



Libertyville, Illinois 60048
www.Intermatic.com

El-501 Series

Digital In-Wall Astronomic Timer Installation and User Guide

SAFETY SECTION

Risk of Fire or Electric Shock

- Disconnect power at the circuit breaker(s) or disconnect switch(es) before installing or servicing.
- Do not use in wet locations.
- Use indoors only.
- Do not use to control appliances that contain heating elements such as cooking appliances, heaters, and irons.
- Do not exceed electrical ratings.
- Do not use to control receptacles.

Notice

- No user-serviceable parts.
- The internal battery requires up to 30 minutes to charge. If the battery is not charged and power is lost, schedule information may have to be re-configured.



PRODUCT DESCRIPTION

The El-501 Series In-Wall Timer provides customized schedules with up to 40 ON/OFF events. The El-501 Series is LED compatible and has a built-in rechargeable, non-serviceable battery for schedule backup.

- Automatic dusk/dawn settings with offset
- Random mode simulates occupancy
- Daylight Saving Time (DST)
- Countdown feature
- Single-pole or 3-way Installations

RATINGS

Operating Voltage	120 VAC, 60 Hz
Electronic Ballast (LED)	10 A
Incandescent	10 A
Resistive	15 A
Motor Load	½ HP
Operating Temperature	32° F - 104° F (0° C - 40° C)
Dimensions	4.125" x 1.75" x 1.625" (104.78 mm x 44.45 mm x 41.28 mm)

PRE-INSTALLATION

PREPARING THE TIMER FOR INSTALLATION

- Locate the LINE, LOAD, NEUTRAL, TRAVELER, and GROUND terminals.
- Loosen the LINE, LOAD, NEUTRAL, and GROUND terminals with a screwdriver.
- If installing in a 3-way circuit, loosen the TRAVELER terminal as well.

OPTIONAL FACEPLATE COVER

If you have purchased an optional Faceplate Cover, install it now.

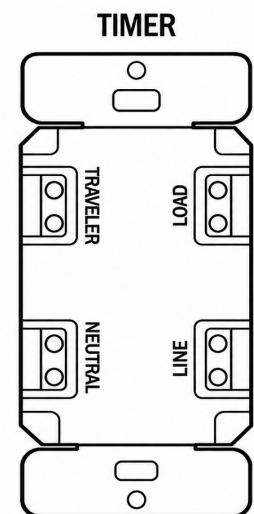


Figure 1

INSTALLATION



INSTALLATION VIDEO

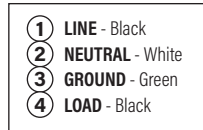
To watch a tutorial Video on installing this timer:

1. Go to www.Intermatic.com and enter the Product Name or Model Number in the search field.
2. Click on the video link in the "Extras" section.

1. Disconnect the power at the circuit breaker(s) or disconnect switch(es)
2. **WARNING:** If you are unsure or unclear about this installation, or if the wires in your box do not match the manual (for example, no neutral wires), contact a qualified, licensed electrician.
3. Determine the type of installation required by reviewing the examples below
 - **Single-Pole:** Used when the timer controls the load from a single location
 - **3-Way Installation, Load Side:** Used when the load is controlled from two different locations and has the common (hot) terminal connected to the device/load.
 - **3-Way Installation, Line Side:** Used when the load is controlled from two different locations and has the common (hot) terminal connected to the 120 VAC/line.

SINGLE-POLE INSTALLATION

1. Ensure that power for the circuit is turned off at the circuit breaker.
2. Remove the existing switch.
 - Connect the timer to the wall box wires as shown. (See Figure 2)
 - Connect the Line wire (1) to the LINE terminal of the timer.
 - Connect the Load wire to the LOAD (4) terminal of the timer.
 - Connect the Ground wire (3) to the GROUND terminal of the timer.
 - Connect the white Neutral wire to the NEUTRAL terminal of the timer, making sure the wire nut is tight.
3. Tighten terminal screws to between 8.85 and 12.39 lbf-in. and carefully push the wires back into the wall box.
4. Mount the timer to the wall box using the included captured screws.
5. Install decorator-style wall plate (not included).
6. Restore power to the circuit at the circuit breaker.
7. If the timer does not power on, disconnect the power at the circuit breaker again, and switch the Line and Load wires on the timer.
8. Re-attach the timer and wall plate and restore power from the circuit breaker.



