Operation Manual

Model 600A

Moisture Sensor Kit for Large Square Balers

HayBoss™

AGCO PARTS

010-0600A OPR
4/14

SERVICE DUTY OF THE PARTIALLY COMPLETED MACHINE: The Harvest Tec Hay Moisture Sensor Kit will only be put into service after installed on a hay baler that has been declared to conform with the Directive.

Noise from the Harvest Tec Moisture Sensor Kit does not exceed 70 dB (A).

Manufacturers Name Plate

<table>
<thead>
<tr>
<th>Harvest Tec Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufactured at and correspondence to:</td>
</tr>
<tr>
<td>2821 Harvey Street Hudson, WI 54016 USA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build Date</td>
</tr>
<tr>
<td>Serial No.</td>
</tr>
</tbody>
</table>

PERSON AUTHORIZED TO PROVIDE INFORMATION ON THE MACHINE AND WHO MAKES THIS DECLARATION:

Jeffery S. Roberts, President, Harvest Tec, Inc.

Signed in Hudson, WI, USA on May 21, 2011
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Introduction

Thank you for purchasing a HayBoss G2 600A Moisture Monitor System and congratulations. This system is designed to monitor the moisture and tonnage of the forage crop and to plug directly into the baler’s ISOBUS and display on a C1000 monitor. The 600A Moisture Monitor System offers these advantages:

1. Operation coordinated with baler operation
2. Less cab clutter providing better visibility
3. Ease of use with all information on one screen
4. Records kept together
5. And the system is ready for future updates.

The 600A Moisture Monitor kit includes the following parts: Dual Channel Processor (DCP), Moisture Sensors, Harnesses and Miscellaneous Hardware. For your convenience a parts break down for the model 600A is included in the back of this manual. If you do have questions bring this manual into the dealership. They can assist you in ordering the correct replacement parts.

The HayBoss G2 600A Moisture Monitoring System can have a complete preservative applicator added as well as the tagging option to enhance the system at any time. Contact your local dealer for more information.

Right and Left sides are determined by facing in the direction of forward travel.

System Requirements

The Baler Processor must have Version 3.3 or higher. If equipped with the SBM, the SBM must have Version 4.0 or higher.

For instructions on How to Mount the 600A to the Baler please refer to the 600A Installation Manual.
Safety

Carefully read all safety signs in this manual and on the moisture sensor kit before use. Keep signs clean and clear of obstruction to view. Replace missing or damaged safety signs. Replacement signs are available from your local authorized dealer. See your installation manual under the replacement parts section for the correct part numbers.

Keep your moisture sensor kit in proper working condition. Unauthorized modifications to the moisture sensor kit may impair the function and/or safety of the machine.

Carefully read and understand all safety signs before installing or servicing.

Safety Decals

Number 1
Disconnect power before servicing.
Part no. DCL-8003

Number 2
Read and understand the operator’s manual before using or working around the equipment.
Part no. DCL-8000
Operation of 600A Moisture Sensor Kit

Operation of the ISOBUS Monitor

The ISOBUS Monitor utilizes a combination of soft keys, number menus, and the scroll wheel on the upper right side of the actual monitor to make selections. Selections are made by scrolling the Thumb Wheel and pressing in once the selection is highlighted. All buttons are labeled and color coded.

Baler Monitor Setup

At any time after the initial Start Up/Power On the green “uploading data” status bar (arrow A) should begin to fill.
System Setup

1. To view moisture from the 600A Moisture Sensor begin setup at the main baler screen. Select the WRENCH icon (arrow A) which is the fourth icon down on the right side of the screen-the right selection menu.

2. The service screen displayed below should appear. Select the Next Screen icon (arrow B) located at the bottom of the right selection menu.
3. A similar screen will appear with a different menu options on the right side of the screen. Press the A B icon (arrow C) located at the top right of the selection menu.

