

The Rain8 is an 8-zone irrigation controller capable of executing a complete irrigation schedule triggered by the reception of a single X10 command or by assigning a unique X10 code to each zone.

## Verify Contents of Shipping Container

- A power line interface (PSC05 or TW523) is required for operation and is supplied as part of this package only if the Rain8B (bundled) was ordered.
- Rain8 controller with detachable terminal block in place.
- 110 to 24-vac 300ma (7.2va), wall-mounted transformer (US & Canada only).
- **Special Data cable**, modular connectors on both ends.
- RS232 serial cable, DB9 both ends.

## Installation

### Controller Location

- Select a mounting location that is close to an electrical outlet and the valve wires that will connect to it.
- The controller should not be exposed to water. If used outside, it is necessary to provide a weather proof housing for your Rain8. <http://www.wgldesigns.com/r8outdoor.html>
- Mount your controller to a smooth dry surface by means of the enclosed Velcro strips.

### Wiring the Valves

- If the maximum distance is less than 600 feet, use a single 20 gauge, plastic insulated wire for each valve.
- Each valve has two wires. One wire is designated as the common. All of the common valve wires can be connected together to one wire going to the controller.
- All connections should be made using wire nuts in grease caps to prevent corrosion.
- Only one valve should be connected to each zone.
- The rated output is 24 VAC at .25 amps (250ma), per zone. Some valves require a greater current than .25 amps to initially open and drop back to a lower value. This will present no problem as long as the drop back value is .25 amps or less.

### Connecting the Valve Wires to the Controller

- Determine which valve is to be connected to each zone. Insert each valve wire into its respective position on the terminal strip and gently tighten the setscrew.
- Connect the common wire from the valves to the terminal labeled "common".

### Connecting the Transformer & Interface

- Locate the two terminals labeled "24-vac in". Connect the two transformer wires to these terminals.
- The Rain8 must connect to a power line interface (PSC05 or TW523) using only the furnished data cable.

### Prepare to Program the Rain8 module

- Please note that the Rain8 terminal strip is removable. Gently unplug the portion with screw heads from the socket mounted on the PCB. Remove the Rain8 from the wall and bring it to the location of the PC that will be used for programming.
- Connect the DB-9 connector on the Rain8 to a serial cable, with the other end plugged into a serial port on your PC. It is not necessary to provide power for the unit as it can derive what it needs for programming from the serial port.

### Setting up your PC

- Download software and start program from <http://www.wgldesigns.com/rain8.html>
- Set up the Serial Port box, in the lower left corner, by selecting the serial port number to be connected.
- At this point there is no need for anything to be connected to the Rain8 other than the serial cable. The power for the unit is derived from the serial port.
- Test the assignment by pushing the "Apply" Button. If you get a message "module not responding...", verify connections and port assignment. The proper response "Rain8 module detected" indicates that everything is now ready to program the unit.

## Programming the Controller for Individual Zone Control

Select the House Code and Unit Code to start and stop each zone

1. Locate the drop down box in the upper left hand corner of the Rain8 window identified as "Manual". Select the House Code and bank desired.
2. Just below are 8 input boxes to program the elapsed time in minutes that a given zone or valve will run before turning off automatically. . The run times for each zone may be anything from 0 to 250 minutes, in one-minute increments. Enter values that are a little larger than what would normally be used by the home automation program. This provides a safety feature that will turn off any given valve in the event of a lost X10 "OFF" command.
3. After the new values have been entered, click on the "load module" button. This causes an upload from the PC to the Rain8 memory. Confirm the up load by clicking on the "read module" button.

## Check Out

To test these new settings, unplug the serial cable and return the Rain8 to its original location. Plug in the terminal strip and TW523 connector. Verify that the TW523 and the 24-vac transformer are plugged in.

Using the settings shown here, sending the X10 signal E1-ON would cause the valve connected to terminal 1 to open. Sending it an E1-OFF it would close. If nothing were done, it would turn itself off at the end of three minutes

The screenshot shows the Rain8 software interface with the title "Rain8 an X10 driven, 8 zone, dual". It features a "Manual" section with a dropdown menu set to "E", radio buttons for "1 - 8" (selected) and "9 - 16", and buttons for "read module" and "load module". Below this is a "Manual/Default run time" section with eight rows, each representing a zone (E1 to E8) and its corresponding run time in minutes. The run times are: E1 - zone 1 (3), E2 - zone 2 (20), E3 - zone 3 (20), E4 - zone 4 (20), E5 - zone 5 (20), E6 - zone 6 (20), E7 - zone 7 (20), and E8 - zone 8 (24). Each run time is displayed in a box with up and down arrow buttons for adjustment.

