

Low Voltage Landscape Transformer

SAFETY AND NOTES



- Product should be installed and serviced in accordance with applicable national, state and local building and electrical codes.
- Risk of fire or electrical shock. Install transformer at least 10 ft. (3.05 m) from pools, spas or fountains.
- Outdoor, above ground installation only. For use with low voltage landscape lighting only.
- Transformer has a built-in circuit breaker which can be reset by removing and then restoring power.
- Transformer must be connected to GFCI – protected receptacle marked suitable for wet locations. Receptacle must be protected by a weatherproof cover.
- Do not submerge the transformer or use it to power submersible lights or light mounted in or near pool, spas or fountains.
- If cleaning is necessary, use a damp cloth to wipe down case. Do not spray transformer with pressurized water or steam.
- Do not use with dimmer or extension cord or wire in parallel with other transformers.
- Do not exceed 70% of the maximum wattage of the transformer when connecting lights.
- Transformer must be mounted in a vertical orientation, with the bottom at least 1 ft. from the ground.
- Ensure all mounts are securely attached and will support the transformer's weight. Failure to properly support transformer may result in damage or injury, for which the manufacturer does not assume responsibility.
- Do not attempt to disassemble or modify transformer.
- Ensure wiring to lights is correct gauge for the run and total power of the intended circuit and is intended for use with outdoor landscape applications.

SAFETY AND NOTES

Check product label for specific electrical specifications related to installation. Improper installation will void warranty.

MODEL	PS-A0075-HW-111	PS-B0150-OW-211	PS-B0300-OW-311	PS-B0600-OW-412
Output Voltage	12 or 15 VAC	12, 13, 14 or 15 VAC	12, 13, 14 or 15 VAC	12, 13, 14 or 15 VAC
Operating Temperature	-4° -113° F (-20°-45° C)			
IP Rating	IP54			
Weight	6.9 lb (3.1kg)	12.8 lb (5.8 kg)	16.75 lb (7.6 kg)	25.5 lb (11.6 kg)

TRANSFORMER SIZING

Total load (watts or volt – amperes) of all fixtures connected to one transformer must not exceed 70% of the W or VA capacity of the transformer. Use the below equation to calculate the suitable transformer.

$$\text{Total fixture load (W or VA)} \div 0.7 = \text{minimum transformer capacity}$$

TRANSFORMER MOUNTING

Mount transformer to solid surface using stainless hardware capable of supporting the weight of the transformer. Hardware is not included. Once screw(s) are properly mounted, slice transformer over screw heads and tighten screw(s) to lock in place once the transformer is level.

SYSTEM CHECK

After installing entire system, apply supply power. After five minutes of operation, remove supply power. Check all low voltage electrical connections, which should be cool to the touch. If any connection is warm to touch, check and re-tighten the connection and repeat the process until all connection problems are resolved.



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WIRE AND VOLTAGE SELECTION

12 AWG landscape wire is generally recommended. For optional results, lights should be distributed evenly along the cable run, with higher power lights being closest to the transformer. Higher voltage terminals can be used with longer runs to make up for slight voltage drops. The below equation and table can be used to select the appropriate wire gauge for an application.

Note: When connecting wiring to transformer, do not loosen top terminals on 75W models as they are for internal wiring only.

Volage Loss Calculation

$$\left(\frac{\text{Distance (ft)}}{\text{Cable Constant}} \times \text{Load (W)} \times 2 \right) / \text{Cable Constant} = \text{Voltage loss}$$

Wire Gauge	Cable Constant
#18/2	1,380
#16/2	2,200
#14/2	3,500
#12/2	7,500
#10/2	11,920

OPTIONAL PHOTOCELL INSTALLATION

1. Begin by unplugging transformer to remove supply power.
2. Use a screwdriver and carefully remove the inside section of the knockout located on the right side of the transformer. Do not remove outer portion of knockout, as this will prevent the photocell from mounting property. (Picture A)
3. Install photocell into case and tighten in place. (Picture B)
4. Remove the jumper wire from the photocell connector and connect the photocell. (Picture C)
5. Adjust the angle of the sensor so it can accurately detect ambient lighting and apply power. Check for proper operation and adjust sensor angle as needed.



