

# RECON

## WIRELESS BLOCKAGE AND FLOW MONITOR

### **OPERATOR'S GUIDE**

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## **Recon Wireless Blockage and Flow Monitor Operator's Guide**

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## Related Documentation

Document Number	Document Title
600820-000009	Recon Wireless Blockage and Flow Monitor Quick Reference Guide
600820-000012	Recon Wireless Blockage and Flow Monitor Troubleshooting Guide
600840-000019	Recon Wireless Blockage and Flow Monitor Installation Guide

## Glossary

Acronym	Term	Definition
App	Software application	A computer program, especially one designed for a mobile device
BIT	Built-in-Test	A mechanism built in to Wireless Blockage and Flow Monitor that allows that equipment to test itself for, and alert the user of, any possible problems
ECU	Electronic Control Unit	A component of Wireless Blockage and Flow Monitor that allows for the communication of the flow sensors to the iPad software app via a LAN connection
IAS	Intelligent Agricultural Solutions	The company that manufactures, sells, and supports the Wireless Blockage and Flow Monitor
	Gateway 260 (gateway)	A computing platform that enables communication from the WBFM to a virtual terminal display or iPad. Using a gateway with the WBFM system replaces the need for the access point.
LED	Light Emitting Diode	A semiconductor diode that converts applied voltage to light. In the Wireless Blockage and Flow Monitor, an LED is used to signify the status of the ECU
	Mass Flow	Mass flow measures product flow throughout the entire system. The mass flow rate is an arbitrary number and does not correspond to a specific unit of measurement.
	Primary	Tube that feeds multiple secondary runs, usually leading to a manifold that splits the product flow to the secondaries.
	Product A/ Product B	If you are running two different products through two different airstreams, one product is product A and the other product is product B.
	Section	Section of the toolbar, usually defined by the primary (or manifold) that is feeding that section.
	Section Control	A section control system enables and disables certain airstreams to avoid overseeding where product has already been applied or doesn't need to be applied.
WBFM	Wireless Blockage and Flow Monitor	The Intelligent Ag system that notifies operators of blockages or low air flow anywhere in their implement
	Work Switch	A component of the implement that signifies when the equipment is enabled (in the ground) or disabled (out of the ground). When the work switch is disabled, the Wireless Blockage and Flow Monitor's audible alarm that alerts the operator to blockage of flow in the equipment's runs will automatically be silenced

# 1. Introduction

## 1.1 About the Recon Wireless Blockage and Flow Monitor

Intelligent Ag's Recon Wireless Blockage and Flow Monitor (WBFM) is an acoustic-based monitoring system that quickly and accurately notifies operators of blockages anywhere in their implement. Operators interact with the WBFM via an iPad® app in the tractor cab. Electronic control units (ECUs) communicate with the Recon Wireless Blockage and Flow Monitor app via a wireless network, which means the WBFM requires less wiring than traditional blockage monitor systems.

For instructions to install the WBFM, see the Recon Wireless Blockage and Flow Monitor Installation Guide (Intelligent Ag document number 600840-000019) from the Recon Wireless Blockage and Flow Monitor app's Guides ⓘ screen.

For installation videos, current WBFM documentation, iPad and software requirements, and other resources, visit [intelligentag.com/support](http://intelligentag.com/support).

## 1.2 Using an iPad

The Recon Wireless Blockage and Flow Monitor interfaces with the system using the Wireless Blockage and Flow Monitor app on an iPad.

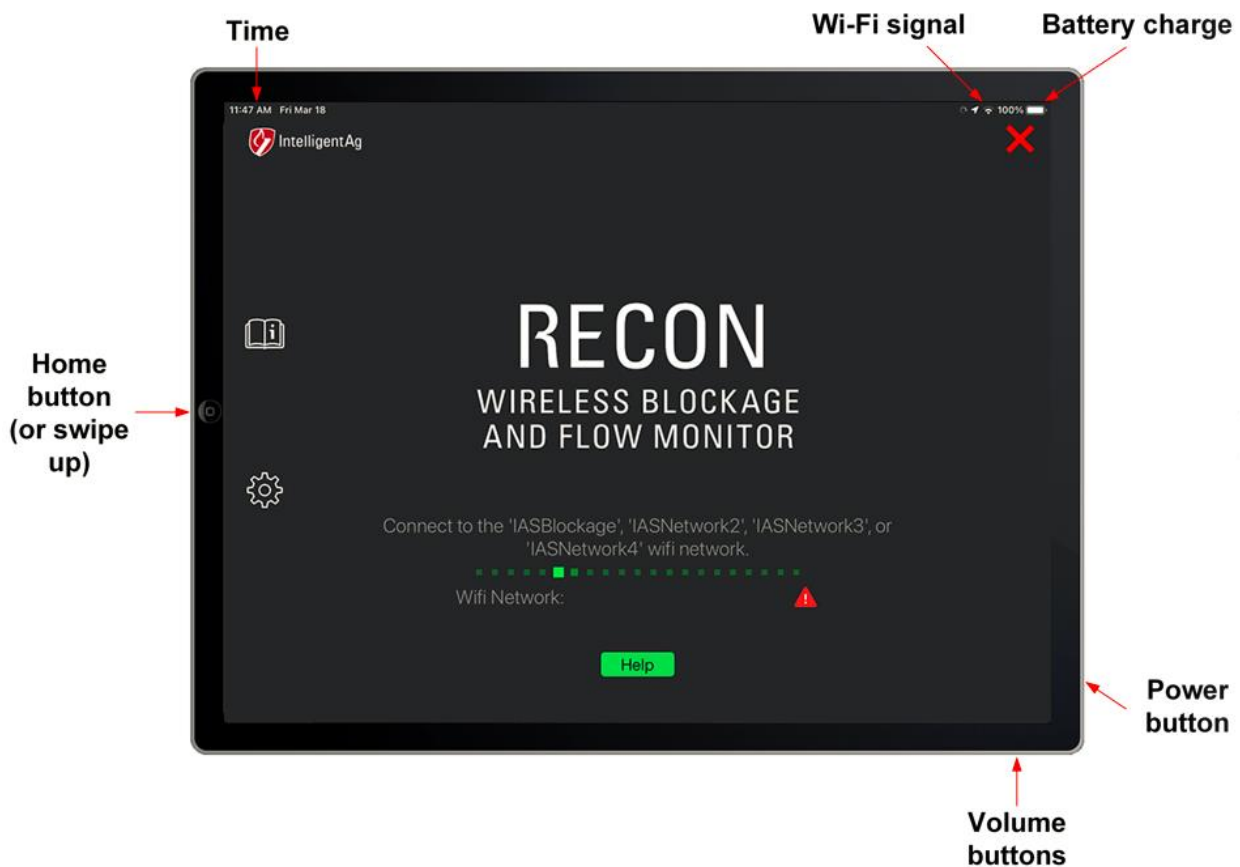


Figure 1: Using the iPad

### 1.2.1 Powering on/powering off the iPad

To power on the iPad, press and hold the power button for 3 to 5 seconds.

When the iPad is powered on, you can press the power button to turn the screen off and put it in sleep mode. Press the power button again to exit sleep mode.

To power off the iPad, press and hold the power button for 3 to 5 seconds. Then, slide the icon that appears on the screen.

### 1.2.2 Opening the Recon Wireless Blockage and Flow Monitor app

**IMPORTANT:** If you are prompted to enable location services, select **Only While Using the App** or **Always Allow**. If you select **Don't Allow**, this will prevent the iPad from connecting to the "IASBlockage" or "IASNetwork2" network.

Once the iPad is powered on, tap the Recon Wireless Blockage and Flow Monitor app located on the iPad Home screen. If you haven't downloaded the app yet, search *Intelligent Ag* in the App Store and download the Recon Wireless Blockage and Flow Monitor app. Refer to the download instructions in the Recon Wireless Blockage and Flow Monitor Installation Guide for more information.

**NOTE:** Intelligent Ag recommends leaving your iPad connected to the charger the entire time you are using the app.

### 1.2.3 Viewing the iPad Home screen

Press the iPad's Home button, or if you don't have Home button, swipe up from the bottom of the screen.

### 1.2.4 Closing the app

Tap the X in the upper right corner to close the app.

### 1.2.5 Adjusting iPad volume

To adjust the iPad volume, press the top or bottom iPad volume button, as shown in Figure 1.

**NOTE:** If your iPad has a side switch and it is configured to mute the iPad, ensure that the switch is enabled (the iPad is not muted).

### 1.2.6 Changing iPad language

1. Tap **Settings** on the iPad Home screen.
2. Tap **General** on the left navigation pane.
3. Tap **Language & Region**.
4. Select the new language.

