Orbit®

b•hyve™
WIFI SPRINKLER TIMER

Users Manual
Sp. Users Manual

Congratulations on selecting your new Orbit® timer! Orbit's simple programming and setup are combined with the latest timer technology and versatility.

Your new timer provides convenience and flexibility, letting you run a fully automatic, a semi-automatic, or a manual watering program for all your watering needs. Although this timer is so easy to program that you likely will not need instructions, we recommend that you read this manual fully before installation so that you understand all of the advanced features.

Table of Contents

Section 1: Get To Know Your Timer

A — Lock and Latch

B — Weather Resistant Cover

C — Dial

D — Digital Display

E — Swing Door Panel

F — Battery Compartment

G — Transformer

H — Wiring Terminals
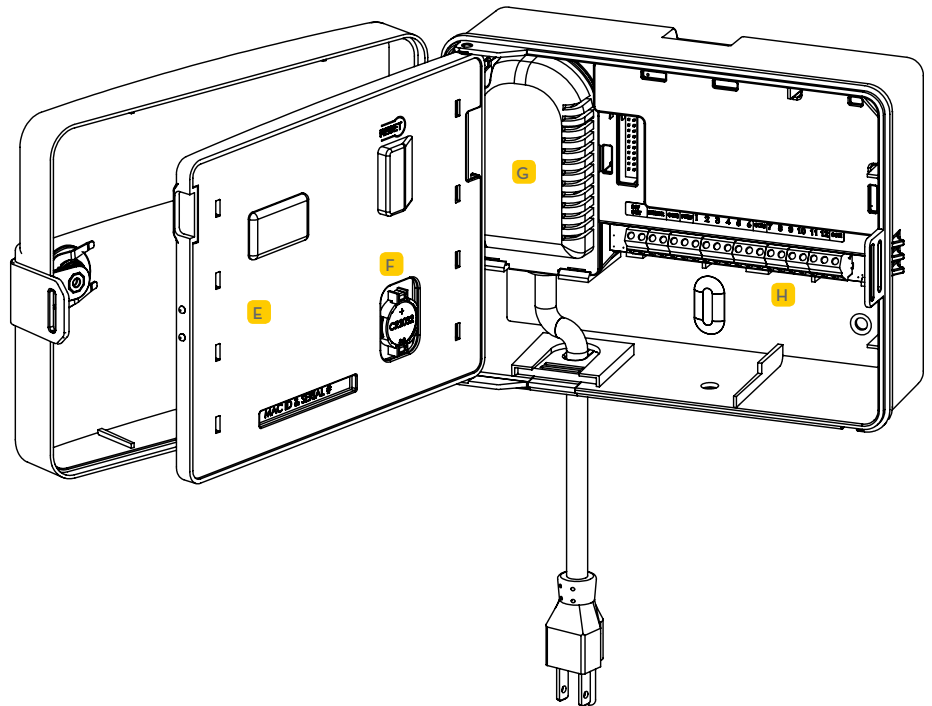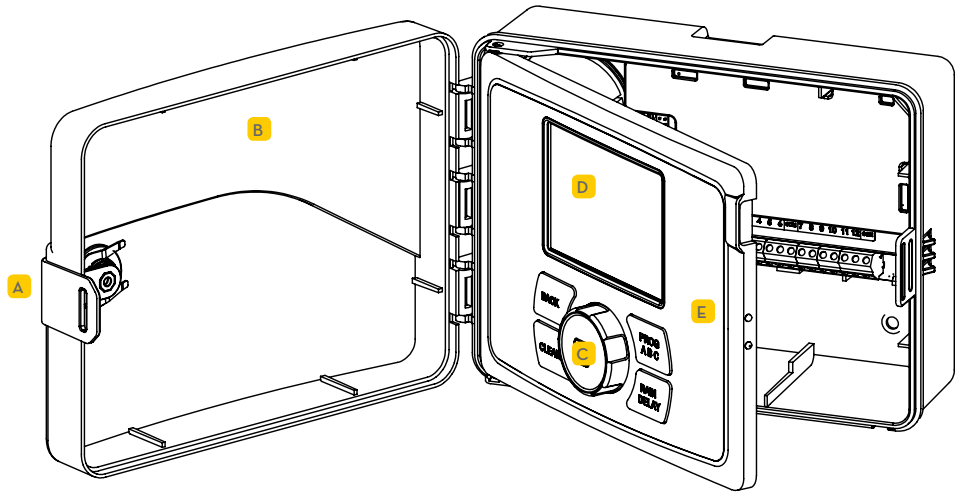
Buttons	Function
☐	Scroll up or down, left or right and push to make a selection
CLEAR	To clear a setting
PROGRAM	To move to different programs: A, B, and C
BACK	To go back a step
RAIN DELAY	To pause operation for 24-72 hours due to rain or other factors

