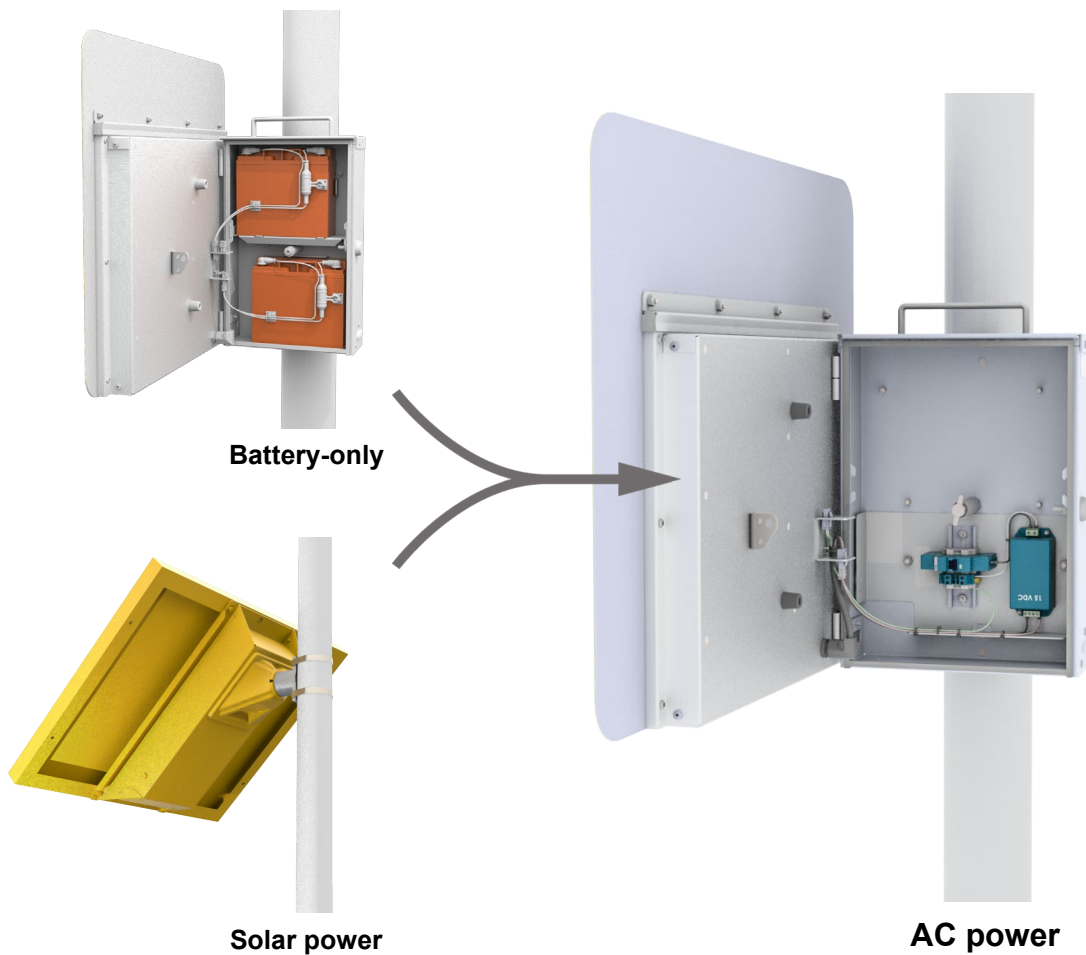


For battery and solar-powered SPEEDCHECK-12 systems



89807_RETROFIT-GUIDE_SPEEDCHECK-12-Battery-Solar-to-AC_RevA

Table of Contents

1.0 Warnings and Precautions	3
1.1 Warranty Disclaimer	3
1.2 Standards	3
1.3 Safety and Usage Precautions	3
2.0 Battery/Solar to AC Retrofit Kit	5
3.0 Tools and Materials Required	5
4.0 Installation	6
4.1 Removing Solar Components (if applicable)	6
4.2 Removing Battery Components	8
4.3 Conduit Routing (Existing Battery Systems Only)	9
4.4 Installing AC Backplane	10

1.0 Warnings and Precautions

The following symbols indicate important safety warnings and precautions throughout this guide:



WARNING indicates that serious bodily harm or death may result from failure to adhere to the precautions.