4. The A B screen will appear. Next select the A B 2 (arrow D) icon which is the second from the top on the far right selection menu.
5. The A B 2 screen will appear. The **Harvest Tec** On/Off selection icon can now be selected. To turn the Harvest Tec Moisture Sensor On (signified by a **green check mark**) or Off (signified by a **red X**) navigate to the box and select (arrow E) by pressing the **Scroll Wheel**. Once the Harvest Tec Moisture Sensor has been turned On/Off you can navigate back to the main baler work screen by pressing the **BALER** (arrow F) icon on the top right of the selection menu.

6. The main baler work screen will appear. Select the **container** (arrow G) where you would like to view the moisture information on the baler run screen. **Note:** This can be done on the primary or secondary baler work screen. The screen has been or can be customized for viewing containers or options as you would like and as guided in the baler manual.
7. Once the user has selected the container they would like to change, a **drop down list** (arrow H) will appear. The **Moisture option** (arrow I) should be at the bottom of the drop down selection list.

![Diagram showing drop down list and Moisture option](image)

8. The Moisture container will have a red background until HayBoss G2 system is put in Manual Mode or Auto Mode. The two values indicated in the moisture option are as follows: **current moisture / last bale average moisture** (arrow J).

![Diagram showing Moisture container with red background](image)
To Adjust the Moisture Alarm

1. From the main baler screen, select the third icon down the right selection menu that shows a diamond beside a baler (arrow K).

2. To adjust the moisture alarm set point select the box option to the right of the moisture droplets (arrow L) and adjust to the desired moisture limit. To return to the baler work screen, press the baler icon at the top right of the selection menu (arrow M). When the moisture is higher than the alarm setting the audible alarm will sound (if turned on) and the moisture values on the screen will display with a red background.
Option to turn Off/On all Alarms or Beeps

1. From the main baler work screen select the third icon down the right selection menu that shows a diamond beside a baler (arrow N).

2. Select the fourth icon down on the right selection menu showing a bugle beside an alarm icon (arrow O).
3. The alarm screen should now be displayed. All alarms can be silenced before they are ever heard. This can be done by selecting the **Peak Moisture** icon (arrow P) and turning the alarm On/Off. To return to the baler work screen, press the baler icon located at the top right of the selection menu. If the moisture is higher than the alarm setting the moisture values will be displayed with a red background but there will be no audible alarm if this is turned off.

Please refer to the baler service manual for software updates.
Harness/Wiring Installation and Diagram

A. The Baler Power/Communication Harness (006-6650LS2) will attach to the open port of the Tractor Harness (006-6650TM) and run back to the Dual Channel Processor (DCP-006-6671LS). Connect the large plug of the Baler Power/Communication Harness (006-6650LS2) to the bottom (shorter side) of the DCP. Attach the Baler Interface Harness (006-6650VA) in between the short whip cable hardwired to the DCP and the main Power/Communication Harness (006-6650LS2). Make sure Active Terminator removed from the back underside of the baler is attached to the Baler Interface Harness (006-6650VA).

B. Install the terminating connector with green cap (006-5650Z) to the port labeled Pump Controller.

C. Attach moisture and bale rate harness (006-7303H) and also end of bale harness (006-7400) to the DCP (006-6671LS).

D. Install terminating resistor with red cap (006-6650Z) on tractor harness (006-6650TM).

E. Connect Keyed Power Extension harness (006-5650K) to a keyed power source.

F. The Optional Port and the Data Transfer Port are not used in this application.

AGCO 2100 Series Balers Pre 2012 will need the AGCO Integration Harness (006-6650VAX)
600A Pin Outs for Harnesses

**Power/Comm Harness 006-6650TM at Hitch**
- Pin 1 Red  +12V Power to TSD
- Pin 2 Red  +12V Power to DCP
- Pin 3 Orange Keyed Power
- Pin 4 Gray Shield
- Pin 5 Green HT Can Low
- Pin 6 Yellow HT Can Hi
- Pin 7 Orange Can1 Hi
- Pin 8 Black Ground from TSD
- Pin 9 Black Ground from DCP
- Pin 10 Blue Can1 Low

