

Traffic Safety Corporation

In-Roadway Warning Lighting System Power Adapter Installation Manual Series Circuit Installation



**TRAFFIC
SAFETY_{CORP.}**

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Section 1 – General Information

A. Warnings

1. THIS IS A MATCHED COMPONENT SYSTEM.
Use of any other components voids the warranty. Use of a different number of fixtures voids the warranty.
2. ACCEPTANCE TEST.
Each Power Adapter is factory tested. Therefore, if you follow these instructions, your installation should go smoothly. The following "Acceptance Test Checklist" should be taped to the front of the cabinet.
3. FIXTURE SERIES CIRCUIT.
This system uses a series circuit (yes, just like the old Christmas tree lights - don't worry, we use a lamp bypass device in case one of the lamps fails). The reason we use a series circuit is to minimize the voltage in the street and illuminate each fixture with the same brightness.
4. If there are auxiliary lamps, beacons, or LEDs they must be connected to the terminals marked Aux. **Do not** connect them into the in pavement light circuit.

Traffic Safety Corp.
Crosswalk Power Adapter / Acceptance Test Checklist

Client (Sold To): McCain Sales of Florida

Ship to: McCain Sales of Florida

Sales Order#: 422

Power Adapter Part Number: PA-XPO9-3-1

Power Adapter Serial Number TS-S-08-181

This Power Adapter is designed for the following fixture configuration
 Fixtures: Circuit 1 9 x 50Watts Circuit 2 x Watts Total 9

Sign and Date to Accept

		Circuit 1 (Volts)	Circuit 2 (Volts)
<input checked="" type="checkbox"/> 04/23/02	No Fixture Voltage Test:	Day <u>76.6</u>	<u> </u>
<input checked="" type="checkbox"/> 04/23/02	No Fixture Voltage Test:	Night <u>69.6</u>	<u> </u>
		(Amps)	(Amps)
<input checked="" type="checkbox"/> 04/23/02	Tested with Load :	Day <u>6.22</u>	<u> </u>
<input checked="" type="checkbox"/> 04/23/02	Tested with Load:	Night <u>5.73</u>	<u> </u>
<input checked="" type="checkbox"/> 04/23/02	Schematic for correct PN placed in cabinet.		
<input checked="" type="checkbox"/> 04/23/02	Installation Manual placed in cabinet.		

Acceptance Tests:

04/23/02 Performed by: Peace Habana Date: 4/23/02

04/23/02 Witnessed By: W. R. P. Date: 4/23/02

Controlled Document File Ref: g:\ControlledDoc\QC\TSC001

B. Common Mistakes

- If you wire the fixtures in a parallel circuit you will blow out the lamps and bypass devices. This situation is not covered by our warranty. Fixtures will have to be returned to the factory for refurbishment at your expense.
- All the fixtures must be plugged into the 90R Waterproof Receptacles after they have been wired in series before applying power to the fixture circuit. If you don't have all the fixtures connected, for example, you decide to plug in just one fixture to "test" the circuit, you will blow out the lamp(s). The fixture(s) will have to be returned to the factory for refurbishment at your expense.
- THIS SYSTEM IS ONLY AS GOOD ITS INSTALLATION. We absolutely believe that our success depends on your success. Please call if we can help in any way.

C. Save Your Boxes and Covers

1. Your Base Cans are shipped with a protective plywood cover. If you keep this cover you can use it to protect the Base Can flange ring when the road is resurfaced. Also, if you want to remove the fixtures for any reason, you will want to cover the Base Can until they are replaced.
2. Hold on to the fixture boxes until your installation is up and running, just in case a fixture needs to be sent back to the factory for any reason.

Section 2 – Installation of Base Cans in the Roadway

A. Fixture Locations

Refer to Design Engineer's drawing for the fixture locations in the roadway.



Typical Layout for 2 Lane Road

B. Drainage System

1. Background

The fixtures are pressure tested under water at the factory and are completely waterproof. However, the Base Cans can fill with water from hydraulic pressure around the conduits or from water in the street.

We do not want the field connection between the 90R Waterproof Receptacles and the installer provided 10 gauge stranded wire sitting in standing water in the Base Can. It will eventually leak resulting in a short in the system. Also, standing water in the Base Can can freeze and damage the can and fixture.

Therefore, the Base Can requires a drainage system to prevent standing water. Every Base Can has a drain hole to facilitate this process.

Three types of drainage systems are typically used

- a. French Drain
- b. Modified French Drain consisting of 4" diameter by 12" long sewer pipe filled with pea gravel installed vertically directly under the drain hole on the bottom of the can.
- c. Piped drain system

2. Refer to the Designer Engineer's drawing for the drainage system specified for your installation.

C. Base Can Support Requirements

1. In asphalt: Mount the Base Can in a 24" square block of concrete extending 6" below the bottom of the Base Can.
2. In concrete: Core Drill a 10" diameter hole, support the Base Can with 6" of concrete beneath the base can and secure the sides with a high strength epoxy such as Dayton Superior HD-50.
3. REMEMBER – The system is only as good as the foundation underneath each Base Can.

