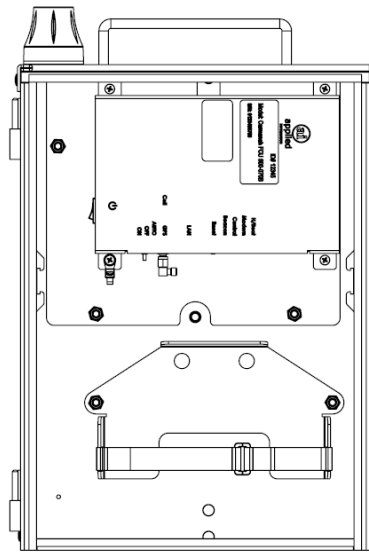
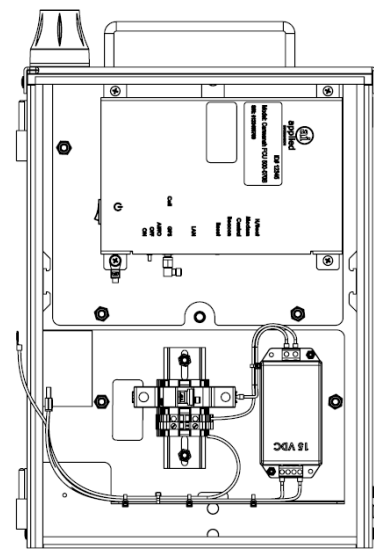


For the SPEEDCHECK-12



SPEEDCHECK-12
(Battery/Solar)



SPEEDCHECK-12
(AC)

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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 manual will familiarize you with the features, operation standards and installation of Carmanah's SPEEDCHECK-12 Applied Information (AI) Integration Kit. Failure to comply with the use, storage, maintenance, installation or placement instructions detailed in this manual 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



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.



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.



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



This guide is specific to the SPEEDCHECK-12 AI Integration Kit installation and is not a replacement for the complete SPEEDCHECK-12 product user manual.

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

1.4 Applications

For Carmanah SPEEDCHECK-12 radar speed signs, the AI Integration Kit allows for remote system monitoring, scheduling and control.

The SPEEDCHECK-12 AI Integration Kit is available in two different states of assembly described below:

- **If ordered with a SPEEDCHECK-12 system:** the display enclosure harnessing is assembled in the factory, creating an “AI-ready” SPEEDCHECK-12 system. The AI Integration Kit comes as parts to be installed by the user following all installation steps provided.
- **If ordered separately:** the SPEEDCHECK-12 display enclosure must be replaced prior to following these installation steps. See the note below.



If installing into an existing system that was not ordered with the AI Integration Kit, you will require a new display enclosure. Contact Carmanah for more information.



For systems that have the optional large external SpeedCheck cabinet the door switch sensor is not compatible with SPEEDCHECK-12.

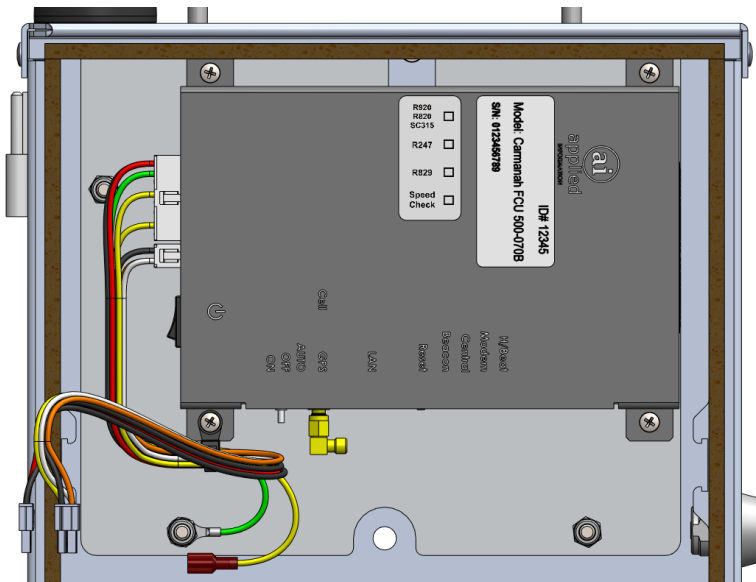
2.0 System Components

The SPEEDCHECK-12 Applied Information (AI) Integration Kit consists of the following items:

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Mount plate, AI FCU (1) 2. Harness, AI FCU to bulkhead (1) 3. Harness, solar monitoring, 8' (1) 4. Nut, nyloc, 1/4"-20 (4) 5. Cable tie, 4-way, mounting base (2) | <ol style="list-style-type: none"> 6. Cable tie, 4" (4) 7. Cable tie, 7", #8 screw mount (1) 8. Screw, #8-32 x 1/4", pan head (3) 9. Screw, #8-32 x 3/8", pan head (1) 10. Adapter, 90°, SMA male to SMA female (2) 11. Adapter, harness, AI 070B to 030/070C (1) |
|--|---|

NOTE

The Applied Information AI-500-070B and AI-500-030 (monitoring only) are supported with SPEEDCHECK-12 systems. Modem supplied separately.



