

Genius™ Irrigation System Training Manual

IrriGreen, Inc.

2013



IrriGreen™ manufactures and sells landscape irrigation systems that save water and simplify installation. We use digital technology to water the exact landscape shape cutting installation time in half and reducing wasted water by 50%. IrriGreen certified contractors generate more profit per installation and greater ownership value to end users.



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TABLE OF CONTENTS

Introduction	2
Comparison of the Genius Irrigation System to Conventional Systems	3
Key Features and Benefits of the Genius Irrigation System	4
Selling the Genius Irrigation System	5
Planning & Layout for the Genius Irrigation System	6
Installing the Genius Irrigation System	8
Programming the Genius Irrigation System	12
Maintaining the Genius Nozzle and Filter System	18
Warranty	Error! Bookmark not defined.

Per FCC 15.19 (a) (3) and (a) (4): 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.

Per FCC 15.21: The user and installer of the IrriGreen Genius Irrigation System shall not make any modifications to the system not expressly approved by IrriGreen. Unauthorized modifications will void the warranty and void the user's authority to operate the equipment per FCC rules.



IrriGreen™ Genius™ Irrigation System Training Manual

Introduction

The Genius irrigation system combines digital technology with a patent pending nozzle design to produce an irrigation system capable of distributing water in patterns that fit the shape of the landscape. The Genius irrigation system does this while both reducing the water required to irrigate the landscape and saving significant installation time and materials.

The Genius irrigation system is designed to significantly reduce the labor required to install in-ground irrigation systems while at the same time reducing water required to sufficiently water the lawn. The center of the system is the Genius sprinkler that can be programmed to water a wide variety of shapes and sizes. This sprinkler reduces the need for distribution pipe by up to 85%, significantly cuts the number of sprinkler heads required and reduces the amount of water typically wasted to irrigate the lawn by up to 50%. While the cost of the water is born by the property owner, it is still a barrier that can be turned into an opportunity when selling the benefits of Genius irrigation systems to consumers.

Reducing installation labor for the installer and reducing end user water bills are compelling reasons for irrigation contractors to consider switching all or part of their installation business to the Genius irrigation system. The installer will be able to address business in more price sensitive areas by offering services at a reduced price while maintaining profitability on every installation. Their customers will be happier with green, hassle free lawns and lower water bills than those customers with conventional irrigation systems.

This training manual is a component of a training program developed to train experienced irrigation contractors on the techniques unique to installing the Genius irrigation system. This program is intended for licensed (if required by local and/or state code), experienced irrigation contractors for residential and commercial in-ground irrigation systems. It is not intended as a complete or comprehensive training program for installing in-ground irrigation systems.

THIS TRAINING PROGRAM IS INTENDED FOR IRRIGATION CONTRACTORS THAT ARE ALREADY LICENSED AND/OR EXPERIENCED IRRIGATION PROFESSIONALS. (NOTE: PROFESSIONAL IRRIGATION TRAINING RECOMMENDED.)

The following points will be covered by this training program and manual:

- Comparison of the Genius irrigation system to conventional sprinkler systems.
- Key features and benefits of the Genius irrigation system.
- Selling the Genius irrigation system.
- Installation techniques unique to the Genius irrigation system.
- Programming the Genius sprinklers.
- Maintenance techniques unique to the Genius irrigation system.
- System warranty information.



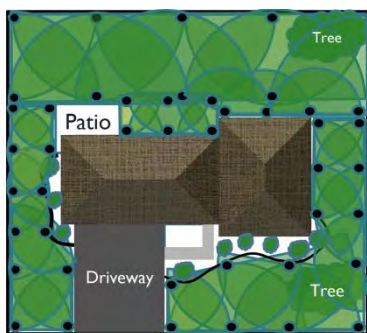
Comparison of the Genius Irrigation System to Conventional Systems

1. System similarities, the Genius irrigation system:

- Designed to be permanently installed into the lawns and landscapes of residential and commercial properties.
- Designed for use with conventional irrigation controllers, rain sensors, etc. currently being used by irrigation system installers.
- Requires the same 24 VAC low voltage power source for Genius server as conventional controllers.
- Uses similar distribution pipe and fittings currently being used to install conventional in-ground irrigation systems, but significantly less pipe length and fewer fittings.
- Requires the same maintenance for spring start-up and fall blow-outs as conventional irrigation systems, and is compatible with regular sequencing for typical blow-out procedures.
- Irrigates in watering zones – 1 zone for 1 sprinkler.
- Can be used in conjunction with conventional system zones and controllers if required.
- Uses the same water source as conventional systems.

2. System differences, the Genius irrigation system:

- Uses software in sprinklers, servers and programmers so the water pattern for each individual Genius sprinkler can be programmed to fit the landscape it is watering.
- Eliminates the need for head-to-head watering overlap (see graphics below, Conventional vs. IrriGreen).
- Genius sprinklers digitally control the water flow distance and rotational speed of the multi-stream nozzle.
- Genius sprinklers are 11.5 inches in height from top to bottom.
- Uses 12 VDC to power and communicate with each Genius sprinkler, so distances up to 500 feet away from server are allowed.
- Requires the water pattern for each Genius sprinkler be programmed (using IrriGreen's Genius programmer) to fit the individual landscape shape being watered in each zone.
- Includes an IrriGreen network server which is electrically connected to a 3rd party irrigation controller, electrically connected to each sprinkler and a wireless programmer for mapping each watering zone.
- Wireless programmer can be used for mapping each watering zone up to 200 feet away from server.
- We recommend a master shutoff valve be installed between the water source and the Genius sprinklers.



