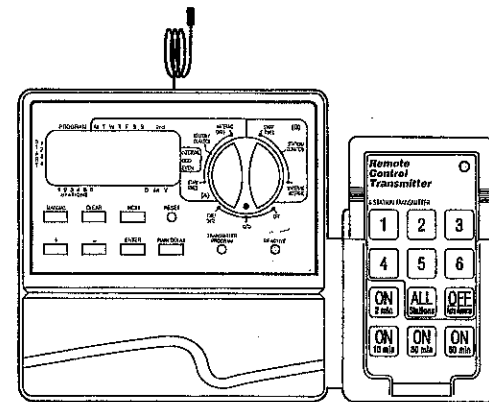


User's Manual

Sprinkler Timers by Orbit®

Manual para el Usuario
Reguladores para aspersores de riego de Orbit®

Manuel de l'utilisateur
Programmateurs pour systèmes d'arrosage par Orbit



How to Program

Orbit® SuperStar® and WaterMaster®

Dual Program Sprinkler Timers

With Built-In Wireless Remote Control

Cómo programar

Reguladores para aspersores de doble programación

Orbit® SuperStar® y WaterMaster®

con control remoto inalámbrico integrado

Comment Programmer

Les systèmes d'arrosage Orbit® SuperStar® et WaterMaster®

Programmateurs à double programmation

avec télécommande incorporée

Orbit® Irrigation Products Inc. • 845 N. Overland Rd.
North Salt Lake, Utah 84054

Printed in Hong Kong

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Date Purchased: _____

Fecha de compra: _____

Date d'achat: _____

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The information in this manual is primarily intended for the user who will establish a watering schedule and enter that schedule into the Controller. This product is intended to be used as an automatic timer controller for activating 24 VAC irrigation valves, as described in this manual.

Help: Before returning this Controller to the store, contact Orbit® Technical Service at:

Orbit® Technical Service: 1-800-488-6156

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La información de este manual se ha preparado primordialmente para el usuario que vaya a establecer un programa de riego y lo adapte al Regulador. Este producto se ha preparado para usarse como controlador automático de regulador para activar válvulas de irrigación de 24 VCA, según se describe en este manual.

Sugerencia: Antes de devolver este Regulador al almacén, sírvase ponerse en contacto con la sección de servicio técnico de Orbit®, llamando a:

Servicio técnico: 1-800-488-6156

Aviso de marca registrada

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L'information contenue dans ce manuel a été rédigée principalement pour l'utilisateur qui veut établir un programme d'arrosage et introduire ce programme sur le programmeur. Ce produit est conçu de manière à être utilisé comme programmeur automatique pour l'activation de vannes d'irrigations de 24 VCA, comme décrit dans ce manuel.

Aide: Avant de retourner ce programmeur au détaillant, contactez le service technique d'Orbit au numéro suivant:

Service technique d'Orbit: 1-800-488-6156

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ENGLISH

Section One

Introduction

Thank you for selecting an Orbit® Sprinkler Controller. Orbit® designers have combined the simplicity of mechanical switches with the accuracy of digital electronics to give you a Controller that is both easy to program and extremely versatile. The Orbit® Controller provides convenience and flexibility, letting you run a fully automatic, semi-automatic, or a manual watering program for all your watering needs. This Controller also adds the convenience and flexibility of, wireless remote control.

Please read this manual completely before you begin to program and use the Controller. A few of the most notable design features include:

At-a-Glance Simplicity

By turning the rotary dial to one of nine settings you can review programming or easily make changes.

Armchair Programmable

By inserting two AA alkaline batteries you can program the Controller prior to installing it in its permanent location

Wireless Remote Control

With the use of the wireless remote transmitter, the Controller can be operated via wireless remote control, up to 200 feet from the controller. You can initiate a manual watering cycle of 2, 10, 30, or 60 minutes, for all or any individual station. Excellent for maintenance, repairs, and system start-up and shut-down. The Controller allows up to 6 independent transmitters. The convenient LED light on the Controller face verifies wireless transmission.

Fail-Safe Program/Non-Volatile Program Memory

If the Timer loses AC power, the existing program will not be lost. After the AC power returns, the Timer will recall the last program into memory and there will be no need to re-program. If both the AC power is lost and the batteries are dead or missing, the user will only need to reset the time and date; all other program settings are held in non-volatile memory, and there is no need for re-entry.

Circuit Breaker

A circuit breaker protects the Timers power supply. If the circuit breaker trips, it can be reset beneath the terminal cover.

Lexan Language Covers

Available in Spanish, French, Italian, German and English

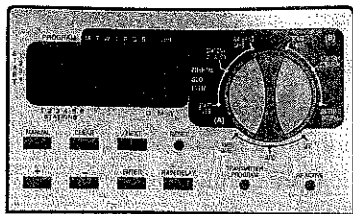


Figure 1: Location of Controls on the Timer

1. Digital Display

A large LCD (Liquid Crystal Display) shows the time of day and indicates many of the programming settings. The display is completely interactive with all other controls.

2. Programming Keys

The Timer has seven push button keys for setup and program entry. Working in conjunction with the rotary dial, the keys are used to set the time of day, watering time, watering days, start times, and other functions.

3. Rotary Dial

The heart of the Timer is the rotary dial. This dial-type dial makes it easy to see which function is currently selected and/or in which mode the Timer is set to operate.

