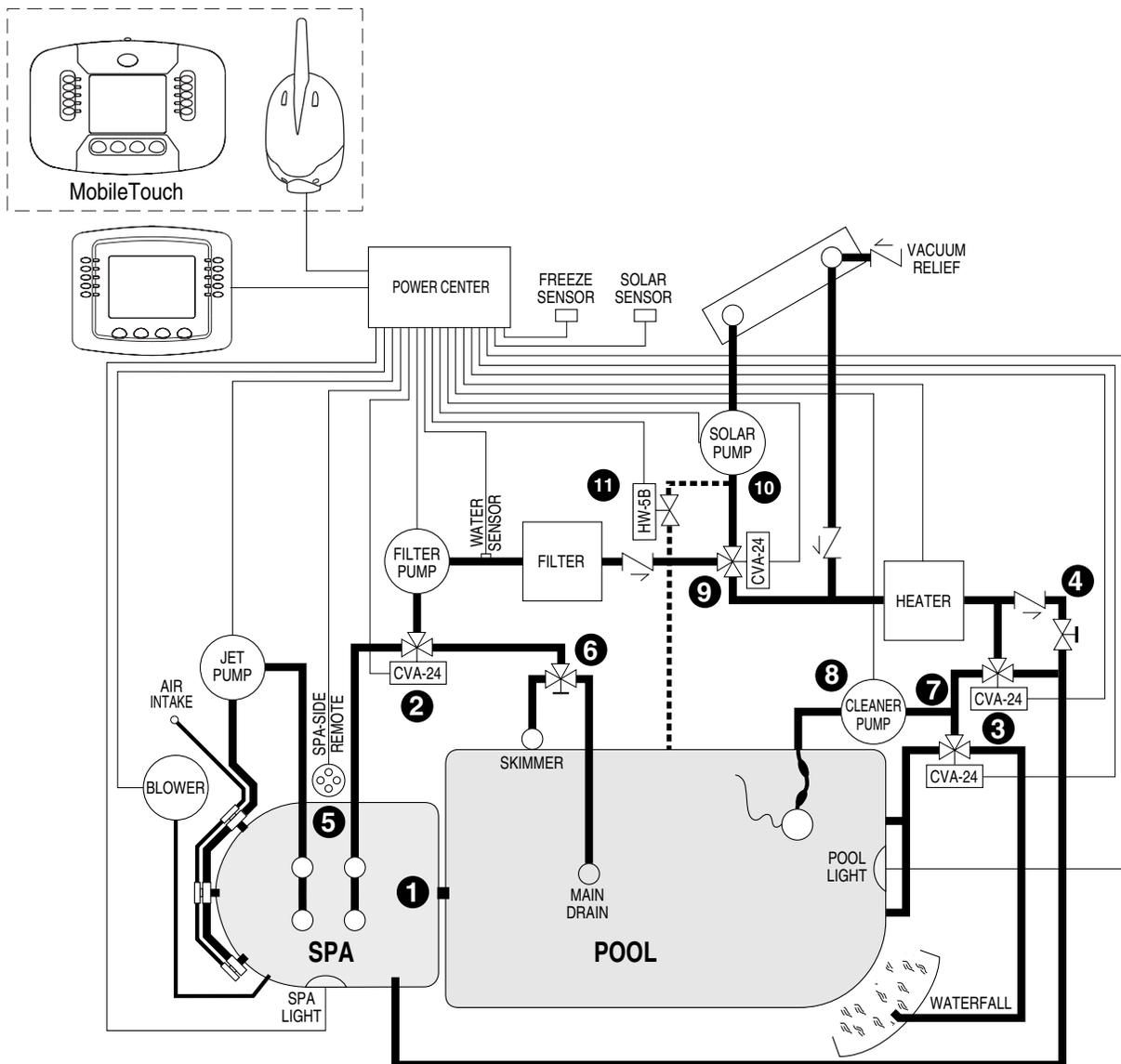
**The Spa-Side remote will not be installed until the spa construction is completed.**

- 6 For systems which incorporate a skimmer, it is possible to balance the amount of suction between the skimmer and main drain for maintenance purposes. This is easily accomplished by installing a manual three-port mixing valve at the suction line. Plumb one port to the skimmer and the other to the main drain.
- 7 If a “non-booster pump” pressure-side pool cleaner is being used, plumb a manual three-port valve between the filter pump and filter, with the third port plumbed to the pool cleaner line, and install a motorized two-port **Pool Cleaner Valve** at this line. The motorized valve will automatically open whenever the Control System activates the pool cleaner.
- 8 If a booster pump pool cleaner is being used, plumb the booster pump so that its suction-side is connected to the pool return, after the heater, and as close to the ground as practical.

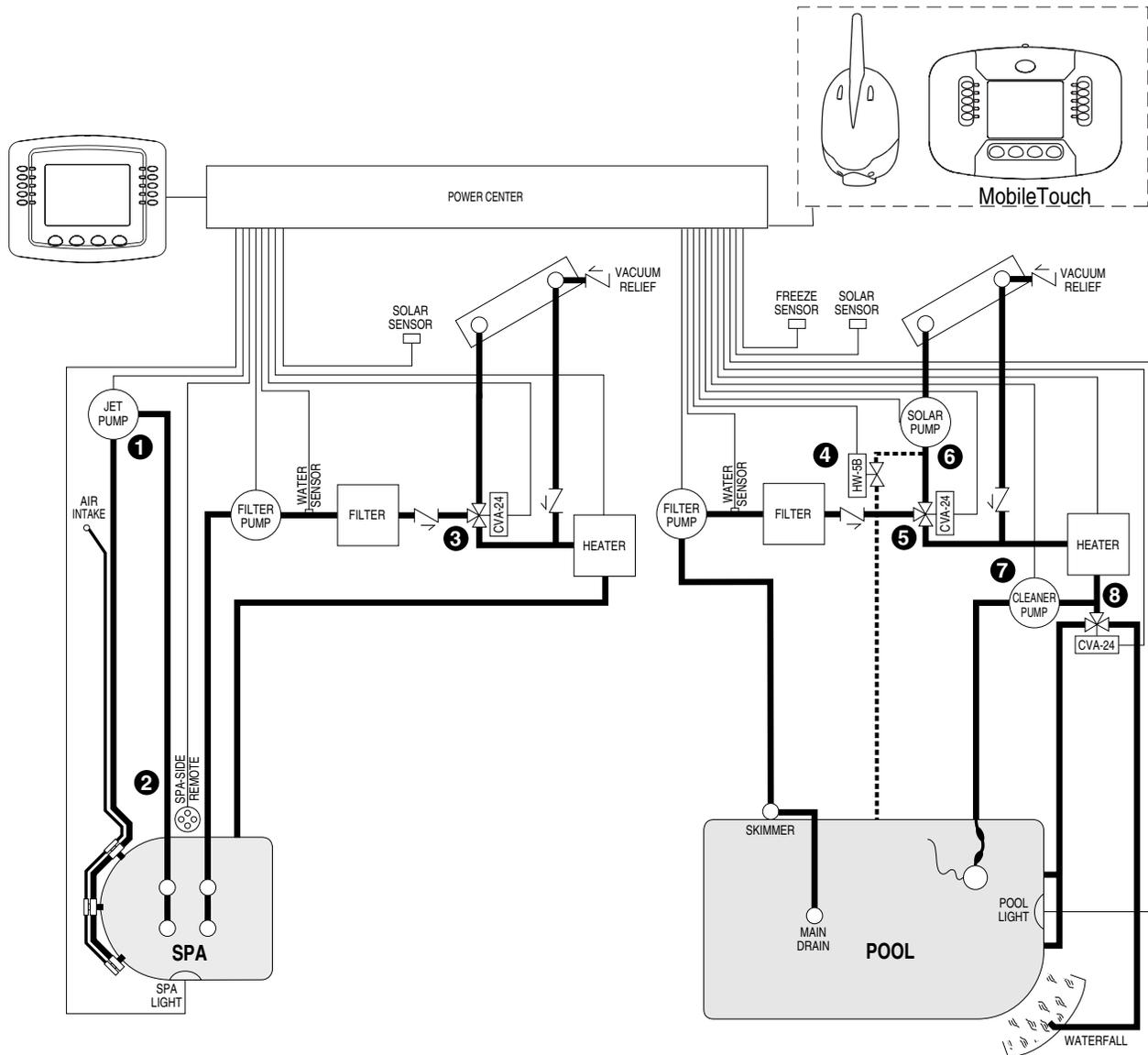
- 9 Plumb the solar feed and return lines between the filter and the heater. Install a three-port valve at the feed line. Use a solar valve (model SOL-2T), to allow automatic draining of the panels.
- 10 A solar booster pump should be used when the distance to the panels exceed 200 ft., or the panels are elevated higher than 25 ft.
- 11 Glazed solar panels require a drain valve (model HW-5B) to allow draining of the panels. This prevents damage from overheating water. Install a drain valve at the solar feed line and connect to the pool fill line.

## Equipment Location

All equipment, with the exception of the Spa-Side remote, must be located at least 10 ft. from the water's edge.



