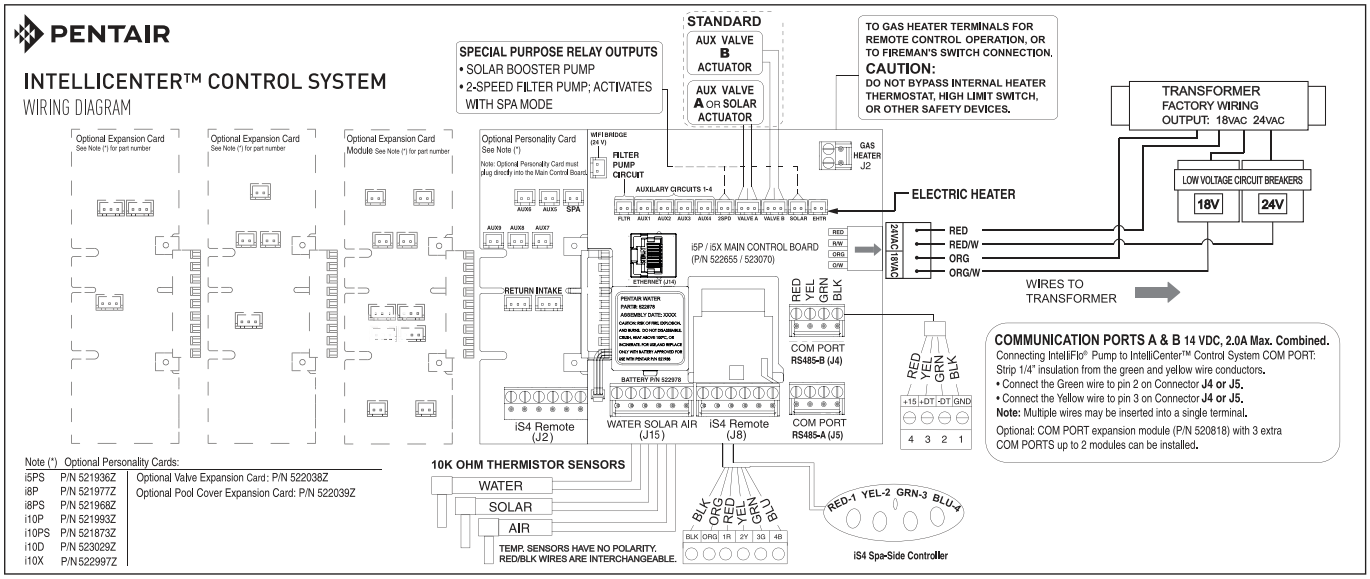
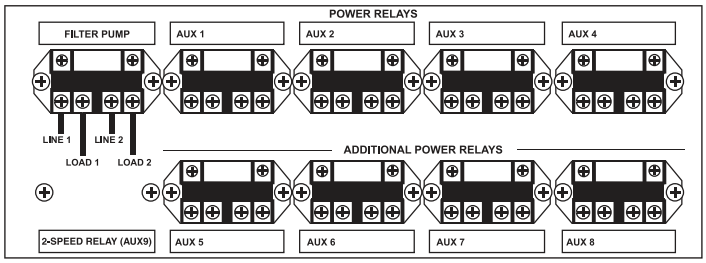
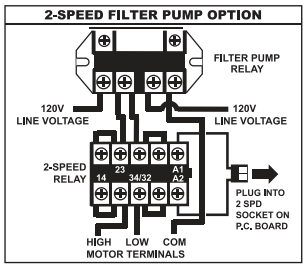
Power Center Wiring Diagram





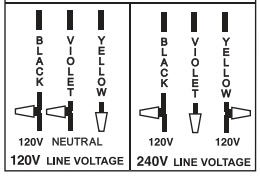


RELAY CONTACT OUTPUT	
General: 25A, 277VAC	
PUMP	LIGHT
1.5 HP 120 VAC	1.5 KW 120 VAC TUNGSTEN
3 HP 277 VAC	4,8 KW 240 VAC TUNGSTEN
20 FLA/120 LRA, 120 VAC	20A, 277 VAC BALLAST
17 FLA/102 LRA, 277 VAC	

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.

