



# INTELLISYNC™ CONTROL AND MONITORING SYSTEM



## INSTALLATION GUIDE

IMPORTANT SAFETY INSTRUCTIONS  
*READ AND FOLLOW ALL INSTRUCTIONS*  
SAVE THESE INSTRUCTIONS

## IMPORTANT WARNING AND SAFETY INSTRUCTIONS



### IMPORTANT NOTICE

This guide provides installation and operation instructions for this product. Consult Pentair with any questions regarding this equipment.

**Attention Installer:** This guide contains important information about the installation, operation and safe use of this product. This information should be given to the owner and/or operator of this equipment after installation or left on or near the equipment.

**Attention User:** This manual contains important information that will help you in operating and maintaining this product. Please retain it for future reference.

### READ AND FOLLOW ALL INSTRUCTIONS SAVE THESE INSTRUCTIONS



This is the safety alert symbol. When you see this symbol on your system or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

**⚠ DANGER**

Warns about hazards that can cause death, serious personal injury, or major property damage if ignored.

**⚠ WARNING**

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

**⚠ CAUTION**

Warns about hazards that may or can cause minor personal injury or property damage if ignored.

**NOTE:** Indicates special instructions not related to hazards.

Carefully read and follow all safety instructions in this manual and on equipment. Keep safety labels in good condition; replace if missing or damaged.

**⚠ DANGER**

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

**⚠ WARNING**

INSTALLERS, POOL OPERATORS AND POOL OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS BEFORE USING THIS PRODUCT. This Guide provides installation and operation instructions for the product. Consult Pentair Water Pool and Spa, Inc. ("Pentair") with any questions regarding this product.

This product is intended for use in swimming pool applications only. 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. A pool or spa pump must be installed by a qualified pool and spa service professional in accordance with the current 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.

## IMPORTANT WARNING AND SAFETY INSTRUCTIONS

### DANGER



#### RISK OF ELECTRICAL SHOCK OR ELECTROCUTION!

Always disconnect power at the circuit breaker before servicing the enclosure or equipment connected to the enclosure.

Improper installation can create an electrical shock hazard that can result in death or serious injury.

All applicable local installation codes and ordinances must also be adhered to. Improper installation will 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. Always disconnect the power to the pool light at the circuit breaker before servicing the light. Failure to do so could result in death or serious injury to serviceman, pool users or others due to electrical shock.

### DANGER



Water temperature in excess of 100° F (37.7° C) 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.

### WARNING

The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia in hot tubs and spas.

Do not use this product to control an automatic pool cover. Swimmers may become entrapped underneath the cover. For units intended for use in other than single-family dwellings, a clearly labelled 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 five (5) feet (1.52 m) away, adjacent to, and within sight of, the unit.

Except for listed spa-side remote controls, install a minimum of five (5) feet (1.52 m) from the inside wall of the pool and spa.

The electrical supply for this product must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors to comply with the current National Electrical Code (NEC), NFPA 70 or the Canadian Electrical Code (CEC), CSA C22.1. All applicable local installation codes and ordinances must also be adhered to.

Use only copper supply conductor's rated for 60C/75C sized based on ampacity to support all loads (refer to NEC tables).

## IMPORTANT WARNING AND SAFETY INSTRUCTIONS

### ⚠ 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.

#### General Installation Information

1. This equipment is not provided with integral Ground Fault Circuit Interruptor (GFCI) protection.
2. The electrical supply for this product must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors to comply with in accordance with the current National Electrical Code (NEC), NFPA 70 or the Canadian Electrical Code (CEC), CSA C22.1. All applicable local installation codes and ordinances 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.

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](http://www.cpsc.gov).

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

**RF Exposure Requirements:** The antenna(s) used for this device must be installed to provide a separation distance of at least 7.0 inches (20 cm) from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

L'antenne (s) utilisé pour cet appareil doit être installé pour fournir une distance de séparation d'au moins (20 cm) à partir de toutes les personnes et ne doit pas être co-localisés ou fonctionner en conjonction avec une autre antenne ou un autre émetteur.

## IMPORTANT WARNING AND SAFETY INSTRUCTIONS

FCC Standard - 47 CFR Part 15, Subpart C (Section 15.247). This version is limited to chapter 1 to chapter 11 by specified firmware controlled in the U.S.A.

**Instruction to user** - This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note: In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the user's authority to operate this equipment.