D. Conduit

Run schedule 40 PVC pipe between each Base Can and the Power Adapter to facilitate maintenance.

E. Grounding

Every Base Can is provided with an internal grounding lug. Prepare a piece of 10 gauge wire by stripping and forming a loop at both ends. Connect one end to the internal ground lug inside the Base Can. Place the other end between the fixture and the Base Can flange ring so that the fixture hold down bolt goes through the loop when the fixture is bolted into place.

F. Base Can Installation Techniques

1. Trench



Note use of Mounting Jigs, Traffic Safety PN MO-XWJIG.

2. Core Drill



3. Can Installed at Grade



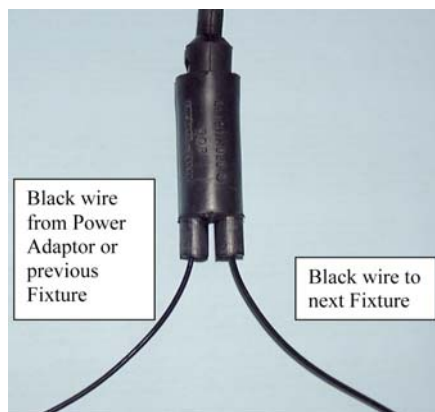
G. Base Can Must be Set at Grade

The Base Cans must be set so that the top of the can matches existing grade. Use Traffic Safety Mounting Jigs, Part Number MO-XWJIG or equivalent. Failure to mount the base can at grade and aim it properly can result in unacceptable system performance and expensive rework. On crowned roads, the can may have to be placed slightly lower to insure the no part of the edge is above grade.

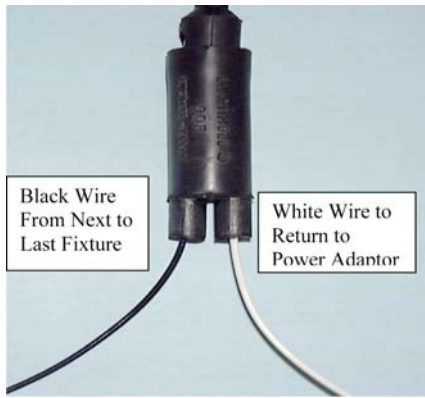
Section 3 – Electrical Installation

A. Wire the Fixtures in a Series Circuit

1. Wire the 90R Waterproof Receptacles



- Using 10 gauge stranded Black wire, bring the primary from the Power Adaptor ACV (AC Volts) terminal block to the 90R Waterproof Connector for the first fixture.
 - Use Traffic Safety crimping tool (PN# MI-909) or Vise-Grips to “crush” the connector’s metal barrel onto the wire.
 - Continue on with Black wire until you come to the 90R for the last fixture.
2. On the 90R for the last fixture, connect the Black wire from the previous fixture on the primary. On the secondary, connect a White wire out of the 90R and make a “home run” to the Power Adaptor and connect to RTN (Return) terminal block.
 3. Double transformer Power adapters require two (2) separate Fixture series circuits with half of the fixtures on each circuit (+/-) 1 fixture.