4. Reset Button

Press and release reset button to clear the time and date, this does not remove the factory installed fail-safe program or the user installed programs. Press reset button for more than 2 sec. to clear the time, date, and user installed programs. To prevent an accidental reset, the button is recessed into the panel and must be pressed with a small pointed object such as a pen or pencil tip.

Notable Programming Features

Two Watering Programs—Summary

The Timer gives you the option of using any or all of these independent programs; Note that each station can independently be set to either A or B or both A and B programs.

Program-A

This program lets you schedule selected stations to water on specific days of the week or to water every 2nd day. Program-A repeats itself continuously in successive weeks.

Program-B

Provides two options: One for odd or even day watering or one for intervals ranging from everyday to every 28th day. This feature is designed to meet the growing needs and restrictions imposed by local governments and to conserve water. The Timer automatically calculates odd and even days (by date) for each month and makes adjustments for leap years to provide true odd and even watering through the year 2095.

Start-Time Stacking

The Timer has the intelligence to "stack" start times that overlap. If you enter two or more start times that overlap (in the same or in different programs), the Timer will not activate two stations at the same time. Instead, the Timer activates the first station and then activates the next station(s) in sequence after the first station finishes its preset watering duration.

The Timer will NOT stack to the next calendar day. This prevents the Timer from violating an odd or even day watering schedule.

Manual and Semi-Automatic Modes

The Timer gives you a number of manual and semi-automatic modes for flexibility in watering. You can override the Timer's automatic programming in a variety of ways.

Section Two

Getting Started

Programming the Timer can be accomplished in just a few basic steps. Before you begin programming, it is important to install the battery, set the time of day and date, and establish a watering plan.

Install the Batteries

The Timer requires two AA batteries to maintain the time and date in case of AC power loss. In a typical installation, fully charged batteries should provide sufficient power for approximately one year of operation.

- ◆ Remove the terminal cover.
 - ◆ Insert two AA batteries into the battery compartment.
 - ◆ Return the terminal cover to its closed position.
- Weak or missing batteries can cause the time and date to be erased after a power failure. If this happens, you will need to install fully charged batteries and re-enter the time and date. All other program settings will be maintained in non-volatile memory.

Set the Time of Day and Date

If this is the first time the Timer has been programmed, you should press the small recessed button labeled RESET. Pressing RESET does not affect the factory installed fail-safe program [See Figure 2].

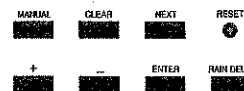


Figure 2: Programming Keys

- ◆ Turn the rotary dial to the Time/Date position [See Figure 3].
- ◆ 12:00 AM will appear in the display with three arrows

pointing to the year (Y), month (M), and day (D).

- ◆ Press and hold the + key to advance the clock to the correct time of day. Use the - key to go in reverse. When the correct time of day is reached, press the ENTER key to lock in the time

To increase or decrease more rapidly, hold down either the + or - keys until the display goes into rapid advance mode.

- ◆ A blinking cursor will appear above the arrow for the year (Y), month (M), or date (D) when programming [See Figure 4].
- ◆ Use the + and - keys to set the correct year and then press ENTER.
- ◆ Use the + and - keys to set the correct month and then press ENTER.
- ◆ Use the + and - keys to set the correct date and then press ENTER.



Figure 3: LCD Display with Surrounding Information

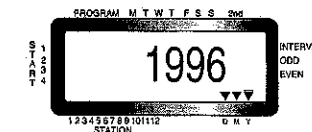


Figure 4

CAUTION: If a watering schedule is not entered into the Timer, the factory installed fail-safe program will turn on each station every day for 10 minutes. To avoid accidental valve activation, either:

- 1) turn the rotary dial to OFF
- 2) enter a watering schedule

Establish a Watering Plan

To help you visualize how best to program the Timer, it might be helpful to make a watering plan on paper. This will help you establish which days and times you want to water.

Section Three

Programming

The Timer has two programs you can setup to control a variety of watering plans. Depending on your needs, you can use either or both programs.

Enter the Watering Schedule in any Order

You have the option of entering your watering schedule in whatever order you like. This feature makes it very easy to review and change your watering schedule. Your settings can be changed at any time—while you're setting up the initial schedule, or after years of operation.

Start-Times for Program-A or -B

Note: A start time is the time of day that the program begins watering the first station, and all other stations will then follow in sequence. There are not separate start times for each station. Start times do not correspond to specific stations. If you enter more than one start time, all stations programmed to operate will water again (in sequence).

- ◆ The way you set the start time is the same for both programs. Turn the rotary dial to the **Start Times** position in the program that you want to set up. The display will show an A or B depending on which program you have selected.

The display will show --:-- and a blinking cursor in **START 1** location [See Figure 5].

- ◆ Set the time you want to begin watering for start time 1 using the + or - keys, then press the **ENTER** key. The display will advance to **START 2**. For additional start times, simply repeat this procedure by using the + and - keys to enter the time, then press **ENTER**. Remember, *Each start time will activate all stations that are programmed to operate. There are not separate start times for each station. Start times do not correspond to specific stations.*

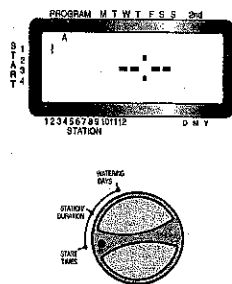


Figure 5: LCD Display with Start Time

Watering Duration for Program-A or -B

Note: Both programs require watering durations to be programmed.

