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# Low Voltage Power Module Installation Guide

300W 600W 900W 1200W

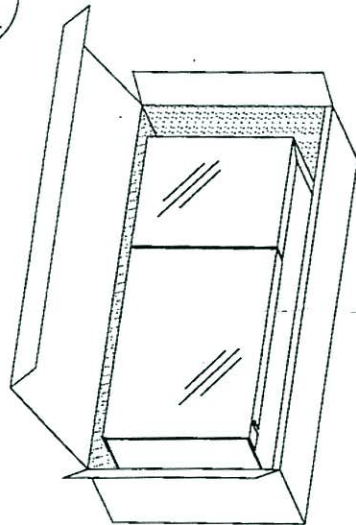
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**!! ATTENTION !!**

Please read and understand thoroughly this installation guide to ensure safe and efficient operation of this Power Module.

**1**

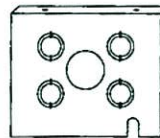


Open shipping carton, and carefully remove the transformer.

Open the side flap inside of shipping carton and remove the mounting hardware and landscape wire connection hardware bags that are supplied with the unit.

Inspect shipping carton contents for any damage that may have been incurred during shipment.

Our Bottom Plates feature double knock-outs for adapting to standard conduit sizes, as well as a 1-5/8" diameter access hole to allow for a larger centrally located 1-1/2" conduit for a cleaner, more professional looking installation.



Example:  
Bottom Plate

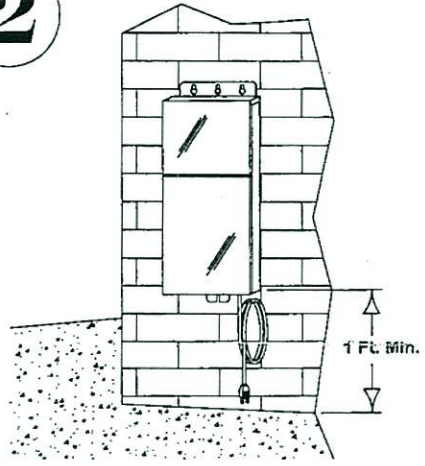


Example:  
Bottom Plate  
Hardware Bag

504-0105

2

**MOUNTING THE UNIT:**



Mount the Transformer to a solid surface using keyhole slots in the mounting bracket. (NOTE: The transformer must be mounted at least one foot above ground level, with the wire terminals facing down.)

Secure the Transformer using the appropriate wall anchors for the wall surface used. (Wall mounting screws and anchors not supplied.)

**DETERMINE THE LOAD:**

3

Our Multi-Tap transformers are equipped with secondary circuit breakers that are connected to the COM. Each circuit can be loaded up to a maximum of 300 watts.

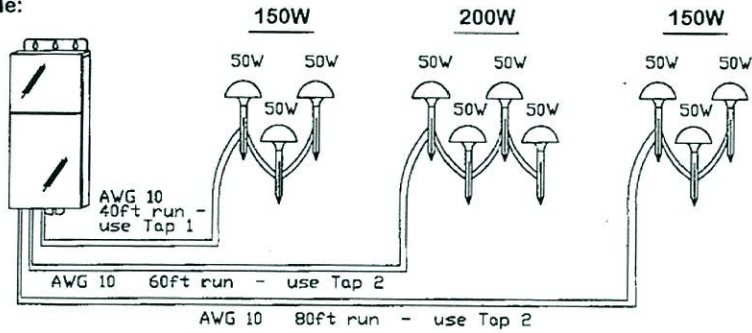
A) Add up your fixture's wattage. Divide your load into 300W max. per wire run. DO NOT EXCEED 300W PER RUN!!