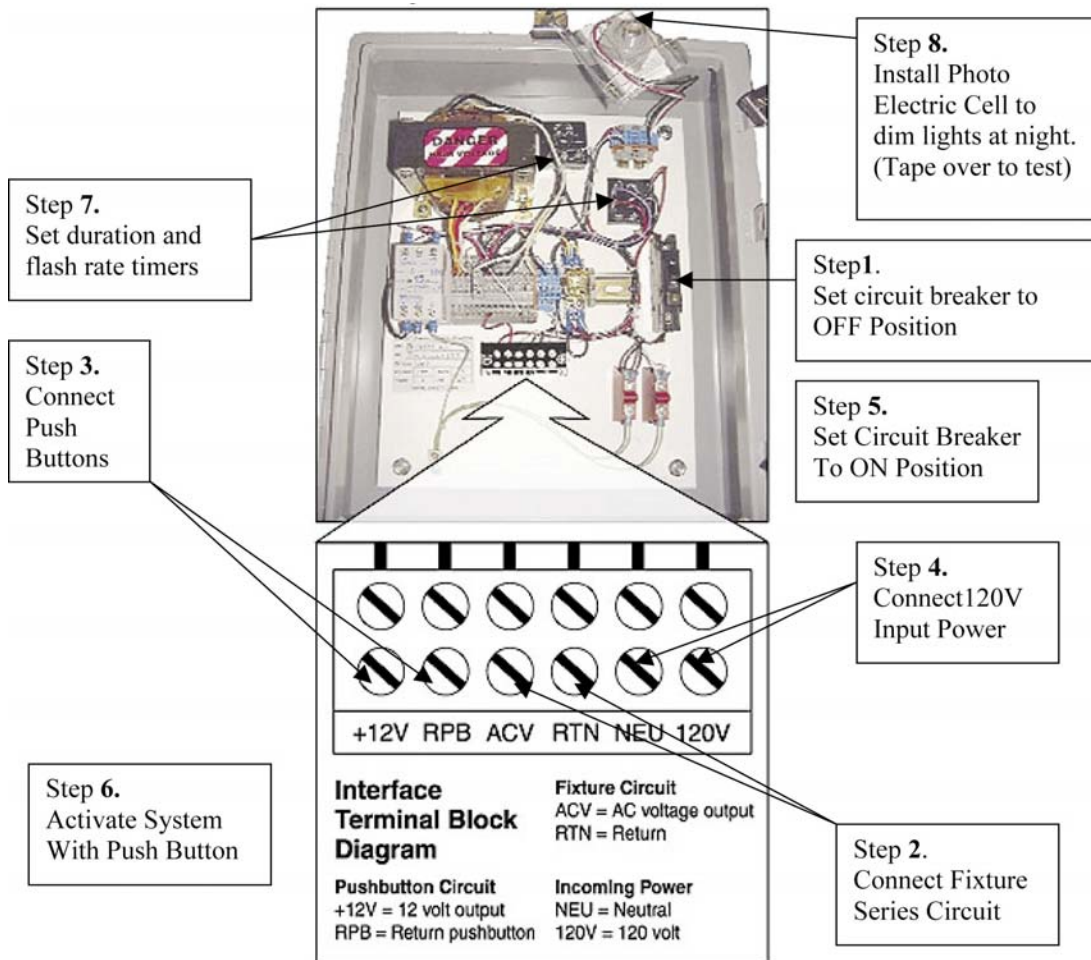
4. Plug in **ALL** the fixtures. If you plug in less than the correct number of fixtures you will blow them out!!!

PRODUCT: <i>XW Power Adapter</i>			
PN:	<i>PA - XP06 - 3.1</i>		
SN:	<i>TS - S - 02 - 389</i>		
OPTIONS:			
VOLTAGE:	<i>120</i>	AMPS:	<i>6.6</i>
PHASE:	<i>1</i>	HZ:	<i>60</i>
TRAFFIC SAFETY CORP.			

The numbers following (XP) specify the number of fixtures the Power Adapter is designed for. This Power Adapter is designed for 6 fixtures.

5. Use the Stainless Steel Bolts which secure the plywood lid to the Base Can to secure each fixture to the Base Can. Make sure to properly ground each fixture.

