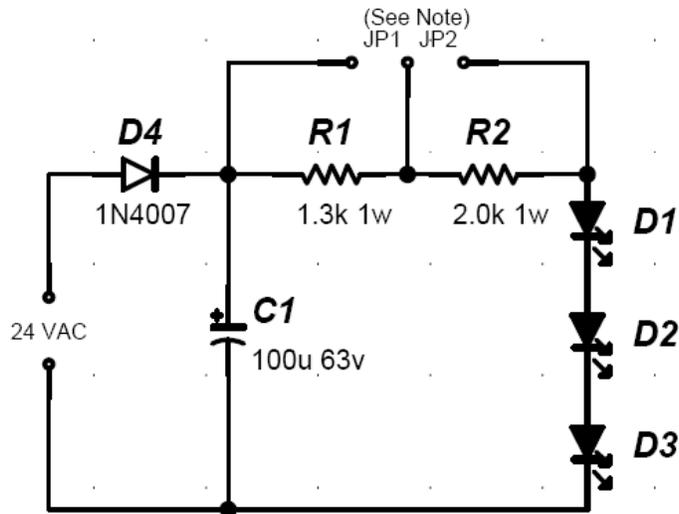


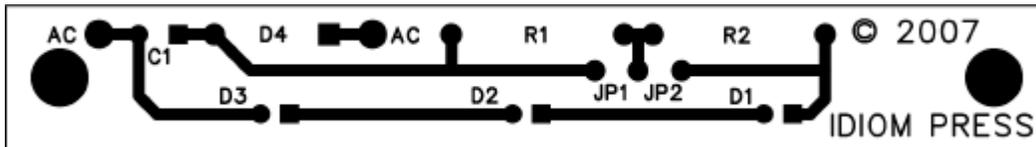
Idiom Press Rotator Illuminator



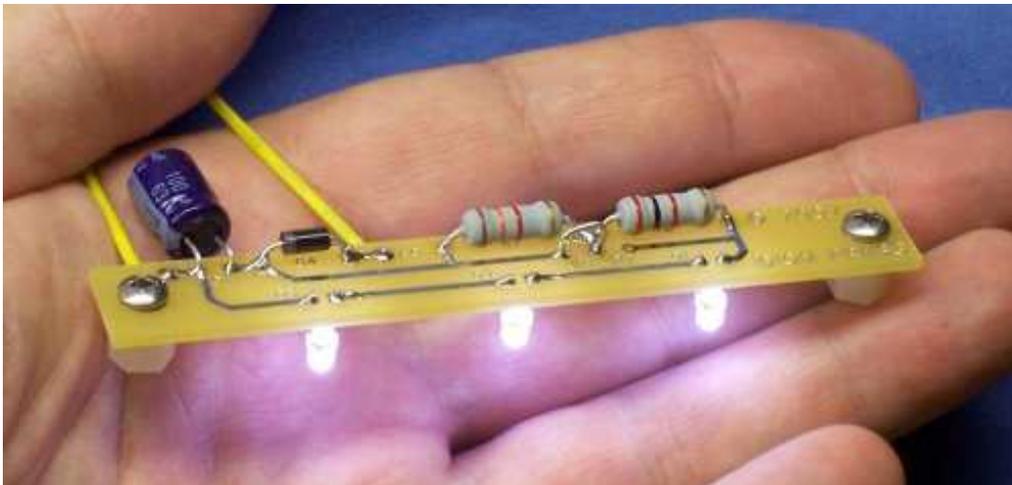
Note:

Install no jumper for minimum intensity.
Install JP1 for medium intensity.
Install JP2 for maximum intensity.

Caution: do not short out both resistors.
To do so would permanently damage or destroy the LED's.



Please note that the Rotator Illuminator is designed to work with meters that have clear plastic on top and a single bulb mounted above the meter, which is the majority of the meters in service. Control boxes made in the last year or two have black plastic all around and two bulbs set into the meter, and unfortunately are not suitable for the Rotator Illuminator.



