

# Troubleshooting Guide

Observed Problem	Possible Cause	What to Do
Switch timer does not switch ON/OFF but display looks normal.	Switch timer is not set in AUTO, RANDom, or MANual mode.	Press <b>MODE</b> to select the operational mode you want to use.
Switch timer won't enter AUTO or RANDom mode when you press <b>MODE</b> .	The time of day or timer settings have not been set.	Make sure the time of day and at least one scheduled activity have been set.
Switch timer switches at incorrect times or skips some of the programmed times.	Programmed schedule(s) are incorrect.	Press <b>ON/OFF</b> to review the settings and revise them as necessary. See instructions at the left.
	Switch timer is in RANDom mode, which varies switching times up to ±20 minutes (to give your home a "lived-in" look).	If you don't want to keep the switch timer in RANDom mode, press <b>MODE</b> to change to AUTO mode.
	The Astronomic and Specific switching times are in conflict. For example, you've set ON to DUSK and OFF at 8 pm, and due to seasonal changes, DUSK has advanced to 8:30 pm. <i>NOTE: Your switch timer automatically skips any conflicting ON event as summer approaches to prevent unwanted operation of lights or other controlled devices. See "What to Do" if you want to identify and remove conflicting settings.</i>	<ol style="list-style-type: none"> <li>Complete the steps for setting the Time and Date, then temporarily change the date to June 21st.</li> <li>Review the DAWN and DUSK settings by pushing the <b>ON/OFF</b> button.</li> <li>Make sure the specific ON or OFF time settings won't interfere with these DAWN and DUSK times. Make changes as necessary.</li> <li>When finished, change the Date setting back to today's date.</li> </ol>
The lights or controlled devices don't match the programmed ON/OFF status immediately after setting the time or programming a schedule.	Switch timer does not "catch up" automatically to the programmed load state. The status of the switch timer will remain as is until it comes to the next programmed ON/OFF time.	After entering your schedules or the time, then returning to the AUTO mode, push the <b>ON/OFF</b> button to change the load state if necessary.
Load only operates when the remote (3-way) switch is in one position, or the switch timer ignores the remote switch.	The remote switch is wired incorrectly.	Recheck the wiring, especially for the jumper, according to "If a 3-way Switch Timer" and "If a Multiple Switch Timer Setup."
The switch timer ignores a 3-way remote switch even though it is wired correctly.	There is an excessive length of wire (more than 100 feet), or there is buried wire to the switch.	Eliminate the condition: either replace the buried cable, do without the remote switch, or contact Intermatic Customer Service for more options.
	The remote switch is not functioning properly or worn out.	Replace the remote switch.
The load turns off immediately after being turned on.	<ul style="list-style-type: none"> <li>The remote switch or switch timer is wired wrong.</li> <li>There is an excessive length of wire (greater than 100 feet)</li> <li>There is buried wire to the remote switch.</li> <li>The switch timer is not functioning properly.</li> </ul>	If the problem persists with the switch timer's red wire disconnected or with a remote switch temporarily connected right at the switch timer, replace the non-functioning switch timer. Otherwise, try the above suggestions.
	<ul style="list-style-type: none"> <li>Battery is not seated in the tray.</li> <li>The tray is misaligned.</li> <li>The contact tabs of the tray are bent.</li> </ul>	Seat the battery in the tray, then reinstall.
The switch timer operation is sluggish or not switching ON/OFF at all.	Though the "BATT" message is not being displayed, the battery is getting weak.	Replace the battery. To test the battery, press the <b>ON/OFF</b> button. The timer should "click."
Timer shows ON but the light or other controlled device is OFF.	The light or controlled device itself may be switched OFF.	Make sure the light or controlled device is switched ON and plugged in.