Conventional System



IrriGreen System



IrriGreen Nozzle



Key Features and Benefits of the Genius Irrigation System

Because the Genius sprinklers are individually programmable, each sprinkler can be programmed to water the specific landscape geometry within the watering it is located. During the installation process, the water throw distances are programmed for each individual sprinkler to match the landscape geometry it will irrigate. Minimum watering overlap is recommended between Genius sprinklers, and the need for head-to-head sprinkler watering coverage is eliminated. This elimination of required head-to-head coverage can result in saving as much as 50% of the wasted water.

Since each sprinkler has its own self-contained flow control valve, the need for valve boxes servicing multi-head zones is no longer necessary. This in turn reduces the amount of distribution pipe required to install a system, in many cases by 85%, which also reduces the time required to pull or trench the pipe. The result is a significant savings in installation labor, reducing the time required to install a given system by 50% or more.

Key Feature: Digitally controlled water distribution at individual sprinkler heads

- Capability to program the watering pattern to fit the shape of the landscape.
- Minimizes over watering by eliminating the need for head-to-head coverage.
- Ensures accuracy of water delivery precipitation rate.
- Provides accurate watering times and precipitation rates during installation.
- Reduces the amount of distribution pipe required for installation.
- Reduces the number of irrigation sprinklers required for installation – 1 zone for 1 sprinkler.
- Reduces the direct and indirect labor required to install the entire system.
- Reduces the water typically wasted due to overlap while irrigating turf areas by up to 50%.

Key Feature: Unique streaming nozzle design (patents pending)

- Irrigates watering zone using streams of water, reducing wind drift and increasing soil moisture.
- Increased droplet size from streams rather than spray or mist, which drives water into soil.
- Creates a more even distribution uniformity over entire watering zone.
- Reduces the potential for dry spots and minimizes over spraying onto hardscape areas.
- Uses less water and waters more accurately, which reduces phosphorus runoff.

Key Feature: Standard industry design components

- Works with typical irrigation water sources with standard pipe/tube fittings and electrical connectors.
- Works in conjunction with standard industry controllers/schedulers.
- Compatible with rain and/or moisture sensors and other water saving technologies.
- Capable of functioning in a hybrid system with conventional watering zones using spray, rotor or drip.



Selling the Genius Irrigation System

The target customers for the Genius irrigation system are residential and commercial end users. The initial product offering is ideally sized for these customer applications.

Initially we will target residential and commercial customers who are on city water and have water supply pressure from 40 to 80 PSI. These customers will likely be attracted to the Genius irrigation system because of the financial aspect of the water savings while others may want it because it is “green”. In addition, we expect local officials to be interested in this technology because of the potential impact it could have on reducing future water demands and phosphor runoff.

1. Target Customers

- Residential homeowners
- Commercial property owners
- Real estate management firms, consultants and homeowner associations
- “Green” and Cleantech customers
- Customers concerned about the cost of water
- Early “technology” adopters
- State and local governments (Note: some of these may be influencers and not customers)

2. Why install a Genius irrigation system? Residential and commercial end users will because ...

- Cost savings from lower water bills (vs. conventional systems)
- Water savings (being green)
- Less mess and hassle due to torn up landscape
- Reduced installation time
- Cool technology (early adopters)

3. And “green” customers and early adopters will because ...

- They want a green lawn
- They want to be “green”
- They want to save money
- They want to tell their neighbors how they are being “green” and sustainable
- They like to try new things
- It is cool technology

4. And state and local officials will because...

- They will be interested in getting behind the technology because of the impact it will have on reducing future water usage for turf irrigation and the positive impact that will have on future capital budgets
- They will appreciate the potential for reduced phosphor runoff

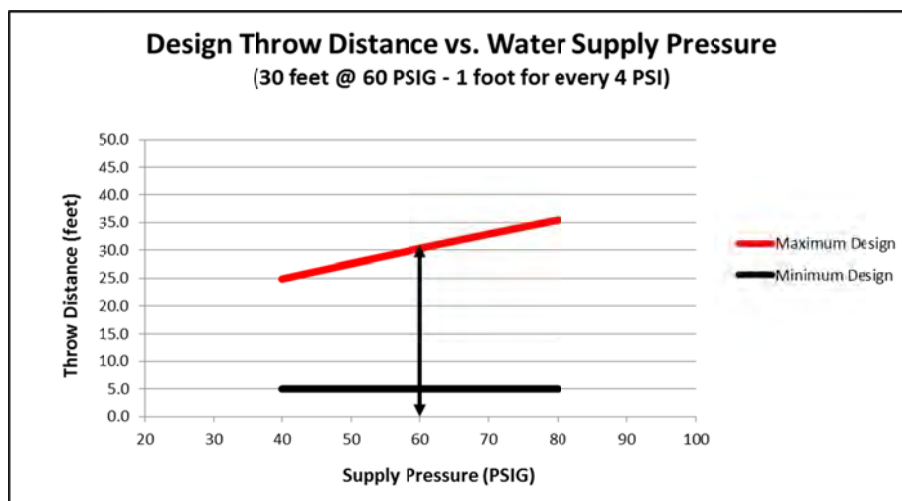


Planning & Layout for the Genius Irrigation System

Use the following steps to plan your design:

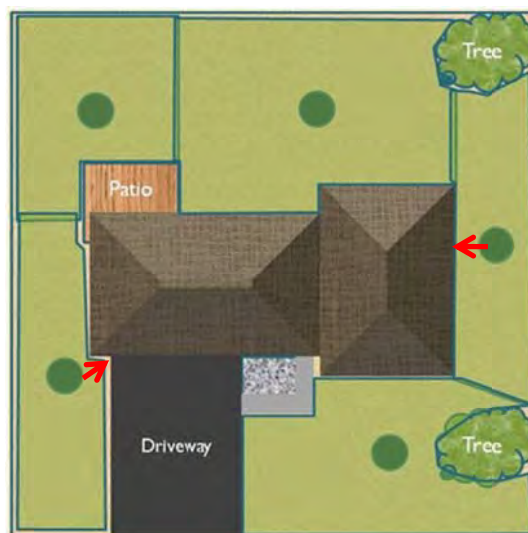
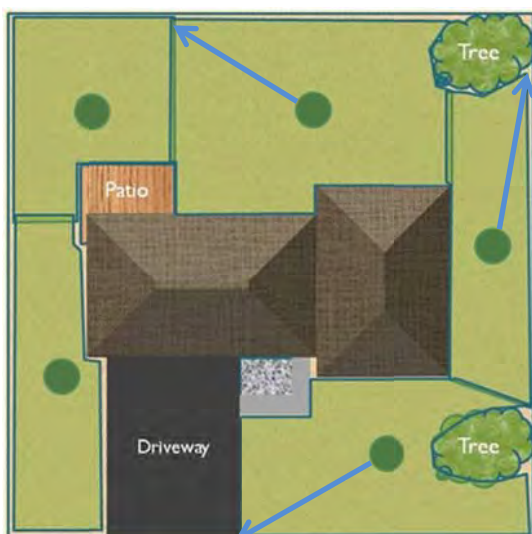
1. Measure water supply pressure and capacity in GPM at the proposed site.

- Use a water pressure gauge and record the pressure in PSIG at an outdoor spigot.
- Most city water systems supply between 10-12 GPM at each spigot – please check if uncertain.
- A 1" pipe diameter (or larger) is recommended for distribution of the main water supply line for the Genius irrigation system. A ¾" main line pipe may provide enough GPM at pressures above 60 PSI, but will experience more pressure drop and shorter throw distances. A ½" pipe or smaller is not recommended for main lines. A short run of funny pipe or swing pipe may be used from the main line to individual sprinkler heads.
- The chart below can be used to plan the Genius sprinkler head spacing, and illustrates the maximum design water throw distance from a sprinkler head based on water supply pressure. (NOTE: it is important that calculations for additional pressure drop due to elevation changes, length of main line and use of anti-syphon valves be subtracted from the water supply pressure to each sprinkler head.)



2. Locating the Genius sprinkler heads for each watering zone

The maximum distance that a Genius sprinkler will uniformly throw water depends on water supply pressure and pressure drop to the sprinkler head. Since Genius sprinklers will often be placed near the center of an area of landscape, the diagonal distance to the corners will determine the maximum distance. For instance, in a 42 x 42 foot square or a 24 x 55 foot rectangle, the diagonal distance to the corners is 30 feet. The minimum design distance that a Genius sprinkler will uniformly throw water is 5 feet. See examples of maximum throw distance (in blue) and minimum throw distance (in red) below.



3. Consider other site specific issues and regulations

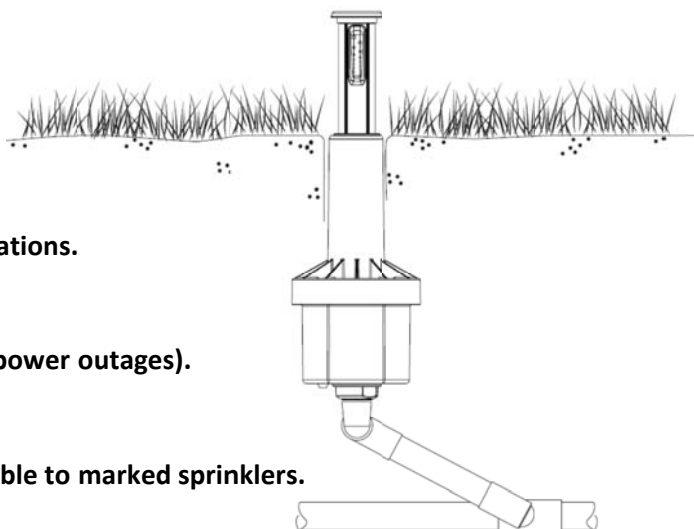
- Local and state regulations (and homeowner association rules if attributable)
- Please contact your local city/county for local plumbing codes and site permits as may be required
- Electrical requirements (Note: a low voltage license may be required in some states)
- Pre-install underground utility locations (Note: call for official assistance in locating these lines)
- Rain sensor requirements (Note: may be required in some states)
- Soil type may determine how deep to bury the pipe and whether to pull poly pipe or trench in PVC pipe
- Presence of landscape obstacles like trees, fences, and elevation changes may inhibit watering patterns
- Some conventional spray nozzles, rotors and/or drip irrigation may be necessary



