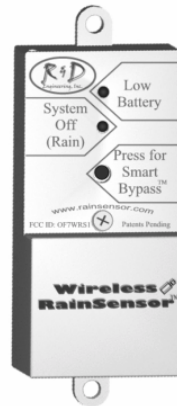


The Wireless RainSensorTM For Irrigation Systems



Transmitter



Receiver

Models:
WRS1
WRS1-F

INTRODUCTION:

Congratulations on your purchase of the Wireless Rain Sensor. No special tools are required to install the Wireless Rain Sensor, so you'll be up and running in minutes. Please read through these instructions in their entirety before attempting to install the Wireless RainSensor. If you are unsure about the proper wiring, please have a qualified contractor perform the installation for you. Installation should also be performed with adherence to local codes. Additional information is available at www.rainsensor.com.

Before attempting to install the Wireless RainSensor, please read and follow the installation instructions for your Timer/Controller in regards to connecting a Rain Sensor.

PLEASE NOTE:

The Receiver should **NOT** be directly connected to 120/240VAC.
The Receiver **SHOULD** be mounted indoors or in a protective enclosure.
The Transmitter should **NOT** be submerged in water.

Usted habla español?

Este manual de instrucción está también disponible en español. Por favor contacte su distribuidor, or llame al 1-888-301-3818.

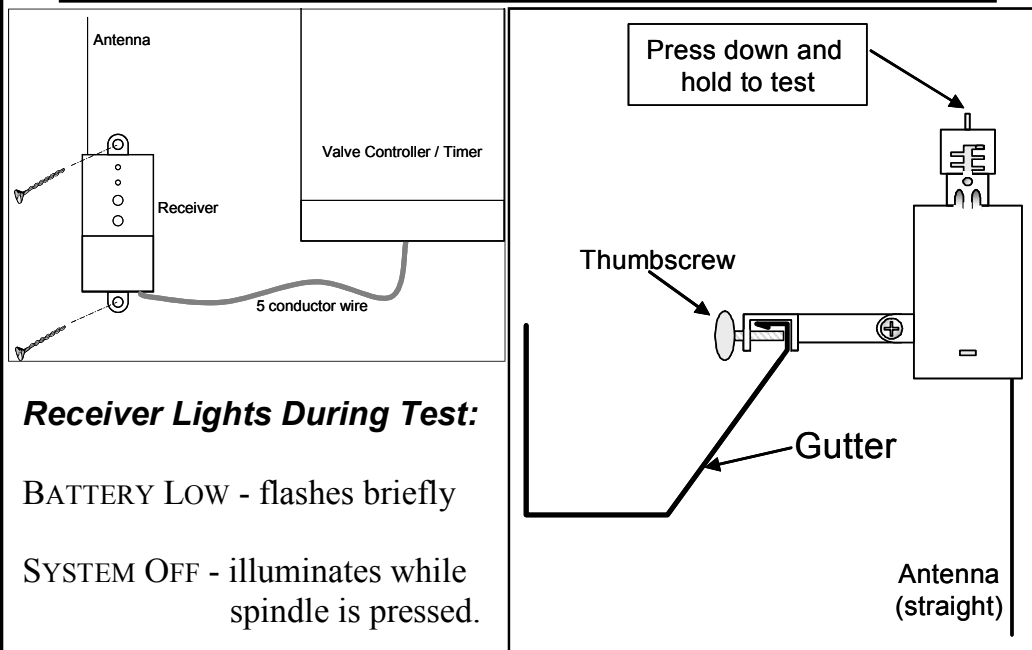
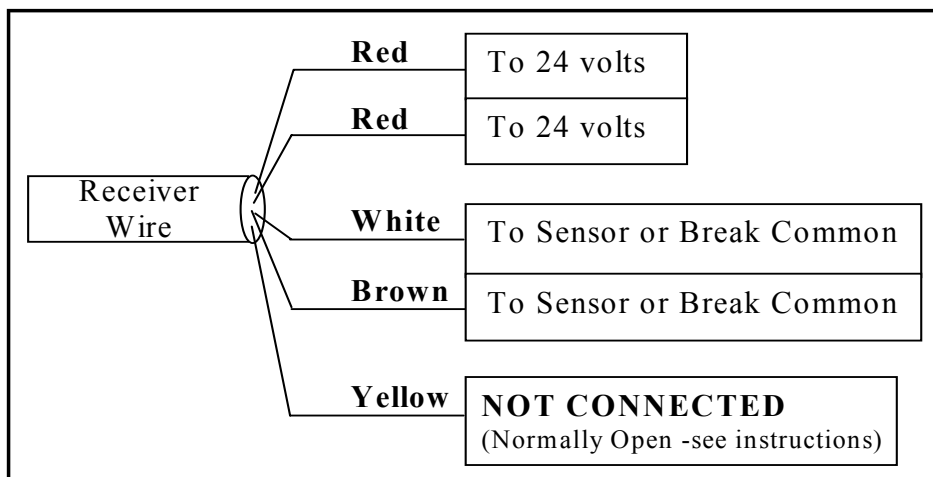
R&D Engineering, Inc., Manasquan, NJ

