



## TL2

### ALUMINUM THIN LINE DIE-CAST LED EXIT SIGN

---

# INSTALLATION AND OPERATING INSTRUCTIONS

#### **IMPORTANT SAFEGUARDS**

When using electrical equipment, basic safety precautions should always be followed including the following:

#### **READ AND FOLLOW ALL SAFETY INSTRUCTIONS**

1. DO NOT use outdoors.
2. DO NOT mount near gas or electric heaters.
3. Equipment should be mounted in locations and at heights where it will not be readily subject to tampering by unauthorized personnel.
4. The use of an accessory equipment is not recommended by the manufacturer. Use of such equipment may cause an unsafe condition.
5. DO NOT use this equipment for other than intended use.
6. Conduct periodic visibility tests in accordance with the applicable installation code (such as NFPA 101).
7. Supply connections MUST be made inside the junction box.
8. Install using recommended junction box ONLY.
9. Servicing of this equipment should be performed by a qualified service personnel.
10. Install sign indoors only where not exposed to direct unfiltered sunlight, liquid spray or temperatures outside of the range of 10°C to 40°C.
11. Before installing unit, disconnect power at a breaker panel.

#### **SAVE THESE INSTRUCTIONS**

31 Waterloo Ave • Berwyn, PA • 19312 U.S.A  
Telephone: (610) 647-8200 • Email: [support@isolite.com](mailto:support@isolite.com)

# TABLE OF CONTENTS

## SECTION 1.0 INSTALLATION PREPARATION

---

1.1 Knockouts & Chevrons Page 3

---

1.2 Transformer Wiring Page 4

## SECTION 2.0 INSTALLATION OPTIONS

---

2.1 Back Mount Installation Page 5

---

2.2 Canopy & Top Mount Installation Page 7

---

2.3 End Mount Installation Page 8

---

2.4 Recessed Mount Installation Page 10

## SECTION 3.0 MASTER REMOTE SIGN CONFIGURATION Page 12

## SECTION 4.0 DIAGNOSTICS

---

4.1 Non-Self Testing/Diagnostic Models Page 14

---

4.2 Self-Testing/Diagnostic Models Page 15

## SECTION 5.0 OPTIONS

---

5.1 Flasher/Fire Alarm Page 16

---

5.2 Remote Exit & Lamp Operation Page 16

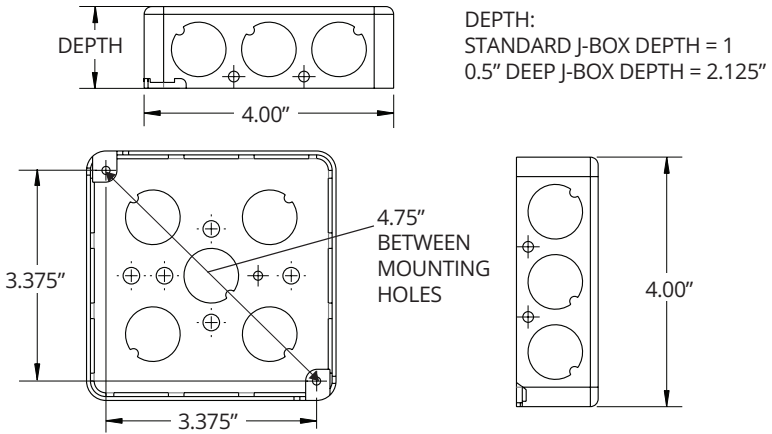
---

5.3 Infra-Red Remote Testing Page 16

# SECTION 1.0: INSTALLATION PREPARATION

This Exit Sign is designed to be mounted to a junction box (supplied by others). It can be either back, top or side mounted. The single face unit back mounts to a standard 4" Square (4S) junction box. Dual circuit options will require a deep junction box.

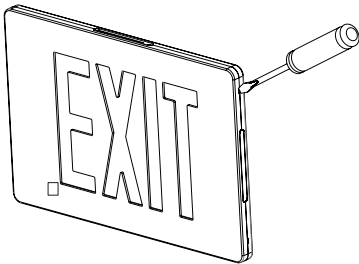
**FIGURE 1:** Junction Box Dimensional Outline



## SECTION 1.1: KNOCKOUTS & CHEVRONS

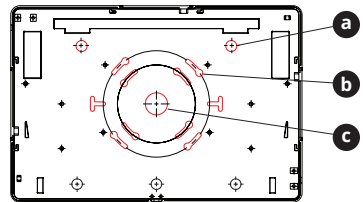
1. Open enclosure and separate panels using a flat blade screw driver (as shown below).
2. Support rear panel on spacers and punch out appropriate knockouts to fit junction box.

**FIGURE 2:** Opening the Sign



To separate the housing, insert a flat blade screwdriver into the 4 slots on the edge and rotate the blade gently so that the housings snaps apart. Repeat on all sides before pulling apart.

**FIGURE 3:** Rear Panel Knockouts

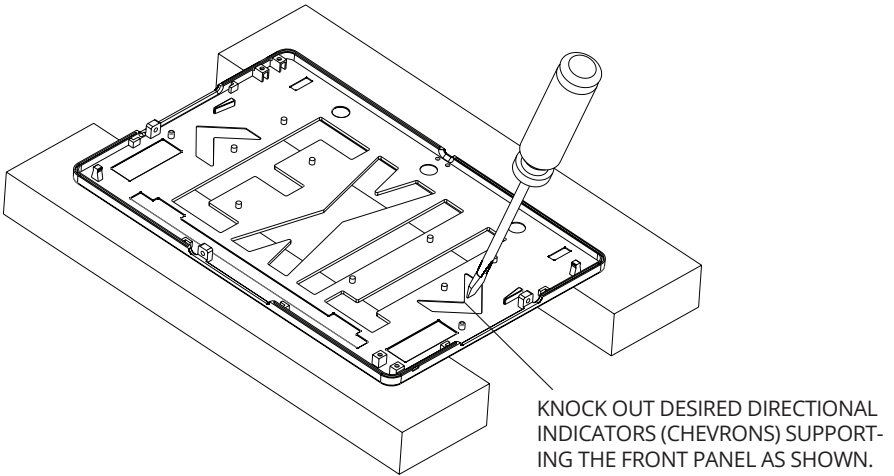


- a. Knockouts for remote connection wires.
- b. Junction Box knockouts
- c. Knockout for lead wires to sign.

