The Standard KINZE Planter Module is a feature that displays planting data from a KINZE Population Monitor on the Map screen.

Load Configuration

Press the Planting App from the home screen. This will take you through the steps needed to load a configuration.

Map View

Once a configuration has been completed, the Map View screen appears.

A. Menu button

B. Total Logged Field Area

C. Ground Speed

D. AgFiniti Status

E. Diagnostics

F. GPS Signal Indicator

G. Display Legend

H. Vehicle Icon

I. Product Control toolbox

J. Planter Drive RPM

K. Bar Graph

L. Settings button

M. Event Summary

N. Map View

O. Split screen

P. Planter Performance screen

Q. AutoSwath

R. Master Switch Status

S. Shaft Speed
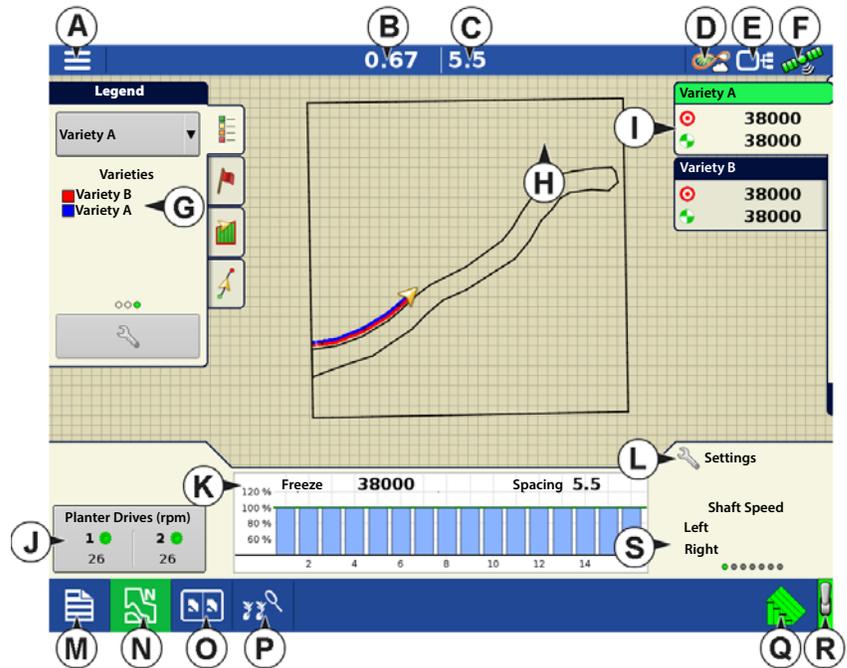
NOTE! Pressing the Map View button will cycle between the available Map Screen views, and the appearance of the Map View button changes.

Planter Performance Screen

The Planter Performance screen displays information on machine performance.

Shaft Speed—The speed of the planter drive shafts, in RPM.

**Tank Weight**—The weight of seed in each tank of the ASD system.

Tank Area Left—The number of acres (hectares) that can be planted with the amount of seed remaining in the tanks of the ASD system.

ASD Tank Pressure—The air pressure level for the Air Seed Delivery (ASD) system.

EdgeVac Level—Measure of seed meter vacuum. This measurement, shown in inches of water, is displayed for each vacuum fan.

Pneumatic Down Pressure—Measure of down force the air bag places on the row unit.

Magnetic Pickup Speed—Speed registered according to the magnetic pickup.
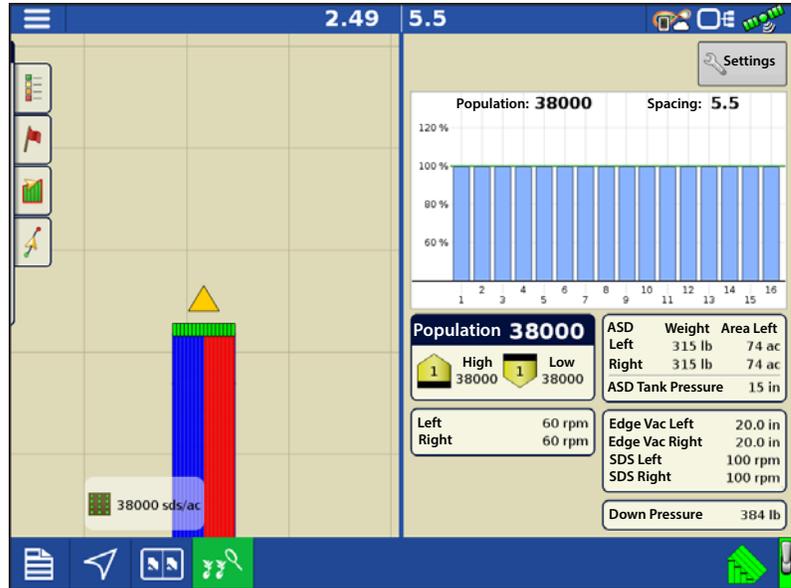
> **i** NOTE! Seed tube sensors that communicate on the MUXBUS with Planter Monitor Module can calculate each individual rows population. The PMM calculates the target population (100% line on population bar graph) by averaging each individual rows population across the planter.

Creating Products

Creating planting products can be completed during initial setup or from the Product Selection screen of the Field Operation Wizard when starting a field operation.

Follow described steps to create planting varieties during initial setup.