## LIMITED ONE-YEAR WARRANTY

If within the warranty period specified, this product fails due to a defect in material or workmanship, Intermatic Incorporated will repair or replace it, at its sole option, free of charge. This warranty is extended to the original household purchaser only and is not transferable. This warranty does not apply to: (a) damage to units caused by accident, dropping or abuse in handling, acts of God or any negligent use; (b) units which have been subject to unauthorized repair, opened, taken apart or otherwise modified; (c) units not used in accordance with instructions; (d) damages exceeding the cost of the product; (e) sealed lamps and/or lamp bulbs, LED's and batteries; (f) the finish on any portion of the product, such as surface and/or weathering, as this is considered normal wear and tear; (g) transit damage, initial installation costs, removal costs, or reinstallation costs.

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This 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 on line at [www.intermatic.com](http://www.intermatic.com). This warranty is made by: Intermatic Incorporated Customer Service/7777 Winn Rd., Spring Grove, Illinois 60081-9698/815-675-7000 <http://www.intermatic.com>

# INTERMATIC® MODEL ST01 Series Self-Adjusting Wall Switch Timer

## Installation and User Instructions

### Ratings

- Resistive (*heater*) 15 Amp, 120-277 VAC
- Tungsten (*incandescent*) 15 Amp @ 120 VAC, 6 Amp @ 208-277 VAC
- Ballast (*fluorescent*) 8 Amp @ 120 VAC, 4 Amp @ 208-277 VAC
- Motors 1 H.P. @ 120 VAC, 2 H.P. @ 240 VAC
- DC Loads 4 Amp @ 12 VDC, 2 Amp @ 28 VDC

### WARNING

- Electrical shock hazard. Risk of injury or death. Remove electrical power at service panel before installing.**
- Risk of fire or burns from used battery. Do not recharge, disassemble, heat above 100° C, crush, or incinerate the lithium battery. Keep battery out of reach of children. Replace only with Panasonic type CR2 or equivalent CR2 battery approved by Underwriters Laboratories (UL). Use of a different battery type may present a risk of fire or explosion upon disposal of battery.**
- Risk of fire. Do not use timer to control devices that could have dangerous consequences due to inaccurate timing, such as sun lamps, sauna, heaters, crock pots, etc.**

### NOTICE

- Follow local electrical codes during installation.
- Risk of timer damage due to leakage if weak battery is not replaced promptly.
- Dispose of used battery promptly per local regulations.

### 1 – Before Installing Switch Timer, Install and Check Battery

Before installing the switch timer into the wall, make sure the supplied battery is installed and working.

- Open the access door to reveal the battery tray, located below the ON/OFF keypad.
- If there is a pull tab at the battery tray, remove the tab to connect the installed battery. Make sure battery tray is pushed fully into place. Proceed to Step 6.
- If the battery was supplied loose, pry open the battery tray and remove it from the timer.
- Place the supplied "CR2" battery into the tray, observing + and - markings on tray.
- Replace the battery tray into the switch timer.
- The display will initialize itself then flash "12:00 AM" in MANual mode.

7. Press the **ON/OFF** button. The switch timer should "click."  
*NOTE: If display doesn't flash "12:00 am", the battery may be dead. Replace the battery before installing the switch timer.*

**For new installations, it is recommended that you setup and program your timer before installing it in your wall. This will make it easier to follow the instructions while programming the timer. Since the timer is battery-powered and does not need AC power to program, all of your settings will be saved in the timer and ready to be used once the timer is installed.**

### 2 – Intro to Programming: Read Before You Begin

- Your ST01 timer will display the event's information slightly differently if the event has never been programmed (Figure 14), or if it has had information entered into it before (Figure 25).
- If you are programming into an uninitialized event location (Figure 14), note that the display may flash DAWN or DUSK momentarily when the **ON/OFF** key is pressed (Section 6, Step 3).
- Your timer does not force you to program **ON** and **OFF** times in pairs; you must be sure to program a corresponding OFF time for every ON time you enter into the timer. **Each ON and each OFF setting will use a different numbered program.** This allows greater flexibility while programming your timer.
- As you use the menus to program, it will be helpful to have an overview of how they are organized. Press the **MODE** button to rotate through the switch timer's modes: SET UP, PROGRAM,

AUTO, RANDOM, and MANUAL. All menus "loop", so they repeat when you get to the end. AUTO and RANDOM modes are skipped until there is at least one ON/OFF setting.

