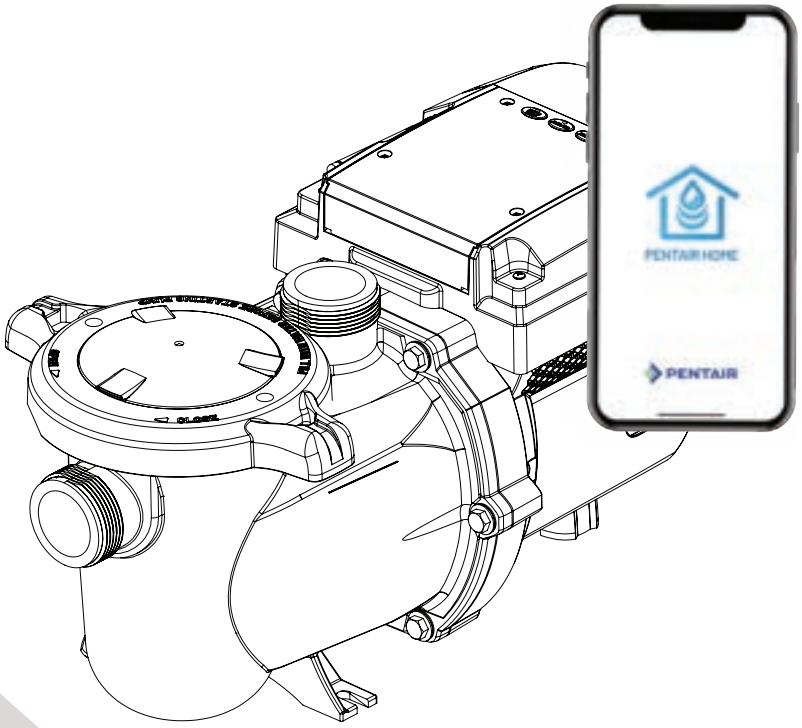
PENTAIR HOME

FOR INTELLIFLO3™ VSF AND INTELLIPRO3™ VSF VARIABLE SPEED AND FLOW PUMPS

USER'S GUIDE



IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

Digital copies of all IntelliFlo3 VSF manuals, as well as translated versions, can be found at www.pentair.com, or by scanning the provided QR code.

- *Install and Maintenance Guide (P/N 356231)*
- *User's Guide (P/N 356088)*

Se pueden encontrar copias digitales de todos los manuales de IntelliFlo3 VSF, así como versiones traducidas en www.pentair.com, o escaneando el código QR proporcionado.

- *Guía de instalación y servicio (P/N 357973)*
- *Guía del usuario (P/N 357971)*

Des copies numériques de tous les manuels IntelliFlo3 VSF, ainsi que les versions traduites, peuvent être trouvées sur www.pentair.com, ou en scannant le code QR fourni.

- *Guide d'installation et d'entretien (P/N 357974)*
- *Guide d'utilisation (P/N 357972)*

IMPORTANT SAFETY INSTRUCTIONS

This guide provides important installation, operation and maintenance instructions related to this equipment. Consult Pentair or a qualified pool professional with any questions.

Attention Installer: This guide contains important information that helps ensure proper and safe installation, operation and maintenance of this equipment. Ensure this guide is given to the pool owner and/or operator of this equipment after installation.

Attention User: This guide contains important information that helps ensure proper and safe operation and maintenance of this equipment. Retain this guide for future reference.

Call (800) 831-7133 for additional free copies of these instructions or product labels. Refer to www.pentair.com for more information.

READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

This is the safety alert symbol. When you see this symbol in this guide or on the product itself, look for one of the following signal words and be aware of the potential for personal injury.

⚠ DANGER Warns of hazards that may cause death, serious personal injury, or major property damage if ignored.

⚠ WARNING Warns of hazards that may cause serious personal injury or major property damage if ignored.

⚠ CAUTION Warns of hazards that may or can cause minor personal injury or property damage if ignored.

Carefully read and follow all instructions in this guide or displayed on the equipment. Ensure all product labels are kept in good condition and replace missing or damaged labels immediately.

⚠ DANGER FAILURE TO FOLLOW ALL INSTRUCTIONS AND WARNINGS CAN RESULT IN SERIOUS BODILY INJURY OR DEATH. **THIS PUMP SHOULD BE INSTALLED AND SERVICED ONLY BY A QUALIFIED POOL SERVICE PROFESSIONAL. INSTALLERS, POOL OPERATORS AND OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS IN THE OWNER'S MANUAL BEFORE USING THIS PUMP. THESE WARNINGS AND THE OWNER'S MANUAL MUST BE LEFT WITH THE POOL OWNER.**

⚠ WARNING Do not permit children to use this product.

⚠ WARNING **RISK OF ELECTRICAL SHOCK.** Connect only to a branch circuit protected by a ground-fault circuit-interrupter (GFCI). Contact a qualified electrician if you cannot verify that the circuit is protected by a GFCI.

⚠ WARNING This unit must be connected only to a supply circuit that is protected by a ground-fault circuit-interrupter (GFCI). Such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push the reset button. Power should be restored. If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the pump without the test button being pushed, a ground current is flowing, indicating the possibility of an electric shock. Do not use this pump. Disconnect the pump and have the problem corrected by a qualified service representative before using.

⚠ CAUTION This pump is for use with permanent swimming pools and may also be used with hot tubs and spas if so marked. Do not use with storable pools. A permanently-installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity.

General Warnings

- Never open the inside of the drive motor enclosure. There is a capacitor bank that holds a 230 VAC charge even when there is no power to the unit.
- The pump is not submersible.
- The pump is capable of high flow rates; use caution when installing and programming to limit performance potential with old or questionable equipment.
- Code requirements for electrical connection differ from country to country, state to state, as well as local municipalities. Install equipment in accordance with the National Electrical Code and all applicable local codes and ordinances.
- Before servicing the pump, switch OFF power to the pump by disconnecting the main circuit to the pump.
- This appliance is not intended for use by persons (including children) of reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.