**Recommended Hydraulic Schematic for Shared Equipment System**



**Recommended Hydraulic Schematic for Dual Equipment System**



# High Voltage Connections

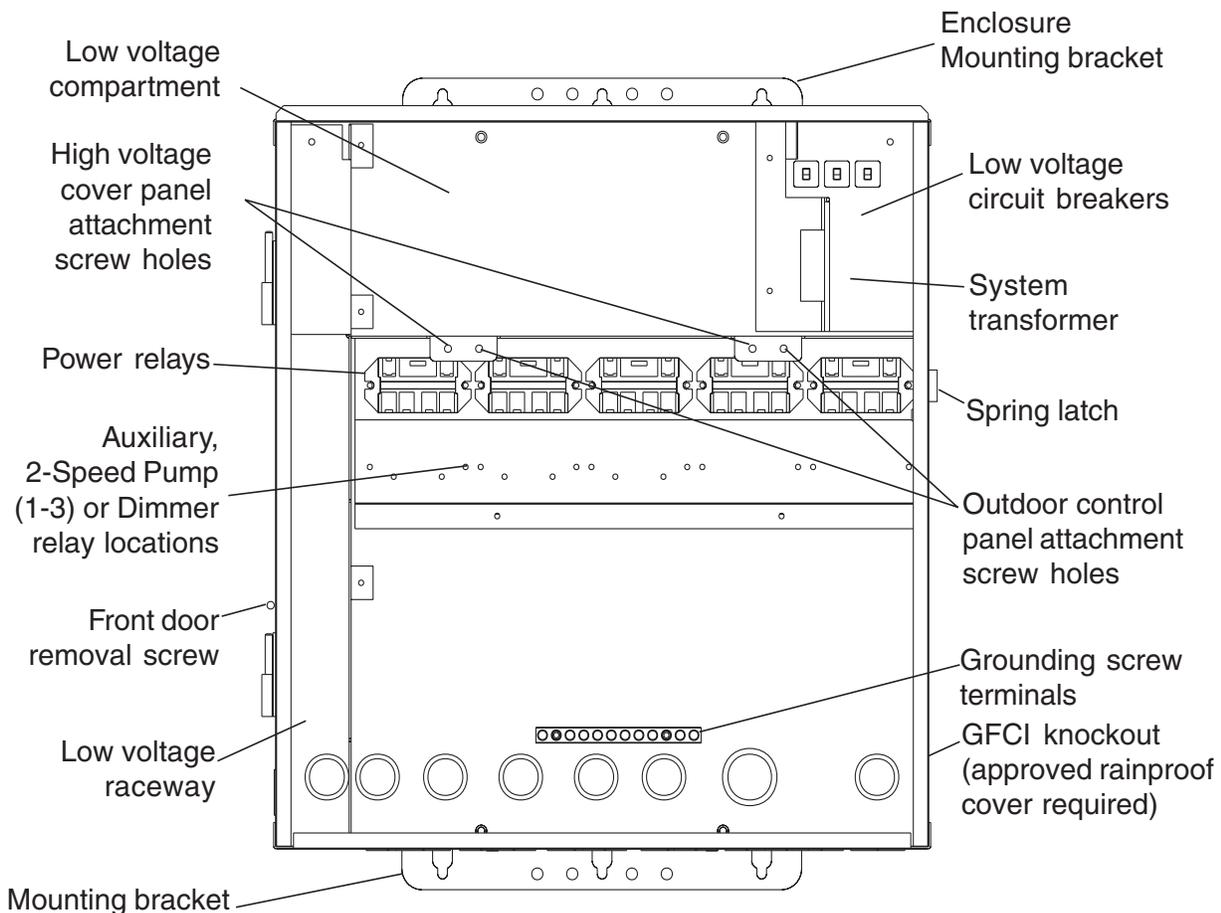
**⚠ WARNING** - It is required that the main power into the home be switched OFF at the main circuit breaker box whenever the high voltage cover-panel is removed. The main power must also be switched OFF to access the Power/Load Center enclosure low voltage raceway.

## Power Center and Load Center Description

Power Center and Load Center enclosures are identical with the exception of the circuit breaker base (Sub-panel). For details, refer to the Load Center illustration, see page 15. Not shown is the high voltage cover-panel and the front door. See the WARNING information above before opening the cover-panel.

### Power Center (without Sub-panel)

The Power Center is connected to an electrical circuit breaker panel (Sub-panel) installed at the equipment pad. The AC power is provided from the Main-panel (located at the house) to the Sub-panel. The Power Center is installed next to the Sub-panel. For complete Power/Load Center installation instructions, refer to the Load/Power Center User's Guide (P/N 520100).

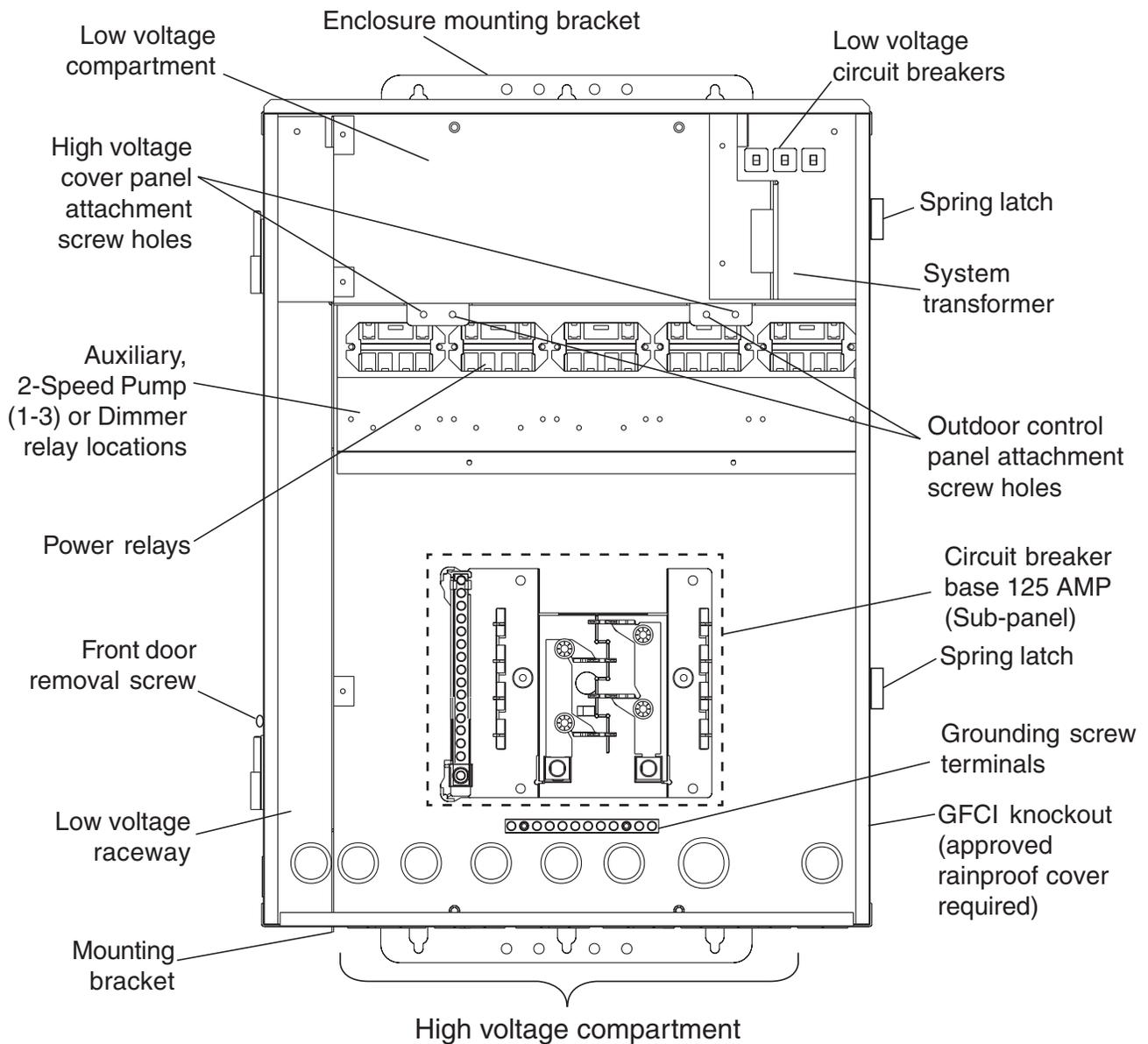


**Power Center Enclosure  
(17" H x 17" W x 4.8" D)**

## Load Center (with built-in Sub-panel)

The Load Center is installed at the equipment pad. The AC power for the Load Center is provided from the Main-panel located at the house. For complete Power/Load Center installation instructions, refer to the Load/Power center User's Guide (P/N 520100).

**Note:** Up to three additional Expansion Centers (i5x or i10x) can be added to a base Power/Load Center: i9+3, i9+3S, i10+3D. For more information about using multiple Power/Load Center, refer to the IntelliTouch Systems User's Guide (P/N 520102) and the IntelliTouch Installation Guide (P/N 520101).



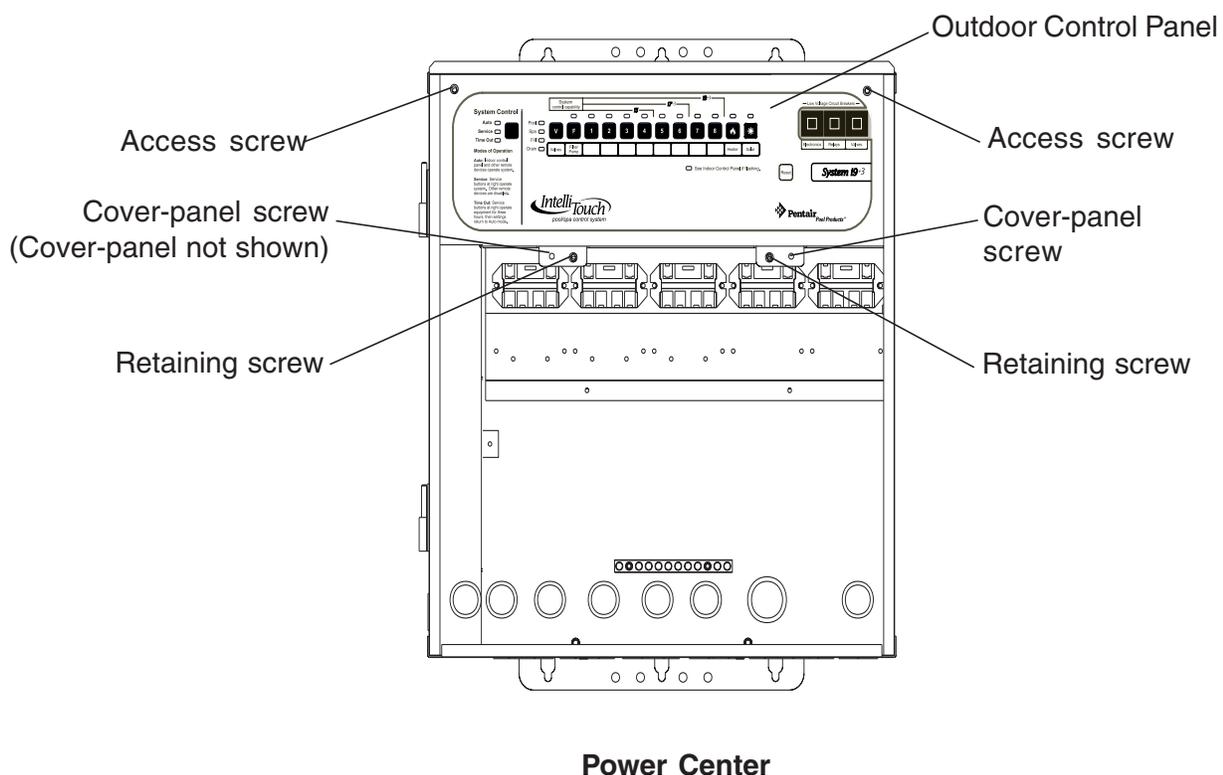
**Load Center Enclosure  
(23" H x 17" W x 4.8" D)**

## Installing the Outdoor Control Panel

The Outdoor Control Panel includes a motherboard and Personality board. The Personality board is mounted on top of the Motherboard which mounts on the back of the Outdoor Control Panel. The control panel installs in the top part of the Power/Load Center enclosure. The Power/Load Center receives control inputs from the Personality board and distributes high voltage power to Pentair Valve Actuators (PVA), control pumps, lights, and heater operations. The IntelliTouch remote Indoor Control Panel also controls these and other functions, such as pool and spa lights.