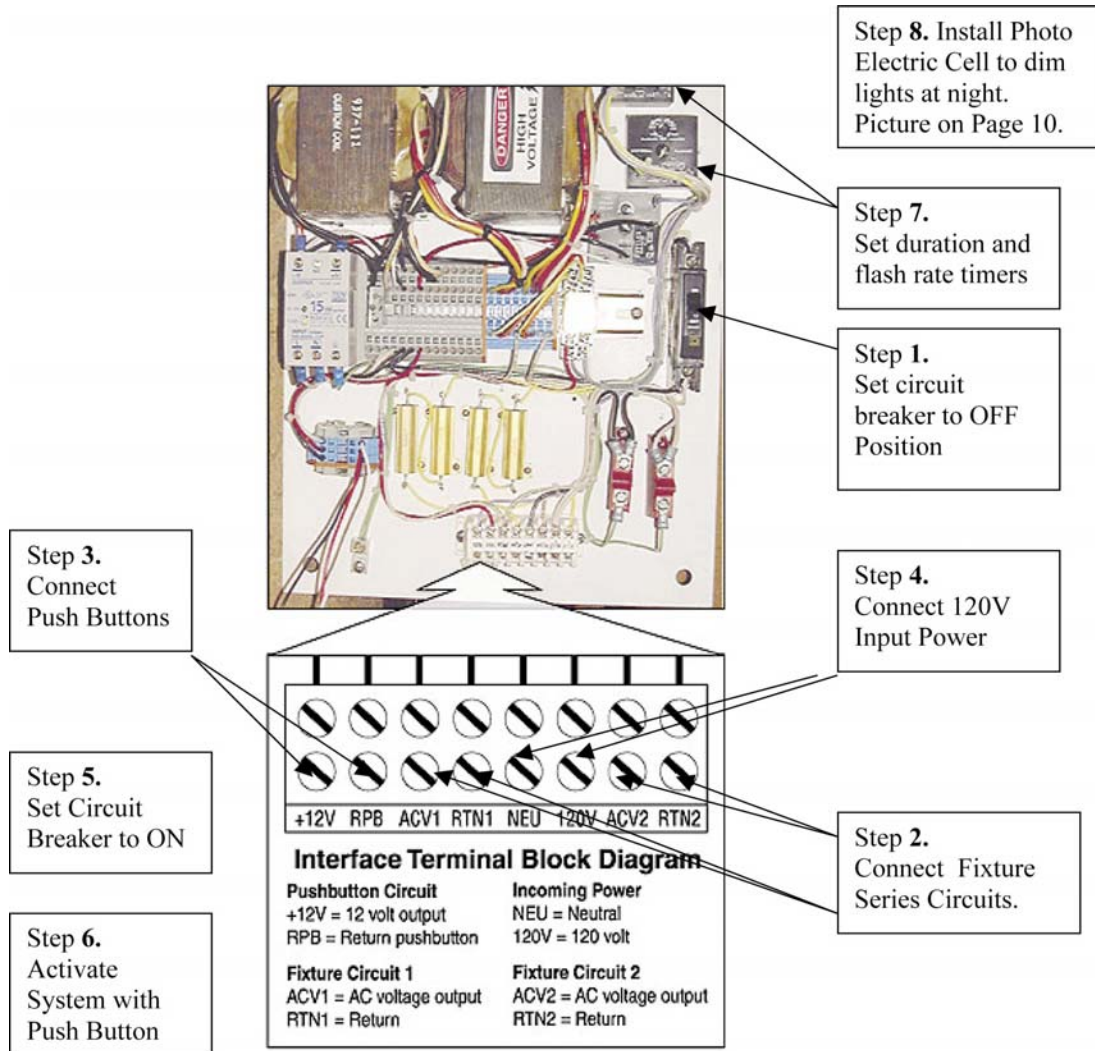
B. Single Transformer Model



- Step 1. Set Circuit breaker to OFF position
- Step 2. Connect the Fixture series circuit.
- Step 3. Connect Activation Device (Push Buttons, Microwave Sensors or Bollard System)
 - 3a. Connect out going Push Button Lead Wire to +12 (Black wire)
 - 3b. Connect return Push Button Wire to RPB (Return Push Button)(White Wire)
- Step 4. Connect the Power Adapter to Power Source (120v)
- Step 5. Set Circuit breaker to ON Position
- Step 6. Activate system with push button (you can simulate a push button by jumpering from RPB to +12v.)
- Step 7. Set duration and flash rate timers per engineer's specifications (usually 1 second per 4 ft. of crossing and 1 second on/ 1 second off, respectively.)
- Step 8. Install Photo Electric Controller. (See Section D.)

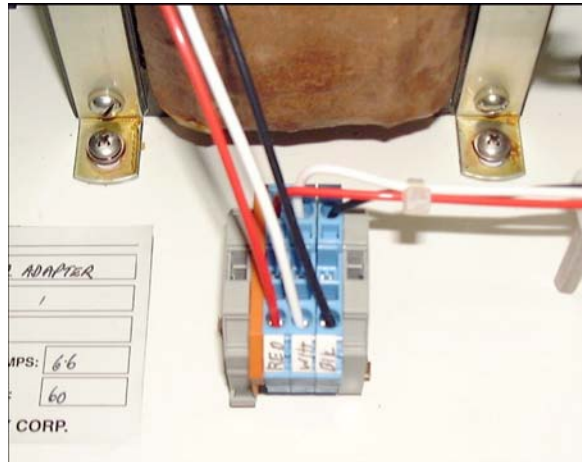
C. Double Transformer Model

Purpose of Double Transformer is to Split the LOAD between circuits and make it more responsive.



D. Photoelectric Controller

The photoelectric controller reduces the current to the fixtures at night to avoid excessive brightness, which could distract drivers. The high (daytime) and low (nighttime) settings are pre-set at the factory. After the System is working, install the photoelectric controller as follows:



- Step 1. Connect Red Photo Electric wire to RED
- Step 2. Connect White Photo Electric Wire to WHITE
- Step 3. Connect Black Photo Electric Wire to BLK
 - A. Cover the photoelectric controller and make sure it dims the system.
 - B. Breach the side or bottom of the Power Adapter cabinet and install the photoelectric controller.

Section 4 – Periodic Maintenance

A. Cleaning

Fixture lenses should be cleaned periodically by Pressure Washing. Hand washing from time to time will also work just fine.

B. Refurbishment

Fixtures should be returned to the factory for refurbishment every 3-5 years, typically when the first lamp fails.

Section 5 – Warranty

Traffic Safety Corp. provides a limited one-year warranty from the date of shipment. See Traffic Safety Corp. Form PA 1.2 for details.



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