CONTROL TRANSFORMER WIRING



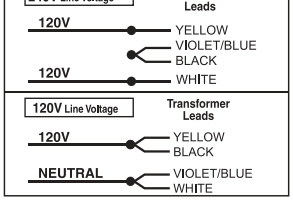
TYPE 3R "Rainproof" (IPX3). Enclosure suitable for INDOOR or OUTDOOR USE.
Control Panel suitable for SWIMMING POOL/SPA applications.
Electrical Rating: 120/240VAC 150 AMP Single Phase (3 Wire).
The input line to this control panel should be protected by a 240VAC circuit breaker rated at NO MORE than 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

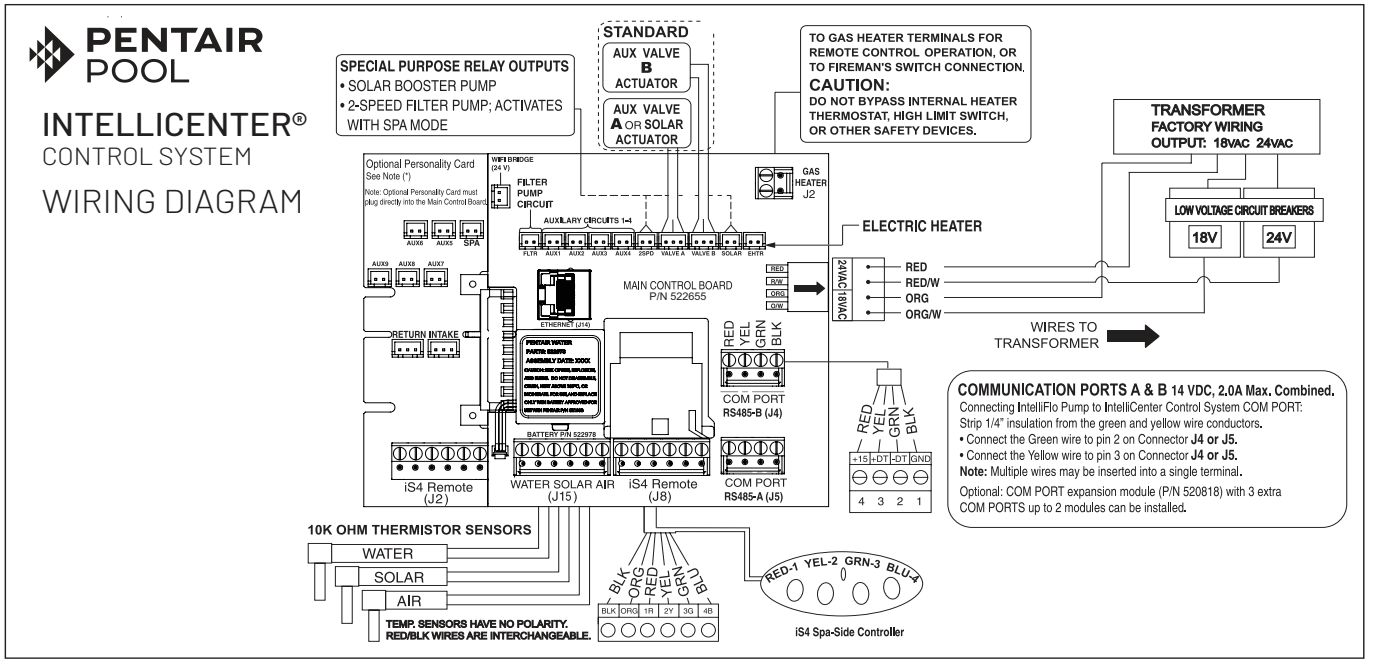
TRANSFORMER INPUT:
120VAC@2.5A, 50/60 Hz - 240VAC@1.3A, 50/60 Hz
WIRING CONFIGURATION FACTORY SET FOR 240V.

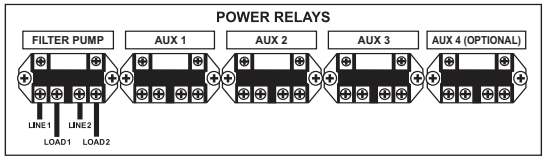
WARNING! DISCONNECT LOAD CENTER BEFORE SERVICING SCG TRANSFORMER. Connect this chlorinator transformer to the FILTER PUMP RELAY ONLY. The chlorinator should only be powered when the Filter Pump is ON.

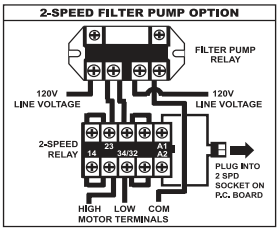
SCG TRANSFORMER WIRING



Power Center Wiring Diagram (P/Ns 523910 and 523911)







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	

SCG TRANSFORMER WIRING

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.