**Canada** - Industry Canada (IC) Regulatory Notice: - This device complies with RSS210 of Industry Canada. (1999).

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication. This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante. Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## CUSTOMER SERVICE / TECHNICAL SUPPORT

Customer Service and Technical Support, USA  
(8 AM - 5:00 PM – Eastern/Pacific Times)

Phone: (800) 831-7133

Fax: (800) 284-4151

[www.pentair.com](http://www.pentair.com)

Sanford, North Carolina (8 AM - 5.00 PM ET)

Phone: (919) 566-8000

Fax: (919) 566-8920

Moorpark, California (8 AM - 5.30 PM PT)

Phone: (805) 553-5000 (Ext. 5591)

Fax: (805) 553-5515

### Contents

<b>Important Warning and Safety Instructions</b> .....	2-5
Overview/Features .....	7
IntelliSync Wiring Bay .....	8
IntelliSync LEDs and Buttons Actions.....	9
Location / Installation / Mounting .....	10
Connecting Power to the IntelliSync Control and Monitoring System.....	11
Connecting a SuperFlo VS, VST, and SuperMax VST, WhisperFloXF VS and Max-E-ProXF VS Pump to IntelliSync Digital Inputs.....	11
Pump External Control Mode.....	12
Operating the SuperFlo VS/VST, SuperMax VST pump.....	12
Connecting the pump to the IntelliSync Control and Monitoring System.....	13
Connecting a SuperFlo VS pump to IntelliSync Control and Monitoring System .....	14
Connecting a SuperFlo and SuperMax VS Pump to IntelliSync.....	15
Wiring an IntelliFlo (IntelliPro), SuperFlo VST (SuperMax VS), or WhisperFloXF VS (Max-E-ProXF VS) Pump .....	16
Installing Ambient Air Temperature Sensor.....	17
Installing Water Temperature Sensor .....	18
Replacement Parts List .....	19

Visit [www.pentair.com](http://www.pentair.com) for the IntelliSync Control and Monitoring System manuals:

IntelliSync Quick Start Guide (P/N 523415)

IntelliSync Pentair Home App User's Guide (P/N 523491)

IntelliSync Installation Guide (P/N 523414)

# IntelliSync™ Control and Monitoring System

## Overview

IntelliSync Control and Monitoring System communicates to the homeowner's WiFi router using a 2.4GHz wireless connection. The Pentair Home app can control and monitor two pumps and two sensors through IntelliSync.

Note: IntelliSync Control and Monitoring System supports pump speeds (RPM), not pump flows (GPM). For IntelliFlo VSF pumps, pump speeds are supported.

IntelliSync Control and Monitoring System supports the following pool and spa pumps. **Note: Pump Communication Cables are required and are sold separately.**

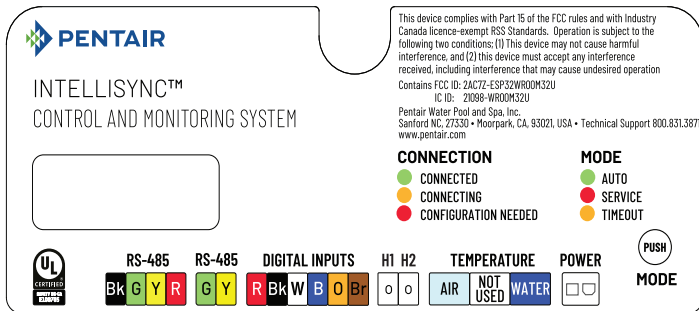
- IntelliFlo® VS Pump (P/N 350122)
- IntelliPro® VS Pump
- IntelliPro® VSF Pump
- IntelliFlo® i1 Pump
- IntelliFlo® i2 Pump
- IntelliFlo® VSF Pump
- IntelliFloXF® Pump
- IntelliProXF® Pump
- IntelliFloXFVS® Pump
- IntelliProXFVS® Pump
- IntelliFlo® VS+SVRS Pump
- IntelliPro® VS+SVRS Pump
- Temperature Sensors: Air and Water
- IntelliFlo® 2VST Pump
- IntelliPro® 2VST Pump
- SuperFlo® VS Pump\* [P/N 356324Z (Black, RS-485 and Digital Input) or P/N 353129Z (Almond, Digital Input only)]
- SuperFlo® VST Pump (mfg. After 11/2/20)
- SuperFlo® VST Pump (mfg. Before 11/2/20)\*
- SuperMax® VS Pump (mfg. After 11/2/20)
- SuperMax® VS Pump (mfg. Before 11/2/20)\*
- WhisperFloXFVS Pump\* RS-485 upgrade (1/4/21)
- Max-E-ProXFVS® Pump\* RS-485 upgrade (1/4/21)

Note: (\*) Digital Input Only. Pump speeds (RPM 1-3) are assigned from the pump control pad. Speed 4 is assigned for QuickClean. See page 12.

