ENGAGE®
ZONE CONTROL

TROUBLESHOOTING GUIDE

Document revision 1.0

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IntelligentAg

Engage® Zone Control
Troubleshooting Guide

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Record of Revisions

Revision Number	Change Description	Revision Date	Inserted By
1.0	Initial release	2/09/21	AAL

Helpful Videos

Description	Link
Virtual Terminal Configuration for John Deere 2630	www.youtube.com/watch?v=bcPTtfP1GqM
Time of Flight Configuration	www.youtube.com/watch?v=zdDnzl-Ju7U
Seasonal Maintenance Guide	www.youtube.com/watch?v=DiWH8D4eza4

TIP: If you don't see your problem listed or your problem is not resolved after completing all troubleshooting steps, contact your Intelligent Ag dealer for assistance.

Before you Begin

Before you begin troubleshooting, make sure that you have the most recent Virtual Terminal and John Deere Blockage Software versions.

Software Type	Version
John Deere 2630 Virtual Terminal Software	3.36.1073 or later
John Deere 4640 Virtual Terminal Software	10.18.1754-94 or later
John Deere Blockage Software	12.0 or later
AFS Pro 700	Any

The Engage® Zone Control app won't load on the Virtual Terminal

1. Check the status light on the gateway.

   - **Green:** Gateway is operating normally. Continue to step 2 below.

   - **Blinking Blue:** Update in progress. Wait 10 minutes, then power cycle the gateway.

   - **White:** Initial boot. Wait 2 minutes, then power cycle the gateway.

   - **Purple/Blue:** System boot. Wait 5 minutes, then power cycle the gateway.

   - **Solid Red:** Built in Test (BIT) failure.

     a. If the system is operating correctly, it is okay to continue using the gateway.

     b. If the system is not operational, power cycle the gateway. If the status light returns to red, follow the steps below.

        i. Power cycle the gateway again.

        ii. Feel the gateway's external temperature. If it feels excessively hot, remount it in cooler location.

   - **Yellow:** Application failure.

     a. Wait 5 minutes, then power cycle the gateway.

     b. Check for a gateway update. Refer to the instructions in Step 4.

2. Make sure that the gateway harness is connected properly to the CAN network.

   a. Make sure that it is wired according to the wiring diagram in Appendix A.

   b. Use a multimeter to check the harness at the gateway for power. It should be around 12 V.

3. Cycle power to the gateway.

4. Check for a gateway update.

   a. Connect an iPad to the internet.

   b. Tap the **App Store** icon on the iPad's home screen.

   c. Search for *Intelligent Ag* and download the Recon Wireless Blockage and Flow Monitor app if you haven't already.

   d. Press the home button on the iPad to return to the Home screen. Don't open the app yet.

   e. Turn the tractor key to the ON position.

   f. Once the LED on the Gateway is green, connect to the **IASBlockage** Wi-Fi network on the iPad.

      i. Tap the **Settings** icon on the iPad's Home screen.

      ii. Tap **Wi-Fi** on the left side of the screen.

      iii. Tap **IASBlockage** from the "Choose a Network..." list. A checkmark will display to the left of the network name when the iPad is connected to the gateway network.

   g. Tap the **Recon Blockage Monitor** icon on your iPad's Home screen to open the app.

   When first opening the app, you will see a prompt saying "Update Required," Press **Ok** to start the update. Once the firmware update is finished, the LED on the gateway will return to green. You can view the firmware version in the Config page of the Intelligent Ag Virtual Terminal app.

5. Contact your dealer for a replacement gateway if the steps above do not solve the problem.

Gates will not open and close

1. Make sure that the documentation tab in the Virtual Terminal is set up correctly. Refer to the steps below or watch this section of the Virtual Terminal configuration video: https://youtu.be/bcPTtfP1GqM?t=990.

   a. Tap the menu ⌗ button in the lower right corner.

   b. Tap **GS3 (GreenStar).**

   c. Tap **Document** on the right navigation.

   d. Make sure that there is a product application tab with a product selected (such as manure). The Target Rate should be grayed out and have a value of 0.9.

2. Make sure that section control is correctly mapping on the Virtual Terminal. Refer to the steps below or watch this section of the Virtual Terminal configuration video: https://youtu.be/bcPTtfP1GqM?t=123.

   a. Tap **Section** on the right navigation.

   b. Tap **View By Operation** at the top of the screen.

   c. Tap **Section Control** above the map. Make sure that section control is mapping on the screen.

