# Simple To Program (STPi) Controller

## Installation, Programming & Operation Guide

***Hole provided to hang manual next to controller.***

# Welcome! Simple To Program (STPi) Controller

Thank you for Purchasing the Rain Bird Simple To Program Controller! In the following pages, you will find step by step instructions on how to use every function included in your STPi Controller. Thanks again and we hope you enjoy your new Controller.

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## Controller Functions

**The diagram below shows the controls and displays for your new Controller. Use this to become familiar with the Controller functions.**

**OFF**
Turns off ***ALL*** watering

**AUTO**
Set dial here to run your programmed settings

**SET CLOCK**
Set current time of day

**SET DATE**
Set current date

**DISPLAY SCREEN**

**WATERING DAYS**
Select which day(s) the displayed zone is watered

**RAIN DELAY**
Delays watering up to 72 hours

**ZONE OFF**
Shuts off the displayed watering zone

**ADJUST WATER**
Adjusts watering amount (%) as seasons change

**WATERING TIMES**
Select how many times per day the displayed zone is watered

**ZONES 1-9**
Program watering for each zone (4 Zone model shown)

**UP/DOWN ARROWS**
Use UP/DOWN arrows on left or right to set time, date, run time, start time, etc.

**WATER NOW**
Manually waters any zone

***NOTE: Always begin by turning the dial to the position you want to make a change to and then make your changes using the options and information displayed to the right of the dial. For example, if you want to set a schedule for Zone 1 in your yard, first turn the dial to "1" and then make your changes using the buttons to the right and below the display screen.***

# Set Clock

**To input the current time into the Controller, follow these steps below:**

***NOTE: Verify that the AM/PM setting is correct when setting time***

**Step 1**
Turn dial to SET CLOCK

**Step 2**
Use left UP/ DOWN arrow keys to adjust current time

***NOTE: Reset dial to AUTO position after making any adjustments to the programming.***

## Set Date

**To input the current date into the Controller, follow these steps below:**

**Step 1**
Turn dial to SET DATE

**Step 2**
Use left UP/ DOWN arrow keys to select current year

**Step 3**
Use right UP/ DOWN arrow keys to select current month and day

***NOTE: Reset dial to AUTO position after making any adjustments to the programming.***

# Schedule Watering

**To set up a watering schedule for each zone in your yard, follow these steps below:**

**Step 1**
Turn dial to the zone you wish to program

**Step 2**
Use left UP/DOWN arrow keys to select 1st start time to water

**Step 3**
Use right UP/ DOWN arrow keys to select the run time for each zone

**Step 4**
Select number of times per day to water. Default is once per day (see table below)

**Step 5**
Select the DAY(s) of the week or ODD/EVEN days you wish to water

**Step 6**
Turn dial to each active zone and repeat steps 2-5

| Watering Times Per Day Options | Hours From First Start Time |
|---|---|
| 2 times per day | 6 hours |
| 3 times per day | 4 and 8 hours |
| 4 times per day | 3, 6 and 9 hours |

**Example:** If the first start time for Zone 1 is programmed for 8:00 AM and the user has selected THREE TIMES, then the second start time will be at 12:00 PM and the third start time will be at 4:00 PM.

***For start time details see page 16.***

***NOTE: The Controller is designed to prevent any two zones from irrigating at the same time. This feature is called "Program Stacking"***

**TIP:** The best way to condense the irrigation schedule is to set each zone's start time the same. For example: If both Zone 1 and Zone 2 are scheduled to irrigate on the same day and both start times are set for 8:00 AM (with a 10 minute run time), then Zone 1 would begin irrigating at 8:00 AM and Zone 2 would begin irrigating at 8:10 AM (after Zone 1 has stopped).

## Water Now

**This option allows you to water any single zone on demand instead of waiting for the programmed schedule.**

***NOTE: Any watering you do with this function will not affect your normal schedule.***

**Current Watering Zone**

**Step 1**
Turn the dial to the zone you wish to water

**Step 2**
Press WATER NOW. The zone will start watering for a default 10 minutes

**Step 3**
Use the UP/ DOWN arrows to adjust the number of minutes

**Step 4**
To stop watering before the time is up, return dial to AUTO position

## Rain Delay

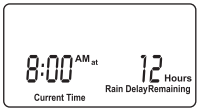
**Use this function to suspend watering for up to 3 days (72 hours) due to weather or other reasons.**

***NOTE: Once the Controller has waited the amount of time you select for Rain Delay, it will resume normal scheduled watering. Any scheduled watering that falls into the delay period will not occur.***

**Step 1**
Turn the dial to RAIN DELAY

**Step 2**
Use the right UP/ DOWN arrows to adjust the amount of delay time

**Step 3**
Return dial to AUTO position




Screen displays current time and the number of rain delay hours that are left until regularly scheduled watering resumes.