Installing the Genius Irrigation System

Use the following installation steps:

1. Install plumbing as required by installation and regulations.
2. Install back-flow preventer (anti-syphon valve).
3. Install a master control shut off valve (necessary for power outages).
4. Mark sprinkler placement per design plan.
5. Trench PVC or pull poly pipe along with multi-wire cable to marked sprinklers.
6. Installing each Genius sprinkler:
 - Before connecting sprinklers – flush out the system laying flexible pipe outside each sprinkler hole.
 - Connect the sprinkler fitting (¾ inch FPT) to the main water line using funny pipe or swing pipe.
 - Install the flexible pipe to the main line and connect the sprinkler with a ¾ inch fitting and Teflon tape.
 - Position sprinkler so the top cap is about ½ inch above the ground (dirt portion of the sod layer – see photo).



- Connect the white sprinkler wire to the white common wire in the multi-wire cable using waterproof connectors. Be sure to continue the white wire connection (common) to all other sprinklers.
 - Connect the red sprinkler wire to another colored wire in the multi-wire cable using waterproof connectors. Be sure to record the color wire connected to each sprinkler for each numbered watering zone.
7. Installing the Genius server:
 - Feed the multi-wire cable coming in from the field through the grommet on the bottom left of the server closest to the terminal strip located on the left. (See photos and notes on following 2 pages.)
 - Connect the white wire of the multi-wire cable to the COMMON terminal (top) of the left terminal strip.
 - Connect the remaining colored wires to individual OUT terminals numbered 1 – 8 matching the coloring of individual sprinklers from each watering zone connected in step 6 above.



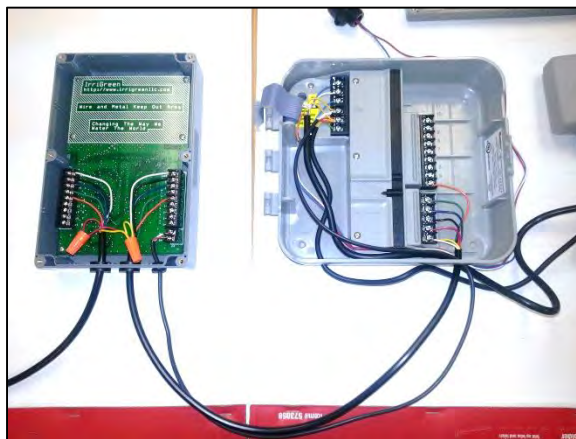
Wiring coming into the IrriGreen Genius server from the field:

- IrriGreen Genius sprinkler
- ¾" MPT to swing pipe fitting
- Connector from main line to funny pipe
- Run of funny pipe to 1" main poly
- 2-pair conductor wire pigtail (on sprinkler)
- Waterproof connectors to hook up sprinkler
- Multi-conductor wire to IrriGreen server



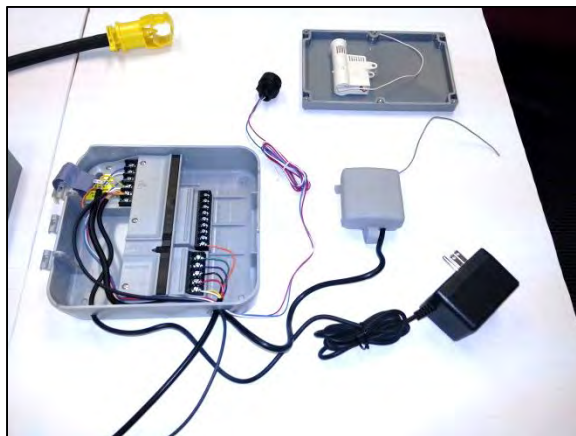
Wiring going out from IrriGreen Genius server to a 3rd party controller/clock scheduler:

- Left side IrriGreen server – OUT to field 12 VDC
- Right side IrriGreen server – IN from clock 24 VAC
- Bottom right IrriGreen server – 24 VAC power
- Left side 3rd party controller
 - Top left – rain (or moisture) sensor leads
 - Next lead – remote control lead
 - Next 3 leads – 24 VAC power
- Right side 3rd party controller
 - Bottom lead – common
 - Next lead up – ACV shut-off valve
 - Next 8 leads – Zones 1 through 8



Wiring additional items to 3rd party controller/clock scheduler:

- Connect the 24 VAC transformer for power
- Run 2-pair conductor to IrriGreen for 24 VAC power
- Connect the rain (or moisture) sensor to the controller
 - Install sensor as indicated by manufacturer
 - Install wireless receiver inside building
 - Connect leads to controller
- Connect the remote control to the controller
 - Install remote key (plug) outside
 - Run wire leads through wall
 - Connect leads to controller