3. Mare sure that Engage® Zone Control is active on the task controller. Follow the steps below or watch this section of the Virtual Terminal configuration video: https://youtu.be/bcPTtfP1GqM?t=1046.

   a. Tap **Document** in the right navigation.

   b. Tap **Product Application** at the top of the screen.

   c. Toward the bottom of the screen, verify that the Target Rate is grayed out and has a value of 0.9. If it's not grayed out, power cycle the system using the tractor key or restart the gateway.

4. Make sure that the work switch is functioning correctly.

   a. Tap the menu ⬆️▦ button in the lower right corner.

   b. Tap the **Intelligent Ag** app.

   c. Tap **Gates** on the right navigation. Verify that the circle at the top left of the screen is green when the implement is down, and black when the implement is up. If the work switch is inverted, follow the steps in this section of the Virtual Terminal configuration video: https://youtu.be/bcPTtfP1GqM?t=554.

5. Make sure that the gates do not have any errors.

   a. Within the Intelligent Ag app, tap **Config** on the right navigation.

   b. Tap **Diagnostics**.

   c. If any gates have an error, reposition them.

6. Make sure section control is enabled in the John Deere settings. Follow the steps below or watch this section of the Virtual Terminal configuration video: https://youtu.be/bcPTtfP1GqM?t=939.

   a. Tap the menu ⬆️▦ button in the lower right corner.

   b. Tap **GS3 (GreenStar).**

   c. Tap **Section** on the right navigation.

   d. Make sure that all boxes under Section Control are checked.

7. Make sure Engage® Zone Control is enabled in the Intelligent Ag app on the Virtual Terminal.

   a. Tap the menu [icon] button in the lower right corner.

   b. Tap the **Intelligent Ag** app.

   c. Tap **Config**.

   d. Tap **Settings**.

   e. At the bottom of the screen, make sure that the **Engage Zone Control Enabled** box is checked.

8. If you're using the Wireless Blockage and Flow Monitor, make sure that Engage Zone Control is selected in the Section Control setting in the Recon Wireless Blockage and Flow Monitor app.

Leaving skips near coverage

1. Check overlap settings in the Virtual Terminal settings.

   a. Tap the menu [icon] button in the lower right corner.

   b. Tap **GS3 (GreenStar).**

   c. Tap **Section** on the right navigation.

   d. Tap **Settings** at the top of the screen.

   e. Tap **Overlap Settings**.

   f. Make sure that each of the three options on the left side are set to **% Overlap** and **102%**.

2. Check section widths in the Intelligent Ag app.

   a. Tap the menu [icon] button in the lower right corner.

   b. Tap the **Intelligent Ag** app.

   c. Tap **Config** on the right navigation.

   d. Tap **Section Control Configure**.

   e. Make sure that the widths under **Section Width** are correct.

Leaving skips coming in or out of headlands

Follow the steps below or watch the time of flight configuration video: https://youtu.be/zdDnzl-Ju7U.

1. Make sure that you are setting down your implement early in the pass to allow appropriate time for section control to engage.

2. Make sure that the Time of Flight Compensation numbers in the Intelligent Ag app are correct.

    a. Tap the menu ⬆▦ button in the lower right corner.

    b. Tap the **Intelligent Ag** app.

    c. Tap **Config** on the right navigation.

    d. Tap **Section Control Configure**.

    e. Make sure that the numbers under Time of Flight Compensation are correct.

3. Make sure that the turn on and turn off times in the Virtual Terminal settings are correct.

    a. Tap the menu ⬆▦ button in the lower right corner.

    b. Tap **GS3 (GreenStar).**

    c. Tap **Section** on the right navigation.

    d. Tap **Settings** at the top of the screen.

    e. Tap **Turn On/Off Settings**.

    f. Make sure that the turn on and turn off time are correct, and that the times are the same for all operations. To re-measure your turn on and turn off times, refer to the video referenced at the beginning of this section.

4. Make sure offsets are correct.

    a. Tap **Equipment** on the right navigation.

    b. Tap the **Machine** tab at the top of the screen.

    c. Tap **Change Offsets**. Make sure that these numbers are correct.