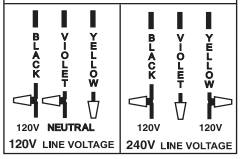
240V Line Voltage

120V — YELLOW
VIOLET/BLUE
120V — BLACK
WHITE

120V Line Voltage

120V — YELLOW
BLACK
NEUTRAL — VIOLET/BLUE
WHITE

CONTROL TRANSFORMER WIRING



ELECTRICAL RATING: 120/240VAC, 150 AMP, Single Phase.
CONTROL TRANSFORMER INPUT: 120VAC, 2A; 240VAC, 1 A, 50/60Hz.
SCG TRANSFORMER INPUT (IF EQUIPPED): 120VAC, 2.5A; 240VAC, 1.3A, 50/60 Hz.
SHORT CIRCUIT CURRENT RATING: 5000 RMS SYMMETRICAL AMPERES.

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 vaving 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.

TYPE 3R "Rainproof" (IPX3) enclosure suitable for INDOOR or OUTDOOR USE. /

Enceinte TYPE 3R « Rainproof » (IPX3) adaptée à une utilisation INTÉRIEURE ou EXTÉRIEURE.

Control Panel suitable for SWIMMING POOL/SPA applications.

The input line to this control panel should be protected by a 240VAC circuit breaker rated at NO MORE than 150 Amperes maximum.

Use COPPER CONDUCTORS ONLY. Use 14 AWG to 6 AWG, 60°/75°C copper conductors for all field wiring.

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

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.

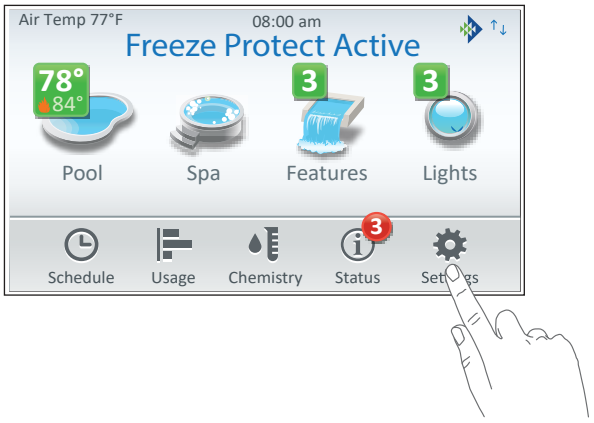
Setup Wizard Overview

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.

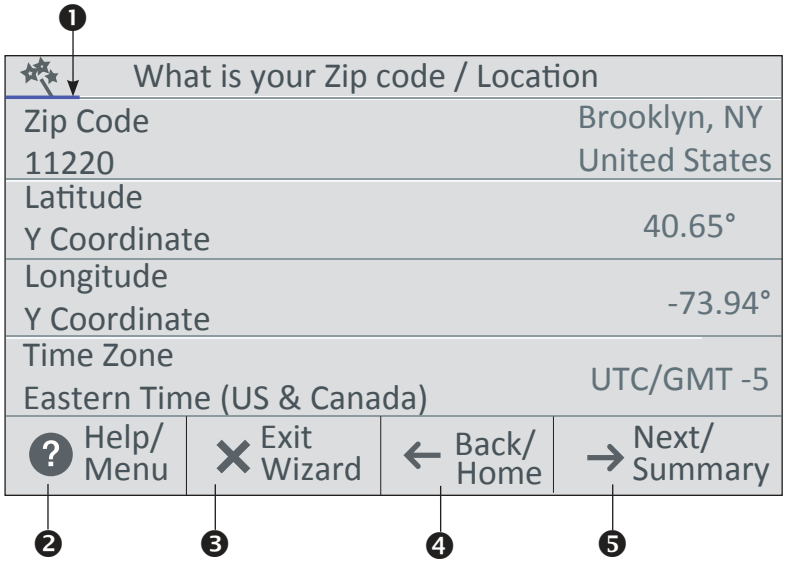
While in the Setup Wizard, if a power outage occurs or the screen times out, the system will revert to the Home Screen. Any changes made in the Wizard before power loss will be saved.

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



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

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

❸ **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.

