PENTAIR

INTELLICENTER™

PLUG-N-PLAY
POOL/SPA CONTROL SYSTEM

INSTALLATION MANUAL

PENTAIRPOOL.COM.AU

TABLE OF CONTENTS

1. CONTROL SYSTEM OVERVIEW

Welcome! Your Pentair IntelliCenter™ 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. The historical usage data feature provides a convenient way to help you conserve energy. Using an iPhone®, iPad® mobile digital device or an Android® wireless device, you can now control your pool and spa from anywhere inside or outside your home. The IntelliCenter Control System is a scalable system that can be used with popular home automation systems.

This manual describes how to install the IntelliCenter Control System and associated equipment.

1.1 Features

- 4" x 3" capacitive touch sensitive colour touch screen with Day Time and Night Time colour screen modes.
- 100 programmable Schedules with independent timers.
- Circuit Groups and Macros: Assign groups of lighting and AUX circuits to be controlled by a single button.
- Variable speed pump support for up to 16 IntelliFlo® Pumps or up to 2 EnviroMax Pumps.
- Optional Spa Command or iS4 Spa Side Remotes.
- Up to 4 actuator valves: Intake/Return plus A and B assignable to circuits. Expandable up to 10 valves with expansion card.
- Optional indoor control panel, or wireless hand-held remote.
- Optional IntelliChem® chemistry controller for automatic pH and ORP control of pool chemistry.
- Optional IntelliChlor® salt chlorine generator with built in salt level sensor.
- 8 included relay circuits, expandable up to 40 auxiliary circuits with expansion enclosures.
- Spa one touch 'Manual Heat' function to automatically turn valves and begin heating for spa on-demand use.
- Heat pump, gas heater and solar heating support.
- Built in real time clock and optional internet time sync.
- Assignable Circuit Names and Custom Circuit Names.
- Optional passcode protection and different user access profiles.
- USB port for use with a standard flash drive. Save the system's configuration and upgrade the system's firmware.

1.2 What's Included

- Intellicenter outdoor control system.
- Built in colour LCD touchscreen.
- 9 Panel mount electrical outlets.
- 2 Temperature Sensors.
- 1x Water sensor clamp.
- Installation manual.
- 4x Mounting screws.
- 4x Wall plugs.
- Hole marking guide.
- Neutral wire link.

1.3 Optional Extras

- Valve expansion card - Adds an additional 6x valve actuator outputs.
- Pool cover input card - Provides input from an automatic pool cover.
- IntelliValve - Digitally set actuator for automatic turning of valves.
- Standard valve actuator - For automatic turning of valves.
- Solar water temperature sensor - For controlling solar heating.
- Indoor wired colour touchscreen - For wall mounted in-house control panel.
- Wireless handheld colour tablet - For wireless control.
- is4 spa side remote - Wired spa-side mount control buttons.
- Spa Command spa side remote - Wires spa-side remote control with temperature display.

IntelliCenter Control System
Indoor Control Panel (P/N 522035)

IntelliCenter Control System
Wireless Control Panel (P/N 522036)

SpaCommand® Spa-Side
Controller (P/N 521176)

iS4 Spa-Side Remote
(521894, 521890,
521889)

IntelliChem®
(P/N 521357-AU)

IntelliChlor Plus
(P/N 523730,
523738, 523735,
523741)

Valve Actuator
(263045)

IntelliValve
(521485)

Pool Cover Card
(522039Z)

Valve Expansion Card
(522038Z)

Solar Temperature
Sensor (522101)

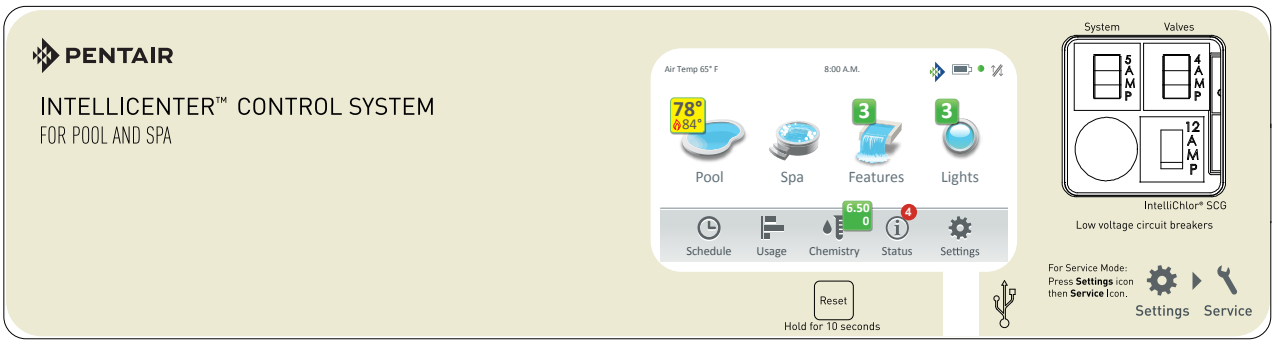


Figure 3: IntelliCenter Outdoor Control Panel

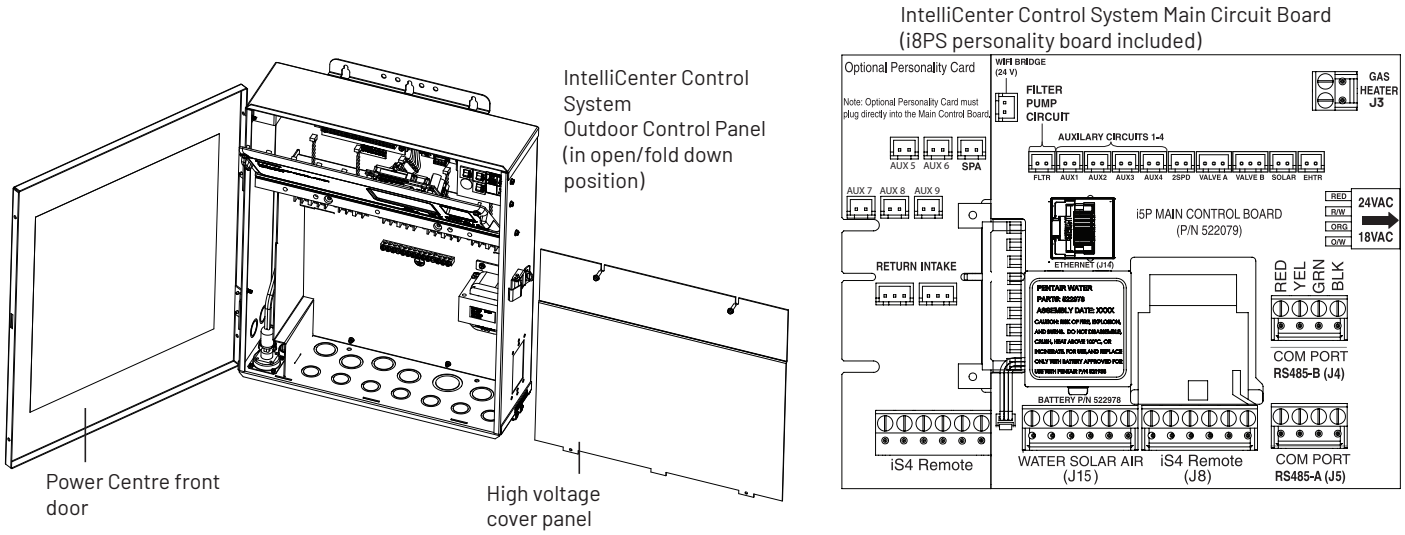


Figure 2: IntelliCenter power centre view with control panel down revealing main board.

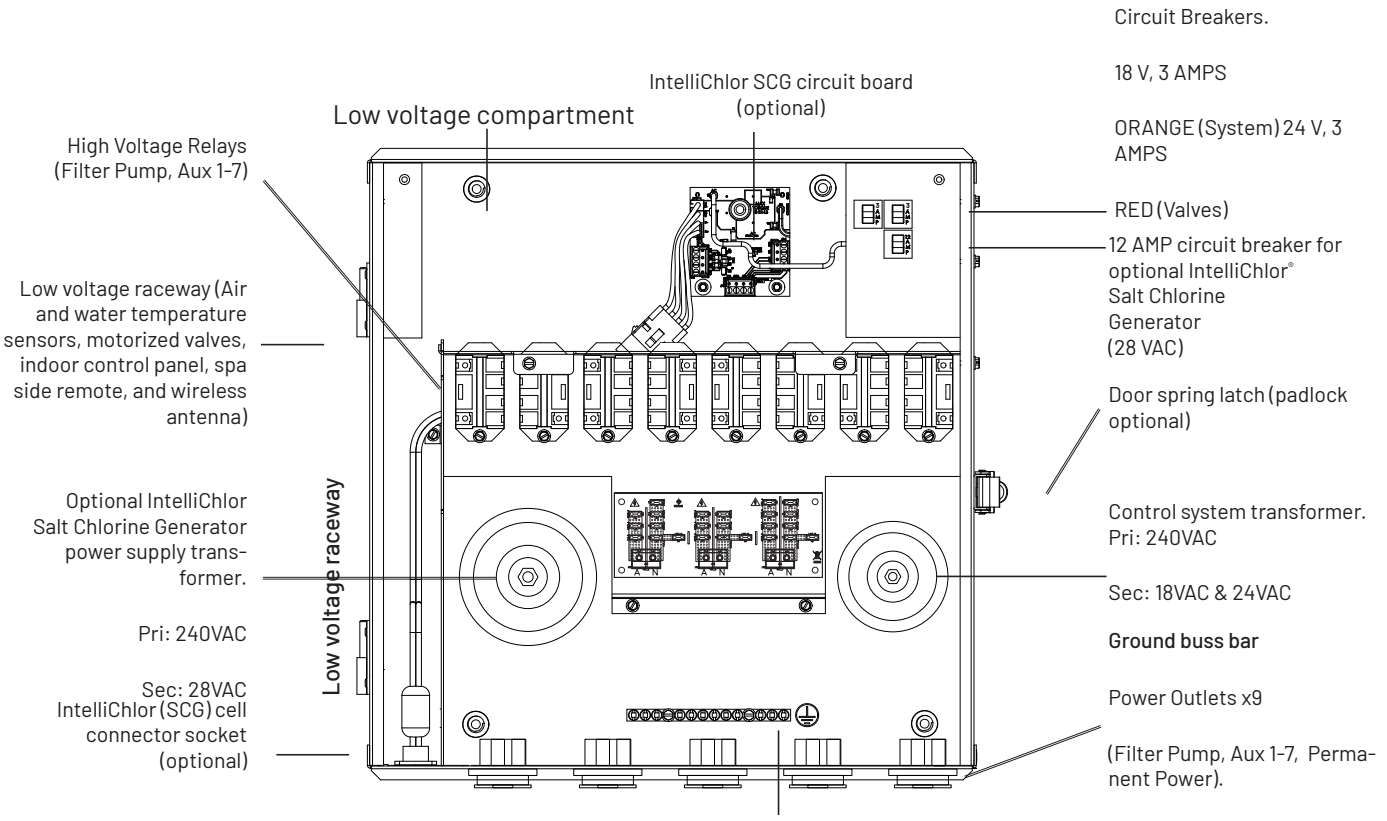


Figure 1: IntelliCenter power centre view with control panel, door and HV cover panel removed.

2. LOCATION AND MOUNTING

RISK OF ELECTRICAL SHOCK. BEFORE REMOVING THE HIGH VOLTAGE COVER PANEL FROM THE ENCLOSURE SWITCH OFF THE POWER FROM THE MAIN CIRCUIT BREAKER BOX OR SUBPANEL.

⚠ WARNING

2.1 Important Considerations

This manual describes how to install, configure and operate the IntelliCenter Control System. Please take time to read through this manual to familiarize yourself with the IntelliCenter Control System.

Please read the following guidelines carefully:

- The IntelliCenter Control System Power Centre must be installed at the equipment pad.
- Install the IntelliCenter no less than 3.5m from pool and/or spa. Additionally, the installation shall allow the user enough space to stand clear of the filter and pump during system start-up.
- AC power for the IntelliCenter must be provided from the main circuit breaker panel located at the house or a sub-panel.
- All electrical equipment, except for spa-side remote switches, must be installed no less than 3.5m from pool and/or spa, unless otherwise permitted by appliance IP rating and comply with all national, state, and local codes (AS/NZS 3000).
- The IntelliCenter has an IPX4 enclosure and can be mounted outside or inside. For best protection and longevity it is recommended to locate the unit in a pool equipment plant room or other shelter.
- Before choosing the final location for the enclosure, consider the length of all of the conductors that will have be connected to the IntelliCenter. Make sure to consider cable lengths for the sensors, actuators, comms, etc. to the IntelliCenter location.
- Mount the Power Centre on a flat vertical surface so the conduit knockouts are located at the bottom of the enclosure. Upper and lower brackets are provided to mount the enclosure.
- DO NOT mount the enclosure horizontally. Water can enter the conduit knockouts and cause damage to the system and an electrical shock hazard. Install with conduit knockouts down.
- Install the Power Centre so that drainage is provided for all electrical components.
- All connected equipment should be certified for pool and spa applications and be compliant to the applicable Australian and New Zealand Standards.
- Allow at least 1.0m of unobstructed access to the front of the Power Centre for the owner or service personnel.
- The Power Centre provides grounding screw terminals for grounding all equipment. All equipment including the Power Centre enclosure must be bonded to earth ground.

2.2 Preparing the IntelliCenter for Installation

Before mounting the Power Centre, first remove the front door and the high voltage cover panel to access the enclosure conduit knockouts and low voltage raceway.

To remove the Centre or Power Centre high voltage cover panel:

1. Unpack the Power Centre from the shipping carton.
2. Unlatch the front door spring latch and open the front door.
3. Remove the two retaining screws from the High Voltage Cover Panel. Remove the panel from the enclosure.
4. Loosen the two retaining screws securing from the top edge of the Outdoor Control Panel. Fold down the Outdoor Control Panel to access the circuit board sockets connectors for the electrical connections.
5. For new installation, proceed with, mounting the Power Centre followed by making the electrical connections.
6. After electrical connections have be completed; close the Outdoor Control Panel and tighten the two retaining screws. Reinstall the High Voltage Panel: Insert the panel's three tabs into the lower slots on the enclosure. Secure the panel with the two (2) retaining screws. Close the front door and secure with the latch.

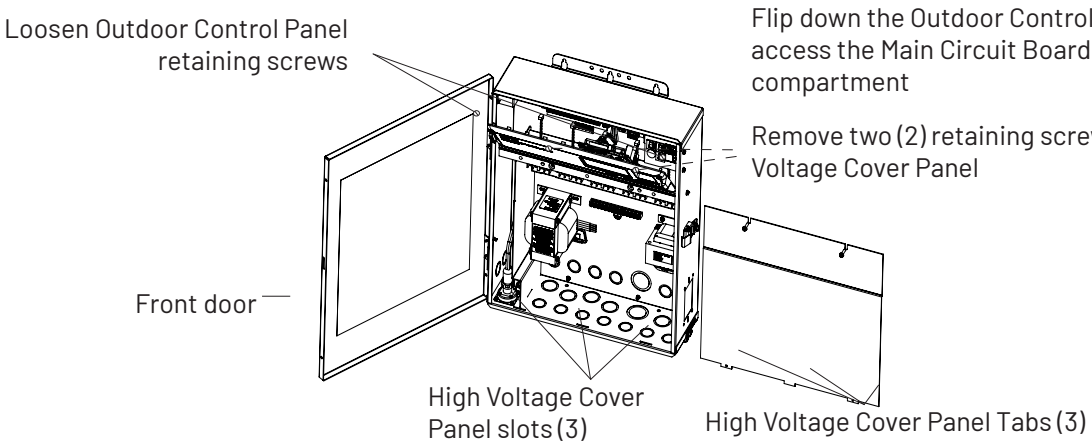


Figure 4: IntelliCenter power centre showing panels removed.

2.3 Mounting the IntelliCenter Power Center

Mount the IntelliCenter Control System Power Centre on a flat vertical surface, such as a wall or post at eye level, at least 3 m from the pool, spa or hot tub.

To mount the Power Centre:

1. Locate the enclosure against a vertical flat surface.
2. Identify the mounting holes in the IntelliCenter. These are located inside the unit. Remove the door, electrical cover panel and flip down the outdoor control panel.

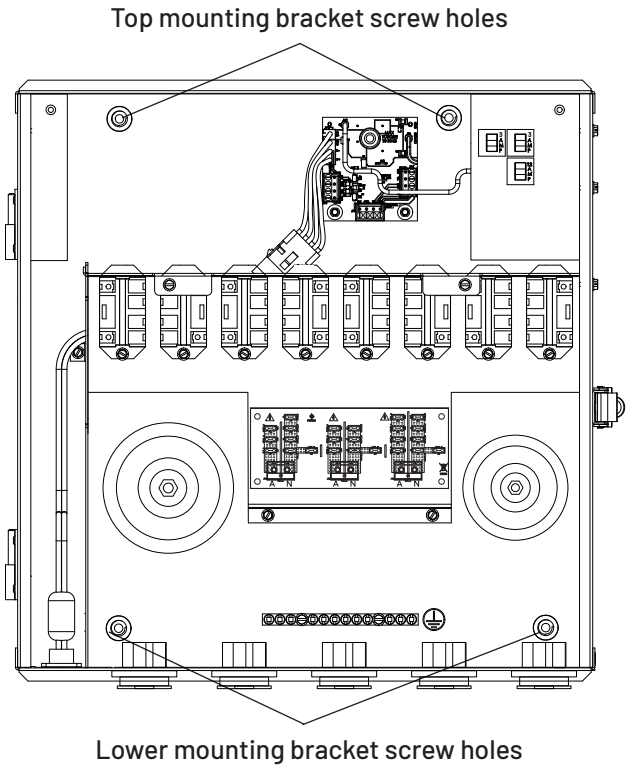


Figure 5: IntelliCenter power centre mounting holes.

LOCATION AND MOUNTING (Continued)

3. Use the supplied stencil to mark the location of the mounting holes on the wall. Alternatively, you can tape the stencil to the wall and drill through it.
4. Drill holes in the wall, at the marked locations, for the supplied wall plugs (6mm drill bit). Alternatively if using masonary anchors or alternative wall anchors, use a suitably sized drill bit.

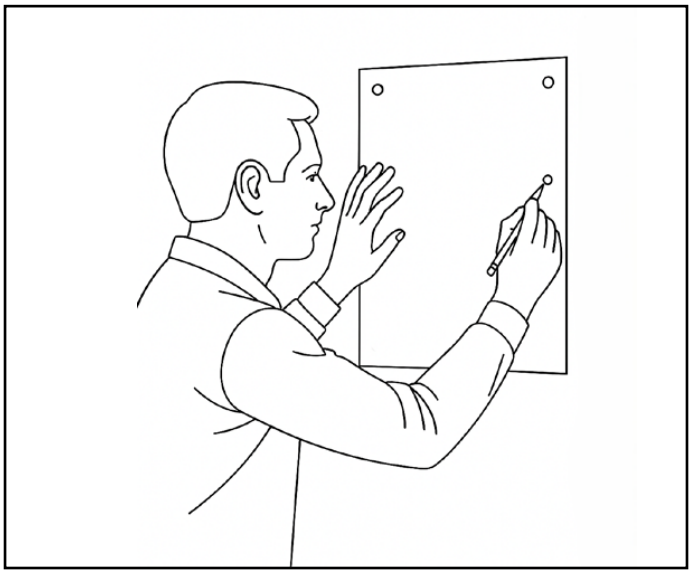


Figure 6: Marking mounting holes with pattern.