Dial Position	Function
AUTO	Set program is running
MANUAL	To water stations manually
DATE/TIME	Set clock time, Year, Month, and Day
START TIME	Set time to begin watering Year, Month & Day
RUN TIME	Set watering duration for each station
HOW OFTEN	Set frequency of watering days
BUDGET	Adjust overall watering as a percentage
OFF	Turn all stations/functions off
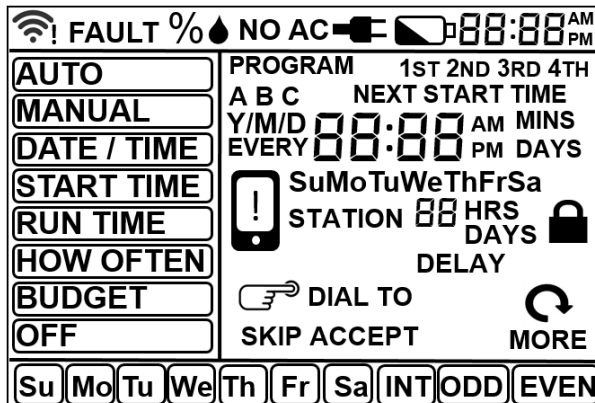
Section 2: Installation

Required Tools

- Small Flathead Screwdriver (included in hardware package)
- Wire Strippers

Installation Steps

1. Select a Location
2. Mount the Timer
3. Connect Valve Wires to Timer
4. Connect Electrical Power
5. Activate Battery

1. Select a Location

When choosing a location for your timer, consider the following:

- Choose location near an electrical outlet.

- Ensure operating temperatures are not below 32° or above 158° Fahrenheit (below 0° Celsius or above 70° Celsius).

- Place it away from direct sunlight if possible.

- Ensure at least 9" of space to the left of the sprinkler timer box for the door to swing open after installation.

- Locate the timer where there is easy access to sprinkler wire (from valves). If mounted in an outdoor location, shut the compartment door to keep the timer safe from weather damage. To lock: insert the key and turn clockwise to the locked position.
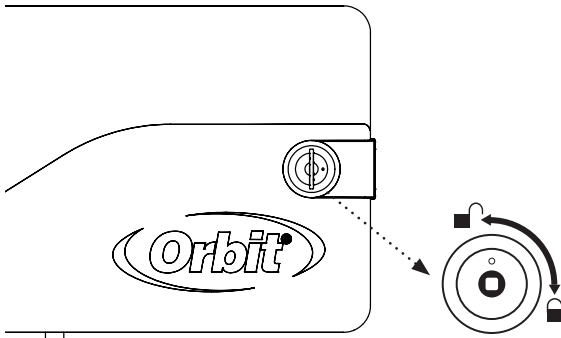
Note: Sprinkler timers are weather-resistant to UL-50 and ETL® Listings, but should not be placed in areas where continuous water could cause damage.

2. Mount the Timer

- Install a No. 8 screw (included) into wall. Leave the screw head protruding 1/8" (3mm) from wall. Use expanding anchors (included) in plaster or masonry, if necessary, for a secure hold.

- Slip the timer over protruding screw (using keyhole slot in back of timer). *See figure 2*

- Drive a No. 8 screw through one of the two pre-formed holes located in lower back cabinet.

Keyhole

Pre-formed Mounting Holes

1/8"

No. 8 Screw

Wall
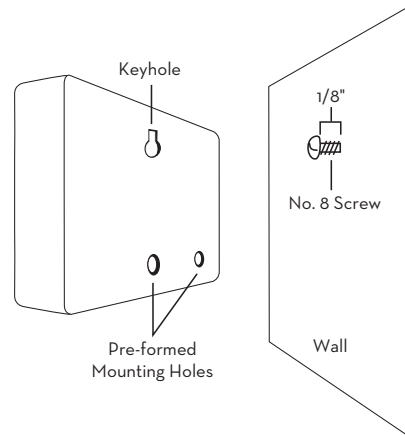
3. Connect Valve Wires to Timer

- Strip 1/2" (12 mm) of the plastic insulation off the end of each wire for both the timer wires and the valve wires.