To install the Outdoor Control Panel:

1. Unlatch the front door spring latches, and open the front door of the Power/Load Center.
2. Remove the screws securing the high voltage cover-panel, and remove it from the enclosure.
3. Remove the Outdoor Control Panel from the Personality Kit and its packaging.
4. Mount the Outdoor Control Panel in the top part of the Power/Load Center. Secure the lower edge of the control panel with the two retaining screws. Once secured, the Control Panel can hinge out and down to access the Personality board for low voltage connections.
5. When finished with the low voltage connections on the Personality board, close the hinged control panel and secure it with the two access screws.
6. Install the cover-panel and secure it with the two screws.
7. Close the front door of the Power/Load Center. Fasten the two spring latches.

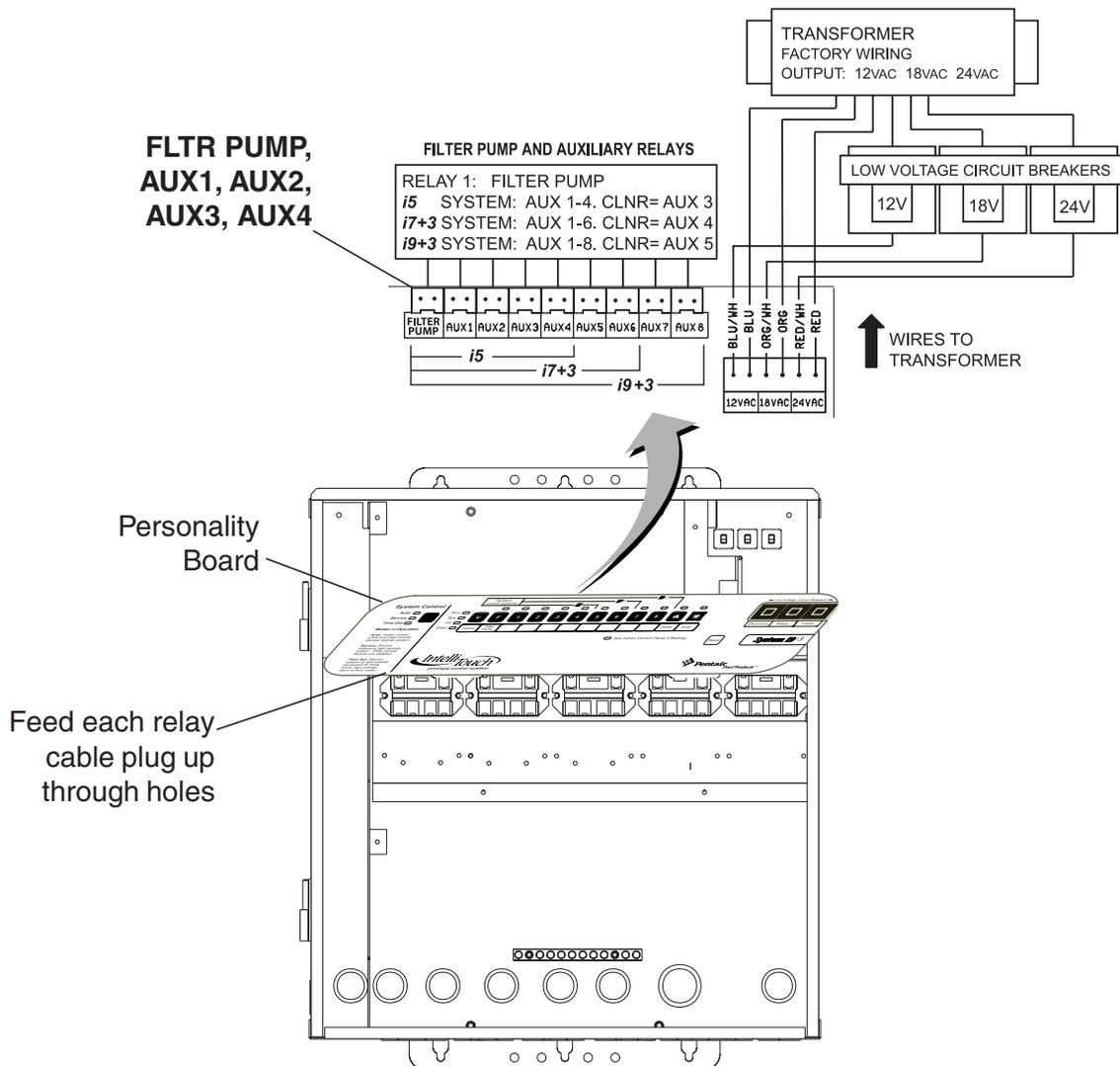


# Connecting the Pre-Installed Relays

There are five pre-installed relays in the Load/Power Center.

To connect the pre-installed relay cable plugs to the Personality board:

- Route the power relay cable plugs up through the high voltage compartment to the Personality Board. Insert the plug into the two-pin sockets, beginning with **FLTR PUMP**, then **AUX1**, **AUX2**, **AUX3**, and **AUX4**. For the two-pin socket locations, refer to the diagram shown below and the System Wiring Diagrams for models i5, i7+3, and i9+3, page 32 and 33.



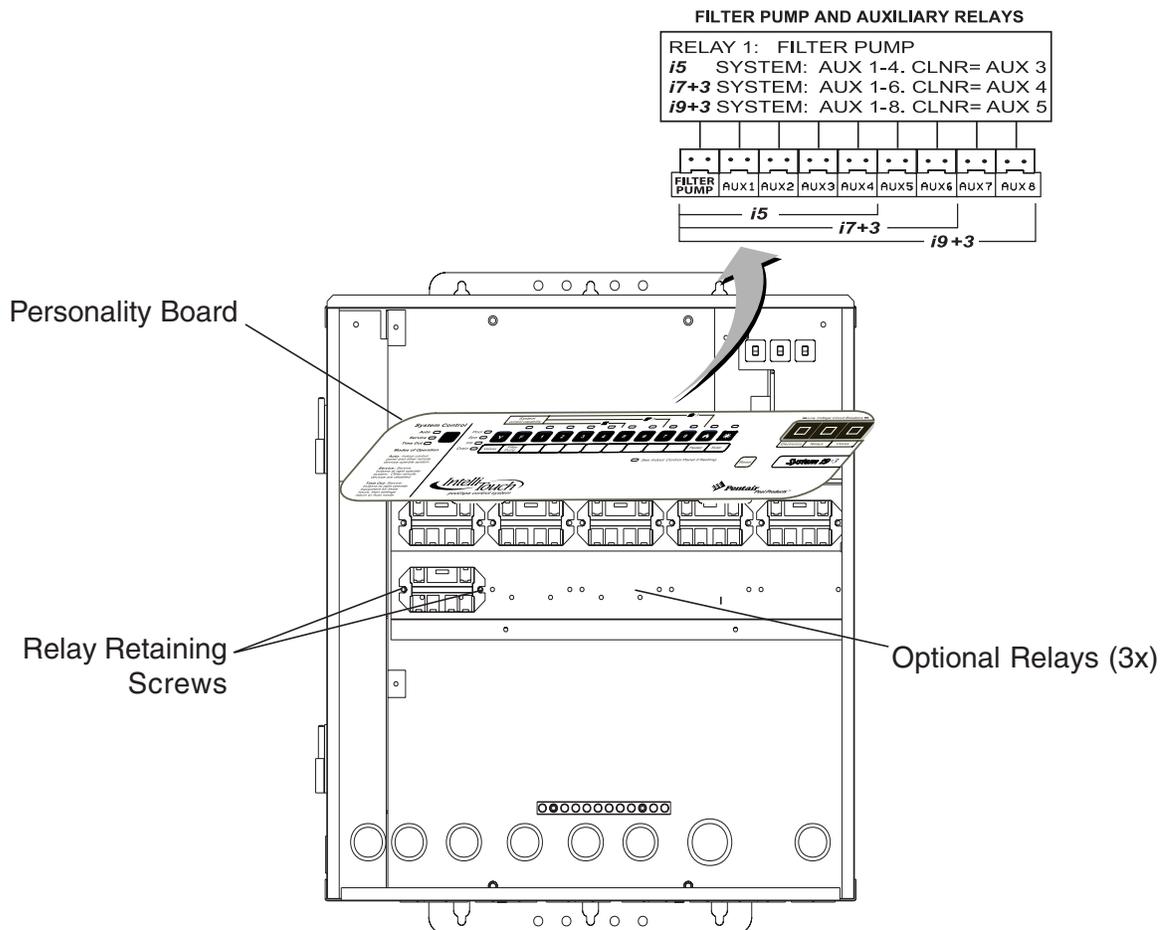
## Installing Auxiliary Relays

Install additional auxiliary relays as needed. Depending on the Personality Kit there may be as many as five additional relays.