- ◆ Turn the rotary dial to the **Station Duration** position in either the A or B program. The display will show which program you have selected with an "A" or "B" and the -- MINS and the cursor blinking at station "1" [See Figure 6].

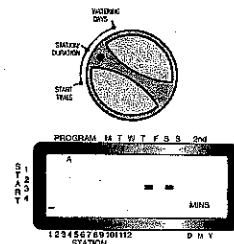


Figure 6: Station Duration for Program A

- ◆ You can set the watering duration from 1 to 99 minutes. Press and hold the + key to advance the number of minutes, or use the - key to go in reverse, then press **ENTER**. When the minutes are set, a solid "A" or "B" will appear over station 1 and the cursor will advance to station 2 and continue blinking.
- ◆ Simply repeat these steps to set watering durations for stations 2 through 6 (or 2 through 12).
- ◆ To skip a station, press the **NEXT** key.
- ◆ To erase previously programmed watering durations, press the **CLEAR** key.

Assigning Watering Days for Program A

- ◆ Turn the rotary dial to **Watering Days** in program A. The display will show an "A" and the cursor will blink under the days of week M, T, W, T, F, S, S (Monday, Tuesday, etc.) [See Figure 7].

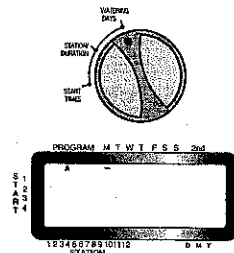


Figure 7: LCD Display with Watering Days

- ◆ Press **ENTER** to activate watering on Monday. An arrow appears under M and the cursor will advance to Tuesday ("T"), press **ENTER** to activate watering on this day. Repeat these steps for all days of the week.
- ◆ To skip a day, press **NEXT**.
- ◆ To delete a previously entered day, press **CLEAR**.
- ◆ If you want to water every second day, press the **NEXT** key to advance the cursor to "2nd", then press **ENTER**.

Note: If you choose to water every 2nd day, you cannot set specific days of the week for watering.

Assigning Watering Intervals for Program -B

Program B is used to water at specific intervals between days (1 to 28), or on odd or even calendar dates. The Timer has a leap-year compensator and will ensure conformance to the odd and even schedule through the year 2095.

- ◆ Turn the rotary dial to **Watering Interval**. The cursor will blink to the left of the word **Interval** [See Figure 8].

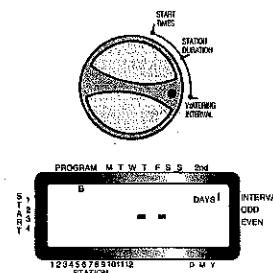


Figure 8: LCD Display with Watering Interval

- ◆ Press and hold the + or - keys to select the number of days between watering. Example: If you want to water once every 10 days, set the interval at 10.
- ◆ To activate the watering interval, press **ENTER**.

Note: If an interval of "3" is entered today, the Timer will water for the first time today, and then again every "3" days.

- ◆ To select odd or even day watering, press **NEXT**. The cursor will move to either the odd or even setting, then press **ENTER**.
- ◆ To erase a schedule, press **CLEAR**. To enter a new schedule, press **NEXT**.

Reviewing and Changing Your Program

The Orbit Timer lets you easily review a complete watering plan.

For example, to review Program-A watering start times, simply turn the rotary dial to the **Start Times** position in Program-A and check the times that have been entered. Using the **NEXT** key, you can advance through the schedule without fear of disturbing any programming.

If you want to change the start times, watering days, or interval, simply follow the directions for that program.

After reviewing or changing a watering schedule, remember to turn the rotary dial back to **AUTO** if you want the Timer to automatically follow your program.

Ready for Automatic Operation

After programming is complete, turn the rotary dial to **AUTO** [See Figure 9].

The Timer is now fully programmed and ready to use in the automatic mode. In automatic mode, each program will operate sequentially, starting with Program-A.

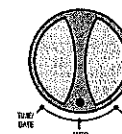


Figure 9: Ready for Automatic Operation

Section Four Semi-Automatic and Manual Operation

The Orbit Timer has the ability to override the automatic program without disturbing the preset program.

Using the Semi-Automatic Mode

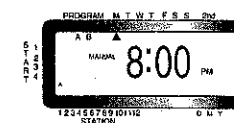
(All stations cycle once both A & B programs)

- ◆ Turn the rotary dial to **AUTO**, then press the **MANUAL** key. The display will show "AB", "MANUAL", and "ALL" will be blinking [See Figure 10]. This indicates all six (or twelve) stations in the A and B programs will semi-automatically water for their assigned durations in sequence.
- ◆ To activate the *assigned* water durations in the A and B programs for each station, press **ENTER**.



Figure 10: Semi-Automatic Watering for Stations Assigned to A and B Programs

Note: Water durations assigned to station 1 in program A will water first, then move to station 1 in program B before advancing to the second station and will continue alternating. Only those stations assigned a watering duration will water when using the manual or semi-automatic mode [See Figure 11].



