Smeg's Electrical pages

A big welcome here to Smeg from the Mondeo Enthusiast Group (the MEG bit), who is helping me as his electrical knowledge is far greater than mine.

Here he has designed a double locking interface so that all the aftermarket alarms that only provide a single locking pulse (most) can be adapted to provide the double pulse that the Mondy requires to deadlock fully. Hopefully if we are very nice to him he will design some more add-ons for us. Please route any feedback to me and I will pass it on

As with all add on's, neither me nor Smeg accept any responsibility for any problems you may have if you decide to fit this to your car

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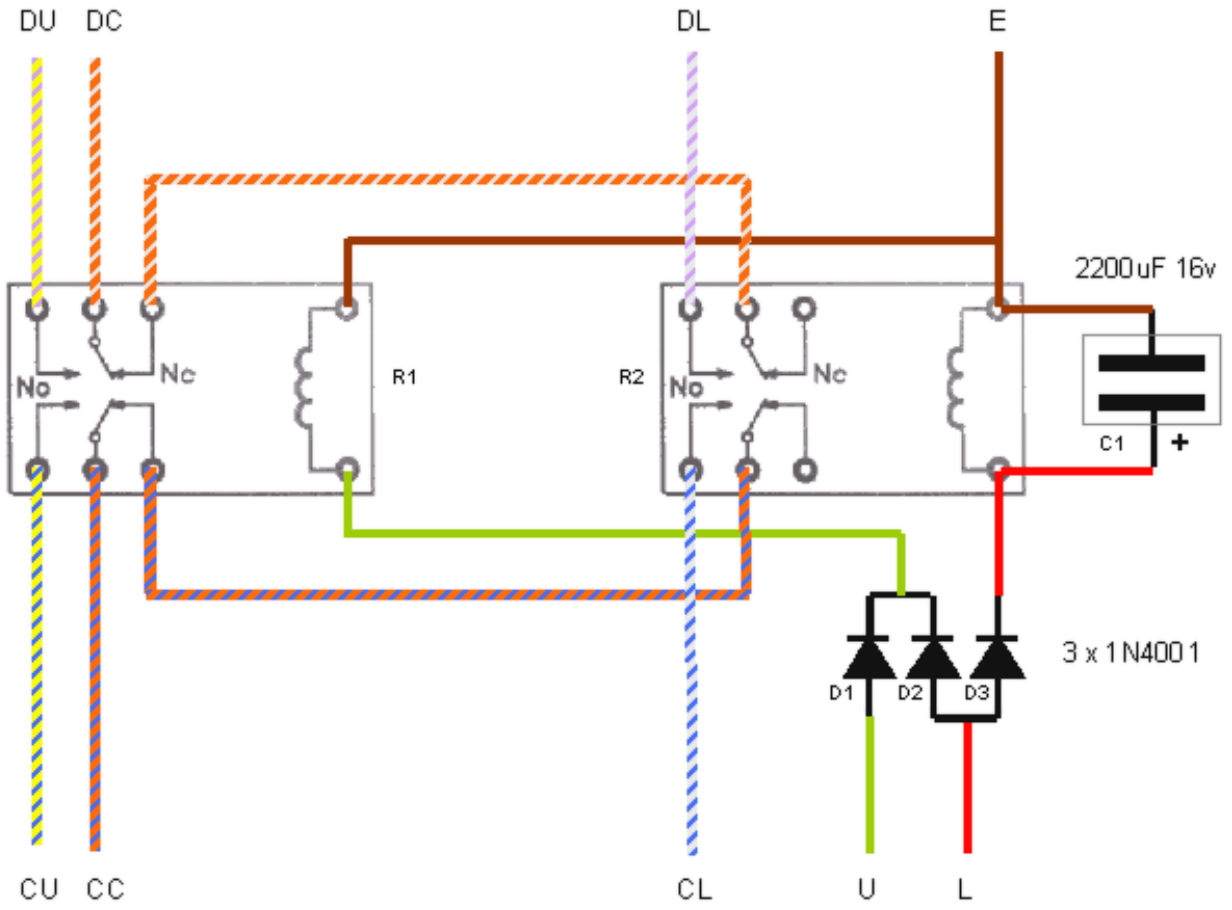
Smegs double locking Interface

DOUBLE LOCKING INTERFACE

Operate your Ford Double Locking via your 3rd party alarm central locking outputs.