## 2. Getting Started

### 2.1 Connecting the iPad to the wireless network

In order to communicate with the WBFM system, the iPad must be connected to the WBFM's wireless network. A TP Link access point or gateway broadcasts the WBFM wireless network. To receive information from the WBFM wireless network, the iPad must be in close range of the TP Link access point or gateway.

Make sure that your iPad is connected to the WBFM wireless network at the beginning of every planting session. This is especially important if your iPad is connected to another network, such as a home wireless network, between sessions. Tap the **Settings** icon on the iPad Home screen to see what wireless network it is connected to.

To connect the iPad to the WBFM wireless network:

1. Power on the tractor and iPad.
2. Tap the **Settings** icon on the iPad's Home screen.
3. Tap **Wi-Fi** on the left side of the screen.
4. Make sure that Wi-Fi capabilities are enabled.
5. Tap **IASBlockage** or **IASNetwork2** from the "Choose a Network..." list. A checkmark will display to the left of the network name when the iPad is connected to the network.

**NOTE:** If the Intelligent Ag network does not appear on the "Choose a Network..." list, wait a few minutes to give the iPad time to search for the network. If the network does not appear after several minutes, verify that the gateway or TP Link access point has power.

- **TP Link access point:** Verify that the LEDs on the back of the unit are green. If the network still does not appear, contact your dealer for assistance.



Figure 2: TP Link access point LEDs


**IMPORTANT:** Do not reset the access point to its default factory settings. The access point requires special configuration to work with the WBFM. If the access point is reset, it must be returned to Intelligent Ag to be reconfigured.

- **Gateway:** Verify that the LED on the back of the gateway is green.



## 2.2 Setting up the Wireless Blockage and Flow Monitor

**IMPORTANT:** If you are prompted to enable location services, select **Only While Using the App** or **Always Allow**. If you select **Don't Allow**, this will prevent the iPad from connecting to the “IASBlockage” or “IASNetwork2” network.

1. Tap the Blockage Monitor icon on your iPad's Home screen to open the app.
2. Tap the settings  icon on the Blockage screen. Then, tap **Setup Wizard** in the bottom right corner.
3. Select your monitoring view type. Tap **Next**.
  - **Manifold view** displays the implement ports and manifolds in a circle. Manifolds using Product A have white lettering and manifolds using Product B have blue lettering.
  - **Row view** displays the implement ports and sections in columns. Manifolds using Product A are displayed on the top half of the screen and manifolds using Product B are displayed on the bottom half of the screen.

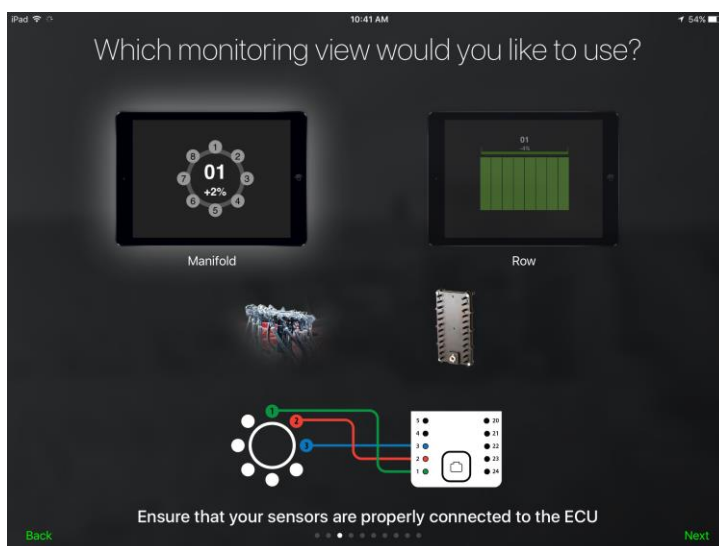


Figure 3: Configuration – View Options

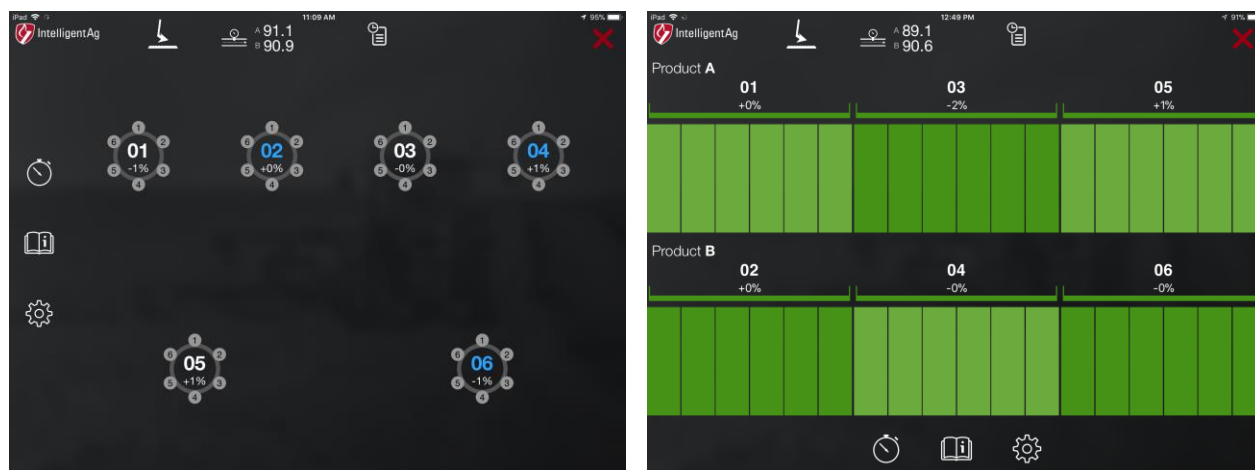
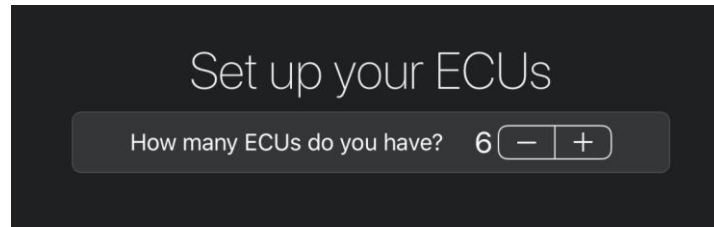


Figure 4: Blockage screen in manifold view (left) and row view (right)

4. Select the number of ECUs on your system. Tap **Next**.

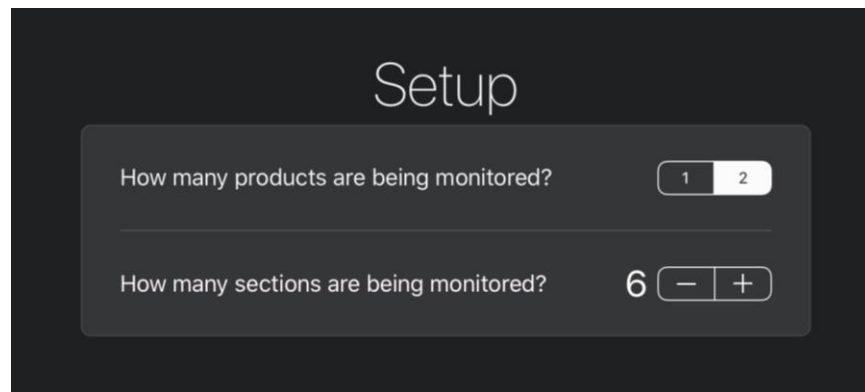
**NOTE:** If the ECU search does not find your ECUs, try following the troubleshooting steps in the on-screen help.



**Figure 5: Configuration – ECU Setup**

5. Configure your product and section setup.
  - a. Select the number of products you are monitoring.
    - Select **1** if you are only monitoring 1 product, or if you have two products flowing through the same air stream (single shoot).
    - Select **2** if you are dual shooting – two products (e.g. seed and fertilizer pellets) simultaneously flowing through the implement via different air streams.
  - b. Select how many sections you're monitoring. By default, this is the same as the number of ECUs installed.

**NOTE:** The minimum number of sections is half of the number of ECUs, and the maximum number of sections is double the number of ECUs.
  - c. Tap **Next**.



**Figure 6: Configuration – Product and Section Setup**

## 6. Configure each section.

**Section Details** Enabled ☒

Name  **a**

Enter number of sensors  **c**

Select the ECU(s) connected to this section 0001

**b**

0001 0002 0003 0004 000

Is this section on product A or B? ☒ A ☐ B **d**

< Previous **Next >** **e**

Figure 7: Configuration – Section Details

- a. Tap the manifold number or name to rename the section (optional).