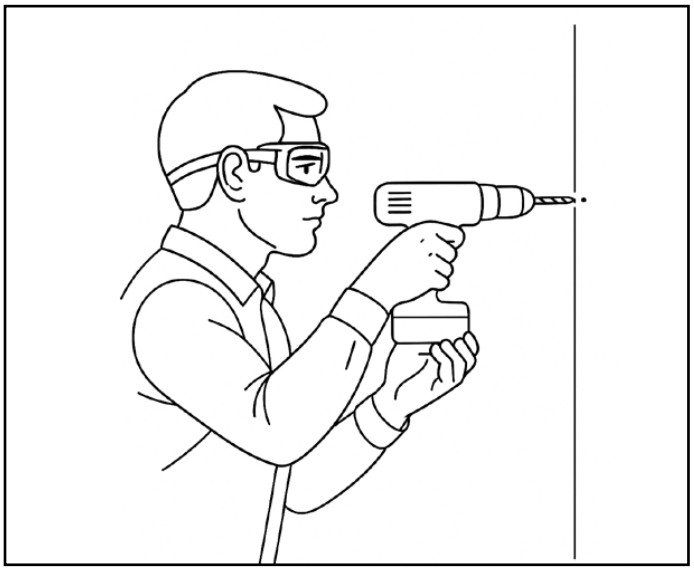


Figure 7: Drilling mounting holes.

5. Insert the wall plugs into the wall. They should be a tight fit. Use a small rubber mallet if necessary. The wall plug should sit flush with the wall.
6. Line the IntelliCenter cabinet up to the wall plugs and hold in place (assistance from a second person may be required). Insert screws through the IntelliCenter cabinet holes and into the wall plugs. Drive the screw in with a manual or electric phillips head driver.

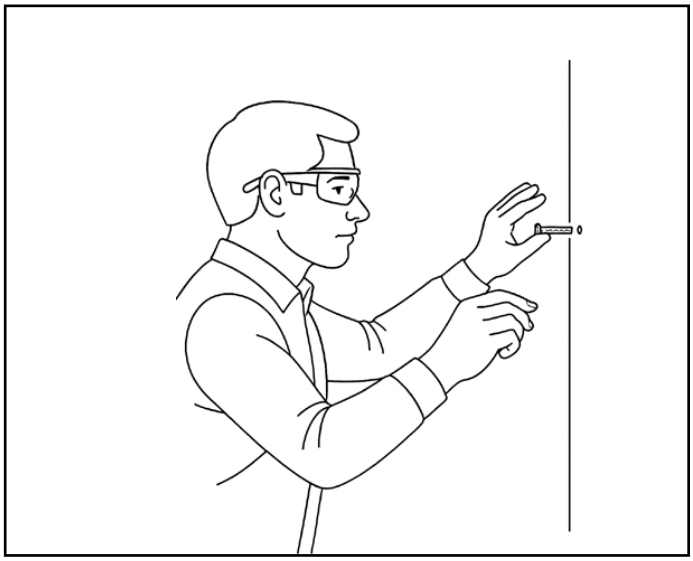


Figure 8: Inserting wall plugs.

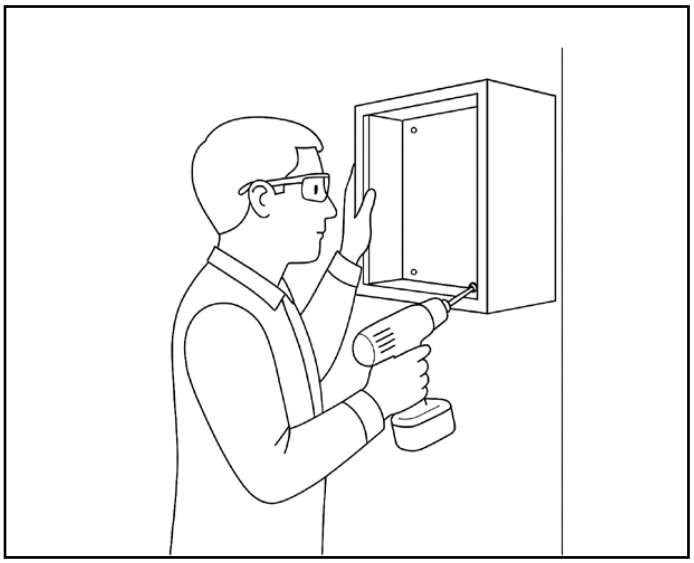


Figure 9: Mounting cabinet to wall.

3.1 General guidelines.

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

NOTE: All electrical installation, including electrical wiring methods and materials used to complete the electrical installation of the IntelliCenter Control System **MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN** in accordance with the Wiring Rules (AS/NZS 3000) as well as any local electrical codes in effect at the time of installation.

- To avoid obstruction into the IntelliCentre, when using electrical conduit complete the installation of the conduit before concrete is poured. Also, underground conduit should be positioned in well compacted soil. Ensure that all conduit joints are well sealed and watertight.
- The conduit size is based on the conductor size, and the number of conductors within the conduit. The number of pieces of equipment to be controlled will dictate the size of the conductors and therefore the conduit.

DO NOT RUN HIGH VOLTAGE AND LOW VOLTAGE CONDUCTORS IN THE SAME CONDUIT.

- Use a 2.5mm^2 or larger copper wires for connections depending on the load requirement. Supply conductor must be sized to support all loads.
- Refer to the wiring rules (AS/NZS 3000) and all other relevant codes for the number and size of conductors that can be installed in various sizes of conduit.
- Supply circuits must be protected by RCD's or RCBO's that are suitably rated. If one relay is used for more than one device, verify that the total current draw (all equipment) does not exceed the current rating of the circuit.
- The IntelliCenter Control System automation control circuit board requires 240 VAC, 0.5A power to operate the control logic circuits and the optional IntelliChlor® Salt Chlorine generator requires 1.3A. The control board power is derived from the third input power terminal "IN 3" and the SCG power is derived from IN1.
- The maximum load current must not exceed 60 AMP at 240 VAC.
- Determine the number of high voltage circuits being used in the IntelliCenter™ Control System. Balance the load according to each appliances load and input in which the auxiliary is connected to. Refer to the below table which shows the auxiliary and which line input it is connected to.

IN 1 (20A Max)	**IN 2 (20A Max)**	**IN 3 (20A Max)**
Filter Pump	Aux 3	Aux 6
Aux 1	Aux 4	Aux 7
Aux 2	Aux 5	Permanent Power
IntelliChlor SCG (1.3A)		Control Panel (0.5A)

3.2 Power Supply

- The IntelliCenter PNP is equipped with 3x power inputs, each rated at 20A, for a total of 60A load. Each power input requires seperate circuit protection provided in the fixed wiring.
- It is important that each input is protected with maximum 20A circuit protection. This is to ensure adequete protection of the internal wiring, relays and also protection for pool pumps which typically have a locked rotor current above 20A.
- The circuit protection is to be provided in the fixed wiring via a subpanel or in the main distributino board. It is recommended that a subpanel is used so that protection devices are clearly visible at the pool equipment pad. Refer to figure below for a typical subpanel installation. If the circuit protection is provided in the main distribution board then it suggested to place a main isolation switch near the IntelliCenter, for safety reasons and a clear means for disconnection.

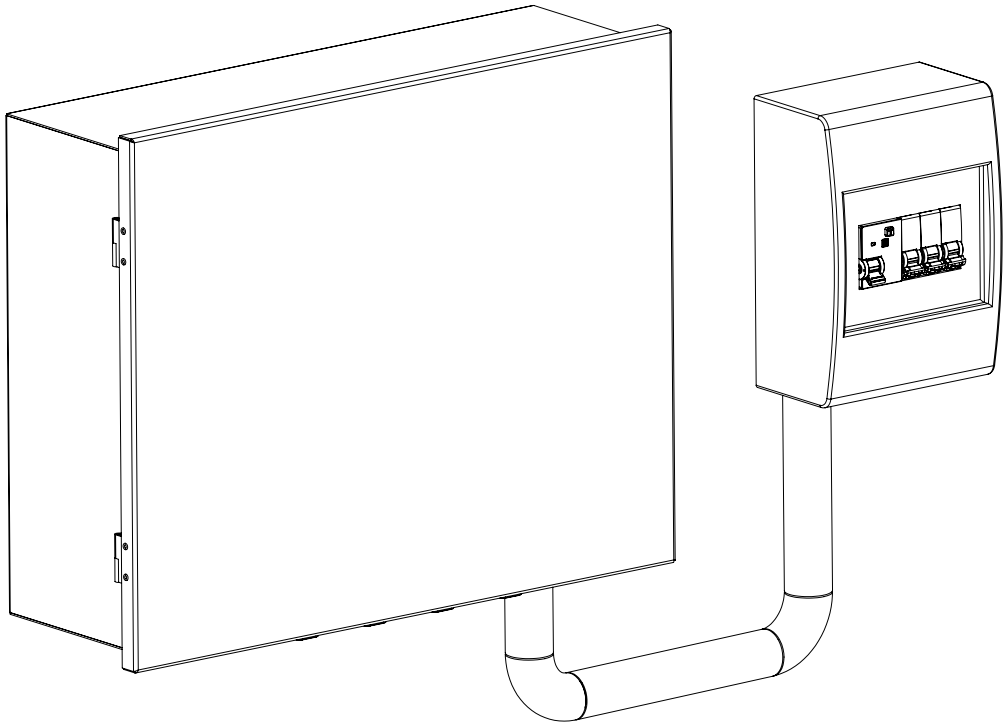


Figure 10: IntelliCenter installed with subpane supplying protected power.

- Protected power inputs can be supplied in multiple configurations at the discration of the electrical installer. For example:
- 3x 2-Pole 20A RCBO's, OR
- 1x 63A 2-pole RCBO and 3x 20A circuit breakers, OR
- 1x 3-Phase, 4-pole, 20A per phase RCBO.

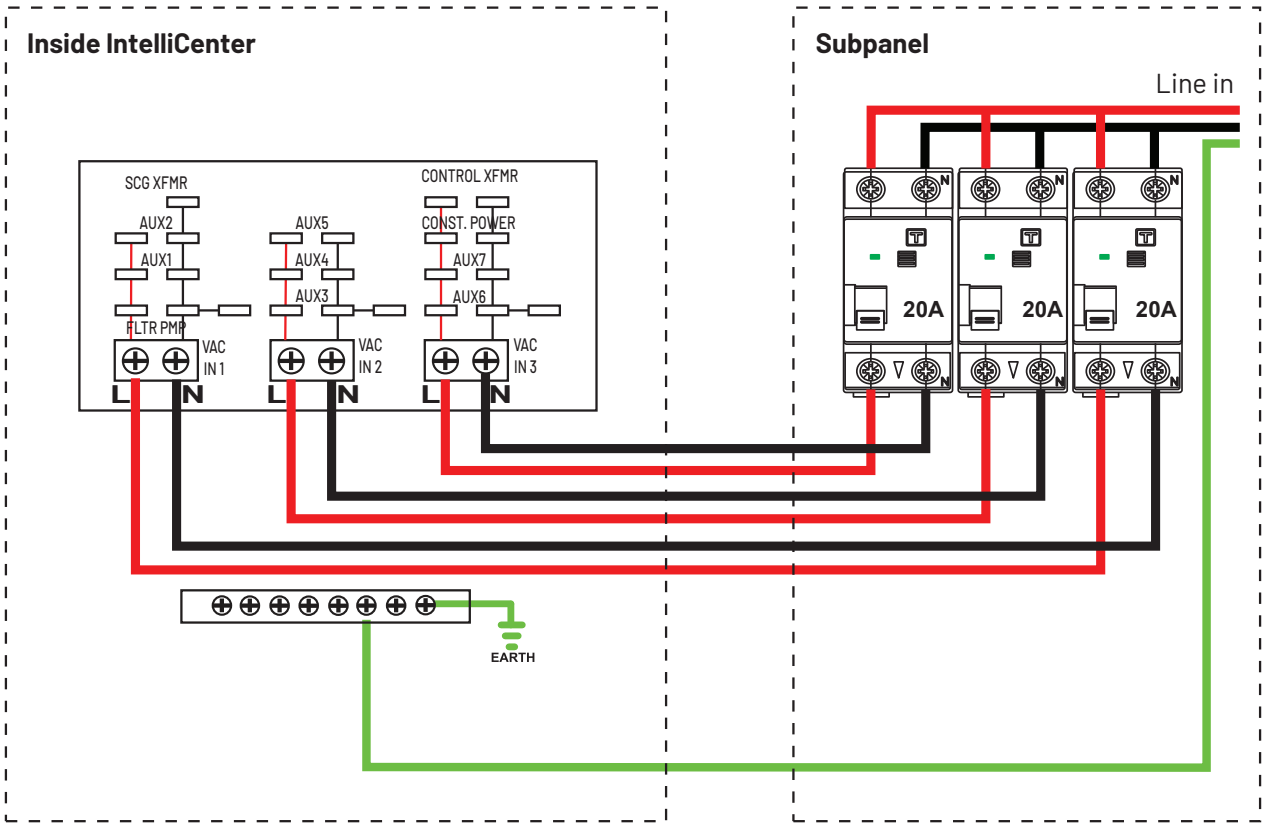


Figure 11: Electrical wiring using 3x 20A RCBO's to supply IntelliCenter.

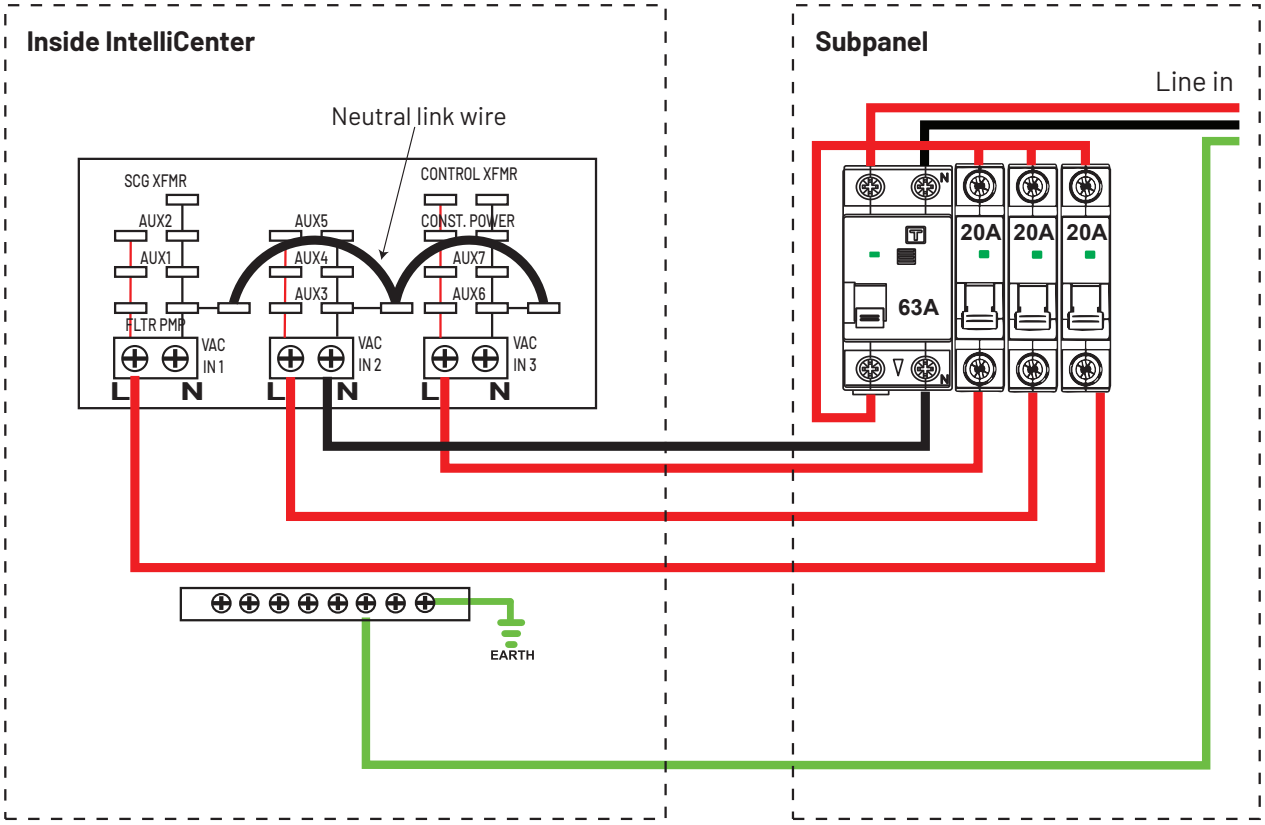


Figure 12: Electrical wiring using 1x 63A RCBO and 3x 20A CB's to supply IntelliCenter.

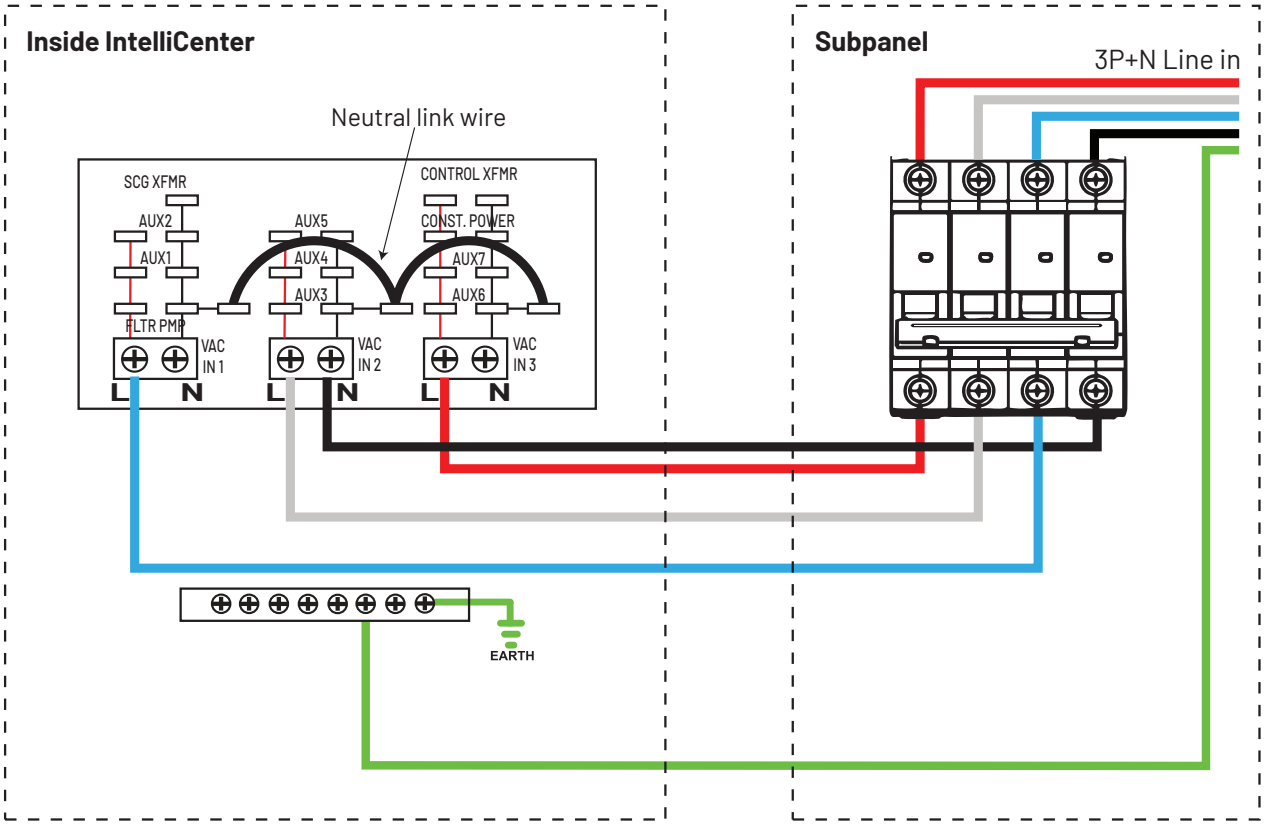


Figure 13: Electrical wiring using a 3-Phase, 4-Pole RCBO to supply IntelliCenter.

