For all G Series systems
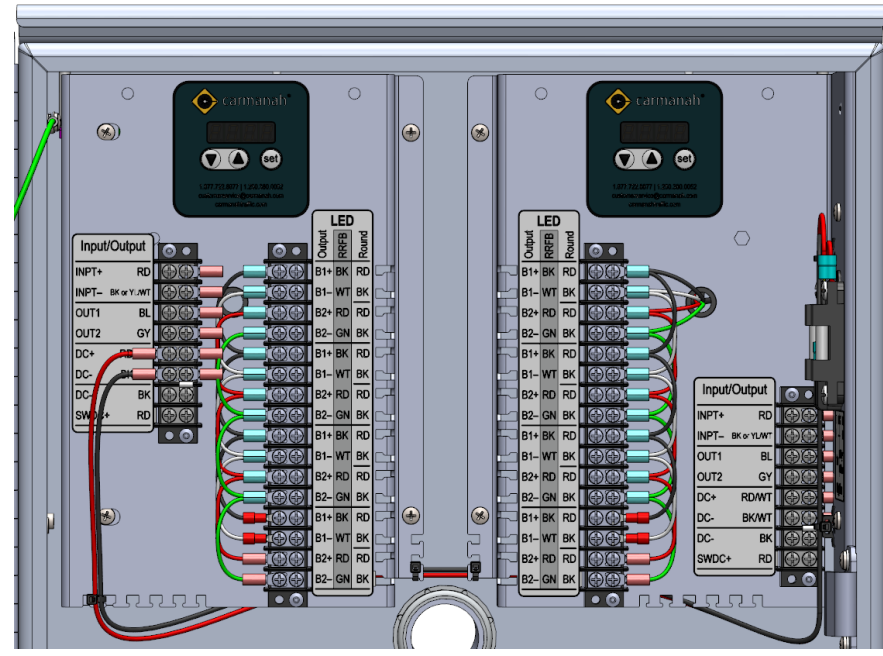

90068_RETROFIT-GUIDE_G-Series-Dual-EMS_RevC

Table of Contents

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 a second Energy Management System (EMS) as a retrofit into a G Series cabinet to form a dual EMS configuration. 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.

NOTE   All Carmanah traffic products use a constant-current LED output circuit. Not all traffic beacons are compatible with this output. Please contact Carmanah for additional information and guidance when adding or replacing beacons or other hardware.
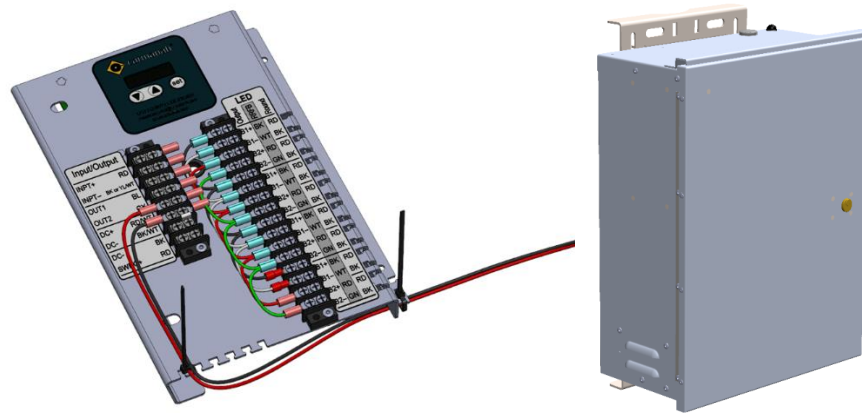
NOTE   <u>**This guide is specific to adding a second EMS into a G Series cabinet as a retrofit and is not a replacement for the complete G Series product user manual.**</u>

