OPERATOR'S MANUAL

VISUM

J.assy

VISUM
v.4.3
January 2022

This device contains **FCC ID 2AD66-RF2401F20**

This device complies with Part 15 of the FCC Rules. 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.

For further information, please visit **www.fcc.gov.**

This device contains **IC ID 21278- RF2401F20**

IC compliance
This device complies with Industry Canada license-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.

Conformité aux normes d'IC
Cet appareil est conforme à la(aux) norme(s) RSS sans licence d'Industry Canada.
Son utilisation est soumise aux deux conditions suivantes:
(1) Cet appareil ne doit pas causer d'interférences et
(2) Il doit accepter toutes interférences reçues, y compris celles susceptibles d'avoir des effets indésirables sur son fonctionnement.

Table of Contents

📋 Operation Instructions

Specifications

Resistant to dust and water jet.

Radiofrequency communication at 2.4GHz.

GFSK Modulation.

Internal antenna.

Dimension: 71mm (A) x 89mm (L).

Weight: 245g.

Power: 2,5mW to 3,6mW

Internal diameter of the sensor: 45mm.

Wearing protection: Stainless Steel.

Outer diameter of the hose:
from 1 1⁄4 to 2 1⁄16".

Specifications

Radiofrequency communication at 2.4GHz.

GFSK Modulation.

Omni-directional antenna, 5dBi, 50 Ohms.

SMA connector.

Supply voltage: 10Vdc to 30Vdc.

Power: 4 W to 12 W.

Display with 2 character, 7 segments.

2 Red/Green/Flashing Blue LEDs.

Resistant to dust and water splash.

Specifications

Radiofrequency communication at 2.4GHz.
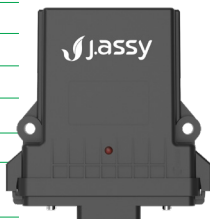
GFSK Modulation.

Omni-directional antenna, 5dBi, 50 Ohms,

SMA connector.

Supply voltage: 10Vdc to 30Vdc.

Resistant to dust and water splash.

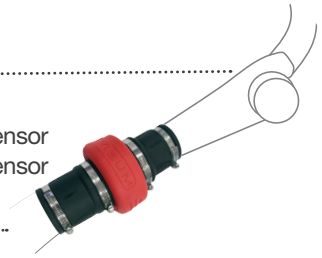CAN communication, protocol ISO
11783 (ISOBUS)

Installation | Visum

The sensor is installed between the diffuser/air release and the fertilizer outlet hose:

1 ¼"	1 ½"	1 ¾"	2 1⁄16"

Choose the correct inlet and outlet coupler for the hose and diffuser diameters.

ASSEMBLY

1. Cut a piece of the hose at the diffuser side with the length of the sensor-coupler assembly, so that the total length will be the same as the original hose.

2. Place the sensor with the internal antena facing "up" or "skyward". The internal antenna is located to the left of the square patch with "P" and "L" between the "J" and "A" of the word J.Assy. See illustration below.

Sensor Assembly

1. Diffuser, **2.** Inlet coupler, **3.** Outlet coupler, **4.** Metal clamps, **5.** Hose.

Recommendations

3. Securely fasten the rubber couplers with the metal clamps**¹**.

Do not "overtighten". Check the hose clamps after 10 minutes of field operation to ensure everything is snug and maintaining good connections.
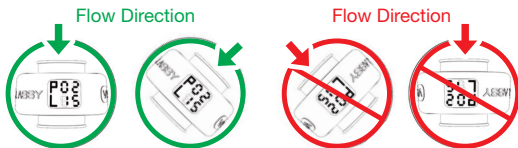
> **TIP:**
> • Do not point or align the sensor antenna toward a metal barrier, that could degrade the communication efficiency from the sensor to the monitor.

> **⚠ ATTENTION:**
> • Do not install the sensor upside down. Installation must match the orientation in the pictures below.

¹ 1, 75 em - 2, 75 em x 0312 em x 0021 in.

Installation | Monitor

1. Disassemble the Monitor bracket by removing the two side nuts.

2. Clean the installation surface with a cloth and alcohol.

3. Remove the film from the double-sided tape and fasten the bracket to the surface by pressing the whole area of the tape.

4. Wait for 15 minutes and then mount the Monitor on the bracket with the two side nuts.

5. If you install the bracket on a glass surface, put the anti- UV tape on the opposite side of the glass in order to protect the double-sided tape from the sun.

6. Press the ⏻ button to turn on the Monitor and hold it for 5 seconds to turn it off.

Alternatively, the tape may be removed to mount the bracket with screws or attached to a bar with clamps or RAM Mount kit (not included).
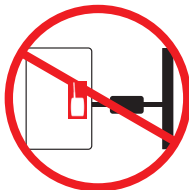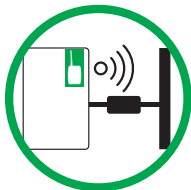
ATTENTION:
The Monitor should be installed with the antenna in a vertical line and avoid putting the antenna in the horizontal position.

