



Rain/Freeze Sensor User Manual

Water on Demand® 2-Wire Irrigation Accessory
Part Number: ACC-RFS-001

Acclima, Inc.
1763 W. Marcon Ln. , Ste. 175
Meridian, ID 83642 USA
www.acclima.com



Acclima, Inc.
2260 East Commercial St
Meridian, Idaho 83642
United States of America

www.acclima.com

Toll free 866-887-1470
Fax 208-887-6368

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Overview

The Acclima 2-wire adapter for Freeze, Rain and Wind sensors contains a precision temperature sensor that continuously monitors air temperature accurate to within 0.5° Celsius. When the temperature falls below 4° Celsius (39.2° Fahrenheit), the “Freeze” LED will illuminate and the CS3500 controller to which it is connected will suspend irrigation until the temperature exceeds 5°C (41° F).

A separate rain sensor or wind sensor can be connected to the adapter that will cause the CS3500 controller to suspend irrigation whenever the settings for the rain sensor or wind sensor have been exceeded by rain or wind conditions. These external devices must be purchased separately and must have normally closed switch contacts.

Installation

What You Will Need for Installation

- Acclima 2-wire adapter box
- Philips screw driver
- 2 masonry anchors with screws
- Drill and bit for installing masonry anchors
- Sufficient 2-wire underground cable (Paige 180010) to reach the nearest valve box
- Sufficient 2-wire underground cable (Paige 180010) to reach the rain/wind sensor if used
- 14 gauge ground wire and grounding rod if a rain or wind sensor is used
- Masonry cable clamps to hold the cables to the wall of the building

Installation Procedure

Install the adapter box on the side of the building in a location that is protected from direct sunlight 24 hours per day. Sunlight will heat the enclosure and cause large errors in temperature readings. Mount the enclosure to the wall using 2 masonry anchors and screws through the “ears” on the enclosure. Note that these “ears” are on diagonal corners of the enclosure.

Remove the clear cover from the enclosure by removing the 4 screws at the corners of the cover.

Remove the black compression nuts from the wire entry ports on the bottom of the enclosure.

Prepare the cable from the enclosure to the nearest valve box as follows: Use a 2 conductor 18 gauge cable with a black PE sheath such as Paige #180010. This cable will need to be long enough to reach from the enclosure down the wall and into the ground and to the

nearest 2-wire connection point such as inside a nearby valve box. Strip the outer sheath from your 2-wire cable so that the inner wires are exposed about 1 inch. Strip the insulation from the inner wires back about ¼ inch.

Slip the compression nut over the cable then insert the cable through the left cable port. Insert the red wire into the terminal marked “red” and the white wire into the terminal marked “white”. Tighten the terminal screws. Tighten the compression nut to seal around the cable entry. If you are not using a rain or wind sensor there are no other connections needed and you can replace the cover.



Run the other end of the cable to the nearest 2-wire connection point (likely a valve box). After running the cable up underneath the

lower rim of the valve box connect the 2 wires to the 2-wire network in the valve box – red to red and white to white. Use wire nuts and grease caps to secure the connections.

If a rain or wind sensor is used, run a 2nd 2-wire cable into the right cable entry port. Remove the jumper wire from the terminal block and attach the two wires to the outer terminals on the 3-terminal block. The other end of the cable is attached to the two wires on the rain or wind sensor. The wiring polarity is not important.

Rain and wind sensors mounted on rain gutters can attract lightning. If this is a concern in your area, place a grounding rod in the soil underneath the installed enclosure. Run a 14 gauge solid copper wire from the center terminal of the right hand terminal block down the wall to the grounding rod. There is a built-in lightning arrestor in the adapter box that will divert mild charges to ground.

If a rain or wind switch is not used, keep the jumper wire attached to the terminal block.

Configuration

Download the latest version of Irrigation Manager Software for your laptop from www.acclima.com. This contains installation support for the 2-wire adapter box and also has an attached firmware upgrade needed by the CS3500 base unit to support the adapter box. This will be loaded automatically (upon responding to a queue) the first time you access the CS3500 using the new Irrigation Manager Software.

Note that the CS3500 has two firmware packages – one in the base unit and one in the front panel. If your CS3500 was manufactured prior to Oct. 15, 2009 you will need to upgrade the firmware in its panel. CS3500's shipped from the factory after October 15, 2009 will not need any firmware upgrades. Please see the included instructions on how to upgrade firmware in the CS3500 panel.

After the enclosure has been mounted and wired, the adapter can be configured on the CS3500. The easiest way to do this is using a laptop with the latest version of Irrigation Manager Installed.

Connect the laptop to the CS3500 using an RS232 cable or call in from a remote desktop using the telephone connection in Irrigation Manager.

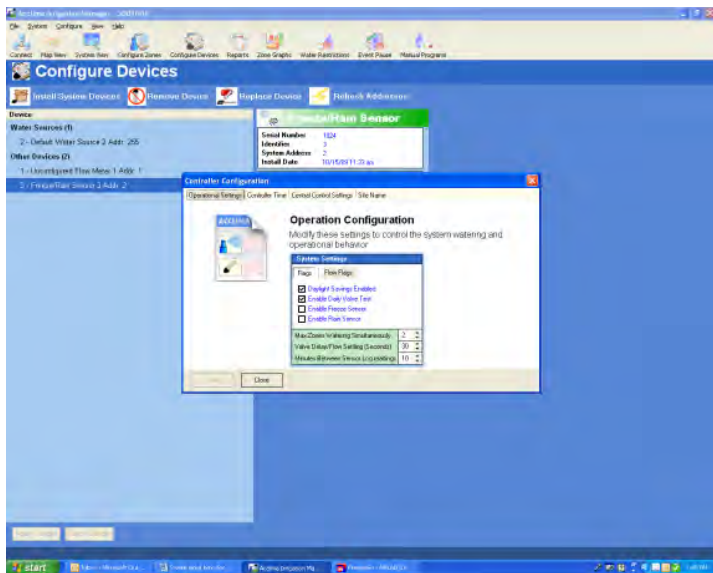
Once Irrigation Manager has synchronized with the CS3500, open the “Configure Devices” page. Click the “Install System Devices” button and enter the serial number of the adapter box. This serial number is at the top of the rain/freeze sensor on the PC board and can be seen through the clear cover. After Irrigation Manager has detected the adapter box, it will appear under “Other Devices” in the device list.

Now that the adapter is installed, the functions in the adapter need to be enabled.

- Click the “Configure” menu option near the upper left corner of the Irrigation Manager Screen.
- In the pull down menu, click “Controller Configuration”. A new dialog box will appear titled “Controller Configuration”.

- Click on the “Operational Settings” tab at the top of the dialog box.
- In the middle of this screen, click on the shaded area called “Flags”.
- Click on “Enable Freeze Sensor”. This will place a check mark in the box to the left indicating that it is enabled.
- If you have also attached a rain or wind sensor check “Enable Rain Sensor”. If you did not attach a rain sensor leave this box unchecked.

You are now finished with the installation and configuration.





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