

March 2008

A LS7634/LS7635 WALL DIMMER WITH A NEON LOCATOR LAMP OR LED LOCATOR LAMP

In certain applications, it is desirable to add a Neon lamp to a dimmer wall switch to make it easy for people unfamiliar with the surroundings to find the location of the wall dimmer in an unlit room or hallway.

A Neon locator lamp can be added to the Figure 5 application schematic of the LS7634_LS7635 data sheet as shown in Figure 1 of this Application Schematic.

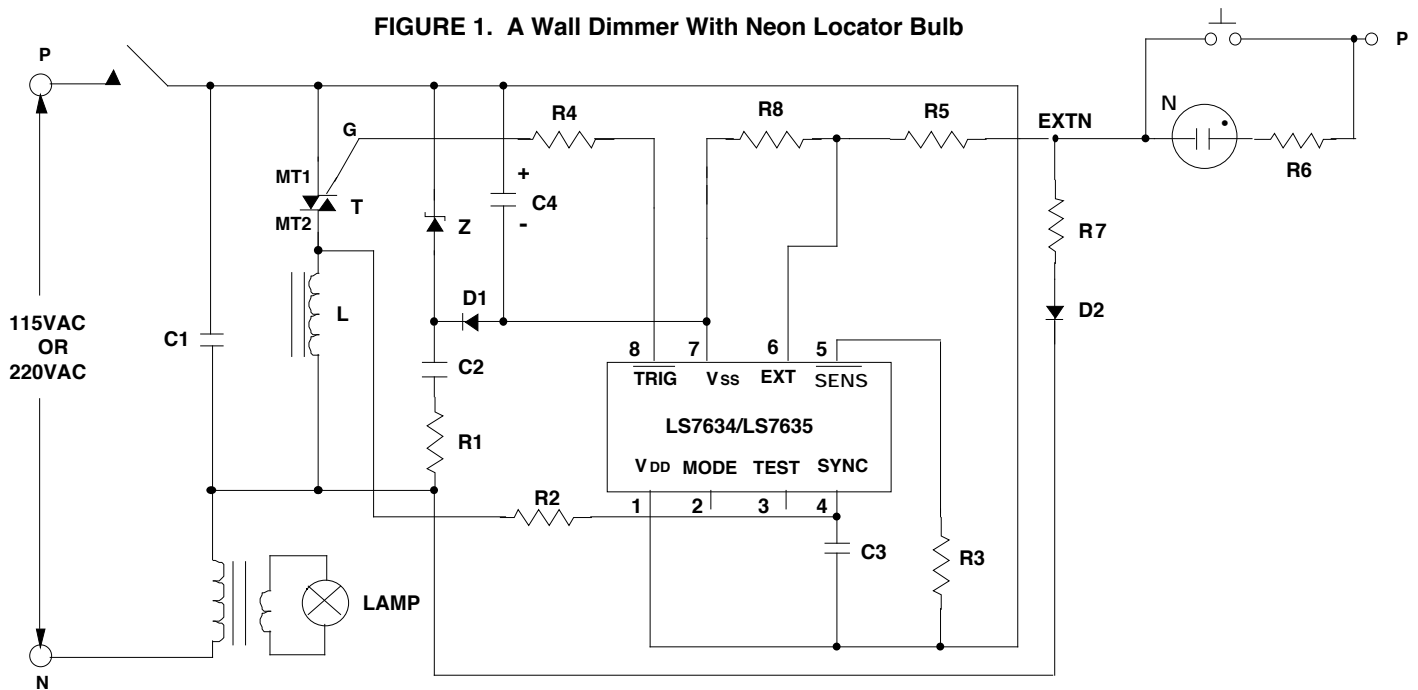
The Neon lamp is at its brightest during the time when the light driven by the triac is off. It will be at its dimmest when the light is at its brightest. A dome switch is used to control the wall dimmer.

