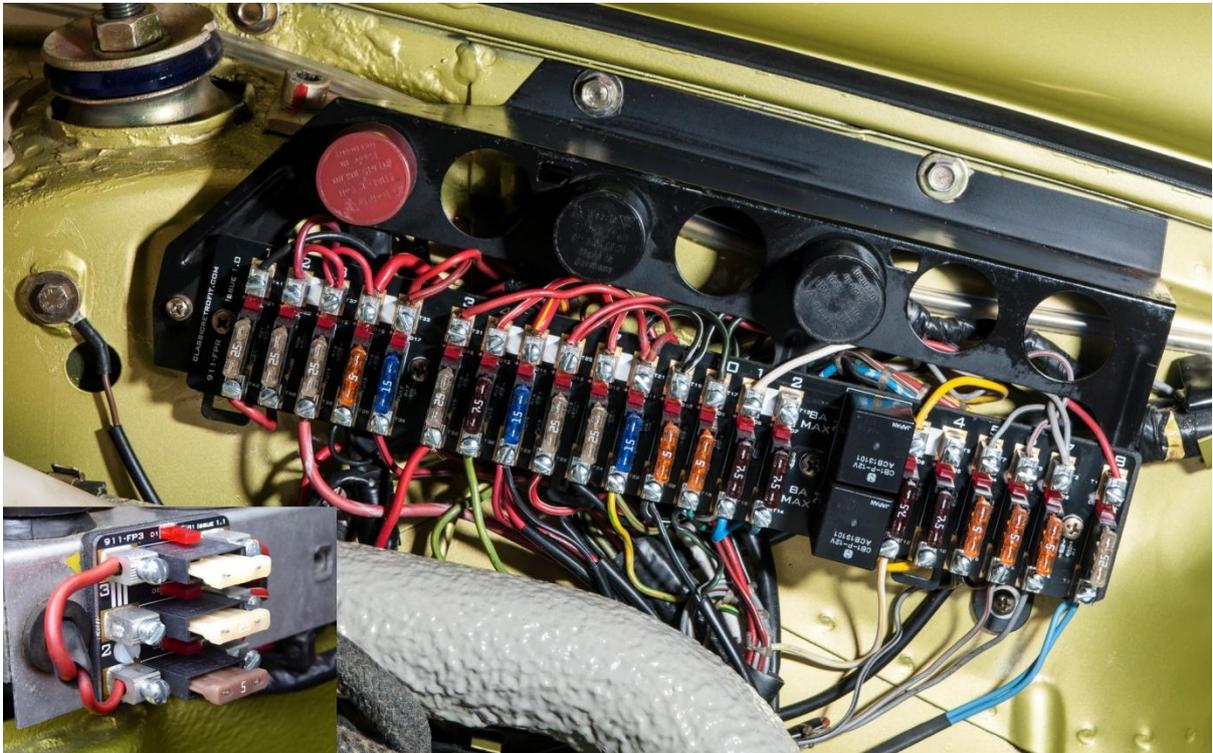




911-FPR and 911-FP3

Fuse Panel Installation Guide

Issue 1.4



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Thanks!

Thank you for purchasing our fuse panel upgrade for your 911. We hope you like it!

The fuse panel is just one of many products we are developing.

Check out www.classicroetrofit.com regularly to see what we're up to!

911-FPR and 911-FP3 Fuse Panel Upgrade.

The 911-FPR and 911-FP3 fuse panels are an essential upgrade for all "impact bumper" model Porsche 911s 1974-1989. The main features are:

- Uses standard ATO blade fuses
- Integrated relays for improve headlamp performance
- LED fuse blown indicators
- Simple installation.
- No modifications required to existing wiring
- No crimping, soldering or special tools required.

911- FPR replaces the front fuse blocks. There are 21 fuse ways labelled as per the Porsche numbering system on the fuse box cover. It also has dedicated relays on the main and dipped headlamp circuits. Typically, the relays improve the brightness of your headlamps as they relieve the lighting switch from carrying heavy current.

911-FP3 has 3 fuse ways and is for the engine compartment.

	<p>The fuse ways either side of the relay (labeled 1, 2 , 3 and 4) are rated 8A max. They are intended to be used for powering standard filament headlamp bulbs.</p> <p>All other fuse ways are rated 25A</p>
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Before You Start

The installation is straightforward and can be completed comfortably in 1 to 2 hours by a competent person. We do, however, draw your attention to our disclaimer at the end of this document.

There are a few wiring peculiarities with some later models. Please see the sections at the end of this document, particularly if you have a European 1987 MY Carrera 3.2 or a 'fully loaded' car with extra electrical equipment.

You will need the following tools:

- A flat head medium sized blade screw driver for the screw terminals.
- A 'Philips' (crosshead) screw driver for the mounting screws.
- Cutters (for cutting cable ties).

We strongly advise to take reference photos of the original fuse box before you start. Pay close attention to the placement of original external brass links. Take close ups of the wire connections on the top and bottom rows. Try also to identify any non standard wiring (particularly alarm systems).

The fuse panel is 'plug and play' provided you install all wires in a like for like placement.

If you need to remove an existing relay kit, there is a guide at the end of this document.

Front Panel Preparation.

Referring to the original fuses, make a note of the ratings of each fuse. Both the old 'bullet' fuses and the modern blade fuses are colour coded. Confusingly, the colour codes are not the same.

Old style 'bullet' fuses		New 'blade' fuses	
Blue	25A	Clear/Natural	25A
Red	16A	Blue	15A
White	8A	Brown	7.5A
Yellow	5A	Tan	5A

Note: Fuse colours are for guide only - some colours do vary. we note that 'brown' and 'tan' fuses are easily confused. ATO fuses have the rating printed clearly on the top.

