



IntelliFlo® VF Variable Speed Swimming Pool Pump

Quick-Start Guide

Step-by-step instructions
for easy set-up and operation



Pentair Water
Pool and Spa®

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Before you get started...

You're about to discover just how simple it is to program the IntelliFlo® VF Variable Speed Pump. Within minutes, the IntelliFlo will be ready to:



- Slash energy costs by 30% to 90% or more
- Reduce noise to half a human whisper
- Automatically adjust for voltage irregularities
- Automatically shut down after sensing loss of prime, overheating, dead-head or maximum pressure or brown-outs
- Monitor filter pressure and alert when filter needs cleaning
- Shut down within one second of sensing suction blockage

A few simple commands enable IntelliFlo VF to deliver the exact flow needed for a variety of tasks, automatically adjusting as needed.

You'll be able to change or add equipment without having to change or add pumps, because all you'll need to do is program the new or added flow to maintain peak system performance. IntelliFlo is the one pump that can serve almost every application, and do it more efficiently than ever before.

How is this incredible performance possible?



The IntelliFlo VF is the first pump to use a permanent magnet synchronous motor (PMSM). But the real secret is IntelliFlo's powerful microprocessor that senses impeller load, and adjusts motor speed by controlling current frequency and voltage. That's how IntelliFlo is always able to maintain the most efficient flow possible.

While IntelliFlo is incredibly advanced, it's easy to install and program.

This guide will lead you through the set-up process. Let's get started!

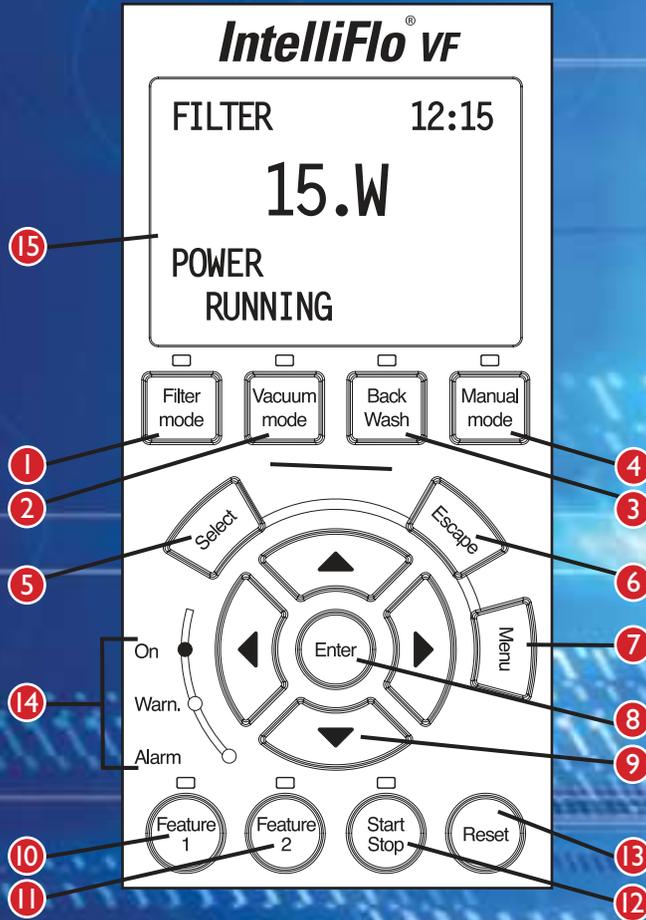
Warnings

Before you begin programming, please read the important safety warnings below.