3.0 Tools and Materials Required

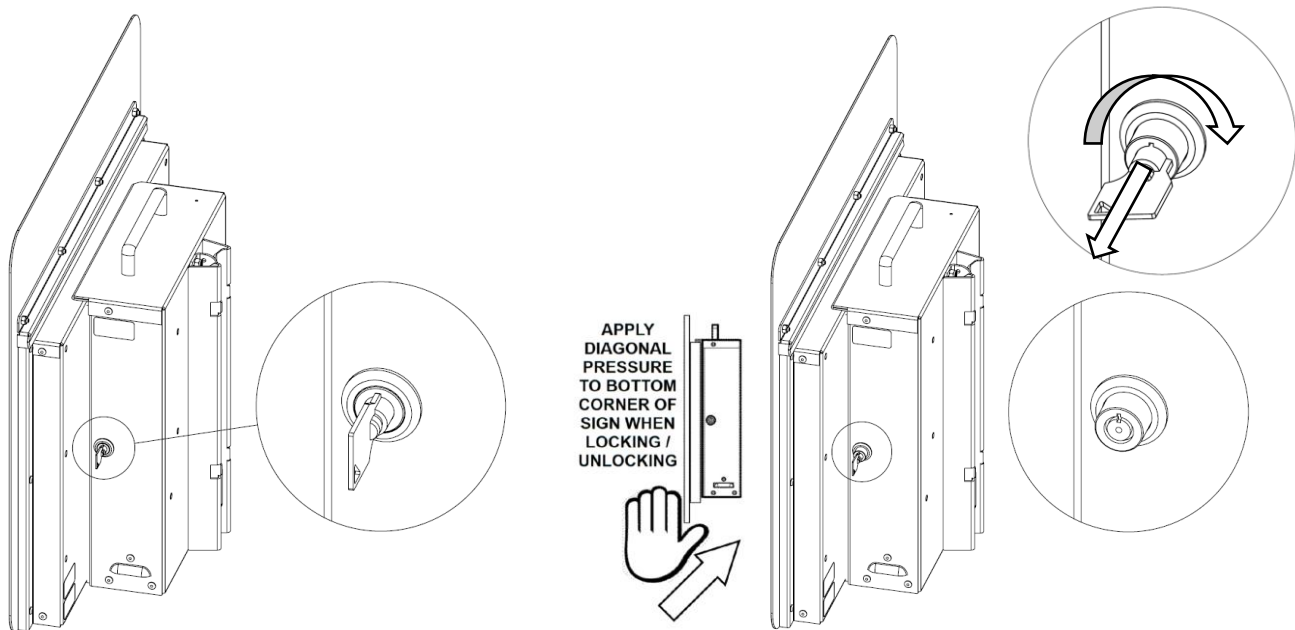
The following tools and materials may be required to install the AI Integration Kit into your SPEEDCHECK-12 system:

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Drill and 17/32" drill bit 2. Deburring tool or similar 3. Crescent wrench 4. Side cutters | <ol style="list-style-type: none"> 5. Multi-bit screwdriver 6. Socket set 7. 18/19mm wrench or 3/4" fuel inject socket |
|--|---|

4.0 Installation

4.1 Opening Rear Enclosure

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.



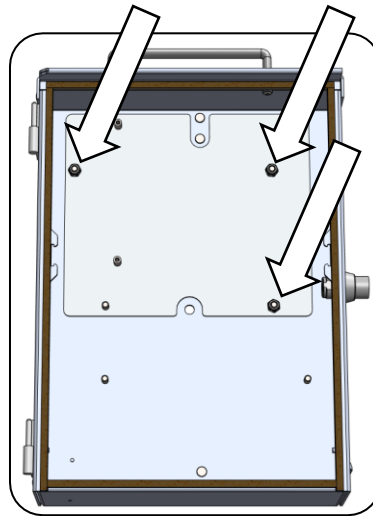
4. Swing the display enclosure away from the rear enclosure.