3.3 Grounding and Bonding Connections

Connect a ground conductor from the subpanel or distribution boardl to the IntelliCenter's GROUND BUS BAR. Use a minium 4mm^2 copper earth wire (check the AS/NZS 3000 for current rules).

Ensure that each piece of high voltage (240VAC) equipment that is connected to the IntelliCenter is properly grounded.

Equipotential bonding may be required depending on the location. Check the local codes and Australian Wiring Rules. If equipotential wiring is required, connect the Power Centre to the pool bonding system using a minium 4mm^2 copper earth wire.

3.4 Power Relays

The IntelliCenter Control Systems has high voltage relays pre-installed in the Power Centre. 7 auxiliary circuits (AUX) plus one relay for the filter pump.

The pre-installed relay cables plug to the IntelliCenter Control System circuit board AUX plugs:

- The power relay cable plugs are routed up into the Low Voltage Compartment through the 'fire wall' to the circuit board. The plugs are inserted 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.

Additional relays are installed on the daughter board; AUX5, AUX6 and AUX 7.

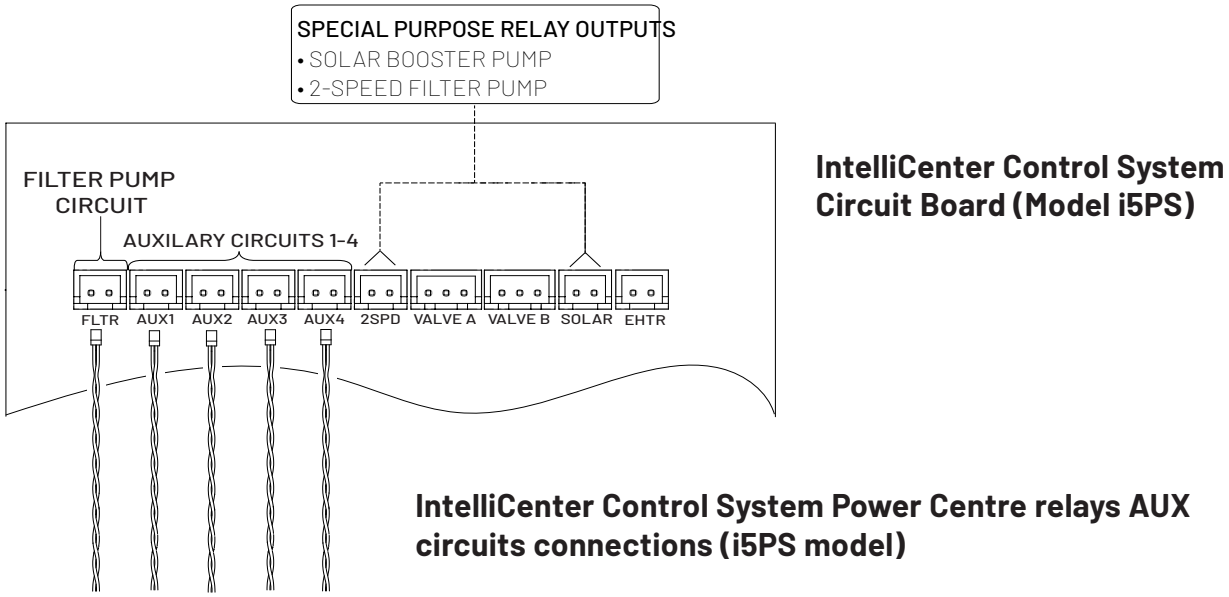


Figure 14: Relay coil wires to IntelliCenter main board.

TO AVOID AN ELECTRICAL HAZARD - Do not apply power to the IntelliCenter until all electrical connections for all loads (heaters, pumps, motorized valves, and lights etc.) have been completed.

Once the IntelliCenter power centre has been mounted and connected to the mains power, you can begin connecting the pool appliances. Before making any connections, ensure that the power is switched off at the breakers or via the isolation switch.

The electrical outlets are located on the base of the IntelliCenter and are layed out as per the below figure. Each outlet has a dust cover to protect it when not in use. Open the dust cover and plug in the pool appliance.

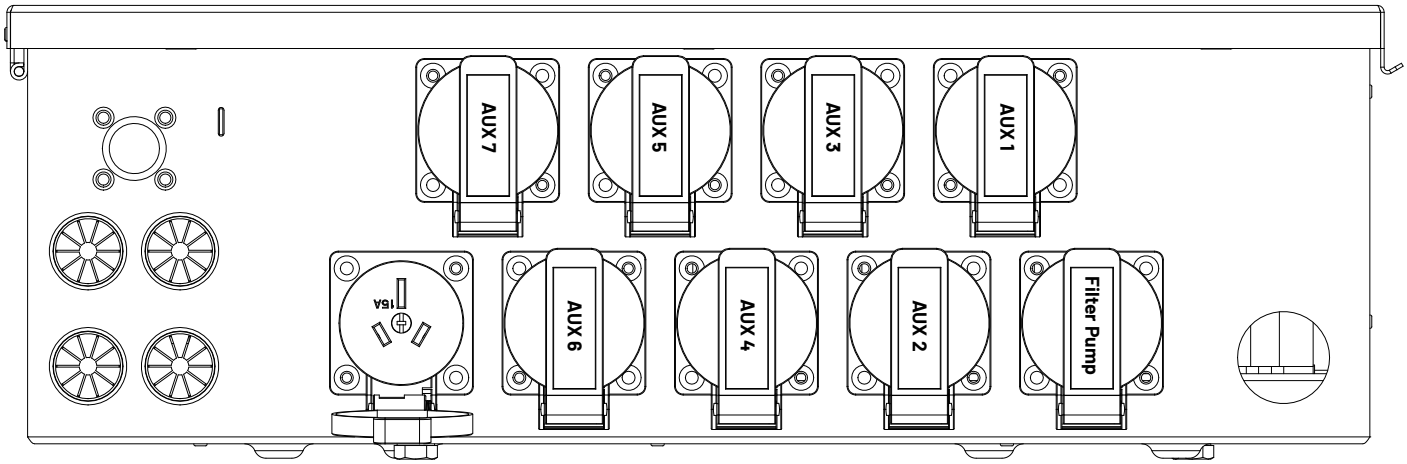


Figure 15: Electrical Outlets

All of the outlets are 10A apart from AUX 5 and 'Permanent Power' which are both 15A.

The 'Permanent Power' outlet is not switched via a relay and is always powered when the IntelliCenter is powered. This is purposefully designed for a Pentair variable speed pump, which should be powered all the time and only activated via the digital control to start, stop and change speed.

If additional permanant power outlets are required, ask your electrician to install an additional GPO in the fixed wiring. This will not be connected to the IntelliCenter.

5. INSTALLING VALVE ACTUATORS

The IntelliCenter™ Control System can control multiple valve actuators. Two of the valve outputs are dedicated to the pool/spa intake (INTAKE) and return (RETURN) valves. Valve A or Valve B actuators are for general purpose use (solar, water-feature, in-floor cleaner, etc.).

4.1 Connecting the Actuator to the Valve

To install the valve actuator:

1. Remove the valve knob, handle and the four screws, from the valve cover (indicated with arrows).

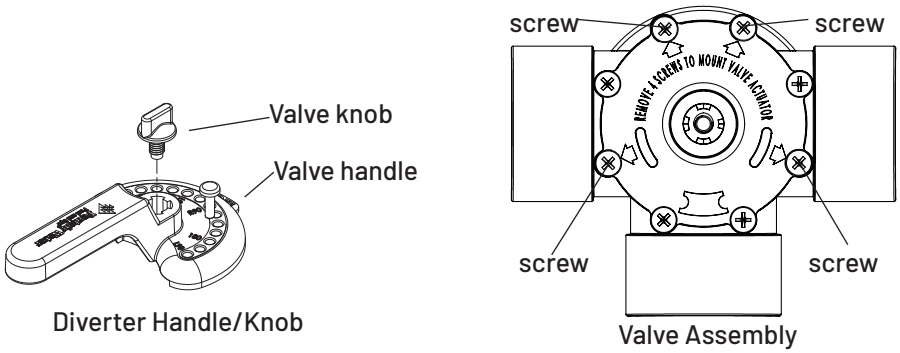


Figure 17: Actuator mounting screws on Pentair 3-way valve.

2. Align the splines of the actuator shaft over the shaft of the valve.

   Note: The keyed square spline notch (as shown below) indicates the position of the diverter.

   Note: End Point at 0 (OFF) is the default position of the IntelliValve Valve Actuator.

3. If the actuator is not aligned with the mounting holes on the valve cover, rotate the actuator (while still attached to the valve) until the actuator is positioned correctly over the valve.

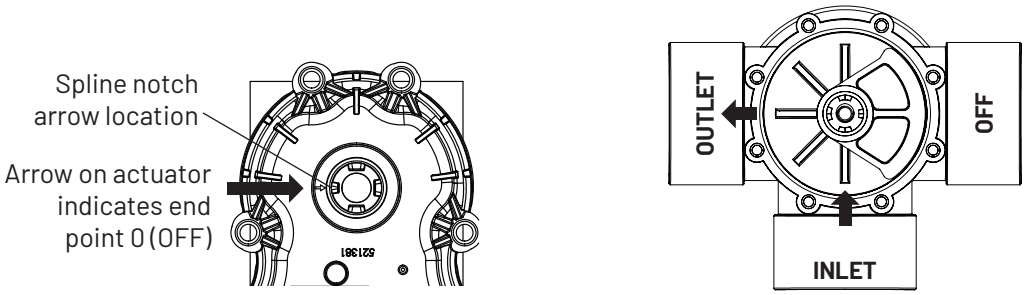


Figure 18: Actuator shaft spline (IntelliValve actuator shown).

4. Secure the actuator with the screws provided. Only use self-tapping screws when required.
6. Mount the valve handle and knob onto the actuator.

Note: The diverter valve handle OFF indicator, represents the current position of the valve's internal diverter seal which will stop the flow of water.

Note: When a motorized valve actuator is installed, stop-pins are not required.

Note: Adjusting the valve position (3-way valve shown below) If the valve rotates to the wrong position, adjust the switch on the back of the actuator between ON1 and ON2 positions. This will rotate the valve to the correct position.

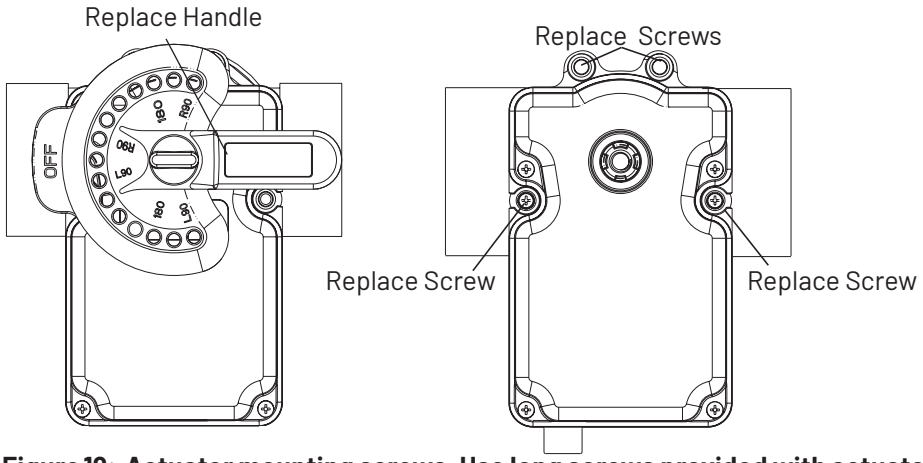


Figure 19: Actuator mounting screws. Use long screws provided with actuator.

7. For the IntelliValve, mount the valve actuator onto the valve assembly and secure it with the four 2¼ inch mounting screws provided, as shown below.

Note: DO NOT over tighten the mounting screws.

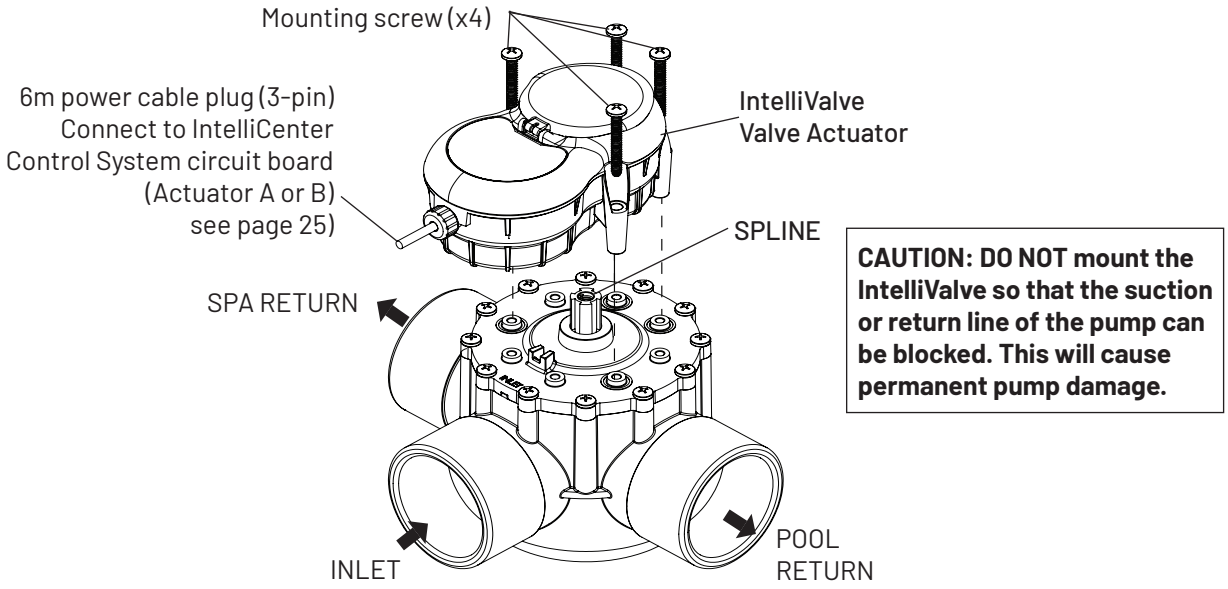


Figure 20: IntelliValve actuator mounting on a three-way valve.

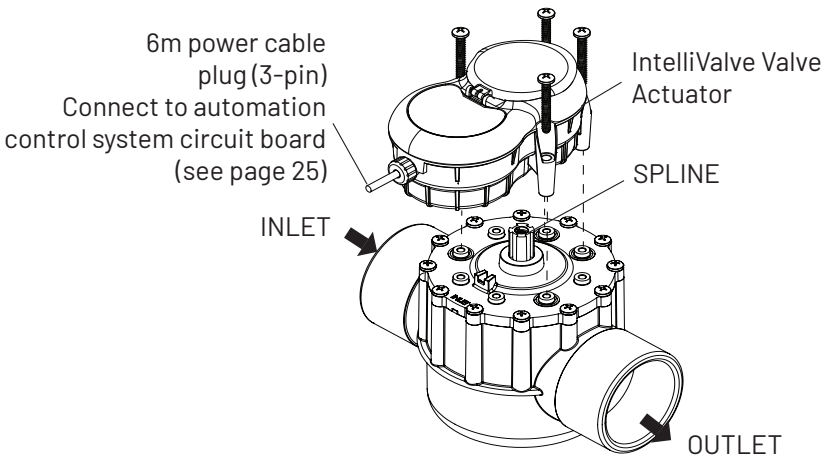


Figure 21: IntelliValve actuator mounting on a two-way valve.

5.1 Connecting the Actuator to the IntelliCenter

1. At the Power Centre, route the cable through one of the 25mm grommets and up through the low voltage raceway to the mother board (as shown below).
2. For the pool and spa intake and return valves, connect the valve actuator cable plug into the INTAKE (suction) three-pin socket, and the RETURN three-pin socket on the IntelliCenter personality circuit board.
3. For additional assignable valve actuators (e.g. solar, waterfall), connect the valve actuator cable plug into the Valve A three-pin socket, and the Valve B three-pin socket on the IntelliCenter personality circuit board.

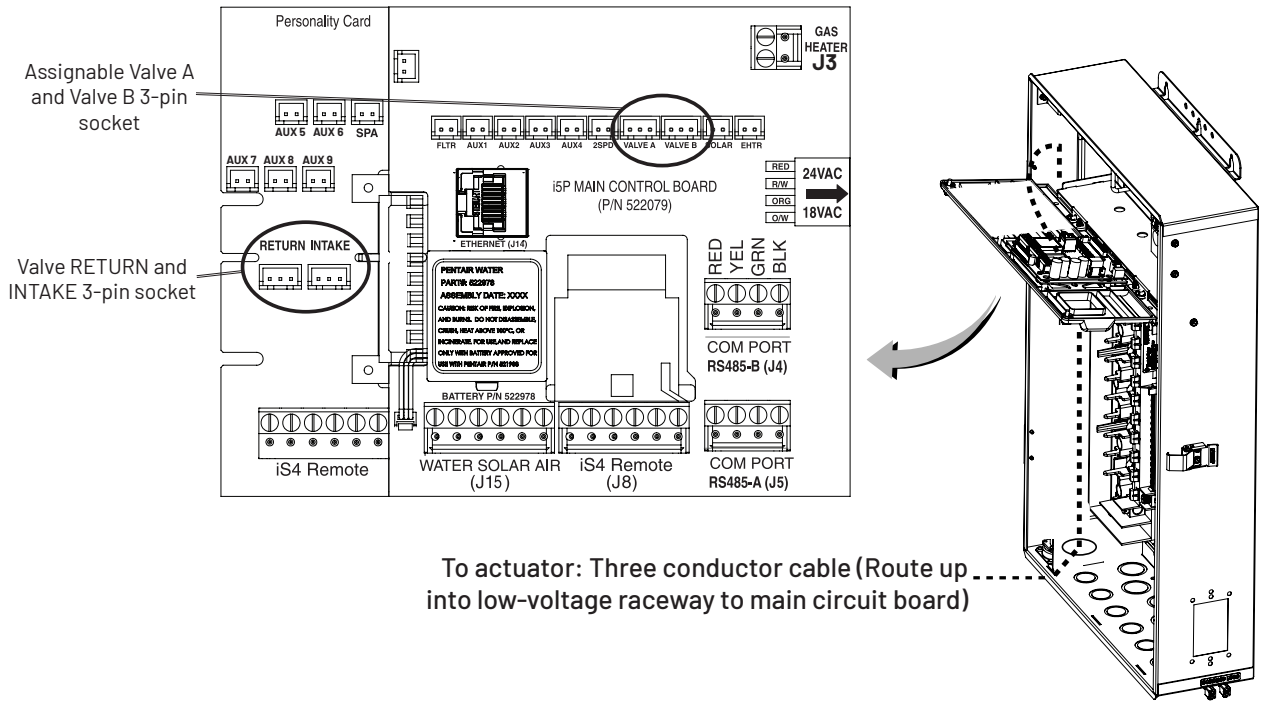


Figure 22: IntelliValve actuator mounting on a two-way valve.

4. Excess cable can be coiled up outside the unit. Do not coil the cable in the upper low voltage compartment. For valve actuator circuit board socket location see below.
5. Optional Valve Module Expansion Boards: Using one Valve Module Expansion board (P/N 522038), six additional valve actuators (VALVE C, D, E, F, G, H) can be added to the system for a total of 10 actuators. The expansion board attaches to the edge of the IntelliCenter Control System circuit board. For installation and operation information, refer to the Valve Actuator Installation Guide (P/N 270140).

6.1 Installing the Water Temperature Sensor

1. Select a convenient location to mount the water sensor in the plumbing system between the filter pump and filter.
2. Drill a 9.5mm diameter hole in one side of the pipe. It is suggested to drill a small pilot hole and step the drill size up to 9mm, to ensure a clean hole.
3. Remove any burrs in the plastic around the hole.
4. 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.