Note: The blade fuses don't have exact matches for rating. We haven't encountered any problems with using the slightly lower 15A and 7.5A fuses in place of 16A and 8A. We provide enough fuses for a standard car. If your fuse values have been changed you may have to purchase additional fuse values. We recommend Littelfuse ATO blade fuses.

- Populate your new panel with the fuses provided.
- Loosen all the screw terminals on the panel. They may be stiff due to the manufacturing process.

You are now ready to start the installation.

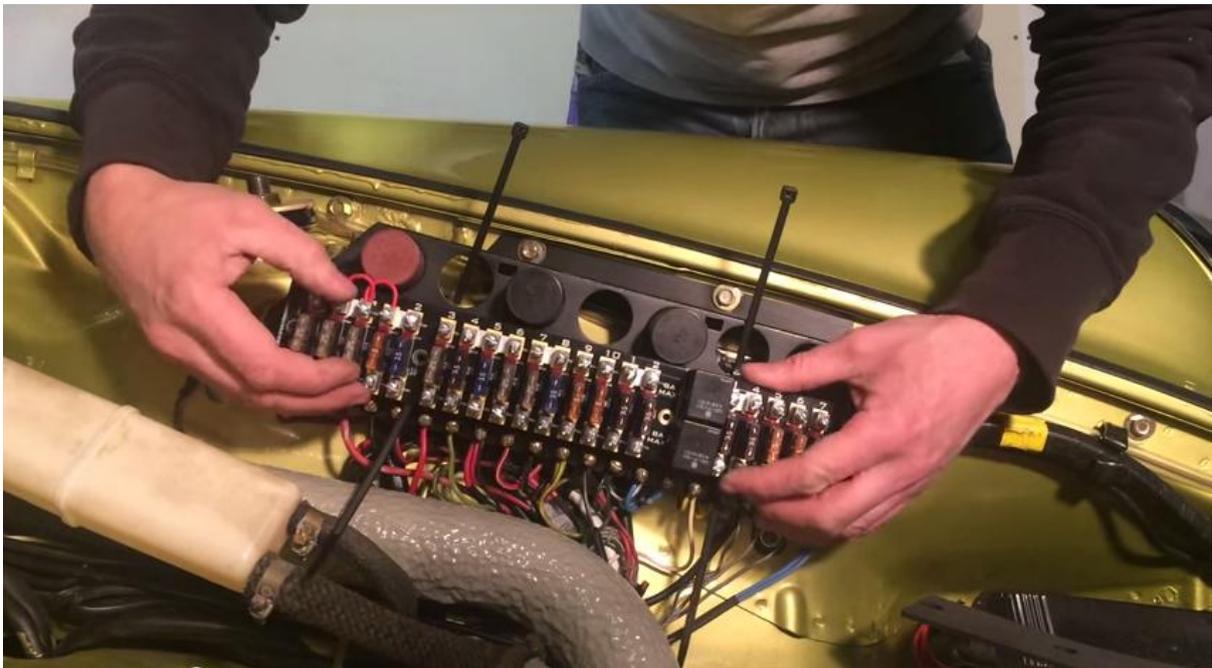
Front Panel Installation.



This equipment must be installed by an auto electrician or persons of equivalent level of competence. Failure to follow the installation procedure can result in damage to the vehicle, its wiring harness and injury.

Follow these instructions for a quick and straightforward installation.

1. **Disconnect the negative terminal (earth strap) from the battery.**
2. If you have an existing relay kit to remove, see the removal instructions further on in this document.
3. 'Crack' loose all the screw terminals on the **original** panel in the car and retighten finger tight. Don't take the wires out at this stage. You are just breaking the seal of 30 years or more!
4. Again, 'crack' loose the six screws that hold the original fuse blocks in place. Don't remove them yet.
5. Using two long cable ties, loosely strap the new panel in front of the original so that you have access to the bottom row of screw terminals, both on the original and new panels. Don't worry about the gasket at this stage.



6. Starting at the left hand end (rear of car), transfer each wire from the original screw terminal to the new one until you have completed the bottom row. Note that in many cases there are multiple wires in the same terminal. It is vital that you are methodical and take your time. Complete each terminal fully before moving to the next one. Skip the 'H'

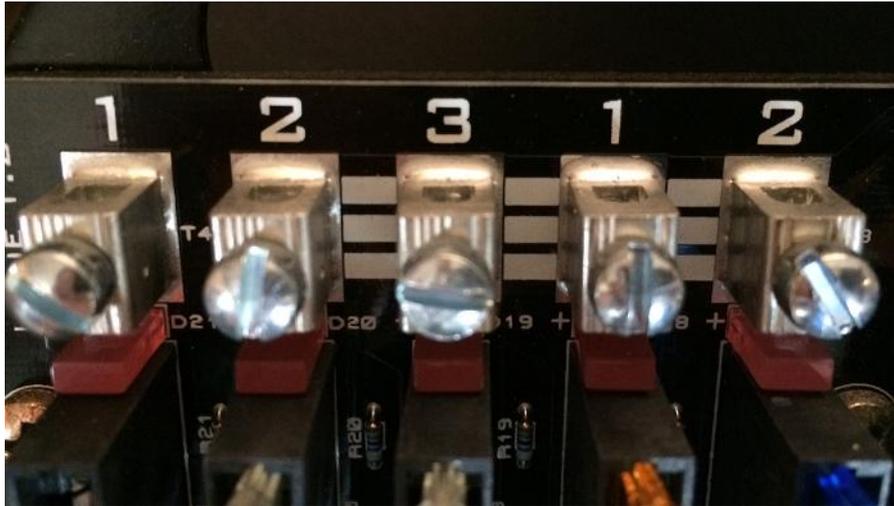
terminal on Issue 1.3 panels at this stage but read the Additional Headlamp Feed section at the end of this document for information.