4.2 AI-500-070B Field Control Unit (FCU)

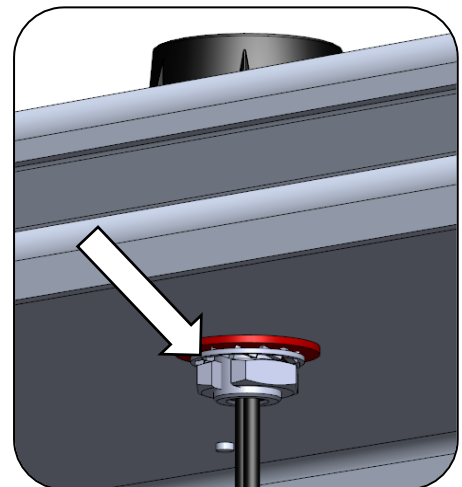
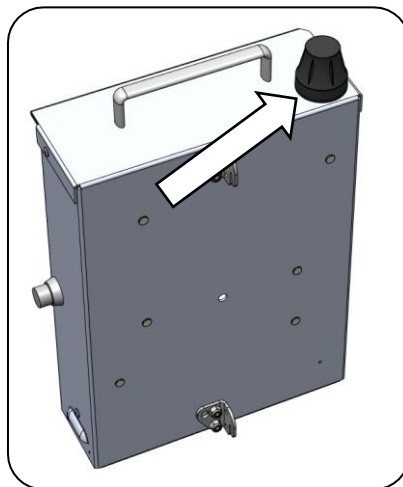
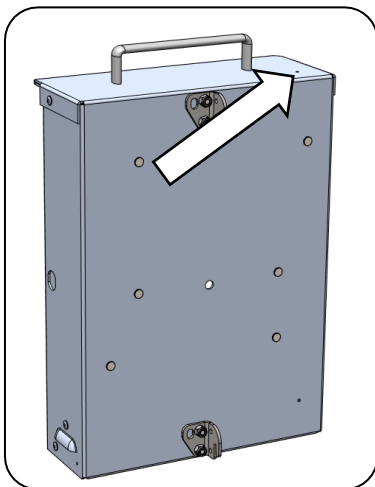
NOTE

If a second battery is installed in the upper part of the rear enclosure it will need to be removed to fit the AI-500-070B Field Control Unit (FCU). Remove the upper battery, battery bracket and battery shelf prior to installing the FCU mounting plate.

1. Disconnect power to the system by opening all battery fuse holders or switch off the breaker (to the right).
2. Install the AI-500-070B mounting plate into the rear enclosure and secure with three nyloc nuts in the locations outlined below.

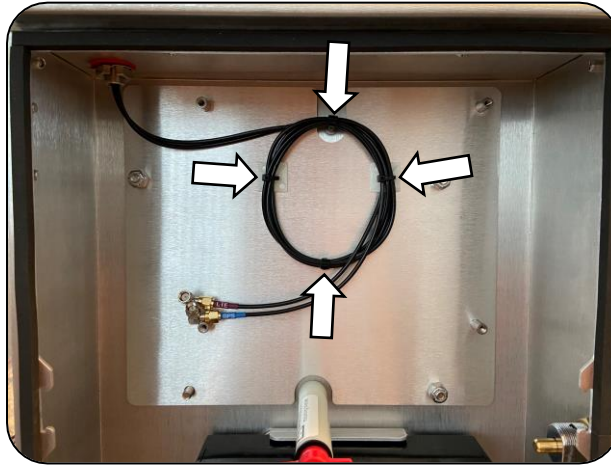


3. Drill a 17/32" hole in the top corner of the rear enclosure at the half shear location. Deburr both sides of the hole and remove all metal chips.
4. Remove jam nut and washers from antenna. Install coax cables through previously drilled hole. Install plastic washer, lock washer and nut as shown below. Ensure the antenna is flush with the rear enclosure and tighten nut with a 19mm wrench.



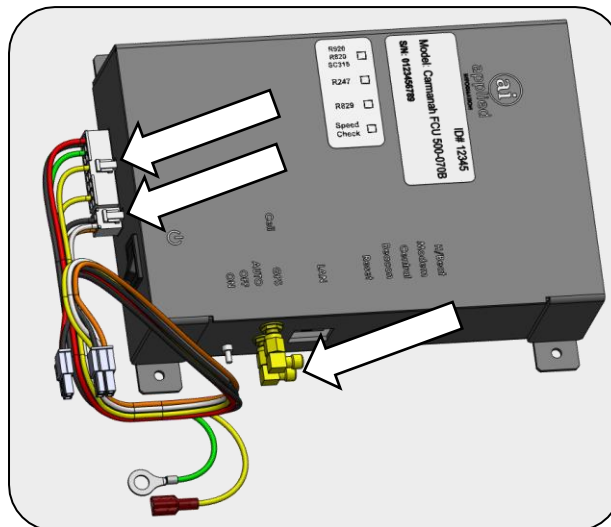
5. Install two cable tie holders onto the mounting plate as shown below.

