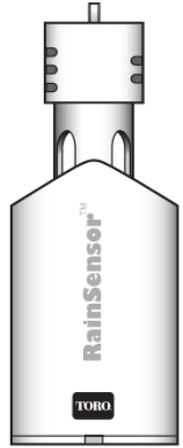


## Introduction

The Toro RainSensor connects to your irrigation system controller/timer to suspend automatic watering operation in the event of rain. Designed for ease of installation, your sensor-controlled irrigation system will be up and running in minutes. Before attempting to install the RainSensor, please read through these instructions in their entirety. Since the RainSensor is designed to work with most makes and models of controllers, you should also refer to the instructions provided with your irrigation system controller for specific information regarding the connection and use of a rain sensor or rain switch.

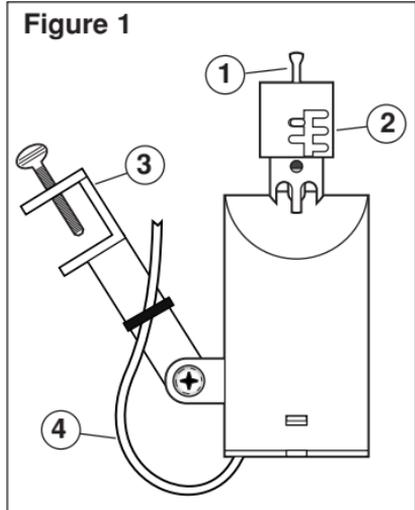


**⚠ Important: Please note the following information regarding installation and use of the RainSensor.**

- The RainSensor is designed to operate with 24 V ac power only. Connecting the RainSensor control wiring to 120/240 V ac power may result in severe equipment damage.
- Installation methods must comply with all applicable national and local building codes. If you are unsure about proper wiring practices, have a qualified contractor perform the installation for you.
- The RainSensor unit should never be submerged in water or installed inside a rain gutter.

## RainSensor Components (Figure 1)

- 1 - Test Spindle - Press down to manually test RainSensor operation.
- 2 - Rainfall Adjustment Cap - Enables the RainSensor to be adjusted for detection of rainfall from 1/8" to 1".
- 3 - Universal Mounting Bracket with Quick-Clip™ - Simplifies installation on rain gutter, side of roof, etc. Enables the RainSensor to be mounted on an angled surface then easily adjusted to the vertical position.
- 4 - 25' of outdoor-rated RainSensor control wire provided.



## Installation Instructions

### Rainfall Adjustment

Prior to installing the RainSensor, check the current setting on the Rainfall Adjustment Cap. The RainSensor can be adjusted to detect average rainfall amounts of 1/8", 1/4", 1/2", 3/4" or 1" before suspending watering.

To adjust, turn the cap from the current setting and engage the stationary pins with the desired slot position in the cap. Be sure to align the slot and pin properly as this adjustment does not require excessive force. See **Figure 2**.

**Note:** Avoid using the 1/8" setting in high-humidity conditions.

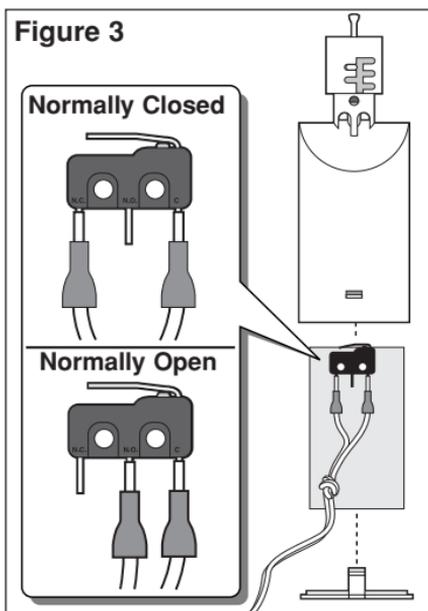
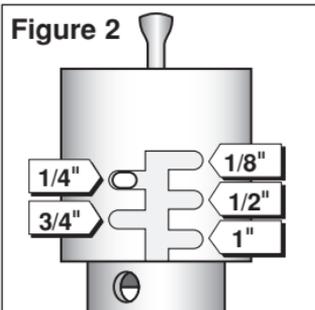
### Changing the RainSensor Configuration

The RainSensor is designed to work with Normally Closed or Normally Open sensor circuits. If connecting the RainSensor to the controller's sensor terminals, first verify which type of sensor circuit is required by referring to the controller user guide. The RainSensor is set for Normally Closed sensor operation. If Normally Open operation is required; i.e., for the Toro ECx™ and GreenKeeper® controllers, configure the RainSensor as follows:

