



ASMII AIR SEEDER MONITOR



TABLE OF CONTENTS



Safety Notices	1
Introduction	3
System Overview	3
System Diagram	4
Installation	5
Console Mounting	5
Monitor And Power Connections	5
ASM II Console Main Harness	6
Module Mounting	7
System Configuration	9
Split Row Enable	9
Minimum Seeding Rate	10
System Operation	11
Power Sequence	11
Sensor Detection	11
Planting	13
Single Row Failure	14
Multiple Row Failure	14
All Rows Failure	15
Dimming	15
Lift Switch	15
Hopper Level Low	16
Errors	16
Troubleshooting	19
DJ ASM II Service Parts	23
Monitor And Main Harness	23
Module And Module Harnesses	23
Extensions	23
Warranty	25

TABLE OF CONTENTS





SAFETY NOTICES

Safety notices are one of the primary ways to call attention to potential hazards.



This Safety Alert Symbol identifies important safety messages in this manual. When you see this symbol, carefully read the message that follows. Be alert to the possibility of personal injury or death.

⚠ WARNING

Use of the word **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

Use of the word **CAUTION** with the Safety Alert Symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION

Use of the word **CAUTION** without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in equipment damage.

OPERATOR'S MANUAL





INTRODUCTION

SYSTEM OVERVIEW

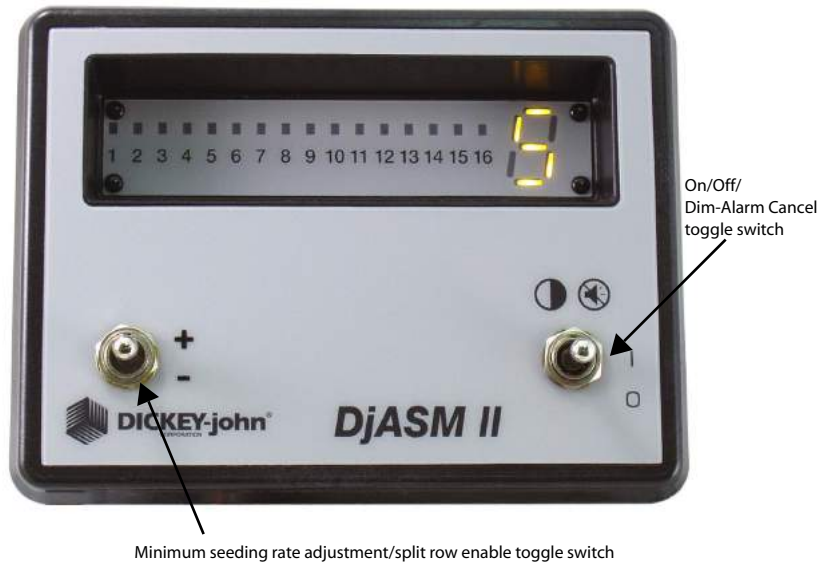
The Dj Air Seeder Monitor (Dj ASM™ II) provides accurate blockage and low cost monitoring of up to 128 rows and 8 hopper levels. It can scan 8 ASM II modules and display the status of 16 rows for each module or 15 rows and 1 hopper per module.

The monitor features:

- 128 row maximum monitoring capability
 - 8 ASM II module scanning capability
 - 16 row or 15 row and 1 hopper level sensor display capability per ASM II Module
- Implement lift switch input
- 16 row indicators
- 7 segment indicator (displays 1,2,3,4,5,6,7,8,9,0, A,C,E,H,L)
- OFF/ON/DIM-ALARM CANCEL toggle switch
- 5 step LED dimming for full sunlight/night time use
- Internal audible alarm (chirp/blare output)
- 12 VDC power relay switching output (for modules)
- Minimum seeding rate adjustment switch/split row enable

Figure 1

Dj ASM II Air Seeder Front Panel





SYSTEM DIAGRAM

The following illustrates the Dj ASM II system.