**Power/Comm Harness 006-6650LS2 at Hitch**
- Pin 1 Red  +12V Power to TSD
- Pin 2 Red  +12V Power to DCP
- Pin 3 Orange Keyed Power
- Pin 4 Gray Shield
- Pin 5 Green HT Can Low
- Pin 6 Yellow HT Can Hi
- Pin 7 Orange Can1 Hi
- Pin 8 Black Ground from TSD
- Pin 9 Black Ground from DCP
- Pin 10 Blue Can1 Low

**Display Plug on Harness 006-6650TM at TSD**
- Pin 1 Red  +12V Power from DCP
- Pin 2 Black Ground from TSD
- Pin 3 Yellow HT Can Low
- Pin 4 Gray Shield
- Pin 5 Green HT Can Hi
- Pin 6 Orange Can1 Hi
- Pin 7 Blue Can1 Low

**006-6650VA to DCP Whip**
- Pin 1 Red  Can Power
- Pin 2 Black Can Ground
- Pin 3 Yellow HT Can Hi
- Pin 4 Gray Shield
- Pin 5 Green HT Can Low
- Pin 6 Orange Can1 Hi
- Pin 7 Blue Can1 Low
006-6650VA to 006-6650LS2
Pin 1  Red  Can Power
Pin 2  Black  Can Ground
Pin 3  Yellow  HT Can Hi
Pin 4  Gray  Shield
Pin 5  Green  HT Can Low
Pin 6  N/A
Pin 7  N/A

006-6650VA harness to Baler Plug
Pin A  N/A
Pin B  Red  TBC Power
Pin C  N/A
Pin D  Gray  TBC Ground
Pin E  Orange  Can1 Hi
Pin F  Blue  Can1 Low

Main Power Connector on DCP
Pin 1  Red  +12V Power from tractor
Pin 2  Black  Ground from tractor
Pin 3  Orange  Keyed power

Star Wheel and Bale Rate Sensor connector on DCP
Pin 1  Blue  +12V Power
Pin 2  Orange  Ground
Pin 3  Black  Signal for sensor 1
Pin 4  White  Signal for sensor 2
Pin 5  N/A
Pin 6  N/A
Pin 7  N/A
Pin 8  Violet  Star wheel input 1
Pin 9  Brown  Star wheel input 2

End of Bale sensor on DCP
Pin 1  Brown  Sensor Power
Pin 2  Blue  Sensor Ground
Pin 3  N/A
Pin 4  Black  Signal from Sensor
Common Questions

1. **How do I turn the system on/off?**
   Turn the key in the tractor to the ON position. The ISOBUS Monitor will turn on, and the baler, on 600A working screen tabs, will be viewable. Turn the system off by turning the tractor key OFF.

2. **How to get in the LBS/TON, MC%, and TONS/HR menus?**
   In the Main Menu press the SETUP MODE key. From this screen you can change your alarm settings and bale rate settings. See SETUP INSTRUCTIONS in the Operations Manual for a detailed explanation of this process.

3. **The moisture content displays “LO” or “HI” all the time.**
   When the moisture content display does not change frequently while baling, there is likely a faulty star wheel connection. One of the first places to check is inside the white star wheel block. Check to see if the electronic swivel is in the star wheel shaft and check to see that the star wheel shaft is not working out of the block. Also, check all star wheel wires and connectors to see if there is a continuity or grounding problem.

4. **Should the battery connections be removed before jump starting or charging a battery?**
   Yes. Anytime the tractor will have voltage going up rapidly the connections should be removed.

5. **Can the Harvest Tec 600 be updated for preservative or a tagger?**
   Yes. Consult your local dealer for part numbers and pricing.

6. **Bale scale does not give a consistent reading.**
   Baling on rough terrain or hills can cause the scale to give an inaccurate reading. Turn Bale Scale option OFF in the Bale Rate Screen and use AVG Bale Weight reading as weight of bale.