QUICK START INSTRUCTIONS:

For the *experienced installer*, the following instructions can be used.

1. Disconnect power to the timer/controller.
2. Mount Receiver adjacent to controller with the provided screws or double sided foam tape.
3. Attach Receiver White & Brown wires to the sensor inputs *OR*
 - a. Disconnect common valve wire and common pump/master valve wire, if present.
 - b. Attach White wire to common wire(s).
 - c. Attach Brown wire to common terminal on controller.
4. Connect the Red Receiver Power wires to the controller's low voltage power source (24V)
5. Test wiring by pressing & holding the Transmitter spindle.
6. Adjust Transmitter cap to desired activation rainfall amount.
7. Mount Transmitter in an unobstructed location away from sprinklers.
8. Re-confirm operation of Transmitter at mounting location.

Verify that the Antennas are fully extended and straight as shown.



Receiver Lights During Test:

BATTERY LOW - flashes briefly

SYSTEM OFF - illuminates while spindle is pressed.

** DETAILED INSTALLATION INSTRUCTIONS **

There are two main components, the Transmitter and the Receiver. The Transmitter is installed outdoors where it is exposed to all rainfall. The Receiver is installed in a weatherproof location adjacent to the sprinkler valve controller.

WIRING THE RECEIVER: (TWO STEPS INVOLVED)

There are two steps involved:

Step 1: Attach the control wires (similar to hard-wired sensors)

Step 2: Attach the low voltage power wires

IMPORTANT: Do NOT connect the Receiver directly to 120/240VAC as this **will** result in irreversible damage. If you are in doubt, contact a qualified installer or electrician. !

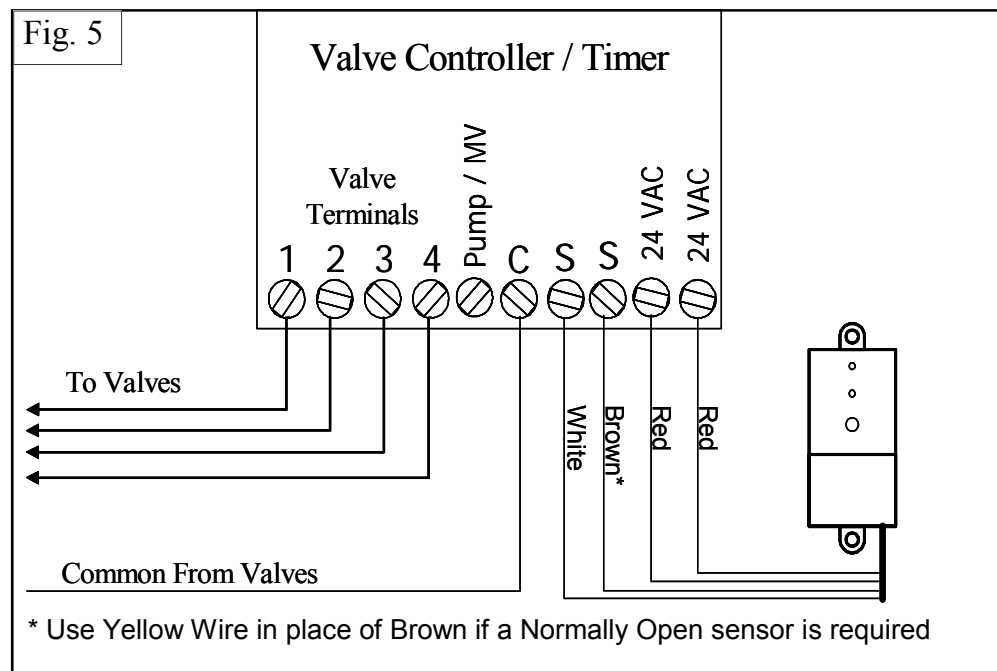
Step 1. Control Wires (Disconnect power to the Controller):

