25-AMP

40-AMP

50-AMP

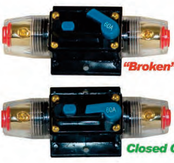
60-AMP

80-AMP

Used on small Compressors for overload protection

Circuit Breaker 75-AMP

Used between Large Compressor (DC7500) and Car Battery



3-Positions ON/OFF/NEUTRAL Returns to center automatically. Must use Relays

3-Positions ON/OFF/NEUTRAL Returns to center automatically. Must use Relays

Momentary on, returns to off when button is released Stainless Steel Used for Shavedoors, etc

2-Position On/Off Switch for many uses

Digital Sendors used with Digital Gauges and our Smartride

Analog Sendors

Wiring Harness for 8 Valves and Pressure Switch, with Molex Snap-in Connectors

Quantity Prices can be even lower than shown for larger quantites and higher volume purchases Email: joe@chassis-tech.com for lowest possible prices.

RELAYS how they work & how to wire it up..

Many Installers do not know how relays are used.....

what is a relay?

-a relay is a device that allows you to control a high-current electrical load with a low-current electrical 'signal'. they are usually electromagnetic, but are also available in solid-state forms. they can be used with a switch (to allow control of a high-current load with a small switch) or they can be hooked up to a switched power source in the car like the ignition or accessory power circuits (to allow power to be switched on/off automatically with the ignition key).

Why do I need a relay?

-when hooking anything up to a car's factory wiring, it's important to remember that factory wires are designed to carry the load of only the factory installed components. they are not 'general use' power circuits like the power outlets in your house. for example, the ignition (IGN) circuit is designed to power the car's ignition system and nothing else. hooking up a high-current device to this circuit can create a fire hazard. by using a relay, you can use the IGN circuit to control a high-current device without directly powering it from the IGN circuit itself.

Is a relay hard to hook up?

-no... most relays require only 4 wires.

I bought a relay, but I don't know how to hook it up.

Weird numbers and strange symbols, what do they mean?

-a standard relay will have 4 or 5 numbered leads (30, 85, 86, 87,& sometimes 87a). why they picked those numbers, I have no clue; but I can tell you what they hook up to.

-30 = constant [positive (+)] power wired direct to battery)

-85 = coil ground (wired to the negative (-) battery terminal or any grounded metal panel in the car)

-86 = coil power (wired to the control source. could be a switch, or it could be the car's IGN or ACC circuit.)

-87 = switched [positive (+)] power output. (when relay coil is powered, lead/pin 87 is connected to lead/pin 30)

-87a = [on 5 lead/pin relays only] this lead/pin is connected to lead/pin 30 when the coil is NOT powered.

here is the bottom view of a standard 4-lead relay

Switches Must have Relays !!

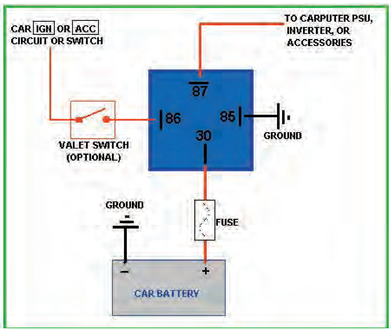
Pressure Switches do not go bad, but they burn up when you hook them up without a relay. ALSO.. IF YOU HOOK IT UP WRONG, THE PRESSURE SWITCH WILL NOT SHUT OFF!!

10 Gauge Wire #30 & #87

3-Position On/Off/Neutral FBSS Switch, use with relay to power

here is what happens inside the 4-lead/pin SPST relay. on the left, the coil is NOT powered. on the right, the coil IS powered. notice the switch changes positions when the coil is powered. when the coil is powered, pins 30 and 87 are connected. when the coil is NOT powered, then pin 30 is not connected to anything, therefore it is in the 'off' position.

typical setup to control power to a accessory via the car's ACC/IGN circuits.



I want to use the relay to turn on/off with the car. how do I hook that up?

-connect lead/pin 86 to the car's IGN, or ACC circuit. these circuits can be tapped into in the wiring harness that goes to your car's key switch. the ACC circuit can also be tapped into at the fuse box or in the stock radio harness.

What is the difference between ignition (IGN) and the accessory (ACC) circuit?

-they are both powered when they key is in the 'RUN' position, and they are both not-powered when they key is in the 'OFF' position.

-the 'ACC' circuit is powered when the key is in the 'ACC' position, but is not powered when the key is in the 'START' position. when the key is turned, power to the relay will turn on as the key passes the 'ACC' and 'RUN' positions, then turn off in the 'START' position, then turn back on as the key is released (springs back to the 'RUN' position. this is not an issue if you're using a manual on/off switch, or have a delayed on startup controller.

-the IGN circuit is powered when the key is in the 'START' position, but is not powered when the key is in the 'ACC' position. this circuit avoids the issue stated above, but requires that the key is left in the 'RU' position if you want to use the carputer with the engine off. on some cars, this can burn out the ignition coil.

I bought a 5-pin relay, can I still use it as a simple on/off switch instead of a changeover switch?

-yes. simply leave pin 87a disconnected.

My relay has more than 5-leads/pins?

if your relay has more than 5-leads/pins then it is most likely a DPDT, MPDT, or MPMP relay (M=multiple). it will work the same way, it simply has two or more separate switched inputs/outputs inside it. regardless of the number of switched contacts, it will still use a single coil, so it will still be controlled by a single power source.

does a relay take the place of a fuse?

-no! a relay provides no protection from overload or short-circuits.

do I need to use a fuse if I use a relay?

yes! you must still fuse your power wires!