CAUTION indicates that damage to equipment may result if the instructions are not followed.



NOTE suggests optimal conditions and provides additional information.

1.1 Warranty Disclaimer

This guide will familiarize you with the features and installation of the Carmanah battery/solar to AC retrofit kit for the SPEEDCHECK-12 radar speed sign. Failure to comply with the use, storage, maintenance, installation or placement instructions detailed in this guide could void the warranty.

1.2 Standards

Perform all installation, wiring, grounding and maintenance in conformance with local building and electrical codes. Adherence to the National Electrical Code (NEC) is mandatory to comply with any certification markings. Non-adherence to code may void the warranty.

1.3 Safety and Usage Precautions



Use extreme caution when handling the batteries as they can generate hazardous short-circuit currents. Remove all jewelry (bracelets, metal-strap watches, etc.) before entering the cabinet.



Before lifting any heavy or bulky equipment, ensure the load is secured so moving parts do not shift, and that it can be lifted as far as needed without back strain or loss of grip. Installation may require more than one person.



Ensure the equipment is not powered during installation and wiring of the system.



Recheck all completed wiring for proper polarity prior to energizing the system.

NOTE

Changes or modifications to Carmanah equipment not expressly approved by Carmanah could void both the user's authority to operate the equipment and the warranty.

**WARNING**

Product can have sharp edges. Accidental movement of hinged components can cause injury.

This guide is specific to retrofitting the SPEEDCHECK-12 radar speed sign from battery/solar to AC power and is not a replacement for the complete SPEEDCHECK-12 product user manual.

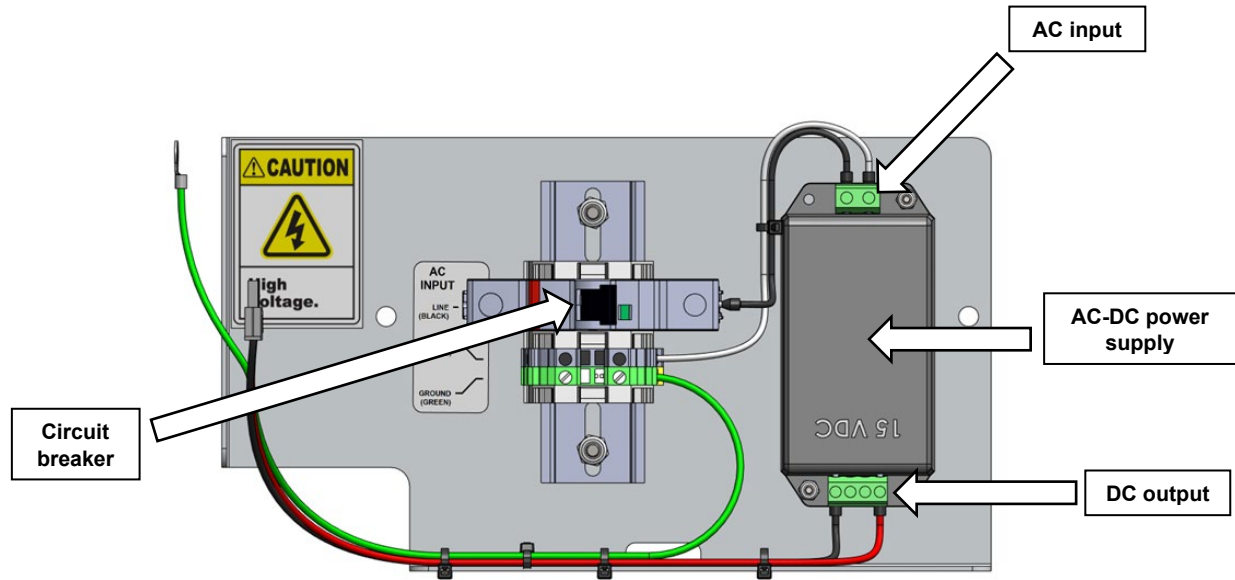
NOTE

Visit support.carmanah.com to download the complete product user manual.