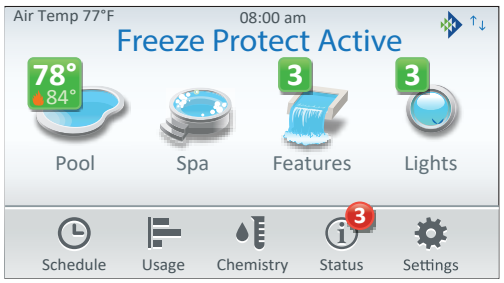
❹ **BACK/HOME:** Return to the previous screen.

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

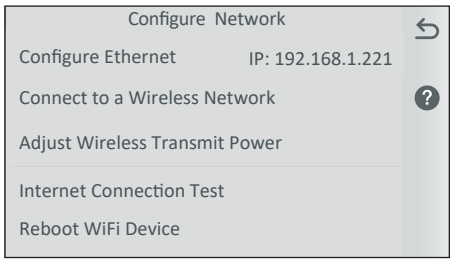
Number of Configured Devices: *Displayed on the first of each Wizard option screen are the number of devices that have been configured. As you progress the message corresponds to how many options have been updated.*

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



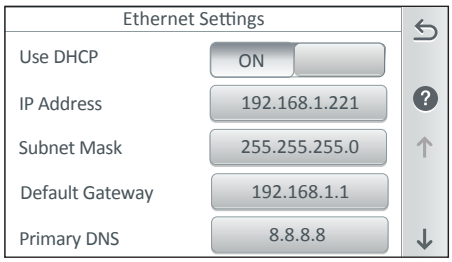
Configure Ethernet: Used to configure a 900 MHz Wireless Link Kit or direct Ethernet connection. Refer to *Configure Ethernet* below.

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



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

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.

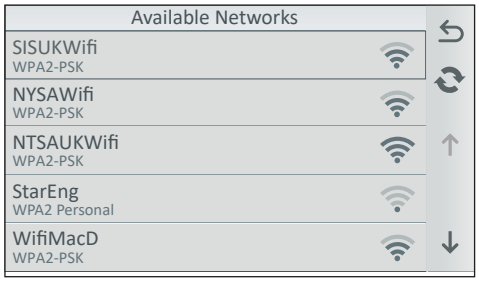
Primary DNS: Server should be provided by the Internet Service Provider.

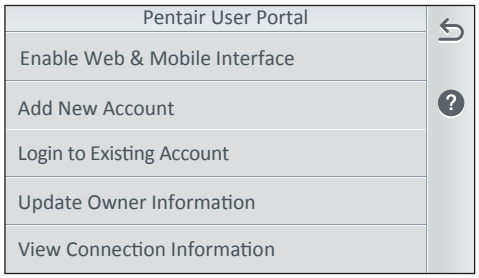
Secondary DNS: A primary DNS server should be configured for a zone, but you may have multiple secondary servers. Both primary and secondary servers provide the same data.

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)
- **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

