



SunTouch™ Safety Vacuum Release System (SVRS) Audible Alarm

(for use with IntelliFlo® VS+ SVRS
and IntelliPro® VS+ SVRS pumps)



Installation and User's Guide

IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

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WARNINGS AND IMPORTANT SAFETY PRECAUTIONS



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



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



The SVRS Alarm is intended for use in swimming pool applications and can only be used with The IntelliFlo®VS+ SVRS and IntelliPro®VS+ SVRS pump.



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



IMPORTANT NOTICE - Attention Installer: This Installation and User's Guide ("Guide") contains important information about the installation, operation and safe use of the SVRS Alarm. This Guide should be given to the owner and/or operator of this equipment.



Before installing this product, read and follow all warning notices and instructions in this Guide. Failure to follow warnings and instructions can result in severe injury, death, or property damage. Call (800) 831-7133 for additional free copies of these instructions. Please refer to www.pentairpool.com for more information related to these products.



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



To reduce the risk of injury, do not permit children to use or operate this product.



When setting up pool water turnovers or flow rates the operator must consider local codes governing turnover as well as disinfectant feed ratios.



DO NOT increase pump size; this may increase the flow rate through the system and exceed the maximum flow rate stated on the drain cover. Never exceed the maximum stated pump flow rating.



If this product is intended for use in other than single-family dwellings, a clearly labeled emergency switch shall be provided as part of the installation. The switch shall be readily accessible to the occupants and shall be installed at least 5 feet (1.52 m) away, adjacent to, and within sight of, the SVRS Alarm.

WARNINGS AND IMPORTANT SAFETY PRECAUTIONS



RISK OF ELECTRICAL SHOCK OR ELECTROCUTION:

PUMPS REQUIRE HIGH VOLTAGE WHICH CAN SHOCK, BURN, OR CAUSE DEATH. BEFORE WORKING ON PUMP!

Always disconnect power to the pool pump at the circuit breaker from the pump before servicing the pump. Failure to do so could result in death or serious injury to service person, pool users or others due to electric shock.



Before attempting installation or service of the SVRS Alarm, be sure all power to the circuit supplying AC power is disconnected/switched off at the circuit breaker. The SVRS Alarm must be installed by a qualified professional. Grounding (earth bonding) is required to the SVRS Alarm.



Install the pump a minimum of five (5) feet from the inside wall of the pool and spa. Canadian installations require a minimum of three (3) meters from pool water.



A pool or spa pump must be installed by a qualified pool and spa service professional in accordance with the National Electrical Code and all applicable local codes and ordinances. Improper installation may create an electrical hazard which could result in death or serious injury to pool users, installers, or others due to electrical shock, and may also cause damage to property.



Pumps produces high levels of suction, which can pose extreme danger if a person comes in close proximity to an open pool or spa drain or a loose or broken drain cover or grate. The pump, when installed according to the manufacturer's instructions, is designed to help prevent injuries caused by body entrapment in pools. Pumps does not, however, protect against limb entrapments, disembowelments (when a person sits on a broken or uncovered pool drain) or hair entanglements.



Pumps improperly sized or installed or used in applications other than for which the pump was intended can result in serious personal injury or death. These risks may include but not be limited to electric shock, fire, flooding, suction entrapment or serious injury or property damage caused by a structural failure of the pump or other system component.



The IntelliFlo® VS+ SVRS and IntelliPro® VS+ SVRS pump is capable of generating systems pressures up to 50 psi. Installers must ensure that all system components are rated to withstand at least 50 psi. Over pressurizing the system can result in catastrophic component failure or property damage.

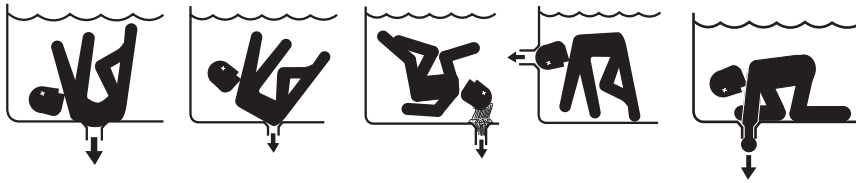
WARNINGS AND IMPORTANT SAFETY PRECAUTIONS

Two Speed Pump Controls Notice (Title 20 Compliance)

Please read the following important Safety Instructions. When using two-speed pumps manufactured on or after January 1, 2008, the pump's default circulation speed **MUST** be set to the **LOWEST SPEED**, with a high speed override capability being for a temporary period not to exceed one normal cycle, or two hours, whichever is less.



SUCTION ENTRAPMENT HAZARD



Pool and spa pumps move large volumes of water, which can pose extreme danger if a person's hair comes in close proximity to a drain that is not the proper size for the pump or pumps.

Hair Entanglement – When the hair tangles or knots in the drain cover, trapping the swimmer underwater. This hazard is present when the flow rating of the cover is too small for the pump or pumps.

Limb Entrapment – When a limb is sucked or inserted into an opening resulting in a mechanical bind or swelling. This hazard is present when a drain cover is missing, broken, loose, cracked or not properly secured.

Body Entrapment – When a portion of the body is held against the drain cover trapping the swimmer underwater. This hazard is present when the drain cover is missing, broken or the cover flow rating is not high enough for the pump or pumps.

Evisceration/Disembowelment – When a person sits on an open pool (particularly a child wading pool) or spa outlet and suction is applied directly to the intestines, causing severe intestinal damage. This hazard is present when the drain cover is missing, loose, cracked, or not properly secured.

Mechanical Entrapment – When jewelry, swimsuit, hair decorations, finger, toe or knuckle is caught in an opening of an outlet or drain cover. This hazard is present when the drain cover is missing, broken, loose, cracked, or not properly secured.

Two Speed Pump Controls Notice (Title 20 Compliance)

Please read the following important Safety Instructions. When using two-speed pumps manufactured on or after January 1, 2008, the pump's default circulation speed **MUST** be set to the **LOWEST SPEED**, with a high speed override capability being for a temporary period not to exceed one normal cycle, or two hours, whichever is less.

WARNINGS AND IMPORTANT SAFETY PRECAUTIONS


⚠ WARNING Only use a pumping system rated for the corresponding flow. FAILURE TO DO SO CAN RESULT IN HAIR OR BODY ENTRAPMENT WHICH CAN CAUSE SERIOUS PERSONAL INJURY OR DEATH. If in doubt about the rating of your system, consult a qualified pool service professional.

IMPORTANT NOTICE: Pumps are not a substitute for properly installed and secured pool drain covers. An ANSI/ASME A112.19.8 approved anti-entrapment drain cover must be used for each drain. Pools and spas should utilize a minimum of two drains per pump. Regularly inspect all covers for cracks, damage and advanced weathering. If a cover becomes loose, cracked, damaged, broken or is missing, close the pool or spa immediately, shut off the pump, post a notice and keep the pool or spa closed until an appropriate VGB 2008 certified cover is properly installed. Covers deteriorate over time due to exposure to sunlight and pool chemicals. This cover must be replaced within seven (7) years from installation (or earlier if the cover becomes damaged in any way).

⚠ WARNING Control System is intended to control heaters with built-in high limit circuits **ONLY**. Failure to do so may cause property damage or personal injury. All water will be routed through the heater assembly.

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

General Installation Information

1. All work must be performed by a licensed electrician, and must conform to all national, state, and local codes.
2. Install to provide drainage of compartment for electrical components.
3. If this system is used to control underwater lighting fixtures, a ground-fault circuit interrupter (GFCI) must be provided for these fixtures. Conductors on the load side of the ground-fault circuit-interrupter shall **not** occupy conduit, junction boxes or enclosures containing other conductors unless such conductors are also protected by a ground-fault circuit-interrupter. Refer to local codes for details.
4. A terminal grounding bar stamped  is located inside the SVRS Alarm enclosure. To reduce the risk of electric shock, this terminal must be connected to the grounding means provided in the electric supply service panel with a continuous copper wire equivalent in size to the circuit conductors supplying this equipment (no smaller than 12 AWG or 3.3 mm). The bonding lug(s) provided on this unit are intended to connect a minimum of one No. 8 AWG for US installation and two No. 6 AWG for Canadian installations solid copper conductor between this unit and any metal equipment, metal enclosures or electrical equipment, metal water pipe, or conduit within 5 feet (1.5 m) of the unit.
5. The electrical supply for this product must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors to comply National Electrical Code (NEC), NFPA 70 or the Canadian Electrical Code (CEC), CSA C22.1. All applicable local installation codes must also be adhered to. The disconnecting means must be readily accessible to the tub occupant but installed at least 10 ft. (3.05 m) from the inside wall of the pool.
6. Supply conductor must be sized to support all loads.