## Features

- Dimensions: 5 5/8" H x 7 7/8" W x 1 3/16" D
- Vertical or horizontal mounting
- Internal antenna for WiFi (2.4 GHz) and Bluetooth® wireless technology connectivity
- 120 VAC to 12 VDC Power Adapter

## IntelliSync™ Control and Monitoring System Wiring Bay



### Connection LED

**Green:** WiFi internet connected to the home network.

**Yellow:** Connecting to the home network.

**Red:** Not connected to the home network.

### Mode LED

**Green:** System in Auto mode (normal operating mode).

**Red:** The system is in Service mode.

**Yellow:** The system is in Time out mode.

**Mode Button (Bluetooth® wireless technology pairing):** Press and hold Mode button for three seconds to enter Bluetooth pairing mode.

The Connection LED will start blinking (Green). From the Pentair Home app connect the IntelliSync Control and Monitoring System unit to the mobile device.

**RS 485 (Digital outputs):** Four wire screw terminal. Black (GND), Green (-DT), Yellow (+DT), Red (+12 VDC). Use this terminal if +12VDC is required for equipment.

**RS 485 (Digital outputs):** Two wire screw terminal (Green (-DT), Yellow (+DT)). Connect IntelliFlo pumps.

**Digital inputs:** Six wire screw terminal: Red (+5V), Black (GND), White (speed 1), Blue (speed 2), Orange (speed 3), Brown (speed 4 - Quick Clean feature). **Note: SFVS Pumps and Cables manufactured before 11/2/20 have different pinouts. See wiring diagram on page 13 for pinout instructions.**

**Temperature Sensors (Air and Water):** Two wire screw terminal for each sensor.

**PWR:** Plug the provided 12 VDC, 1.5 A power plug into the power socket on the unit. Plug the other end of the power cord into a 120 VAC power source. See page 11.

**Note: H1/H2 and S1/S2 (Not used - For future use)**



## IntelliSync™ Control and Monitoring LEDs and Button Action

Button Action	Connection LED	Mode LED	State	Comment
	Amber		Startup, connecting to WiFi	Normal (Briefly)
	Green		WiFi connected with internet	
	Green/Red		WiFi connected; no internet	
	Red/Blink		WiFi configuration needed	Unit doesn't have WiFi configuration stored, has timed out.
Press 3-5 sec	Green pulse		<i>Bluetooth</i> ® wireless technology pairing mode (Temporary state)	Temporary state - will change back to solid Green after <i>Bluetooth</i> and WiFi are connected to Pentair Home app.
Press once		Amber	Toggle Service mode with timeout	Disable remote and scheduled control of equipment (LED columns show LED state while in Service mode, and not about to timeout)
		Green	Normal (Auto mode)	
		Red	Toggle Service mode (Permanent hold)	Disable remote and scheduled control of equipment. Press once (from Service mode) Amber Toggle Service mode with timeout
Press once (from Service mode)		Amber/Blink	Service mode about to expire	Timeout duration
	Amber Fast Blink		Over The Air (OTA) firmware update in progress	
Hold during power up	Red Blink	Red Blink	Reset to Factory Mode. Caution, reset will erase the SSID and the home router network password.	Three (3) blinks, then goes to regular display.

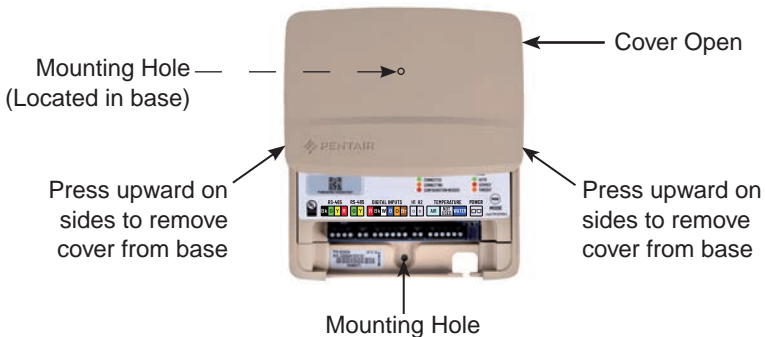
## Location and Installation

Before installing the IntelliSync™ Control and Monitoring System, read the following guidelines carefully:

- Before permanent installation, test the 2.4 GHz WiFi signal strength at the location where the enclosure will be mounted (refer to "Testing WiFi Signal Strength" in the IntelliSync Pentair Home App User's Guide). IntelliSync operates on 2.4 GHz. Be sure the home network router supports 2.4 GHz. Dual Band routers are supported.
- If possible, minimize the number and volume of obstacles that may block the wireless signal to the enclosure.
- Before choosing the final location for the unit, consider the length of all of the RS-485 wires that will need to be connected to the unit. Note: Be sure to consider cable lengths for the sensors to the unit location as well.
- Mount the unit on a flat vertical surface with unobstructed access to the front of the unit. The unit can be mounted outside or inside of a pool equipment shed or other enclosure.
- All electrical equipment, except for UL Listed spa-side remote switches, must be installed no fewer than 5 ft. (1.5 m). For Canada, 3 m (9.75 ft.) from the pool and/or spa. Comply with all national, state, and local codes.
- Install the IntelliSync unit to allow enough space at the equipment pad to stand clear of the filter and pump during system start-up.

## Mounting IntelliSync

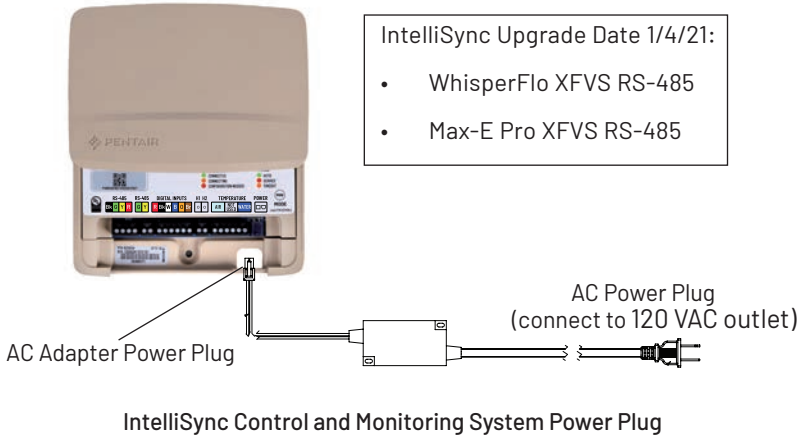
1. Press the front sides of the cover upward and slide it off the base.
2. Insert a #12 screw (recommended) through the top and lower mounting hole. Secure the base to mounting surface.
3. To reinstall the cover; insert the rear cover side slots onto the base and slide downward.



IntelliSync Control and Monitoring System Cover

## Connecting Power to IntelliSync™ Control and Monitoring System

1. Plug the IntelliSync 12 VDC, 1.5 AMP power adapter power cord to a 120 VAC power source. Plug the other end into the IntelliSync unit.
2. Apply AC power to the IntelliSync unit. Both Mode and Connection LEDs will illuminate. IntelliSync is ready for configuration and operation.



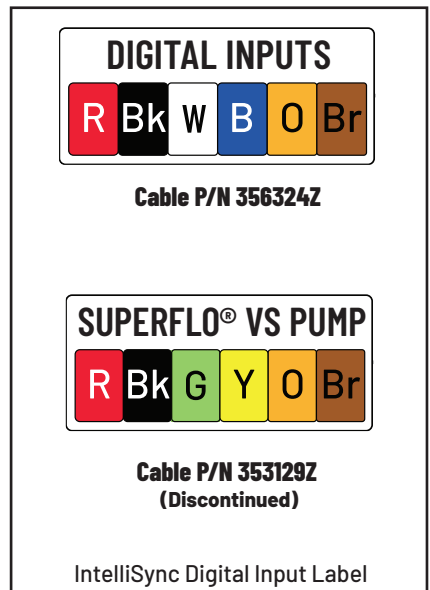
## Connecting a SuperFlo® VS, VST, and SuperMax® VST, WhisperFloXF® VS and Max-E-ProXF® VS Pump to IntelliSync Digital Inputs

SuperFlo VS Pump (P/N 342001)  
 SuperFlo VST Pump (P/N 342002)  
 SuperMax VST Pump (P/N 343001)  
 WhisperFlo XFVS (P/N 022035)  
 Max-E-Pro XFVS (P/N 023035)

Legacy pumps (see page 15)

- IntelliSync provides digital output screw terminals for pump connections
- Pump must be wired with constant AC power from a GFCI breaker
- IntelliSync must be in Auto mode (Green LED) and Connection mode (Green LED) for the Pentair Home app to control pump speeds (RPM). See page 8.