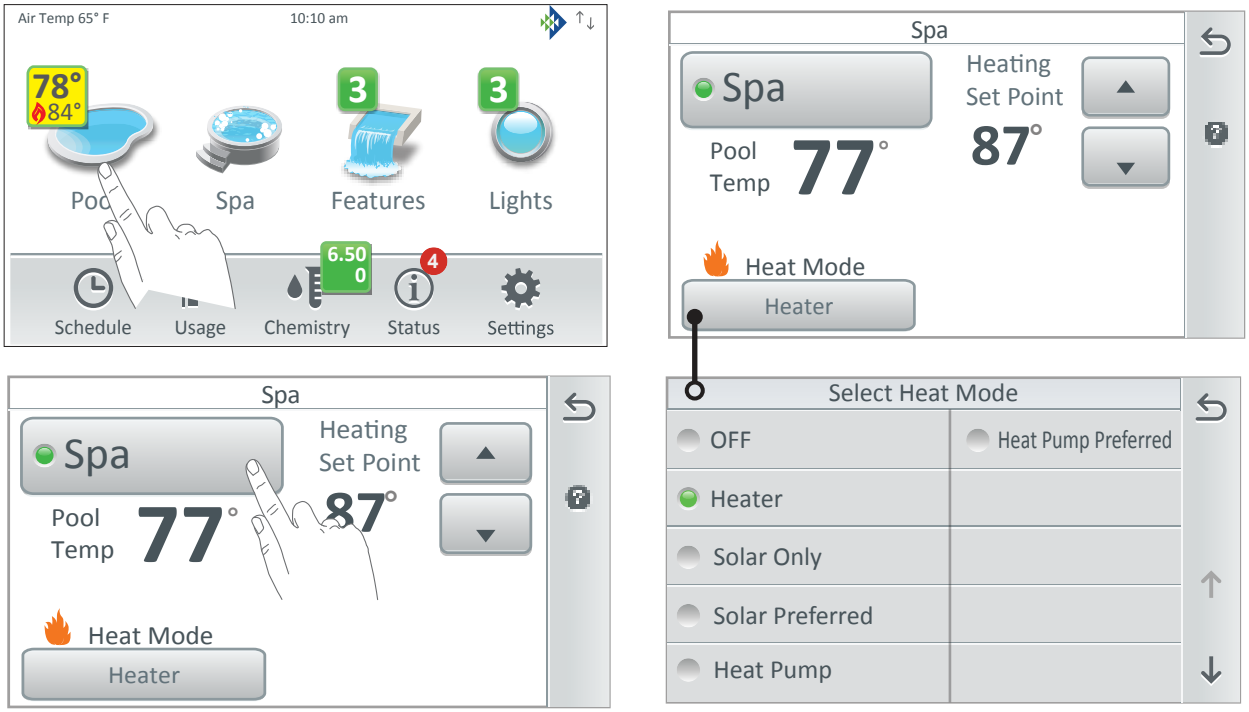
CONTROL SYSTEM TEST

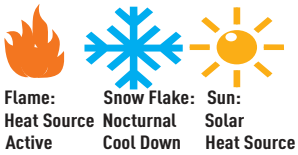
The following describes how to test the IntelliCenter Outdoor Control Panel to activate the heater, valves and pumps. This test assumes that all system equipment has been properly installed and connected to the IntelliCenter Load/Power Center.

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.





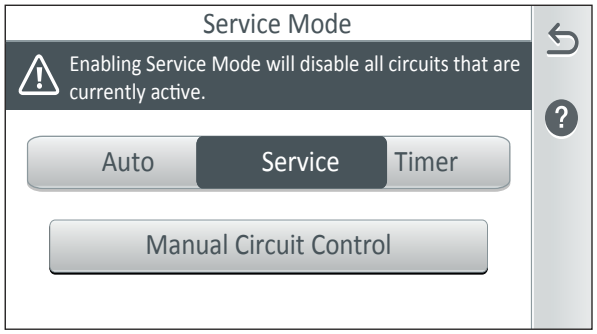
Flame icon: Displayed with the current heat set point temperature.

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)



