ATRONICS ™/MC

Thank You for purchasing this Atronics™ timer. We appreciate the trust and confidence you have placed in Atronics™. We are dedicated to the ongoing creation of quality products designed to enhance your living environment. Please visit us at www.atron.ca. Thank you for choosing Atronics™!

LS330   Digital Programmable Astronomic Wall Switch Timer

The Digital Programmable Astronomic Wall Switch (In-Wall) Timer switches loads according to a preset weekly schedule with to-the-minute accuracy. The astronomic feature provides sunset (ON) and sunrise (OFF) settings to eliminate the need for separate photo control devices. The independent 7-day programming provides complete flexibility for applications where load switching differs each day of the week. Astronomic programming can be combined with independent programs to provide a sunset ON and timed program.

This timer provides additional features including a Random setting, which is a great security feature giving your home a lived-in look while you are away, and a countdown override setting, providing timed automatic shut-off.

Replaces a standard (single pole … SPST) wall switch OR
Replaces a 3-way (SPDT) wall switch

Fits a standard electrical junction box
Program up to 40 ON / OFF settings (20 program pairs)
Program different settings for each day of the week
Sunset (ON) / sunrise (OFF) option automatically adjusts daily
Other programming options include:
  Random Setting mode
  Countdown Timer mode

Caution: DO NOT EXCEED CAPACITY

Single Pole vs 3-Way Application:
This Timer (item # LS330) is designed for either single pole or 3-way applications. Determine your application before commencing installation.

What is your application?
Single Pole:
  "Single Pole" is the common term for a single pole, single throw (SPST) switch, which controls one circuit and is either "ON" or "OFF". A typical application for this timer would be replacing a standard in-wall light switch, one switch controlling one or more light fixtures.
Three-Way:
  "Three-way switch" is the common term for a single pole, double throw (SPDT) switch, which alternates between two circuits instead of being "ON" or "OFF". Three-way switches are typically used when you want two different switches to control the same device. A typical application includes 2 switches, each at opposite ends of a hallway controlling the same light fixture(s).

Please refer to the two installation (wiring) instructions below. Choose "Single Pole" OR "3-Way", depending on your application.

Installation Instructions:
This timer replaces a standard (SPST) wall switch or replaces a 3-way (SPDT) wall switch. This timer is designed to fit a standard (minimum 2 ½" deep) electrical junction box in new construction, or to replace an existing wall switch. It is used for the automatic control of a lighting circuit or motor driven device such as a ceiling or attic fan. **Do not exceed capacity.** It is recommended that installation, while simple, be done by an electrician. **Connect in accordance with national and local electrical codes.**

Electrical Ratings:
120 VAC 60Hz
15 A
1800 W Resistive
1800 W General Purpose
960 W Tungsten
500 VA Electronic Ballast
1/2 HP

Other Specifications:
Programmable Time Increments: 1 Minute
Output Control: Timer or Manual Control
Output Switch: Relay
Timer Accuracy: +/- 1 second / day at 20° C
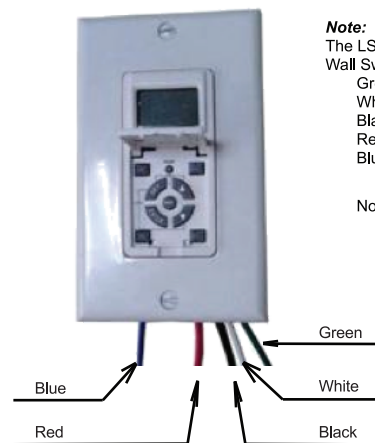
Applications:
Replaces a standard (SPST) wall switch OR replaces a 3-way (SPDT) wall switch
For Convenience – Come home to an illuminated home.
For Energy Savings – Time your lighting to come ON and OFF as needed.
For Added Safety – Gives your home a lived-in look.
For Indoor Use Only.
Ideal for controlling: Lighting, Fans, Small Pumps and Fountains.