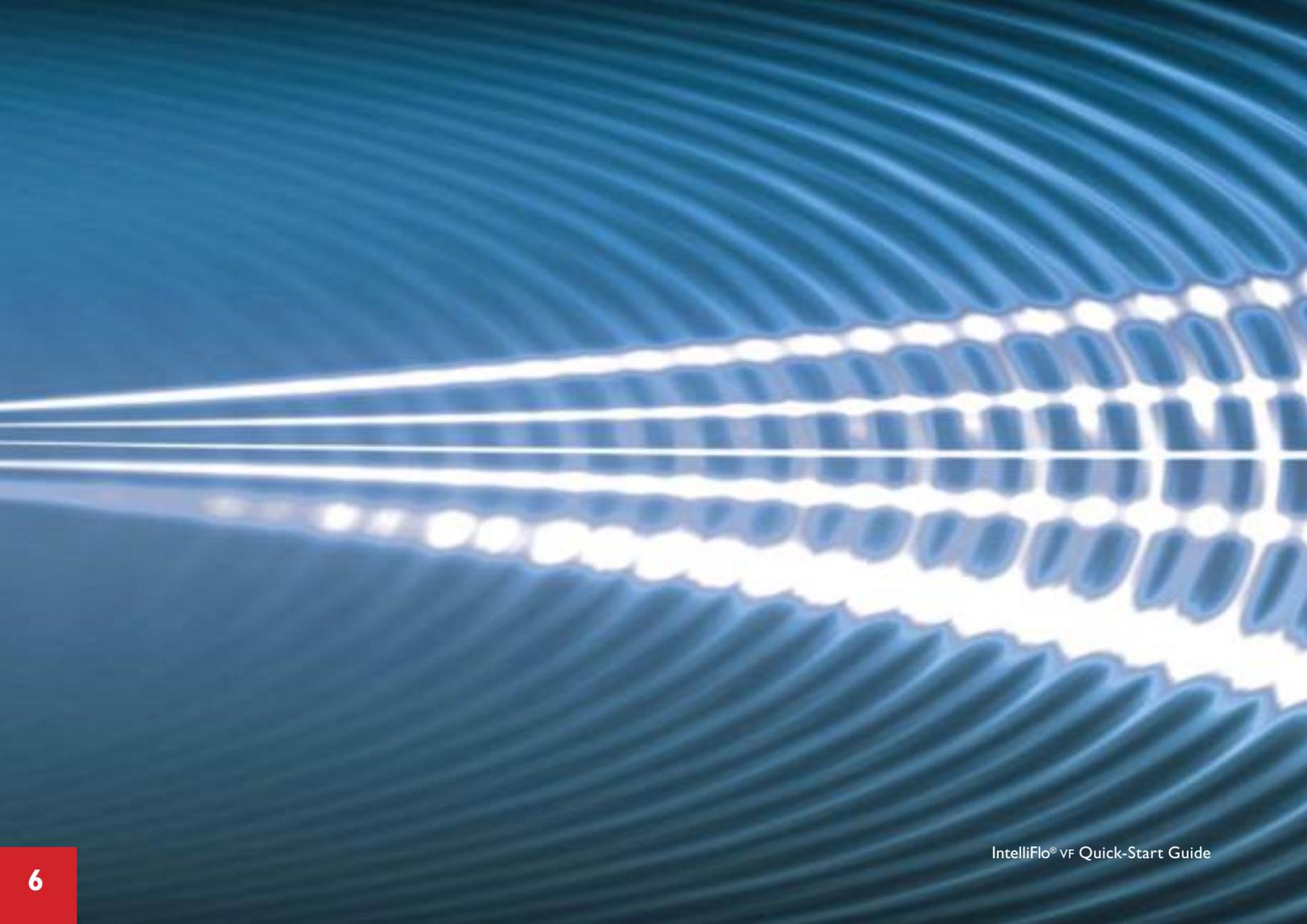


- Never go inside the drive enclosure. The capacitor bank holds a 230 volt charge, even if there is no power to the unit.
- Do not submerge IntelliFlo.
- IntelliFlo is capable of 130 GPM or 110 feet of head. Use caution when installing and programming to limit pump performance when plumbed with old or questionable equipment.
- Manual mode shuts off all sensors, including Suction Blockage. Use only when metering the system, or in an emergency.
- IntelliFlo should be wired for constant power. The pump is designed to turn itself on and off.
- Always stop IntelliFlo before performing maintenance.

Control Panel



- 1 **Filter/LED** – Starts Filter mode.
The LED is on when Filter mode is active.
- 2 **Vacuum/LED** – Starts Vacuum mode.
The LED is on when Vacuum mode is active.
- 3 **Backwash/LED** – Starts Backwash mode.
The LED is on when Backwash mode is active.
- 4 **Manual/LED** – Starts Manual mode. The LED is on when Manual mode is active.
- 5 **Select** – Displays menu items or enters edit mode for changing a value on line two of display.
- 6 **Escape** – Go up to next menu level, or stop editing the current setting.
- 7 **Menu** – Access menus if pump is stopped.
- 8 **Enter** – Saves current menu item setting, acknowledges and clears alarms and warnings.
- 9 **Arrows**
 - Up** – Move one level up in the menu tree or increase a digit when editing a setting.
 - Down** – Move one level down in the menu tree or decrease a digit when editing a setting.
 - Left** – Move cursor left one digit when editing a setting.
 - Right** – Move cursor right one digit when editing a setting.
- 10 **Feature 1** – Starts Feature 1 mode.
The LED is lit when mode is active.
- 11 **Feature 2** – Starts Feature 2 mode.
The LED is lit when mode is active.
- 12 **Start/Stop** – Start or Stop the pump. When the LED is lit it indicates the pump is currently running or in a mode to start automatically.
- 13 **Reset** – Reset alarm or alert.
- 14 **LEDs**
 - On** – This green LED is on when IntelliFlo is powered on.
 - Warning** – This LED is on if a warning condition is present.
 - Alarm** – This LED is on if an alarm condition has occurred.
- 15 **Control Panel LCD Display**
 - Line 1** – Mode and time.
 - Line 2** – Data.
 - Line 3** – Name of data in line 2.
 - Line 4** – Run status.



