



carmanah®

F / G Series OVERHEAD LIGHTING QUICK START GUIDE

For overhead lighting powered by the F and G Series systems



89251_QSG_TRA_Overhead-Lighting-F-G-Series_RevC

1.1 Safety Precautions



ELECTRICAL SHOCK HAZARD. DO NOT LET THE BATTERY TERMINALS COME INTO CONTACT WITH ANY EXPOSED METAL.

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

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

Solar panels produce DC electricity when exposed to light and can therefore produce an electrical shock or burn. To render solar panels inoperative, remove them from sunlight or fully cover their front surface with an opaque material.

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.

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.

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.

Make sure the installation location has an unobstructed view of the sun's path. Obstructions such as trees or buildings could significantly reduce the amount of sunlight on the solar panel. Shade analysis is highly recommended to understand how shadows will change according to the time of year. Contact Carmanah for a detailed examination and solar simulations for your site.

This quick start guide is not a replacement for the complete F / G Series product user manuals.

NOTE

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

2.1 Tools and Materials Required

The following tools and materials may be required to mount and install the overhead lighting (OHL) fixture depending on your F / G Series model and configuration:

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Imperial socket set 2. Crescent wrench 3. Tap set 4. Imperial Allen-Wrench set 5. Fish tape 6. Fine-tip felt marker | <ol style="list-style-type: none"> 7. Drill and drill bits 8. Multi-bit screwdriver 9. Ladder or lift device 10. Lithium grease 11. Electrical Multi-meter (Optional) |
|---|--|

3.1 Installation Considerations

Overhead lighting fixtures

- Carmanah provides AC or DC fixture options. The wiring for these two fixtures is outlined in this guide. The fixture type can be verified by the box label (UL = AC fixture, SL = DC fixture). See [Section 5.1](#) for system compatibility. Only fixtures provided by Carmanah are supported.
- A maximum of one LED fixture is recommended per system. Contact Carmanah if you wish to install multiple fixtures as this will affect configuration and sustainability.

Mounting

- Various mounting options are available such as 9" direct mount or 4', 6', 8' and 10' arms. Consult the manufacturer's installation instructions included with those mounting options when installing the fixture.
- Consult with a lighting designer for detailed recommendations and simulation for project-based roadway lighting layouts which may affect LED mounting height and overall pole size and height.

Wiring

- Review the F or G Series product manuals for additional AC/DC relay wiring connection details. Visit support.carmanah.com to download the most recent product manuals.
- Wiring from the cabinet or solar engine to the LED fixture is **not included**. Use 10 – 16 AWG stranded or solid wire as appropriate.

Photocells and shorting caps

- The LED fixtures have photocell sockets that require a photocell or shorting cap to be installed. See [Section 5.1](#) for compatibility details.
 - Shorting cap – Carmanah Energy Management System (EMS) determines day/night transition
 - Photocell – photocell determines day/night transition
- Photocells or shorting caps are not packaged inside the lighting fixture boxes and are packaged separately.
- Photocells should be used for Accessible Pedestrian Signal (APS) button compatibility. See [Section 5.1](#) for more information. Only instant on/off photocells provided by Carmanah are supported.