- Route coax cables from antenna to cable tie mounts and loop cables around 2-1/4 turns clockwise. Secure with four cables ties.

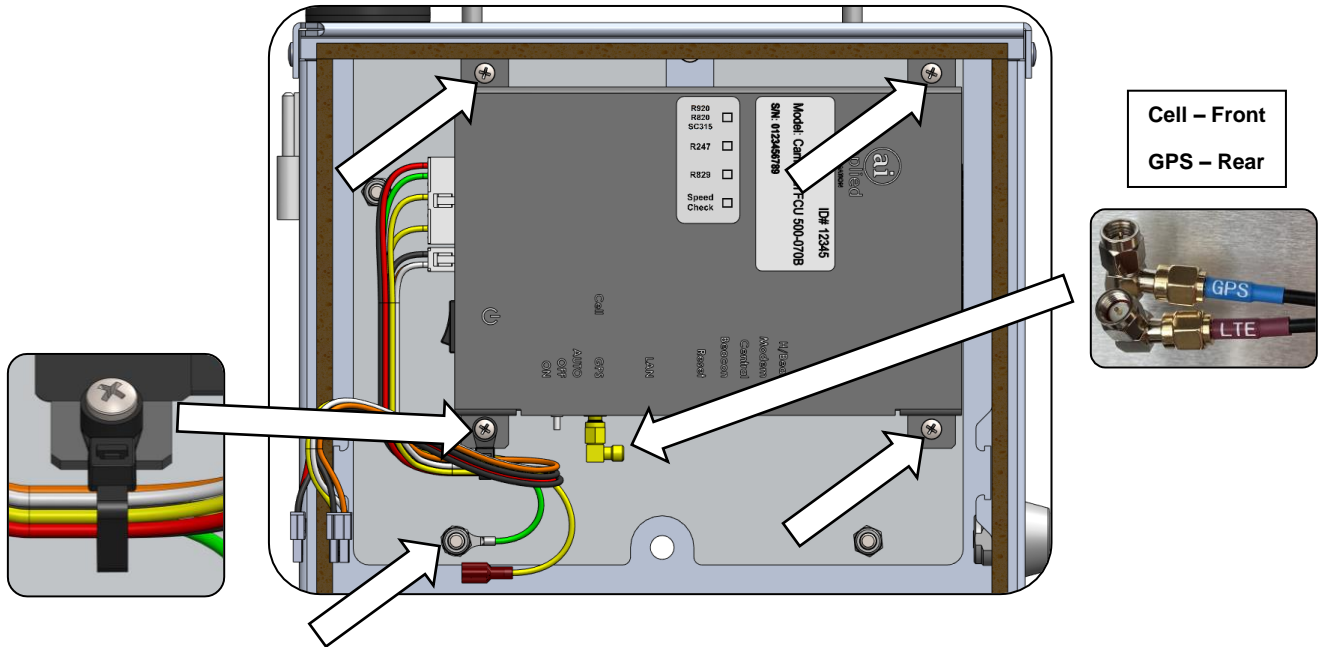

NOTE

Coax cable connectors should end up approximately in the left of the rear enclosure.

- Install 16-pin and 4-pin harnesses into the AI-500-070B.
- Thread two 90° coax adapters onto antenna connectors. Orient as shown below.



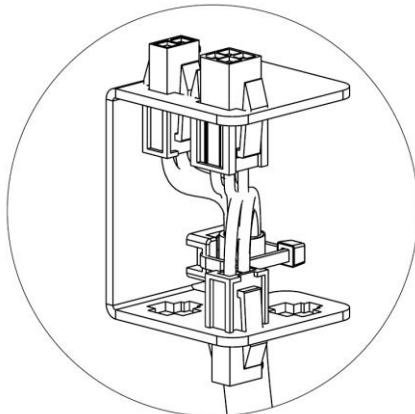
9. Install AI-500-070B onto mounting plate with three #8-32x1/4" screws.
10. Install screw mount cable tie around harness wires end secure to lower-left mounting plate standoff with one #8-32x3/8" screw.
11. Install harness ground ring terminal onto stud shown and fasten with one nyloc nut. Orient as shown.
12. Thread GPS and LTE antenna coax harness connectors onto correct connectors on the AI-500-070B (not shown below).



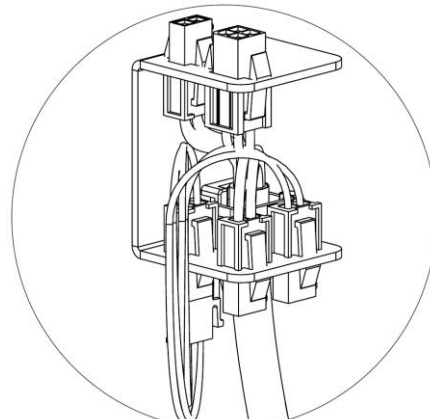
NOTE

Yellow sensor wire will remain unterminated for AC-powered systems. For solar-powered systems this will mate with the yellow wire from the solar kit. See [Section 4.3](#) for more information.