Changing the way we water the world™

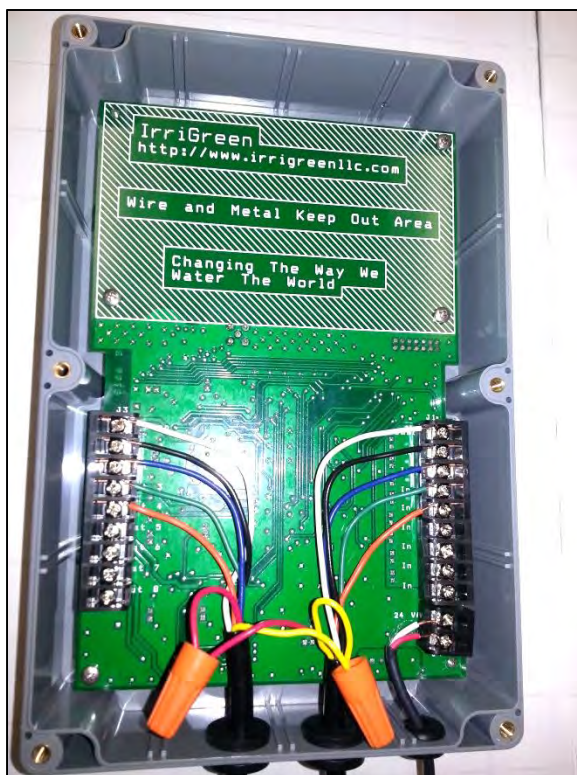
Wiring diagram for IrriGreen Genius Server:

(in this example)

7 leads OUT to field (12 VDC)

Common (white) →
 Zone 1 (black) →
 Zone 2 (blue) →
 Zone 3 (green) →
 Zone 4 (orange) →
 Zone 5 – Zone 8 (open, no wires)

ACV shut-off (red wires) →
 24 VAC com (yellow wires) →



(in this example)

7 Leads IN from clock (24 VAC)

← Common (white)
 ← Zone 1 (black)
 ← Zone 2 (blue)
 ← Zone 3 (green)
 ← Zone 4 (orange)
 ← Zone 5 – Zone 8 (no wires)
 ← 24 VAC power (white)
 ← 24 VAC power (red)
 ← ACV shut-off (red wires)
 ← 24 VAC com (yellow wires)

Wiring diagram for 3rd party controller/clock scheduler:

Multi-leads in to controller

Rain Sensor 1 (blue) →
 Rain Sensor 2 (white) →
 Remote control (blue) →
 24 VAC power (white) →
 24 VAC power (red) →
 24 VAC Com (yellow) →



7 Leads in from Genius server

← Zone 5 – Zone 8 (no wires)
 ← Zone 4 (orange)
 ← Zone 3 (green)
 ← Zone 2 (blue)
 ← Zone 1 (black)
 ← ACV shut-off (red)
 ← Common (white/yellow)

***NOTE:** Run 24 VAC power from 3rd party controller to IrriGreen server using 2-conductor irrigation wire.



8. Before covering the Genius sprinklers, test each sprinkler using the Genius Programmer:

- [Please refer to Step 2 on page 12 to set the programmer to the address on the server.]
- **Press and release the # number key** on the Genius programmer until the word CAL appears.
- **Press and hold the # number key** until the word ZONE starts flashing.
- Select the zone number **by pressing ↑ up or ↓ down arrows** after the word ZONE stops flashing.
- **Press and release the # number key** to set the ZONE, and the word PSI flashes for 12 seconds.
- When the **rotation symbol appears [R]** in the center of the display, the sprinkler will rotate to its starting position indicating a good electrical connection, and this may take up to 23 seconds.
- When the PSI reading appears on the top line (e.g. 60), **press and hold the # number key** to exit.
- After the word ZONE stops flashing, another zone can be selected and tested in the same fashion, or you can **press and release the * star key** at this point to exit the CAL program.
- You should test all sprinklers in this manner to be certain all electrical connections are working.



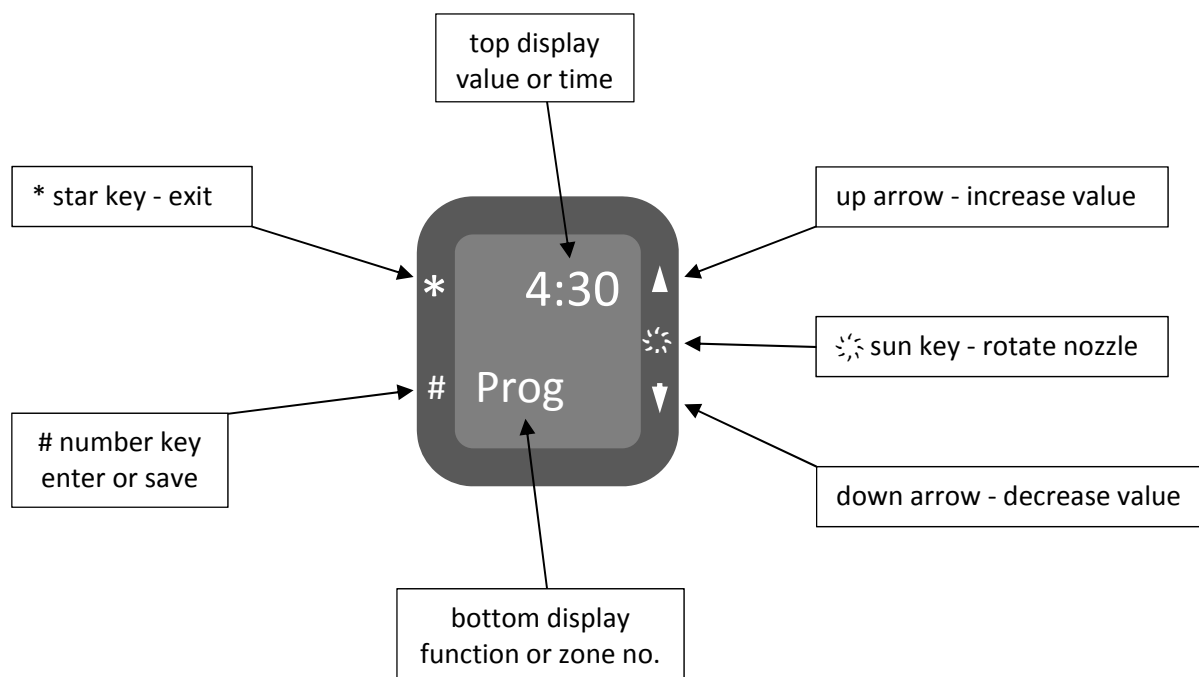
9. Before burying the Genius sprinklers, test for leaks at all fittings by turning on the water. (NOTE: If you are using an ACV for emergency shut-off, then you will need to open this valve for proper water supply.)
10. Connect accessory devices like rain and moisture sensors to a conventional 3rd party controller.