2.0 Battery/Solar to AC Retrofit Kit

The SPEEDCHECK-12 battery/solar to AC retrofit kit includes:

1. AC kit, SPEEDCHECK-12 (1)
2. Nut, nyloc ¼"-20 (2)



3.0 Tools and Materials Required

The following tools and materials may be required to install the battery/solar to AC retrofit kit into your SPEEDCHECK-12 system:

1. Socket set
2. Drill with step bit
3. Deburring tool or similar
4. Electrical multimeter
5. Side cutters
6. Crescent wrench
7. Liquid tight conduit with conduit fitting
8. Multi-bit screwdriver

4.0 Installation

4.1 Removing Solar Components (if applicable)

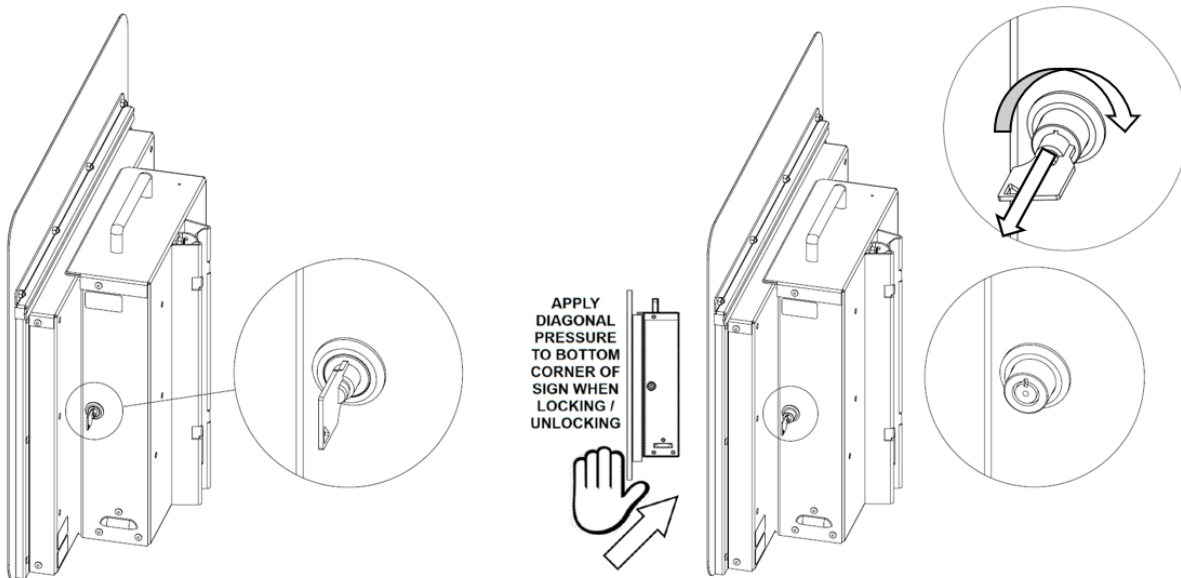


Battery removal should not be carried out in windy conditions. In all cases, the area at the base of the post must be roped off to prevent people from being injured or killed by falling batteries.