13. Connect the 2-pin and 4-pin AI-500-070B connectors to the open receptacles on the display enclosure as shown below. All 2-pin connectors are interchangeable.



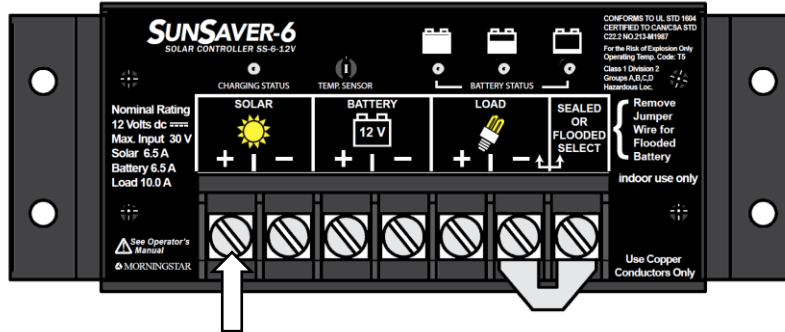
Battery Only or AC w/ AI FCU



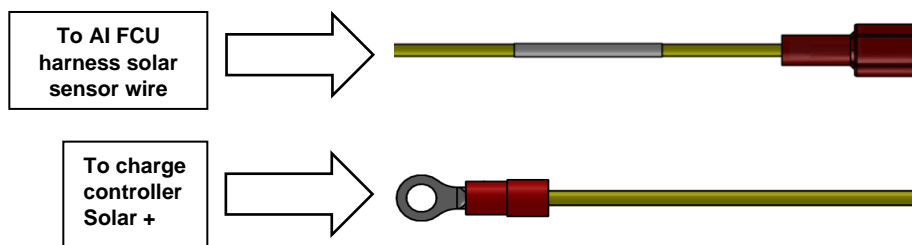
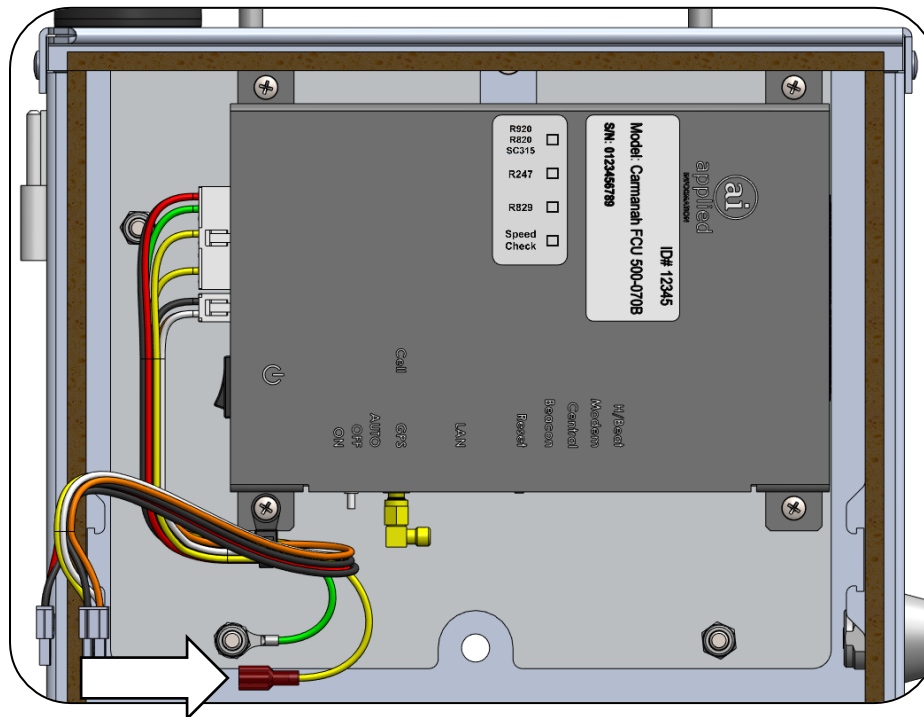
Solar Kit w/ Battery & AI FCU

4.3 Solar Version Only

1. For solar kit versions, there is a length of yellow sensor wire to be routed with the battery harness from the solar kit to the LED display.
2. Terminate this yellow sensor wire to the Solar positive (+) terminal of the charge controller. Route the sensor wire down the pole and into the rear enclosure.