7. When you have completed the bottom row, remove the cable ties and pull the new panel away from the old fuses to access the six mounting screws for the original blocks. Set the screws to one side (you will be reusing them). The old fuse blocks are now just 'hanging' on the top row wiring.



8. Again, starting at the left hand end, transfer each top row wire across to the new panel. These are replicated on PCB of the new panel so do not need to be fitted. This time, you will be able to remove the three original blocks as you go along for improved access.

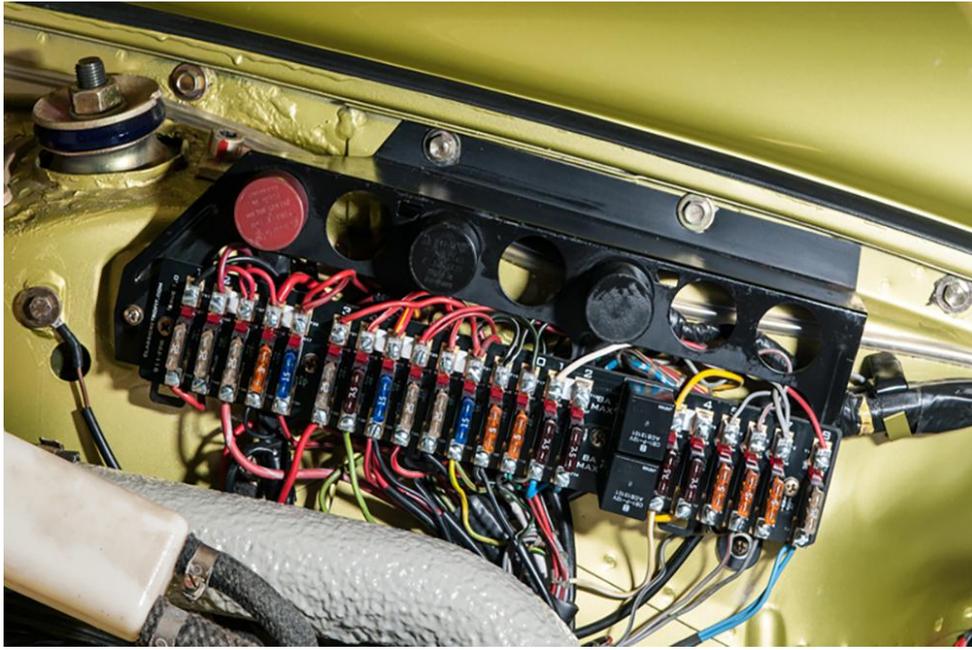
Links between terminals are marked clearly on the fuse panel with 3 white horizontal lines:



Note1 : Late model cars may have extra 'intermediate' terminals fitted in between the numbered terminals. These wires can be fitted to either adjacent terminal on the new panel. For example, if you find a wire on a terminal between 7 and 8 on the old fuse block, then wire it to 7 **or** 8 on the new panel.

Note2 : The (old) fitment photo above shows two red wire links. These do not need to be fitted as all panels from Issue 1.2 onwards have onboard links.

9. Insert the gasket behind the new panel. It has a correct way up so please note the screw hole orientation. The gasket **must** be fitted to electrically isolate the back of the panel from the metal bracket.
10. The new panel is mounted using four of the original mounting screws. The supplied nylon spacers **must** be fitted between the panel and the metalwork of the 'fuse box'. It can be helpful to 'stick' the spacers in place with some light grease to aid installation.
11. Screw the panel down to the metalwork.
12. Recheck every screw terminal for tightness.
13. Reconnect battery and check all electrical systems.



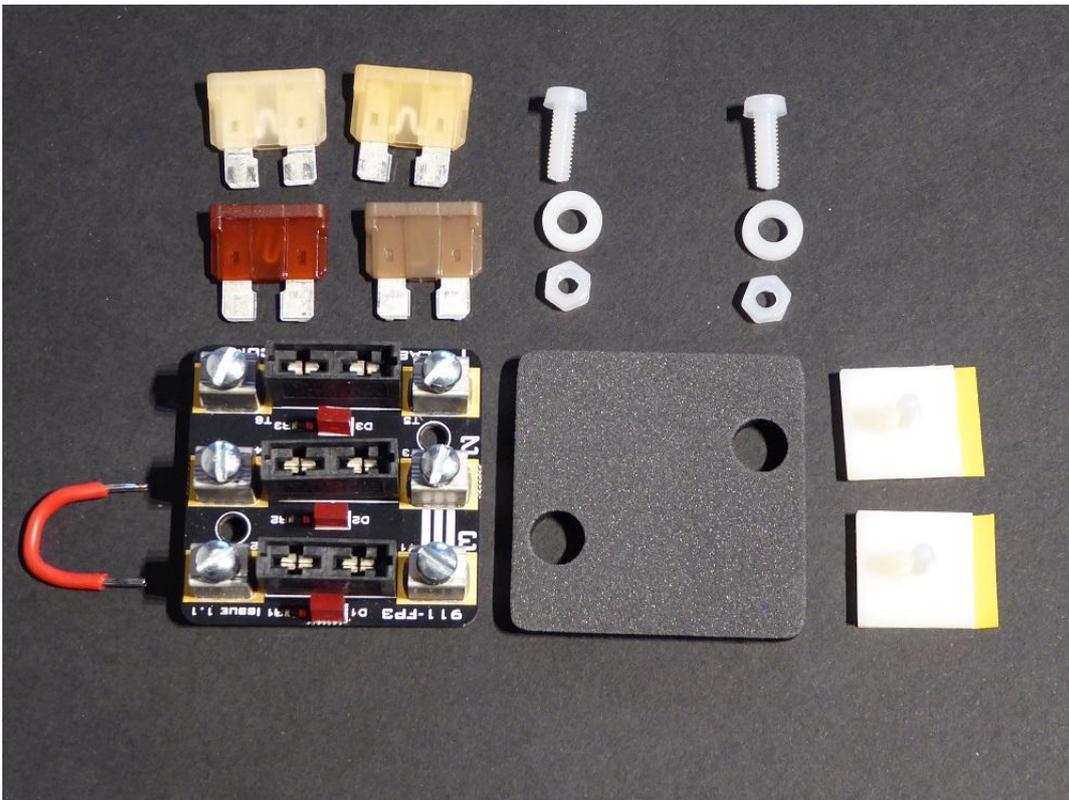
Note: The original lid will fit over the new panel but the recess on the far right hand end may need enlarging but a few mm for a good fit.