Add Preservative Application:
- HT5004518B   Standard   2150-2290
- HT5004519B   Cutter     2150-2290
- HT5004527B   Packer     2150-2250
- HT5004530B   2170-2270 XD with Cutter

Add Tagger
- HT850

Add Dye Spray Marker
- HT0840
## Troubleshooting

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<th>PROBLEM</th>
<th>POSSIBLE CAUSE</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture reading errors (high or low)</td>
<td>1. Wire disconnected or bad connection between star wheels and DCP</td>
<td>1. Reconnect wire.</td>
</tr>
<tr>
<td></td>
<td>2. Low power supply to DCP</td>
<td>2. Check voltage at box. (Min of 12 volts required.) See Diagnostics section of manual.</td>
</tr>
<tr>
<td></td>
<td>3. Dry hay lower than 8% moisture or wet hay over 75%.</td>
<td>3. System reads 8-70% moisture.</td>
</tr>
<tr>
<td></td>
<td>4. Ground contact with one or both star wheels and baler mounted processor.</td>
<td>4. Reconnect.</td>
</tr>
<tr>
<td></td>
<td>5. Short in wire between star wheels and DCP.</td>
<td>5. Replace wire.</td>
</tr>
<tr>
<td></td>
<td>6. Check hay with hand tester to verify.</td>
<td>6. Contact Harvest Tec if conditions persist.</td>
</tr>
<tr>
<td>Moisture readings erratic.</td>
<td>1. Test bales with hand tester to verify that DCP has more variation than hand tester.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Check all wiring connections for corrosion or poor contact.</td>
<td>2. Apply dielectric grease to all connections.</td>
</tr>
<tr>
<td></td>
<td>3. Check power supply at tractor. Voltage should be constant between 12 and 14 volts.</td>
<td>3. Install voltage surge protection on tractors alternator.</td>
</tr>
<tr>
<td>Terminal reads under or over power.</td>
<td>1. Verify with multi-meter actual voltage. Voltage range should be between 12-14 volts.</td>
<td>1. Clean connections and make sure applicator is hooked to battery. See Diagnostics section of manual.</td>
</tr>
<tr>
<td>Bale rate displays zero.</td>
<td>1. Bale rate sensors are reversed.</td>
<td>1. Switch the sensors next to the star wheel.</td>
</tr>
<tr>
<td></td>
<td>2. Short in cable.</td>
<td>2. Replace cable.</td>
</tr>
<tr>
<td></td>
<td>3. Damaged sensor.</td>
<td>3. Replace sensor.</td>
</tr>
<tr>
<td></td>
<td>4. Sensor too far from star wheel.</td>
<td>4. Adjust gap between prox sensor and star wheel so it is 1/8-1/4” away.</td>
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</table>
## Parts Breakdown

### Star Wheels and Bale Rate Sensors

<table>
<thead>
<tr>
<th>Ref</th>
<th>Description</th>
<th>Part#</th>
<th>Qty</th>
<th>Ref</th>
<th>Description</th>
<th>Part#</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Block cover</td>
<td>006-4641B</td>
<td>2</td>
<td>9</td>
<td>Star wheel block</td>
<td>006-4641A</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Electronic swivel</td>
<td>006-4642A</td>
<td>2</td>
<td>10</td>
<td>Star wheel sensor</td>
<td>006-4641A</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Swivel insert w/ Ref # 10</td>
<td>006-4641K</td>
<td>2</td>
<td>11</td>
<td>Twine guard-left for AGCO</td>
<td>006-4641K</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Snap ring (per side)</td>
<td>006-4641K</td>
<td>2</td>
<td></td>
<td>Twine guard-right for AGCO</td>
<td>006-4641K</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Washer (per side)</td>
<td>006-4641K</td>
<td>2</td>
<td></td>
<td>Twine guard-right for AGCO</td>
<td>006-4641K</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Dust seal (per side)</td>
<td>006-4641K</td>
<td>2</td>
<td></td>
<td>Twine guard-right for AGCO</td>
<td>006-4641K</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>Plug fitting</td>
<td>003-F38</td>
<td>2</td>
<td></td>
<td>Star wheel assembly</td>
<td>003-F38</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>Wiring grommet</td>
<td>008-0821A</td>
<td>2</td>
<td></td>
<td></td>
<td>008-0821A</td>
<td>2</td>
</tr>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>12</td>
<td>Bale rate sensor</td>
<td>006-7303S</td>
<td>2</td>
<td></td>
<td></td>
<td>006-7303S</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>Moisture and bale rate harness</td>
<td>006-7303H</td>
<td>1</td>
<td></td>
<td></td>
<td>006-7303H</td>
<td>1</td>
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# Parts Breakdown for 600A Series Control and Harnesses