⚠ DANGER SUCTION ENTRAPMENT HAZARD: STAY OFF THE MAIN DRAIN AND AWAY FROM ALL SUCTION OUTLETS! **THIS PUMP IS NOT EQUIPPED WITH SAFETY VACUUM RELEASE SYSTEM (SVRS) PROTECTION AND DOES NOT PROTECT AGAINST BODY OR LIMB ENTRAPMENTS, DISEMBOWELMENTS (WHEN A PERSON SITS ON A BROKEN OR UNCOVERED POOL DRAIN) OR HAIR ENTANGLEMENTS.**

THIS PUMP PRODUCES HIGH LEVELS OF SUCTION AND CREATES A STRONG VACUUM AT THE MAIN DRAIN AT THE BOTTOM OF THE BODY OF WATER. THIS SUCTION IS SO STRONG THAT IT CAN TRAP ADULTS OR CHILDREN UNDER WATER IF THEY COME IN CLOSE PROXIMITY TO A DRAIN OR A LOOSE OR BROKEN DRAIN COVER OR GRATE.

THE USE OF UNAPPROVED COVERS OR ALLOWING USE OF THE POOL OR SPA WHEN COVERS ARE MISSING, CRACKED OR BROKEN CAN RESULT IN BODY OR LIMB ENTRAPMENT, HAIR ENTANGLEMENT, BODY ENTRAPMENT, EVISCERATION AND/OR DEATH.

The suction at a drain or outlet can cause:

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.

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.

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.

NOTE: ALL SUCTION PLUMBING MUST BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL AND LOCAL CODES, STANDARDS AND GUIDELINES.

IMPORTANT SAFETY INSTRUCTIONS

⚠WARNING **TO MINIMIZE THE RISK OF INJURY DUE TO SUCTION ENTRAPMENT HAZARD:**

- A properly installed and secured ANSI/ASME A112.19.8 approved anti-entrapment suction cover must be used for each drain.
- Each suction cover must be installed at least 3 ft (0.9 m) apart, as measured from the nearest point to nearest point.
- Regularly inspect all covers for cracks, damage and advanced weathering.
- If a cover becomes loose, cracked, damaged, broken or is missing, replace with an appropriate certified cover.
- Replace drain covers as necessary. Drain covers deteriorate over time due to exposure to sunlight and weather.
- Avoid getting hair, limbs or body in close proximity to any suction cover, pool drain or outlet.
- Disable suction outlets or reconfigure into return inlets.

⚠WARNING The pump can produce high levels of suction within the suction side of the plumbing system. These high levels of suction can pose a risk if a person comes within close proximity of the suction openings. A person can be seriously injured by this high level of vacuum or may become trapped and drown. It is absolutely critical that the suction plumbing be installed in accordance with the latest national and local codes for swimming pools.

⚠WARNING A clearly labeled emergency shut-off switch for the pump must be in an easily accessible, obvious place. Make sure users know where it is and how to use it in case of emergency.

The Virginia Graeme Baker (VGB) Pool and Spa Safety Act creates new requirements for owners and operators of commercial swimming pools and spas.

Commercial pools or spas constructed on or after December 19, 2008, shall utilize:

(A) A multiple main drain system without isolation capability with suction outlet covers that meet ASME/ANSI A112.19.8a 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.

Commercial pools and spas constructed prior to December 19, 2008, with a single submerged suction outlet shall use a suction outlet cover that meets ASME/ANSI A112.19.8a and either:

(A) A SVRS meeting ASME/ANSI A112.19.17 and/or ASTM F2387, or

(B) A properly designed and tested suction-limiting vent system, or

(C) An automatic pump shut-off system, or

(D) Disabled submerged outlets, or

(E) Suction outlets shall be reconfigured into return inlets.

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

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

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

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

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

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

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

General Installation Information

- All work must be performed by a qualified service professional, and must conform to all national, state, and local codes.
- Install to provide drainage of compartment for electrical components.
- These instructions contain information for a variety of pump models and therefore some instructions may not apply to a specific model. All models are intended for use in swimming pool applications. The pump will function correctly only if it is properly sized to the specific application and properly installed.

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

Pumps and replacement motors that are single speed and one (1) Total HP or greater cannot be sold, offered for sale, or installed in a residential pool for filtration use in California, Title 20 CCR sections 1601-1609.

CUSTOMER SERVICE / TECHNICAL SUPPORT

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

Call: (800) 831-7133

Visit: www.pentair.com

Fax: (800) 284-4151

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INTRODUCTION

The Pentair Home app is the perfect solution for remotely monitoring and controlling your pool equipment from anywhere.

This guide provides instructions on creating an account and using Pentair Home to get the most out your Pentair Home account and your connected pool products.

Home Dashboard

From the Home Dashboard you can remotely monitor and control your pool and equipment. Press a specific equipment tab to display controls. From any other screen, press the Dashboard Icon [7] to return to the Home Dashboard.

After a compatible device has been added to your Pentair Home account, the Home Dashboard can be accessed by tapping the corresponding device tab. For an overview of the Pump Dashboard, refer to *Pump Dashboard, page 4*.

1– Dashboard Settings: Press to access pool info, notification settings and equipment warranty information, or log out of Pentair Home.
The Home Dashboard can be customized by pressing EDIT DASHBOARD.

2– Contact Pentair: Press to open the Contact Pentair screen.
Send a message to Pentair general or device support, or report bugs within the app.

3– System Status/Alerts: Displays current system alerts. Press to open a list of alerts.

4– Add a Device: Press to open the Add a Device screen.
Choose a device to add to your Pentair Home Account. For example; ChemCheck, IntelliConnect, IntelliSync, etc.

5– Control System Tab: Displays current system/device operation mode.
PRESS THIS TAB TO ADD EQUIPMENT TO A DEVICE.