# SECTION 1.1: KNOCKOUTS & CHEVRONS

CONTINUED

**FIGURE 4:** Removing the Directional Indicators (Chevrons)

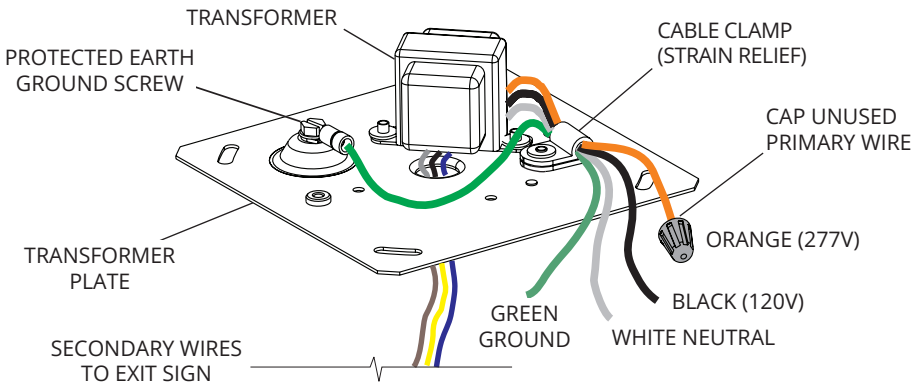


# SECTION 1.2: TRANSFORMER WIRING

**NOTE:** Before installing unit, disconnect power at breaker panel

AC Single Circuit Input: The transformer plate assembly will be provided assembled as shown below. Connect lead wires to feed wires in 1.5" deep junction box.

**FIGURE 5:** Single Circuit Application - Lead Wire Connections to Transformer

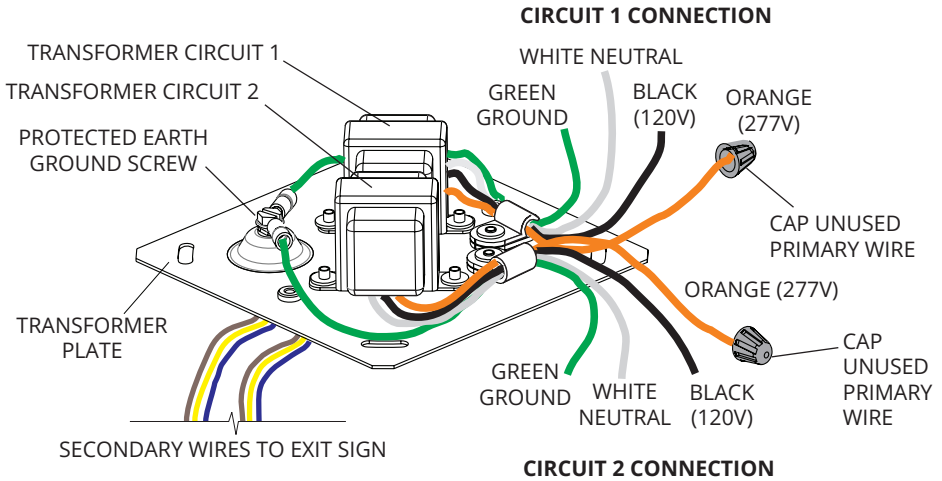


**AC Dual Circuit Input:** Utility Power and Emergency Power can be connected to EITHER transformer. Mixed voltages may be used. (Example: 120V Utility Power, 277V Emergency Power)

## SECTION 1.2: TRANSFORMER WIRING

CONTINUED

**FIGURE 6:** Dual Circuit Application - Lead Wire Connections to Transformers



**NOTE:** When wiring both Utility and Emergency Power, a 2 1/8" deep junction box is required per NEC Code.

## SECTION 2.0: INSTALLATION OPTIONS

The TL2 Series has several different Mounting options available to fit a wide variety of applications. Those options are:

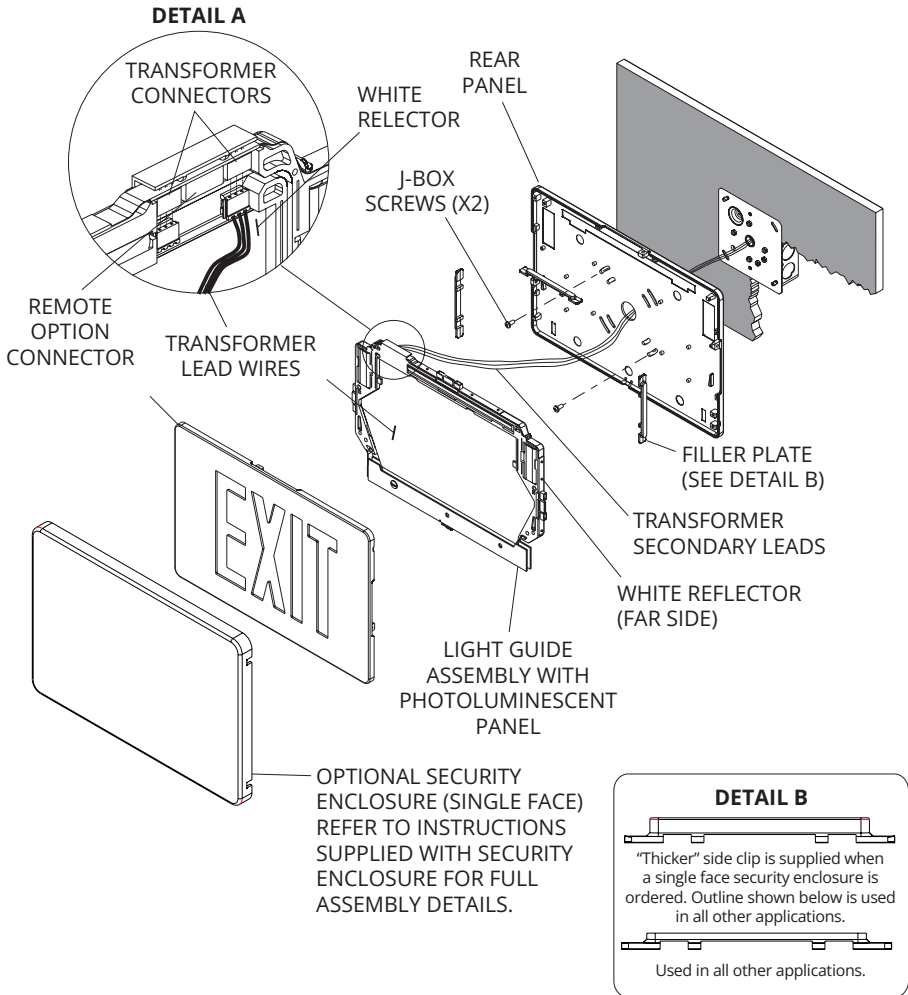
1. Back Mount Installation (Section 2.1)
2. Canopy/Top Mount Installation (Section 2.2)
3. End Mount Installation (Section 2.3)

CONTINUE TO NEXT PAGE

## SECTION 2.1: BACK MOUNT INSTALLATION (SINGLE FACE)

1. Secure spider plate to junction box. Route transformer's secondary leads through center knockout of the rear panel.
2. Place the filler plates in rear panel as per Detail B.
3. Terminate transformer leads to light guide assembly, per Detail A below.
4. Route wires between the rear panel and the white reflector. The wires should not be visible when looking at the sign from the front face.
5. Snap on Front Panel with the colored diffuser.

