



Installation Manual

CS9100-LED

Professional Series

Landscape Lighting System



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READ THESE INSTRUCTIONS ENTIRELY BEFORE BEGINNING INSTALLATION!

Congratulations on your decision to purchase one of the finest quality LED landscape lighting systems on the market today. When properly installed and maintained, this system will provide years of trouble free service and allow you to illuminate your home like a professional. Just follow these easy steps to design and install the CS9100 system and any add-ons or upgrades you may have purchased. For additional help and information on installing your system, visit our web site at www.EasyAssemblyRequired.com.

WHAT'S INCLUDED:

6 each CS937-LED Copper Bullet Directional Lights	200 feet Landscape Cable 14/2 gauge
3 each CS936S Copper Area/Path Lights	1 each Outdoor Timer with Photocell
1 each CS100T Pro-Series Transformer	1 each Stake Driver Cap (Installation Tool)

TOOLS REQUIRED/RECOMMENDED FOR INSTALLATION:

Screwdriver (Flat & Phillips Head)	Shovel
Wire Cutter	Hammer
Wire Stripper	100-Ft Measuring Tape
Pliers	Power Drill and Bits (3/16" bit for plastic anchors)
Dead Blow Mallet (for stake installation)	Gloves

BASIC SYSTEM DESIGN STEPS:

LED landscape lighting is quite easy to install and is much easier than traditional halogen systems. LED lighting allows the running of cables with less complications of the dreaded "voltage drop" that occurs more readily with halogen systems and other higher wattage incandescent systems. Just follow these four easy steps for a successful installation.

- A. **Determine the location of the power transformer before installation** and make sure a suitable 115/120VAC covered GFCI outlet marked "WET LOCATION" is within reach of the transformer power cord. Attach and secure transformer to the wall a minimum of 12 inches above ground using screws and anchors (if needed). Mounting screws are provided for your convenience.
- B. Lay out the 14/2 gauge MAIN SUPPLY CABLE according to the **Easy Design Guide** on the next page, paying close attention to where your fixtures are located and distances to determine the length of cable needed.
- C. Install each luminaire according to the individual instruction sheets, attach each luminaire to **the Main Supply Cable using the attached easy connectors**, and bury loose cable as desired (6 inches deep or less).
- D. Plug **Power Transformer** into the **Timer with Photocell**, plug the timer into the GFCI outlet, and turn the Timer dial to the desired setting for Dusk/Dawn, or Dusk On/ Off in 2, 4, 6, or 8 hours.



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Easy Design Guide

Use the Easy Design Guide to help determine the best way to wire your fixtures to create optimal results in the illumination of your home. Follow these simple rules for best results:

1. It is recommended that you use **2 MAIN SUPPLY CABLE** runs from the transformer for best results and easiest installation, especially when you need to install fixtures on both sides of the transformer.
2. For short distances from the transformer (under 60 feet), only a single **MAIN SUPPLY CABLE** may be used to install this LED system for even easier installation. If the transformer is located on one end of the house, simply run a cable from the transformer to the various lights, leaving a little extra slack to make burying the cable easy.
3. **DO NOT EXCEED the MAXIMUM WATTAGE** listed for each length of MAIN SUPPLY CABLE used or the voltage at the fixtures will be lower than required causing the LED to flicker or not light at all. If any lights, especially on the end of the **MAIN SUPPLY CABLE**, do not light or experiences flickering, make sure the transformer is on the HIGH setting (See #4 below) and check to make sure the quick connectors on each light fixture are properly installed and are making a good connection.
4. Use the **HIGH SETTING** on the transformer to boost the secondary voltage for this system to provide additional voltage. (See details in Transformer Installation Sheet)
5. **SHORTER** lengths for the **MAIN SUPPLY CABLE** **lowers** voltage drop on the line while **LONGER** lengths **increases** the voltage drop. Use the Line Length/Wattage Chart below to determine the maximum wattage load for various lengths of the MAIN SUPPLY CABLE.
6. **The total wattage for the CS9100-LED 9-Light System is only about 40 watts**, providing ample room on the standard 100 watt transformer to add additional CS Professional Series LED fixtures to expand your system. The chart below will help determine the maximum amount of fixtures you can have on the system when you add up the total wattage from all fixtures on the line / system.

