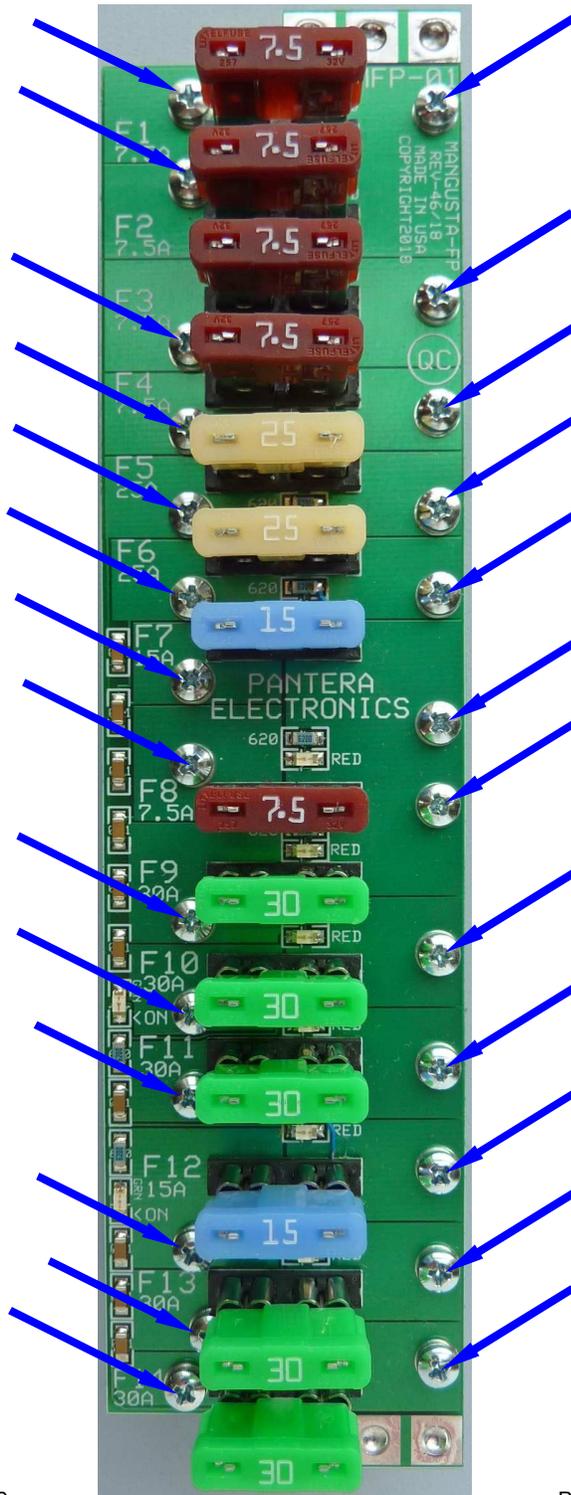

Pantera Electronics ATO Fuse Panel Mangusta Installation Manual

Preliminary

- > 12 ATO blade fuses plus 2 additional ATO fuses for the radiator fans.
- > Rugged open frame construction to dissipate heat, built with high quality non-flammable materials, aluminum, copper, brass, glass impregnated fiber board.
- > Quick disconnect terminals are labeled with wire color and function to help debug wiring problems.
- > ATO fuses are labeled on the fuse panel with circuit number and current rating.
- > Each fuse has a red LED indicator for "open" fuse condition. (note that the protected load must be active or "ON" for the LED to operate)
- > Quick disconnect terminals are geometrically positioned similar to the factory fuse panel, transferring one wire at a time to minimize installation problems.
- > Electronic noise suppression devices for each fused circuit to minimize electrical noise from car stereo systems.
- > ATO automotive fuses were designed for the automotive industry and are readily available in Europe, Canada and U.S.A.