To install a relay:

1. At the Power/Load Center, install the relays below the pre-installed relays. Secure in place with two retaining screws.
2. Route the relay cable plug up through the holes into the high voltage compartment to the Personality board.
3. Insert each auxiliary relay plug into the one of the two-pin sockets, beginning with **AUX5**, **AUX6**, **AUX7** and **AUX8** on the Personality board. For wiring details, refer to the System Wiring Diagrams for models i5, i7+3, and i9+3, page 32 and 33.

**Note:** Install the optional Two-Speed Pump relay (P/N 520198) cable plug into the **2SPD** two-pin socket on the Personality board. For installation and operation information, refer to the Two-Speed Relay User's Guide (P/N 520210).



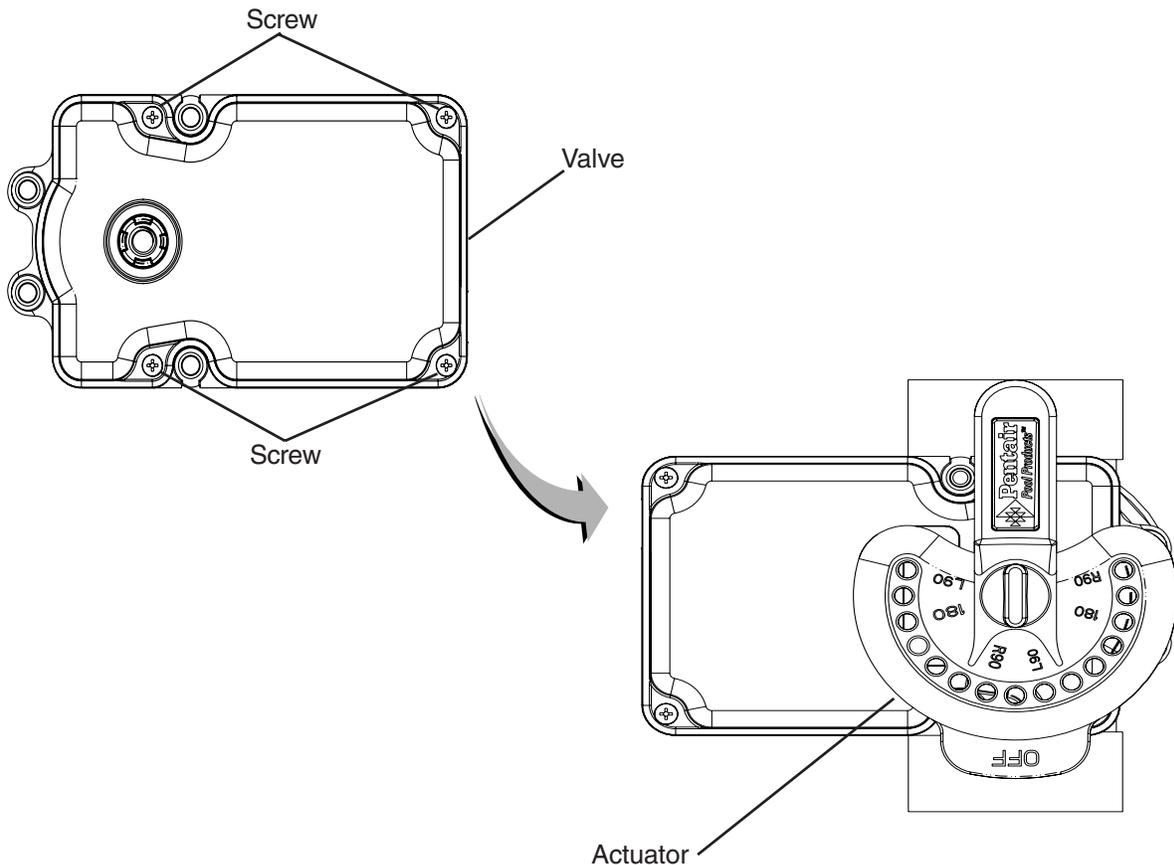
# Installing the Valve Actuator

To install the valve actuator:

1. Remove the four valve cover screws, indicated with arrows on the valve cover.
2. Mount the actuator on the valve.
3. Secure the actuator with the provided screws.
4. At the Load Center, route the cable up through the low voltage raceway to the Personality board.
5. Connect the valve actuator cable plug into the **INTAKE** (suction) and **RETURN** three-pin sockets on left side of the Personality board. For wiring details, refer to the System Wiring Diagrams for models i5, i7+3, and i9+3, page 32 and 33.

**Note:** *If applicable, mount the auxiliary and/or Solar valve actuators and plug it into the **VLA A** and **VLA B** 3-pin sockets. Excess cable can be coiled in the Power/Load Center low voltage raceway. Do not coil the wire in upper low voltage compartment.*

**Valve Module Expansion Board:** Three additional valve actuators can be added to the system if necessary using a Valve Module Expansion board (P/N 520285). The expansion board attaches to the edge of the Personality board. For installation and operation information, refer to the IntelliTouch Valve Actuator User's Guide (P/N 520294)



# Installing and Connecting Temperature Sensors

## Water Temperature Sensor

To install the water sensor:

1. Drill a 5/16 in. hole in the plumbing between the filter pump and filter.
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. At the Load Center, route the wire up through the low voltage raceway to the Personality board.
4. Fasten the cable to the plumbing with cable ties.
5. Cut off the excess wire and the strip conductors ¼ inch. Insert the wires into the **WATER** screw terminals (**J5**) on right-side of the Personality board. For wiring details, refer to the System Wiring Diagrams for models i5, i7+3, and i9+3, page 32 and 33.

## Ambient Air Temperature (Freeze Protection) Sensor

To install the air sensor:

1. Mount the sensor in the open air, in a shaded area, away from air conditioners. During the winter months, to avoid freeze damage pool and spa equipment, mount the air sensor in a shaded area to assure proper temperature readings.
2. Route the wire through the low voltage raceway to the Personality board.
3. Fasten the cable to the plumbing with cable ties.
4. Cut off the excess wire and the strip conductors ¼ in. Insert the wires into the **AIR** screw terminals (**J5**) on right side of the Personality board. For wiring details, refer to the System Wiring Diagrams for models i5, i7+3, and i9+3, page 32 and 33.

## Solar Temperature Sensor (Optional)

To install the solar sensor:

1. Mount the sensor on a flat surface, with the same exposure to sun as the solar collectors (next to the collectors is recommended). Do not let the sensor touch the panels.
2. If necessary, splice a two-conductor extension wire to the sensor. Route the wire to the Load Center and up through the Low Voltage raceway to the Personality board.
3. Strip the conductors ¼ in. Insert the wires into the **SOLAR** screw terminals (J5) on right side of the Personality board. For wiring details, refer to the System Wiring Diagrams for models i5, i7+3, and i9+3, page 32 and 33.

## Connecting the Heater Thermostat

The following instructions are for gas heaters and heat pumps with low voltage thermostats.

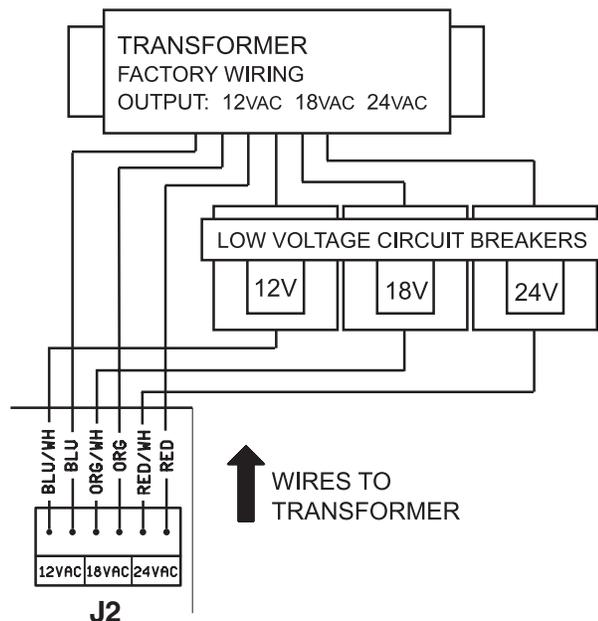
To connect the heater thermostat cable plug to the Personality board:

1. Run a two-conductor cable from the heater thermostat area to the low voltage raceway to the Personality board in the Load Center.
2. Strip the conductors  $\frac{1}{4}$  in. Insert the wires into the **GAS HEATER (J30)** two-screw terminals on the left side of the Personality board. For wiring details, refer to the System Wiring Diagrams for models i5, i7+3, and i9+3, page 32 and 33.
3. At the heater, connect the wires in accordance with heater manufacturer's instructions. For older heaters without instructions for remote operation, connect the wires to the Fireman's switch connections in series with the thermostat, pressure switch, and other safety switches.
4. Do NOT disconnect or wire around the thermostat, pressure switch, high limit switch, or other safety devices.
5. Select the pool or spa thermostat and toggle the heater to that setting.
6. Turn the thermostat for the selected setting to maximum.

## Connecting the Transformer

To connect the transformer wire harness onto the Personality board:

- Connect the transformer plug onto connector **J2** on the right side of Personality board. The plug is keyed onto the pins so that the six wires point towards back of the board. From left to right the wire colors should be blue, orange, red. For the connector location, refer to the diagram shown below and the System Wiring Diagrams for models i5, i7+3, and i9+3, page 32 and 33.