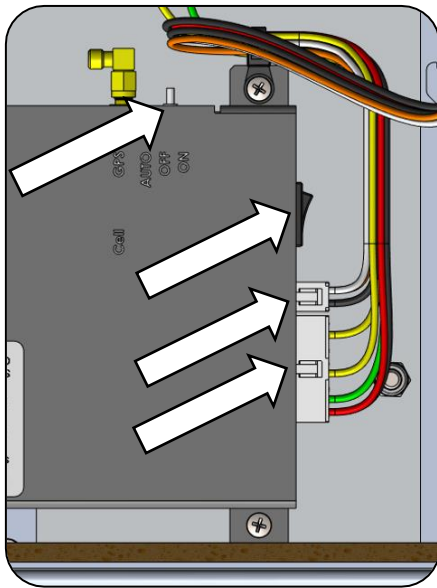


3. Once the sensor wire is inside the rear enclosure, connect it to the yellow wire shown below.



4.4 Testing AI-500-070B

1. Ensure AI serial number has been activated.
2. Set toggle switch to “OFF”.
3. Ensure connectors are properly mated on the bottom of the AI-500-070B.
4. Confirm correct wiring and power-up system by connecting the DC power (battery fuses or switch on the breaker) and turning on the AI power switch.
5. Open your PC, open a browser and navigate to the Glance website: glance.appinfoinc.com
6. Log in using the credentials provided by AI or the distributor you purchased the equipment from.
7. On the upper-left side of the browser, select the device name that matches the Device ID (the ID number labelled on the AI-500-070B).



Ensure the equipment is not powering during installation. Recheck all wiring prior to energizing the system.

8. Ensure that the “Current Status” indicates “Online”.
9. Ensure “Current Device Status” is “OK”.
10. Contact Applied Information to arrange the firmware in the AI unit to be programmed correctly, if this hasn’t already been done.
 - a. Phone: 678.830.2170
 - b. Email: support@appinfoinc.com
 - c. Web: appinfoinc.com

« Prev | Next »
 ■ Carmanah 9876

Current Status : Online
 Current Alarms :
 Current Schedule: Schedule 1
 Power Status : No AC
 Current Device Status : OK
 Timezone : -7 Hours
 Time Since Last Contact : 24 Minutes 6 Seconds
 7/8/2019 9:47:54 AM

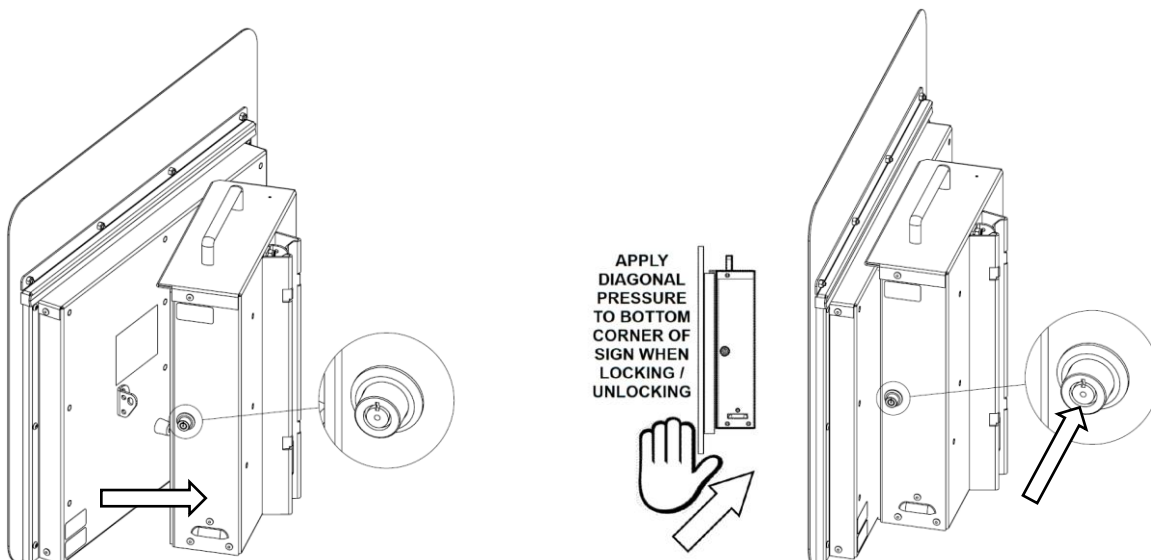
	Now
System Voltage (V DC)	13.3
Solar Array Voltage (V DC)	23.4