- Connect one wire from each valve (it doesn't matter which wire) to a single "Common" sprinkler wire (usually white).

- Connect the remaining wire from each valve to a separate colored sprinkler wire.

Note: The maximum loading for each station/pump is 250mA, the maximum loading for the timer is 500mA.

If the distance between the sprinkler timer and valves is under 700' (210 m), use Orbit® sprinkler wire or 20 gauge (AWG) plastic jacketed thermostat wire to connect the sprinkler timer to the valves. If the distance is over 700' (210 m), use 16 gauge (AWG) wire.
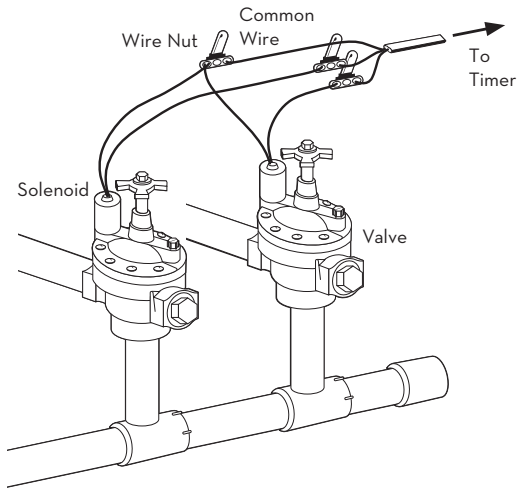
Important: All wires should be joined together using wire nuts, solder, and/or vinyl tape. In wet environments like a valve box it is recommended to use Orbit Grease Caps to prevent corrosion of the connection and for protection from water infiltration.

Wiring Electric Valves

Strip 1/2" (12 mm) of plastic insulation off the end of each individual wire. Each valve has two wires. One wire (it doesn't matter which one) is to be connected as the common. The other valve wire is to be connected to the specific station wire that will control that valve. The common wires for all the valves can be connected together to one common wire going to the controller. To avoid electrical hazards, only one valve should be connected to each station.

Important: The wire can be buried in the ground; 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.

Your timer is equipped with angled terminals for easy wire insertion. Push common wire into the common terminal and, using the included screwdriver, tighten the screw in the wire terminal to secure the wire. Insert and tighten remaining wires to corresponding terminal locations.
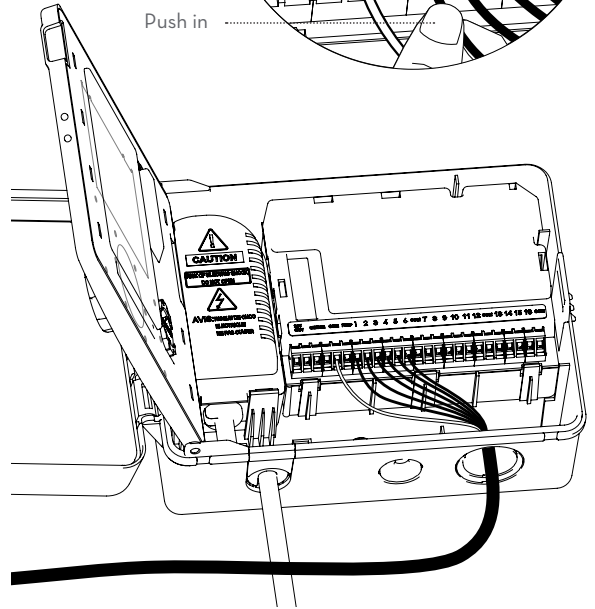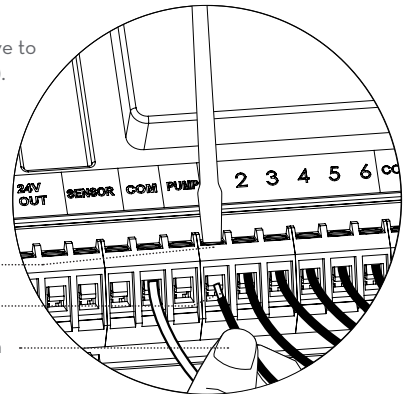
4. Connect Electrical Power

Indoor Locations – Insert the power cord into an 110V electrical outlet.