The Monitor should be installed with the best possible line of sight to the sensors in order to avoid communication problems.

Avoid installing the monitor close to the cab ROPS column. Keep a minimum distance of 12 in. between monitor and column.

Power Connection

The power cable must be connected to 12Vdc to 24Vdc power source.

CONNECTING TO A POWER PLUG INSIDE OF THE TRACTOR CAB

1a. he installation kit will not be used, but rather a manufacturer harness (not included) will be needed.
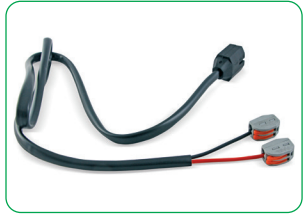
1b. Cut the power cable excess and mend the wires with the manufacturer harness.

CONNECTING TO THE TRACTOR BATTERY

• Use the included installation kit detailed below.

2a

2b

2c

2d
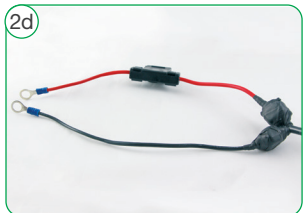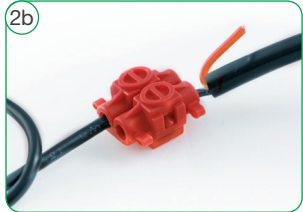
• The red connector must be protected with self-fusing tape.
• Preferably, the power cable should be connected directly to the battery terminals.

ATTACH THE ANTENNA

• You will find the antenna inside your Monitors box.
• Attach it to the back of the Monitor by threading on the connection. Do not "over-tighten".
• Position the antenna so that it is in a vertical orientation.

⊶ Network ID

All sensors must be configured with the network ID in order to communicate with the Monitor. The network ID can be found on the back of the Monitor or can be extracted thru operation software. The sensor configuration can be done with a Visum Monitor. Check how it can be done in this manual.

The following steps must be done:

1. Find the address indicator 📶 on the rubber cover.

2. Wake up the sensor by shaking it.

3. Pllace the magnet on the address indicator (make circular movement to easily turn on the internal switch).

4. Wait for the confirmation beep or message.

5. Fill the address indicator with the number of the implement and row.

⚠️ **ATTENTION:**
Never configure two sensors at the same time, even with two different devices, because the connections may cross each other.

◐ **TIP:**
  1. In order to change the address of any sensor, just follow the steps again, before doing the sensor "addressing procedure".
  2. When installing the sensors on your machine initially, we recommend you "address" the sensors to the monitor on your workbench first before installing the sensors on the toolbar row units.

3. Line up all your sensors on the workbench and write the row number on each first. Then add all the couplers and hose clamps.

4. Then you can either power up the monitor at the workbench with a 12V battery to complete the "Addressing" procedure, or carry the sensors to your tractor cab where you have installed the Monitor to complete the "Addressing" procedure.

5. After that install the sensors on the toolbar/ row unit at the air diffuser/air release. We recommend you install with the row numbers running from the left to the right (standing behind the toolbar facing the tractor cab) beginning with 1 to 99, or many rows you have to monitor.

6. Do not mount the monitor in the cab using a large high-powered magnet mounting kit or place a magnet near the monitor as it can cause the monitor to fail.
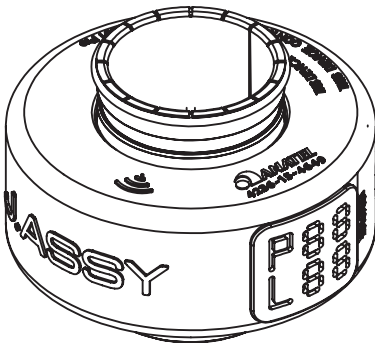
This is the area where you "ADDRESS" the sensor with the magnet that is included with the sensor.

(≣) Operation

- The Monitor communicates with the flow sensors, indicating the presence or absence / blockage of flow.
- When you turn on the monitor the monitor should display a "00" on display and both LEDs should be OFF, indicating that no sensor has communicated with the monitor. That will happen every time that you turn on your monitor.
- Under normal conditions (sensors communicating and indicating flow), the display should show two dashes and the LEDs of respected function (fertilizer or seed) will show green, indicating that everything is Ok.
- The Monitor communicates only with sensors assigned to its ID, which is on a label on the back of the Monitor.
- In case of flow failure (absence or blockage), the Monitor will beep and the display will show the row number. The LED related to the product flow (seed or fertilizer) will turn red.