Figure 2 of this Application Note shows how multiple dome switches, each with their own Neon locator lamp, can be used to control one wall dimmer.

Alternatively, an LED locator lamp can be added to the Figure 5 application schematic of the LS7634_LS7635 data sheet as shown in Figure 3 of this Application Schematic.

When the light driven by the triac is off, the LED is on, showing the location of the wall switch. When the light driven by the triac is on, the LED is off.

FIGURE 1. A Wall Dimmer With Neon Locator Bulb



- C1 = 0.15μF, 200V
- C1 = 0.15μF, 400V
- C2 = 0.15μF, 200V
- *C2 = 0.082μF, 400V
- C3 = 0.02μF, 10V
- C4 = 0.002μF, 10V
- C5 = 100μF, 10V
- C6 = 0.1μF, 10V

- R1 = 270 , 1/2W
- *R1 = 1k , 1W
- R2 = 680k , 1/4W
- *R2 = 1.5M , 1/4W
- R3 = 1.5M , 1/4W
- R4 = 62 , 1/4W
- R5 = 150k , 1/4W

- R6 = 0 (no R needed)
- *R6 = 100k , 1/4W
- R7 = 22k , 1/4W
- *R7 = 22k , 1/2W
- R8 = 1.5M , 1/4W
- D1 = 1N4148
- D2 = 1N4003
- *D2 = 1N4004

- Z = 5.6V, 1W (Zener)
- T = Q4004L4 Typical Triac
- T = Q5003L4 Typical Triac
- L = 100μH (RFI Filter)
- L = 200μH (RFI Filter)
- N = 125VAC Neon Bulb
- *N = 250VAC Neon Bulb