Rear Panel Installation.

The rear panel is always live - You absolutely **must** disconnect the battery negative terminal before installation.

The rear panel has two options for installation. All hardware is in the kit.



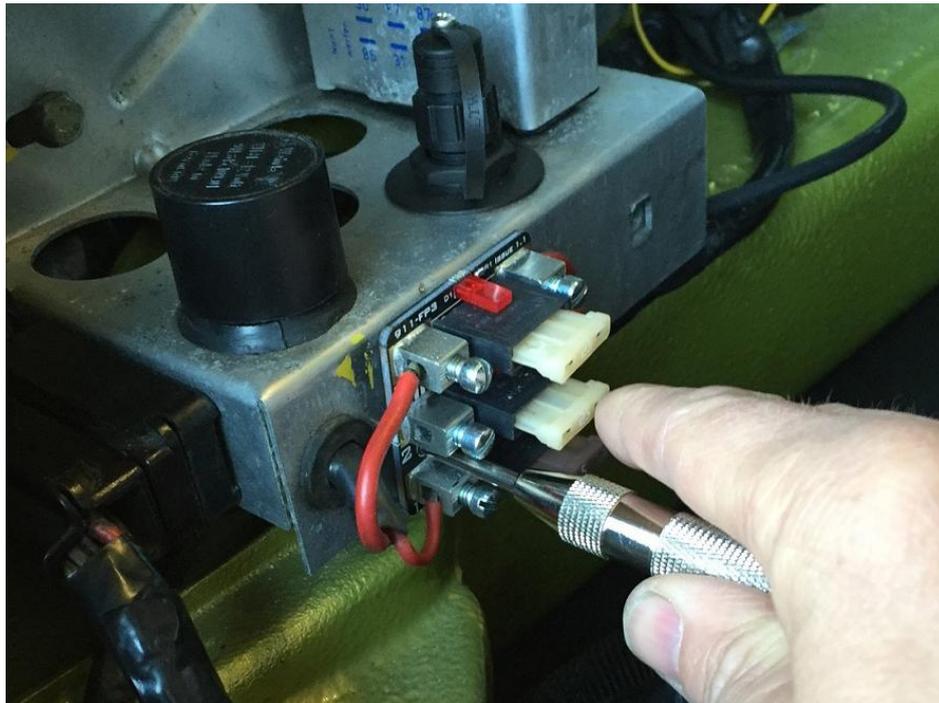
A wire link may be needed on a 3.2 Carrera. When you remove your original fuse block, check the back. If terminals 1 and 2 are linked, fit a wire link after installation.

Screw mount.

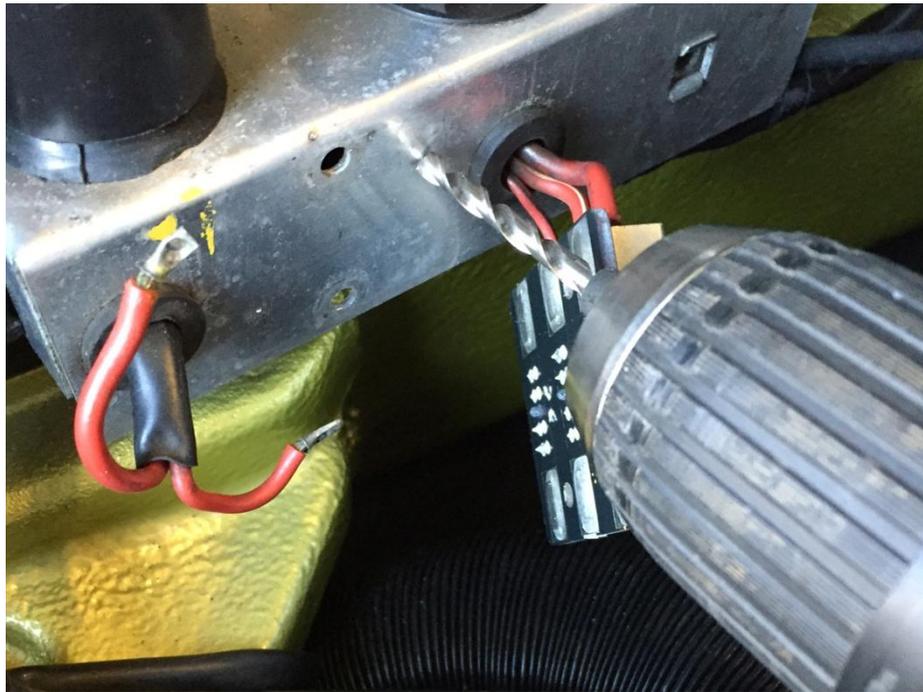
This requires drilling two holes in the aluminium relay panel. Use all parts except for the adhesive pads.

- 1) Disconnect the battery negative.
- 2) Photograph or note the wires on the existing fuse block.
- 3) Undo the mounting screws and nuts (behind) on the original fuse block and remove.