WARNINGS AND IMPORTANT SAFETY PRECAUTIONS

The Virginia Graeme Baker Pool and Spa Safety Act imposes certain new requirements on owners and operators of swimming pools and spas. Pools or spas constructed on or after December 20, 2008, shall utilize:

- (A) No submerged suction outlets, a gravity drainage system with ASME/ANSI cover(s), one or more unblockable outlets; or
- (B) A multiple main drain system without isolation capability with suction outlet covers that meet ASME/ANSI A112.19.8 Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs and either:
 - (i) A safety vacuum release system (SVRS) meeting ASME/ANSI A112.19.17 Manufactured Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems and/or ASTM F2387 Standard Specification for Manufactured Safety Vacuum Release Systems (SVRS) for Swimming Pools, Spas and Hot Tubs or
 - (ii) A properly designed and tested suction-limiting vent system or
 - (iii) An automatic pump shut-off system.

Pools and spas construction prior to December 20, 2008, with a single submerged suction outlet shall use a suction outlet cover that meets ASME/ANSI A112.19.8 and either:

- (A) A multiple main drain system without isolation capability, or
- (B) A safety vacuum release system (SVRS) meeting ASME/ANSI A112.19.17 and/or ASTM F2387, or
- (C) A properly designed and tested suction-limiting vent system, or
- (D) An automatic pump shut-off system, or
- (E) Disabled submerged outlets, or
- (F) Suction outlets shall be reconfigured into return inlets.

For information about the Virginia Graeme Baker Pool and Spa Safety Act, contact the Consumer Product Safety Commission at (301) 504-7908 or visit www.cpsc.gov.

NOTE: Always turn off all power to the pool pump before installing the cover or working on any suction outlet.

Section 1

Safety Vacuum Release System (SVRS) Audible Alarm

Overview

The Safety Vacuum Release System (SVRS) audible alarm device is designed to be used with an IntelliFlo® VS+ SVRS pump or IntelliPro® VS+ SVRS pump. The pump is connected to the SVRS audible alarm circuit board via a 50 ft. two-conductor cable. The pump complies with the ASME/ANSI A112.19.17-2002 SVRS standard which defines how fast the pump must stop on a suction blockage event. The SVRS audible alarm activates the alarm if the pump stops due to an SVRS blockage event on the main pool or spa suction outlet drain cover(s).

Emergency Shut-Off Switch (ESO3) Accessory

If an Emergency Shut-Off Switch (ESO3) is connected to the SVRS Alarm power center and an SVRS blockage event occurs, the SVRS audible alarm will activate but the ESO3 alarm will not sound. Pressing the ESO3 button will switch OFF AC power to the pump and activate both alarms.

IntelliFlo SVRS Pump Operation Modes

The SVRS Audible Alarm supports two pump operation modes; “SCHEDULE” and “MANUAL.”

Schedule mode (see page 7): Each of the pump’s four speed buttons can be scheduled for start/stop times and run speeds.

Important notes when scheduling pump start and stop times:

- To schedule the pump to run for 24 hours per day without turning off, requires two (2) separate schedules; for example set Speed 1 in the pump’s “Schedule Mode” to start at 8 AM and stop at 7:59 AM and Speed 2 to start at 7:57 AM and stop at 8:01 AM.

Note: It is not recommended to program a speed button to run one schedule for 23 hours and 59 minutes (23:59) per day. Program a second schedule to overlap the first program. Refer to the example described above.

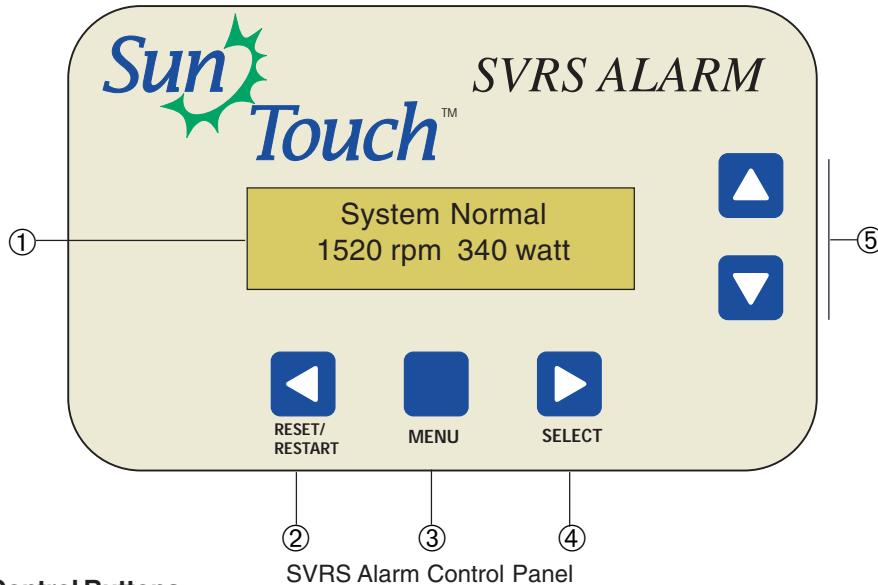
- For more information about programming the pump, see page 12.

- **Manual mode (see page 9):** Each of the four pump speed buttons are setup manually from the pump's control panel. If an SVRS blockage event occurs in manual mode, check the suction outlets for a blockage then press the **RESET/RESTART** button to deactivate the alarm. **Note: The pump will not restart automatically in "Soft Prime" mode.** To restart the pump, you must first place the SVRS alarm system in "SERVICE MODE," press one of the pump SPEED buttons, press the START/STOP button then press the MENU button to re-enable the alarm system. Press the MENU button until the main screen is displayed.

Note: For IntelliFlo pump operating information, see the IntelliFlo VS+ SVRS and IntelliPro VS+ SVRS pump Installation and User's Guide (P/N 353850).

SVRS Alarm Power Center Control Panel




Use the SVRS Alarm control panel buttons to access the menu items and setup system settings.



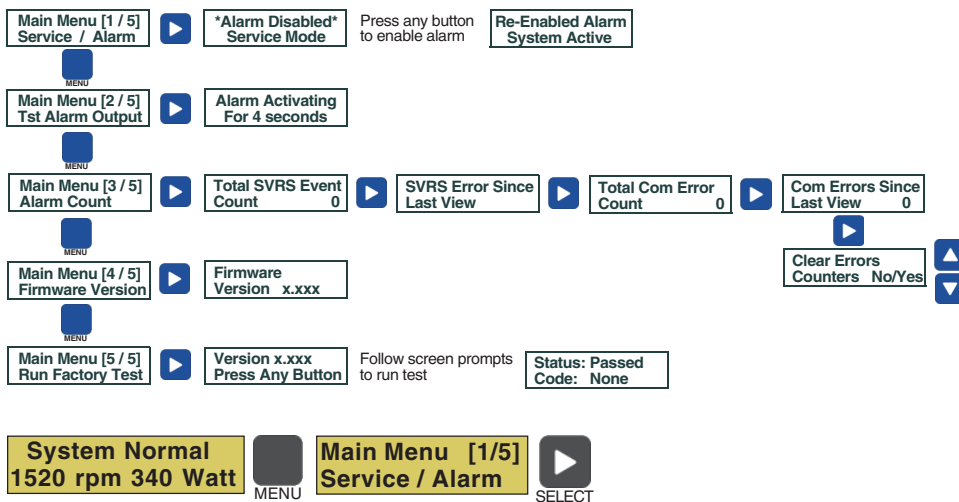
Control Buttons

- ① **Liquid Crystal Display (LCD):** The main system display consists of a 16 x 2 alphanumeric character LCD with backlighting for easy viewing.
- ② **Reset/Restart button:** After a SVRS blockage event occurs, check the suction outlets for a blockage then press this button to turn off the audible alarm. Further action maybe necessary to restart the pump. For more information, see page 7.

