Thank you for selecting the Orbit® Touch-Screen Timer. Our designers have combined the simplicity of touch-screen programming with the flexibility and accuracy of digital electronics to give you a timer that is easy to program and extremely versatile. This convenient timer lets you run automatic or manual watering programs with a wide spectrum of features, including remote control operations.

Please read this manual completely before you begin programming and using the timer.

### Important Features and Capabilities

#### Dual Programs

The timer offers two programs – Program A and Program B – for watering flexibility. Any of the watering stations can be assigned to either program. For example, stations that water your garden and flower beds could be assigned to Program A and watered daily starting at 8 a.m., while stations that water your lawn could be assigned to Program B and watered every third day starting at 5 a.m.

#### “Stacking” Feature

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.

### Choice of Five Languages

You can easily set the LCD display to read in any of five languages: English, Spanish, French, German or Italian.

### Water Budgeting

This convenient feature provides a quick, easy way to increase or decrease the watering durations of all stations in both programs to match seasonal watering needs. You won’t have to adjust each station’s watering time individually.

### Rain Sensor (Optional)

An optional rain sensor can be purchased separately to prevent programmed watering for a period of time after rain falls (determined by the amount of rain and how quickly the sensors dry out). If your unit is RF capable then you can use a wireless sensor. Otherwise a hard-wired sensor can be used.

### Docking Port

This timer has been designed for convenience and “armchair” programming. The timer’s docking port is mounted on a wall and all wires are connected to it. The main timer unit can be easily and quickly slid on and off the docking port, allowing you to take the timer virtually anywhere to create or change watering programs.

### Programming Information Stored Safely in Non-Volatile Memory

All programming information for Program A and Program B is stored indefinitely in the timer’s non-volatile memory (EEPROM and internal memory). This high-end feature means your programming won’t be lost or erased if the power and batteries go out.

### Convenient, Easy-to-Read Touch-Screen LCD Display

The timer’s back-lit, touch-screen LCD display screen is conveniently programmed and easy to read under any lighting conditions. You may use either your finger or the built-in stylus on the touch screen.

(See Figure 1)
Push Buttons
These push buttons on the timer are used for programming and other operations:

- HOME/Lock
  Used to exit settings; to go into AUTO MODE, or to lock the touch screen.

- System Off
  A single push will open the Rain Delay screen. A second push of the button will place the entire system in OFF mode.

- Reset (pin hole)
  Resets the timer to its factory settings.

- RF Sync
  Allows the timer to synchronize with a new remote or wireless sensor.

- Rain Sensor
  In Active position the controller will monitor the rain sensor, in Bypass position the controller will ignore the rain sensor. (This switch is for hard wired sensors only and does not affect wireless rain sensors.)

Section 2: Getting Started

Set Language
Press the HOME button. The controller will now take you through a step by step programming process.

1. Press Home/lock or the touch screen to set the language of your choice (English, Spanish, French, German or Italian). Press ENTER.

2. Set Current Time and Date
   - Press or on the touch screen to set the current time. Press ENTER.
   - Press or on the touch screen to set the current year. Press ENTER.
   - Press or on the touch screen to set the current month. Press ENTER.
   - Press or on the touch screen to set the current day of the month. Press ENTER.

3. Determine a Watering Plan
   - See page 14 for instructions.

Section 3: Programming your timer

Walk through programming is available after hitting the HOME button.

Program Toggle Feature
The Program Toggle Feature allows you to switch back and forth between Program A and Program B. Press PROG. A or PROG. B on the touch screen to select Program A (‘A’ is larger than ‘B’) or Program B (‘B’ is larger than ‘A’). You can change the watering start times, watering days, and watering durations for each program.

Set Start Time
Press or on the touch screen to set the start time for the selected program. Press ENTER.

Set Watering Days
Press ODD, EVEN, INTERVAL (1-32 days using or ) or the specific days of the week (Su, Mo, Tu, We, Th, Fr, Sa) you want the selected program to water. Press ENTER.

