RECON SPRAYSENSE™

TROUBLESHOOTING GUIDE

Document revision 1.1

Last revised: July 18, 2023

IntelligentAg™

Recon SpraySense™ Troubleshooting Guide

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Record of Revisions

Revision Number	Change Description	Revision Date	Inserted By
1.0	Initial release	March 17, 2022	AAL
1.1	Updated wiring diagram	July 18, 2023	AAL

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 SpraySense app version, Gateway firmware version, and iOS version.

Wi-Fi Connectivity Issues

1. Make sure that the iPad is connected to the SpraySense-*XXXXXX* Wi-Fi network.
2. Make sure that the gateway is powered on.

   The Gateway needs constant and keyed power in order for proper operation. Ensure that both are connected. Refer to the Gateway connector table below.

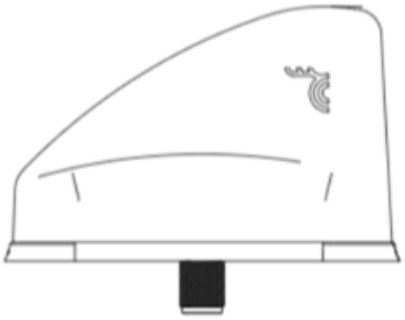
Connector A	
Pin number	Signal name
1	POWER_UNSWITCHED
2	GND
3	DIGITAL_IN_1
4	DIGITAL_IN_0
5	CAN2_HIGH
6	CAN1_HIGH
7	CAN1_LOW
8	CAN2_LOW
9	DIGITAL_OUT_0
10	DIGITAL_OUT_1
11	DIGITAL_OUT_2
12	SWITCHED_POWER

Connector B	
Pin number	Signal name
1	RS232_TX
2	Unused
3	CAN6_HIGH
4	CAN5_HIGH
5	CAN4_HIGH
6	CAN3_HIGH
7	CAN3_LOW
8	CAN4_LOW
9	CAN5_LOW
10	CAN6_LOW
11	RS232_GND
12	RS232_RX

3. Make sure that the LED on the gateway is solid green. Refer to the table below for other color meanings.

Color	Meaning	Troubleshooting Step
White	Gateway is stuck on initial boot stage	Cycle power to see if it resolves issue, otherwise contact Intelligent Ag™ for a replacement.
Blue	Gateway is stuck in boot stage	Cycle power to see if it resolves issue, otherwise contact Intelligent Ag for a replacement.
Blue and purple alternating	Gateway is booting	None; wait for gateway to finish booting.
Any other LED color	Varies	Contact Intelligent Ag.

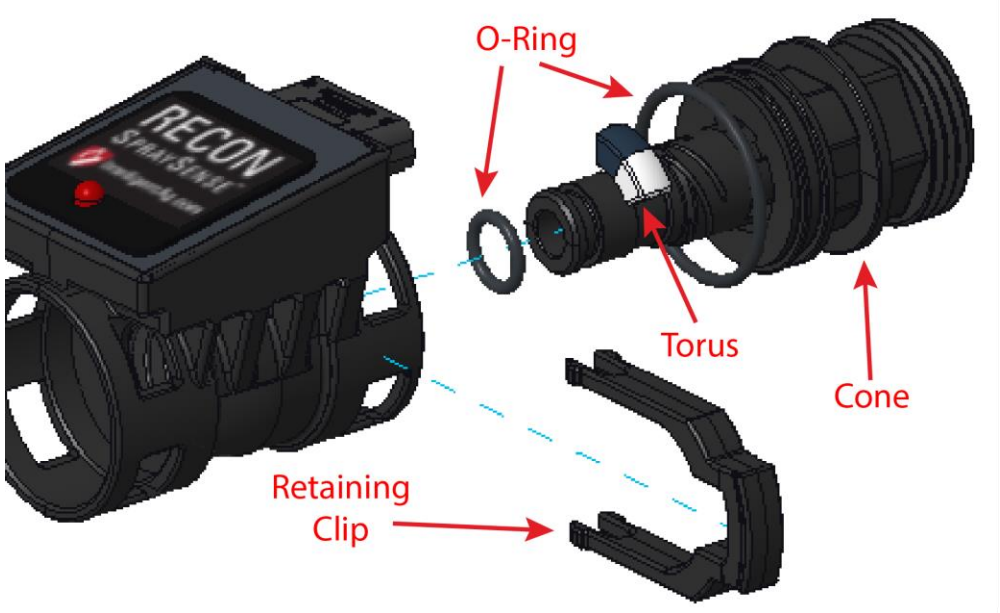
4. Turn off additional wireless devices such as two-way radios. These can cause interference.
5. Check Wi-Fi antenna location.
    - The antenna should be mounted at least 8 inches away from the gateway and have direct line of sight to the iPad.
    - The optimal orientation is for the fins to face up and the side of the fins to face the cab.



6. Restart the system by cycling key power.
7. Restart the iPad.
8. Delete and re-download the app.
9. Make sure the connections are seated properly on the Gateway, including the CAN connections and antenna connections.
    - The 12 pin Deutsch connectors should be seated firmly with the tabs locked on either side.
    - The antenna connections should be screwed tightly on and connected to the correct ports on the Gateway.