SVRS Audible Alarm Installation and User's Guide

- ③  **MENU button:** Use the Menu button to access the main menu items. There are five (5) menu items to select from. Press the MENU button to scroll through each of the five menu items. The main menu items are displayed along with the menu number (1/5). To exit the main menu item, press the Menu button until the main status screen displays. If no menu activity is detected after five minutes, the main status screen is displayed. All menu settings are permanently saved and retained in the SVRS Alarm control panel even after power is removed from the control panel.
- ④  **Right button:** While in the main menu, use the Right arrow button to select a menu setting or to return to the main menu items. After changing a menu item setting or value, it is automatically saved.
- ⑤  **Up and Down arrow button:** After an SVRS blockage has occurred, press the Reset/Restart button to silence the audible alarm then press both buttons simultaneously two times to initiate a pump “hard” prime restart. Pressing these buttons the second time will also disable the “SVRS Auto restart” protection feature during the priming mode. If the Reset/Restart button is pressed to silence the audible alarm allowing the pump to start in “soft prime” mode, this may turn off “priming” on the pump. Pressing the Up/Down arrow to start the pump in “hard prime” mode may enable “priming.” Before doing so, be sure to clear the suction outlet of the blockage. If the buttons are pressed simultaneously only one time, a pump “soft” prime restart is initiated. This condition occurs after the Reset/Restart button is pressed to initiate a soft prime restart. These buttons are also used to toggle “Clear Errors Counters” No/Yes setting. See Menus, page 5.

Main Menu



Access the Main Menu

To access the menu items, Press the **Menu** button. Press the **Right arrow button** to access the menu item. Use this button to view a menu setting and to exit a setting and return to the main menu (1-5). Note: Use the **Up/Down arrow button** to select “Clear Errors Counters” **No/Yes** setting.

Service / Alarm Mode

Main Menu [1/5]
Service / Alarm

Enter Service mode: Press the **Menu button** then the **Right arrow button** to enter Service mode.

Alarm Disabled
Service Mode

Note: “Service” mode disables the Alarm mode and allows manual control of the pump. When the SVRS Alarm is powered up and in “Service” mode, it will automatically revert to “Alarm” mode (normal SVRS protection mode) in five (5) minutes and the pump display will show “DISPLAY NOT ACTIVE.”

Re-Enable Alarm
System Active

Exit Service mode: To exit Service mode anytime before five minutes, press any button on the control panel. The screen will display “Re-Enable Alarm System Active” for five (5) minutes then return to “Alarm” mode. Pressing any button before the five (5) minutes will return the system to “Alarm” active mode. Press the Menu button to scroll through the menu items until the main status screen is displayed.

Testing the SVRS Alarm

Main Menu [2/5]
Tst Alarm Output

To test the audible alarm: Press the Menu button until Main Menu [2/5] is displayed, then press the

Alarm Activating
For 4 Seconds

Right arrow button. The screen displays “Alarm Activating for 4 Seconds.” The audible alarm is activated for four (4) seconds. Press the Menu button until the main status screen is displayed.

Alarm Count

Main Menu [3/5]
Alarm Count

To view the Alarm Count screens: Press the Menu button until Main Menu [3/5] is displayed, then press the **Right arrow button.** The screen displays “Total SVRS Event Count 0.” Press the Right arrow button to view the other Alarm Count events. Press the **Menu button** to exit Alarm Count.

Total SVRS Event Count	xxx0
-----------------------------------	-------------

Displays the total SVRS event alarms.

SVRS Error Since Last View	xxx0
---------------------------------------	-------------

Displays SVRS event alarms since last viewed.

Total Com Error Count	xxx0
----------------------------------	-------------

Displays total Communication alarms.
Communication alarms occur when the system is not communicating with the pump.

Com Errors Since Last View	xxx0
---------------------------------------	-------------

Displays Communication alarms since last viewed.

Clear Errors Counters	No?
----------------------------------	------------

Clear all “Error Counters.” Press the **Up arrow or Down arrow button** to select “Yes” to clear errors counters.

Firmware Version

Main Menu [4/5] Firmware Version

To view the firmware version: Press the Menu button until Main Menu [4/5] is displayed, then press the **Right arrow button** to display the current firmware version. Press the **Menu button** twice to return to the main screen.

Run Factory Test

Main Menu [5/5] Run Factory Test

To run the factory test: Press the Menu button until Main Menu [5/5] is displayed, then press the **Right arrow button** to display the first screen. Press the Right button to start the system test. Follow the screen prompts to complete the test. After the test has been completed, press the **Menu button** twice to return to the main screen.

Troubleshooting (Status and System Alert Messages)

The following alert messages may be displayed if a system error is detected.

Pump is Not Running	The pump is not running. Either the pump is in ‘manual’ mode or is not scheduled to run at this time. To start the pump; press the SVRS alarm control panel Menu button, press the Right arrow button (disable alarm) on the SVRS alarm (this enables ‘Service’ mode). Press the pump’s Start/Stop button two times (be sure the LED above the Start/Stop button is on). To reactivate the SVRS alarm, press the Menu button. For information about ‘schedule’ mode, see page 1.
System Normal 1520 rpm 340 Watt	The pump is on and running normally and the alarm is enabled. The current RPM and Wattage is displayed.
SVRS Alarm !!! Blockage Alarm	An SVRS event has occurred. The pump has stopped and the alarm is activated. If the optional ESO3 emergency switch option is installed; pressing the switch will switch OFF AC power to the pump.
Check for Drain !!! Blockage !!!	
Communication With Pump Alarm	A communication failure has occurred between the system and pump. Check the RS485 communication cable between the pump and the SVRS Alarm power center.
Soft Restart in xxx Seconds	Before a pump ‘Soft Prime’ or Full/Hard Prime’ restart mode is initiated, the countdown seconds are displayed as defined in the pump’s ‘SVRS Auto Restart’ setting (default 120 seconds, ‘Auto Restart’ disabled/Enabled). For more information, see page 7.
Full/Hard Prime in xxx Seconds	
Soft Restart in 5 Seconds	If the pump’s ‘SVRS Auto Restart’ feature is disabled, the pump restarts (in ‘Soft Prime’ or ‘Full/Hard Prime’ mode) after a five second countdown. For more information, see page 7 -8.
Full/Hard Prime in 5 Seconds	

Required Action for SVRS blockage Event (Schedule Mode, SVRS Auto Restart “Disabled”)

IMPORTANT NOTE: Disabling the “SVRS Auto Restart” setting does not mean that the SVRS suction blockage feature is also being disabled. When the pump stops due to a SVRS blockage alarm, after the blockage has been removed, pressing the Reset/Restart button on the SVRS Alarm control panel will “Soft Prime” restart the pump after a five (5) second countdown, then the pump will resume normal operations. During the soft prime the pump starts at the minimum RPM setting of the pump and slowly ramps up to the desired speed setting.

**System Normal
1520 rpm 340 Watt**

Pump in “Schedule” mode and “Auto Restart” feature “Disabled”.

Note: To Enable/Disable “SVRS Auto Restart” pump setting, see page 10.

- 1 Pump Stopped: SVRS audible alarm ON (due to drain blockage).**
- 2 Check for blockage in pool/spa main drain.**
- 3 Remove blockage.**
- 4 Press Reset/Restart button once to deactivate alarm (alarm OFF).**

**Soft Restart in
5 Seconds**

After a five (5) second countdown the pump will restart in “Soft Prime” mode.

**Check for Drain
!!! Blockage !!!**

The display toggles between these two alert messages.

**System Normal
1520 rpm 340 Watt**

The system returns to normal operation (after blockage is removed)

Required Action for SVRS blockage Event (Schedule Mode, SVRS Auto Restart “Enabled”)

IMPORTANT NOTE: If the “SVRS Auto Restart” is enabled and a SVRS blockage event occurs, after the blockage is removed, pressing the Reset/Restart button on the SVRS Alarm control panel will “Soft Prime” restart the pump in the countdown set by the “SVRS Auto Restart” setting. The default setting is two (2) minutes (can be set from 30 sec. to 5 mins.). During the soft prime the pump starts at the minimum RPM setting of the pump and slowly ramps up to the desired speed setting. If it senses a blockage it will stop and soft prime again. The pump will repeat this process ten (10) times.

If a SVRS blockage event occurs, the SVRS Audible Alarm activates the alarm. A blockage event can be caused by leaves, jewelry, hair, limb, or body caught in the opening of the suction outlet cover. Take the following action if the SVRS alarm is activated due to an SVRS blockage. The following screens are displayed after an SVRS blockage occurs:

Note: To Enable/Disable “SVRS Auto Restart” pump setting, see page 10.

