

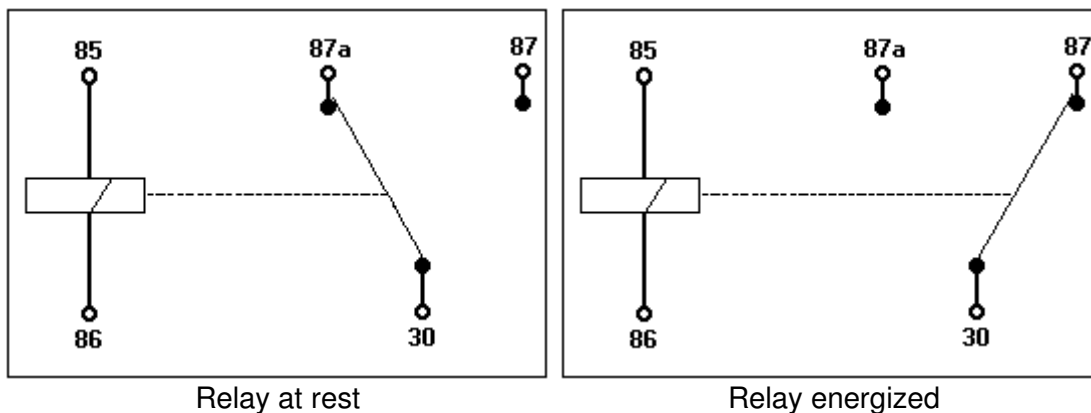
Firgelli Automations SPDT Relay 12vdc 20Amp Specifications

Overview

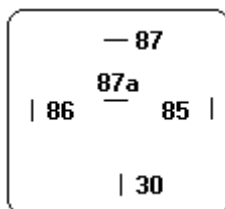
Relays are widely used in electrical applications where one circuit is to be energized or turned "on" by the presence of a voltage, provided by another circuit. An example of this is when an automotive radio sends out a triggering voltage to turn on an external amplifier or activate a motorized antenna. Anywhere a switch can go in a circuit, a relay can replace it, (as long as there is a triggering voltage available to activate it).

The "switch" in a relay is more often called a solenoid. A solenoid is like a piston that pushes outward when energized with electricity. This push mechanically trips the switch in the relay, completing circuit and allowing the switched voltage output.

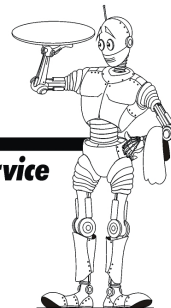
A relay can be triggered with an electrical pulse as small as 150 milliamps. The switched output can be as high as 20 amps.



Relay Pin configuration



Common Relay Pin Configuration (Bosch-type)



Connections

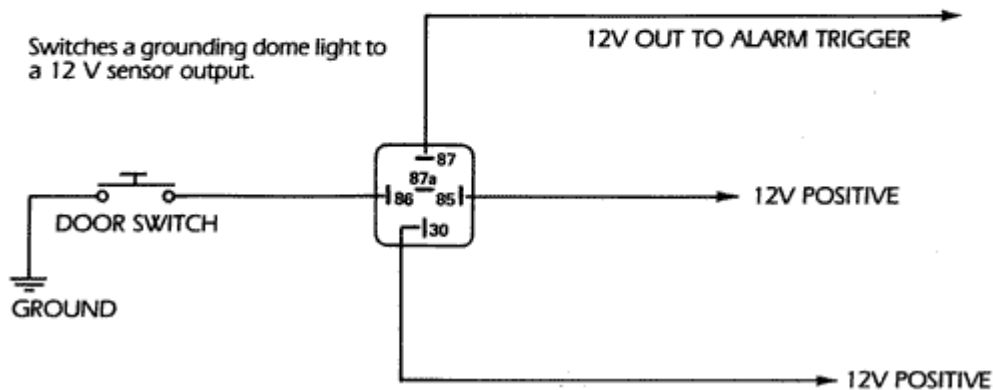
The terminals of a relay are defined as follows:

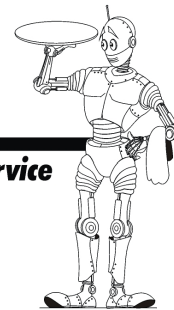
- 30 is the common or input voltage (or ground) to be switched.
- 87a is the normally closed connection (can be used as a switched voltage output when the relay is at rest). (This terminal offers no voltage when the relay is energized.)
- 87 is the normally open connection (switched voltage output when the relay is energized).
- 85 is connected to the ground of the triggering voltage.
- 86 is connected to the positive 12V of the triggering voltage.

Note: in many cases, the connection of pins 85 and 86 can be interchangeable, but NOT if there is a diode wired across the coil.

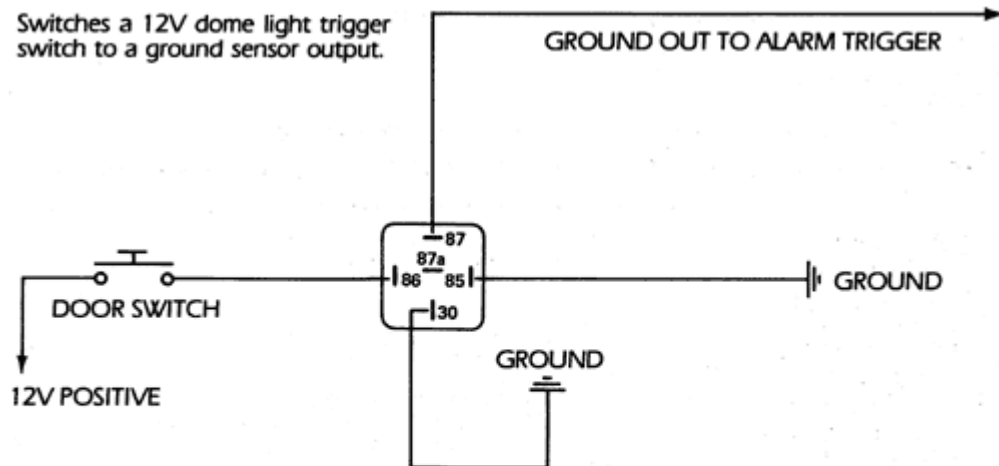
Below are several common examples of how relays are commonly used:

Most alarms on the market have both a positive and a negative trigger. Although both are supplied, only **ONE** type of trigger can be wired, not both. If you have a car that switches 12V to a dome light and you want to install a motion sensor that supplies a ground, you must invert one of the signals. (i.e. The grounding motion sensor to a 12V sensor.)