SINGLE-POLE TIMER

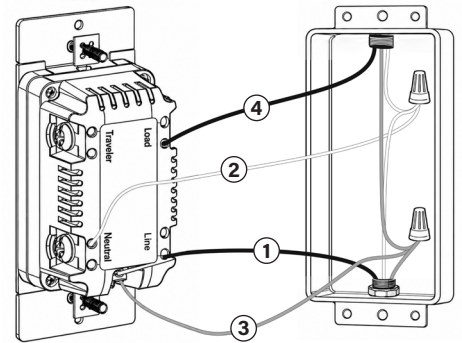


Figure 2

3-WAY INSTALLATION, TIMER ON THE LOAD SIDE

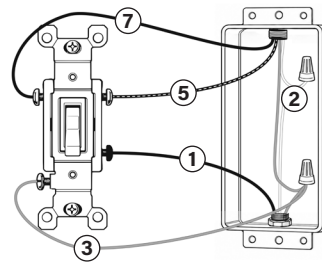
Line Side Switch Preparation

1. Ensure that power for the circuit is turned off at the circuit breaker.
2. Remove the Line Side switch from the wall box.
3. Remove and label the Line wire (1) from the COMMON Terminal.
4. Remove and label the Traveler 2 wire (7) from Line side switch HOT Terminal. (Figure 3)
5. Connect a jumper wire (6) back to the COMMON Terminal. Tie the other end of the jumper to the Line wire (1) and the Traveler-2 wire (7) using a twist-on wire connector. (Figure 4)
6. Re-mount the switch to the wall box.

Load Side Switch

1. Remove the Load Side switch from the wall box.
2. Remove and label the Load wire (4) from the COMMON Terminal.
3. Remove and label the Traveler 1 wire (5) from the HOT Terminal.
4. Remove and label the Traveler 2 wire (7) from the second HOT Terminal.
5. Remove the copper or Green Ground wire (3) from the GROUND terminal and remove the old switch from the wall box.
6. Connect the Load wire (4) to the LOAD terminal of the timer.
7. Connect the Traveler-1 wire (5) to the TRAVELER terminal of the timer.
8. Connect the Traveler-2 wire (7) to the LINE terminal of the timer.
9. Connect white jumper wire (2) (included) to the NEUTRAL terminal on the timer
10. Tie the other end of the jumper to the Neutral wire bundle in the wall box using the twist-on wire connector (included).
11. Connect the Ground wire to the GROUND terminal on the timer.
12. Tighten all terminal screws to between 8.85 and 12.39 lbf-in.
13. Carefully push the wires back into the wall box and install the timer using the two captured screws.
14. Install decorator-style wall plate (not included).
15. Restore power from the circuit breaker.
16. Confirm that the load turns ON and OFF when you press the timer On/Off button. Flip the remote switch to the other position and re-check the timer ON/OFF manual operation. If you can hear the relay click but the load does not work correctly, turn the power off at the breaker and check the wiring. Swapping Traveler-1 with Traveler-2 on the timer may fix the problem.

SWITCH ON THE LINE SIDE



SWITCH ON THE LOAD SIDE

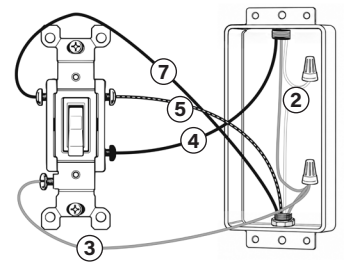
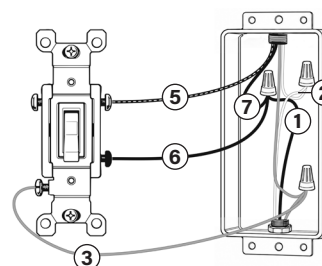