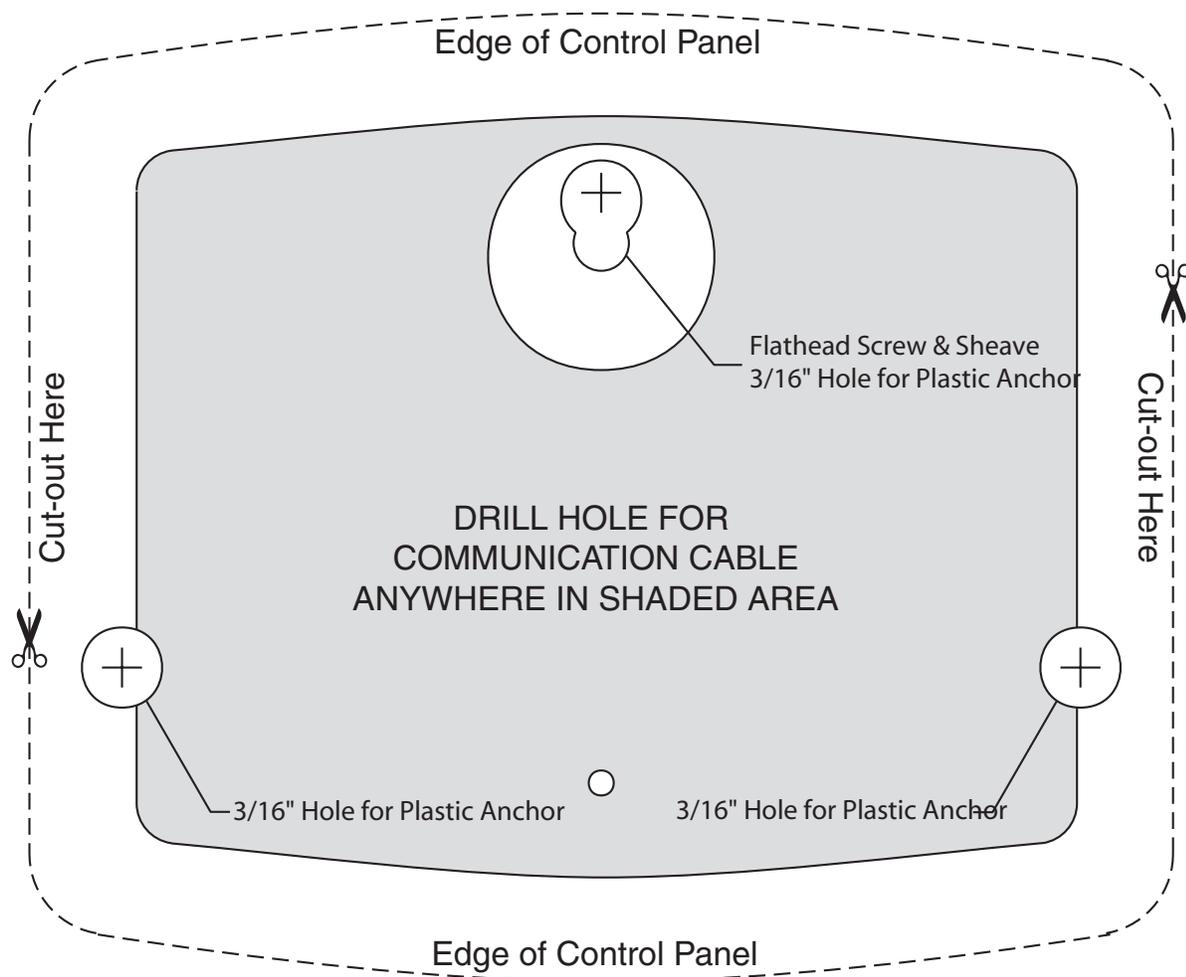
## Installing the Indoor Control Panel

The Indoor Control Panel controls pool, spa, lights and other functions of the IntelliTouch system from inside the home or a sheltered area. Select a convenient wall location inside the house or other weather-protected area for mounting the Control Panel.

### Drill Control Panel Wall Mounting Holes

To drill the control panel mounting holes:

1. The Control Panel is 5- $\frac{3}{4}$  in. wide. Using the cutout template below, mark the three screw locations on the wall for the mounting holes. Drill the three mounting holes. If the screws are not being screwed into studs, drill  $\frac{3}{16}$  in. holes and insert wall anchors (included in the kit) as required.
2. Drill a hole  $\frac{1}{4}$  in. within the gray area shown in the template for the communication cable to feed through.



Indoor Control Panel Template

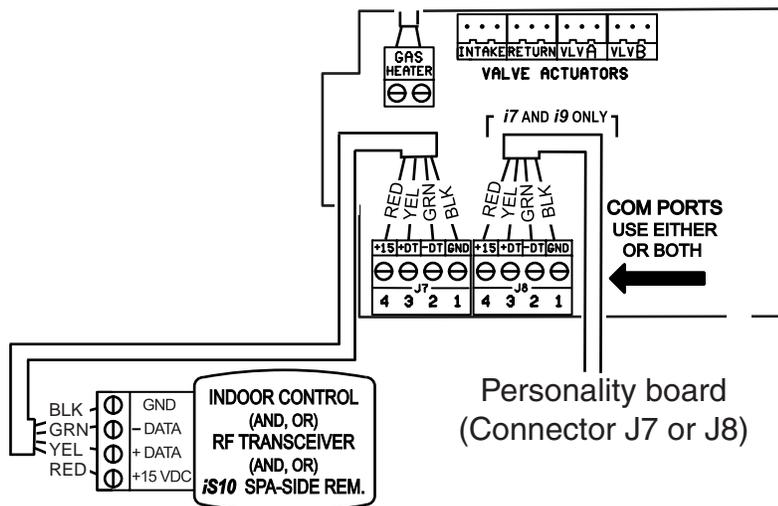
## Cabling the Indoor Control Panel at the Load Center

To connect the Indoor Control Panel cable to the Personality board:

1. Turn off the main system power before making any connections.
2. Run a UL approved four conductor cable (22 AWG) from the Indoor Control Panel to the Load Center. The preferred wire color scheme is: Red, yellow, green, and black.

**CAUTION** Do NOT short GND or +15V connections (Red or Black) to data lines (Green or Yellow). The Control Panel board may be permanently damaged. Do NOT reverse GND or +15V or system will not operate.

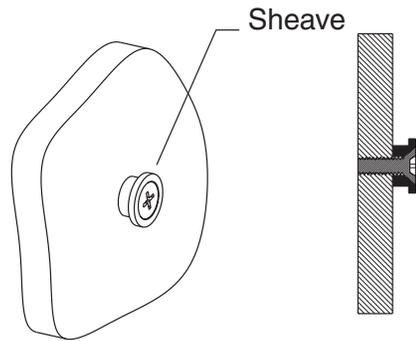
3. Route the cable up through the low voltage raceway to the Personality board. To access the Personality board, refer to Installing the Outdoor Control Panel, page 16.
4. Strip back the communication cable conductors ¼ in. Insert the wires into the screw terminals (provided in the kit). Secure the wires with the screws. Make sure to match the color-coding of the wires: Red = +15, Yellow = +DT, Green = -DT, and GND = Black.
5. Insert the cable plug onto either of the **COM PORTS (J7 or J8)** connectors located on the left side of the Personality board. For connector locations, refer to the Wiring Diagrams for models i5, i7+3, and i9+3, page 32 and 33.
6. Proceed with **Cabling the Indoor Control Panel**, page 24.



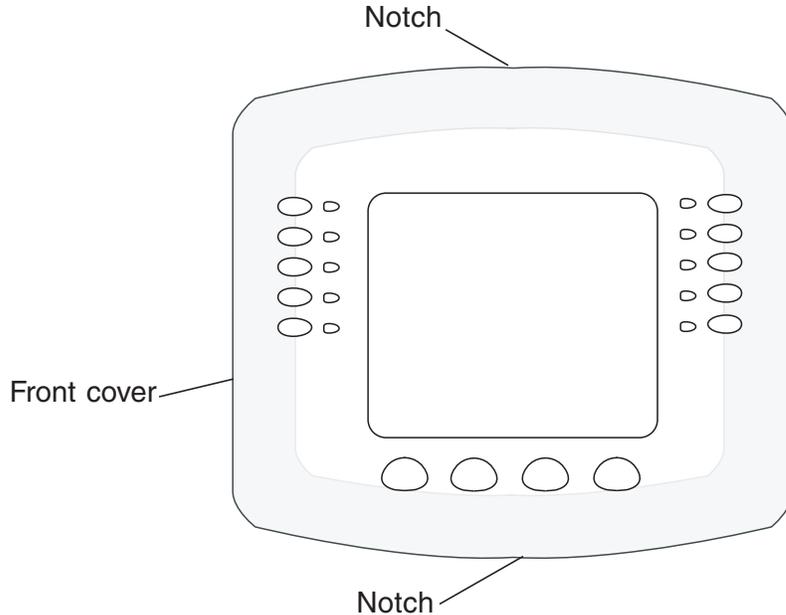
## Cabling the Indoor Control Panel

To connect the communication cable to the Indoor Control Panel:

1. Route the cable through the house wall to the location of the Indoor Control Panel. Pull a working length of the communication cable out of the house wall.
2. Drill the flathead screw (provided) through the mounting sheave and into the wall.

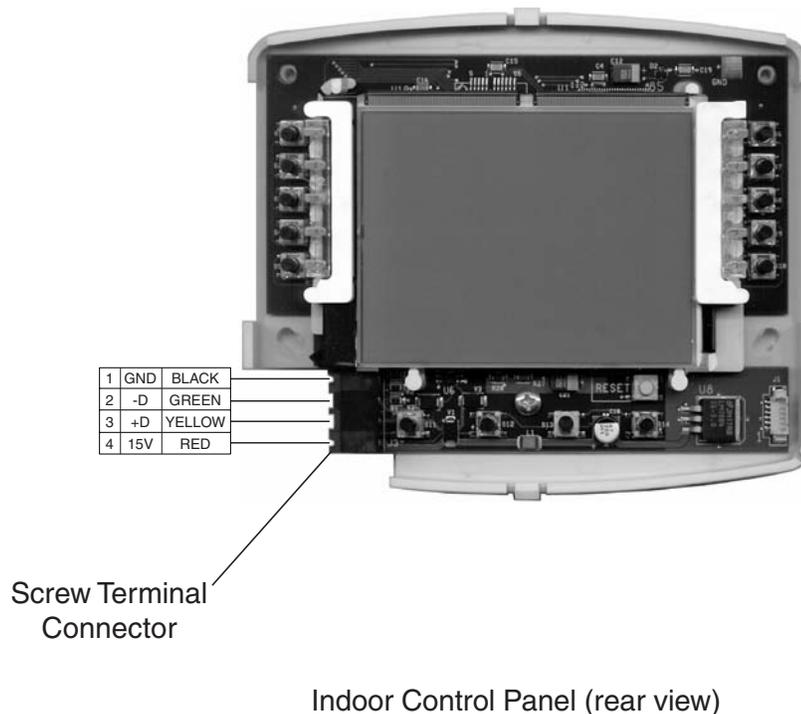


3. **Remove the control panel front cover:** From the front of the control panel, insert the tip of a small flat-blade screw driver into the notch on the top edge of the control panel cover and gently pry the cover off from the control panel base.