Total Length of Main Supply Cable	Maximum Wattage Available for Fixtures	CS9100-LED Fixtures & Optional Add-ons	Individual Fixture Wattage
50 Feet	90 watts	CS936-LED Path Light	3.0 watts
60 Feet	75 watts	CS937-LED Bullet Light	5.0 watts
70 Feet	60 watts	CS938-LED Deck Light*	1.2 watts
80 Feet	55 watts	CS933-LED Well Light*	5 or 9 watts
90 Feet	50 watts	<i>*Sold Separately - Optional add-on fixtures are not</i>	
100 Feet	45 watts	<i>Included in the CS9100-LED 9-Light System.</i>	

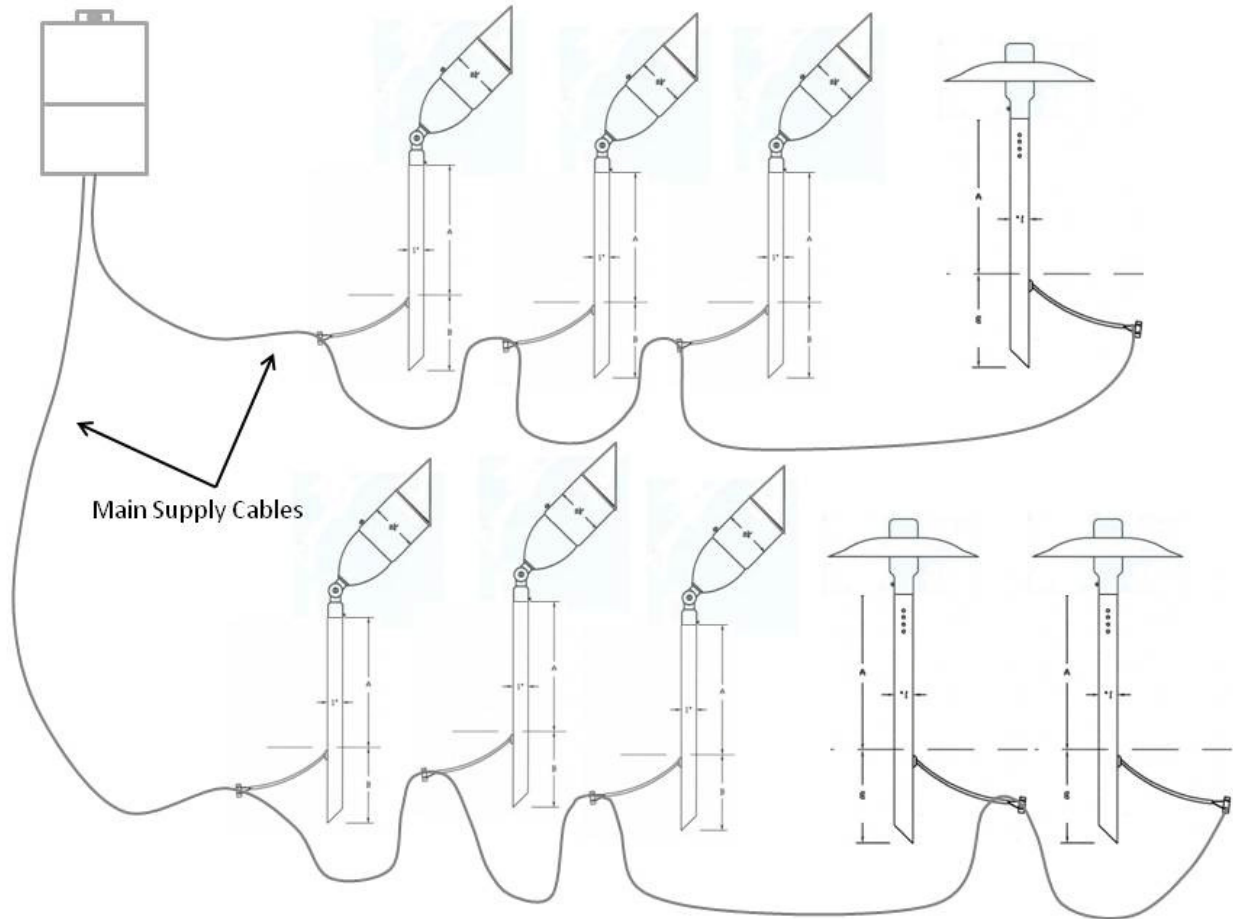
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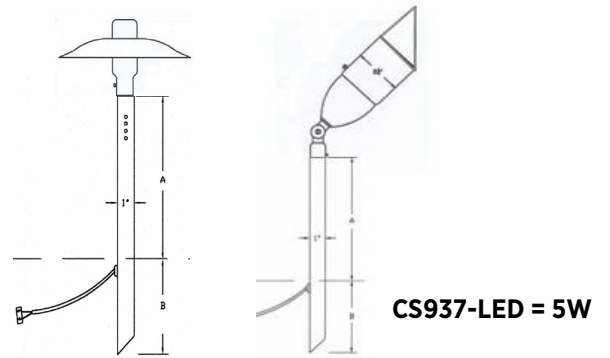
Example of Wiring Plan