Notice that there are essentially 4 vertical rows of terminals on the original fuse panel, one row is on the back or mounting side. This back side row of terminals is the voltage supply, and the other rows of terminals on the side connect to the various electrical loads in the car. On the ATO fuse panel the voltage supply terminals are on the same side as the load terminals, but are closest to the edge, this locates that row in a relatively similar position to the other rows of terminals. This aids in installation by not needing those wires to stretch to the back side and frees some length for attaching the other wires. **It is important that the voltage supply wires are correct, no mistakes.** These connections determine 3 conditions of voltage supply, (A) loads are powered all the time or un-switched, (B) switched by the ignition switch and (C) switched by the headlight switch.

Note: There are (3) terminals marked "EXTRA" located at Fuse #8, Fuse #11 and Fuse #12



IMPORTANT !

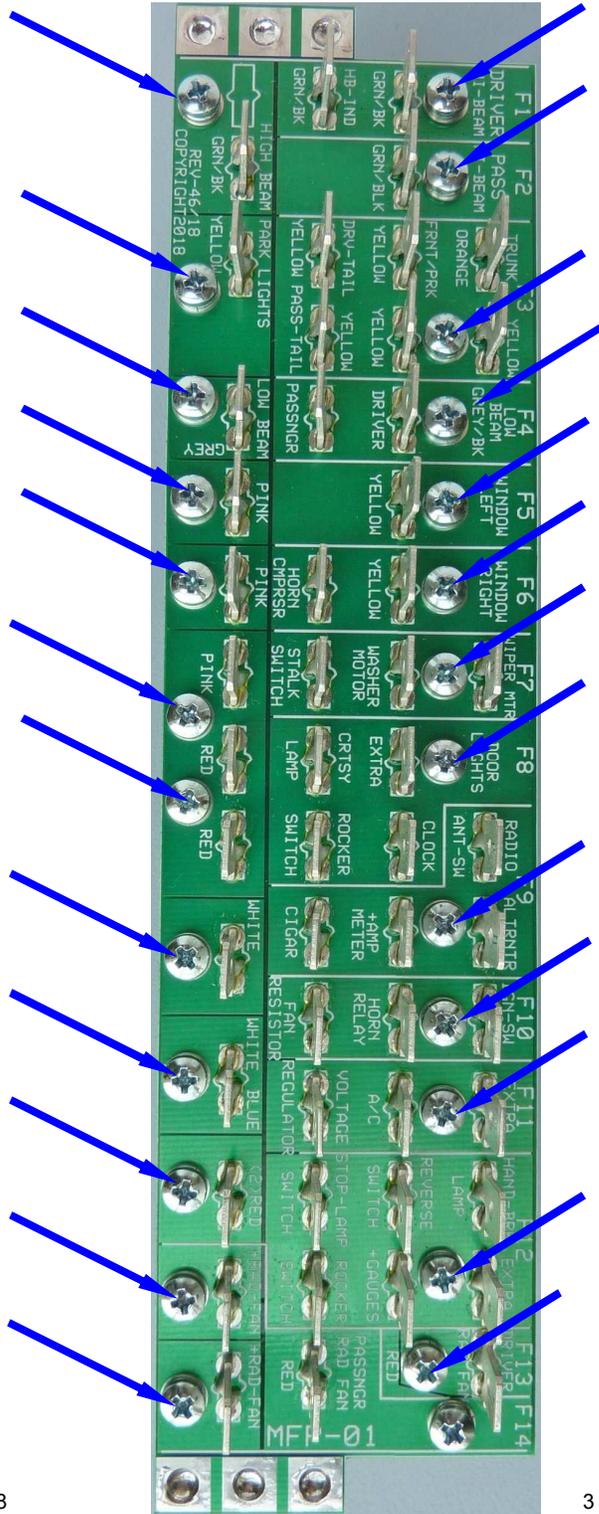
This is the fuse side of the fuse panel, to ensure reliability check to make sure each screw is tight. Use a #1 Phillips head or crosshead screwdriver to check that all of the screws are tight.