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

2.0 G Series Dual EMS Retrofit Kit

The following is the main component for the dual EMS retrofit kit and is fully prewired and configured by Carmanah. Additional components may be required based on your application (pushbutton, LED load, harnessing, etc). This kit is only support by the G Series cabinet.
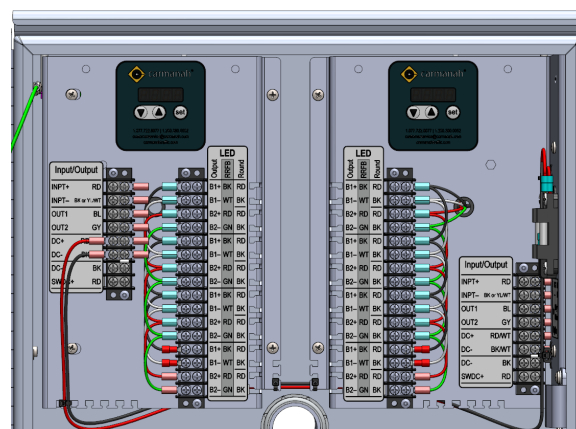

3.0 Installation Procedure

This guide is for installing a second Energy Management System (EMS) as a retrofit kit into one of the following compatible Carmanah systems:

- G Series – SC315-G, R820-G, R829-G, R247-G

Refer to the individual product user manual for more details at support.carmanah.com. This retrofit kit is not compatible with older SC315 (legacy) systems. This guide assumes you have received a Solar Power Report from Carmanah to verify your system will be sustainable by adding a second EMS. The second EMS is required when having two different LED loads (circular beacons, RRFBs, LED enhanced signs) powered by the same cabinet. Third party devices or any component(s) mounted in the left side of the cabinet, where the second EMS will be installed, are not compatible with this retrofit.
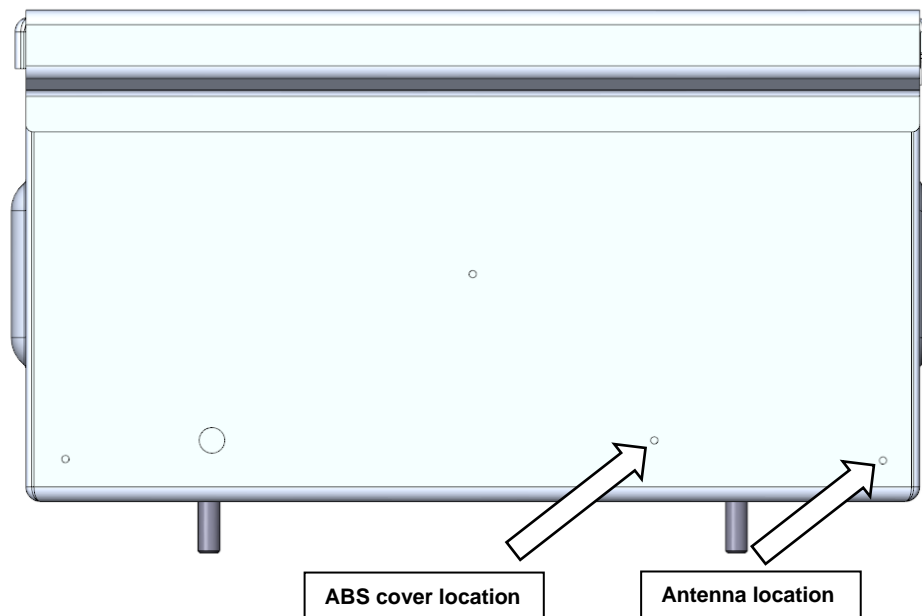
The images in this guide may differ from your G Series cabinet. They are for illustrative purposes only.
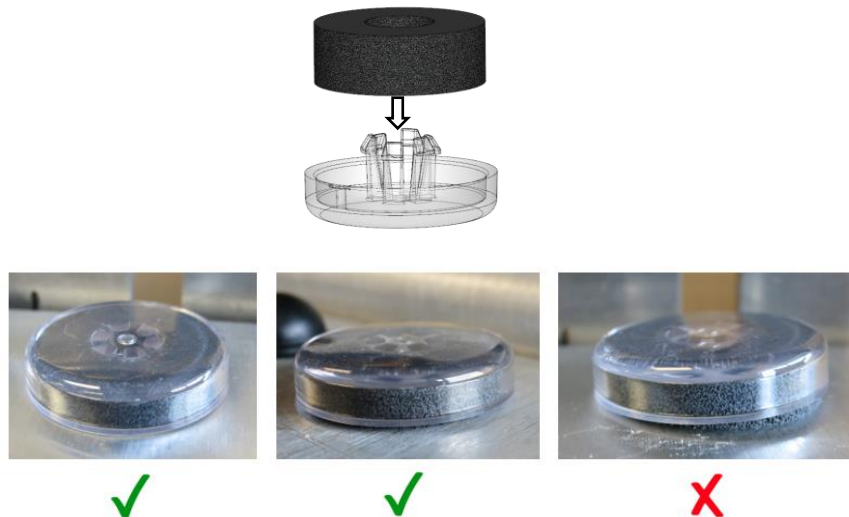