Picture A



Picture B



Picture C



Low Voltage Landscape Transformer

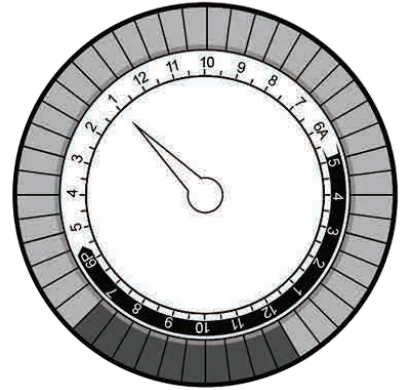
OPTIONAL TIMER OPERATION (150 – 600W MODELS)

Mechanical Timer (TIME – MW)

With all grey tabs set the pushed-in position, timer will not affect function and connected lights will stay on unless power is switched off.

To set up the timer, begin by making sure the sliding switch on top is set to the timer setting. Next, rotate the timer dial until the arrow points to the current time (1PM in our example). Finally, pull grey tabs outward at times when the light system should be powered off (7PM to 12AM in our example). Times where the grey tabs are pushed in (dark grey in the image) will be the only times the system will be switched on.

Additionally the system can be manually turned off using the main power switch, or manually turned to always on with the slide switch on top of the timer.

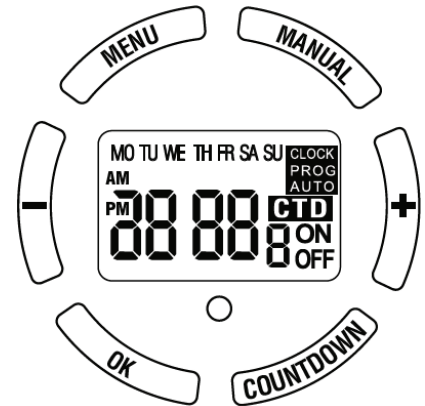


Digital Timer (TIME DW)

Before beginning to adjust settings, plug the timer in and press the reset button to ensure the timer is at factory default settings before use. Timer will return to main menu if no input is made for one minute at any time during programming or if the MENU button is held down for 2 or more seconds.

Setting Date/Time

1. With supply power on, press the MENU button once. CLOCK should be illuminated in the next top right corner of the screen.
2. Next, press the OK button to enter day of the week selection. Use the (+/-) buttons to select the correct date. Press OK to confirm selection.
3. The hour should now be flashing. Use the (+/-) buttons to adjust the correct hour (Cycle through to go from AM to PM). Press OK to confirm selection.



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Setting Programs

Timer can store information for up to 9 programs with independent ON and OFF setting for each program.

1. With supply power on, press the MENU key until you reach the desired ON or OFF setting. Each pair of ON and OFF settings. (e.g. 10N and 10FF) will need to be set to work together for proper operation.
2. Press the OK button to enter programming for the selected setting.
3. Use the (+/-) buttons to cycle through day settings and press OK when the desired setting is displayed.

Day Settings:

- MO, TU, WE, TH, FR, SA and SU (full week)
- MO, TU, WE, TH, FR, SA and SU (individual days)
- MO, TU, WE, TH, FR (weekdays only)
- SA and SU (weekend only)

4. Select the hour (cycle through to go from AM to PM) using the (+/-) buttons, then press OK.
5. Select the minute using the (+/-) buttons, then press OK to finish programming setting.
6. Press the MANUAL button so that AUTO is displayed on the screen to activate the programmed settings.

Operating Modes

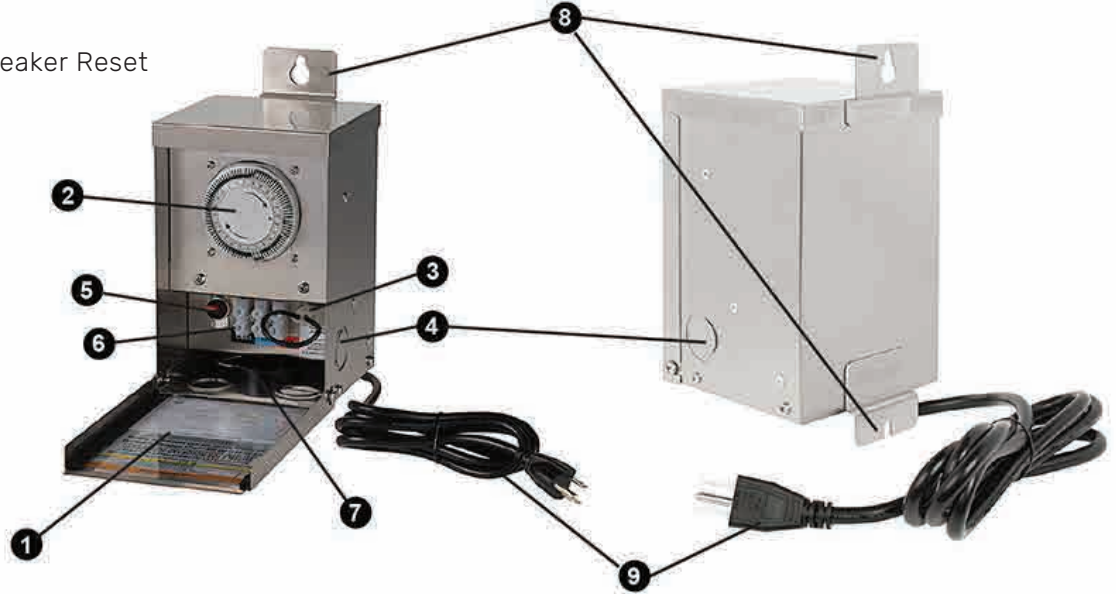
Press the MANUAL button to cycle between operating modes.

