



# JOHN DEERE MOBILE WEATHER VALUE AND WALK AROUND GUIDE

CLICK THE ARROW TO GET STARTED



JOHN DEERE

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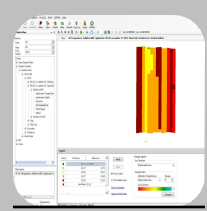
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*To get started, choose a section to review or explore all the new features by using the arrows below*



# Product Overview

John Deere Mobile Weather is a machine mounted weather monitoring system that works in conjunction with the GreenStar™ 2 and GreenStar™ 3 systems. Mobile Weather monitors and documents weather conditions without the need for stopping to check current weather conditions via a hand held device. It allows users to create customizable alerts and weather information to make educated decisions about when to spray. Built in alerts make it easy for operators to set operational parameters to know when unfavorable weather conditions are present. Having weather information in the cab allows operators to increase product efficacy and decrease the risk of chemical drift.

The Mobile Weather utilizes a third-party weather sensor that connects to the John Deere Application Controller 1120 and uses ultrasonic sensors to measure wind speed and direction. Mobile Weather activation is required to utilize the Application Controller 1120 in order to monitor weather information. The sensors are capable of measuring a range of wind speeds with a high level of accuracy. Wind is turbulent and not static. Changes in wind speed are detected more quickly with ultrasonic sensing than propeller-type anemometers. As a result, wind speed values displayed can change frequently.

Producers running a GreenStar™ 3 2630 will be capable of documenting five critical values needed for when determining the effectiveness of chemical application:

- ☐ Temperature
- ☐ Humidity
- ☐ Delta T
- ☐ Wind Direction
- ☐ Wind Speed



All other compatible GreenStar 2 Displays will only be able to display

the weather data without the ability to record. Once the weather information is collected in the GreenStar 3 2630 it can then be transferred to Apex, for further analysis and record keeping.



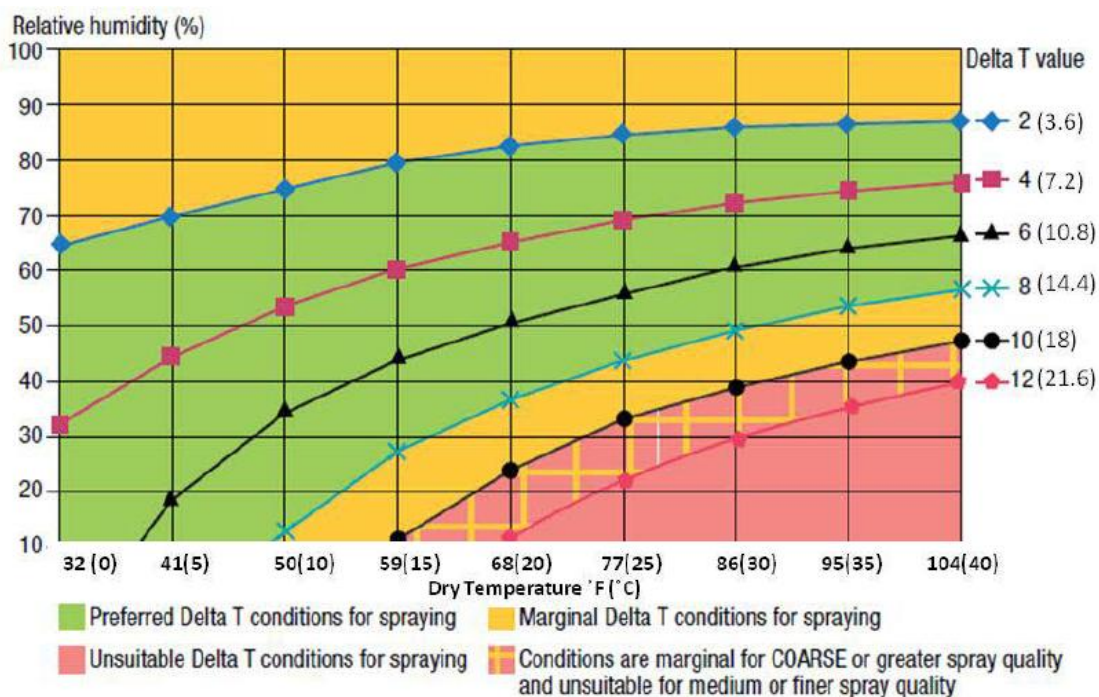
# Product Overview

## What is Delta T?

Delta T is the difference between wet bulb and dry bulb temperature, combining the effects of temperature and relative humidity on the survival of spray droplets. Delta T is an important indicator for acceptable spraying conditions such as evaporation rate and droplet lifetime.