Continue on next page....

Required Action for SVRS blockage Event (Schedule Mode, SVRS Auto Restart “Enabled”)

System Normal
1520 RPM 340 Watt

SVRS Alarm !!!
Blockage Alarm

Check for Drain
!!! Blockage !!!

Pump in “Schedule” mode and SVRS “Auto Restart” feature “Enabled”

SVRS Audible Alarm ON (due to blockage)
(Display toggles two alert messages)

- 1** Pump Stopped and SVRS Audible Alarm ON due to blockage:
- 2** Check for blockage in pool/spa.
- 3** Remove blockage.
- 4** Press Reset/Restart button once to deactivate alarm (alarm OFF)

Soft Restart in
xxx Seconds

Check for Drain
!!! Blockage !!!

After a predetermined time the pump will “Soft Prime” restart (SVRS feature is NOT disabled). The display toggles between the countdown seconds and warning message. The countdown seconds as defined in the pump’s “SVRS Auto Restart” setting. The default setting is two (2) minutes.

- 5** Press Up and Down arrow button at the same time (first time)

! Press Again !
for HARD PRIME

Check for Drain
!!! Blockage !!!

Before pressing UP and DOWN buttons a second time (to start up the pump in Full/Hard prime), verify the suction outlet cover blockage is REMOVED. Pressing the UP and DOWN buttons a second time DISABLES the SVRS protection feature.

⚠ WARNING

Pressing the Up and Down arrow button a second time DISABLES THE SVRS FEATURE - Before pressing button verify that blockage is REMOVED.

*Note: If the **UP and DOWN buttons** are **NOT pressed** a second time, a pump “Soft Prime” restart will be initiated and the SVRS feature will not be disabled.*

- 6** Press Up and Down arrow button at the same time (second time)

Full/Hard Prime
in xxx Seconds

Check for Drain
!!! Blockage !!!

After a predetermined time, a pump “Full/Hard Prime” restart is initiated. The display shows the remaining countdown seconds as defined in the pump’s “SVRS Auto Restart” setting.

The system returns to normal operation (if blockage is removed).

Required Action for SVRS blockage Event (Manual Mode, SVRS Auto Restart “Enabled/Disabled”)

System Normal
1520 rpm 340 Watt

Pump in “Manual” mode and SVRS “Auto Restart” feature “Enabled or Disabled.”

Note: The pump will not restart automatically in “Soft Prime” mode.

Pump Stopped and SVRS Audible Alarm ON due to blockage:

- ❶ Check for blockage in pool/spa.
- ❷ Remove blockage.
- ❸ Press Reset/Restart button once (alarm OFF)

**Soft Restart in
5 Seconds**

**Check for Drain
!!! Blockage !!!**

The display toggles between these two alert messages. After a five (5) second countdown the pump will stop. Display shows “Pump Not Running.”

- ❹ **To restart pump, enter SERVICE MODE:** Press the **Menu** button then the **Right arrow** button to enter “Service” mode.
- ❺ **Press one of the SPEED buttons on pump.**
- ❻ **Press Start/Stop button on pump to restart.**
- ❼ **Exit SERVICE MODE:** Press the Menu button on the SVRS alarm. To exit Service mode, press the Menu button until the main screen displays.

System Normal
1520 rpm 340 Watt

The system returns to normal operation (if blockage is removed)

Enable or Disable the “SVRS Auto Restart” Setting

To enable or disable the SVRS Auto Restart setting:

1. Check that the green power LED is on.
2. Press the **Menu** button. “Settings” is displayed.
3. Press the **Select** button. “Pump Address” is displayed.
4. Use the **Up** or **Down** arrow button to scroll to “SVRS”.
5. Press the **Select** button. “Enabled Auto Restart” is displayed.
*To Disable the setting, press the **Select** button to highlight “Enabled” and press the **Down** arrow button to change the setting to “Disabled,” then press the **Enter**, and **Escape** button.*
6. Press the **Down arrow** button to display “SVRS Restart Time.”
This is the duration of time that the pump will restart after a blockage if no buttons are pressed on the SVRS alarm control panel and the pump’s “SVRS Auto Restart” feature is enabled.
7. Press the **Select** button to change the setting. The cursor will appear in the time column.
8. Press **Up** or **Down** arrow button to change the auto restart time from 30 seconds to 5 minutes.
9. Press the **Enter** button to save the setting. To cancel any changes, press the **Escape** button to exit edit mode without saving.
10. Press the **Escape** button to exit.

IntelliFlo Pump Control Panel Buttons and Display Message

While the SVRS Audible Alarm is active and communicating with the IntelliFlo VS+ SVRS or IntelliPro VS+ SVRS pump, the pump control panel displays “**Display Not Active**” and the pump control buttons are disabled.

IntelliFlo VS+ SVRS and IntelliPro VS+ SVRS Pump Overview

The IntelliFlo VS+ SVRS and IntelliPro VS+ SVRS variable speed pump with the safety vacuum release system (SVRS) protection feature operates at a maximum system flow rate of up to 174 gallons per minute (GPM). The pump can operate from 1100 RPM to 3450 RPM with preset speeds of 1100, 1500, 2350 and 3110 RPM. The pump can be adjusted from the pump's control panel to run at any speed between 1100 RPM to 3450 RPM for different applications. The pump control panel alarm LED and error messages warn the user against under and over voltage, high temperature, over current, suction blockage and freeze protection with user defined minimum and maximum speed presets.

The IntelliFlo VS+ SVRS and IntelliPro VS+ SVRS pump may not protect individuals from hair entrapment, limb entrapment or evisceration. The operator must ensure that all suction and return fittings are clean and unobstructed whenever the pump is started. **Because SVRS protection is not enabled during priming mode, never allow anyone in the pool during priming mode.** If SVRS auto restart is enabled and an SVRS event occurs, the pump is allowed to restart automatically after the preset time period.

Note: The operator must insure that any SVRS blockage event is quickly evaluated to confirm that all suction and return fittings are clean and unobstructed. When the pump restarts after a high vacuum event it will slowly ramp up to speed. If the pump senses a blockage it will shut down. The pump will attempt to soft prime 10 times before attempting a full prime.

Programming the IntelliFlo VS+ SVRS Pump

By setting a start time and a stop time, Speeds 1-8 can be programmed to run a certain speed at a certain time of day. To run a scheduled pump speed, press the Start button (LED on). The LCD screen will display “Running Schedules” when it is ready to run a scheduled speed. If the start button is pressed during a scheduled speed time the screen will read Running Speed x and will run speed x. (If priming is enabled it will prime first at the maximum RPM setting of the pump before running speed x.)

Note: The pump will not run the scheduled speeds until the Start/Stop button is pressed (LED on) to place the pump in the “Running Schedule” mode.

To set a schedule to run the pump:

1. Check that the green power LED is on.
2. Press the **Menu** button. “Settings” is displayed.
3. Use the **Up** or **Down** arrow button to scroll to “Speed 1-8”.
4. Press the **Select** button. “Speed 1” is displayed.
5. Use the **Up** or **Down** arrow button to choose the speed you wish to program.
6. Press the **Select** button. Select **Manual**, **Schedule**, or **Egg Timer** for speeds 1-4. “Disabled” or “Schedule” for speed 5-8 is displayed.
Speeds 1-4 default setting is MANUAL. To create a schedule for speed 1-4 Press Select to highlight manual.
Speeds 5-8 default setting is DISABLED. To create a schedule for speed 5-8, Press Select to highlight Disabled.
7. Use the **Up** or **Down** arrow button to scroll to “Schedule”.
8. Press the **Enter** button.
9. Press the **Down** arrow button. Set speed will be displayed.
10. Press the **Select** button to change the speed. The first digit will highlight (ones digit).
11. Use the **Up** or **Down** arrow button to change the speed.
12. Press the **Enter** button to save the setting.
13. Press the **Down** arrow button. “Set Start Time” is displayed.
14. Press the **Select** button to change the start time. The cursor will highlight the minute column.

15. Use the **Left** arrow button to move the cursor to the hour column if desired.
16. Press the **Enter** button to save the setting.
17. Press **Down** arrow. “Set Stop Time” is displayed
18. Press the **Select** button to change the stop time.
19. Press the **Enter** button to save the setting.
20. Press the Start/Stop button. The LED above the button will light up and the pump will start if within a scheduled time or “Running Schedule” is displayed.