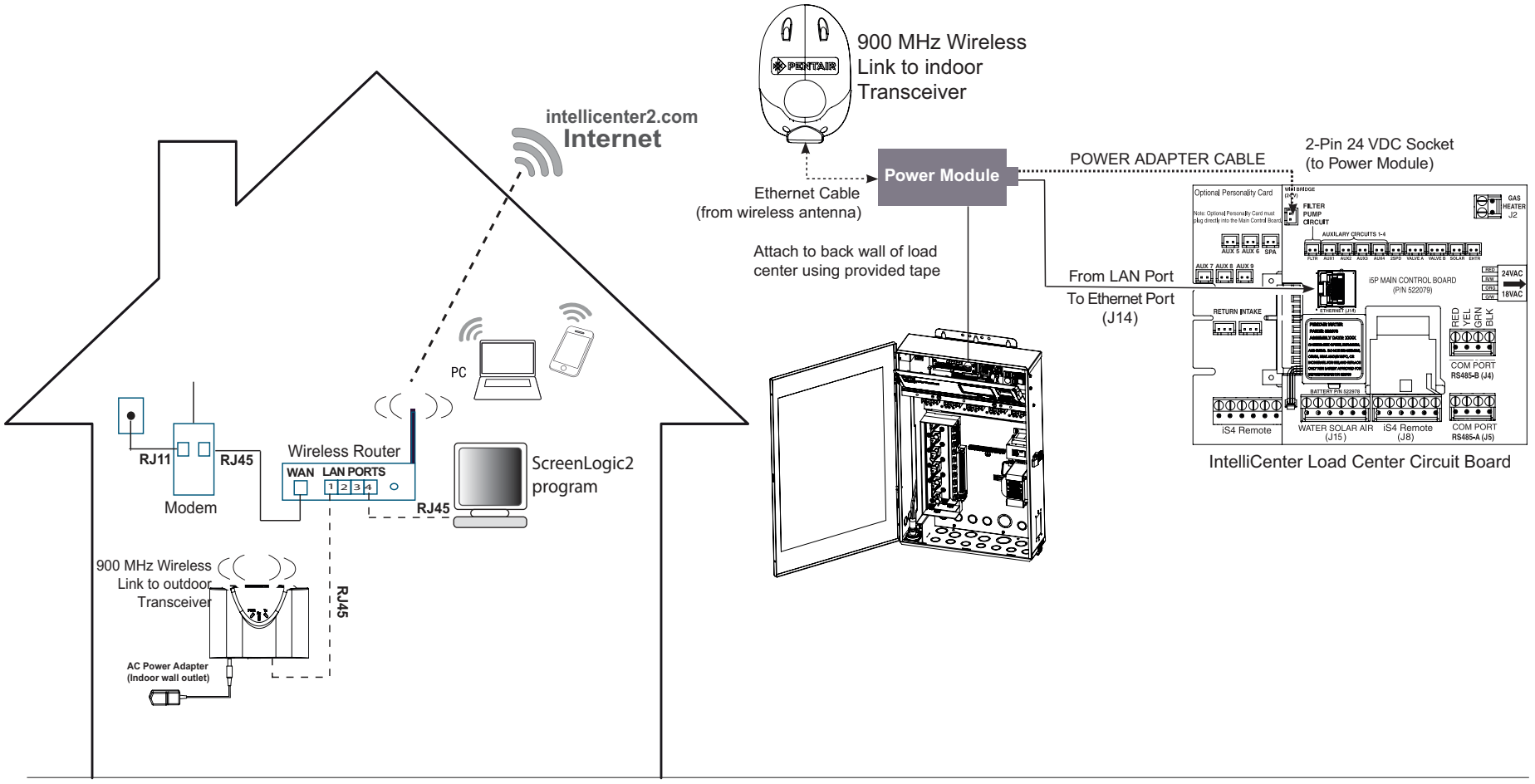
3. From the Home screen, tap **Settings > Service Mode > Service**.
4. Tap **Manual Circuit Control**. To test the equipment, tap the displayed circuits (pump, aux, solar, heater) to confirm proper operation. When the filter pump is on water will flow from the pool and returned into the pool. The Green 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).*



IntelliCenter Load Center Circuit Board

900 MHz Wireless Wiring Diagram

(for 900 MHz Wireless Installations Only)

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.



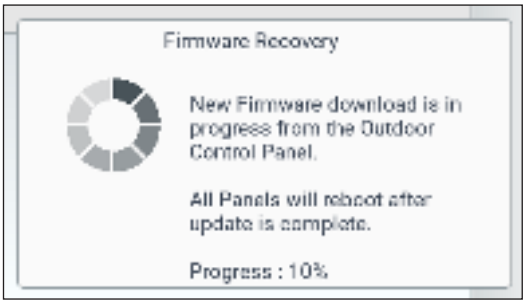
During the download process, the firmware download icon and completion percentage will display in the top right of screen. After the download process has been competed the following dialog boxes are displayed.

- **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*. 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.



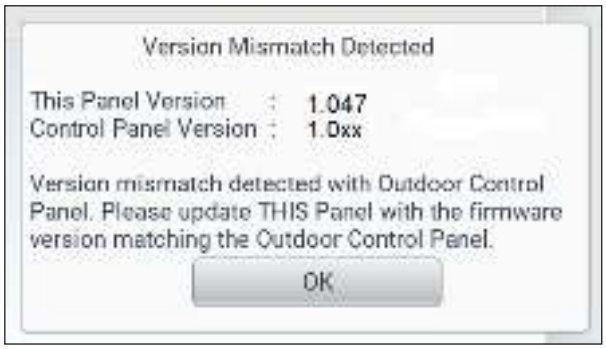
Panel Mismatch

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, 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

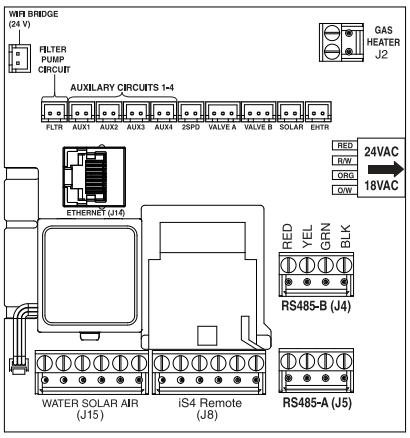
Personality Kits

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.