Outdoor Locations – Insert the power cord into a 110 volt Ground Fault Interrupter (GFI) outlet.

5. Activate Battery

One Lithium CR2032 battery (included) is required to retain the time and date during power loss. Annual replacement is recommended.

Remove the plastic strip to activate the pre-installed battery.

(See page 12 for battery replacement)

Remove plastic strip
to activate battery →

CR2032

MAC ID & SERIAL #

> **Note:** *The battery alone will not operate the valves in your sprinkler system. The sprinkler timer has a built-in transformer that must be connected to an AC voltage source.*
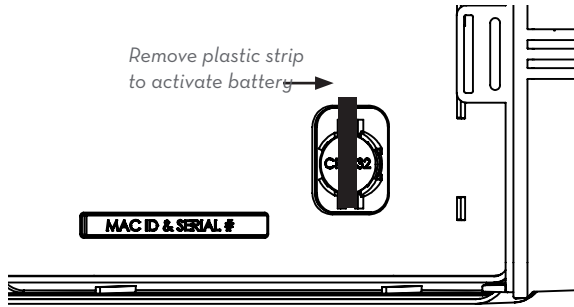
Section 3: Programming

A note about multiple programs

Your sprinkler timer provides the flexibility of using 3 independent programs (A,B,C). A program is where you store all of your sprinkler settings. It consists of a group of stations set to specific start times and run times. Multiple programs allow you to run different valves on different days with different run times. While many applications only require one program (A), using multiple programs can be useful for drip areas, newly planted lawn, or rotary sprinkler stations. Using programs to group stations with similar water needs will maximize irrigation efficiency.

Primary programming can be accomplished in just a few basic steps.

The instructions here are for those who intend to use the timer without wifi connectivity. Otherwise, programming should be completed using the instructions included in the app.

Primary Programming

Press the Reset tab on the back of the swing panel to clear any previous factory programming.

1. Set Clock

- Turn dial until [SET CLOCK] is highlighted.
- Press the dial and you will see Y (Year) flashing.
- Rotate the dial until the current year is displayed.

- Press the dial to enter the year and move to the month. Repeat the same steps to enter the month and day.
- After the day is entered, the time will flash. Rotate the dial until the current hour is shown then repeat the same steps for the minutes (*note*: continue rotating the dial to cycle between am/pm when in the hour setting).

2. Start Time

- Turn dial until [START TIME] is highlighted, then press the dial.
- The hour dashes (--) will be flashing. Rotate the dial until the desired start hour is reached. Continue to rotate the dial to go between am and pm. Press the dial to confirm the hour.
- Rotate the dial until the desired minute shows on the display then press the dial to confirm the selection. After pressing the dial, the timer will automatically advance to the 2nd start time.

> **Note:** *Only one start time is needed to run all of the zones in a program.*

The display will show
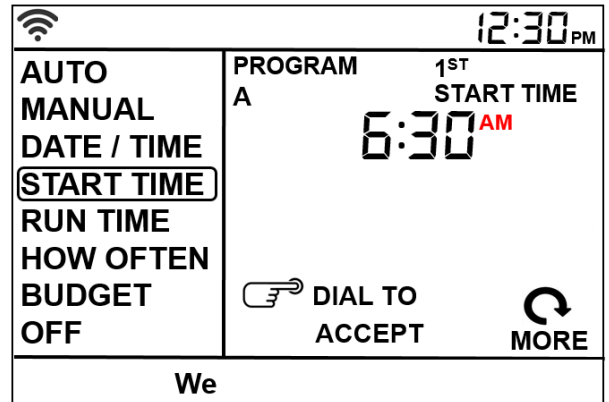
Please note that [START TIME] is the time of day that your programmed watering starts. You can set up to 4 start times. All stations that have a programmed run time (how long) will run in sequence at these times.

Note: Start-Time Stacking
When a start time is set before the previous program has completed, that start time will be "stacked" or delayed, and will start upon completion of the previous program.