- OFF – Lights will remain off and set programs will not be activated.
- ON – Lights will remain on constantly and set programs will not be activated.
- AUTO/ON – Lights are currently on and set programs will be activated.
- AUTO/OFF – Lights are currently off and set programs will be activated.

Low Voltage Landscape Transformer

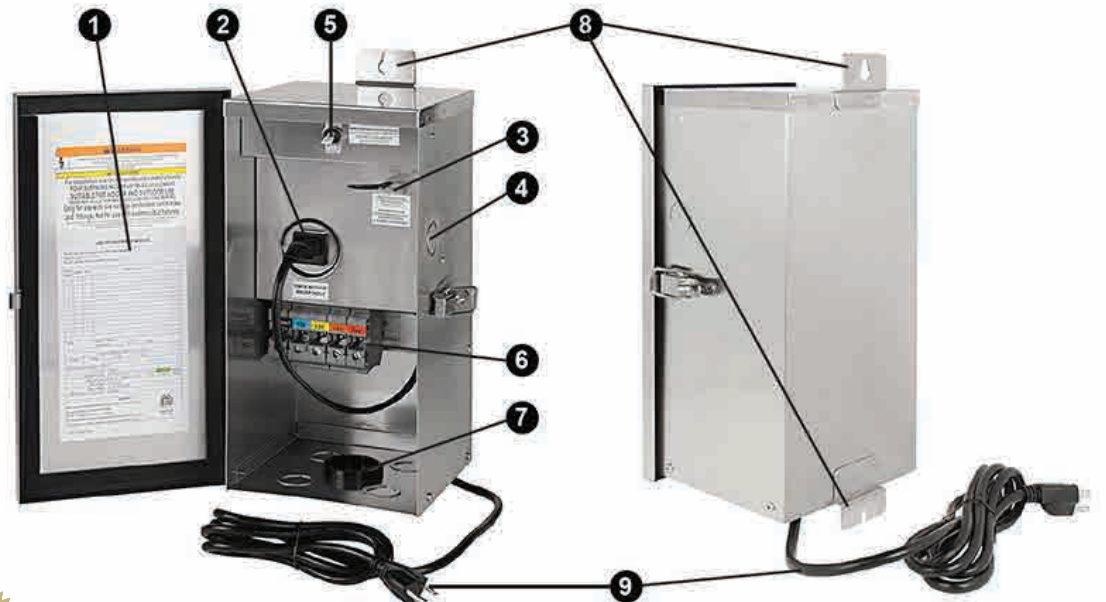
FEATURES (75W MODEL)

1. Operating Record, Warnings and Specifications.
2. Mechanical Timer
3. Photocell Jumper Wire
4. Photocell Knockout
5. On/Off Switch and Circuit Breaker Reset
6. Terminal Block
7. Conduit Cover
8. Mounting Tab
9. Power Cord



FEATURES (150 - 160W MODEL)

1. Operating Record, Warnings and Specifications.
2. Timer Plug
3. Photocell Jumper Wire
4. Photocell Knockout
5. On/Off Switch and Circuit Breaker Reset
6. Terminal Block
7. Conduit Cover
8. Mounting Tab
9. Power Cord



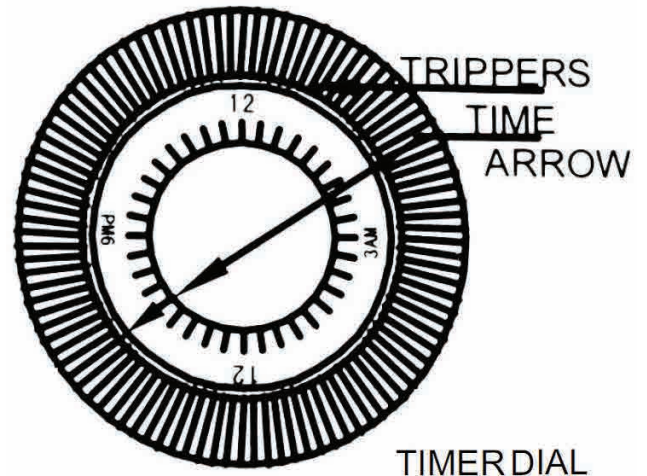
EPC SERIES TRANSFORMER OPERATING INSTRUCTION:

TIMER ON TIMER OFF:

- A. Push all trippers on dial between desired "ON" time.
- B. Turn dial clockwise until time arrow is pointing at correct time of day.

AUTOMATIC CONTROL WITH PHOTOCELL:

- A. Remove protection cover from photocell.
- B. To control lights – Set the timer to turn on before dark and photocell will activate the lights when it gets dark. Lights can be turned off by the timer at a present time, or push in all trippers and photocell will turn off lights at dawn.



CIRCUIT BREAKERS:

- A. A Circuit breaker will trip if there is a short, or if total lamp wattage installed exceeds rating.
- B. To reset breaker – Turn breaker to On position.
- C. If breaker trips again, check for an overload or for short circuit.

NOTE: Photo cell has a delay up to 30 ± 15 sec.

ISOLATED WINDINGTYPE TRANSFORMER

When used to supply power to fountain lighting, this transformer must be plugged into a (GFCI) ground fault circuit interrupter outlet located at least 10 ft. (3.05M) from the inside wall fountain.

NOTE: IN CASE OFF POWER FAILURE TIMER MUST BE RESET.



LANDSCAPE TRANSFORMER
LOW VOLTAGE

THIS UNIT PROTECTED WITH A THERMAT PTOTECTOR AND WILL AUTOMATICALLY SHUT OFF IF IT OVERHEATS. IF THE UNIT CYCLES ON AND OFF, IT SHOULD BE CHECKED BY A QUALIFIED SERVICE PERSON.

MOUNT THIS UNIT NO LESS THAN 1 FT. ABOVE
GROUNDLEVEL WITH THIS ARROW POINTED UP



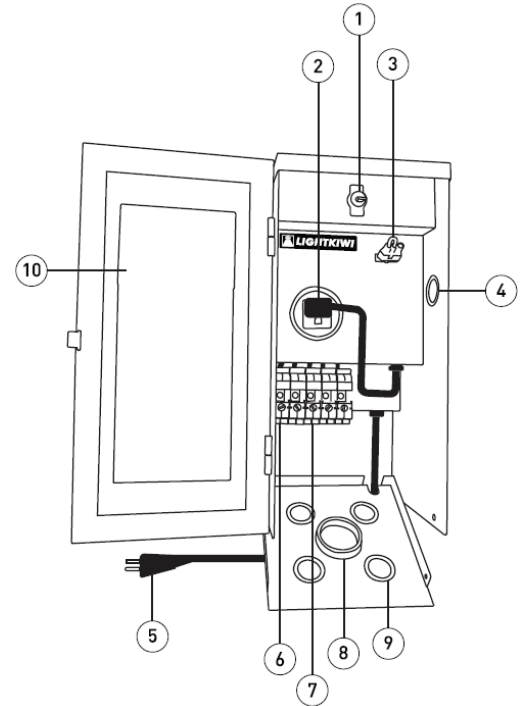
COVER MUST BE INSTALLED

Multi-Tap Low Voltage Transformer Installation Guide

Caution: If you are not confident working with electricity, please contact a professional. Before you dig, have a professional mark the location of any electrical or gas lines. By dialing 811, you will be connected to your local utility company for assistance free of charge.

WARNING: Transformers must be installed in accordance with the National Electrical Code (NEC and codes. Failure to do so will void the warranty and may result in serious injury and/or damage to the transformer.

1. On/Off Rocker Switch (Magnetic Overload Circuit Breaker)
2. Timer Receptacle (Built-in Timer on 75 Watt, Model: U21841)
3. Photozell Receptacle
4. Knockout for Photozell
5. Power Card
6. Common Tap
7. Voltage Tap
8. Conduit Entry Knockout
9. Knockout for Wire
10. Record Form