Continue to next page.



**(Continued)****Pump External Control Mode:**

- **For proper operation with IntelliSync™, the pump should NOT be in External Control Only mode (Green LED on).** The green LED next to Ext. Control Only should not be illuminated.
- To take the pump out of Ext. Control Only mode, press the **Start/Stop** button to stop the pump. **Press and hold the Start/Stop button for at least 10 seconds.** The green LED should go out next to Ext. Control Only.



De-Activating External Control Only

**Operating the SuperFlo VS/VST, SuperMax VST pump:**

- The SuperFlo VS/VST, SuperMax VST pumps have four (4) default speed settings for speeds 1, 2, and 3 and the QuickClean feature. Speeds can only be adjusted on the pump's control key pad.
- **Pump Speed Priority (Speed 1, Speed 2, Speed 3, and QuickClean):** The lowest speed number will take priority over the highest speed number. The priority in which speeds will run is Speed 1 has the highest priority then Speed 2, Speed 3, and Quick Clean.

*Example: A recommended set up would be to set Speed 2 for the pump filtration speed, and set a lower speed for Freeze protection on Speed 3. If the temperatures drops to the freeze set point, the pump will run at a low speed to keep the pool water from freezing. When it's time to run the pump filtration schedule, the pump will ramp up to the filtration speed since it's set as speed 2 and has higher priority. As a rule, set up higher RPMs on the lower speed number buttons and lower RPMs on the higher speed buttons.*

Note: If the pump has been stopped via the Start/Stop button, the pump will not run until the pump is turned back on by pressing the Start/Stop button. If the Start/Stop LED is illuminated, that indicates the pump is on and will run via Digital Inputs.

**Set the pump schedules to zero:** To ensure any existing schedules on the pump do not conflict with the IntelliSync schedules, all schedules need to be set to zero duration for the pump to work properly.

**To zero out the pump schedules:**

1. **Stop the pump. Press the desired speed button until the duration LED is blinking.**
2. **Press the arrow button to set each schedule duration to 0:00 (hr. min.)**
3. **Repeat Steps 1-2 for all speed buttons (1, 2, and 3).**

*Continue to next page.*

(Continued)

### Connecting the pump to the IntelliSync™ Control and Monitoring System:

1. Unplug power from the IntelliSync Control and Monitoring unit. See page 11.
2. Use Communication Cable kit. P/N 356324Z - 8 conductor (Black, RS-485 and Digital Input) or P/N 353129Z - 6 conductor (Almond, Digital Input only). See pin configuration below.
3. Align the "keyed" cable plug with the pump's communication port, then insert the plug into the port socket located on the side of the pump. Twist the lock nut on the cable to secure the cable.
4. Run the cable from the pump to the IntelliSync unit screw terminals. Strip back the outer jacket of the cable by 1-inch, exposing the conductors. Strip back each conductor 1/4-inch. Insert and secure the six (6) conductors into the IntelliSync digital output screw terminals as shown below:  
**Red (+5V), Black (GND), White (Speed 1), Blue (Speed 2), Orange (Speed 3) Brown (Speed 4 - Quick Clean feature).**

Note: When a Digital Input is triggered, the LED above the PROGRAM button will begin to blink and the display will toggle between the display parameter and "E.C.". This indicates an External Control is running.


The pump will run the Digital Input as long as the Digital Input trigger is present and will override any schedules programmed via the keypad. The Display button is still functional along with the Start/Stop button.