Manual Mode

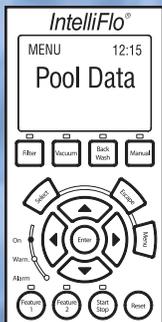
Stand-Alone Set-Up

(no controller or appliance communicating with IntelliFlo)

Manual Mode is used for first-time programming, service and testing, or whenever you need to quickly measure or set flow rates for equipment and features. (Please refer to page 9 of the IntelliFlo VF Installation and User's Guide.)

Note: Before initial IntelliFlo VF programming, set system valves for your pool circulation mode.

Pool Data Mode



Setting Pool Parameters in Pool Data mode

Pool Data mode is used to give IntelliFlo information about pool volume and water temperature. You also set the time clock, adjust screen contrast, and program the pump address (if needed for IntelliTouch automated control system) in Pool Data mode.

Press **Menu** to access Pool Data. Press **Select** to set parameters.

Pump Address

Only used when linked to IntelliTouch – See IntelliFlo VF Installation and User's Guide for installation with Pentair automated control systems. **Skip to Pool Volume if stand alone installation.**

Pool Volume



Press  to enter Pool Volume menu.

Press  to scroll to Pool Volume.

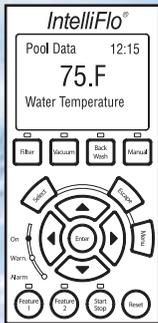
Pool volume is expressed in 1000s of gallons. Enter volume as accurately as possible, as IntelliFlo VF uses this information to maximize operational efficiency.

Press  to highlight value.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Water Temperature



Press  to scroll to Water Temperature menu.

Measure pool water temperature. The closer your entry to the actual water temperature, the more accurate the flow reading.

Press  to highlight value. Press  and  to select digit to modify.

Enter water temperature – change values by pressing  and .

When value is set, press  to confirm value and save changes.

(Note: If connected to IntelliTouch, IntelliFlo VF will retrieve water temp automatically.)

Priming



The Priming settings determine how long IntelliFlo VF will try to prime before it reports an error. This is a critical setting for proper operation. The lower the time setting, the quicker a priming error is reported if the system is difficult to prime.

The Priming range can be set from 1 minute to 15 minutes. Note: An IntelliFlo VF mechanical seal will withstand approximately 15 minutes of attempted priming before damage occurs. If the pool is plumbed correctly, **IntelliFlo VF should prime in less than 30 seconds without removing the strainer.** If the strainer has been removed for cleaning and a substantial amount of air is in the system, IntelliFlo should prime in 60 to 90 seconds.

Important: IntelliFlo VF will prime every time it starts. If the priming flow is set too high, equipment damage could occur. If set too low, IntelliFlo will not prime. Establishing the correct priming flow may require some trial and error, but always keep the flow as low as possible for cost savings and safety.

Setting Priming GPM



Press  to scroll to Priming menu. Press **Select** to enter the Priming menu.

Press  to access "Max Priming Flow" value. Value is expressed in gallons per minute (GPM). The available range is from 30 to 130 GPM. The default is 55 GPM.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and program.

Priming time determines how long you want IntelliFlo to attempt to prime before reporting an error. Time can be set from 1 to 15 minutes.

Setting Priming Time

Press  to access **Max Priming Time**.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Note: The “System Priming Time” menu should only be used when excessive amounts of air need to be evacuated from the system. IntelliFlo VF can prime in seconds, but additional time may be needed to fill other devices – e.g., filters or solar heating systems.

Filter Settings

Press  to scroll to **Filter menu**.

IntelliFlo VF is constantly monitoring filter pressure, and when it detects that the system needs cleaning, an “Alert – Service System Soon” message will appear on the control panel display. This parameter can be set from 1 PSI to 50 PSI, and establishes when the “Service System Soon” alert will activate. Average setting should be between 10 PSI and 20 PSI for most pools and filters. Note: PSI changes can come from anywhere in the system, e.g., clogged skimmers or pump strainer baskets. Note: Initial start-up and installation of the IntelliFlo pump must always be performed with a clean filter. If the filter has been in use, run the filter backwash cycle before start-up.