- If the sensor loses communication for more than 5 minutes the monitor will indicate missing sensor. In that case the monitor will beep and the display will show the row number. Also, the LED related to the product flow (seed or fertilizer) will blink blue.
- In case of MANEUVER2, a light will be whirling on the display and the LED related to the flow product (seed or fertilizer) will turn green.
- The monitor will enter MANEUVER state if 75% of the rows (or more than 8 sensors, if the implement has more than 12 rows) indicating no flow at the same time
- The Monitor will exit maneuver state when more than 50% of the sensors indicate the presence of flow.
- To extend the life of the internal batteries, flow sensors are "sleeping" when they are not used. They wake up only when they detect motion, like when the implement moves, and the Monitor is on

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👁 **TIP:**
Each time that the monitor is turned on, check if all the sensors are present after 2 minutes of use. Use function F1 to do this.

⚠ **ATTENTION:**
If the monitor enters the MANEUVER state during field operation check if there is a problem with the whole section.

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*The VERSION is shown every time that you turn your Monitor ON.

[2] MANEUVER state is typically when you are maneuvering on the headlands making turns or similar maneuvering situations when the fertilizer is not expected to be flowing. It can be detected as MANEUVER state if you turn off one section.

✏️ Functions description

F1 | Reading sensor status

When entering the screen, it shows which sensors are present and the rows with their respective state.

The monitor should present on the screen the ordered list of rows and their connected sensors starting with the lowest number and the time between the increment of the row information should be shown in 2 seconds.

All states shown must be the sensors BEFORE switching state.

When increasing the row number, the monitor should show the corresponding state of the fertilizer or seed row on the respective LEDs. If the monitor does not have a seed or fertilizer sensor on the row, the LEDs should be off, otherwise it should follow the following logic:

Green	**Red**	**Flashing Blue**
Sensor with flow	Sensor with flow failure/ blockage	Sensor Missing[3]

3 *Missing sensor is when the monitor does not receive a signal from that sensor for more than 5 minutes.*

> ✓ **OUTPUT CONDITIONS:**
> The user can cancel the process at any time by pressing ① for 5 seconds. After listing all sensors, the function automatically returns to the device's operation screen.

F2 | Changing the monitor volume

Upon entering the screen, it shows the current volume level and allows change.

The monitor should show the current volume level and allow adjustments when clicking $\updownarrow$

When clicking on $\updownarrow$ the user will switch between the available levels and at each change a triple beep will be triggered to present the chosen volume.

The confirmation of a new selected level is made after the user clicks the $\textcircled{0}$. After the confirmation click, the monitor should present the selection confirmation by presenting the text "OK" and going to the initial screen.

Volume changes can be made between the options below:

A1: Mute - no beep to present to the user
A2: Low level
A3: Medium level (factory default value)
A4: High level

> **OUTPUT CONDITIONS:**
> The user can cancel the process at any time by pressing $\textcircled{0}$ for 5 seconds.
>
> If the user does not choose or cancel the function, it must exit automatically in 60 seconds and maintain the previous adjustment.

F3 | Changing the Screen Brightness

Upon entering the screen, it shows the current brightness level and allows change.

The monitor should show the current brightness level and allow you to change it by clicking $\updownarrow$

When clicking on $\updownarrow$ the user will switch between the available levels and with each change the brightness on the screen will be updated.

The confirmation of a new selected level is made after the user clicks ⓪

After the confirmation click, the monitor should present the selection confirmed by presenting the text "OK" and going to the initial screen.

When changing the brightness, the monitor will show the selected LED brightness showing the fertilizer LED in Green and the seed LED in Red.

Brightness changes can be made thru the options below:

B1: Low level
B2: Medium level (factory default value)
B3: High level

OUTPUT CONDITIONS:
The user can cancel the process at any time by pressing ⓪ for 5 seconds.

If the user does not choose or cancel the function, it must exit automatically in 60 seconds and maintain the previous adjustment.

F4 | Check sensor ID

When entering the screen, the two decimal points on the display will show and the two LEDs in white will be lit, after 1 second the display will blink and the central segments of the two displays will blink every 1 second: "-" and "-", both LEDs remain lit in white.

When entering the function, the monitor should start the process of requesting a radio ID, asking for the ID every 1 second.

In this mode, the user needs to bring the magnet closer to the sensor to perform the reading.

Upon receiving the message that sensor was addressed, the monitor should turn on the GREEN LED corresponding to the and present the information on the display as follows (with a 1 second interval between them):

| L | | Row number | | First ID letter | | Second ID letter | | ... | | Eighth ID letter |
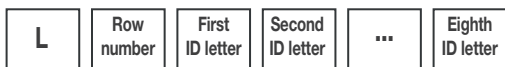
The sensor ID will be displayed three times.

> ✓ **OUTPUT CONDITIONS:**
> After presenting the data, the monitor should exit the function.
>
> The user can cancel the process at any time by pressing ⏻ for 5 seconds.
>
> The maximum time to remain within this function is 60 seconds.