**NOTE:** Sections display in alphanumeric order based on name. If you want to name your sections based on a description rather than a number (e.g. “left”, “center”, “right”), place a number before the name so that they display in the correct order (e.g. “1left”, “2center”, “3right”).

- b. Tap the ECU or ECUs that are connected to the section. The ECU serial number is located on the back of the ECU.

**NOTE:** If you split a manifold’s runs across two ECUs or joined two manifolds on one ECU, refer to the instructions below when assigning ECUs:

- **Splitting:** Select the two ECUs that your manifold is connected to.
- **Joining:** Select the same ECU for two different manifolds.

- c. Select the number of sensors connected to the ECU.

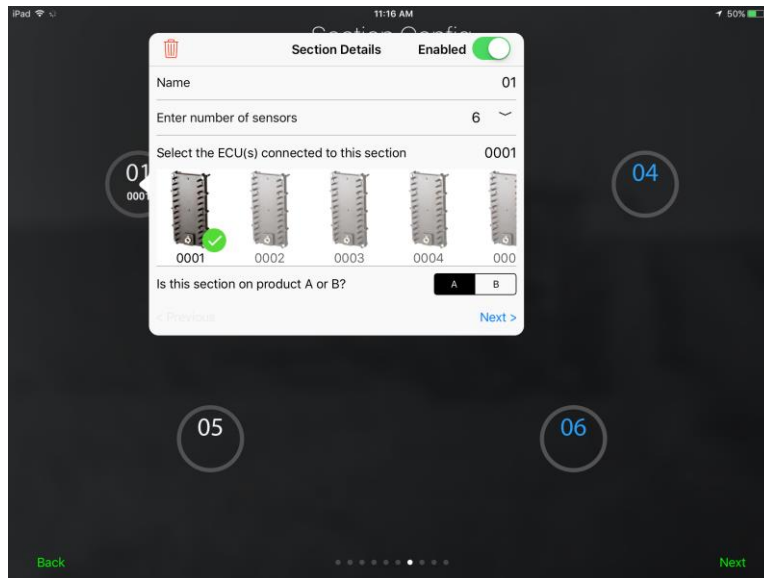
- d. If you are running two different products via two different airstreams, decide which product will be product A and which will be product B. Select which product this section is running.

**NOTE:** Make sure that you assign product types consistently. For example, if Sections 01 and 03 are running seed and Sections 02 and 04 are running fertilizer pellets, you should assign Product A to Sections 01 and 03 and Product B to Sections 02 and 04.

- e. Tap the blue **Next** button to continue to the next section.

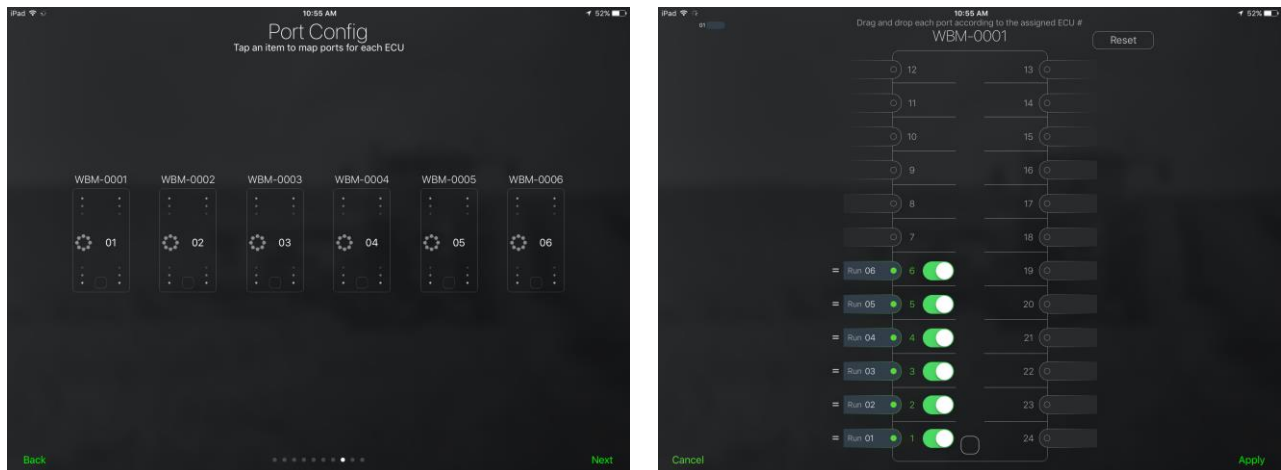
**NOTE:** To permanently delete a section, tap the red trash icon in the upper left corner. To temporarily disable a section, toggle the **Enabled** switch in the upper right corner.

- f. Tap the green **Next** button in the bottom right corner of the screen when you're done configuring all sections.



**Figure 8: Configuration – Section Configuration**

7. Configure each ECU's ports.
  - a. Tap each ECU and verify that the run configuration in the app matches how your runs are connected to the ECUs. If the app doesn't match your system setup:
    - Drag a run number to the correct port on the ECU diagram.
    - Toggle the switch next to a port number to disable or enable a port.
    - Tap **Reset** to revert the changes back to the previous configuration.
    - Tap **Apply** to save the changes.
  - NOTE:** If you connected your sensors in counterclockwise order instead of in clockwise order, you do not need to re-arrange your runs here. Refer to Section 4 to change your run direction.
  - b. Tap **Next**.



**Figure 9: Configuration – Port Configuration**

8. Set up your work switch.
  - a. Select if your implement is operating with section control.
  - b. Select the serial number of the ECU that has the work switch connected to it.
  - c. Select the current mode of your work switch (raised or lowered). This determines the configuration of your work switch. To verify your work switch setup after configuration, refer to Section 2.3.

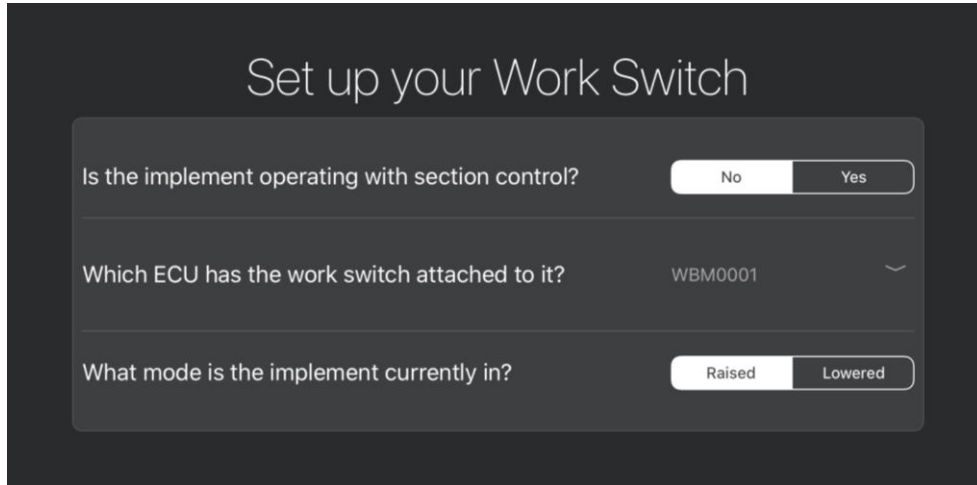
The screenshot shows a configuration screen titled "Set up your Work Switch". It contains three settings: 1. "Is the implement operating with section control?" with a toggle switch set to "Yes". 2. "Which ECU has the work switch attached to it?" with a dropdown menu showing "WBM0001". 3. "What mode is the implement currently in?" with a toggle switch set to "Raised".

Figure 10: Configuration – Work Switch Setup

9. Set up alarms and notifications.
  - a. Drag the slider to select a delay before alarms sound.
  - b. Drag the slider to select the volume of the alarms.

**NOTE:** To configure other alarm settings, see Section 2.6.

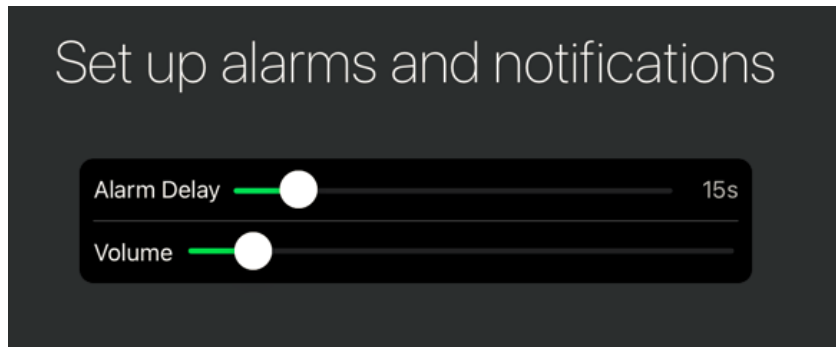
The screenshot shows a configuration screen titled "Set up alarms and notifications". It contains two sliders: 1. "Alarm Delay" with a slider set to 15s. 2. "Volume" with a slider set to a low level.