Figure 2

Dj ASM II System Diagram

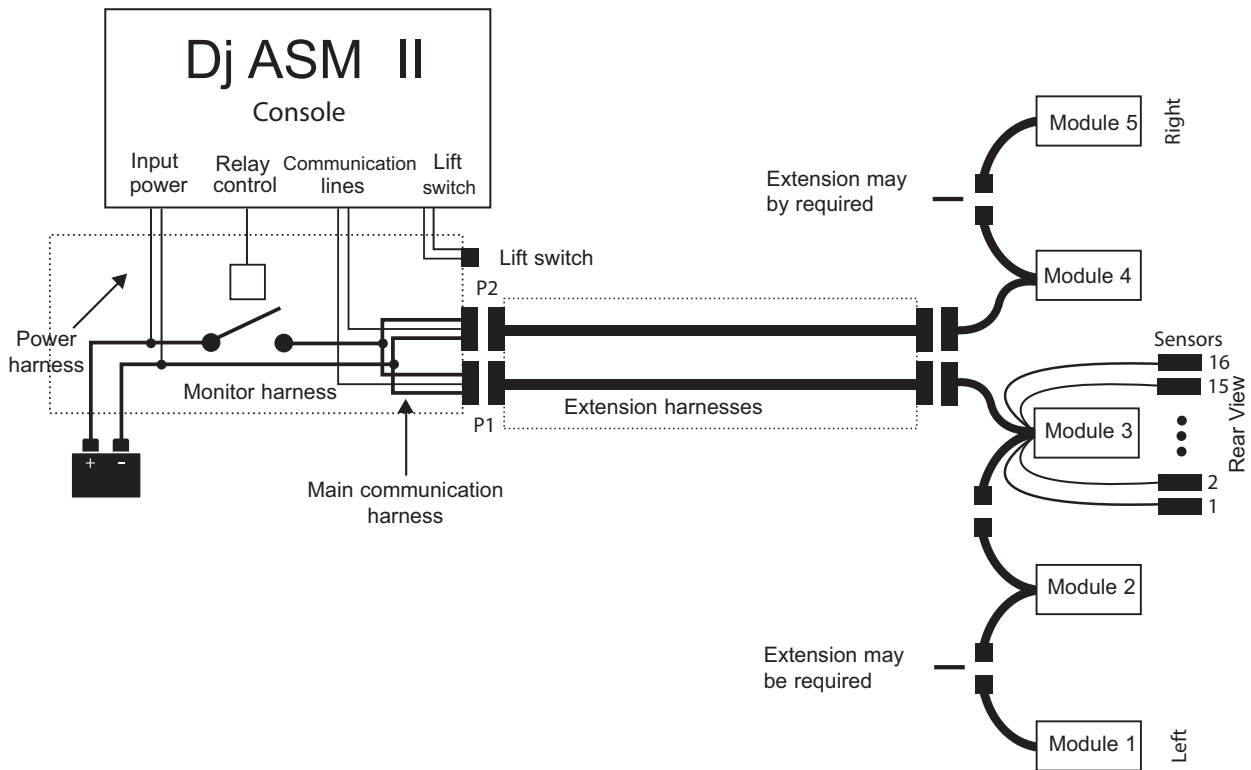


Diagram Notes:

- P1 modules address from left end to middle, while P2 modules address from middle to right end.
- Lift switch is optional.
- Module power is not carried through the console due to worst-case voltage drop on 128-row system.
- P2 is not required for systems with four modules or less (64 rows or less)
- P1 can drive four modules.



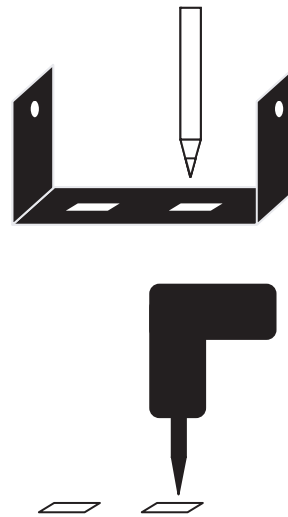
INSTALLATION

CONSOLE MOUNTING

1. Use the mounting bracket as a template for drilling.
2. Mount the console in a location that is easy to view and easy to reach for threshold adjustment, split row activation, dimming, and alarm silencing.

Figure 3

Console Mounting



3. Before drilling, assure the power and main hitch harness can be routed in the proper manner. Harness retention and routing outside of the cab is also important.

CAUTION

Do not use the enclosure as a guide when drilling. This may cause damage to the mounting bracket.

MONITOR AND POWER CONNECTIONS

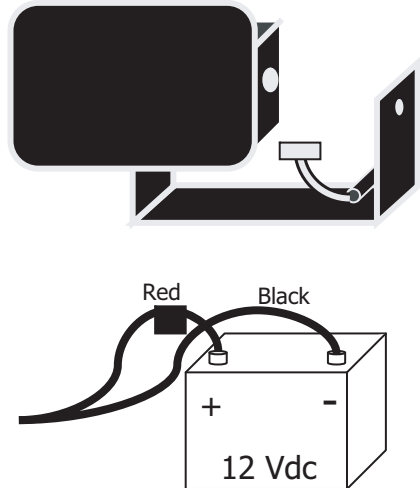
1. Route the power leads of the main harness to the battery. Allow some slack to tie the harness off to the console bracket for strain relief and protection of the harness.

The monitor operates on 12Vdc only. The red (fused) lead should be connected to the positive battery terminal and the black lead should be connected to the negative battery terminal.