F5 | Address sensors

Entering the function allows you to add a new sensor to your sensor list.

Using ♦, , the row number is increased, the user must select the row number to be added, the monitor will present the row number that will be addressed with the LEDs off. The monitor should also have a rapid increment if ♦ is pressed for more than 1 second, until it is released, with an increase of 5 positions per second.

When selecting the row number to be addressed, the user must press ⏻ to confirm the selection.

During addressing, the LEDs should flash in white, while the DISPLAY displays the row number to be addressed statically.

In this mode, the user needs to bring the magnet to the sensor in a circular manor to perform the addressing.

After addressing the sensor, the monitor shows the message "Ok" on the display and turns on the LED corresponding to the sensor type in green, the user needs to confirm the addressing by clicking $\mathbf{\mathbb{O}}$.

When the addressing is successful, the monitor will go to the row selection with the incremented value of 1, that is, if the addressing of row 3 was successful, it will now be ready to address row 4, waiting only for the user's confirmation by same procedure.

> **OUTPUT CONDITIONS:**
> The user can cancel the addressing process at any time by pressing the $\mathbf{\mathbb{O}}$ for 5 seconds, and the monitor will return to the row selection screen, if $\mathbf{\mathbb{O}}$ is pressed again for 5 seconds the monitor returns to the device's operation screen.

F6 | Display the monitor ID

Upon entering the function, the monitor will begin the process of presenting the ID.

Upon entering the function, the monitor will show its own ID.

On this screen, the monitor will keep the two LEDs off and present ID information on the display, with an interval of 1 second, in the form:

| **L** | **Row number** | **First ID letter** | **Second ID letter** | **...** | **Eighth ID letter** |

> **OUTPUT CONDITIONS:**
> After presenting the data, the monitor should exit the function.
>
> The user can cancel the process at any time by pressing $\mathbf{\mathbb{O}}$ for 5 seconds.
>
> The maximum time to remain within this function is 60 seconds

F7 | Customize the Maneuver beep time

When entering the function, the monitor will present the current maneuver beep time on the display.

The user will be able to increase the value by pressing ⬍ if it remains pressed for more than 1 second, it should increase rapidly at the rate of 5 per second, until the button is released. The increment of this time is from 1 to 99 seconds. When the value reaches 99 it should turn to 1 again.

To confirm the selected value, press ⓪.

✓ **OUTPUT CONDITIONS:**
After confirming the selected time, the monitor will exit the function.

The user can cancel the process at any time by pressing ⓪ for 5 seconds.

💡 Troubleshooting table

Symptom	Possible Cause
Monitor doesn't turn on.	Bad power supply.
No sound from Monitor.	Wrong configuration.
Weak numbers on display.	Wrong configuration.
No communication from one sensor (not shown on F1 list and/ or alarm with orange LED).	Sensor is not on the network.
No communication from several sensors (not shown on F1 list and/or alarm with orange LED).	Bad network signal. No antenna is attached to the Monitor.
Maneuver state occurs during normal operation.	Several sensors informed no flow status.

If you need more assistance please contact our technical team to help you.

Actions

Check if the cable is intact.
Check if the monitor is properly connected to a 12V-24V power supply (red-positive, black-negative).
Check if the fuse is plugged in and intact.

Access function **F2** and change beep volume.

Access function **F3** and change brightness level.

Add sensor to the network with function **F5**.
Low battery. End of sensor life.

Check if the antenna is properly attached and in vertical position. Try to move obstacles between antenna and sensors. Place the monitor in a place with the best line of sight to the sensors.
Turn off any high-power radio source near the implement.

Check if there is enough flow running on the pipes.
Check if there is a section turned off.

Installation | ECU

Requirements
Tractor with ISOBUS Connector (not included)

Main ISOBUS cable (not included)

Terminator connector RE207311 (not included)

J.Assy ISOBUS ECU (inside the box)
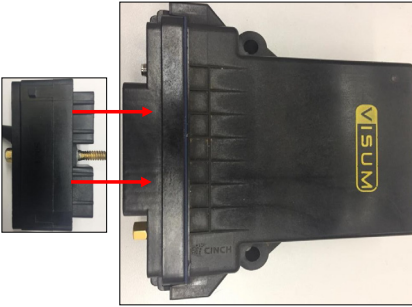J.Assy ISOBUS Cable (inside the box)
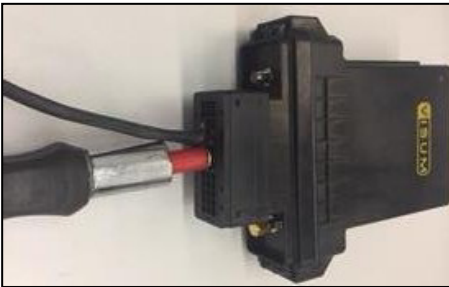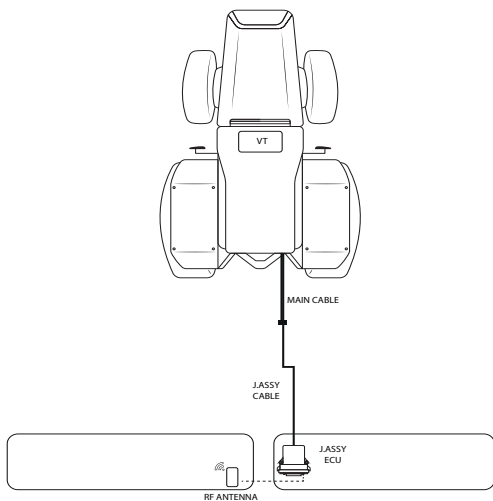RF antenna (inside the box)