***NOTE: Reset dial to AUTO position after making any adjustments to the programming.***

## Adjust Water

**Use this simple option to make run time adjustments that account for seasonal variation, without changing all of the initial zone settings.**

***NOTE: Instead of changing the settings for each zone, you can adjust the amount of time you water for each zone with one simple adjustment using the WATER ADJUST function. Your scheduled start times will not change, but the actual zone run time will be adjusted.***

**Step 1**
Turn the dial to ADJUST WATER

**Step 2**
Use the left UP/ DOWN arrows to adjust the percentage increase or decrease to the initial zone run time setting

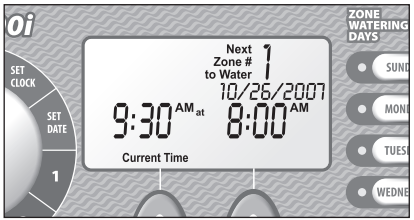
**TIP:**
Automatically adjust watering of each individual zone by using left UP/DOWN arrows to adjust from -90% to+100%. It is important to note that the baseline schedule is set at 0% and not 100%.

**EXAMPLE:**
If Zone 1 is scheduled to water for 10 minutes and you set ADJUST WATER to +50% then Zone 1 run time will be increased to 15 minutes.

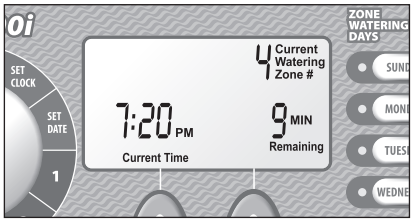
***NOTE: Reset dial to AUTO position after making any adjustments to the programming.***

# Normal Operation

**Below are different screens your Controller might display while in AUTO position mode.**

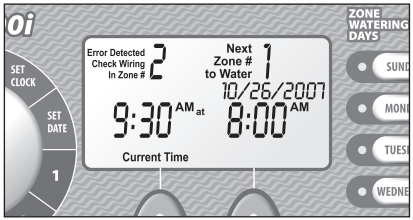



**Normal Operations**
Screen displays current time, the zone that is scheduled to be watered next, and the date and time it will be watered.




**Watering Now**
Screen displays current time, which zone is currently being watered, and the number of minutes remaining in the cycle for that zone.

**With Rain Delay**
Screen displays current time and the number of rain delay hours that are left until regularly scheduled watering resumes.




**Error Detected**
When an error is detected, screen displays the affected Zone # in upper-left corner.

## Mounting Controller

**Follow these instructions to mount STPi Controller:**

**Step 1**
Drive a screw into the wall, leaving an1/8" gap between screw-head and wall as shown in Figure 1 (you can also use the supplied wall anchors if necessary).

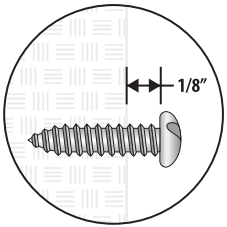



**Figure 1**

**Step 2**
Hang the Controller on the exposed screw.

**Step 3**
Remove access cover at bottom of Controller and drive a screw through the center hole into the wall as shown in Figure 2.

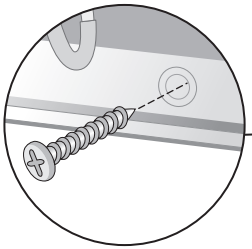
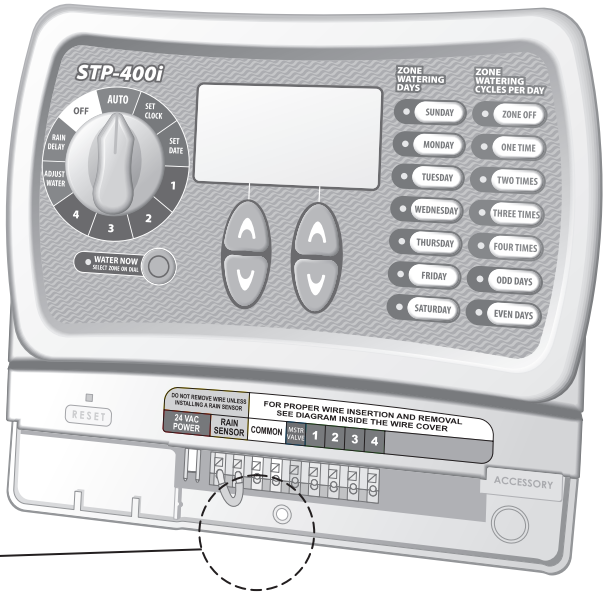