CC	CENTRAL LOCKING COMMON	(Orange/Blue)
CL	CENTRAL LOCKING – LOCK	(White/Blue)
CU	CENTRAL LOCKING – UNLOCK	(Yellow/Blue)
DC	DOUBLE LOCKING COMMON	(Orange/White)
DL	DOUBLE LOCKING – LOCK	(White/Violet)
DU	DOUBLE LOCKING – UNLOCK	(Yellow/Violet)
E	EARTH / GROUND	
L	LOCK SIGNAL	
U	UNLOCK SIGNAL	

Wire colours stated are taken from a Ford Mondeo 1993

This circuit requires +ve inputs on 'U' & 'L'.
This can be converted to –ve inputs by reversing all diodes and the capacitor. 'E' should now be attached to +ve

Circuit Designed and drawn by Smeg © 2002. fordmondeo.org

Description:

Using the ford key, you unlock by simply turning to the left. However, to lock, requires both an unlock turn and a lock turn - the kind of double key turn we are all familiar with. - The Smeg interface simply emulates this action.

Looking at the diagram, relay R1 is used for the unlocking function. Relay R2 is used for the locking function. Both relays simply connect the common lines to the lock & unlock lines, for both the C-locking and D-locking, - exactly like a key turn would do. Bare in mind, your aftermarket alarm will supply lock/unlock signals for a duration of 0.5s up to 5s, the actual duration is irrelevant.

Unlock:

A +ve current is applied to the unlock input (U). It travels through D1 and energises relay R1. This simply connects the C-locking common to the C-locking unlock line, (having the effect of operating the C-locking motors), and connects the D-locking common to the D-locking unlock line, (having the effect of signalling the FF alarm to unlock the D-locks and disarm the FF alarm).

Lock:
Locking is slightly more complex.

A +ve current is applied to the lock input (L). It travels through both D2 and D3, and energises BOTH relays. R1 performs it's unlock function as stated above. However, R2 is also energised, but is prevented from performing the locking function because its 'common' lines are disconnected as R1 energises. - The relays will stay in this state for the duration of the 'lock' pulse supplied by your aftermarket alarm. When the 'lock' pulse has finished, R1 will de-energise, but R2 is held in place for a further duration of about 1 second because of capacitor C1. When R1 de-energises, it returns the 'common' lines to R2, enabling it to perform its lock function. - You can see from the above that the Smeg interface 'flicks' between unlock and lock, (emulating the double key turn), and gives the FF alarm the signals it's expecting, to engage the D-locks.

parts list:

the parts I have listed are all available from Maplin, and I have listed the Maplin part numbers.

Part Number	Qty	Description	Cost
VH54J	1	Capaciter 2200uF 16V	£0.79
QL73Q	3	Diode 1N001	£0.05
FJ43W	2	DPDT Relay 6A	£2.99
KC91Y	1	Plastic Box	£1.29