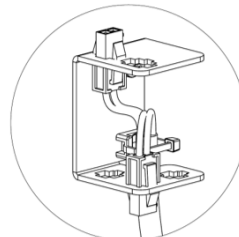
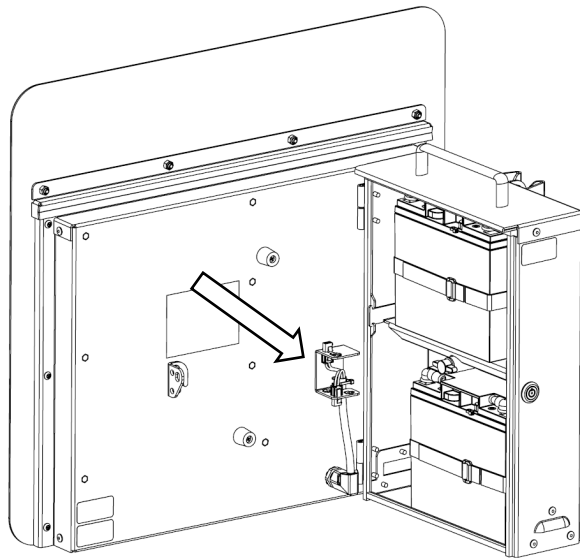
NOTE

The solar housing may contain additional batteries.

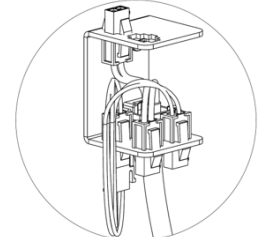
1. To open SPEEDCHECK-12, insert included key into lock and rotate clockwise.
2. Apply diagonal pressure to the bottom right corner of the sign face then PULL on the key.
3. Once unlocked, the key can be removed.



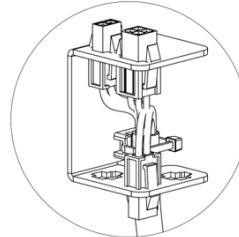
4. Swing the display enclosure away from the rear enclosure.
5. Open the battery fuse holder(s) to power down the sign. Remove all applicable battery, solar and StreetHub connectors (if present) from the display connector bracket. Leave any installed connectors retained in the connector bracket.