<table>
<thead>
<tr>
<th>Ref</th>
<th>Description</th>
<th>Part Number</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>End Of Bale Sensor</td>
<td>006-7400</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Terminating Connector w green cap</td>
<td>006-5650Z</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>End of Bale Sensor Bracket</td>
<td>001-4648</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>DCP Shield/Cover</td>
<td>001-5650X</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>DCP Main Control LS 600 AUTO</td>
<td>006-6671LS</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>DCP Baler Harness 30 FT</td>
<td>006-6650LS2</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>DCP Tractor Harness</td>
<td>006-6650TM</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Dust Plugs</td>
<td>006-5651PLUGS</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>DCP Baler Interface Harness</td>
<td>006-6650VA</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>DCP TSD Terminating Resistor w/red cap</td>
<td>006-6650Z</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Key Switch Wire</td>
<td>006-5650K</td>
<td>1</td>
</tr>
</tbody>
</table>

AGCO 2100 Series Baler Pre 2012 will need 006-6650VAX 1
Optional Touch Screen Display (TSD)

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Touch Screen Display</td>
<td>006-6670</td>
</tr>
<tr>
<td>2</td>
<td>Suction Cup Mount</td>
<td>001-2012SCM</td>
</tr>
<tr>
<td>3</td>
<td>RAM Mount</td>
<td>001-2012H</td>
</tr>
</tbody>
</table>

Complete Kit: 030-5670A
Warranty and Liability Agreement

Harvest Tec, Inc. will repair or replace components that are found to be defective within 12 months from the date of manufacture. Under no circumstances does this warranty cover any components which in the opinion of Harvest Tec, Inc. have been subjected to negligent use, misuse, alteration, accident, or if repairs have been made with parts other than those manufactured and obtainable from Harvest Tec, Inc.

Our obligation under this warranty is limited to repairing or replacing free of charge to the original purchaser any part that in our judgment shows evidence of defective or improper workmanship, provided the part is returned to Harvest Tec, Inc. within 30 days of the failure. Parts must be returned through the selling dealer and distributor, transportation charges prepaid.

This warranty shall not be interpreted to render Harvest Tec, Inc. liable for injury or damages of any kind, direct, consequential, or contingent, to persons or property. Furthermore, this warranty does not extend to loss of crop, losses caused by delays or any expense prospective profits or for any other reason. Harvest Tec, Inc. shall not be liable for any recovery greater in amount than the cost or repair of defects in workmanship.

There are no warranties, either expressed or implied, of merchantability or fitness for particular purpose intended or fitness for any other reason.

This warranty cannot guarantee that existing conditions beyond the control of Harvest Tec, Inc. will not affect our ability to obtain materials or manufacture necessary replacement parts.

Harvest Tec, Inc. reserves the right to make design changes, improve design, or change specifications, at any time without any contingent obligation to purchasers of machines and parts previously sold.

Revised 01/13
For assistance please contact:

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2821 HARVEY STREET
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PHONE: 715-386-9100
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FAX: 715-381-1792
Email: info@harvesttec.com