4) Temporarily fit the new fuse panel , align and mark hole locations with a punch / pen:

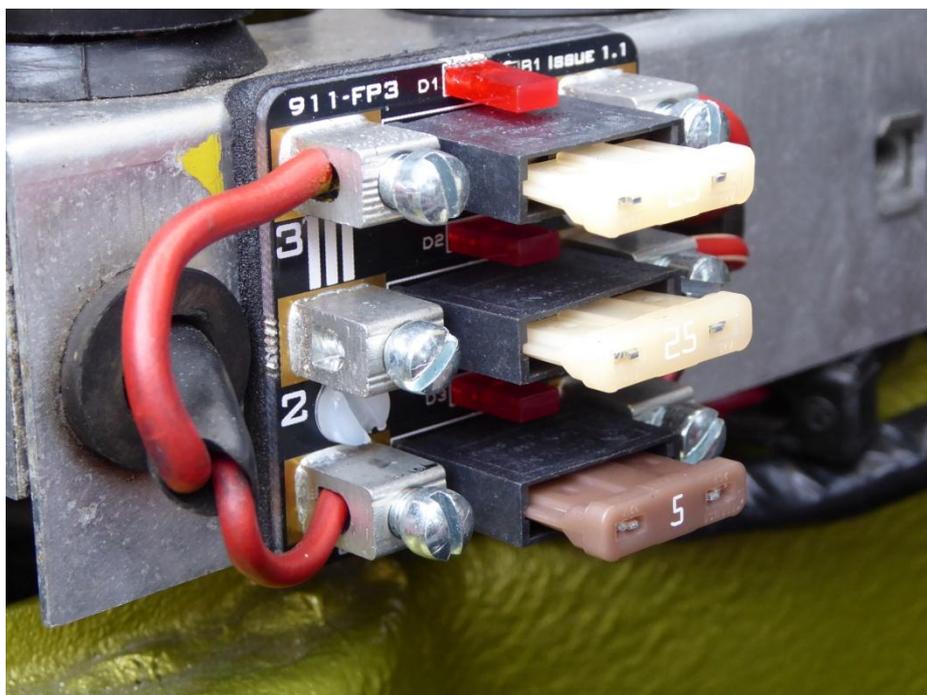


5) Drill two mounting holes with a 4mm drill bit.



6) Fit the round white spacers in the gasket and secure to the car with nylon screws and nuts.

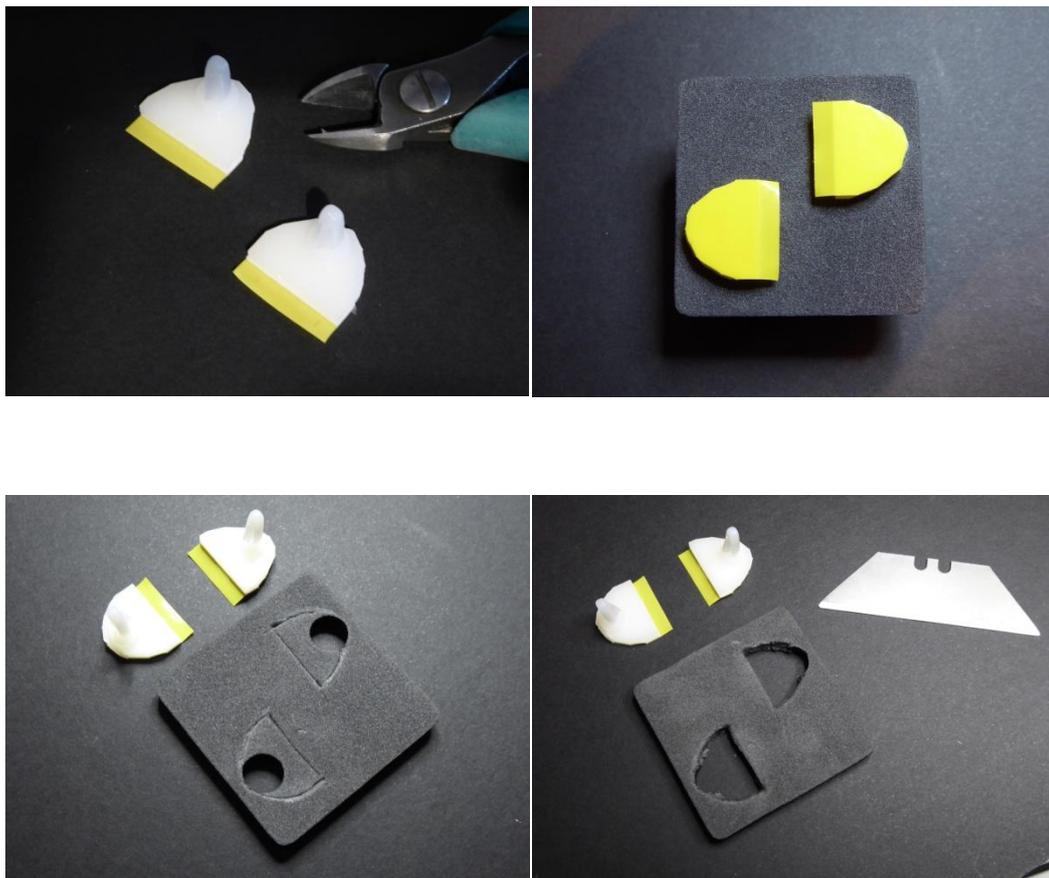
Tip: Pushing the screw through and then trying to get the nut on is very difficult. Instead, pull the fuse panel away from the car, slide the nut up behind on your finger so you can see it through the hole, then put the screw in. Much easier.