Steps

Connect J.Assy cable into J.Assy ECU

Use a ¼" screwdriver to tighten the connector on the ECU box

Connect antenna to J.Assy ECU.
Connect the ECU in your system.

MAIN CABLE

J.ASSY
CABLE

J.ASSY
ECU

RF ANTENNA

VT

⚠️ **ATTENTION:**
• Don´t forget to plugin the main cable on your tractor.

Turn your system on and check to see if the J.Assy application it is loading in your VT

⭕ Network ID

All sensors must be configured with the network ID in order to communicate with ECU. The sensor configuration can be done on our screen in your VT. Check how it can be done in this manual.

The following steps must be done:
1. Find the address indicator 🛜 on the rubber cover
2. Wake up the sensor by shaking it.
3. Place the magnet on the address indicator (make circular movement to easily turn on the internal switch).
4. Wait for the confirmation beep or message.
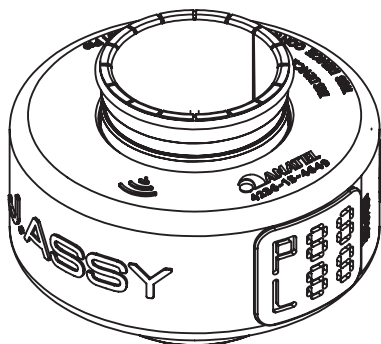5. Fill the address indicator with the number of the implement and row.

⚠️ **ATTENTION:**
Never configure two sensors at the same time, even with two different devices, because the connections may cross each other.
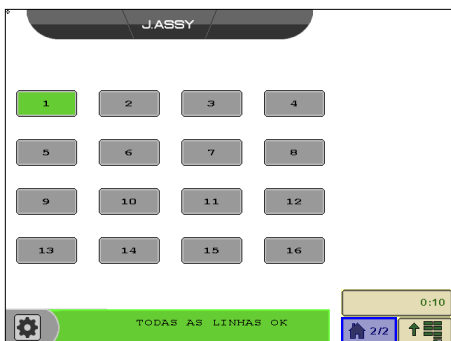

👁️ **TIP:**
In order to change the address of any sensor, just follow the steps again.

✎ Ajusting the language

The first time that you open a J.Assy screen you will see a Portuguese version. To change that just follow the steps bellow:
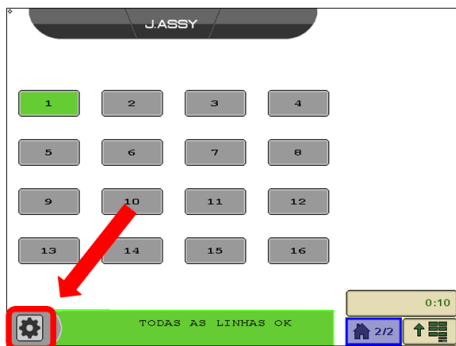
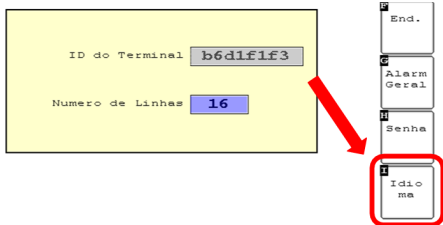1. J.Assy screen first time that you open your system

Access settings

When the gear button is select, it will require a password to access the functions.
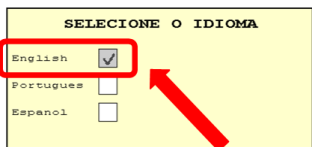
Default Password: 1710

3. Select "Idioma"

ID do Terminal **b6d1f1f3**

Numero de Linhas **16**

```
F
End.

G
Alarm
Geral

H
Senha

I
Idio
ma
```

4. Select "English"

SELECIONE O IDIOMA

English ✓
Portugues
Espanol

5. Select "Salvar"

SELECIONE O IDIOMA

English ✓
Portugues
Espanol

CANCELAR   SALVAR

4:42pm
2/2
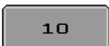
6. Wait while the new language is loaded

