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Universal wireless brake monitor and switch

part number 759530B

Installation instructions and user guide



Time Tested • Time Proven

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FCC Compliance Statement

Warning: Changes or modifications to these devices not expressly approved by Roadmaster, Inc. could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Radio Frequency Exposure

This equipment complies with radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 20 cm entre le radiateur et votre corps. Cet émetteur ne doit pas être co-localisées ou opérant en conjonction avec tout autre antenne ou transmetteur.

Industry Canada License Exempt

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

FCC ID: RGY-9510
IC: 22290-9510
FCC ID: RGY-9520
IC: 22290-9520

THESE DEVICES COMPLY WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS.

(1) THESE DEVICES MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THESE DEVICES MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

Specifications

Frequency: 923 MHz
Voltage: 12 volts
Sleep current: 30 mA

All illustrations and specifications contained in this document are based on the latest information available at the time of publication. ROADMASTER, Inc. reserves the right to make changes at any time, without notice, in material, specifications and models, or to discontinue models.

Brake Light Switch Installation Instructions

1. If the vehicle has adjustable brake pedals, start here. Otherwise skip to step 2.

If it does, make certain the brake pedal is at the same position it was when the supplemental braking system was installed. Failure to do so will result in incorrect reporting of braking activity which may result in damage to the vehicle's brakes.

2. The universal brake light switch is to be installed on the brake pedal arm with the sensor aimed toward the front of the vehicle. Refer to Figures 1 and 2. Find an unobtrusive point high on the brake pedal arm where the switch will not present an obstruction to the driver, or interfere with the operation of the vehicle in any way.

Tech tip: The sensor's field of view must not have any moving items. Items that may move while the vehicle is being towed, such as floor mats, wiring harnesses or other similar items must not enter the sensor's field of view. Otherwise the switch may report incorrect braking activity.



3. Once the correct location is confirmed, remove the backing from the adhesive pad and use it to attach the switch to the brake pedal. Secure the installation by wrapping the included zip ties through the square holes on the switch and around the brake pedal arm.

4. Plug the included wiring harness into the switch. There are two sockets; use whichever one is pointing up.

5. Use the included #10 ring terminal to attach the black wire to a good chassis ground.

6. Route the red wire to a dedicated positive 12 volt power source. This power source must be energized at all times:

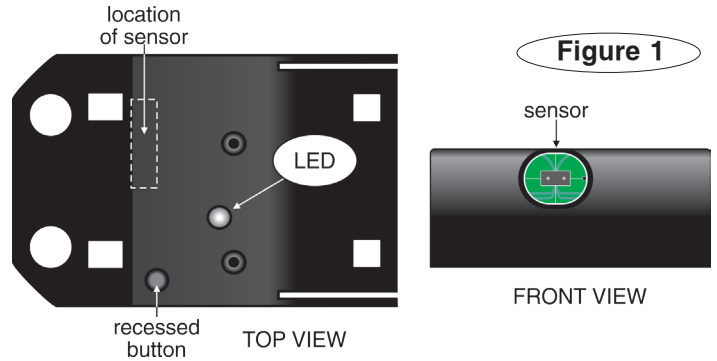


Figure 1

Note: If your vehicle requires the battery to be disconnected while towing, you must use option 2.

• **Option 1** – fuse tap (preferred)

Install the included fuse tap in place of a fuse in the vehicle's fuse panel. Be sure to insert the original fuse and provided 2 amp fuse as shown in Figure 3. Attach the fuse tap to the red wire using one of the included butt connectors.