Clean Filter Pressure Setting

Press  to access **Clean Filter Pressure setting**.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.



Turnovers Per Day



Press  to scroll to Turnovers.

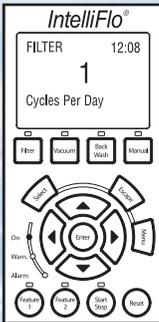
This setting establishes number of times the entire volume of water will turn over per day. One turn per day is recommended for energy conservation and for most common pool requirements. This setting can also be modified to easily increase system flow if required for more effective skimming. You can set up to eight turns per day.

Press  to access Turnovers Per Day.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Cycles Per Day



Press  to scroll to Cycles.

IntelliFlo VF uses the Cycles Per Day setting to calculate how much time it has to complete turnovers/filtration. You can program up to four start/stop cycles per day.

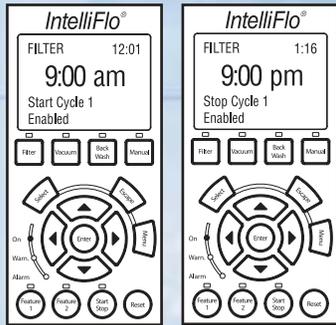
Press  to access Cycle value.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.



Cycle Start and Stop

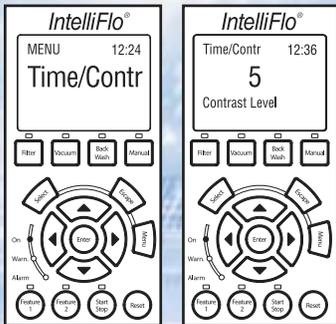


Each Cycle has two screens, one for Start Cycle and one for Stop Cycle. Press  to access Start Cycle and set starting time. Press  again to access Stop Cycle and set stop time. Repeat this procedure for every Cycle. Press  to scroll to Time/Contr:

You can program up to four start and stop cycles per day.

The more time the IntelliFlo VF is given to operate, the less power and flow will be needed for turning over the pool.

Time and Contrast



Setting Clock

Press  to access Set Time.

Make sure to set AM/PM correctly.

IntelliFlo can store the correct time for up to 96 hours after power is shut off.

After 96 hours, IntelliFlo VF's clock must be reset.

Adjusting Screen Contrast

Press  to scroll to Contrast.

Screen contrast levels can be set from 0-9.

Avoid setting at 0 unless you are unable to read the screen due to bright sunlight.

Features 1 and 2

Press  to scroll to Features menu
(Features are found in the Time/Cont menu).

Features 1 and 2 allow manual operation of assigned water features with a range of 0-600 minutes each. For example, Feature 1 can be assigned to Spa operation, and Feature 2 to the Automatic Cleaner. Features 1 and 2 need to be programmed for Flow and Duration. They are manually activated by pressing the Feature Button, and then Start/Stop. The Feature's LED light will come on, and the screen will start to subtract time in minutes from your programmed duration time. You can also scroll with the   buttons to monitor power, speed, or flow.

Setting Flow Rate

Press  to access **Feature 1 or Feature 2 Set Flow**.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Setting Duration

Press  to access **Feature 1 or Feature 2 Duration**.

Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Features 3 – 9

Features 3 through 9 enable you to assign additional water features for timed operation. These features are fully controlled by IntelliFlo's internal clock. You will need to program a flow rate and start/stop time for each feature.

Note: Feature 3 through 9 program times cannot overlap.

When a feature is running, IntelliFlo will monitor GPM and subtract time from the filter cycle. All sensors are active during any Feature 3 – 9 cycle.

Enabling Features 3 – 9

Features must be enabled before they will operate.

To enable, press   and  to save the setting.

Setting Flow Rate

Flow Rate for Features 3 – 9

Press  to access **Set Flow**. Press  to access the Flow setting.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Setting Start/Stop

Times for Features 3 – 9

Press  to select **Start Time** or **Stop Time Setting**. Press  to access the setting.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Modulated Output (M.O. Flo)

Enabling M.O. Flo

The Modulated Output feature automatically increases pump flow to allow the system heater to check the water temp and switch on if necessary. This feature also allows flow control flexibility if filter cycle flow is less than needed for certain devices. M.O. Flo also allows you to program flow intervals that can be used for water effects. You will need to enable M.O. Flo, and set the flow rate, run times, and intervals between run times. M.O. Flo will operate only during the “Filter Mode” time cycles.