Figure 4

Monitor and Power Connections

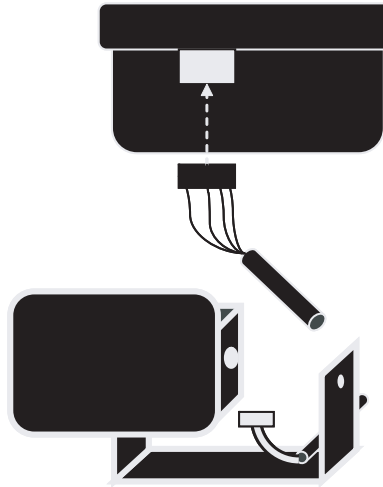


ASM II CONSOLE MAIN HARNESS

1. Insert the harness connector into the J1 connector located inside the console bottom.

Figure 5

Main Harness Connection



2. Route the main harness to the rear of the tractor.
3. Mount the relay (part of the main harness) to a suitable location at the rear of the tractor assuring the connector will reach the implement connector at the hitch.

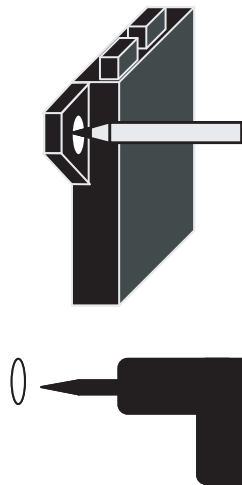


MODULE MOUNTING

1. Lay out all harnesses and modules on the implement to determine proper mounting locations. Refer to (Figure 2) for layout guidelines.
2. Use the module as a template for drilling in a location that will allow the tower harness to reach all the sensors installed on the air seeder and be connected to the hitch cable or next module in line (1/4-20 hardware is recommended).

Figure 6

Module Mounting



IMPORTANT: Before drilling, assure the harness can be routed in the proper manner. Consider harness placement in regard to air seeder movement during planting.





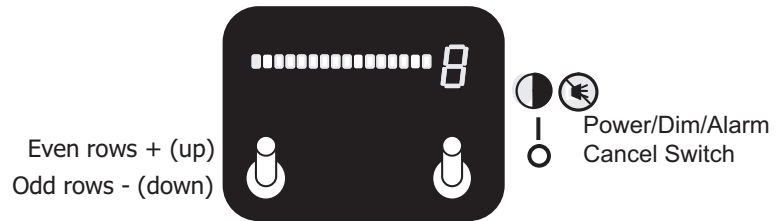
SYSTEM CONFIGURATION

SPLIT ROW ENABLE

Split Row Enable monitors either the odd or even numbered rows. Refer to (Figure 7) to enter the even or odd row configuration.

Figure 7

Even or Odd Row Activation



To monitor only even numbered rows:

1. Hold the +/- switch in the "+" or up position and turn the power switch ON. The letter "E" as well as the even row indicators will display.
2. Release the +/- switch immediately.

Figure 8

Even Row Enable



NOTE: Turning the power switch ON with the +/- switch in the center position configures the system to monitor all rows.

To monitor only odd numbered rows:

1. Hold the +/- switch to the "-" or down position and turn the power switch ON. The letter "O" will display as well as the odd row indicators.
2. Release the +/- switch immediately.

Figure 9

Odd Row Enable





MINIMUM SEEDING RATE-% BASED THRESHOLD

The minimum seeding rate can be set to monitor a minimum number of seeds based on a user-defined percentage of the nominal seeding rate. The minimum seeding rate threshold is based on the average seeding rate of all active rows. As the seeding rate increases and decreases based on ground speed, the failure detection point adjusts based on the average seeding rate. The factory default minimum seeding rate percentage is 70% of the nominal seeding rate.

To set the minimum seeding rate:

1. Power on the console and wait until the start up test of modules, seed sensors, and hopper level sensors are complete.
2. Momentarily hold the +/- switch in either the "+" (up) or "-" (down) position to change the threshold adjustment setting.
3. Refer to (Figure 10) for the desired threshold setting.
4. Holding the +/- switch to the "+" (up) position will increase the threshold setting. Holding the +/- switch to the "-" (down) position will decrease the threshold setting.

Figure 10

Minimum Seeding % Rate Table

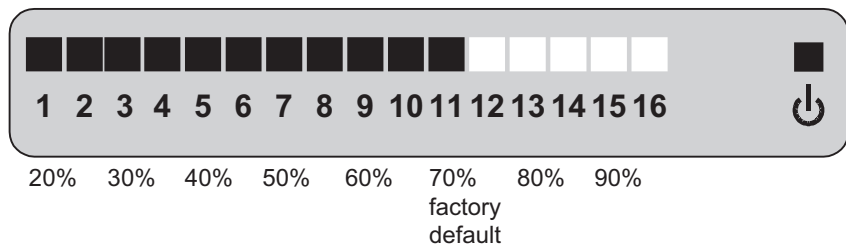
Percentage Threshold Setting based on Number of LED's Illuminated

LED Indicator	(Percentage Setting)	LED Indicator	(Percentage Setting)
1	20% of nominal seed rate	9	60% of nominal seed rate
2	25% of nominal seed rate	10	65% of nominal seed rate
3	30% of nominal seed rate	11	70% of nominal seed rate
4	35% of nominal seed rate	12	75% of nominal seed rate
5	40% of nominal seed rate	13	80% of nominal seed rate
6	45% of nominal seed rate	14	85% of nominal seed rate
7	50% of nominal seed rate	15	90% of nominal seed rate
8	55% of nominal seed rate	16	95% of nominal seed rate

When the seeding rate falls below the percentage based threshold, a seed row failure has occurred. An alarm sounds and the respective LED's illuminate.