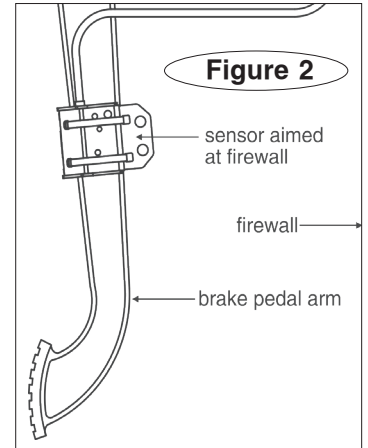


Figure 2

Note: Ensure that the fuse socket that you install the fuse tap into is not part of a "retained accessory power" circuit. If the vehicle has this mode, choose a different circuit to connect the red wire. Otherwise, power to the transmitter will be lost within a few minutes after the ignition switch is turned off.

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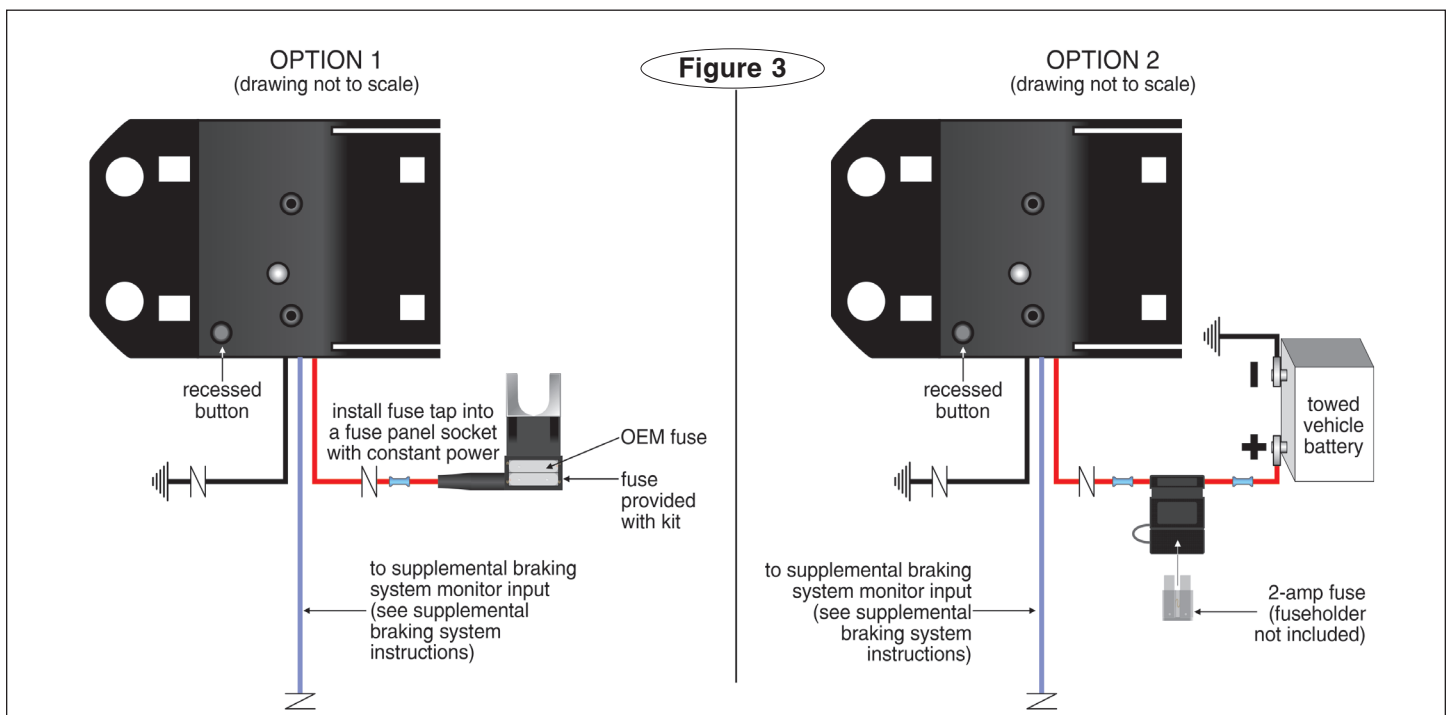


Figure 3

OPTION 1
(drawing not to scale)

OPTION 2
(drawing not to scale)

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• **Option 2** – inline fuse (for use if the vehicle’s fuse panel is inaccessible or not suitable for use with a fuse tap):

Attach the red wire directly to the positive battery terminal, using a ring terminal and an ATM inline fuse holder (not included). Install the included 2 amp ATM fuse into this fuse holder. The inline fuse must be within six inches of the battery terminal.