Programming the Genius Irrigation System

1. Overview of Programmer Software functions and Typical Button commands

Function	Description of commands and settings in each function
SET	Set programmer to server address for communication and scheduling
CAL	Calibrate sprinkler water pressure, flow valve and motor compensation
PROG	Program watering zones for exact landscape shape (up to 50 positions)
RUN	Select runtime precipitation rate and calculate watering zone times
DATE	Shows time of day and date (use * star key to enter date function)
BATT	Shows level of battery power remaining (change if below 2.60 volts)



Button	Description of commands and settings in each function
* star key	Press and release * star key to exit a watering zone or to exit a function, and Press and release * star key to cycle through a function
# number key	Press and release # number key to move between functions, and Press and release # number key to enter a watering zone or to save a value
☀ sun key	Press and release ☀ sun key to rotate sprinkler nozzle direction (clockwise)
↑ up arrow	Press and release ↑ up arrow to increase setting or open flow valve
↓ down arrow	Press and release ↓ down arrow to decrease setting or close flow valve
hold # number key	Hold down # number key to enter Set, Cal, Prog or Run function
hold * star key	Hold down * star key to erase program data for zone in Prog function



2. Set programmer to server address for communication and scheduling

- **Press and release the # number key** on the Genius programmer until the word SET appears. (NOTE: you may see CAL, PROG, RUN, the date and the battery power before you see SET.)
- **Press and hold the # number key** until the word ADDRESS appears at the bottom of the display (shown as Addr) and a set of 4-digits appear across the top of the display.
- **Press and release the # number key** until you get to a digit that needs to be changed, then select the correct digit **by pressing ↑ up or ↓down arrows** while that digit is flashing.
 - Continue to follow this procedure until the address in the 4-digit display matches the last four digits on the server address label. (NOTE: this address number can be found on the inside and the outside of the Genius server case.)
- **Press and release the * star key** when you have the correct address to save the SET address number.
- **Press and release the * star key** when you see the scheduling calendar appear – future option only.
- The current program version and date will be displayed, then **Press and release the * star key** to exit the SET address function.

3. Calibrate sprinkler water pressure, flow valve and motor compensation

- **Press and release the # number key** on the Genius programmer until the word CAL appears.
- **Press and hold the # number key** until the word ZONE starts flashing to enter the CAL function.
- After the word ZONE stops flashing, select the zone number **by pressing ↑ up or ↓down arrows**.
- **Press and release the # number key** to enter the ZONE, and the word PSI flashes for 12 seconds.
- When the **rotation symbol appears [R]** in the center of the display, the sprinkler will rotate to the starting position, and this may take up to 23 seconds.
- Select the PSI value by **pressing ↑ up or ↓down arrows** after the word PSI stops flashing.
 - The PSI value is the static supply pressure (PSIG) for a given sprinkler zone. (Default is 60 PSI.)
 - **Press and release the # number key** to save the PSI value. The word SAVE appears.





- **Press and release the * star key** on the Genius programmer while in the PSI Mode to go to FLO Mode
 - The valve will open and water streams will emerge as the display shows FLO on the bottom and counts up to 15.00 feet on the top. (NOTE: You can immediately change the flow direction of the streams by **pressing the ↺ rotate key** if water is streaming towards an area not suitable for measuring.)
 - Measure the distance from the farthest water stream to the sprinkler – this is the FLO value.
- If this distance is 15.00 feet, then **press and release the * star key** to go to RCO Mode.
 - Or, If this distance is less than 15.00 feet (example 13.50 feet), then adjust the FLO value **by pressing ↑ up or ↓ down arrows** to 13.50 feet and then **press and release the # number key**. The word SAVE appears and the water streams will stop and re-emerge at 15 feet as the display counts up to 15.00 feet.
 - Or, If this distance is more than 15.00 feet (example 17.00 feet), then adjust the FLO value **by pressing ↑ up or ↓ down arrows** to 17.00 feet and then **press and release the # number key**. The word SAVE appears and the water streams will stop and re-emerge at 15 feet as the display counts up to 15.00 feet.
 - If this distance is not 15 feet, then repeat this process until this distance is 15.00 feet, then **press and release the * star key** to go to RCO Mode.



