

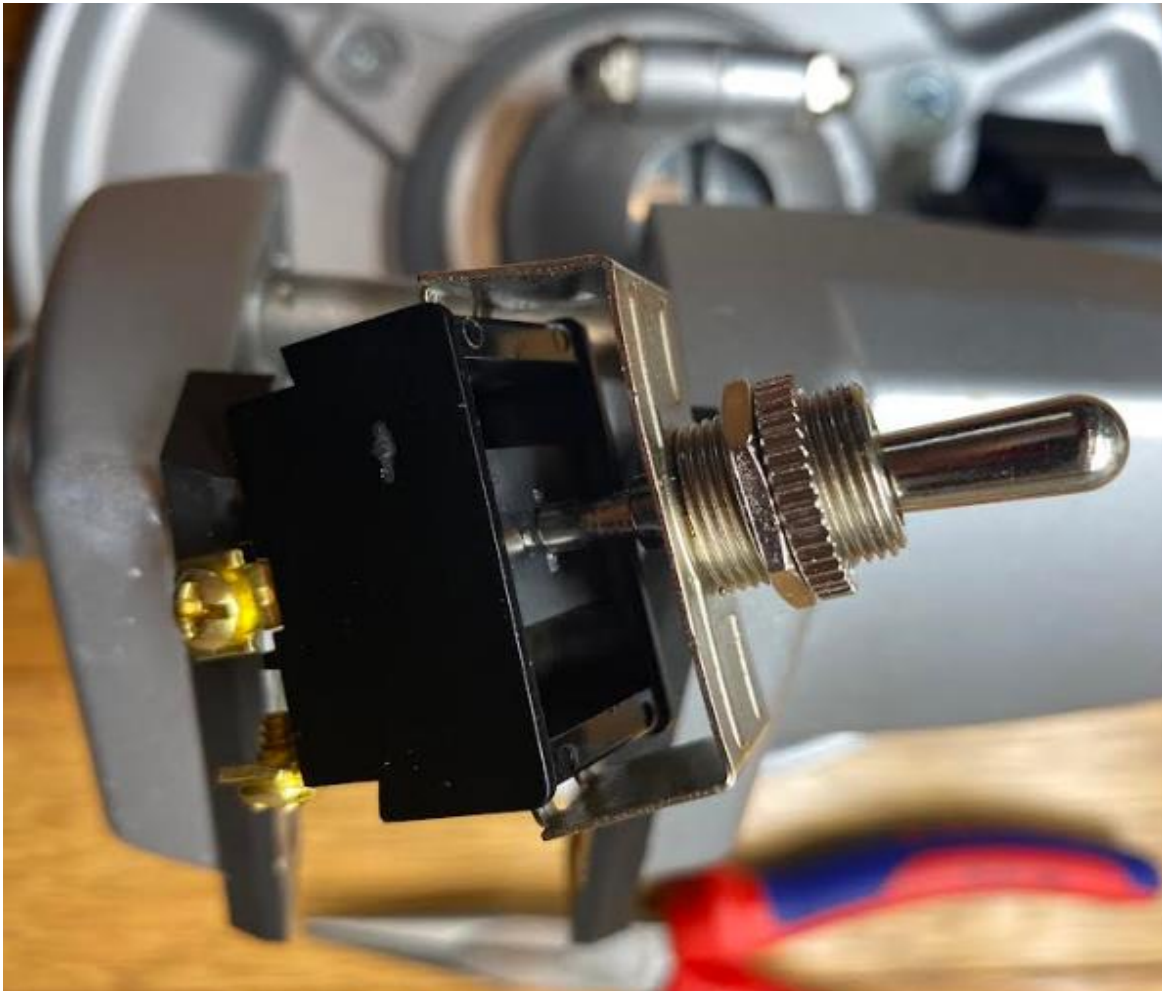
Lock the Lock

November 02, 2025 | Electrical-Enigma.com | Juan M. Moreno



The Spanish Phrase “a capa y espada” that in English translates to “by sword and cape” means to protect someone or something without surrendering. It is said that this phrase derived from medieval knights sworn to defend and protect who on the brink of death would wrap their cape around one arm and wield their sword with the other.

Today, me your host, Juan M. Moreno will show you a couple techniques to tap into electronic systems to protect your prized possessions with minor impactful electrical alterations.



For ease of readability a clickable Table of Contents is depicted below.