The Receiver control wires (White and Brown) are used to interrupt the common wire of the valves or they can be hooked up directly to the sensor input of the controller itself, if present.

Follow Applicable Part: A OR B OR C

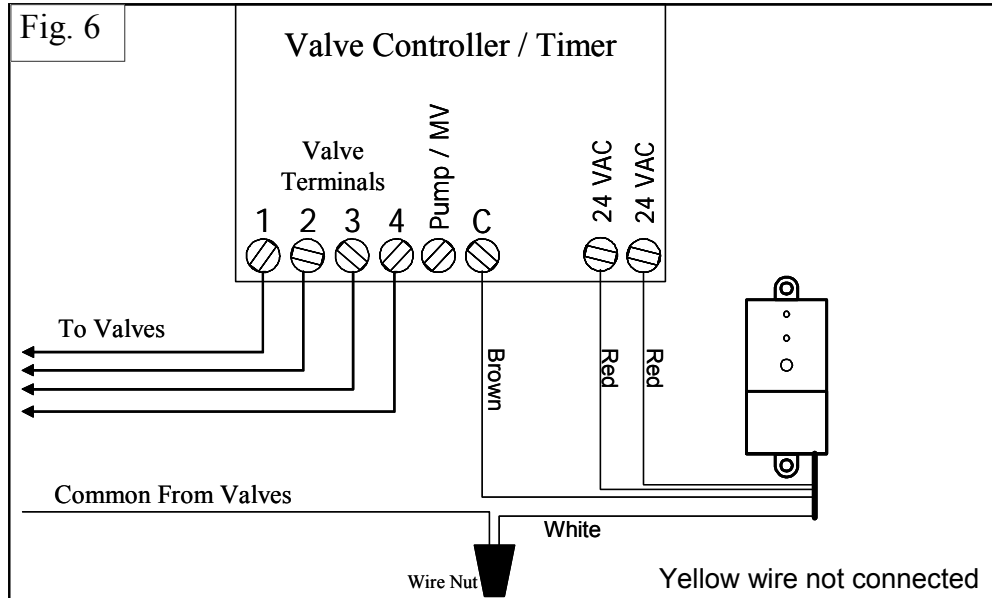
A. Controllers WITH Sensor Inputs: (Fig. 5)

Find the controller terminals marked “Sensor, SEN, or S” and directly connect the White & Brown wires to these two terminals, in any order. There may be a jumper tab or wire that must be removed from between the terminals, or a “sensor connected” switch that must be activated. **Note:** If the controller requires a Normally Open sensor circuit, attach the White and *Yellow* wires to the terminals.