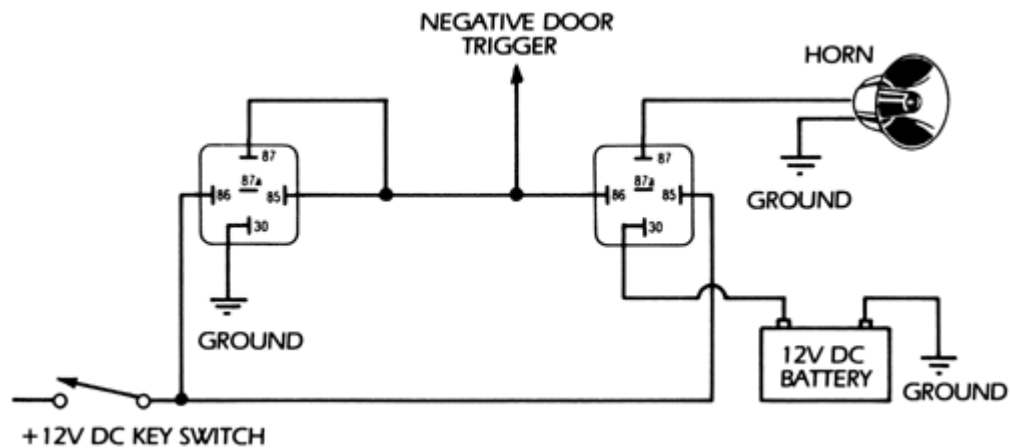


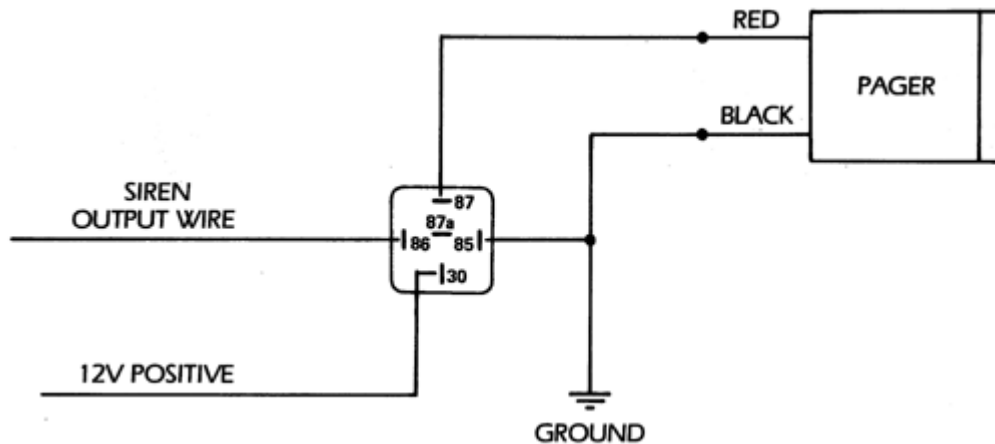
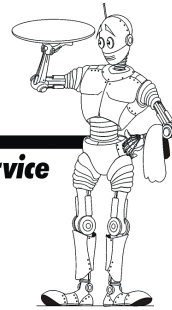


Switches a 12V dome light trigger switch to a ground sensor output.



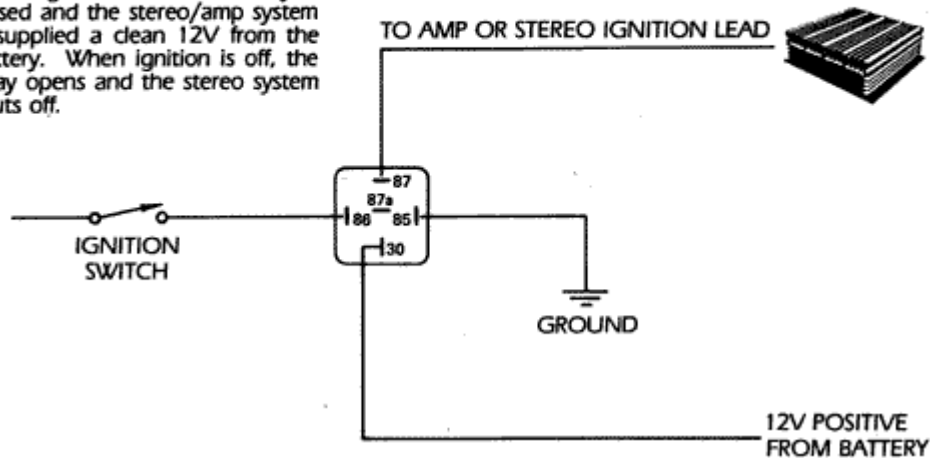
The door switches can be motion sensors, shaker boxes, glass sensors...etc., any trigger you wish to invert.

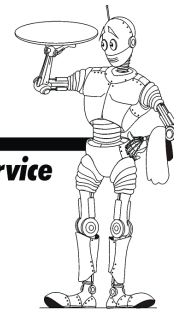




On some import or older model cars, the vehicle's ignition or charging system can cause noise to be picked-up by high end audio systems or cellular phones. To eliminate this noise, use the following diagram.