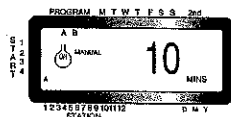


Figure 11: Semi-Automatic Watering Entered for A and B Programs, All Stations

(All stations cycle once, A program only)

- ◆ To activate each stations assigned watering durations for the A program *only*, press the MANUAL key, followed by the NEXT key. This will activate stations with assigned watering durations in the A program only. To initiate this semi-automatic watering, press ENTER [See Figure 12].

(All stations cycle once, B program only)

- ◆ To activate each stations assigned watering durations for the B program *only*, press the MANUAL key, followed by pressing the NEXT key two distinct times. This will activate only those stations with assigned watering durations in the B program only. To initiate this semi-automatic watering, press ENTER.

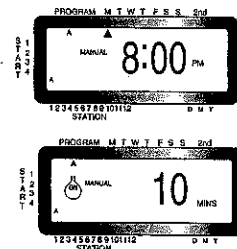


Figure 12: Manual Watering in Either the A or B Program Only

Using Manual Operation

The manual operation mode allows you to set durations in any of the six (or twelve) stations from 1 to 99 minutes.

- ◆ Turn the rotary dial to AUTO.
- ◆ Press the MANUAL key. Then press NEXT three times. The display will show a blinking cursor on station 1 along with -- MINS [See Figure 13].



Figure 13

- ◆ To set the number of minutes for watering duration, press and hold the + key to advance to desired number of watering minutes. Use the - key to go in reverse. Press ENTER to begin watering.
- ◆ To skip a station, press NEXT until the cursor is blinking over the station number you wish to program. Example: To set station 3 for five minutes, press the MANUAL key; then press the NEXT key five times to

select the manual operation mode and advance to watering for station 3; using the + or - key, set the manual watering duration to five minutes; then press ENTER [See Figure 14].

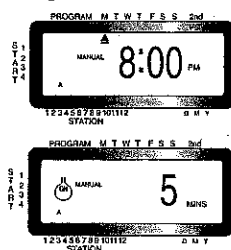


Figure 14: Manual Watering Station 3 for Five Minutes

Note: After the MANUAL key has been pushed, if a selection is not made within 60 seconds the display returns to the time of day.

Interrupting or Halting Timer Output

The Timer has several built-in features that allow the user to momentarily interrupt or halt the electrical output to the station valves.

- ◆ To momentarily interrupt the electrical output to the stations, press the OFF/AUTO RESUME button on the hand held wireless transmitter. This is useful for making a quick repair or pattern adjustment in the sprinkler system. To restart the electrical output, simply press the OFF/AUTO RESUME button once again. NOTE: The program will return where it would have, had the interruption not occurred. For instance, the Timer does not try to recapture any automatic watering which is lost due to the interruption.
- ◆ To halt or discontinue semi-automatic or manual watering, press the CLEAR key once. The Timer will revert to your original automatic watering plan.

Using the User Selectable Rain Delay Mode

To stop automatic watering for 24, 48, or 72 hours, use the RAIN DELAY mode key.

- ◆ With the rotary dial set to AUTO, press the RAIN DELAY key once. The Timer will force a 24-hour interruption of all scheduled watering. After 24 hours, the Timer will automatically return to its initial watering schedule.
- ◆ To increase the rain delay to 48 or 72 hours simply press the RAIN DELAY key again until the desired delay time is displayed.
- ◆ To cancel the rain delay mode, press CLEAR [See Figure 15].
- ◆ Note: While in rain delay mode, the timer will display the remaining hours (counting down) to the end of the accepted delay alternating with the current time and

date. No other key besides CLEAR is accepted while the Timer is in the rain delay mode. (Wireless operation is still possible)



Figure 15: Display Showing Rain Delay

Complete System Shut Down

To shut the system down, turn the rotary dial to the OFF position. The Timer remains programmed but will not water.

Section Five Using Remote Features

Setting up the Wireless Features

The Wireless Remote features of the Timer allow you to operate the Timer from up to 200 feet away using the hand held Wireless Transmitter. You can turn on all stations or a specific station, for a number of minutes. This feature is especially helpful in troubleshooting, making adjustments and repairs, performing additional watering, and for start-up and shut-down of the sprinkler system.

- ◆ First, install a 9-volt alkaline battery into the hand held Transmitter [see Figure 16]. To test the battery, press the OFF/AUTO RESUME button on the Transmitter. The red light on the Transmitter will light up for two seconds, and three audible beeps will be heard. After sustained use (approx. one year) the battery will weaken, and the red light will dim. Replace the battery when the light begins to dim or if the operating distance begins to lessen.



Figure 16: Installing Transmitter Battery

- ◆ To test the wireless system, hold the Transmitter near the Timer (the Timer must have the transformer installed) and press the OFF/AUTO RESUME button on the Transmitter. If powered correctly, the red light on the face of the Timer (labeled RF Active) will flash several times, as will the red light on the Transmitter. NOTE: If the Transmitter and Timer do not respond accordingly, check power sources. It may also be necessary to program the Transmitter to the Timer (see Programming the Transmitter on page 7).

Operating the Timer Using the Wireless Features

The wireless feature allows you to perform semi-automatic timed watering cycles. The normal automatic program of the Timer and the wireless feature operates independently. However, the wireless operation has priority over any other Timer program.