total = £8.21

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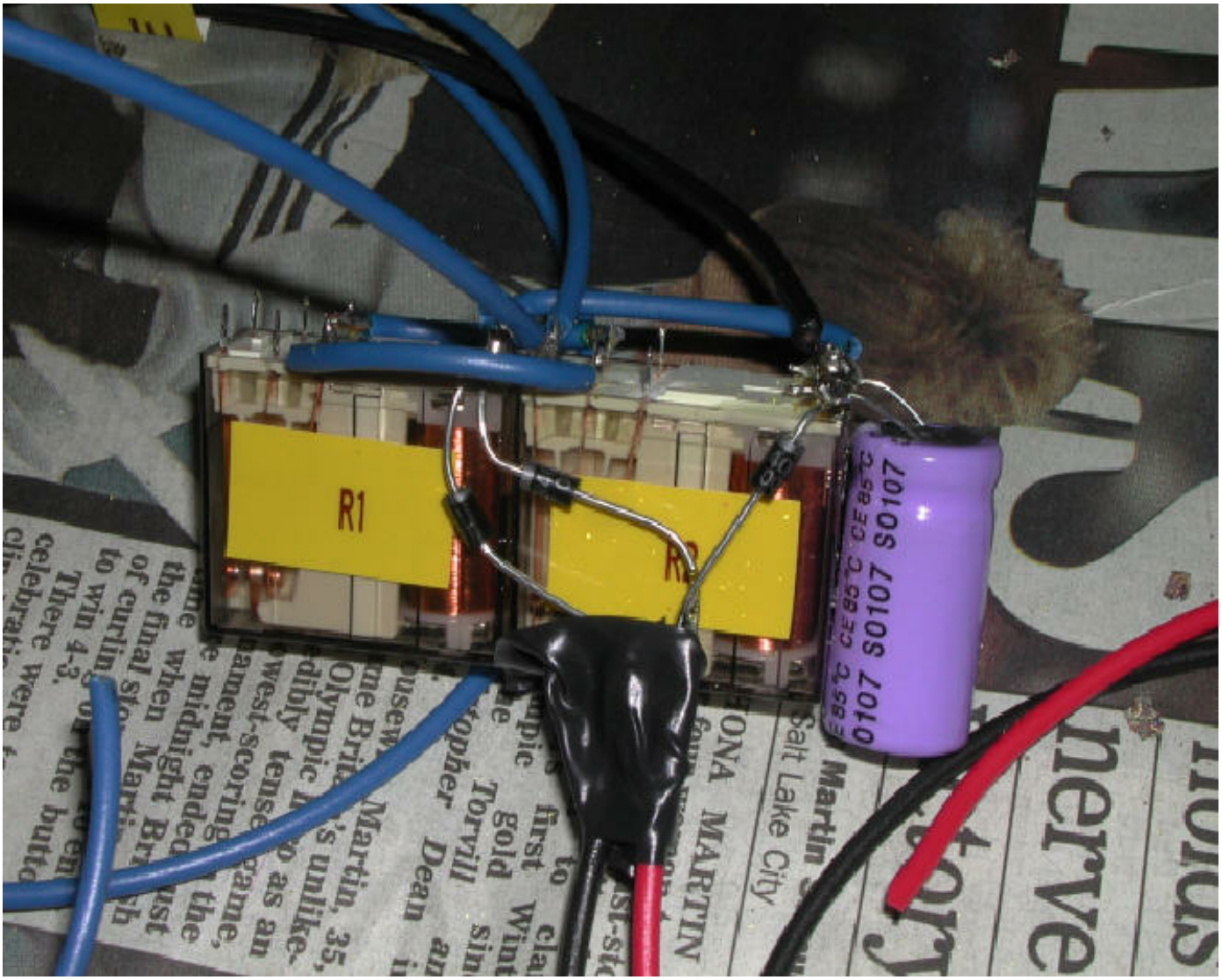
