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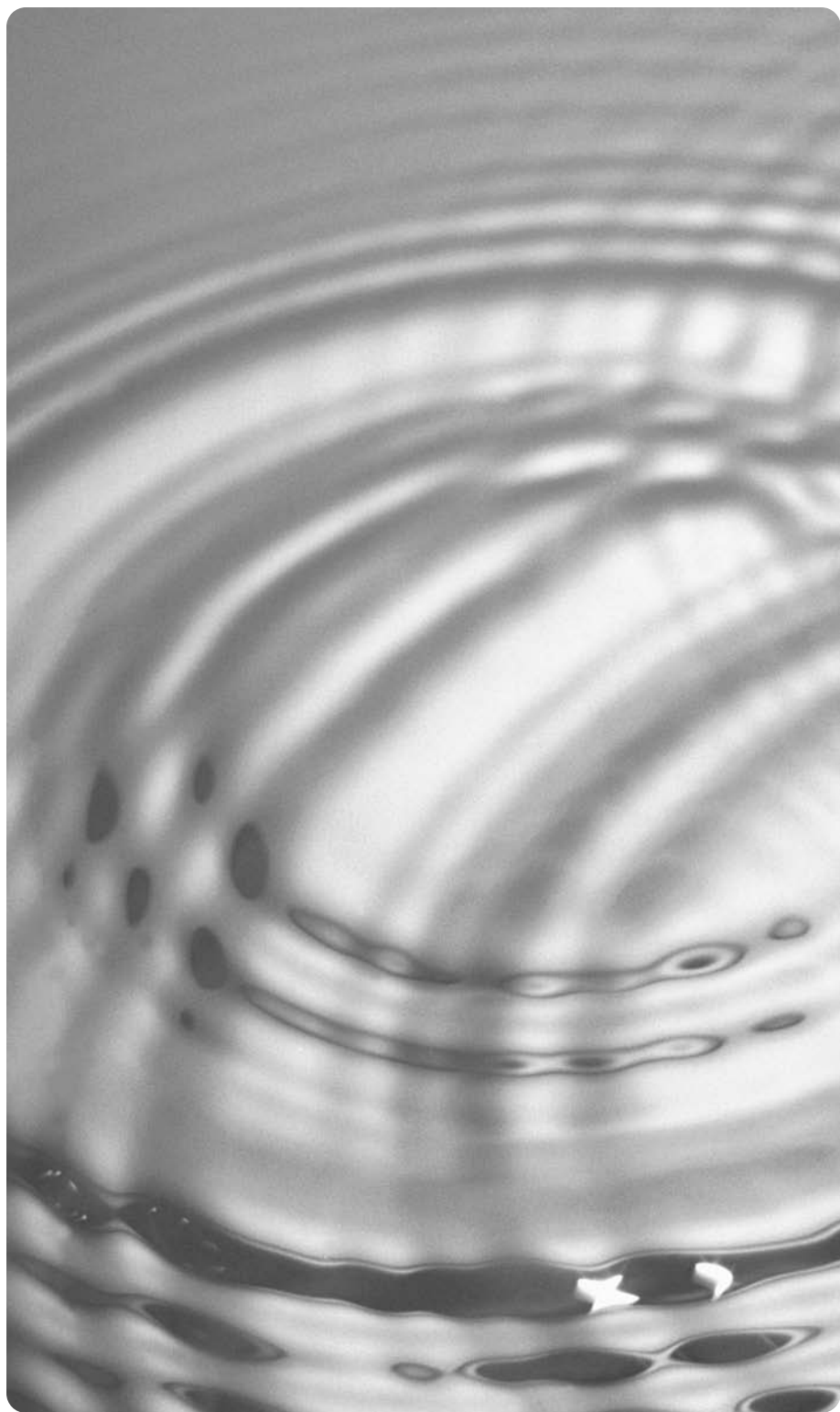
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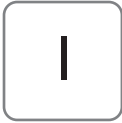
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Introduction

Welcome to the World of WeatherTRAK®

What is WeatherTRAK?

WeatherTRAK ET plus is the leading smart, weather-based irrigation solution. Numerous, multiyear studies by water districts and municipalities have proven that *WeatherTRAK* optimizes landscape health while it also saves time, money and water.

Your *WeatherTRAK ET plus* controller includes the built-in irrigation *Scheduling Engine™* that calculates an accurate irrigation schedule based on the specific needs of your landscape. Your customized schedule is automatically adjusted as the controller receives evapotranspiration (ET) updates via the *WeatherTRAK ET Everywhere™* service. HydroPoint Customer Service completes the solution, providing expert assistance at every step of the way. Help is just a phone call away at: (800) 362-8774.

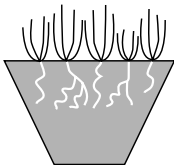
This Owner's Manual will help you maximize the benefits of your new *WeatherTRAK ET plus* controller.

Why Should I Care About Accurate Irrigation?

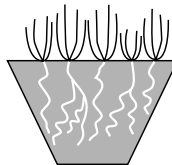
Research has proven that over-watering is not only costly, but it also threatens the life of your landscape.

Over-watering leads to poor plant health and disease. It also dramatically increases water bills, depletes precious water supplies and creates runoff pollution, endangering local watershed areas and beaches.

In many cases, landscapes become conditioned to inaccurate irrigation. Often times the plants have adjusted to inconsistent watering and have developed survival mechanisms such as shallow rooting.



Shallow roots
from frequent
overwatering

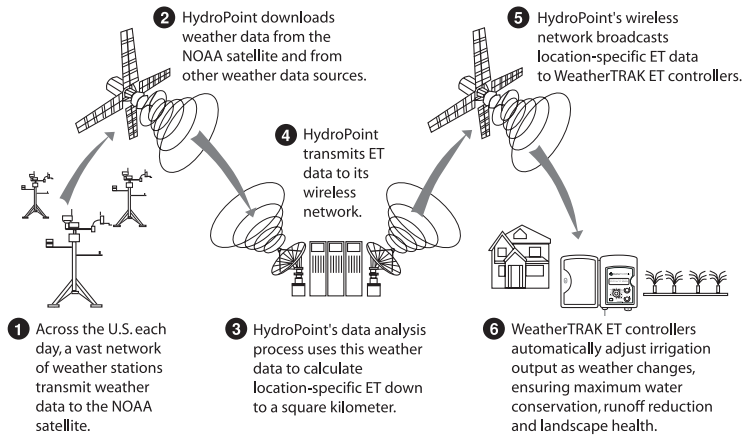


Deeper roots
from correct
watering

Over time, the *WeatherTRAK ET plus* solution reconditions your landscape to a natural balance, leading to healthier plants and greater efficiency in the way they use and absorb water.

How Does it Work?

First, the *WeatherTRAK ET plus* controller automatically calculates a program that matches your landscape's specific needs. Next, *WeatherTRAK ET Everywhere* service collects and analyzes the weather conditions in your area, and automatically broadcasts local weather data directly to your controller, seven days a week. This revolutionary technology ensures the most accurate, cost-effective irrigation ever devised.



WeatherTRAK ET Everywhere service and ET plus controller

What is the WeatherTRAK ET Solution?

WeatherTRAK ET plus offers three key solutions to your irrigation needs:

- 1. *WeatherTRAK ET plus Scheduling Engine.*** You simply enter basic information about your landscape into *WeatherTRAK ET plus* and the controller automatically calculates a scientifically based, customized schedule for you.
- 2. *WeatherTRAK ET Everywhere service.*** HydroPoint obtains weather station data from a host of public and private partners including the National Oceanic and Atmospheric Administration (NOAA), cities, states, universities, water districts and other organizations that own and manage weather station networks or individual weather stations.

HydroPoint collects, analyzes and validates weather data gathered from thousands of weather stations. HydroPoint utilizes these weather stations to provide input parameters for our local evapotranspiration (ET)* calculations.

ET Everywhere service provides accurate ET down to *one square kilometer*, automatically adjusting the water flow with changes in your local weather conditions. *ET Everywhere* service is centrally managed at the HydroPoint Data Center.

3. **HydroPoint Customer Service.** HydroPoint offers the irrigation industry's most professional and personalized customer support. HydroPoint is here to answer any questions you have: from understanding how to install *WeatherTRAK ET plus* to questions about horticulture, water conservation and proper plant maintenance.

If you need help, just call HydroPoint Data Systems at **(800) 362-8774** or look HydroPoint Data Systems up on the Web at **www.hydpoint.com**. Go to the support page.

How Do I Maintain My Landscape?

Although *WeatherTRAK ET plus* eliminates most adjustments, it relies on a good irrigation system.

Inspect your irrigation system by checking for leaks and broken sprinkler heads at least four times per irrigation season.

What You Can Expect

Once your *WeatherTRAK ET plus* controller is installed, it will likely need to be "tuned" as your landscape gets reconditioned. It will take time and a phased-in approach to develop an optimal water schedule. However, with *WeatherTRAK ET plus*, you will begin to see dramatic results in water savings and plant health within a few short weeks.

* ET is a scientific formula that determines the amount of water lost from a plant and its soil due to transpiration and evaporation caused by local weather conditions.





Chapter 1: Getting to Know Your *WeatherTRAK ET plus*

In this chapter you will learn about:

- Overview of the Controller and
- Selecting and Adjusting the Settings.

Note: Before using your controller

1. Make sure to inspect your existing irrigation system for any leaks or broken pipes. The efficiency of your new controller depends on the condition of your system. By having an efficient system, you will gain the most from using *WeatherTRAK ET plus*.
2. Install your new controller. HydroPoint recommends that you have *WeatherTRAK ET plus* installed and programmed by an authorized *WeatherTRAK ACE* contractor. For more information, call HydroPoint at: **(800) 362-8774**.

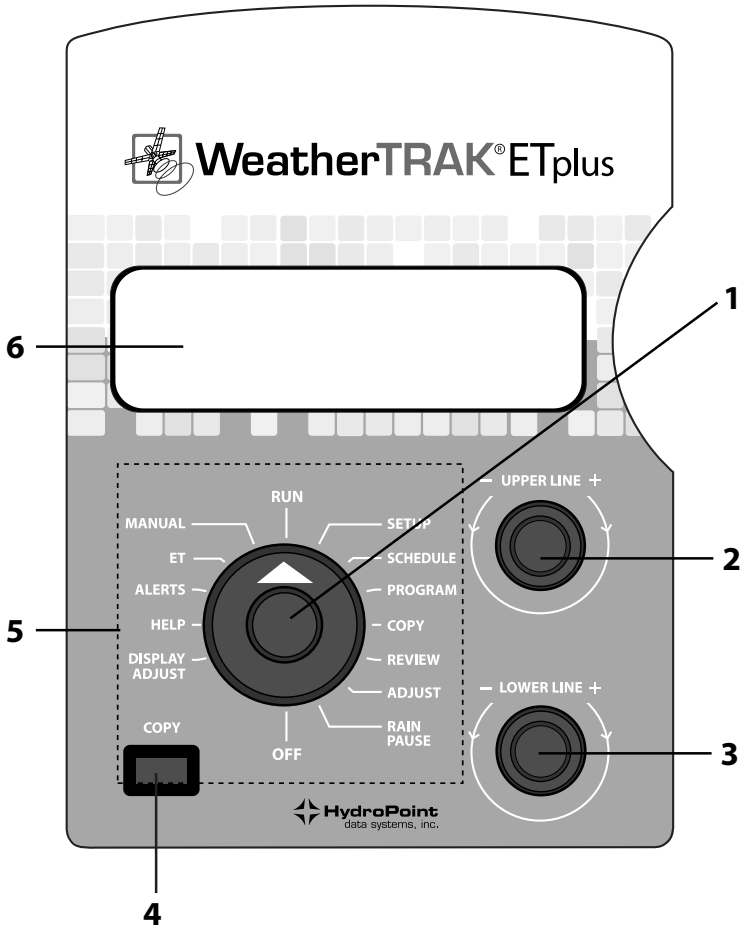
HydroPoint has provided a mounting template and separate poster with step-by-step instructions for installing *WeatherTRAK ET plus*.

Overview of the Controller

The main controls on *WeatherTRAK ET plus* are:

- a Function Selector knob (1) for selecting functions (5),
- an Upper Line knob (2) and
- a Lower Line knob (3).

You will also see a Copy button (4) and an information display (6).



1. Function Selector

Turn this knob left or right to select items to view. (For example, RUN, SETUP and PROGRAM.)

2. Upper Line Knob

Turn this knob left or right to select items on a list that appear on the upper line of the display.

3. Lower Line Knob

Turn this knob left or right to change the items on the list that you have selected. These will appear in the second line of the display.

4. Copy

Use this button to copy information that has been set for one station to another station.

5. Function Selector Positions

Run

Set the controller to this position for day-to-day operation. You will see a display that shows:

- the time and date,
- which valves are on (manually or automatic) and
- whether the controller is in **RAIN PAUSE** or if the rain sensor is active

Setup

This position lets you adjust the time, date and time zone.

Schedule

Use this position to set the days your irrigation system can operate.

Program

This position lets you customize your landscape-specific parameters by setting various “user modes.” These user modes include items such as:

- Fully Automated,
- User Program with ET,
- User Program No ET and
- Off.

Copy

This feature allows you to:

- Copy one station’s settings to another station,
- Copy one station’s settings to all other stations or
- Restore default values.

Review

This setting displays each station's:

- Irrigation runtime,
- Number of cycles,
- Soak times,
- Adjustment factor expressed as a percentage and
- Operating days.