Figure 11: Configuration – Set Up Alarms and Notifications

## 2.3 Verifying work switch installation

Follow the instructions below to verify that the WBFM work switch has been correctly installed and is communicating with the app.

1. Determine your work switch method.

- **Default method**

- o Whisker switch (900000-000001)
  - The work switch is **engaged** (the work switch is triggered by the height sensor) when the **implement is in the ground**.
  - The work switch is **disengaged** (the work switch is not triggered) when the **implement is out of the ground**.
- o Proximity switch (153560-000014)
  - The work switch is **engaged** (magnet is close to the work switch) when the **implement is in the ground**.
  - The work switch is **disengaged** (magnet is pulled away from the work switch) when the **implement is out of the ground**.

- **Inverted method**

- o Whisker switch (900000-000001)
  - The work switch is **disengaged** (the work switch is not triggered by the height sensor) when the **implement is in the ground**.
  - The work switch is **engaged** (the work switch is triggered) when the **implement is out of the ground**.
- o Proximity switch (153560-000014)
  - The work switch is **disengaged** (magnet is pulled away from the work switch) when the **implement is in the ground**.
  - The work switch is **engaged** (magnet is close to the work switch) when the **implement is out of the ground**.

2. Use the instructions below to verify your work switch setup.

- a. Lower the implement and verify that the work switch indicator turns green.
- b. Raise the implement and verify that the work switch indicator turns white.
- c. Lower the implement again and verify that the work switch indicator turns green.

If the work switch indicator is not the correct color as noted in the instructions above, toggle the **Work Switch Inverted** switch in the Settings page. If it does not change when you adjust the implement's hydraulic system, contact your dealer for assistance.

## 2.4 Adding and editing components in the app

This section includes instructions for adding and editing manifolds and runs that were not included during the initial configuration of the WBFM.

**TIP:** To go through the initial setup again, tap the settings ⚙ icon on the Blockage screen, then tap **Setup Wizard** at the bottom of the screen.

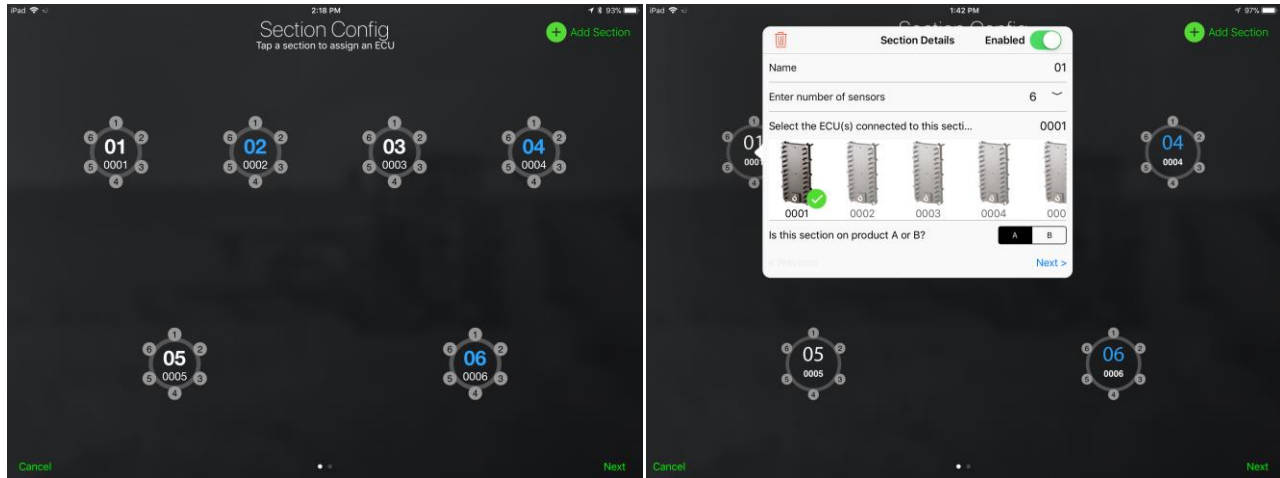


Figure 12: Edit Section Configuration

### 2.4.1 Edit section settings

1. Tap the settings ⚙ icon on the Blockage screen.
2. Tap **Edit Config** at the bottom of the screen.
  - **Delete a section:** Tap the section you want to edit. Then, tap the trash can icon.
  - **Disable a section:** Tap the section you want to edit. Then, toggle the **Enabled** switch.
  - **Add a section:** Tap **Add Section** on the Section Config screen. Tap the new section that appears and configure its settings. Refer to Section 2.2, step 6 for more information about the Section Details page.

### 2.4.2 Edit port settings

1. Tap the settings ⚙ icon on the Blockage screen.
2. Tap **Edit Config** at the bottom of the screen.
  - **Add or remove a port on a manifold:** Tap the section that you want to change the ports on. Change the number next to **Enter number of sensors** to the correct number of ports.
  - **Edit port order:** Tap the green **Next** button in the bottom right corner of the Section Config page. Tap the ECU that you want to edit, and drag its runs to re-order the ports. Refer to Section 2.2, step 7 for more information about the Port Config page.
  - **Disable a port:** Tap the green **Next** button in the bottom right corner of the Section Config page. Toggle the switch next to the port number.

## 2.5 OPTIONAL: Enabling High Fan Noise

Once you've used the system, if flow is detected on your runs when no product is running, configure your system to use the High Fan Noise feature. This is especially prevalent on machines with on-board tanks.

1. Set the tractor engine to the RPM that will be used while seeding.
2. Engage the hydraulics to the fan and set the fan to the RPM that will be used while seeding.
3. Allow the fan to stabilize for one minute. This ensures that the fan and airflow are at the operating speed.
4. Tap the settings ⚙ icon on the Blockage screen.
5. Without product running, enable the **High Flow Noise** switch under Flow Rate.  
*If you have Low or Very Low flow selected, your flow rate will be reset to Normal when High Fan Noise is enabled.*
6. Return to the Blockage screen. Tap **Start Calibration** when it appears.

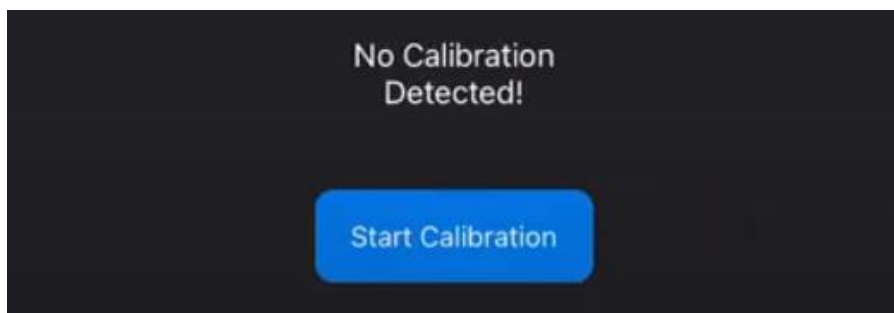



Figure 13: High Fan Noise Calibration Screen

7. Tap **Done** when Calibration Ready appears. Calibration is complete.



## 2.6 Setting alarms

You can configure system alarms on the Settings page. To navigate to the Settings screen, tap the settings icon  on the Blockage screen.