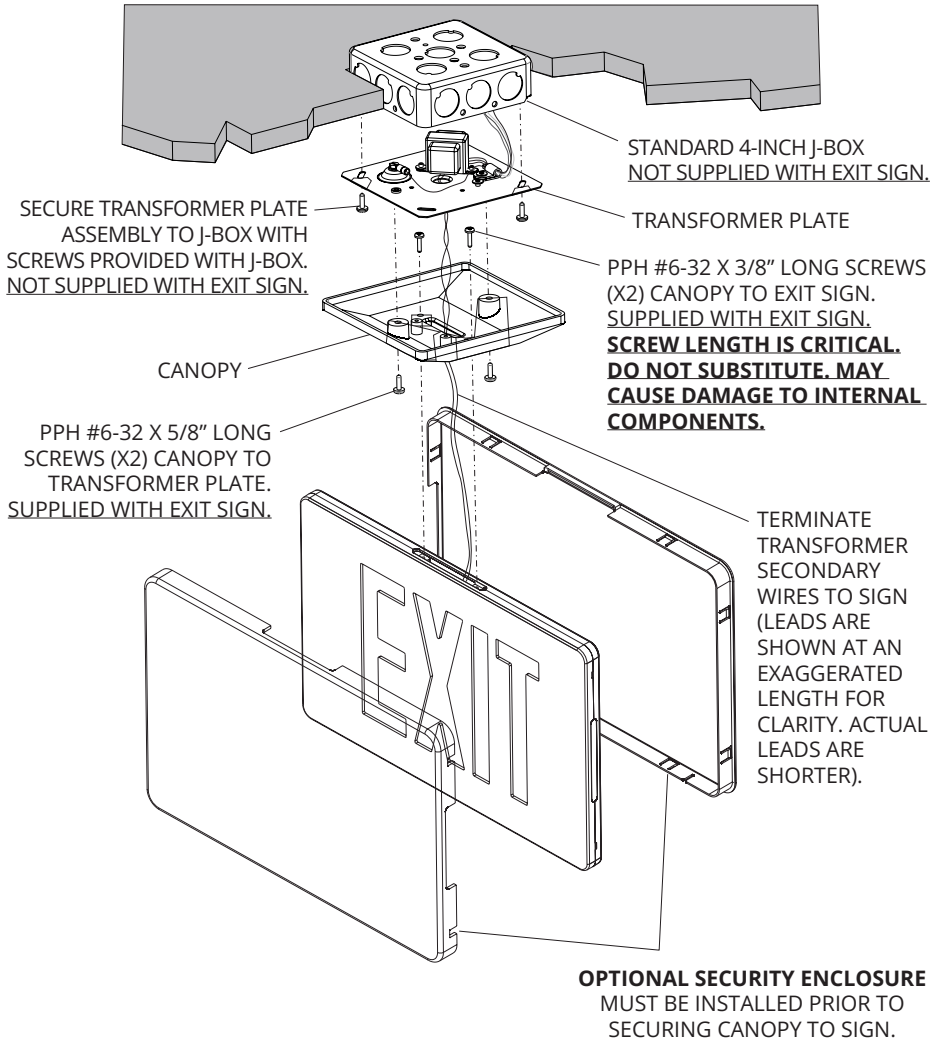
**FIGURE 7:** Back Mount Installation



## SECTION 2.2: CANOPY & TOP MOUNT INSTALLATION (SINGLE OR DOUBLE FACE)

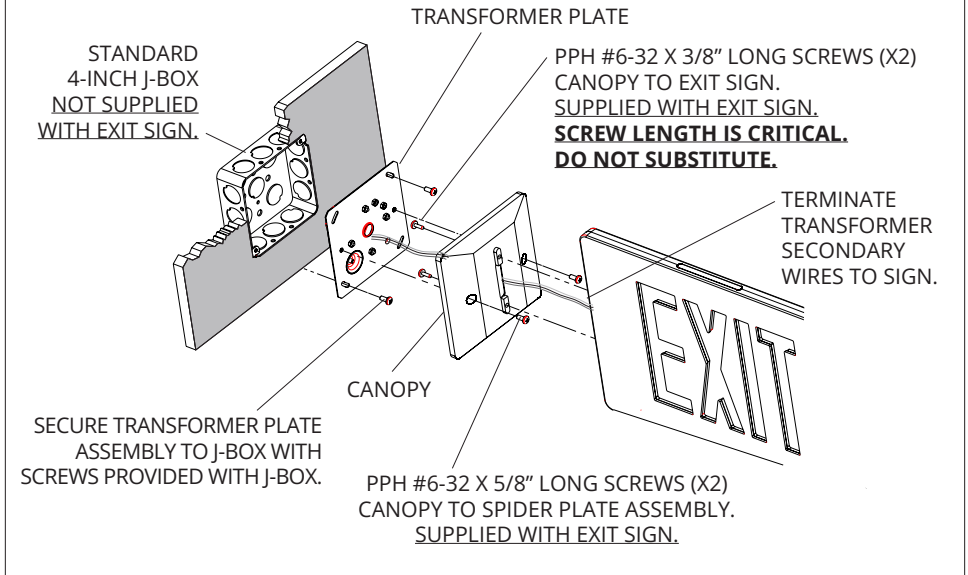
1. Secure transformer plate to junction box. Guide transformer secondary leads through canopy and connect to sign.
2. Secure canopy to sign and then fasten to spider plate. If an optional security cover will be utilized, it must be assembled to sign prior to securing the canopy to the sign.

**FIGURE 8:** Canopy Mount Installation (Top/Ceiling Mount)

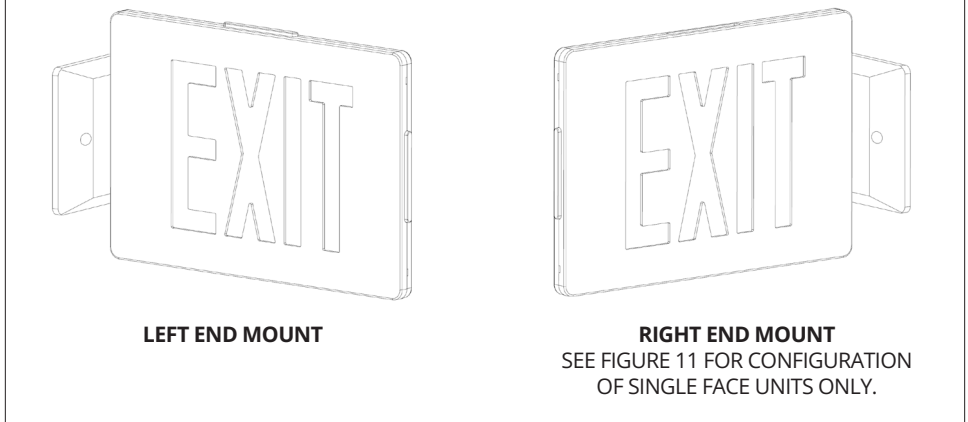


## SECTION 2.3: END MOUNT INSTALLATION

**FIGURE 9:** Left End Mount Installation



**FIGURE 10:** Left vs. Right End Mount Installation

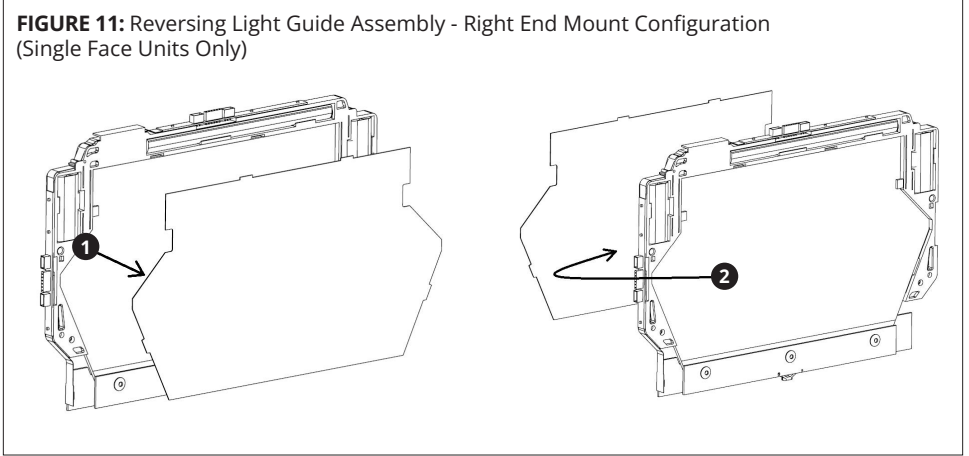


## SECTION 2.3: END MOUNT INSTALLATION

CONTINUED

1. Holding the light guide in the same orientation, install the white card on the reverse side, bending it slightly to install the 4 tabs into the corresponding slots.
2. Open sign as described in Figure 2. Remove the Light Guide assembly. Remove the white card by grasping near the bottom and pulling outward.