> **Example:** Bill just planted new grass seed and wants to water three times per day. He sets START TIME 1 for 5am, START TIME 2 for 12pm, and START TIME 3 for 5 pm.
>
> He also sets HOW OFTEN to INT (interval) EVERY 1 DAYS (see section 3, HOW OFTEN).

In AUTO mode the system will water 3 times per day. Once Bill's sod is established he can CLEAR start times 2 and 3 and return to watering just once per day.

3. Run Time

• Turn dial until [RUN TIME] is highlighted, then press the dial.

STATION is the area that will be watered by each valve. On this screen the RUN TIME or duration for each station is set.

• Press the dial when the station number is flashing. The duration will flash at this point and the dial can be rotated to adjust the time for this station.

• When the desired duration is reached, press the dial. The next station will flash and the process can be repeated for the number of zones you wish to water.
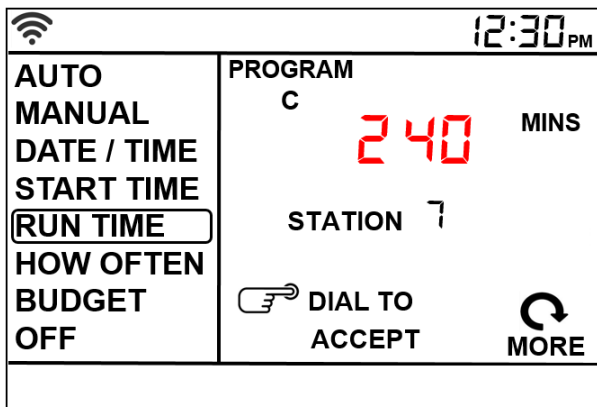
Note: Press the BACK button to return to the main lcd menu

4. How Often

• Turn dial until [HOW OFTEN] is highlighted, then press the dial.

This screen allows you to set how often to water.

There are 3 options provided:

1. Days of the week (Mon, Tues, Wed, etc.)

2. Intervals (Every "X" number of days)

3. Odd or Even Days

Days of the Week

• Display will show the current program (A,B, or C) and "Su" flashing.

• Rotate the dial to the desired watering day

• Press the dial and a frame will appear around the selected day. Repeat the process for all desired watering days.

• To delete a previously entered day, rotate the dial to the day and press the dial to de-select the day. If you wish to erase all watering days, press the CLEAR button.

Example: Monday, Thursday, & Saturday
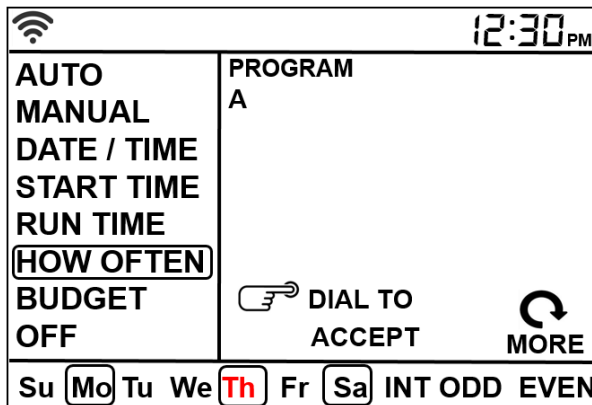
Intervals

• Rotate the dial until INT is flashing, then press the dial to select INT (Intervals).

• The interval (days) will flash. With it flashing, rotate the dial until the desired number of days between waterings is reached, then press the dial .

Example: An interval of 1 will water every day; an interval of 3 will water every 3rd day, etc.

Odd or Even Days

- Rotate the dial until Odd or Even is highlighted and flashing

- Press the dial to select Odd or Even

Example: Odd: 1st, 3rd, 5th, etc.
Example: Even: 2nd, 4th, 6th, etc.

```
📶                                    12:30 PM

AUTO              PROGRAM
MANUAL            A
DATE / TIME
START TIME
RUN TIME
HOW OFTEN
BUDGET            ☞ DIAL TO        ↻
OFF                 ACCEPT         MORE

Su  Mo  Tu  We  Th  Fr  Sa  INT  ODD  EVEN
```

Note: Selecting a different option or pressing clear will erase the previous selection.