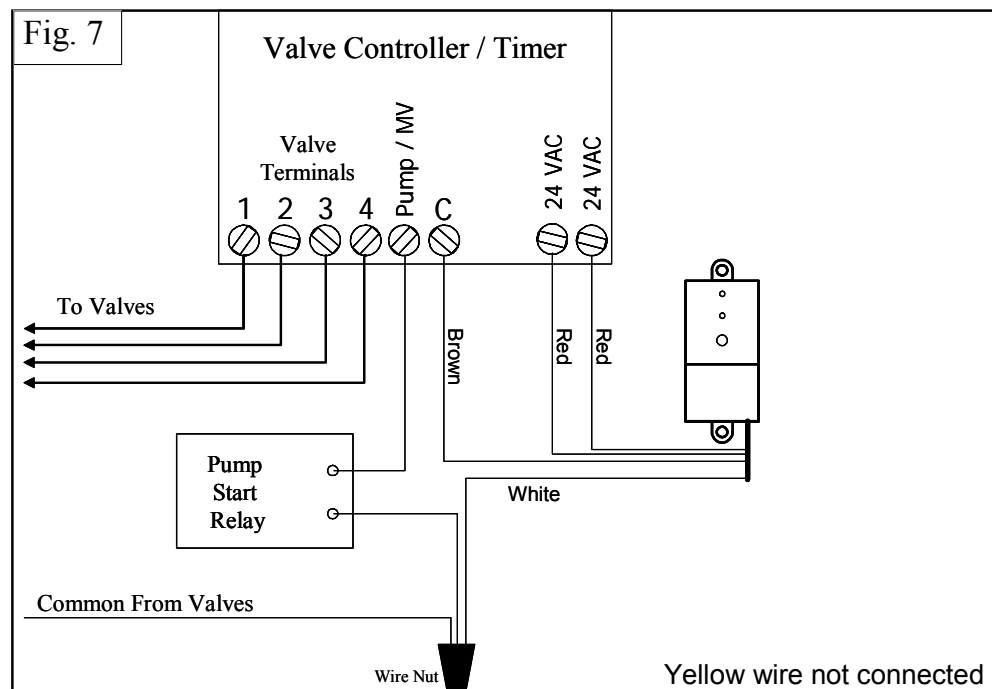
B. Controllers with NO Sensor Inputs, NO Pump Start or Master Valve: (Fig. 6)

Disconnect the common control wire from the common terminal of the controller. Join this wire to the White Receiver control wire using a wire nut. Attach the Brown control wire to the common terminal on the controller.



C. Controllers WITH Pump Start or Master Valve, NO Sensor Inputs: (Fig. 7)

Similar to Step B, disconnect *All* the common control wires from the common terminal(s) of the controller. Join these wires to the White Receiver control wire using a wire nut. Be sure to include the *common* wire from the Pump Start Relay with these. Next attach the Brown Receiver control wire to the common terminal on the controller.



Step 2. Power Wires (low voltage):

The Receiver requires a nominal voltage of 24V to power the unit.

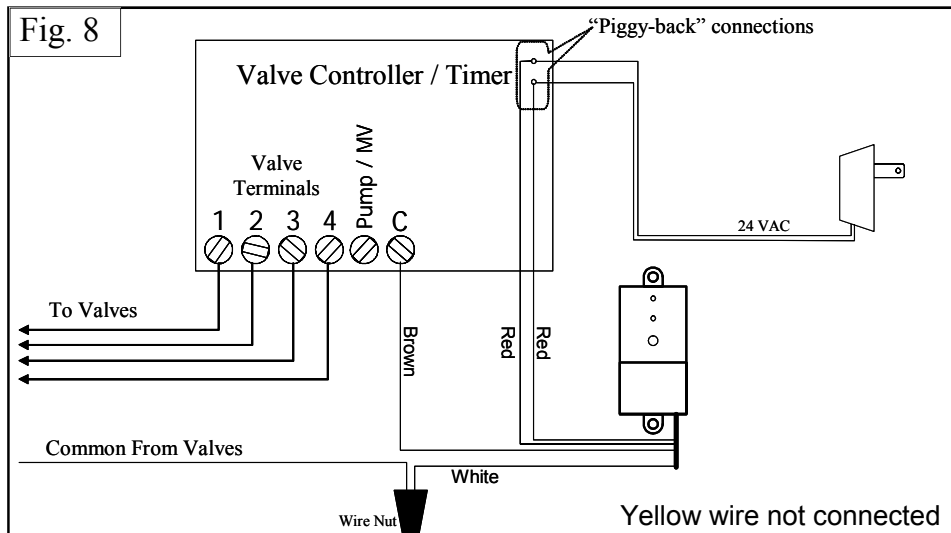
***Disconnect Power to the Controller/timer before proceeding!*

A. Controllers WITH 24V Terminals: (Fig. 5)

24V terminals, typically connected with wires to the controller's transformer, are present on the majority of controllers. Simply attach the two Red Receiver wires to these two terminals. Typical markings are {24:24} , {0:24} , {H.Post:24} , {24 VAC}. Verify correct voltage before connecting.