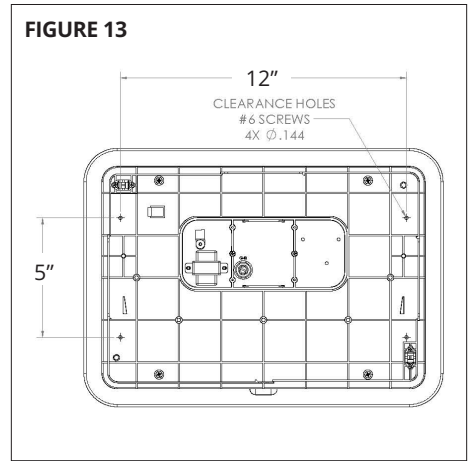
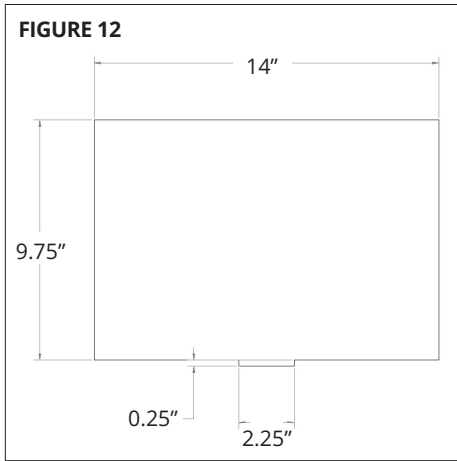
**FIGURE 11:** Reversing Light Guide Assembly - Right End Mount Configuration (Single Face Units Only)



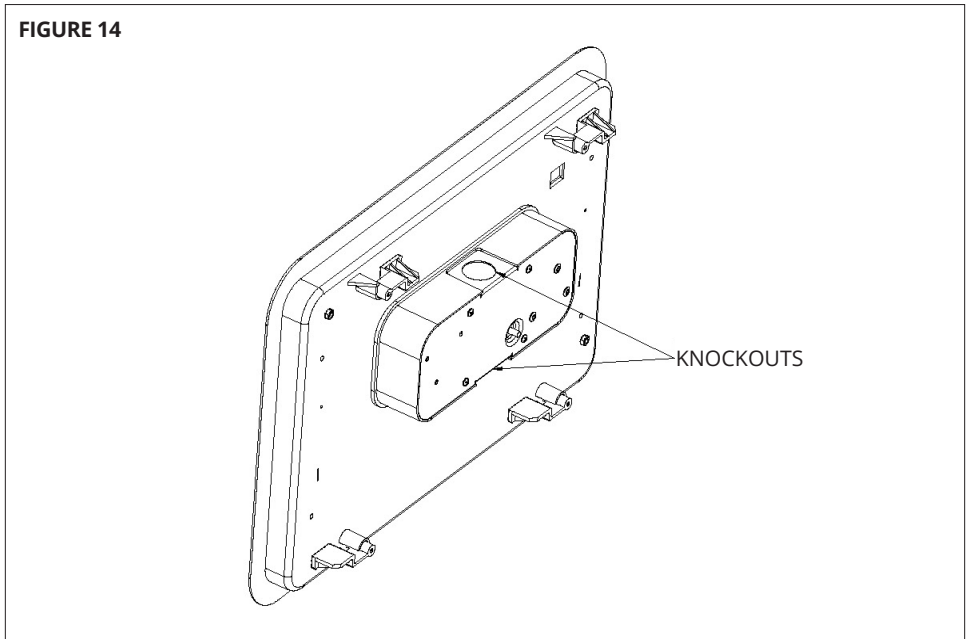
CONTINUE TO NEXT PAGE

## SECTION 2.4: RECESSED WALL MOUNT INSTALLATION

1. Cut out the wall opening to the dimensions shown in Figure 12.
2. Optional holes for support mounting - #6 screws (**not supplied**).



3. Choose top or bottom wire entry and Remove Knockout.
4. Add a Wire Clamp to the 7/8" knockout hole (**not supplied**).