(To turn on one station for a specific watering duration using the wireless Transmitter)

- ◆ Press the desired station button on the Transmitter (number 1, 2, 3, etc.). The Transmitter will beep once, and the red light will turn on [See Figure 17].
- ◆ Press the desired watering duration ON button (choose 2, 10, 30, or 60 minute durations). The Transmitter will beep three times to confirm the command. The Timer's red light will flash several times to acknowledge receipt of the wireless signal [See Figure 17]. During wireless watering, the Timer display will show the active station being watered (an "A" above the station number), show REMOTE, and count down the number of minutes remaining for that station.
- ◆ Note that the ON button must be pressed within 10 seconds of the desired station button (while the red indicator light is still lit) or you will need to repeat the steps.
- ◆ NOTE: The wireless watering has priority over any other Timer function (including automatic, semi-automatic, or manual). If the wireless feature interrupts a functioning automatic program, the wireless watering will occur, and afterwards the Timer will revert back to the automatic program. However, any time occurring during the wireless watering will be lost. The wireless feature will also override the rain delay, or Timer OFF modes.
- ◆ To stop wireless watering, simply press the OFF/AUTO RESUME button on the Transmitter.

(To turn on all stations for a specific watering duration using the wireless Transmitter)

- ◆ Press the ALL button on the Transmitter. The Transmitter will beep once, and the red light will turn on [See Figure 17].
- ◆ Press the desired watering duration ON button (choose 2, 10, 30, or 60 minute durations). The Transmitter will beep three times to confirm the command. The Timer's red light will flash several times to acknowledge receipt of the wireless signal [See Figure 17]. During wireless watering, the Timer display will show the active station being watered (an "A" above the station number), show REMOTE, and count down the number of minutes remaining for each station. Note that each station will be activated, regardless of the programming in the Timer.
- ◆ To stop wireless watering, simply press the OFF button on the Transmitter.

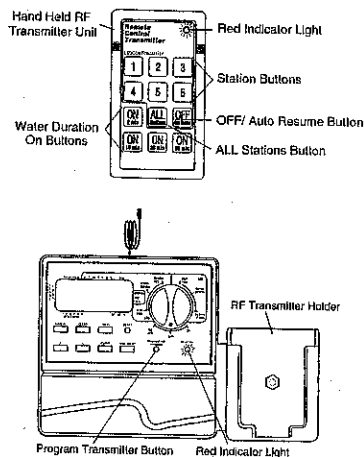


Figure 17: Watering Using Wireless Remote Features

(Notes About Using the Wireless Remote Features)

- ◆ Remember that the wireless features have priority over normal Timer operations. Although the Timer will return to the automatic program, the time spent during an wireless cycle will be lost. For this reason, interrupting a currently running automatic (or semi-automatic or manual) program *may* cause some stations of the currently running automatic program not to water at this time.
- ◆ The wireless watering features do not "Stack" as do the Timer programs. A new wireless command will cancel the currently running wireless command.
- ◆ After sustained use (approx. one year) the hand held Transmitter battery will weaken, and the red light will dim. Replace the battery when the light begins to dim or if the operating distance begins to lessen.
- ◆ If the Transmitter and Timer do not respond appropriately, check power sources. It may also be necessary to program the Transmitter to the Timer (see **Programming the Transmitter** below).
- ◆ The normal distance your Transmitter will operate is 200 feet line of sight. The range is reduced when transmitting through walls, shrubbery, metal siding, etc. For best results hold the Transmitter above your head or immediately in front of you.

Programming the Transmitter

It may not be necessary to use this procedure for models sold with a Transmitter included, since the Transmitter and Timer have already been programmed to work together. However, if you replace your Transmitter or add additional Transmitters (up to six per receiver) you must code the Transmitter to the Timer. To program the Transmitter:

- ◆ While holding the Transmitter in one hand, press and release the **TRANSMITTER PROGRAM** button found in the

battery compartment of the Timer. The red indicator light on the Timer will turn on. Press the **OFF** button on the Transmitter. The Transmitter will beep three times and the red indicator light on the Timer will blink, indicating the program coding is complete.

- ◆ Repeat Steps 1 and 2 for up to six transmitters.

Why You May Want Additional Transmitters

- ◆ **Security:** Your gardener can work on your watering system while your home and garage are locked.
- ◆ **Convenience:** Your neighbor or friend can check your watering system if you are on vacation. It may also be convenient to have a separate Transmitter in more than one location (garage, kitchen, etc.).
- ◆ **Loss:** If you misplace or lose your Transmitter, you have a back-up.

Section Six Installation

Timer Location

- ◆ Select a location near a standard electrical outlet. Avoid using an outlet controlled by an On/Off switch.
- ◆ The timer should not be exposed to the weather or operated at temperatures below 14° degrees or above 113° degrees Fahrenheit. (-10° c + 45° c)
- ◆ Installation works best inside a garage or protected area. The Timer should not be mounted outdoors.

Note: The distance that the Transmitter and Timer will operate at is approximately 200 feet line of sight. This distance can be affected by obstacles such as walls, automobiles, metal siding, etc. To achieve the maximum amount of range, mount the Timer as high on the wall as is convenient for operation and service.