Figure 3

SWITCH ON THE LINE SIDE



TIMER ON THE LOAD SIDE

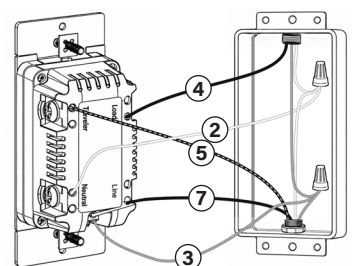
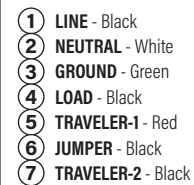


Figure 4



3-WAY INSTALLATION, TIMER ON THE LINE SIDE

Load Side Switch Preparation

1. Ensure that power for the circuit is turned off at the circuit breaker.
2. Remove the Load Side switch from the wall box.
3. Remove and label the Load wire (4) from the COMMON Terminal. (Figure 5)
4. Remove and label the Traveler 2 wire (7) from Line side switch HOT Terminal.
5. Connect a jumper wire (6) back to the COMMON Terminal. Tie the other end of the jumper to the Load wire (4) and the Traveler-2 wire (7) using a twist-on wire connector. (Figure 6)
6. Re-mount the switch to the wall box.

Line Side Switch

1. Remove the Line Side switch from the wall box.
2. Remove and label the Line wire (1) from the COMMON Terminal.
3. Remove and label the Traveler 1 wire (5) from the HOT Terminal.
4. Remove and label the Traveler 2 wire (7) from the second HOT Terminal.
5. Remove the copper or Green Ground wire (3) from the GROUND terminal and remove the old switch from the wall box.
6. Connect the Line wire (1) to the LINE terminal of the timer. (Figure 6)
7. Connect the Traveler-1 wire (5) to the TRAVELER terminal of the timer.
8. Connect the Traveler-2 wire (7) to the LOAD terminal of the timer.
9. Connect white jumper wire (2) (included) to the NEUTRAL terminal on the timer.
10. Tie the other end of the jumper to the Neutral wire bundle in the wall box using the twist-on wire connector (included).
11. Connect the Ground wire (3) to the GROUND terminal on the timer.
12. Tighten all terminal screws to between 8.85 and 12.39 lbf-in.
13. Carefully push the wires back into the wall box and install the timer using the two captured screws.
14. Install decorator-style wall plate (not included).
15. Restore power from the circuit breaker.
16. Confirm that the load turns ON and OFF when you press the timer On/Off button. Flip the remote switch to the other position and re-check the timer ON/OFF manual operation. If you can hear the relay click but the load does not work correctly, turn the power off at the breaker and check the wiring. Swapping Traveler-1 with Traveler-2 on the timer may fix the problem.