1. Select **Product Type** (Crop) and **Product Units** (seeds or pounds)

2. Enter **Variety** or **Hybrid** name.

   Press [keyboard icon] to enter a unique name for the variety or hybrid.

3. Enter **Variety** or **Hybrid Manufacturer** is applicable.

   Manufacturer name can be added to the drop-down menu by pressing [wrench icon].

4. Press [checkmark icon] to complete Product setup.

   Created variety or hybrid should appear under the Planting heading located on the Product tab of the Configuration Setup Screen.

Setup Steps

> **i** NOTE! Steps 1-4 must be performed by everyone who has purchased a Standard KINZE Planter Monitor; steps 5-6 are performed by customers who have purchased those specific features.

1. **Standard KINZE Planter Module Configuration**—This creates a configuration that is used for Standard KINZE Planter Module operations. See "Create Configuration" on page 3.

2. **Monitor Module setup**—Included front and rear unit settings, Shaft RPM sensor settings, and row spacing settings. This step allows the display to detect the physical KINZE Planter devices. See "KINZE Planter Configuration" on page 3.

3. **Sensor detection process**—This allows the display to detect the proper number of Muxbus sensors on the row units. See "Muxbus Sensor Detection" on page 5.

4. **Set alarm thresholds**—This allows user-defined level at which the seed monitor alarms will sound. See "KINZE Seed Monitor Alarms" on page 8.

5. **Calibrate the Magnetic Pickup Coil**—This step, which is performed by customers who have purchased the Magnetic Pickup Coil Speed Sensor allows the Monitor Module to receive data from this sensor, which measures the ground speed of the planter. See "KINZE Magnetic Coil Speed Sensor Calibration" on page 8.

6. **EdgeVac® calibration**—This step, which is performed by customers who have purchased the EdgeVac® seed meters, allows the display to receive accurate data from the meters. See "KINZE EdgeVac Calibration" on page 9.

Create Configuration

A wizard will guide you through the process of selecting or creating a configuration.
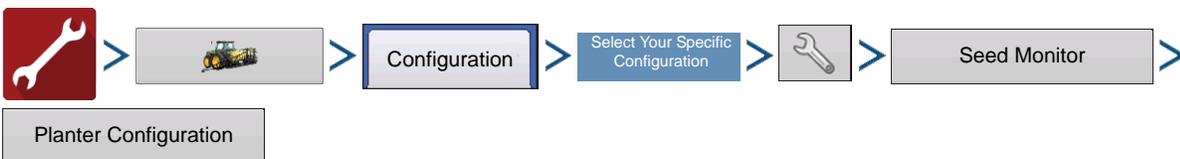
The configuration can be started in two places:
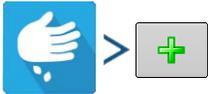
OR

Your Operating Configuration will then be viewable when you start a new Field Operation with the Application Wizard.

You can also use the **Manage Equipment** button to create or edit specific vehicles and implements.

KINZE Planter Configuration

- **Front Units and Rear Units**—Use ▲ / ▼ to adjust the number of front and rear planting units, if necessary.

- **Shaft RPM Sensors**—Use ▲ / ▼ to adjust the number of Shaft RPM Sensors, if necessary.

- **Row Spacing**—Shows the minimum row spacing of the planter. Press [▦] to adjust the Row Spacing.

- **Sensitivity**—Changes automatically with product type selection. Press [▦] to adjust.
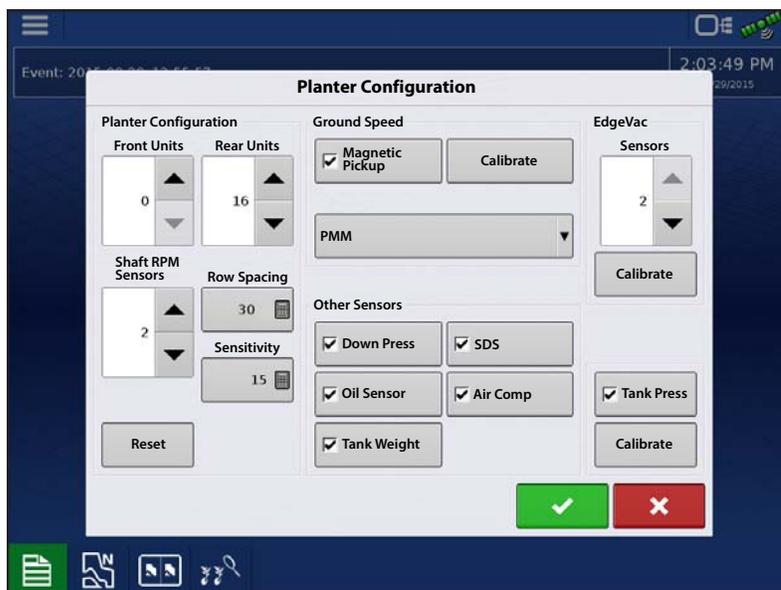
ℹ️ NOTE!: Higher sensitivity is used for smaller seeds. Default values are; Soybeans = 15 and Corn = 10. Lower sensitivity if dust is affecting displayed population.

- **Reset**—Returns settings to factory defaults, which allows operator to run Muxbus Sensor Detection again.

Ground Speed Settings

- **Magnetic Pickup**—Check the Magnetic Pickup check box only if the planter is equipped with the Magnetic Pickup Sensor.