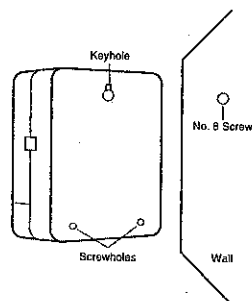


Figure 18: Mounting the Timer

Mounting the Timer

- ◆ Screw a No. 8 screw at eye level leaving the screw head extended out from the wall about 1/8 inch. Use expanding anchors in plaster or masonry if necessary.
- ◆ Slip the keyhole in the back of the timer over the extended screw.
- ◆ Screw a No. 8 screw through each of the two holes at the bottom of the timer box into the wall [See Figure 18].
- ◆ Install two AA batteries, and re-enter the time and date as required.

Wiring the Electric Valves

- ◆ If the distance between the timer and valves is under 700 feet, use WaterMaster sprinkler wire or 20 gauge plastic jacketed thermostat wire to connect the timer to the valves. If the distance is over 700 feet, use 16 gauge wire. The wire can be buried in the ground;

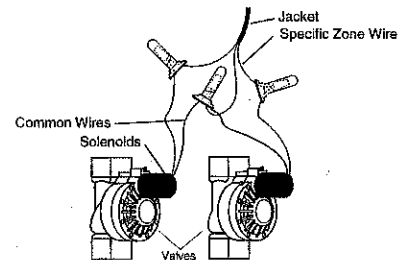


Figure 19: Wiring Valves

however, for more protection wires can be pulled through PVC pipe and buried underground. Be careful to avoid burying the wires in locations where they could be damaged by digging or trenching in the future.

- ◆ Each valve has two wires. One wire is to be connected as the common. The common wires for all the valves can be connected together to one common wire going to the timer. The other valve wire is to be connected to the specific station wire that will control that valve [See Figure 19].
- ◆ All wires should be joined together using wire nuts, solder, or vinyl tape. For additional protection to waterproof connections a WaterMaster® grease cap can be used.
- ◆ To avoid electrical hazards, only one valve should be connected to each station.

Connecting Valve Wires to the Timer

- ◆ Remove cover by sliding it down.
- ◆ Determine which valve you want to connect to which station. Connect each valve wire to its station terminal (labeled 1-6 or 1-12) by inserting the bare wire.
- ◆ It may be necessary to "open" the terminal to allow for

wire insertion or removal. To do this, simply press upward on the tab located on top of the terminal.

- ◆ Connect the common wire to the terminal labeled "COM" [See Figure 20].

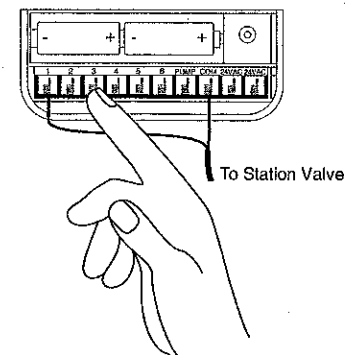


Figure 20: Connecting Valve Wires

Connecting Pump Start or Master Valve to the Timer

- ◆ Connect one wire to the terminal marked "PUMP."
- ◆ Hook the second wire to the terminal marked "COM." The two wires should then be hooked up to a master valve or pump start relay rated at 24 volts AC input (coil side). Refer to local codes. A qualified electrician may be required to install a pump start relay.

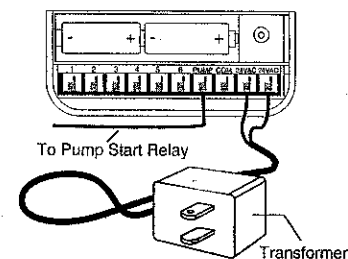


Figure 21: Connecting Pump Start and Transformer

Connecting the Transformer

- ◆ With the cover off, find the two terminal holes labeled "24VAC." Make sure the transformer is not plugged in. Insert one of the two power leads from the transformer into each terminal.
 - ◆ Plug in transformer [See Figure 21].
- WARNING: DO NOT LINK TWO OR MORE TIMERS TOGETHER WITH ONE TRANSFORMER.**
- ◆ Slide the cover back on until it snaps.

■ Trouble Shooting

Problem/Possible Causes

One or more valves do not turn on:

1. Faulty solenoid.
2. Wire broken or not connected.
3. Flow control stem screwed down, shutting valve off.
4. Programming is incorrect.

Stations turn on when they are not supposed to:

1. Water pressure is too high.
2. More than one start time is programmed.

One station is stuck on and will not shut off:

1. Faulty valve.
2. Particles of dirt or debris stuck in valve.
3. Valve diaphragm faulty.

All valves do not turn on:

1. Transformer defective or not connected.
2. Programming is incorrect.
3. Circuit breaker has been tripped.

Timer will not power up:

1. Circuit breaker has been tripped.
2. Transformer not plugged into an operational AC outlet.

Valves continue to turn on and off when they are not programmed to:

1. More than one start time is programmed with overlapping schedules.
2. Excessive pressure.

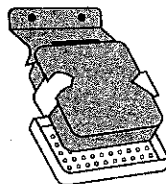
Circuit breaker trips repeatedly:

1. Short in wiring or solenoids.

■ Other Quality Products and Accessories

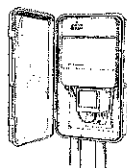
Automatic Rain Shut-Off

For automatic rain shut-off, contact your Orbit® dealer to purchase an Orbit® model 57091 automatic rain shut-off switch. The rain shut-off easily connects to the Timer and prevents over-watering during rainy periods.