Figure 11

Seeding Rate Failure Threshold Set at 70% of Nominal Seeding Rate)





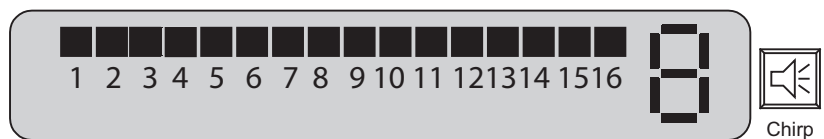
SYSTEM OPERATION

POWER SEQUENCE

Moving the I-O (power) switch to the center position turns on the monitor. Upon power up, the Air Seeder Monitor provides the operator with an indicator test by illuminating all 16 rows and the 7 display segments. The alarm will output a single chirp during the display test.

Figure 12

Power Up Indicator and Alarm Test-All LED's on



SENSOR DETECTION

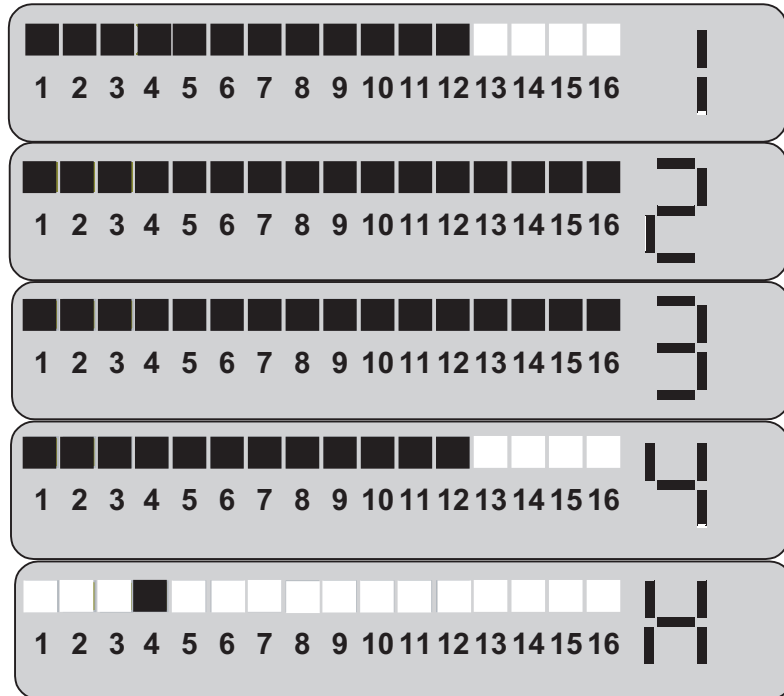
After the indicator test is complete, the monitor will begin displaying the results of the sensor detection. The Module Number will display "1" and the row numbers with detected sensors will illuminate. If another Dj ASM II module is connected, the Module Number will advance to "2" and the row numbers with detected sensors will illuminate, and so on for additional modules. The monitor will dwell for 2 seconds on each module. In the event a hopper/row module is connected, the monitor will display the seed sensors detected first, then detect the hopper sensor(s), with an "H" and the module locations displayed.

The following sensor detection sequence ([Figure 13](#)) depicts 56 rows of monitoring with 12 rows connected to Dj ASM II module 1, 16 rows connected to modules 2 and 3, and 12 rows and 1 hopper connected to module 4.



Figure 13

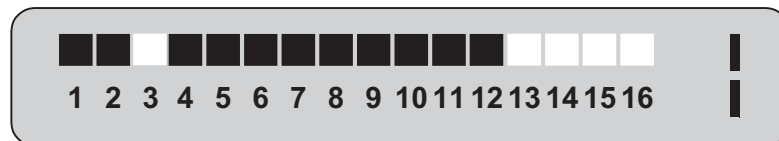
Sensor Detection Sequence



(Figure 14) illustrates that row 3 on Module 1 was not detected during the sensor test and is not usable. This could indicate that a sensor is not connected or has failed on module 1.