Indoor Control Panel (front view)

4. Strip the leads of the communication cable wires  $\frac{1}{4}$  in. Insert the wires into the screw terminals (provided in the Personality Kit). Make sure to match the color-coding of the wires (see front of circuit board). An optional cable clip feature has been built into the back plate to help guide the communication cable.
5. Insert the screw terminal connector onto the circuit board socket.
6. Mount the control panel on the wall. Slide the control panel back plate over the mounting sheave and slide down. Rotate back plate as necessary to make level. The bottom mounting holes should be visible through cutouts in the controller board.
7. Feed the cable back into the wall so that the remainder left outside the wall fits behind the back plate.
8. Install the pan head screws into the wall to secure the back plate.
9. Mount the control panel cover over back plate and snap in place to secure. Remove the clear protective plastic sheet from the control panel LCD.



## MobileTouch Wireless Controller

The MobileTouch wireless controller provides wireless control of the IntelliTouch system. The MobileTouch controller kit consists of:

- Hand-held wireless LCD control panel
- AC adapter for recharging the unit
- Transceiver module

### Mounting and Connecting the MobileTouch Transceiver Module

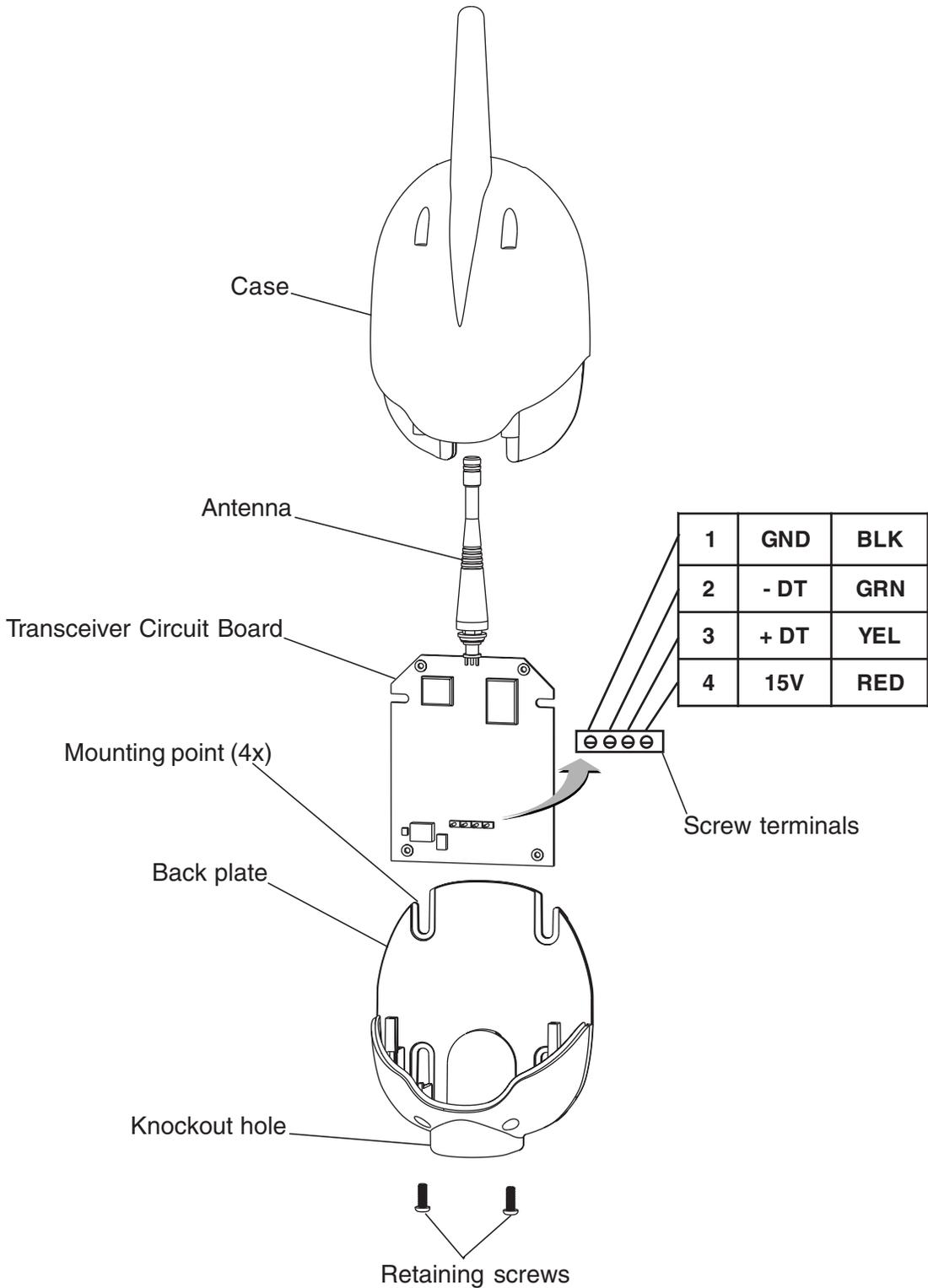
The Transceiver module is a two-way radio device with an attached antenna that communicates to and from the IntelliTouch system via the MobileTouch hand-held wireless controller. Mount the Transceiver module at a convenience location (on a flat vertical surface) near the Load Center or Power Center, at a minimum of 5 ft. above ground level to optimize the functional operating range of the MobileTouch wireless control panel.

**CAUTION** To avoid signal interference, mount the Transceiver module antenna a minimum of 10 ft. away from the Load Center or Power Center, any metal surface/structure, or air blower located in the immediate area of the equipment pad.

To mount the Transceiver module:

1. **CAUTION - Switch the main power off at the Load Center or Power Center.**
2. Remove the two retaining screws located on the underside of the transceiver. Carefully slide the transceiver case up and off the Transceiver back plate.
3. Remove the Transceiver circuit board. Slide the circuit board up and out of the back plate.
4. Position the back plate against the mounting surface so that the transceiver is oriented in an upright position (with the antenna pointing upwards). Use a pencil to mark the four mounting points. Drill four 3/16 in. diameter holes into the mounting surface and insert the four plastic anchors (provided in the Personality Kit).
5. Feed a UL approved four 22 AWG conductor cable through the knockout hole at the bottom of the enclosure. Do not run wire through the drain holes. If the knockout hole is not being used to run wire through, drill a hole through the bottom of the back plate and seal it using a fitting with a few feet of conduit or some other sealant between the case and the cable.
6. Position the back plate over the mounting points and secure it with the four mounting screws (provided in the Personality Kit).
7. Carefully slide the Transceiver circuit board back into the back plate.
8. Strip back the wires ¼ inch. The recommended wire color scheme is red, yellow, green, and black. Insert the wires into the screw terminals (provided in the Personality Kit). Connect the screw terminal connector onto the circuit board. For wiring details, see page 20.
9. Slide the Transceiver circuit board case into the back plate. Secure the case using the two retaining screws.
10. Proceed with **Connecting the Transceiver Module Cable to the Personality Board**, on page 28.

**⚠ CAUTION** Water damage may occur if the case retaining screws are not secured or a new hole is drilled for the cable and not sealed. Do not seal drain holes.



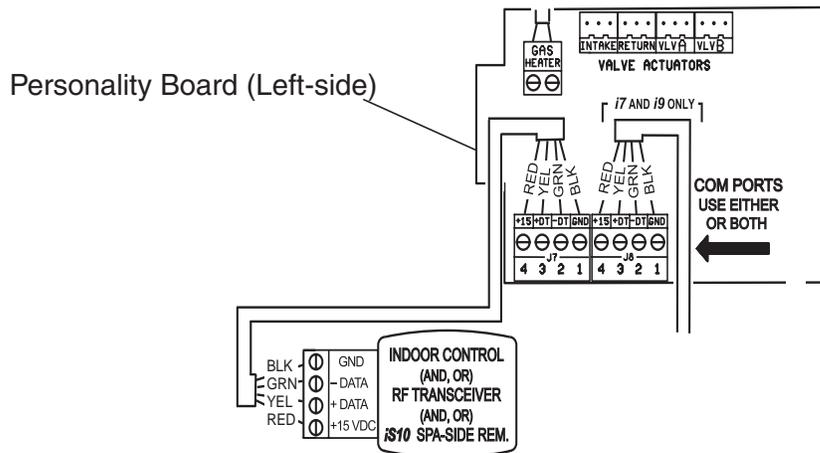
Transceiver Module

## Connecting the Transceiver to the Personality Board

To connect the Transceiver Module cable:

1. **⚠ CAUTION - Switch the main power off at the Load Center or Power Center.**
2. At the Load Center or Power Center, route the Transceiver module cable up through the low voltage raceway to the Personality board. To access the Personality board, refer to Installing the Outdoor Control Panel, page 16.
3. Strip back the cable conductors ¼ inch. Insert the wires into the screw terminals (provided in the Personality Kit). Secure the wires with the screws. Make sure to match the color-coding of the wires: GND = Black, Green = -DT, Yellow = +DT, and Red = +15
4. Insert the screw terminal connector onto either of the **COM PORTS (J7 and J8)** connectors located on the left side of the Personality board. For wiring details, refer to the Wiring Diagrams for models i5, i7+3, and i9+3, page 32 and 33.

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



## Using the MobileTouch Wireless Controller

Do not leave the MobileTouch wireless controller in direct sunlight for extended periods of time. If the control panel LCD screen darkens, place it in the shade for five minutes or until the screen returns to normal before using. Do not adjust the contrast, the screen will become too light to see when it cools down to its normal operating temperature.