**NOTE:** See section 4 for details about non-alarm settings.

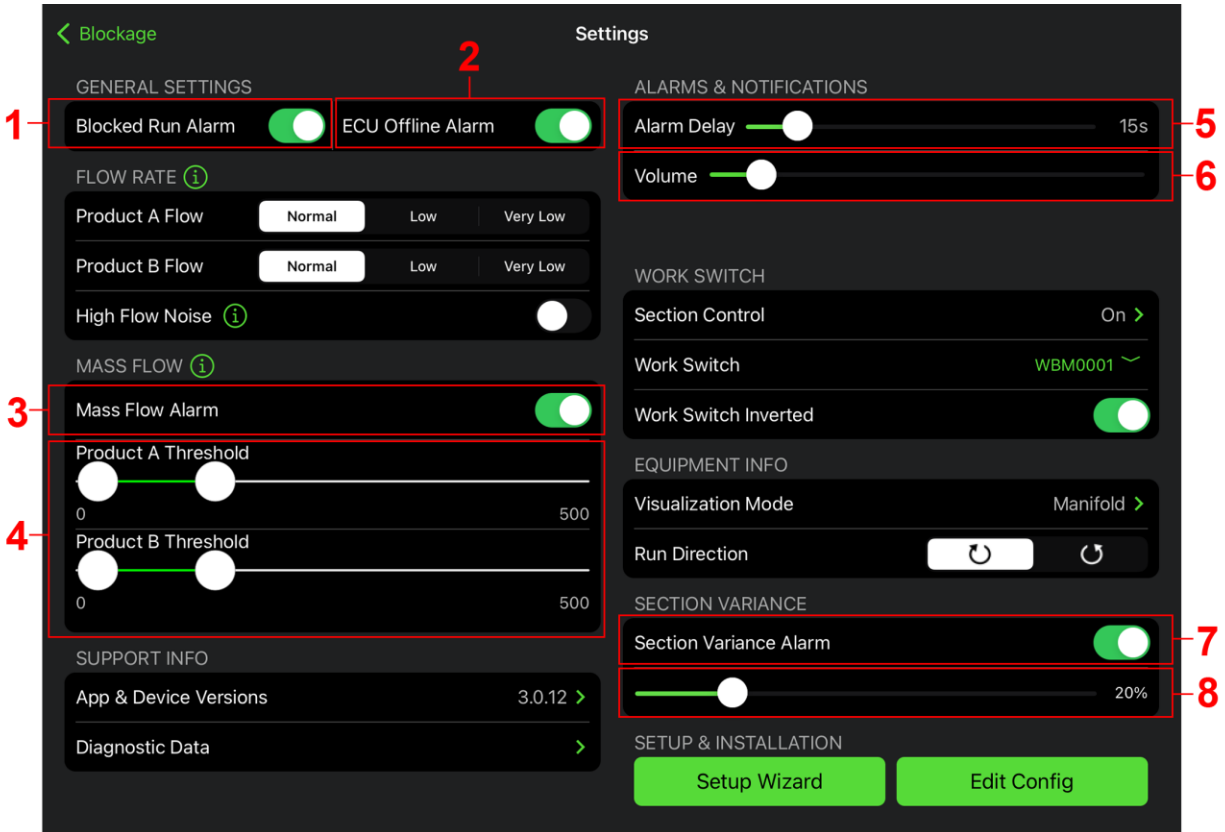


Figure 14: Settings screen - alarms

1. **Enable and disable the blocked run alarm.** Toggle the **Blocked Run Alarm** switch.
2. **Enable and disable the ECU offline alarm.** Toggle the **ECU Offline Alarm** switch to enable an alarm when the app has not received data from an ECU for more than 15 seconds.
3. **Enable and disable the mass flow alarm.** Toggle the **Mass Flow Alarm** switch to enable an alarm when the total product flow is outside of the thresholds set on the slider below.
4. **Set the mass flow threshold.** Use the sliders to set the alarm threshold for each product. Flows above or below these ranges will trigger an alarm.
  - Drag the leftmost slider to the minimum acceptable flow rate for the product.
  - Drag the rightmost slider to the maximum acceptable flow rate for the product.

**NOTE:** You might want to wait to set this alarm until you are familiar with the normal range for the product's mass flow averages. The mass flow rate is an arbitrary number and does not correspond to a specific unit of measurement.

5. **Set alarm delays.** Drag the **Alarm Delay** slider to adjust the number of seconds between when the WBFM detects a blockage and when the alarm sounds.
6. **Change alarm volume.** Drag the **Volume** slider to adjust the volume of alarms.
7. **Enable and disable the section variance alarm.** Toggle the **Section Variance Alarm** switch to be notified of flow outside of your selected threshold for each section.
8. **Set the section variance threshold.** Drag the **Variance Threshold** slider to the percentage difference at which you want to hear an alarm for individual sections.

## 3. Monitoring for blockages

### 3.1 Viewing the Blockage screen

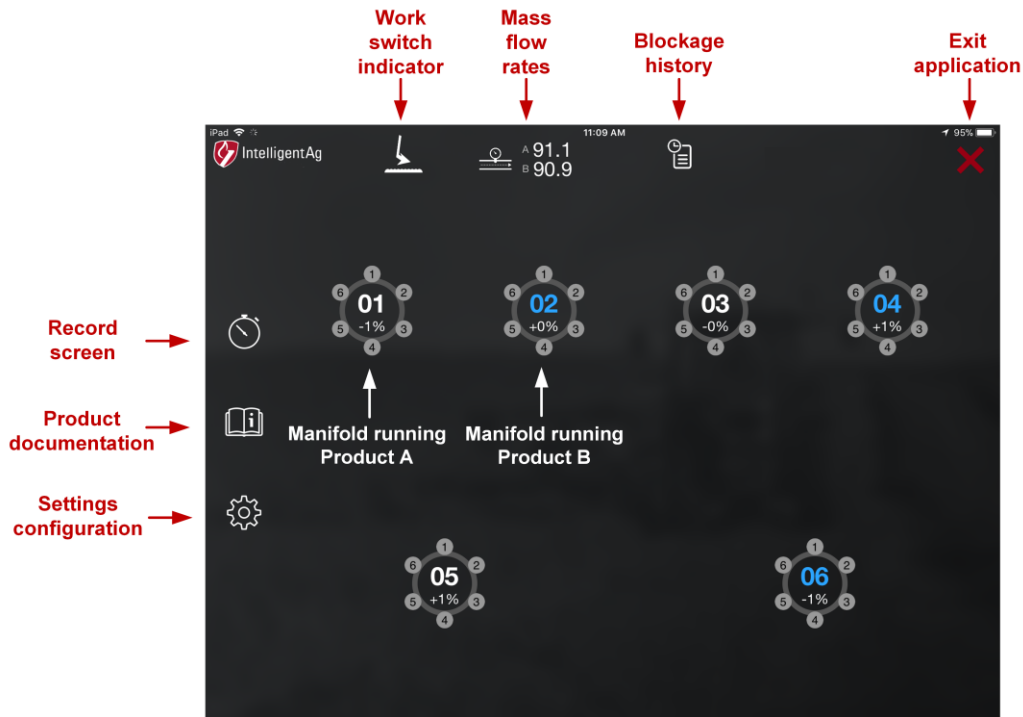


Figure 15: Viewing the Blockage screen

### 3.2 Viewing a blocked run or manifold

When a blockage is displayed on the Blockage screen of the app, an audio alarm will sound (if enabled) and the run that has become blocked will be marked as a red circle with the run number in its center.