Qty	Part No	Description
1	ZRIL001	Printed Circuit Board, Rotator Illuminator
3	ZRIL002	LED, white 140 mcd 140 deg STATIC SENSITIVE
1	ZCOM0060	Capacitor, 100 μ F 63V 20% electrolytic
1	ZCOM0025	Diode, 1N4007
1	ZRIL003	Resistor, 1.3 k Ω , 1 W
1	ZRIL004	Resistor, 2.0 k Ω , 1 W
2	ZRIL005	Adhesive dot, double-sided
2	ZRIL006	Spacer, nylon hexagonal 4-40 threaded 0.25 in
1	ZRIL007	Bag, 3"x5"x2 mil, anti-static reclosable
2	ZCOM0059	Screw, 4-40 X 1/4", SS, ph pan hd MS
1	ZCOM0043	Wire, UL 1007, stranded and tinned, 24 AWG

Installation Instructions

1. Unplug the rotator control box from the mains power supply.
2. Hold the Rotator Illuminator circuit board with the printed wiring side up. The printed wiring side is the top of the board. All the components will be installed on the top of the board, except for the LEDs and the spacers.
3. Screw the two threaded nylon spacers to the bottom of the board, with the screw heads on the top of the board.

The LEDs are sensitive to electrostatic discharge (ESD). Please take the necessary precautions against static electricity to avoid damaging the LEDs.

It is possible to install the LEDs touching the Rotator Illuminator circuit board, up high and away from the meter, or down low and touching the meter. If the LEDs are mounted up high, then the light will be more even but will not be as bright. If the LEDs are mounted down low, then the light will be brighter but not as even. We recommend that you try mounting the LEDs up high at first. If the light is then not bright enough, then you can lower the LEDs later.

4. Place the circuit board and spacers on a flat surface so that the spacers hold the board above the table. Insert the LEDs into the holes for D1, D2, and D3 from beneath. The long lead goes into the hole with the square pad. Let the LEDs touch the tabletop. Do not solder the LEDs yet. Trim the LED leads at the circuit board with the LEDs still touching the tabletop. Then push the LEDs up so that they touch the circuit board, and solder them. Do not trim the leads again, because you may wish to lower the LEDs later for more brightness.
5. Install the 1N4007 diode in D4 on top of the board. The banded end goes towards C1. Save the trimmed leads for later.
6. Solder the 100 μ F electrolytic capacitor C1 on top of the board. The long lead goes into the hole with the square pad. Do not install C1 flush with the board; instead leave enough room so that the leads can be bent 90°, because there is not room in the control box if the capacitor stands up. When the solder connections have cooled, bend the capacitor leads 90°.
7. Install resistors R1 and R2 on top of the board. R1, 1.3 k Ω , is brown-orange-red-gold. R2, 2 k Ω , is red-black-red-gold.
8. Cut the 24-gauge wire into two equal lengths. Strip the ends of the wires. Install a wire in each hole labeled AC. Install the wires from below and solder on top of the board.
9. Unscrew the lamp from the socket in the control box.

10. Solder the two wires to the lamp socket terminals. Use a piece of vinyl electrical tape to cover the connection to make sure that no metal part shorts the leads.
11. Connect power, and turn on the control box. The LEDs should light.
12. Hold the Rotator Illuminator on top of the meter so that the LEDs illuminate the meter face, as they will when the board is permanently installed. Using a test lead with alligator clips on the ends, try bypassing one resistor or the other, and see what level of brightness you prefer. **DO NOT BYPASS BOTH RESISTORS AT THE SAME TIME**; doing so would permanently damage the LEDs. If you prefer the brightness with R2 bypassed (brightest), then solder the diode lead you saved earlier as a jumper at JP2. If you prefer the brightness level with R1 bypassed (medium brightness), then solder the jumper at JP1. If you prefer the brightness with no resistor bypassed (least bright), then install no jumper. You may wish to test the Rotator Illuminator, with temporary jumper installed, in the shack under various lighting conditions before soldering the jumper.
13. Experiment with the exact placement of the Rotator Illuminator over the meter. The light changes quite a bit depending upon how far the Rotator Illuminator is from the front panel of the control box.
14. Stick the glue dots to the spacers. Peel the opaque paper off first, stick the dot on the spacer, and then peel off the clear backing.
15. Stick the Rotator Illuminator down onto the meter lightly. Verify that the placement is exactly how you like it, and then press down firmly so that the glue dots take hold.

Enjoy your steady, energy-efficient lighting for many hours to come!

If you have any questions, please feel free to contact Idiom Press.

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