G Series Dual EMS Example

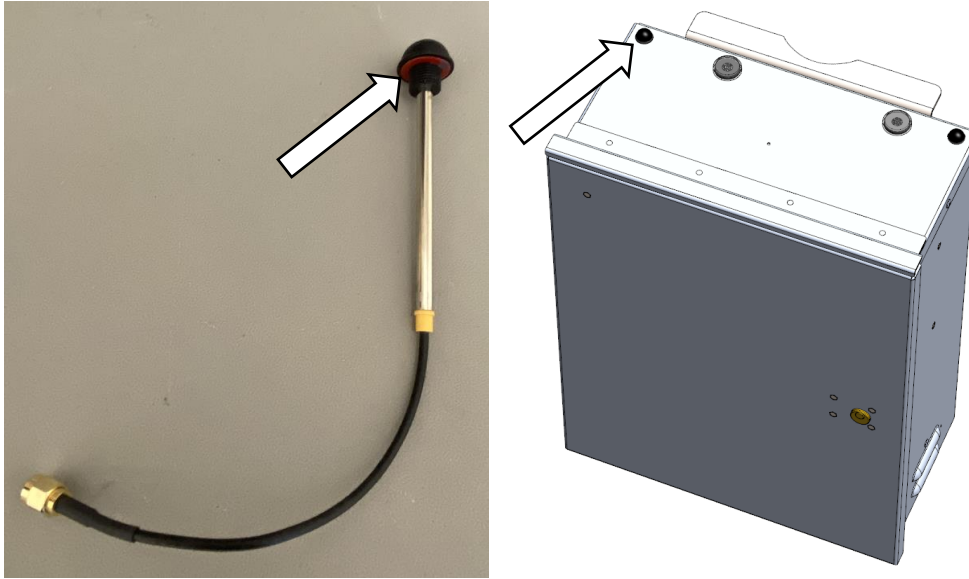## 3.1   G Series Cabinet – Antenna and Ambient Brightness Sensor Cover

1. Remove power to the system. For AC-powered systems, turn off the circuit breaker in the cabinet and for solar-powered systems remove the battery and solar fuses.

2. Locate the two half shears on the top left of the cabinet and drill the following holes:
    a. Antenna hole (outboard location) – 0.438" hole
    b. Ambient Brightness Sensor (ABS) cover hole (inboard location) – 0.438" hole

ABS cover location   **Antenna location**

3. Install the Ambient Brightness Sensor cover in the inboard hole location. Snap it in place and press down firmly. Ensure the cover is pushed down until the outer rim contacts the housing surface. Check that the cover is sitting parallel to the cabinet top surface after releasing it.
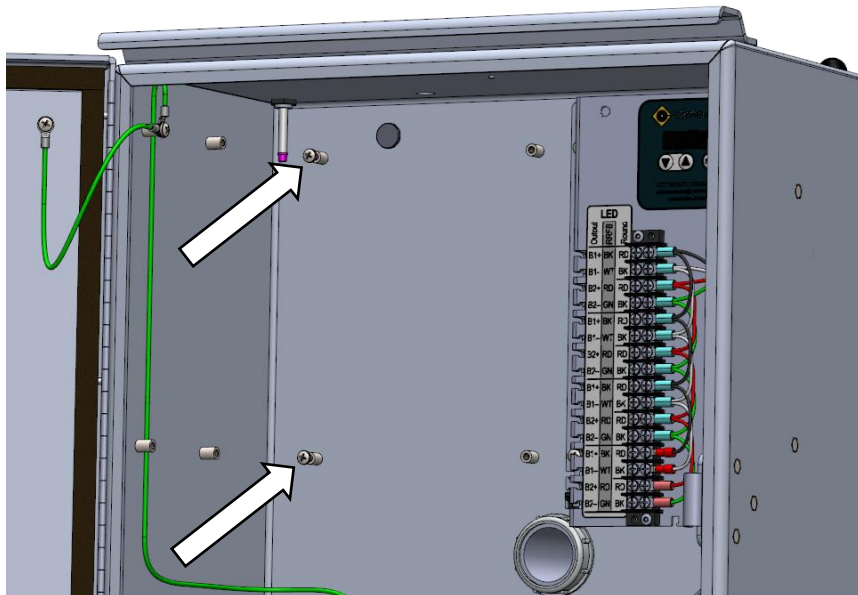