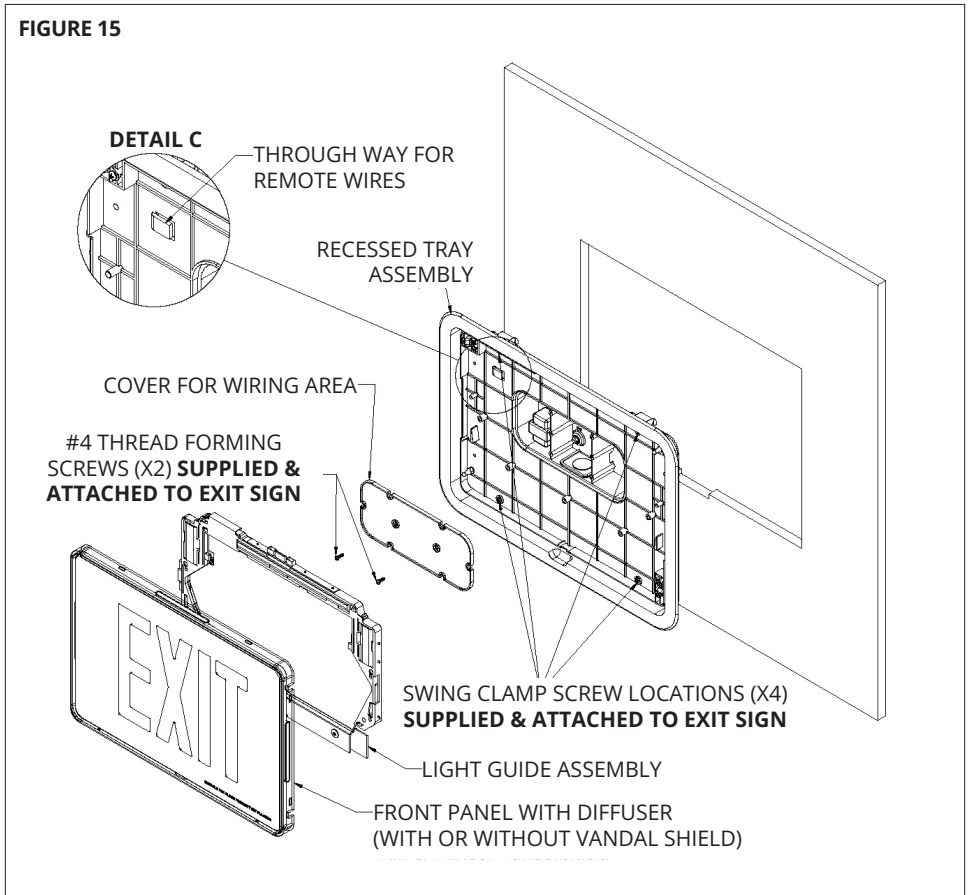


## SECTION 2.4: RECESSED WALL MOUNT INSTALLATION

CONTINUED

1. Insert the Recessing Tray assembly into the cut-out in the wall and secure with the Old Work Screws or through holes for support mounting .
2. Route the transformer wires through the side holes in the cover and secure the cover with the (2) #4 screws.
3. Light Guide assembly connection options
  - a. Connecting transformer leads, see Detail A in Section 2.1.
  - b. Remote wire connections see Figure 18 in Section 3.0.
3. Insert the Light Guide Assembly into the Recessing Tray and snap on the Front Panel.

FIGURE 15



## SECTION 3.0: MASTER-REMOTE SIGN CONFIGURATION

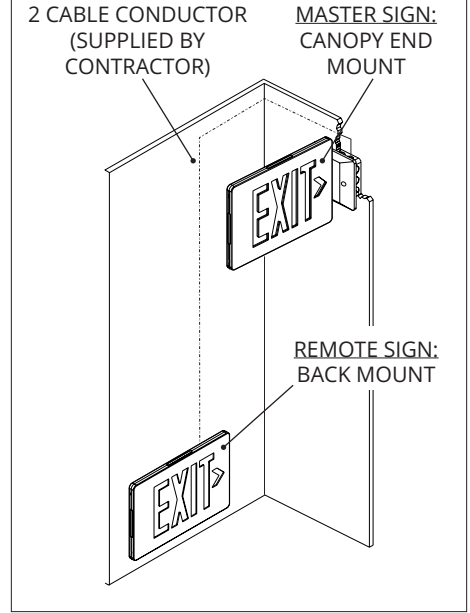
The Master - Remote product (TL2) is supplied with 2 signs. The master sign (Figure 13) is provided with a system battery, spider plate assembly (for power) and an option connector used to connect the two signs.

The remote sign (Figure 14) is assembled in the same manner as the master sign, without a spider plate assembly. An option connector is also installed in the remote sign for interconnection to the master sign.

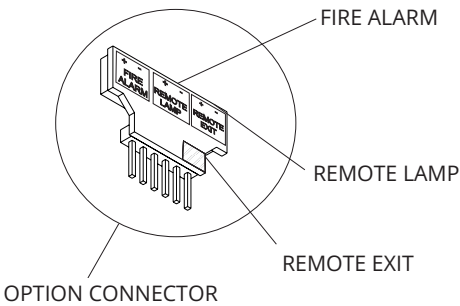
Interconnect the signs with a 2-conductor cable (20 AWG minimum, supplied by contractor), per the National Electric Code, observing correct polarity. The run should be a distance of 50 feet or less.

To install remote lamp (3.6V, 2W max - not shown), the option connector is installed similarly in the master sign as shown in Figure 13. Terminate remote lamp leads to the option connector in mating pins labeled "Remote Lamp". Remote Lamp max mounting height to be 11ft or the equivalent.

**FIGURE 16:** Remote Sign Example



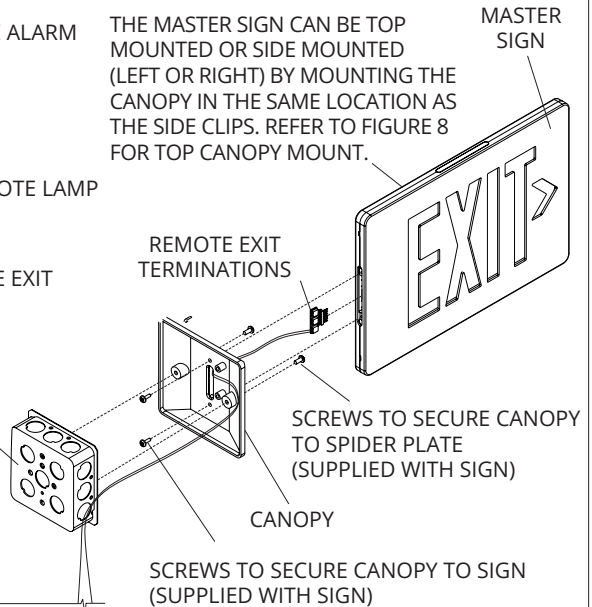
**FIGURE 17:** Master Sign Canopy End Mount (Option Connector)



THE MASTER SIGN CAN BE TOP MOUNTED OR SIDE MOUNTED (LEFT OR RIGHT) BY MOUNTING THE CANOPY IN THE SAME LOCATION AS THE SIDE CLIPS. REFER TO FIGURE 8 FOR TOP CANOPY MOUNT.