LOADING SETTINGS
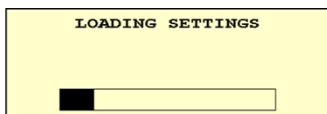
✎ Functions description

J.ASSY Screen
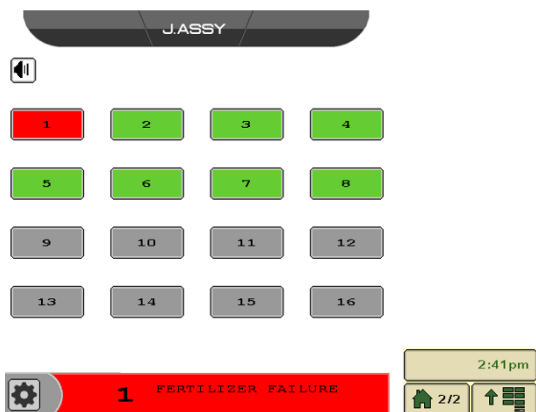
	Change the alarm volume (it may present some unexpected behavior in some terminals)
2	Sensor ok – with flow and communicating as expected
1	Sensor presenting failure (absence of flow, presence of blockage or sensor absence)
10	Sensor not enabled (configured for 8 sensors) or sensor inactive (inactive row)
⚙	Setting button – you can access costumers' function and change some basic settings

Alarm when in other screen

When the customer isn't using J.Assy screen and an alarm occurs a pop-up will present itself as show Failure alarm

It should show the row and the type of alarm in this pop-up. Correction in next version.

Maneuver alarm
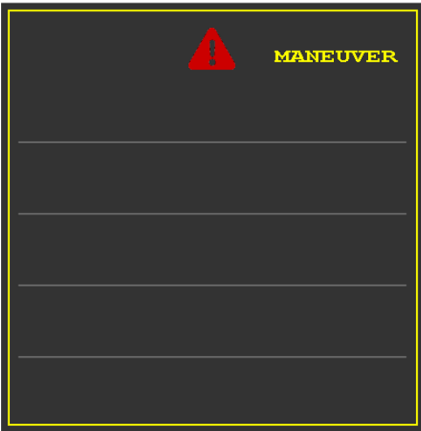
Settings

Deactivating a single sensor

It is possible to deactivate one (or more) sensors. To do so, follow the steps bellow:

1. Select the desired sensor:
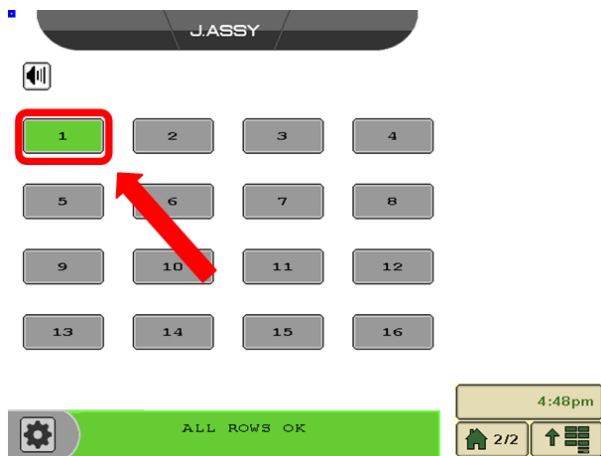
2. Select the desired type of sensor to disable

J.ASSY

1

INACTIVE ROW

FERT.   SEED

4:47pm

MANEUVER   2/2
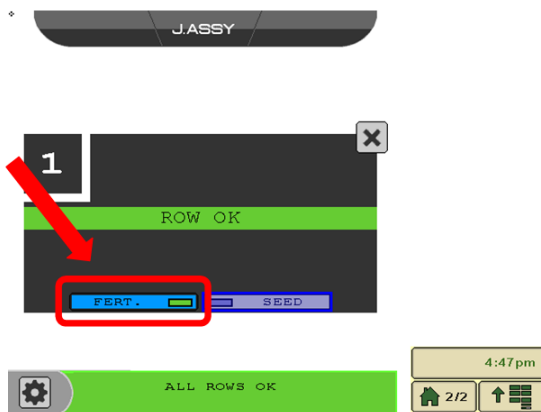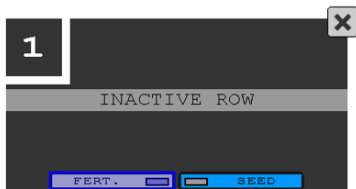
Access settings

When the gear button is selected it will require a password to access these functions.

Default Password: 1710

PASSWORD

EXIT   OK

1710

1	2	3	←
4	5	6	
7	8	9	
.	0	+/-	

Cancel   Accept

Terminal ID b6d1f1f3

Number of Lines 16

Add.

