Stand Alone Application Guide

For small scales (HO, N, Z, TT) where the system is mounted stationary with speakers in the room.

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Overview

The Phoenix System has been installed on trains in scales as small as HO. Many modelers realize that the sound quality that the Phoenix system is capable of simply can not be reproduced by the small speakers that are dictated by the smaller scales. One solution is to mount the system off the train. S and O scales are generally large enough for adequate speakers, but here too a stationary system may be more dramatic.

The basic stand alone strategy is to feed the sound system the same power that is going out to the locomotive so that the sound may change according to locomotive movement. The sound board needs to be operating in voltage mode rather than trigger mode (trigger mode is when you have a contact that opens and closes as the wheels rotate). If you have a DCC system, you will get excellent sound to motion synchronization and the function buttons can trigger the sounds.

Comparisons

Here are some of the significant differences between the stand alone, off the train installation and a typical on the train installation.

1. Battery - Not needed in stand alone. The battery supplies power when there isn't power form the main supply; in a stand alone application you can easily connect a constant power source, ideally between 6 and 12 Volts DC. DCC utilizes a constant power environment.
2. Speakers - It is easy and practical to use larger speakers mounted in good acoustical enclosures. The sound board will generally provide plenty of volume for indoor applications. For 1:1 scale realism, try hooking up your stereo amplifier using our line out connection. You'll be able to feel the bass in the diesel sounds. Nearby folks and household members who are not enthralled with trains might not react favorably...
3. Triggering Sounds - You can have up to six buttons connected to the sound board to activate sounds on demand. In most on-board the train installations you can only trigger a few sounds with magnets positioned on the layout and reed switches mounted on the train. You may want other than the standard factory sound trigger configuration. If you are using DCC you have available an additional eight function buttons.

Components

Generally you will not want many of the components that come in our standard kits. As mentioned the battery is not needed; the speakers are small and not enclosed; the volume switch is might be smaller than you would like in a control panel; you most likely will not use reed switches or power plugs. Most stand alone users order only the sound board and a battery terminal plug. If you use, or plan to use, the Computer Interface, you will also need an access jack.

One characteristic of modelers in the smaller scales is that they typically have many locomotives. This makes the Phoenix system very attractive when you also use the Computer Interface kit. You can change the sound in the board to match the locomotive you are currently running, this process takes about 3 minutes. The computer interface is also very handy for tuning the system to the way you like to run. You can select which sounds play on various triggers, set volumes for individual sounds and adjust the timing and duration of sounds.

Application Ideas

Triggering sounds.

Hand operated push buttons are probably the most common way to trigger sounds. You can also have a train sensor mounted near a crossing, your coaling tower, water tower, et cetera and wire this into the sound board so that the sound will play at the appropriate time. This could be as simple as a reed switch on the layout and a magnet mounted somewhere on the train to trip the sensor. Photo eyes also work very well.

Transmit audio to the train.

One of our creative customers used a pair of Family Radio Service transmitter/receivers to add sound to his HO empire. The Phoenix Sound system was mounted in a sound proof box with one radio in transmit mode. The receiving unit was then mounted, less shell, in a boxcar. The receiver operates for about two hours from rechargeable batteries. Alternately, you could use an FM transmitter and mount a small FM radio in a car. You can supplement the on train sound with stationary speakers or sub-woofers that get their input from the stationary sound system.

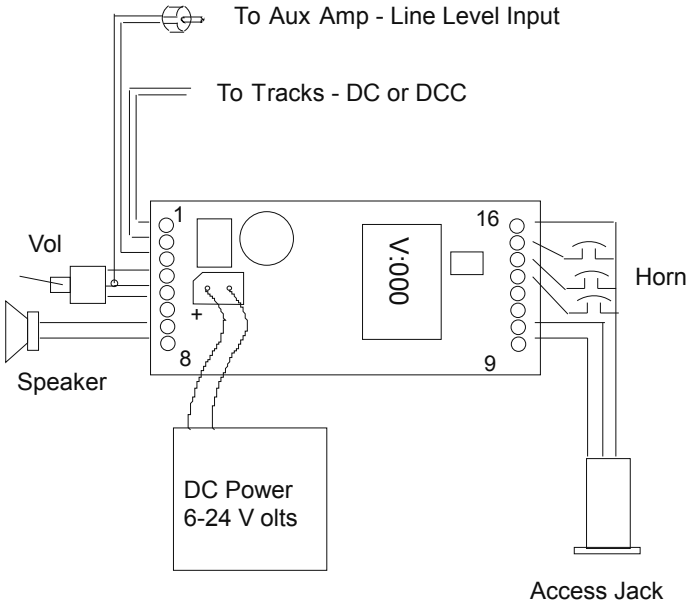
Stand Alone Configuration

The standard trigger and DCC assignments can be found in the BigSound™ Handbook. You may also find other information regarding the physical and operational characteristics of the sound board in its handbook.

For smaller scales (HO, N, Z) we can adjust the Diesel Revs so that they all occur by 8 volts. Normally Rev 8 occurs around 16 volts.

Generally stand alone operators are not concerned with conserving battery power and consequently will not want the system to shut down until they kill the power. We normally configure stand alone systems for this type of operation

Suggested Wiring



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Notes:

1. Inputs 10 through 12 are available for other triggers, omitted from this diagram for clarity.