- Once you reach a Mode you want to work with, press the **ON/OFF** button to rotate through the loop of settings available for that Mode, returning to the beginning. For example, in SET UP mode, you will see HOUR, MINute, AM/PM, Year, MONth, etc.
- Use the + or - buttons to change a setting when it is FLASHING (e.g., the correct hour). Holding the button makes the numbers scroll faster. Pressing **ON/OFF** again advances to the next setting and automatically saves — whether you changed the setting or not. **Saving is automatic, there's no extra step.**
- If you're interrupted during programming, your work to that point is automatically saved after 5 minutes.
- Press **MODE** when you're finished to navigate to the mode you want to operate the switch timer: Auto, Manual, or Random.

### 3 – Clear Any Existing Programming

It's unlikely that the new switch timer has any existing programming but to make sure, use this procedure *before setting the time*.

- Open the front cover.
- Hold down **ON/OFF**.
- Using a pen or paper clip, press and release **RESET**, which is the small round button to the lower right of the + button.
- When the screen displays INIT, release **ON/OFF**. The screen will initialize, then flash "12:00 am" in MANual mode.

All previous settings are now deleted.

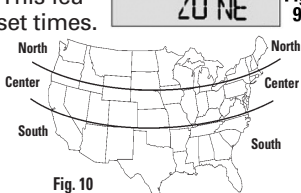
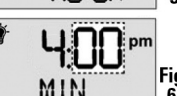
### 5 – Set the Date and Time

*In order for the Astronomic Feature and automatic Daylight Saving Time settings to function properly, the CALENDAR settings must be entered correctly.*

*WHAT IT MEANS: The icon of the LIGHT BULB indicates whether the switch timer is ON or OFF. The WHITE area of the example screens is what will be flashing on your switch timer.*

- Press **MODE** until the screen displays SET UP. The first time, the hours/minutes display will be flashing (Fig. 4).
- Press **ON/OFF** to display HOUR (Fig. 5), then press + until the correct hour and AM/PM are shown.  
*NOTE: If you go too far, press the - button to back up, or press + until you loop back.*
- Press **ON/OFF** to display MIN (Fig. 6), then press + until the correct minute is shown.
- Repeat this routine for YEAR, MONTH, DATE.
- Verify that the day of the week is correct (Fig. 7). If wrong, press + or - to loop back, then reset the calendar information.
- Press **ON/OFF** to display DST (Fig. 8), and set whether you want to adjust automatically for Daylight Saving Time (DST).
  - If you use DST, press + for AUTO.
  - If you do not use DST, press + for MANual.
- Press **ON/OFF** to set your ZONE (Fig. 9). This feature tracks changes in sunrise and sunset times. Press + to select your local zone: NoRTH, CENTer, or SOUth (Fig. 10).

- You can set DAWN or DUSK to your exact time in your area according to your newspaper or online. Use the following procedures to do so, or press **ON/OFF** 3 times to skip.
  - Press **ON/OFF** to set your exact local time for DAWN (Fig 11), then press + to set the correct HOUR.





- b. Press **ON/OFF** to display MIN (Fig. 12), then press + until the correct minute is shown.



- c. Repeat Steps a and b to set exact local time for DUSK.

9. Press **ON/OFF** again and you'll loop back to SET UP.

**CHECK YOUR SETTINGS:** Press **ON/OFF** repeatedly to loop back around to review your date and time settings. If anything is wrong, make corrections using the above steps.