TRANSFORMER PLATE ASSEMBLY SECURED TO J-BOX. NOTE: WIRES FROM THE TRANSFORMER ARE NOT SHOWN FOR CLARITY. REFER TO FIGURE 9 FOR CONNECTING TRANSFORMER WIRE TO SIGN.

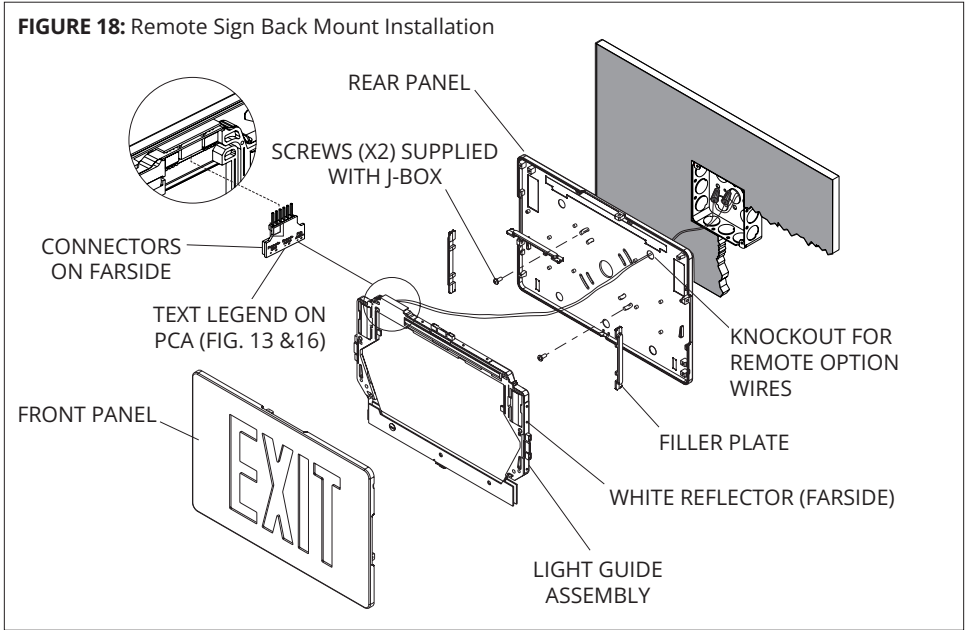
ROUTE REMOTE WIRES (SUPPLIED BY CONTRACTOR) BETWEEN CANOPY AND TRANSFORMER PLATE, OUTSIDE OF THE J-BOX.



## SECTION 3.0: MASTER-REMOTE SIGN CONFIGURATION

CONTINUED

Route remote wire (supplied by contractor), from master sign to remote sign via the knock out in the rear panel. The remote sign can be mounted to a junction box (as shown) or secured safely to the wall using anchors. The remote option printed circuit assembly should be installed into the sign as shown below. The text legend on the PCA should be visible when looking at the rear of the light guide assembly.



CONTINUE TO NEXT PAGE

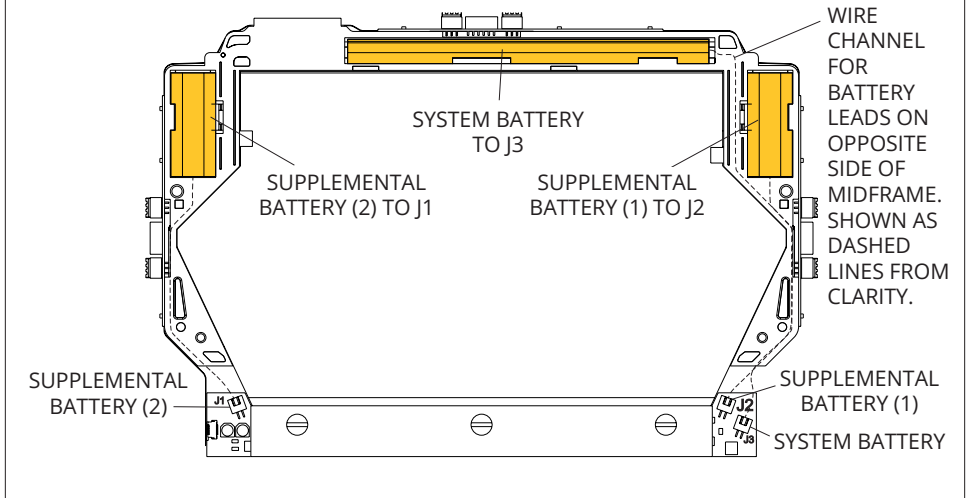
## SECTION 3.0: MASTER-REMOTE SIGN CONFIGURATION

CONTINUED

The System battery is supplied with the sign for emergency backup configurations. Supplemental batteries are provided with the sign when Remote Capacity/ Lamp is ordered.

**FIGURE 19:** System/Remote Lamp Battery Replacement

*NOTE: This product contains Ni-MH batteries. Used batteries may not be disposed of in the municipal solid waste stream. Ni-MH batteries must be recycled or disposed of properly. For information on local recycling drop-off points, phone toll free 1-800-BATTERY (1-800-228-8379).*



## SECTION 4.0: DIAGNOSTICS

For units with Self-Testing/ Self Diagnostics option, refer to the section on next page for operating instructions. Battery back-up units without Self-Testing/ Self Diagnostic option Include a battery diagnostics system which indicates, via flashing of the indicator light, that the battery needs replacement. If flashing occurs after a new installation, check that the battery plug is properly inserted into the circuit board connector (For reference, see Figure 15).