Press Back to return to the main LCD menu, rotate the dial to Auto and press the dial to select. You have programmed your timer!
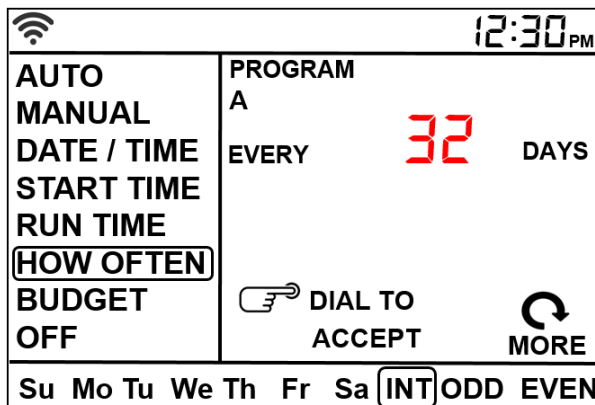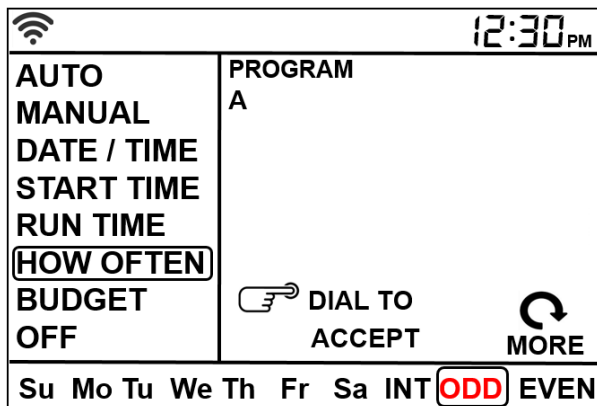
Note: *If your program is lost, the factory installed fail-safe program will turn on each station every day for 10 minutes*

Note: *Your prior programming will not be disturbed unless altered. Always be aware of the program you are in (A, B, or C) when you are making changes.*

Reviewing and Changing Your Program

If you want to review or change the start times, run times, or how often to water, simply follow the directions again for that option. After reviewing or changing a watering schedule, remember to turn the dial back to [AUTO] for automatic operation.

Section 4: Additional Features

Rain Delay

[Rain delay] allows you to delay your sprinkler timer from watering for a set period of time. Delay settings are 24, 48, and 72 hours.

- With the timer in AUTO.

- Press the [Rain Delay] button to automatically delay watering for 24 hours.

- If a longer Rain Delay is desired, rain delay button repeatedly or rotate the dial until the desired number of delayed days is reached.

- Press the dial to begin the rain delay.

- [CLEAR] button stops the rain delay and scheduled watering will resume.

- At the end of the selected rain delay amount of time, automatic watering resumes.

- While in rain delay mode, the timer will display the number of remaining rain delay days or hours.

Water Budgeting

Water Budgeting is a simple way to adjust your watering duration to match seasonal watering needs. Water Budgeting works by increasing or decreasing watering duration for all stations in each program.

Adjustment range is from 10% to 200% by increments of 10%. The default value is 100%, which means your timer will run each zone for exactly the number of minutes you entered as the run time. The budgeting will remain at the adjusted range until you change it.

To set budgeting:

- Press the [PROGRAM] button to select the program you wish to budget.

- Turn dial until [BUDGETING] is highlighted, then press the dial.

- To adjust rotate the dial to the desired budget percentage then press the dial.

- If using multiple programs (A, B, or C) press the [PROGRAM] button to move to the desired program and make the needed adjustment.

```
┌─────────────────────────────────────┐
│ 📶        %              12:30 PM    │
├──────────────┬──────────────────────┤
│ AUTO         │ PROGRAM              │
│ MANUAL       │ A                    │
│ DATE / TIME  │    2 00              │
│ START TIME   │                      │
│ RUN TIME     │                      │
│ HOW OFTEN    │                      │
│ BUDGET       │ ☞ DIAL TO           │
│ OFF          │    ACCEPT      ↻     │
│              │              MORE    │
├──────────────┴──────────────────────┤
│              We                     │
└─────────────────────────────────────┘
```
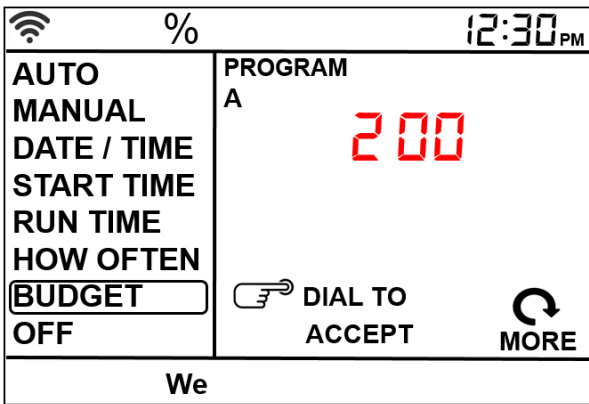
Example: Bill's watering duration is set at 30 minutes however; it is summertime so he wants to water twice as long so he sets his budgeting to 200%, his timer will now water for 60 minutes.