(continued)

## Connecting a SuperFlo® VS pump to IntelliSync Control and Monitoring System

SIGNAL DESCRIPTION	WIRING KIT	
	356324Z (BLACK - 8 WIRE)	353129Z (ALMOND - 6 WIRE)
<b>RS-485</b>		
RS-485 -DT	<b>GREEN</b>	N/A
RS-485 +DT	<b>YELLOW</b>	N/A
<b>Digital Inputs</b>		
+5V OUTPUT	<b>RED</b>	<b>RED</b>
COMMON GROUND	<b>BLACK</b>	<b>BLACK</b>
SPEED 1	<b>WHITE</b>	<b>GREEN</b>
SPEED 2	<b>BLUE</b>	<b>YELLOW</b>
SPEED 3	<b>ORANGE</b>	<b>ORANGE</b>
QUICK CLEAN	<b>BROWN</b>	<b>BROWN</b>

### SuperFlo VS Automation Cable Wire Color





INTELLISYNCTM  
CONTROL AND MONITORING SYSTEM

This device complies with Part 15 of the FCC rules and with Industry Canada licence-exempt RSS Standards. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Contains FCC ID: 2AUC72-ESP32WR00M32U  
IC ID: 23090-WR00M32U

Pentair Water Pool and Spa, Inc.  
Sanford NC, 27330 • Moorpark, CA, 93021, USA • Technical Support 800.831.3871  
www.pentair.com

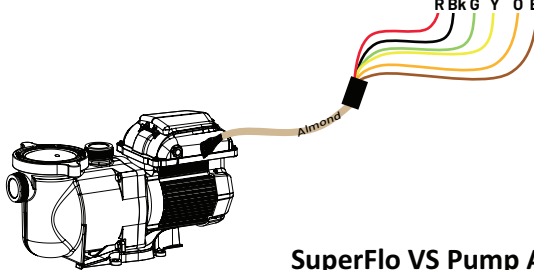
	RS-485	RS-485	DIGITAL INPUTS	H1 H2	TEMPERATURE	POWER	
	Bk G Y R	G Y	R Bk W B O Br	o o	AIR NOT USED WATER	<input type="checkbox"/>	

**CONNECTION**

- CONNECTED
- CONNECTING
- CONFIGURATION NEEDED

**MODE**

- AUTO
- SERVICE
- TIMEOUT



When using the Almond color SuperFlo VS cable (P/N 353129Z), insert the Green wire into the terminal labeled "W" and insert the Yellow wire into terminal labeled "B".

### SuperFlo VS Pump Almond Cable

**CAUTION:** When using the Almond cable, do not insert Green and Yellow wires into the port labeled "RS-485".

## Connecting a SuperFlo® and SuperMax® VS Pump to IntelliSync™

**Digital Input Voltage Specifications:** 18-30 VAC (24 VAC +/- 20%) - 9-30 VDC (12-24 VDC +/- 20%). **Connecting Legacy pumps (SuperFlo VS Pump (P/N 342000) and SuperMax VS Pump (P/N 343000) to IntelliSync:**

1. Unplug power from the IntelliSync Control and Monitoring unit. See page 11.
2. Use Communication Cable kit (see below). P/N 356324Z - 8 conductor (Black, RS-485 and Digital Input) or P/N 353129Z - 6 conductor (Almond, Digital Input only).
3. Strip back the outer jacket of the cable by 1-inch, exposing the conductors. Strip back each conductor 1/4-inch. Insert and secure the five (5) conductors into the pump's DIP switch digital output terminals as shown below:
4. Run the cable from the pump to the IntelliSync unit screw terminals. Strip back the outer jacket of the cable by 1-inch, exposing the conductors. Strip back each conductor 1/4-inch. Insert and secure five (5) conductors into the IntelliSync SuperFlo VS digital output screw terminals as shown below:  
**WHITE (STEP 1), BLUE (STEP 2), ORANGE (STEP 3), BROWN (OVRD), BLACK (ICOM).** Confirm your automation cable part number and pinout colors with the cable diagram (see below and on page 13) before connecting the pump to a control system.
5. **Add a wire from J3 (RED (+), RS-485 4-pin connector) to J8 (RED- SuperFlo 6-pin connector) as shown below.**

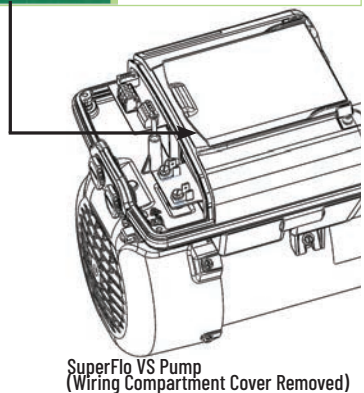
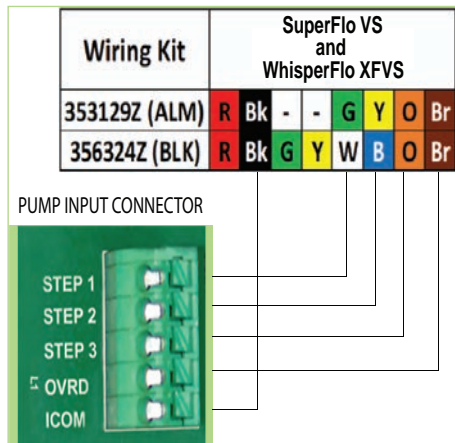
Note: If the pump has been stopped via the Start/Stop button, the pump will not run until the pump is turned back on by pressing the Start/Stop button. If the Start/Stop LED is illuminated, that indicates the pump is on and will run via Digital Inputs.