F Series specific

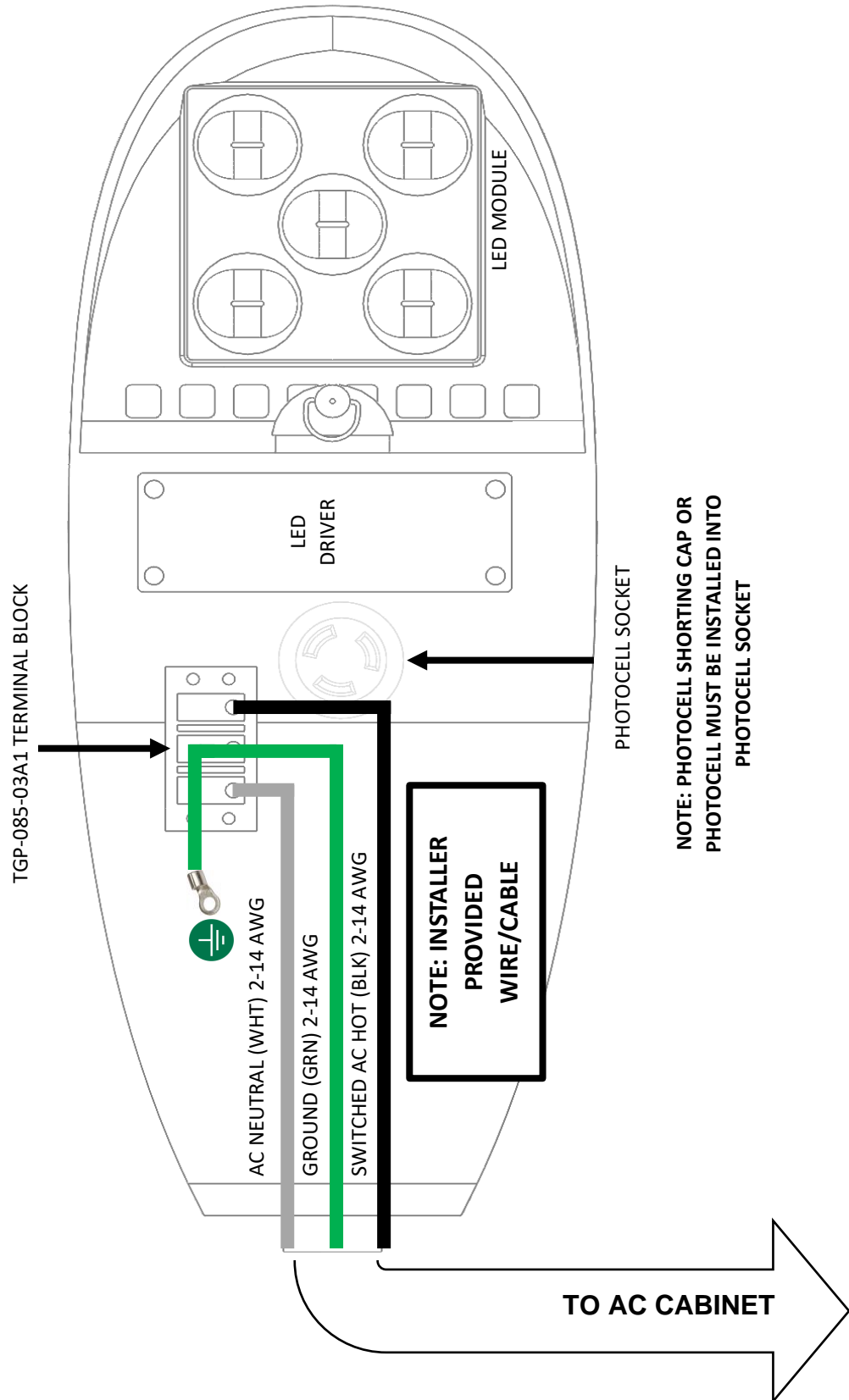
- Third party devices such as the Polara XAV pushbutton, RTC AP22 time switch, or Applied Information Field Control Unit (FCU) are not supported with the overhead lighting option.