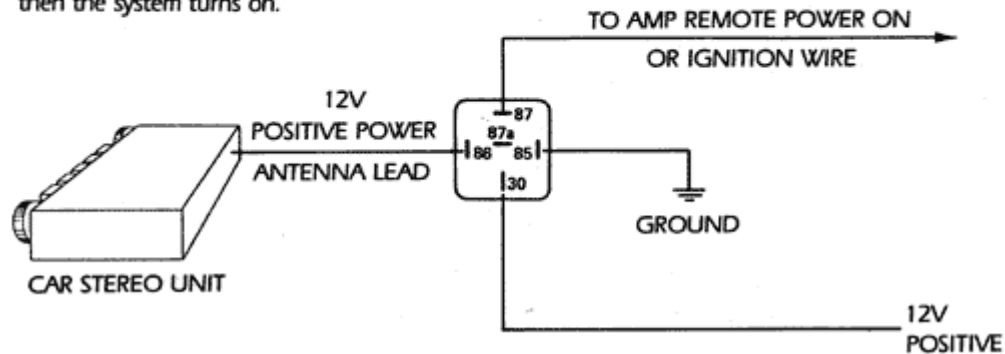
When ignition is on, the relay is closed and the stereo/amp system is supplied a clean 12V from the battery. When ignition is off, the relay opens and the stereo system shuts off.



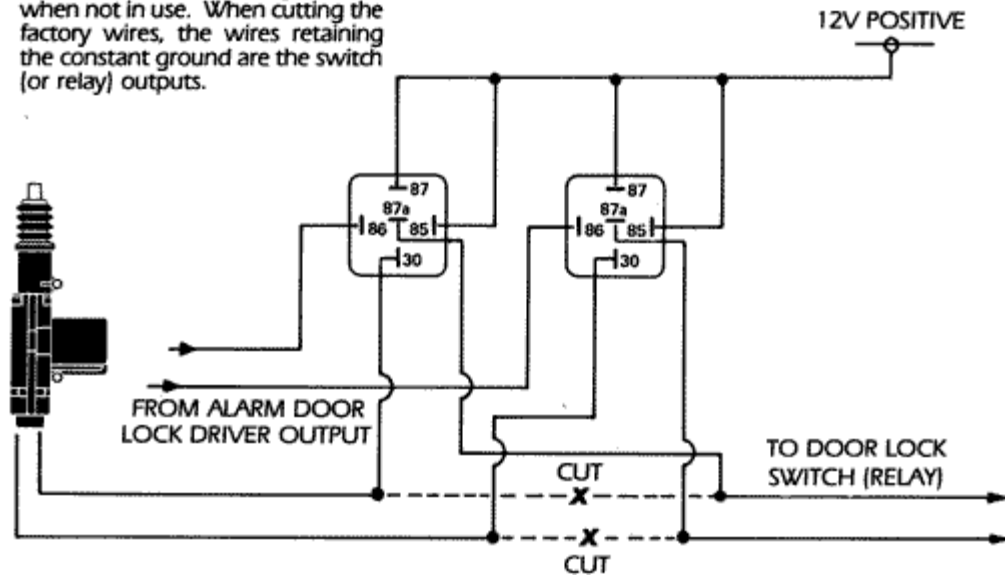


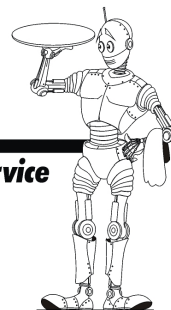
The diagram below displays a remote turn-on system. When the radio is turned on, the relay is triggered. When the radio is turned OFF, the system shuts down.

When the radio is on, the relay closes, and the AMP or E.Q. system turn-on wires receive 12V power, then the system turns on.