When the pump is running a scheduled speed or a duration speed (egg timer) the countdown time (T 00:01) showing the hours and minutes is displayed on the pump’s screen.

***Note:** Speeds 5-8 can be programmed to operate in Schedule mode only. The pump can run eight (8) different speeds at eight (8) programmed start and stop times per day.*

***Note:** When two speeds are scheduled during the same run time the pump will run the higher RPM Speed regardless of Speed # in use.*

Section 2

Installation

Before installing the SVRS Alarm power center read the following guidelines:

- Switch OFF AC power at the main circuit breaker panel, located at the house before high and low voltage connection to the power center.
- AC power for the power center must be provided from the main circuit breaker panel located at the house.
- All electrical equipment must be installed at least five (5) feet from pool and/or spa, and comply with all national, state, and local codes.
- Install the power center no less than five (5) feet from pool or spa near to the pumps, heater, valves, and sensors. Mount the power center outside or inside a pool equipment house or other enclosure.
- Mount the power center on a flat vertical surface or wall so that the conduit knockouts are located at the bottom of the enclosure. Upper and lower brackets are provided to mount the power center to a vertical surface.
- DO NOT mount the power center horizontally. Water can enter the conduit knockouts and cause damage to the system and an cause an electrical shock hazard.
- Consider the power center location when routing the conduit carrying the AC power to the power center, and the conduit that will be run to the high voltage equipment.
- All power center high voltage double pole relays and are rated at 3HP/30A at 240 VAC (1½ HP/30A at 120 VAC).
- Install the power center so that drainage is provided for all electrical components.
- Motors should have built-in thermal protection.
- Allow for unobstructed access to the front of the power center for service personnel.
- The power center provides grounding screw terminals for grounding all equipment. All equipment including the power center must be bonded to earth ground.

Mounting the SVRS Alarm Power Center

The SVRS Alarm Power Center can be mounted on a flat vertical surface, such as a wall or post.

Note: *Select a convenient location to mount the SVRS Alarm Power Center. DO NOT install the SVRS Power Center enclosure less five (5) feet from the pool/spa, filter and no further than 15 feet from the pool/spa valve.*

To mount the SVRS Alarm Power Center:

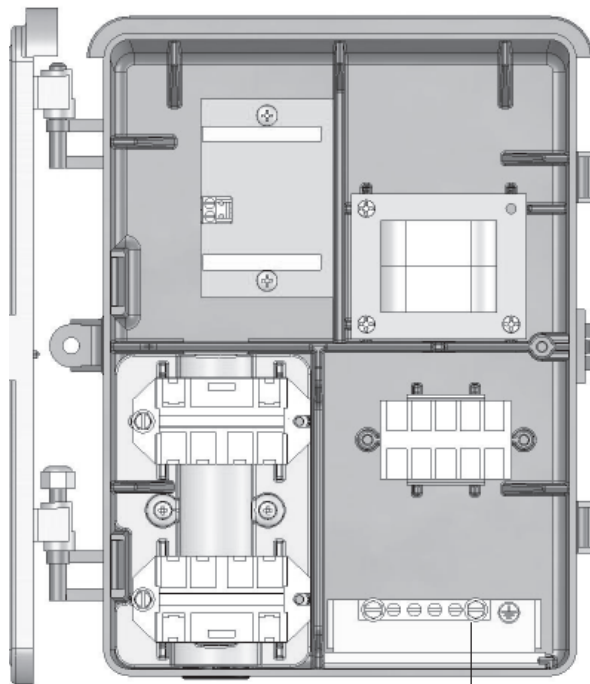
1. Position the SVRS Alarm power center against the vertical flat surface. If wall anchors are being used, support the power center in position (horizontally level and square) against the surface and mark the bracket hole pattern on the wall.
2. Secure the power center with three (3) screws in the mounting bracket holes. If using wall anchors, use 3/16" drill and set the anchors and secure the enclosure with screws.



SVRS Alarm Power Center Mounting Brackets

Grounding and Bonding to the SVRS Alarm Power Center

Connect a ground wire from the primary electrical panel to the SVRS Alarm power center ground bus bar. Also ground each piece of high voltage (120 VAC or 240 VAC) equipment that is connected to the SVRS Alarm power center relays. The SVRS Alarm power center must also be connected to the pool bonding system using an 8 AWG (minimum) wire. An earth terminal for bonding is provided on the grounding bus bar inside the Power Center. For input AC wiring information, see page 17.



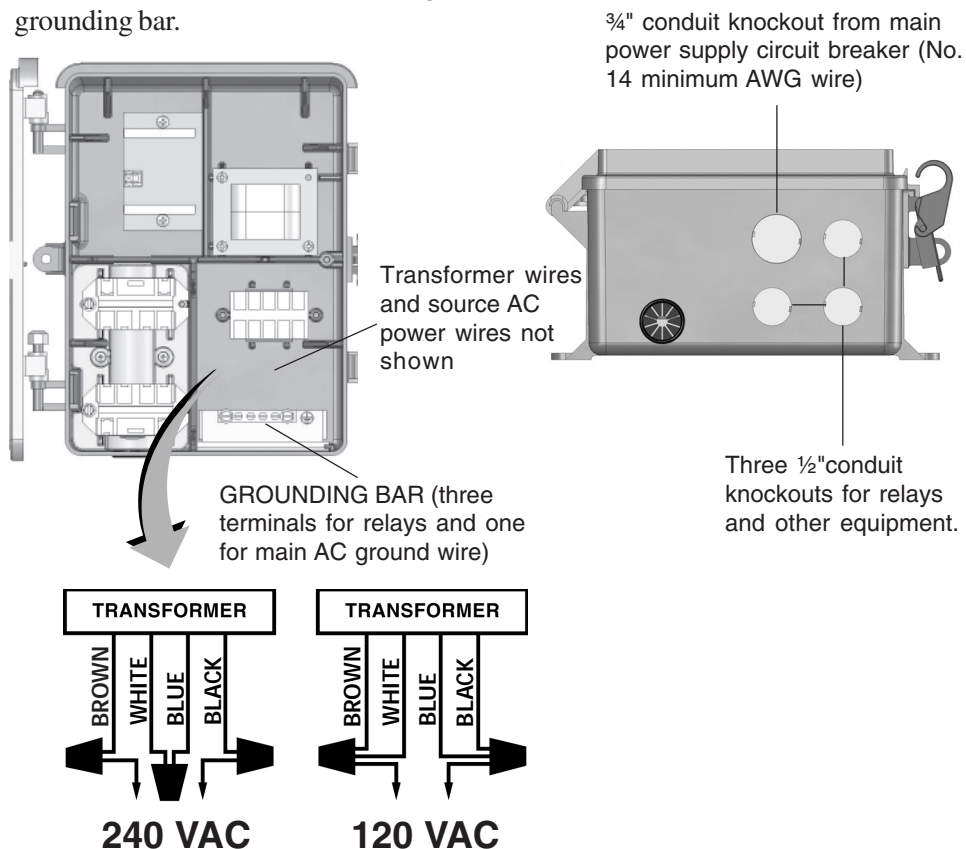
Grounding Bus Bar
(three terminals for
relays and one for main
AC ground wire)

High Voltage Transformer Wiring

The high voltage wiring section is located inside the SVRS Alarm power center. The SVRS Alarm power center can be connected either to 120 VAC or 240 VAC. The SVRS Alarm power center should be wired to receive continuous power (connect directly to sub-panel). The maximum current rating is 820/410 mA at 120/240 VAC 60 Hz/50 Hz. For the AC power wire into the SVRS Alarm power center from the main circuit breaker at the house, use a three conductor cable. Follow manufacturer instructions when installing and testing of ground fault circuit breakers (GFCB) and interrupters (GFCI). Connect input AC wires to the SVRS Alarm power center transformer wires as follows:

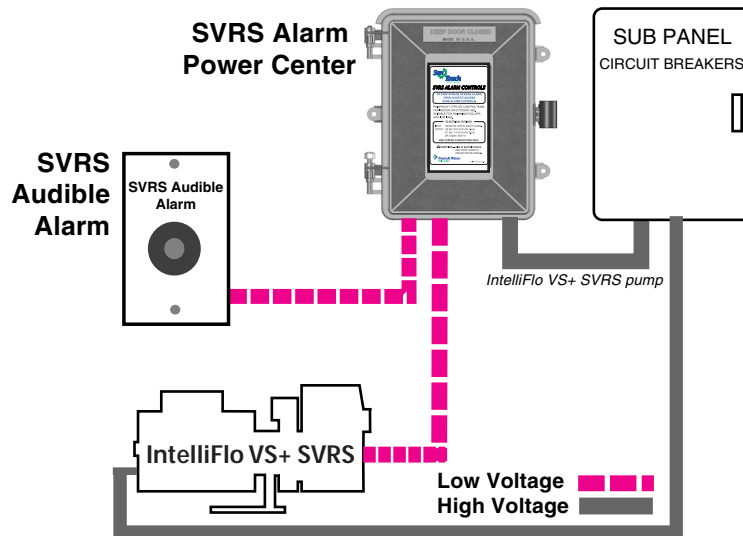
120 VAC: Connect one wire to the Brown/White wires and one wire to the Blue/Black wires. One wire must be connected to the grounding bar (see page 14).

