New Dome Light Timer

Thank you for purchasing this modern update to the DeLorean DMC-12's Dome Light Timer. I hope this product adds to the enjoyment of your car.

Note:
The new LEDs with the constant current switching regulator will not work with this unit. Those LEDs by Super Bright have two black cylinders soldered to the LED circuit board.

Features

The dome light timer module in your relay/fuse area is an original late 70's design, one consequence being that it will not work with modern LED bulbs. Using modern, smaller, more efficient components, this upgrade is a functional replacement that will also consume less power and ultimately be very reliable.

In addition, several new functionality features have been added, as well as new operating modes.

Modes

Mode 1:
The "Car Show" mode is the OEM functionality, but with the added benefit that it will work with either incandescent or LED bulbs. It's called car show mode because it will leave the lights on when the car is unattended, like at a car show.

Mode 2:
A "Battery Saver" mode will turn off all courtesy light power if any light is left on longer than 10 minutes. Power is restored when all light switches are closed.

Mode 3:
"Parade mode", which operates like Mode 1, but flashes all the courtesy lights with an attention getting double flash (you may want to turn your dome lights off in this mode).

New Functionality:

The unit also keeps the dome lights on for 20 seconds after both doors have closed. The 20 second time can be changed (programmed) by the user. It then slowly fades the dome lights off. This will work with incandescent or LED bulbs installed. You also get full voltage to your dome lights. Without a timer installed you lose two diode drops in the Delorean wiring. This results in 1 to 2 volts lost to the dome lights. If you switch the key to ACC or run, the 20 second timer is aborted.

Another new function is after closing your doors, if you put the key on before the dome lights have gone off, the dome lights will turn on after you turn the key off. A neat feature is they slowly light so as not to blind you at night. This will help the occupants find the door latch.

Lastly, an extra pin is provided at the bottom of the unit. This is to provide a connection/input directly to your car's burglar alarm, when a door is opened. Actually, with simple some added wiring, it could also be used as a trigger for a sound effect box, or for your flux capacitor prop.

New Dome Light Timer, Installation and Programming Documentation

Notes and Specifications
Standby current is 29 micro-amps with all doors shut. With an incandescent bulb left on in battery saver mode, standby current is 262 micro-amps (less with an LED left on).

If you have modified your lighting circuit, such as using the door switches for a burglar alarm, most likely this unit will not work.

If your light switches get wet inside, you may have problems until they have dried. This is more likely to be a problem with the engine light switch.

PROGRAMMING

To read and change the mode:

 Note: **The Dome lights must be set to the auto position.**

1) Sit in the passenger seat with the doors closed. Hood and engine covers must also be closed. (All lights and ignition key must be off)
2) Open the glove box and before 5 seconds elapse, press and hold the glove box switch down.
3) The current mode will be displayed with the dome light flashing:
a) One flash = mode one (Car Show mode)
b) Two flashes = mode two (Battery Saver mode)
c) Three flashes = mode three (Parade mode)
4) The current mode will display three times (the mode number is denoted by the number of flashes.
5) If you do nothing, the mode will not change, and the unit runs the current mode.
6) If you release the glove box switch before the displayed mode has run three times, then the next mode is programmed and the dome light will stay flashing at a fast rate. This confirms that the next mode has been programmed.
7) Press the glove box switch to return to step 3. If you now have the current mode you want, keep holding the switch down until it exits the programming mode or else you release the glove box switch to continue changing the mode.

Note: bug in first release, you must continue holding the glove box switch another 4 seconds after the third mode flash to exit the programming mode.

To enter the program mode for changing the dome light delay time.

1) Sit in the passenger seat with the doors closed. Hood and engine covers must also be closed. (All lights and ignition key must be off)
2) Open the glove box and before 5 seconds elapse, press and hold the glove box switch down.
3) Turn the ignition key to on. The dome light will start flashing at one second intervals. Using the flashing dome light, count how many seconds you want to program the new delay time to be. When you turn the key to off, that new time will be saved.

You can set any time from 1 to 255 seconds.

Note:
The mode and delay time stays programmed (even without your battery installed) until you change it as I outlined above.

New Dome Light Timer, Installation and Programming Documentation

INSTALLATION

Pre-Installation Notes:
For full functionality of this unit, the following instructions need to be followed, please read them beforehand and refer to them as you proceed with the installation. The installation will entail working in the fuse/relay area of your car. You will need to cut and splice (all hardware is provided) certain wires in the fuse/relay area. Although the installation is very straight forward, if you are not comfortable with this, please seek out assistance.

Tools Required:
Wire stripper
Butt splice crimper
Phillips screwdriver
Paper Clip or Small flat bladed jeweler's screwdriver
Optional: Removing the passenger seat simplifies access to the fuse/relay area.

Reference
The following is the required signal list (reference Figure 1 below), of this new timer.