Adjust

When you set a station to "**Fully Automated**", this feature adjusts station runtimes by adjusting the percentage ET.

When in "**Fully Automated**" mode, you can adjust in increments of 5% (in a range of -50% to +25%).

Rain Pause

This feature lets you shut down the controller for a specific number of days (in a range of 1 to 14 days).

Off

This setting stops all irrigation. The controller will still receive daily ET updates and the schedule will be recalculated.

Display Adjust

This feature lets you adjust the contrast of the display for better viewing.

Help

Select **HELP** to see the toll-free phone number to call for information about your *WeatherTRAK ET plus* controller. The **HELP** feature also displays important activation and troubleshooting information about your controller.

Alerts

This setting provides a list of alerts that you will receive about your controller. You will be alerted if you attempt to make a setting that could harm your plants, and in the event of an electrical or communication malfunction.

ET

This setting displays:

- The last ET value received along with the time and date it was received,
- The weekly ET value, which is an accumulation of the ET values sent over the last seven days and
- An optional feature that allows you to set custom plant and turf types and associated water requirements.

Manual

This feature lets you manually operate one, multiple, or all stations for a specific period of time, in increments of 1 minute, from 1 to 99 minutes.

6. Information Display

This three-line display shows the status of your controller and the adjustments that you make to it.

Selecting and Adjusting the Settings

You can select and adjust the controller's settings in three simple steps.

1. Turn the **Function Selector** knob to one of the following settings. Going clockwise they are:
 - Run,
 - Setup,
 - Schedule,
 - Program,
 - Copy,
 - Review,
 - Adjust,
 - Rain Pause,
 - Off,
 - Display Adjust,
 - Help,
 - Alerts,
 - ET and
 - Manual.

You will see the display change as you turn the knob.

2. Turn the **Upper Line** knob to the left or right to scroll through items on the list.

For example, if you choose **SETUP** with the **Function Selector**, you can turn the **Upper Line** knob left or right to scroll through the entire list of setup features.

Note: As you scroll through a list, many lists will loop through the last item to the first item. This avoids the need to retrace your previous steps to go to items in the current list.

3. Turn the **Lower Line** knob to the left or right to change the items on the list that you have selected. For example, if you select “**Set Clock**” on the upper line with the **Upper Line** knob, you actually change the clock settings on the lower line with the **Lower Line** knob.

These changes appear in the second lower line of the display.

Note: The latest setting is automatically saved. There is no need to press any special “save” key.





Chapter 2: Setting Up Your *WeatherTRAK ET plus*

Now that you have installed your *WeatherTRAK ET plus* controller and are familiar with the way to make changes to the settings, it's time to set up the controller.

This chapter explains:

- Setting the Irrigation Start Time,
- Setting the Water Window,
- Setting the High ET Start,
- Setting the Clock,
- Setting the Time Zone,
- Setting Auto Daylight Savings,
- Setting the Maximum Active Stations,
- Viewing the Serial Number,
- Viewing the Phase Integrity,
- Locking on a Phase,
- Displaying the Microzone,
- Displaying the WT Version,
- Setting the Stacking Option,
- Setting the Water District Number,
- Setting the Radio Antenna and
- Activating *WeatherTRAK ET plus*.

After you are finished with the basic set-up and have completed the Installation and Program Settings worksheet, please call HydroPoint Customer Service to activate your *WeatherTRAK ET plus*.

To start, turn the **Function Selector** knob to **SETUP**.

Setting the Irrigation Start Time

With *WeatherTRAK ET plus*, once you set a start time, the rest of the irrigation calculations are done automatically.

To set the irrigation start time:

1. Turn the **Upper Line** knob until you see:



SET IRRIG START (HOUR)
12:01am

2. Turn the **Lower Line** knob to set the **hour** (a.m. or p.m.) you would like irrigation to begin.
3. Turn the **Upper Line** knob to the right once more to select the start time minutes.
4. Use the **Lower Line** knob to change the start time minutes.

Note: The default start time is 12:01 a.m. You cannot set the time to 12:00 a.m.

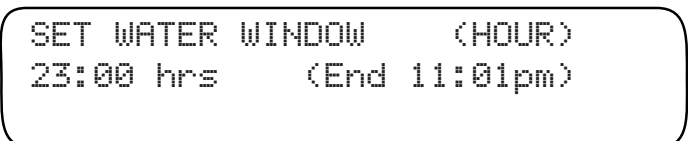
Setting the Water Window

The “**Water Window**” setting allows you to create a window of time that irrigation is allowed to operate. The calculated program may be shorter or longer than the window. If it is longer than the window, it will not complete. Any incomplete runtimes will be carried over to the next irrigation day.

To create a water window, the end time must be at least six hours from the start time to allow for effective watering.

To set the water window:

1. Turn the **Upper Line** knob until you see:



SET WATER WINDOW (HOUR)
23:00 hrs (End 11:01pm)

The lower line of the display shows the default setting of 23:00 hours.

2. Turn the **Lower Line** knob to set the number of hours.
3. Turn the **Upper Line** knob to the right once more to select the number of minutes.
4. Turn the **Lower Line** knob to set the water window minutes (00 to :59).

Note: The minimum window you can set is 6 hours.

Setting the High ET Start

With *WeatherTRAK ET plus*, you set a high ET start time for when the controller needs to water more than once per day to adjust for extreme weather conditions.

During periods of high ET, *WeatherTRAK ET plus* may water every day of the week using a single start time. If more water is needed within a given day (typically for turf), *WeatherTRAK ET plus* will irrigate a second cycle long enough to replenish the required ET.

To do this:

1. Turn the **Upper Line** knob until you see:



SET HIGH ET START (HOUR)
01:00pm

2. Turn the **Lower Line** knob to set the high ET start hour (1 to 9). The lower line of the display shows the default setting of 1 p.m.
3. Turn the **Upper Line** knob to the right once more to select the high ET start minutes.
4. Use the **Lower Line** knob to change the high ET start minutes (00 to :59).

Setting the Clock

To set the clock:

1. Turn the **Upper Line** knob until you see:



SET CLOCK (YEAR)
Sep 21 2005

2. Turn the **Lower Line** knob to set the year.
3. Turn the **Upper Line** knob to the right once more to select the month.
4. Turn the **Lower Line** knob to change the month.

Continue using the **Upper** and **Lower Line** knobs to set the day, hour and minutes.

Setting the Time Zone

WeatherTRAK ET plus receives a regular time broadcast, which is based on Greenwich Mean Time (GMT).

The controller then automatically adjusts this time based on the local time zone and Daylight Savings Time (if used).

To set the time zone:




SET TIME ZONE
Pacific

Turn the **Lower Line** knob to select your time zone. The choices are:

- Atlantic,
- Eastern,
- Central,
- Mountain,
- Pacific (Default Setting),
- Alaska and
- Hawaii.

Setting Auto Daylight Savings

1. Turn the **Upper Line** knob until you see:



AUTO DAYLIGHT SAVINGS?
Yes

2. Turn the **Lower Line** knob to select “Yes” or “No.”

Setting the Maximum Active Stations

You should always set the maximum active stations to correspond to the actual number of valves that are wired to the controller.

Important:

If you set this higher than the actual number of valves that you are using, you may add unnecessary time to the irrigation window. This may cause unnecessary water window alerts.


Important:

If you set “Maximum Active Stations” lower than the actual number of valves that you are using, you will prevent some of the valves from operating at all.

There is a separate master valve terminal on the output board of the controller. You do not need to count the master valve as an active station.

To set the maximum active stations:

1. Turn the **Upper Line** knob until you see:



SET MAX ACTIVE STATIONS
9

2. Turn the **Lower Line** knob to select the number of valves connected to the controller. The default number is 9 or 12 depending on the controller model you are operating.

Viewing the Serial Number

Under **SETUP**, to view the serial number of your controller, turn the **Upper Line** knob until you see:



SERIAL NUMBER
00649127

Please write down your serial number for future reference.

SN #: _____

Viewing the Phase Integrity

To view the phase integrity, which indicates wireless reception strength, turn the **Upper Line** knob until you see:



PHASE INTEGRITY
A=23 B=34 C=31 D=18

Note: Before calling HydroPoint Data Systems to activate your controller you should leave the phase integrity screen on for several minutes to acquire the correct phase integrities for the controller. Call HydroPoint Customer Service at: (800) 362-8774.

Locking on a Phase

To activate your controller, you will be asked to lock to a phase. Do not perform this setting until the HydroPoint Customer Service Representative asks you to do it.

To do this:

1. Turn the **Upper Line** knob until you see:



LOCK PHASE
None

2. Turn the **Lower Line** knob to select a lock phase. Your choices are:
 - A,
 - B,
 - C or
 - None (Default Setting).

When you lock onto a phase other than “None,” the controller will beep when receiving your activation message.



Important:

This feature is used only at *ET Everywhere* service activation. After activation all phases are ‘live’ and will be used to receive daily ET updates. Locking on a phase at activation allows for a faster activation process. At midnight of the day of activation, the controller will “unlock.”

Displaying the Microzone

The microzone provides the specific location of the controller and enables *WeatherTRAK ET plus* to receive its daily local ET updates.

To view the microzone, turn the **Upper Line** knob until you see:



MICROZONE
12345678

This displays the current microzone. The value shown is the default value.

Note: The microzone is transmitted to each controller during *ET Everywhere* service activation. You do not set the microzone.

Displaying the WT Version

This information will be used for *ET Everywhere* service activation only.

To view this, turn the **Upper Line** knob until you see:



WT VERSION
ver 00300a29

The number you see is the current *WeatherTRAK ET plus* version.

Setting the Stacking Option

Stacking is an irrigation term for sequential versus simultaneous operation of two or more schedules.

Your controller has two schedules: A and B.

Stacking (Stacking = yes, the default setting) means that all stations on both schedule A and schedule B will run sequentially (one at a time) until all programmed stations have completed their cycle runtime. Non-stacking (Stacking = no) means that the stations in program A can operate at the same time as the stations in program B (simultaneous operation). The hydraulics of your irrigation system determine whether or not non-stacking should be set.

1. Turn the **Upper Line** knob until you see:



STACKING
Yes

2. Turn the **Lower Line** knob to select:
 - Yes (Default Setting) or
 - No.

Setting the Water District Number (Option for Water Agency Program Participants)

HydroPoint provides a water district number if, and only if, you are a registered and willing participant in a water agency program. During activation, you will be instructed on what value, if any, should be entered. This may be set manually. This identification will allow your *WeatherTRAK ET plus* to be notified of specific water agency requirements.

To set the water district number:

1. Turn the **Upper Line** knob until you see:



```
SET WATER DIST.# Digit 1
_12345
```

2. Turn the **Lower Line** knob to select a number from "0" to "9."
3. Continue to turn the **Upper Line** and **Lower Line** knobs until you have selected the correct five-digit number.

Important:

There are some menu displays that you will set later. The following settings are not mandatory and will be covered in Chapter 4.

Setting the Radio Antenna

There are two options for setting the radio antenna:

- Internal (Default Setting) and
- External.

Usually, you will use the internal antenna.

In some areas, the internal antenna may not function due to local topography or interference from metal items, such as mounting the controller inside a steel cabinet. You can install an external antenna to allow the controller to receive a better signal.

To set the antenna:

1. Turn the **Upper Line** knob until you see:



RADIO ANTENNA
Internal

2. Turn the **Lower Line** knob to select “Internal” or “External.”

Turn the **Upper Line** knob until you see:



SETUP COMPLETE

You can purchase a kit that has the connection cable and antenna. Please call your local distributor or HydroPoint Sales for more information.

Activating *WeatherTRAK ET plus*

You are ready to activate your *WeatherTRAK ET plus* controller!
Please call HydroPoint Data Systems now at: (800) 362-8774.



Important:

Activation takes about three minutes to complete. Be sure to have your Installation and Program Settings worksheet and the controller's serial number ready when you call. Remember to set your display on "Phase Integrity" (SETUP Function) several minutes before you call.





Chapter 3: Programming Your *WeatherTRAK ET plus*

This chapter explains how to set schedules and program your *WeatherTRAK ET plus*.

You will learn about:

- Setting Schedules,
- Introduction to Programming,
- Fully Automated Program,
- User Program With ET,
- User Program No ET,
- Copying,
- Reviewing and
- Adjusting.

Setting Schedules

Schedules are water days that you can assign on a station-by-station basis. You must set a schedule before you begin any programming.

There can be up to two different schedules:

- A or
- B.

Once you create a schedule, you can then apply it to a given station during programming. You can assign only one schedule for each station.

Note: Schedules do not determine or affect runtimes. Runtimes are determined when you program each station. These schedules are used for “**Fully Automated**” mode stations only. You will create schedules for the “**User Programmed-with ET**” and “**User Programmed--NO ET**” modes in the program sections for those stations.

To set up a schedule:

1. Turn the **Function Selector** knob to **SCHEDULE**.

You will see the following display:



```
SET SCHEDULE
SCH A
```

2. Turn the **Lower Line** knob to select one of the following:
 - A (Default Setting) or
 - B.
3. Turn the **Upper Line** knob until you see:



```
SET WATER DAYS SCH A
Automated by WeatherTRAK
```

4. Turn the **Lower Line** knob to choose one of the following:
 - Automated by WeatherTRAK (Default Setting),
 - Odd/Even,
 - Interval or
 - Days of Week.

After you select a schedule, please see the following procedures for the schedule that applies to you.