* = Component change for 220VAC

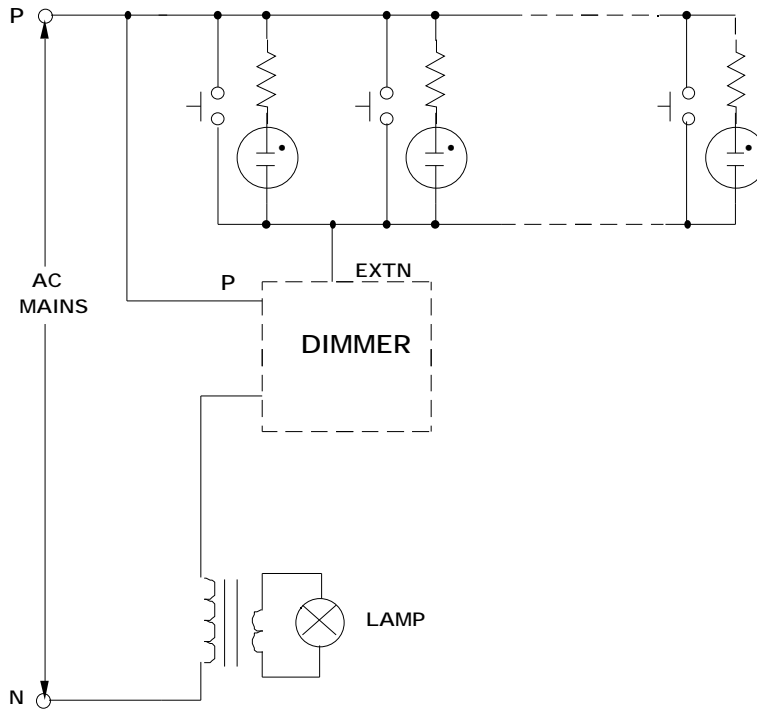
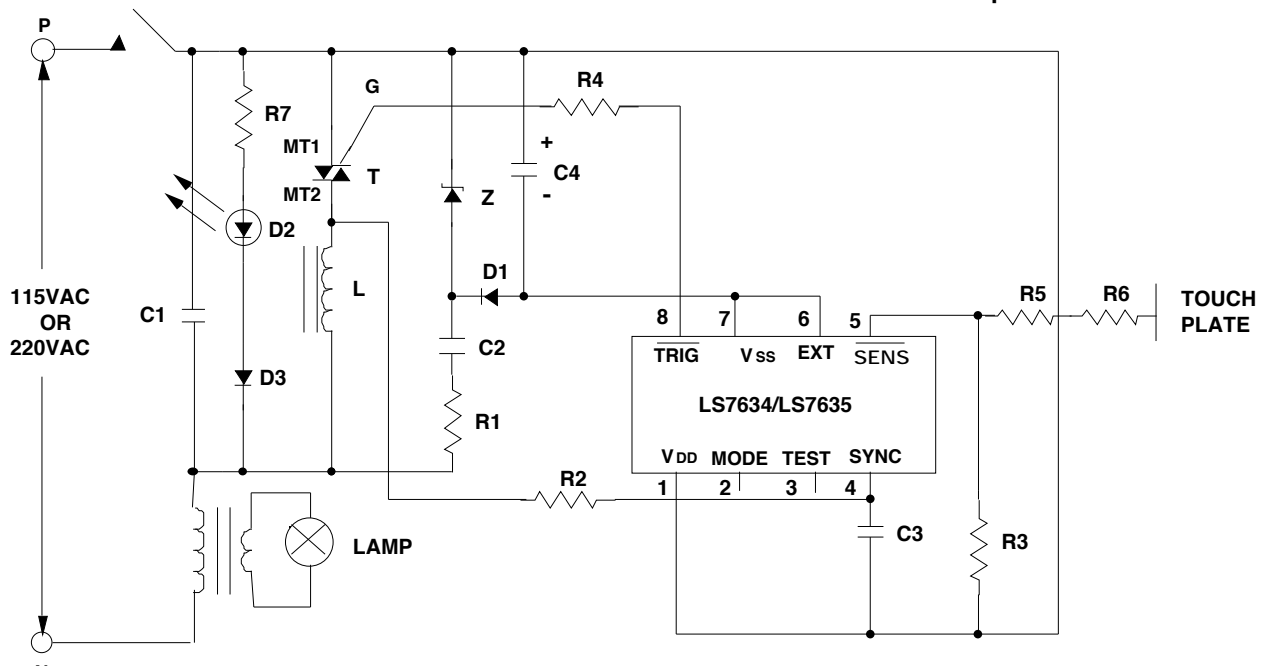


FIGURE 2. Multiple Remote Controls for One Wall Dimmer

Figure 2 shows how multiple remote switches, each with their own neon locator bulb, can be wired to control one wall dimmer.

FIGURE 3. A Wall Dimmer With LED Locator Lamp



C1 = 0.15 μ F, 200V
 *C1 = 0.15 μ F, 400V
 C2 = 0.15 μ F, 200V
 *C2 = 0.082 μ F, 400V
 C3 = 0.02 μ F, 10V
 C4 = 0.002 μ F, 10V
 C5 = 100 μ F, 10V
 C6 = 0.1 μ F, 10V

R1 = 270 Ω , 1/2W
 *R1 = 1k Ω , 1W
 R2 = 680k Ω , 1/4W
 *R2 = 1.5M Ω , 1/4W
 R3 = 1M Ω to 5M Ω , 1/4W
 R4 = 62 Ω , 1/4W
 R5, R6 = 2.7M Ω , 1/4W
 *R5, R6 = 4.7M Ω , 1/4W

R7 = 18k Ω , 1/4W
 *R7 = 36k Ω , 1/4W
 D1 = 1N4148
 D2 = 5mA LED
 D3 = 1N4003
 *D3 = 1N4004

Z = 5.6V, 1W (Zener)
 T = Q4004L4 Typical Triac
 T = Q5003L4 Typical Triac
 L = 100 μ H (RFI Filter)
 *L = 200 μ H (RFI Filter)

* = Component change for 220VAC