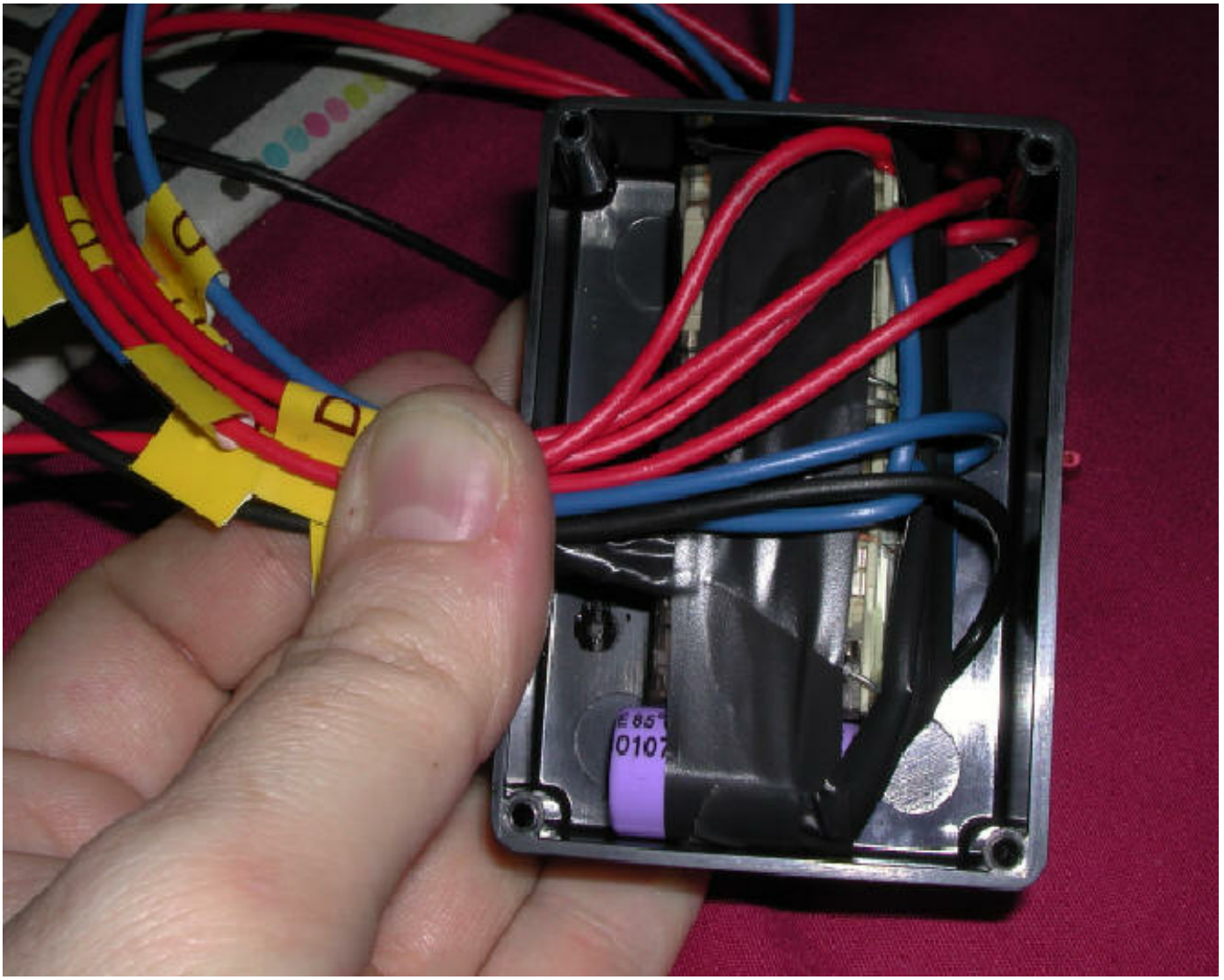
How to put it all together