If you selected “Automated by WeatherTRAK,” you will see the following display:



BEST NON-WATER DAY SCH A
None

This is the default setting. You can set a non-watering day if you wish. The controller will never allow any watering on the day you select. If you want to allow the controller to water on any day, select “None.”

To select a non-watering day, turn the **Lower Line** knob to choose one of the following:

- Sun through Sat or
- None (Default Setting).

Note: This is a “hard” non-water day and *WeatherTRAK ET plus* will never water on the day you selected. *WeatherTRAK ET plus* may also skip days if it determines that irrigation can wait until the next water day. If the soil reservoir has enough water for the plant material, it may skip a day.

If you selected “Odd/Even,” you will see the following display:



WATER DAY ODD/EVEN SCH A
Odd

Turn the **Lower Line** knob to choose one of the following:

- Odd (Default Setting) or
- Even.

WeatherTRAK ET plus will NOT water on the current day if it does not meet the schedule.

Note: If you select “Odd” watering day, the controller will allow watering on both day 31 of the current month and day 1 of the following month.

If you selected "Interval," you will see the following display:

```
WATER DAY INTERVAL SCH A
01 Day      (water every day)
```

Turn the **Lower Line** knob to choose one of the following:

- 01 Day-31 Day.

Note: *WeatherTRAK ET plus* treats the current day as "Day 0" and will water on that day. "Day 01" will start at 12:01 a.m. on the day following the current day.

A "01" day interval will water every day, a "02" day interval will water every second day, and a "03" day interval will water every 3 days.

If you selected "Days of Week," you will see the following display:

```
Jan S M T W T F S  SCH A
   _ Y Y Y Y Y Y Y
```

1. Turn the **Lower Line** knob to choose one of the following:

- Y for Yes-OK to water on this Day (Default Setting)
- - for Non-Water Day - Never water on this day.

Note: The lower line of the display shows the default settings for January. For each month of the year, the user selects which days of the week to water. Note that there is a cursor beneath the "Y," (Yes) that is under the "S" for Sunday to indicate it can be changed.

Some watering may occur on non-water days if watering cycles that start during "Y" days extend into "-" days AND there is no water window to stop this.

WeatherTRAK ET plus will water on “Y” days as needed in response to the changing weather. During winter months, some of these days may be skipped, while in the summer, every “Y” day may be required to irrigate. If you do not set enough days to allow watering during times of high ET, the system will alert you of the problem. (Please see “Understanding Alerts” on page 71 for more information.)

2. Turn the **Upper Line** knob to the next position.



The cursor will move to the “Y” under the “M” for Monday.

For example:

Continue to turn the **Upper Line** knob until the cursor appears under the “T” for Thursday.

3. Turn the **Lower Line** knob to the desired setting.
4. Turn the **Upper Line** knob past the “S” for Saturday. The upper line changes to these headings:
 - Feb S M T W T F S SCH B,
 - Mar S M T W T F S SCH B,
 - Apr S M T W T F S SCH B, etc. through December.

Set the irrigation days of the week for each month of the entire year.

Introduction to Programming

You need to program *WeatherTRAK ET plus* in order to create an irrigation routine for each station at your site.

There are four **PROGRAM** modes you can select. They are:

- Fully Automated,
- User Programmed-With ET,
- User Program-NO ET and
- Off.

All programs are based on their assigned schedule watering days you created in the A and B schedules. (Please see “Setting Schedules” on page 26 for more information.)

The “**Fully Automated**” mode is the first (and recommended) method of programming.

To ensure that water is applied in the proper amounts at the proper time, *WeatherTRAK ET plus* asks you to enter information about the specific conditions of each irrigation zone at your site.

Based on your input, the controller will automatically calculate the correct irrigation program. Once activated, the controller will start receiving daily *ET Everywhere* service updates and automatically adjust the program every day in response to current local weather conditions.

The controller will then water on the best days according to the schedule you selected.

The other two methods of programming are “**User Programmed--With ET**” and “**User Programmed--NO ET**.” These require you to determine your own irrigation program of runtimes, the number of cycles, minimum soak times and what days of the week to water, hence the name “**User Programmed**.”

The “**User Programmed--With ET**” mode will still receive daily *ET Everywhere* service updates and will adjust station runtimes accordingly. You will initially set the controller’s base schedule for the best program for that day’s current ET and then the daily ETs will adjust runtimes accordingly.

The “**User Programmed--NO ET**” mode does not use *ET Everywhere* service and the program remains unchanged unless you change it. This mode always applies the same amount of water regardless of changing weather and changing landscape requirements.

Fully Automated Program

With this method, the design of the irrigation program is completely automated based on parameters that you select. (The irrigation program is automatically adjusted by *ET Everywhere* service updates.) Once you have set the parameters, *WeatherTRAK ET plus* will adjust the watering programs in response to changing weather conditions throughout the year.

WeatherTRAK ET plus uses a 50% soil moisture depletion model to determine when and how much to water each plant type. When the soil reservoir has depleted to 50% of its capacity, the controller will irrigate.

There are 14 steps to program each station on your controller using the fully automated feature.

They are:

- 1. Set Station to Program**
You program one station at a time.
- 2. Set Program Mode**
You set the controller to “**Fully Automated**” program mode.
- 3. Set Schedule**
You assign a schedule, A or B, from one that you have already created.
- 4. Use Water Window**
You tell the controller whether or not you want to use the water window defined during setup.
- 5. Set Sprinkler Type**
You select the kind of sprinkler heads you will be using.

6. Set Precipitation Rate

This is the amount of water applied in inches per hour. After you select a sprinkler type, you set the precipitation rate.



Important:

The precipitation rate is vital to determine the proper runtimes for each station and to allow the system to operate properly and efficiently.

- The default precipitation rate is matched to the chosen sprinkler type. The greater the precipitation rate, the shorter the runtimes and more cycles needed to apply the required water.
- The lower the precipitation rate, the longer the runtimes and fewer cycles required to apply the required water.
- Please see “Appendix C: Site Data Gathering” on page 95.

7. Set Efficiency

You set the overall efficiency of the sprinklers.

- The default values are based on industry published values.
- The default efficiency rate is matched to the chosen sprinkler type.
- Higher efficiencies mean shorter runtimes and fewer cycles required to apply the needed water.
- Lower efficiencies mean longer runtimes and more cycles required to apply the water needed.
- Please see “Appendix C: Site Data Gathering” on page 95.

8. Set Soil Type

You enter the kind of soil that you have in that station/zone.

9. Set Plant Type

You select the type of plant material you are irrigating.

There are two types of parameters for each plant type:

- crop coefficient and
- root depth.

By selecting a plant type, you select values for both.

The **crop coefficient** adjusts the gathered ET to the ET amount required by the specific plant material.

Some plants may need much less water than the relative daily ET to thrive, e.g., native plants, while other plants may require more. The crop coefficient allows *WeatherTRAK ET plus* to customize each station to a particular type or group of plants to give you efficient water usage.

The root depth is necessary for proper irrigation because different watering patterns can affect how deep the applied water infiltrates the soil. Deep-rooted plants require a different irrigation pattern than shallow-rooted plants to supply water deeper into the soil.

WeatherTRAK ET plus adjusts the watering pattern to account for the plant type selected.

10. Set Root Depth

You set the depth of your plant's roots. The default values are based on standard values for selected plant and soil types which you can adjust as required.

- Larger root depths allow for longer intervals (days) between watering.
- Smaller root depths create shorter intervals between watering.

11. Set Microclimate

You enter the amount of direct sunlight your plants receive each day.

If the area is:

- Sunny all day, this will water exactly to ET.
- Sunny most of day, this will decrease watering by 10% of ET.
- Shady most of the day, this will decrease watering by 20% of ET.
- Shady all of the day, this will decrease watering by 30% of ET.

12. Set Slope Factor

You enter the relative flatness of your landscape.

- Slope factors are aimed at reducing runoff and maximizing water intake by the plants' roots.
- Slope factors will affect the duration of each water cycle and the number of cycles required to apply water.
- The steeper the slope the greater the number of cycles and the lower the runtime per cycle.

13. Set Sprinkler Location

You enter a sprinkler location if the sprinklers are on a slope.

Note: If the slope is "0", you will not be allowed to select a location.

14. Set Usable Rainfall

This feature only works with the *WeatherTRAK Rain Service*.

Note: Specific values are entered for each station. To speed up the entry process, you can use the **COPY** feature to copy information from one station to another and then edit as required.

To Begin Fully Automated Programming:

Set Station to Program

1. Turn the **Function Selector** knob to **PROGRAM**.

You will see the following display:



```
SET STA TO PROGRAM
Program STA 01
```

2. Turn the **Lower Line** knob to the desired station. You have the following choices:
 - STA 1, 2, 3, etc. up to the maximum active station number that you entered during **SETUP**.

Set Program Mode

1. Turn the **Upper Line** knob until you see:

```
SET PROGRAM MODE STA 01  
Fully Automated
```

2. Turn the **Lower Line** knob to select “**Fully Automated**” from the following choices:
 - Fully Automated (Default Setting),
 - User Programmed-With ET,
 - User Programmed-NO ET or
 - OFF.

Note: Each of the program modes is shown sequentially.

Set Schedule

1. Turn the **Upper Line** knob until you see:

```
SET SCHEDULE STA 01  
Sch A
```

2. Turn the **Lower Line** knob to select one of the following choices:
 - A or
 - B.

Use Water Window

1. Turn the **Upper Line** knob until you see:

```
USE WATER WINDOW STA 01  
Yes (end time 11:01pm)
```

This tells the controller whether this station should use the water window you entered in **SETUP**. The controller calculates the end time.

2. Turn the **Lower Line** knob to choose:
 - Yes (end time) or
 - No.

Set Sprinkler Type

1. Turn the **Upper Line** knob until you see:

```
SET SPRINKLR TYPE STA 01
Spray Head
```

The lower line of the display shows the default setting.

2. Turn the **Lower Line** knob to choose one of the following sprinkler types:
 - Spray Head (Default Setting),
 - Full Circle Rotor,
 - Part Circle Rotor,
 - Mixed Rotors,
 - Full Circle Impact,
 - Part Circle Impact,
 - Mixed Impacts,
 - Stream Rotors,
 - Bubbler,
 - Drip Emitter or
 - Stream Spray.

Set Precipitation Rate

1. Turn the **Upper Line** knob until you see:

```
PRECIP Digit 2 STA 01
1.70 Inches/Hr (default)
```

Note: This setting should match the precipitation rate that you gathered using the Site Data Gathering process on page 95.

2. Turn the **Lower Line** knob to choose the first digit of the precipitation rate desired:
 - 0 to 9.

3. Turn the **Upper Line** knob to the next position.

```
PRECIP Digit 2    STA 01  
1.70 Inches/Hr (default)
```

Note that the cursor has moved to the "7," which can now be changed.

4. Turn the **Lower Line** knob to change the number.

Repeat these steps until you have set your desired precipitation rate.

Set Efficiency

1. Turn the **Upper Line** knob until you see:

```
EFFIC'NCY Digit 1 STA 01  
70 Percent (default)
```

Note that there is a cursor under the "7" to indicate this digit can be changed.

2. Turn the **Lower Line** knob to choose one of the following system efficiency settings:
 - 1 to 9 (default depends on sprinkler type selected previously).
3. Turn the **Upper Line** knob to the next position.

```
EFFIC'NCY Digit 2 STA 01  
70 Percent (default)
```

Note that the cursor has moved to the "0," which can now be changed.

4. Turn the **Lower Line** knob to choose the desired response.
 - 0 to 9 (Default setting “0” to create “70”).

Note: The value “(default)” will appear if the sprinkler is using the sprinkler type’s default value.

Set Soil Type

1. Turn the **Upper Line** knob until you see:



SET SOIL TYPE STA 01
Sandy

2. Turn the **Lower Line** knob to choose one of the following soil types:
 - Sandy (Default Setting),
 - Sandy Loam,
 - Loam,
 - Clay Loam or
 - Clay.

Set Plant Type

1. Turn the **Upper Line** knob to the next position.



SET PLANT TYPE STA 01
Cool Season Grass

2. Turn the **Lower Line** knob to choose one of the following plant types:
 - Cool Season Grass (Default Setting),
 - Warm Season Grass,
 - Combined Grass,
 - Flowers,
 - Trees,
 - Shrubs - High Water Use,
 - Shrubs - Medium Water Use,
 - Shrubs - Low Water Use,
 - Mixed - High Water Use,
 - Mixed - Medium Water Use,
 - Mixed - Low Water Use,

- Native Shrubs/Trees,
- Native Grasses,
- Custom Plant A,
- Custom Plant B or
- Custom Turf.

Set Root Depth

1. Turn the **Upper Line** knob until you see:



```
SET ROOT DEPTH STA 01
_06 Inches (default)
```

Note: The lower line of the display shows the default setting based on the selected plant and soil type or the last value you selected. If you change the plant type, the root depth will revert to the default root depth based on the plant type.

2. Turn the **Lower Line** knob to choose one of the following custom root depths:
 - 02 to 36 (default setting as per plant type).

Note: The minimum root depth is 02 inches. Also, the term “(default)” will appear next to the root depth if it matches the plant’s default root depth.

Set Microclimate

1. Turn the **Upper Line** knob until you see:



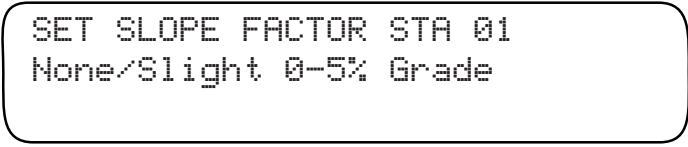
```
SET MICROCLIMATE STA 01
Sunny All Day
```

The lower line of the display shows the default setting.

