

LED AC Panel Faceplate

DM Engineering

<http://dm-eng.weebly.com/>

Thank you for purchasing the LED AC Panel Faceplate, we hope you enjoy it. Please follow the instructions below for the proper installation.



FEATURES

- Utilizes an all LED solution for illumination.
- Will draw less current (approx 50ma) depending on your intensity setting..
- Will run with lower temperature than with incandescent bulbs.
- Increased reliability with a modern one board solution.
- Bright illumination even in daylight (setting is adjustable).

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INSTALLATION

Step 1. Remove your shifter plate, center console and existing panel.

First remove the shifter plate. The proper way to pull it is to remove the shifter knob first (a little more involved on the automatic), then remove the two screws holding the shifter plate to the center console (press down with your fingers so the screws don't chew up the plate) and unplug the clock connector if you have one.

Then pull out the three dial knobs on the existing AC faceplate, remove the one tiny screw holding the face plate (that was behind the knob), and pull out each side of the console so the face plate does not hit anything as you remove it – there will be some resistance due to the existing bulbs and wiring.

To remove the center console, pull it up, starting from rear portion, after removing the six bolts (watch for the nut clips in front and under the switches, they may be loose and you'll need them back in place to reinstall). You may also have some brackets to loosen, under the dash, near the center console. Note that you will have to work the brackets around the OEM wire harness towards the front, to lift the entire console away from the body.

You will now have full access to the wiring and to proceed with the rest of the installation.

Step 2. Cut two notches on the shifter plate's front edge

Note: Rev C or higher circuit boards do not require this modification.

Do not skip this modification. When you install the shifter plate it is easy to get it under two ICs on the new board and when you press the plate down it will rip those ICs off the board.

You will need to cut two half inch wide notches on the shifter plate metal, in order to prevent damage to this LED board in case you push your shifter plate too far forward, when you put the shifter plate back in.

Each notch is about 0.75" and the left notch is 1.0" to 1.5" from left edge, the right notch is 1.6" to 1.1" inch from right edge. The notch is cut to the fold in the metal (see picture). A "nibbler" would be the best tool for cutting the notch but I used my Dremel with a "cut off wheel". Using the cut off wheel will require you to brush off the fine dust of chips that cover the metal plate.

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Step 3. Modify the wiring:

The exiting illumination related wires can be modified as you cut them from the old bulb sockets. The four AC panel lights should each have a black and (red/brown) wire. One of those black wires goes to the new board's black wire. One of the (red/brown) wires goes to the new board's red wire. etc. I think one of the new board's indicator wire colors was not the same as listed on the OEM schematic, but doing one wire at a time from the old sockets will be a guide as to how to wire it.

The old wiring is 19 AWG so we use butt terminals rated for 22 to 18 AWG. A good recommendation is to strip the 22 AWG wire on the harness long and fold over the wire to give more material to crimp to. If the OEM wire is oxidized use some 320 grit sandpaper to clean up the old copper wire. Soldering after crimping is best, but not required. Don't forget to add the shrink tubing before you crimp both ends.

<u>New Harness</u>	<u>Function</u>	<u>OEM harness</u>	<u>Cut from:</u>
RED	Backlight power	red/brown	backlight socket
BROWN	FanFail	brown/purple	fan fail socket
BLACK	Ground	black	backlight socket
GREEN	Day Light Running	light green/white	tap to radio power
YELLOW	Lock Doors -	brown/pink	lock door socket
WHITE	Defog	white/brown	defog socket
ORANGE	Lock Doors +	light green/white	lock door socket

To get daylight running operation, pull the red wire pin and green wire pin and swap positions.

Note: On my car the FanFail wire was black/orange

The tap to radio power is required to power the fan running LED when lights are not on and you have my fan fail unit. That original green wire pin also will drive the LEDs to full power when that pin is grounded. So, you will probably see full power LEDs if you turn on the lights without the key on and switch your AC mode switch on. That grounds the radio power wire when the key is off.

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Step 4. Modify the faceplate:

It is required to sand the white paint off the face plate "light tubes", for the best illumination possible. I wet sanded the paint with 320 grit "wet" paper under running tap water.

Next you will have to cut the indicator tubes, before you can install the face plate onto the new LED board. Do that first and lay the board over the face plate so you can see if you cut them short enough to clear the board. A fine tooth saw or a Dremel tool works well for cutting the plastic tubes.

The picture below shows the results after these modifications are made.



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Step 5. Install the new LED board

Note: Rev C or higher circuit boards do not require this modification but removing the spacer did correct my knob from sitting too high.

Note you will need to remove or cut the white spacer on the fan speed switch. I found removing the spacer made the fan knob sit at just the right height.

I drilled a hole in the board to use a sheet metal screw to hold it in place but you can do it without that screw. It just makes things easy to install the face plate with the board held in position. You would have to drill a pilot hole using the LED board to mark the location. Lay the board into position using the mode switch mounting studs and the four corner faceplate holes centered. Then mark the hole location with a scribe, center punch or felt tip marker. Drill your hole for your #4 or #6 sheet metal screw to thread into.

Note:

When you pull or insert the connector you need to hold the board near the mating connector so you don't bend the board (it is only a 0.032 inch thick board).

Plug the wire connector into the LED board and test that all LEDs are working.

Step 6: Reinstall center console

Note: The LED board and faceplate should be removed when you put the center console back in so you don't damage them. When installing or removing the LED board and faceplate with the console installed carefully pull the sides of the center console to clear the board and faceplate so you don't damage the faceplate decal or bend the LED board.

You will find some light leaking around the edges face plate. To address this, use the included foam (full 1/2 inch width) around the four edges of the face plate, flush with front decal.

You can adjust the illumination, by removing the AC mode dial, and making adjustments with a small screwdriver on the two exposed small potentiometers. See picture below.



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Congratulations.

Enjoy your modern LED illuminated AC panel, and all its benefits.