12V Car Interior Fading Light Module V3
User Manual

Product of: E & S Engineering, South Africa   Web: www.EandSEngineering.co.za

Features:
- Can be connected to an existing interior light system or in a new system.
- Can be used in Door / Off / On door mode as standard light systems.
- Interior lights fade on when the ignition is turned off.
- Interior lights fade half off (if on) when the ignition is turned on.
- Interior lights fade on when door is opened and switched to "Door" mode.
- Interior lights fade off after delay when door is closed and switched to "Door" mode. Longer delay if the key is off and shorter delay if the key is on.
- Interior lights fade on and off when switched with door mode switch.
- Reading light fades on and off with dedicated reading light push button.
- Module can drive bulbs or LEDs, outputs of 5amps max.
- Both lights will fade off after 2 hours if they are still on to prevent flattening of the battery.

Installation:
- The installation is pretty easy and not much electrical knowledge is needed.
- **Make sure that body of the car (ground) is connected to negative on the battery, and when the door is opened the doors switch connects to ground.**
- **Turn off all power before installing,** remove the fuse to an existing light system and ensure the key is turned off and or disconnect the battery.
- **Refer to the wiring diagram on page 3 for more info.**

Connecting up the power

Connecting the Positive power (Red wire):
The red wire must be connected to a positive terminal on the car. This terminal must have power at all times regardless of the ignition key. This terminal must be fused. You should be able to take the power from the positive terminal of the bulb in an existing system.

Connecting the Negative power (Black wire):
The black wire must be connected to some negative terminal on the car, the cars body is normally a good negative. This must be a good connection to ground because it is used to drive the bulbs.

Connecting up the Interior lights

Connecting the Key (Orange wire):
The key wire (orange) must be connected to some power source controlled by the ignition key. So that when the key is turned on (motor is running) the orange wire receives 12V

(+). The terminal uses very little current but must still be fused. This signal fades the lights off when the key is turned on and turns the lights on for a while when the key is turned off.

Connecting the Door Mode Switch common (Yellow wire):
The door mode switch wire (yellow) must be connected to the common terminal of the door mode switch. This wire must be connected to ground (-): (a) when the door mode switch is set to "On" and (b) when the door mode switch is set to "Door" and the door is open. The Door Mode switch can be any toggle or rocker switch with a on-off-on configuration and wired as shown in the wiring diagram on page 3.

Connecting the Door Delay capacitor:
The Door Delay capacitor wire (purple) must be connected to make the light fade off after a delay when the door is closed. The purple wire must be connected to the terminal on the door mode switch along with the wire that connects to the switch in the door.

Connecting the Interior lights - bulbs or LEDs (Blue wire):
You can connect bulbs and or LEDs, as long as they do not use more than 5 amps or 50Watts altogether. The lights must be connected between the blue output wire and 12v (+). If using LEDs, the correct resistors must be used so they can operate on 12 volts.

Wiring up the Reading lights

Connecting the Reading light switch (Green wire):
  The reading light switch wire (green) must be connected to a push button (normally open), the other terminal of the push button must be connected to 12v (+). It is used to turn the reading light on and off. If you don't want to use the reading light, connect this wire to ground (with the black negative wire). The Reading light button can be any normally open push button and wired as shown in the wiring diagram on page 3.