It is *imperative* to check to make sure the screws on both sides of the fuse panel tight

IMPORTANT !

This is the terminal side of the fuse panel, to ensure reliability check to make sure each screw is tight. Use a #1 Phillips head or crosshead screwdriver to check that all of the screws are tight.

It is *imperative* to check to make sure the screws on both sides of the fuse panel tight



**Disconnect the battery by removing the negative (-)
or ground cable from the battery terminal.**

- 1) Remove 2 thumb screws and remove the cover on the original fuse panel. Remove the (2) 5mm screws, top and bottom, that mount the fuse panel.
- 2) Rotate the fuse panel so that you can see the back side and the wires that connect to it. Since the Mangusta is 40+ years old, the PVC insulation is stiff especially if it is cold. If it is cold you can use a hair dryer to warm the wires this will relax the “set” in the wires. ***Don't*** use a paint stripping heat gun, it can melt the wires. If the wires are dirty and the colors might be difficult to determine use a solvent to clean them. Mineral Spirits will not damage the wires but may remove some of black stripe so be careful not to rub too hard.
- 3) The ATO fuse panel utilizes 0.25” quick disconnect tabs the same style as on the Pantera. Notice that the layout of the tabs positioned on the ATO fuse panel are similar but not exact as the original, this is due to the design accommodating 2 additional fuses. But it is consistent with the number of tabs and relative position to the original. Starting at the top of the fuse panel as oriented from the mounting position, remove the wires one by one. As you re-attach the each wire to the ATO fuse panel, untangle each wire from the harness. This allows the maximum length wire, it may seem impractical at first but it is worthwhile when completed. As each wire is moved, also verify the female quick disconnect terminal fits on the tab with firm pressure. Use pliers to compress the original terminal barrel shaped portions of the terminal. It doesn't require much pressure, if the terminal is compressed too much use a small screwdriver to open the slot slightly.
- 4) Continue moving the wires one by one until all of the wires are transferred, at this point fuses # 13 and #14 will be available for radiator fan wires.
- 5) Rotate the ATO fuse panel to the mounting position, position the plastic shim between the ATO fuse panel and the mounting bracket and install (2) screws. Do not cross thread the screws, this is easy to do on the top screw. Even though the original screws fit, the single slot screws are not the best, ***5mm diameter x 30mm long Phillips screw heads are much easier to install and reduces the chance of cross-threading.***

Disclaimer

The products from Pantera Electronics have been designed and manufactured with the best quality components known to the engineer. The installation instructions have been written to assist the owner in the proper use and installation of the products. Pantera Electronics can not be held responsible or held liable for the interpretation or incorrect implementation of the products.

Note the angle and width of stripe the High Beam Headlight Wires

High beam, Drivers side, 12 AWG wire, narrow black stripe



High beam, Passenger side, 12 AWG wire, no stripe



High beam 12 Volt supply, 12 AWG wire, wide black stripe



High beam indicator light, 18 AWG wire, narrow black stripe

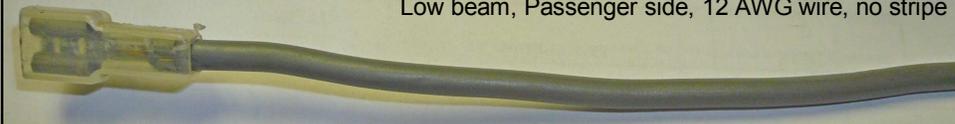


Note the angle and width of stripe the Low Beam Headlight Wires

Low beam 12 Volt supply, 12 AWG wire, no stripe



Low beam, Passenger side, 12 AWG wire, no stripe



Low beam, Drivers side, 12 AWG wire, wide black stripe



Note the angle and width of stripe the Power window 12 Volt supply wires.