240 VAC: Connect one wire to Black wire and one wire to Brown wire. The White/Blue wires are connected together. One wire must be connected to the grounding bar.



Installing the SVRS Audible Alarm System

The following illustration shows the IntelliFlo VS+ SVRS pump connected to the SVRS Alarm circuit board using the pump's RS-485 two-wire communication cable (provided with pump) and the SVRS audible alarm connected to the SVRS circuit board using a 50 ft. two-conductor cable (provided in kit). The Emergency Shut-Off switch (ESO3) accessory (not shown - see page 21), for commercial spa pump applications, can also be connected to the SVRS Alarm power center (for more information, see page 21).



SVRS Alarm Connections and Alarm Modes

The SVRS Alarm system alarm modes are:

- SVRS Alarm circuit board input connections "Pump" and "Aux 1" are only ON when the alarm is ON.
- SVRS Alarm circuit board input connection "Aux 2" is only OFF when the alarm is ON.
- SVRS Alarm circuit board input connection "Aux 3" is always ON. This connection is for the ESO3 option. Pressing the ESO3 red button will shut power off to the pump.

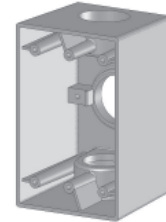
For more information about auxiliary input connection, see page 19.

Connecting the SVRS Alarm Plate

The SVRS Alarm plate is connected to the SVRS Alarm circuit board using the provided 50 ft. two-conductor cable. Mount the alarm plate in a standard outlet box near the pool and spa area (within listening distance of the alarm).

Install the alarm plate (See Figure 1)

1. Strip back the ends of 50 ft. cable conductors ¼ in. Loosen the two screws on the back of the alarm plate. Wrap each wire around each screw. Tight the screws to secure the wires.
2. Mount the alarm plate no less than five (5) feet from the pool/spa in a standard outlet box (purchased separately), type: 22.5 cubic inches (minimum) - Suitable for wet locations with UL/CSA approval listings. Check the inside of outlet box for specification label. The outlet box should accept a minimum of one 3/4” steel conduit.
3. Secure the alarm plate with the two Phillips head screws provided.
4. Route the two conductor cable from the alarm up through the Power Center grommet opening located on the left side, and up through the low voltage raceway to the SVRS circuit board.
5. Connect the cable plug to the **PUMP** output connector on the SVRS Alarm circuit board.



Outlet Box

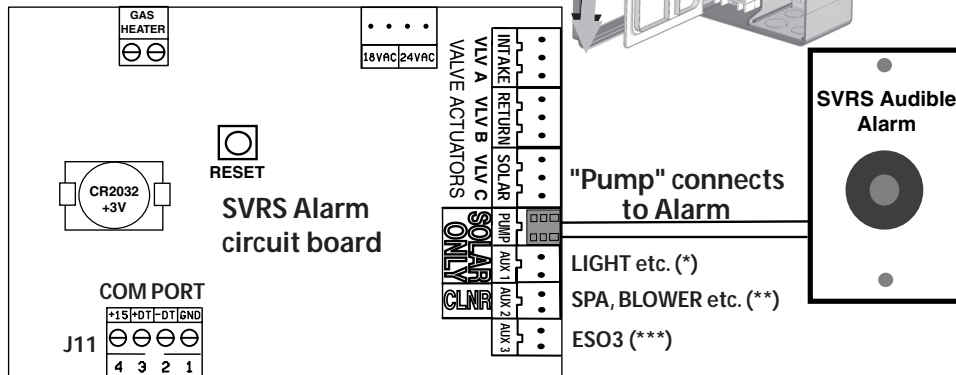
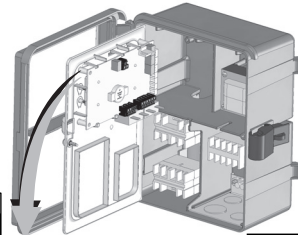


Figure 1

Note: (*) Device connected to PUMP and AUX 1 are ON when alarm is ON.
 (**) Device connected to "AUX 2" is OFF when alarm is ON.
 (***) Device connected to "AUX 3" is always ON. This output connector is used for the ESO3 connection. When alarm is activated, press ESO3 button to shut power OFF to the pump. Pull out the ESO3 button to re-enable pump power.

Connecting IntelliFlo VS+ SVRS pump to the SVRS Alarm Power Center

The IntelliFlo VS+ SVRS pump is connected to the SVRS Alarm circuit board center using the 50 ft. two-conductor communication cable (provided with pump).

To connect the IntelliFlo pump communication cable (See Figure 2)

1. Route the two conductor cable from the pump up through the Power Center grommet opening located on the left side, and up through the low voltage raceway to the circuit board.
2. Strip back the cable conductors ¼ in. Insert the wires into the screw terminals (provided in the kit). Secure the wires with the screws. Make sure to match the color coding of the wires (see Figure 2 below).
3. Insert the terminal connector on the **COM PORT (J11)** screw terminal on the circuit board.

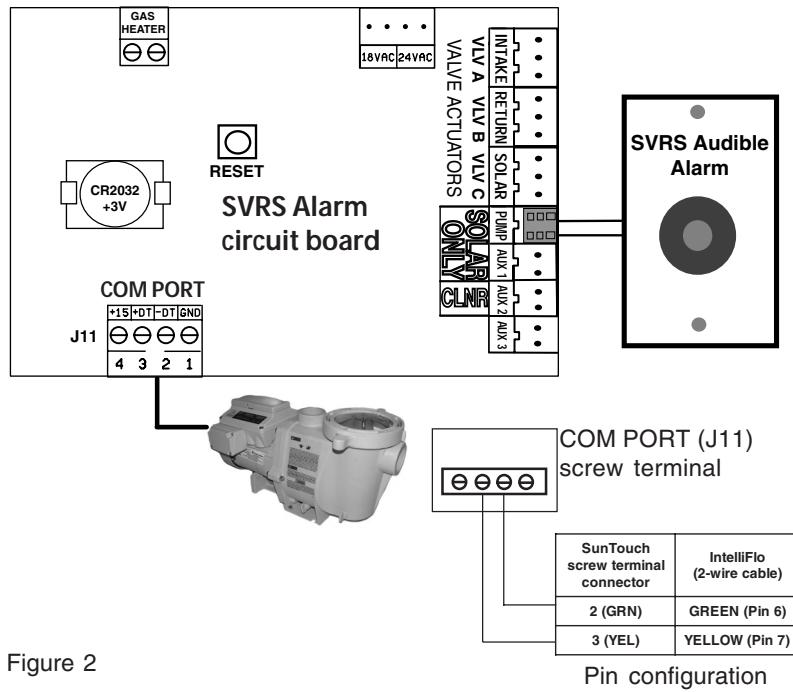
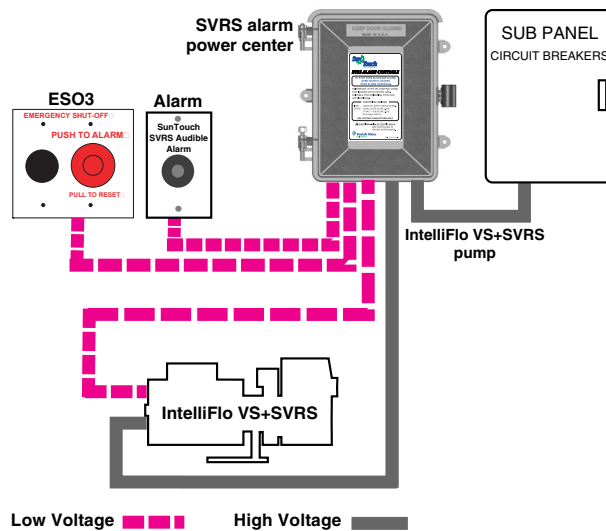