⚠ WARNING

If the fuse holder is not located within six inches of the battery terminal, a short circuit may cause an electrical fire.

CAUTION

Refer to the owner’s manual before attaching the ground wire. Some manufacturers stipulate that ground wires must be attached at specific locations. Significant damage to the vehicle’s electrical system, as well as other consequential, non-warranty damage will occur if the ground wire is not attached at one of these points.

7. The blue wire is the universal brake light switch output wire. Following the instructions that came with the supple-

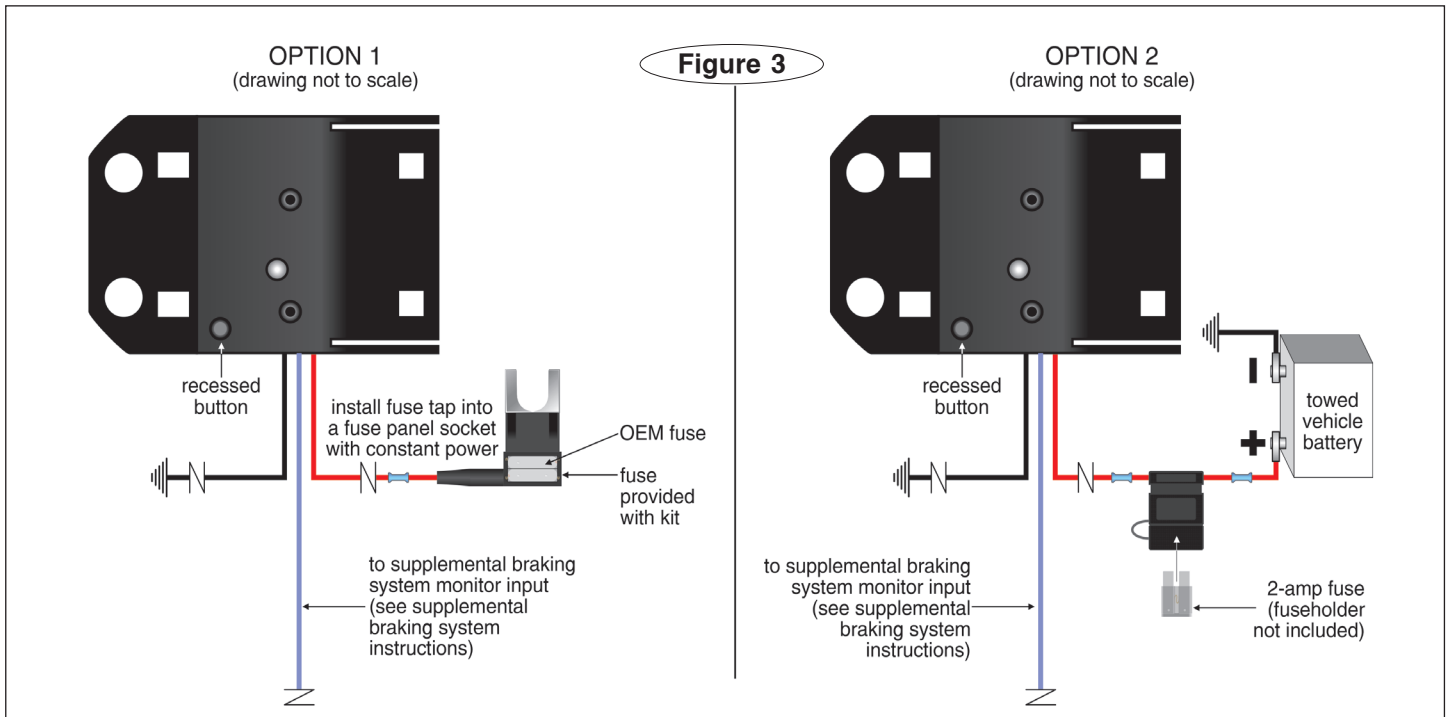
mental braking system, use one of the included blue butt connectors to attach the blue wire to the supplemental braking system’s monitor input.