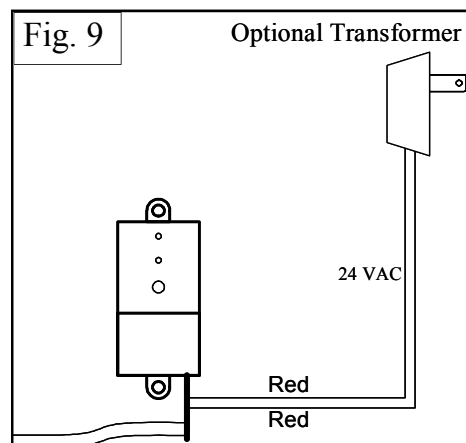
B. Controllers with NO 24V Terminals: (Fig. 8)

On controllers that do not have 24V terminals, “piggy-back” the two Red wires to the controller’s 24VAC supply wires.



C. Using the Optional Transformer: (Fig. 9)

In rare cases where a controller does not use 24V as its power supply, or access to it is not convenient, it is best to use an optional 24V Transformer to power the Receiver unit. Order R&D part # TRN120 from your distributor or R&D directly. (Available at a nominal cost).

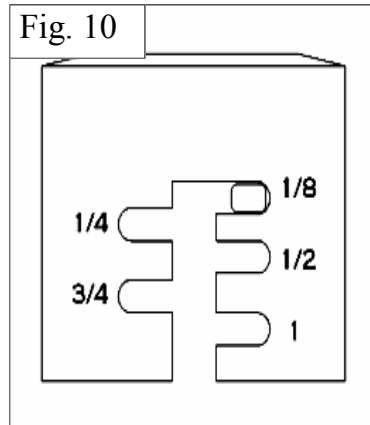


INITIAL RECEIVER TESTING:

Reconnect power to Controller. Lightly press & hold the Spindle at the top of the Transmitter - the “System Off - Rain” light should illuminate on the Receiver for the duration of the actuation. (The Battery Low light will also briefly flicker when a valid transmission has been received.) If the light does not illuminate, please recheck your wiring. **Verify that both Antennas are fully extended and straight.**

RAIN FALL ADJUSTMENT: (Fig. 10)

The Wireless RainSensor can be adjusted to detect rainfall quantities of 1/8", 1/4", 1/2", 3/4" or 1". Rotate the cap on the Transmitter body so the pins are located in the desired rainfall amount slot. Be sure to align the slots and pins properly as this adjustment should not require excessive force.



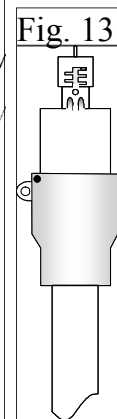
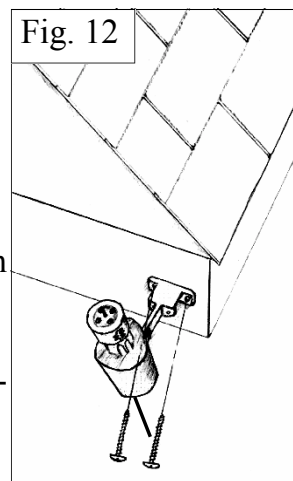
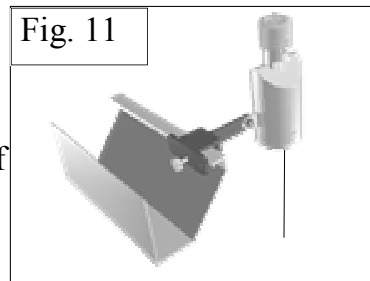
MOUNTING THE TRANSMITTER/ SENSOR: (Figs 11, 12, & 13)

Mount the Transmitter as close to the Receiver as possible to avoid interference of the wireless signal. The Transmitter should be mounted where it will be exposed to unobstructed rainfall, but not in the path of sprinkler spray. Gutter mounting is simple with the “Quick Clip”™ gutter bracket (see Fig. 11). The Transmitter can also be mounted on any suitable surface using the enclosed screws (see Fig. 12). The Transmitter may also be mounted to a PVC pipe using a 1-1/4” coupling or optional adapter (Fig. 13). **NOTE:** The unit should be mounted in a vertical orientation with the Antenna wire protruding straight down from the housing. Avoid installations where the antenna wire comes in contact with any metal objects.

