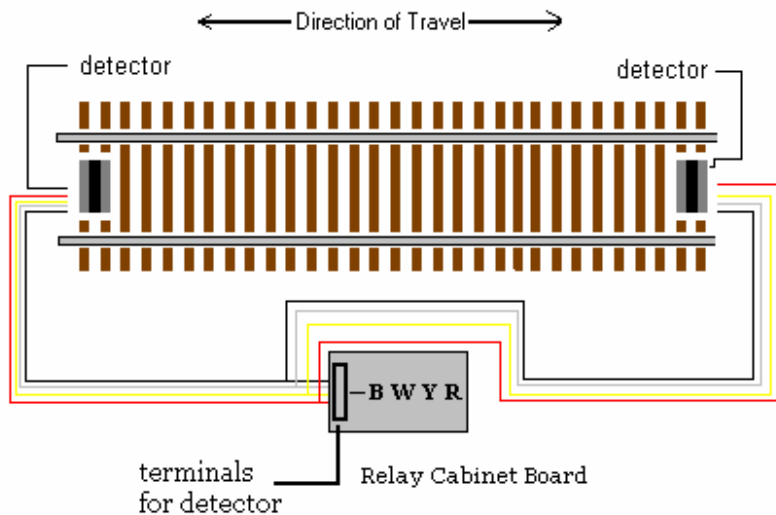


Step [4] Connecting the Detectors to the Relay Cabinet

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. For **Searchlight** signals remove the **SIGNAL SELECT** jumper block from the relay card. For **Color light** signals leave the jumper block on. For **ABS (Absolute Block Signals interlocked)** remove the **SA/ABS** jumper block. For the **STAND ALONE** configuration leave the **SA/ABS** jumper block on.

Run wire from the signals to the relay cabinet. Connect each color wire from the signal to its appropriate terminal on the Relay Card marked **W G Y L**. Repeat this process for each signal for each block. See Figure 6A and 6B below.

Fig. 6A

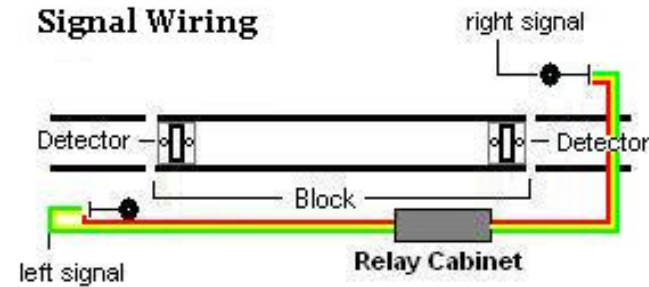
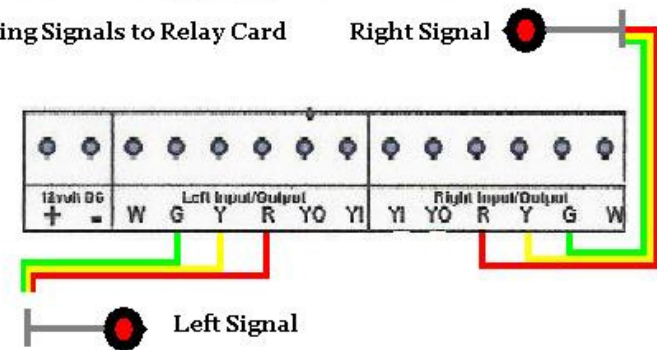


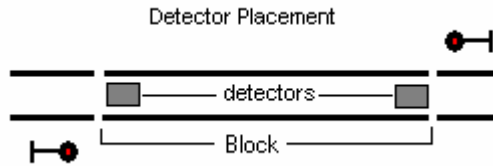
Fig.6B

Connecting Signals to Relay Card



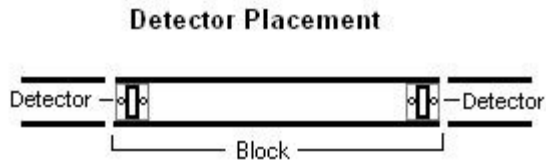
Step [1] Establishing a Grade Crossing Block

The first step if installation is to establish a grade crossing block. A signal block is a section of track that is protected by signals. Figure 1 below illustrates this.



The detectors are positioned between the rails at the intersections of signal blocks. There is one detector at each end of the signal block. See Fig. 2.

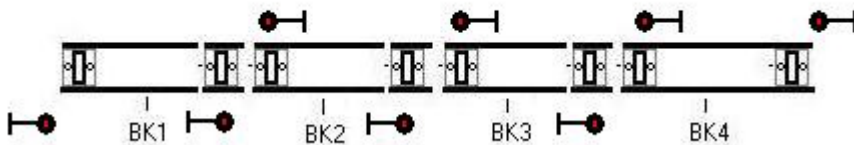
Figure 2



For each block you will need two detectors. See Fig. 3

Fig.3

2 detectors for each signal block: 4 blocks shown



Step [7] Testing the Signal System

Connect the signal power source to the power bus (**12-18 volt DC**). You should have green for all signals. If you are using the **STAND ALONE** configuration the signal will go to yellow and then to green after 12 seconds. If this is not the case, then go back through the previous steps for the offending signal and check your connections. Check to that each detector works properly by running a locomotive or car over each detector for the block. Each signal within the block should be red.

For the ABS configuration: to check for yellow, cover a detector and look at each block to the left or right of the block that is occupied. The signals in those blocks should be yellow. If the signals do not display yellow, the go to **Step [6]** above and make sure that you have made the proper connections between Relay Cards.

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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Phone 269-684-4361

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Notes

Description

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

Specifications

- 12 -18volt DC operation (unregulated)
- 100 ma power draw per board
- Uses infrared state-of-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
- Will not drive two-wire LEDS

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