Note:
The LS330 Digital Programmable Astronomic Wall Switch Timer has 5 wires:
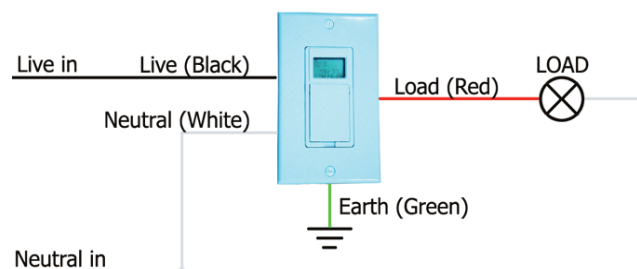 Green: Ground (Earth)
  White: Neutral
  Black: Hot (Live)
  Red: To Load
  Blue: Traveler for 3-Way
           Switching Applications

  Note: The blue wire shall only be used
           when replacing a 3-way switch.

Green
Blue
Red
White
Black

1. Turn OFF the main power. Disconnect electrical power for the circuit by removing fuse or switching off circuit breaker.

2. Remove the existing switch. There should be three wires in the electrical box, or four wires including the ground, as follows:
   "HOT" or "Live" wire: Usually Black
   "LOAD" wire: Usually Red
   "NEUTRAL" wire: Usually White
   "GROUND" wire (if present):   Usually Green or bare copper wire

3. Connect the wires of Timer and electrical wall box as follows:
   (1) Connect the 'Hot' wire to Timer's black wire,
   (2) Connect both the Neutral wires of the main power and Load to the Timer's White wire
   (3) Connect the 'Hot / Live' wire of Load to Timer's red wire, and
   (4) Connect the 'Ground' wire to Timer's green wire. In newer type installations, there may be a green wire in the box which is connected to a green screw on the wall switch. This green grounding wire, if present, should be securely fastened to any metallic screw within the junction box. If the box is plastic, twist the green wire around a group of bare copper (ground) wires found in the box.

4. In making connections, wires should be twisted together and secured with twist-on wire connectors provided.
   BE SURE ALL CONNECTIONS ARE SECURE.
   DOUBLE CHECK ALL TWIST-ON WIRE CONNECTORS.

5. Tuck the wires into the electrical wall box leaving room for Timer. Mount the Timer to the electrical wall box using the screws provided.
   DO NOT CRUSH ANY WIRES.

6. Using the two shorter screws provided, mount the wallplate.

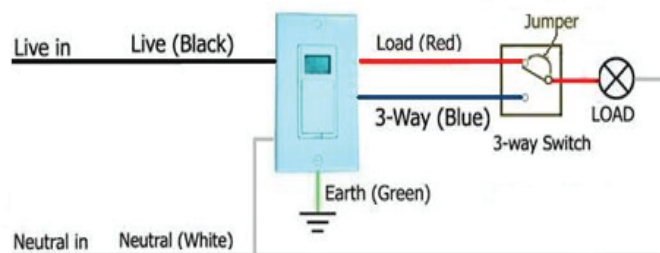7. Restore power to the circuit by turning the main power ON.

Installation Instructions when Replacing a Standard Single Pole Switch:

Live in   Live (Black)   Load (Red)   LOAD
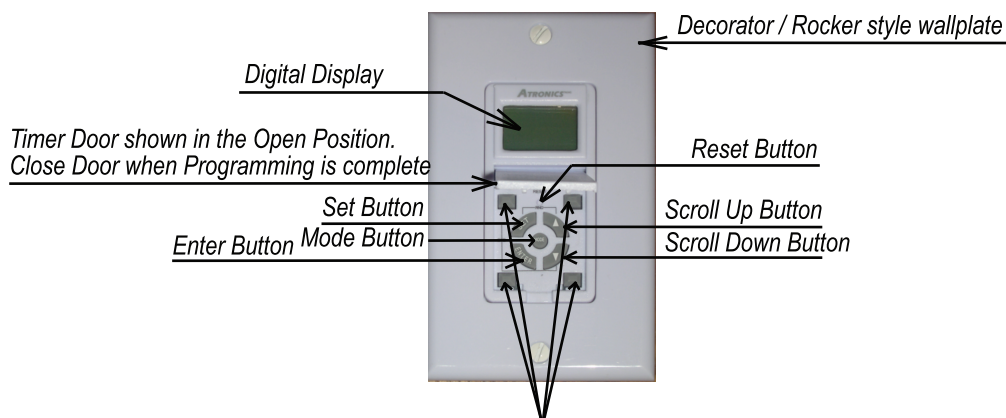Neutral (White)
Earth (Green)
Neutral in