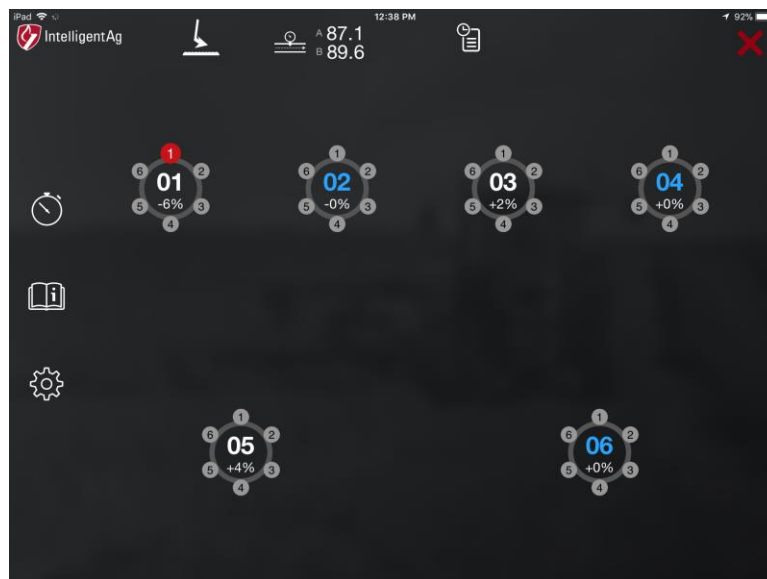
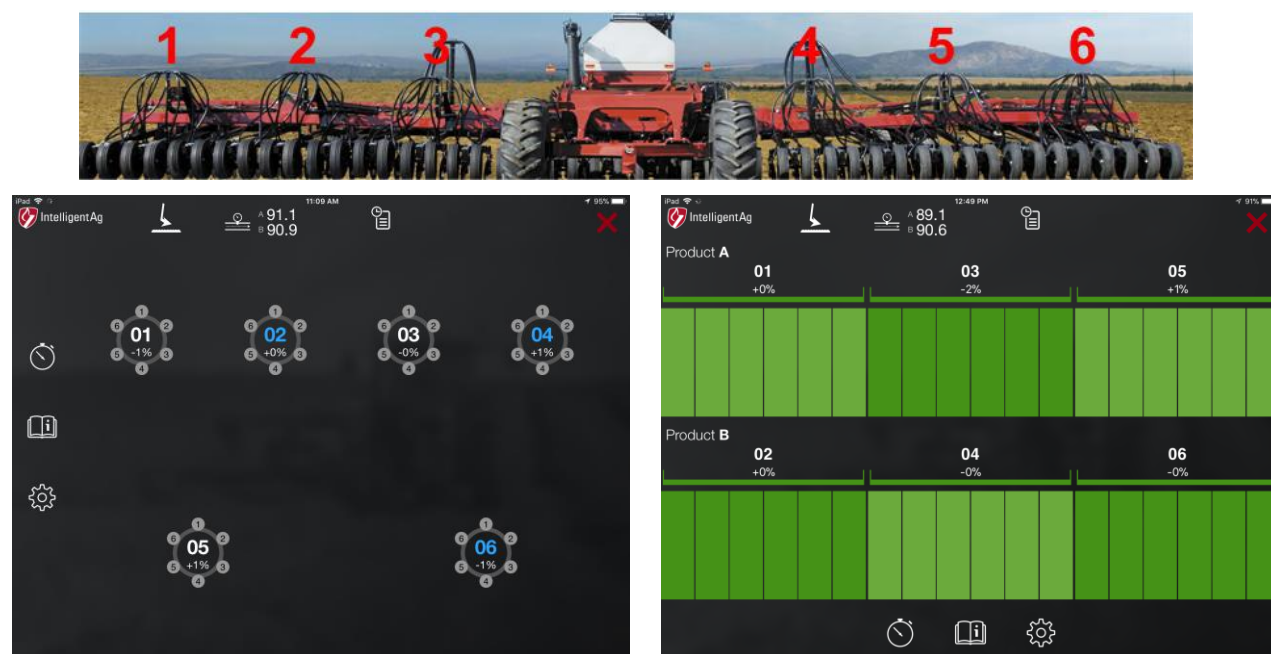


Figure 16: Blockage screen with a blocked run

If you configured your ECUs in order from left to right, Figure 17 shows how your system is displayed in the app. If you haven't already, Intelligent Ag recommends marking the ECU port number connected to the sensor on a location easily visible on each hose. This makes it easier to identify which run is blocked.



**Figure 17: Viewing blockages**

Top: Tractor connected to a six manifold implement,  
 Left: Blockage screen representing that implement in manifold view.  
 Right: Blockage screen representing that implement in row view.

**NOTE:** When the implement is out of the ground, the app might display that all runs are blocked (because no material is flowing through the runs), but the audio alarm will not sound. Residual seed or other product can cause the flow and blockage readings to fluctuate for a few minutes after stopping seeding.

### 3.2.1 Silencing the audio alarm when a blockage is detected

When the blocked run alarm is sounding, you can silence it by tapping anywhere on the Blockage screen of the app. This will silence the audio alarm until another blockage is detected.

### 3.2.2 Viewing blockage history

You can view all recently detected blockages from the Blockage History list. To view blockage history, tap the history icon on the Blockage screen, as shown in Figure 18. For example, in manifold view, a blockage on Manifold 2, Run 5 will appear as “02 - R 5.” In row view, a blockage will display with the run number. Blockages that are currently active are in black text.

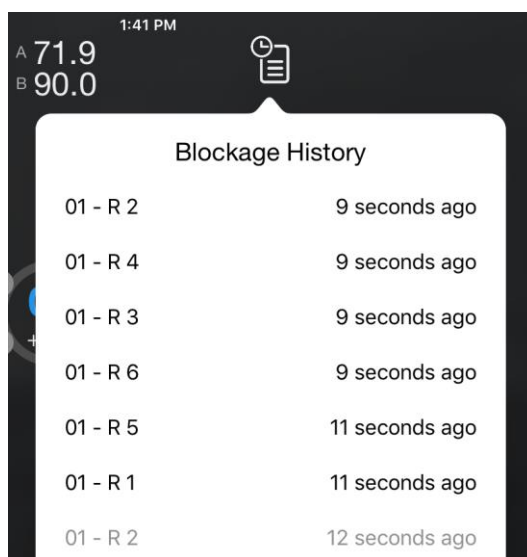


Figure 18: Blockage History screen

### 3.2.3 Adjusting flow rate settings

If you are applying product at a low application rate, you can adjust your flow rate settings to prevent the flow alarm from falsely triggering.

To adjust the flow level settings:

1. Tap the settings ⚙ icon on the Blockage screen.
2. Under Flow Rate, select **Normal**, **Low**, or **Very Low**.
  - **Normal:** Use when applying seed at a rate greater than 7 pounds/acre. Used for most products.
  - **Low:** Use when applying seed at a rate between 5 to 7 pounds/acre. Often used with canola, flax, alfalfa, and grass.
  - **Very Low:** Use when applying seed at a rate less than 5 pounds/acre. Often used with canola and sunflowers.

### 3.2.4 Monitoring with section control


If your implement has a section control system and you indicated that you were using section control during initial configuration, the manifolds that are not seeding due to section control will appear dimmed.

**NOTE:** All sections will appear dimmed if the work switch is disengaged while section control is enabled.



Figure 19: Blockage screen showing a manifold not seeding due to section control

#### Adjusting Section Control Sense settings

1. Tap the settings  icon on the Blockage screen. Then, tap **Section Control**.
2. Adjust the alarm thresholds for Product A and Product B (if applicable).
  - The higher the percentage on the red slider, the longer it will take for a section alarm to shut off when runs become blocked
  - The higher the percentage on the green slider, the longer it will take for a section alarm to sound when blocked runs become unblocked.

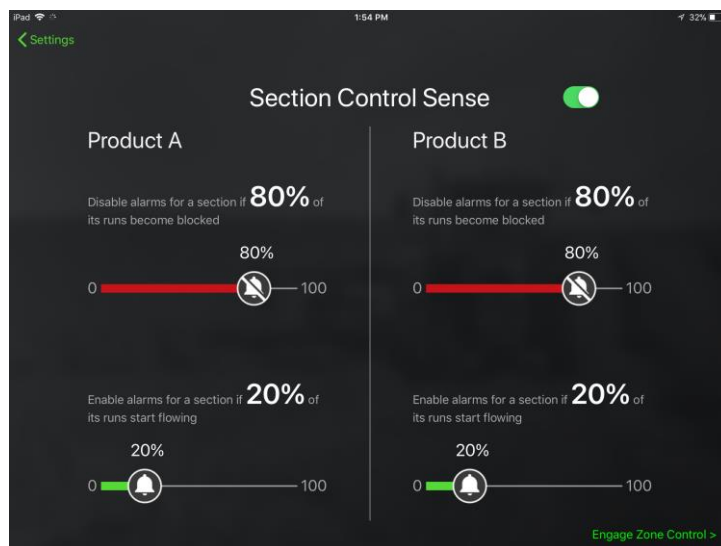


Figure 20: Section Control Sense settings

### Using the WBFM with Engage Zone Control

If you have an Engage Zone Control system that uses the same gateway as the WBFM, you can enable it through the Recon Wireless Blockage and Flow Monitor app. Tap **Engage Zone Control** in the bottom right corner of the Section Control Sense screen. Then, tap the **Enable Engage Zone Control** switch and tap **Proceed**. This allows the Engage Zone Control unit to detect when sections are off instead of the Section Control Sense feature of the Recon Wireless Blockage and Flow Monitor app.

### 3.3 Monitoring manifold variance

In addition to alerting operators to blocked runs or manifolds, the WBFM also monitors the variance between all manifolds on the implement.

The variance of a manifold is a percentage of flow in relation to the flow of the other manifolds on the implement that are running the same product type.

- **0% variance:** all manifolds have equal flow levels.
- **Positive variance:** manifold has above average flow level.
- **Negative variance:** manifold has below average flow level. May indicate poor product flow or low product levels.

The variance for each manifold appears directly below the manifold's name on the Blockage screen of the app. The manifold's variance is given in real time and will continuously update.

Manifolds that are outside the variance threshold will change from gray to orange. For more information about the variance threshold, see Section 2.6.

