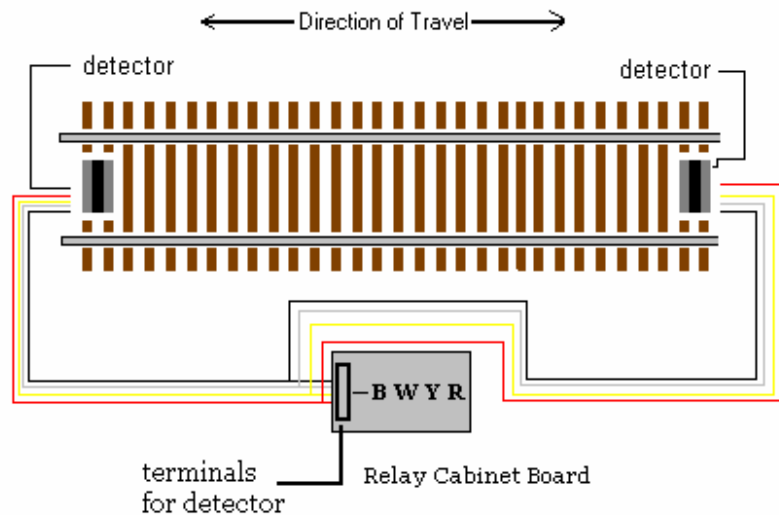


Step [4] Connecting the Detectors to the Relay Cabinet

After you have determined the locations of the Relay Cabinets (1 per grade crossing block see page 10 for Relay Cabinet preparation), connect each detector to the appropriate Relay Card. There are four wires for each detector Red, Yellow, White, and Black. Connect lengths of wire from the detector to the Relay Cabinet. Connect these wires to the detector using the wire nuts provided. Use dielectric grease in the nut before connecting the wires. The wires are then connected to the detector input/output terminals on the left side of the Relay Card marked **B W Y R** which correspond to the color wires on the detectors. Connect one detector set red wire to R1 and the other red wire to R2 See Figure 5 for details.

Figure 5



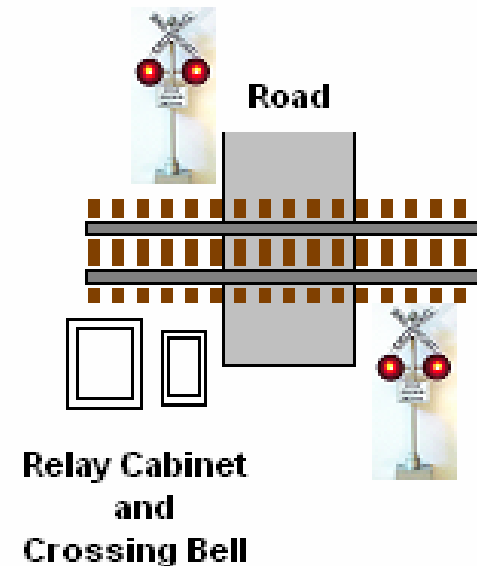
Run a power bus (ground and positive at least 22 gauge wire) around the track on the same side as the Relay Cabinets. Connect each relay card to the power bus using pieces of wire connected to the + and - terminals on the card to the power bus. The power to the Relay Cards should be 12volt-18 DC unregulated either from a transformer connected to the house supply or a 12 volt battery. **DO NOT CONNECT THE RELAY CARD TO THE TRACK POWER. Doing so may damage the Relay Card. SBSC will not be responsible for incorrectly powering the Relay Cards with an inappropriate power source.** Connect the bus to your power source. Check to see if the detected light goes on when each of the detectors in a block are covered. When it is on the detectors are working properly.

Step [5] Connecting Signals to the Relay Cabinet

Follow the instructions supplied with the signals to properly install the signals. Run wire from the crossing signals to the relay cabinet. Connect each color wire from the crossing signal to its appropriate terminal on the Relay Card marked **G Y R**; one for the left terminals and one for the right terminals.

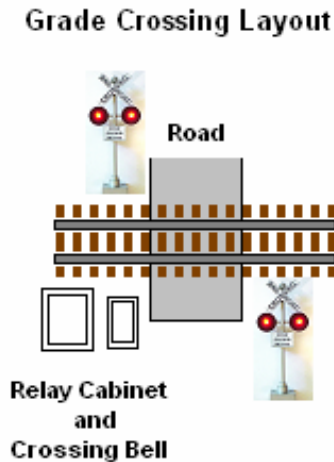
Figure 6

Grade Crossing Layout



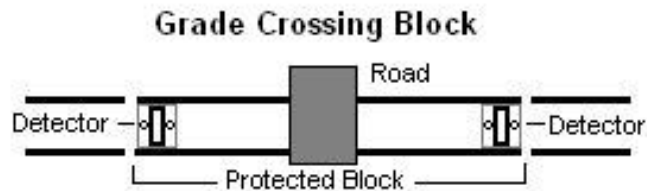
Step [1] Establishing a Grade Crossing Block

The first step if installation is to establish a grade crossing block. A grade crossing block is a section of track that protects a grade crossing at the intersection of a road and tracks which are protected by signals. Figure 1 below illustrated this.



The detectors are positioned between the rails where the signals are activated to allow enough warning that a train is approaching. There is one detector at each end of the grade crossing block. See Figure 2.

Figure 2



Step [7] Testing the Signal System

Connect the signal power source to the power bus (**12-18 volt DC**). Check to see that each detector works properly by running a locomotive or car over the detector. The crossing signals within a block should be flashing red and the crossing bell should be on as well for each detector covered in that block.

The volume can be adjusted for the crossing bell. To adjust the volume, remove the four screws from the front of the bell cabinet. Carefully remove the front cover. Caution: **the speaker is connected to the back of the front cover and has wires connected to the sound board.** In the lower right corner is an adjustment blue pot which will adjust the volume by turning the adjustment screw on the pot. Place a piece of rolling stock over a detector and turn the screw to achieve the desired volume.

If everything checks out OK then you are finished. Congratulations! You have successfully installed you crossing signal system. The signals will work automatically. Now you can just run trains and enjoy the added realism of a signal system to your railroad.

Again, thanks for the business.

South Bend Signal Company
"Making Your Railroad Real"

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Notes

Description

The LDS is a detector/signal driver providing detection and signaling for grade crossing signals.

Specifications

- 12 -18volt DC operation (unregulated)
- 100 ma power draw per board
- Uses infrared state -f-the-art detection device
- Bi-directional providing signal control in both directions of travel
- Two detectors one for each end of the signal block
- Compatible with any train control system: DC, DCC Battery, or live steam
- For indoor or outdoor use

Materials Needed

- small Phillips and slotted screw driver
- Dielectric grease to seal wire nuts (can be purchased at most auto supply stores)
- 1/8^{32nd} and 1/4th drill bits and power drill
- 12-18volt DC power source (**not the throttle supply**)
- Wires cutters and wire strippers
- Small wire nuts for wire connections (some supplied)
- Tube of Silicon Caulk