A lower Delta T results in better survival of fine droplets. Dry air with low humidity has a high Delta T above 46.4 (8) resulting in high evaporation rates and poor droplet survival. Weeds can also be stressed because of high Delta T if there is not adequate moisture. Very moist or humid air has a low Delta T, less than 35.6 (2), and consequentially droplets can survive too long if too small to fall to the ground. With a coarser spray, it is possible to start in the same range, potentially finishing with a Delta T of 18 to 21.6 (10 to 12), if the other conditions are suitable and the plants are not stressed. It is however not recommended to start spraying when the Delta T value is already 18 (10) or over.

Increasing chemical efficacy as well as reducing spray drift is paramount to many customers. Delta T should be taken into consideration along with other conditions such as wind speed and direction, droplet size and boom height to ensure best practice.





# Compatibility

## AMS:

Mobile Weather is compatible with the following displays:

- ☐ GS3 2630 Display – The only display that is capable of documenting weather data. Software update 2012-1 is required in order for recording to work.
- ☐ GS3 Command Center
- ☐ GS21800 Display
  - ☐ 2.8.1205
- ☐ GS2 2100 Display
  - ☐ Software 2.8.1029 or higher
- ☐ GS2 2600 Display
  - ☐ Software 2.8.1029 or higher
- ☐ Apex™
  - ☐ Software 3.2.212



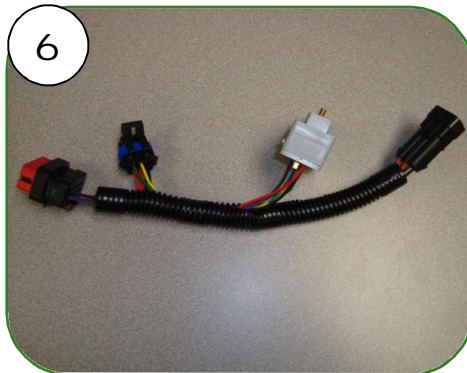
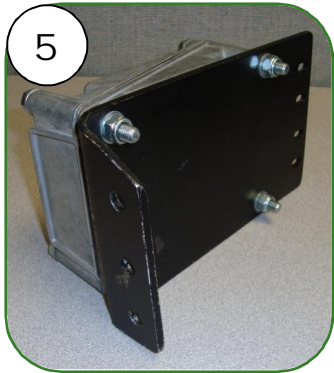
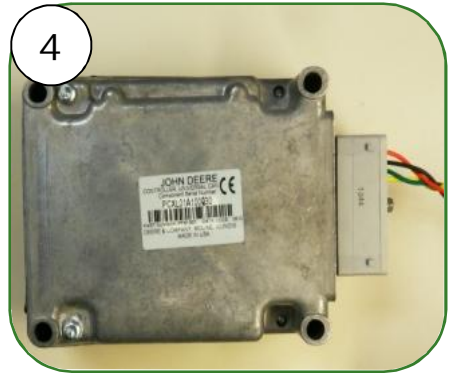
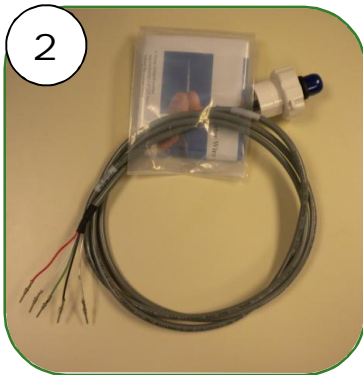
## Sprayers:

Mobile Weather is compatible with the following sprayers:

- ☐ 4730
- ☐ 4830
- ☐ 4930
- ☐ 4940



# Mobile Weather Required Components



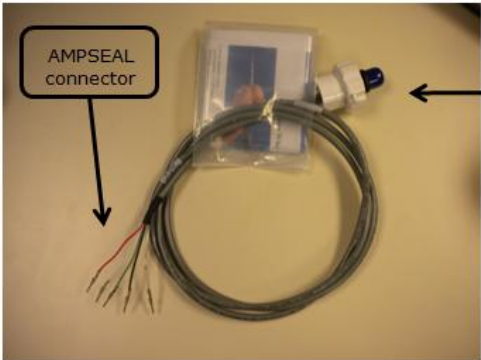
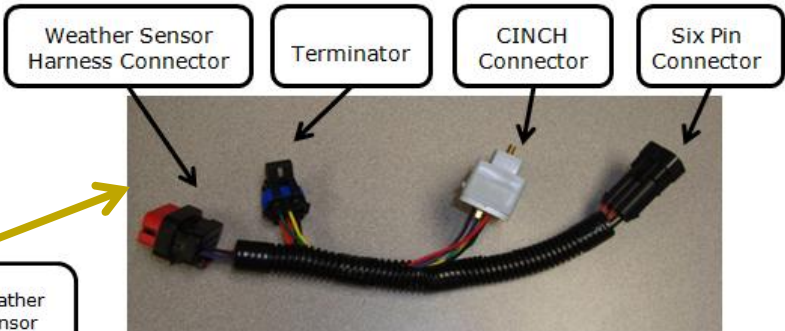
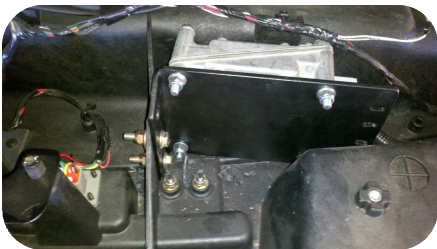
1. Airmar® Weather Sensor
2. Weather sensor harness
3. Weather sensor mounting bracket
4. Application Controller 1120
5. Application Controller 1120 mounting bracket
6. Mobile weather harness
7. GreenStar™ Display

# Installation





# Installation





# Mobile Weather Activation

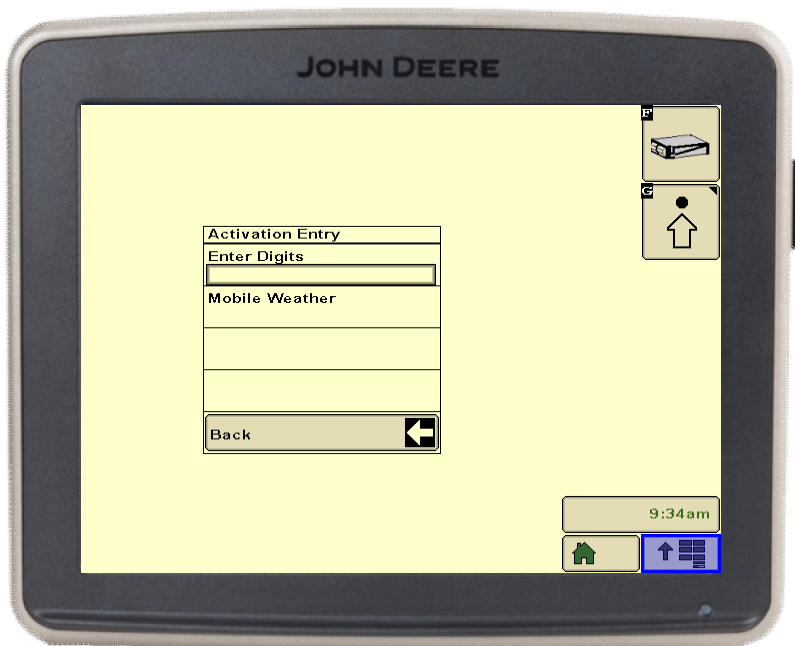
To run Mobile Weather on the Application Controller 1120, a 26 digit activation code is required.

What information is required to activate the unit:

- ☐ Application Controller 1120 serial number
  - ☐ Located on the controller label
- ☐ COMAR order number for Application Controller 1120
- ☐ GreenStar 2 or GreenStar 3 Display

Where to enter the activation code:

- ☐ Go to the Main Menu of the display and find the icon Application Controller 1120
- ☐ Select Softkey G and look for Enter Digits box
- ☐ Enter a 26 digit activation code in the box
- ☐ After activation code is entered, power must be cycled on the machine to get VI to show up