Power Transformer



This example demonstrates the **optimal wiring plan** design, using **two (2) Main Supply Cables** from the transformer to split the fixtures into two (2) groups. For best results follow these tips:

1. Keep cables as short as possible.
2. Leave enough slack to make burying cable easier.
3. Make sure the Easy Connectors are tight to create a good connection on the Main Supply Cable



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Professional Series CS936-LED Path Lights

INSTALLATION INSTRUCTIONS

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INSTRUCTIONS PERTAINING TO A RISK OF FIRE, OR INJURY
TO PERSONS IMPORTANT SAFETY INSTRUCTIONS

For use with Low Voltage Landscape Lighting Power Units. FOR OUTDOOR USE ONLY.

Amperage not to exceed 25 AMPS per circuit

Voltage not to exceed 15 VOLTS per circuit

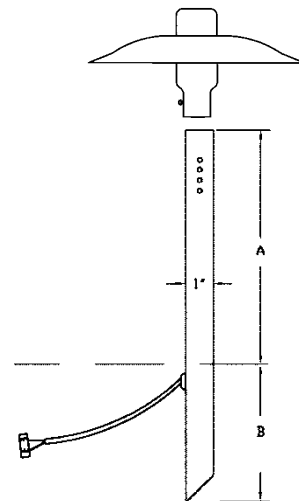
Warning: Luminaire must be installed in accordance with the National Electric Code (NEC) and all Local Codes. Failure to comply with NEC and/or Local Codes may cause serious injury and could destroy the luminaire. Failure to comply with NEC and Local Codes will void all warranties.

Safety Warning: LAMP IS HOT WHEN LUMINAIRE IS ON! Hot lamp creates risk of fire and injury to persons. Keep away from combustibles. Lamp gets hot very quickly. Turn off or unplug luminaire and allow lamp to cool to change bulb. Do not touch lamp with bare hands. When using this fixture with high wattage halogen lamps (35W halogen MAXIMUM), keep luminaire away from children as luminaire may become VERY HOT. Do not install luminaire within 10 feet (3.05 meters) of a pool, spa, fountain, or pond. Do not cover or bury luminaire and keep luminaire clear of debris. Use only UL compliant components including low-voltage power units, cable, wire connectors, and any other component necessary. **CAUTION: Luminaire is NOT submersible!**

NOTE: Do not exceed the maximum wattage rating or maximum amperage rating of the power unit (transformer) used when installing multiple luminaires.

