

INTRODUCTION TO RELAYS

INTRO TO RELAYS

- A relay is nothing more than a switch. A relay is an electromechanical switch. Simply put, a relay will be used for an alarm or remote start installation for one or more of the four purposes:
 - To turn something ON
 - To turn something OFF or disable something
 - To change the polarity of a wire
 - To increase the current supply of a wire.
- Relays involve the simple matter of switching. The difference between a switch that you turn on or off with your finger and a relay is the method of activation. You use your finger to turn a switch on or off, but a relay is activated electronically. This is how a car alarm or remote start system's functions can operate without having someone to turn a switch manually.
- Relays are often used in alarm or remote start installations to control functions like:
 - Starter interrupts or disables
 - Power door locks
 - Flashing parking lights
 - Power trunk, power hatch, or power fuel door releases
 - Horn honk
 - Multiple triggers
 - Garage door openers
 - Power window/sunroof control



Example of a Bosch SPDT 30-amp relay:

3 parts make up a standard relay. They are known as the COIL, CONTACTS, and the SPRING.

COIL:

- This is the part of the switch that allows the relay to be controlled electronically instead of by someone pressing a button or flipping a switch. The coil of a relay is made up of many turns of small gauge wire wrapped around an iron core. When the coil is energized it creates a magnetic field.
- Pins 85 and 86 make up the terminals of the coil. When 12V is connected to pin 86 and ground is connected to pin 85, the coil is activated.

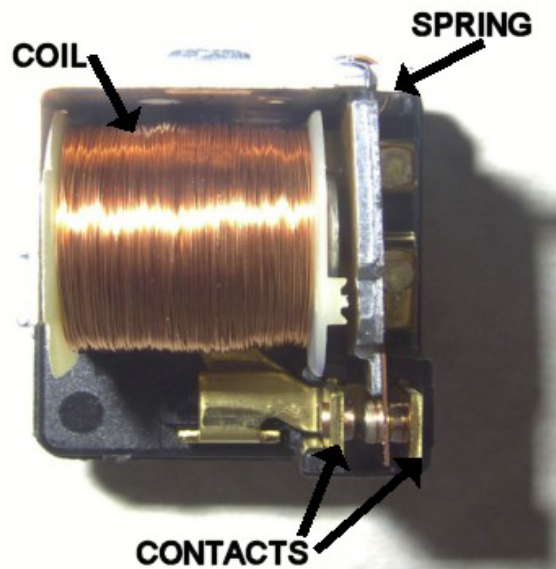
NOTE: Usually, it doesn't matter whether pin 85 or 86 is used for 12V or ground. But if the relay has an INTERNAL SPIKE SUPPRESSION DIODE, 85 must be the negative terminal and 86 must be the positive terminal. Most OEM vehicle relays are wired this way and it is a good habit of always using 85 for the negative terminal and 86 for the positive terminal.

CONTACTS:

These are the terminals that connect into the vehicle's electrical system. Functions include turning a vehicle on/off or disabling it, changing a wire's polarity, or increasing the current. Depending on if the coil is energized or not, pin 30 will be connected to either pin 87 or pin 87A.

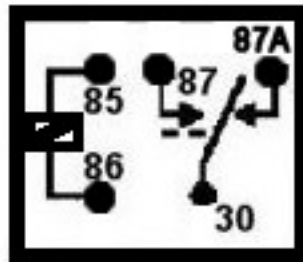
SPRING:

This is the part of the relay that keeps the common (pin 30) and the normally closed contact (pin 87a) connected while the coil is not energized. Magnetic force created by the energized coil will connect the common (pin 30) to the normally open contact (pin 87)



A look inside a relay:

This is a schematic of a relay. A similar schematic is printed on the side of most relays.



This is a look at the back of a relay. Actual connections are connected to these terminals or a custom wired harness is plugged into the back of the relay.