**⚠ WARNING** Do not plug in the AC adapter into an AC wall outlet power source within five (5) feet of the pool and spa. Canadian installations require a minimum of three meters from pool water. Do not recharge outdoors.

**⚠ CAUTION** The hand-held LCD control panel is NOT intended to be submersible. Remove unit immediately if dropped in water.

## Charging the MobileTouch Wireless Controller

To charge the unit:

- Plug the AC adapter (provided with the Personality Kit) into an AC wall power outlet. Insert the AC adapter plug into the power jack of the unit.

**⚠ CAUTION - Only use Pentair approved AC adapter.**

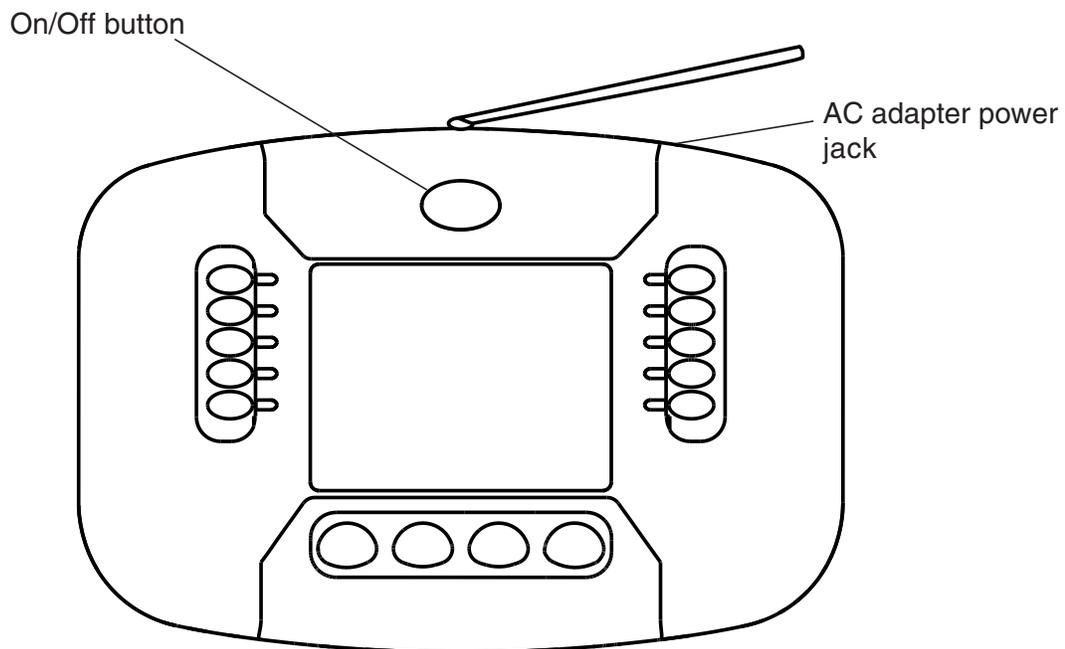
**Note:** *A full day's usage requires a complete battery charge (4-5 hours). With a charge time of 10-15 minutes on a dead battery, usage may last up to an hour. The unit can be used without the AC adapter power plug connected, for approximately 1 hour and 40 minutes.*

## Using the MobileTouch Wireless Controller

The range of the MobileTouch wireless controller can be up to 300 feet. The unit can be used all day at full power with a complete battery charge (4-5 hours). For more information about using the MobileTouch wireless controller, refer to the IntelliTouch Systems User's Guide (P/N 520102).

To use the MobileTouch wireless controller:

- Press the button at the top of unit to switch the unit on. You can operate the unit with or without the AC adapter power plug connected.



MobileTouch Wireless Controller

## System Start-Up

The following information describes basic start-up procedures. For more detailed troubleshooting information, refer to the *IntelliTouch Systems User's Guide (P/N 520102)*. Before you power up the Power/Load Center check the following:

### Check Electronics

Check that the following plugs are seated correctly on the Personality board:

- Relay connectors - **FLTR PUMP - AUX1 - AUX10**
- Temperature sensors connectors **WATER, SOLAR, AIR**
- Transformer wire harness **J2** attached to the Personality board.
- Heater control connector **ELEC HTR** or two-wire screw terminal.

Refer to Summary Installation Steps (page 8) and Power/Load System Wiring Diagrams, page 25 and 26.

### System Test

The following describes how to test the 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 Power/Load Center.

#### Testing Valve Actuators and Pumps

Use the following steps to test the valve actuators (CVA24T) for proper rotation. For Outdoor Control Panel System i5, i7+3, i9+3 (shared equipment).

To test the valve actuators and pump:

1. Power up the Power/Load Center.
2. Press the **SYSTEM CONTROL** button on the Outdoor Control Panel until the **SERVICE** light is on. .
3. Press the **V (Valve)** button to select **POOL**.
4. Press the **F (Filter Pump)** button to activate the filter pump. Water will be removed from the pool and returned to the pool.
5. 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 reverse the **RETURN** with **VLV A** (or **VLV B**) plugs on the Personality board.

### Testing the auxiliary relays

Affix the auxiliary relay labels to the appropriate buttons on the Outdoor Control Panel. If necessary, write the function on the control panel.

- Toggle the filter pump, each auxiliary circuit, heater and solar and verify the function. Press the **SYSTEM CONTROL** button to set the system in “**AUTO**” mode when done.

## Affixing the System Wiring Diagram Label

To affix the wiring diagram label on the enclosure inside front door:

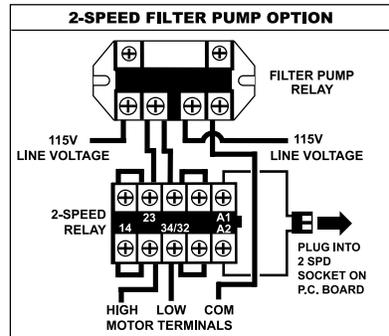
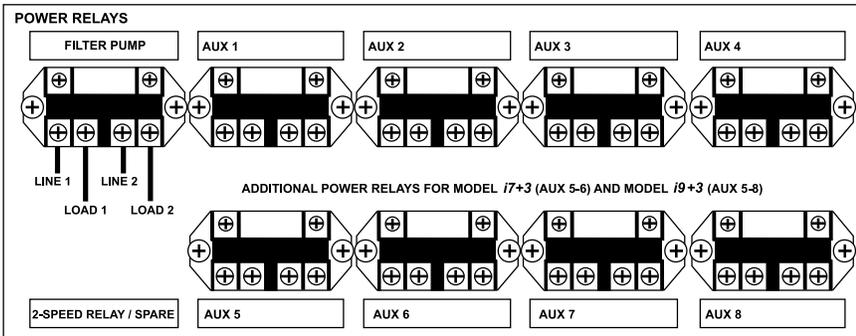
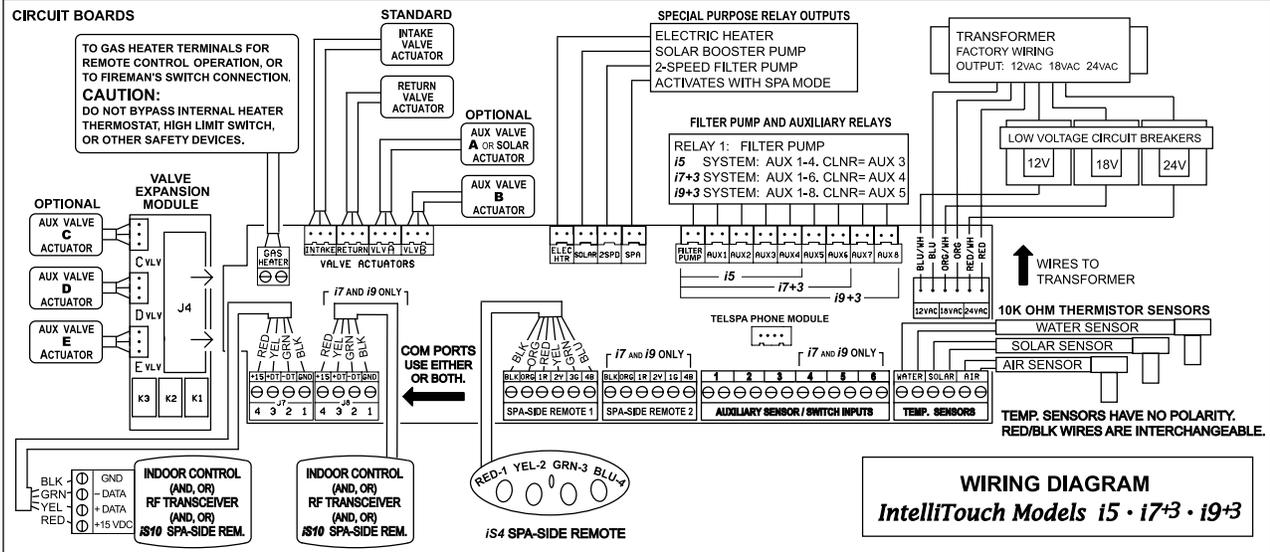
1. Open the enclosure front door.
2. Peel the backing off the wiring diagram label.
3. Position the label in middle of the inside of the front door. Apply even pressure on the surface of the label to secure in place.



**WARNING**

**PREVENT ELECTROCUTION**  
INSTALL AT LEAST 5 FEET FROM INSIDE WALL OF SPA OR POOL

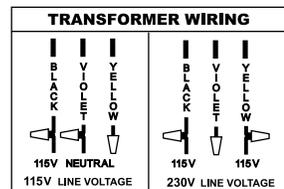
**DISCONNECT ALL CONNECTIONS BEFORE SERVICING THIS UNIT. THIS APPLIANCE HAS UP TO 11 SUPPLY CONNECTIONS.**



**RAINFOOF (TYPE 3R) CONTROL PANEL. FOR INDOOR OR OUTDOOR USE.**  
SUITABLE FOR SWIMMING POOL/SPA APPLICATIONS  
120V 125 AMP OR 240V 63 AMP MAX. SINGLE PHASE.  
60 - 75°C. MIN. INSULATION  
SHORT CIRCUIT RATING: 5000 SYMMETRICAL AMPERES.  
TRANSFORMER INPUT: 120V., 2A., 50/60Hz;  
240V., 2 WIRES, 1A., 50/60Hz.