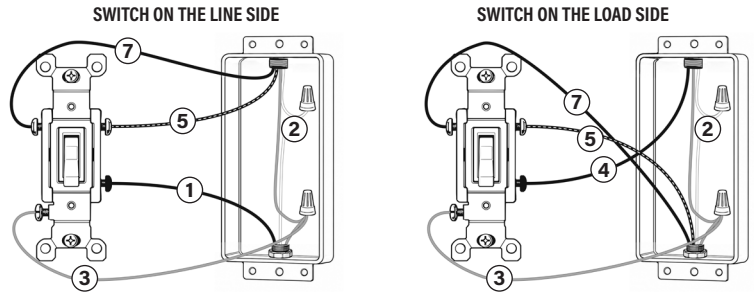


Figure 5

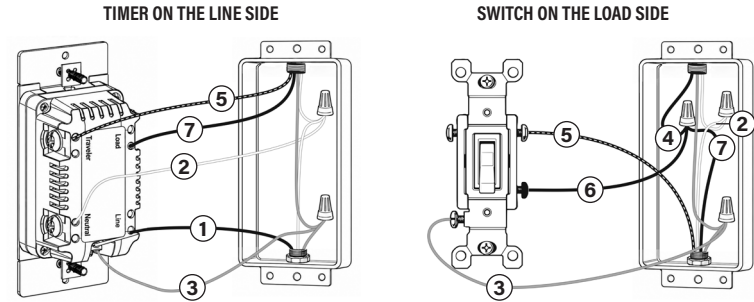
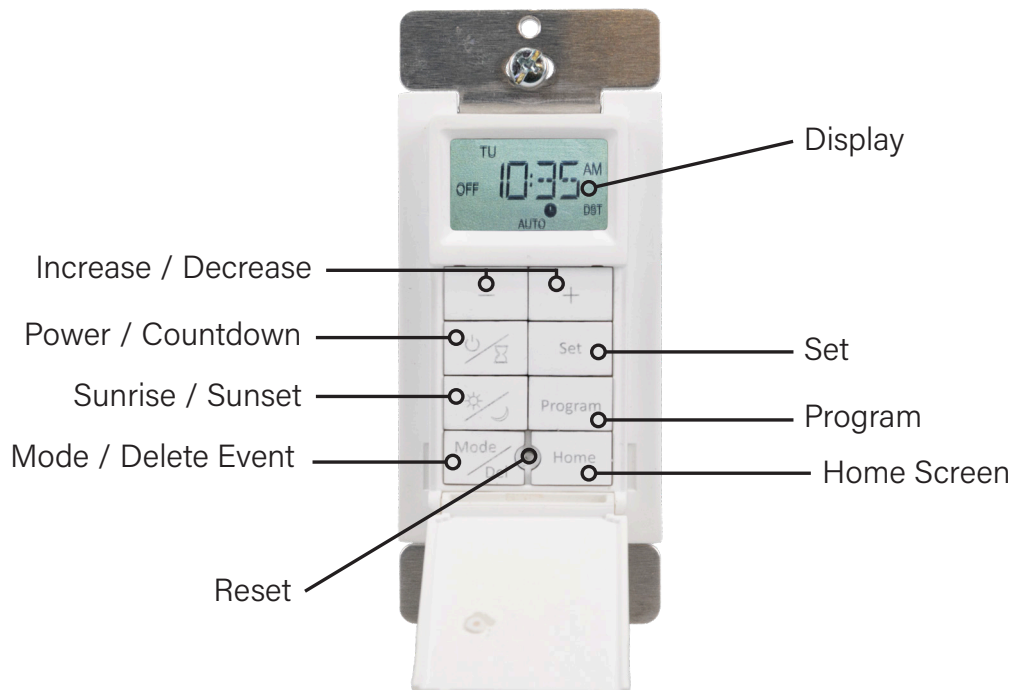


Figure 6

- | | |
|---|--------------------|
| ① | LINE - Black |
| ② | NEUTRAL - White |
| ③ | GROUND - Green |
| ④ | LOAD - Black |
| ⑤ | TRAVELER-1 - Red |
| ⑥ | JUMPER - Black |
| ⑦ | TRAVELER-2 - Black |

TIMER INTERFACE



PROGRAMMING THE TIMER



PROGRAMMING VIDEO

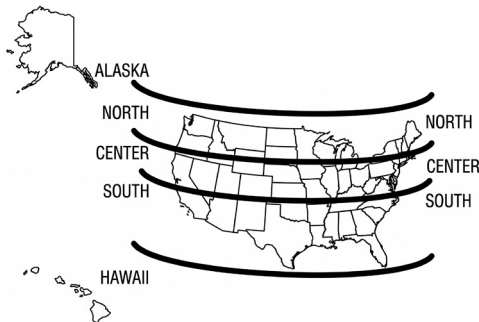
To watch a tutorial Video on programming this timer:

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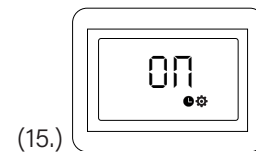
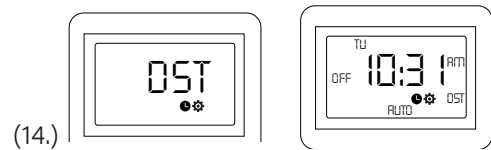
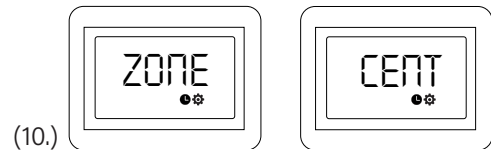
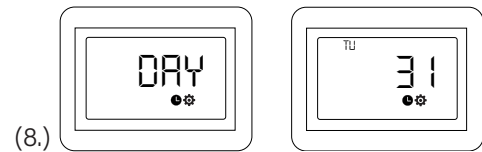
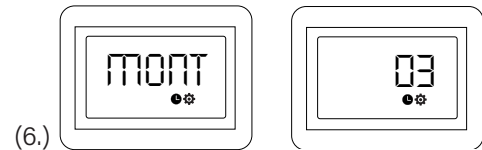
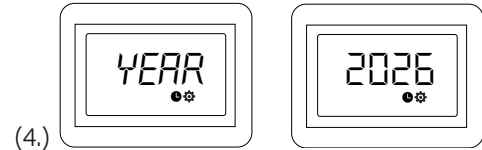
SETTING TIME AND DATE

1. Using a toothpick, paper clip or pencil, press the Reset button. The Display should begin flashing 12:00AM.
2. If the Time is not flashing, press and hold the Set button until the Time starts flashing.
3. Press + or - to set the current time.
 - a. Holding + or - scrolls the time faster.
 - b. To change from AM to PM, continue scrolling through the clock.
4. Press Set to move to Year
5. Press + or - to set the year.
6. Press Set to move to Month.
7. Press + or - to set the month
8. Press Set to move to Day
9. Press + or - to set the day.
10. Press Set to move to Time Zone
11. Press + or - to set the time zone.
12. Press Set to move to Astronomic Zone, to define the approximate Sunrise/Sunset times for your location. Choices are:

- a. CENTER
- b. SOUTH
- c. HAWAII
- d. ALASKA
- e. NORTH



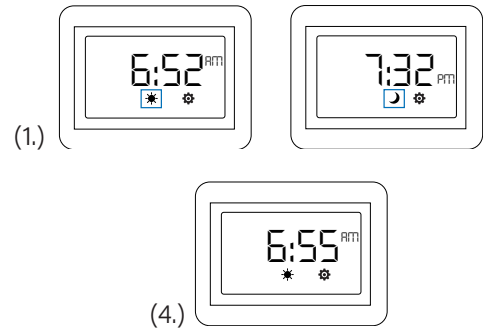
13. Use the Map as a reference to select the Astronomic Zone for your location.
14. Press Set to move to DST (Daylight Saving Time)
15. Press + or - to turn Daylight Saving Time ON or OFF.
16. Press Set to finish setup. You will automatically return to the Home Screen.



