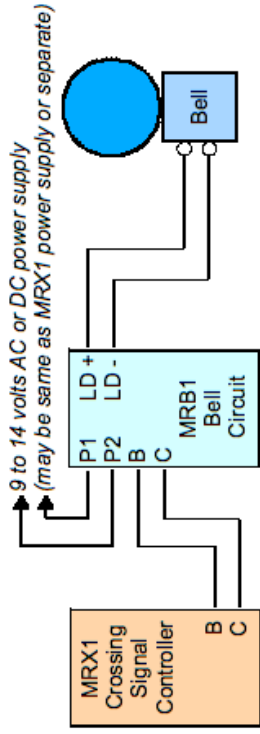


Azatrax MRB1 Bell Ringer / Strobe Light Pulsar Installation Instructions

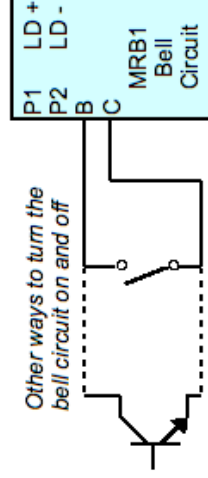
The MRB1 bell ringer / strobe flasher circuit adds sound or lighting effects to your model railroad or diorama. It can drive a mechanical bell (door bell or door chime) for railroad sound effects, or LED lights to produce a strobe light effect.



Connections - Crossing bell

Add crossing signal warning bell sounds to a model railroad grade crossing. Connect the MRB1 to an Azatrax MRX1 Crossing Signal Controller as shown above. Connect the bell to the + and - LD (Load) terminals. Power supply should have an output current rating of at least 0.5 amp (may vary depending on the bell).

Other means of turning on the MRB1 bell/strobe circuit are shown here. Connecting 'B' to 'C' via a switch, relay, transistor or open-collector logic gate will start the bell or flashing



lights. Only 1 mA flows from 'B' to 'C'. Disconnecting 'B' turns off the bell or lights.

Choosing a bell - The MRB1 is designed to use a common low voltage door bell or door chime available from hardware stores and building supply centers. Examples:

- 2.5 inch doorbell: Carlon DH922, Ace Hardware 36486
- 4 inch doorbell: Ace Hardware 36487, Heath 174C-A
- 2-tone door chime ('bing-bong'): Ace Hardware 36456, Carlon DH110 or DH120, Heath 95B-B

See www.azatrax.com for more information and assistance.

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Connections - Strobe lights

Small, super bright white LEDs can be used to simulate strobe lights on modern antenna towers and tall smoke stacks. Use a flash rate of once every 2 or 3 seconds. Or, put the LEDs in a scale structure and turn up the flash rate for a disco effect.

**** ALWAYS use a series resistor with LEDs ****

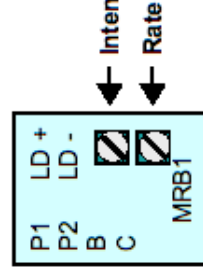
Suggested resistance with 9 volt power supply:

- one pair of white LEDs in series: 33 ohms
 - two pairs of white LEDs: 15 ohms
- With 14 volt power supply:
- one pair of white LEDs in series: 150 ohms
 - three white LEDs in series: 50 ohms
 - two pairs of white LEDs: 75 ohms

On / off control is the same as for the bell circuit (see other side).

Adjustments

Two adjustments are available on the MRB1 circuit board. 'Rate' adjusts how often the bell is struck or the lights are flashed. The available range is 4 times per second to once every 4 seconds. 'Inten' adjusts the intensity of the bell or light flash. It varies the length of time that the bell is energized for each strike, or the length of time the lights are on for each flash.



On / off control is the same as for the bell circuit (see other side).

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