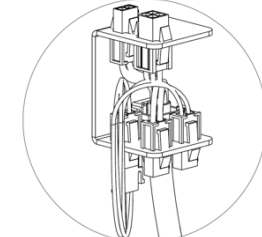
Battery Only



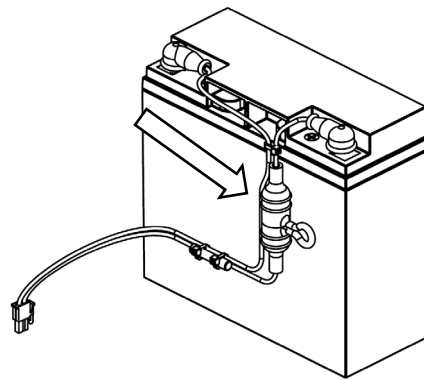
Solar Kit w/ Battery



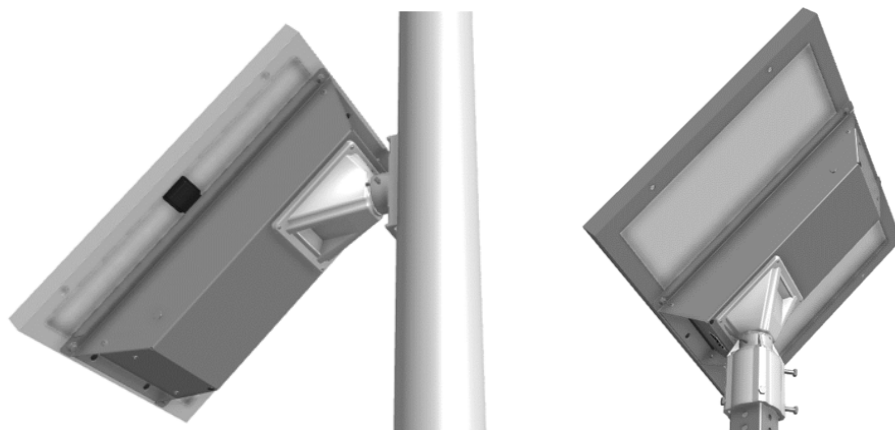
Battery Only w/ StreetHub



Solar Kit w/ Battery & StreetHub

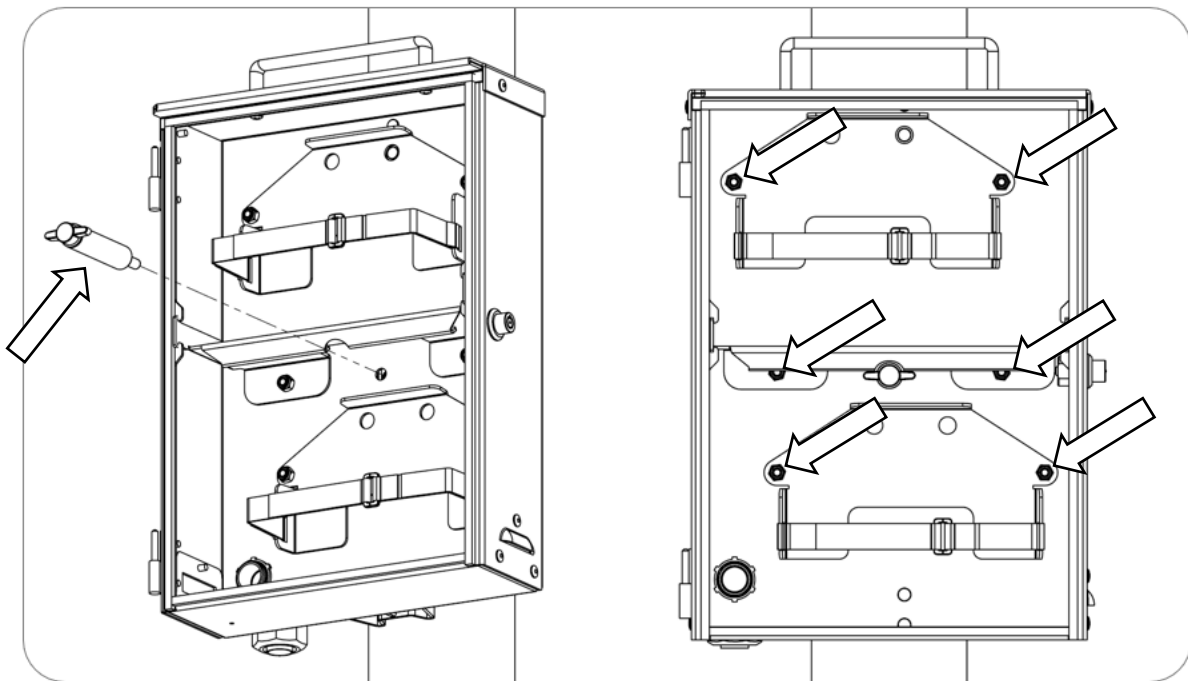


6. Remove solar panel assembly from pole. Remove the pole mount and take the entire assembly off together while pulling the solar harness from the radar speed sign.
 - a. The assembly includes solar panel, solar housing, wedge casting, pole mount and wiring.