Figure 14

Row Failure Example

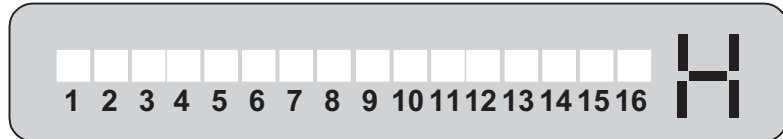




(Figure 15) illustrates that a Hopper module was detected but no Hopper sensors were detected.

Figure 15

Hopper Failure Example

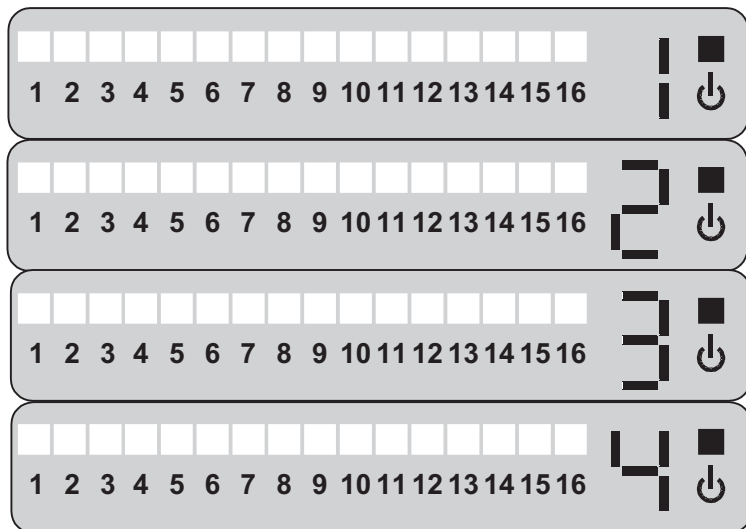


PLANTING

After the sensor detection is displayed, the monitor is ready for the planting operation. When planting begins, monitoring operation starts. As long as every reported row detects at least the minimum seeding rate, the 7-segment display will scan through each detected module number.

Figure 16

Planting Display - No Failed Rows



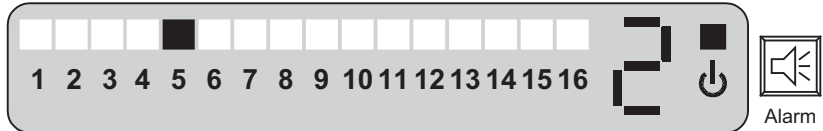


SINGLE ROW FAILURE

If a single row failure is detected, the appropriate Module Number will display, the corresponding row output will illuminate, and the alarm sounds. (Figure 17) illustrates a single row failure on Module 2, Row 5.

Figure 17

Example of Single Row Failure



The display will continue to show this condition until the alarm is canceled by toggling the I/O (power) switch to the up position (alarm cancel). When the row failure alarm is canceled, the display will scroll through each module as before, but will illuminate only the failed rows. If an additional single row failure occurs, the operation will return to dwell upon that failure. If a second alarm cancel is performed, the display will again scroll through each module as before, but will illuminate both failed rows.

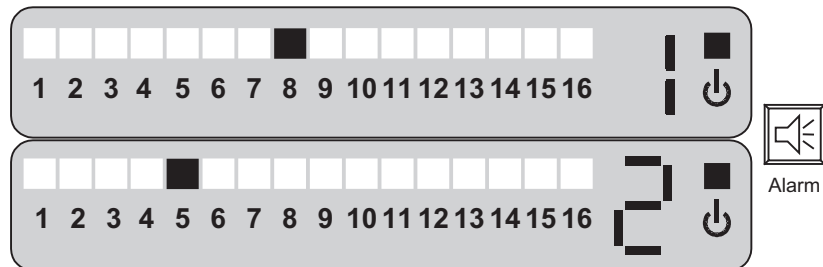
MULTIPLE ROW FAILURE

If rows fail on more than one module, the monitor will sequence through the module numbers and display the corresponding row numbers for 2 seconds on each module.

(Figure 18) illustrates Module 1, Row 8 and Module 2, Row 5 as failed. The following display sequence will occur and loop.

Figure 18

Example of Multiple Row Failure



The looping of the modules with failed rows will continue unless the alarm is canceled. If this occurs, the display will scroll through each module as before, but will illuminate the failed rows. If additional rows fail, the operation will return to looping the new failures only.

If a second alarm cancel is performed, the display will again scroll through each module as before, but will illuminate all row failures.

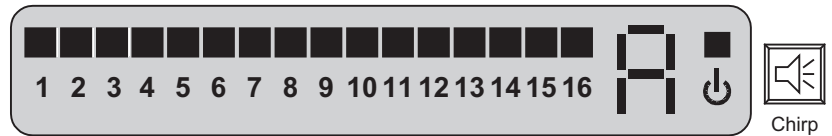


ALL ROWS FAILURE

If all rows fail, which is common when the planter is lifted and no lift switch is installed, the module display will output an "A", all rows will light, and the alarm will chirp.