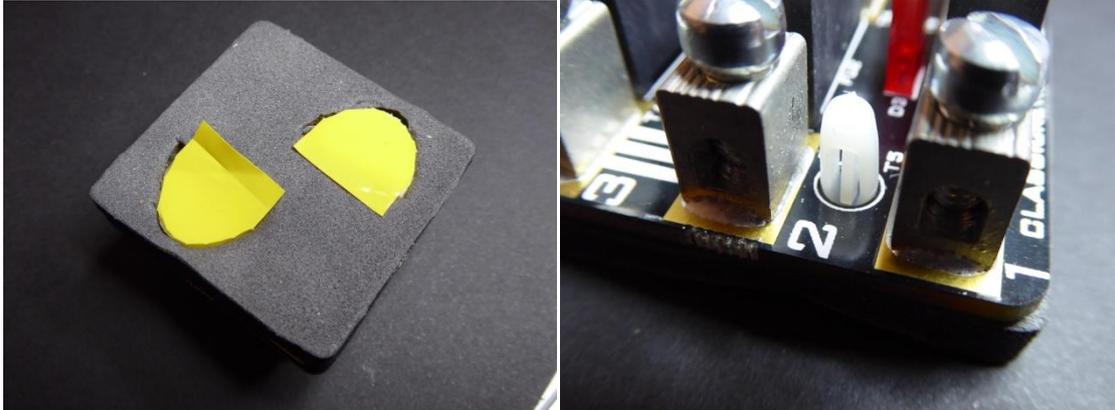
Adhesive pad mount.

Firstly the adhesive pads are very strong and are more than adequate at securing the panel if you do not wish to drill holes.

- 1) Disconnect the battery negative.
- 2) Photograph or note the wires on the existing fuse block.
- 3) Undo the mounting screws and nuts (behind) on the original fuse block and remove.
- 4) The adhesive pads can be completely hidden with a little preparation work. Familiarise yourself with how the clip into the panel. Notice that they are a little wide and need trimming for a neat finish.
- 5) Trim one edge of each pad so they fit comfortably within the boundary of fuse panel, then place them over the gasket and scribe round with a scapel and finally cut out:

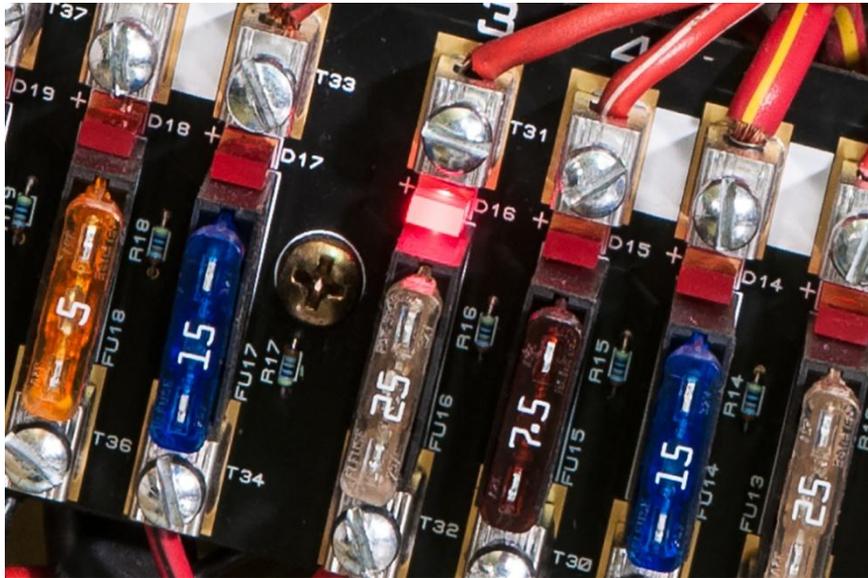


5) Assemble the panel and gasket. Clip the pads through the panel so they latch. Do not use the spacers.



6) Remove the adhesive pad backing paper and push the whole assembly firmly onto the aluminium panel in the car. If you need to remove the panel at a later date, press the latches on the pad clips.

Led Indicator function.



Your new fuse panel features a red LED on each fuse way. These can serve two purposes.

In normal operation, with fuses fitted, the LED will indicate a blown fuse. Note the LED will only be lit if the circuit feed is live. For example, if the fuel pump fuse has blown, the LED will only light when the fuel pump is being 'told' to run.

For diagnostic purposes, the LED can be used to trace faults in the electrical systems of the car. Simply take the fuse out for the circuit you wish to test. For example, if you suspected your turn signal switch to be defective, remove that fuse and check for the LED illumination when the switch is operated.

Removal of an existing headlamp relay kit.

If upgrading to the 911-FPR panel you should remove the existing relay kit before you start. Typically these kits have six connections and the relays are separate to the fuse panel.



The colours for the wiring in these kits have changed over the years but usually they are:

J West kit	Sucro kit	Function
Red	Red	12v (battery +)
Black	Black	Ground (chassis / battery -)
White	White	High beam feed from headlamp switch
Yellow	Yellow	Low beam feed from headlamp switch
White	Blue	High beam to headlamp (fuse 1)
Yellow	Blue	Low beam to headlamp (fuse 3)

Remove the battery negative terminal.

Start by identifying the 12V and Ground wires and removing them.

Remove all four wires from top and bottom fuses 1 and 3 on the right hand fuse block.

The only wires remaining connected should be the two that have been spliced to the original headlamp switch feed wires. For an impact bumper car the original wires are white and yellow. remove the splice and reconnect the original white wire to fuse 1 and the yellow wire to fuse 3 on the right hand fuse block.

Remove the relay kit from the car.

You are now ready to start the installation as per the normal instructions.