1. Turn OFF the main power. Disconnect electrical power for the circuit by removing fuse or switching off circuit breaker.

2. Remove the existing switch. There should be four wires in the electrical box, or five wires including the ground, as follows:

"HOT" or "Live" wire:	Usually black
"LOAD" wire:	Usually red
"NEUTRAL" wire:	Usually white
"TRAVELER" wire:	Usually blue
"GROUND" wire (if present):	Usually green or bare copper wire

3. Connect the wires of Timer and electrical wall box as follows:
   (1) Connect the 'Hot' wire to Timer's black wire,
   (2) Connect both the Neutral wires of the main power and Load to the Timer's White wire
   (3) Connect the 'Hot / Live' wire of Load to Timer's red wire
   (4) Connect the Timer's blue wire to the second 3-way switch, and
   (5) Connect the 'Ground' wire to Timer's green wire. In newer type installations, there may
       be a green wire in the box which is connected to a green screw on the wall switch.
       This green grounding wire, if present, should be securely fastened to any metallic screw
       within the junction box. If the box is plastic, twist the green wire around a group of bare
       copper (ground) wires found in the box.

4. In making connections, wires should be twisted together and secured with twist-on wire connectors provided. **BE SURE ALL CONNECTIONS ARE SECURE. DOUBLE CHECK ALL TWIST-ON WIRE CONNECTORS.**

5. Tuck the wires into the electrical wall box leaving room for Timer. Mount the Timer to the electrical wall box using the screws provided. **DO NOT CRUSH ANY WIRES.**

6. Using the two shorter screws provided, mount the wallplate.

7. Restore power to the circuit by turning the main power ON

Installation Instructions when Replacing 3-Way Switch:

Digital Display

Decorator / Rocker style wallplate

Timer Door shown in the Open Position.
Close Door when Programming is complete

Reset Button

Set Button

Scroll Up Button

Enter Button   Mode Button

Scroll Down Button

Manual ON/OFF Override works when the Timer Door is in closed position (4 Corner Buttons)

A. Manual (Override) Operation:
Pressing the door "OVERRIDE" will override the timer setting and will manually turn the switch ON and OFF.

B. Initial Set-Up:
When you initially program the unit it may be necessary to press the manual override button as the unit will not look back to determine if it should be ON.
For example, if the current time is 2:00 PM and you just programmed the unit to turn ON at 1:00 PM, you will need to press the manual override button to turn it ON.
Thereafter, the unit will resume normal operation (automatic operation).
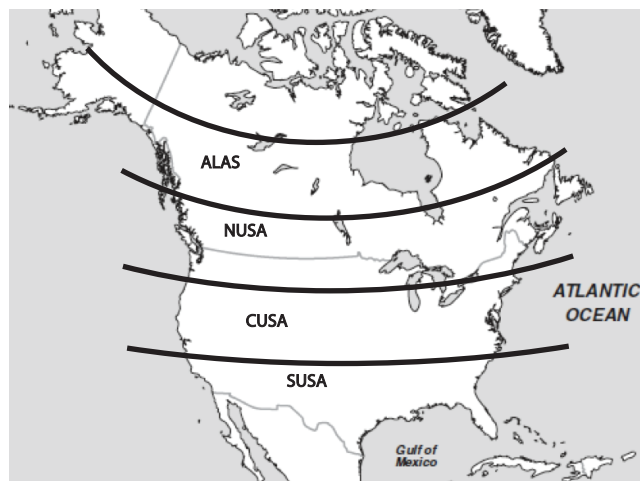
C. Power-Up Sequence:
   1. Lift up the bottom of the door using a small slotted screwdriver.
   2. Position the slide switch to "TIMER".
   3. Press the "RESET" button using a paper clip.
   4. Press the "ENTER" button to start the timer.
   5. The display should show 12:00 PM".