Energy Management System (EMS) settings

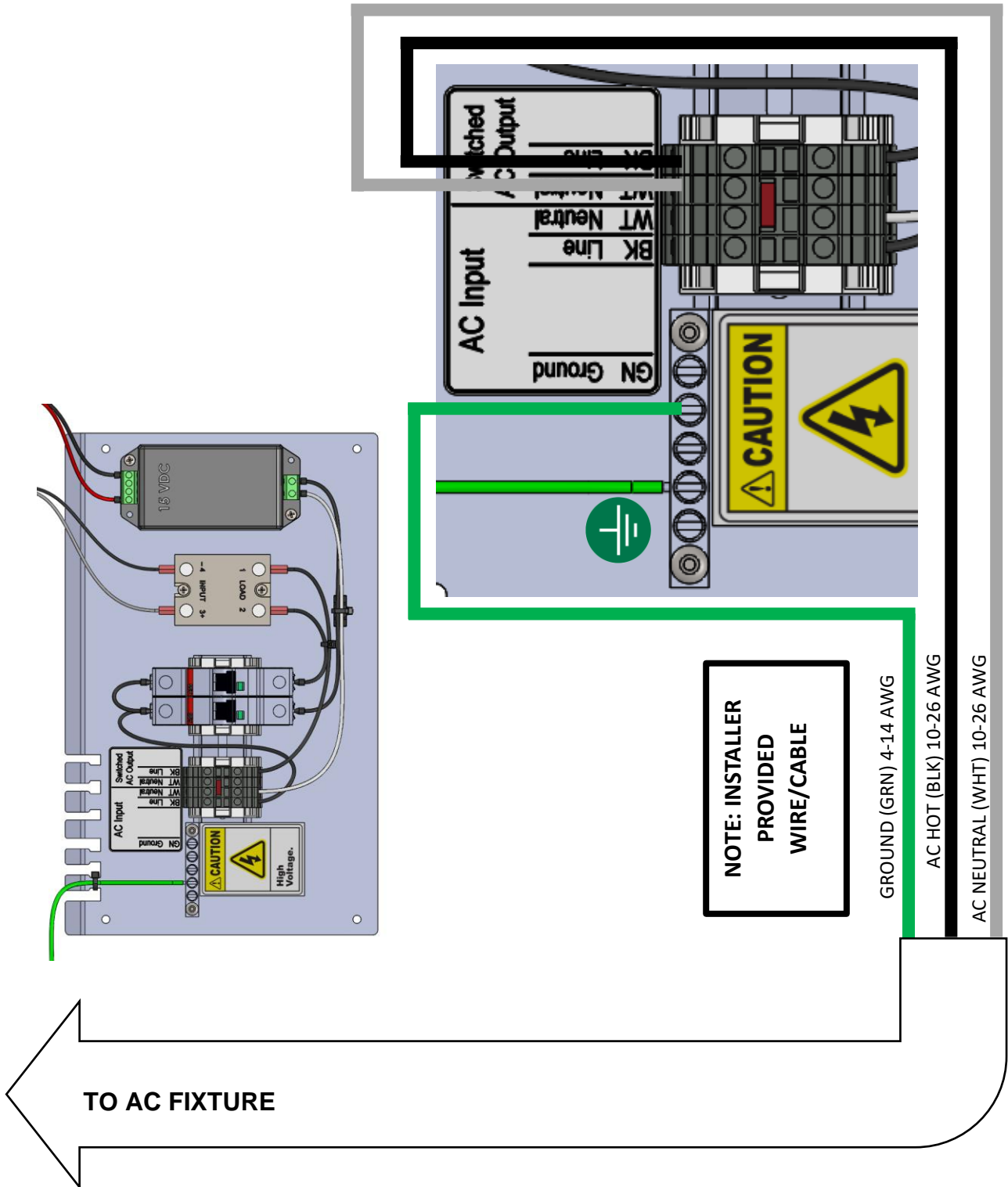
- In order to conserve power for solar applications, it is strongly recommended that the Digital Output setting to turn on the LED fixture is only set to the "**nite**" setting. See the full product user manuals for more information on system settings.