	Status
Cabinet Door	Closed
Lamp Fault	OK
Beacon Status	Central Override - ON

Inputs

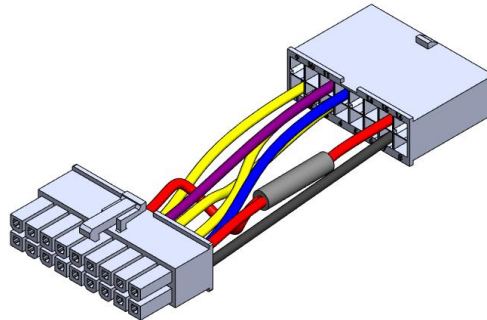
	■ Status - Override is Active
Beacon Control	<input checked="" type="radio"/> On <input type="radio"/> Off <input type="radio"/> Schedule

11. 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 then PUSH the lock to secure in place.

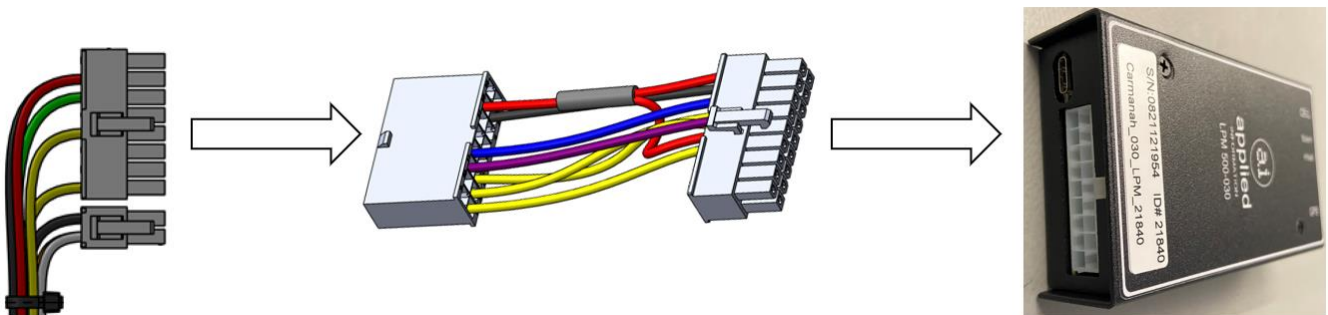


5.0 Appendix A – AI-500-030 Low Power Monitor (LPM)

For systems that will contain the AI-500-030 Low Power Monitor, Carmanah includes an adapter harness to go from the AI-500-070B harness to the AI-500-030 device.



The supplied AI-500-070B (16-pin) harness will connect to the adapter harness (16-pin to 18-pin). The 18-pin end of the adapter harness then connects to the AI-500-030.



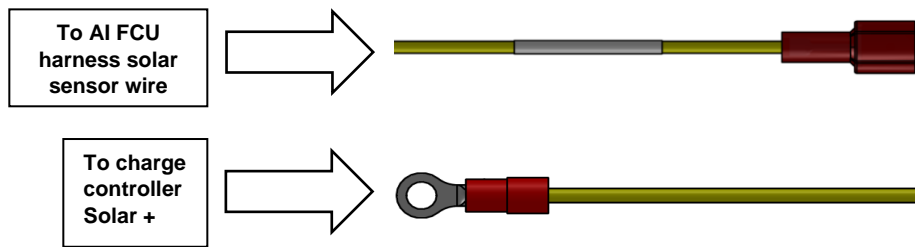
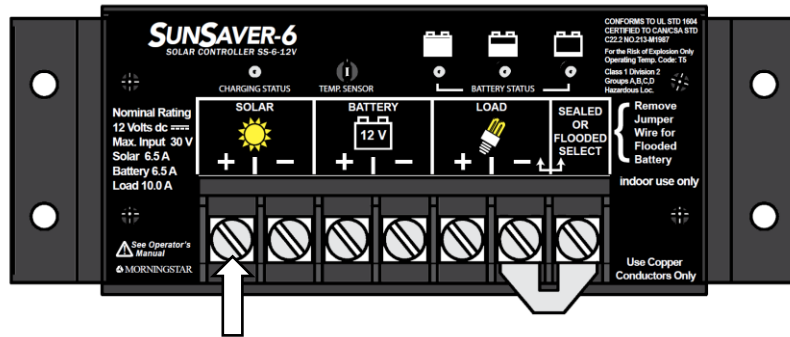
The following monitoring parameters will be available with this harness and adapter configuration in a SPEEDCHECK-12:

- Solar panel voltage monitoring (solar systems only)
- System voltage monitoring (AC systems only)
- Battery voltage monitoring (solar systems only)
- Knockdown monitoring

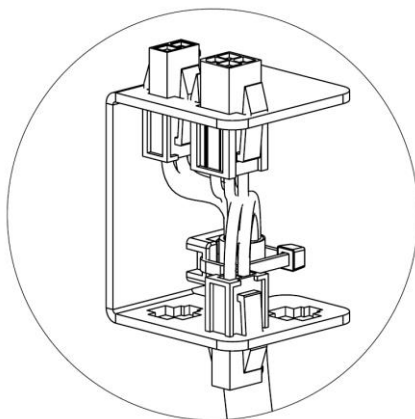
1. Follow the instructions provided by Applied Information for installing the AI-500-030 or contact their email support at support@appinfoinc.com.