Figure 19

All Rows Failure Example



DIMMING

A dimming feature is included for low light planting conditions. After the sensor detection has been completed and only during non-alarm conditions, the dim switch can be toggled into the up position to dim the indicators. Each dim step will cause the alarm to chirp. Once the lowest dim level has been reached, the alarm will sound for 2 seconds.

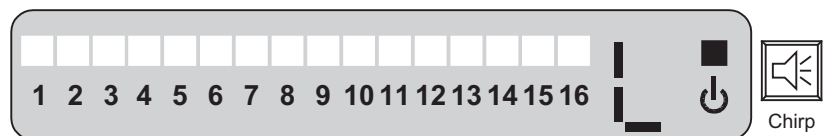
After 2 seconds, or if the switch is released and toggled up again, the indicators will brighten. Once the highest brightness level has been reached, the alarm will sound for 2 seconds.

LIFT SWITCH

The lift switch input will keep the ALL ROWS FAILURE from occurring. When the Lift Switch input is grounded, it is considered active (inhibits ALL ROWS FAILURE). When active, the module display will output an "L" and will no longer scan through the modules. The alarm will chirp.

Figure 20

Active Lift Switch





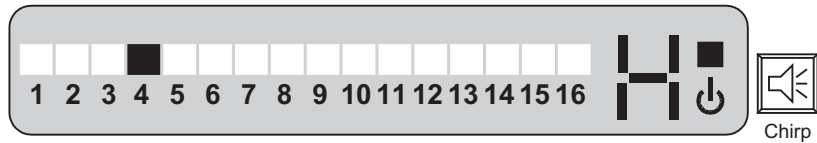
HOPPER LEVEL LOW

Hoppers can be monitored with the Dj ASM II console in the event a 15 row Hopper Module is connected to the system. If a hopper is low, the sensor will ground the signal line and an “H” will appear on the display, indicating a hopper is empty.

The LED number indicates which hopper level sensor module is connected. (Figure 21) illustrates a low hopper on module 4.

Figure 21

Low Hopper Level Example

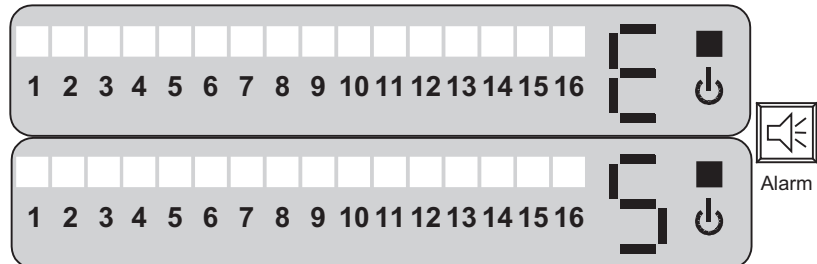


ERRORS

The monitor can detect 8 Vdc error during start-up. If this error occurs, the Module Display will output an “E”, followed by the module number. In the following example, Module 5 detected an 8 V sensor supply voltage short to ground.

Figure 22

Module 5 Start-Up Error Example



CAUTION

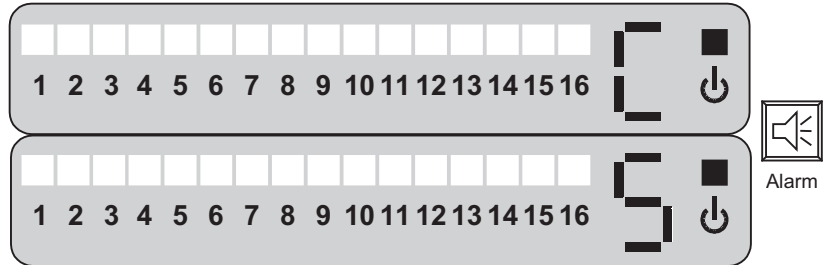
This error CANNOT be disabled using the Alarm Cancel feature. The problem must be either repaired or the module must be disconnected from service.

A communication error will display a “C”, followed by the module number. In the following example, the monitor detected a communication error with Module 5.



Figure 23

Module 5 Error Example

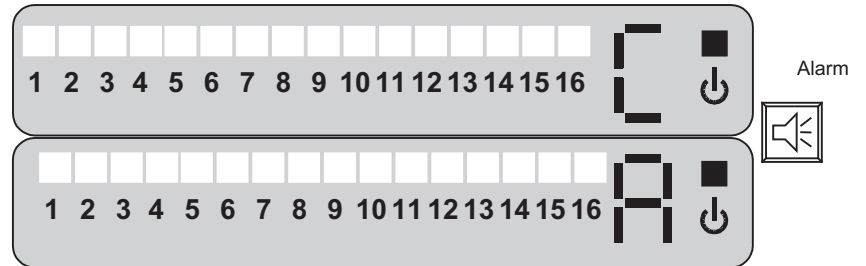


A Module 5 Communication error is similar to the 8 Vdc error. The “C” and “5” will toggle back and forth. The error cannot be eliminated until the communications failure has been corrected and power has been cycled OFF/ON.

