

AC Sound Controller, item 1102, for conventional AC sound systems.

OVERVIEW:

The 1102 AC Sound Controller contains three push buttons to operate three basic functions. These functions are Direction, Whistle / Horn, and Bell. The 1102 AC Sound Controller is designed to handle 10 amperes maximum track current. Continuous current should be limited to 8 ampere's maximum. The 1102 AC Sound Controller is constantly in the power loop between your power transformer and the track. It can remain connected to any system without interference but has a fixed voltage loss associated to it. The benefit is that it does not change track voltage when a sound function is selected. The AC Sound Controller operates conventional AC Sound systems operating with transformer voltages from 15 to 18 volts AC. The AC Sound Controller is made in U.S.A..

INSTALLATION INSTRUCTIONS:

The AC Sound Controller, when looking at it's back, consists of a connector block for four wires. This four place connector block provides for the connection of the AC Sound Controller (refer to Fig1 and Fig2) between your existing power transformers variable output and your track. Connect two wires from the output of your variable AC power transformer to the terminals labeled "IN"). The two terminals labeled "OUT" now become the output and are to be connected to your existing layout wiring leading to the track (where the transformer's variable connections previously were). The "A" and "U" are only for polarity reference. The "U" terminal is usually referred to as a "common" connection or "base post" for most 2 rail AF operators. The "U" post is generally the outside rails, for 3 rail operators, and the left hand rail for all 2 rail operators. The "A" post is generally the center rail, for 3 rail operators, and the right hand rail for 2 rail operators.

If the Whistle/Horn button operates the Bell, then the sound unit is most likely wired up incorrectly in the engine. You can either rewire the engine or switch the "A" and "U" output wires from the controller to the track.

Multiple AC Sound Controller units can be connected to one power transformer. This allows for segmenting the control areas. When multiple AC Sound Controller units are connected to multiple transformers, proper phasing is required. Without proper phasing, doubled voltages can appear at the trackside and shorts will appear when crossing from one block to another. To be sure of proper phasing of power transformers, connect one leg of each transformers output to the other (such as the "U" or "Base Post"). Then place a light bulb (a standard 14-18 volt lamp will do with standard train transformer voltages) between the open legs of each transformer (such as the "A" or "7-16 v Post"). With the output's set equal in voltage, check to see if the light bulb illuminates. If it does you do not have proper phasing between the transformers. To obtain proper phasing, remove the 120v plug to one transformer, rotate it, and plug it in again or swap the lead on one transformer only to the opposite lead. Recheck for lamp illumination. None should occur (assuming equal voltage settings for an output, the difference in transformer output may show a slight illumination). At this point you can mark your transformer wall plugs for proper polarity for reference in case they were unplugged from the outlet strip and replugged reversed from originally plugged. This is why newer transformers are equipped with polarized plugs. Refer to other figures for different wiring configurations.

OPERATING INSTRUCTIONS:

The 1102 AC Sound Controller's sole function is to embed a DC signal into the AC track power to activate the specific sound selected. The direction button interrupts track power for as long as it is held. This enables operating the "E-unit" in the locomotive to change it's direction easily and without having to change the track voltage applied. It is not suggested to leave the track voltage to full since reapplying the power would be very hard on the motor. It is best to use this for slower speed operation. The Whistle button will embed the signal for operating a Whistle or Horn. The Bell button will do the same. The signal is only present when holding the button down. No voltage change will occur when operating the Whistle/Horn or Bell controls with the 1102 AC Sound Controller. When no button is depressed, except for the sequence button, the 1102 AC Sound Controller keeps the insertion loss the same.