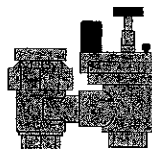
Weather Resistant Timer Box

Allows outdoor installation of most brands of indoor mount timers, UL listed.



Automatic Valves

Durable, non-corrosive plastic construction, automatic valves are available in anti-siphon or straight valves, with safe, low voltage.



Automatic Converters

Durable non-corrosive plastic construction, converts most brands of plastic or brass valves to automatic.



Grease Caps

Protects low voltage wires from corrosion or shorts.



Questions?

Please call toll-free
1-800-488-6156

Orbit® Irrigation Products Inc.
845 North Overland Rd. • North Salt Lake, Utah 84054

ESPAÑOL

Sección uno

Introducción

Gracias por seleccionar un Controlador para aspersores de Orbit®. Los diseñadores de Orbit® han combinado la simplicidad de interruptores mecánicos con la exactitud de elementos electrónicos digitales para proporcionarle un Controlador que es tanto fácil de programar como extremadamente versátil. El Controlador de Orbit® proporciona conveniencia y flexibilidad, permitiéndole hacer uso de un programa de riego completamente automático, semi-automático o manual, para satisfacer todas sus necesidades de riego. Este Controlador también incorpora la conveniencia y la flexibilidad del control remoto inalámbrico.

Sírvase leer todo este manual antes de empezar a programar y a usar el Regulador. Entre algunas de las más notables características del diseño se incluyen las siguientes:

Simplicidad en diseño

Haciendo girar el dial a cualquiera de las nueve posiciones, usted puede examinar la programación o hacer cambios con facilidad.

Programación a control remoto

Insertando dos baterías (pilas) alcalinas AA usted puede programar el Controlador antes de instalarlo en la ubicación permanente.

Control remoto inalámbrico

Con el uso del transmisor remoto inalámbrico, el Controlador puede hacerse funcionar por medio del control remoto inalámbrico, a una distancia máxima de 200 pies (60 metros) del controlador. Usted puede iniciar un ciclo de riego manual de 2, 10, 30 ó 60 minutos, para todas las estaciones o para cada una en forma individual. Es excelente para mantenimiento, reparaciones y para encender y apagar el sistema. El Controlador permite que se use hasta un máximo de 6 transmisores independientes. La conveniente luz LED que está en el frente del Controlador verifica la transmisión inalámbrica.

Programa de protección contra fallas/Memoria no volátil del programa

Si el Regulador se queda sin corriente (CA), no se perderá el programa existente. Una vez que se recupere la corriente, el Regulador volverá a utilizar el último programa que tuviera en la memoria, de manera que no habrá necesidad de reprogramar. En el caso de que se perdiera la corriente (CA) y las baterías se acabaran o hicieran falta, el usuario sólo tendrá que volver a fijar la hora y la fecha; los demás valores del programa se tendrán en la memoria no volátil y no habrá necesidad de entrarse de nuevo.

Interruptor de circuitos

Un interruptor de circuitos protege el abastecimiento de energía de los Reguladores. En el caso de que el interruptor de circuitos se desconectara, se puede reposicionar por debajo de la cubierta de la terminal.

Cubiertas en distintos idiomas

Se tienen disponibles en español, francés, italiano, alemán e inglés.

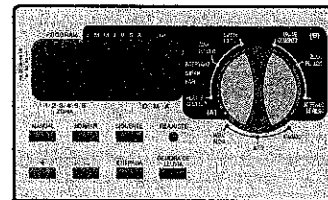


Ilustración 1: Ubicación de controles en el Regulador

1. Pantalla digital

Una pantalla grande LCD muestra la hora del día e indica la mayoría de los valores de programación. Existe reciprocidad completa entre la pantalla y TODAS los demás controles.

2. Teclas de programación

El Regulador tiene siete teclas para la programación. Cuando se usan en conjunto con el selector giratorio, las teclas pueden fijar la hora del día, la hora de riego, los días de riego, las horas de inicio y otras funciones.

3. Selector giratorio

El elemento principal del Regulador es el selector giratorio. Este elemento tipo dial facilita ver cuál de las funciones se ha seleccionado actualmente y/o en qué modo se ha fijado el Regulador para su funcionamiento.

4. Botón para reposicionar

El botón para reposicionar borra la hora y la fecha pero no quita el programa de protección contra fallas instalado por la fábrica. Para evitar que se hagan accidentalmente cambios, el botón está incrustado en el panel y se debe oprimir con un objeto pequeño puntiagudo, como la punta de un lapicero o de un lápiz.

Funciones importantes de programación

Dos programas de riego--Resumen

El Regulador le da la opción de usar cualquiera o TODAS estos programas independientes: Tenga en cuenta que cada estación se puede fijar independientemente ya sea en los programas A o B o en los dos A y B.

Programa-A

Este programa le permite programar estaciones seleccionadas para regar en días específicos de la semana

Dépannage

Problèmes et causes possibles

Une vanne ou plusieurs ne s'active(nt) pas:

1. Solénoïde défectueux.
2. Fil cassé ou non connecté.
3. Tige de contrôle du flux vissée trop loin, bloquant ainsi la vanne.
4. Programmation incorrecte.