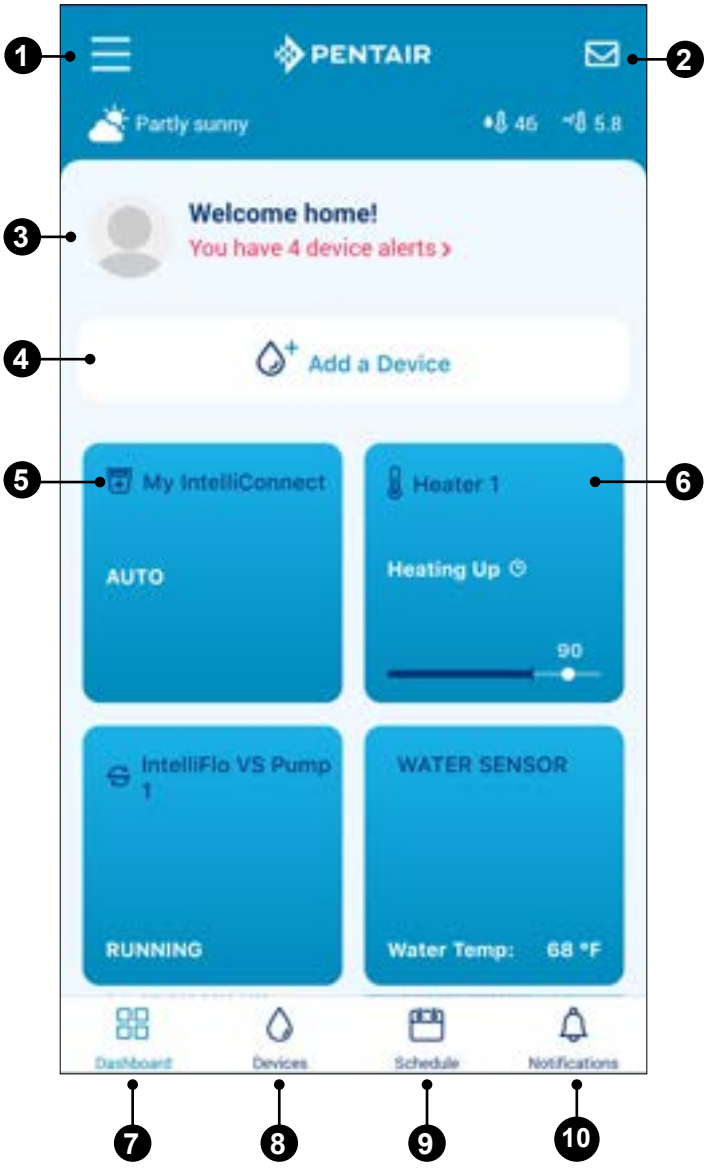
6– Equipment Tabs: Displays individual equipment status (pump, heater, salt chlorinator, etc.).
Press a specific tab to open its Equipment Settings screen.

7– Dashboard Icon: Press to return to Home Dashboard from any screen.

8– Devices Icon: Press to open the Devices screen.
View all connected devices and equipment.
Press an equipment tab to open its Settings screen.

9– Schedule Icon: Press to open the Schedules calendar.
Displays active schedules for connected equipment.

10– Notifications Icon: Press to open the Alerts screen.
Displays past and present system alerts.



INITIAL SETUP

Creating a Pentair Home Account

1. From your chosen smart device, download Pentair Home from the Google Play® store (Android® devices) or Apple® app store (iOS® devices).

   Note: Apple operating systems must be **iOS® 11 or later.** Android operating systems must be **version 6.0 or later**.

2. Open the Pentair Home app ( ) from your smart device.
3. A series of informational screens will display. Scroll through these screens to continue.
4. The Email Entry screen will display. Enter your email address and press GET STARTED.
5. The Password Creation screen will display. See **FIGURE 1**.
6. Enter your desired password in both entry fields (1).
7. Review the terms of service by pressing TERMS OF SERVICE. Check the Terms of Service Box (2) to acknowledge you have read the Terms of Service.
8. Press CREATE MY ACCOUNT (3).
9. The Verify Your Email screen will display and a verification email will be sent to the provided email address.

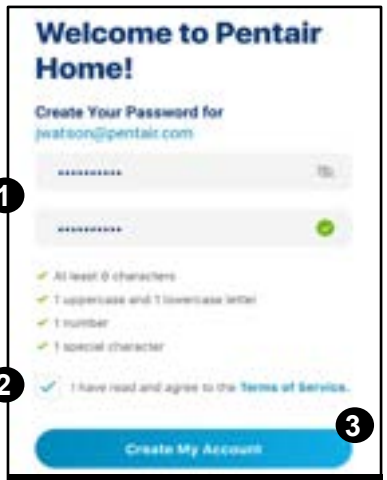


FIGURE 1

FIGURE 2

10. Verify your account using the link in the verification email.

    Note: If you do not receive a verification email press I DIDN'T GET THE EMAIL at the Check Your Email screen and follow on-screen instructions.

11. After verification, the Create Profile screen will display. See **FIGURE 2**.
12. Enter your profile information.
13. Press the STANDARD or METRIC tab to choose which units the app will display.
14. Press SAVE to save entries.
15. Continue to *Pairing Devices to your Account, page 3*.

Pairing Devices to your Account

Several smartphone functions will be used to successfully pair your pump to your Pentair Home account.

Before signing into the app ensure:

- Your smartphone's *Bluetooth*® wireless technology is turned on
- Your smartphone's location service is on
- Pentair Home has *Bluetooth* permissions

TO PAIR A PUMP TO YOUR ACCOUNT:

1. Sign into your Pentair Home account.
2. The Home Dashboard screen will display (**FIGURE 3**).
   Press ADD A DEVICE [1].
3. The Add a Device screen will display (**FIGURE 4)**.
   Select your pump from the list of devices.
4. The Installation screen will display. Press CONTINUE.
5. At the pump, press the CONNECT button on the drive.
6. The pump will enter *Bluetooth* Pairing Mode and the Connect LED will begin pulsing Blue.
7. Select your pump to begin *Bluetooth* pairing.
8. Wait for the Connect LED to turn solid Blue, then press CONTINUE.
9. Once a *Bluetooth* connection has been established and confirmed, press CONTINUE.
   - **If pairing your pump to a WiFi network:** Continue to step 10.
   - **If not pairing your pump to a WiFi network**: Press SKIP FOR NOW to connect only via *Bluetooth*. Refer to *Direct Connect, page 7* for additional information.