2. Turn the **Lower Line** knob to choose one of the following micro-climates:
 - Sunny All Day (Default Setting),
 - Sunny Most of the Day,
 - Shady Most of the Day or
 - Shady All Day.

Set Slope Factor

1. Turn the **Upper Line** knob until you see:



SET SLOPE FACTOR STA 01
None/Slight 0-5% Grade

The lower line of the display shows the default setting.

2. Turn the **Lower Line** knob to choose one of the following slope factors:
 - None/Slight 0-5% Grade (Default Setting),
 - Gentle 6-8% Grade,
 - Mild 9-12% Grade,
 - Moderate 13-20% Grade or
 - Steep > 20% Grade.

Set Sprinkler Location

1. Turn the **Upper Line** knob until you see:



SPRINKLR LOCATION STA 01
All Parts of Slope

2. Turn the **Lower Line** knob to choose one of the following locations of sprinklers with relationship to the slope:
 - None, No Slope Set (Default Setting if no slope),
 - All Parts of Slope (Default Setting if slope > none),
 - Top of Slope,
 - Middle of Slope or
 - Bottom of Slope.

Set Usable Rainfall

1. Turn the **Upper Line** knob until you see:



USABLE RAINFALL STA 01
Inactive

The lower line of the display shows the default setting of “Inactive.”

2. Turn the **Lower Line** knob to choose one of the desired percentage of estimated rain to be on this station.
 - Inactive to 100% in 25% increments (default setting: Inactive).

Note: By default this feature will be inactive. *WeatherTRAK Rain Service* is only available in select regions and must be activated by HydroPoint Customer Service. If not activated, no percentage can be set. This feature is not the same as the **RAIN PAUSE** function. Please see “Using Rain Pause” on page 65 for more information.

To End Automatic Programming

1. Turn the **Upper Line** knob until you see:



PROGRAM COMPLETE STA 01

2. Turn the **Lower Line** knob to start the next station program schedule, or you can turn the **Function Selector** knob to other programming functions.

To speed up the process of entering this information on other stations, you simply use the **COPY** feature to copy the data from one station to either select stations or to all stations. You can then edit to make changes to the stations as required. Please see “Copying” on page 49 for more information.

You can also directly program additional stations.

User Program With ET

To program with ET, you must enter the entire irrigation program (cycle time, number of cycles per operating day, soak time) and also assign water days. The program you create is then modified by daily *ET Everywhere* service. Stations in this mode will run according to the same start times you set in **SETUP**.

Remember, if you choose the stacking option, it is a sequential operation. Non-stacking is a simultaneous operation.

The steps to program your controller with ET are:

- 1. Set Station**
This allows you to program one station at a time.
- 2. Set Program Mode**
This allows you to program the controller with ET.
- 3. Set Cycle Time**
This is how long to water for each cycle.
- 4. Set Number of Cycles**
This is how many times to repeat a cycle.
- 5. Set Soak Time**
This is the minimum time between cycles to let the soil absorb water.
- 6. Set Water Days**
This allows you to select the days to water.

You enter these values for each valve. To speed up the entry process, information can be copied from one station to another and then edited as required.

To Begin User Program:

Set Station

Turn the **Function Selector** knob to **PROGRAM**.

Set Program Mode

1. Turn the **Upper Line** knob to “**Set Program Mode.**”
2. Turn the **Lower Line** knob to “**User Programmed--With ET,**” as in the display below.



```
SET PROGRAM MODE STA 02
User Programmed--With ET
```

Set Cycle Time

1. Turn the **Upper Line** knob until you see:



```
SET CYCLE TIME STA 02
05.0 Minutes
```

First, you will set whole minutes. Then you will set tenths of minutes.

For this example, change the cycle time to “**25.8 minutes.**”

2. Turn the **Lower Line** knob to the desired minutes (Turn to 25):
 - 00 to 99 (Default Setting: 05.0).
3. Turn the **Upper Line** knob until you see:



```
SET CYCLE 10ths STA 02
25.0 Minutes
```

You can now change the lower line of the display to show the desired tenths of minutes.

4. Turn the **Lower Line** knob to the desired tenths of minutes (Turn to 8):
 - 0 to 9.

This is what the display looks like when the cycle time is set to “25.8 minutes.”



```
SET CYCLE 10ths STA 02
25.8 Minutes
```

Set Number of Cycles

1. Turn the **Upper Line** knob until you see:



```
SET # OF CYCLES STA 02
01 Cycles/Operating Day
```

2. Turn the **Lower Line** knob to the desired number of cycles (00 turns station OFF):
 - 00 to 20 (Default Setting: 01).

Set Soak Time

1. Turn the **Upper Line** knob until you see:



```
SET SOAK TIME STA 02
30 Minutes
```

2. Turn the **Lower Line** knob to the desired soak time:
 - 0 to 480 in 10-minute increments (Default Setting: 30).

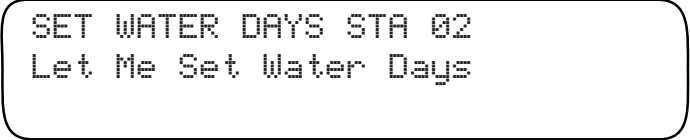
Note: Due to the nature of some soils, it is important that you apply water in short cycles to prevent irrigation water from running off the landscape area onto pavement, roadways or other areas.

By inserting a minimum soak time between the irrigation cycles, the irrigation water is allowed to soak into the soil before the next cycle begins.

Note: Some soak times may be longer than the minimum soak time that you set because other stations may be completing their cycle runtimes before the station can return to watering.

Set Water Days

1. Turn the **Upper Line** knob until you see:



```
SET WATER DAYS STA 02
Let Me Set Water Days
```

2. Turn the **Lower Line** knob to the desired watering day type:
 - Let Me Set Water Days (Default Setting),
 - Water 7 Days Per Week or
 - Set Water Day Intervals.

“**Let Me Set Water Days**” allows you to set which days of the week the controller will irrigate. You can choose different days for each month of the year.

- “**Water 7 Days Per Week**” irrigates every day, or
- “**Set Water Day Intervals**” allows you to set a regular interval for irrigation. For example, if you set a water day interval of “2,” the controller will irrigate every other day. If you set a water day interval of “7,” the controller will water every seven days or once a week, etc.

The choices for “**Set Water Days**” are shown below.

For “Let Me Set Water Days”:

1. Turn the **Upper Line** knob until you see:



```
Jan S M T W T F S STA 02
Y - - Y - -
```

The lower line of the display shows the default settings for January.

For each month of the year, the user selects which days of the week to water.

Note: There is a cursor beneath the “Y” under the “S” for Sunday to indicate it can be changed. In this example, set Sunday and Thursday as Water Days.

2. Turn the **Lower Line** knob to “Y”:
 - Y for Yes (Default Setting) or
 - — for No.
3. Turn the **Upper Line** knob until you see:



The cursor will move to the “Y” under the “M” for Monday.

4. Turn the **Lower Line** knob to the desired setting. (“-” for “No.”)

Continue this sequence until you have set all of the irrigation days of the week for January.

For example, turn the **Upper Line** knob until the cursor appears under the “—” for Thursday. Turn the **Lower Line** knob to “Y”. Turn the **Upper Line** knob once to move the cursor to the “Y” under “F” for Friday. Turn the **Lower Line** knob to “—” for No.

5. Turn the **Upper Line** knob past the “S” for Saturday. The upper line changes to these headings:
 - “Feb S M T W T F S STA 02,”
 - “Mar S M T W T F S STA 02,”
 - “Apr S M T W T F S STA 02,” etc. through December.

Set the irrigation days of the week for each month of the entire year.

6. Turn the **Upper Line** knob until you see:



After you set the water days for the year you are finished.

The following worksheet can help you to determine the weekly schedule for each month of the year. Make a copy of the table shown below and mark a "Y" in those days that irrigation should occur.

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
January							
February							
March							
April							
May							
June							
July							
August							
September							
October							
November							
December							

You can now program additional stations.

Turn the **Upper Line** knob to start the next station program schedule, or turn the **Function Selector** knob to **RUN** or other programming functions.

Note: To speed up the process of entering this information on other stations, you can use the **COPY** feature to copy the data from one station to either select stations or to all stations. You can then edit to make changes to the stations as required. Please see "Copying" on page 49 for more information.

For “Water 7 Days Per Week”:

Turn the **Upper Line** knob until you see:

SCHEDULE COMPLETE STA 02

There are no other choices. The entry process is finished. You can now program additional stations or use the **COPY** feature to copy programs between stations.

For “Set Water Day Intervals”:

1. Turn the **Upper Line** knob until you see:

WATER DAY INTRVL STA 02
01 Day (water everyday)

2. Turn the **Lower Line** knob to:

- 01 to 31 (Default Setting: 01).

3. Turn the **Upper Line** knob until you see:

PROGRAM COMPLETE STA 02

After the irrigation interval is set, the entry process is finished. You can now program additional stations, or use the **COPY** feature to copy programs between stations.

User Program No ET

To program without ET, you must figure out the entire irrigation schedule (cycle time, number of cycles per operating day, soak time and days of operation) and enter it into the controller.

Unless you change it, the schedule remains the same.

This mode is different from the “**User Programmed--With ET Mode**” in that the irrigation schedule is not modified by daily *ET Everywhere* service. Stations in this mode will run according to the start times that you entered in **SETUP**.

Remember that stacking is a sequential operation and non-stacking is a simultaneous operation.



Important:

The steps to program your controller without ET are the same as programming with ET.

Follow the same steps for programming with ET if you wish to program without ET.

Copying

This feature lets you copy the information you entered for one station to another station, multiple stations, or all stations. The information can then be edited as required. This speeds up programming and minimizes your chances for error.

Occasionally, you may wish to erase all of the programming you entered in your *WeatherTRAK ET plus* controller and start over. You can easily do this with “**Copy Program Defaults**.” Or, you may want to start over with the **SETUP** defaults. You can do this by using “**Copy Setup Defaults**.”

The steps for using the **COPY** feature include:

- 1. Copy From the Station Number**
Set the source station with the **Upper Line** knob.
- 2. To Station Number (Press the Copy button)**
Set the destination station(s) with the **Lower Line** knob, then press the **Copy** button.

3. Copy Program Default

This erases all station programming and restores factory-set defaults to individual stations or all stations.

4. Copy Schedule Defaults

This erases all schedules and restores factory-set defaults to all schedules.

5. Copy Setup Defaults

This erases all user selections and restores the factory-set defaults for the **SETUP** feature.

Copy From the Station Number

1. Turn the **Function Selector** knob to **COPY**.

The display will look like this:



```
COPY FROM STA 01
To STA 02 (Press COPY)
```

2. Turn the **Upper Line** knob to select the desired source station:
 - Station 1, 2, 3, ... to the last available station on the controller.

To Station Number (Press Copy)

1. Turn the **Lower Line** knob to the desired destination. These include:
 - Station 1, 2, 3, ... to the last available station on the controller and
 - All Stations.
2. Press the **Copy** button.

For this example, we will copy the program information from Station 3 to Station 4. (Turn the **Upper Line** knob to “**COPY FROM STA 03.**”)



```
COPY FROM STA 03
To STA 02 (Press COPY)
```

Now change the destination station (Turn the **Lower Line** knob "To STA 04.")



COPY FROM STA 03
To STA 04 (Press COPY)

Now press the **Copy** button.

The display will change briefly to this:



COPYING DONE!

Then the display will change back to this:



COPY FROM STA 03
To STA 04 (Press COPY)

Another example of the **COPY** function is:



COPY FROM STA 01
To ALL STA's (Press COPY)

This will copy program data from Station 1 to all stations of the controller.

Note: If you want to make minor changes to the copied data, simply turn the **Function Selector** knob to **PROGRAM**, set the station number, and edit as needed.

Copy Program Defaults

You can copy program defaults to individual stations or to all stations.

1. Turn the **Function Selector** knob to **COPY**.



```
COPY FROM STA 01
To STA 02 (Press COPY)
```

2. Turn the **Upper Line** knob past all of the “**COPY FROM STA 01, 02, 03...**” displays through to the last station on your controller. The next display is:



```
COPY PROGRAM DEFAULTS
To STA 02 (Press COPY)
```

3. Turn the **Lower Line** knob to the desired setting. These include:
 - Station 1, 2, 3, ... to last available station on controller and
 - All Stations (Default Setting).
4. Press the “**COPY**” button. The display will change briefly to this:



```
COPYING                               DONE!
```

Then the display will change back to this:



```
COPY PROGRAM DEFAULTS
To STA 02 (Press COPY)
```


Copy Setup Defaults

1. Turn the **Function Selector** knob to **COPY**.
You will see the following display:



```
COPY FROM STA 01
To STA 02 (Press COPY)
```

2. Turn the **Upper Line** knob past all of the “**COPY FROM STA 01, 02, 03...**” displays through to the last station on your controller, and past “**COPY PROGRAM DEFAULTS**” and past “**COPY SCHEDULE DEFAULTS.**” The next display is:



```
COPY SETUP DEFAULTS
(Press COPY)
```

The lower line of the display shows the only setting for this feature.