Set Watering Durations
- Select the first station to be watered by pressing the station number on the bottom of the touch screen or press ENTER to advance to the desired station. Note: The active station, being programmed, will Flash.
- Set the watering duration for each station by either:
  1. Selecting one of the preset watering duration minutes (0, 5, 10, 15, 20, 30 or 45) on the bottom of the LCD.
  2. Using the or to enter the desired minutes.
- Note: a watering duration must be entered for each watering station.
- Follow the same procedure to set the watering durations for all other stations.
- Press EXIT. At this point you will see the PROGRAMMING COMPLETE screen. If you wish to go back and change any of the settings, press EXIT. When you press Enter, this will accept the programming and take you to the HOME/AUTO screen.
**To Set Watering Cycles:**

Multiple watering cycles is simply the where the sprinkler timer will cycle.

Using multiple watering cycles is ideal for reducing runoff and standing water. This sprinkler timer allows program A or B (or both) to be repeated on the days programmed.

When extra watering is needed, Program A or B (or both) can be set to repeat the set watering durations up to 20 times a day.

To order to maintain absorption and prevent runoff, you may set a specific number of minutes or hours between the start of one cycle and the start of the following cycle. This is called the “cycle delay” and can be set from 0 minutes to 90 minutes in 10-minute increments, and from 2 hours to 23 hours in one-hour increments.

- From the HOME/AUTO screen, press PROG. A or B to enter the program review screen. Toggle to desired program.
- Press CYCLES.
- From the HOME/AUTO screen, press PROG. A or B to select the desired number of watering cycles. Press ENTER.

**To Change Settings From the HOME/AUTO Screen:**

Orbit® has simplified the way to make modifications to your timer. Just tap the setting you want changed in the HOME/AUTO screen.

- Tap the date to change the current date
- Tap the time to change the time of day
- Tap the NEXT START to change the time of day you want to water
- Tap the station number to modify the watering durations
- Tap PROG to modify the watering days
- Tap CYCLES to modify the number of watering cycles
- Press the WIRELESS STATE button at any time to return to the HOME/AUTO screen.

**To Water in Manual Mode:**

In Manual mode, you can manually water one, some, or all stations.

- Or, press NEXT for MANUAL - SELECT watering. This screen allows you to select any single station or a group of stations each with individual durations (1 to 240 minutes) using the Quick Touch buttons. Select the desired stations and durations then press ENTER.
- Or press NEXT again for MANUAL - PROG A watering. This will allow you to water the stations in Program A for their preset durations. Press ENTER to begin watering.
- Or press NEXT again for MANUAL - PROG B watering. This will allow you to water the stations in Program B for their preset durations. Press ENTER to begin watering.

**To Set Water Budgeting:**

Water Budgeting is a quick way to adjust your set durations (10 to 200%) based on seasonal requirements.

- Press BUDGET.
- Press or to select the desired budget percentage. Press ENTER.

Note: If your set duration is 10 minutes and you set the water budget to 150% the duration will be 15 minutes. If you set it to 50% the duration will be 5 minutes.

**WIRELESS SENSOR STATE**

(Optional for RF Models Only)

This timer can communicate with Orbit wireless sensors.

To change the communication status between the timer and the wireless sensor do the following:

- From the BUDGET button on the HOME/AUTO Screen.
- From the SENSOR button on the top right of the screen.

- Use the or to toggle the sensor communication status.

**Sensor Active** - sensor will allow sensor to block watering

**Sensor Bypass** - sensor will ignore the sensor and will not allow watering to be blocked

**To Lock Programming Keys**

- Press the HOME/LOCK button once from the HOME screen. The lock icon will show on the screen. To unlock the touch-screen press the HOME button again.
To Prevent Watering:

- To stop watering for a set period (1 to 99 days) press RAIN DELAY once and select the desired delay using or and then press START. To cancel the RAIN DELAY and return to AUTO mode press CANCEL.
- To stop all watering indefinitely, push the RAIN DELAY/SYSTEM OFF button twice. The controller will be placed in OFF mode. To return to AUTO mode press the HOME/LOCK button.

Section 4: Remote Control Device

NOTE: This feature is optional and may not be included on your model.
The Orbit® Touch-Screen Timer can be controlled using the included remote control device for your convenience. Commands from the remote control device override any programmed or manual water functions already set in place. When remote control watering is finished, any current programmed and manual watering becomes active and resumes operating as scheduled at that particular day and time.