John Deere Blockage is not showing up on the Virtual Terminal

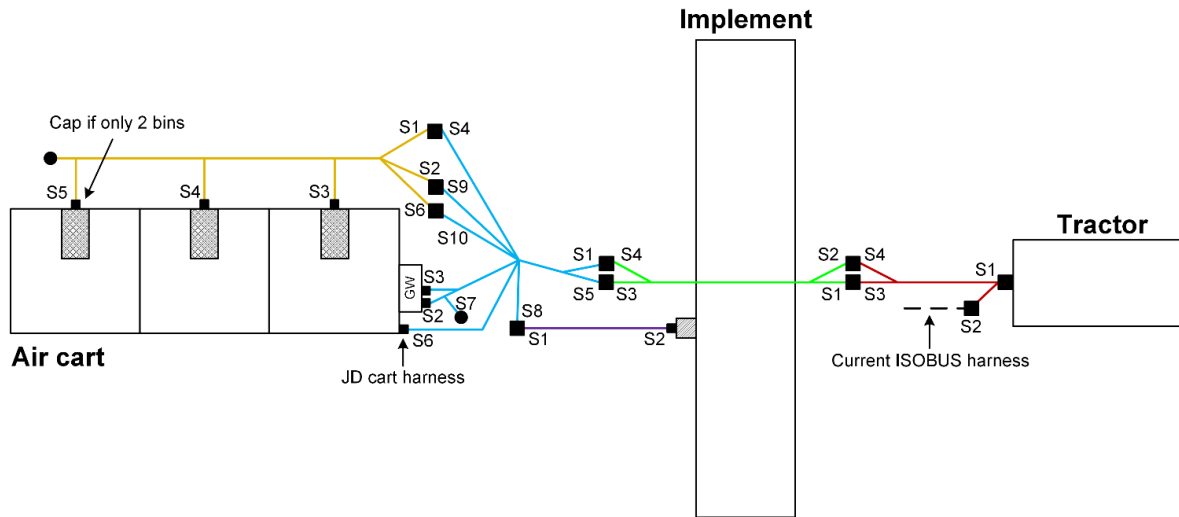Your dealer should update the John Deere Blockage Software to the latest version.

**NOTE:** This procedure must be done at the drill. You cannot bring you monitor into the dealership.
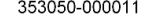
Gate Errors on Virtual Terminal
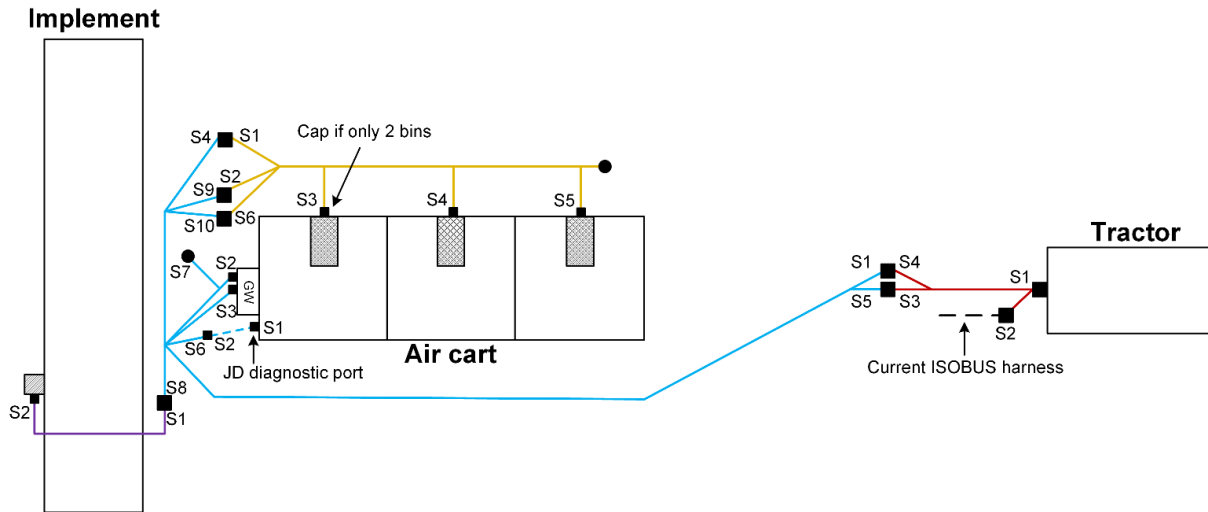
Error message	Troubleshooting steps

Gate state says *ERROR*	1. Reposition the gate that has an error.
	
	   a. Tap **Config** on the right Intelligent Ag navigation.
	
	   b. Tap **Diagnostics**.
	