3. Press the **Copy** button to complete the process. The display will change briefly to this:



```
COPYING                               DONE!
```

Then the display will change to this:



```
COPY SETUP DEFAULTS
(Press COPY)
```

The **SETUP** defaults are now restored.

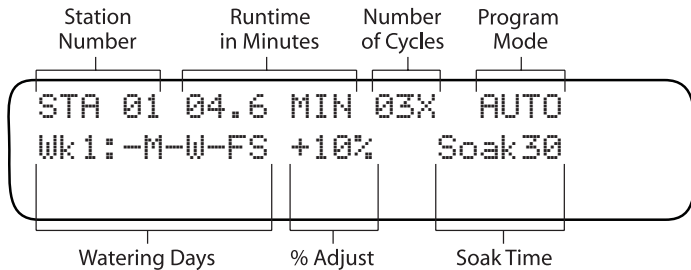
Reviewing

The Review feature lets you look at each station's entire irrigation schedule with a turn of the knob.

The following are examples of **REVIEW** displays for each program mode.

1. Turn the **Function Selector** knob to **REVIEW**.

If using the "**Fully Automated**" mode the display will look like this:



2. Turn the **Lower Line** knob to see up to week 8.

Reading from left to right, the upper line of the display shows:

- STA 01 Station Number
 - 04.6 MIN Runtime in Minutes
 - 03X Number of Cycles
 - AUTO Program Mode
-
- Station 1 will irrigate for 4.6 minutes per cycle, run for 3 cycles and is in the "**Fully Automated**" mode.

Reading from left to right, the lower line of the display shows:

- Wk1:-M-W-FS Watering Days for Week 1
(current week)
- +10% ADJUST Setting
- Soak 30 Soak Time

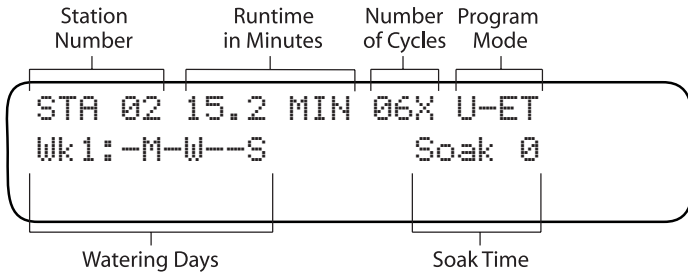
In summary, the review shows:

- The watering days are Monday, Wednesday, Friday and Saturday,
- Station 1 will operate 4.6 minutes three times on each irrigation day,
- There is an "Increase Irrigation +10%" (see following section on "Adjusting" on page 57) and
- There is a 30-minute soak period between cycles.

Note: If the high ET start time is used for a given day, then “Hi ET” will replace the “+10%” field and the percent adjust will not be shown. For more information on high ET please see page 15.

- Turn the **Upper Line** knob to **REVIEW** the next station(s).

If you are using “**User Programmed--With ET,**” the display will look like this:



Note: The **Lower Line** knob is not used with “**User Program**” modes.

Reading from left to right, the upper line of the display shows:

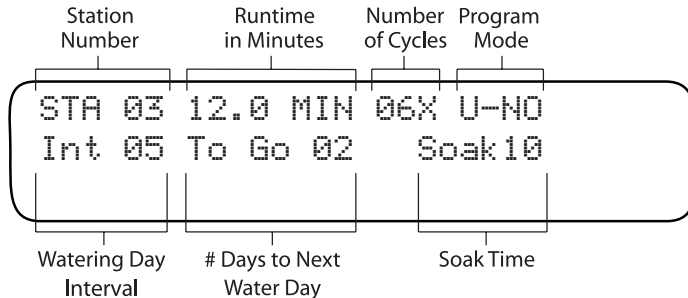
- STA 02 Station Number
- 15.2 MIN Runtime in Minutes
- 06X Number of Cycles
- U-ET Program Mode

Reading from left to right, the lower line of the display shows:

- Wk 1: -M-W--S Watering Days for Week 1 (current week)
- Soak 0 Soak Time

- Turn the **Upper Line** knob to **REVIEW** the next station(s).

If you are using “**User Programmed--No ET,**” the display will look like this:



Reading from left to right, the upper line of the display shows:

- STA 03 Station Number
- 12.0 MIN Runtime in Minutes
- 06X Number of Cycles
- U-NO Program Mode

Reading from left to right, the lower line of the display shows:

- Int 05 Watering Day Interval
- To Go 02 Number of Days to Next Water Day
- Soak 10 Soak Time

5. Turn the **Upper Line** knob to **REVIEW** the next station(s).

If you hold down the **Copy** button, the display will look like this:



```
STA 03 12.0 MIN 06X U-NO
Int 05 To Go 02 Soak10
```

Reading from left to right, the upper line of the display shows:

- STA 03 Station Number
- 12.0 MIN Runtime in Minutes
- 06X Number of Cycles
- U-NO Program Mode

Note: The examples shown are just part of a larger set of displays that can occur as the schedules and programming change.

Adjusting

The **ADJUST** feature is for tweaking any stations running in the “Fully Automated” mode. The **ADJUST** feature can increase or decrease a station’s runtime from the automatically calculated runtime.



Important:

Use **ADJUST** on any stations that are continually wetter or drier than desired.

The **ADJUST** feature should not be confused with or compared to the Water Budget feature seen in other controllers.

In the “Fully Automated” mode and the “User Programmed--With ET” mode, the *WeatherTRAK ET Everywhere* service updates automatically modify the irrigation schedule to respond to current water requirements based on actual weather.

Note: If you want to change an irrigation runtime in the “User Programmed--With ET” mode or the “User Programmed--NO ET” mode, it is necessary to make the changes back in the “Program” mode. The “Adjust” feature does not operate in these two modes.

The steps to use the **ADJUST** feature include:

1. Adjust

You can select individual controller stations with the **Upper Line** knob.

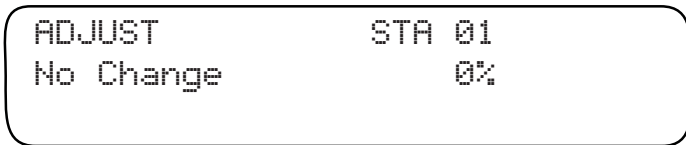
2. Increase/Decrease Irrigation Percentage

You can adjust irrigation by applying a percentage with the **Lower Line** knob.

To use Adjust:

1. Turn the **Function Selector** knob to **ADJUST**.

The display will look like this:



The upper line and lower line of the display show the default settings.

2. Turn the **Upper Line** knob to select the station.
3. Turn the **Lower Line** knob to change the percentage.

For this example, set Station 3 and decrease irrigation 5%.

1. Turn the **Upper Line** knob to “**STA 03.**” You can also set:
 - Station 1, 2, 3, ... to the last available station on the controller.
2. Turn the **Lower Line** knob to “**Decrease Irrigation -05%.**” You can adjust irrigation from -50% to +25% in 5% increments.

“No Change” will not alter the schedule. This is what the display looks like when Station 3 is set to “Decrease Irrigation -05%.”

```
ADJUST          STA 03
Decrease Irrigation -05%
```

Any stations that are in the “User Programmed” mode will look like this:

```
ADJUST          STA 01
Non-Adjustable Mode 0%
```

Repeat this pattern of selecting a station to **ADJUST** and the desired percentage until complete. After a station and the percentage change is set, the controller will calculate a new irrigation schedule for that station.

To see a station that has an **ADJUST** value, turn the **Function Selector** knob to **REVIEW**. The display will look like this:

```
STA 01 09.1 MIN 02X AUTO
Wk1:-MTW-FS 10% Soak 15
```

Reading from left to right, the upper line shows:

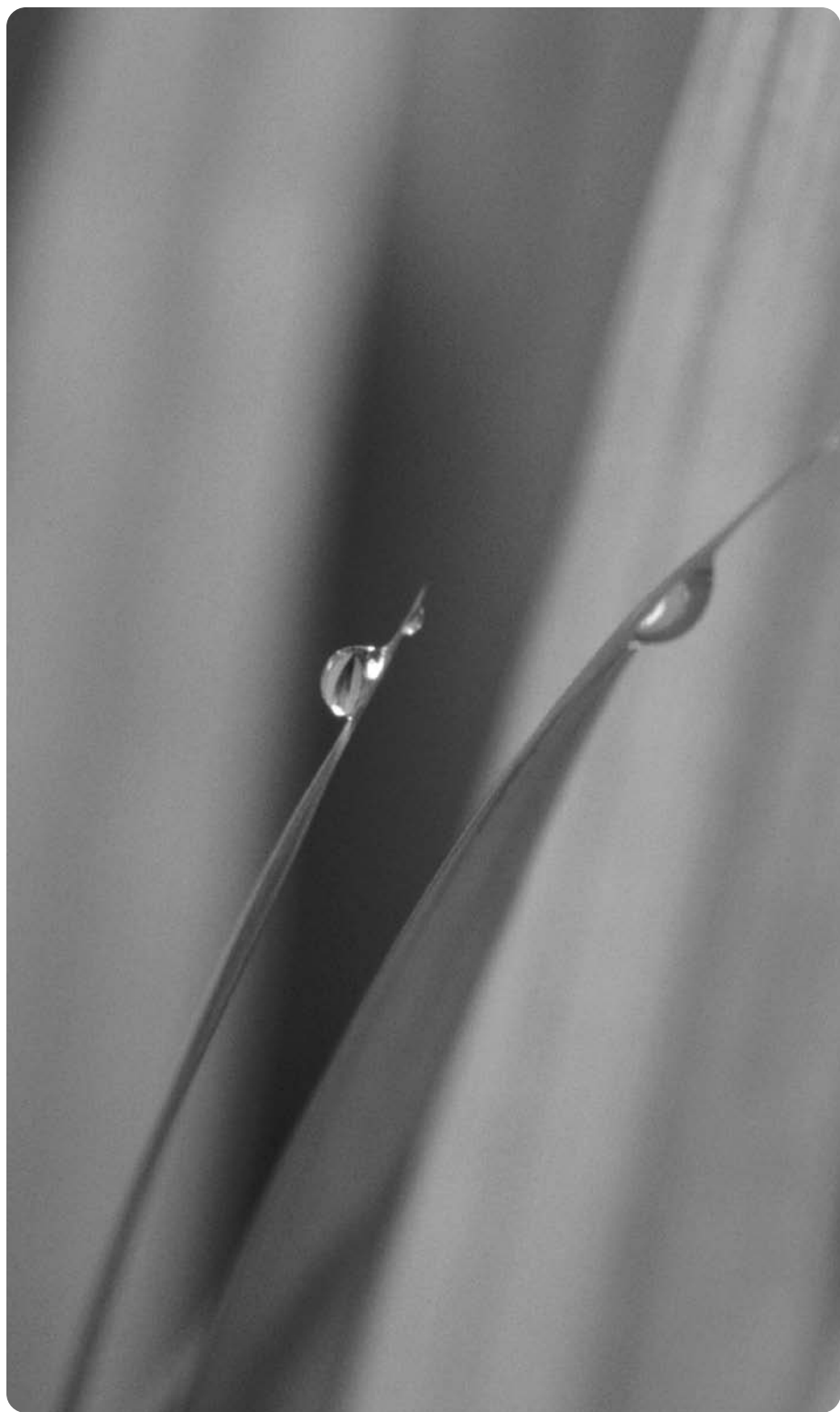
- STA 01 Station Number
- 09.1 MIN Runtime in Minutes
- 02X Number of Cycles
- AUTO Program Mode

Reading from left to right, the lower line shows:

- Wk1: -MTW-FS Watering Days for Week 1 (current week)
- 10% Adjust Setting
- Soak 15 Soak Time

Note: If increasing the irrigation by the **ADJUST** function exceeds the maximum calculated cycle time, a cycle will need to be added and the adjusted cycle time will be reduced. (The maximum cycle time applies to an amount of water up to the runoff point due to soil saturation.)

For example, if the automatically calculated irrigation schedule requires 4 minutes per cycle, 4 times per day for a total of 16 minutes, and the user adjusts irrigation to increase 20%, the new cycle time will be 4.8 minutes (4×1.20). The total adjusted runtime will be 19.2 minutes (4.8×4). If the maximum allowable cycle time to runoff is 4 minutes, the adjusted irrigation schedule will increase the number of cycles to 5 and reduce the cycle runtime to 3.7 minutes ($3.7 \times 5=18.5$).





Chapter 4: Using Special Features

In this chapter you will learn about many of the special features of *WeatherTRAK ET plus*.

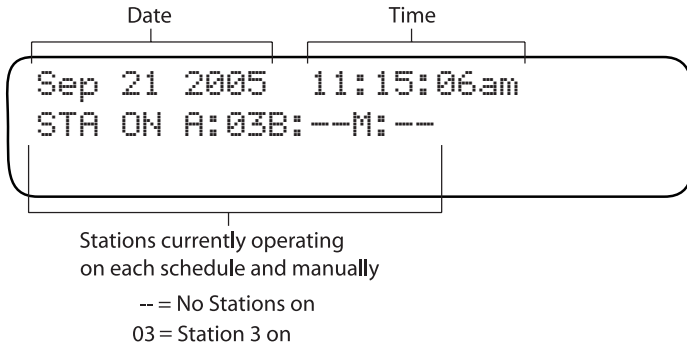
These include:

- Viewing Run,
- Using Rain Pause,
- Watering Manually,
- Understanding Alerts,
- Using ET,
- Using Display Adjust,
- Using Help,
- Setting to Off,
- Activating *WeatherTRAK Rain Service*,
- Setting the Zip Code,
- Setting the ET Zone,
- Displaying the Group Number and
- Setting the Maximum Backup ET.