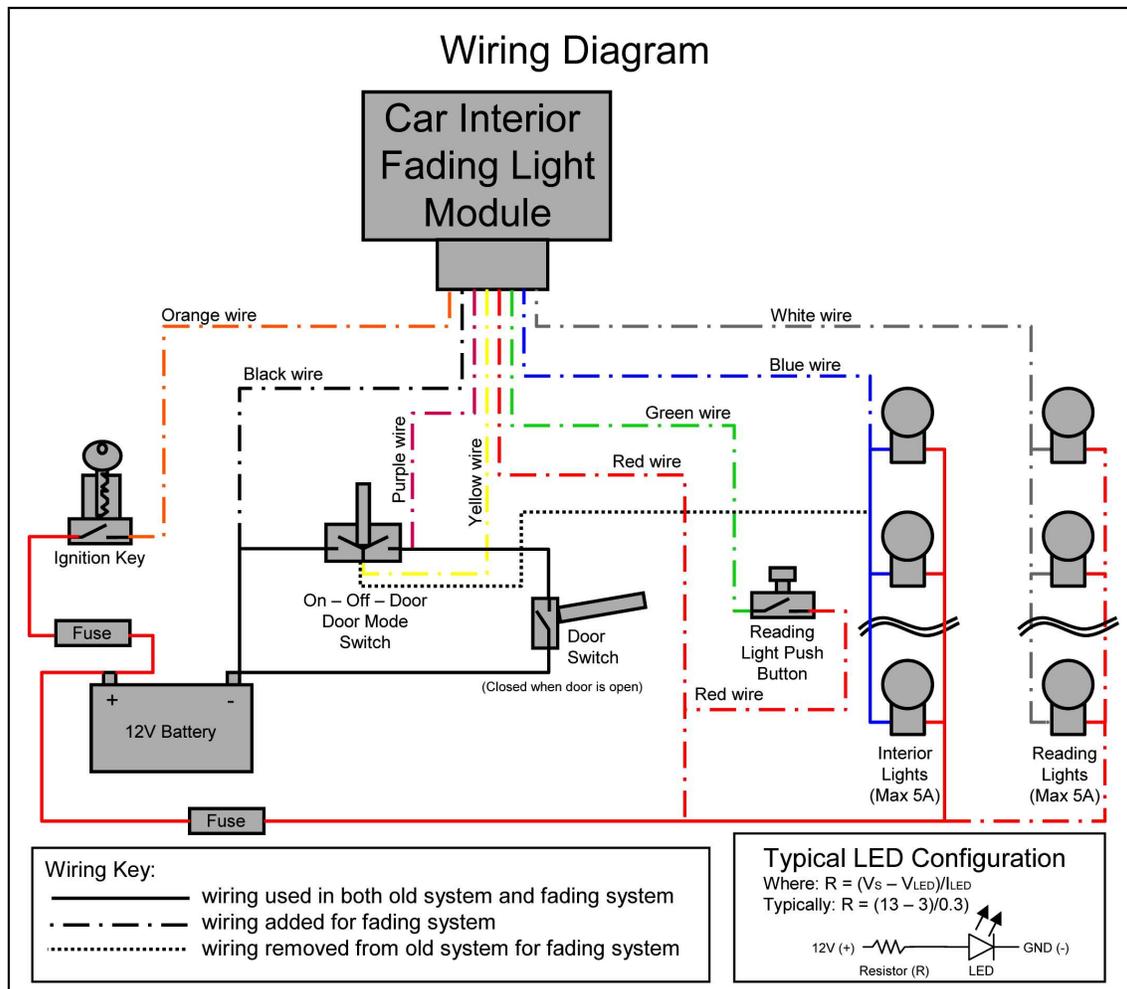***Connecting the Reading lights - bulbs or LEDs (white wire):***
You can connect bulbs and or LEDs, as long as they do not use more than 5 amps or 50Watts altogether. The lights must be connected between the white output wire and 12v (+). If using LEDs, the correct resistors must be used so they can operate on 12 volts. If you don't want to use the reading light, insulate this wire so it can't short on anything.

Tips for upgrading the interior lights from an existing system
(See above for installing reading lights)
1) First ensure that the switch in the door connects to body of the car (ground) as shown in the wiring diagram below.
2) Also ensure that the existing bulbs are connected to positive permanently and that the other bulbs terminal is connected to the Door Mode switch's common terminal (which is connected straight to ground (negative) when in the "On" position and connects to ground (negative) via the switch in the doors when the door is open and the door mode switch is in the "Door" position.
3) If this is all correct, remove the fuse in the light system, turn off the key and or disconnect the battery until everything is connected.

4) Now cut the wire connecting the bulb terminal (negative) and the common terminal of the Door Mode Switch. Join the wire connected to the negative bulb terminal to the blue wire of the module and join the wire connected to the common terminal of the door mode switch to the yellow wire of the module.
5) Then connect the black wire from the fading module to any good ground connection (negative). Then connect the red wire from the fading module to the positive terminals of the light bulbs (this line must be fused and always have power).
6) Now connect purple wire (door delay capacitor) to the terminal on the door mode switch with connects to the switch in the doors. See the wiring diagram below.
7) Finally, connect the orange wire to any fused positive point that only has power when the ignition key is turned on.

Wiring Diagram

Car Interior Fading Light Module

Orange wire

White wire

Black wire

Blue wire

Purple wire

Yellow wire

Green wire

Red wire

Ignition Key

On – Off – Door
Door Mode
Switch

Door
Switch

(Closed when door is open)

Red wire

Reading
Light Push
Button

Red wire

Fuse

+   -

12V Battery

Fuse

Interior
Lights
(Max 5A)

Reading
Lights
(Max 5A)

Wiring Key:
—————— wiring used in both old system and fading system
· — · — · — wiring added for fading system
·············· wiring removed from old system for fading system

Typical LED Configuration
Where: R = (Vs – VLED)/ILED
Typically: R = (13 – 3)/0.3)

12V (+) —ᴡᴡ— ▷|— GND (-)
          Resistor (R)   LED

For more info and assistance on this and other products please check out our website or contact us via our website. **www.EandSEngineering.co.za**