

Detailed Installation & Operator's Manual

For Smart Timers ST8R & ST12R

Residential Installation

Document #92-01139-0



Before disconnecting your old timer, follow the directions on the accompanying sheet entitled “Before you Disconnect your Old Timer”

1. Selecting a location for the Smart Timer See Figure 1.

This controller must be mounted indoors to comply with electrical codes. Mount the controller near an electrical outlet which is *not* controlled by a light switch. Wood screws accompany the controller and may be used to mount the controller on a 2x4 inside your garage. **NOTE: If installing on dry wall or stucco, use an dry-wall anchor which you may obtain from any hardware store.**

Mount the controller at eye level convenient to both the electrical outlet and the wire to the valves. Plug the transformer into the electrical output and into the Smart Timer. Make certain the rotary switch is pointing up to the AUTO/Run position. The controller should light up and display the current time and day of the week. The Smart Timer will also show the current watering days for the *Lawn™* program. Two arrows on the right of the display will flash (Figure 5) alerting you to the missing Solar and Rain sensors which will be connected in the next 2 steps.

2. Selecting a location for the SFR sensor See Figure 2.

Since the Smart Timer makes watering decisions based on readings from the SFR sensor, it is important to mount the SFR solar sensor so that it gets a *good look at the sun most of the day*. The best location will usually be along the roof. There is no restriction on the distance between the SFR sensor and the controller. Read Step 3 before actually mounting the sensor. Extra attention given to positioning this sensor which will result in healthier lawns and greater water savings.

From your chosen location for the SFR sensor, face south and look from the east where the sun rises and imagine the sun traveling through the sky to the west. Look for trees or other obstructions in this path. Our patent pending technology will compensate for shadows from trees or high buildings. But it is still best to give the SFR sensor the best look at the sun all day long. The most important time is from 8 am to 5 PM.

3. Cable connections to the SFR sensor Figures 2.

If the sensor is mounted more than 25 feet from controller, you will need to purchase the materials listed on the back page and extend the cable that comes with the SFR sensor.

If the sensor will be mounted less than 25 feet from the controller, then use the 5 cable staples that come with each Smart Timer to route the SFR cable *under the eaves* and into the garage to protect the wiring from ultra-violet sunlight.

At the controller end, connect the black wire to the Solar - terminal and the red wire to the Solar + terminal. The **Solar Missing** arrow should now disappear. If not, then see Trouble-Shooting section at the end of this manual.

At the controller end, connect the other two wires to the Rain terminals. Neither the color nor the orientation of the the rain sensor wires are important. The **Rain Delay** arrow should go disappear. If not, then see Trouble-Shooting section at the end of this manual.

4. Connecting Valves to Sprinkler Timer .

Multi-wire sprinkler connection cable (18AWG) is commonly used to connect the valves to the Smart Timer. This sprinkler cable is insulated for direct burial and is color-coded for each valve. Connect the white wire of the cable to the COM terminal of the Smart Timer. Connect the colored wires to the terminals labeled V1, V2, etc. Skip the MV terminal unless there is a master valve or booster pump in the sprinkler system. It is good to use the wires in the order that they appear in the rainbow which can easily be remembered by the name “ROY G BIV” (red, orange, yellow, green, blue, indigo & violet) Not all of these colors are in the cable. But this rainbow pattern gives an easily remembered order to the wiring.

The white common wire *must* be connected to each valve and to the COM terminal of the Smart Timer. The other wire of each valve must be connected to one of the colored wires of the sprinkler cable and to one of the V1 to V12 terminals of the Smart Timer.

5. Installation is complete. Next, test the wiring to valves

(Figure 5) Rotate the switch to “1,2,3 Minute Test” position. Push the **MORE** switch to select the number of minutes to activate each valve. The Smart Timer will now activate each valve in sequence for the length of time that you have selected. Walk through your yard and verify that each valve is working properly. If not, check the display of the controller to see which valve the Smart Timer is trying to activate. Make a note of this valve number and return to your lawn and observe the activation of the other valves. *We recommend that you perform this simple test once per month.*

*To advance quickly to another valve, push the **NEXT** switch on the left of display.*

*To stop, prevent or cancel watering, rotate the switch to “**STOP watering**” position.*

*** Installation Complete ***

Figure 1: Smart Timer mounted on garage wall

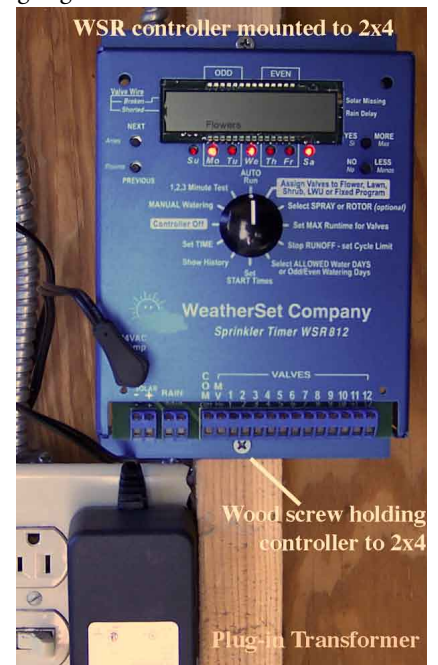


Figure 2: SFR sensor mounted along roof. This mounting of the sensor gives accurate solar readings from sunrise to end of day.

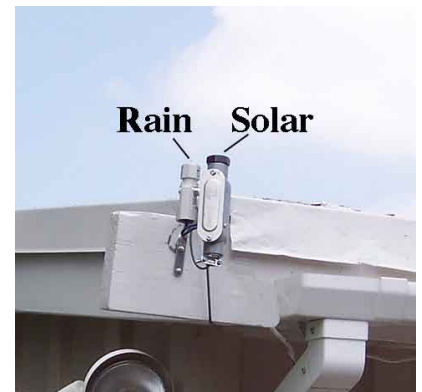


Figure 5: 1,2,3 Minute Test selected by rotary switch. YES/MORE switch was pushed to select 004Minute test. Valve #2 has run 1 min + 37 sec. Solar sensor is missing or connected backwards. Rain sensor is missing or has detected rain.