**Figure 2**



## Connecting Power Cord

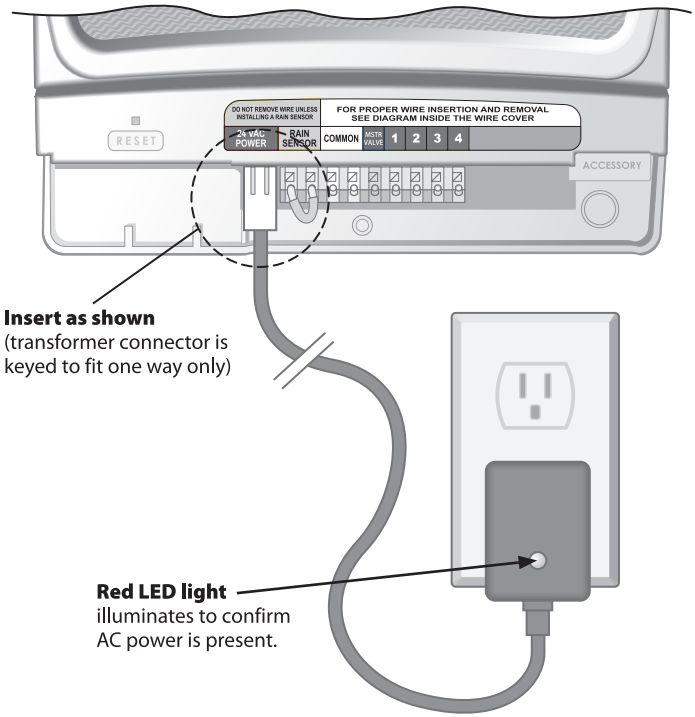
**Follow these instructions to connect the power cord:**

**Step 1**
Attach the transformer connector to the 24VAC POWER pin connection on the Controller.

**Step 2**
Plug transformer into the wall socket.

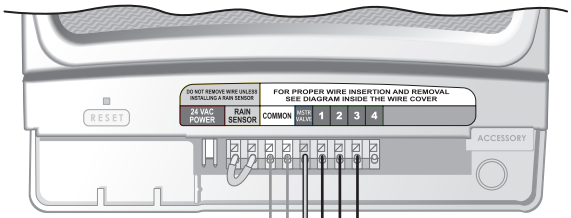
***NOTE: DO NOT plug in the transformer until you have completed and checked all wiring connections. Also, do not attempt to link two or more Controllers together with a single transformer.***

***NOTE: Do not plug Controller into socket that is controlled by a secondary ON/OFF light switch.***



## Master Valve or Pump Start Relay

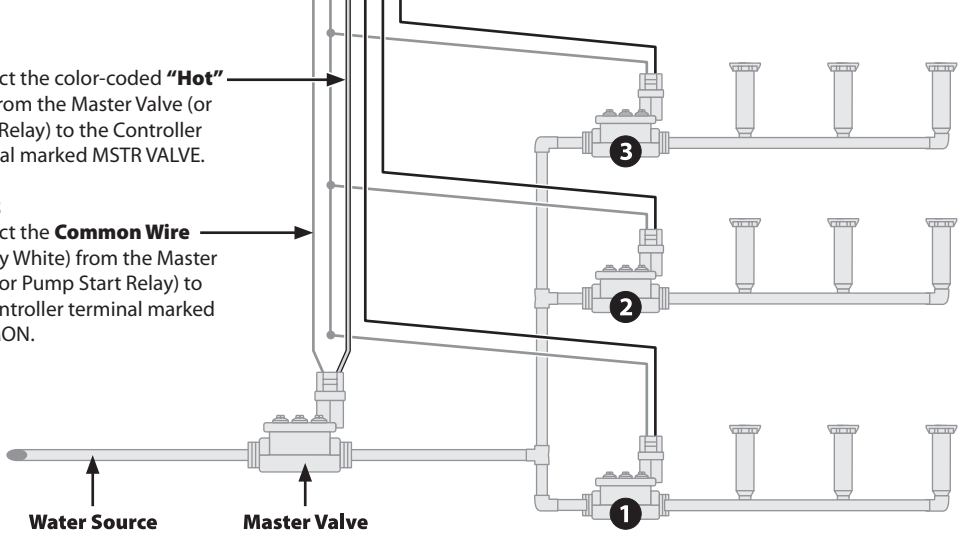
**This example shows what a Master Valve connection would look like. A Pump Start Relay would connect differently at the water source.**




***NOTE: STPi Series Controllers allow a Master Valve or Pump Start Relay to operate whenever a valve is operating (pumps are used in some places to draw water from a well or other source). If you are activating a pump from the Controller, you must also install a Pump Control Relay***

**Step 1**
Connect the color-coded **"Hot" Wire** from the Master Valve (or Pump Relay) to the Controller terminal marked MSTR VALVE.