     Note: If the pump is not paired to a WiFi network then Pentair Home control can only be accessed when within Bluetooth range of the pump.
     It is recommended that the pump be paired to a WiFi network even when not using Pentair Home control. This allows you to receive the latest updates and features.
10. The Connect Your Device to WiFi screen will display (**FIGURE 5**).
    Select your WiFi network and enter the password. Press CONTINUE.
11. The Device Address screen will display.
    Select your address from the Device Address drop down menu and press CONTINUE.
12. The Nickname screen will display.
    Enter the name you would like your pump to go by within Pentair Home.
    Press SAVE.
13. Installation Completed will display. Press CONTINUE.
14. Your pump is now paired to Pentair Home and ready to use.

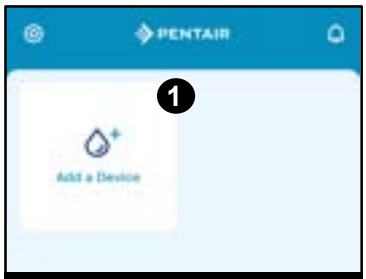


FIGURE 3

FIGURE 4

FIGURE 5

OPERATION

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

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

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

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

Pump Dashboard

The Pump Dashboard is your pump's home page. Basic pump info, run status and programming can be viewed from this screen.

If any pump alerts and problems are present they will also display at the top of this screen.

1– Device Settings: Tap to display the Device Settings screen.
Most of the pump features and settings can be accessed from the Device Settings screen. Refer to *Device Settings, page 6*.

2– Enabled/Disabled Toggle: Tap to enable or disable your pump.
A DISABLED pump will not start until this toggle is switched to ENABLED or the pump ON/STOP button is pressed.

3– Current Status: Displays the current pump state.
IDLE: The pump is not currently running a program.
PROGRAM: Displays the program currently running.

4– Next Program: Displays the next program scheduled to run after completion of the current program or idle. If all programs are programmed manual or timer "No Programs are Scheduled" will display.

5– Run Data: Displays estimates of the pump's current flow, power consumption and overall system pressure.

6– Program Tabs: Displays all pump Programs and their individual settings.
Tap a Program Tab to edit or start a program. Refer to *Program Setup, page 5* for programming instructions.
Note: Quick Clean will always display as a program tab and cannot be removed from the Pump Dashboard. Quick Clean is programmed similarly to a Timer program.

7– Edit/Run Program Tabs: Displays when a Program Tab is pressed.
EDIT: Tap to open the Program Setup screen. Refer to *Program Setup, page 5*.
RUN NOW/STOP: Tap to manually start or stop a pump program.

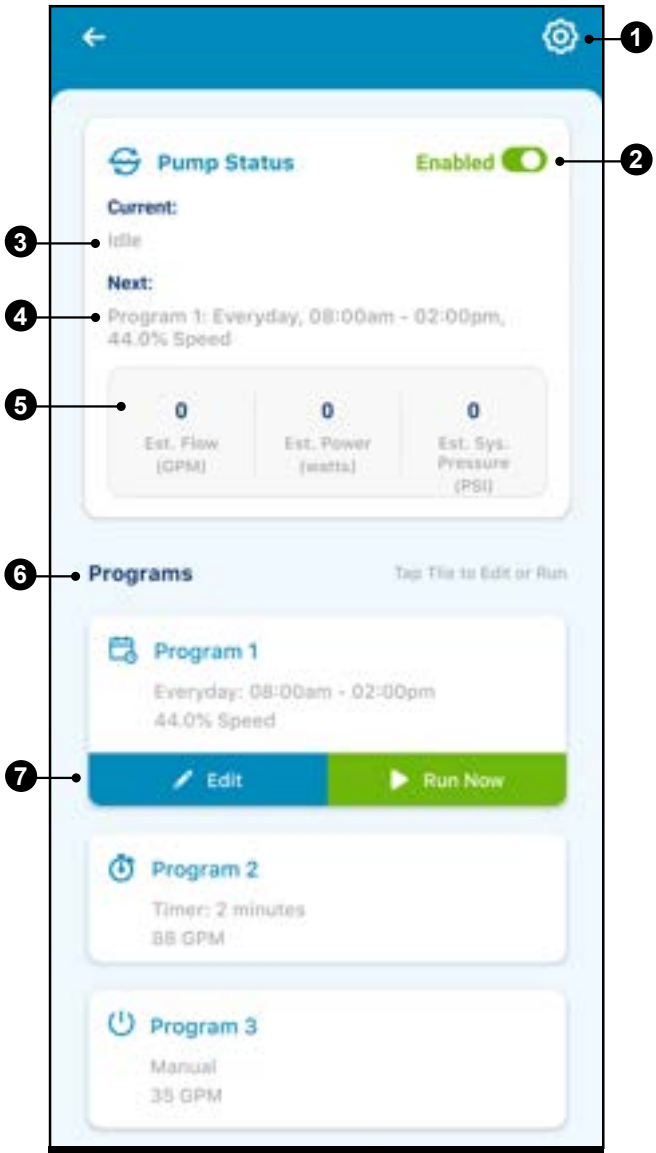

FIGURE 6

Program Setup

The pump allows you to create and customize up to 8 unique programs.

The pump also features a default Quick Clean program that can be customized, but not renamed or deleted.

1- Schedule Enabled/Disabled Toggle: Tap to enable or disable a Schedule Program.
If disabled, the schedule program is inactive and will not run until it is re-enabled.
This toggle will only appear if a program is Schedule Mode.