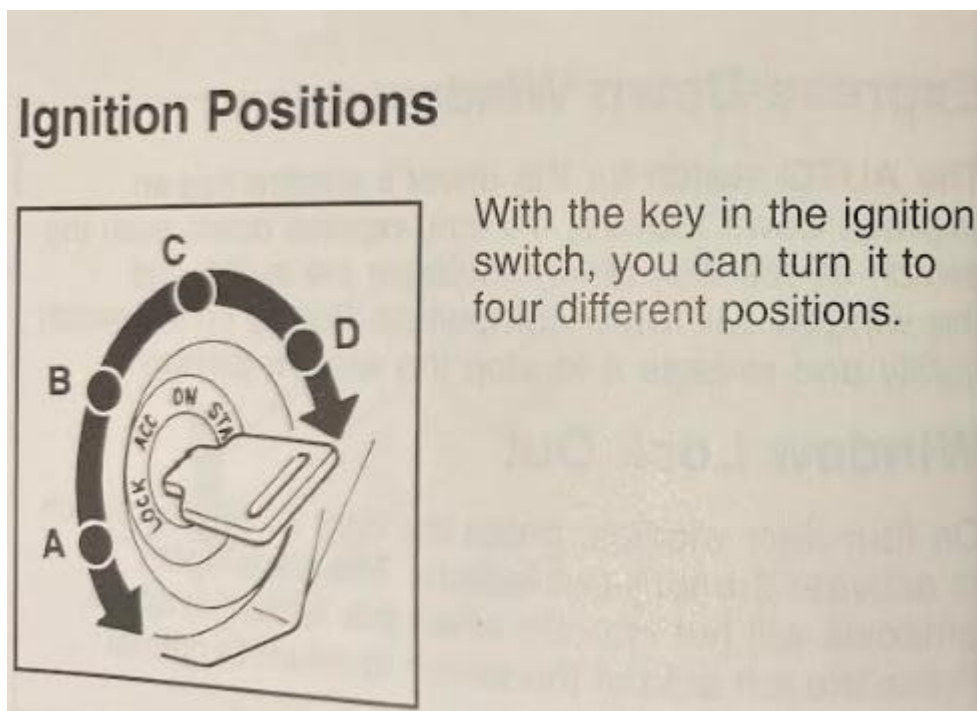
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Overview of intended behavior for end user.

Electrical/Electronics systems are practically present everywhere and on everything from phones, personal computers, homes, cars, etc. The emphasis of this blog “Lock the Lock” is to show you how to install an anti-theft system in your vehicle. That will do both:

- Indicate if the anti-theft system is deactivated or activated.
- Respectively enable an Essential Power Circuit and disable it.

Let us proceed to look at a direct quotation from the 2003 Chevy Tracker User Manual, my personal vehicle which I modified.



“ON (C): This is the position that the switch returns to after you start your engine and release the switch. The switch stays in ON when the engine is running. But even when the engine is not running, you can use ON to operate your electrical accessories and to display some instrument cluster warning and indicator lights”, 2003 Chevy Tracker Owner Manual.

We want to be able to turn the key to the ON position and have the instrument cluster (dashboard) notify the end user if the anti-theft system is deactivated or activated. For that we have to reverse engineer the electrical system narrowing down on our circuits of interest.

A given fuse enables the visibility of the mentioned indicator lights on the instrument cluster (dashboard). Further on we will work on **Identifying the Signaling Circuit** but for now let us simply make note of this and start thinking on how it can satisfy our first bullet point:

- Indicate if the anti-theft system is deactivated or activated.