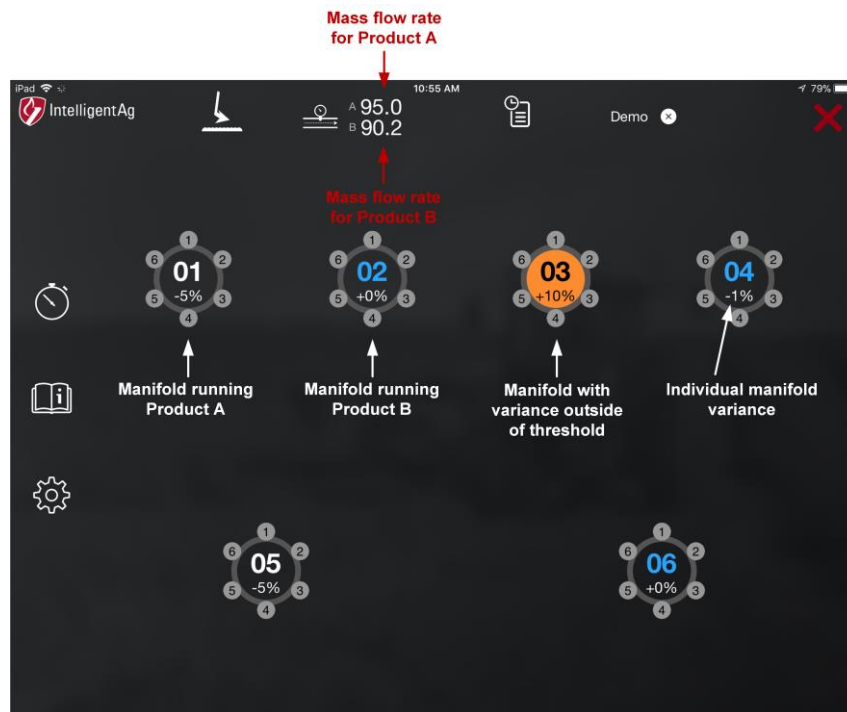
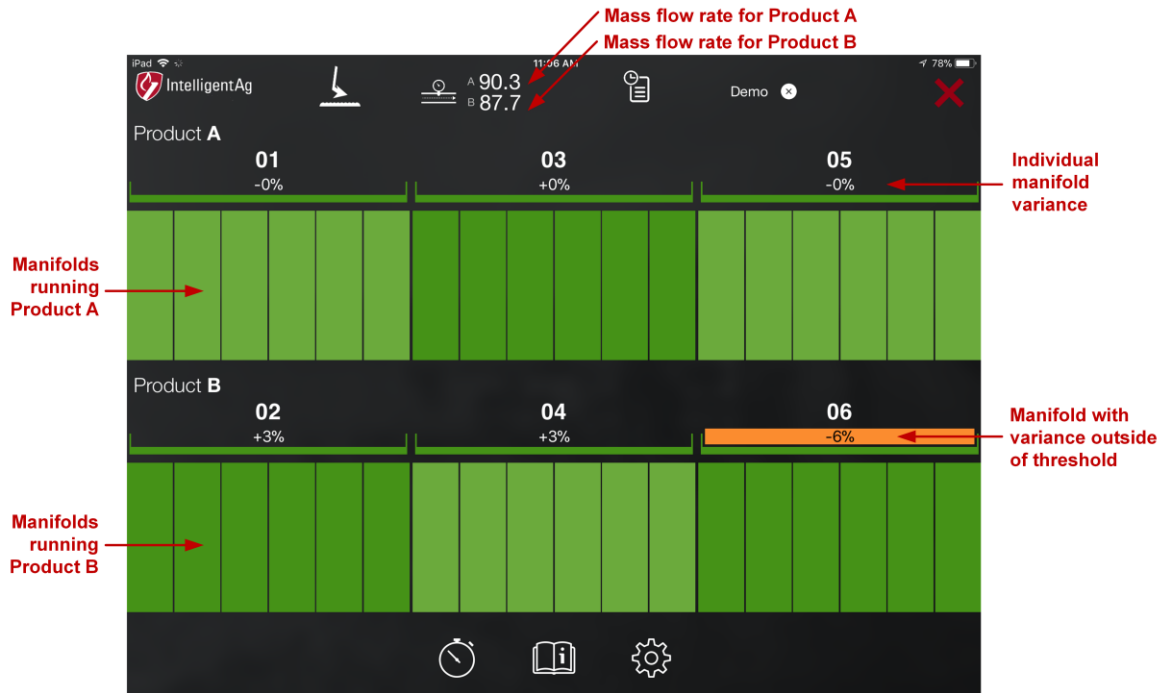


Figure 21: Understanding variance – manifold view



**Figure 22: Understanding variance – row view**

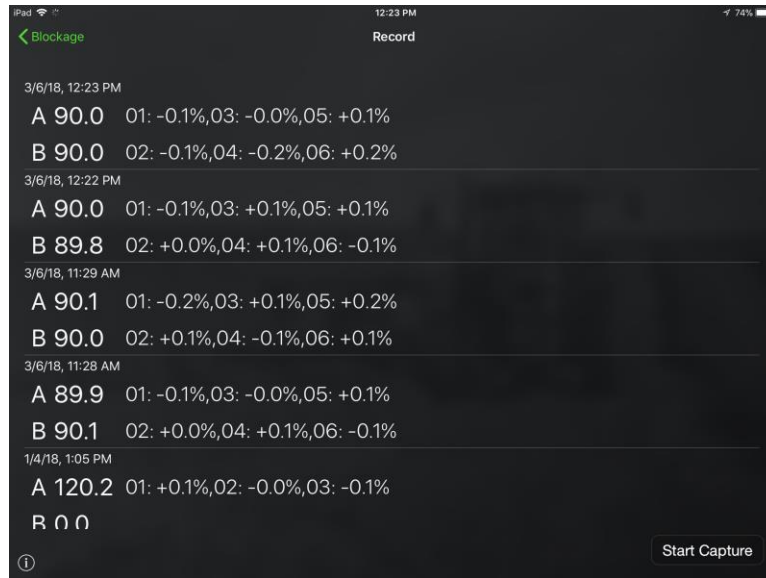
If you are monitoring more than one product type with the WBFM, variance averages for manifolds are based on the variance of manifolds running the same product type. For example, if you are monitoring the flow of seed and fertilizer pellets that are simultaneously flowing through the implement in separate manifolds, the variance of a manifold running fertilizer pellets will only be compared to the flow of other manifolds that are also running fertilizer pellets, and the variance of a manifold running seed will only be compared to the flow of other manifolds that are also running seed.

**NOTE:** If two different product types are running through your implement, verify that you have correctly assigned each manifold to a product type. Refer to Section 2.2 for instructions for how to assign product types to manifolds. If you are running two product types simultaneously through your implement via different runs and do not correctly assign them, the variance will be inaccurate and incorrect blockage notices can occur.




### 3.3.1 Recording the average variance and mass flow rate

The record feature allows you to see the average variance for each manifold on your implement and a total average for all manifolds monitoring a product type over one minute.



**Figure 23: Viewing manifolds' flow averages**

To record the average variance and mass flow rate:

1. Tap the capture  icon on the Blockage screen.
2. Tap **Start Capture**. The flow average capture will run for one minute. During this time, you can navigate to the Blockage screen to continue to monitor for any blockages or low flow rates on your implement. Once the flow average capture is complete, a message will display stating "Capturing of flow data is complete." This message will appear on any screen of the app.

Once the flow average rate is captured, a new line will appear on the Record screen.

## 3.4 Monitoring mass flow rate

The total flow rate for all manifolds of each product type appears on the top of the Blockage screen in the app, as shown in Figure 21 and Figure 22. If the app is monitoring only one product type, the flow rate for Product B will not display.

The mass flow rate is arbitrary and does not correspond to a specific unit of measurement. As you become more familiar with the mass flow rate, you will be able to determine what range of mass flow numbers indicates good product flow. Once you have determined this range, you may want to set an alarm based on these parameters. See Section 2.6 for more information about this alarm.

Mass flow can fluctuate with changes in product type, application rate, ground speed, and fan speed. An abnormal mass flow number could indicate any of the following:

- Open or leaking cart lid
- Product bridging in bin
- Meter roll buildup
- Leaking or blocked primary

### 3.5 Monitoring the ECU status LED

An LED is located on the front of every ECU, as shown in Figure 24. This LED signifies the status of the ECU. Multiple built-in-tests (BITs) periodically check the status of the ECUs. If a BIT fails, the ECU's LED will change from blinking red to solid red, as described in Table 1.