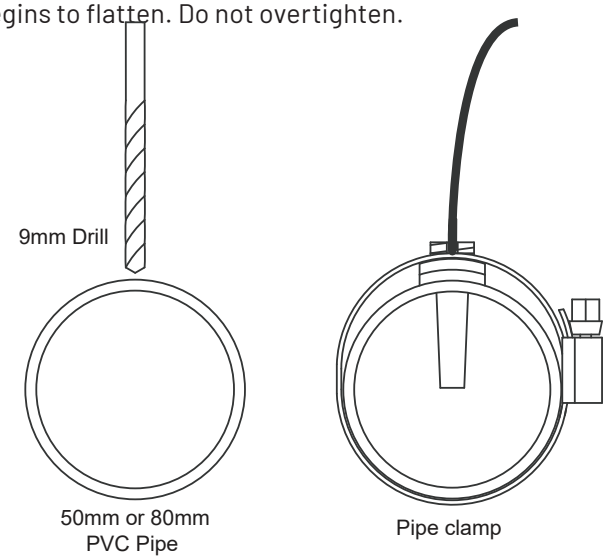
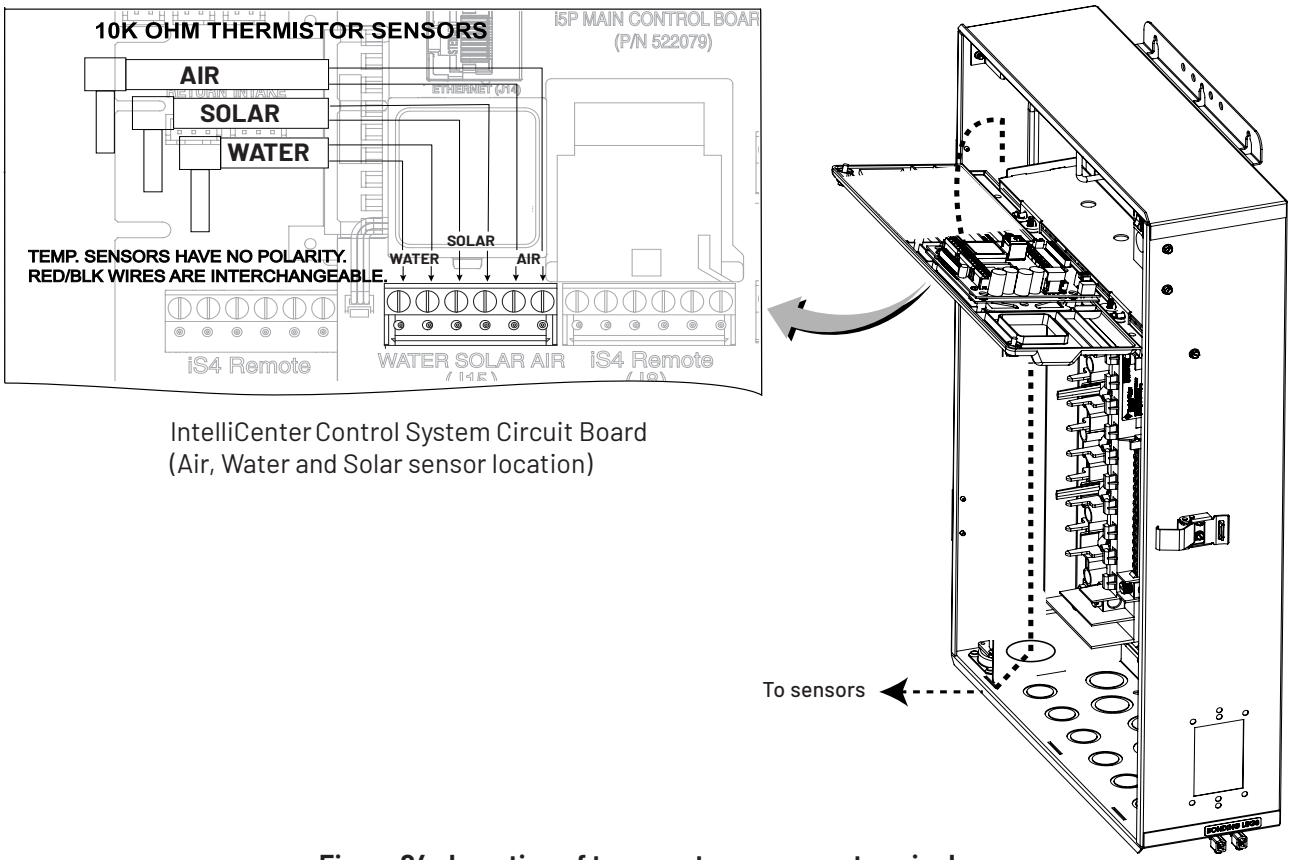


Figure 23: Cross section view of water temperature sensor installation.

5. Fasten the cable to the plumbing with cable ties.
6. Run the sensor cable between the sensor and the IntelliCentre. Route the cable up through the low voltage raceway to the circuit board, as shown below.
7. Cut off the excess cable and then strip conductors about 6mm from the end of the wires.
8. Insert the conductors into the WATER SENSOR screw terminals (J15) on the main IntelliCenter Control System circuit board.



IntelliCenter Control System Circuit Board
(Air, Water and Solar sensor location)

Figure 24: Location of temperature sensore terminals.

6.2 Installing the Air Sensor

1. Mount the sensor in the open air, in a shaded area, away from air conditioners to assure proper temperature readings. The Home screen displays the current ambient air temperature.
2. Run the sensor cable (included in kit) between the sensor and the IntelliCentre. Route the cable up through the low voltage raceway to the circuit board (as shown above).
3. Cut off the excess cable and strip the conductors about 6mm from the end of the wires.
4. Insert the conductors into the AIR SENSOR screw terminals (J15) on the main IntelliCenter Control System circuit board.

6.3 Solar Sensor Installation

The IntelliCenter can control a solar heating system, using either a change of pump speed and actuated diverer valve, or using a serperate solr booster pump. To activate the solar, the optional solar temperature sensor PN: 522101 must be purchased and installed.

⚠ CAUTION DO NOT DRILL HOLE AND CLAMP SENSOR INTO SOLAR PIPE.

1. Mount the sensor on a flat surface, with the same exposure to sun as the solar collectors (next to the collectors is recommended) or any sunny location. Do not let the sensor touch the panels. For glazed panels, install the sensor between collector and glazing.
2. If necessary, splice a two-conductor extension conductor to the sensor. Run two-conductor cable between the sensor and the IntelliCenter. Use waterproof connectors to connect the sensor to the cable. Use figure 8 cable, 1mm2 minimum, outdoor rated wiring and be sure the conductor connections are protected from the environment. Use shielded cable for long runs or runs near other electrical wiring.
3. Cut off the excess conductor and the strip back conductors by 6mm.
4. Insert the conductors into the SOLAR SENSOR screw terminals (J15) on IntelliCenter Control System circuit board.

6.4 Sensor Resistance

The IntelliCenter™ Control System uses 10k Ohm thermistor sensors. When the sensor is disconnected from the control system, the sensor will read 10k Ohm at 25°C. Refer to the following table for the resistance at other temperatures. An accurate reading should give a temperature setting that is accurate to ±0.2° C from 0 to 75° C.

T (°C)	T (°F)	R (Ω)
0	32	32,600
5	41	25,400
10	50	19,900
15	59	15,700
20	68	12,500
25	77	10,000

T (°C)	T (°F)	R (Ω)
30	86	8,056
35	95	6,530
40	104	5,326
45	113	4,367
50	122	3,602
55	131	2,985

T (°C)	T (°F)	R (Ω)
60	140	2,487
65	149	2,083
70	158	1,752
75	167	1,480

7.1 Connecting a Standard Heater

The IntelliCenter™ Control System heater control uses low voltage dry contacts that can be connected to most gas heaters or heat pumps with 24 VAC control circuits. The following connection instructions are for gas heaters and heat pumps with low voltage contacts, such as the 'Fireman's Switch'.

To connect the heater control cable to the IntelliCenter Control System circuit board:

1. Switch OFF power to the heater.
2. Remove the factory installed jumper from the heater's Fireman's Switch connector or remote control loop. At the heater, connect the conductors in accordance with heater manufacturer's instructions.
3. Run a two-conductor cable from the heater Fireman's Switch connector through the low voltage raceway to the Power Centre circuit board, as shown below.
   NOTE: Use 105° C+ temperature rated cable for connection to the heater. When connecting conductors inside the heater, be cautious of HOT internal parts of the heater. Refer to the minimum temperature rating for conductors recommended by the manufacturer. See the heater owners manual for further details.
4. Strip back the conductors about 6mm.
5. Insert the conductors into the **GAS HEATER** two-screw terminals **(J3)** on the motherboard. For heater circuit board screw terminal location see below.

⚠ CAUTION

Be sure that the conductors from the heater to the IntelliCenter Control System Power Centre are not near or touching any line voltage conductors in the heater. Failure to follow these instructions may cause the heater to malfunction.

6. Set the heater's Pool and Spa thermostats to their maximum position (as temperature control will be with the IntelliCenter).

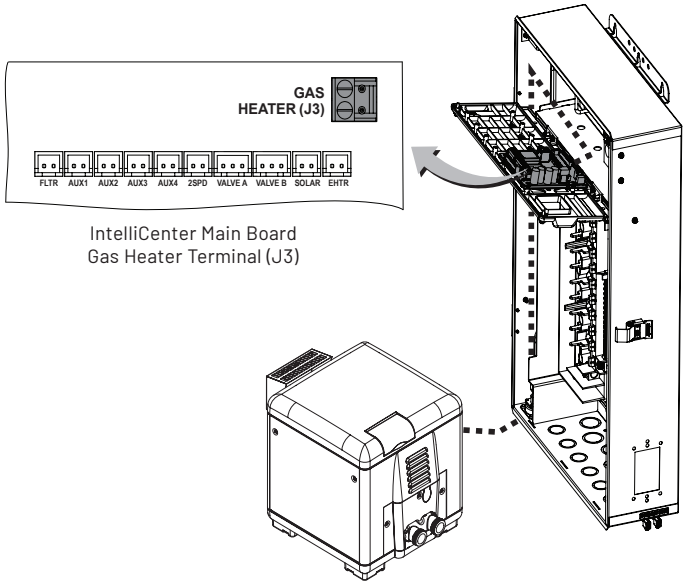


Figure 25: Location of gas heater terminal (J2) on IntelliCenter.

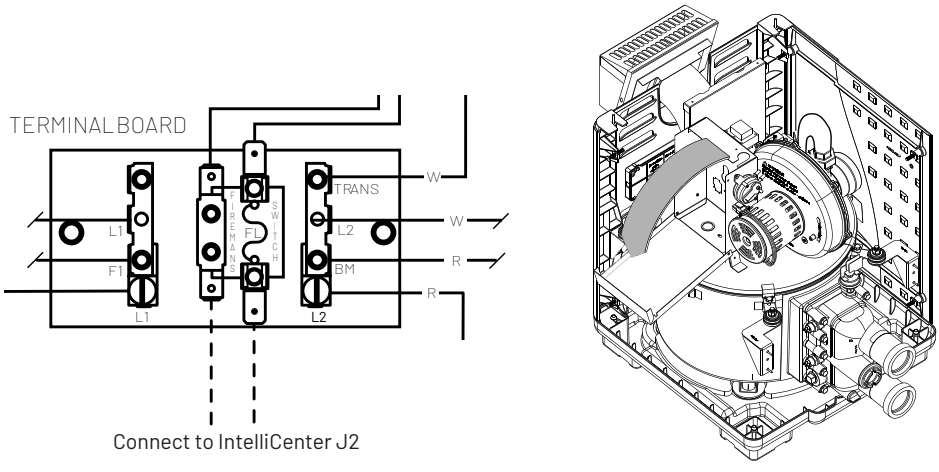


Figure 26: Location of MasterTemp FiremanSwitch terminals.

7.2 Connecting the MasterTemp® to the IntelliCenter™ via COM Port (RS-485)

For remote control and monitoring, the MasterTemp heater can be connected to the IntelliCenter via the heater's RS-485 COM port. Up to 16 heaters can be connected. The default address of a heater is 1. If additional heaters are connected, each heater must have its own address. The address range is 1 to 16. The address for each heater is set from the heater's front LCD panel menus.

When a heater is being controlled via the RS-485 interface: The heater front panel buttons are inactive. When pressing a panel button, it will turn on the LCD display displaying "RS485 Control". Heater Alarms/Errors are displayed on IntelliCenter's control panel(s) Status Home screen.

Accessing the MasterTemp® Heater RS-485 COM Port

1. Remove the side panel closest to the MasterTemp control panel by undoing the four corner screws with a large flat head screwdriver.
2. Remove the four corner wing nuts that secure the top panel. Lift the top panel upward to remove the top panel. The COM port is locted on the circuit board behind the control panel. Note: Be careful to ensure that if any of the other connectors to the PCB are dislodged, that they are re-secured.

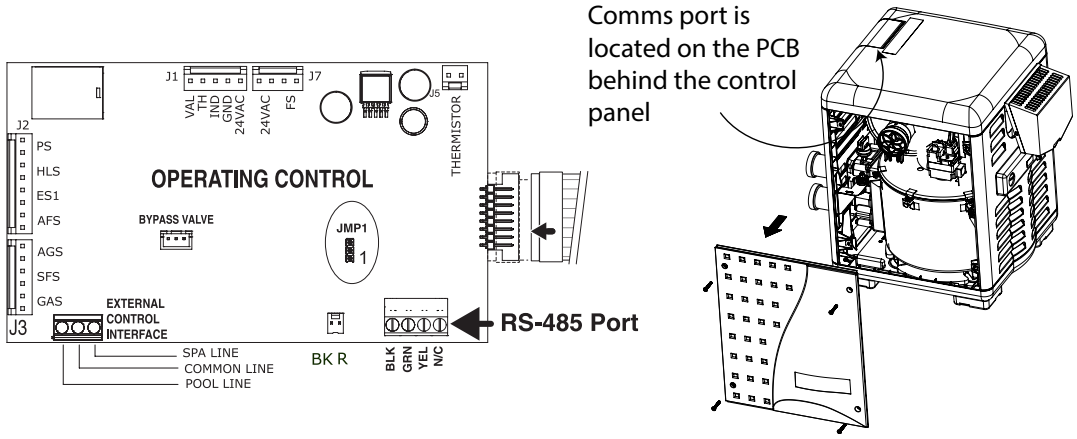


Figure 27: Location of MasterTemp COM Port.

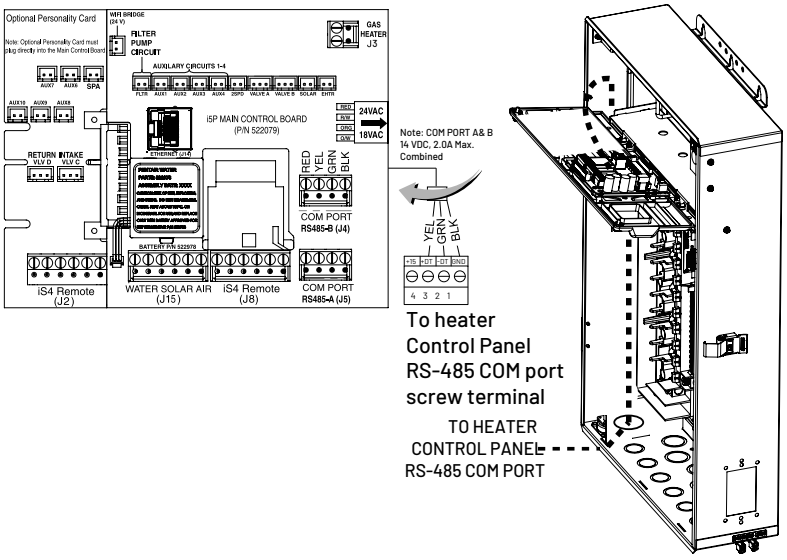
3. Locate the small hole in the exhaust panel, for the RS-485 cable. Use an appropriate size drill bit for the flexible conduit or strain relief to be used in the exhaust panel to drill a hole for the RS-485 wires.
4. Install a flexible conduit or a strain relief and securely attach to the heater panel. **Note: The conduit or cable connector should contain an insulating bushing or its equivalent to prevent abrasion of the RS 485 wires as it enters the exhaust panel.**
5. Strip back the outer sheathing from the cable 100mm from the end of the cable. Strip back each conductor 6mm from the ends.
6. Insert the RS-485 cable (from the IntelliCenter) through the flexible conduit or a strain relief into the panel hole and securely attach to the heater panel.
7. Once the cable is inside the heater, route the RS-485 wires away from the exhaust. Note: Do not let the wires touch the exhaust.
8. Using cable ties, secure to the RS-485 cable to the main wire harness that connects to heater's control panel circuit board.
9. Insert the three RS-485 wires (Pin 1-BLK, 2-GRN, 3-YEL) into the screw terminal. Secure the conductors with the screws. For wiring details, refer to the pin configuration on next page. **NOTE: Do not connect the red wire.**
10. Replace the top panel and the heater side panels. Be sure that there are no wires caught under the panel.

To connect the MasterTemp heater to the load center:

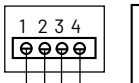
BEFORE REMOVING THE HIGH VOLTAGE COVER PANEL FROM THE LOAD CENTER OR POWER CENTER ENCLOSURE SWITCH OFF THE POWER AT THE HOUSE MAIN CIRCUIT BREAKER BOX.

1. Switch OFF AC power to the enclosure at the main house panel circuit breaker.
2. Unlatch and open the front door.
3. Loosen the two retaining screws securing from the top edge of the Outdoor Control Panel. Fold down the Outdoor Control Panel to access the circuit board socket connectors for the electrical connections.
4. Use a 22 AWG four conductor low voltage RS-485 cable to connect to the MasterTemp heater to the IntelliCenter Control System.

5. Run the RS-485 cable from the heater's control board RS-485 COM port terminal connector to the IntelliCenter.
6. Insert the cable into the one of the plastic grommet fittings, located on the lower left side of the enclosure and pull the cable up through the low voltage raceway to the circuit board, as shown below.
7. Strip back the outer sheathing 100mm from the end of the cable. Strip back each conductor 6mm from the end.
8. Insert the conductors into the COM Port screw terminals located on the top of the IntelliCenter Control System circuit board (see diagram below). Secure the conductors with the screws.
9. For wiring details, refer to the pin configuration shown below. Note: Multiple conductors may be inserted into a single screw terminal. **Note: Do not connect the red wire on the COM Port for the MasterTemp.**
10. Secure the control panel with the two (2) retaining screws.



MasterTemp COM Pport Control Panel Screw Terminal



Heater to IntelliCenter wires pin assignment

MasterTemp Heater COM Port screw terminal connector	IntelliCenter Control System COM Port (J4 or J5)
NOT USED	NOT USED
3 (YELLOW)	3 (YELLOW)
2 (GREEN)	2 (GREEN)
1 (BLACK)	1 (BLACK)

Figure 28: IntelliCenter COM Port connection for MasterTemp Heater

7.3 Connecting a Heat Pump

A heat pump can be connected to the IntelliCenter in much the same way as the heater described in Section 5.1. The Gas Heater screw terminals (J3) can also be used to connect heat pump. Unless the IntelliCenter is to be controlling both a heat pump and a standard gas heater, in that case refer to section 5.4.

1. Run a two-conductor cable from the heat pump external control to the low voltage raceway to the motherboard in the Pentair Automation control centre.
2. Strip the conductors 7mm. Insert the wires into the GHTR two-screw terminals (J3) on the motherboard.
3. At the heat pump, connect the wires to "remote on/off" on the terminal block.
4. Do NOT disconnect or wire around the thermostat, pressure switch, high limit switch, or other safety devices.
5. Turn the thermostat on the heat pump, for the selected setting, to maximum.