INSTALLATION GUIDELINES

1. Disconnect or unplug transformer from power source.
2. All Path Light tops are to be mounted to a power stake and are interchangeable.
3. Drive the power stake into the ground at the desired location and depth (see "B") with the included installation driver tool.
4. Install bulb, slide top over power stake, and set top at the desired height position using set screw or pushpin in holes.
5. Connect the wire terminals to the main lead to the transformer using included Quick Connect lead connectors.
6. Cable may be buried if desired to a maximum depth of 6 inches underground.
7. Do not exceed 12 Volts at the Luminaire.
8. Recommended Lamp: 3W G4 LED Bi-pin



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Professional Series CS937-LED Directional Lights

INSTALLATION INSTRUCTIONS

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INSTRUCTIONS PERTAINING TO A RISK OF FIRE, OR INJURY
TO PERSONS IMPORTANT SAFETY INSTRUCTIONS

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Voltage not to exceed 15 VOLTS per circuit

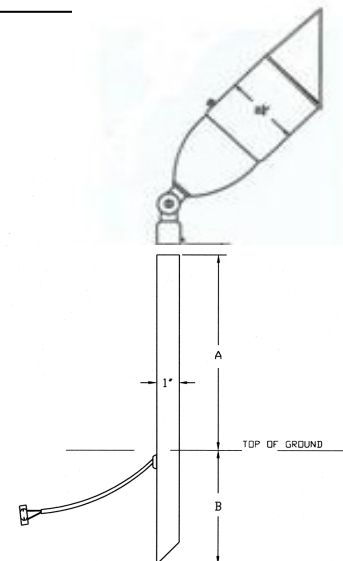
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Safety Warning: LAMP IS HOT WHEN LUMINAIRE IS ON! Hot lamp creates risk of fire and injury to persons. Keep away from combustibles. Lamp gets hot very quickly. Turn off or unplug luminaire and allow lamp to cool to change bulb. Do not touch lamp with bare hands. When using this fixture with high wattage halogen lamps (35W MAXIMUM), keep luminaire away from children as luminaire may become VERY HOT. Do not install luminaire within 10 feet (3.05 meters) of a pool, spa, fountain, or pond. Do not cover or bury luminaire and keep luminaire clear of debris. Use only UL compliant components including low-voltage power units, cable, wire connectors, and any other component necessary. **CAUTION: Luminaire is NOT submersible!**

NOTE: Do not exceed the maximum wattage rating or maximum amperage rating of the power unit (transformer) used when installing multiple luminaires.

INSTALLATION GUIDELINES – STAKE MOUNTED MODEL

1. Disconnect or unplug transformer from power source.
2. This style of Directional Light is a complete luminaire and designed to be mounted on a ground stake.
3. Drive the ground stake into the ground at the desired location and depth (see “B”) with the included installation driver tool.
4. Connect the matching male and female terminals on the ground stake and luminaire, slide the socket onto the ground stake and secure the position desired using the brass screws on the adjustable knuckle.
5. Connect the wire terminals to the main lead to the transformer using included Quick Connect lead connectors.
6. Cable may be buried if desired to a maximum depth of 6 inches underground.
7. Do not exceed 12 Volts at the luminaire.
8. Recommended Lamp: 5W MR16 LED



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Additional Helpful Installation Instructions

Quick Connectors & Installation



Quick Connects are a fast and easy method for connecting P. M. Lighting landscape lighting luminaires to the **Main Supply Cable** running to the power transformer. These connectors will work on both 14 gauge and 12 gauge cable for home runs. Simply position the cable between the 2 halves of the Quick Connects as shown and squeeze the parts together tightly to pierce both wires with the metal conductors. The teeth on the ratchet devices lock the pierced terminals into place to securely hold the connection over time.

To install or replace Quick Connects,

1. Cut the old Quick Connect parts from the wires (if replacing old ones) and strip the end of the wires to approximately ½” in length.
2. Use the wire nuts included in the replacement kit to connect each side of the Quick Connect to the 18 gauge wire on the luminaire.
3. Attach and secure the new Quick Connect as outlined above.