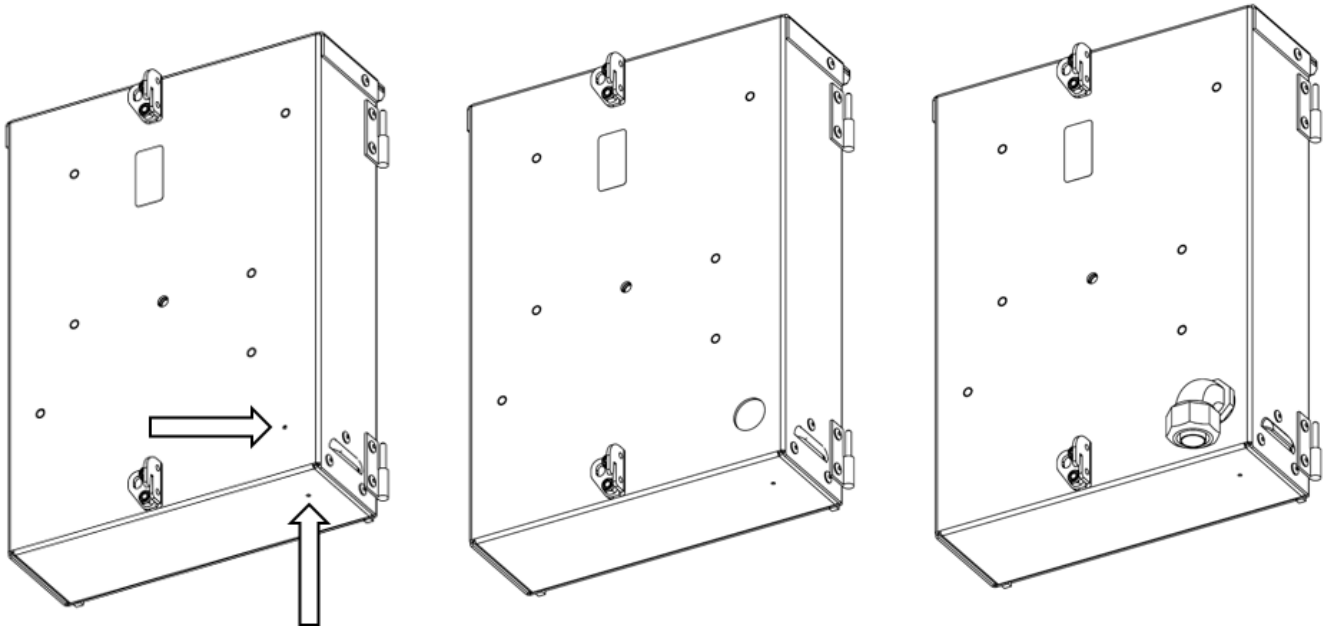
4.2 Removing Battery Components

1. Perform the actions in step 1-4 from [Section 4.1](#) if not already done.
2. Unstrap all batteries and remove from the system.
3. Remove all battery brackets and battery shelf if present.
 - a. Retaining bolt may need to be removed temporarily for easier access. Replace retaining bolt after removing brackets if removed.



4.3 Conduit Routing (Existing Battery Systems Only)

1. For existing battery-only powered systems, you will need to source and install an appropriate conduit fitting and liquid tight conduit. Below are two drilling locations on the rear enclosure which are marked as half shears.
2. Drill and deburr 1-1/8" hole in the back or bottom of the rear enclosure and install the conduit fitting.
3. Install and route the liquid tight conduit. Conduit may be run internal or external to the pole.



4.4 Installing AC Backplane

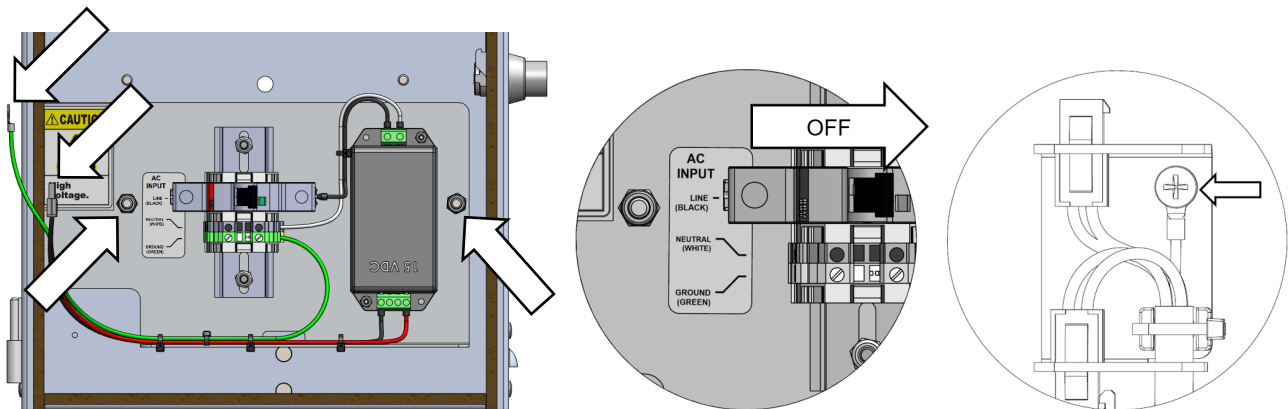


Live AC power will be present. Only qualified personnel should carry out the following retrofit.