Pin 87a, +12 volt fused power.
Pin 87, Key On signal.
Pin 86, Ground.
Pin 85, Power to the courtesy lights.
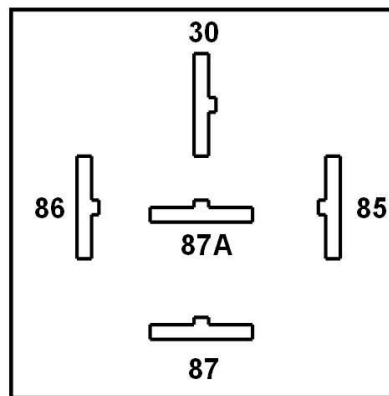Pin 30, Connection to the dome lights.

Figure 1. Reference diagram of relay pin locations, top view.

Note: The installation will require you to extract the wire and it's pin/connector from the relay socket. If you have never extracted the pins from a really socket before, you can stick the end of a large paper clip wire (or the small flat bladed jeweler's screwdriver) into the identified location number of the relay's finger tab slot. This is done at the top of the socket, on that very small indent, in the middle of the individual opening. The paper clip or small screwdriver needs to be centered in that small slot, as you press it in. With a very minor pull from the bottom, the pin and wire should then pull out. If you extract a pin and plan to reuse that pin, make sure the locking tab on the pin is sticking out, so it will lock into the socket.

New Dome Light Timer, Installation and Programming Documentation

Bypass:

If for some reason you need to revert back to stock operation with no dome unit plugged in, Jumper Pin 87A to pin 85.

Installation:

Optional, but recommended: Disconnect your battery by disconnecting the (-) negative terminal and placing the cable out of the way.

1) The first thing you will need to do is remove all the relays from the sockets so you can remove the two screws on each relay bank holding the relay sockets in place (see Figure 2. below). The socket banks are built of individual sockets that slide together via dovetails on the sides of the sockets.
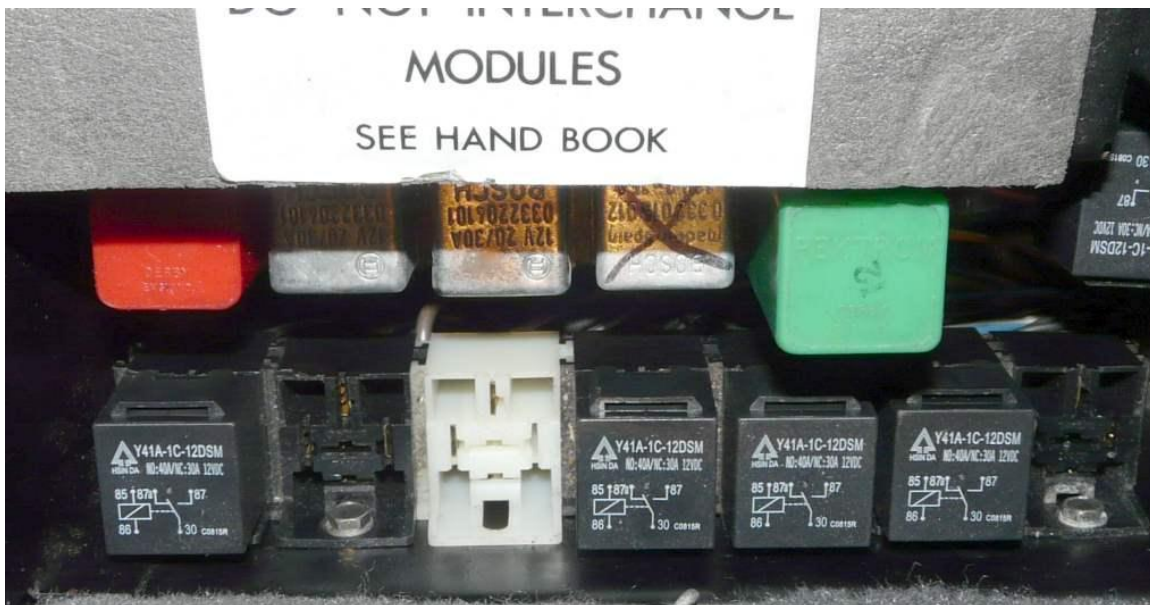

Figure 2. White relay socket and relay bank mounting screws.

2) The original wiring has the front and rear dome lights attached to pins #30 and #87 and jumpered together, both are purple/white wires, see Figure 3. below.

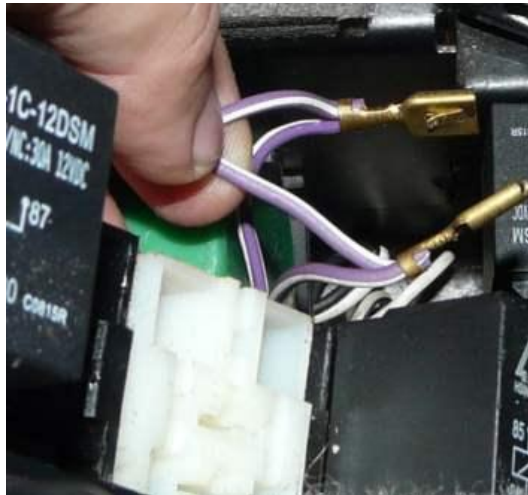# New Dome Light Timer, Installation and Programming Documentation

Figure 3: Wire and pins, pulled from white relay socket

Another signal must use pin #87, so pin #87 must be extracted. Referencing the diagram, pin #87 is the bottom most location. There are two methods offered to accomplish this:

a) After extracting pin #87 you must insulate that pin with tape or shrink tubing (or use the alternate method that follows) to prevent it from shorting to another wire or the metal bracket. This method only pulls one pin from the socket, but will leave an insulated 12V wire under the relay.

b) The alternate method is to extract both pins 87 and 30. Then cut off both pins near the end of the pins, and discard the jumper wire that connected them both. Now install the brown wire provided into the socket pin #30 and use a butt connector to join the two purple/white wires, with the new brown wire.

3) Now to get power to the module and interrupt the dome light power you install the new red wire with the crimped terminal into the white socket pin #87a. Install the new blue wire with the crimped terminal into the white socket pin #85. Tie wrap these new wires into the harness under the sockets to prevent pulling the wires too short for the next step. Route these new wires along the existing wire bundle and exit out the right side of the fuse block. Cut the purple wire in the large bundle on the right side of the fuse block (this wire comes from fuse #12). Note that there are some other purple wires in this area (see Figure 4.), confirm by a minor tug, that the purple wire you are about to cut goes to fuse #12. Attach the new red wire to the cut purple wire that goes to the fuse. Attach the new blue wire to the cut purple wire that goes into the large bundle on the right side of the fuse block.

New Dome Light Timer, Installation and Programming Documentation

Figure 4. Make sure you verify you have the correct purple wire.

4) Now we need to get the key on signal into the white relay's pin location 87. This signal is available with the light green/white wire on the red resistor socket or the AC light relay socket. This socket is on the opposite bank of relays, and you will need to also remove the two screws that hold it in place, to access the wires needed. Two different methods to achieve this are:

a) Extract the double green/white wires from the (red) relay, cut the pin/connector, and splice in the supplied yellow wire. Now the new yellow wire can be plugged into the white relay's location 87.

b) Alternatively, if you don't use the AC light relay (i.e., the "A/C Light Mod" was incorporated - lights only on with car lights on) you can extract the green/white wires and use the existing pin, for the white relay's #87. If you find the reach of that wire to the white relay too short, you can also use the supplied yellow wire to split it in as an extension

4) The double black wires in pin #86 remain.

5) Install the new dome light module into the white socket. It can only go in one way, so take notice that the configuration of the pins at the bottom match.

Congratulations, that's it. Check your work to the diagram below, and afterwards, re-attach the cable battery back on. You should see the dome lights come back on as soon as the battery is connected.

Reference, new wiring of white socket

Pin 87a, Red Wire
Pin 87, Yellow Wire
Pin 86, Black Wire (unchanged)
Pin 85, Blue Wire
Pin 30, Brown Wire

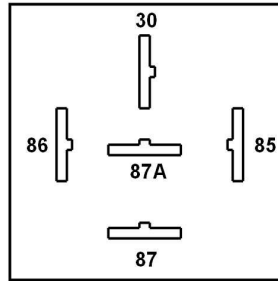# New Dome Light Timer, Installation and Programming Documentation

Figure 5. Reference diagram of relay pin locations, top view.

Post Installation Notes:
LEDs can show a little light with micro-amps of current flowing through them. Since this unit monitors for a light on by driving 200 ua of current, your LEDs may show some light after the unit has gone into battery saver mode. If this really bothers you, you can install a 50 Kohm resistor over that LED. This is not required and will not affect the standby current drawn in battery saver mode. The door LEDs would only need to have one of the LEDs modified with this resistor.

Alarm wiring

The extra pin at the bottom of the unit can be used to send a 12V trigger to auto burglar alarm. This pin provides a signal that simulates the connection to the door switch. This signal is a low power driver for an input into an external alarm. If you have an alarm wired to the door switches, most likely this will cause the dome delay unit to not work. You need to remove the existing wiring from the door switches and wire that connection to the extra pin. Use a standard 1/4'" female flat lug. Install that lug on the pin and then install the dome unit into its socket.

Note: Bug in first release does not signal the door closed until the dome light goes out.

If you have any questions, you can send me a PM on DMCTalk.com, to bitsyncmaster
Or you send me an email directly, at: david.mckeen@verizon.net