4.1 G Series AC Fixture Wiring Diagram

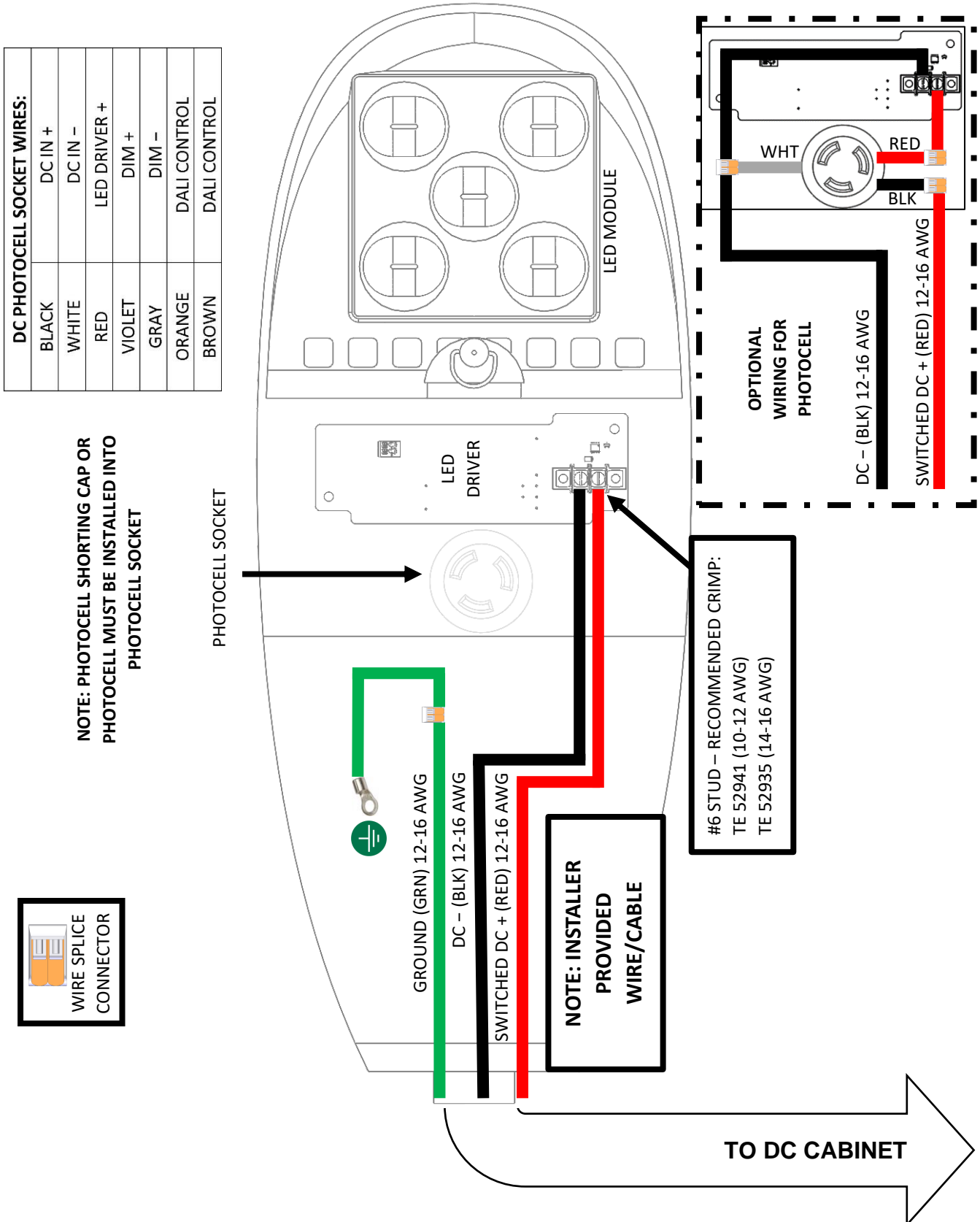
| AC PHOTOCELL SOCKET WIRES: | |
|----------------------------|--------------|
| BLACK | AC HOT |
| WHITE | NEUTRAL IN |
| RED | LED DRIVER + |
| VIOLET | DIM + |
| GRAY | DIM - |
| ORANGE | DALI CONTROL |
| BROWN | DALI CONTROL |



