



Time Tested • Time Proven

855901-05 06.22

Universal brake light switch

part number 751000

Installation and operation instructions

All specifications are subject to change without notice.

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WARNING

Read all instructions before installing or operating this device. Failure to understand how to properly install the universal brake light switch could result in property damage, personal injury or even death.



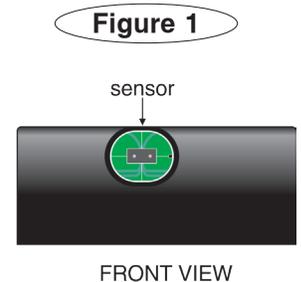
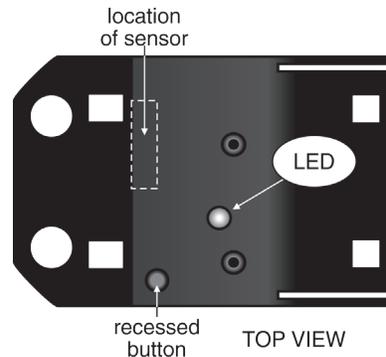
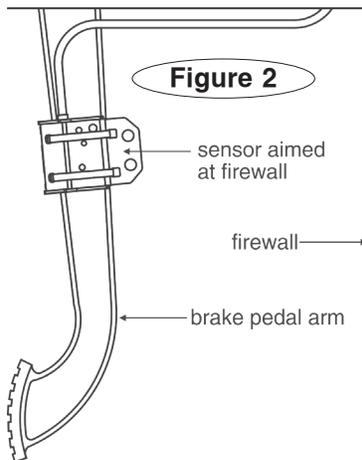
Installation instructions

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:

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.

continued on next page

Safety Definitions

These instructions contain information that is very important to know and understand. This information is provided for **safety** and to **prevent equipment problems**. To help recognize this information, observe the following symbols:

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in property damage, serious personal injury or even death.

WARNING

A RED WARNING indicates a hazardous situation of the highest magnitude which, if not avoided, could result in property damage, serious personal injury or even death.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in property damage, or minor or moderate personal injury.

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Note: Ensure that the fuse socket that you install the fuse tap into is not part of a “retained accessory power” circuit. A retained accessory power circuit is one where certain vehicle functions stay active for about ten minutes after the ignition is turned off or until a door is opened. If the universal brake light switch is powered by one of these circuits, it may cease to function after a short time.

• **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 a 2 amp fuse and fuse holder are 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 supplemental 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.

9. Setting the “home” position: With the brake pedal fully released (see WARNING below), 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.

WARNING

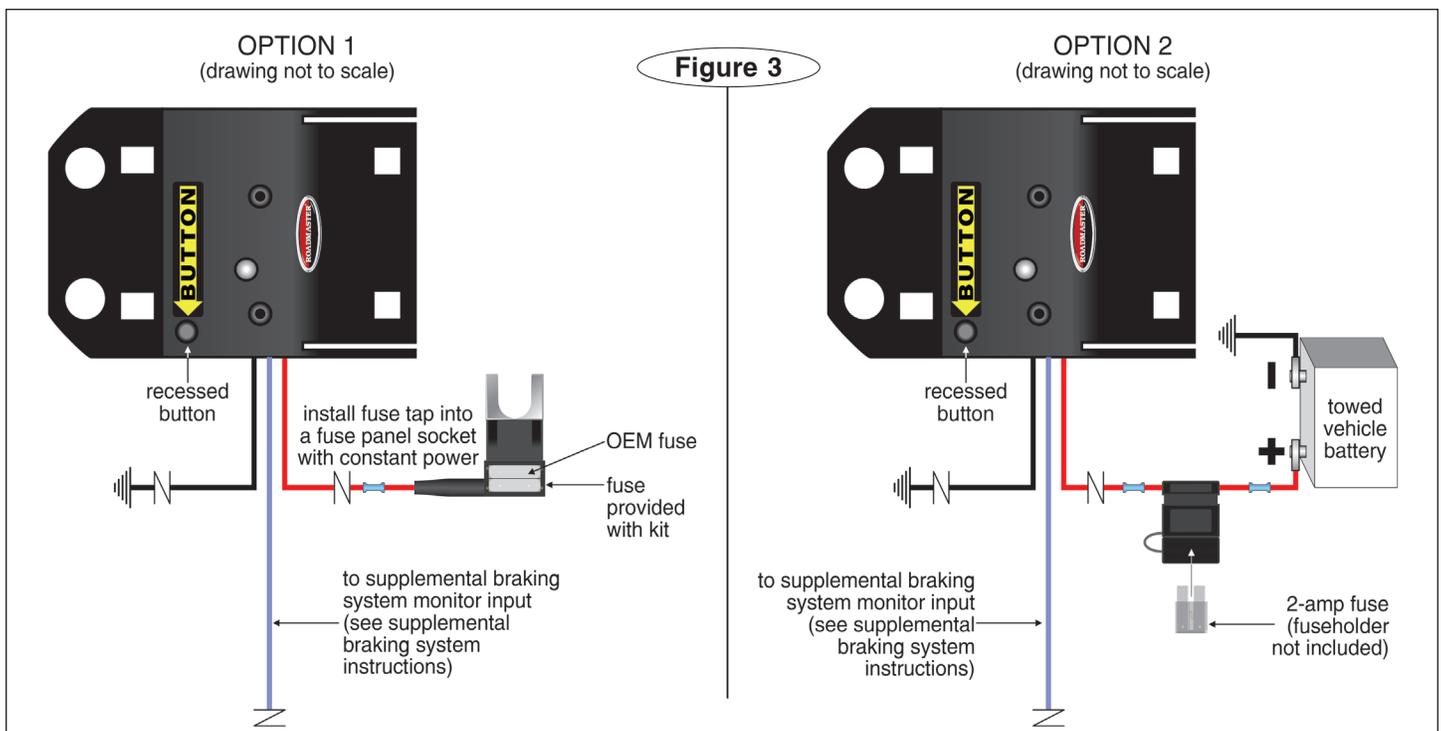
Make absolutely certain that the supplemental braking system is not depressing the brake pedal at all. We recommend starting the vehicle and visually checking the brake lights to see if they are illuminated. If you are unsure, have someone pump the brakes while you check.

If the braking system is even slightly engaging the car’s brakes, when you set “home,” the monitor will NOT tell you that the brakes are being applied.

Significant damage to the vehicle’s braking system, as well as other consequential, non-warranty damage will occur.

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).



Troubleshooting

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

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.