D. Choosing Your Living Zone:

The "Living Zone" is the astronomic set-up that enables your timer to follow sunset and sunrise times.
Choose a living zone that describes your geographic location:
   "ALAS": Alaska, Yukon Territory, Northwest Territories, Nunavut Territory, northern British Columbia, northern Alberta and northern Saskatchewan
   "NUSA": Northern USA and southern Canada ("NUSA" is the default setting)
   "CUSA": Central USA and the most southern region of Canada - southwestern Ontario and Ontario's Niagara region.
   "SUSA": Southern USA
   "HAWI": Hawaii

Enter your living "Zone" as per the following

E. Setting Your Living Zone:

1. Press the "MODE" button three (3) times. "ZONE" will be flashing on the display.
2. Press the "ENTER" button to confirm "Zone Setting Mode".
3. Using the "Scroll Up" and "Scroll Down" buttons to bring the correct zone, then press "ENTER" to confirm the setting and to bring you back to "Clock Mode".
4. The display will follow zone changes and will show as: NUSA "-N", CUSA "-C", SUSA "-S", ALAS "-A" or HAWI "-H" followed by "AU" (Auto Mode) or "MA" (Manual Mode) for the current zone indicated.

F. Setting Current Time:

1. Press the "MODE" button twice. "CALD" will be flashing on the display.
2. Press the "ENTER" button to confirm "Time Setting Mode".
3. Using the "Scroll Up" and "Scroll Down" buttons, enter the year, then press "SET" button. The month setting will now appear.
4. Repeat using the "Scroll Up" and "Scroll Down" buttons and the "SET" button (as above in # 3) to set the Month, Date, Hour, Minutes and Seconds setting.
5. Press the "ENTER" button to finish the current time setting procedure and to move back to the normal clock mode.

G. Programming ON / OFF Events:

Astronomic programming, sunset (ON) and sunrise (OFF), can be combined with independent programs to provide a sunset ON and timed program.

1. Press the "MODE" button once. "PROG" will be flashing on the display.
2. Press the "ENTER" button to confirm "Program Setting Mode".
3. Using the "Scroll Up" and "Scroll Down" buttons, enter the desired ON time. All days are indicated by default. Please refer to Block Programming (below) for selecting different days.
4. Repeat step 3 (above) to enter up to 40 ON / OFF events (20 program pairs).
5. At any time, press the "ENTER" button to finish programming. This will bring the unit back to the clock mode.

H. Block Programming:

When programming ON / OFF events, all days are indicated by default. To change the day selection, simply keep pressing "Scroll Up" or "Scroll Down" and the display will change as follows:

a. Individual day settings: "MO" or "TU" or "WE" etc.
b. Weekdays - Monday to Friday setting: "MO" "TU" "WE" "TH" "FR"
c. Weekends - Saturday and Sunday setting: "SA "SU"
d. Monday to Saturday setting: "MO" "TU" "WE" "TH" "FR" "SA"
e. Daily - Monday to Sunday setting: "MO" "TU" "WE" "TH" "FR" "SA" "SU"
f. Monday, Wednesday & Friday setting: "MO" "WE" "FR"
g. Tuesday, Thursday & Saturday setting: "TU" "TH" "SA"
h. Follow the steps above to complete programming.

