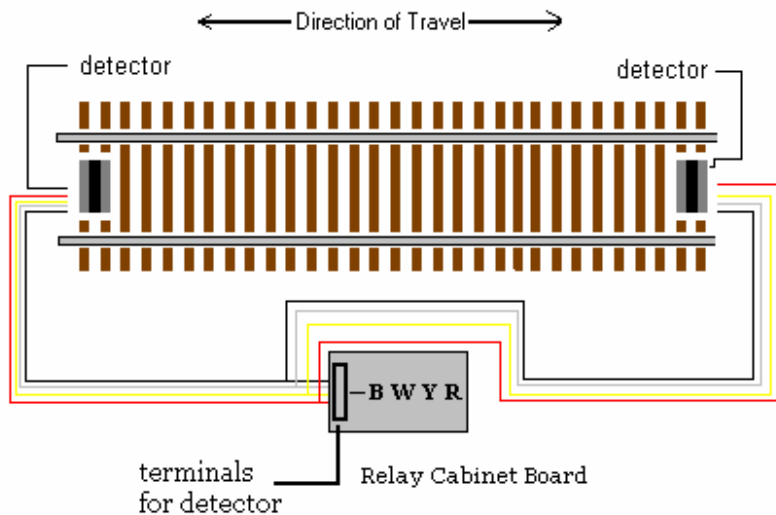


#### Step [4] Connecting the Detectors Sets to the DSDIF Board

After you have determined the locations of the **DSDIF** boards (1 per block), mount the board between the detectors under the layout. Connect each detector set to the appropriate board. The white wires from the detector set should be soldered together and additional wire added to reach the **DSD-IF**. There are four wires for each detector Red, Yellow, White, and Black. Twist and solder lengths of wire from the detector set to the **DSD-IF** board. The wires are then connected to the detector input/output terminals on the left side of the Relay Card marked **B W Y R** **R1 R2** which correspond to the color wires on the detector sets. See **Figure 5** for details.

**Figure 5**



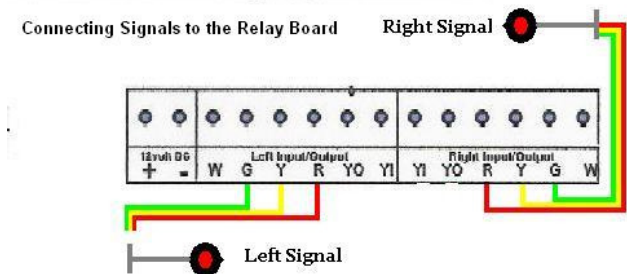
Run a power bus (ground and positive at least 22 gauge wire) around the track on the same side as the boards. Connect each board to the power bus using pieces of wire connected to the + and - terminals on the card to the power bus. The power to the boards should be 12-18 volt DC unregulated either from a transformer connected to the house supply or a 12 volt battery. **DO NOT CONNECT THE DSD-IF TO THE TRACK POWER. Doing so may damage the board. SBSC will not be responsible for incorrectly powering the DSD-IF with an inappropriate power source.** Connect the bus to you 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 DSD-IF Board

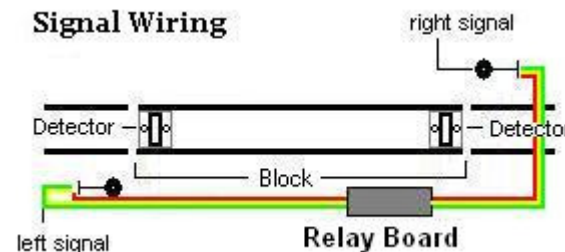
Follow the instructions supplied with the signals to properly install the signals. For Searchlight signals remove the **SIGNAL SELECT** jumper block from the **DSDIF** board. For Color light signals, leave the **SIGNAL SELECT** jumper block **ON**. For the **ABS** configuration remove the **SA / ABS** jumper block. For the Stand Alone configuration leave the **SA / ABS** jumper block **ON**.

Run wire from the signals to the **DSD-IF** board (6 pair phone wire works well). Connect each color wire from the signal to its appropriate terminal on the board marked **W G Y R**. Repeat this process for each signal for each end of the block. See Figure 6 A and 6B below. The **W** terminal is for the white wire on SBSC's Color Light Signals (common positive).

**Figure 6A**

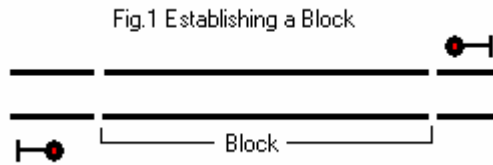


**Figure 6B**



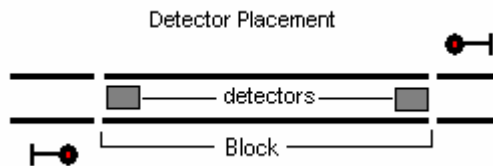
## Step [1] Establishing Signal Blocks

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



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

**Figure 2**



For each block you need two detector sets. See Figure 3

**Figure 3**

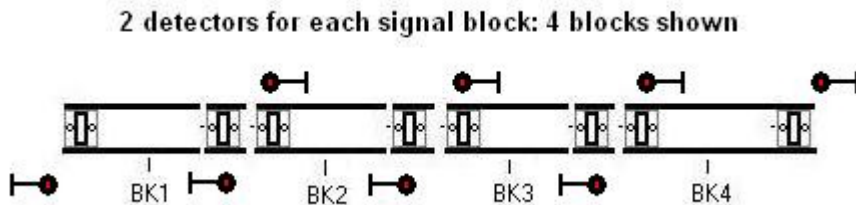


Figure three shows the placement of detector sets to establish four Signal blocks. It is a good idea to draw a track diagram of you railroad to help establish signal blocks.

## Step [7] Testing the Signal System

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

For **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, then go to Step [6] above and make sure that you have made the proper connections between Relay Cards.

For **Stand Alone** configuration: When the block changes from occupied to clear, the signal will change to yellow for 12 seconds and the back to green.

If everything checks out OK then you are finished. Congratulations! You have successfully installed you 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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### **Description**

The IFDSD is a detector/signal driver providing detection and signaling for searchlight or color light signals with either a **Stand Alone** ( yellow automatic but not real-time aspects) or **ABS** (absolute block Signal system with real time aspects).

### **Specifications**

- 12 -18 volt DC operation (unregulated)
- 100 ma power draw per board
- Uses infrared state –of-the-art detection device
- Drives bicolor LEDS (three-wire common ground type)\*
- Is capable of all three aspects (green, yellow, and red)
- 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 use. Works in any light conditions
- will not drive two-wire LEDS

### **Materials Needed**

- small Phillips and slotted screw driver
- 1/8<sup>th</sup>, 3/16<sup>th</sup>, and 1/4<sup>th</sup> drill bits and power drill
- 12-18volt DC power source (**not the throttle supply**)
- Wires cutters and wire strippers
- 1 or 2 signals for each block (2 per block for bi-direction plans)
- Soldering iron and rosin core 60/40 solder