B) Measure the approx. distance from the transformer to the first fixture on each run. Refer to Chart 1 to pick the correct tap for each run. You may use one, two, three or all taps at once.

| WATT    | TAP 1<br>12V |           | TAP 2<br>13V |           | TAP 3<br>14V |           | TAP 4<br>15V |           |
|---------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|
|         | AWG<br>12    | AWG<br>10 | AWG<br>12    | AWG<br>10 | AWG<br>12    | AWG<br>10 | AWG<br>12    | AWG<br>10 |
| 100-149 | 38           | 60        | 76           | 120       | 113          | 180       | 151          | 240       |
| 150-199 | 25           | 40        | 50           | 80        | 76           | 120       | 101          | 160       |
| 200-249 | 19           | 30        | 38           | 60        | 57           | 90        | 76           | 120       |
| 250-300 | N/A          | 24        | N/A          | 48        | N/A          | 72        | N/A          | 96        |

**CHART 1 (WIRE RUNS IN FEET)**

Example:



C) Once you find the correct tap for each run, see Chart 2 to calculate the cable losses.

$$\begin{aligned} \text{Cable loss} &= (\text{loss per foot} \times \text{distance}) \\ &= (0.293 \times 40\text{ft}) + (0.537 \times 60\text{ft}) + (0.293 \times 80\text{ft}) \\ &= (11.72) + (32.22) + (23.44) \\ &= 67.38 \text{ watt losses total.} \end{aligned}$$

CHART 2 (WATTAGE LOSSES PER FOOT)

| AWG | 100W  | 150W  | 200W  | 300W |
|-----|-------|-------|-------|------|
| 12  | 0.210 | 0.461 | 0.855 | N/A  |
| 10  | 0.131 | 0.293 | 0.537 | 1.2  |

D) Determining Maximum Lamp Load:

All of our Transformers are designed to provide up to maximum wattage rating on any tap. However, you must take into account the cable losses.

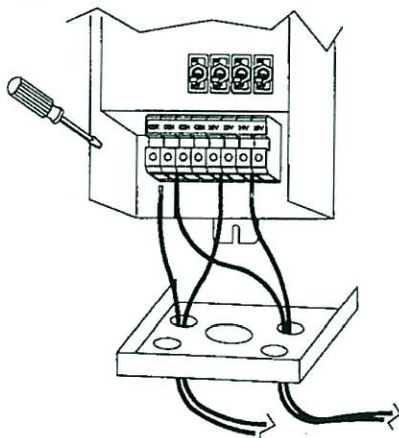
Example:

$$\begin{aligned} \text{Maximum Lamp Load} &= (\text{Transformer rating}) \text{ minus (cable losses).} \\ &= (600\text{W}) - (67.38) \\ &= \text{approximately } 530\text{W Lamp Load.} \end{aligned}$$

**\*\* Your maximum lamp load should not exceed approximately 530W. \*\***

4

#### CONNECTING THE CABLES:



Loosen the two screws that hold the unit cover in place, and remove cover.

Run lighting cables through knockouts in Bottom Plate.

Connect the low voltage cables to the COMs and low voltage taps labeled on the Terminal blocks.

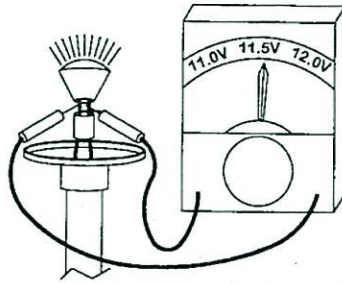
Make sure that all connecting screws are secure and tight.

**REMEMBER!! Maximum 300W per circuit!!**

Turn off ALL the circuit breakers in the transformer unit. Plug the 120V line cord into a grounded 120V outlet. Turn on one breaker at a time to ensure that your low voltage cable runs are connected per TABLE1, and to ensure that there are not any short circuits.

# 5

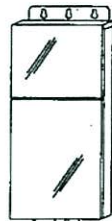
## CHECKING LAMP VOLTAGES:



Check the voltage at each fixture using a True RMS Voltmeter, and make sure you have the proper voltage to the lamp.