Viewing Run

After you have completely programmed your *WeatherTRAK ET plus*, you can turn the **Function Selector** knob to **RUN**. The controller will now operate normally. Leaving the controller **Function Selector** knob in any setting except **OFF** will allow automatic operation.

Here are some examples of what the display may look like when on **RUN**:



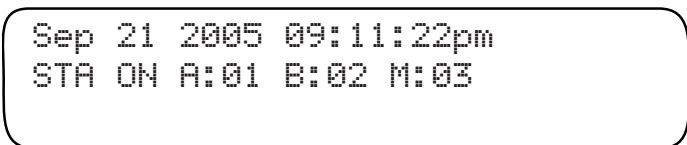
Reading from left to right, the upper line shows:

- Sep 21 2005 Date
- 11:15:06am Time
- The current date and time are shown.

Reading from left to right, the lower line shows:

- STA ON Identifies Stations On
- A:03 Station 3 is Watering for Schedule A
- B:— No Stations Watering for Schedule B
- M:— No Stations Watering that were set by MANUAL

Note: There is no indication on the screen that the master valve is on. When the master valve is in use, it will be on when any other valves are on in either A, B, or M.



Reading from left to right, the upper line shows:

- Sep 21 2005 Date
- 09:11:22pm Time

Reading from left to right, the lower line shows:

- STA ON Identifies Stations On
- A: 01 Station 1 is Watering as Part of Schedule A
- B: 02 Station 2 is Watering as Part of Schedule B
- M: 03 Station 3 is Watering as Set by User in
MANUAL

Note: *WeatherTRAK ET plus* can run up to 3 valves at the same time.

Using Rain Pause

RAIN PAUSE is a feature that allows you to turn off all stations of the controller for a specific number of days.

RAIN PAUSE is different from **OFF**. With **RAIN PAUSE**, after a period of days has gone by, the controller will return to its normal operation. **OFF** stops all irrigation indefinitely until you return it to **RUN** or some other feature.

You can install a rain switch on *WeatherTRAK ET plus*. If used, the rain switch will activate once the controller detects a pre-set amount of rain. Ten minutes after the switch is activated, any irrigation in progress will stop, and no programs will run until the switch deactivates. One hour after deactivation, the controller will allow irrigation.

Note: Your *WeatherTRAK ET plus* controller has an override switch to disable the rain switch when you want to operate the controller during a wet-rain sensor period.

The steps to use the **RAIN PAUSE** feature are:

1. **Rain Pause**

This turns off all stations of the controller.

2. **Days to Resume**

This sets the number of days to pause.

Rain Pause

Turn the **Function Selector** knob to **RAIN PAUSE**.

The display will look like this:



```
RAIN PAUSE ALL STATIONS
00 Days to Resume
```

Days to Resume

1. Turn the **Lower Line** knob to:

- 00 to 14 Days (Default Setting: 00).

No irrigation will occur until **RAIN PAUSE** has counted down to zero; irrigation will then resume for all stations on the next scheduled Water Day. (As each day elapses, this display will update to show the number of days remaining until it will resume normal irrigation.)

RAIN PAUSE has no effect on manual operations.

2. Turn the **Function Selector** knob to **RUN**. The display will look like this:



```
Sep 21 2005 08:45:23pm
STA ON Rain Pause MAN--
```

The upper line shows the current date and time.

The lower line shows that all programmed stations of the controller are in **RAIN PAUSE** and that there are no stations on in the **MANUAL** mode.

Note: If your controller is in **RAIN PAUSE** and you need to either increase or decrease the number of days before it resumes normal irrigation, turn the **Function Selector** knob to **RAIN PAUSE** and change the number of days with the **Lower Line** knob.

If the rain switch is tripped, no stations will run.

If you have installed and activated a rain switch, the display will look like this when the rain switch is active:



```
Sep 21 2005    08:45:23pm  
STA ON Rain Switch MAN--
```

The upper line shows the current date and time.

The lower line shows that all programmed stations of the controller are affected by the rain sensor and that there are no stations on in the **MANUAL** mode.

Watering Manually

Manual operation allows you to immediately start irrigation of all stations or single station(s). Manual operation is for a specified number of minutes and will start immediately, whether or not the current day is an allowed irrigation day. Only one station can be on at a time when watering in **MANUAL**.

The steps to manually operating your controller are:

1. **Manual Water Specific Stations**

This involves manually watering individual stations.

2. **Minutes**

These are the minutes that manual operation will run.

3. **Manual Water All Stations**

This involves manually watering all stations with the same runtime.

Note: Manual operation is useful to test your system to ensure that all the sprinklers are working properly and are correctly identified.

Manual Water Specific Stations

1. Turn the **Function Selector** knob to **MANUAL**.

The display will look like this:



```
MANUAL WATER
Specific Stations
```

2. Leave the setting at the default of “**Specific Stations.**” The choices are:
 - Specific Stations (Default Setting) or
 - All Stations.

The process to manually water specific stations is to first set the station with the **Upper Line** knob, and then set the amount of time with **Lower Line** knob.

3. Turn the **Upper Line** knob to the next position.



```
MANUAL WATER SET STA 01
00.0 Minutes
```

You can set each station for a different time. In this example, we will set Station 4 to water for 10 minutes.

4. Turn the **Upper Line** knob to “**STA 04.**” The other settings include:
 - STA 01 through 12 (Default Setting: STA 01)

Minutes

The lower line shows the default setting. Only whole minutes are set.

5. Turn the **Lower Line** knob to “**10.0.**” The other settings include:
 - 00 to 99 (Default Setting: 00.0).

This is what the display looks like when Station 4 is set for 10 minutes:



```
MANUAL WATER SET STA 04
10.0 Minutes
```

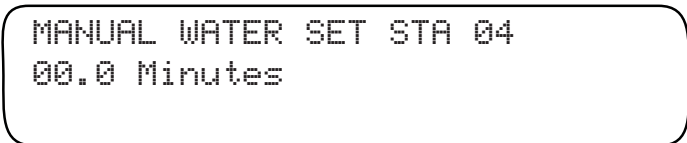
Repeat this pattern of selecting a station to manually water for the desired amount of time until complete.

Manual irrigation starts immediately on the first station that had a time entered.



```
MANUAL WATER SET STA 04
09.9 Minutes      NOW ON
```

There are 9.9 minutes remaining on Station 4. When irrigation has finished on this station, the screen will change to this:



```
MANUAL WATER SET STA 04
00.0 Minutes
```

Note: In manual operation, the controller will run the stations in their numerical order, which may not be the order in which they were entered.

Manual Water All Stations

1. Turn the **Function Selector** knob to **MANUAL**.

The display will look like this:



```
MANUAL WATER
Specific Stations
```

- The choices using the **Lower Line** knob are:
 - Specific Stations (Default Setting) and
 - All Stations.
- Turn the **Upper Line** knob.

The display will look like this:



```
MANUAL WATER ALL STATION
00.00 Minutes
```

The lower line of the display shows the default setting. Only whole minutes are set.

- Turn the **Lower Line** knob to the desired minutes for manual operation. These include:
 - 00 to 99 (Default Setting: 00.0).

Manual irrigation starts immediately on Station 1. The display will change to show the status of irrigation as in the example below (time set for two minutes).



```
MANUAL WATER ALL STATION
01.9 Minutes STA 01 ON
```

There are 1.9 minutes remaining on Station 1. After Station 1 has completed watering, Station 2 will go on for two minutes, then Station 3, etc. to the last station on the controller. When all irrigation is finished, the screen will change to this:



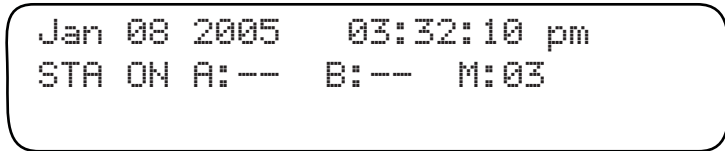
```
MANUAL WATER ALL STATION
00.0 Minutes
```

Note: If the **Function Selector** knob is turned to the **OFF** position, after one (1) second, the **MANUAL** mode stops. (This prevents momentary interruption of any irrigation when rotating the **Function Selector** knob through the **OFF** position.)

To cancel a “**MANUAL WATER All Stations**” entry, simply turn the **Lower Line** knob to “**0.0 Minutes**.” The manual valve currently on will stop irrigation, and no other manual valves will irrigate.

Note: Manual watering will occur immediately regardless of what other stations are on and will run concurrently with all other programmed stations.

The **RUN** display below shows manual irrigation at Station 3.



Understanding Alerts

The **ALERTS** feature provides status alerts for key functions of *WeatherTRAK ET plus*.

ALERTS covers issues related to **Water Window Status**, **Day Status**, **Communication Status** and **Electrical Status**.

If any one or more status sections are in **ALERT** mode, then the third line of the display (on all screens, not just in **ALERTS**) will read:

“Status: Warning See Alert.”

This will display until you fix the problem associated with each alert.

To fix Day Status alerts: reset the available water days or day interval in the month displayed in the alert. You can also increase the root depth for the alert station.

To fix Electrical Status alerts: repair the electrical system or component that has caused the short. The alert will then go away on the next irrigation run.

To fix Water Window Status alerts: expand the water window, reduce the run times with the **ADJUST** feature, or allow more days to irrigate.

To fix Communication Status alerts: call HydroPoint Customer Service at: (800) 362-8774.

To see alerts:

Turn the **Function Selector** knob to **ALERTS**.

Water Window Status Alert

```
MANUAL WINDOW STATUS  
TIME: 300 MIN (+60)  
STATUS: WARNING SEE ALERT
```

This alert shows the total amount of used window (runtime plus idle soak time) and shows the amount that this exceeds the Set window. If the runtime is under the window allotment, then there is not a warning, but this screen still shows the time and amount it is under.

In this example, the allowed water window is 300 minutes. The +60 indicates that the calculated schedule is 60 minutes more than the window is scheduled to complete.

Water Day Status Alert (A)

```
DAY STATUS SCHEDULE A  
Jul: 1 DAY INTERVAL REQ.  
STATUS: WARNING SEE ALERT
```

This alert shows for Schedule A if the user defined scheduled days are fewer than the days that the *Scheduling Engine* determines are required. The alert shown here is for the month of July.

This alert also shows the actual day interval that *WeatherTRAK ET plus Scheduling Engine* suggests. This is done by using the maximum ET value for each time of year. If there is a violation for multiple months it will show the earliest month first until the schedule for that month is corrected. If there are multiple months in violation, then the next month will only show up when the first month has been resolved.

Communication Status Alert

The display will look like this:

```
COMMUNICATION STATUS  
COMMUNICATION LOST  
STATUS: WARNING SEE ALERT
```

This will appear if *ET Everywhere* service has failed to communicate for 4 days. For these 4 days, *WeatherTRAK ET plus* will use the last received ET to calculate programs. After 4 days, it will continue to irrigate using the maximum backup ET from **SETUP**. The controller will also beep as an audible warning that communications have been lost.

Using ET

ET is the position that you select when you want to view the current ET.

To do this:

1. Turn the **Function Selector** knob to **ET**.
2. Turn the **Upper Line** knob until you see:

```
CURRENT DAILY ET: 0.14  
11-28-05 00:09:24
```

This is the current daily ET stored in the controller. The lower line shows the date and time the ET was received by the controller.

3. Turn the **Upper Line** knob until you see:

```
CURRENT WEEKLY ET: 0.95  
11-28-05 00:09:24
```

This is the current weekly ET stored in the controller. The lower line shows the date and time the ET was received by the controller.

4. Turn the **Upper Line** knob until you see:

Custom Plant Types (Kc)

SET KC CUSTOM PLANT A
1.00

SET KC CUSTOM PLANT B
1.00

SET KC CUSTOM TURF JAN
1.00

Kc is a mathematical notation for “Landscape Coefficient.” This is an adjustment factor for each station based on the plant type that is being irrigated. For example, native plants use less water than most non-native plants and will have a lower Kc.

To enter the custom turf Kc for each month, turn the **Upper Line** knob until you see the above display. Then turn the **Lower Line** knob to set Kc for January. Next turn the **Upper** and **Lower Line** knobs to set Kc for February. Repeat this process for all the remaining months of the year.

Using Display Adjust

Display Adjust lets you adjust the contrast of the display.

1. Turn the **Function Selector** knob to **DISPLAY ADJUST**.

The display will look like this:

ADJUST CONTRAST
Use Upper Line to Change

2. Turn the **Upper Line** knob left or right to change the contrast to the most desirable setting.

Using Help

If you are having problems with any aspect of your *WeatherTRAK ET plus* controller, help is available from a HydroPoint Customer Service Representative at the number shown in the display.

Help screens will help you to identify and troubleshoot any problems that may occur with the *WeatherTRAK ET plus* controller. You may be asked to look at these displays, write down what is stored in them and report this information to a HydroPoint Representative. Unlike other features, there are no entries for you to make in **HELP**. The lower line of the displays shown below are typical examples of **HELP** screens.

1. Turn the **Function Selector** knob to **HELP**.

The display will look like this:



```
FOR CUSTOMER SERVICE  
DIAL 1-800-362-8774
```

2. Turn the **Upper Line** knob.

The display will look like this:



```
THE CURRENT WEEKLY ET 1.67  
11-28-05 00:09:24
```

This is the current daily ET stored in the controller. The lower line shows the date and time the ET was received.