- As previously completed in the steps above, by **pressing and releasing the * star key** on the Genius programmer while in the FLO Mode, you will move into the RCO mode.
 - The water streams will stop and re-emerge as the display counts up to 15.00 feet.
 - After a delay of 3 seconds, RCO on the display will stop blinking and the water streams should shorten the throw distance from 15.00 feet to about 14.00 feet.
 - Measure the newly shortened distance from the water stream to the sprinkler (example 14.00 feet).
- If this shortened distance is 14.00 feet, then **press and release the * star key** to exit the RCO Mode.



- Or, if this shortened distance is less than 14.00 feet (example 11.50 feet), then adjust the RCO value **by pressing ↑ up or ↓down arrows** to 11.50 feet and then **press and release the # number key**. The word SAVE appears and the water streams will stop and re-emerge at 15 feet as the display counts up to 15.00 feet.
- Or, if this distance does not shorten but remains at 15 feet, then adjust the RCO value **by pressing ↑ up or ↓down arrows** to 16.00 feet and then **press and release the # number key**. The word SAVE appears and the water streams will stop and re-emerge at 15 feet as the display counts up to 15.00 feet.
- If this shortened distance (after 3 seconds) is not 14.00 feet, then repeat this process until it is, then **Press and release the * star key** on the Genius programmer to exit RCO Mode.
- After the word ZONE stops flashing, another zone can be selected and calibrated in the same fashion.
- **Press and release the * star key** on the Genius programmer to exit the CAL program.

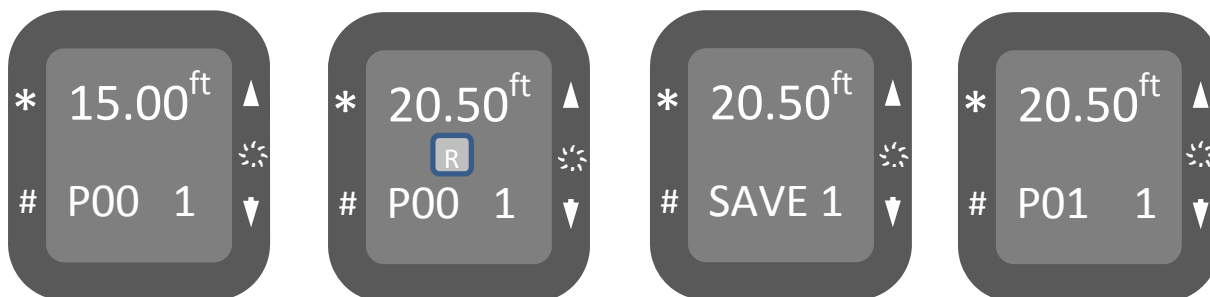


4. Program watering zones for exact landscape shape (up to 50 position settings)

- **Press and release the # number key** on the Genius programmer until the word PROG appears.
- **Press and hold the # number key** until the word ZONE starts flashing to enter the PROG mode.
- After the word ZONE stops flashing, select the zone number **by pressing ↑ up or ↓down arrows**.
- **Press and release the # number key** to enter the ZONE, and the word P00 flashes for 12 seconds.
- When the **rotation symbol appears [R]** in the center of the display, the sprinkler will rotate to the starting position, and this may take up to 23 seconds.
 - The valve will open and water streams will emerge as the display shows P00 on the bottom and counts up to 15.00 feet on the top. (NOTE: You can immediately change the flow direction of the streams by **pressing the ☼ rotate key** if water is streaming towards an area not suitable for a good starting position. This will be your 1st position point to be saved.)



- If this distance is correct and the flow direction is correct, then **press and release the # number key** to save this first position – Position 1 (P01).
 - Or, if this flow direction is not correct, then **press and release the ☼ rotate key** to rotate the angle of the flow direction 1 step in the clockwise direction. If this flow direction is still not correct, then **press and release the ☼ rotate key** until the flow direction lines up with the position you are trying to save.
 - (NOTE: You can **press and hold the ☼ rotate key** to very quickly repeat the rotation angle of the flow direction in the clockwise direction, and the rotation will stop upon letting go. However, be careful not to over rotate your desired flow direction position, or you will have to rotate 360° to start again.)
- Or, if this distance is not correct, then adjust the distance **by pressing ↑ up or ↓ down arrows**.
 - (NOTE: You can **press and hold the ↑ up or ↓ down arrows** to very quickly repeat the change in distance, and the distance will then change upon letting go. Once you **release either the ↑ up or ↓ down arrows** the display will show the actual distance in feet.)
 - If this distance or flow direction is not correct, then repeat this process until this distance and flow direction is correct, then **press and release the # number key** to save this position.
- Once all of the desired positions have been programmed **press and release the * star key** on the Genius programmer to exit zone programming. The first and last positions will automatically be connected.
- After the word ZONE stops flashing, another zone can be selected and programmed in the same fashion.
- **Press and release the * star key** on the Genius programmer to exit the PROG program.
- Once a zone is programmed it can also be edited by re-entering the zone in PROG mode to edit distances at set positions or insert/add new positions. (NOTE: you cannot delete a position.)
 - (NOTE: If necessary while in PROG mode, you can erase all of the programmed positions by **pressing and holding the * star key** until the word ERASE appears. All of the programmed positions for this zone will then be erased.)