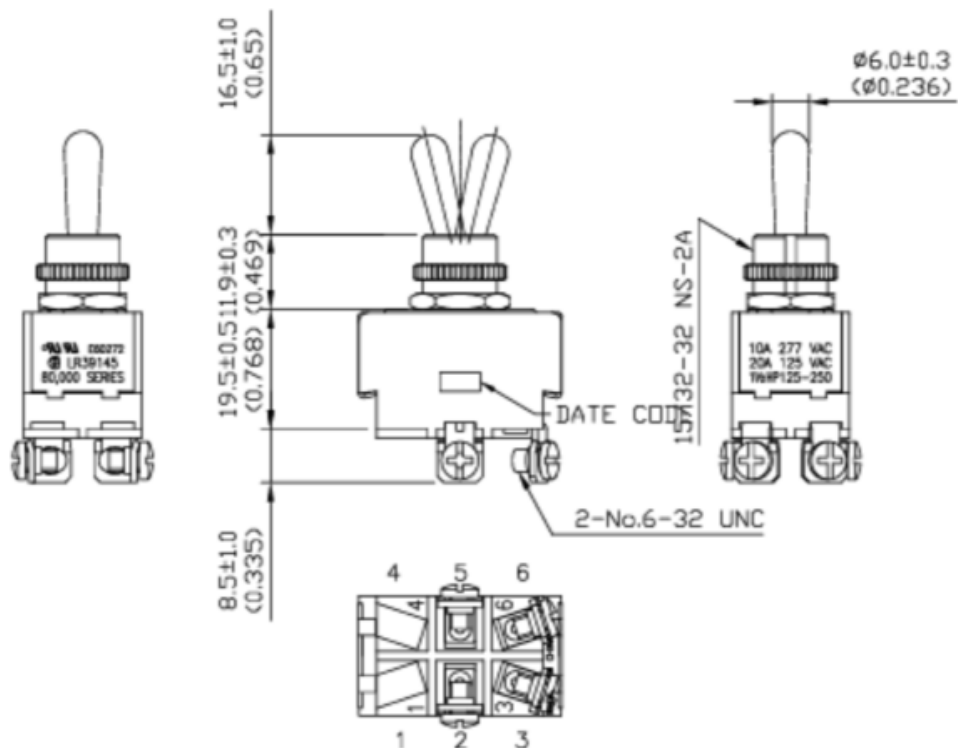
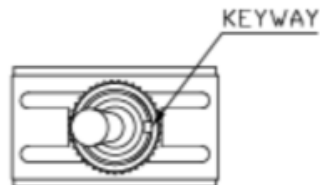
The switch utilized for this presentation is depicted below.



Rating	10A 277VAC, 20A 125VAC 1½HP 125-250VAC		
Contact R	50m ohm Max.		
Insulation R	DC 500V 100M ohm Min.		
Dielectric Strength	AC 1500V 1 minute		
Circuit	4P DPST ON-OFF		
Operation Force	1200g±300g		

- 1 KNURL NUT ASSY
1 HEX NUT ASSY

Packing: As GB's standard pack
(1 pce/blister card, 5 pcs
/box stick with one label)