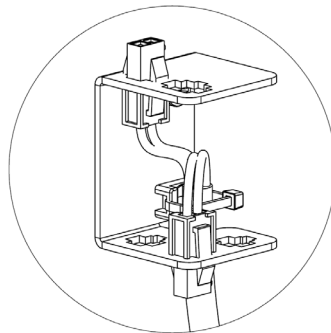


All 2-pin connectors are interchangeable for connecting 12 VDC power at the connector bracket. The only unique connector is four pin for StreetHub equipped systems and carries data only.

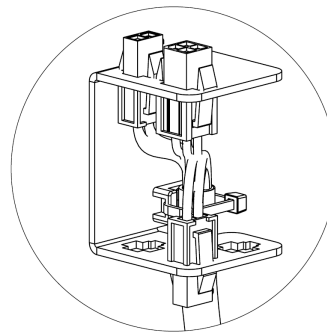
1. Mount the AC backplane to two threaded studs in the bottom of the rear enclosure and secure with the included nuts. Torque to 75 in-lbs.
2. Ensure the circuit breaker is switched off (pushed to the right).
3. Connect the green ground wire under the connector bracket mounting screw on the display assembly. Torque to 30 in-lbs.



4. Connect the wire harness from the power supply and any disconnected items from [Section 4.1](#) as per below. Additional configuration shown below. Power supply connector can mate with any open 2-pin connector.