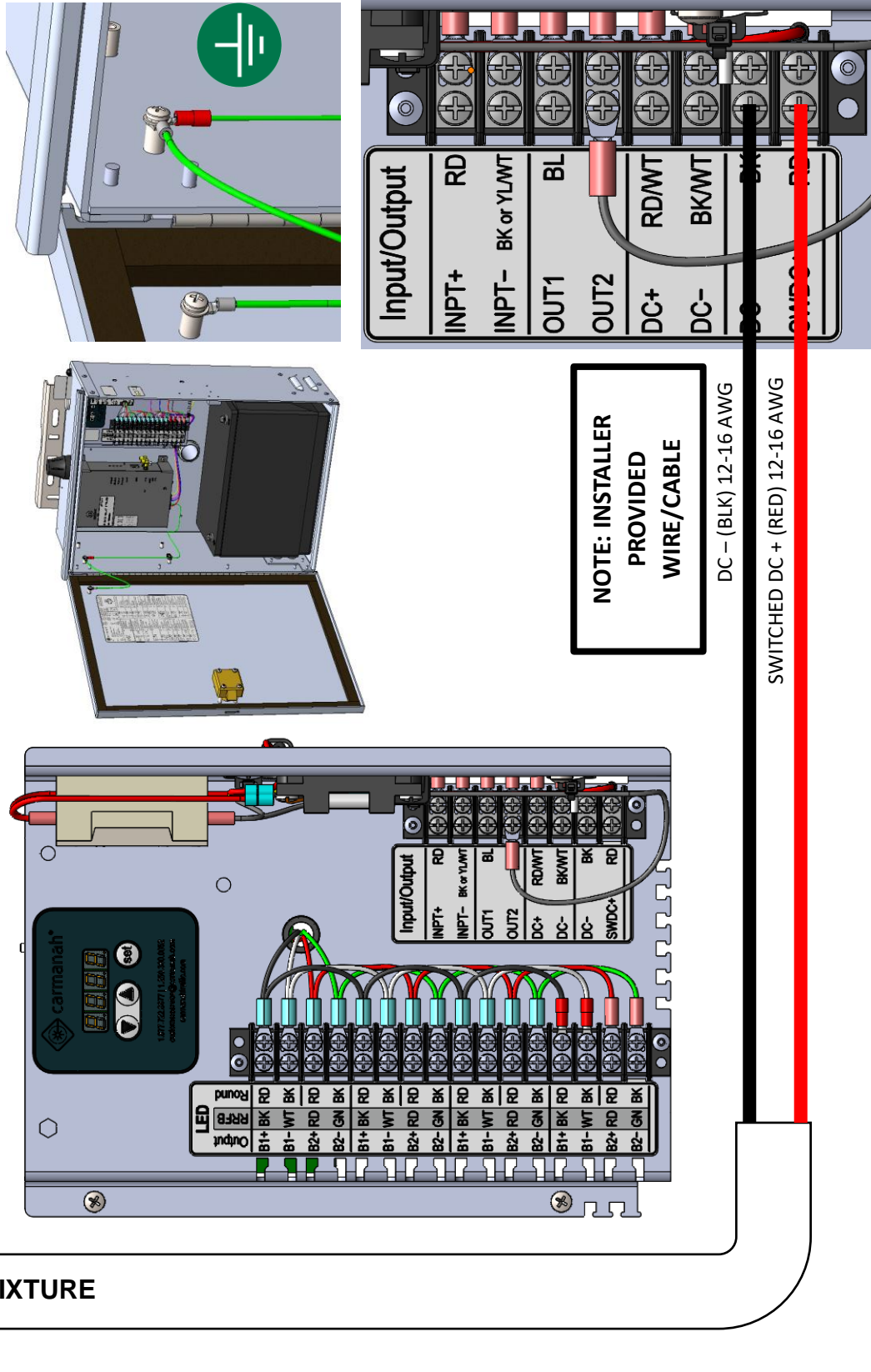
4.2 G Series Cabinet AC Fixture Wiring Diagram



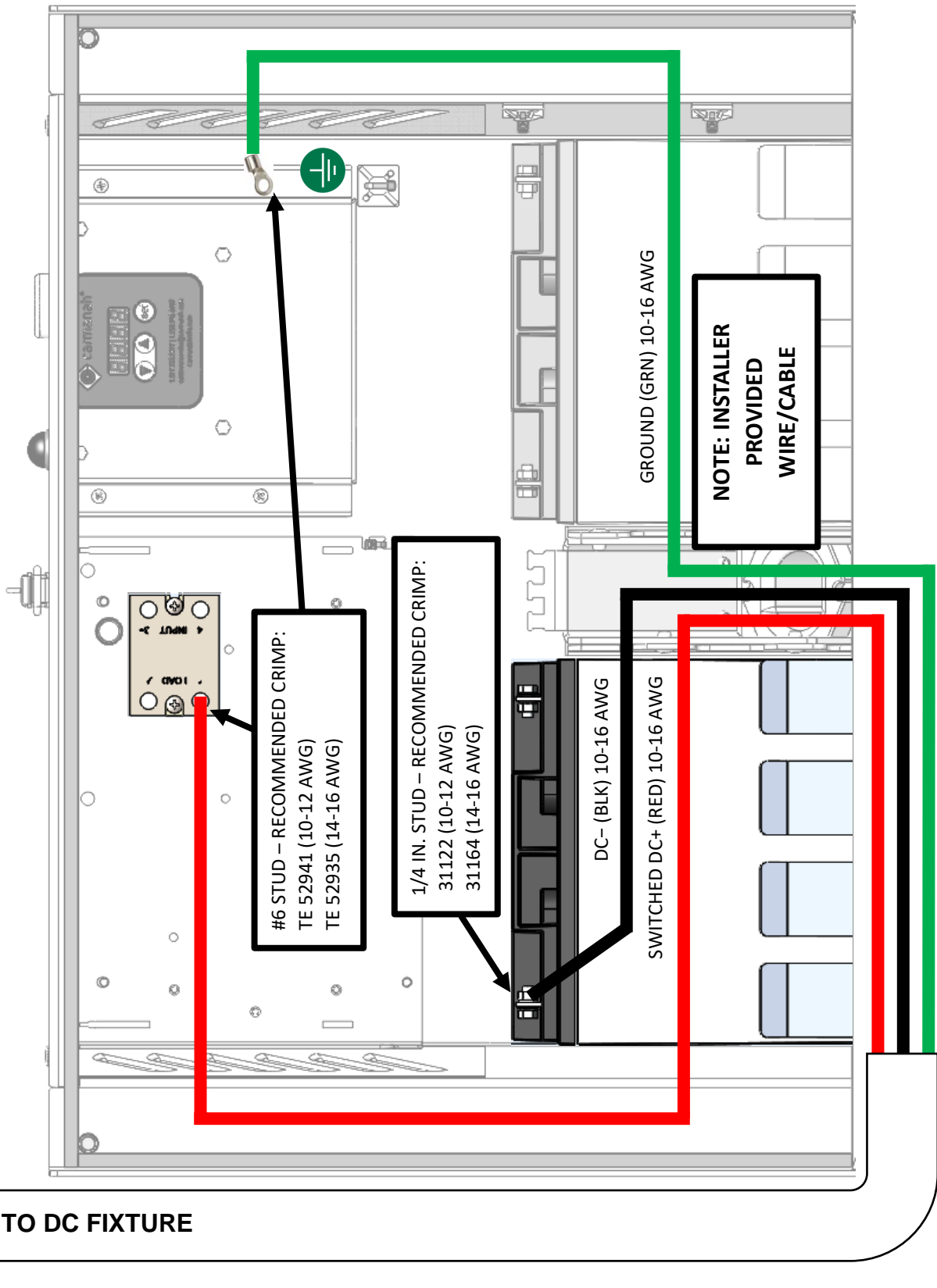
4.3 G Series Cabinet DC Fixture Wiring Diagram