8. If the vehicle has adjustable pedals and/or pedal presets, make certain the pedal is in the appropriate position for use with the braking system. For Roadmaster supplemental braking systems, this means the pedals should be moved all the way toward the driver’s seat.

9. Setting the “home” position: With the brake pedal fully released, use a ballpoint pen or similar tool to press and hold the recessed button (Figure 3) until the LED starts flickering, then release the button. Once the LED stops flickering, the switch has learned its “home” position.

Normal operation

Any time the universal brake light switch moves closer to the firewall than the “home” position (i.e., when the supplemental braking system depresses the brake pedal), the LED on the switch will illuminate and a positive 12 volt signal will be generated on the blue wire. The switch will generate this signal continuously until the brake pedal returns to its “home” position (i.e., released).



Wireless Monitor Installation Instructions

Note: If the supplemental braking system to be monitored is a Roadmaster InvisiBrake®, check the serial number before proceeding with the installation. If it's less than 21603, you must install an optional adapter, part number 8700-9530.

Note: The most noticeable difference between the motorhome monitor and the towed vehicle transmitter (Figure 1) is the wires extending from them. The transmitter has four colored wires; the monitor has one black wire.

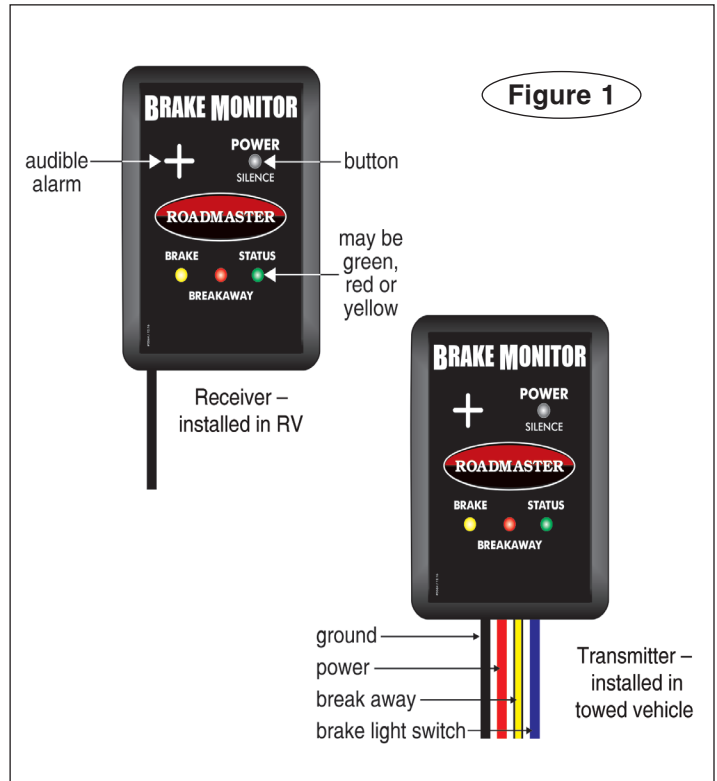
1. Choose a suitable installation point for the towed vehicle transmitter under the dashboard. This point should be out of sight but accessible to the installer for troubleshooting. Any mounting point that doesn't present an obstacle to the driver, or interfere with the operation of the vehicle, is suitable.

2. Attach the wires. If necessary, use a butt connector and additional 18-gauge wire (not included) to extend the wiring.