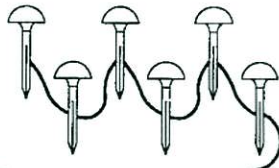
The correct voltage should be between 11.0 Volts and 12.0 Volts.

## CHECKING THE OUTPUT AMPS:



Once you have checked all the runs for correct voltages, use a clamp-on Amp Meter and check the output current on the low-voltage cable at the transformer.

**REMEMBER!! Maximum 25Amp per circuit!!**



## CHECKING THE INPUT AMPS:

Your Transformer is provided with a long loop in the optional photocell plug that you may utilize to measure the input current. Simply apply the clamp on the Amp Meter around the loop and measure the current. (See Chart 3)

**REMEMBER!! Do not exceed the maximum input current!!** If input current exceeds the max rating, either remove Fixtures or reduce lamp wattages in the Fixtures until input current is sufficiently reduced.

The Transformer is marked with a label showing the maximum input current.

PHOTOCELL JUMPER  
(Example:600W)

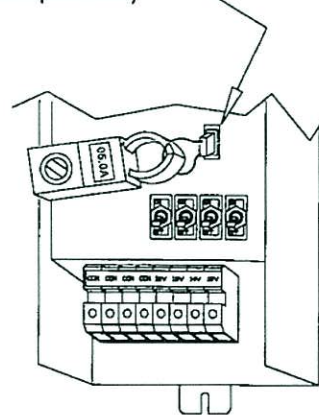


CHART 3 (INPUT CURRENT)

|      | 300W | 600W | 900W | 1200W |
|------|------|------|------|-------|
| AMPS | 2.5A | 5.0A | 7.5A | 10.0A |



## TIMER WITH PHOTOCELL OPERATION INSTRUCTIONS

### OPERATING INSTRUCTIONS FOR: MANUAL PLUG-IN TIMER WITH PHOTOCELL

#### TIMER ON/OFF ONLY:

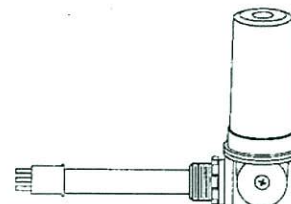
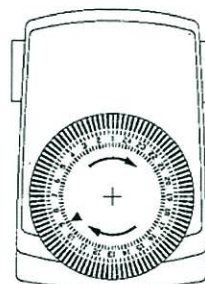
To control the lights set the timer to turn On before dark at your desired On time. The lights can be turned Off by the timer at a pre set time by setting your desired Off time.

#### PHOTOCELL ON/OFF ONLY:

Remove the black nylon cap from photocell. To control the lights set the timer by pushing all the timer tabs out to the On position. The photocell will activate the lights when it gets dark and turn Off the lights at dawn.

#### PHOTOCELL AND TIMER ON/OFF:

Remove the black nylon cap from photocell. To control the lights set the timer to turn On before dark between 12:00 – 4:00 PM. The photocell will activate the lights when it gets dark. The lights can be turned Off by the timer at a pre set time by setting your desired Off time.



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### OPERATING INSTRUCTIONS FOR: DIGITAL PLUG-IN TIMER WITH PHOTOCELL

#### TIMER ON/OFF ONLY:

To control the lights program the timer to turn On before dark at your desired On time. The lights can be turned Off by the timer at a pre set time by programming the timer to your desired Off time. Refer to the timer instruction sheet supplied with the timer for programming information.

#### PHOTOCELL ON/OFF ONLY:

Remove the black nylon cap from photocell. To control the lights Program the timer to stay On. The photocell will activate the lights when it gets dark and turn Off the lights at dawn.

#### PHOTOCELL AND TIMER ON/OFF:

Remove the black nylon cap from photocell. To control the lights program the timer to turn On before dark between 12:00 – 4:00 PM. The photocell will activate the lights when it gets dark. The lights can be turned Off by the timer at a pre set time by programming the timer to your desired Off time. Refer to the timer instruction sheet supplied with the timer for programming information.