Prior to final placement, the Transmitter should be tested again by lightly pressing & holding the spindle as described in “Initial Receiver Testing”.

Note: If the location of the Transmitter is not providing a valid signal to the Receiver, verify the Transmitter operation at close range and choose another mounting location.

Also, make sure the Antennas are fully extended and straight.



TIP! If the Receiver is not visible to the installer, turn on a watering zone which is visible from the installation location and the activation of the Transmitter will shut off the “test” zone.

OPERATION:

Normal Operation:

When the Wireless RainSensor activates due to sufficient rainfall, the “System Off - Rain” light will remain illuminated on the Receiver. After the RainSensor “dries out”, the controller will resume its normal watering schedule.

Smart Bypass™:

Your Wireless RainSensor can be temporarily deactivated by using the built in *Smart Bypass* button. Simply tap this switch once and the “System Off - Rain” light will go out until the next time the Wireless RainSensor resets (dries out) - *all automatically*.

Battery Low Indicator:

When the “Battery Low” indicator light illuminates constantly, it serves as a warning that the Transmitter’s battery is getting low and it should be replaced when convenient. The Wireless RainSensor will function properly for some time after this indicator is present. **Note:** A brief “Battery Low” light illumination is used to indicate a valid transmission from the Transmitter. This is a diagnostic tool and does not indicate that the battery is low.

Transmitter Battery Replacement: Slide the bottom from the transmitter housing by first depressing the two opposing clips, and gently pull the circuit board out of the unit. Replace using two 3V CR2032 cells or equivalent, paying close attention to polarity (+/-).

CODE CHANGING:

The transmission code for the unit is identified by stickers on the Transmitter & Receiver. Although, in most cases, even if two identical units are installed, unwanted activations would only occur if the two sensors are set for different rainfall amounts. However, the code may be manually changed as follows:

1. Remove the Transmitter’s Bottom cover by pressing the tabs in and slide the circuit board out.
2. Identify the code wire loops (black and white small loops) & cut one or both wires with end cutting pliers.
3. Disconnect the power from the Receiver and remove the cover.
4. Cut the SAME colored wire(s) as was done for the Transmitter.
5. Re-assemble and test the operation.

TROUBLESHOOTING:

Please visit our website at www.rainsensor.com for troubleshooting and installation help. You may also call our technical support line at 888-301-3818.

SPECIFICATIONS:

Mounting: "Quick-Clip"[™] Gutter Bracket, Screws or Pole mount.

RainSensor Transmitting Range: up to 300 feet LOS

Sensor: Industry Standard Hygroscopic discs with adjustable rain sensitivity

Optional Freeze Sensor available (Model WRS1-F)

Transmitter Average Battery Life: 5 years

Battery Type: (2) CR2032 - 3V cells

Operating Temperature: -20°F to 120°F

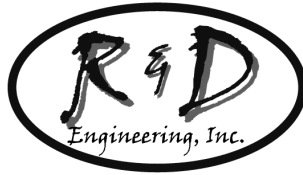
Receiver Power: 22-28 VAC/VDC, 100mA (from existing timer or optional transformer)

Relay Contacts Output: Normally Open & Normally Closed 3A@24VAC

Receiver Controls: Status indicator, built-in *Smart*[™] Bypass Switch[™],
Repairman Assist[™] compatible, low transmitter battery indicator

Warranty: 3 Years Limited (contact R&D for details)

Patents Pending



Over 15 Years of Irrigation Experience

R&D Engineering, Inc.

P.O. Box 414

Manasquan, NJ 08736-0414

Phone (888) 301-3818

Int'l (732) 528-7008

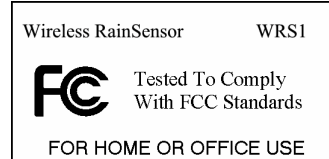
Fax (732) 528-3607

Email: info@rainsensor.com

Visit us on the Internet at:

www.rainsensor.com

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.



Certified Canada
3949104244A