✔   ✔   ✗

4. Clean the cabinet surface with isopropyl alcohol for the antenna location. Remove and release the adhesive liner from the antenna. Feed the lead through the hole and press into place. Tighten plastic lock nut from within the cabinet to snug. Do not over-tighten.
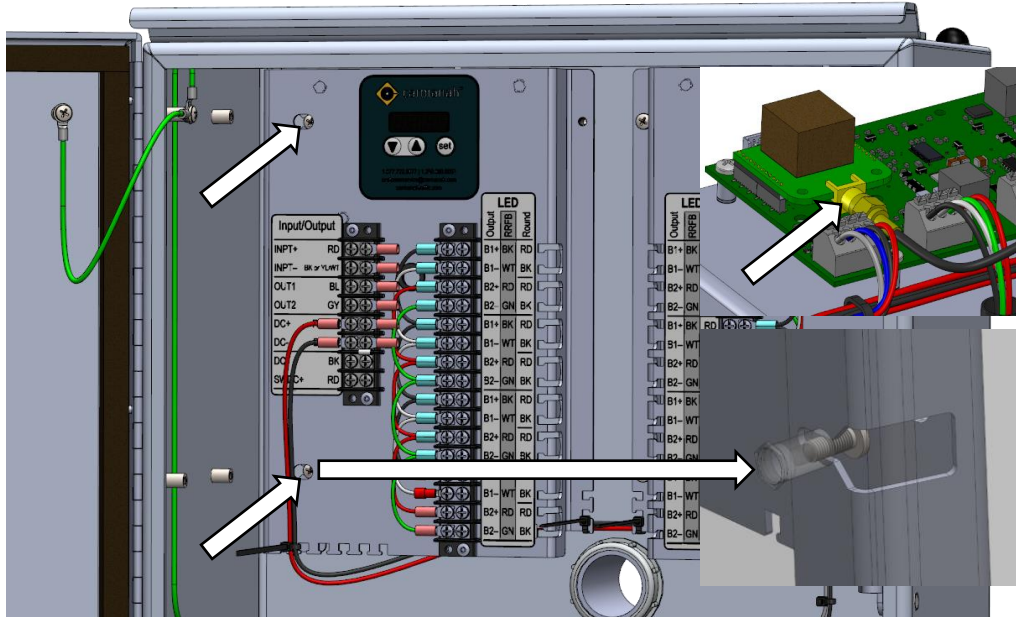

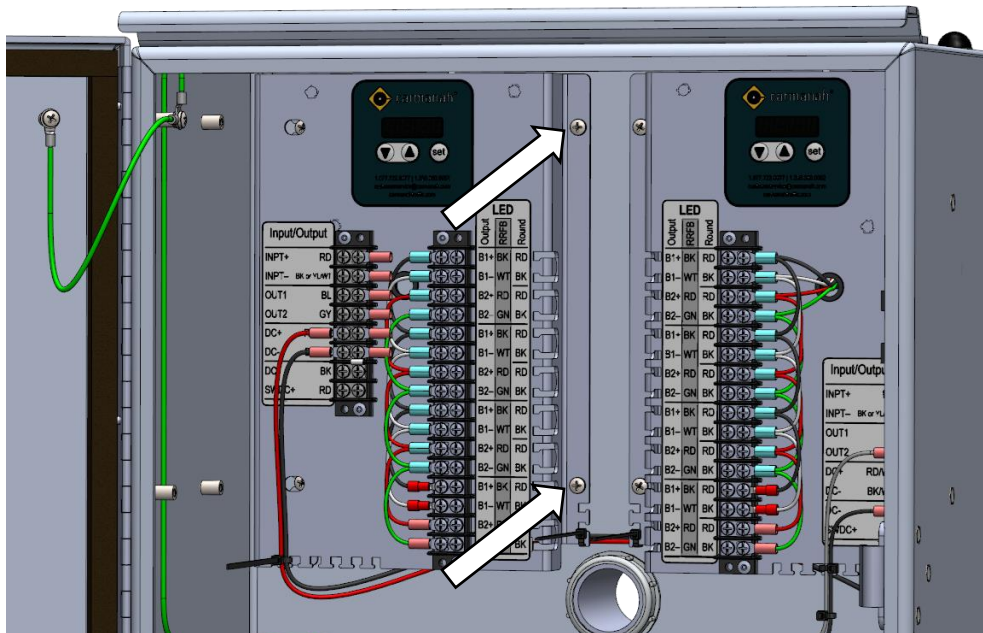## 3.2   G Series Cabinet – Second EMS Installation