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	

**PREVENT WATER DAMAGE**  
**KEEP DOOR CLOSED**



**CAUTION: RISK OF ELECTRIC SHOCK, READ INSTALLATION MANUAL.**  
**IMPORTANT:** This control panel must be installed according to the National Electrical Code (including article 680) and local code requirements. Mount with conduit hole down. The main lugs and neutral main are suitable for No. 14 to 6 AWG COPPER or ALUMINUM conductors for branch circuit wiring. Install interchangeable circuit breakers designed to fit this control panel interior, see list of suitable types below. Follow manufacturers instructions for installing and testing of ground fault circuit breakers (GFCB) and interrupters (GFCI). Additional approved wiring devices may be installed in the rectangular side knockout or inside the enclosure, provided the wiring devices have lead connections. Otherwise, the device with uninsulated terminals must be covered by internally installed metallic or nonmetallic wall box. When using side knockout, an approved rainproof cover must be installed over the wiring device if used outdoors. Make sure connections to low voltage compartment are sound and properly insulated. After wiring, install front panel over wiring compartment and close unused breaker openings with filler plates.



Sanford NC • Moorpark CA



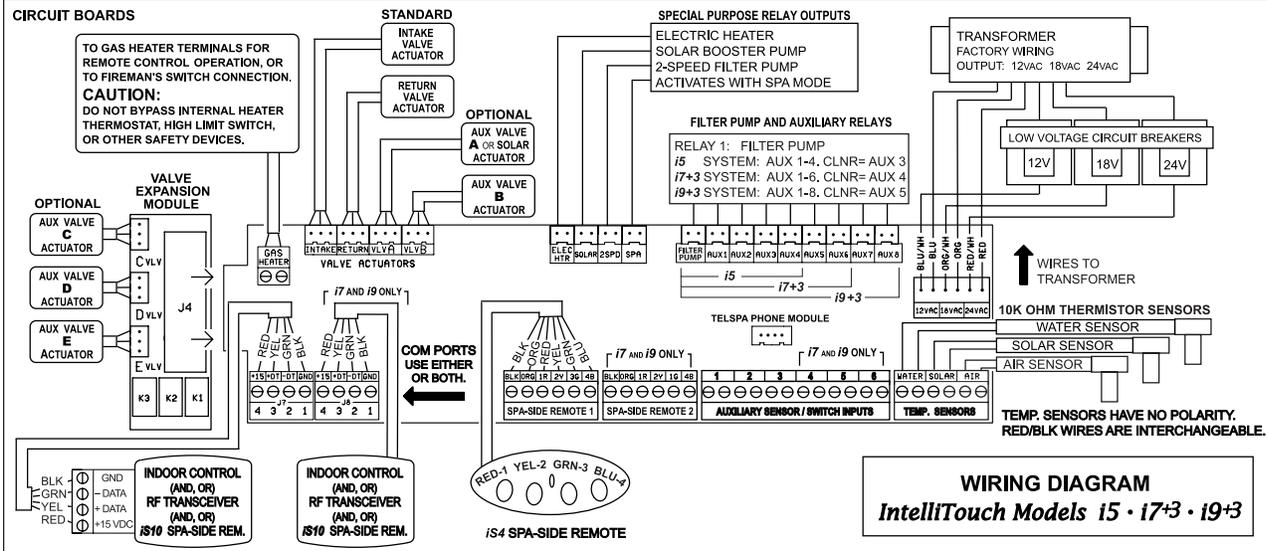
Customer Service 800-831-7133

**System Wiring Diagram (Power Center)**

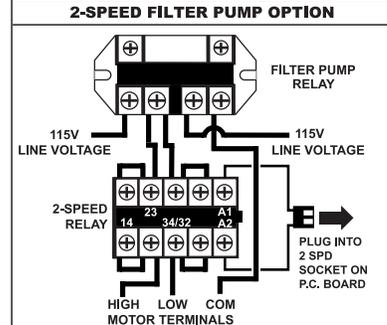
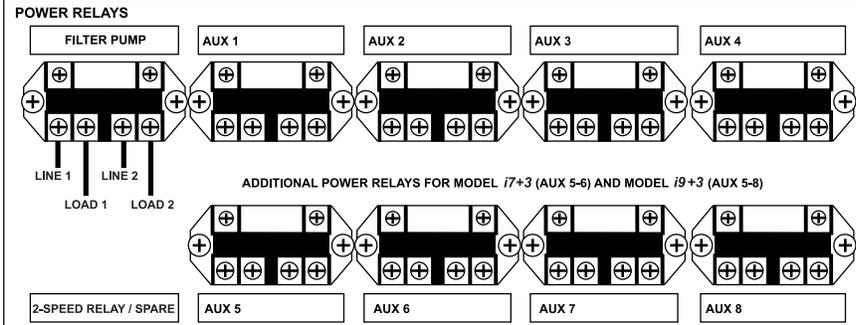
LABEL P/N 520451 REV. A



**WARNING PREVENT ELECTROCUTION** DISCONNECT ALL CONNECTIONS BEFORE SERVICING THIS UNIT. THIS APPLIANCE HAS UP TO 11 SUPPLY CONNECTIONS.  
 INSTALL AT LEAST 5 FEET FROM INSIDE WALL OF SPA OR POOL



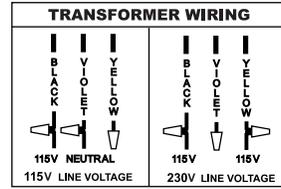
**WIRING DIAGRAM**  
*IntelliTouch Models i5 • i7+3 • i9+3*



RAINPROOF (TYPE 3R) CONTROL PANEL, FOR INDOOR OR OUTDOOR USE.  
 SUITABLE FOR SWIMMING POOL/SPA APPLICATIONS  
 120V 125 AMP OR 240V 63 AMP MAX. SINGLE PHASE.  
 60 - 75°C, MIN. INSULATION  
 SHORT CIRCUIT RATING: 5000 SYMMETRICAL AMPERES.  
 TRANSFORMER INPUT: 120V., 2A., 50/60Hz;  
 240V., 2 WIRES, 1A., 50/60Hz.

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	

**PREVENT WATER DAMAGE**  
**KEEP DOOR CLOSED**



**CAUTION: RISK OF ELECTRIC SHOCK, READ INSTALLATION MANUAL.**  
**IMPORTANT:** This control panel must be installed according to the National Electrical Code (including article 680) and local code requirements. Mount with conduit hole down. The main lugs and neutral main are suitable for No. 14 to 2 AWG conductors. Use No. 14 to 6 AWG COPPER or ALUMINUM conductors for branch circuit wiring. Install interchangeable circuit breakers designed to fit this control panel interior, see list of suitable types below. Follow manufacturers instructions for installing and testing of ground fault circuit breakers (GFCB) and interrupters (GFCI). Additional approved wiring devices may be installed in the rectangular side knockout or inside the enclosure, provided the wiring devices have lead connections. Otherwise, the device with uninsulated terminals must be covered by internally installed metallic or nonmetallic wall box. When using side knockout, an approved rainproof cover must be installed over the wiring device if used outdoors. Make sure connections to low voltage compartment are sound and properly insulated. After wiring, install front panel over wiring compartment and close unused breaker openings with filler plates.



SUITABLE CIRCUIT BREAKERS	
SIEMENS	TYPE Q
THOMAS & BETTS	TBXXXC
CUTLER HAMMER	CLXXX

Sanford NC • Moorpark CA



Customer Service 800-831-7133

**System Wiring Diagram (Load Center)**

## Glossary

**Expansion Kit:** A kit that includes additional auxiliaries to an existing Personality Kit. Requires a Load Center for each Expansion Kit.

**Feature Circuits:** Programmable circuits that may control relays and/or valve actuators. For details, see the IntelliTouch Systems User's Guide (P/N 520102)

**High Voltage Compartment:** Large lower right compartment of Load Center for all high voltage wiring including circuit breakers, relays, and GFCI.

**Indoor Control Panel:** This 14 button remote controller with LCD (liquid crystal display) is wired to the Personality board in the Power/Load Center. The control panel can be wall mounted inside a house to control IntelliTouch Systems.

**iS4:** Four function Spa-Side remote. Can be spa wall or deck mounted.

**iS10:** Up to ten function spa-side remote with temperature changing capability. Can be spa wall or deck mounted.

**Load Center:** Metal enclosure with power relays, transformer, and circuit breakers. The Load Center is installed prior to Personality Kit installation. Used for distributing power for controlling IntelliTouch Systems. Also known as the "sub-panel."

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

**Low Voltage Raceway:** Vertical space in the left side of Power/Load Center for low voltage cabling.

**MobileTouch Controller:** Wireless controller for the IntelliTouch Systems with all the functionality of the Indoor Control Panel.

**Mud Box:** Enclosure to provide mounting features for iS10 spa-side remote that is cast into gunite, concrete, or other spa wall/deck construction.

**Outdoor Control Panel:** Control panel with flexible hinge installed in upper portion of Power/Load Center to control IntelliTouch systems.

**Personality Board:** The circuit board mounted on top of the Outdoor Control Panel motherboard. The Personality board defines the system capabilities.

**Personality Kit:** Set of parts to define the capability of a system; may include: Outdoor Control Panel, temperature sensors, actuators, control panel (Indoor or MobileTouch), additional relays, actuators.

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

**Relay Circuits:** The circuits that control the relays on the Personality Board. Connectors on top edge of the circuit board.

**Screw Terminal Connector:** Removable connector that may attach to circuit board with multiple sockets (anywhere from 2 to 12) to receive wires from controllers and sensors; wires held by screw terminals; multiple wires of a small enough gauge (usually 22 AWG) may be coupled to a single socket of a terminal connector.

**Transceiver:** Circuit board with attached antenna that can send and receive radio frequency (wireless) transmissions. Used with the MobileTouch wireless controller.

# Notes

## Notes