	     IMPORTANT: Only navigate to this screen when the toolbar is raised so that section control commands are not received during gate positioning.
	
	2. Check for product buildup.
	
	   a. Unplug the Engage® Zone Control unit bin harness.
	
	   b. Remove the bottom meter cover and top lid and clean product buildup that is impeding gate movement. Refer to the Engage Zone Control Maintenance Manual (600840-000047) for cleaning procedures.
	
	   c. Re-connect the bin harness.

The following gates are in need of repositioning.	1. Reposition the gate that appears red on the screen.
	
	2. Check for product buildup.
	
	   a. Unplug the Engage Zone Control unit bin harness.
	
	   b. Remove the bottom meter cover and top lid and clean product buildup that is impeding gate movement. Refer to the Engage Zone Control Maintenance Manual (600840-000047) or this video for cleaning procedures: https://youtu.be/DiWH8D4eza4.
	
	   c. Re-connect the bin harness.
	
	Contact your Intelligent Ag dealer if you repeatedly get the same error on a gate.

There are disabled gates in the system. You may re-enable them in the diagnostics menu.	1. Tap **Config** on the right Intelligent Ag navigation. 2. Tap **Diagnostics**. 3. Tap the arrow buttons until you see the disabled gate. 4. Tap **Enable & Reposition**.
There are X motor controllers that haven't been mapped to a location.	Navigate to the Intelligent Ag Serial Number Configuration settings screen and ensure that all motor controllers have been configured.
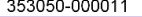
An unmapped motor controller with serial number XX has disconnected from the control unit.	Ensure that the motor controller with that serial number is powered on and communicating. Refer to the LED codes below: • **Solid red:** Powered on and communicating. • **Flashing red:** Powered on but not communicating. • **Fast flashing red:** Firmware update in progress.
Motor controller with serial number XX on bin X on the left side has disconnected from the control unit.	Ensure that the motor controller with that serial number is powered on and communicating. Refer to the LED codes below: • **Solid red:** Powered on and communicating. • **Flashing red:** Powered on but not communicating. • **Fast flashing red:** Firmware update in progress.

Bin X gate X has encountered an obstruction.	1. Close and open the gate with the obstruction.
	
	   a. Tap **Config** on the right Intelligent Ag navigation.
	
	   b. Tap **Diagnostics**.
	
	   c. Tap **Open this gate**.
	
	   d. Tap **Close this gate**.
	
	2. Visually inspect the unit for obstructions.
	
	   a. Unplug the Engage® Zone Control unit bin harness.
	
	   b. Remove the bottom meter cover and top lid and clean product buildup that is impeding gate movement. Refer to the Engage Zone Control Maintenance Manual (600840-000047) for cleaning procedures.
	
	   c. Re-connect the bin harness.

Bin X gate X is not moving. ACTION REQUIRED!	Visually inspect the unit for obstructions. 1. Unplug the Engage Zone Control unit bin harness. 2. Remove the bottom meter cover and top lid and clean product buildup that is impeding gate movement. Refer to the Engage Zone Control Maintenance Manual (600840-000047) for cleaning procedures. 3. Re-connect the bin harness. Contact your Intelligent Ag dealer if there are no obstructions.

Appendix A
Wiring Diagrams

Implement

Tractor

Cap if only 2 bins

S1 S4
S2 S9
S6
S10

S5 S4 S3

S3
S2 S7

S8
S1

S6

Air cart

JD cart harness

S1 S4
S5 S3

S1

S2 S4
S1 S3

S1

S2

Current ISOBUS harness

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	Engage Zone Control Unit
	Work switch
	Connection point
	CAN termination
353050-000011	Work switch extension harness
353050-000032	Gateway harness
353050-000034	Tractor harness
353050-000035	Intermediary harness
353050-000036	Bin harness

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Implement

Cap if only 2 bins

Air cart

JD diagnostic port

Tractor

Current ISOBUS harness

	Engage Zone Control Unit
	Work switch
	Connection point
	CAN termination
353050-000011	**Work switch extension harness**
353050-000032	**Gateway harness**
353050-000034	**Tractor harness**
353050-000036	**Bin harness**
353050-000047	**Diagnostic adapter harness**