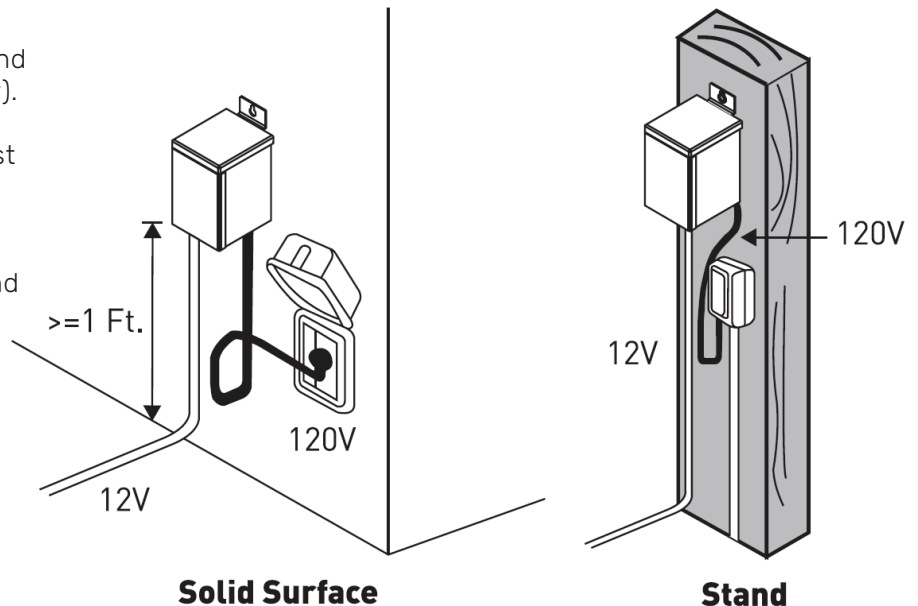


The transformer is based on a 300-+watt model. The presence, number and location of components may vary by model.

MOUNTING THE TRANSFORMER

Mount the transformer on a solid surface or stand with stainless screws and anchors (if necessary). Use the bubble level to mount vertically. The bottom of the transformer should be at least one foot above ground.

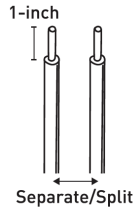
To attach the transformer to brick wall, use a masonry bit (8mm) to drill the mounting hole and place the plastic in lead in the hole. The screw pass through the keyhole.



Multi-Tap Low Voltage Transformer Installation Guide

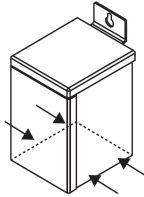
PREPARING THE CABLE

Separate the wire from the cable and strip about 1-inch wire from the end.

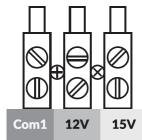


CONNECTING THE CABLE TO THE TRANSFORMER

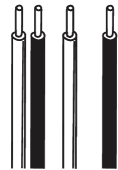
Loosen the screws that secure the bottom plate located on both sides of the transformer, and remove the bottom plate.



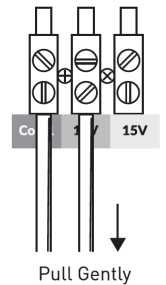
Install cable through the knockouts on the bottom plate. (If desired, install the cable in the conduit (not included).)



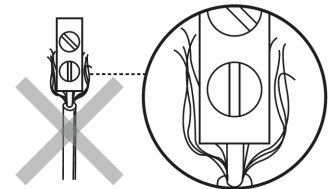
Insert the stripped end of one wire under the "Com1" tap. Then tighten the screw. Repeat this procedure for "12V" or other appropriate voltage taps (See Voltage Drop Calculation for reference.)



NOTE: Gently pull on the landscape wire to verify if the connection is strong.



NOTE: Verify that there are no loose cable stands.



WARNING: Risk of Fire
Make sure there is no wire insulation under the clamping plate and firmly tighten the terminal screws.

VOLTAGE DROP CALCULATION

NOTE: This data is provided as a general guideline. Actual performance will depend on the installation layout, the fixtures, and the condition of the cable.

$$\frac{\text{Total Watts on Cable} \times \text{Distance of Run in feet} \times 2}{\text{Wire Constant}} = \text{Voltage Drop}$$

Wire Size	#18/2	#16/2	#14/2	#12/2	#10/2	#8/2
Constant	1380	2200	35800	7500	11920	18960

This calculation is based on 120V AC in and 120VAC out and is for use as guideline. It is highly recommended to check the accrual voltage of each fixture with a voltmeter before burying the wires and finalizing the project. We accept no responsibility for use of the information provided.

OPERATING THE TIMER (for built-in timer on 75 Watt Transformer)

Rotate the outer portion of the timer until the arrow on right side points to the current time (24 hour time). Then, slide the dark gray tabs (15 minute interval per tab) towards the center for the allotted time you want the lights to be on.