PROGRAMMING THE TIMER

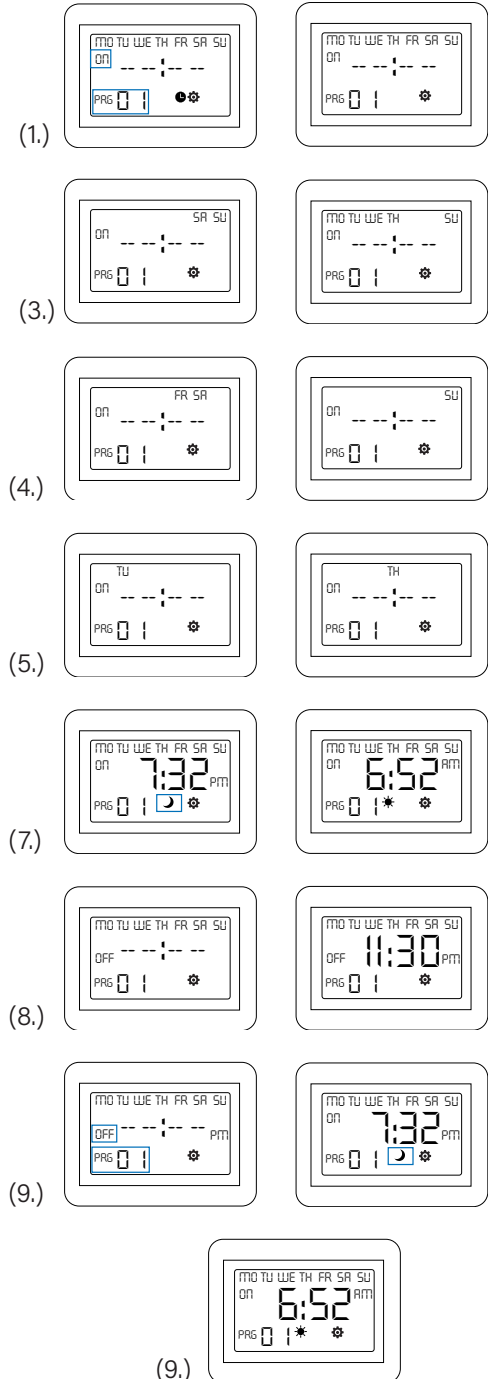
ADJUSTING SUNRISE/SUNSET TIMES

1. Press the Sun/Moon button to toggle the display between the Sunrise and Sunset times. These times are based on your Astronomic Zone and the Current Date.
2. To adjust the Sunrise Time, press the Sun/Moon button until the Sun symbol appears.
3. Press + or – to adjust the offset in minutes for the sunrise time.
4. Press the Sun/Moon button again to display the Moon symbol.
5. Press + or – to adjust the offset in minutes for the sunset time.



CREATING PROGRAMS, EVENTS AND SCHEDULES

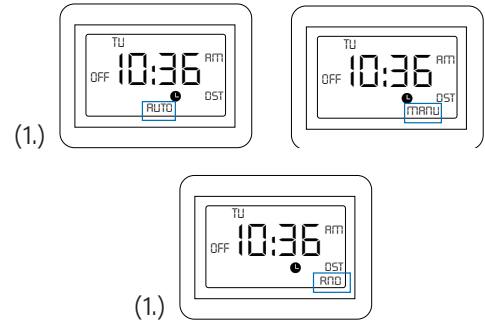
1. Press the Program button to program an Event. "PRG 1" and "ON" will flash, indicating that you are setting the ON time for Program 1.
2. Press Set to select the days of the week for PRG 1 to turn ON.
3. Use the + and – to select the days. The choices are:
 - a. Every Day
 - b. Monday through Friday
 - c. Saturday and Sunday
 - d. Sunday through Thursday
 - e. Friday and Saturday
 - f. Individual Day: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, or Saturday
4. Press Set to choose the days of the week and advance to programming the ON time for PRG 1
 - a. To set the ON time for Dawn or Dusk, press the Sun/Moon button to select sunrise or sunset.
 - b. To set the ON time for a specific time, press the Sun/Moon button until the Display shows the manual Time Entry screen. Then use the +/- buttons to select the desired time.
5. After selecting the ON time for PRG 1, press Program to lock in the time and advance to programming the OFF time for PRG 1.
6. Use the + and – to select the days for the PRG 1 OFF schedule, and press Set to advance to the OFF time setting for PRG 1.
7. Again, use the Sun/Moon button to toggle between Dawn, Dusk, and a manual time entry.
8. Press Program to move to the PRG 2 screen and repeat the process for up to 20 Programs, each with an ON and OFF Event.
9. To exit the Scheduling screens, toggle through the 20 Programs using the Program button or simply press the Home button to return to the Home Screen.



OPERATING MODES

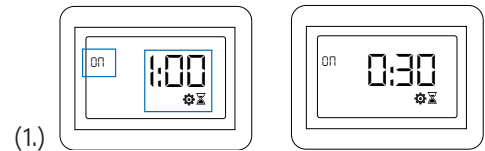
AUTO, MANUAL AND RANDOM

1. From the Home screen, press the Mode/Del button to cycle through the Operating modes.
 - a. AUTO enables all Programs to run
 - b. MANUAL disables all Programs
 - c. RANDOM offsets all Programs by plus or minus 1 to 30 minutes, to simulate occupancy in a vacant home.
2. In AUTO mode, the timer can still be manually controlled by pressing the Power/Countdown button when the door is opened. When the door is closed, pressing the front of the door also turns the timer on and off.
 - a. If the timer is in AUTO mode, the Program Schedule will automatically resume at the next programmed event.