2– Program Nickname: Displays the name a specific program will display on the Pump Dashboard.
Tap the entry field to edit the program name.

3– Program Mode: Displays the current Program Mode.
Tap a mode tab to select a mode.

- **MANUAL:** A manual program must be manually started and stopped from the Pump Dashboard. The program will not repeat and will run until it is manually stopped.
- **TIMER:** A timer program must be manually started from the Pump Dashboard but will automatically stop at the end of its set duration. The program will not repeat and will only run for its set duration.
- **SCHEDULE:** A schedule program will automatically start and stop based on its day, start time and end time settings. The program will repeat at the same time each day on each day selected.

4– Set Schedule/Timer:

- **MANUAL MODE:** This option will not display for manual mode programs.
- **TIMER MODE:** Set the run duration for timer mode programs.
- **SCHEDULE MODE:** Select which days of the week you want the pump to run and set the duration of these daily runs.

5– Pump Speed/Flow: Displays the Speed (percentage of maximum speed) or the Flow (GPM) set for the program.
Tap the Speed or Flow tab to determine which of these measurements is displayed.
Use either the **+/-** buttons to edit the speed/flow setting in minor increments or the slider to edit in larger increments.
The Activated/Deactivated toggle shows the state of the pump.
If ACTIVATED, the pump is currently active and able to run a program.

6– Relay Toggles: Tap a relay toggle to determine whether a wired device is active during the program run time.
If a device relay is Activated, the device will run along with pump the entirety of manual, timer or schedule program.
These toggles only display if the Relay Control Board (P/N 356365z -- sold separately) has been installed.

7– Save: Tap to save edits made to program settings.
The SAVE button must be pressed in order to save edits to settings; otherwise they will be lost.

8– Remove Program: Tap to permanently delete a program from the Pump Dashboard.

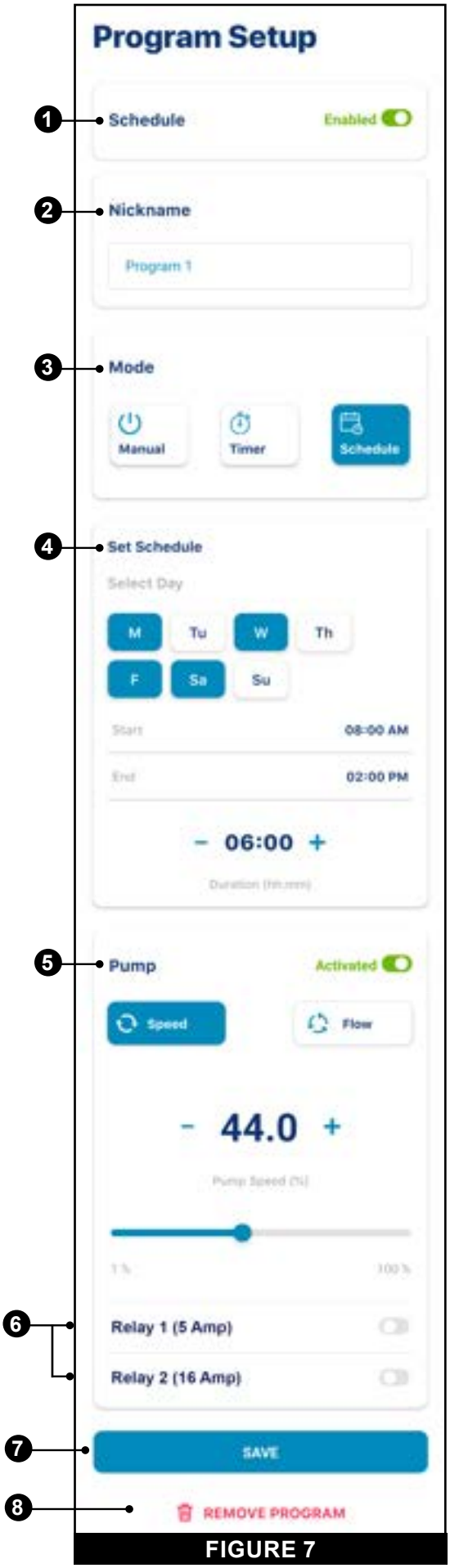

FIGURE 7

Device Settings

Device Settings can be accessed by pressing the Device Settings gear icon ( ) in the top-right of the Device Dashboard.

1– **Product Overview:** View and edit general information about your IntelliFlo3 VSF such as device nickname or address.

2– **Notifications:** Control where and how device notifications are delivered.

3– **Product Support:** Opens the IntelliFlo Support page.

4– **Remote Monitoring:** Use your address to find and contact local pool professionals offering to monitor your pump remotely.
Search results will only contain professionals offering remote monitoring.
Remote monitoring permissions can be given and revoked from this screen at any point.

5– **Contact a Professional:** Use your address to find a local pool professional.
Search results will contain available local pool professionals.

6– **WiFi:** View and update the WiFi network you are currently paired to, as well as signal strength.

7– **Relays:** View and edit your current pump relay device settings and nicknames.
This functionality is only available if the Relay Control Board (P/N 356365z -- sold separately) has been installed.
Refer to *Relays, page 7*.

8– **Alerts History:** Displays a list of device alerts.

9– **Direct Connect:** Setup the Direct Connect feature.
This feature allows you to control your pump without an internet connection.
Refer to *Direct Connect, page 7*.

10- **Priming Parameters:** View and edit your pump's priming settings.
Refer to *Priming Parameters, page 8*.

11- **Limits Parameters:** View and edit your pump's speed, flow and pressure limits.
Refer to *Limits Parameters, page 8*.

12- **Thermal Mode:** View and edit the your pump's Thermal Mode temperature set point and speed/flow settings.
Refer to *Thermal Mode, page 9*.

13- **Automation Address:** View and edit the pump address associated with your automation system.
The pump address entered on this screen must match the address in the automation system. If addresses do not match, the pump can not communicate with an automation system.