### SECTION 4.1: NON-SELF TESTING / DIAGNOSTICS MODELS

To test battery backup units, use test switch to simulate AC power outage. The indicator light will go out, and the sign will remain lit, indicating transfer to emergency mode. It will remain lit on battery power until switch is released. Release of switch will automatically restore AC/ Battery charge mode, with indicator light on. Testing for longer periods is best accomplished by turning off AC circuit power. Signs should be tested in accordance with National Electric Code and NFPA 101 Life Safety Code Requirements which specify monthly testing for 30 seconds and yearly testing for 90 minutes. Note that the batteries will take some time to reach full charge after a prolonged test, and that the unit cannot provide full duration operation should a real power outage occur before the batteries have had an opportunity to reach full charge. It is recommended that long duration tests be limited to once yearly, and be conducted when the area will be unoccupied afterwards.

## SECTION 4.2: SELF TESTING / DIAGNOSTICS MODELS

The unit meets the requirement of NFPA 101 for Periodic Testing of Emergency Lighting Equipment. It provides visual indication of unit malfunctions including: Battery Fault, Charger Fault, Transfer Fault, Lamp Fault.

STATUS DISPLAY	MEANING	ACTION
<b>Continuous Green</b>	Battery in Float / Trickle Charge	None
<b>Continuous Red</b>	Battery High Charging	Wait for Green Status
<b>Flashing Green</b>	In Test Mode	Wait for Test to Complete
<b>Alternate Red &amp; Green</b>	Insufficient Charge for User-Test	Wait for Full Charge
<b>Red Single Blink</b> (ON / Pause)	Transfer System Failure Battery	Factory Service
<b>Red Two Blinks</b> (ON / Pause)	Failure	Check Connections / Replace Battery
<b>Red Three Blinks</b> (ON / Pause)	Charger Failure	Factory Service
<b>Red Five Blinks</b> (ON / Pause)	Lamp Failure	Check Remote Connection / Factory Service

**SELF-TEST:** The unit will perform a self-test and diagnostic function at least once every 28 days. The self test will disable the charger and turn on the LEDs for 30 seconds to check the lamp load, battery and transfer function. The test will be performed only if the battery is fully charged. If not, the test will automatically reschedule. The charger function is monitored while AC is applied.

**USER-TEST:** A user-test may be performed at any time the status display is continuous green. On initial power-up, it could take up to 72 hours for the status display to reach continuous green. With a fully charged battery, pressing the test switch momentarily will initiate a 30 second test. Pressing the test switch continuously for 4 seconds and releasing it will initiate a 90 minute test.

Either Test can be canceled by pressing the test switch again for 1 second.

 **ATTENTION:** AFTER INSTALLATION IS COMPLETE, REAPPLY POWER AND NOTIFY THE AUTHORITY HAVING JURISDICTION.

CONTINUE TO NEXT PAGE

## SECTION 5.0: OPTIONS

### SECTION 5.1: FLASHER / FIRE ALARM

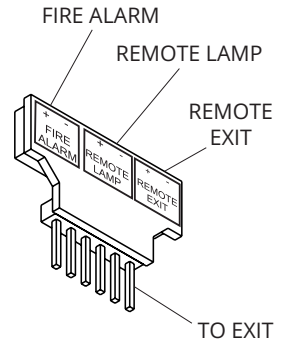
Battery Backup Emergency signs that are equipped with the FLASH in EMERGENCY MODE OPTION will automatically flash in the emergency mode but not flash on AC operation. AC Only exit signs that are equipped with the flash option will flash continuously while power is supplied.

AC Only and Battery Back up emergency signs that are equipped with the FIRE ALARM SIGNAL MODE FLASH option will automatically flash in both AC and emergency modes upon application of a fire alarm signal to the option connector (Figure 16). The fire alarm signal can be either AC or DC of either polarity, and range from 12 to 24 volts. The current draw from the fire alarm signal is less than 10 milliamps (mA).

Units that include one of the above options, are intended for installation in locations where such features are permitted by local codes.

Flasher Rate: 60 per minute | Duty Cycle: 25%

**FIGURE 20:**  
Option Connector



### SECTION 5.2: REMOTE EXIT & LAMP OPERATION

The self-diagnostic system “learns” the lamp and remote sign load when the unit reaches it’s first full charge. It is therefore necessary to have any remote lamp or sign already connected when first applying AC power. Subsequent self-tests and user-test will compare the actual lamp and sign load to the “learned” value.

If the remote lamp and sign load is changed once it has been “learned”, it is necessary to disconnect AC Power at the circuit breaker panel and unplug the internal battery (refer to Figure 15 for details). Once these are reconnected, the unit will “learn” the new lamp and sign load.

### SECTION 5.3: INFRA-RED TESTING

To activate TRANSMITTER, remove tab from back of device.

The USER-TEST can be performed up to 20 feet away using the optional “INFRA RED REMOTE TESTING TRANSMITTER”.

By aiming the TRANSMITTER (Figure 17) at the legend face, and pushing either the “30 SECOND” or “90 MINUTE” button for 1 second, the TRANSMITTER can initiate or cancel “30 SECOND” or “90 MINUTE” user tests.

**FIGURE 21:**  
Remote Transmitter



## SAVE THESE INSTRUCTIONS

31 Waterloo Ave • Berwyn, PA • 19312 U.S.A

Telephone: (610) 647-8200 • Email: support@isolite.com