Zone	Run Time (minutes)
E1 - zone 1	3
E2 - zone 2	20
E3 - zone 3	20
E4 - zone 4	20
E5 - zone 5	20
E6 - zone 6	20
E7 - zone 7	20
E8 - zone 8	24

## Programming the Controller for Stand Alone Operation

The Rain8 can also be used with nothing more than X10's Mini Timer or even a hand held remote, like the "Palm Pad". Anything that can generate a single X10 command can trigger a complete irrigation sequence, cycling through all eight zones. When one zone times out, the next one starts. The time settings for each zone are stored internally. The Rain8 provides for two independent schedules, each with it's own X10 trigger assignment and run times.

## Select the House Code and Unit Code desired to Trigger a Program

1. Locate the drop down box identified as "Auto A (or B) trigger".
2. Click on "enable". If it is not enabled the boxes will be "grayed out" and unable to accept any changes.
3. Select the House Code and Unit Code desired to trigger a sequence of events.
4. Just below are 8 input boxes to program the elapsed time in minutes that a given zone or valve will run before turning off and advancing to the next one. The run times for each zone may be anything from 0 to 250 minutes, in one-minute increments. A setting of zero would cause the Rain8 to skip that particular zone. Here, zones 6 - 8 would be skipped.
5. After the new values have been entered, click on the "load module" button. This causes an upload from the PC to the Rain8 memory. Confirm the up load by clicking on the "read module" button.

## Check Out

To test these new settings, unplug the serial cable and return the Rain8 to its original location. Plug in the terminal strip and TW523 connector. Verify that the TW523 and the 24-vac transformer are plugged in.

Using the settings shown here, sending the X10 signal A9-ON would cause the valve connected to terminal 1 to open. At the end of 250 minutes it would turn off and valve # 2 would open and so on. To abort an in-process schedule, send it an A9-OFF.

## Other Features

The **Skip box** is used to assign an X10 code that will cause a currently active stand alone program to stop the active valve and move on the next valve in sequence. The feature must

first be enabled to enter any values. The skip feature is not functional for individual zone control as there is not a preordained sequence of events.

The **Inhibit box** functions with both types of control. Its function is to allow the user an easy means of preventing any sprinkler activity for whatever period of time desired. This would be useful if rain is forecast or a garden party scheduled. In this example, after enabling the feature, sending an A16-ON would set the inhibit ON. All X10 commands would be ignored until it received an A 16 OFF (inhibit OFF).

An **error check** is made prior to uploading data to insure there are no X10 codes used for more than one function. For example: If the Inhibit code above was enabled and A16 was also selected to trigger a program, you would get a message box "Unable to load duplicate assignments...".

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# Rain8

## Troubleshooting

### Does not respond to X10 signal

**Verify configuration of Rain8 by connecting unit to serial port on PC with furnished RS232 cable.**

- Open program rain8.exe and push “Apply” button.
- Select “A” and “1-8” in Manual box upper left corner.
- Enter 10 in first box (zone1 default run time).
- Click on “load module”.

At this point the Rain8 is configured to turn on zone 1 when an X10 signal with the address of A1-ON is received over the power line.

**Verify that the X10 signal is reaching the outlet that the Rain8 power line interface (PLC) is plugged into.**

1. Plug in X10 lamp module or appliance module (with table amp or other indicating device connected) in same outlet as the PLC. Set X10 module to receive “A1”.
2. Send X10 signal “A1-ON”. If indicator device comes on then X10 signal has been received at outlet and X10 signal transmission has been verified.

**Verify wiring connections at Rain8.**

Make sure transformer wires connect to the far right pair of screw connections and transformer is plugged into power outlet.

Verify the special data cable supplied with unit connects the right hand RJ11 modular jack and the PSC05 PLC. Make sure that the PLC is plugged into the same outlet that was tested above. Red led will indicate that it is powered up.

If the data cable has been altered or replaced with another cable, verify that the modular connectors are wired in the data configuration. **Please note that a regular phone cable will not work.**

**Check operation.**

Using a voltmeter verify that there is 25-28 volts AC across the two transformer screw connections.

Send “A1-ON” as done above while watching PLC led. If led blinks then the X10 signal is being received by the PLC.

With voltmeter measure the voltage between the first screw terminal and the “common” terminal. If the reading is not the same as above, then the possible items that could cause this failure are:

- The data cable is bad.
- The PLC is bad. No other way to verify this without a substitution.
- The Rain8 is bad.

Request RMA for return and replacement.

**Problems or Questions?**

If help is needed, please do not hesitate to contact us. We want to make your installation as painless as possible. Your suggestions or questions will help us improve this document and our product.

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