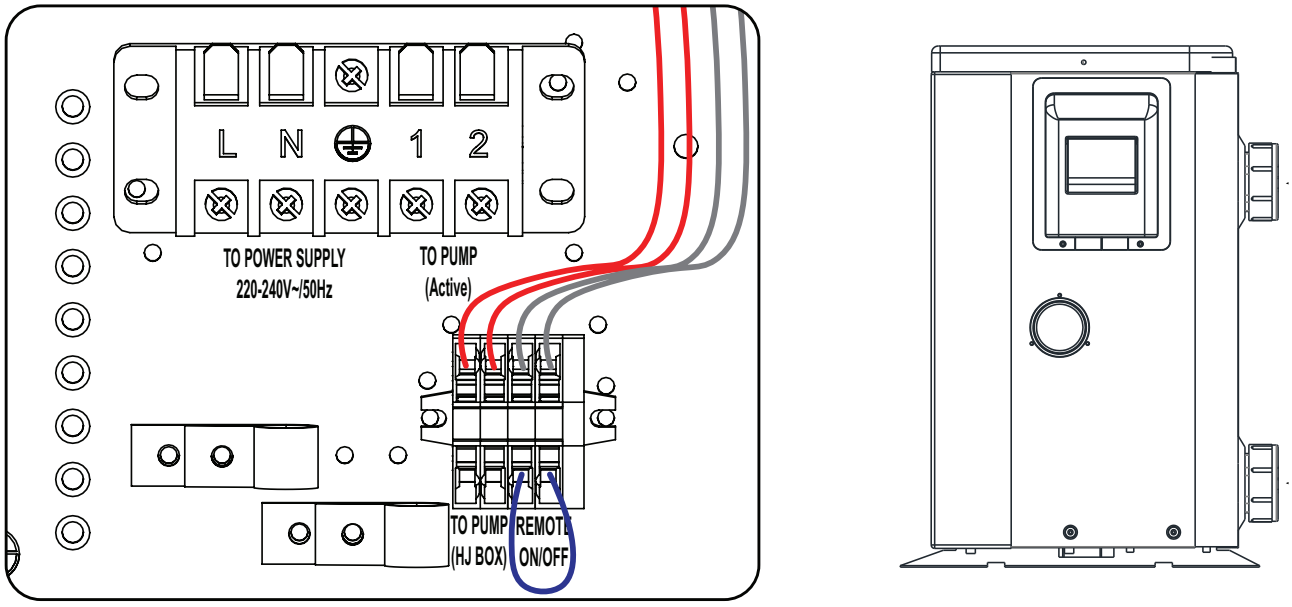


Figure 29: IntelliCenter COM Port connection for MasterTemp Heater

7.4 Connecting Different Heater Types

The IntelliCenter can control multiple heater types

Heat Sources	Connections	EasyTouch Configuration
Solar + Gas Heater	Connect gas heater to 2-wire terminal marked "GHTR" (J3). Connect solar valve actuator to VLVA (single pump system) or connect solar booster pump electrical outlet relay to "Solar" terminal (separate solar pump system).	Settings>Advanced>Installation Setup>Heaters> +Add Heater > Solar +Add Heater> Gas
Gas Heater Only	Connect gas heater to 2-wire terminal marked "GHTR" (J3).	Settings>Advanced>Installation Setup>Heaters> +Add Heater> Gas
Solar Only	Connect solar valve actuator to VLVA (single pump system) or connect solar booster pump electrical outlet relay to "Solar" terminal (separate solar pump system).	Settings>Advanced>Installation Setup>Heaters> +Add Heater > Solar
Heat Pump Only	Connect heat pump to 2-wire terminal marked "GHTR" (J3).	Settings>Advanced>Installation Setup>Heaters> +Add Heater> Heat Pump

Heat Pump + Gas Heater	Connect gas heater to 2-wire terminal marked "GHTR" (J3). Connect heat pump to relay connected to "Solar" terminal. See Figure Below.	Settings>General>Solar as a Heat Pump> Solar Relay Enable = Yes Settings>Advanced>Installation Setup>Heaters> +Add Heater > Heat Pump +Add Heater> Gas
Heat Pump + Solar	Connect heat pump to 2-wire terminal marked "GHTR" (J3). Connect solar valve actuator to VLVA (single pump system) or connect solar booster pump electrical outlet relay to "Solar" terminal (separate solar pump system).	Settings>Advanced>Installation Setup>Heaters> +Add Heater > Solar +Add Heater> Heat Pump

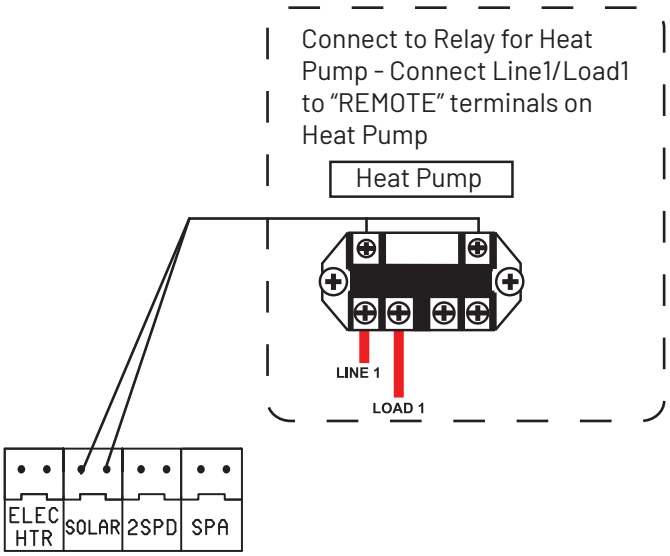


Figure 30: IntelliCenter Heat Pump Relay for Heat Pump and Gas Heat combination

8. CONNECTING A VARIABLE SPEED PUMP

8.1 Connecting a Pentair IntelliFlo Pump

The IntelliCenter can control an IntelliFlo pump with up to 8 different speed and/or flow settings. Realtime power and speed data is transmitted from the IntelliFlo pump to the IntelliCenter aswell as Error and status information. The control of the pump is entirely digital via the RS485 comm cable. The pump is permanently powered and a 15m communication cable is provided with IntelliFlo pump. The pump remains powered and in stand-by awaiting control from the IntelliCenter.

To connect the IntelliFlo pump communication cable to the Power Centre:

1. Switch AC power OFF to the IntelliCentre at the main circuit breakers, sub-panel or isolatoin switch.
2. Connect the IntelliFlo communication cable to the IntelliFlo using the connector at the side of the drive. Carefully insert fully, ensuring it is alligned correctly and tighten the nut.

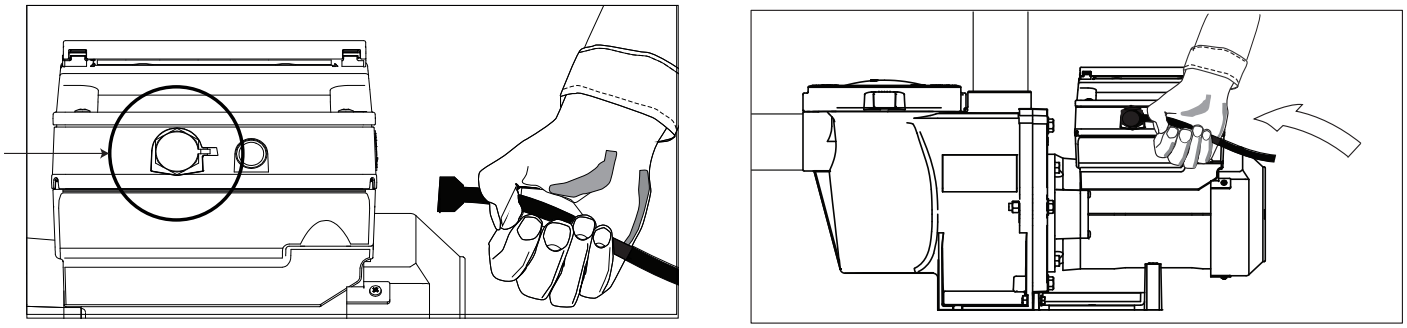


Figure 31: IntelliFlo 2 COM Port connection.

3. Run the communication cable from the pump to the IntelliCentre.
4. Insert the communication cable into a cable gland on the left hand side and route the cable, via the low voltage receway up to the top compartment.
5. Strip back the outer sheathing of the cable and the foil shielding by 5cm. Strip back each conductor by 7mm.
6. Insert the conductors into the COM Port screw terminals (J4 or J5) located on the top of the IntelliCenter Control System circuit board (see diagram below). Secure the conductors with the screws. For wiring details, refer to the pin configuration shown below. ***Note:*** *Multiple conductors may be inserted into a single screw terminal.*
7. *Plug the IntelliFlo pump power cord into the IntelliCenter permanent power outlet (15A). If more than one IntelliFlo pump are required, they can be powered via a standard, outdoor rated, 15A GPO (this doesn't require wiring through the intellicenter). Up to 32 IntelliFlo pumps can be connected to IntelliCenter.*

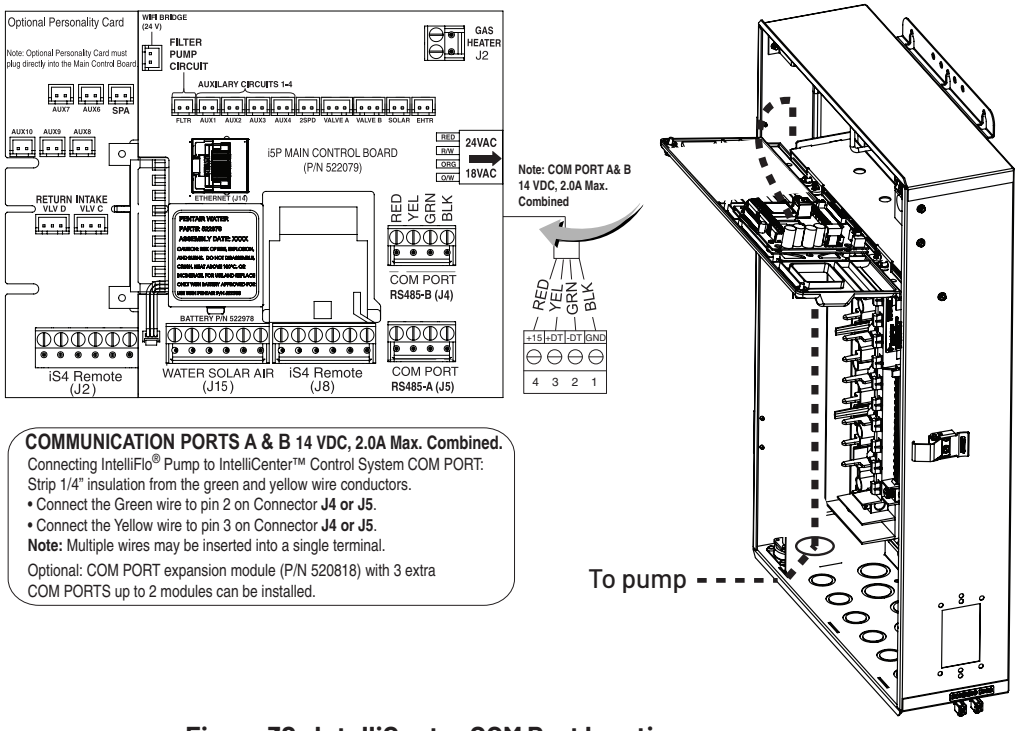


Figure 32: IntelliCenter COM Port location.

8.2 Connecting a Pentair EnviroMax 1500 or WhisperFlo VS 1500 Pump

The IntelliCenter can control an EnviroMax or WhisperFlo VS pump with up to 8 different speed and/or flow settings. Real-time power and speed data is transmitted from the IntelliFlo pump to the IntelliCenter. The control of the pump is entirely digital via the RS485 comm cable. The pump is permanently powered and a digital communication cable can be purchased seperately (**356324Z**). The pump remains powered and in stand-by awaiting control from the IntelliCenter.

To connect the EnviroMax or WhisperFlo VS pump communication cable to the Power Centre:

1. Switch AC power OFF to the IntelliCentre at the main circuit breakers, sub-panel or isolatoin switch.
2. Connect the communication cable (356324Z) to the pump using the connector at the side of the drive. Carefully insert fully, ensuring it is alligned correctly and tighten the nut.

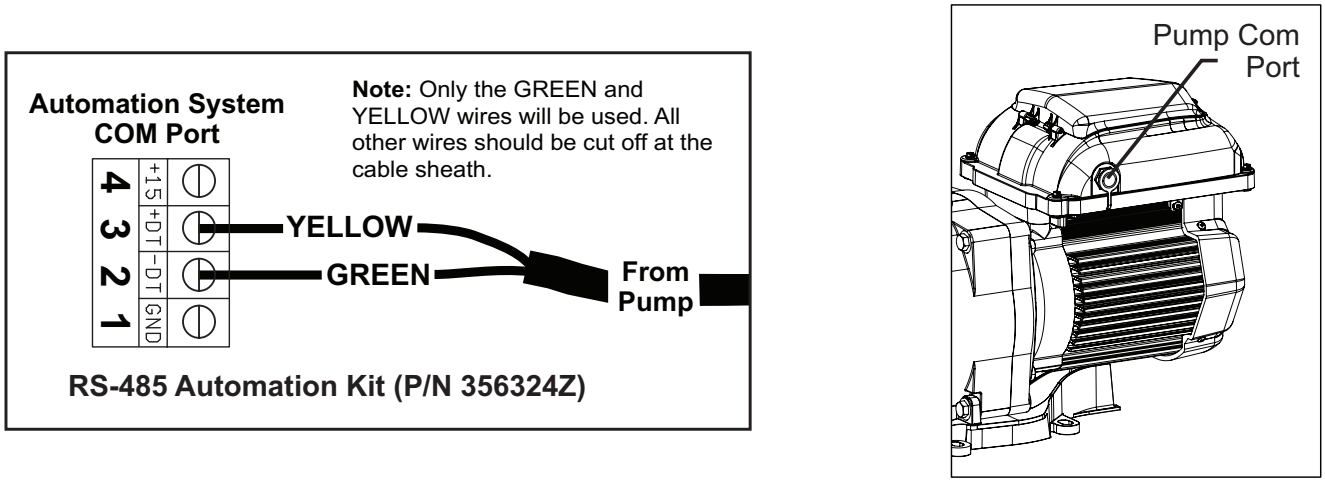


Figure 33: EVMX1500 and WHFL-VS COM Port location.

3. Run the communication cable from the pump to the IntelliCentre.
4. Insert the communication cable into a cable gland on the left hand side and route the cable, via the low voltage receway up to the top compartment.
5. Strip back the outer sheathing of the cable and the foil shielding by 5cm. Strip back each conductor by 7mm.
6. Insert the conductors into the COM Port screw terminals (J4 or J5) located on the top of the IntelliCenter Control System circuit board (see diagram below). Secure the conductors with the screws. For wiring details, refer to the pin configuration shown below. ***Note:*** *Multiple conductors may be inserted into a single screw terminal.*
7. *Plug the pump power cord into the IntelliCenter permanent power outlet. If more than one VS pump are required, they can be powered via a standard, outdoor rated, 10A GPO (this doesn't require wiring through the intellicenter). Up to 2 EnviroMax or WhisperFlo VS pumps can be connected to IntelliCenter.*
8. External Control Only mode will only allow the pump to run from IntelliCenter commands. When this mode is active the programmed pump schedule is deactivated, and user speed requests from the keypad will not be accepted. If the pump is stopped a user can still program the speeds for all four Speed buttons.

To activate External Control Only mode:

1. With the pump powered, but stopped.
2. Press and hold Display button for 3 seconds.
3. Press Display to advance menu until "Addr" is displayed.
4. Use "+" and "-" to assign one of two pump addresses, then press display to exit the menu. The pump address should match the address used in the IntelliCenter.
5. Activate External Control Only mode by pressing and holding the Start/Stop button for 10 seconds.
6. If successful the LED next to Ext. Control Only will illuminate.
7. The Start/Stop button must be pressed again to allow the pump to run.

Figure 34: EVMX 1500 in External Control Only Mode

9. CONNECTING THE OPTIONAL INTELLICHLOR®

The IntelliChlor SCG cell power cord is connected to the socket on the bottom of the IntelliCenter™ Control System Power Centre enclosure.

⚠ WARNING

TO AVOID AN ELECTRICAL HAZARD AND EQUIPMENT DAMAGE TO THE ENCLOSURE AND INTELLICHLOR SCG CELL:
FIRST DISCONNECT AC POWER TO THE ENCLOSURE BEFORE CONNECTING THE INTELLICHLOR SCG CELL POWER CABLE TO THE ENCLOSURE SOCKET.

To connect the IntelliChlor SCG power cord to the Power Centre:

1. Install the IntelliChlor cell as per the IntelliChlor installation guide.
2. Switch OFF AC power to the enclosure at the main house panel circuit breaker.
3. Align the four pins of the IntelliChlor cell power cord connector with the socket on the bottom of the enclosure and insert the cord connector into the socket.
4. Rotate the socket nut until it locks the connector in place. Do not over tighten the nut (hand tighten only).

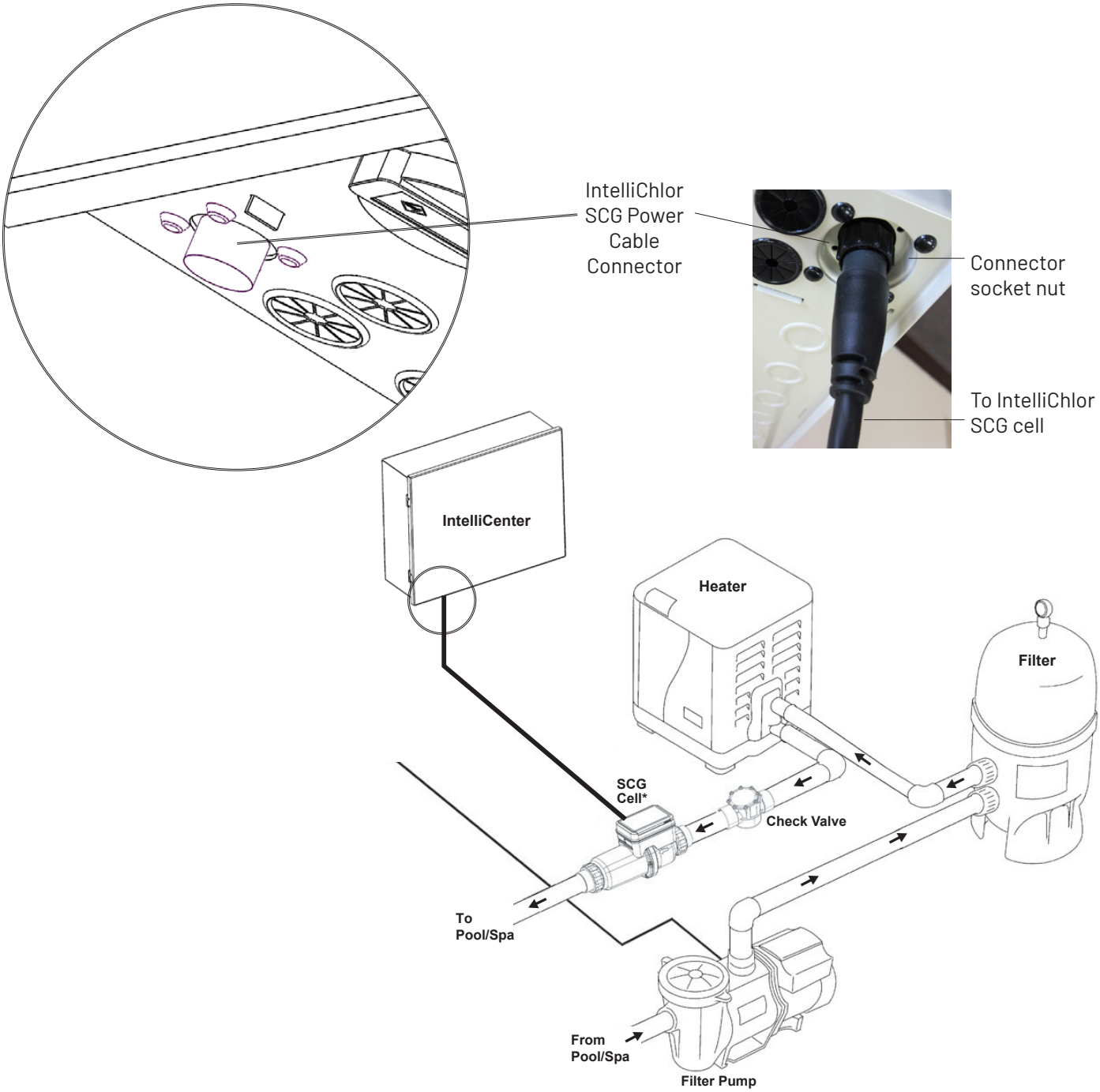


Figure 35: IntelliCenter COM Port location.