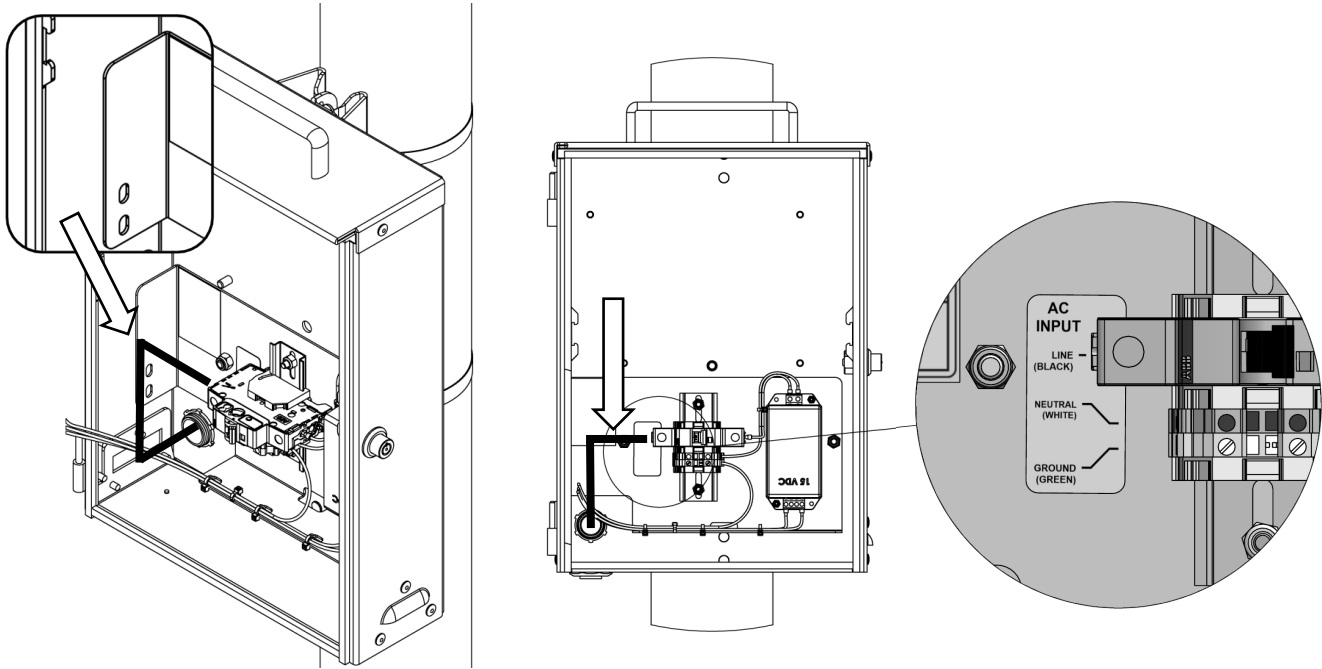


AC Only

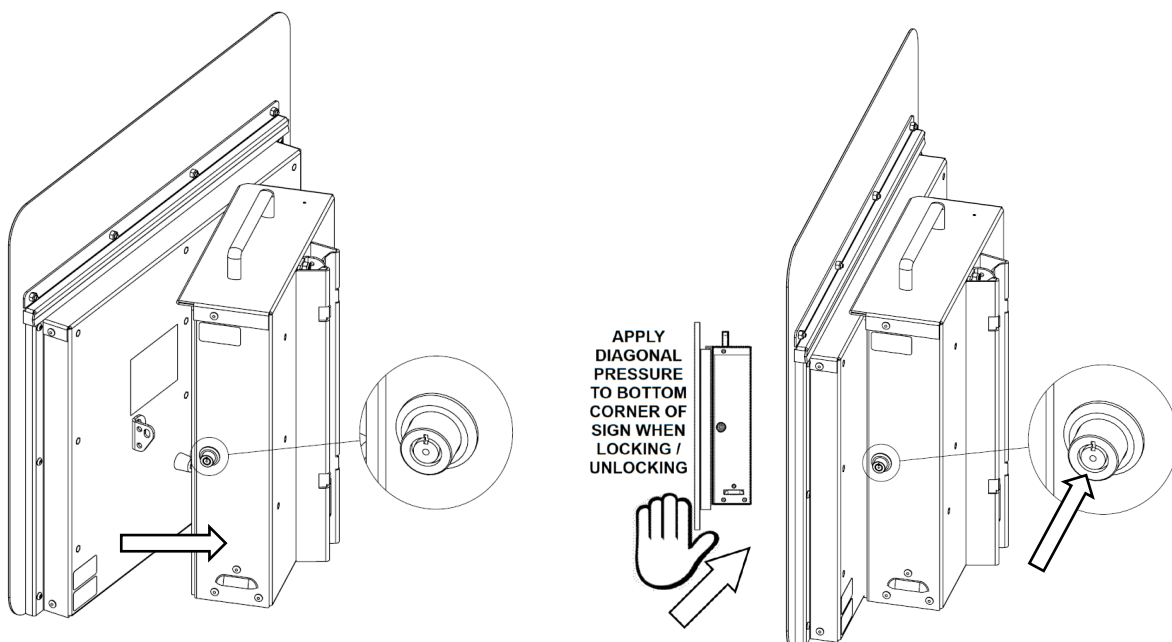


AC w/ StreetHub

5. Route the source AC power into the sign through the liquid tight conduit. Refer to the sticker next to the breaker for color coding and terminal locations. Strain relief AC wires using highlighted feature.
 - a. line = black, neutral = white, ground = green



6. Turn on the source AC power and then the switch the circuit breaker on (to the left).
7. To close, push the display enclosure against the rear enclosure and then apply diagonal pressure in the bottom right corner of the sign face. Once fully closed, PUSH the lock to secure in place.





© 2022 Carmanah Technologies Corporation

Technical Support:

Email: customersupport@carmanah.com

Toll Free: 1.877.722.8877 (US & Canada)

Worldwide: 1.250.380.0052

Fax: 1.250.380.0062

Web: carmanah.com