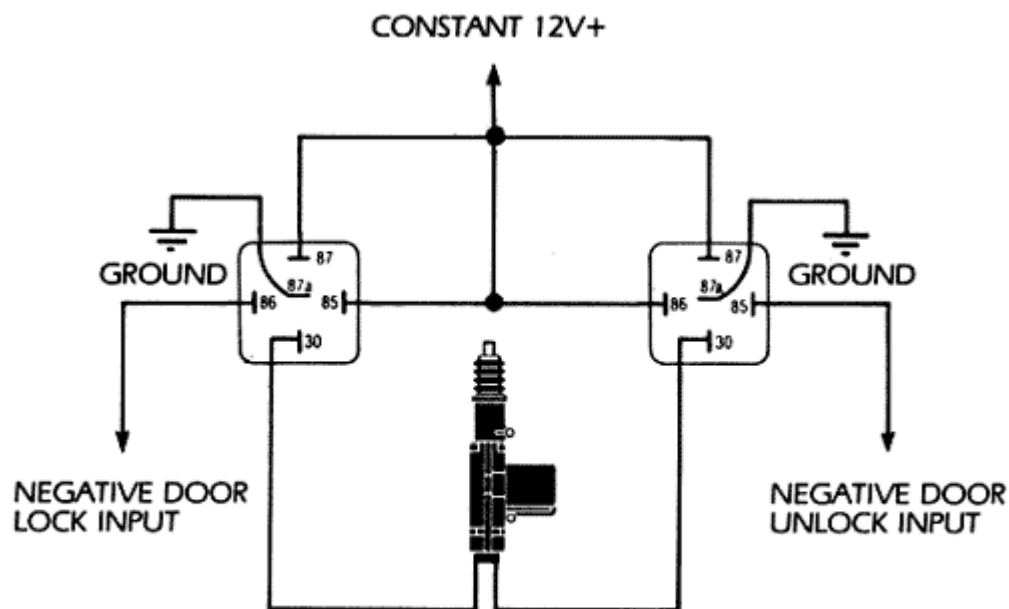
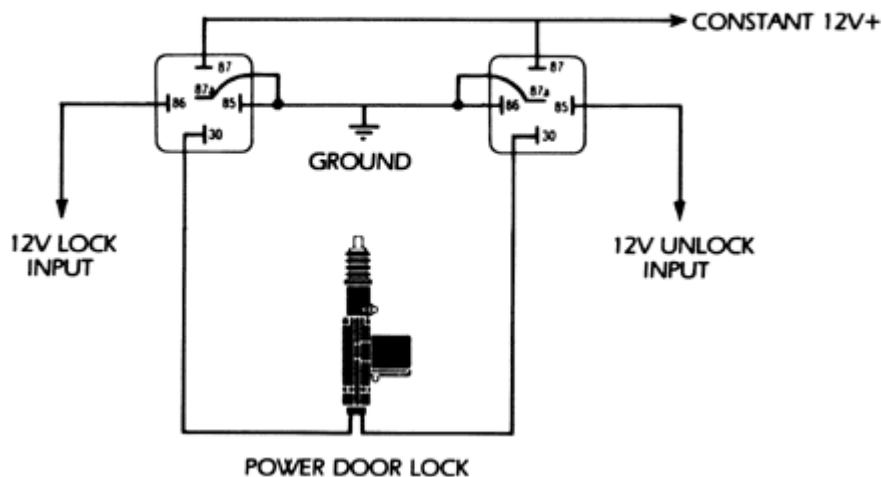


Wires for factory reversing polarity locks will show constant ground (-) when not in use. When cutting the factory wires, the wires retaining the constant ground are the switch (or relay) outputs.





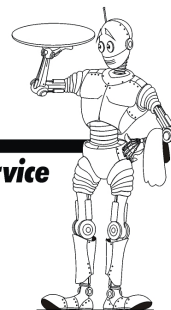
Adding a door actuator using door lock and unlock circuit, reversing polarity positive 12v output.



Negative door lock and unlock output reversing polarity



La robotique à votre service



Disclaimer

This information provided as an option to those who wish to use it. It is recommended only to those who have some familiarity with such practices and/or audio electronics in general. Firgelli Automations is not responsible for any damages sustained from mishandling of products or incorrect interpretation of this information.