ℹ️ NOTE!: Customers who do not have the Magnetic Pickup sensor who check this box will see a window stating "Bad Configuration: No Magnetic Pickup sensor currently found."

- **Speed Source**—The Speed Source drop-down box selects the type of speed source for the planter monitor. Choose between GPS, AUX (Auxiliary Input Module) and PMM. This speed selection only affects the PMM. The display's ground speed source must still be selected.

    GPS—The PMM utilizes the speed from the GPS correction source that is connected to the display.

    AUX—The PMM utilizes a speed source that is connected to the Auxiliary Input Module. This is typically a tractor wheel speed or radar source.

    PMM—The PMM utilizes the Magnetic Pickup Coil that is equipped on the planter to measure speed. This coil sensor will need to be calibrated.

Other Sensors

Other check boxes on the Planter Configuration window include:

- **Down Pressure**—Check this box if the planter has pneumatic down pressure.

- **Oil Sensor**—Leave this box unchecked.

- **SDS Sensors**—Leave this box unchecked.

- **Air Compressor**—Check this box if the planter has an air compressor installed.

- **Tank Weight**—Check this box if the planter has a tank weight sensor install.

- **EdgeVac Sensors**—Use ▲ / ▼ to enter the number of EdgeVac® sensors on the planter. Calibrate EdgeVac sensors once a year. To start process, press the Calibrate button.

- **Tank Pressure**—Check the box only if the planter is equipped with tank pressure sensor. Calibrate the sensor once a year. To start process, press Calibrate button.
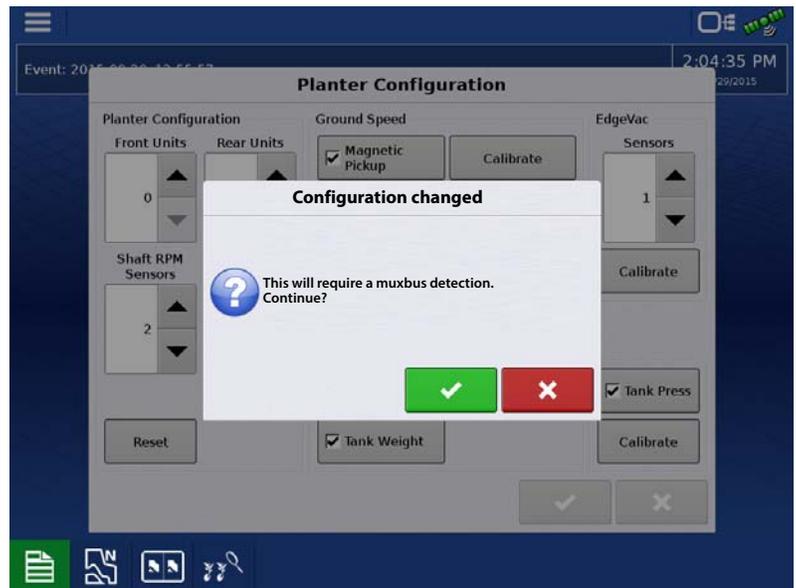
Muxbus Sensor Detection
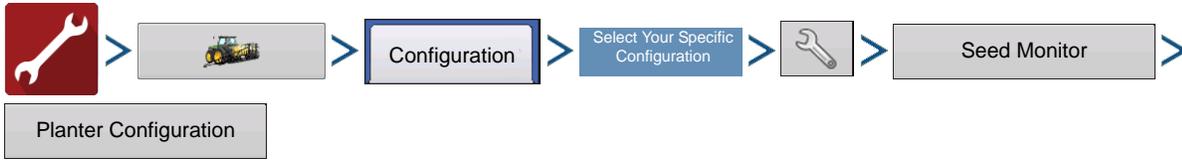
After initial configuration of the Standard KINZE Planter Module, complete the Muxbus Sensor Detection process. This process allows the Muxbus to detect each sensor on the planter. In order for the display to show the correct Planter Monitor information, complete the detection process for each Muxbus sensor.

ATTENTION! Be sure that all sensors are **unplugged** before beginning the process. If any sensors are plugged in the sensor harness, the Muxbus Detection process will abort. If this occurs, unplug all sensors and retry procedure.

1. To start the Sensor Muxbus Detection process, make any settings changes necessary at the Planter Configuration screen and then press [✓]. Make certain all planter sensors are disconnected from the planter harness.

NOTE!: The Muxbus detection process will only start if sensor configuration has changed.

1. **Accept the Muxbus Detection**—A screen appears, informing you that your configuration has changed and that it will require a Muxbus detection. Once all sensors are disconnected, press [✓] on the Configuration Changed screen. The Muxbus Detection Process then begins.

2. **Detect individual row units**—Plug in each physical sensor plug into the Muxbus wiring harness on the planter (from left to right). Follow the on-screen instructions.

Sensor Detection screen:

Install muxbus sensors in the following order:
1. Rear Row Seed Sensors from left to right
2. Front Row Seed Sensors from left to right
3. Section Transmission sensors from left to right
4. Ground Speed Pickup Sensor
5. Auxiliary Sensors in the following order:
   a. SDS Sensors
   b. EdgeVac Sensors
   c. Pnuematic Down Pressure
   d. Air Compressor Pressure
   e. Bulk Seed Tank Pressure
   f. Bulk Seed Tank Weight

Item	Status
Rear Section	
Row 1	OK
Row 2	OK
Row 3	OK
Row 4	<Plug In>
Row 5	<Not Installed>
Row 6	<Not Installed>
Row 7	<Not Installed>
Row 8	<Not Installed>

Order of Muxbus Sensor Installation

Install the Muxbus sensors in the following order:

- Rear Row Seed sensors from left to right.