(2) Power window wires, 12 Volt supply, **10 AWG** wire, black stripe

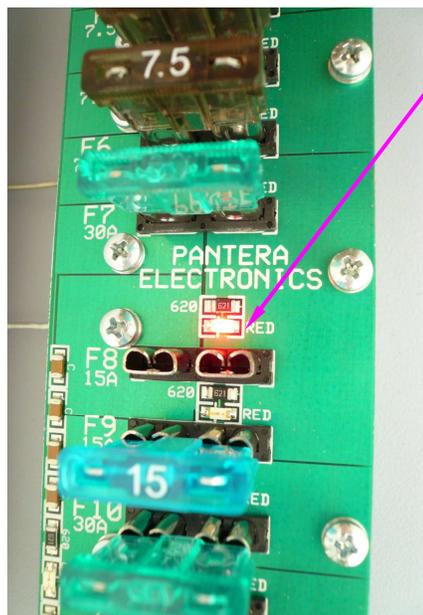


High Power Fans and Fuses

Fuses #13 and #14 were added for radiator fans that cool the radiator. Fuse #12 and #13 are rated at 30 amps and should not be exceeded.

Power-up Test (**Note the fuse panel must be mounted for testing**)

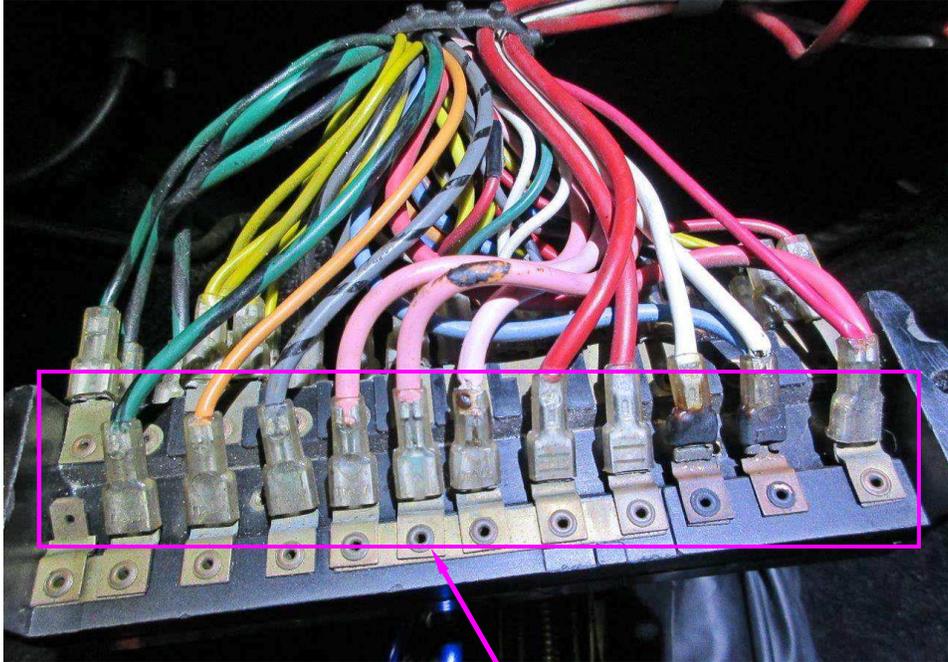
- 1) In order to test the ATO fuse panel, re-connect the negative (-) or ground cable to the battery terminal.
- 2) ~~Set the ignition switch to the "Accessories" position, the GREEN "ACC" indicator should be illuminated.~~
- 3) ~~Set the ignition switch to the "Run or Ignition" position, the GREEN "IGN" indicator should be illuminated.~~
- 4) Remove fuse F8, the red LED should illuminate, this assumes the curtsy lights are "ON". Fuses located behind the door closing bracket can be easily removed by a pair of small pliers. You can test other fuses but the LED may not illuminate if the load is not turned "ON". This is true of all LED fuse condition indicators on the ATO fuse panel, **the load must be turned "on" or active in order for the LED indicator to illuminate**, this is a typical condition during electrical diagnostics.
- 5) Replace any fuses from testing.
- 6) Testing completed.