## 6 – Set Initial Pair of ON and OFF Times

You have many options with up to 40 timer settings:

- Set to a specific ON/OFF time.
- Set to DAWN and DUSK, which automatically adjust as the seasons change. This is the ASTRONOMIC feature.
- Set to activate ALL days, M-F, WeeKenD, or individual days.

Programs are created in two procedures: setting an ON time followed by setting an OFF time. You must set each time separately. The instructions below will guide you as follows:

- First, for setting an ON time, which can be DAWN or DUSK, or a specific time such as 6:00 pm,
- Then for setting an OFF time which can also be DAWN or Dusk, or a specific time.

1. Press **MODE** until the screen displays ProGraM below the time of day (Fig. 13).



2. Press **ON/OFF** to display the program number, then press + until you see the program number you want to set (Fig. 14).



3. Press **ON/OFF**, then press + if necessary, to display ON for setting the ON time (Fig. 15). Continue to press + for OFF (if setting an OFF time) or SKIP (if deleting a setting).



4. Press **ON/OFF**, then press + to display whether you want ON to be set for DUSK, DAWN, or a specific time which would be shown as "12:00" (until you change it).

### If ON is to be at Dawn or Dusk:

*NOTE: Some people like to set DUSK as an ON time and match it with a specific time such as 11:00 pm for OFF.*

- a. Press + to display DUSK (Fig. 16). Continue to press + for DAWN (if setting DAWN as the on time).



- b. Press **ON/OFF** to display the days you want the setting to be active, then press + to select either ALL days, M-F, WeeKenD, or an individual day. Fig. 17 shows ALL as an example.



- c. Press **ON/OFF** again. The display will briefly show SAVE.

You have successfully set the ON time as DUSK, and must now repeat this procedure to set the OFF time to go with it.

The display will loop back to Step 2 above, ready for you to set another program. Press + to display a flashing "02" (Fig. 18).



- To set PROGRAM 2, follow this procedure again, beginning at Step 2 above.

- When you're finished, press **MODE** to exit from programming and automatically save your new settings.

### If ON is to be at a Specific Time such as 8:15 pm:

- a. Press + to display "12:00" (Fig. 19).



- b. Press **ON/OFF** to display the hour (Fig. 20), then press + until the correct hour is shown.



*NOTE: If you go too far, press the - to back up, or press + until you loop back around.*

- c. Press **ON/OFF** to display the minutes (Fig. 21), then press + until the correct minute is shown.



- d. Press **ON/OFF** to display the days you want the setting to be active, then press + to select either a specific day of the week, ALL days, M-F (work week only), or WKD (weekend only). Fig. 22 shows ALL as an example.



- e. Press **ON/OFF** again. The display will briefly show SAVE.



You have successfully set the ON time to 8:15 pm, and must now repeat this procedure to set the OFF time to go with it.

The display will loop back to Step 2 above, ready for you to set another program. Press + to display a flashing "02" (Fig. 23).

- To set PROGRAM 2, follow the procedure beginning at Step 2 on the other side of this sheet. **Repeat these steps to create up to 40 unique ON/OFF settings.**
- When you're finished, press **MODE** to exit from programming and automatically save your new settings.

## 7 – Selecting AUTO, RANDom, or MANual Operation

Once set up, you have three choices for using the switch timer. To make a selection, open the front cover and press the **MODE** button until you see your choice of the following options:

- **AUTO** — uses the timer settings you have programmed.
- **RANDom** — gives your home a "lived-in" look by varying your settings by a random amount of ± 20 minutes or so.
- **MANual** — makes the switch into a standard ON/OFF switch without timer settings. Press on the door of the switch timer for ON, press again for OFF.