Note: When multiple low voltage triggers are present priority will be: PROGRAM 1 > PROGRAM 2 > PROGRAM 3 > QUICK CLEAN.

Note: See Table on page 13 for signal descriptions and ranges.

### **⚠ WARNING**

Access to the SuperFlo VS terminals are in close proximity to the AC power mains connectors which carry line voltage capable of causing personal injury or damaging the equipment if contact is made. AC Power to the pump should be turned off when accessing this area.



## Wiring an IntelliFlo® (IntelliPro®), SuperFlo® VST (SuperMax® VS), or WhisperFloXF® VS (Max-E-ProXF® VS) Pump

Note: The IntelliSync™ Control and Monitoring System supports control of only one IntelliFlo or one IntelliPro pump. IntelliSync provides two RS-485 screw terminals (four and two terminals) for pump connections.

**RS-485**



**RS-485 Pump  
Wiring  
Terminals**

- The pump must be wired with constant AC power from a GFCI breaker.
- The IntelliSync must be in Automation (Mode LED Green), for the Pentair Home app to send commands to control the pump speeds (RPM).
- **Speed Priority:** The highest speed (RPM) takes priority over lower speeds (RPM).

**Note:** For IntelliFlo VSF pumps, pump speeds are supported. For a complete list of supported pumps, see page 7.

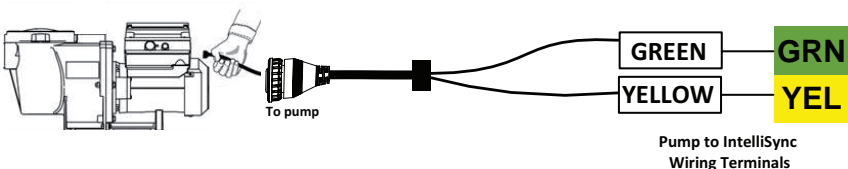
### To wire an IntelliFlo or SuperFlo, XFVS pump:

1. Unplug power from the IntelliSync unit.

Note: No pump communication cables are provided with the IntelliSync. Provided with the IntelliFlo pump is a 50 ft. (15.2 m) low voltage, two conductor RS-485 cable. A 50 ft. (15.2 m). External Control Wiring Kit (P/N 350122). Replacement can be purchased separately.

**Note:** The SuperFlo VST/SuperMax VS/WhisperFlo XFVS/Max-E-Pro XFVS pumps require the 8 conductor RS485/Digital Input communication cable (P/N 356324Z - Sold Separately).

2. Connect the RS-485 communication cable plug into the socket located on the side of the pump. Communication cable can be purchased separately.
3. Run the cable from the pump to the IntelliSync unit screw terminals. Strip back the outer jacket of the two cables by 1-inch. Strip back the yellow and green conductors 1/4-inch.
4. Insert the two conductors into the IntelliSync RS-485 screw terminals (Green and Yellow). Secure the conductors in each of the screw terminals.



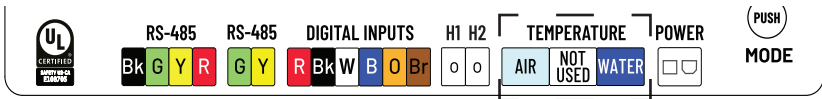


## Installing the Ambient Air Temperature Sensor

Install the air sensor in a shady area (not in direct sunlight) near the equipment pad. Refer to sensor manual for specific sensor installation instructions.

To wire the air temperature sensor to IntelliSync™ Control and Monitoring System:

1. Unplug power from the IntelliSync™ unit. See page 11.
2. Run a 22 AWG (provided with the sensors), two-conductor cable from the Air Sensor to the IntelliSync Air sensor screw terminals.
3. Strip back the outer jacket of the cable by 1-inch, exposing the two conductors. Strip back each conductor 1/4-inch.
4. Insert the conductors into the Temperature AIR sensor screw terminals. Secure the individual wires into the screw terminal. See AIR temperature screw terminal illustration below.