3. Turn the **Upper Line** knob to the next position.



```
SERIAL NUMBER  
00649765
```

- Turn the **Upper Line** knob to the next position.

```
MICROZONE  
12345678
```

- Turn the **Upper Line** knob to the next position.

```
DATA ENCRYPTION MASK  
02341234567877665244 (OK)
```

- Turn the **Upper Line** knob to the next position.

```
START TIMES  
1st 11:00pm Hi ET 1:00pm
```

You enter the start time with the **SETUP** function.

- Turn the **Upper Line** knob to the next position.

```
BEEP ON MESSAGE?  
No
```

The default is “No.” The controller will beep when it receives any message. If this is changed to “Yes,” at midnight it will revert back to the default setting.

```
PHASE INTEGRITY  
A=35 B=41 C=39 D=40
```

- Turn the **Upper Line** knob to the next position.

The unit is gathering statistical data on the signal integrity of each phase. It can take several minutes to acquire sufficient data.

9. Turn the **Upper Line** knob to the next position.



LOCK PHASE
None

The phase options are “None,” “A,” “B,” “C,” or “D.” When locked on a phase other than “None,” “Beep on Message” will turn on automatically.

10. Turn the **Upper Line** knob to the next position.



RESET/ERASE or RESTART
Hold Copy to RESET/ERASE

There is a blank screen before this. Two actions can be performed here. One action is to restart the controller microprocessor, retaining all of the programming previously completed. This is called a “Restart.” A second action called a “Reset” can be performed. This action will restart the controller microprocessor **and erase** all of the programming previously entered into the controller. You will be required to call HydroPoint Customer Service and reactivate the controller. You should only do this when directed by HydroPoint Customer Service.

HydroPoint Customer Service: (800) 362-8774.

Setting to Off

OFF stops all irrigation of your *WeatherTRAK ET plus* controller until you return the **Function Selector** knob to **RUN** (or any other function position other than **OFF**.)

Turn the **Function Selector** knob to **OFF**.

The display will look like this:



Sep 21 2005 12:47:56pm
Irrigation is Turned OFF

The upper line of the display shows the date and time.

The lower line indicates that no irrigation will occur until the **Function Selector** knob is turned to another position.

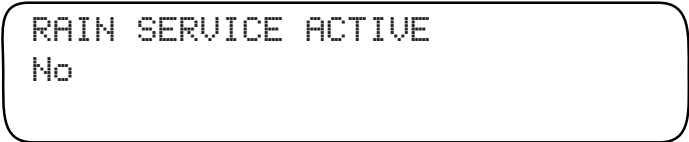
Once the **Function Selector** knob is turned to **OFF** and it remains in the **OFF** position for at least one second, all active controller functions are stopped until you return the **Function Selector** knob to the **RUN** position (or any other function position). This prevents momentary interruption of any irrigation when rotating the **Function Selector** knob through the **OFF** position.

Activating *WeatherTRAK Rain Service*

WeatherTRAK Rain Service monitors the rainfall in your area with a sophisticated array of rain sensors and other weather devices. The rainfall amount is then sent to your controller with the daily *ET Everywhere* service broadcast. The rainfall is then used to calculate a new soil depletion value to take advantage of the rainfall in its calculating of the next day's irrigation schedule.

WeatherTRAK Rain Service is available in some markets. This service can only be activated by calling HydroPoint Customer Service at: **(800) 362-8774**.

1. Under **SETUP**, turn the **Upper Line** knob until you see:



RAIN SERVICE ACTIVE
No

2. Turn the **Lower Line** knob to select “**Yes**” or “**No**.”

Note: This display is only adjustable after *Rain Service* activation by HydroPoint Customer Service.

Setting the Zip Code

To set your zip code:

1. Under **SETUP**, turn the **Upper Line** knob until you see:



```
SET ZIP CODE Digit1
_15645
```


2. Turn the **Lower Line** knob to select a number from "0" to "9."
3. Continue to turn the **Upper Line** and **Lower Line** knobs until you have selected the correct five-digit zip code.

Setting the ET Zone

The ET zone number is provided at activation. Along with the microzone value it is used by the controller to receive its local ET updates. In most locations, you will not be required to set this at activation.

To set the ET zone number:

1. Under "Setup," turn the **Upper Line** knob until you see:



```
SET ET ZONE# Digit 1
_12345
```

2. Turn the **Lower Line** knob to select a number from "0" to "9."
3. Continue to turn the **Upper Line** and **Lower Line** knobs until you have selected the correct five-digit zone number.

Displaying the Group Number

The group number may be assigned at activation or at a later date via HydroPoint Customer Service. If not assigned, the default is 00000. This number is used to group controllers together for sending *ET Everywhere* service messages.

To view the group number:

1. Under **SETUP**, turn the **Upper Line** knob until you see:



GROUP NUMBER
00835

2. You can now return the **Function Selector** to **RUN** or another programming function. If you return the **Function Selector** to **RUN**, the display will show the current time and date.

Setting the Maximum Backup ET

This value is used by the controller as a backup in the event that a communication failure occurs with *WeatherTRAK ET plus* and daily ET values are not received.

To set the maximum backup ET:

1. Under **SETUP**, turn the **Upper Line** knob until you see:



MAX BACKUP ET Digit 1
2:00

The lower line shows the default setting: "2.00."

2. Turn the **Lower Line** knob to select a number from "0" to "9."
3. Continue to turn the **Upper Line** and **Lower Line** knobs until you have selected the correct three-digit number.

Note: The maximum backup ET value includes a seasonal curve associated with the set number such that it that will automatically adjust the backup ET value according to the time of the year. You should set this to the value you want for the highest ET time of the year.





Appendix A: Quick Reference Guide

Getting Started

Site Survey

Gather the required site data for your irrigation system and landscape parameters (e.g., precipitation rate, zone efficiency, sprinkler type, plant type, soil type, root depth, slope amount and sprinkler location).

Setup Controller

1. Turn the **Function Selector** knob to **SETUP**.
2. Using the **Lower Line** knob set the irrigation start hour.
3. Rotate the **Upper Line** knob to select irrigation start minute.
4. Using the **Lower Line** knob, select the irrigation start minute.
5. Rotate the **Upper Line** knob until you see “**Set Clock (Year)**.”
6. Using the **Lower Line** knob, set the clock hour.
7. Continue using the **Upper** and **Lower Line** knobs to set the clock month, day, hour, minute, time zone and max active stations.

Activate

Call HydroPoint Customer Service to activate your controller at: **(800) 362-8774**. Be sure to have your completed Installation and Program Settings worksheet available.

Schedules

The Schedule feature allows you to set the water day pattern for your irrigation system. There are two schedules, A and B.

To set the day pattern for a schedule:

1. Turn the **Function Selector** knob to **SCHEDULE**.
2. Using the **Lower Line** knob select the schedule to set.

3. Rotate the **Upper Line** knob to select the day pattern type.
4. Using the **Lower Line** knob, select the day pattern for the selected schedule.
5. Rotate the **Upper Line** knob to select the setting for the selected day pattern.
6. Using the **Lower Line** knob, set the day pattern settings.

Water day patterns available: “Automated by WeatherTRAK,” “Odd/Even,” “Interval” and “Days of Week.”

Programs

The **PROGRAM** feature will allow you to modify any of your station-specific settings.

To set a station’s program:

1. Turn the **Function Selector** knob to **PROGRAM**.
2. Using the **Lower Line** knob select the station to program.
3. Rotate the **Upper Line** knob to select the program mode.
4. Using the **Lower Line** knob, select the program mode.
5. Automatic Mode: Using the **Upper** and **Lower Line** knobs, select a schedule (A or B), enter the landscape and irrigation system parameters you gathered in the “Site Data Gathering” section on page 95.
6. “User Programmed--With ET” or “User Programmed--NO ET” mode: Using the **Upper** and **Lower Line** knobs, enter the cycle runtime, number of cycles, soak time and day pattern for the station.
7. Refer to chapter three of this manual for more information.

Copy

The **COPY** feature allows you to quickly copy the program settings of one station to one or more stations.

One to one:

1. Turn the **Function Selector** knob to **COPY**.
2. Using the **Upper** and **Lower Line** knobs select the station to copy from and copy to.
3. Press the **Copy** button.

One to many:

1. Turn the **Function Selector** knob to **COPY**.
2. Using the **Upper Line** knob, select the station to copy from.
3. Using the **Lower Line** knob rotate through all station numbers. and select "**All Stations.**"
4. Press the **Copy** button.

Defaults restoration:

1. Turn the **Function Selector** knob to **COPY**.
2. Using the **Upper Line** knob, rotate through all the station numbers and select the type of setting you want to revert to default.
3. Press the **Copy** button.

Review

The Review feature allows you to see what the irrigation schedule is projected to be for each station.

How to Review:

1. Turn the **Function Selector** knob to **REVIEW**.
2. Using the **Upper Line** knob, select the station to review.
3. Using the **Lower Line** knob, select a week to view (weeks 1 – 8).

Adjust (Auto Mode Only)

The **ADJUST** feature allows you to easily adjust (increase or decrease) the watering times per station in 5% increments. Adjust should be used for fine-tuning each station according to its specific watering needs.

How to adjust:

1. Turn the **Function Selector** knob to **ADJUST**.
2. Using the **Upper Line** knob, select the station to adjust.
3. Using the **Lower Line** knob, select the amount to adjust the station.

Manual

The **MANUAL** feature allows you to immediately start irrigation for a specified number of minutes for all stations or a single station(s). Only one station can be on at a time when watering in **MANUAL**.

To water all stations:

1. Turn the **Function Selector** knob to **MANUAL**.
2. Using the **Lower Line** knob, select “**Manual Water All.**”
3. Rotate the **Upper Line** knob to the right one notch.
4. Using the **Lower Line** knob, select the number of minutes to operate.

To water selected stations:

1. Turn the **Function Selector** knob to **MANUAL**.
2. Using the **Lower Line** knob, select “**Specific Stations.**”
3. Rotate the **Upper Line** knob to the right until the desired station is selected.
4. Using the **Lower Line** knob, select the number of minutes to operate.

Rain Pause

The **RAIN PAUSE** feature allows you to suspend irrigation for all stations for up to 14 days. After a **RAIN PAUSE** setting has expired, normal irrigation will resume. **RAIN PAUSE** can be set automatically but can be changed from the controller.

To set a Rain Pause:

1. Turn the **Function Selector** knob to **RAIN PAUSE**.
2. Using the **Lower Line** knob, set the number of days to pause.





Appendix B: Troubleshooting Guide

Alert Troubleshooting

Water Window Alert

During times of high ET, the water window you selected may not provide sufficient irrigation for all zones.

To correct this:

1. Increase the water window.
2. Increase the number of days to irrigate.
3. Change the station program parameters or reduce the required amount of water for each zone.
4. Use adjust to increase or decrease watering.

Day Interval Alert

During times of high ET, the number of days you allow irrigation may not be enough to adequately irrigate all zones.

To correct this:

1. Increase the number of days to irrigate.
2. Change the station program parameters or adjust to reduce the required amount of water for each zone.

Communication Alert:

Call HydroPoint Customer Service at: (800) 362-8774.

Electrical Alert

Most likely, this is caused by a blown solenoid or wiring problem.

To correct this:

1. Check the solenoid on each affected valve.
2. Check the wiring from the controller to each valve.
3. If the above solutions do not fix the problem, call your local irrigation repair company or a *WeatherTRAK* distributor for more information. Distributor information is available on the HydroPoint Web site at: www.hydropoint.com.

The Controller Programs Correctly But the Stations are Not Irrigating

1. **Turn the Function Selector to RUN.**
Check the “**Date**” and “**Time**” settings. Be sure they are correct. If the date is wrong, controller will not be in sync with the actual date which may cause valves to not operate on correct days. If the time is wrong, controller will not be in sync with the actual time, so valves will not operate at the correct time.
2. **Keep the Function Selector at RUN.**
If “**RAIN SWITCH**” displays, your rain sensor is active and is blocking operation of the controller. If no rain sensor has been installed, check the sensor terminals, there should be a jumper wire between them for proper operation.
3. **The Controller Fuse May Be Blown.**
Replace the fuse. A replacement fuse is included with each controller. Fuses are also available from *WeatherTRAK* distributors.

Is Your Landscape Too Wet?

1. Select **ADJUST**.
2. Turn **Upper Line** knob to select the station.
3. Turn **Lower Line** knob to adjust -10% and watch for 7-10 days.
4. If still wet, decrease 5% to 10% each week until you see minor stress.
5. When you see minor stress, increase 5% to settle program at optimal level.

Is Your Landscape Too Dry?

1. Select **ADJUST**.
2. Turn **Upper Line** knob to select the station.
3. Turn **Lower Line** knob to adjust +5% and watch for 7-10 days.
4. If still dry, increase 5% each week until stress is eliminated. This is the optimal level.

Feature Adjust is Not Working

1. **Turn the Function Selector to RUN.**
Check the "Date" and "Time" settings. Be sure they are correct.
2. **Turn the Function Selector to REVIEW.**
ADJUST changes may be subtle, shown as a small difference in the runtime or number of cycles, or it may be more significant depending on the percentage adjustment. If you are towards the end of the week when reviewing the schedule (Wed. or later) the affect of ADJUST may not be evident in the current week. Remember, any days that have already irrigated will appear in the REVIEW display regardless of any ADJUST. You should see the effect of ADJUST in week 2, 3, etc. with different day intervals.