**Step 2**
Connect the **Common Wire** (usually White) from the Master Valve (or Pump Start Relay) to the Controller terminal marked COMMON.



## Master Valve or Pump Start Relay

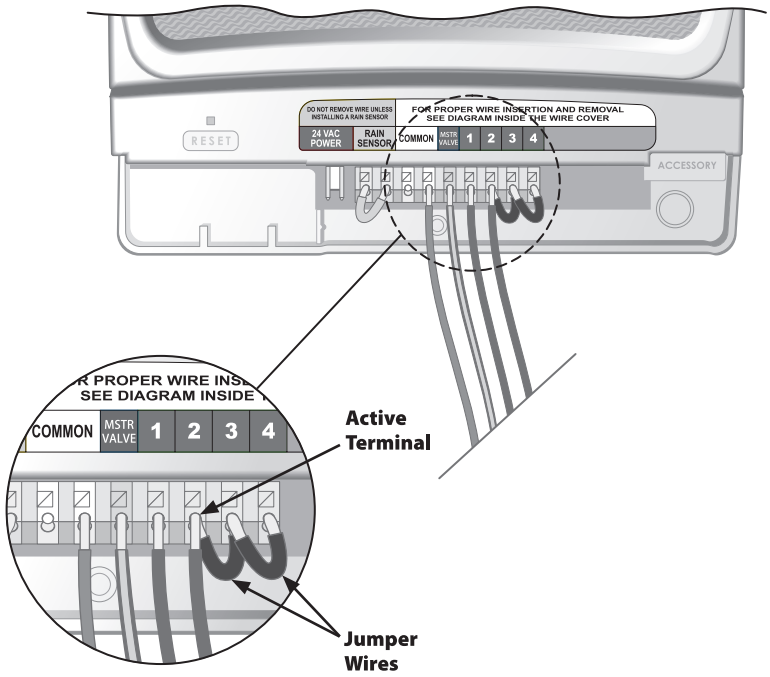
**Note these additional instructions when connecting a Pump Start Relay:**

**Step 3**
To avoid possible pump damage when using a Pump Start Relay, connect a short jumper wire from any unused zone terminal(s) to the nearest zone terminal screw in use.

For example: if you have a 4 Zone Controller with only two zones in use, route the terminals for Zones 3 and 4 to the nearest active terminal (in this example, Zone 2).

***NOTE: Make sure that the total draw of the Master Valve or Pump Start Relay, plus the draw of the valves does not exceed 0.650 Amps at 24VAC, 60 Hz.***

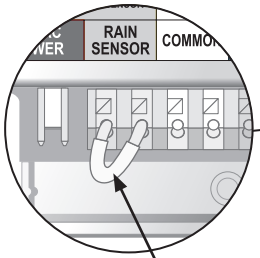
***NOTE: This Controller does not provide main power for a pump.***



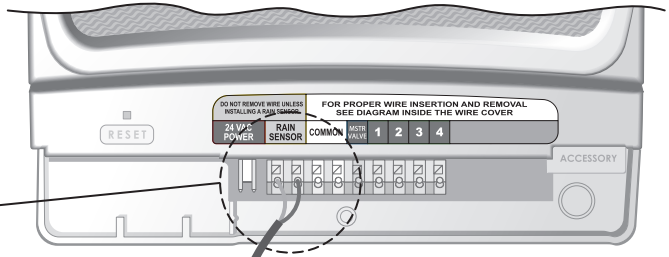
## Connecting Rain Sensor

**Follow these instructions if you wish to connect a Rain Sensor to the STPi Controller.**

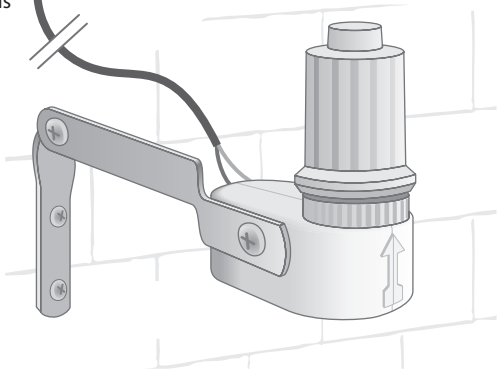
**Step 1**
Remove the jumper wire from the Rain Sensor terminals.