- Front Row Seed sensors from left to right.

    As shown from **(A)** to **(B)**.

- Section Transmission sensors from left to right.

- Ground Speed Pickup Sensor.

- Auxiliary Sensors in the following order:

    A. SDS Sensors

    B. EdgeVac® Sensors

    C. Pneumatic Down Pressure

    D. Air Compressor Sensor
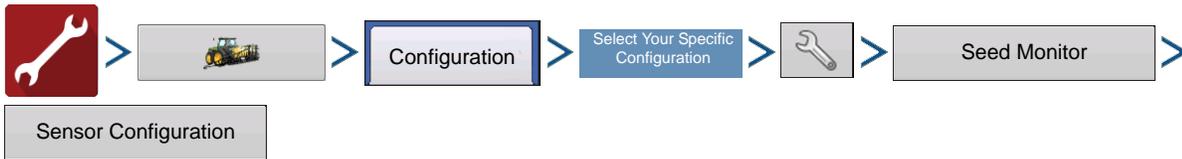
    E. ASD Sensor

    F. Seed Scale Sensor
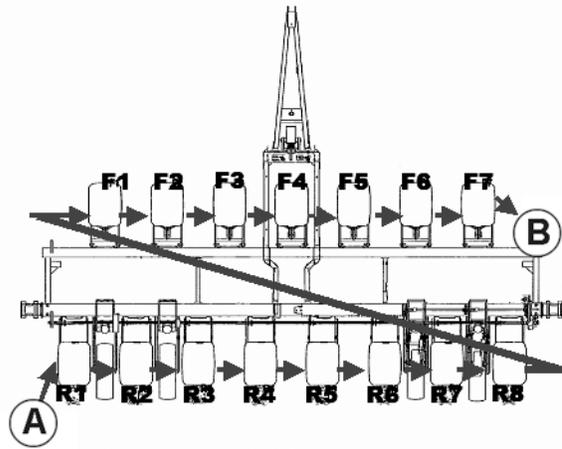
i NOTE!: When the row unit sensor is plugged in, the display will beep three times and show the status as "Calibrating." When calibration is complete, the sensor will display either "OK" or "Slow".

3. **Resolve Any Possible Errors**—When the Muxbus Detection Process begins, each row unit will display "Not Installed" underneath the status. But as the Muxbus Detection process takes place, each row unit should state "Calibrating" for a time, then should indicate "OK". After calibration, the sensor status displays either one of two different states:

- OK - The sensor is working and is communicating at 9600 baud.

- Slow - The sensor is working, but is communicating at 2400 baud.

i NOTE!: Some older KPM I, II, and III systems have slower sensors with black connectors, that communicate at a 2400 baud rate. The KPM I, II and III systems with blue connectors communicate at a 9600 baud rate. A slower baud rate does not result in decreased performance.

4. **Detect Complete**—When the Muxbus Detection process is complete, a message displays, stating "All sensors found".

KINZE Sensor Configuration

> [wrench icon] > [tractor image] > Configuration > Select Your Specific Configuration > [wrench icon] > Seed Monitor >

Sensor Configuration

OR

[menu icon] > [Settings gear icon] Settings > Configuration Settings > Seed Monitor > Sensor Configuration
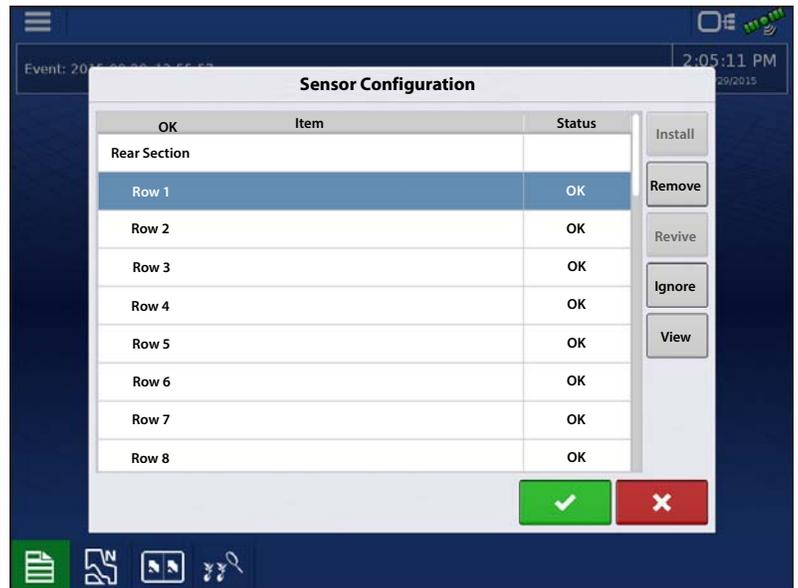
The Sensor Configuration screen is for system maintenance of the KINZE Population Monitor.
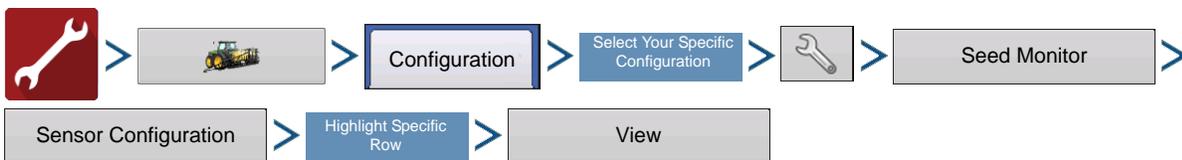
- **Install**—Installs a row sensor.