- Attach the black wire to any good chassis ground.
- Connect to power: first, determine if you will use the provided fuse tap or inline fuse holder (Options 1 and 2, Figure 2).

Next, attach either the fuse tap or the fuse holder to the red wire extending from the transmitter.

Then attach the red wire to any constant 12V+ source.



CAUTION

The fuse in the fuse tap or fuse holder must be within six inches of the electrical connection. Otherwise, a short circuit may cause significant damage to the towed vehicle's electrical system, an electrical fire or other consequential, non-warranty damage.

- Attach the yellow wire to the 'cold' side of the breakaway switch. *Note: The correct wire will be energized when the breakaway pin is pulled.*

- Attach the yellow wire to the 'cold' side of the breakaway switch. *Note: The 'cold' side will be the wire that is energized when the breakaway pin is pulled.*

3. Insert the provided fuse into either the fuse tap or fuse holder (Figure 2).

4. Use the included zip ties to attach the transmitter and professionally secure the wiring.

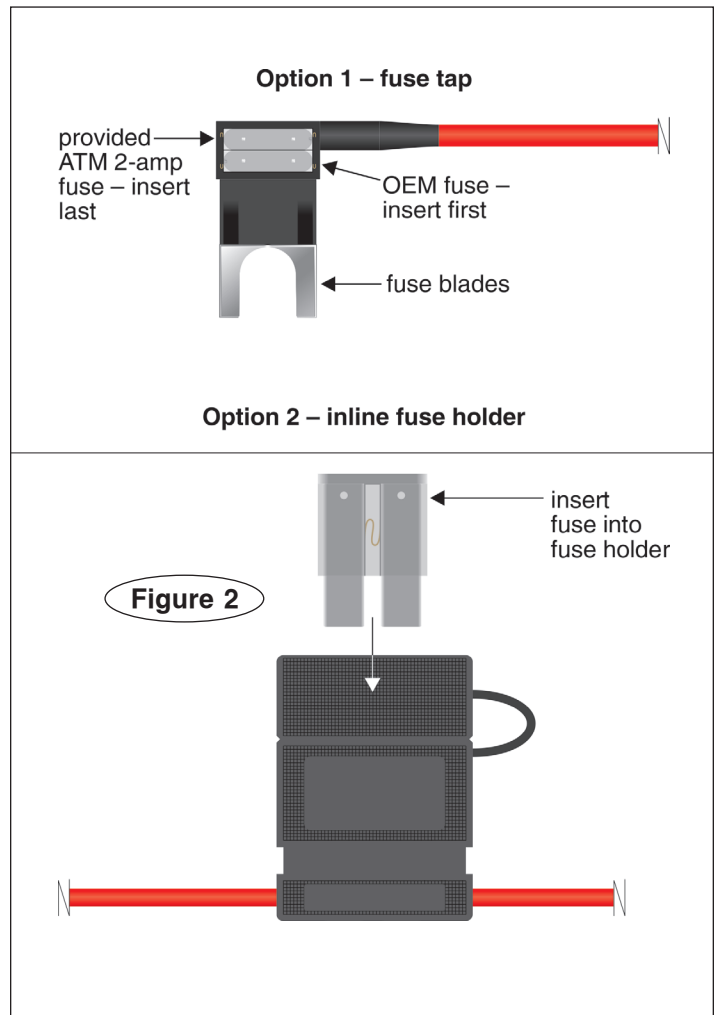
5. Plug the motorhome monitor into any 12V+ source in the motorhome, and attach it with the Velcro strips at any location where it can be seen by the driver.

Operating the RV monitor

1. Check the "Status" light:

- If the light is solid green, you're ready to tow.
- If the light is alternately flashing red and green, it's not receiving a signal. Hold the brake pedal down for five seconds before releasing it. The light on the transmitter should be solid green.