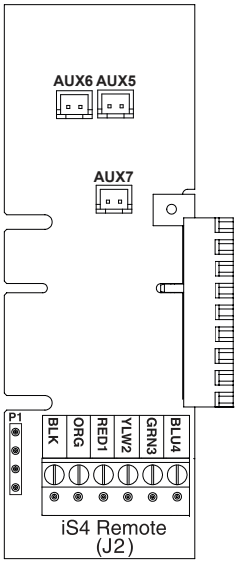
By adding Personality Kit, the system can be expanded to support additional auxiliary connections, additional bodies of water, or dual equipment filtratrion systems.

Single Equipment: Intended to control a single body of water

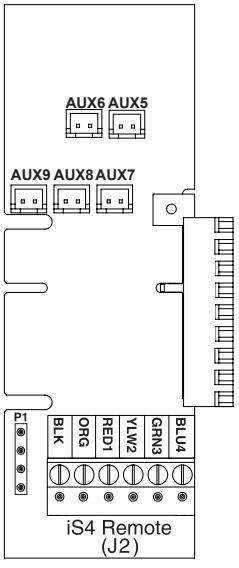
- **i5P (P/N 521909)** – Standard Option. Features four auxiliary circuits and one dedicated filter pump relay.
- **i8P (P/N 521910)** – Provides three additional auxiliary circuits (seven total).
- **i10P (P/N 521911)** – Provides five additional auxiliary circuits (nine total).



i5P (P/N 521909)



i8P (P/N 521910)

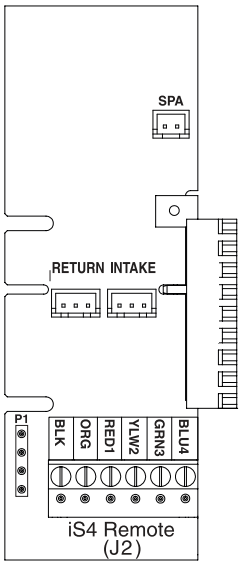


i10P (P/N 521911)

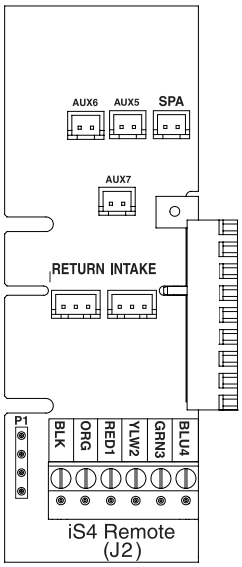
Personality Kits (continued)

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

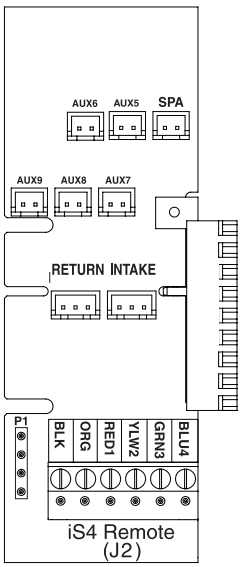
- **i5PS (P/N 521912)** – Allows for spa control when installed onto an i5P main board.
- **i8PS (P/N 521913)** – Provides three additional auxiliary circuits (seven total).
- **i10PS (P/N 521914)** – Provides five additional auxiliary circuits (nine total)



i5PS (P/N 521912)



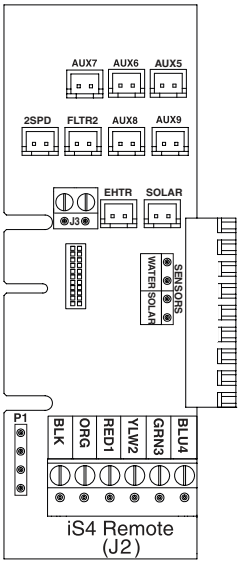
i8PS (P/N 521913)



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.

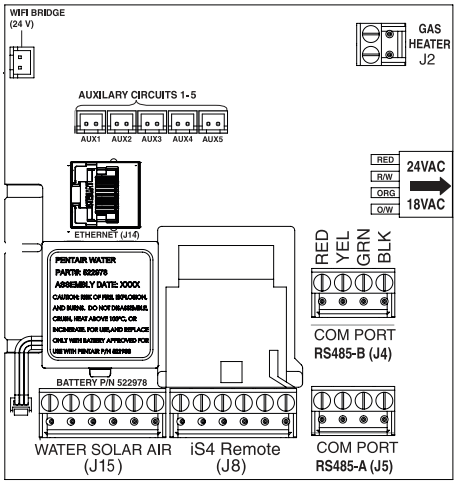
- **i10D (P/N 521915)** – Provides five additional auxiliary circuits and an additional filter pump relay.