Les stations s'activent alors qu'elles ne le devraient pas

1. Pression de l'eau trop élevée.
2. Deux ou plusieurs heures de démarrage sont programmées.

Une des stations est bloquée et ne s'arrête plus:

1. Vanne défectueuse.
2. Particules de saleté ou débris coincés dans la vanne.
3. Diaphragme de la vanne défectueux.

Toutes les vannes ne s'ouvrent pas:

1. Le transformateur n'est pas connecté ou il est défectueux.
2. La programmation est incorrecte.
3. Le disjoncteur s'est déclenché.

Le programmeur ne s'active pas:

1. Le disjoncteur est déclenché.
2. Le transformateur n'est pas connecté à une prise CA fonctionnelle.

Les vannes continuent à s'allumer et à s'arrêter sans avoir été programmées à cet effet:

1. Plus d'une heure de démarrage est programmé avec des plans se chevauchant.
2. Pression excessive.

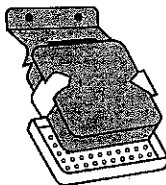
Le disjoncteur continue à se déclencher

1. Court-circuit dans le câblage ou les solénoïdes.

Autres accessoires et produits de qualité

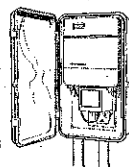
Système d'arrêt automatique lors de temps pluvieux

Pour obtenir un système d'arrêt automatique lors de temps pluvieux, contactez votre détaillant Orbit pour acheter l'interrupteur, modèle Orbit 57091, pour arrêt automatique lors de temps pluvieux. Cet interrupteur se connecte facilement au programmeur et empêche un arrosage inutile durant les périodes pluvieuses.



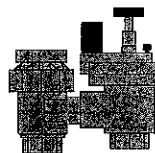
Boîtier du programmeur résistant aux intempéries

Ce boîtier permet une installation extérieure de la plupart des programmeurs de marques diverses à montage intérieur, classés UL.



Vannes automatiques

Des vannes automatiques solides, en plastique non corrosif, sont disponibles en options anti-siphon ou normale avec une tension basse sans danger.



Convertisseurs automatiques

Des convertisseurs solides, en plastique non corrosif, convertissent les vannes en plastique ou en laiton de la plupart des marques en vannes automatiques.



Capuchons à graisse

Protègent les fils de basse tension contre la corrosion ou les courts-circuits.



Question?

Veuillez contacter:

Orbit® Irrigation Products Inc.

845 North Overland Rd. • North Salt Lake, Utah 84054

Federal Communications Commission Radio and Television Interference Statement for a Class 'B' Device

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. 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.

User Instructions:

If the 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 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 Orbit® could void the user's authority to operate the equipment.

Declaración de la Comisión Federal de Comunicaciones sobre interferencias de radio y televisión para un dispositivo de clase "B"

Este equipo ha sido examinado y se ha llegado a la conclusión de que cumple con los límites establecidos para un dispositivo digital de clase B, de acuerdo con el estatuto 15 de las Reglas de la FCC. Estos límites se han designado para proveer protección razonable contra interferencia peligrosa en una instalación residencial. Este equipo genera, usa y puede irradiar energía de radio frecuencia y, si no se instala y se usa de acuerdo con las instrucciones, puede causar interferencia peligrosa en comunicaciones de radio.

Instrucciones para el usuario:

Si el equipo causa interferencia peligrosa para la recepción de radio o televisión, lo cual puede determinarse encendiendo y apagando el equipo, se insta al usuario a tratar de corregir la interferencia siguiendo una de las siguientes medidas:

- ◆ Cambie la dirección o posición de la antena receptora.
- ◆ Aumente la separación entre el equipo y el receptor.
- ◆ Conecte el equipo en un tomacorriente que esté en un circuito diferente del que está conectado el receptor.
- ◆ Consulte al distribuidor o a un técnico experimentado de radio/TV.

Los cambios o modificaciones que no hayan sido aprobados específicamente por Orbit® podrían anular la autoridad del usuario para operar el equipo.

Déclaration relative aux interférences radio et télévision par le Federal Communications Commission (Délégation des communications fédérales) pour dispositifs de classe "B"

Cet équipement a été testé et trouvé compatible avec les limites relatives aux dispositifs de classe B, suivant l'article 15 de la réglementation FCC. Ces limites sont conçues de façon à fournir une protection raisonnable contre des interférences nuisibles lors d'une installation résidentielle. Cet équipement génère, utilise et peut émettre une énergie de fréquence radio et, si il n'est pas installé et utilisé suivant les instructions, il peut causer des interférences nuisibles aux communications radio.

Instructions pour l'utilisateur:

Si l'équipement cause des interférences nuisibles aux réceptions de radio ou télévision, ce qui peut être déterminé en allumant et éteignant l'équipement, l'utilisateur devrait essayer de corriger l'interférence par l'une des mesures suivantes:

- ◆ Orienter différemment ou déplacer les antennes de réception.
- ◆ Augmenter la distance entre l'équipement et le récepteur.
- ◆ Connecter l'équipement dans une prise sur un circuit différent de celui auquel le récepteur est connecté.
- ◆ Consulter le détaillant ou un technicien radio/TV qualifié.

Des changements ou des modifications non approuvés expressément par Orbit® pourraient annuler l'autorisation de l'utilisateur concernant l'utilisation de l'équipement.