14- **External Control Programs:** View and edit the four programs that can be triggered by an external input signal when using the optional Relay Control Board (P/N 356365z).

15- **Ramping Speed:** Determine how quickly your pump will ramp up or down on startup or when changing speeds/flows.
Ramping Speed can be set to FAST, MEDIUM or SLOW.

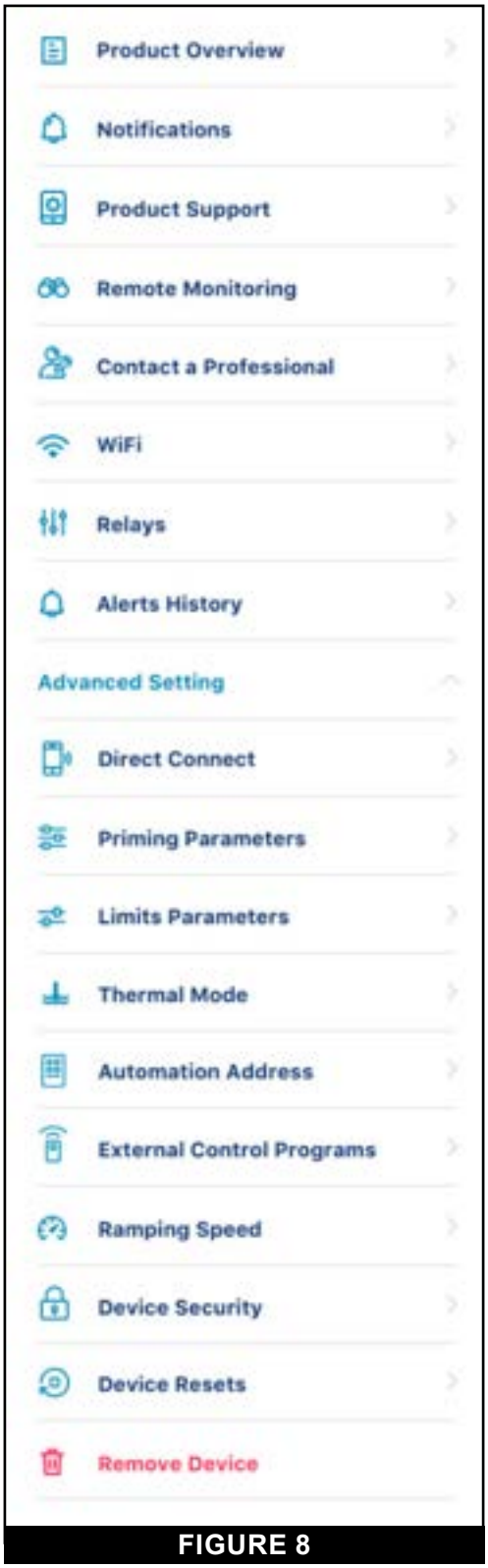

FIGURE 8

16- **Device Security:** Set a 4-digit PIN controlling access to pump controls.

10- **Device Resets:** Restore system defaults for all programs and device settings.

15- **Remove Device:** Remove the pump and pump relay devices from your Pentair Home account.

Relays

Pump Dashboard > Device Settings > Relays

The following functionality is only available if the Relay Control Board (P/N 356365z -- sold separately) has been installed.

The relay board includes two high-voltage terminals capable of controlling pool lights, salt chlorine generators or other filtration system components. One terminal is intended for 5A max low-current connections and the other for 16A max high-current connections.

FIGURE 9

1- Device Type: Select the device connected to a particular relay.

- **RELAY 1 Options:** Lights, Salt Cell or Other
- **RELAY 2 Options:** Lights, Salt Cell, Booster Pump or Other

  Note: If a relay is designated "Booster Pump", the pump will first ensure the Booster Pump has water by delaying power to the relay until the pump has run for two minutes.
  If the pump is already running a program then there will be no delay.

2– Device Nickname: Enter the name you want your device to display on Program Setup screens.

3– Speed/Flow Dependent: Check this box to ensure the relay is only activated when the pump is running.

4– Add/Remove: Tap to add or remove a relay.

Direct Connect

Pump Dashboard > Device Settings > Advanced Settings > Direct Connect

Direct Connect mode allows you to program and operate your pump without a WiFi connection, via a *Bluetooth*® wireless technology connection.

TO PLACE THE PUMP INTO DIRECT CONNECT MODE:

1. Ensure your smartphone is within *Bluetooth* range of the pump, *Bluetooth* is enabled on your smartphone and Pentair Home has *Bluetooth* permissions.
2. At the pump, press the CONNECT button to enter pairing mode. The pump's CONNECT LED will blink blue.
3. Open Device Settings and select Direct Connect.
4. Press CONTINUE at the Bluetooth Pairing screen.
5. Once a Bluetooth connection is established, the pump's CONNECT LED will turn solid blue.

When connected to the pump via Bluetooth, the following options will appear in the Direct Connect menu:

SET-UP WIFI: Tap to establish a WiFi internet connection between your phone and the pump. WiFi will now be your primary connection.

DISCONNECT: Tap to disconnect your *Bluetooth* wireless connection.

Note: When the pump is programmed to operate in Direct Connect mode and has been powered off, the Connect LED will pulse yellow. This indicates that the pump needs to be re-paired with your smartphone.
Press the CONNECT button to reconnect with your previously paired smartphone.

Note: When connected via WiFi, a green dot will display beside the pump nickname on the Pump Dashboard. When connected via *Bluetooth* and operating in Direct Connect mode, the *Bluetooth* symbol will display beside the pump nickname on the Pump Dashboard.

Priming Parameters

Pump Dashboard > Device Settings > Advanced Settings > Priming Parameters

All priming settings can be edited and set from this screen. Tap a specific setting on the right-side of the screen to edit.

1- **Enabled/Disabled:** ENABLED allows the pump to detect whether or not the system is properly primed for pump startup.
If prime is not detected the pump will enter a priming cycle, based on the settings below.