Late model UK and Swedish Carrera 3.2

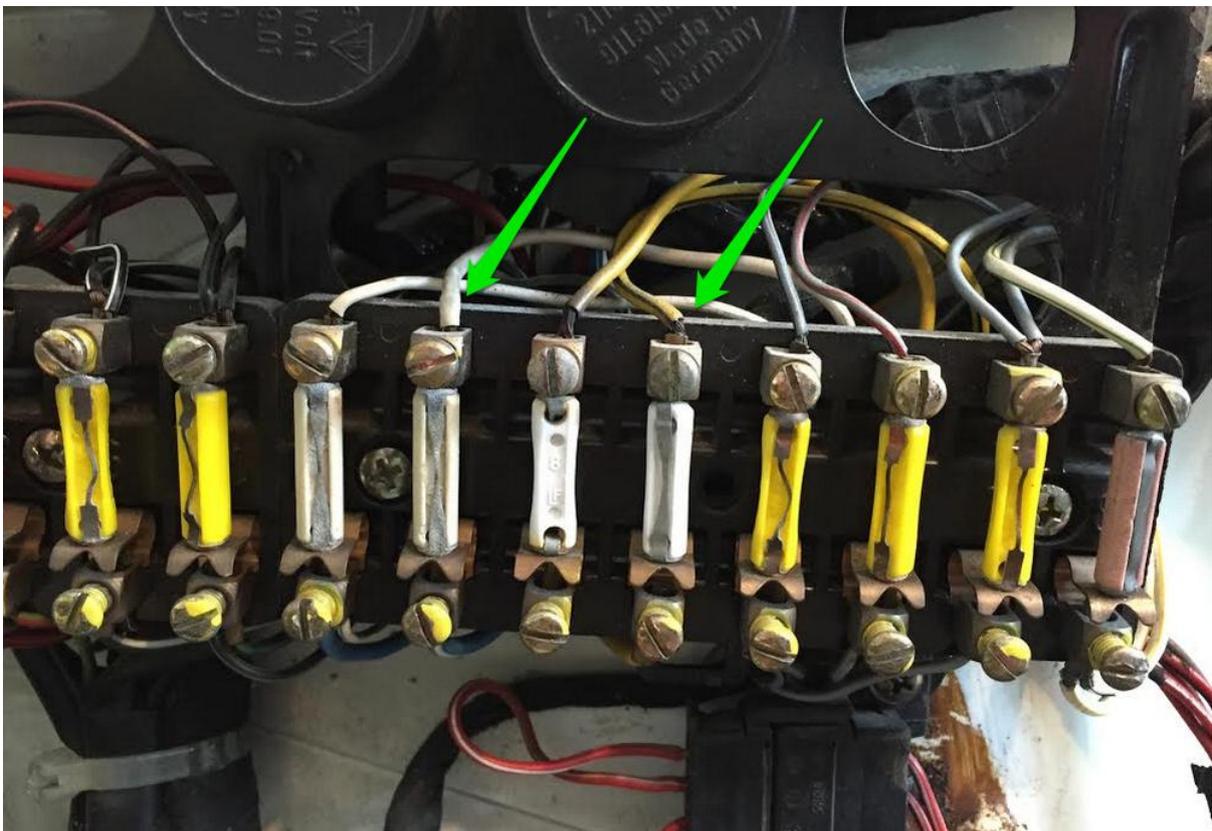
Some European cars from around 1987 model year are fitted with the M062 (Swedish) option. This provides a dimmed dipped headlamp beam when the light switch is pulled out one stop **and** the ignition is on. The idea was to provide a light brighter than the normal parking/sidelight bulbs but not as bright as the normal dipped beam. This was implemented by using a control unit that provided a separate feed to the dipped beam circuit. Interestingly, the reason for this feature was due to legislation that was put forward in Europe in the mid 80's. The legislation was subsequently scrapped.

If you have an Issue 1.3 fuse panel or higher just make sure that the yellow/black wire is connected to fuse way 4 to the right of relay. That is all you need to do!

Issue 1.2 fuse panels only

If you have a 1.3 or later panel, please skip this section.

If you have a white and a yellow/black wire in the following fuses, your car is fitted with this option as shown in the following photo.



The M062 control unit sends a signal on the yellow/black wire that can cause the relay to buzz on 911-FPR fuse panels up to and including versions 1.2. If you have this option, please disconnect the yellow/black wire (tape up the end)

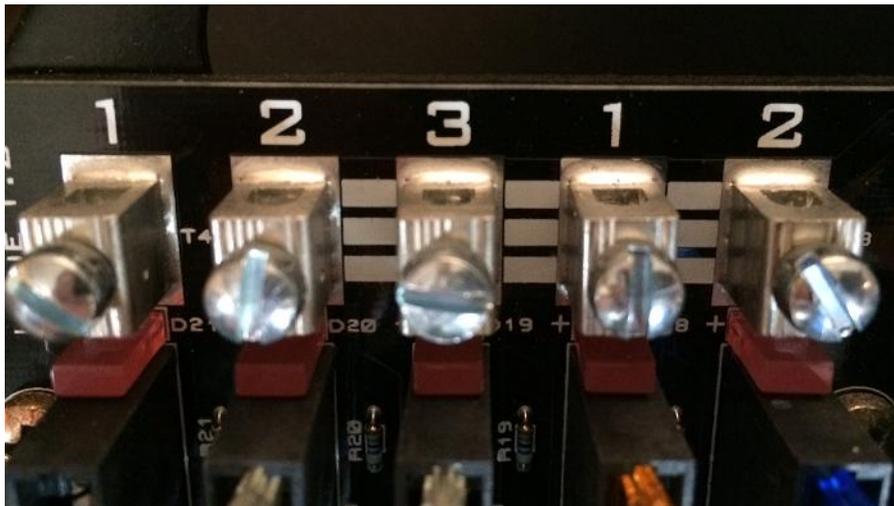
Since the control unit was designed as additional equipment, the removal of the yellow/black wire only removes the dim dipped 'feature' but normal operation of side and parking lights is still fully functional.

You may, however, discover that your front parking/sidelight bulbs have not been working for many years but this fault was 'masked' by the control unit. If you ever wondered why pulling the light switch one stop with the ignition **off** only gave you tail lamps, now you know why!

Cars with extra equipment

The 911-FPR fuse panel takes power for the headlamps from the linked group of four 'always live' terminals at the left hand end of the panel - labelled 2 3 1 2. The links are shown on the panel by the white horizontal bars.

If you have an Issue 1.3 fuse panel, please read the Additional Headlamp feed section.