To Synchronize the Remote Control Device with the Timer:

Follow these easy steps:
1. Select a Location
   Select a location with the following criteria:
   - Near an electrical outlet. (Avoid using an outlet controlled by a switch.)
   - In a dry, indoor location, where operating temperatures are not below 32° or above 122° Fahrenheit (below 0 degrees or above 50 degrees Celsius).
   - Not in direct sunlight.
   - Accessible to sprinkler wires from valves.
2. Mount the Docking Port

Follow these easy steps:
1. Select a Location
   Select a location with the following criteria:
   - Near an electrical outlet. (Avoid using an outlet controlled by a switch.)
   - In a dry, indoor location, where operating temperatures are not below 32° or above 122° Fahrenheit (below 0 degrees or above 50 degrees Celsius).
   - Not in direct sunlight.
   - Accessible to sprinkler wires from valves.
2. Mount the Docking Port

To Water All Stations:

- Press and release the ALL button on the remote control device to select all stations for watering.
- Press and release the ON “X” MIN button to command the timer to water all the stations sequentially for the desired (“X”) number of minutes.
- If you wish to advance to the next selected station before a station’s watering duration is complete, press NEXT.

To Water One Station:

- Press the number of the station you wish to water.
- Press ON “X” MIN to water the station for the desired (“X”) number of minutes.
- If you wish to advance to the next selected station before a station’s watering duration is complete, press NEXT.

To Water More Than One Specific Station:

- Press the numbers of the stations you wish to water. (Example: 3, 7, 10) and then press ON “X” MIN to water those stations for the desired (“X”) number of minutes.
- If you wish to advance to the next selected station before a station’s watering duration is complete, press NEXT.

Section 5: Installing the Orbit® Touch-Screen Timer and Remote Control Device Sleeve

NOTE: Before installation, please have the following tools on hand:
- Phillips screwdriver
- Wire strippers

Installing the Sprinkler Timer in Five Easy Steps

Your new timer has been designed for easy, convenient installation. Simply slide the timer off the docking port, screw the docking port onto a wall in an appropriate location, insert the remote connection into the socket at the bottom of the docking port, and slide the timer back on. Finally, install the sleeve for the remote control device.
Slide the timer off the docking port. (See Figure 5)

• Using the mounting template (included), mark the two screw locations on the wall, then drill holes at the marks for No. 8 screws. Use the expanding anchors in plaster or masonry if necessary.

• Place the docking port against the wall, aligning the two holes in the docking port with the two drilled holes.

• Secure the docking port to the wall by screwing a No. 8 screw (included) through each of the two holes.

• Do not slide the timer back onto the docking port yet.

3. Connect the Transformer

• Find the two sockets at the bottom of the docking port labeled “24VAC.” (See Figure 6)

• Insuring the transformer is not plugged in; insert one of the two power leads from the transformer into each terminal socket using the phillips screwdriver to depress the terminal button (this allows for wire insertion or removal).

• Plug in the transformer

WARNING: Do not link two or more sprinkler timers together with one transformer.

4. Connect Valve Wires to Timer, Pump Start and Master-Valve Terminals

A. Wire the Electric Valves

NOTE: If the distance between the sprinkler timer and valves is under 700' (210 m), use Orbit® sprinkler wire or 20 gauge (AWG) plastic jacketed/thermocore wire to connect the sprinkler timer to the valves. If the distance is over 700' (210 m), use 16 gauge (AWG) wire.

• Taking the sprinkler wire, strip ½” (12 mm) of the plastic insulation off the end of each individual wire.

• Connect one wire from each valve (it doesn’t matter which wire) to a single “common” sprinkler wire. This is usually white.

IMPORTANT: All wires should be joined together using wire nuts, solder and/or vinyl tape. For additional protection to waterproof connections, an Orbit® grease cap can be used.

• Next, connect the remaining wire from each valve to a separate colored sprinkler wire.

To avoid electrical hazards, only one valve should be connected to each terminal.

• Do not link two or more common wires together. If more than two common wires are required, splice several together so only one wire runs into each of the two “COM” terminals. Protect the splice connection with wire nut.