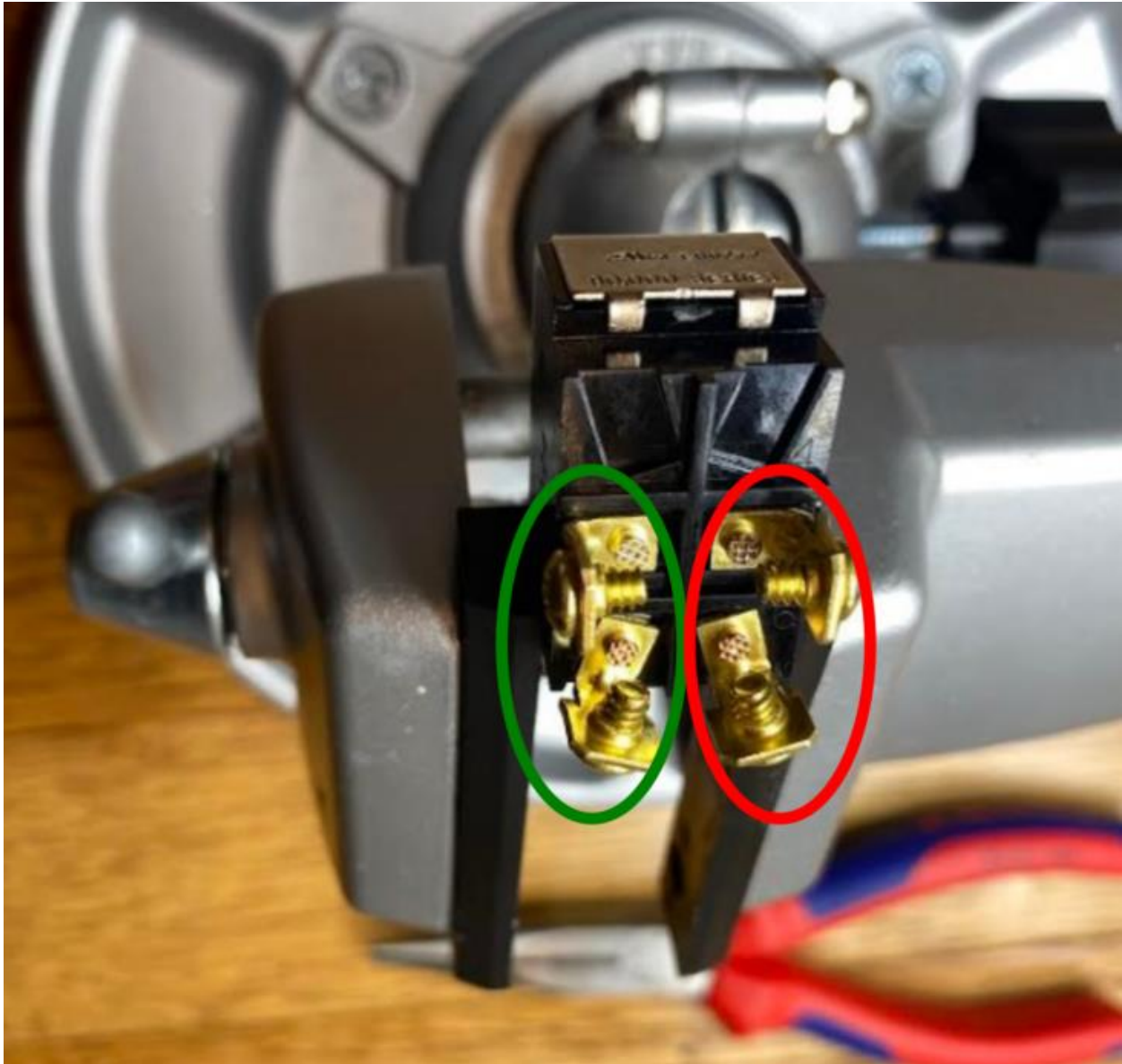




An important characteristic of this switch is that it has a total of 2 contacts and they are completely isolated.



The external toggle actually controls 2 internal levers that force or break mechanical contact depending on the position of the external toggle.



The contacts circled in “**GREEN**” are closed or open depending on the state of the toggle switch and they are completely isolated from the contacts circled in “**RED**”. Each is an isolated pole for a total of two poles. Two independent circuits can be controlled simultaneously ON or OFF (single throw characteristic). So putting both characteristics together, two poles (double pole), and ON or OFF positions, we get what is called a Double Pole Single Throw Switch.

Back in the section **Overview of intended behavior for end user**. We saw that we want the following characteristics:

- Indicate if the anti-theft system is deactivated or activated.
- Respectively enable an Essential Power Circuit and disable it.

The DPST switch can make these operations for us completely isolated and simultaneous. We now know what we are up against we can now proceed to identifying our circuits to be modified.

Identifying the Signaling Circuit.

This is where experience comes in play and quality equipment becomes priceless. You cannot go wrong with a Fluke Multimeter and quality test leads like the Pomona 5325A Probe Kit shown below.



Armed with the needle probes, knowing more or less what you are looking for, you can narrow down on any given conductor with its corresponding current limiting fuse.

Prepping and mounting the electrical harness.

Sleeve your conductors utilized in quality sleeving much like the Flame-Retardant Expandable Sleeving with corresponding McMaster-Carr part number #9196K11.



Add Heat Shrink like so preferably with a moisture seal with a 4:1 shrink ratio. McMaster-Carr is a reputable vendor and sells many sizes. Apply no more than 330°F as if you perform this at a hotter temperature you will start to degrade the heat shrink.



Fold back the excess sleeving back on to the heat shrink like so.



Add more heat shrink and apply no more than 330°F once again.

This looks very professional and anybody can do it even DIYs, the only drawback is that it takes time and quality heat shrink costs \$6.90 for 6 in. lengths that is not including the tools required to perform the work. But once you get good your work can easily look like mine. Do not forget that the only obstruction limiting your growth is yourself.

Note that the blue connectors shown here are where I spliced into for the Essential Power Circuit. They are male and female correspondingly back-to-back on original wiring, this way we can easily connect it back to its original state without having to solder or crimp new terminations. More **Tips&Tricks** will be discussed in the **Tips&Tricks** section of this blog.



In regards to fastening the harness you can utilize one hole zip ties and secure it in place with existing hardware.

Prepping and mounting the electrical switch.