The error “C/A” indicates the monitor is experiencing communication problems with all modules (Figure 24). The letters “C” and “A” will toggle back and forth. This could occur if the monitor is powered up with no modules connected.

Figure 24

Example of Communications Error







TROUBLESHOOTING

UNIT WILL NOT POWER ON. NO LEDS WILL LIGHT DURING THE POWER UP SEQUENCE.

Probable Cause:

1. Loose connection between power harness and monitor.
2. Blown fuse.
3. Defective monitor or main harness.
4. Defective module, harness, or sensor.
5. Poor battery connection.
6. Insufficient system voltage.

Corrective Action

1. Assure harness connections are centered and fully inserted. Assure the main harness is properly connected to the monitor.
2. Assure the positive and negative connections are not reversed. Check the fuse in the power harness near the battery. If it is blown, troubleshoot and repair fault. Replace with a 7.5A AGC.

CAUTION

Do not replace fuse with one having a higher amperage rating - the console could be damaged internally.

3. Disconnect implement main harness. Measure for short between red (power) and black (ground) wires. If shorted, the power harness or the console is faulty and requires repair or replacement. Contact your Parts and Service Dealer or call DICKEY-john in the U.S.A. at 1-800-637-3302.
4. Disconnect the system at the hitch and measure for short between red (power) and black (ground) wires. If shorted, isolate by disconnecting harnesses until fault is found. Contact your Parts and Service Dealer or DICKEY-john in the U.S.A. at 1-800-637-3302. Outside of the U.S.A., contact your dealer or national distributor or DICKEY-john Europe at 00 33 (0) 1 41 19 21 80.
5. Check battery connections and assure they are clean and tight.
6. Make sure battery voltage is between 11 and 16 Vdc.



ROW OR HOPPER INDICATORS FAIL TO ILLUMINATE AFTER SELF-TEST

Probable Cause:

1. Defective sensor or harness wire that is intermittent.
2. Poor harness connection at console or at sensor that is intermittent.
3. Defective harness or sensor cable (signal shorted or power open).

Corrective Action:

1. Swap the sensor with another row or hopper. If problem moves, sensor is faulty. Otherwise, harness or module is faulty.
2. Check module harness connections at the module and sensors. Check module harness for pinches, worn, or broken elements. Check sensor cables for pinched, worn, or broken elements.
3. Check module harness for pinched, worn, or broken elements. Check sensor for pinched, worn, or broken wires.

ROWS FAIL THAT ARE CORRECTLY PLANTING. SELF-TEST INDICATED THE SENSOR WAS PRESENT.

Probable Cause:

1. Minimum seeding rate set too high.
2. Defective seed sensor.
3. Poor harness connection at console or at sensor that is intermittent.
4. Defective sensor or harness wire that is intermittent.
5. Defective harness or sensor cable (signal shorted or power open).
6. Hopper sensor is plugged into seed input.

Corrective Action:

1. Lower the minimum seeding rate (left hand +/- switch).
2. Clean sensing elements using a dry bottle brush. Some seed treatments require scrubbing with water and a commercial cleanser.
3. Check module harness connections at the module and sensors. Check module harness for pinched, worn, or broken elements. Check sensor cables for pinched, worn, or broken elements.
4. Swap the sensor with another row. If the problem moves, the sensor is faulty. Otherwise the harness or module is faulty.
5. Check module harness for pinched, worn, or broken elements. Check sensor for pinched, worn, or broken wires.
6. Verify hopper is only connected to "ROW 16/HOPPER" connector input.



HOPPERS FAIL THAT ARE FILLED ABOVE THE SENSOR. SELF-TEST INDICATED THE SENSOR WAS PRESENT.

Probable Cause:

1. Defective sensor or harness wire that is intermittent.
2. Defective harness or sensor cable (signal shorted to ground).

Corrective Action:

1. Check module harness connections at the module and sensors. Check module harness for pinched, worn, or broken elements. Check sensor cables for pinched, worn, or broken elements.
2. Swap the sensor connection with another hopper connector or move sensor. If the problem moves, the sensor is faulty. Otherwise, the harness or module is faulty. Check module harness for pinched, worn, or broken elements. Check sensor for pinched, worn, or broken wires.

HOPPERS FAIL TO ALARM WHEN SEED IS NOT BLOCKING SENSOR. SELF-TEST INDICATED THE SENSOR WAS PRESENT.

Probable Cause:

1. Defective hopper sensor.
2. Defective sensor or harness wire that is intermittent.
3. Defective harness or sensor cable (signal shorted to power).
4. Hopper sensor is connected to seed input.