Unexpected Readings

1. Make sure that there is no build-up on the nozzle tips.
2. Switch a nozzle tip with the nozzle tip next to it. This helps to determine if it is the sensor or the nozzle body/tip that is providing improper readings.
3. If the readings do not change, swap the sensor in question with one next to it.
    - Do not make any changes to configuration in the app since it will isolate the issue.
    - Determine if there are changes to the readings on the display.
4. Replace damaged components.
    - Make sure that the sensor is clean.
    - Remove sensor from nozzle body.
    - Clean all sensor parts.
    - Make sure that you do not lose any sensor components (i.e. o-rings and torus)



Configuration Confirmation

Check your configuration to make sure that the sensors are indexed correctly in order of the nozzles on your sprayer. There could be issues with Section Sense enabled or sensors incorrectly indexed. This configuration should match the physical equipment on the machine.

1. Tap **Settings** at the bottom of the screen in the app.
2. Make sure that the number of total sensors is correct.
3. Make sure that the number of sensors in each section is correct.

GPS Disconnected

If GPS is disconnected, the ground speed on the Dashboard and Monitoring tabs will show 0 mph, and the rate on the Dashboard and Monitoring tabs will show 0 GPA.

Sensor Offline

If there is a disconnected sensor, the system will show “offline” in the Settings tab.

1. Restart the app and power cycle the system.
2. Make sure there is a solid green light on the face of the sensor.

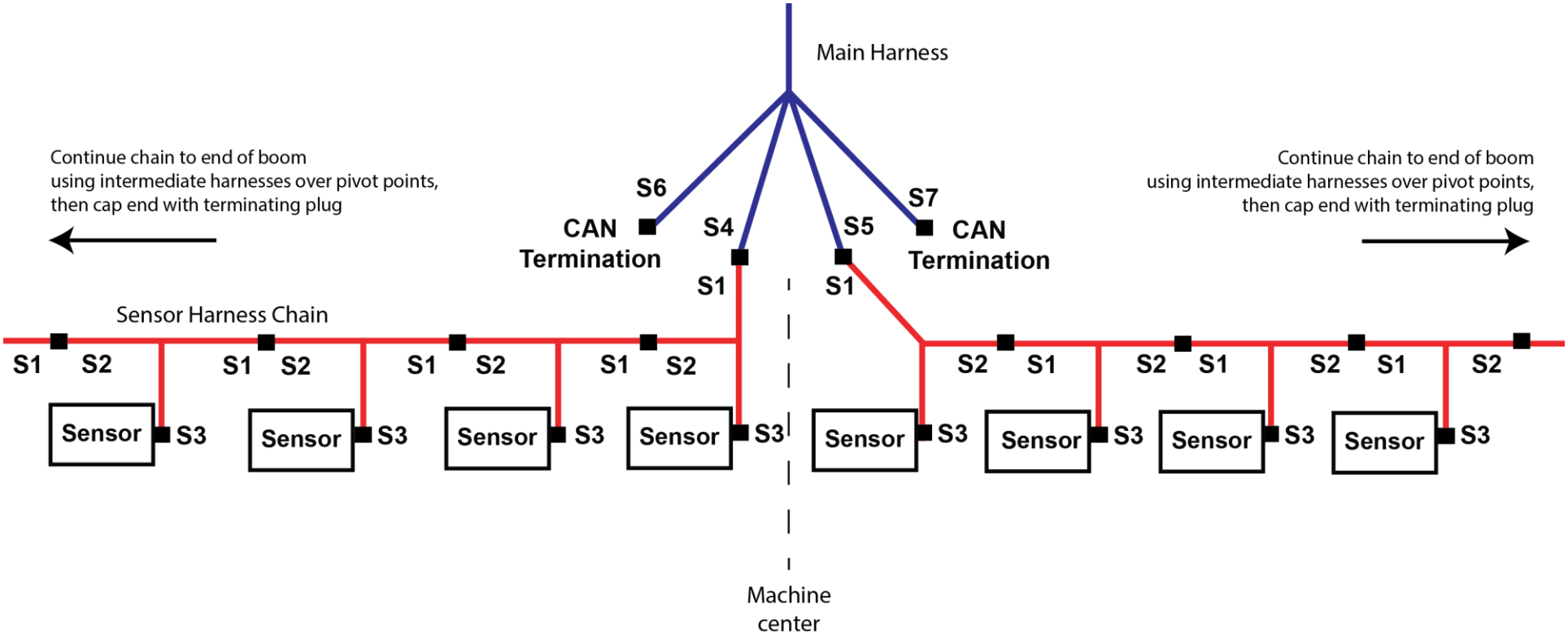
   If there is no light, use a multimeter to check power at the sensor harness on the black and red wires. There should be 12V.
3. Check all harness and sensor connections to make sure they have been seated properly and pins are clean of corrosion.
4. Check the continuity of each wire in the sensor harness to ensure there isn't a wire broken or a bad solder under the braiding.
5. Determine whether affected parts can be fixed or need to be replaced.
6. If all the above has been checked, contact dealer or Intelligent Ag™ for replacement parts.

Boom Disconnected

1. If an entire section or boom stays gray when applying product, follow the steps below.
   a. Make sure that section control on your sprayer is disengaged.
   b. Check sensor LED status. If there is no light, use a multimeter to check power at the sensor harness on the black and red wires. There should be 12V.
   c. Turn off power to the system, then check the CAN wires at the gateway. There should be 2-4 CAN buses to check. Each one should read 60 Ohms.
   d. Back trace the issue to determine the area causing the disconnect.
   e. If LED status is green, check for loose CAN wires or loose ground wires (see Appendix A for wiring diagrams)
2. Check terminators at the end of each boom for the correct resistance (i.e. 120 ohms with the terminator unplugged).
3. Once the faulty piece has been identified, determine if a fix is possible or replacement is necessary.

Appendix A
Wiring Diagrams

SYSTEM WITH LESS THAN 96 SENSORS



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