Manual Watering

Your timer has the ability to allow you to manually water without disturbing the preset program.

- Turn dial until [MANUAL] is highlighted, then press the dial.
- Display will show ALL. If you desire to water all stations, press the dial.
  - O and MINS will show in the display. Rotate the dial to add the number of minutes and press the dial to begin watering all zones for the selected duration.
- If you wish to water specific programs or stations, rotate the dial until the program (A, B, C) or station 12 is showing in the display, then press the dial.
  - If stations are selected, you can set up time for one or more stations to water using the same method used in setting run time.
  - All stations will water consecutively for their programmed duration.

Note: If the run times have not been set, the timer will not initiate manual watering and the screen will return to the current time.

- To specify a specific program, rotate the dial to select A, B, or C.
- Press the dial to activate.
- To select a specific station, continue rotating the dial until the station number appears, then press the dial.
- Press the dial and the station number will flash. Rotate the dial to the desired station, push the dial and rotate the dial until the display shows the desired duration. Press the DIAL to begin watering.

Note: More stations can be watered by repeating this same process

- To stop Manual Watering press [CLEAR].
- The timer will go back to your original automatic watering schedule.

Example: To manually water on station 3 for five minutes, rotate the dial to [MANUAL] then press the dial. Rotate the dial until you see station 12, press the dial and rotate it until you see station 3, then press the dial. Rotate the dial until five minutes shows in the display then press the dial.

Note: After the [MANUAL] button has been pushed, if a selection is not made within 5 seconds all stations and programs will begin watering using the programmed RUN TIMES. If no RUN TIMES have been set, nothing will happen and the display will return to the time of day.

Connecting a Rain Sensor

• Connect the rain sensor wires to the wiring terminal ports labeled "Sensor".

• Place the sensor on/off switch to the "on" position to begin operation.
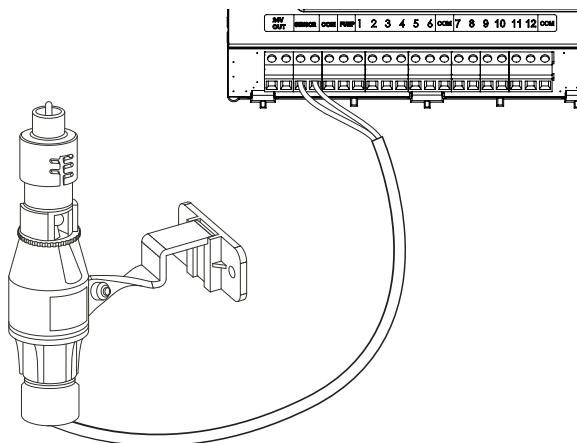
Rain Sensor Bypass

This sprinkler timer is equipped with a sensor override "on/off" switch. This switch is for use during maintenance and repairs, so the sprinkler timer can be operated even if the rain sensor is in active mode.

Important: If the rain sensor switch is in the "on" position and no sensor is connected, the sprinkler timer will not operate. To resume sprinkler timer operation place the switch in the off position.

Pump Start & Master Valve

This sprinkler timer allows a master valve or pump start relay to operate whenever a station is on.

Note: *If you are activating a pump from this timer, you must purchase a Pump Start Relay. From the pump start relay (or master valve); connect one wire to the "Pump" terminal and the other wire to the "Common" terminal.*

Replacing the Battery

WARNING: *Risk of Fire, Explosion, and Electric Shock. Replace battery with Hitachi Maxell Ltd, Type CR2032 only. Use of a different battery has the potential for a risk of fire, explosion, and electric shock. See owners manual for instructions.*

Timer requires a CR2032 Lithium battery

• The battery will maintain your time and date in case of an AC power loss.