### About the Battery

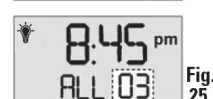
- The single lithium CR2 battery operates the ON/OFF function ("click-click") and maintains time of day and date. The screen flashes "BATT" when the battery is getting low.
- It is recommended to remove AC power when changing the battery.
- You have about one minute to swap batteries before the switch timer "forgets" the date and time settings. Afterwards, if the display is wrong or flashes "12:00 AM", reset the time and date. **All other settings (your ON/OFF programming) remain in memory indefinitely without battery or AC power.**
- To test the battery, press the **ON/OFF** button. The timer should "click."
- Replace the battery per Section 1 Instructions as soon as possible after the low "BATT" message appears.
- Do not leave exhausted battery in Switch Timer. (Risk of leakage.)
- Replace only with Panasonic Type CR2 lithium battery or equivalent CR2 battery approved by Underwriters Laboratories (UL).
- Dispose of the used battery promptly according to local regulations. Keep battery away from children. Do not disassemble and do not dispose of battery in fire.

### Changing Program Times

#### Deleting an ON or OFF Setting

Use these steps to delete an existing ON or OFF setting that you no longer want (for example, special settings from a vacation.)

1. Press **MODE** until the screen displays ProGraM below the time of day (Fig. 24).
2. Press **ON/OFF** to display the program number, then press the + button until you see the program number you want to delete (Fig. 25).
3. Press **ON/OFF**, then the + button until SKIP is displayed (Fig. 26). The switch timer will now suppress this setting.
4. Press **ON/OFF** again to cycle through the program until the display briefly shows SAVE.
5. Press **MODE** to exit from programming and automatically save your new settings.



*NOTE: Repeat this step and select ON or OFF to reactivate the setting.*

### Revising an ON or OFF Setting

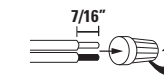
Use these steps to revise an existing ON or OFF setting.

1. Press **MODE** until the screen displays ProGraM below the time of day (Fig. 27).
2. Press **ON/OFF** to display the program number, then press the + button until you see the program number you want to revise (Fig. 28).
3. Press the **ON/OFF** button as many times as necessary to display the setting you want to revise, for example, the MINUTE (Fig. 29).
4. Now press the + button again to display the new minute you want to set (Fig. 30).
5. Press **MODE** to exit from programming and automatically save your new settings.



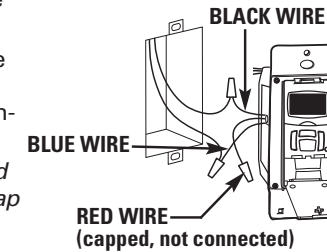
### Installing the Switch Timer

1. Turn off power at the service panel by REMOVING FUSE or TURNING THE CIRCUIT BREAKER OFF.
2. Remove the existing wall switch.
3. Trim building wires to 7/16" as shown.



#### If a Single Switch Setup:

- a. Connect one of the two wires from the wall to the black wire from the switch timer, using the twist connectors provided.
- b. Connect the other wire from the wall to the blue wire from the switch timer, using the twist connectors provided. *NOTE: The RED wire is not used in single-switch installations. Cap with a twist connector.*
- c. Connect the GREEN wire to the grounding screw in the box. If a plastic box, connect to ground as supplied.
- d. Make sure all twist connectors are tight.



#### If a 3-Way Switch Setup:

*NOTE: The distance between switch timer and remote switch must not exceed 100 feet.*

- a. Locate the COMMON wire connected to first old switch. It might be attached to a different colored screw, or find markings on old switch.
- b. Connect BLACK wire from switch timer to COMMON wire, using a twist connector.
- c. Connect the other two wires from the old switch to the Blue and RED wires from the switch timer.
- d. Connect the GREEN wire to the grounding screw in the box. If a plastic box, connect to ground as supplied.
- e. Using diagram #1 below. Identify and remove wire "C" from the "Common" terminal of your existing remote switch.