COUNTDOWN FEATURE

1. Press and hold the Power/Countdown button to enter the Countdown Menu, indicated by a flashing "1:00" countdown duration.
 - a. Use the +/- buttons to change the countdown duration.
 - b. The countdown duration can be set from one minute to 23 hours and 59 minutes.
2. Once the duration stops flashing, the countdown begins.
3. To turn the Countdown Timer off, press the Power/Countdown button and you'll automatically return to the Home screen.

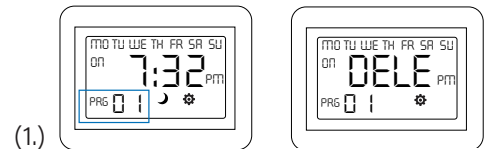


DELETING PROGRAMS

1. From the Home screen, press the Program button to cycle through the Programs.

Note that each Program flashes as you cycle through the list.
2. When you get to a Program that you'd like to delete, press the Mode/Del button.

Note that deleting a Program automatically deletes the ON and OFF Events within the Program.



EDITING PROGRAMS

1. From the Home screen, press the Program button to cycle through the Programs.

Note that each Program flashes as you cycle through the list.
2. When you get to a Program that you'd like to edit, press the Set button.
 - a. The Day setting will flash. Use the +/- to change the day setting as needed.
 - b. Press the Set button to move to the Time setting. Use the Sun/Moon button or the +/- buttons to change the time setting as needed.
3. Press the Program button to move to the next Event you'd like to edit.
4. If no further edits are required, press Home to return to the Home screen.

TROUBLESHOOTING

Observed Problem	Possible Cause	What To Do
Timer is not triggering programmed events.	Check Operating Mode setting.	Change Mode to AUTO.
Lights connected to timer stay on all day.	Program accidentally set for "AM" instead of "PM" or vice-versa.	Change AM/PM time settings as needed.
Lights turn on and off at non-programmed times.	Check to see if there are multiple programs that overlap and conflict with each other	Delete or edit conflicting program(s).
In a 3-way installation, timer only works when remote switch is in one position but not the other.	Remote switch wiring issues.	Turn power off at the breaker and re-check the remote switch wiring, especially the jumper.
Timer switches ON and OFF at incorrect times.	Timer is in Random Mode (RND), offsetting the On/Off times by up to +/- 30 minutes	Change Mode to AUTO
Timer is set for Dusk-to-Dawn operation, but lights are out of sync with the actual sunrise/sunset times.	DST is turned off or wrong Astronomic Zone was selected during setup.	Change DST and Zone settings as needed.

FCC NOTE

This device complies with part 15 of the FCC and Industry Canada license-exempt RSS standard(s). 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.

FCC NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications 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

CAN ICES-3(B)/NMB-3(B)

NOTES

This timer contains a built-in, non-replaceable, rechargeable Ni-MH battery to maintain the date, time of day, and schedule information for at least 30 consecutive days of AC power interruption. All other user settings are maintained indefinitely without AC power.

The built-in battery will fully charge within a day of connection to AC power. After an extended power outage, if the display is flashing "12:00 AM", you will need to re-enter the calendar, time, and day information.

Each ON or OFF setting is an event. Each event must be programmed separately.

When advancing to the next setting, the timer automatically saves the data from the previous screen regardless of setting changes.

LIMITED TWO-YEAR WARRANTY

Warranty service is available by either (a) returning the product to the dealer from whom the unit was purchased or (b) completing a warranty claim online at <https://www.Intermatic.com/Support/Warranty-Claims>. This warranty is made by: Intermatic, 1950 Innovation Way, Suite 300, Libertyville, IL 60048. For additional product or warranty information go to: <http://www.Intermatic.com> or call 815-675-7000, M-F 8AM to 4:30pm