First Gather all the bits that you will need, The components, Wire cutters and strippers, Soldering Iron and solder, Wire etc

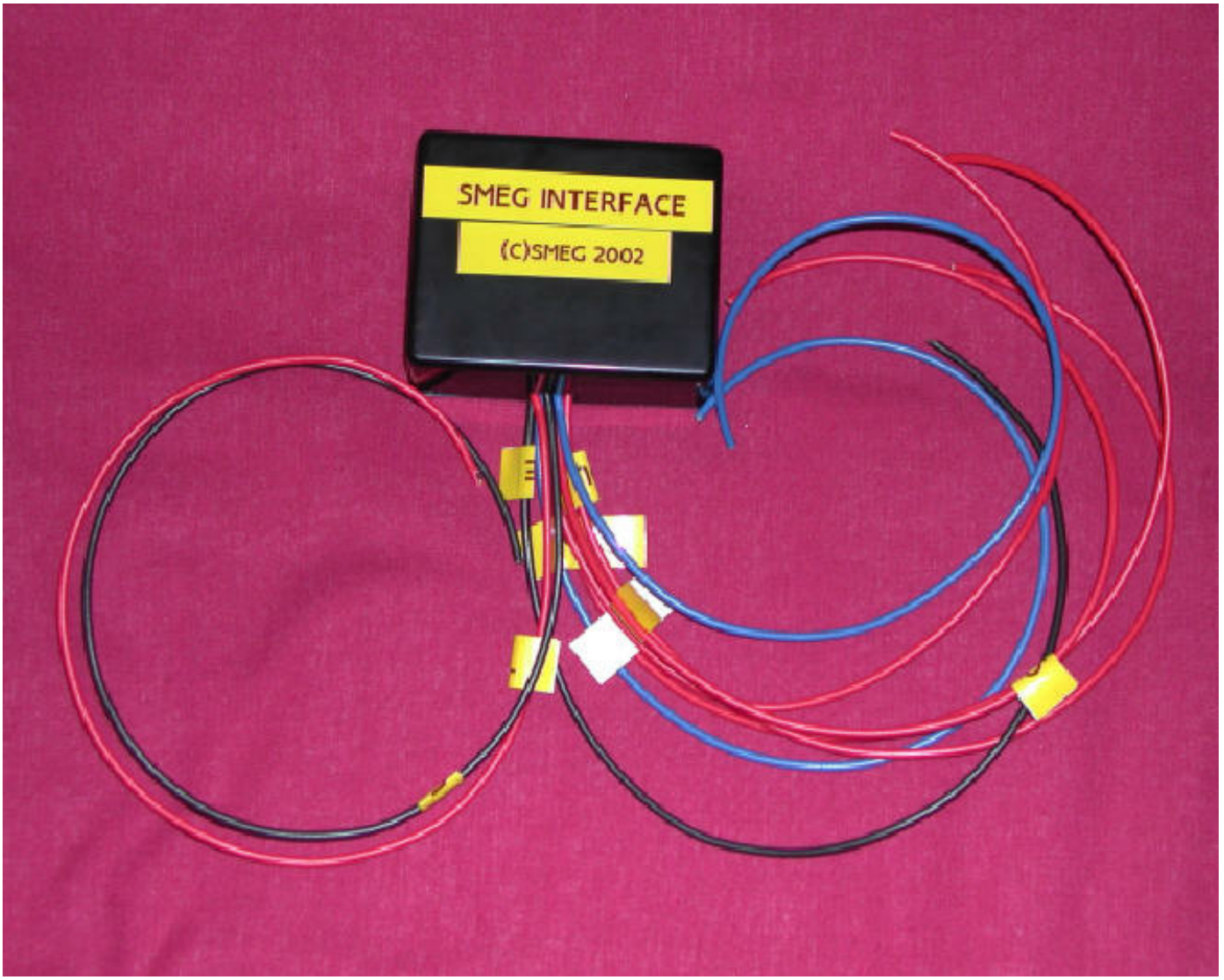
Don't forget the newspaper to solder on or your have holes in the bed!!!



Lay it out and start soldering the components together. If you tape the relays and capacitors like I have they are a nice tight fit in the box



Insulate it all and stick it in the box, make sure it cant move around and all is secure. Dont forget to label all the wires or you'll have a lot of fun later



The finished interface. Now I just have to go and put it in the car!!!!