B. Connect Valve Wires to the Sprinkler Timer

• Strip ¼” (6 mm) of the plastic insulation off the end of each wire.

• Determine which valve you want to connect to which station. Using a phillips screwdriver to depress the terminal button insert the sprinkler wire into each station terminal by inserting the bare wire fully into the terminal under each number. (See Figure 7)

• Connect the common wire to one of the two terminals (white in color) labeled “COM.”

NOTE: Insert only one wire into each “COM” socket. If more than two common wires are required, splice several together so only one wire runs into each of the two “COM” terminals. Protect the splice connection with wire nut.

C. Connect Pump Start and Master Valve

This 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 “COM” terminal.

Once all connections to the docking port are made, you may slide the timer back onto the docking port.

5. Mount the Sleeve for the Remote Control Device

• Using the mounting template (included), mark the two screw locations on the wall, then drill holes at the marks for No. 8 screws. Use the expanding anchors in plaster or masonry if necessary. (The sleeve can be mounted anywhere and does not need to be next to the timer.)

• Place the remote control device sleeve against the wall, aligning the two holes in the sleeve with the two drilled holes.

• Secure the sleeve to the wall by screwing a No. 8 screw (included) through each of the two holes.

• Slide the remote control device into the sleeve.
Section 6: Diagnostics Circuit Breaker

Smart-Scan® Diagnostic Fault Sensing

A diagnostic fault sensor will automatically scan for the presence of a faulty solenoid or wiring short in a valve during each watering sequence. If a faulty station is detected, the sprinkler timer will move to the next working station. Smart-Scan® also detects faulty wiring for the Pump or Master Valve. Upon detection, watering of faulty stations is discontinued.

Fault Notification

- Faulty station: “FAULT” and “Station XX” is displayed. When multiple faulty stations are detected, only the last faulty station will be displayed.
- Faulty wiring for pump/master valve: “PUMP FAULT” is displayed.

Correcting the Fault

1. First, repair the short in the wiring or replace the faulty solenoid.
2. Test the station by operating a manual watering sequence.
3. If the short is not detected after a few seconds, the fault notification message will be terminated.
4. If the message continues, a short in the wiring still exists.

Internal Auto-Resetting Electronic Circuit Breaker

The sprinkler timer is equipped with an internal electronic self-resetting circuit breaker.

Possible causes of a circuit breaker tripping:
1. If lightning strikes nearby.
2. When the power supply has an electric spike.
3. If a station has a wiring short.

Whenever one of these conditions occurs, the electronic circuit breaker may trip, causing the station output from the sprinkler timer to be halted momentarily. The batteries will continue to activate the LCD. After a few moments, the sprinkler timer will automatically retest the circuit to see if the condition has stopped. If so, the circuit breaker will reset itself.

Section 7: Glossary of Terms

<table>
<thead>
<tr>
<th>TERM</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeting</td>
<td>A feature used to increase or decrease all set durations according to seasonal demands</td>
</tr>
<tr>
<td>Manual Watering</td>
<td>An unscheduled watering cycle performed manually by the homeowner</td>
</tr>
<tr>
<td>Master Valve</td>
<td>A valve that regulates water flow through Station valves</td>
</tr>
<tr>
<td>Programs (A or B)</td>
<td>A set of stations that alternates the days and times for watering</td>
</tr>
<tr>
<td>Rain Sensing</td>
<td>A basic that prevents the sprinkler from being triggered if the precipitation exceeds a specific amount</td>
</tr>
<tr>
<td>Repeat Cycles</td>
<td>A feature that allows a program to be repeated multiple times on the same day</td>
</tr>
<tr>
<td>Seasonal</td>
<td>The actual or perceived longer rainy months and shorter the dryer</td>
</tr>
<tr>
<td>Sprinkler Valve</td>
<td>A valve that is responsible for providing an adequate irrigation system on each of the zones</td>
</tr>
<tr>
<td>Start Time</td>
<td>The time that the program begins watering the first station</td>
</tr>
<tr>
<td>Water-Monitoring Station</td>
<td>A station that is configured to be monitored at a regular frequency</td>
</tr>
<tr>
<td>Wetted Terminals</td>
<td>The connection point on the sprinkler head to a wire that is included</td>
</tr>
<tr>
<td>Watering Program</td>
<td>Basic Program (A or B)</td>
</tr>
<tr>
<td>Watering Valve (Irrigation valve)</td>
<td>A valve that delivers water to lawns, plants, and gardens</td>
</tr>
<tr>
<td>Zones</td>
<td>The time the program begins watering the first station</td>
</tr>
</tbody>
</table>
Determine a Watering Plan

1. For each watering station, write down the watering location, type of sprinkler head and types of plants to be watered.