Gen.
Alarm

Pass
word

Lang

PASSWORD

1710

EXIT   OK

CANCEL   SAVE   4:11pm   2/2
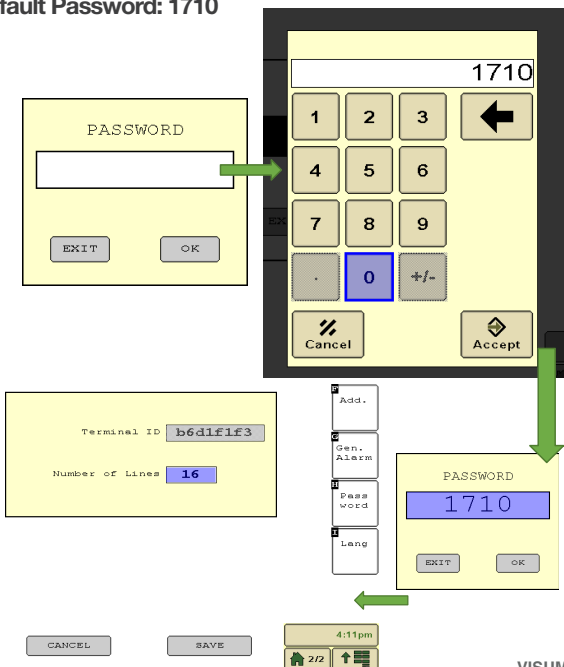
Set number of rows

Enter number of rows and select "SAVE"
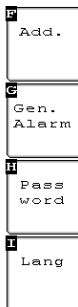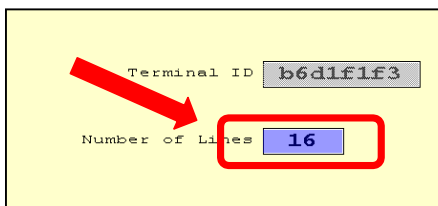
Add sensors

Select the gear button on the screen

1. Select "Add."
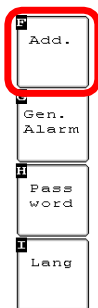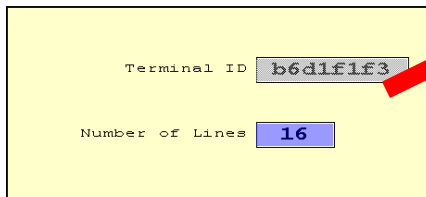
2. Enter the desired row for the sensor

SENSOR ADDRESSING

Terminal ID   b6d1f1f3
Sensor Number   1

ADDRESS   READ

4:12pm
🏠 2/2   ↑🔳

3. Select "ADDRESS" and follow steps to address the sensor:
   a. Find the address indicator 🛜 on the rubber cover.
   b. Wake up the sensor by shaking it.
   c. Place the magnet on the address indicator (make circular
      movement to easily turn on the internal switch).
   d. Wait for the confirmation beep or message.
   e. Fill in the address indicator with the number of the
      implement and row on the sensor.

4. When the process is concluded the progress bar and a
   message "ADRESSED" will show in your VT.

5. Add the new sensor number

6. Repeat the process until all sensors are adressed

⚠ **ATTENTION:**
If you forget to increase the sensor number, two
sensors might be confirmed on the same row.
just adress one of them again with the correct
row number.

SENSOR ADDRESSING

Terminal ID b6d1f1f3

Sensor Number 1

ENDERECADO

ADDRESS   READ

Setting maneuver alarm display

In case you want to change how the maneuver alarm displays it is possible using the function presented below

Terminal ID b6d1f1f3

Number of Lines 16

F
Add.

G
Gen.
Alarm

H
Pass
word

I
Lang

CANCEL   SAVE

4:11pm

2/2

ALARMS – GENERAL

POP-UP MANEUVER

Show Alarm ☑

BEEP MANEUVER

Time Interval (s) 30 ☑

Check this box if you want a maneuver alarm to be displayed

CANCEL   SAVE

4:14pm
🏠 2/2   ⬆📊

ALARMS – GENERAL

POP-UP MANEUVER

Timeout (s) 15 ☑

BEEP MANEUVER

Time Interval (s) 30 ☑

Check this option if you want the alarm pop-up to be automatically dismissed after a defined period of time.