Figure 2

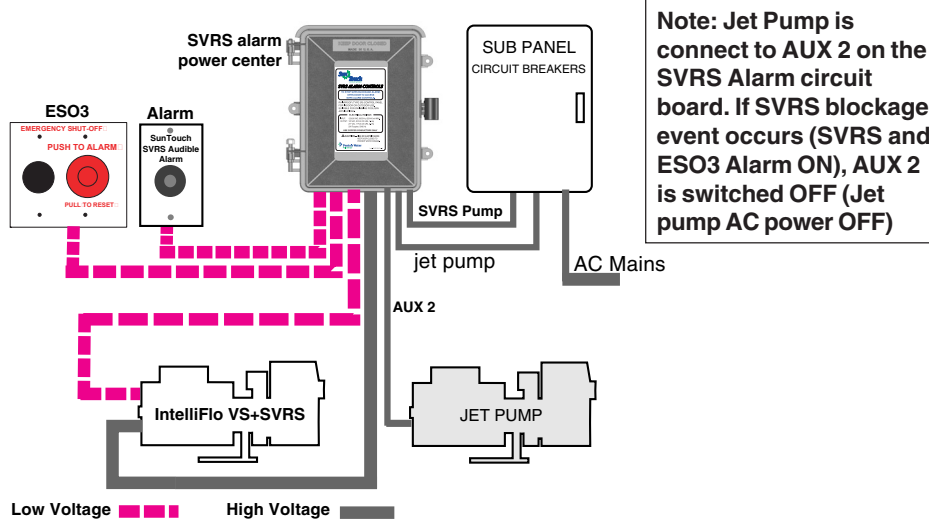
Emergency Shut-Off Switch (ESO3) Accessory

The SVRS Alarm system can be used with the Emergency Shut-Off (ESO3) accessory (connection cable sold separately) for new or existing pool and spa commercial applications. In the event of an emergency, the pool or spa pump can be shut off by pushing the ESO3 red emergency button. Depending upon how the system is wired, this action interrupts power to the pump or other equipment connected to the ESO3 circuit board. Pulling the emergency button back out will return the pumps to normal operation, and shut off the ESO3's alarm.

ESO3 and IntelliFlo VS+SVRS



ESO3, IntelliFlo VS+SVRS and Jet Pump



Mounting the ESO3

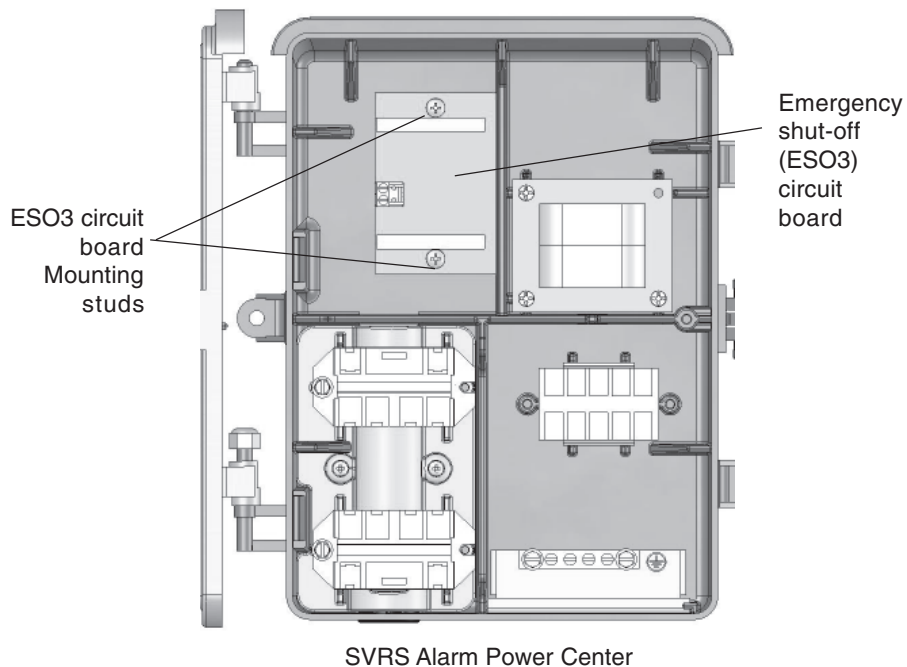
Select a convenient location to mount the Emergency Shut-Off switch (ESO3) near the SVRS audible alarm. Provide a UL-Listed double-gang electrical outlet box. The electrical box must be rated for outdoor/wet location use if the ESO3 is located outside.

Installing the ESO3 Circuit Board

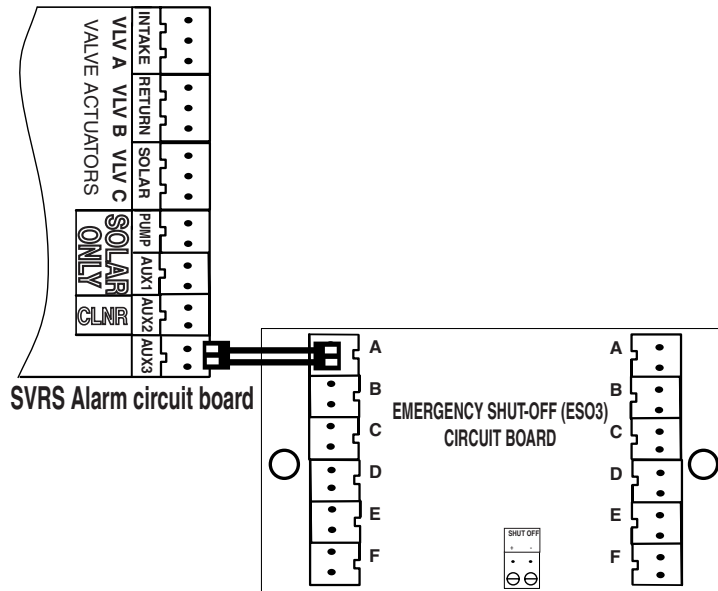
To access the SVRS Alarm Power Center electronics compartment:

Important Safety Instructions - When installing and using this electrical equipment, basic safety precautions should always be followed. Before installing the Emergency Shut-Off Switch, read all safety information on page ii - v.

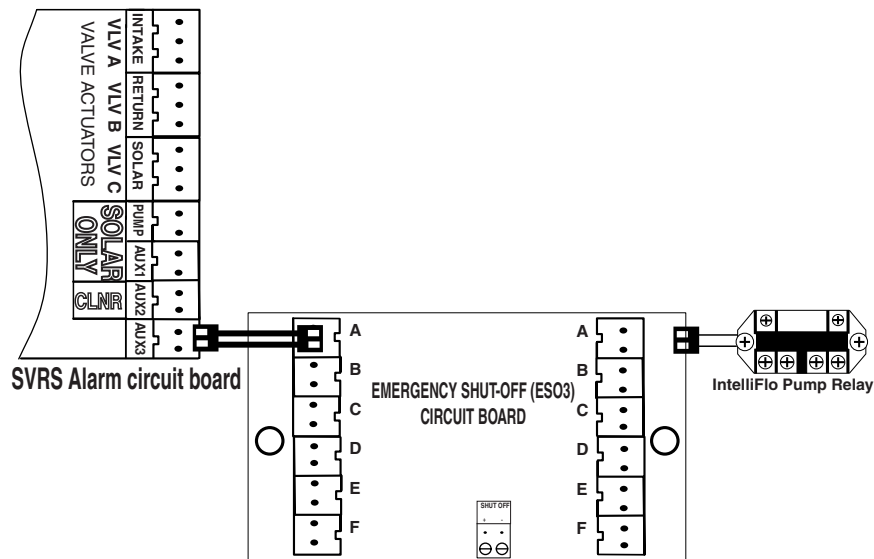
1. Switch the main power OFF to the SVRS Alarm power center.
2. Unlatch the front door,
3. Loosen the retaining screw on the front panel. Open the hinged front panel to access the electronics compartment.
4. Mount the Emergency Shut-off Switch circuit board on the two mounting studs. Secure the circuit board with the two retaining screws.



5. **Connecting the ESO3 circuit board to the SVRS Alarm circuit board:** Using the provided cable, connect AUX 3 on the SVRS alarm circuit board to one of the two-pin sockets located on the left side of the ESO3 circuit board as shown below.