• Battery should last approximately one year.

• To remove, lift on the edge of the coin cell battery.

• Insert one CR2032 battery into the compartment with the + side up.
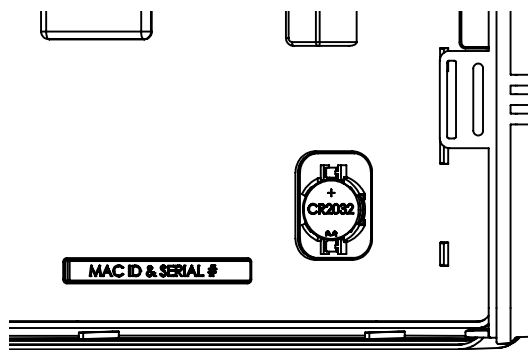
A weak or missing battery can cause the time and date to be erased after a power failure. If this happens, you will need to install a fully charged battery.

Tip: *Replace battery every year, to avoid loss of programming*

Note: *A battery alone will not operate the valves in your sprinkling system. The sprinkler timer has a built-in transformer that must be connected to an AC line voltage source.*

Section 5: Reference

TERM	DEFINITION
START TIME	The time the program begins watering the first programmed station.
VALVE	Supplies water to a specific station or area. The opening and closing of the valve is accomplished through electrical current supplied by the sprinkler timer.
MASTER VALVE	Typically located at the main water source. Turns on and off water for the entire irrigation system when not in use.
MULTIPLE START TIMES	A controller feature that allows a program to be operated multiple times on the same watering day.
OVERLAPPING PROGRAMS	When a "Start Time" is set for a program before the previous program has completed.
PROGRAM (A, B, OR C)	Individual programs as set by the user. Each program operates independently. If one program overlaps the other the programs will be "stacked." After the first program finishes the next program will begin.
RAIN DELAY	A feature that postpones the running of a scheduled watering program for a specific duration.
SOLENOID	The electrical part on an irrigation valve that opens and closes the valve.
SPRINKLER TIMER	A device which instructs the station valves to operate.
STATION	A grouping of sprinklers operated by a single valve which is controlled by the timer.
WATERING BUDGETING	Adjusts your overall watering program as a percentage of total watering duration.

Troubleshooting

Problem	Possible cause
One or more valves do not turn on	1. Faulty solenoid connection
	2. Wire damaged or severed
	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
	3. AM/PM is incorrect
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
Timer will not power up	1. Transformer not plugged into a working outlet
Valves continue to turn on and off when they are not programmed	1. More than one start time is programmed with overlapping schedules
	2. Excessive pressure

Help

1-800-488-6156 or 1-801-299-5555

www.orbitonline.com

Before returning this sprinkler timer to the store, contact Orbit® Technical Service at: 1-800-488-6156, 1-801-299-5555 Listings

Listings

The sprinkler timer is tested to UL-50 standard & is ETL® listed.

Disconnection : Type 1Y

Normal Pollution Situation.

The supply cord of this control can be replaced only by the manufacturer or his accredited service agent.

Trademark Notice

WaterMaster® is a registered trademark of Orbit® Irrigation Products, Inc. The information in this manual is primarily intended for the user who will establish a watering schedule and enter that schedule into the sprinkler timer. This product is intended to be used as an automatic sprinkler timer for activating 24 VAC irrigation valves, as described in this manual.

Warranty and Statement

Orbit® Irrigation Products, Inc. warrants to its customers that its products will be free from defects in materials and workmanship for a period of six years from the date of purchase.

We will replace, free of charge, the defective part or parts found to be defective under normal use and service for a period of up to six years after purchase (proof of purchase required).

We reserve the right to inspect the defective part prior to replacement.

Orbit® Irrigation Products, Inc. will not be responsible for consequential or incidental cost or damage caused by the product failure. Orbit® liability under this warranty is limited solely to the replacement or repair of defective parts.

To exercise your warranty, return the unit to your dealer with a copy of the sales receipt.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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. 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.

Caution: This appliance is not intended for use by young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance.