

# VISUM

# MONITOR



## OPERATOR'S MANUAL

Manual version: v3.1i

Product version: v1.1i

Software version: v3.3

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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](http://www.fcc.gov).


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## Specifications

- Radiofrequency communication at 2.4GHz.
- GFSK Modulation.
- Omni-directional antenna, 5dBi, 50 Ohms, SMA connector.
- Supply voltage: 10Vdc to 30Vdc.
- Display with 2 character, 7 segments.
- 2 Red/Green/Yellow Leds
- Resistant to dust and water splash.

## Installation

1. Disassemble the bracket of the Monitor, 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 over 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. There are four holes in the bracket therefor.

## Power connection

- The power cable must be connected to a 12Vdc to 24Vdc battery.
- The included fuse must be mounted between the power cable and the battery.
- Preferably, the power cable should be connected directly to the battery terminals or power plug inside the tractor.


**=> Attention:** Do not disconnect any others cables attached to the battery of the tractor. It may affect the functionality of other electronics in the tractor.

## Operation

- The Visum Monitor communicates with the flow sensors, indicating the presence or absence / blockage of flow.
- 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, the Monitor beeps and displays the row number. Also, the LED related to the flow material (seed or fertilizer) turns red.

- The flow sensor has 3 basic parameters.
  - The TYPE of the flow: Seed of fertilizer flow.
  - The TIME, which is related to the period of time without flow that the sensor will wait before sending a no flow signal to the monitor. The higher the TIME, the higher will be this period.
  - The SENSIBILITY, which is related to the minimum level of flow necessary for flow detection. Therefore, if the flow level is under the configured level, the sensor will assume that there is no flow on the row. The higher the SENSIBILITY, the higher will be the level.
- If 75% of the rows (or more than 8 sensors, if the implement have more than 12 rows) indicate no flow at the same time, the Monitor will indicate that the implement is in MANEUVER state and a light will be whirling on the display.
- The Monitor gets out of maneuver state when more than 50% of the sensors indicate the presence of flow.
- To save internal batteries, flow sensors are sleeping most of the time. They wake up only when there is movement of the implement and the Monitor is turned on.

## Functions description

To activate the functions of the Monitor, hold the button  until the desired function appears on the display and then release the button.



### Function 01

Lists all sensors present and shows the status of each one. Possible statuses are:

- **Green:** Flow Ok
- **Red:** Flow Failure
- **Yellow:** Missing Sensor (does not communicate with the Monitor)



### Function 02

Choose the beep volume.

1. Select Function 02.
2. Select the desired volume by pressing button 
  - V0: Mute
  - V1: Low and bass sound.
  - V2: Medium sound.
  - V3: Loud and treble sound.
3. Confirm by pressing button .










### Function 03

Adjust the brightness of the leds and display.

1. Select Function 03.
2. Select the desired brightness by pressing button 
  - b0: Low
  - b1: Medium
  - b2: High
3. Confirm by pressing button .





### Function 04




Configuration of the parameters of only one sensor.

1. Select function 4.
2. The display will show "Ln" (meaning Line or Row) for 2 seconds.
3. Select the desired row by pressing  and confirm by pressing .
4. Then the display will show "tP" (meaning Type) for 2 seconds.
5. Select the type for the sensor pressing  and confirm by pressing 
  - tF: Fertilizer sensor type.
  - tS: Seed sensor type.
6. Then the display will show "+" (meaning TIME) for 2 seconds.
7. Select the desired TIME by pressing  and confirm by pressing .
8. Then the display will show "SE" (meaning SENSIBILITY) for 2 seconds.
9. Select the desired SENSIBILITY by pressing  and confirm by pressing .
10. Then the display will blink "--" while the configuration is ongoing. The operation can be cancelled by pressing .
11. When the configuration is finished the display will show "ok".

### Function 05

Configure all the sensors of one type (seed or fertilizer) at the same time.

1. Select function 5.
2. Then the display will show "tP" (meaning Type) for 2 seconds.
3. Select the type of the sensors that will be configured by pressing  and confirm by pressing 
  - tF: Fertilizer sensor type.
  - tS: Seed sensor type.
4. Then the display will show "+" (meaning TIME) for 2 seconds.
5. Select the desired TIME by pressing  and confirm by pressing .

6. Then the display will show "SE" (meaning SENSIBILITY) for 2 seconds.
7. Select the desired SENSIBILITY by pressing  and confirm by pressing .
8. Then the display will blink "--" while the configuration is ongoing. The operation can be cancelled by pressing .
9. When the configuration is finished the display will show "ok".

### Function 06




Check the address of a sensor:

1. Select function 06.
2. When the display shows "Ch", wake up the sensor (just shake it) and put the magnet on the row indicator on the rubber cover.
3. Monitor will display the row number and the 8 digits of the sensor ID.

The operation can be cancelled by pressing .

### Function 07

Add a sensor to the network:



1. Select function 07.
2. Select the row number by pressing  and confirm by pressing .
3. When the display shows "Ad", wake up the sensor (just shake it) and put the magnet on the row indicator on the rubber cover.
4. The operation can be cancelled by pressing .
5. When the configuration is finished the display will show "ok".

The operation can be cancelled by pressing .

⇒ Tip: The added sensors should be listed by the function 01.

### Function 08

Configure the period (in seconds) that the monitor will wait before alarming after receiving a no flow signal from any sensor. If, within this period, another sensor sends no flow signal, the monitor starts counting the period again without alarming. If more the 75% of the sensors (or more than 8 sensors, if the implement have more than 12 rows) sends the no flow signal the monitor will enter the MANOUVER state and will not alarm.

1. Select function 08.
2. The display will show "MA" (meaning Manouver) for 2 seconds.
3. Select the desired period by pressing  and confirm by pressing .

### Function 09

Show the 8 digits of the Monitor ID.

## Usage Tips

- Turn off the monitor when the machine is not in use. Thus, the sensors will always be sleeping, which increases battery life.
- Wash the flow sensors only with water and with hands or soft sponge. Do not use metal, hard or sharp objects, which may damage the sensor surface.