2– **Priming Speed:** Set the speed the pump will run during a priming cycle.

3– **Max Priming Duration:** Set the maximum amount of time the pump will attempt to prime.
If the pump does not achieve prime during this time a priming error will display and the pump will stop.

4– **Priming Range:** Set the sensitivity of pump prime detection. Lower settings require higher flow to detect a successful prime.

5– **Priming Delay:** Set the amount of time the pump remains at priming speed before transitioning to the run program.

6– **Loss of Prime:** ENABLED allows the pump to detect low-flow or no-flow situations while running.
If a loss of prime is detected the pump will pause and attempt to prime, based on the settings above. If priming is successful the pump will continue programmed operation.

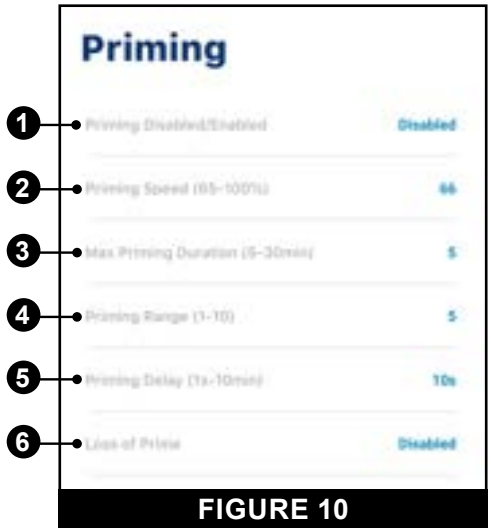

FIGURE 10

Limits Parameters

Pump Dashboard > Device Settings > Advanced Settings > Limits Parameters

Set and edit pump speed, flow and pressure limits. These settings will ensure your pump does not operate outside of the programmed parameters.

1- **Minimum/Maximum Speed:** Set the absolute minimum and maximum speeds the pump will be allowed to run. Pump run speed will never run under or over these two settings.

2– **Minimum/Maximum Flow:** Set the absolute minimum and maximum flow rate the pump will be allowed. Pump GPM will never fall under or exceed these two settings.

Note: These minimum and maximum flow rates only apply to Flow Programs. To apply these settings to Speed Programs as well, the next setting (Flow Limit - Speed Programs) must be enabled.

3– **Flow Limit (Speed Programs):** Enable or disable minimum and maximum flow rate limits for Speed Programs.

4– **Max Pressure:** Set the absolute maximum system pressure the pump will be allowed to produce. Pump system pressure will never exceed this setting.

Note: The maximum pressure setting only applies to Flow Programs. To apply these settings to Speed Programs as well, the next setting (Pressure Limit - Speed Programs) must be enabled.

5– **Pressure Limit (Speed Programs):** Enable or disable maximum system pressure limit for Speed Programs.

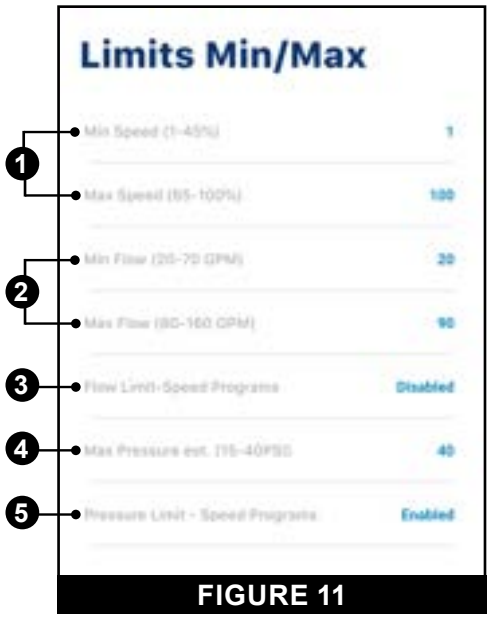

FIGURE 11

Thermal Mode

Pump Dashboard > Device Settings > Advanced Settings > Thermal Mode

Thermal Mode is intended to help protect the pump during freezing or near-freezing conditions.

Note: Do not depend on this feature for freeze protection of the entire filtration system and pool.

Certain situations could cause the pump to sense a different temperature than actual air temperature. Your automation system air temperature sensor should be used to sense actual temperature. For example, if the pump is located indoors, the temperature of the room does not indicate the outdoor temperature.

Note: The pump does NOT sense water temperature.

1- Enable/Disable: Enable or disable Thermal Mode protection.

2– Temperature Set Point: Set the temperature at which the Thermal Mode program will initiate.

3– Speed/Flow Display: Determines whether the Speed/Flow setting below is displayed as a percentage of max speed or in GPM.

4– Speed/Flow Setting: Set the Speed% or GPM the pump will run when Thermal Mode is triggered.

5– Save: Saves edits to Thermal Mode settings.