Controller Just Installed, Activated and Still Beeping

1. **Turn the Function selector to RUN.**
Check the "Date" and "Time" settings. Be sure they are correct.
2. **Turn the Function Selector to RUN and hold down the Copy button.**
You will see "Phase X(L)" where "X" is one of the four phases and the "L" signifies that the phase is locked. "Beep on message" is automatically turned on when the installer locked on a phase to activate. The installer did not turn off beep after activation. The beeper will automatically turn off at midnight or go to HELP, turn to "BEEP ON MESSAGE?" and set to "No."

What the Beeps Mean

1. **Two Beeps:** a good message has been received for this controller.
2. **Four Beeps:** a good message has been received but it is for another controller.
3. **Six Beeps:** a bad message was received and it will be ignored.
4. **Alternating long and short beeps:** The controller's fuse has blown and needs to be replaced. Replace the fuse. Fuses are available from *WeatherTRAK* distributors. See "Appendix D: FCC Information" on page 101.
5. **One beep every 30 seconds:** Communications to the controller have not occurred for over 4 days.

The Display is Blank

1. Turn the Function Selector to RUN. You should now see a display.
2. If not, power down the unit, wait for 30 seconds and restart the unit. The display should return.
3. If the display does not return, call HydroPoint Customer Service at: (800) 362-8774.

The Display is Frozen

1. Turn the Function Selector to RUN. The display should change and show the date and time.
2. If the display shows "PHASE" on the lower line: The Copy button may be stuck in the "pressed" position. Free the Copy button.
3. If the Copy button was stuck: The controller may have been initialized.
4. If the controller was initialized: You must reenter all the setup, schedule and program information. You may need to reactivate the controller. Call HydroPoint Customer Service at: (800) 362-8774.
5. If the Copy button was not stuck: The controller may need to be initialized. Call HydroPoint Customer Service at: (800) 362-8774.

ET Display has a "P" After It

1. Turn the Function Selector to RUN. Check the "Date" and "Time" settings. Be sure they are correct.
2. Turn the Function Selector to DIAGNOSTICS. If you see a "P" after ET, the controller is currently running and an ET was communicated to the unit during station operation. The controller will label the ET as "Pending" until the irrigation cycle(s) are complete. It will then apply the new ET to all programs for the next irrigation.

Week 1 in the Review Screen is Much Different

1. When the controller is installed, any days previous to today will not be shown in “**Week 1**” schedule. The controller shows what days have irrigated or it anticipates what days will irrigate if the weather remains as it is today. If the controller is installed on a Friday, there will be no irrigation days shown prior to Friday, which may result in no irrigation days at all for week 1.
2. Turn the **Lower Line** knob to see Week 2 through 8 irrigation days. The irrigation days will display a pattern as you look at subsequent weeks.

The Display in REVIEW Shows “99+” Minutes

1. The runtime programmed is greater than 99 minutes. There are only two digits available in the display to show the runtime, so if the time actually exceeds 99 minutes it shows “99+”.
2. This is a display issue only; the controller will irrigate for the full runtime.





Appendix C: Site Data Gathering

Introduction

HydroPoint Data Systems, Inc. manufactures a line of ET-based irrigation controllers that allow the user to enter details about their landscape. The *WeatherTRAK Scheduling Engine* applies this data to calculate an efficient irrigation program.



Important:

As with any irrigation schedule, an initial calculation of the schedule is performed and then adjustments are made to fine-tune the amount of water used to properly maintain the landscape. These adjustments may require follow-up visits to a site in order to monitor the landscape and adjust the controller settings. These visits are vital to obtaining a proper and efficient schedule for the landscape.

The schedule adjustment process requires a base program calculated on as much information about the landscape as possible. It is then adjusted up or down according to the landscape response. The goal is to adjust the program to the point of slight stress in the landscape and then adjust it back up slightly to keep the landscape green. This allows a green landscape while using only enough water to keep it that way.

One of the parameters a user must enter to calculate an efficient schedule is a precipitation rate (PR). The following outlined processes enable a user to gather site information to determine a base precipitation rate for each station. Fine-tuning this precipitation rate may be necessary if the irrigation system was not installed to exact manufacturer standards.

The Processes

Precipitation Rate Gathering - Initial Controller Installation Process

Review the System Installation

Make note of the following:

1. A descriptive name for each active station on the controller.
2. The manufacturer of the irrigation nozzles on each station.
3. The spacing of heads for each station (general observation only).
4. The pressure at the heads (general observation only).
5. For retrofit applications, the age of the irrigation system components, especially the sprinkler nozzles and piping. (The performance of these components is likely to degrade over time.)
6. All other station properties are gathered and entered on the Installation and Program Settings worksheet and into the controller at this time.

Enter the Station Precipitation Rate in the Controller

1. If the precipitation rate of the station is known from an irrigation design or other calculation; enter it in the station's properties. This is most common with new irrigation installations.
2. If the precipitation rate is not known, such as a retrofit installation, set the station "sprinkler type" to the type of heads that are installed on that station. The controller will set a default precipitation rate for you.

Precipitation Rate Gathering – Follow-Up Site Visit Process

Review the landscape conditions.

- ✓ Closely check the condition of the landscape. Look for stress in the plant materials or other signs of under-watering or over-watering, such as soggy areas or puddles immediately after irrigation.
- ✓ Use a soil probe to check the depth of moist soil as evidence of the depth the irrigation program is producing. This is very important in areas showing signs of stress and areas where there may be too much water. This information will help in defining which of the following steps should be taken to fine-tune the irrigation program.
- ✓ **If the landscape is green with no signs of stress**, the schedule is adjusted down 10% and monitored. If it is still green with no signs of minor stress after 1 week, it is adjusted down 10% again. This process continues every week until the landscape shows signs of minor stress and then the schedule is adjusted up 5% for a final adjustment.
- ✓ **If the landscape is visibly wet** with extremely wet soil, puddles and runoff, the initial adjustment may need to be adjusted 10% or 15% down for the first 1 week adjustment period and then the process follows the downward 5% adjustment every week until minor stress is visible. Once minor stress is noticed, adjust the schedule back up 5% for a final adjustment.
- ✓ **If the landscape shows signs of stress** and very dry soil with the base schedule and continues to show stress following an initial 5% increase, then continue making 5% increases each week until the landscape shows no signs of stress.
- ✓ **If the landscape is extremely dry or extremely wet**, an adjustment in the precipitation rate may be required. The following steps will help you identify a proper precipitation rate for your system.

Compare Site Information to Criteria

1. Do the heads have head-to-head coverage? (Does one head spray all the way to the next head? I.e. it does not spray less than or greater than the spacing between heads.)
If YES, go to Step 2. If NO, go to Step 3.
2. Do you have access to the manufacturer's sprinkler nozzle data?
If YES, go to Process 1. If NO, go to Step 3.
3. Do the heads produce a lot of misting spray (a sign of too much pressure)?
If YES, go to Process 3. If NO, go to Step 4.
4. Is the system less than 10 years old?
If YES, go to Process 2. If NO, go to Process 3.

Process 1: Manufacturer's Charts and PR (precipitation rate) Calculations

1. Determine if the head layout is in a square or triangular pattern.
2. Verify that you have head-to-head coverage and the nozzles are installed for matched precipitation, a general rule of thumb is: as the spray arc doubles, so should the flow.
3. You can use the manufacturer's PR rates if you have fixed spray nozzles within the same radius family, or rotors/impacts that are all 180 degree arcs with the same nozzle.
4. If you have matched PR nozzles, use this formula for square spacing:

$$\text{PR} = [\text{GPM (for any arc)} \times 34,650] \div [\text{Degree of Arc} \times \text{Head Spacing (ft.)} \times \text{Row Spacing (ft.)}]$$

For triangular space:

$$\text{PR} = [\text{GPM of 360° Arc} \times 96.25] \div [\text{Head Spacing (ft.)} \times \text{Head Spacing (ft.)} \times .866]$$

Process 2: Station Catch Can Audit

Perform a system audit per the Irrigation Association's (IA) Certified Landscape Irrigation Auditor (CLIA) criteria. For information on the CLIA program contact the Irrigation Association at:
www.irrigation.org

Process 3: Sprinkler Type Default

1. If the first two processes are not possible, then set the controller to the default precipitation rate for each zone's sprinkler type.

2. Process to use the defaults:
 - In the programming process, select the sprinkler type for the desired zone.
 - Turn the **Upper Line** knob to set the precipitation rate.
 - Do not change the default setting.
 - Continue with programming the station.





Appendix D: FCC Information

The equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rule. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance can void the user's authority to operate the equipment.

Electrical

Fuse Replacement

⚡ This fuse protects the transformer from an excessive current event due to a short circuit condition. For continued protection against the risk of fire, replace with only the same type and rating of fuse. Ensure power to the controller is off prior to removing or installing fuse.

1. Disconnect power to the controller.
2. Carefully remove the blown fuse from the retaining clips on the PC board.
3. Install a new 2A, 220V, slow-blow fuse (*WeatherTRAK* P/N 4008).
4. Restore power to the controller.

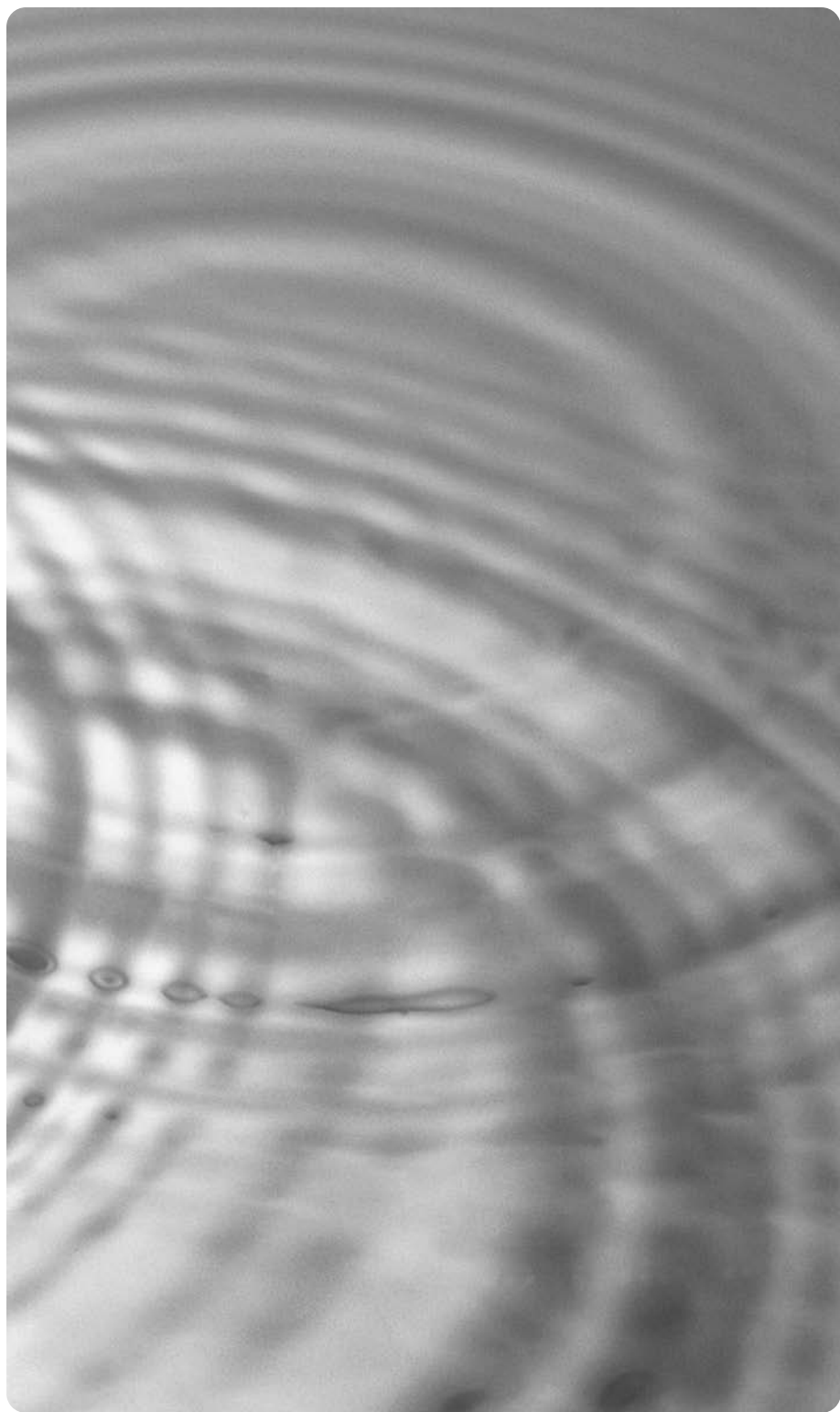
Specifications

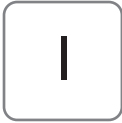
Mechanical specifications are:

- Outdoor Models: 7.50"H x 9.50"W x 5.625"D
- Indoor Models: 7.50"H x 6.50"W x 3.75"D
- Opening Temperature Range: 32°F to 140°F

Electrical specifications are:

- Input Power: 120 VAC, 60 Hz
- Station Output: 24 VAC, 60 Hz, 0.5A max. per station
- Master Valve/Pump Start: 24 VAC, 60 Hz, 0.375A
- Total Output: 24 VAC, 60 Hz, 1.0A maximum
- UL/CSA – listed transformer





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SECOND EDITION: Software Version 300

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