2. Determine the best watering duration and frequency for each station.

3. Determine, based on step 2, the ideal watering option for each station.

4. Use this plan to program the timer.

Based on the preceding information, your watering program may look like this:

<table>
<thead>
<tr>
<th>Station</th>
<th>Program</th>
<th>Watering Option</th>
<th>Days</th>
<th>Start Time</th>
<th>Location</th>
<th>Sprinkler</th>
<th>Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>Days of the week</td>
<td>M, W, Sat</td>
<td>5:00 a.m.</td>
<td>Front, Strip</td>
<td>Spray Heads</td>
<td>Grass</td>
</tr>
<tr>
<td>2</td>
<td>A</td>
<td>Days of the week</td>
<td>M, W, Sat</td>
<td>10 min</td>
<td>Front, North</td>
<td>Spray Heads</td>
<td>Grass</td>
</tr>
<tr>
<td>3</td>
<td>B</td>
<td>Everyday</td>
<td>8:05 a.m.</td>
<td>20 min</td>
<td>Back, North</td>
<td>Spray Heads</td>
<td>Grass</td>
</tr>
</tbody>
</table>

Section 8: Trouble Shooting

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or more stations do not turn on</td>
<td>1. Faulty Solenoid</td>
</tr>
<tr>
<td>Stations turn on when they are not supposed to</td>
<td>1. Water pressure is too high</td>
</tr>
<tr>
<td>One station is stuck on and will not shut off</td>
<td>1. Transformer is defective or is not connected correctly</td>
</tr>
<tr>
<td>All stations do not turn on</td>
<td>1. Transformer is defective or is not connected correctly</td>
</tr>
<tr>
<td>Timer will not power up</td>
<td>1. More than one cycle is programmed</td>
</tr>
<tr>
<td>Stations continue to turn on and off when they are not programmed to</td>
<td>1. Faulty valve</td>
</tr>
<tr>
<td>Water Budgeting set to more than 100%</td>
<td>1. Valve diaphragm faulty</td>
</tr>
<tr>
<td>Transformer not plugged into an operational AC outlet</td>
<td>1. Transformer is defective or is not connected correctly</td>
</tr>
<tr>
<td>Timer is in OFF mode</td>
<td>1. Transformer not plugged into an operational AC outlet</td>
</tr>
<tr>
<td>Transformer not plugged into an operational AC outlet</td>
<td>1. Transformer not plugged into an operational AC outlet</td>
</tr>
<tr>
<td>Water Budgeting set to more than 100%</td>
<td>1. Transformer not plugged into an operational AC outlet</td>
</tr>
<tr>
<td>Water Budgeting set to more than 100%</td>
<td>1. Multiple cycles are programmed</td>
</tr>
<tr>
<td>Water Budgeting set to more than 100%</td>
<td>1. Excessive pressure</td>
</tr>
<tr>
<td>Water Budgeting set to more than 100%</td>
<td>1. Stations are set to water with both programs</td>
</tr>
</tbody>
</table>

1. Short in wiring or solenoids
2. Transformer is defective or is not connected correctly
3. Transformer not plugged into an operational AC outlet
4. Water Budgeting set to more than 100%
Help
Before returning this sprinkler timer to the store, contact Orbit® Technical Service at:
1-800-488-6156, 1-801-299-5555.

Listings
Harley, Orbit Irrigation Products, Inc. declares that this controller is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
The socket-outlet shall be installed near the equipment and shall be easily accessible.

Orbit® Irrigation Limited Six-Year Warranty
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.

SAFETY OF CHILDREN: The controller is not intended for use by young children or infirm persons without supervision. Young children should be supervised to ensure they do not play with controller.