6. **Connecting relay plugs:** Connect the relay cable plug to the two-pin sockets on the right-side of the ESO3 circuit board, as shown below.



Connecting the ESO3 Switch to the Circuit Board (see Figure 3)

7. **Connecting the ESO3 switch:** Route a two-wire cable (sold separately) through grommet located on the left-side of the SVRS Alarm power center, up into the low voltage raceway to the ESO3 switch circuit board.
8. Connect the two wires to J13 on the ESO3 switch circuit board. Connect the other end of the cable to the ESO3 switch plate as shown below in figure 3.

Note: Use same polarity; (+ positive to positive), (- negative to negative) when connecting the two wires from the ESO3 circuit board to the ESO3 switch plate.

9. Verify that all cable connections are connected correctly. Close the front panel and secure it with the retaining screw.

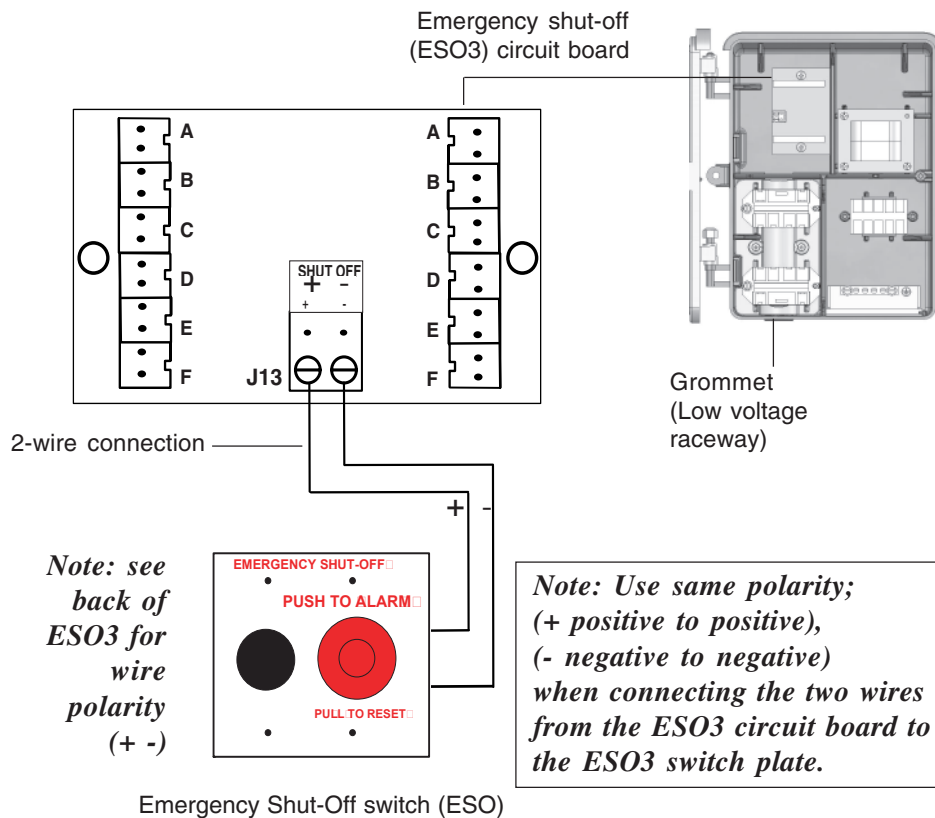


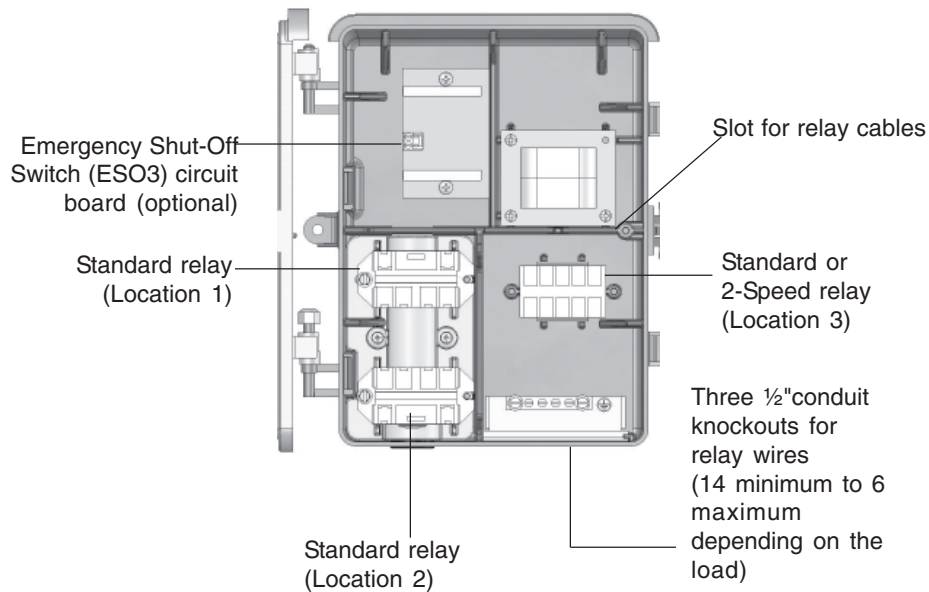
Figure 3

Installing Auxiliary Relays

There can be a maximum of three standard auxiliary relays installed in the SVRS Alarm power center. Relays must be installed at the site. All SVRS Alarm high voltage double pole relays are rated at 3HP/30A at 240 VAC (1½ HP/30A at 120 VAC). There is one relay provided with the SVRS Alarm kit. Other relays can be ordered separately.

Relay locations

A standard relay can be installed in any one of the three locations provided in the SVRS Alarm power center.



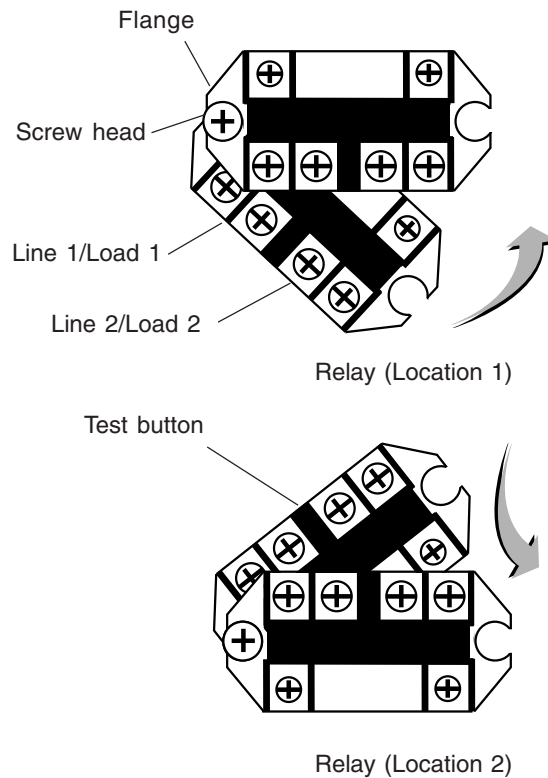
Installing Relays

To install a standard relay in the SVRS Alarm Power Center:

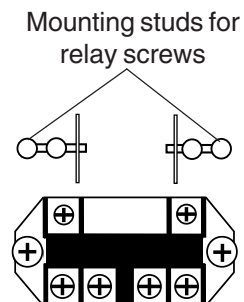
1. **Standard relay (Location 1):** Position the relay coil up in the relay compartment at about a 30° angle. Slide the tip of the relay flange under head of the left-side screw. Rotate the relay upward to align the right-side flange with the screw hole. Using a 1/4 in nut driver, secure the relay in place with the retaining screw.

Standard relay (Location 2): Position the relay (coil facing upward) in the relay compartment at about a 30° angle. Slide the tip of relay flange under head of the left-side screw. Rotate the relay downward to align the right-side flange with the screw hole. Using a 1/4 in nut driver, secure the relay in place with the retaining screw.

Relay Test button (if present): For testing relay connectivity, with power applied, press the lever on the side (line/load side) of the relay.



Standard relay (Location 3): Position the relay (coil facing upward) on top of the mounting studs. Align the relay flanges with the screw holes. Using a 1/4 in nut driver, secure the relay in place with the two retaining screw.



Notes



P/N 521169 Rev A