Corrective Action:

1. Clean sensing elements using a dry bottle brush. Some seed treatments require scrubbing with water and a commercial cleanser.
2. Check module harness connections at the module and sensors. Check module harness for pinched, worn, or broken elements. Check sensor cables for pinched, worn, or broken elements.
3. Swap the sensor connection with another hopper connector or move sensor. If the problem moves, the sensor is faulty. Otherwise the harness or monitor is faulty. Check module harness for pinched, worn, or broken elements. Check sensor for pinched, worn, or broken wires.
4. Verify hopper is connected to "ROW 16/HOPPER" connector input.



UNIT POWERS ON, ALL LEDS BLINK ON, AND NO ERROR OCCURS, BUT NO SENSORS ARE DETECTED ON A MODULE.

Probable Cause:

1. Module harness is not properly connected.
2. Defective (8V power or ground open) harness.
3. Defective monitor or module.

Corrective Action:

1. Check module harness connections at the module and sensors.
2. Check module harness for pinched, worn, or broken elements.
3. Contact your Parts and Service Dealer or DICKEY-john in the U.S.A. at 1-800-637-3302. Outside of the U.S.A., contact your dealer or national distributor or DICKEY-john Europe at 00 33 (0) 1 41 19 21 80.

UNIT DISPLAYS AN “E” FOLLOWED BY A MODULE NUMBER

Probable Cause

1. 8V short error detected by module.

Corrective Action

1. Module voltage supply error. Check module harnesses and sensors for short of 8V supply to ground. 8V supply is generated by each module for its sensors.

UNIT DISPLAYS A “C” FOLLOWED BY A MODULE NUMBER

Probable Cause:

1. Communication error with module.

Corrective Action:

1. Lost communication with module. Check indicated module number first and nearby modules next. Check all communications next by each module for its sensors.

UNIT DISPLAYS A “C” FOLLOWED BY AN “A”

Probable Cause:

1. Communication error with all modules.

Corrective Action:

1. No modules were detected at power up. Check harnesses and modules for proper connection.



DJ ASM II SERVICE PARTS

MONITOR AND MAIN HARNESS

Dj ASM II Monitor	46794-2002
Main harness	46794-0580
Mounting bracket	46794-0080
Fuse, AGC 7.5A	20112-0039
Relay	F86606352

MODULE AND MODULE HARNESES

Dj ASM II Module, 16 row	46794-2057S1
Dj ASM II Module, 15 row/1 hopper	46794-2058S1
12 row tower harness	46775-1320S1
16 row tower harness	46775-1330S1
12 row harness, 7.5" row spacing	46775-1300S1
12 row harness, 15" row spacing	46775-1301S1
12 row harness, 30" row spacing	46775-1302S1
16 row harness, 7.5" row spacing	46775-1310S1
16 row harness, 15" row spacing	46775-1311S1
16 row harness, 30" row spacing	46775-1312S1

EXTENSIONS

4' extension harness	46775-1200S1
6' extension harness	46775-1201S1
10' extension harness	46775-1202S1
15' extension harness	46775-1203S1
20' extension harness	46775-1204S1
25' extension harness	46775-1205S1
30' extension harness	46775-1206S1
40' extension harness	46775-1207S1
45' extension harness	46775-1208S1
50' extension harness	46775-1209S1



Dealers have the responsibility of calling to the attention of their customers the following warranty prior to acceptance of an order from their customer for any DICKEY-john product.

DICKEY-john® WARRANTY

DICKEY-john warrants to the original purchaser for use that, if any part of the product proves to be defective in material or workmanship within one year from date of original installation, and is returned to DICKEY-john within 30 days after such defect is discovered, DICKEY-john will (at our option) either replace or repair said part. This warranty does not apply to damage resulting from misuse, neglect, accident, or improper installation or maintenance; any expenses or liability for repairs made by outside parties without DICKEY-john's written consent; damage to any associated equipment; or lost profits or special damages. Said part will not be considered defective if it substantially fulfills the performance expectations. THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OF MERCHANTABILITY, FITNESS FOR PURPOSE, AND OF ANY OTHER TYPE, WHETHER EXPRESS OR IMPLIED. DICKEY-john neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with said part and will not be liable for consequential damages. Purchaser accepts these terms and warranty limitations unless the product is returned within fifteen days for full refund of purchase price.

**For DICKEY-john Service Department, call
1-800-637-3302 in either the U.S.A. or Canada**



Headquarters:

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TEL: 217 438 3371, FAX: 217 438 6012, WEB: www.dickey-john.com

Europe:

DICKEY-john Europe S.A.S, 165, boulevard de Valmy, 92706 – Colombes – France
TEL: 33 (0) 1 41 19 21 80, FAX: 33 (0) 1 47 86 00 07 WEB: www.dickey-john.com

ASMII AIR SEEDER MONITOR



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