Using the Stake Installation Tool



LEFT PICTURE: Slide the Stake Installation Tool over the top of the copper stake until it bottoms out in the hole. When installing the ground stakes for bullet lights, make sure the wires are carefully tucked inside the stake to avoid cutting or damaging the cable.



RIGHT PICTURE: Position the stake in the location desired and hammer the stake directly into the ground approximately 6 inches, being careful to keep the stake in an upright and straight position. Use a dead blow mallet to minimize the risk of damaging the light socket in power stakes.

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Thank you for purchasing our product.

For tips and more information please visit our web site:

www.pmlighting.com

INSTALLATION INSTRUCTIONS CS100T

Only plug this transformer into a 120VAC GFCI protected outlet. Unplug transformer from outlet prior to installation.

For all the wire connections: Use UL listed **Wire Connectors** included with the Fixtures and Kit .

For all the opened knockouts: Use UL listed **Clamp**

Connectors suitable for the size and type.

Please check that the total lamp wattage is not more than 100 Watts.

MOUNTING:

Choose the best location on any rigid vertical wall, making sure that the wiring compartment points down.

Remove the wiring compartment cover by pulling it out (there are no screws). The enclosures have two knockouts on the bottom one for the input and one for the output.

Remove the knockouts for the input and the output and connect the suitable clamps.

GROUNDING:

The transformer case **must** be grounded. Check to see if ground is secured by the transformer green wire connected to the ground nut on back of housing. This was done at the factory!

OUTPUT CONNECTIONS:

One 12V output circuit (100 W):

Bring the 12V lamp wires in through the open knockout and connect to each of the Terminal blocks lugs. **The screws of the terminal block should be secured well.**

INPUT CONNECTION:

This transformer is designed for use with 120V 60Hz
Plug in the Line cord into 120V outlet.

“Low – High” Switch

Measure voltage at the end of the run (on the secondary). If voltage is below 10.5V, switch the “Low – High” Switch to the “High” position.

Please check and make sure you have followed the instructions carefully.





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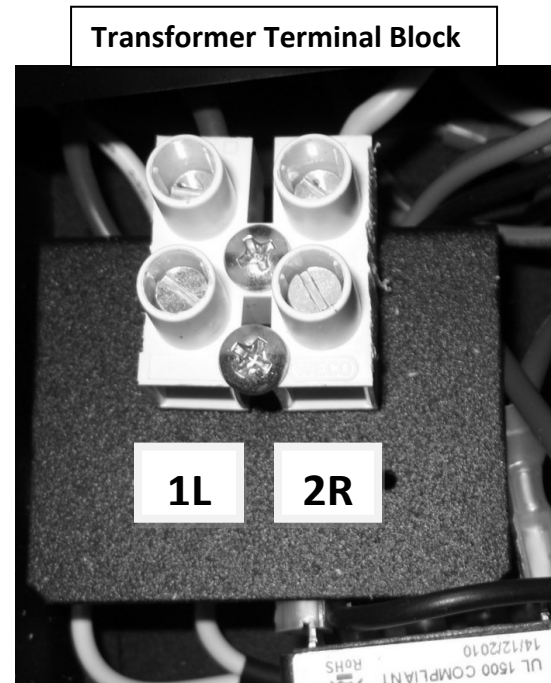
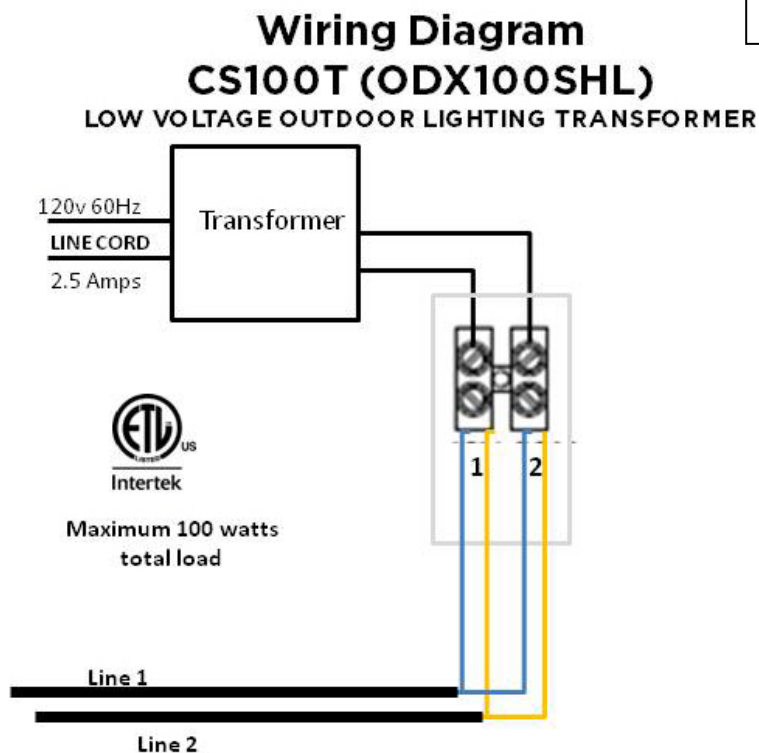
To clarify installation and wiring of your 100 watt Professional Series power transformer, please refer to the instructions below.