- **Remove**—Removes the highlighted sensor of any type.

[i] NOTE! For steps to replace a failed sensor, refer to "Troubleshooting" on page 11.

- **Revive**—Allows the display to reattempt communication with the highlighted sensor of any type.

- **Ignore**—Tells the display to cease communications with a row sensor.

- **View**—Shows the Sensor Information screen.

OK	Item	Status	
Rear Section			Install
Row 1		OK	Remove
Row 2		OK	Revive
Row 3		OK	
Row 4		OK	Ignore
Row 5		OK	
Row 6		OK	View
Row 7		OK	
Row 8		OK	

Sensor Configuration — 2:05:11 PM

Sensor Information

> [wrench icon] > [tractor image] > Configuration > Select Your Specific Configuration > [wrench icon] > Seed Monitor >

Sensor Configuration > Highlight Specific Row > View

The Sensor Information screen displays hardware information for each seed tube sensor and also other sensors. Technical Support may request that you look at this window for help in diagnosing a problem.

- **ID**—A unique number for each sensor on the Muxbus.

- **Serial Number**—Varies for each individual seed tube sensor.

- **Model Number**—Shared by each unit of the same model of seed tube sensor.

- **Baud Rate**—The speed of transmission between the Muxbus sensor and the PMM module.
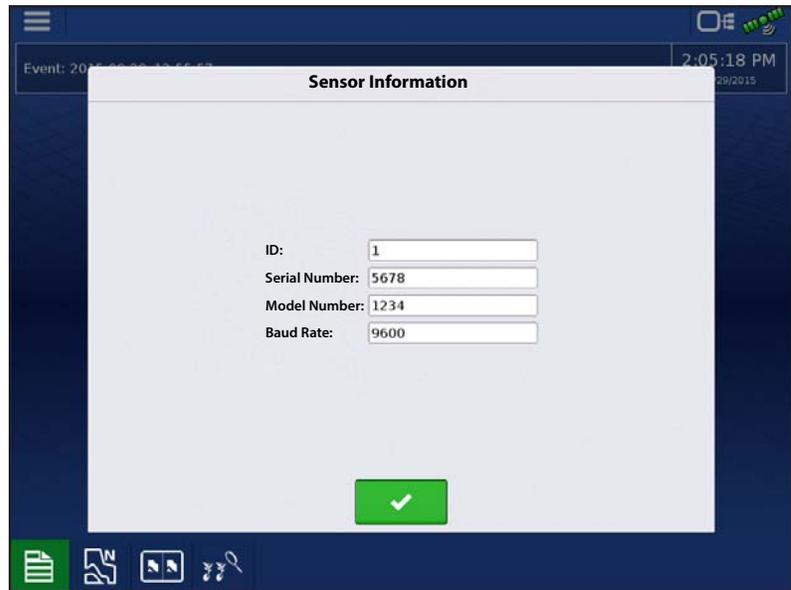

KINZE Seed Monitor Alarms
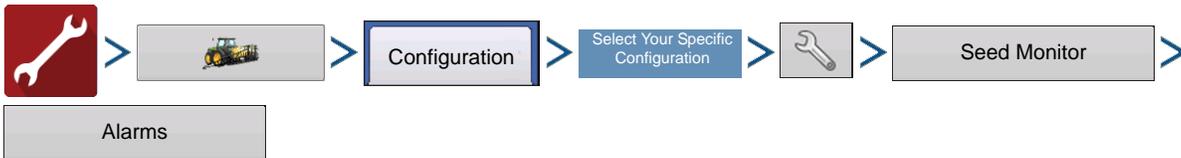
To view the Seed Monitor Alarms screen, press the Alarms button on the Standard KINZE Planter Module Setup screen. To change the threshold of an alarm, highlight the row unit, then press either a given percentage number (10%, 50%, 70%, or use the [🔢] to create a value). The alarm will then sound only when the individual seed sensor population drops below that numeric threshold value relative to the planter average population.

i NOTE!: The default alarm setting is at 50%.