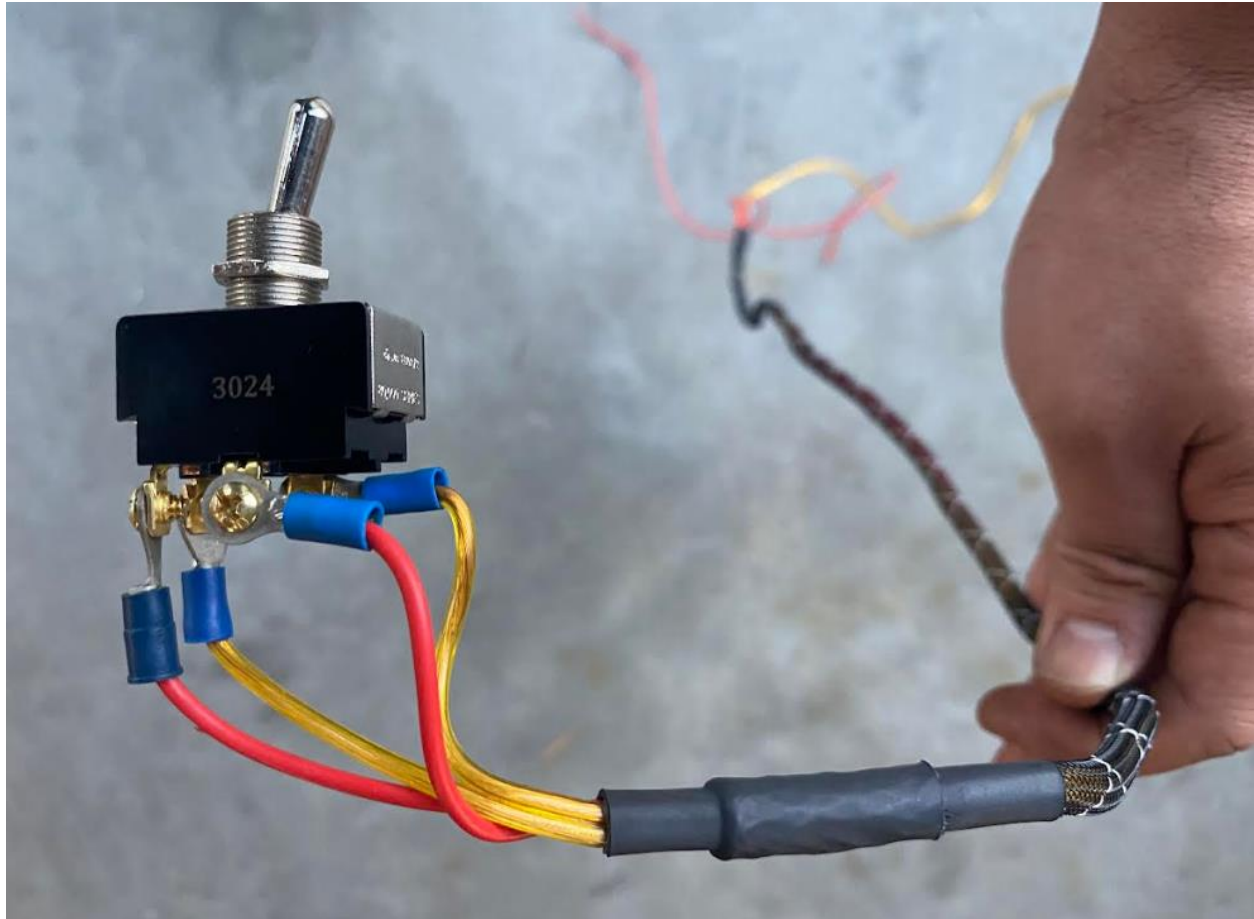
Source a “center punch” tool along with a hammer to create an indentation for exactly where you want to mount your switch.



Hold the center punch with one hand and tap it with a hammer with your other free hand “a capa y espada” “by cape and sword” my friend.



Once you created a dimple in the material where you want to mount your switch, start drilling it with a pilot drill bit and then proceed to use a step bit know as a “Unibit”. Unibits are cone shaped and make a hole bigger after every step. **DO NOT MAKE THE HOLE LARGER THAN THE LOCKNUT ON THE SWITCH!**



Your fully wired switch should look like so when done. The red conductors that control the Essential Power Circuit are completely isolated from the gold conductors that control your Signaling Circuit. Aim for greatness let your work speak for you.

