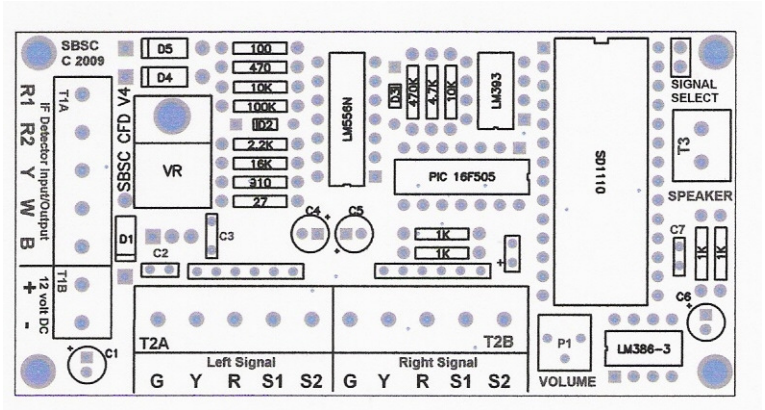
South Bend Signal Company LLC

“Making Your Railroad Real”

www.sbsignal.com

Infrared Detector/Signal Driver For Crossing Signals



CFD-IF (V2)

CFD-IF Manual

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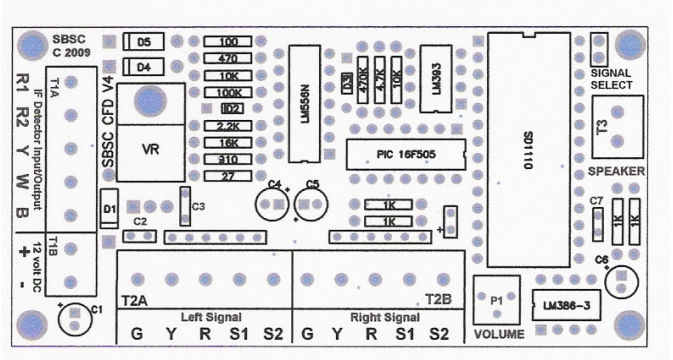
Connecting SBSC Crossing Bell (Option)

Connect the Speaker to the two terminals marked SPEAKER on the right side of the board. The speaker should be mounted in a place where the sound will be clearly heard. Mount the speaker at the appropriate location and run wire back to the speaker terminals on the CFD-IF board. Use the volume adjustment pot marked **VOLUME** to control the volume of the sound.

CFD-IF Terminal Descriptions

Refer to the diagram of the CFD-IF board below to become familiar with the terminals and there purpose.



+ (input) Power wire 12 volt-18 DC *
- (input) ground wire 12 volt-18 DC

Left and Right Block Input/Output Terminals

G LEFT & RIGHT (output) wire to crossing signal
Y LEFT & RIGHT (output) common wire to crossing signal
R LEFT & RIGHT (output) wire to crossing signal
S1 LEFT & RIGHT (output) wire to device motor
S2 LEFT & RIGHT (output) wire to device motor
Speaker (output) to speaker (8 ohms)

Detector Terminals (2 Detector Sets per Block)

R1, R2 (input) Red wire: Receiver inputs from detector sets
Y (output) Yellow wire: Emitter output to detector sets
W (output) White wire: common ground to detector sets
B (output) Black wire: positive power to Receiver

Jumper Blocks: Signal Select Remove for common positive, leave on for common ground crossing signals;

- **Use a separate DC power supply for this signal system. Do not use power from the rails or other throttle source to power this system. Failure to improperly power this system may damage the board. SBSC will not be responsible for improperly connecting the system to an incorrect power source.**

Step [6] 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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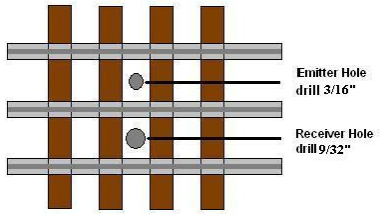
Step [2] Mounting Detectors

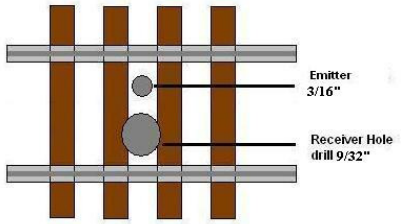
After establishing the Crossing block for your layout, one detector set (emitter and receiver) is mounted at each end of the block. See **Figure 3**. To mount the detectors remove ballast between the ties in the mounting area. Drill a 5/32nd inch and 9/32nd inch hole as shown in Figure **4A** for **O** Scale, and Figure **4B** for **HO** or **4C** for **N** Scale.

Fig.4A O Scale



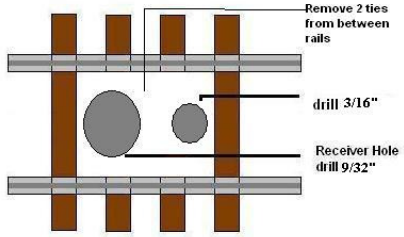
Emitter/Receiver Installation
O Scale 2 or 3 Rail

Fig.4B HO Scale



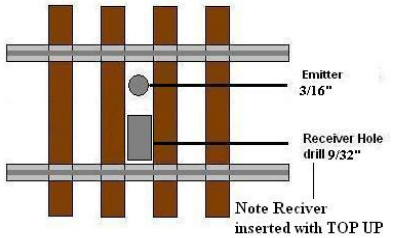
Emitter/Receiver Installation HO

Fig 4 C N Scale



Emitter/Receiver Installation N

Fig 4 D



Emitter/Receiver Installation HO

Insert the detector set into the holes drilled. The top of the receiver should be facing up, not the dome up. The receiver will see the IF light from the top of the package. **See Fig 4 D**. Be careful when inserting the emitter and receive that you do not crimp the leads inside the shrink wrap tubing which will cause them to short and not work properly. Check to make sure they are working properly by connecting them to the CDF-IF board as described in **STEP [4].**

After you are sure they are working properly, cement the **Emitter** and **Receiver** from the top. The **Emitter** should be flush with the top of the ties and the top of the **Receiver** even with the bottom of the ties.