IntelliSync AIR and WATER Screw Terminals

## Installing the Water Temperature Sensor

Install the water temperature sensor into the plumbing system between the filtration pump and filter. Refer to sensor installation manual (P/N 520326) for instructions.

**WARNING** A licensed plumber should perform all plumbing installation, as they will be familiar with all local, state and national codes.

**Required Tools:** Electric Drill, 3/8" Drill Bit, and a Flat-Head Driver

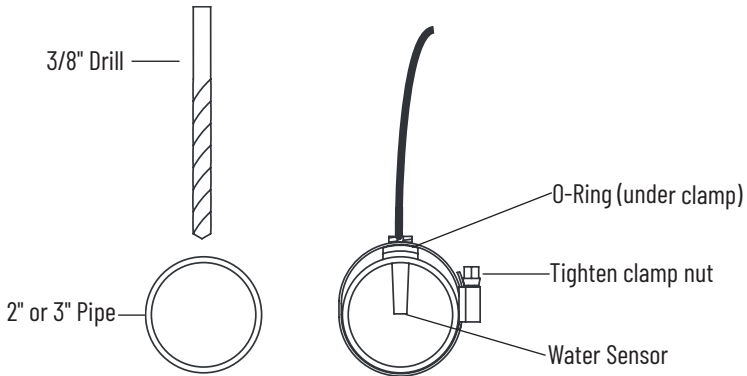
1. Unplug power from the IntelliSync unit, see page 11.
2. Be sure all power to the filtration pump is turned OFF at the circuit breaker to prevent unexpected start-ups during installation.

**WARNING** Failure to relieve all pressure from the filtration system before installing this equipment may result in serious injury.

3. Relieve all pressure from the filtration system at the filter.
4. Close all valves to prevent flooding.
5. **Heater installed:** Install the water sensor **between the filter and heater**. Mark the pipe where the sensor will be installed.
6. **No heater installed:** Install the water sensor **between the filter pump and filter**. Mark the pipe where the sensor will be installed.
7. Set the electric drill to low speed. Drill a 3/8" hole (2 in or 3 in pipe) at the mark made in the pipe. Gently deburr the hole. See Figure 1 on next page.

## Installing the Water Temperature Sensor (Continued)

9. Install the sensor o-ring onto the end of the sensor.
10. Insert the sensor and o-ring into the hole in the pipe. See Figure 2.
11. Wrap the clamp around the pipe and over the sensor. Tighten the clamp nut to secure the clamp and sensor onto the pipe with a flat-head screwdriver. See Figure 2.
12. Run a 22 AWG (provided with the sensors), two-conductor cable from the sensor to the IntelliSync Temperature Water screw terminals.
13. Strip back the outer jacket of the cable by 1-inch, exposing the two conductors. Strip back each conductor 1/4-inch.
14. Insert the conductors into the Temperature Water sensor screw terminals. Secure the individual wires in screw terminals. See WATER temperature screw terminal illustration on previous page.



IntelliSync® Water Sensor Installation

## IntelliSync Control and Monitoring System Replacement Parts

- **Water/Air Temperature Sensor Kit (P/N 520872)**
  - Temperature Sensor, 10k Ohms, 40 ft - P/N 521583
  - Temperature Sensor, 10k Ohms, 20 ft - P/N 521584
  - Hose Clamp (1-7/8" - 5" Clamp) - P/N 476168
  - Hose Clamp 2-3/4 IN - P/N 9321004
  
- IntelliSync Unit P/N 523404
- Top Cover P/N 523413Z
- Power Supply P/N 523410Z
- Terminal Plug (2 Position) P/N 8023302
- Terminal Plug (4 Position) P/N 8023304
- Terminal Plug (6 Position) P/N 8023306

Please scan to install the free Pentair Home app.



1620 HAWKINS AVE., SANFORD, NC 27330 • (919) 566-8000  
10951 WEST LOS ANGELES AVE., MOORPARK, CA 93021 • (805) 553-5000  
[WWW.PENTAIR.COM](http://WWW.PENTAIR.COM)

All indicated Pentair trademarks and logos are property of Pentair Inc. or its global affiliates in the U.S.A. and/or other countries. Third party registered and unregistered trademarks and logos are the property of their respective owners

© 2021 Pentair. All rights reserved. This document is subject to change without notice.



P/N 523414.C 2/2021