HOW TO WIRE AN RGB LED STRIP TO AN EXISTING OEM ON/OFF WALL SWITCH TO LIGHT UP WHITE WHILE ALSO BEING ABLE TO USE THE BOOGEY LIGHTS LED CONTROLLER TO GET MULTIPLE COLORS

SCENARIO

The most common scenario is with RV AWNING LIGHTS but it also applies to lighting applications such as cargo trailer interior lighting, horse trailer interior lighting and similar applications where there is an existing OEM on/off wall switch (will also work too if you're adding new lights with a new wall switch). In this scenario the customer wants to replace the existing single color LED awning light with a multi-color awning light (and all the features it comes with – eg: Bluetooth wireless control) but doesn't want to give up use of the existing on/off wall switch to provide install on white light whenever the wall switch is turned on.

This option requires the purchase of 3 SPDT (or SPST) heavy duty relays. We offer them for sale on our website but you can also buy them locally at just about any auto parts store. They are very common.

SOLUTION

Replace the existing single color awning light with a Boogey Lights multi-color RGB LED light. The wiring of the LED controller to the existing on/off wall switch will depend on which Boogey Lights LED Controller you have: Gen1 or Gen2. The GEN2 is the most popular and has been in production since June of 2023. The GEN2 has our RGBx Quick-Switch technology. We show both wiring versions below.

GEN2 – RGBx with Quick-Switch Technology

Connect the existing 12vdc + (hot) switched connection from the existing on/off wall switch to the QUICK SWITCH (yellow) input to the LED Controller. Connect both the WHITE and GREY X channel output wires coming from the GEN2 LED Controller to the trigger wire input (PIN 86) of a group of 3 SPDT (or SPST) relays. When that on/off wall switch is turned on, 12vdc power is supplied to the Quick-Switch input which instructs the LED controller to turn OFF the RED, GREEN and BLUE channels (if ON) and send 12vdc power to both the White/Grey X channel output wires to PIN 86 of the 3 RELAYS. Doing so activates each of the three relays which sends 12vdc power directly to each of the RGB LED diodes in the LED strip (Red, Green, Blue). Equal amounts of RED + GREEN + BLUE = WHITE (6000 K). When the switch is turned off, that 12vdc power is cut (the three relays open) and the white light turns off. If the RGB mode was on before the wall switch was turned on, the controller will return to the previous color / feature settings. If the RGB mode was off before the wall switch was turned off, nothing happens.

For multi-color operation, whenever the wall switch is off, you can use the Boogey Lights LED Controller as you normally would to create up to 16 million different color options as well as access to the other features via RF or Bluetooth.

GEN2 RGB Wiring with Quick-Switch

For this solution you need three SPDT 30/40amp 12vdc automotive relays. Important to note that the colors of the wires coming out of the relay wiring harness are NOT standard and will change. Super important to pay attention to the pole numbers on the relay itself which are standard and do not change.

Assuming you have three of these relays, twist the like colored together except the wires coming from PIN 87 of the relays (blue wires in our diagram). See wiring diagram we include for more details. Here's the RELAY PIN OUT configurations:

RED: PIN 30 = 12vdc INPUT from 30/40amp source. Important this circuit feeding this be capable of handling the max amperage of the LEDs connected to it. It also needs to be appropriately fused.

WHITE: **PIN 86** = 12vdc INPUT from TRIGGER source which in this case is the output from the GEN2 White/Grey X channel wires. Twist both the White and the Grey wires together.

BLACK: PIN 85 = Common Ground. Must be connected to a ground wire that is capable of handling the amperage of whatever the RED cable is connected to.

YELLOW: PIN 87A = Not used. Must be capped as it is 12vdc hot when relay is normally open.

BLUE: PIN 87 = 12vdc OUTPUT when relay is closed (e.g. Trigger is supplying 12vdc + to relays.)

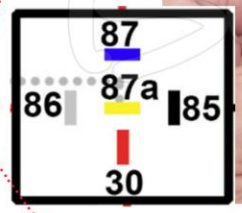
See complete wiring diagram on the next page.

WIRING RGB LED LIGHT TO EXISTING ON/OFF WALL SWITCH TO CREATE WHITE WHILE ALSO BEING ABLE TO USE THE BOOGEY LIGHTS® LED CONTROLLER FOR MULTI-COLOR. GEN2 CONTROLLER W/QUICK-SWITCH.