Press  or  to select **M.O. Flo**. Press  to access M.O. Flo menu settings.

Press  and  to enable. Press  to save.

Setting M.O. Flo Flow Rate

Press  to access **Set Flow setting**. Press  to access setting.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Setting M.O. Flo Run Time and Interval Settings

Press  to access **Set Run Time or Set Interval Time**.

Press  to access setting. Press  and  to select digit to modify.

Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Backwash

The Backwash mode is initiated by pressing the Backwash button.

(The Backwash button doubles for rinse during operation.) A Rinse cycle is automatically executed after the Backwash cycle. IntelliFlo will display a “Filter Warning” or “Service System Soon” message when the filter needs to be cleaned. Before operating, you need to set the Backwash Flow and Duration, and Rinse Duration.

Note: When using cartridge filters, the backwash cycle must be performed when cleaning or replacing filters. When charging a D.E. system, charge the system first during a normal running cycle. After the filter is charged, run backwash mode with the filter valve in the filter position to reset the % clean filter status. Then run the pump in filter mode.

Always perform Backwash before initial start-up and installation to ensure most efficient system performance.

Press  and  or  to select Backwash menu.

Press  to display Backwash Flow. Press  to access setting.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Setting Backwash Flow

Setting Backwash

Duration

Setting Rinse Duration

Vacuum

Press  or  to select **Backwash Duration**.

Press  to access setting.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Press  or  to select **Rinse Duration**.

Press  to access setting.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.

The Vacuum Mode quick launch button allows the pool owner or pool professional to manually vacuum the pool. Vacuum Mode operates only in flow control. Vacuum mode shuts off all sensors. **CAUTION:** Since vacuuming is manual and the user will be at the pool, the “Blocked System” will be switched off.
It is important not to use any kind of automatic cleaner with Vacuum mode.

Setting Vacuum Flow

Press  and  or  to select Vacuum menu.

Press  to access Vacuum Flow. Press  to access setting.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Setting Vacuum Duration

Press  or  to select Vacuum Duration.

Press  to access setting.

Press  and  to select digit to modify. Change values by pressing  and .

When value is set, press  to confirm value and save changes.

Alerts

IntelliFlo displays all Alerts and Warnings on the top-mounted LCD display.

When IntelliFlo senses a potentially damaging condition, an Alert or Warning light will turn on. You cannot activate any commands until the Alert or Warning is cleared with the Enter button. The light will stay on until the reason for the Alert or Warning goes away.

Features – Alerts/Alarms/Suction Blockage

Service System Soon Alert

Occurs when pump discharge pressure has reached programmed clean filter pressure. Yellow warning LED will stay on until backwash cycle is run.

Over Voltage Alarm

Occurs in any mode when voltage spikes.

Under Voltage Alarm

Occurs in any mode when voltage drops below 170 volts.

Over Current Alarm

Usually associated with motor failure or locked rotor.
Occurs when motor calls for more current than needed.

Main Failure Alarm

Occurs when power is fully lost.

Drive Temp Alarm

Occurs when drive gets too warm or cold. Pump will not shut off, but will change speed to cool itself off or warm itself up.

Priming Alarm

Occurs when IntelliFlo VF cannot stabilize flow for selected priming duration.

Sleep Mode

Unit conserves power when set routines are completed faster than programmed times.

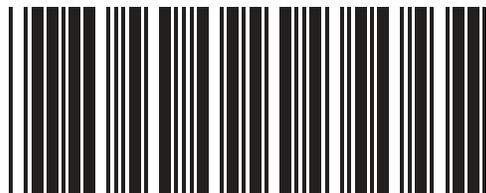
IntelliTouch Mode

Unit is communicating with IntelliTouch and keypad cannot be used. To communicate directly with IntelliFlo VF, user must put IntelliTouch in service mode.

Suction Blockage

If pump suction is fully blocked, IntelliFlo shuts off immediately (within one second). IntelliFlo will also shut off after a few seconds of dead-heading. IntelliFlo will come back on in 30 seconds and slowly ramp up. This function should be tested with all new installations by directing flow to one suction and covering it with a piece of material, such as a rubber bath mat. (Check your local codes for appropriate testing procedures.) **DO NOT COVER SUCTION WITH HAND!** This alert is deactivated in Manual Mode.





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For more detailed instructions on IntelliFlo® vF installation, operation, and troubleshooting, refer to the IntelliFlo vF Installation and User's Guide, P/N 350075. This manual can be viewed and downloaded at www.pentairpool.com.

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