i NOTE!: Press the Disable button to turn threshold of the alarm to zero.
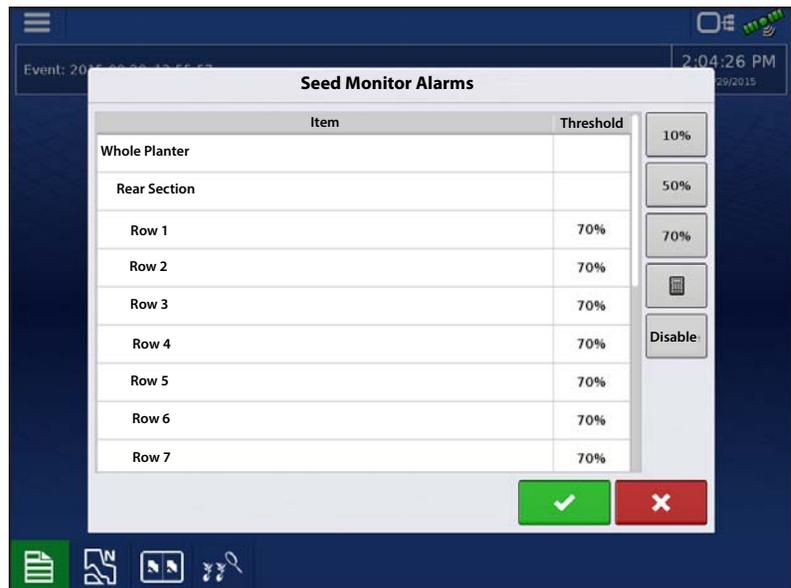
KINZE Magnetic Coil Speed Sensor Calibration
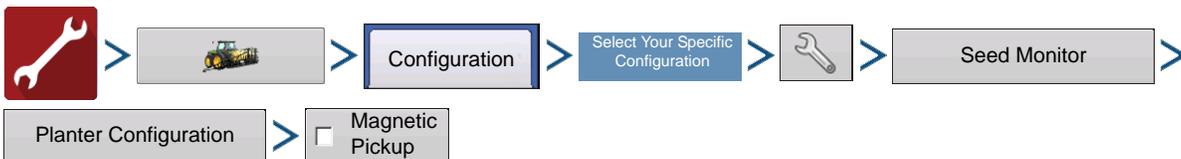
Standard KINZE Planter Module customers who have a magnetic coil speed sensor must check the Magnetic Pickup check box. This setting should then be left unchanged.

These customers will need to calibrate the Magnetic Coil Speed Sensor at least once per season. Press the Calibrate button located next to the Magnetic Pickup check box. The Magnetic Coil Speed Sensor Calibration wizard appears.
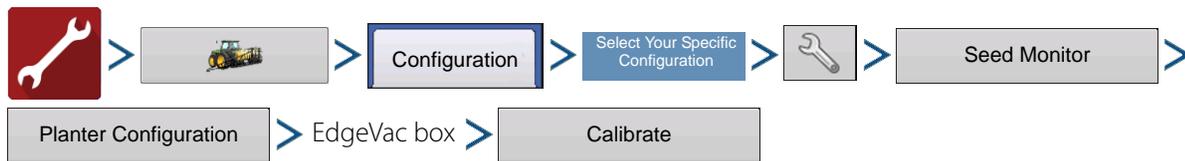
1. **Enter distance of calibration**—The default distance for calibrating the magnetic coil speed sensor is 100 feet (50 meters). If you wish to calibrate at another distance, enter the new distance. Press [▶] to continue.

2. **Drive from start to end points**—Position the vehicle at the start marker. Press the green-colored Start button and drive the vehicle for the predetermined distance.

> [i] NOTE!: The display must be set on 0.0 before driving the calibration distance.

3. **Stop at end of calibration distance**—When the vehicle crosses the end marker of the predetermined distance, press the red-colored Stop button. Press [▶] to continue to final step.

4. **Calibration complete**—The speed sensor calibration number has been calculated from the actual distance driven. Press [✓] to complete calibration and store the calculated value.

> [i] NOTE!: Calibration settings can be manually adjusted if desired by pressing Enter CAL Number and making small changes to the setting.

KINZE EdgeVac Calibration

[🔧] > [🚜] > Configuration > Select Your Specific Configuration > [🔧] > Seed Monitor >

Planter Configuration > EdgeVac box > Calibrate

Customers who have purchased the EdgeVac® seed meters should perform an EdgeVac Calibration once a year to make sure that it is correct.
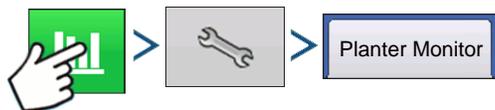
Press the Calibrate button.

Press [⌨] to enter the actual value taken from the hand-held calibration sensor at the vacuum sensor.

> [i] NOTE!: The appearance of this screen varies, depending upon whether you have one or two EdgeVac sensors.

Standard KINZE Planter Module Options

[🔧 Settings] > [Planter Monitor]

or

[👆] > [🔧] > [Planter Monitor]

Make changes to the bar graph's rate/spacing display. Options include Planter Average, Freeze and Scan, explained below.

- **Planter Average**—Default setting for the Rate/Spacing Display. This setting specifies that the Rate/Spacing Display shows the instantaneous average population and seed spacing for the entire planter.

- **Freeze**—Specifies that the Rate/Spacing Display continuously shows only one specified row chosen by the operator. Use ▲ / ▼ to specify which row to "freeze".

- **Scan**—Specifies that the Rate/Spacing Display shows an automatic row-by-row scan on all the planter's row units, displayed in sequence from left to right.

Planter Monitor Diagnostics
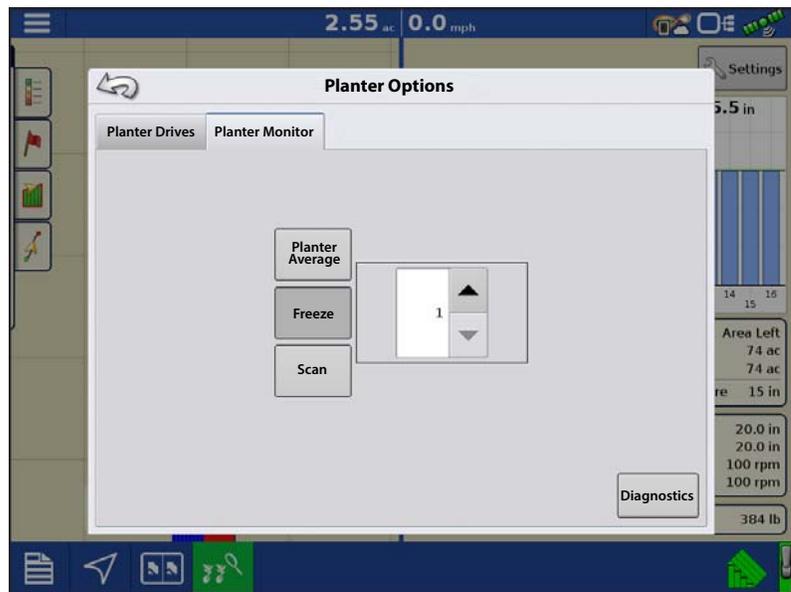
Settings > Planter Monitor > Diagnostics