12vdc power coming from existing oem wall switch. Connects to yellow QUICK-SWITCH wire on the RGBx GEN2 controller.

Existing OEM Wall Switch

Connects to BOTH Grey + White Wires coming from the RGBx controller.



3 - SPDT 30/40amp RELAYS

Note: All wires except the blue are twisted together.

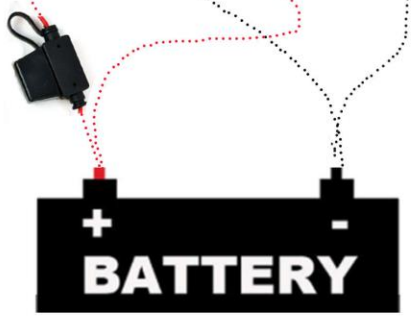
To LED Strip

The colors of the wires coming out of the RELAY wiring harness are not standard. Super important to pay attention to the pole numbers on the relays which are standard and do not change.

Twist the Grey and White wires coming out of the controller together. They connect to PIN 86 on the Relays.

Yellow Quick-Switch Wire

BOOGEY LIGHTS GEN2 RGBx LED Controller w/Quick Switch



RED: PIN 30 = 12vdc INPUT from 30/40amp source. Important this circuit feeding this be capable of handling the max amperage of the LEDs connected to it.

WHITE: PIN 86 = 12vdc INPUT from TRIGGER source (Grey/White output wires on the RGBx LED Controller)

BLACK: PIN 85 = Common Ground. Must be connected to a ground wire that is capable of handling the amperage of whatever the RED cable is connected to.

YELLOW: PIN 87A = Not used. Must be capped as it is 12vdc hot when relay is normally open.

BLUE: PIN 87 = 12vdc OUTPUT when relay is closed (e.g. Trigger is supplying 12vdc + to relays.)

BL-3RELAYS-RGBX

GEN1 RGB without Quick-Switch Technology

Connect the existing 12vdc + (hot) switched connection from the existing on/off wall switch to a group of 3 SPDT (or SPST) relays. When that on/off wall switch is turned on, 12vdc power is supplied to each of the RGB power leads (Red, Green, Blue) via the relay which creates the color white. Note: Equal amounts of RED + GREEN + BLUE = WHITE. When the switch is turned off, that 12vdc power is cut (the three relays open) and the light turns off. For multi-color operation, connect the Boogey Lights LED Controller power lead output to the input power leads of the LED strip on the awning light. Doing so will allow you to control the Boogey Lights awning light via the LED controller.

ONE CAVEAT: The on/off wall switch will over-ride any functionality of the Boogey Lights LED controller. If the wall switch is ON, the led awning light will only display bright white – nothing else. That wall switch has to be turned off before you can use the Boogey Lights LED controller to access any of the capabilities or features of the LED controller (e.g. multi-color, strobing, dimming, flashing, Bluetooth integration, etc.)

GEN1 – RGB Wiring (no Quick Switch)

For this solution you need three SPDT 30/40amp 12vdc automotive relays. Important to note that the colors of the wires coming out of the relay wiring harness are NOT standard and will change. Super important to pay attention to the pole numbers on the relay itself which are standard and do not change. Assuming you have three of these relays, twist the like colored together except the wires coming from PIN 87 (blue wires in our diagrams here). See photo wiring diagram we include for more details. Here's the pin out configurations:

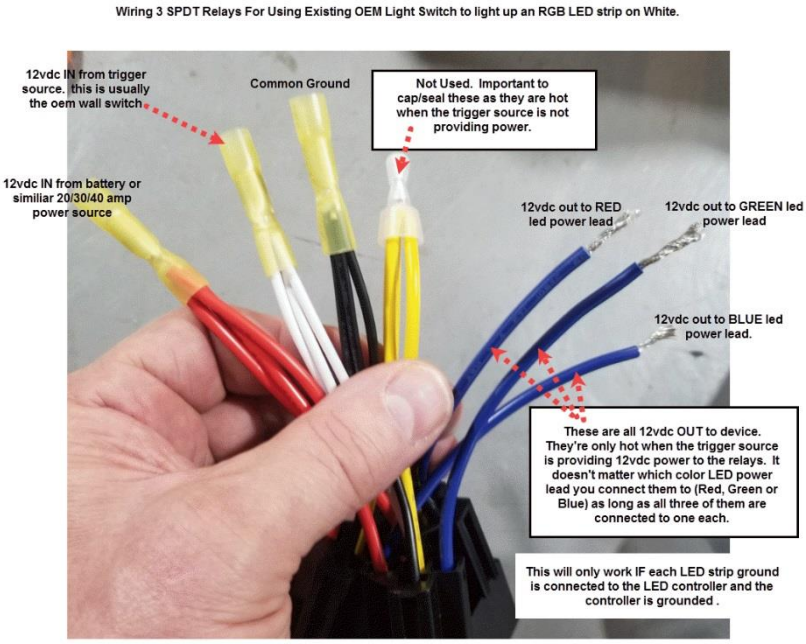
RED: PIN 30 = 12vdc INPUT from 30/40amp source. Important this circuit feeding this be capable of handling the max amperage of the LEDs connected to it.

WHITE: PIN 86 = 12vdc INPUT from TRIGGER source (wall switch)

BLACK: PIN 85 = Common Ground. Must be connected to a ground wire that is capable of handling the amperage of whatever the RED cable is connected to.

YELLOW: PIN 87A = Not used. Must be capped as it is 12vdc hot when relay is normally open.

BLUE: PIN 87 = 12vdc OUTPUT when relay is closed (e.g. Trigger is supplying 12vdc + to relays.)

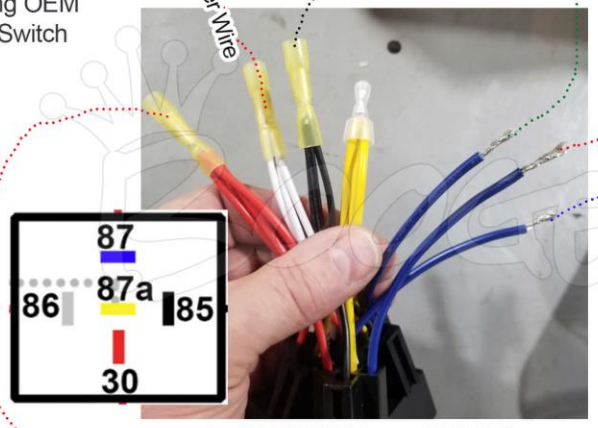


WIRING RGB LED LIGHT TO EXISTING ON/OFF WALL SWITCH TO CREATE WHITE WHILE ALSO BEING ABLE TO USE THE BOOGEY LIGHTS® LED CONTROLLER FOR MULTI-COLOR. GEN1 CONTROLLER. NO QUICK-SWITCH.

12vdc power coming from existing oem wall switch. Pull this from the original awning light 12vdc input wire. It's usually a RED wire indicating 12vdc +. Cap the ground wire that would normally also be included.

Existing OEM Wall Switch

Trigger Wire



3 - SPDT 30/40amp RELAYS

Note: All wires except the blue are twisted together.

To LED Strip

The colors of the wires coming out of the RELAY wiring harness are not standard. Super important to pay attention to the pole numbers on the relays which are standard and do not change.

BOOGEY LIGHTS GEN 1LED Controller w/o Quick-Switch

RED: PIN 30 = 12vdc INPUT from 30/40amp source. Important this circuit feeding this be capable of handling the max amperage of the LEDs connected to it.

WHITE: PIN 86 = 12vdc INPUT from TRIGGER source

BLACK: PIN 85 = Common Ground. Must be connected to a ground wire that is capable of handling the amperage of whatever the RED cable is connected to.

YELLOW: PIN 87A = Not used. Must be capped as it is 12vdc hot when relay is normally open.

BLUE: PIN 87 = 12vdc OUTPUT when relay is closed (e.g. Trigger is supplying 12vdc + to relays.)

Note: Instead of connecting the LED controller to a 12vdc power source (BATTERY +), you could connect the red fused input wire going to the Boogey Lights LED controller to the YELLOW (PIN 87A) output coming from the RELAYS. This way the LED controller would not be energized when the wall switch is ON.