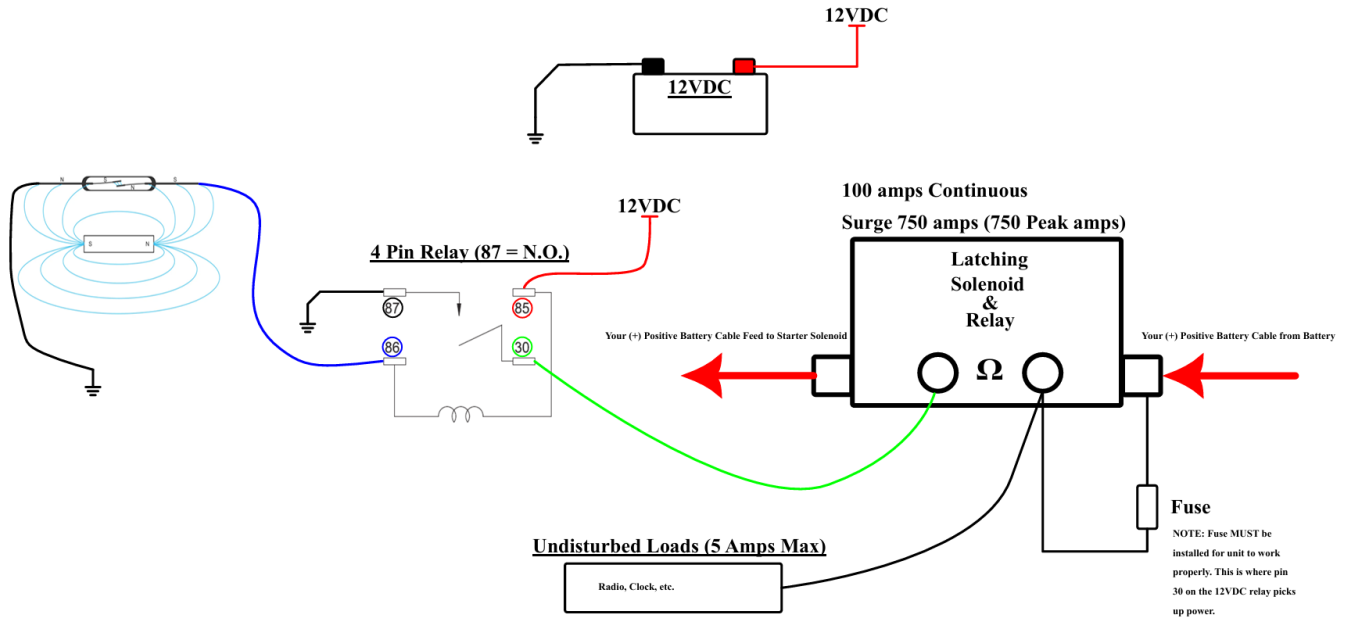
Tips&Tricks.

Know your system. If you do not know its power requirements and or limitations do not even consider modifying your system. Conductors can catch on fire due to phenomena like “Voltage Drop” from undersized wires or improperly sourced components. Make sure all sourced materials are of high quality and sourced from reputable vendors.

On original wiring always use premium high-end male and female connectors (Molex Brand or similar). We want male female back to back on original wiring that way we can always bypass any alterations performed for ease of resell or simply to maintain originality and integrity of the electrical system as much as possible.

Always make a sketch of the modifications performed even if its only with pen and paper. Last thing you want is to have to trace what you previously did or worse yet what somebody else did without any reference as to what does what.

You can deactivate higher amperage rated equipment and hold state with a single component like the Cole Hersee 24200 Insulated Continuous Duty, 12VDC, 110A, SPST Latching Solenoid. For example, take a peek at the diagram below where a magnetic reed switch enables or disables an electrical system. I wired this a while back on my little brother's Ditch Witch SK800.



Credits section.

Thank you, Javier Moreno, for always being there when needed and for having the confidence to let me work on your electrical systems without hesitation, that has really helped me grow my skillset, you can always count on me to help you grow yours!

Contact me if you need to stash your Treasure.

I try to be very professional I hope this blog showcases that about myself. I tackle most all electrical endeavors from fault finding in classic vehicles, to PLC programming from concept to commissioning, electrical installations in homes 120VAC-240VAC, to restoring electrical coffee machines back to factory standards as well as other electrical appliances!

My personal phone number is (720) 413-8971 and you can also find me with the links below:

Electrical-Enigma.com

[Juan M. Moreno \(LinkIn Profile\)](#)

Keep an eye out for my YouTube Channel to be coming very soon...

I hope you enjoyed and learned a thing or two from this content. Until next time knights, keep the king safe and the castle guarded!