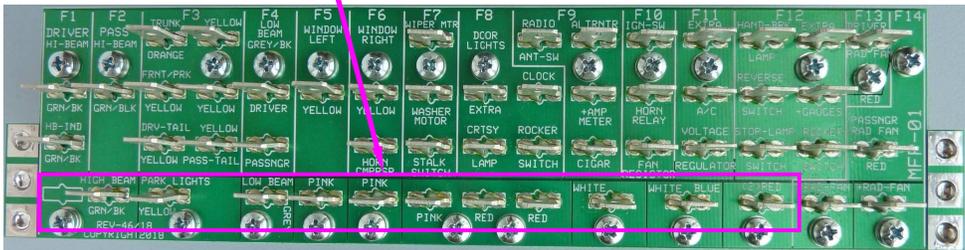
Red LED indicating the fuse is "open".

~~The GREEN indicator is illuminated for Accessories "ON" and The GREEN indicator is illuminated for Ignition "ON".~~

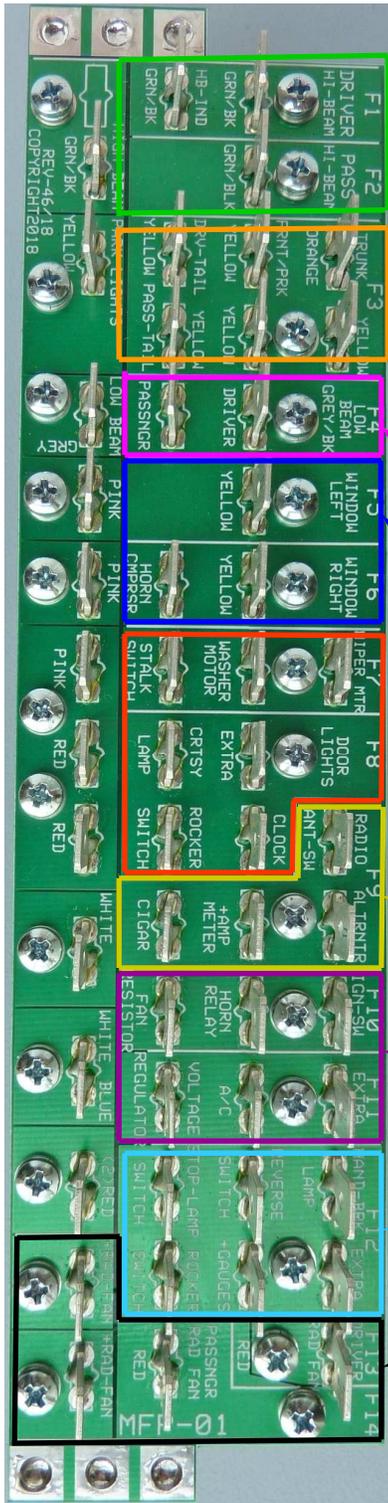
Terminal layout comparison of factory and ATO fuse panels, voltage supply terminal rows.



Voltage Supply Terminal Row
(critical, must match wire colors)



NOTE: It's important to keep this installation manual for future reference since revisions to the product change the contents of the installation manual.



[Image 3]
 Tabs are in groups by the "12V Supply Terminal Row"

The color label may not be correct but the function will be, so connecting to any tab within the group is OK.

The groups are defined by the **colored** lines around the tabs in this picture and the **white** lines on the fuse panel.

- High Beam Headlights and High Beam Indicator.
- Parking, Side-marker and Dash lights.
- Low Beam Headlights
- Power Windows
- Un-switched, powered all the time.
- Accessories (key switch position)
- Run or Engine Ignition (Key switch position)
- Run or Engine Ignition (Key switch position)
- Exclusively for radiator fans, no other connections.

Fuse status indicator locations

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