I. Countdown Timer Program Setting:

1. Press the "MODE" button once. "PROG" will be flashing on the display.
2. Press the "ENTER" button. The display will read "PROG 1 ON".
3. Press the "Scroll Down" button twice to move to the "Countdown Time Setting Mode".
4. Repeat using the "SET" button and the "Scroll Up" and "Scroll Down" for the countdown ON / OFF programming.
5. Press the "ENTER" button to complete the setting and to move back to the normal clock mode.

J. OFF Delay Time Setting:

This function allows the user to manually turn OFF the switch with a time delay. The time delay can be set to 15, 30 60 seconds 1, 5, 10, 30, or 60 minutes.

1. Press the "MODE" button once. "PROG" will be flashing on the display.
2. Press the "ENTER" button. The display will read "PROG 1 ON".
3. Press the "Scroll Down" button to move to the "OFF Delay Time Setting Mode".
4. Repeat using the "SET" button and the "Scroll Up" and "Scroll Down" for the OFF delay time setting.
5. Press the "ENTER" button to complete the setting and to move back to the normal clock mode.

K. Sunrise and Sunset Time Adjust:

The actual sunrise and sunset time will differ from the west coast to the east coast of North America. The Sunrise and Sunset Time
Adjust function allows the user to set the actual sunrise and sunset time for the current day. The unit will memorize the difference, and auto adjusts.

1. Press the "MODE" button 4 times. "SUN +-" will be flashing on the display.
2. Press the "ENTER" button. The display will read "SNUP" and current day's sunrise time will show on the display.
3. Press the "Scroll Up" to advance the time, and "Scroll Down" to move back the time. The setting range is a maximum of + - 2 hours.
   If a time differentiation is greater than 2 hours, then the "Zone" should be changed.
       a. Press the "SET" button and "SNST" and the current sunset time will be displayed. Press "Scroll Up" to advance the time, and "Scroll Down" to move back the time.
4. Press the "ENTER" button to complete the current Astro setting and to move back to the normal clock mode (display showing current time).

L. Daylight Saving Time (DST) Initial Set-Up:

The Astronomic timer provides three versions for Daylight Saving Time, as noted below:

(1) "INIT" (Initial) Mode: Followed by "current Standard Time"
        DST ON at 2:00 AM, second Sunday of March
        DST OFF at 2:00 AM, second Sunday of November
(2) "NEW" Mode: To modify the DST automatic ON / OFF date and time by user.
(3) "MANU" (Manual) Mode: Manual DST ON / OFF switched by pressing both "Scroll Up" and "Scroll Down" in normal clock mode.

1. Press the "MODE" button 5 times. "DST" will be flashing on the display.
2. Press the "ENTER" button. "INIT" will be flashing on the display.
3. Using the "Scroll Up" and "Scroll Down" and the "SET" buttons, set a new date and time in the DST mode.
4. At any time press the "ENTER" button to complete the setting and to move back to the normal clock mode (display showing current time).

M. Manual ON / Auto Mode Switching:

1. Pressing the door will override the timer setting and will manually turn the switch ON and OFF.
2. Pressing the door (or override) for more than 3 seconds will switch between Manual and Auto modes. "MA" displayed indicates Manual mode. "AU" displayed indicates Auto mode.
3. While in manual mode, the unit can be switched ON / OFF by the door (or override), or by 3-way switch.

N. Advancing the Program (Event):

Independent of the programming, it is possible, at any given time, to advance to the next event command by pressing the door (override) or 3-way switch.

O. Manual Countdown Timer Operation:

1. Press the "SET" button and the "Scroll Down" buttons at the same time to start the countdown function.
2. During the countdown period, press the "Override" to switch between pause and continue countdown.
3. During the countdown period, press the "MODE" button to switch the display mode between countdown time and current time.
4. During the countdown period, press the "SET" button and the "Scroll Down" buttons at the same time to advance the time duration of the countdown.