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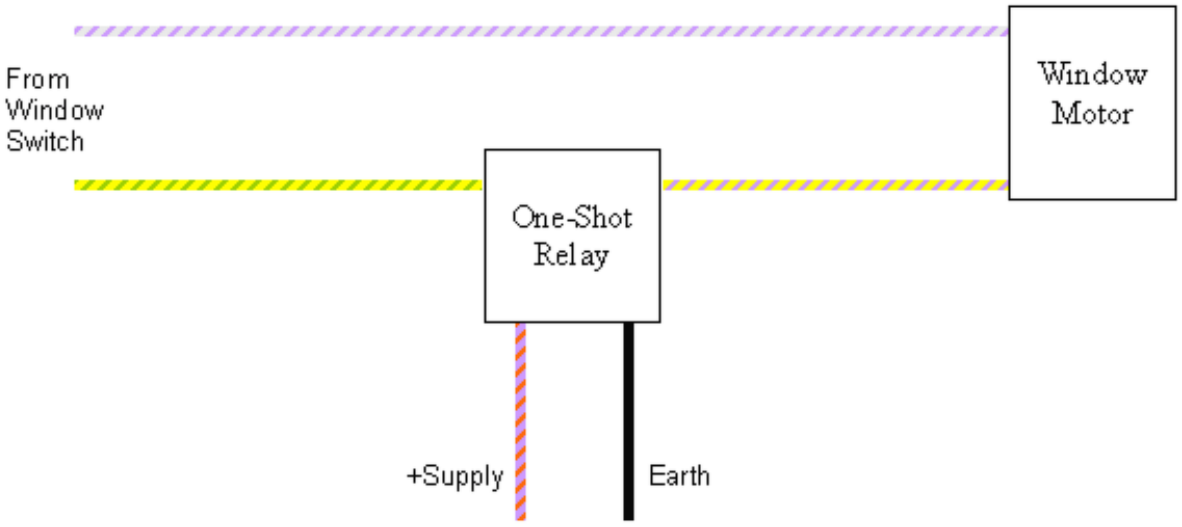
One Shot Up

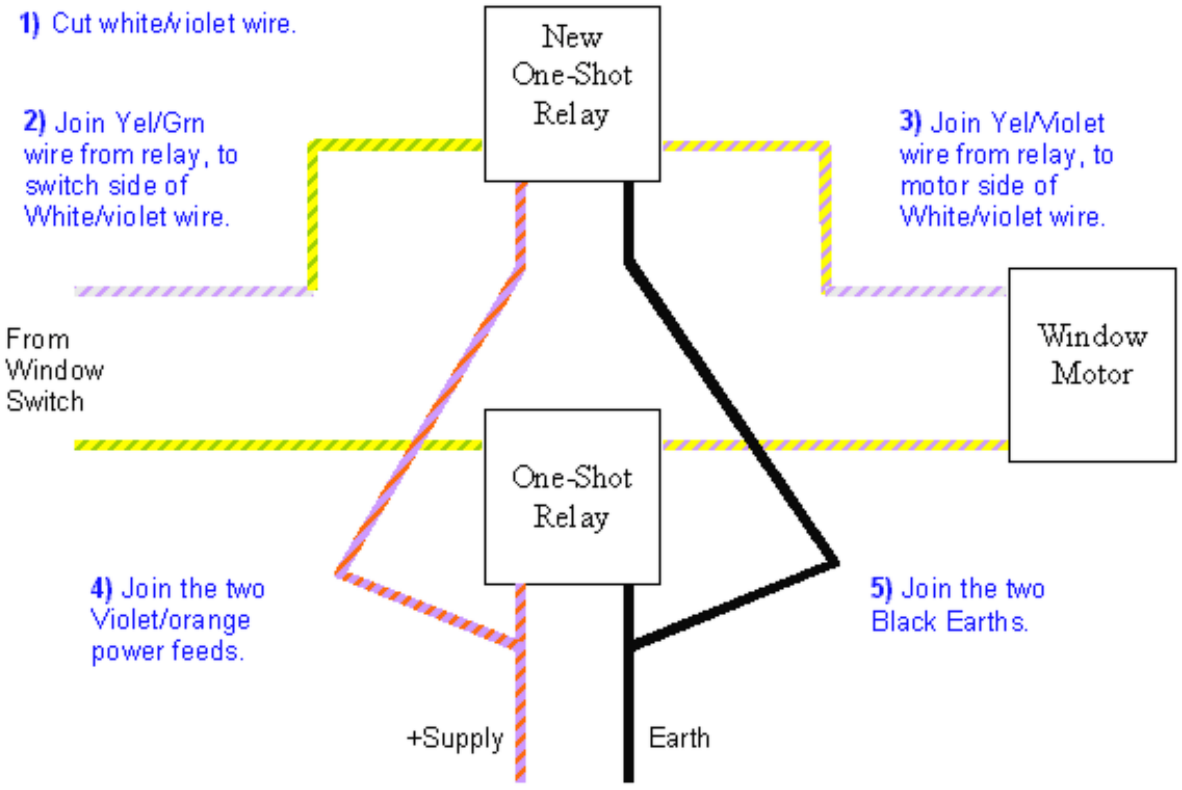
Every One loves their One Shot Down feature on the drivers door, but here's how to add a One Shot Up. Don't forget to do this to the Passenger windows as well