5. Select runtime precipitation rate and calculate watering zone times

- **Press and release the # number key** on the Genius programmer until the word RUN appears.
- **Press and hold the # number key** until the word ZONE starts flashing to enter the RUN mode.
- After the word ZONE stops flashing, select the zone number **by pressing ↑ up or ↓ down arrows**.
- **Press and release the # number key** to enter the ZONE, and the word R01 appears indicating 1 revolution with .05 on the top line indicating .05 inches of precipitation for 1 revolution.
- **Press the ↑ up or ↓ down arrows** to set the desired number of revolutions. The total number of inches of water is listed on the top line for the total number of revolutions set.
- **Press and release the # number key** to save the number of revolutions. The word SAVE appears.
- **Press and release the * star key** to calculate and display the zone watering time for the selected precipitation rate and number of revolutions. This will appear as minutes in the top display.
- The number of revolutions can still be changed by **pressing the ↑ up or ↓ down arrows** and saved by **pressing and releasing the # number key**. This will immediately update and display the new watering zone time in minutes (top display) while showing the new number of revolutions (bottom display). This watering zone time should be entered into the 3rd party clock/scheduler for this zone.

NOTE: If you want to run the watering zone from this point, you can **press and hold down the # number key** until the display flashes “Run” and it automatically exits RUN mode. The sprinkler will then rest itself and run the number of revolutions saved. You can always stop the sprinkler during its run time at any time simply by entering back into run mode, and then exiting again.

- **Press and release the * star key** again on the Genius programmer to exit the watering zone.
- After the word ZONE stops flashing, another zone can be selected and run in the same fashion.
- **Press and release the * star key** again on the Genius programmer to exit the RUN mode.
- YOU ARE NOW READY TO RUN THE SYSTEM FROM THE 3RD PARTY CLOCK/SCHEDULER.





Maintaining the Genius Nozzle and Filter System

[Note: This section has yet to be completed.]



IRRIGREEN, LLC LIMITED TWO YEAR WARRANTY – IRRIGREEN™ IRRIGATION PRODUCT

Limited Warranty. IrriGreen, LLC ("we", "us", "our") warrants its irrigation product (consisting of sprinklers, server box and remote programmer) against defects in material and workmanship for a period of two years from the original date of purchase, provided they are used for irrigation purposes as intended by us in our specifications. Our product warranty is provided solely to the original end user ("you") of our products and is not transferable.

During the warranty period and upon proof of purchase, at our option, we will either repair or replace any part found to be defective, using new or refurbished parts, without charge. Our liability is limited solely to the repair or replacement of defective parts of our product. These are your sole and exclusive remedies for any breach of warranty. There are no other express warranties.

Our limited warranty only covers product issues caused by defects in material or workmanship during ordinary use during the limited warranty period. It does not cover product issues caused by any other reason including but not limited to defect or issues due to (i) acts of God (e.g. lightning, flooding, etc.); (ii) damage by accident, misuse, or abuse; (iii) customer installations or installations performed in any manner contrary to our specifications and instructions; (iv) limitations of technology; or (v) modifications or alterations of or to any part of our product unless done or approved by us. We are also not liable for failure of products not manufactured by us even though such products may be sold or used in conjunction with our products. Our warranty does not apply to software products contained in our product such software being provided AS IS or batteries used within our product.

Service Fees. Any service fees related to removing any defective part and/or re-installing repaired or replaced parts shall be at the end user's sole cost and expense unless the end user has a written service contract with us or with a certified IrriGreen irrigation system installer in which case such written contract will control regarding such service fees.

Warranty Service. To obtain the benefits of our warranty, you must contact your certified IrriGreen irrigation system installer and provide to them a copy of the original sales receipt or other proof of purchase within the warranty period. You or the certified installer are responsible for any damage to any part or loss resulting from removing any defective part or product and/or re-installing any repaired or replaced parts. For questions, you can call us at 612-238-7575.

Grounding. Our limited warranty for server boxes is void if the service box is not properly grounded per our manufacturer's specifications. It is the responsibility of the installer to connect all electronic irrigation equipment for which they are responsible to earth ground in accordance with the National Electrical Code (NEC). Even with optimum grounding, we are not liable for product failures due to acts of God (e.g. lightning, flooding, etc.) and these failures are not covered by this warranty.

WARRANTY EXCLUSIONS & LIMITATIONS. TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, STATUTORY, EXPRESS OR IMPLIED. None of our resellers, certified installers, agents, or employees are authorized to make any modification, extension, or addition to this warranty.

EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

WE ARE NOT LIABLE FOR DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF OUR PRODUCTS, INCLUDING BUT NOT LIMITED TO: VEGETATION LOSS, THE COST OF SUBSTITUTE PARTS OR EQUIPMENT OR SERVICES REQUIRED DURING PERIODS OF MALFUNCTION OR RESULTING NON-USE, PROPERTY DAMAGE OR PERSONAL INJURY RESULTING FROM INSTALLER'S ACTIONS, WHETHER NEGLIGENT OR OTHERWISE, OR DAMAGE CAUSED BY A DEFECTIVE PART OR PRODUCT SUCH AS FLOODING.

Some states do not allow the exclusion or limitation of incidental or consequential damages or exclusions or limitations on the duration of implied warranties or conditions, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary by state.

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