1) USE ONLY THE BOTTOM SCREW TERMINALS TO ATTACH THE MAIN CABLES FROM THE LIGHT FIXTURE RUNS. DO NOT LOOSEN TOP SCREWS OR REMOVE WIRES ATTACHED TO THE TOP SCREWS.

2) EACH MAIN CABLE RUN MUST BE CONNECTED TO 1 (LEFT) AND 2 (RIGHT). SEE DIAGRAM BELOW (SHOWING UP TO 2 MAIN CABLE RUNS).

3) ATTACH ONE SIDE OF THE MAIN CABLE RUN TO THE LEFT TERMINAL (1) BY INSERTING THE STRIPPED WIRE (APPROX. $\frac{3}{4}$ ") INTO THE BOTTOM OF THE TERMINAL BLOCK. ATTACH THE OTHER SIDE OF THE MAIN CABLE RUN TO THE RIGHT TERMINAL (2). TIGHTEN BOTTOM TERMINAL SCREWS TO SECURE EACH WIRE.

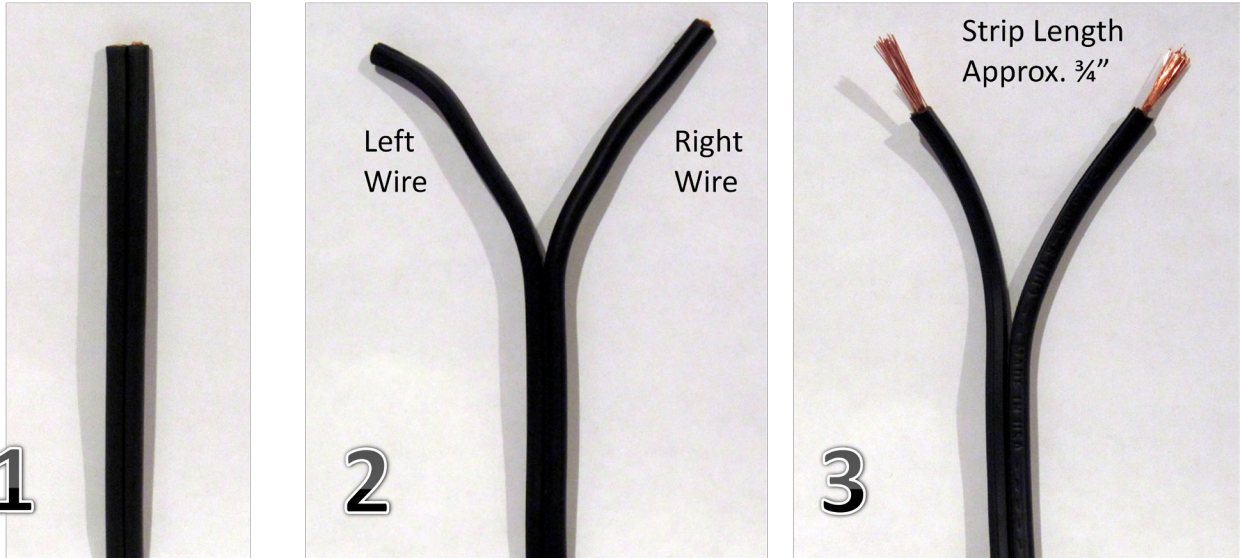
CAUTION: DO NOT LOOSEN TOP SCREWS OR REMOVE ANY WIRES IN TOP PORTION OF TERMINAL BLOCK!