2. To turn the monitor off, press the "Power" button. (The monitor will always turn off after a few minutes when the motorhome's engine is turned off.)



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How to pair the monitor and transmitter

The motorhome monitor and the towed vehicle transmitter have been paired at the factory. If they've lost connectivity pair them as follows:

1. Power on the motorhome monitor.
2. Depress and hold the "Power" button on the motorhome

monitor for about five seconds. The "Status" light will flicker yellow.

3. Release the "Power" button. The "Status" light on both the towed vehicle transmitter and the motorhome monitor will start flashing yellow. The units are now in pairing mode.

4. Depress and release the brake pedal in the towed vehicle. The lights will stop flashing. The transmitter and monitor are paired.

RV Monitor alerts

- **The "Brake" light is yellow.**

The "Brake" light will illuminate yellow whenever the towed car's brakes are on.

- **The "Status" light is solid green.**

The system is ready for towing.

- **The "Status" light is flashing green.**

The transmitter in the towed car is asleep. If the system does not detect any braking activity, it will eventually go to sleep.

- **The "Status light is flashing red and green.**

The RV monitor isn't receiving a signal from the towed vehicle. There are three solutions –

1) If you are hooked up for towing – Pump the towed vehicle's brake pedal. The light should now be solid green.

2) If the towed vehicle is out of range – Press the "Power" to turn off the RV monitor. Conversely, you can just ignore it and it will eventually go to sleep and stop flashing.

- **The "Status" light is yellow.**

The towed vehicle's battery is low.

- **The "Status" light is off.**

There are three scenarios that can cause this –

- 1) The monitor "Power" switch has been turned off.
- 2) It has gone to sleep.
- 3) There is no 12-volt power.

- **The "Status" light is flashing bright red; the "Brake" light is flashing yellow; accompanied with an audible alarm.**

- **The "Status" light is flashing bright red; the "Break away" light is solid red; accompanied with an audible alarm.**

The monitor is reporting a break away signal from the towed vehicle. Pull over as soon as it is safe to do so and investigate.

The towed vehicle's brakes have been on continuously for 30 seconds (for example, at a long stop light). Pump the motorhome brakes to reset the 30 second timer.

Alternatively, press the "Silence" button once – the timer will now alarm only after 60 seconds of continuous braking.

If the "Silence" button is pressed again after the alarm at 60 seconds, it will reset the timer to only alarm after 90 seconds. This can be extended once more to 120 seconds.

Note: You cannot push the button to reset the timer to 30 seconds once it has reached a delay of 120 seconds. To factory reset the timer to 30 seconds, unplug the harness from the transmitter in the towed vehicle. Then, reconnect the harness while holding down the power button. This will reset it to 30 seconds.

Caution

If the monitor alerts you to extended braking when you are not braking the motorhome, the brakes in the towed vehicle are being applied inappropriately. Immediately pull over and investigate to prevent brake damage.

RV monitor color code chart

Status Light	Brake Light	Breakaway Light	Color	Description
●			solid green.....	The system is ready for towing.
●			flashing green.....	The system is asleep.
●●			flashing red and green	The monitor isn't receiving a signal from the transmitter.
○			"status" light is off	The "Power" switch has been turned off.
●			yellow	The towed vehicle's battery is low.
●●	●		flashing red and yellow	Extended braking alert 🎵 (includes an audio alert)
●●		●	solid red and flashing red ...	A break away is in progress. 🎵 (includes an audio alert)
	●		solid yellow.....	The towed vehicle's brakes are being applied.

Troubleshooting

Symptom: The system is installed correctly but when I manually press the brake pedal, a signal is not being sent to the braking monitor.

Solution:

The sensor relies on an infrared signal bouncing off the firewall. If the material of the firewall is very dark, it may absorb the light instead of reflecting it, thereby preventing the system from functioning properly. To test if this indeed is the issue, place a piece of paper or tape on the firewall. or any other item that is not dark in color to be a target from which the sensor can detect and successfully bounce the light off. If this resolves the issue, find a suitable 'target' and permanently mount it on the firewall to reflect the infrared signal.