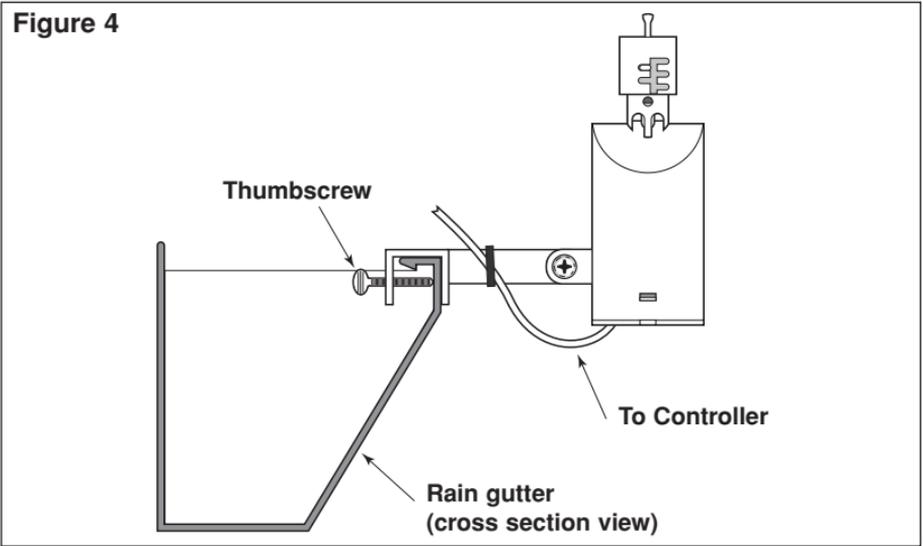
1. Refer to **Figure 3**. Remove the bottom cover by gently pressing in the lower opposing tabs using a small flat-blade screwdriver. Carefully slide the switch board assembly out.
2. Carefully pull the wire connector from the left tab of the switch and attach it to the center tab. Leave the right wire connected.
3. Reassemble the RainSensor making sure the switch board is properly inserted and the strain-relief knot in the RainSensor control wire is inside of the housing.

### Mounting the RainSensor

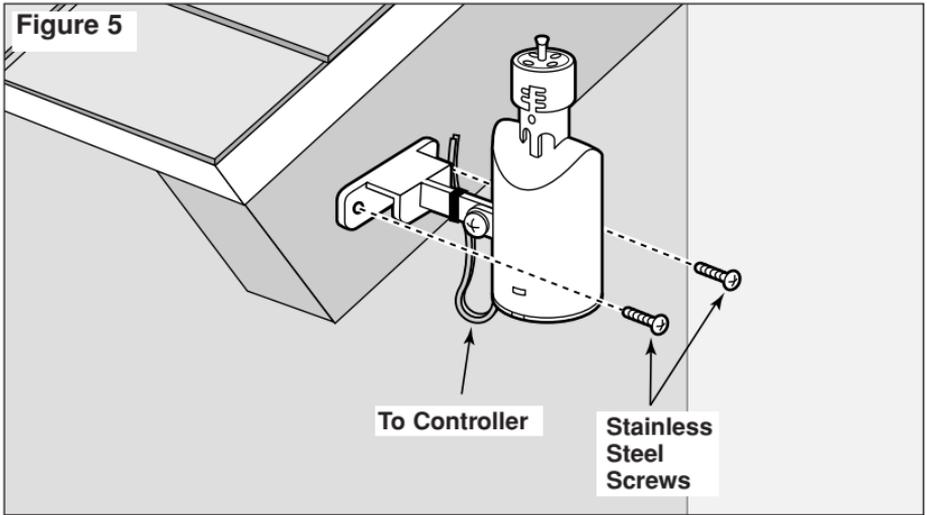
Select a mounting site for the RainSensor as close to the controller as possible. If the 25' RainSensor control wire will not reach the controller, it can be extended up to 100' using 18 AWG outdoor-rated wire. The installation site must provide unobstructed rainfall and sunlight conditions similar to those of the landscape being watered. Make sure the RainSensor will not be in contact with spray from the sprinklers or runoff from the roof.



A rain gutter is an ideal location for the RainSensor. Simply position the bracket with the thumbscrew under the gutter lip and tighten to secure (do not over-tighten). See **Figure 4** below.



The RainSensor can also be mounted on any suitable solid structure such as the side of the roof, a shed or fence using the two supplied stainless steel screws. See **Figure 5** below.