The IntelliChlor SCG communicates from the IntelliCenter™ Control System circuit board to the IntelliChlor SCG circuit board via an RS-485 communications four conductor wire. This cable is factory fitted and connects to both the IntelliChlor (SCG) circuit board COM port terminal and the IntelliCenter Control System circuit board COM port. There are two additional COM ports on the SCG board which can be used for any other com-port devices.

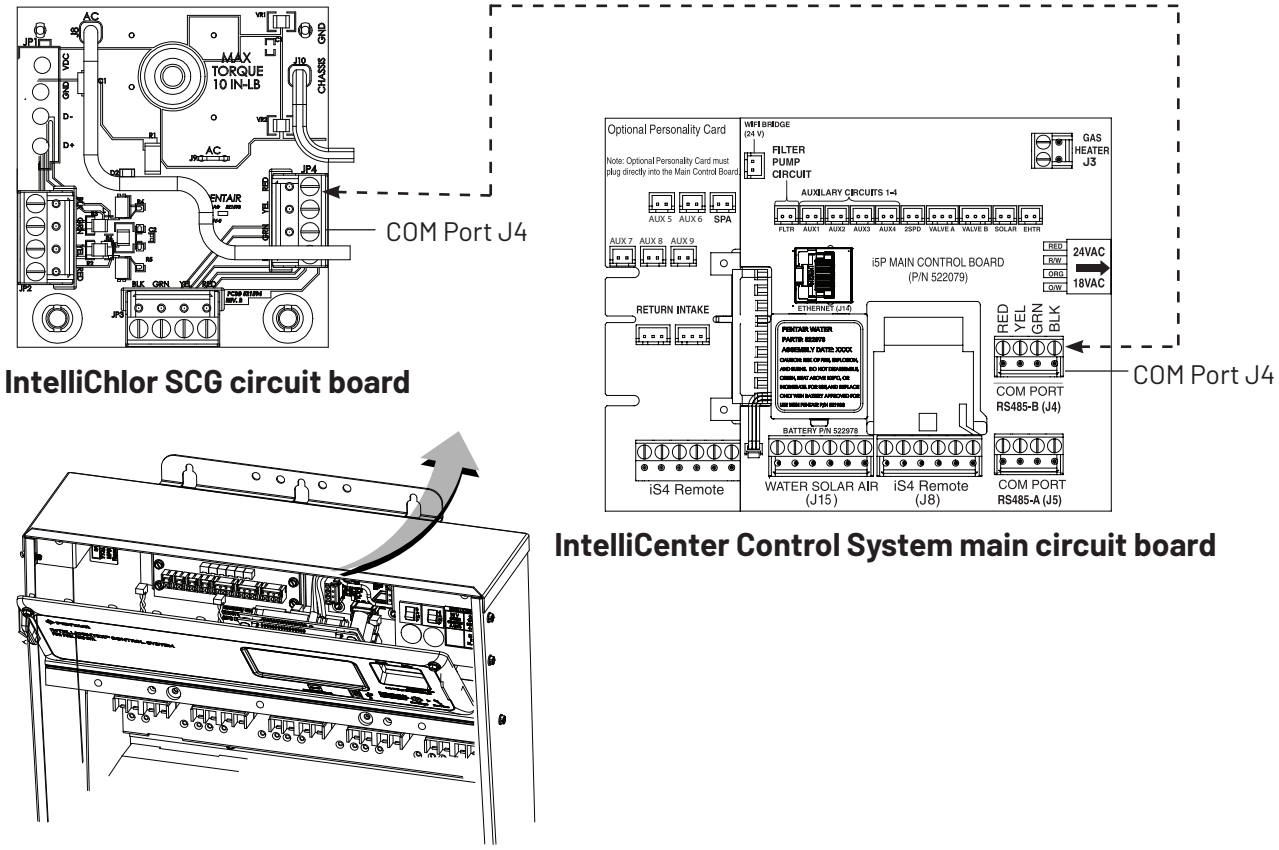


Figure 36: IntelliCenter Control System (with IntelliChlor SCG option)

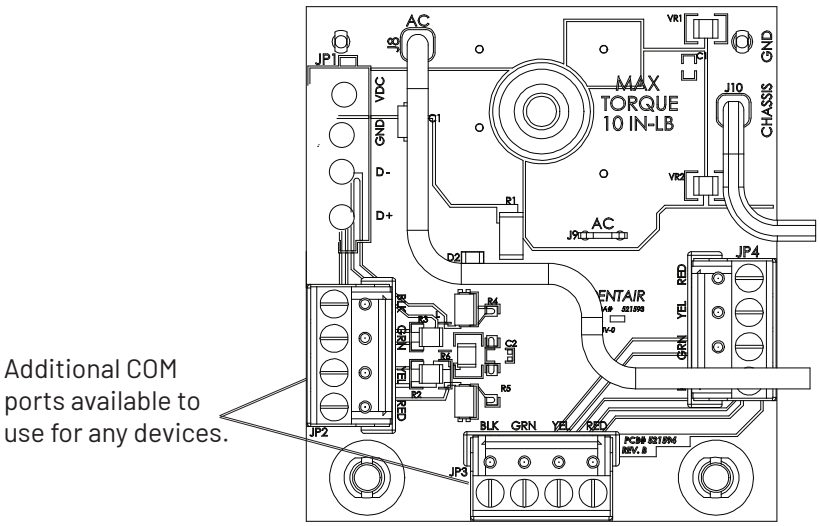


Figure 37: IntelliChlor SCG Circuit Board

10. CONNECTING INTELLICHEM

For more details on installing the IntelliChem chemistry controller, please refer to the installation manual provided with the IntelliChem.

10.1 Connecting IntelliChem Power

The IntelliChem chemistry controller can be powered via the 'Filter Pump' outlet, another auxiliary outlet or permanent power.

- Filter Pump Outlet - Use the filter pump outlet, if you are using a variable speed pump, which would be conencted to permanent power, leaving the Filter Pump outlet free for use. Plug the IntelliChem power cord into 'Filter Pump' outlet. The IntelliChem will be powered up whenever pool mode or spa mode is active but will be off when pool or spa are not in use.
- Auxiliary Outlet - Use an auxiliary outlet, if the 'Filter Pump' outlet is in use and there is no permanent power outlet available. Plug the IntelliChem power cord into any available auxiliary outlet. The auxiliary can be name 'IntelliChem' in the circuits menu and set to 'Chem Relay' circuit function. The IntelliChem will be powered up whenever pool mode or spa mode is active but will be off when pool or spa are not in use.
- Permanent Power - If available, plug the IntelliChem into IntelliCenter's 'Permanent Power' outlet or an external permanent power GPO. The IntelliChem will be permanently powered on. The IntelliChem has it's own flow-switch so no chemical dosing will occur without water flow.

10.2 Connecting IntelliChem COMM Port.

Connecting the Communication Cable to the IntelliCenter Circuit Board

To connect the IntelliChem communication cable to the IntelliCenter Center main circuit board:

1. Strip back the communication cable conductors 6mm. Insert the wires into the screw terminals. Secure the wires with the screws. Make sure to match the color-coding of the wires: Yellow = +DT, Green = -DT. Red and Black wires are not required. DO NOT CONNECT THE RED WIRE.
2. Insert the communication cable terminal plug onto the COM-PORT (J4 or J5) connector.

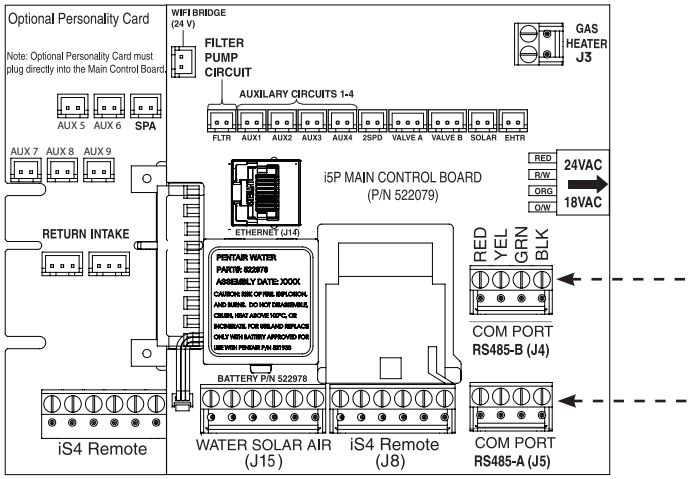


Figure 38: IntelliCenter COMM port locations.

Connecting the Communication Cable to the IntelliChem PCB

Install the IntelliChem in accordance with the IntelliChem installation manual. Run the four conductor cable (22 AWG) from the IntelliChem to the IntelliCenter.

1. Disconnect the IntelliChem from power. Undo the screws at the top of the IntelliCenter control panel and flip down the cover, revealing the circuit board.
2. Strip the leads of the communication cable wires back 6mm. Insert the wires into the COMM port screw terminals. Using a small flat-blade screwdriver, secure the wires with the terminal screws. Make sure to match the color-coding of the wires: Green = -DT, Yellow = +DT. Red and Black wires are not required. DO NOT CONNECT THE RED WIRE.
3. Connect the screw terminal connector onto the COMM port (J7).
4. Secure the IntelliChem panel cover.

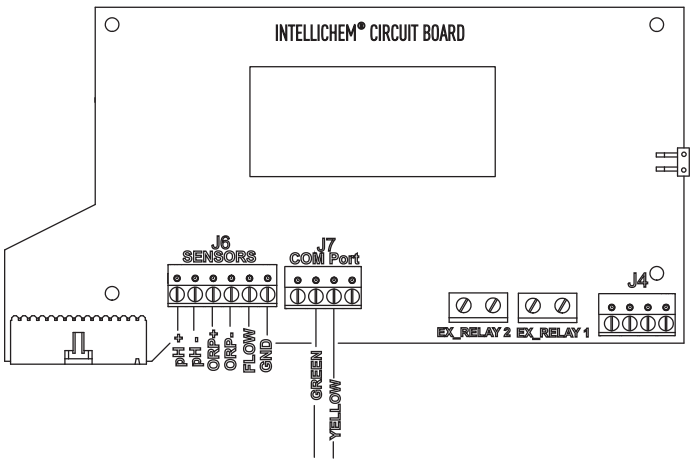


Figure 39: IntelliChem COMM port Connections.

11.1 Indoor Control Panel

For more details on installing the IntelliCenter Indoor Control Panel, please refer to the installation manual provided with the indoor control panel.

Connecting the Indoor Control Panel Communication Cable to the Personality Circuit Board

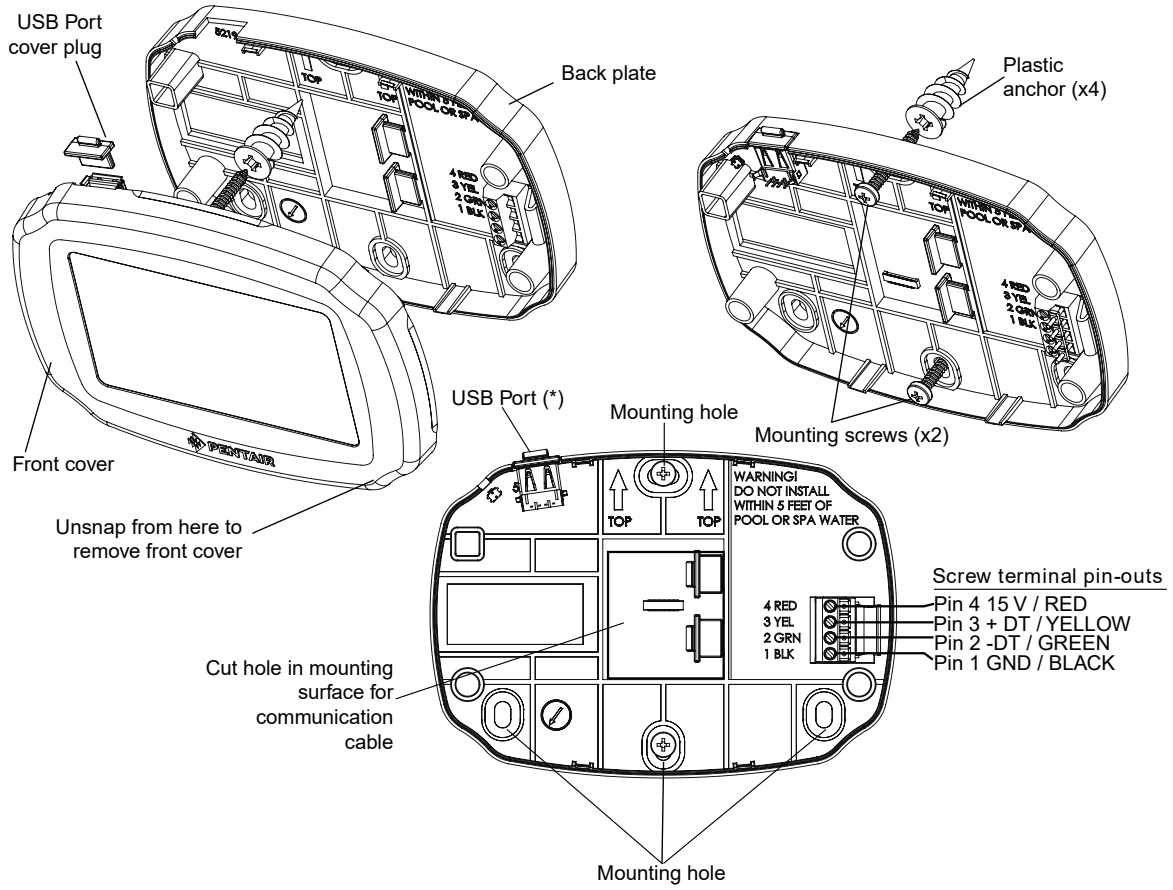
To connect the Indoor Control Panel communication cable to the Load Center Personality circuit board:

1. Strip back the communication cable conductors 6mm. 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.
2. Insert the communication cable terminal plug onto the COM-PORT (J4 or J5) connector.

Connecting the Communication Cable to the Indoor Control Panel

Mount the Indoor Control Panel backplate on the mounting surface. Align the backplate screw holes with the backplate screw holes and secure the backplate with the screws.

1. At the Indoor Control Panel, strip the leads of the communication cable wires back 6mm. Insert the wires into the connector screw terminals (provided in the kit). Using a small flat-blade screwdriver, secure the wires with the terminal screws. Make sure to match the color-coding of the wires: GND = Black, Green = -DT, Yellow = +DT, and Red = +15. Connect the screw terminal connector onto the transceiver circuit board. The preferred wire color scheme is: Red, Yellow, Green, and Black.
2. Mount the Indoor Control Panel cover over backplate and snap in place to secure.
3. Run a four conductor cable (22 AWG) from the Indoor Control Panel to the IntelliCenter. NOTE: Use 18 AWG conductor cable for distances longer than 60m.



Note: (*) Use the USB port to upgrade the IntelliCenter Control System firmware. See page 7.

Figure 40: Indoor Control Panel Connection.

11.2 Wireless Remote

For more details on installing the IntelliCenter Wireless Remote, please refer to the installation manual provided with the wireless remote.

INSTALLING THE TRANSCEIVER

The Wireless Remote Transceiver module is connected to the IntelliCenter Control System via an RS-485 connection. Ensure the transceiver is mounted on a flat vertical surface, at least 1.5 m above ground level to optimize operating range.

To avoid signal interference, mount the Transceiver antenna at least 3 m from the IntelliCenter power center.

If using multiple wireless remotes, ensure transceivers are installed at least 1.8m apart. This will prevent interference and ensure better wireless reception.

1. Remove the two retaining screws securing the transceiver case to the back plate and carefully slide the case off the back plate.
2. Carefully slide the transceiver circuit board up and out of the back plate.

⚠ CAUTION HOLD THE CIRCUIT BOARD AT THE EDGES. Do not touch the board components. Electrostatic discharge can damage the board.

3. Mount the back plate in accordance with the instructions provided.
4. Feed one end of the provided cable through the knockout hole in the bottom of the back plate.
5. Carefully slide the transceiver circuit board into the back plate.
6. Strip the conductors of the provided communication cable 6mm.
7. Insert and secure the conductors into the provided Screw Terminal block. Match the color-coding of the wires: GND = Black, Green = -DT, Yellow = +DT, and Red = +15.
8. Place the screw terminal connector onto the transceiver circuit board.
9. Slide the case onto the back plate and reinstall the two retaining screws.

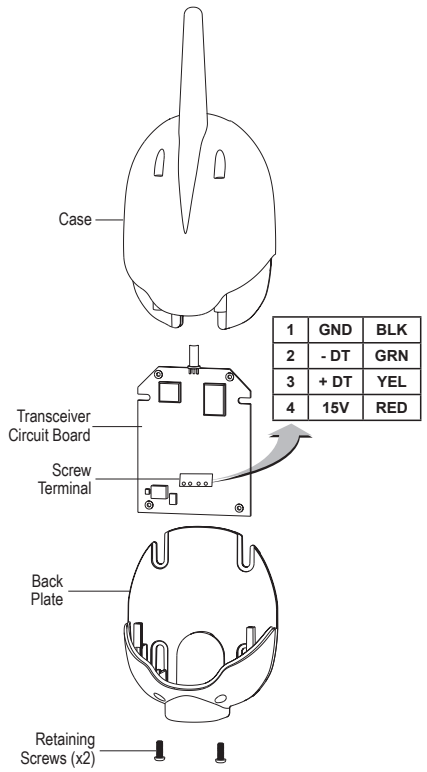


Figure 41: Wireless Transceiver.

Connecting the Transceiver Communication Cable to the Personality Circuit Board

To connect the tramsceiver communication cable to the Load Center Personality circuit board:

1. Strip back the communication cable conductors 6mm. 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.
2. Insert the communication cable terminal plug onto the COM-PORT (J4 or J5) connector.

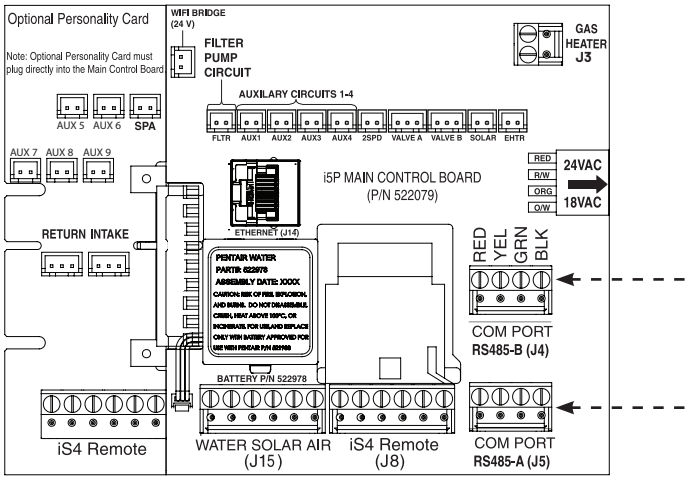


Figure 42: IntelliCenter COM Ports

11.3 Spa Command

For more details on installing the SpaCommand, please refer to the installation manual provided with the unit.