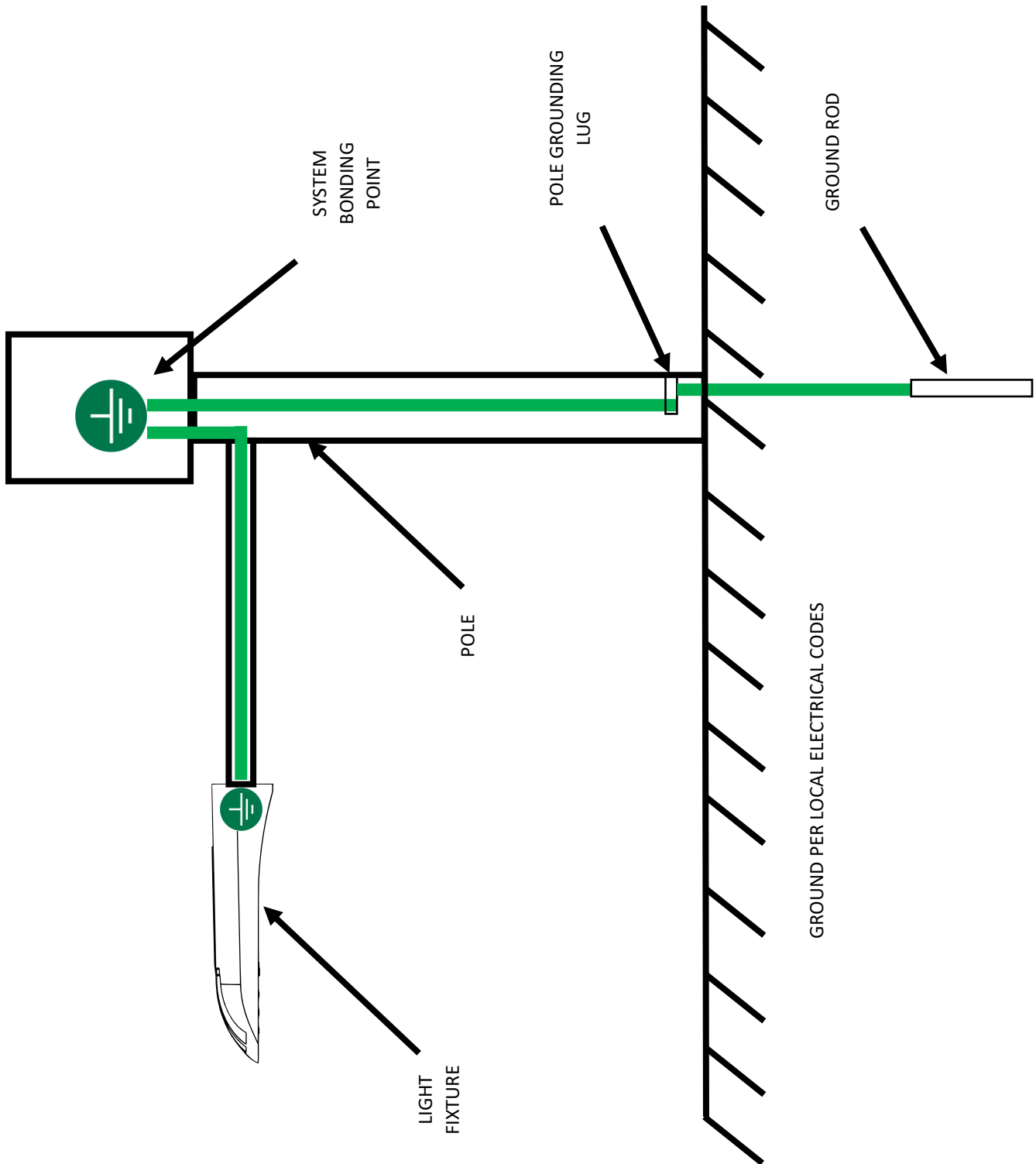
4.4 G Series Cabinet DC Fixture Wiring Diagram