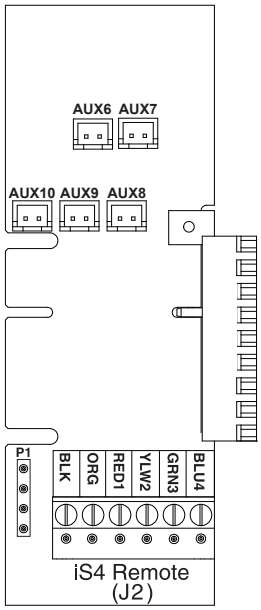
i10D (P/N 521915)

Expansion Kits

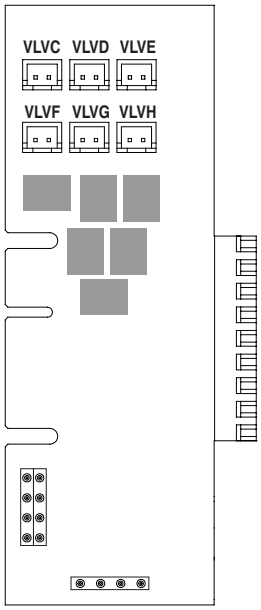
The i5X and i10X expansion kits provide five or ten additional Auxiliary Circuits.



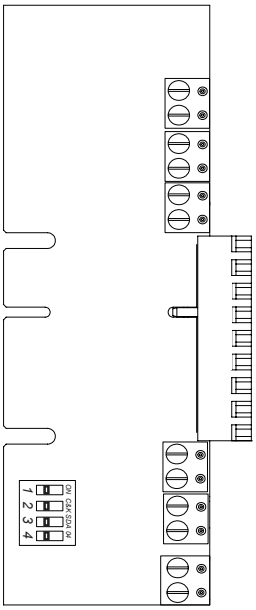
i5X Expansion (P/N 522080)



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

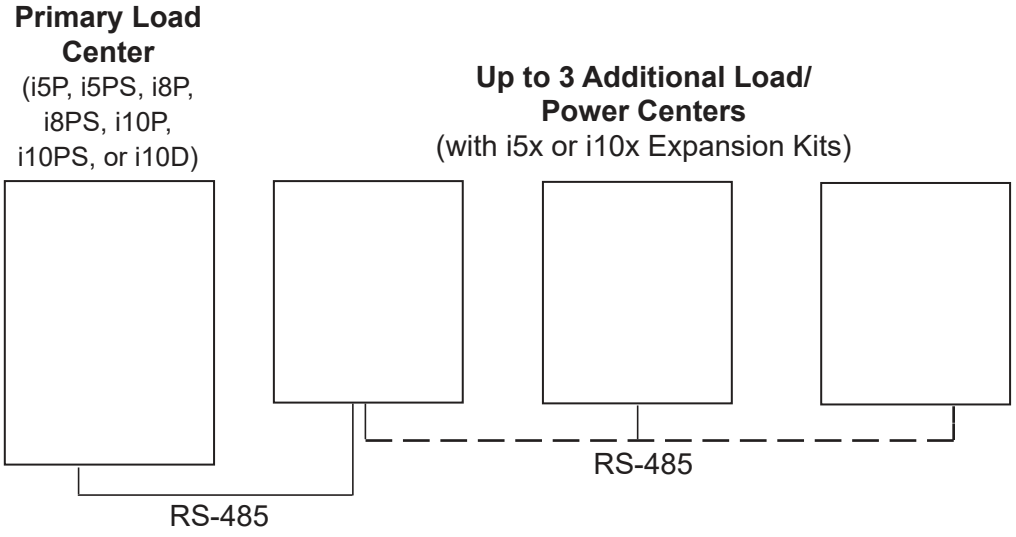


Valve Expansion
(P/N 522038z)



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**.



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

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_2 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_2 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_2 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_2 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

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

NOTES

PENTAIR POOL

1620 HAWKINS AVE., SANFORD, NC 27330 • (919) 566-8000
10951 WEST LOS ANGELES AVE., MOORPARK, CA 93021 • (805) 553-5000

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