The Planter Monitor Diagnostics shows row data from rows monitored by the Standard KINZE Planter Module, including the following:
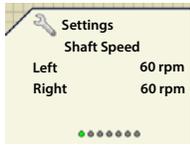
- Row unit seeds per second

- Row unit seeds per acre

ℹ️ NOTE!:This can also be accessed on the CAN device list under Diagnostics.

KINZE Display Items in Map View

The lower right-hand side of the Mapping screen's Equipment Tab includes a number of display items that will vary depending upon the particular Standard KINZE Planter Module configuration.

Swipe displayed item shown above to cycle through sensors.

Shaft Speed—Speed of the planter drive shafts, in RPM.

SDS—Speed of the planter seed delivery system (auger), in RPM.

**EdgeVac Level**—Seed meter vacuum. This measurement, shown in inches of water, is displayed for each vacuum fan.

Pneumatic Down Pressure—Down force the air bag places on the row unit.

Magnetic Pickup—Speed registered according to the magnetic pickup.

Tank Weight—Weight of seed in each tank.

Tank Area Left—Acres (hectares) that can be planted with the amount of seed remaining in the tanks.

**Tank Pressure**—Air pressure level for the Air Seed Delivery (ASD) system.
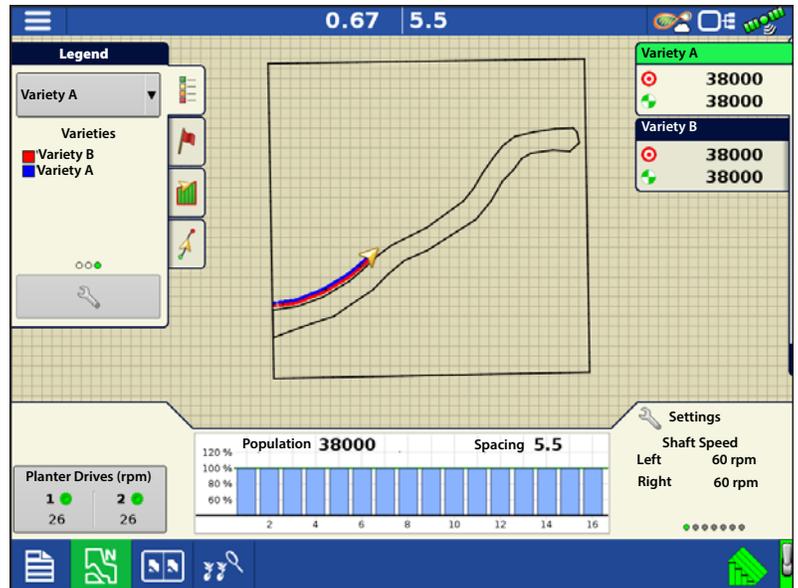
Troubleshooting

How to replace a failed MUXBUS sensor

Follow these steps to properly replace a MUXBUS senor. Failure to follow these steps may require the user to perform entire MUXBUS Sensor Detection.

1. If a sensor fails, leave it plugged in and installed.

2. Proceed to the Sensor Configuration screen.

[wrench icon] > [tractor] > Configuration > Select Your Specific Configuration > [wrench] > Seed Monitor >

Sensor Configuration
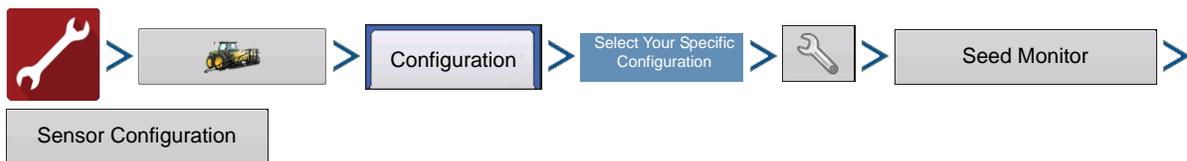
3. Select the failed sensor.

4. With the failed sensor highlighted, press the **Remove** button.

5. Proceed with unplugging and uninstalling the failed sensor.

6. Install the new sensor and plug it into the MUXBUS harness.

7. Return the Sensor Configuration screen on the display. Press the **Install** button. The sensor Status will change to **OK**.

8. Once the new sensors status changes to **OK**, the sensor replacement is complete. The process can be verified by pressing the **View** button and matching the displayed Serial Number with the physical Serial Number on the sensor label. Press [green checkmark].

ℹ NOTE! Users can take the above steps with a lone sensor in attempt to increase the baud rate of a SLOW sensor. Depending on the style of sensor installed and the number of sensors installed on a harness, not all SLOW sensors will communicate on a higher baud rate. A SLOW sensor does not decrease performance.