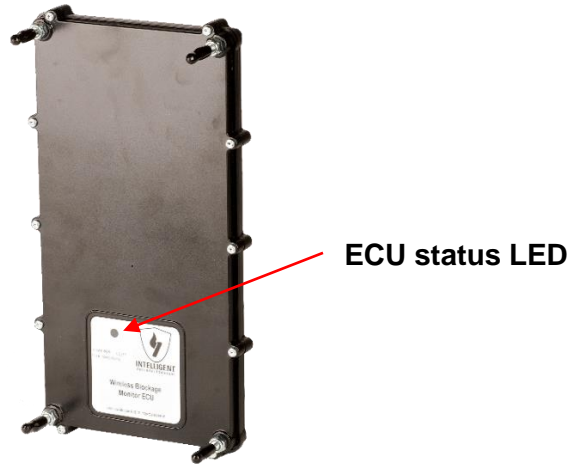


Figure 24: ECU status LED location

LED Color		Status
Blinking red	About one blink every 3 seconds	ECU is in queue for a firmware update
	About one blink per second	ECU is receiving power, no BITs have failed
	Multiple blinks per second	ECU is updating its firmware
Solid red		ECU is receiving power, at least one BIT has failed
Off (black)		ECU is not receiving power

Table 1: ECU LED status

## 4. Adjusting settings

This section describes how to change non-alarm settings. For instructions to change alarm settings, see Section 2.6.

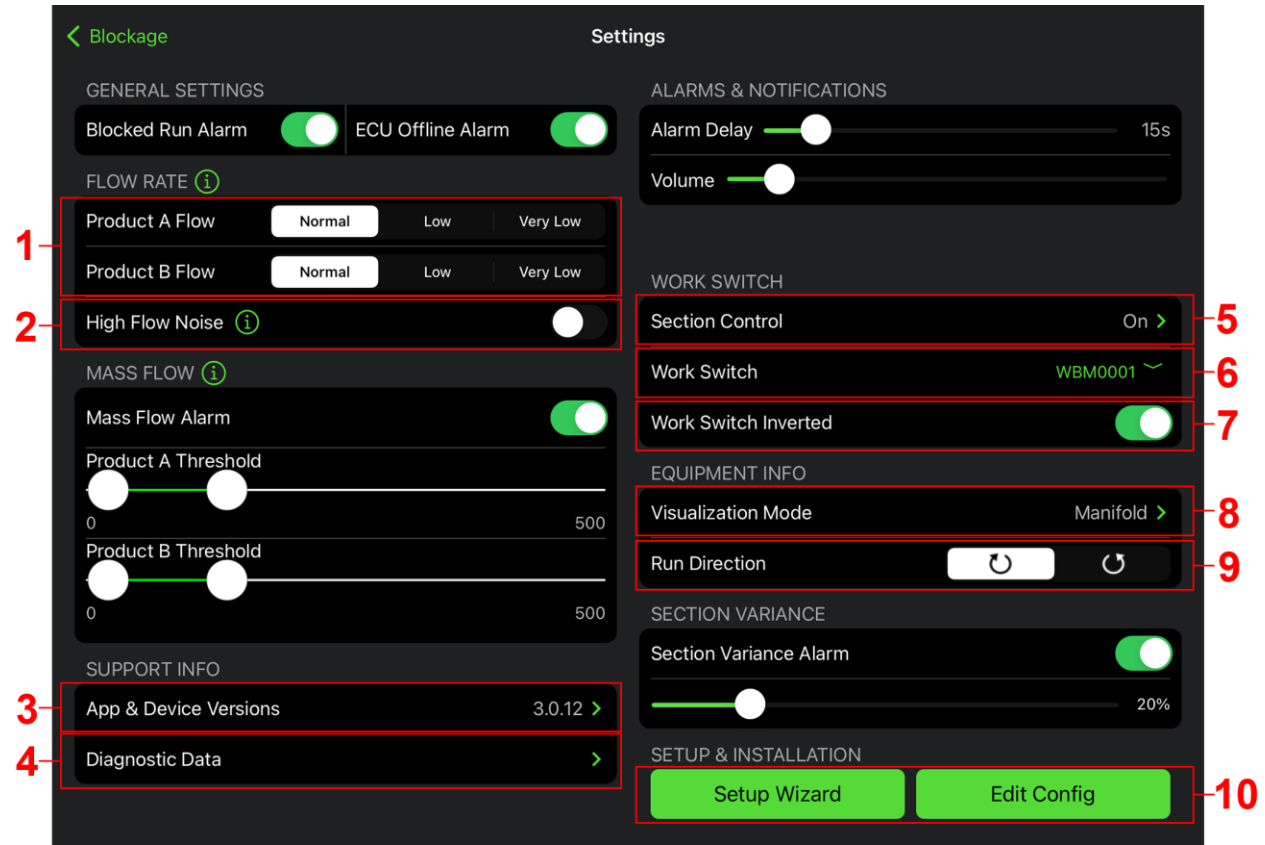


Figure 25: Adjusting settings

1. **Adjust flow rate.** If you are applying product at a low application rate, you can adjust your flow settings to prevent the flow alarm from falsely triggering. See Section 3.2.3 for more information on the three flow rates.
2. **Enable High Fan Noise.** If flow is detected on your runs when no product is running, configure your system to have high fan noise. For more information on configuring high fan noise, see Section 2.5.
3. **View version information.** Tap **App & Device Versions** to view app, hardware, and ECU information when troubleshooting.
4. **Send diagnostic data.** Tap **Diagnostic Data** to upload a problem report to Intelligent Ag. Type a case number (if applicable), a problem description, and select a log date. Tap **Upload Logs**.
5. **Enable and disable section control.** Tap **Section Control** to navigate to the Section Control Sense settings or enable Engage Zone Control. Refer to Section 3.2.4 for more information about these settings.

6. **Change the ECU connected to the work switch.** Tap the ECU serial number next to Work Switch. Then, select the new work switch ECU serial number.
7. **Re-configure the work switch method.** Implement work switches use either the default or inverted method. Toggle the **Work Switch Inverted** switch to change the method. Refer to Section 2.3 for more information on these two methods.

**NOTE:** If you selected **Raised** for **What mode is the implement currently in?** during initial setup, the work switch will automatically be configured for the inverted method.

8. **Change the manifold view type.** Tap **Visualization Mode** to change between manifold view and row view.
9. **Change run direction.** In manifold view, ports are displayed by default in clockwise order around the manifold, as shown in Figure 26. If you installed the sensors in counterclockwise order around the manifold, you can change the way the ports are displayed in the app. Next to Run Direction, tap the clockwise ↻ or counterclockwise ↺ symbol to change the run direction.

**NOTE:** Run direction cannot be changed for row view.

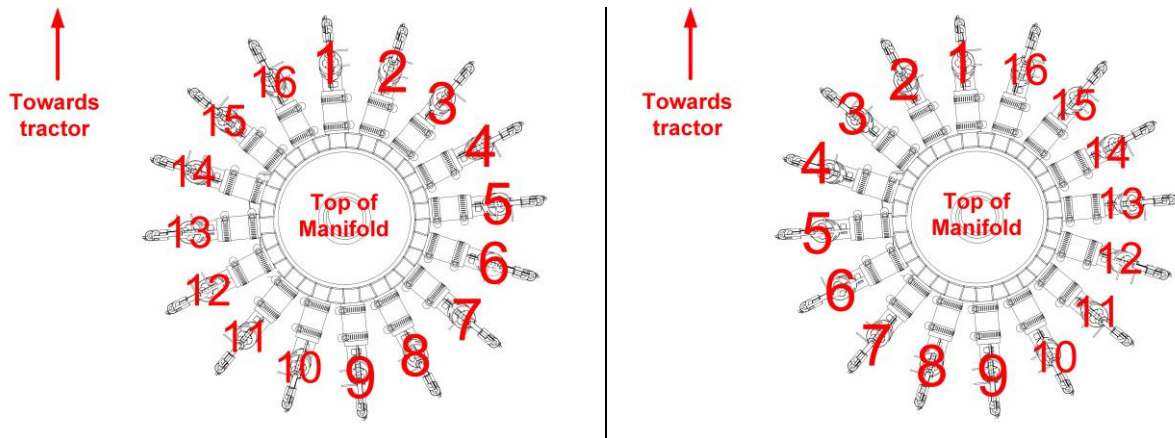


Figure 26: Default/clockwise order (left); counterclockwise order (right)

10. **Re-configure the system or edit individual sections.**
  - Tap **Setup Wizard** to re-configure the system from the beginning.
  - Tap **Edit Config** to edit the configuration of individual sections.