4.6 F Series Engine DC Fixture Wiring Diagram



4.7 Grounding Detail

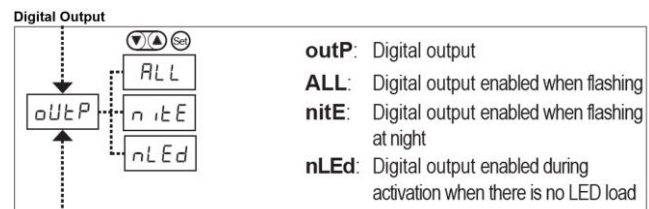
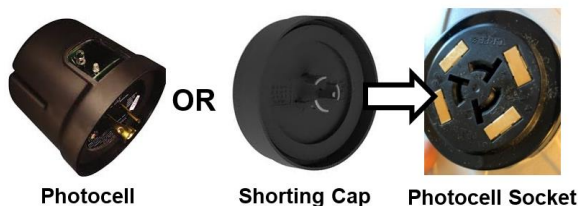


5.1 Troubleshooting

| | |
|--|---|
| The light fixture isn't turning on. | <ul style="list-style-type: none"> • Check all fuses and confirm the Energy Management System (EMS) user interface display lights up. • Check that the battery (if present) is adequately charged. • Check the electrical connections to the light fixture. • Check that the photocell socket (if used) is conducting energy through the photocell or shorting cap. • Ensure solar panel (if present) is clean, clear of debris, and not shaded by buildings or vegetation to allow proper battery charging. |
| My solar power system is being depleted of energy. | <ul style="list-style-type: none"> • Check that the EMS user interface Digital Output “outP” setting is set to night mode “nitE”. This allows the system to conserve power during the day and only use battery power at night. • Contact Carmanah to confirm system configuration is sustainable for your location. |

Compatibility and Settings

| System Type | Fixture Type | Carmanah Relay Kit | Shorting Cap or Photocell | Night Transition Detection | EMS Digital Output (outP) Setting |
|------------------|--------------|--------------------|---------------------------|----------------------------|--|
| F Series (Solar) | DC | DC | Shorting Cap | Carmanah EMS | Night only (nitE), conserves battery power |
| | | | Photocell | Photocell | All |
| G Series (solar) | DC | DC | Shorting Cap | Carmanah EMS | Night only (nitE), conserves battery power |
| | | | Photocell | Photocell | All |
| G Series (AC) | AC | AC | Shorting Cap | Carmanah EMS | Night (nitE), or All |
| | | | Photocell | Photocell | All |



For systems using Polara iNX/iDX or Campbell Guardian APS pushbuttons, the EMS Digital Output setting (outP) **must be** set to “All” for the voice message to be activated during both daytime and nighttime hours.

NOTE

Additionally, to prevent OHL fixtures from being illuminated during the day, each OHL fixture must be fitted with a Carmanah-supplied photocell. These photocells have instant on/off capabilities.

NOTE

For system sizing Carmanah assumes nighttime operation only for the LED fixture. Solar systems which have the LED fixture turning on during the day may not be sustainable.



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