P. Random ON / OFF (RND) Setting:

This feature sets the timer to switch lights ON and OFF at random intervals while you are out of the house. This function (mode) will only operate if one or more programmed switching commands (events) is set.

1. To activate Random Mode, press the "SET" and "Scroll Up" buttons at the same time. Once activated "RND" will appear on the display.
2. To de-activate Random mode, simply repeat the above procedure. The "RND" will disappear from the display.

Q. Manual Daylight Saving Time (DST) Setting:
   1. To activate DST Mode, press the "Scroll Up" and "Scroll Down" buttons at the same time. The current time will advance by one-hour. Once activated, "DST" will appear on the display.
   2. DST mode is returned to Standard Time by pressing the "Scroll Up" and "Scroll Down" buttons at the same time. Once DST is deactivated, "MANU" will appear on the display.

R. Reviewing & Altering Programs:
For the purpose of checking or altering, the "MODE" serves to bring the individual programmed commands (events) successively into the display at any time.
Program alterations are accomplished by resetting hours, minutes, or days by using the appropriate buttons as previously described.

S. Deleting Programs (Events):
   1. Press "MODE" and "ENTER" buttons as referred to in the "Programming ON / OFF Events" section, to view the relevant program.
   2. Press "OVERRIDE" button once to delete the chosen time setting.
   3. Press "OVERRIDE" button (again) once to recall the time setting

T. Current Date Review:
   1. Press "Scroll Up" to review current date.
   2. Press "Scroll Up" (again) to go back to current time display.

U. Daylight Saving Time Review:
   1. It is easy to review the date and time for Daylight Saving Time by pressing the "Scroll Down" button.
   2. The display will show the automatic ON / OFF date and time of Daylight Saving Time.
   3. The date and time will show MANU when the DST setting is in MANU mode.

V. Sunrise and Sunset Time Review:
   1. Press both the "SET" and "ENTER" buttons at the same time for current sunrise time review.
   2. Using the "MODE" button for switching the display between Sunrise time and Sunset time.
   3. Using the "Scroll Up" and "Scroll Down" buttons, for other days and time review, scrolling up / down days from current day. Or follow the these steps for review:
         a. Press the "SET" button for input.
         b. Use the "Scroll Up" and "Scroll Down" for setting the month, and "SET" button to confirm.
         c. Repeat "Scroll Up" and "Scroll Down" and "SET" button for day setting and confirmation.
   4. At any time press both the "SET" and "ENTER" buttons to exit the time review mode.

W. Switching Indicator:
The switching status, ON or OFF, will be shown in the display as "ON" or "OFF" together with the time of day.

X. Memory Backup:
This Timer is equipped with an internal rechargeable Ni-Mh battery designed to provide backup power for up to thirty (30) days to protect your programs in the event of a power failure.
No need to replace the battery.

Note: The display blanks if the battery is discharged completely.

SAFETY WARNING:

Risk of Electric Shock:
Disconnect power at the electrical panel before installation or servicing
For indoor use only
Do not use in wet or damp areas

Risk of Fire:
Do not exceed electrical ratings
Use copper wire only with this device

Limited Warranty:
Atron Electro Industries Inc. (Atron) warrants to the original purchaser, that this timer (product) shall be free from defects in material and workmanship for a period of five (5) years from the date of purchase. During the "in-warranty" period, defective product will be repaired or replaced at the sole discretion of Atron. This warranty covers normal domestic usage and does not cover damage which has occurred in shipment or failure which results from alteration, accident, misuse, abuse, or improper maintenance.

Defective product should be returned to the original place of purchase within the retailer's stipulated return/exchange period.

If product is found to be defective outside the retailer's return/exchange period, then return product postage/shipping prepaid along with the original purchase receipt to:
   Customer Service Department
   Atron Electro Industries Inc.
   429 Alliance Ave.
   Toronto, ON M6N 2J1

Atron will not be liable for incidental or consequential damages.

Additional information may be found at www.atron.ca