Symptom: When applying the brakes in the motorhome, the supplemental braking system's monitor does not indicate that the towed vehicle's brakes are being applied.

Solution:

- Does the LED on the side of the switch illuminate when the towed vehicle's brake pedal is depressed?

YES: Manually depress the towed vehicle's brake pedal and confirm proper operation of the supplemental brake system's monitor.

- If the monitor functions, inspect the supplemental braking system for proper function and correct if necessary.

- If the monitor does not function, check for +12V on the blue wire while manually depressing the brake pedal. If +12V is present, the switch operates properly.

Check the monitor for wiring problems and faulty components.

NO: Check the following –

- Confirm that +12V is present on the red wire—check the 2A fuse.

- Confirm that the black wire is properly grounded.

Afterwards, reset the home position as described in steps 8 and 9, and retest the system. If you have completed these steps and the LED will not illuminate when resetting the home position, contact Roadmaster support.

Symptom: The supplemental brake monitor displays improper braking indications, including flickering or staying on when the towed vehicle's brake pedal is released.

Solution 1: The universal brake light switch's sensor may be tripped by moving objects in its field of view, such as floor mats or wiring harnesses. Restrain or remove any moving objects that may be in the sensor's field of view, and then reset the home position as described in steps 8 and 9.

Solution 2: Some vehicles' brake pedals may have free play when fully released. The brake pedal may seem loose or floppy. If the brake pedal moves due to road conditions while fully released, the universal brake light switch may detect application of the brake pedal. If this is the case,

depress the towed vehicle's brake pedal approximately 1/8 inch and hold it there while resetting the home position as described in steps 8 and 9 under 'Brake Light Switch Installation Instructions.'

Nuisance activations of the supplemental brake monitor should be prevented.

Solution 3: Flickering or nuisance illuminations of the monitor may be caused by faulty or intermittent ground connections between the towed vehicle and the towing vehicle. If solutions 1 and 2 do not address the issue, examine all ground connections between vehicles.

Symptom:

The brake indicator light is on when it should be off, and goes off when it should be on. The signal is backwards.

Solution:

Unplug the harness from the transmitter in the towed vehicle. Now, plug it back in. DO NOT depress the brake pedal while doing so or the signal will still be reversed. If the transmitter is inaccessible, you can simply disconnect the battery for 15 seconds.

Again, make sure the brake pedal is not being depressed when the battery is reconnected.

More info:

This problem can be caused by the brakes being on while any of these things occur: a dead battery; a deeply discharged battery; fuses being pulled, or a bad wiring connection. Essentially, if the voltage drops while the brake pedal is being depressed, then the signal will reverse. For example, if you have a battery disconnect and you step on the brake pedal while pushing the button to reconnect the battery, then the signal can become reversed.

Symptom:

The monitor isn't receiving a signal from the transmitter, or the signal it receives is intermittent.

Solution:

Poor reception or interference can cause an intermittent signal at the transmitter.

Inspect the transmitter in the towed vehicle and ensure that the housing of the transmitter is neither touching nor in proximity to any wiring looms. Any power running through nearby wires can potentially create interference and affect the operation of the unit.

We recommend at least 1-inch of space between any wiring and the transmitter itself. Whenever possible, mount the transmitter higher in the vehicle. This will help improve reception.

Troubleshooting

Problem:

I've previously silenced the alarm for a long-braking event but wish to reset the timer to 30 seconds to ensure I am protecting the brakes on my towed vehicle.

Solution:

You cannot push the button to reset the timer to 30 seconds once it has reached a delay of 120 seconds.

To factory reset the timer to 30 seconds, unplug the harness from the transmitter in the towed vehicle. Then, reconnect the harness while holding down the power button. This will reset it to 30 seconds.