Installing a 'One-Shot Up' relay

Original configuration



With a second 'One-Shot' added.



Circuit Designed and drawn by Smeg ©2002. fordmondeo.org

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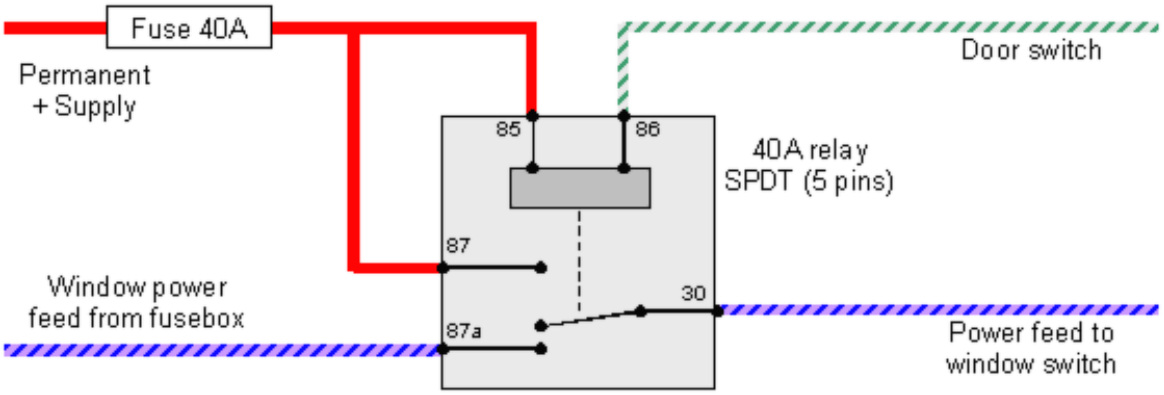
No Key Windows

This mod allows you to wind up or down the windows without the key, just by opening the drivers door. How many times have you got out and realised the windows are open, then had to find the key and turn it in the ignition, now the windows work if the door is open

No-Key Window Mod

Operate your electric windows while exiting the vehicle.



Install relay in driver's footwell. Cut window power feed wire (Violet/Blue) and insert relay as shown above. Attach permanent power supply via a 40A fuse (or 30A for 2 window).

Now, whenever drivers door is open, relay is energised, and all windows can be operated regardless of ignition status.

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Contact me on madmole@btinternet.com

This page was updated on Sunday 17 March 102, just 3743 days ago.