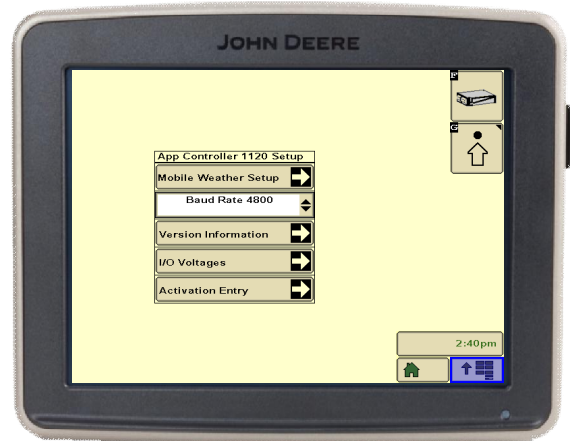
# System Setup

Before Starting Setup Make Sure the Following is Performed:

- ☐ Weather sensor mounted in the proper location (hand rail of the sprayer) and harnessing is connected to the Application Controller.
- ☐ Application Controller hardware installation is complete.
- ☐ Application Controller is activated.
- ☐ GreenStar Display software is up to date.

## Baud Rate Setup

- ☐ Select Application Controller 1120 softkey, then press Setup.
- ☐ Make sure the Baud Rate drop down menu is set to 4800



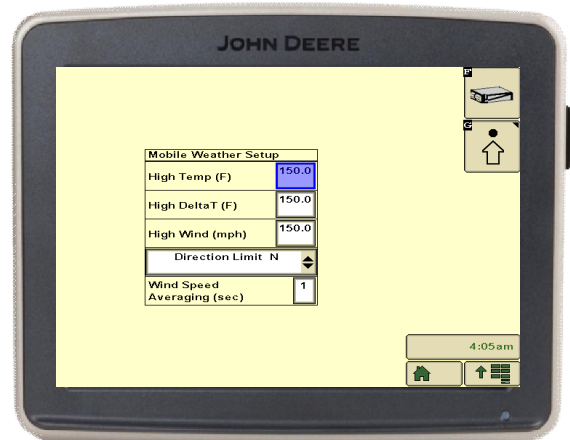
## Weather Alert Limits

Weather alerts are user defined and set for the maximum value only. Alert is received when condition has been reached. Alerts limits can be set for:

- ☐ High Temperature
- ☐ High Delta T
- ☐ High Wind
- ☐ Direction Limit

## Weather Alerts Setup:

- ☐ Select Application Controller 1120, then press Setup.
- ☐ Select Mobile Weather Setup
  - ☐ Enter High Temp, High Delta T, High Wind
- ☐ Select Direction Limit from drop down and enter wind speed averaging (running average based on number of seconds entered). Enter value 1-30 sec.
- ☐ Wind Speed Averaging, will take the average reading for the amount of seconds entered in the box. It will smooth out reading for the sensor.



# Operation

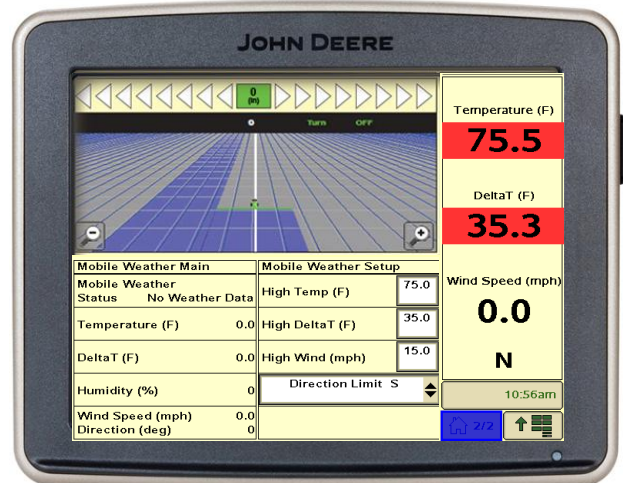
## Viewing Mobile Weather Information on a display:

Weather information can be viewed on the Application Controller page or setup and viewed on a home page section. Mobile Weather will monitor and document temperature, Delta T, humidity, wind speed, and wind direction. When applying, DeltaT should be between 2C (4F) and 8C (14F), and not greater than 10C (18F). A higher Delta T value will result in a faster evaporation rate and shorter droplet lifetime.



## Weather Alerts:

The area around the weather readings will highlight red when the user defined Weather Limits are exceeded. In the example, temperature and Delta T are exceeded but wind speed and direction are not.