1. Install two #8-32 screws in the locations below. Only thread them in 2 – 3 turns.

2. Ensure the radio module is installed and torqued onto the coax extension cable. Install the second EMS assembly plate onto the two screws installed from step 1.
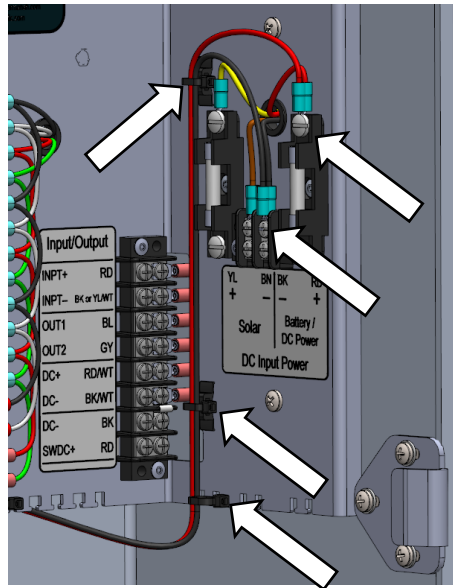

3. Install two #8-32 screws as shown below and tighten down snug. Tighten the other two screws from step 1 to snug as well.
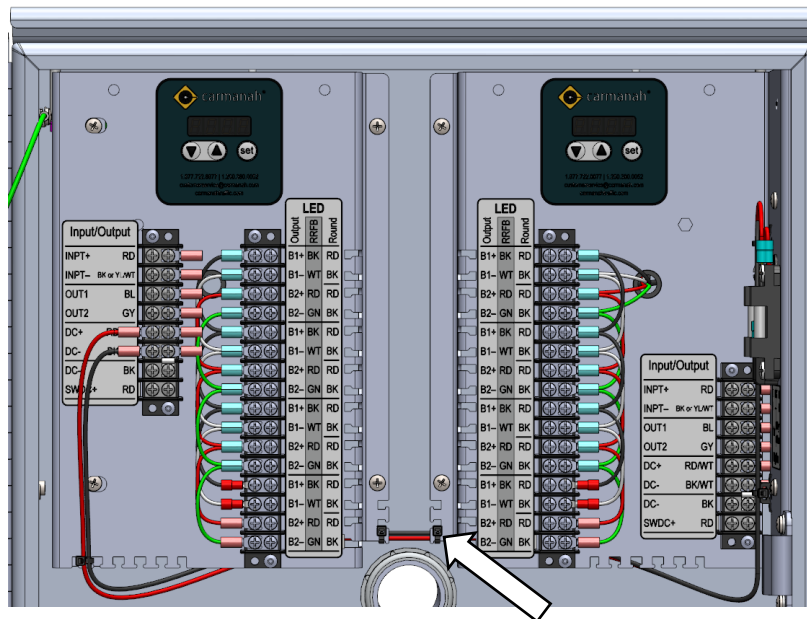
3.3   G Series – Second EMS Wiring