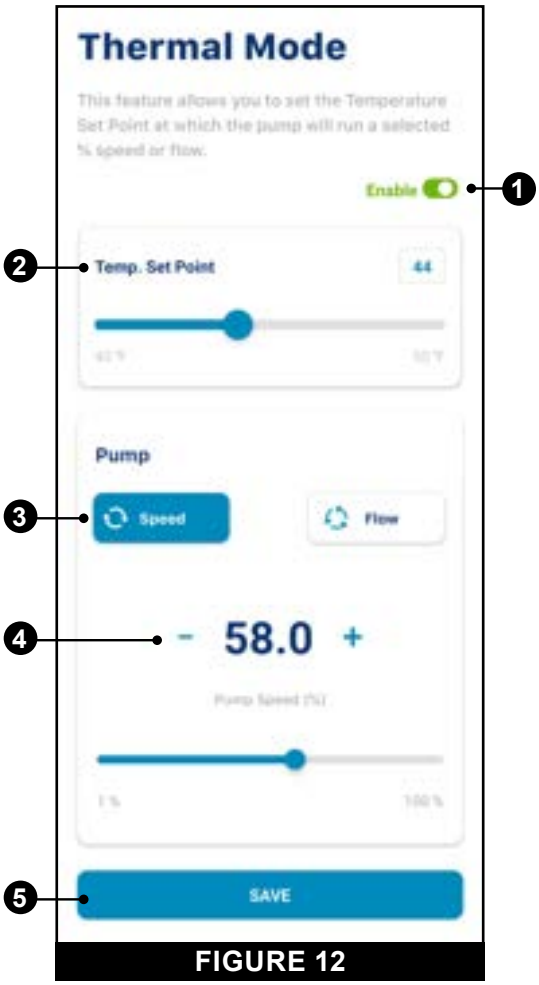

FIGURE 12

TROUBLESHOOTING

Troubleshooting Chart

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Connection Issue - Pump is Offline Alert	Pump is not receiving power	Ensure the pump is receiving power. If the pump is receiving power, the ON/STOP button will illuminate.
	Home internet service is out or inaccessible	Confirm that the home router is active and connected to the internet.
	Intermittent WiFi or network connection	1. Restart the home router. This can clear up many typical home networking issues. 2. Cycle power the pump. Disconnect power to the pump at the main breaker, Wait for 1 minute and reconnect power. 3. Check the signal strength in WiFi Settings of the Pentair Home App. If the signal strength is insufficient, refer to the Poor WiFi Signal section of this troubleshooting chart.
	Bluetooth® connectivity issues	1. Stand closer to the pump when operating via *Bluetooth*. 2. Restart the Pentair Home app. 3. Adjust the pump antenna. 4. Ensure smartphone permissions are given to the pump.
	Poor WiFi signal to router	1. The WiFi antenna can be relocated from the top cover of the drive to a location with better WiFi signal. The antenna bulkhead on the cover has a SMA Female connector, and the antenna has a SMA Male connector. A SMA extension cable can be used to move the antenna to a more favorable location such as around the corner of a wall or outside of an enclosure. 2. Consider operating the pump in Direct Connect mode. Refer to the *Direct Connect, page 7* for instructions.

Alarms and Warnings

When an alarm is triggered the drive's ON/STOP LED will blink RED and a fault code will display. The pump will stop until the alarm is resolved.

When a Warning is triggered the drive's ON/STOP LED will blink GREEN/YELLOW and a fault coded will display.

Depending on your particular setup, fault codes will display on one or more of the user interfaces:

- Pentair Home App
- Automation System Interface
- Optional Touchscreen Controller (Almond - P/N 356159z, Black - P/N 356348z)

ALARM / WARNING	DESCRIPTION	DEFINITION
Weak Wi-Fi Connection	Weak Wifi connection detected.	Pump antenna may be obstructed or too far away from your router. The antenna wire can be extended. Refer to the *IntelliFlo3 VSF Installation and Maintenance Guide (P/N 356231)* for instructions.
Offline	The pump is offline.	The Pentair cloud cannot connect to your pump. This could be caused by a power outage at the pump or router, or a loss of WiFi signal to the pump.
Priming Failure	The pump has reported a Priming Failure Alarm.	Priming failure can be caused by lack of water in the volute strainer basket.
Overheat	The pump has reported an Overheat Condition.	The pump motor has detected an abnormally high internal temperature. This can be caused by a blockage of the cooling fan inlet or outlet, or by excessively high ambient air temperature. The pump will attempt to protect itself by reducing the motor speed to give the motor and drive a chance to cool down.
Over Current	The pump has reported an Over Current Condition.	Load has increased on the motor; due to debris, part interference, temperature issues, age of parts, or supplied voltage. Inspect the rotating parts of the pump for blockages or debris buildup. Refer to the pump *IntelliFlo3 VSF Installation and Maintenance Guide (P/N 356231)* for disassembly and reassembly instructions.
Over Voltage	The pump has reported an Over Voltage Alarm.	Supplied voltage is outside of the proper range. When voltage returns to the normal the alert will clear and the pump will resume operation.
Under Voltage	The pump has reported an Under Voltage Alarm.	Supplied voltage is outside of the proper range. When voltage returns to the normal the alert will clear and the pump will resume operation.
Speed Limit	The pump has reported a Speed Limit Warning.	The pump is operating at the programmed maximum speed in order to achieve the desired speed/flow. Refer to *Limits Parameters* on page 8 for instructions on adjusting the Speed Limit. If this alert displays and the Speed Limit is already set to 100%, then the pump may not be capable of achieving the desired flow rate.
Pressure Limit	The pump has reported a Pressure Limit Warning.	The pump is operating at the programmed maximum system pressure. The pump monitors Total Dynamic Head, and not outlet pressure, so it may differ from the reading on the filter gauge. Refer to *Limits Parameters* on page 8 for instructions on adjusting the pump Pressure Limit.
Flow Limit	The pump has reported a Flow Limit Warning.	The pump is operating at the programmed maximum flow rate. Refer to *Limits Parameters* on page 8 for instructions on adjusting the pump Flow Limit.
Internal Fault	The pump has an internal error.	This alert can be caused by a few different types of internal hardware or software errors in the drive. Disconnect power to the pump and reconnect after one minute. If the alert remains, contact a qualified pool professional.
Drive is Derating (Warning)	The pump is slowing down to prevent the drive from overheating.	This alert usually accompanies an Overheat or Over Current alert. It is intended to note that the pump will continue to operate at a reduced speed as long as possible. After the drive has cooled enough it will automatically resume normal operation.
Derating Alarm - Exceeded & Cut Off	The pump has stopped to prevent the drive from overheating.	The motor and drive are not able to reduce speed enough to protect themselves. The motor will stop and Pentair Home will display this alarm. When the drive has cooled enough, it will automatically resume operation and attempt to run the requested program.
Thermal Mode	The pump operating in Thermal Mode.	The pump is operating in Thermal mode. Thermal Mode is controlled by the drive's internal temperature, not water temperature. **This is intended to keep motor components from freezing, but should not be solely relied on for full filtration system freeze protection.**

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