Once securely fastened, adjust the RainSensor on the mounting bracket as needed to align the RainSensor housing vertically.

### **Routing the RainSensor Control Wire**

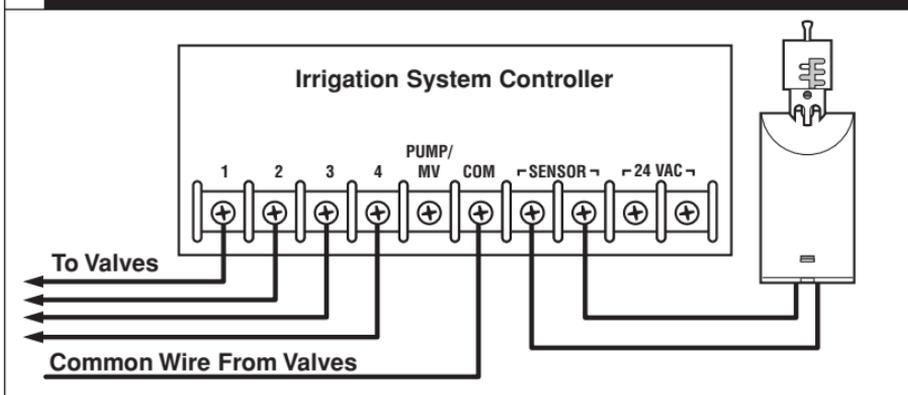
Route the RainSensor control wire back to the controller. Avoid running the wire over sharp edges where cutting or abrasion of the wire insulation may occur. For best results, hide the wire where possible by tucking it under shingles and/or moldings. Seal any holes made by passing the wire through structure walls.

## Connecting the RainSensor Control Wire

**⚠ Caution:** Do not attach the RainSensor control wire directly to 120/240 V ac power as this may result in irreversible damage. If you are in doubt, contact a qualified installer or electrician.

1. Disconnect power to the controller.
2. Follow the applicable instructions provided in steps **A** or **B** or **C**.

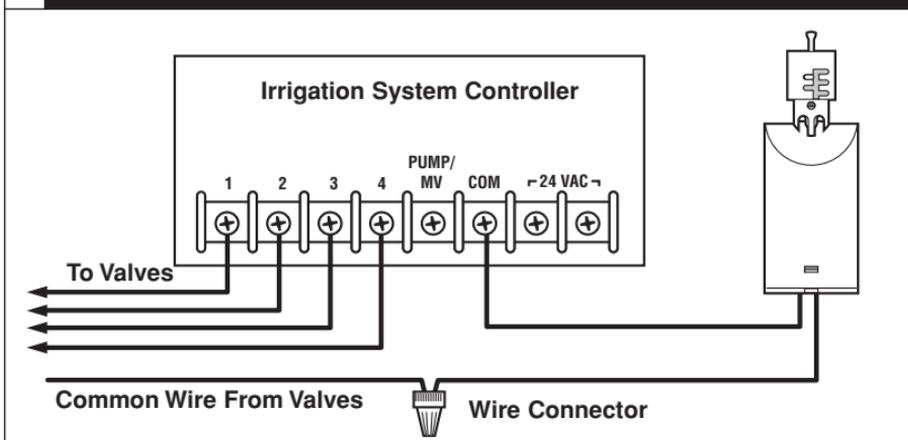
### **A** Controllers with sensor terminals, with or without pump start/master valve:



Find the controller sensor terminals (generally marked “SENSOR”, “SEN” or “S”) and attach the RainSensor control wires directly to these terminals in any order.