Alarms on Standard KINZE Planter Module

When the Active Alarms window is shown, scroll through the list to locate the row units where the alarm is occurring.

Acknowledge the alarm by pressing ✔ . After dismissing the alarm, you may continue planting, however, the alarm will continue showing in the title bar. You may also review the Active Alarm information in the Planter Monitor Diagnostics.

The list below describes various alarms that may occur at system startup. The following pages describe errors that could occur during field operations.

Error Message: "Sensors calibrating wait for calibration"

   Possible Cause: PMM startup

   Solution: Wait for Planter Monitor Module (PMM) to finish before beginning operation.

Error Message: "(Row #) sensor not detected".

   Possible Cause: Population sensor did not begin communicating with the PMM.

   Solution: Acknowledge the error by pressing OK. Check the LED on the sensor to see if it is working properly. If it has failed, then replace the sensor. Refer to the KINZE Planter Operator's manual for further instructions.

Error Message: "Clean or replace sensor (Row #) as necessary".

   Possible Cause: Population sensor dirty.

   Solution: Press OK to dismiss the error. Then clean the sensor and restart the system.

Error Message: "(Row #) mux bus data line short to mux bus ground".

   Possible Cause: Population sensor's mux bus signal wire is shorted to ground.

   Solution: Press OK to dismiss the error. The display then replaces the message window with an alarm text on the header bar at the top of the Run screen. This alarm text continues until the wire is fixed or the sensor is disabled. Inspect the wire at the first opportunity.

Error Message: (Row #) mux bus data line short to mux bus power".

   Possible Cause: Population sensor's mux bus signal wire is shorted to power wire.

   Solution: Press OK to dismiss the error. The display then replaces the message window with an alarm text on the header bar at the top of the Run screen. This alarm text continues until the wire is fixed or the sensor is disabled. Inspect the wire at the first opportunity.

Error Message: "(Row #) communication lost".

   Possible Cause: Seed tube sensor stops communicating with the PMM.

   Solution: Press OK to dismiss the error. The display then replaces the message window with an alarm text on the header bar at the top of the Run screen. This alarm text continues until the wire is fixed or the sensor is disabled. Inspect the sensor at the first opportunity.

Error Message: "(Inner or Outer; Right, or Left) Shaft Communication Lost"

   Possible Cause: Transmission sensor stops communicating with the PMM.

   Solution: Press OK to dismiss the error. The display then replaces the message window with an alarm text on the header bar at the top of the Run screen. This alarm text continues until the wire is fixed or the sensor is disabled. Inspect the sensor at the first opportunity.

Error Message: "(Left or Right) Edge- Vac sensor communication lost".

   Possible Cause: Edge-Vac sensor stops communication with the PMM.

Solution: Press OK to dismiss the error. The display then replaces the message window with an alarm text on the header bar at the top of the Run screen. This alarm text continues until the wire is fixed or the sensor is disabled. Inspect the sensor at the first opportunity.

Error Message: "(Left or Right) SDS shaft sensor communication lost".

Possible Cause: SDS shaft sensor stops communicating with the PMM.

Solution: Press OK to dismiss the error. The display then replaces the message window with an alarm text on the header bar at the top of the Run screen. This alarm text continues until the wire is fixed or the sensor is disabled. Inspect the sensor at the first opportunity.

Error Message: "Low hydraulic oil level".

Possible Cause: Hydraulic oil level drops.

Solution: Check oil level on the planter, add as necessary.

Error Message: "High hydraulic oil temperature"

Possible Cause: Hydraulic oil temperature level rises

Solution: Stop planter in order to cool down oil temperature. Inspect for cause of overheating.

Error Message: "Voltage Error Alarm".

Possible Cause: Occurs if the battery voltage drops below 10 volts, or rises above 15 volts.

Solution: Check tractor's electrical system.

Error Message: "(Row #) Seed Rate Alarm".

Possible Cause: The seed rate of one or more rows is less than the alarm threshold setting and the corresponding transmission shaft sensor detects rotation.

Solution: Press OK to dismiss the error. If the alarm state is still present, the graph will state the rows where the errors are occurring, and the Title Bar will flash the type of alarm. Inspect row units to confirm that each has seed, and that all mechanical drive shaft parts are working properly.

> **i** NOTE!: If desired, the alarm threshold for the row unit may be set to 0%, which will silence the seed rate alarm. However, the bar graph will continue to operate and the row will still be calculated in the planter average population. For instructions on changing the alarm threshold, see "KINZE Seed Monitor Alarms" on page 8.

Error Message: "Low Down Force Air Pressure"

Possible Cause: Low pressure in the pneumatic down pressure system.

Solution: Press OK to dismiss the error. Check for air leaks and compressor failure.

Error Message: "Left (or Right) Tank Seed Level Low.

Possible Cause: The Seed Scale weight has dropped below the entered threshold.

Solution: Press OK to dismiss the error. Refill the tank to clear the error completely.

Error Message: "Seed Tank Pressure Too Low."

Possible Cause: The minimum air flow for seed delivery is not present.

Solution: Press OK to dismiss the error. Check fan on the ASD system.

Error Message: Air Compressor Sensor Too Low."

Possible Cause: The minimum air compressor tank pressure is not present.

Solution: Press OK to dismiss the error. Check the air compressor.