1. Route the red and black DC power wires from the second EMS to the terminals shown below.
   a. Black wire to Battery/DC Power – terminal
   b. Red wire to Battery/DC Power + terminal
2. Install two cable tie mounts in the locations below. Press into ¼" holes.
3. Secure wires to cable tie mounts using three cable ties as shown below. Leave cable ties loose for now.
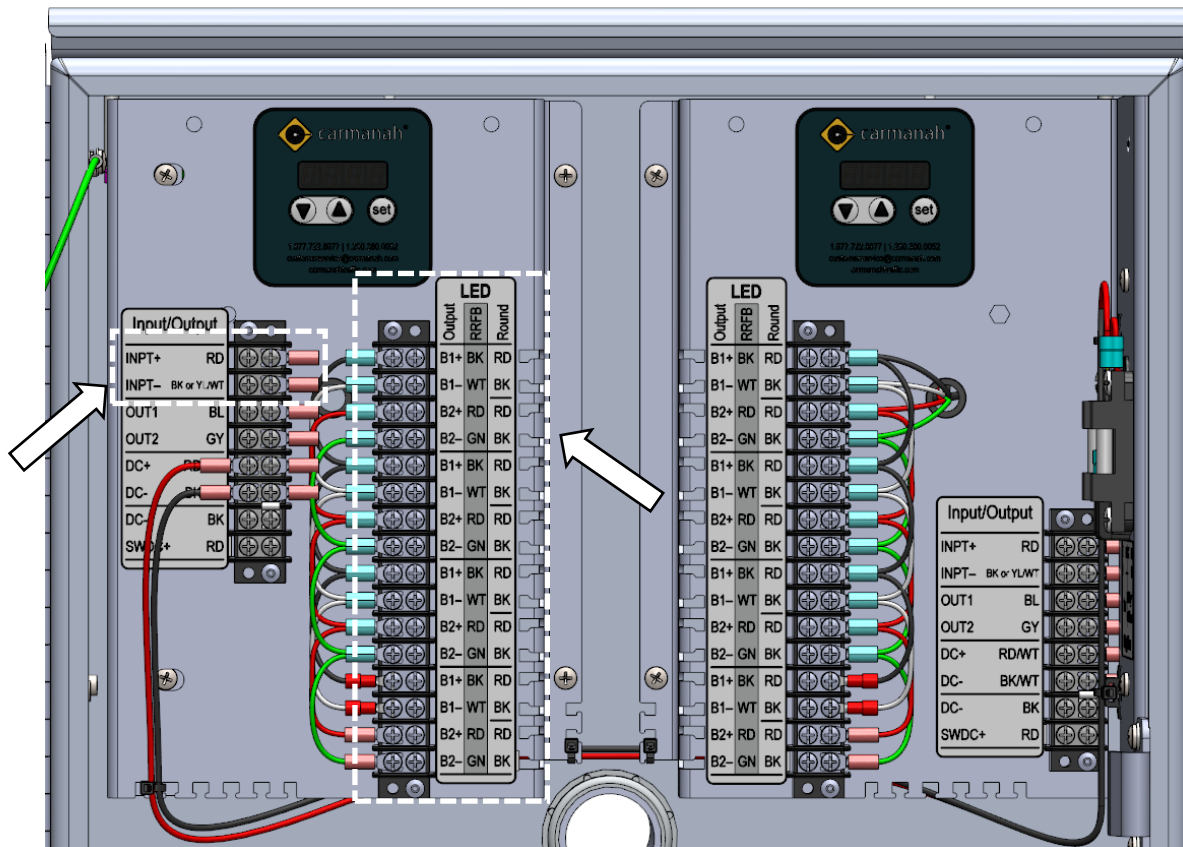

4. Install a cable tie in the location below. Adjust harness slack throughout harness and tighten/trim this and previously installed cable ties from step 3.

3.4 Additional Components and Configuration

1. Install additional items required for your installation setup to the second EMS plate, such as pushbutton(s) and LED load(s).

2. Reapply power to the cabinet and test the system.

   a. The second EMS is normally preconfigured for your application.

   b. The main configuration items are as follows:

      i. Input method (INPT)

      ii. Flash pattern (FLAS)

      iii. Duration (DURA)

      iv. Intensity (INTY)

      v. Night dimming (NITE)

      vi. Radio channel (CHAN)

      vii. Calendar (CAL)

   c. Depending on your application you may or may not want each EMS independently activated. Contact Carmanah for assistance in commissioning your retrofit or visit support.carmanah.com and reference the full user manual.

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