NOTE

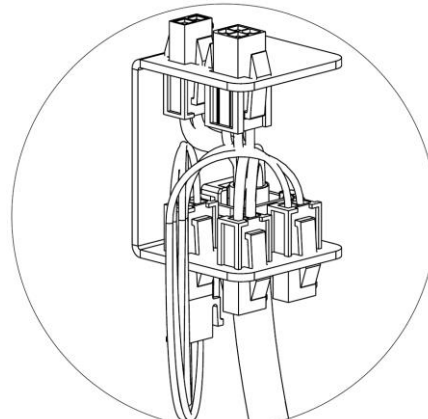
Yellow sensor wire will remain unterminated for AC-powered systems. For solar-powered systems this will mate with the yellow wire from the solar kit. See [Section 4.3](#) for more information.



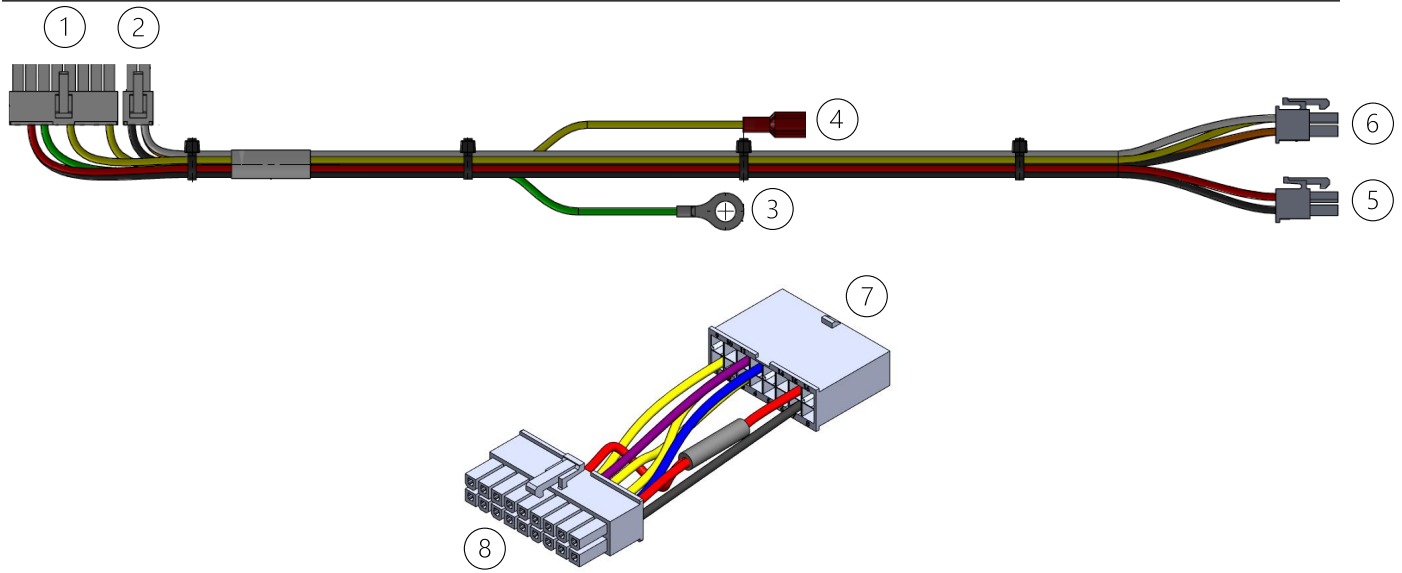
2. Connect the 2-pin and 4-pin AI-500-070B connectors to the open receptacles on the display enclosure as shown below. All 2-pin connectors are interchangeable.



Battery Only or AC w/ AI FCU



Solar Kit w/ Battery & AI FCU



1. To adapter harness; #7
2. Not supported by AI-500-030 (leave disconnected)
3. To SPEEDCHECK-12 chassis stud
4. To included solar sensor wire; other end of solar sensor wire to SunSaver Solar +
5. To SPEEDCHECK-12; any 2-pin receptacle
6. To SPEEDCHECK-12; 4-pin receptacle
7. To AI-500-070B harness; #1
8. To AI-500-030 device



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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