**Remove Jumper Wire**




**Step 2**
Connect both Rain Sensor delay wires to the terminals marked **RAIN SENSOR**.



# Troubleshooting

## Watering Issues

| Problem | Possible Cause | Possible Solution |
|---|---|---|
| **Automatic and Manual cycles do not begin watering.** | Water source not supplying water. | Make sure the main water line and all supply lines are open and operating properly. |
| | Wires not properly connected. | Make sure all field wires and master valve/pump start relay wiring is connected properly. |
| | Wires loose or cut; corroded connections. | Check field wiring for broken, cut, or "skinned" wires and replace if necessary. Check all wire connections and replace with watertight splice connectors as needed. |
| | Dial not set to AUTO position. | Make sure the dial is on AUTO position—not any other dial position. |
| | If you have a Rain Sensor, it may be activated. | You can either wait until the Rain Sensor dries out, or disconnect the Rain Sensor from the yellow terminals on the Controller and replace it with a wire connecting the two yellow terminals. |
| | If you do not have a Rain Sensor, the wire connecting the two yellow Rain Sensor terminals may be damaged or missing. | Connect the two yellow Rain Sensor terminals in the Controller's terminal bay with a short length of 14 to 18 gauge wire. |
| | An electrical surge may have damaged the Controller's electronics. | Press the reset button under the wiring cover. If there is no permanent damage, the Controller should resume normal operation. You will need to input the current time and date, but your watering schedule should remain intact. |

## Electrical Issues

| Problem | Possible Cause | Possible Solution |
|---|---|---|
| **LCD Display is blank.** | Transformer not plugged in or wall socket not supplying power (Red light on the transformer is not illuminated). | Make sure the two-prong connector is connected and the transformer is securely plugged in. |
| | | Make sure the main AC power supply is working properly. |
| **LCD Display is "frozen" and Controller will not accept programming.** | An electrical surge may have damaged the Controller's electronics. | Unplug the Controller for 3 minutes. Plug the Controller back in. If there is no permanent damage, the Controller will accept programming and resume normal operation. |

# Programming Chart

| Zone | Zone Description | Run Time (Max 240 min.) | Watering Days (circle days that apply) | * Start Time #1 (15 min. increments) | Total Start Times (circle no. of starts) |
|---|---|---|---|---|---|
| 1 | | ___ Min | M T W T F SA SU ODD EVEN | ___:___ AM PM | 1 2 3 4 |
| 2 | | ___ Min | M T W T F SA SU ODD EVEN | ___:___ AM PM | 1 2 3 4 |
| 3 | | ___ Min | M T W T F SA SU ODD EVEN | ___:___ AM PM | 1 2 3 4 |
| 4 | | ___ Min | M T W T F SA SU ODD EVEN | ___:___ AM PM | 1 2 3 4 |
| 5 | | ___ Min | M T W T F SA SU ODD EVEN | ___:___ AM PM | 1 2 3 4 |
| 6 | | ___ Min | M T W T F SA SU ODD EVEN | ___:___ AM PM | 1 2 3 4 |
| 7 | | ___ Min | M T W T F SA SU ODD EVEN | ___:___ AM PM | 1 2 3 4 |
| 8 | | ___ Min | M T W T F SA SU ODD EVEN | ___:___ AM PM | 1 2 3 4 |
| 9 | | ___ Min | M T W T F SA SU ODD EVEN | ___:___ AM PM | 1 2 3 4 |

**Note:** A total of 4 start times can be assigned for each zone (this can be helpful for zones irrigating tight soils and slopes).

| *** Start Time Sequence** (hours after first programmed start time) | | | | |
|---|---|---|---|---|
| **No. of Start Times** | **1st Start Time** | **2nd Start Time** | **3rd Start Time** | **4th Start Time** |
| One Time | as programmed | n/a | n/a | n/a |
| Two Times | as programmed | 6 hours | n/a | n/a |
| Three Times | as programmed | 4 hours | 8 hours | n/a |
| Four Times | as programmed | 3 hours | 6 hours | 9 hours |

**Example:** If the first start time for Zone 1 is programmed for 8:00 AM and the user has selected THREE TIMES, then the second start time will be at 12:00 PM and the third start time will be at 4:00 PM.

***Notes:***

*The Intelligent Use Of Water*

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