The wiring on the majority of cars is capable of providing this extra current feed to the headlamps. If your car has been fitted with additional accessories (high power stereo equipment, heated seats/screens etc) the wiring may be near its current carrying capacity. This would show as reduced brightness headlamps when the accessories are on, particularly on 'full beam'.

If you experience this, add an additional red feed wire direct from battery to any of the linked group of 4 'always live' terminals.

Additional Headlamp Feed.

Issue 1.3 or higher fuse panels have an extra terminal marked 'H' for providing an extra feed wire to the headlamp circuit. This can allow the car to be upgraded to 100/80W bulbs.

To perform this upgrade an additional feed wire (not supplied) can be fitted between the battery positive terminal and the 'H' Terminal on the fuse panel.



Fitting the extra headlamp feed can help to spread the current load on cars with additional equipment, even though standard headlamps are fitted.



If fitting upgraded headlamps it is essential to check the condition of the original Porsche wiring loom and connections to the headlamps. It is also highly recommended that the plastic headlamp connector is replaced with a ceramic type.

The feed wire to the 'H' Terminal should be rated 32A.

The wiring from fuse panel to headlamps should be rated 16A for a comfortable safety margin.

Troubleshooting

Miswiring

All Classic Retrofit kits are electrically tested before shipping. The most likely source of problems will be failure to connect the wires as per original. It is easy to miss a wire on the bottom row as they are hard to see. It is also easy to forget to skip a gap as not all terminals are occupied on the bottom row. Refer back to your reference photos and see if you can spot a mistake

'Foreign' wires

The second most common cause of odd behaviour is likely to be the hornet's nest effect. That is, you've been fiddling around with wires that haven't been moved in many years. Perhaps you have found or disturbed 'mystery' wires. Over the years, your car has met a few auto electricians for stereo, alarm and other accessory installations. It isn't surprising to find that there are odd wires, splices and -horror- 'scotch locks' in the wiring loom.

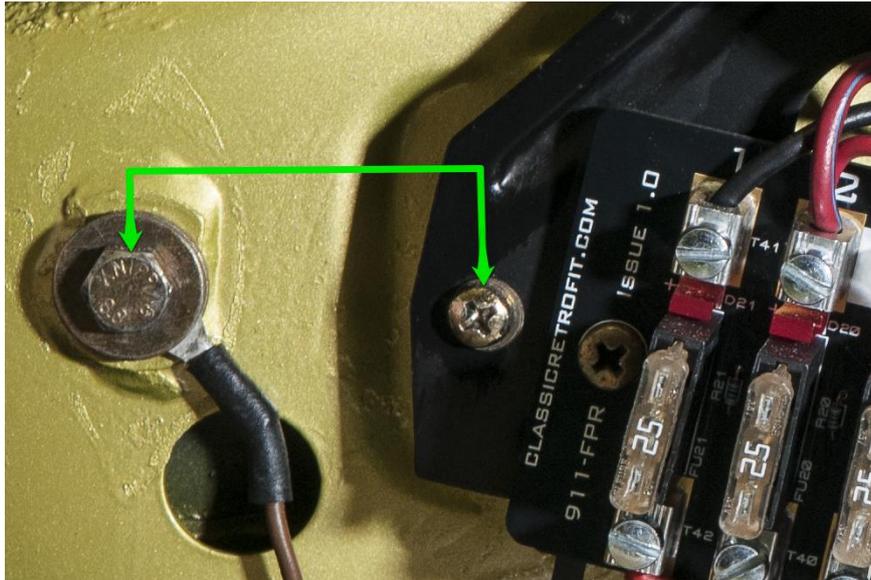
Identifying rogue wires is actually pretty easy. All the original Porsche wires that terminate at the fuse panel have ferrules (small crimps) on the copper part of the wire. If the wire does not have this it is either a 'foreign' wire or an original wire that has been cut. It is good to trace these wires and see if they are actually doing anything. Remove if not.

No Headlamps, no relay click? Grounding

If you cannot hear the relays click when you turn the lights on, it is almost certainly due to bad grounding. The 911-FPR relays use the mounting screw to the left of the relays as a ground. It is important that the screw has good electrical contact with the new fuse panel and is properly secured into the metalwork behind.

The black metal panel itself should be grounded to the chassis via the top wing/fender screws. If you have a meter then you should be able to 'buzz' between the mounting screw and chassis (disconnect battery first). If the metalwork or the car has been repainted, sometimes the electrical connection is not made at the wing/fender screws. There are two ways to remedy this:

- 1) Loosen the wing/fender screw and take the paint back to bare metal beneath it.
- 2) Try adding an extra ground wire to the black metal bracket. The most convenient point to do this is on the far left of the metal bracket. There is a mounting screw and just to the left on the inner wing is an earthing stud. Connect the two points shown on the picture overpage.



Connect the two points shown in the picture to earth the metal bracket. This is a low current connection requiring standard gauge automotive wire similar to that shown on the brown wire in the picture.

Disclaimer



This equipment must be installed by an auto electrician or persons of equivalent level of competence. Failure to follow the installation procedure can result in damage to the vehicle, its wiring harness and injury.

The 911-FPR fuse panel has been designed and engineered to the best of our best capabilities. It has been bench and road tested in a 1982 Porsche 911 SC.

At the time of writing, fuse panels have been fitted to over 80 911 vehicles spanning 1974 to 1989.

The fuse panel will in most cases be a straight swap for the existing bullet fuse blocks in the car. On rare occasions, however, non-standard wiring or extra equipment may mean that the fuse panel may not function as a plug and play item. If you are worried about this please email a photo of your panel to info@classicretrofit.com before commencing installment.

Classic Retrofit will not accept liability for damage to wiring looms or the vehicle in which the fuse panel is installed. We will not accept any liability for injury of any kind caused by installation of our equipment.