The SpaCommand® Spa-Side remote is connected to the IntelliCenter Control System via an RS-485 four wire communication cable which is supplied with the Spa Command. To connect the SpaCommand spa-side remote communication cable to the IntelliCenter:

1. Install and mount the SpaComand control panel in accordance with the installation instructions.

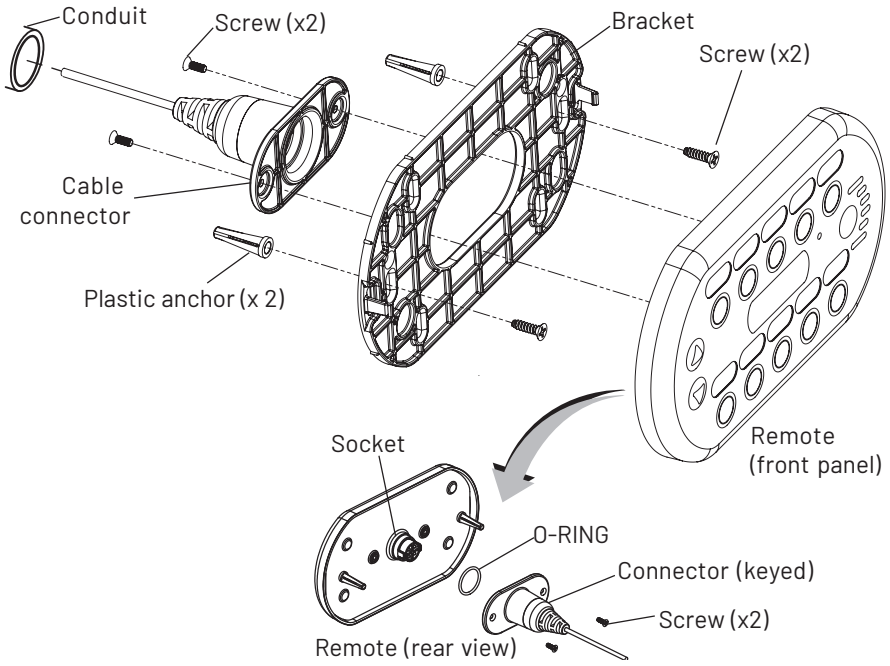


Figure 43: SpaCommand Controller

2. Run the SpaCommand cable through the conduit and into the IntelliCenter.
3. Strip back the communication cable conductors 6mm. 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.
4. Insert the communication cable terminal plug onto the COM-PORT (J4 or J5) connector.

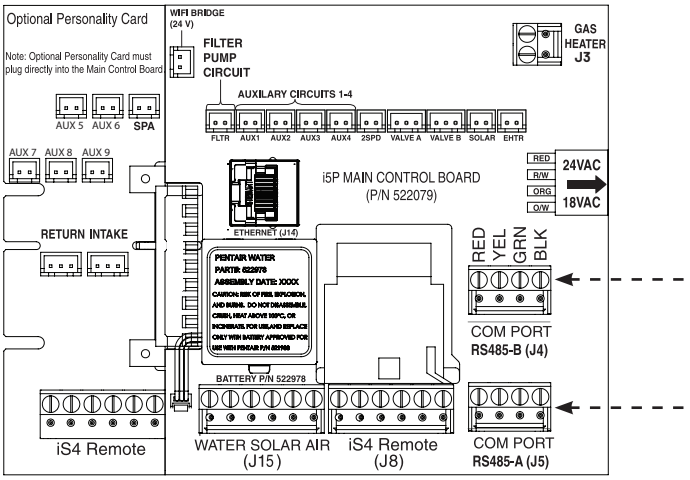


Figure 44: IntelliCenter COM Ports

11.4 iS4

For more details on installing the iS4 Spa Side Remote, please refer to the installation manual provided with the unit.

The iS4 Spa Side Remote is connected to the IntelliCenter Control System via a 6-wire communication cable which is connected with the iS4 remote. To connect the iS4 spa-side remote communication cable to the IntelliCenter:

1. Install and mount the iS4 remote in accordance with the installation instructions.
2. Run the iS4 cable through the conduit and into the IntelliCenter.

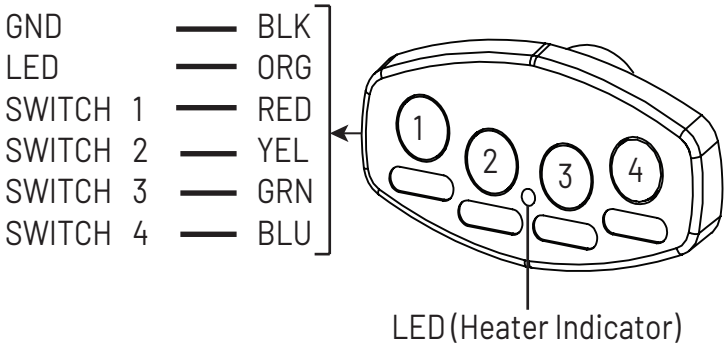


Figure 45: IntelliCenter COM Ports

3. Strip back the communication cable conductors 6mm. 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: Black = GND, Orange = LED, RED = Switch 1, Yellow = Switch 2, Green = Switch 3, Blue = Switch 4.
4. Insert the communication cable terminal plug onto the iS4-PORT connectors (J8).
5. There are two iS4 ports, one is located on the main board section (J8), and there is an additional one on the personality board.
6. The port on the main board is designated iS4 #1 and the port on the personality board is designated iS4 #2. These references are used lated in the programming.

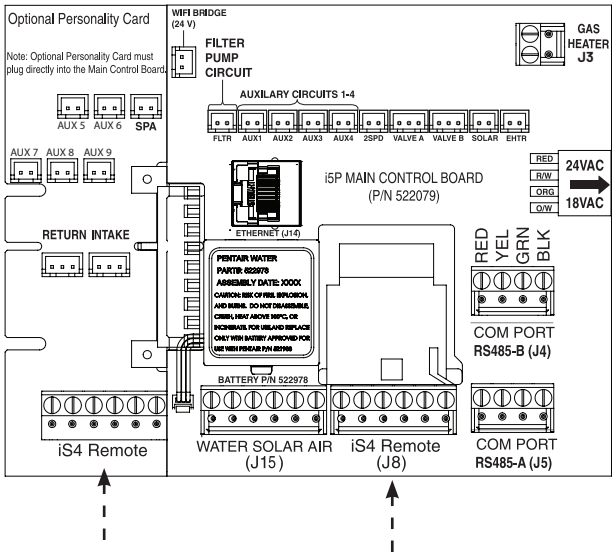


Figure 46: IntelliCenter iS4 Ports

12.1 Connecting to a wired Ethernet.

1. Power Off the IntelliCenter - Before working inside the panel, turn off power at the main breaker to ensure safety.
2. Open the IntelliCenter controller panel - Open the front door and access the low-voltage compartment inside the IntelliCenter enclosure.
3. Locate the Ethernet Port - Find the Ethernet (RJ45) port on the IntelliCenter main board. It's usually labeled "LAN" or "Ethernet."
4. Route the a standard Cat5 or Cat6 ethernet cable through the low voltage reaceway of the IntelliCenter and into the low voltage compartment.
5. Plug the standard connector of the Cat5 or Cat6 Ethernet cable into the IntelliCenter Ethernet port.
6. Run the other end of the ethernet cable to your home router or network switch.
7. Restore Power to the IntelliCenter.
8. Test Connection - With the power back on, use the IntelliCenter interface to verify network connectivity (Settings > Advanced System Configuration > Network and Wifi Setup > Internet Connection Test). The network test will send a 'ping' to the server to verify the internet connection, returning a response time in milliseconds. A response of 20ms or less is considered good.
9. If the internet connection test returns no response or a response time of greater than 20ms, check all connections, verify the network equipment is function and providing an access point and try again.

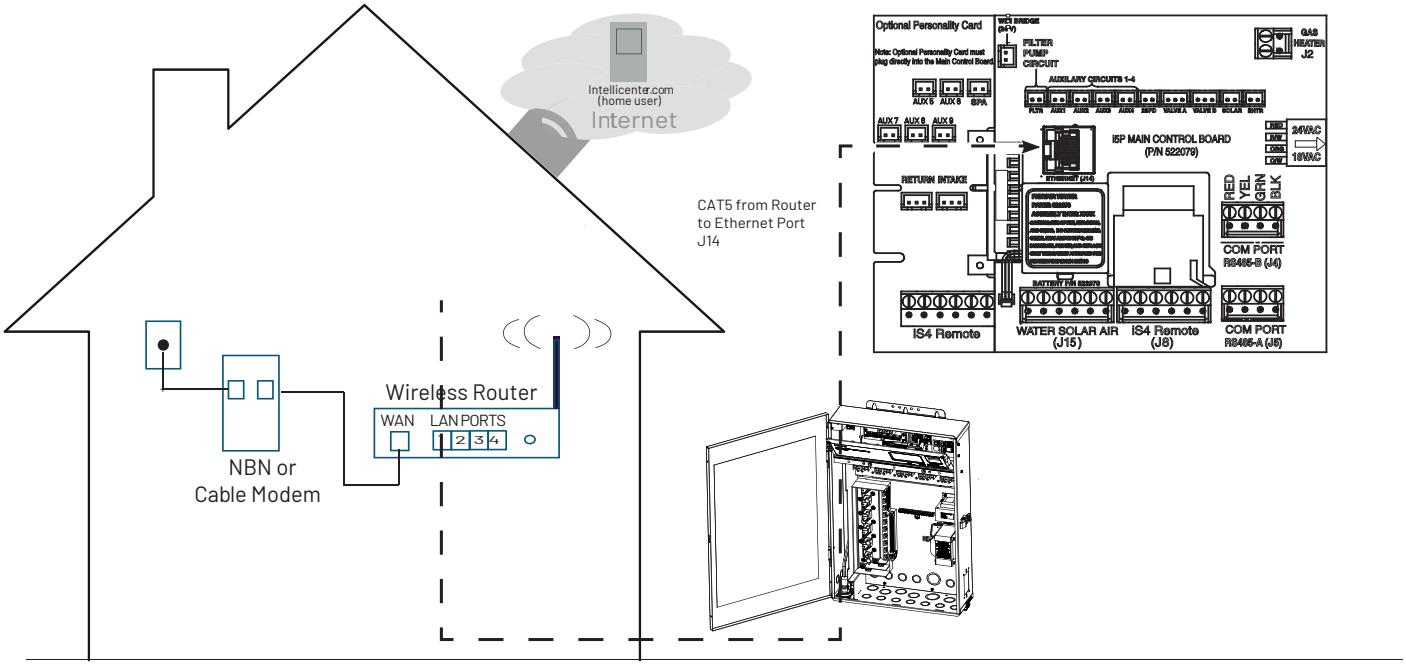


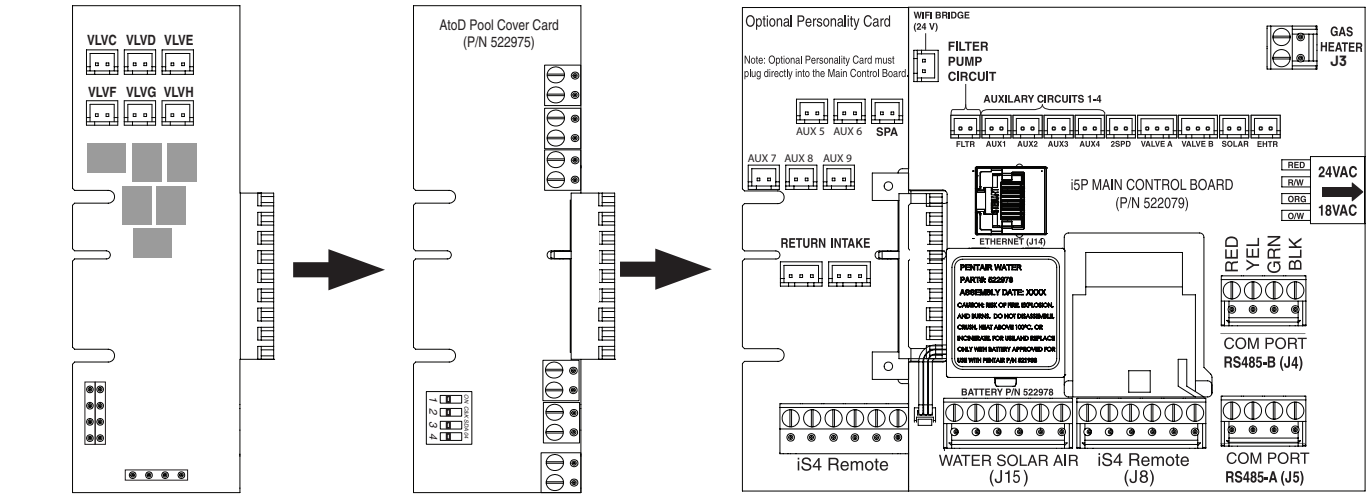
Figure 47: IntelliCenter Ethernet Connection.

13. CONNECTING EXPANSION CARDS

For full details about the expansion card and installation, please refer to the installation manual provided with the expansion card.

Expansion cards can be installed onto the IntelliCenter main board. The IntelliCenter main board is located in the top part of the power center enclosure. To access the main board:

1. Unlatch the front door spring latch and open the front door of the enclosure.
2. Loosen the two (2) retaining screws securing the low voltage cover-panel.
3. Install the Expansion Card onto the main board.
4. Carefully align the expansion card edge connector (component side facing up) with the card edge pins on the Main Board or Personality Board. Slide the Expansion card onto the card edge connector.
5. Secure the Expansion card in place with the two retaining screws (provided in kit).



Valve Expansion Module (P/N 522038Z)

Pool Cover Card (P/N 522039Z)

Personality Card

Main Board

Figure 48: Expansion Card Installation on Main Board

13.1 Pool Cover Input Card

The Pool Cover Expansion card is used to receive an open or closed signal, from the pool cover controller, to the IntelliCenter to modify circuit begaviour when the pool cover is on or off. The card can support two pool covers. Refer to your pool cover manufacturer's owner's manual for wiring instructions.

Note: The Pool Cover Input Card is for providing and input to the IntelliCenter, it does not control the pool cover. For safety reasons, you should not control a pool cover with an automation system.

Run a 2-wire cable from the pool cover controller to the pool cover input card. Connect to the pool cover 1 or pool cover 2 screw terminals. The expansion card can accept normally open or normally closed dry contact inputs. These are later defined int the programming.

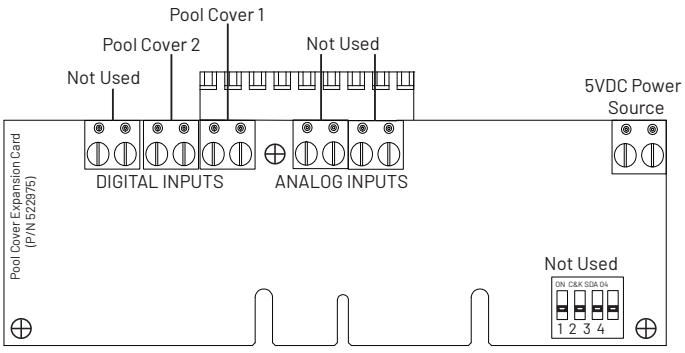


Figure 49: Pool Cover Expansion Card

13.2 Valve Expansion Module

This expansion card provides an additional 6 outputs for valve actuators. Once the card is connected, valve actuators can be installed as per the Valve Installation instructions in the previous section.

Only one valve expansion card can be used per power center.

The IntelliCenter i10X Expansion System, offers ten additional auxiliary circuits. Each IntelliCenter Control System Expansion consists of an additional power centre and control panel.

Up to three Expansion Centres may be added to a system, for control of up to 38 Auxiliary Circuits.

Expansion enclosures can support all of the same high voltage connections as the main load to the Power Centre.

Refer to the IntelliCenter Control System Expansion Installation Guide for more information.

The COMM ports of the main board on the IntelliCenter Control System and the Expansion System are connected together.

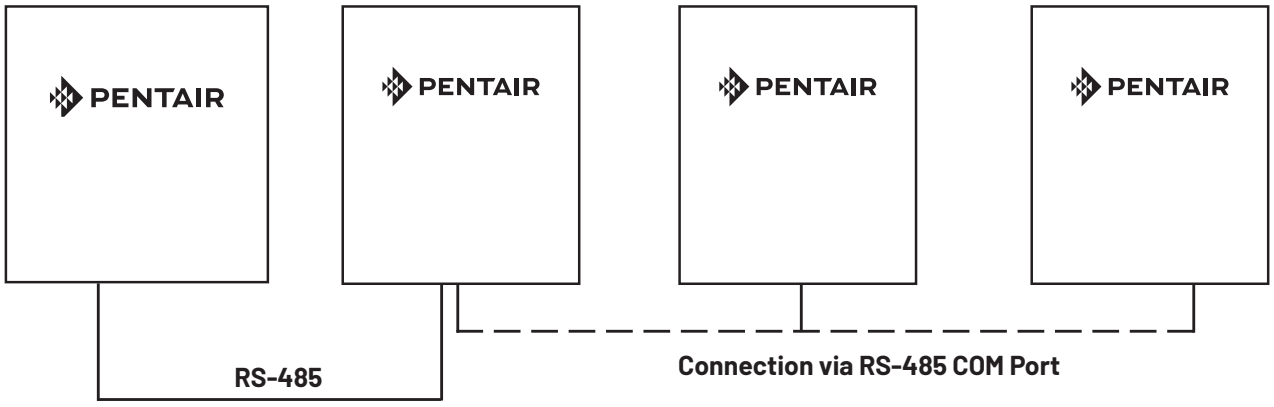


Figure 50: Expansion Center Layout

Strip back the communication cable conductors 6mm. 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: Yellow = +DT, Green = -DT, and GND = Black.

DO NOT CONNECT THE RED WIRE OF THE COMM PORT BETWEEN SYSTEMS.

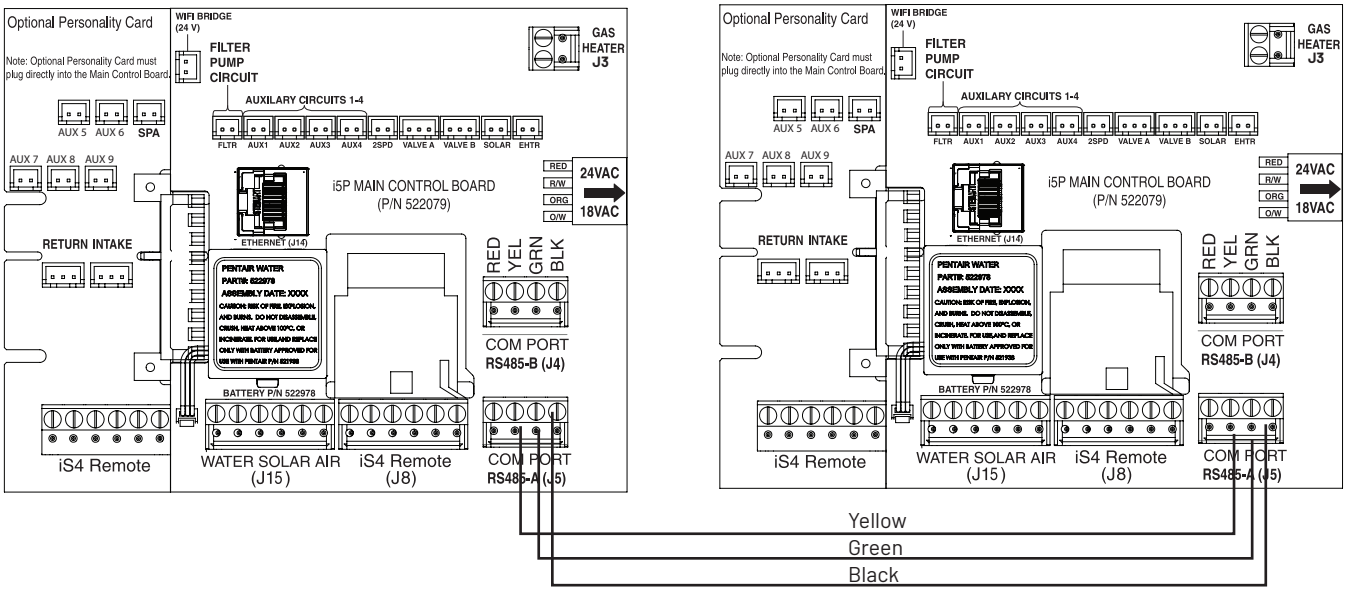


Figure 51: Expansion Center COMM Port Connection.