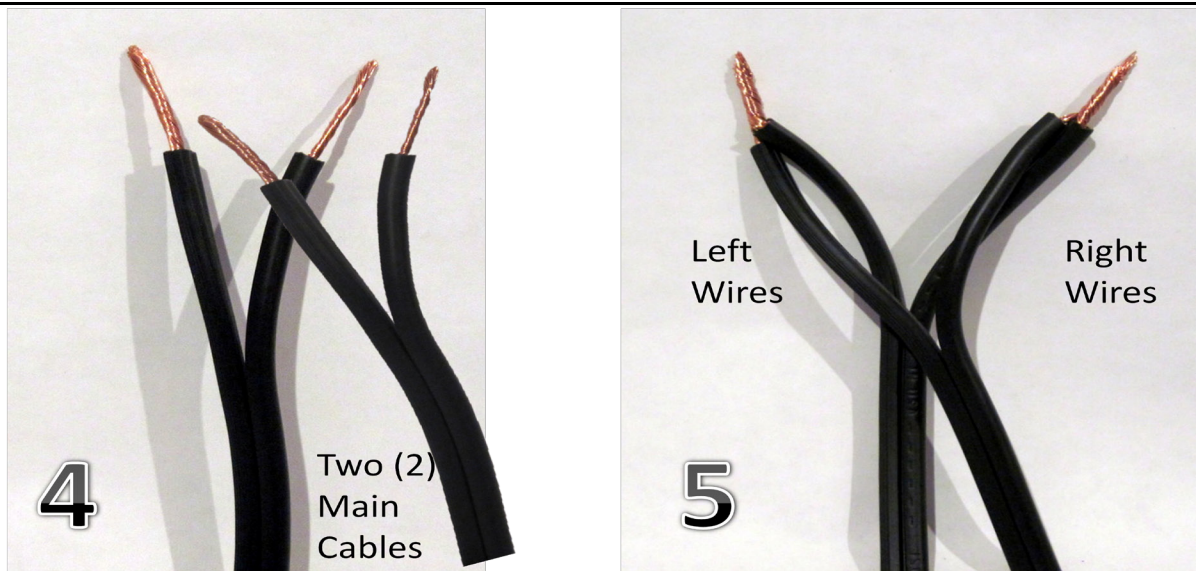
Insert one side of each main cable run into the bottom of the terminal block in the (1) LEFT screw terminal and one side in the (2) RIGHT screw terminal.



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- Each 14/2 main cable must be split in the middle to create a left and right side.
- Strip the outer insulation from each wire approximately 3/4" of an inch to expose the copper stranded wires



- For a single home run cable, twist the strands of copper wire together tightly for each side.
- For more than one home run cable, twist the strands of copper wire together, combining each side together tightly as shown in #5 to make a completed wire harness. Make sure the left and right sides of each cable are separated.



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Accessories & Optional Fixtures



**Quick Connectors (on each luminaire)
Model #IT-06**



**Stake Installation Tool
Model #DC-01**



**Timer with Photocell
Model #IT-01**



**CS933-LED (9W)
In-Ground Well Luminaire**



**CS938-LED (3W)
Deck and Patio Luminaire**



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