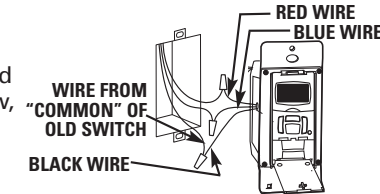
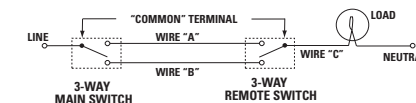
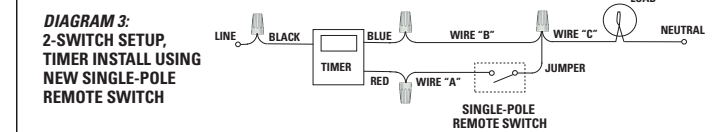
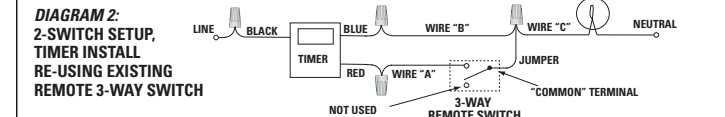


DIAGRAM 1: TYPICAL EXISTING 2-SWITCH SETUP



- f. Using diagram # 2 below, remove and reconnect wires "B" and "C" to the "Common" terminal of your remote switch, using the supplied piece of jumper wire, if necessary. Follow diagram # 3 below, if using a new single-pole remote switch.

*NOTE: For new construction or to replace a dimmer switch, a lighted switch, or a 3-way switch without screw terminals, a single-pole switch can be used at the remote location, as shown.*



*NOTE: If the building's wiring colors don't allow you to tell wire "A" from "B," just pick one of the two wires and connect as if it is wire "B." After the installation is complete, if the controlled light or device will not turn on properly, simply reverse wires "A" and "B." See Steps J and K for how to check.*

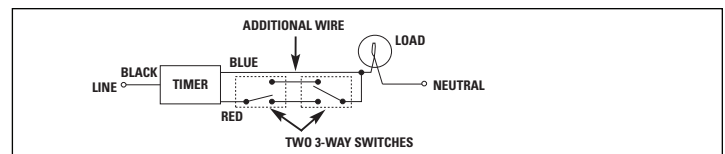
- g. Tuck wires into the timer wall box leaving room for the timer.
- h. Using screws provided, mount the switch timer into the wall box, then install the wall plate.
- i. Install the remote 3-way switch in its box and install wall plate. Turn the power back on at the service panel.
- j. Make sure the switch timer displays "MAN" mode. Do the following test with the remote switch in each of its 2 positions: Press the **ON/OFF** button on the switch timer several times. Each time that you push the **ON/OFF** button, the switch timer should "click" and the controlled light or device (the "load") should turn on or off. If so, proceed to Step K.
  - If the timer clicks but the load does not operate, re-check your wiring and make sure the load is functional.
  - If the timer clicks but the load only operates when the remote switch is in one of its 2 positions, you need to turn off the power at the service panel, then reverse wires "A" and "B." You can reverse wires "A" and "B" at the remote switch wall box, or you can reverse wires "A" and "B" where they connect to the red and blue wires of the switch timer. Then turn power back on at the service panel and repeat Step J.
- k. Verify that the controlled load turns on or off each time that the remote switch is operated.

#### If a Multiple Switch Timer Setup:

Multi-switch applications using the ST01 Series switch timer are wired differently than when using conventional toggle switches. Read the following installation instructions carefully.

- Multiple switch timers may be mounted in an unlimited number of adjacent junction box slots.
- No derating is required for multiple switch timers.

#### For a three-switch setup:



#### For four or more switch setups:

Use the preceding 3-switch installation diagram and wire 4-way switches between the two 3-way switches.

*NOTE: The remote switch(es) may not function reliably when the accumulated wire length to the remote switch(es) exceeds 100 feet or if the wiring to the remote switch(es) is buried underground. Contact Intermatic Customer Service for details.*

*NOTE: Used remote switches from a previous conventional installation may not function reliably with an electronic timer. Try a brand new remote switch if function is intermittent.*