CANCEL   SAVE

4:14pm
🏠 2/2   ⬆📊

```
        ALARMS  -  GENERAL

POP-UP MANEUVER
Show Alarm                          ✓
Timeout (s)              15         ✓
BEEP MANEUVER
Time Interval (s)        30         ✓
```

Check this box if you want the alarm to show up cyclically after some period of time

```
   CANCEL              SAVE
```

4:14pm
🏠 2/2 ⬆️
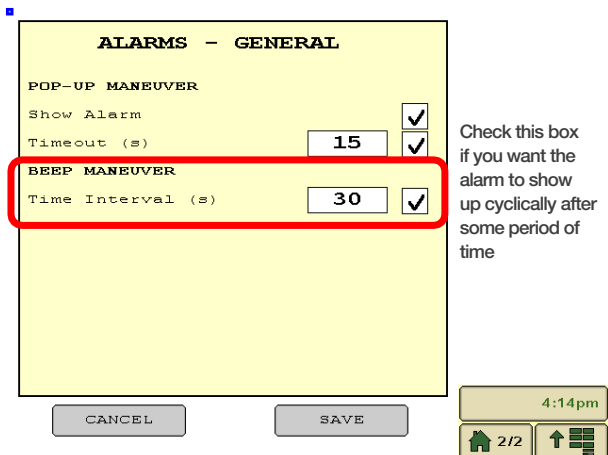
Select "SAVE" after changing the desired parameters.

Change password

```
Terminal ID   b6d1f1f3


Number of Lines    16
```

Add.

Gen. Alarm

Pass word

Lang

```
   CANCEL              SAVE
```

4:11pm
🏠 2/2 ⬆️
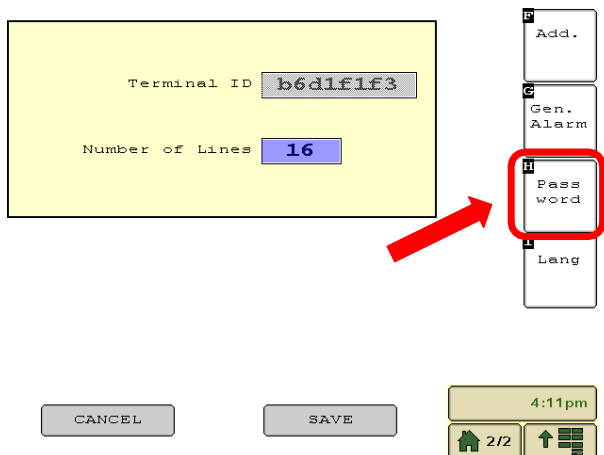
Enter the current password Select "OK"

If the password is correct it will be possible to insert a new password.

```
                    PASSWORD

        Current Password  [        ]  [  OK  ]

            New Password  [        ]

    Confirm New Password  [        ]

```

Press "SAVE" to confirm the change.

Troubleshooting table

Symptom	Possible Cause
ECU doesn't load in your VT.	Bad connection. VT version is NOT compatible.
No sound from ECU.	Wrong configuration.
No communication from one sensor (gray on J.Assy screen or alarm absent).	Sensor is not on network.
No communication from several sensors (gray on J.Assy screen or alarm alarm absent).	Bad network signal. No antenna is attached to the Monitor.
Maneuver state occurs during normal operation.	Several sensors informed no flow status.

Actions

Check if the cable is intact.

Please, contact our technical support for more information

Check volume box in J.Assy screen 🔊

Add sensor to the network.
Low battery.
End of sensor life.

Check if the antenna is properly attached. Try to move
obstacles between antenna and sensors.
Put the antenna in a place with the best line of sight to the
sensors.
Turn off any high-power radio source near the implement.

Check if there is enough flow running thru the pipes. Check if
there is a section turned off.

If you need more assistance please contact our technical team
to help you.

⛆ Cleaning and Storage

You should thoroughly clean fertilizer equipment at the end of each season to prevent corrosion and to ensure everything is in good working order.

We recommend cleaning the sensors and couplers using low pressure water, soft brush and a mild soap solution.

A high pressure water blast to the sensors and couplers may rip or degrade the rubber cover and rubber couplers.

Best results are achieved by removing the sensors and couplers from the machine and rinsing/wiping with a damp cloth or sponge with mild soap to remove all the fertilizer, soil, field grime and allowing them to dry. Do not leave the sensors immersed in water.

Be sure to clean the hose clamps as well and remove all the fertilizer, soil and allow them to dry before reinstalling. If the ROW number identification from the original installation is faded or difficult to read, use a paint marker to write the row number on each so you do not get them mixed up when you re-install them. This will save you time later.

The sensors can be stored as installed on the machine or kept inside during the "off season".

✍ Warranty

This product is warranted by J.Assy to be free from defects in material and workmanship for two (2) years from date of purchase of the original purchaser.

Any sensor, coupler or monitor will be repaired or replaced at no charge with the same item if it is found to be defective under normal use, when installed, operated and cared for according to the manufacturer's instructions.

This warranty does not cover lost or stolen items ,
defects caused by accidents, fire, abuse/ misuse of the
product. This warranty does not cover coupler hose
clamps.

This warranty does not cover Labor charges to
remove or reinstall warranted product or replacement,
transportation or mileage charges. For repair or
replacement, return defective product to the original
place of purchase.

Discarding

Dispose of properly. Recycling electronics conserves
natural resources and minimizes the environmental
impact of improper disposal.

j.assy