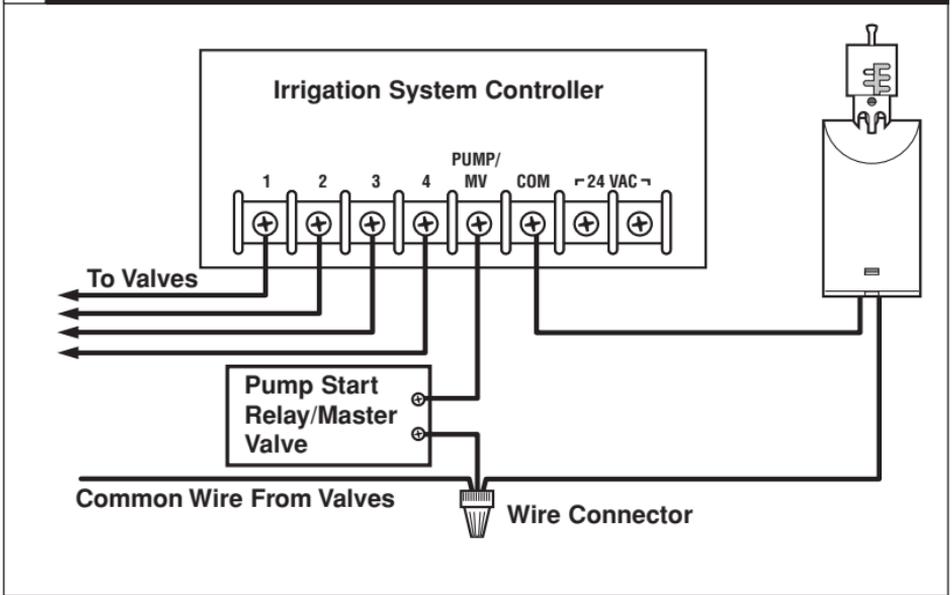
**Note:** There may be a jumper tab or wire between the sensor terminals that must be removed and/or a sensor control or bypass switch that must be activated.

### **B** Controllers with no sensor terminals and no pump start/master valve:



Remove the valve common wire(s) from the valve common terminal and join to either RainSensor control wire using the supplied wire connector. Attach the remaining RainSensor control wire to the valve common terminal.

## C Controllers with pump start/master valve and no sensor terminal:



Disconnect all common wires from the common terminal(s) and join them to either RainSensor control wire using the supplied wire connector. Be sure to include the common wire from the pump start relay or master valve in this connection. Connect the remaining RainSensor control wire to the valve common terminal.

### Operation

#### Testing the Installation

To test the RainSensor operation, turn on a watering zone which is visible from the RainSensor location.

**Note:** The manual activation cycle of some controllers bypasses the sensor inputs. If the RainSensor is connected to the sensor terminals, you will need to run an automatic/timed watering program for these types of controllers.

With the sprinklers on, manually activate the RainSensor by pressing and holding the Test Spindle at the top of the unit. The sprinklers should shut off within a short time. If they do not shut off, recheck the wiring connections at the controller. If the controller has a sensor control or bypass switch, make sure the switch is set to the position that will enable the sensor circuit to be active.

#### Normal Operation

When the RainSensor activates due to sufficient rainfall, the sprinkler system will become inactive until the moisture-absorbent discs inside the RainSensor have dried out. The rate at which the discs dry out will vary dependent on temperature, sun exposure, humidity and wind—the same conditions your soil experiences. This allows the RainSensor to reset when watering is needed again, enabling the sprinkler system to resume normal operation.

## Bypassing the RainSensor

The RainSensor can be temporarily bypassed or deactivated using any one of the following methods:

- Use the controller's sensor bypass switch (if equipped).
- Install an optional bypass switch.
- Temporarily disconnect the RainSensor from the controller's wiring.

**Note:** Always disconnect power to the controller before performing any wiring tasks.

## Specifications

**Mounting:** Quick-Clip™ rain gutter bracket or screws (2 provided)

**Control Wire:** 25' outdoor-rated, 2-wire cable, UL approved

**Sensor Type:** Industry-standard hygroscopic disc stack with adjustable rainfall sensitivity

**Rating:** 3 amp, 24 V ac, NO/NC

**Operating Temperature Range:** -20°F to 140°F

**Hardware:** Stainless steel

**Housing:** UV-resistant engineered polymer

### The Toro Promise — Limited One-Year Warranty

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The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrants, to the owner against defects in material and workmanship for a period of one year from the date of purchase.

Neither The Toro Company nor Toro Warranty Company is liable for failure of products not manufactured by them even though such products may be sold or used in conjunction with Toro products.

During such warranty period, we will repair or replace, at our option, any part found to be defective.

Return the defective part to the place of purchase.

Our liability is limited solely to the replacement or repair of defective parts. There are no other express warranties.

This warranty does not apply where equipment is used, or installation is performed, in any manner contrary to Toro's specifications and instructions, nor where equipment is altered or modified.

NEITHER THE TORO COMPANY NOR TORO WARRANTY COMPANY IS LIABLE FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF EQUIPMENT, INCLUDING BUT NOT LIMITED TO: VEGETATION LOSS, THE COST OF SUBSTITUTE EQUIPMENT OR SERVICES REQUIRED DURING PERIODS OF MALFUNCTION OR RESULTING NON-USE, PROPERTY DAMAGE OR PERSONAL INJURY RESULTING FROM INSTALLER'S NEGLIGENCE.

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