## Recording:

Mobile Weather will start recording automatically once coverage documentation begins on the display. The data it records will be saved to the display and can be unloaded into Apex™. Minimum, maximum and average readings for each weather value recorded in the field will be displayed in Apex.





# Mobile Weather Maps in Apex

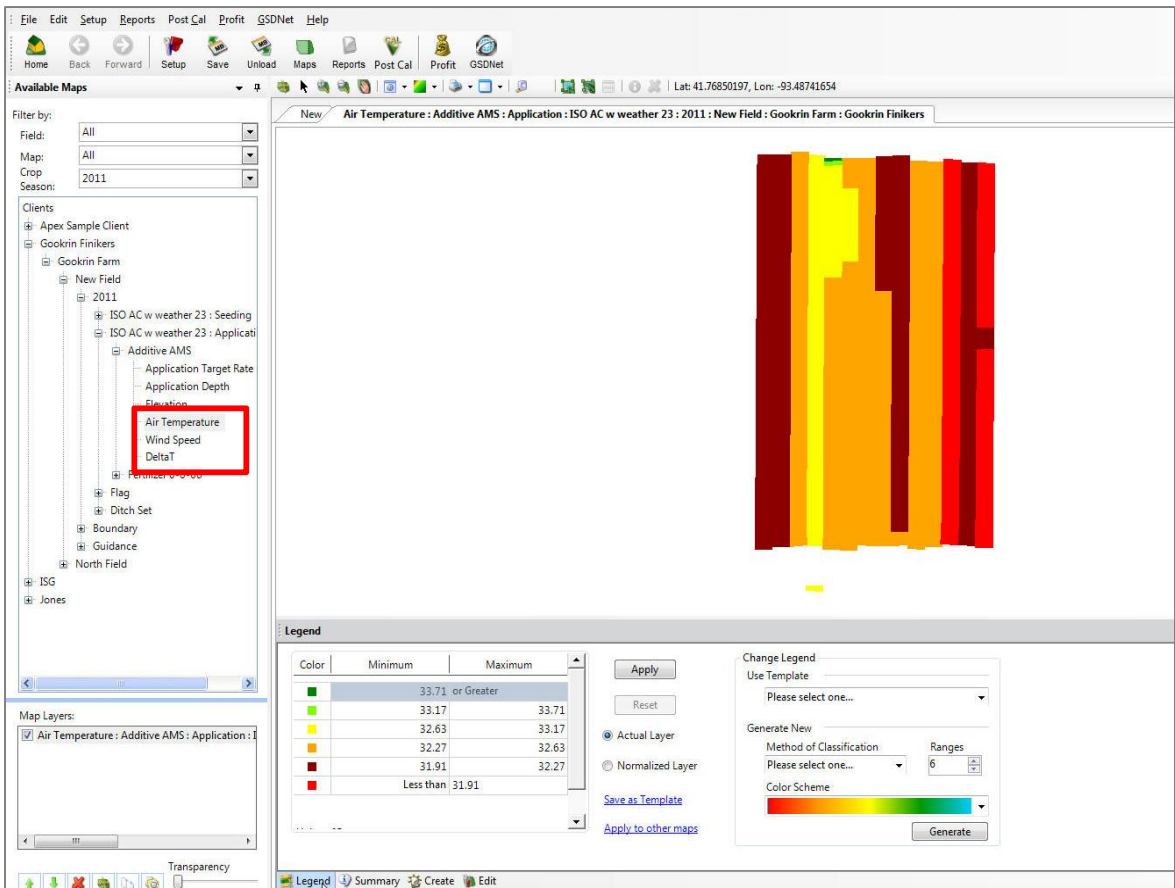
## Viewing Mobile Weather Data in Apex:

With the release of Apex version 3.3 it became possible to read in data from GS3 2630 display that contains John Deere Mobile Weather information. Recorded data can be unloaded in apex and it will read the information and render a map for the following:

- ❑ Air Temperature
- ❑ Delta T
- ❑ Wind Speed

Additionally Apex will display a weather information box on field reports that shows minimum, maximum, and average reads for the collected data.

Here is an example of what Mobile Weather Maps look like in Apex:





# JOHN DEERE MOBILE WEATHER VALUE AND WALK AROUND GUIDE

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