15. INTELLICENTER™ CONTROL SYSTEM START UP

Note: The following information describes how to test the IntelliCenter Control System. For detailed setup and programming information refer to the IntelliCenter™ Control System User's Guide.

15.1 Power On the Power Centre

1. After all the necessary pool and spa equipment has been connected to the Power Centre, replace and secure the High Voltage Panel on to the front of the Power Centre.
2. Switch on the main circuit breakers to apply power to the Power Centre.
3. The IntelliCenter will boot up and you will be prompted to agree to Pentair's Terms and Conditions of use and also to set the date and time. Following that, you will arrive at the home screen.

Figure 52: Home Screen, Selecting Settings

15.2 Testing equipment auxiliary circuits:

1. From the Home screen, tap **Settings > Service Mode > Service**. Note: Service Mode is displayed on the Home screen.
2. Tap **Manual Circuit Control**. To test the equipment, tap the displayed circuits (pump, aux, solar, heater) to confirm proper operation. When the pool circulation 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.

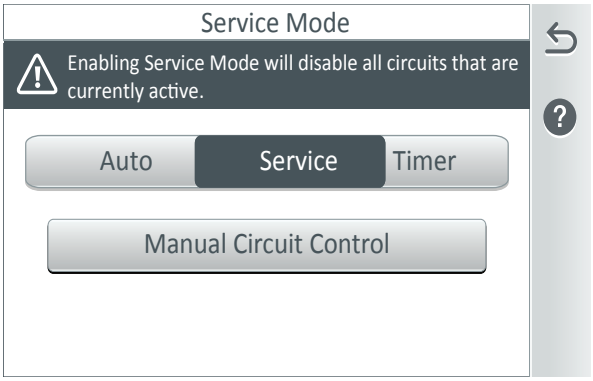


Figure 53: Service Mode Screen

3. Test each of the connected auxiliary devices and ensure that power is applied to the pool appliance.
4. Test each of the connected valve actuators and ensure that they have power and turn when they are activated and deactivated.
5. Test the heaters and ensure that they switch on when manually activated.

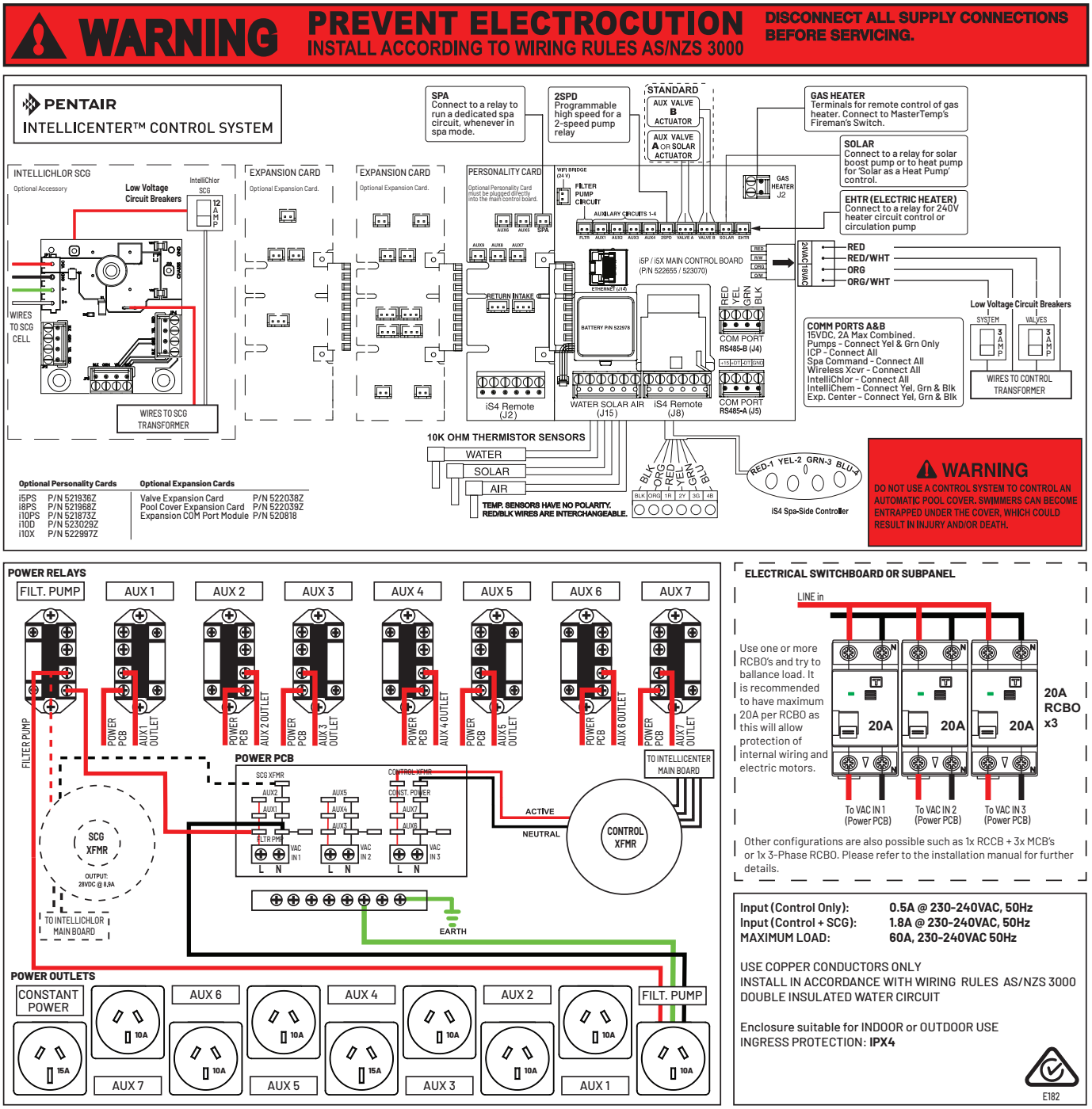
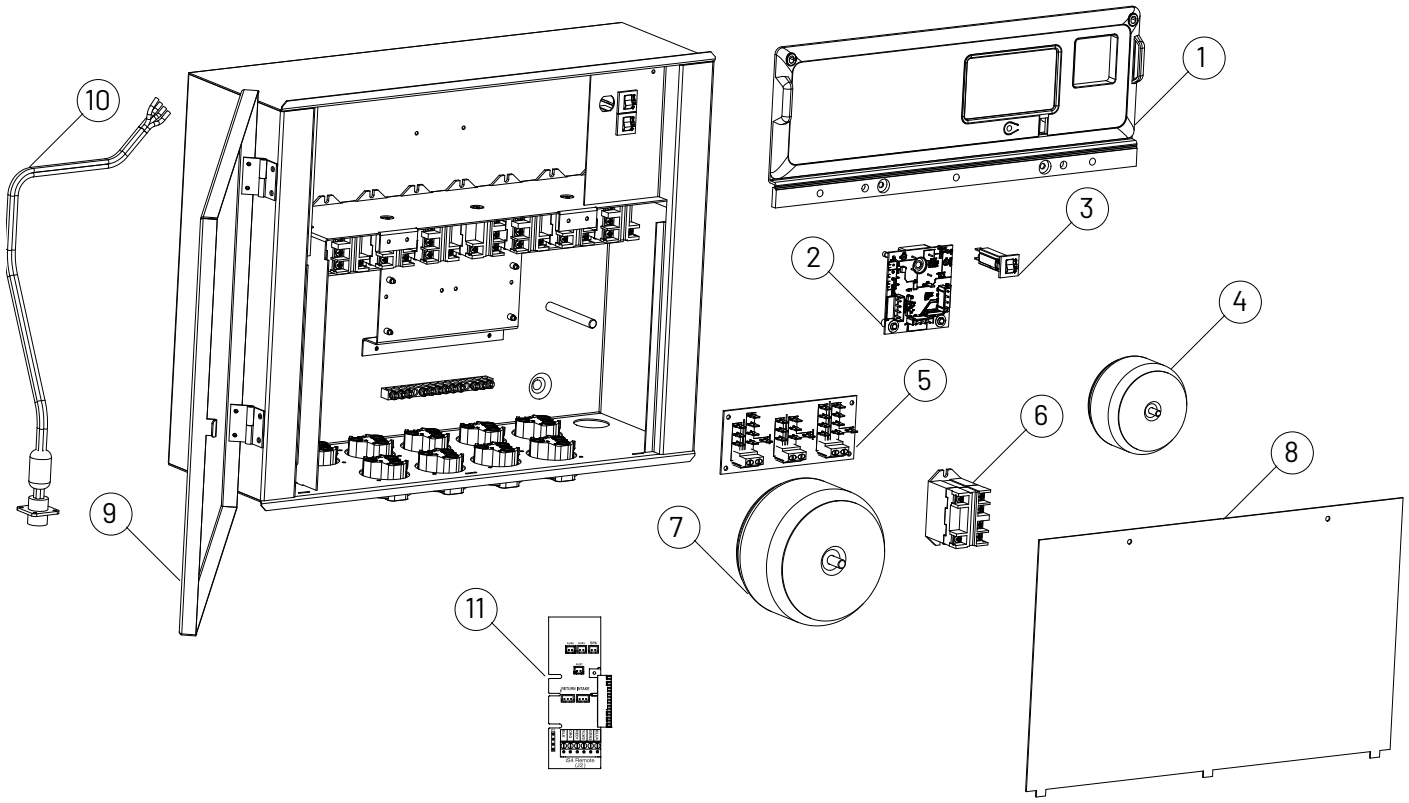


Figure 54: IntelliCenter Wiring Diagram

17. INTELLICENTER REPLACEMENT PARTS LIST



Item	Part No.	Description	Qty.
1	523050	IntelliCenter Main Board (i5P) and bezel assembly	1
2	521593	IntelliChlor SCG PCBA	1
3	8520031	Circuit Breaker 3A	2
3	521142	Circuit Breaker 12A	1
4	700011	Transformer Control 18V/24V	1
5	700166	Power Connection Board	1
6	523543	High Voltage Relay 20A	8
7	700036	Transformer IntelliChlor SCG 28V	1

Item	Part No.	Description	Qty.
8	700198B	High Voltage Cover Panel	1
9	700198C	Enclosure Door	1
10	19113-AU	InltelliChlor SCG Cable	1
11	521968	PCB Personality Board i8PS	1
11	523029	PCB Personality Board i10D	-
Not Shown			
	800175	Mounting Kit (4x screws, 4x plugs)	1
	520872	Temperature Sensor Kit (air, water and clamp)	1

It is important that the pool and spa plumbing system be in accordance with local codes and the Recommended Hydraulic Schematics shown below. Before starting, please review the diagrams and the following recommended guidelines:

- If the spa is attached to the pool, the spa should be at or above the level of the pool. Provide a dam between the two bodies of water to allow the spa to overflow into the pool. The overflow must be sufficient in size to carry the full pump-flow.
- Plumb a three-port Intake Valve on the suction-side of the filter pump, so that the centre 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.
- Plumb a three-port Return Valve on the return-side of the heater, so that the return water will enter the valve through the centre port. Connect the spa return to one side of Return Valve, and the pool return to the other side.
- Install a spa makeup line (consisting of a manual valve and 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.
- 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. Make sure these combined pool suctions converge and connect to the pool side of the intake valve.
- If using a single pump system with solar via actuated valve. 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.
- Always install water chemistry devices downstream of heaters, with a check-valve in between them.
- Any water features that return to the pool shall be installed after the pool/spa return valve on the pool side. This ensures they won't operate in spa mode and drain the spa.
- In seperate body systems, with pool and spa that are not connected, do not attempt to share equipment. Seperate bodies must have seperate equipment. Sharing equipment on seperate bodies risks flooding in the event of actuator valve failure.
- All equipment, with the exception of the spa-side remotes, lighting and water features, must be located at least 3.5m from the water's edge in accordance with the Wiring Rules AS/NZS 3000.

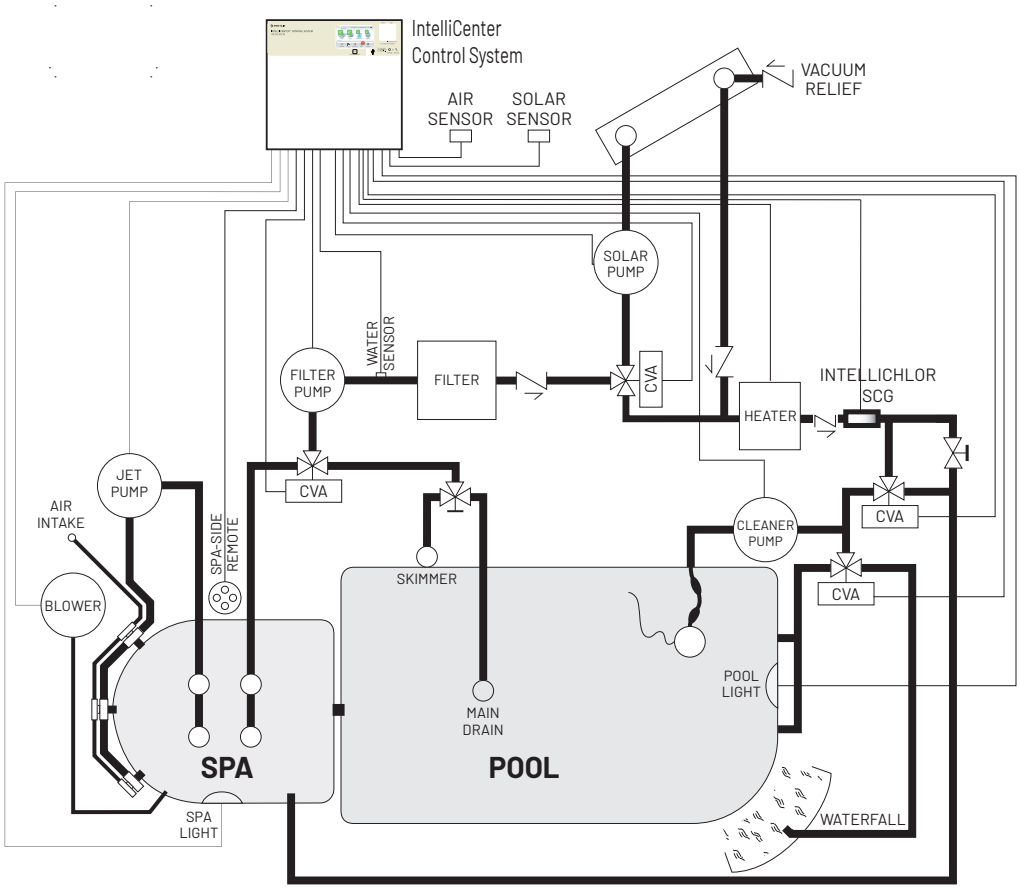


Figure 55: IntelliCenter Wiring Diagram

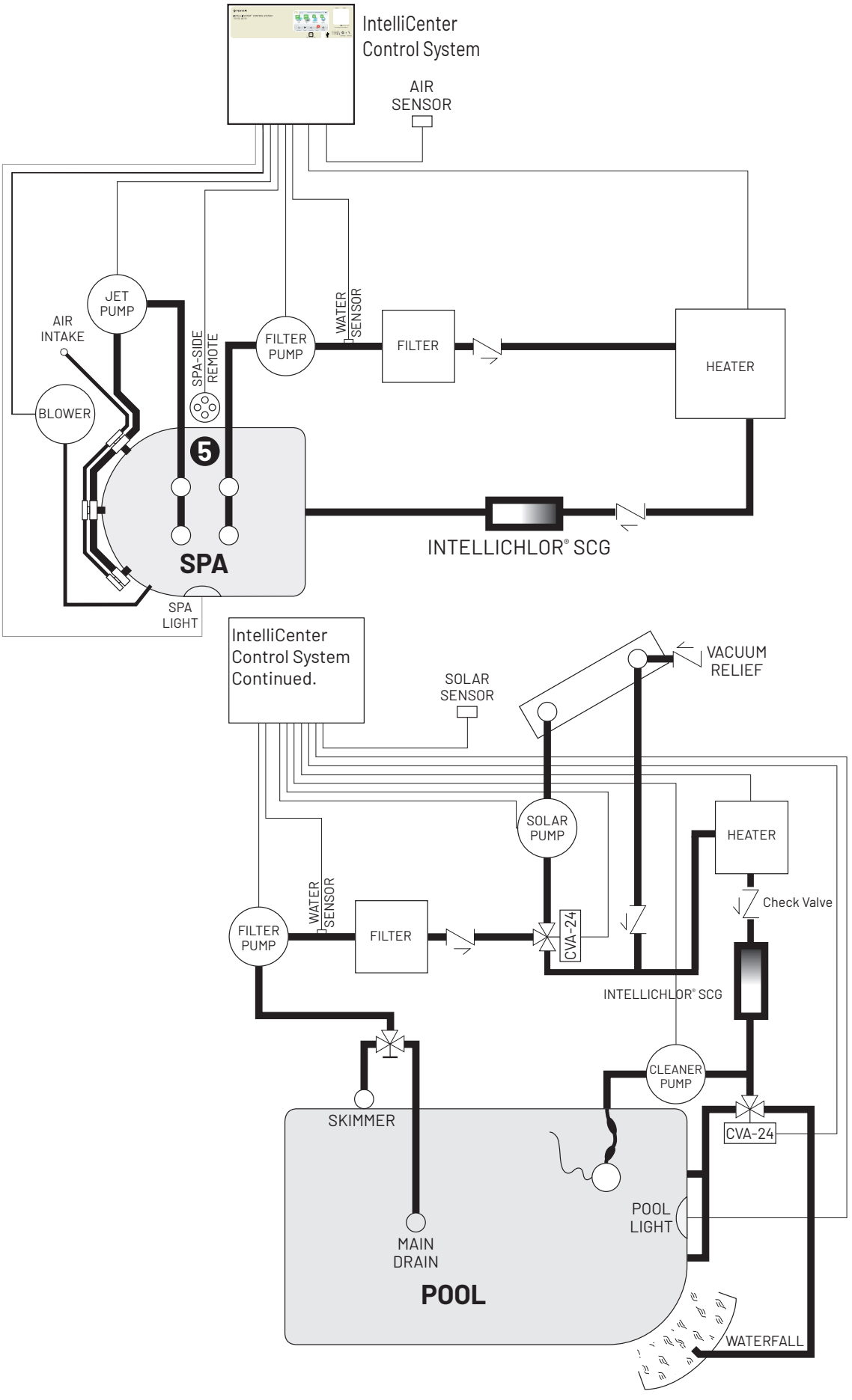


Figure 56: IntelliCenter Wiring Diagram

IMPORTANT

Please attach your sales invoice/docket here as proof of purchase should warranty service be required. Please do not return warranty form to Pentair Australia - Retain for your records.

PURCHASED FROM:
PURCHASE DATE:
SERIAL NO:
MODEL NO:

1-21 Monash Drive | Dandenong South, VIC 3175 | Australia | 1300 137 344 | pentairpool.com.au

L300368 - 1225