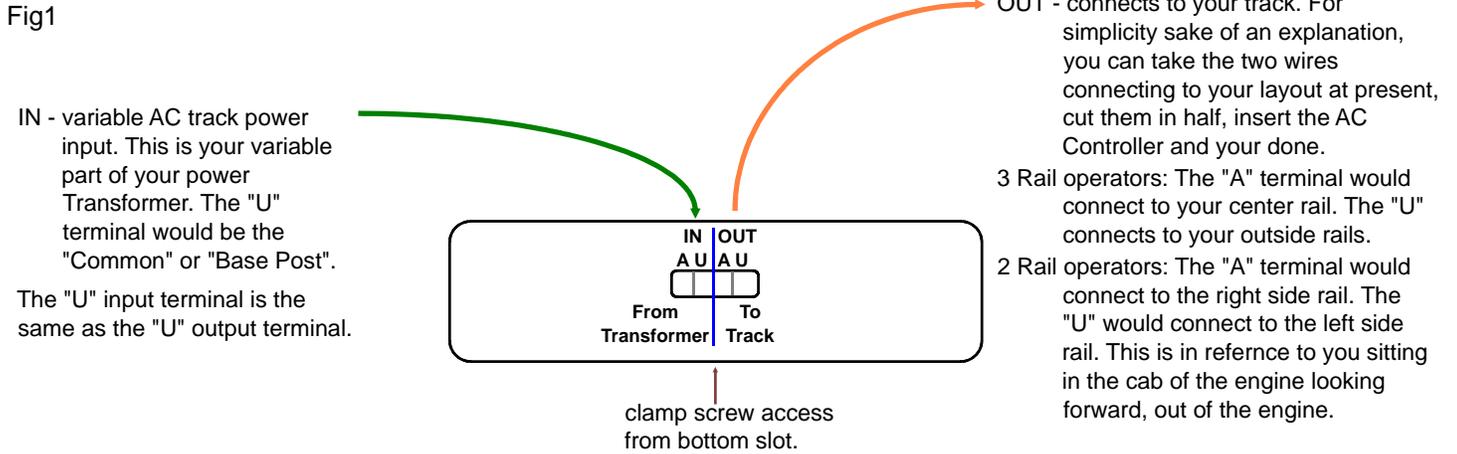
The air spacing in the 1102 AC Sound Controller box is to allow for proper ventilation to occur. The air gaps should always be kept clear of obstruction so that the internal fan can properly move the required air to keep the unit cooled. Placement on a rug should be avoided. Only smooth surfaces, that are lint free area's, should be used. The 1102 AC Sound Controller powers itself from the variable AC input power which also feeds the track. The operation of the cooling fan can be heard whenever transformer power is applied to the 1102 AC Sound Controller. If none can be heard operating, make sure you are supplying input power to the 1102 AC Sound Controller. After checking that there is power, and no fan can be heard operating, then stop using the controller immediately and send it in for repairs. We will notify you of the costs upon receipt. Please include all information to contact you as well as return shipping.

As stated previously, the "U" terminal is the same on input and output. The duplication is there for ease in wiring but only one must be connected to provide power to the AC Sound Controller. Otherwise it will not operate. Constant holding of the Whistle or Bell button for a long duration is not a problem with this controller. Again, heat is always generated during the use of this controller. The higher the current, the higher the heat which is why we recommend staying below 8 amperes! Although the 1102 AC Sound Controller will still handle higher currents, they are not recommended for anything other than a short period of time since they may cause unwarranted damage to occur and excessive heating of the 1102 AC Sound Controller.

The 1102 AC Sound Controller utilizes high reliability 10 ampere relays to switch the control signals and will yield years of enjoyment when properly utilized.

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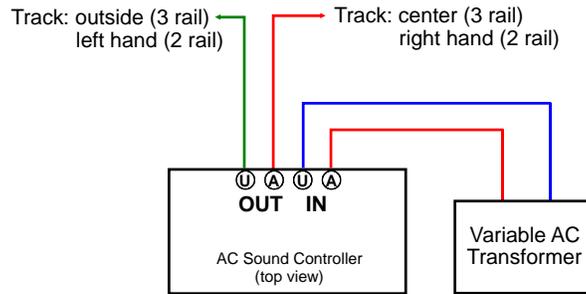
Use only stranded wires from 14 to 22 gauge.

Install by stripping insulation back 3/16", place wire in hole, run screw down (CW) to clamp in position. Screw access is from the bottom of the AC Sound Controller.

When removing wires, back screw almost all of the way out before carefully pulling the wire out.

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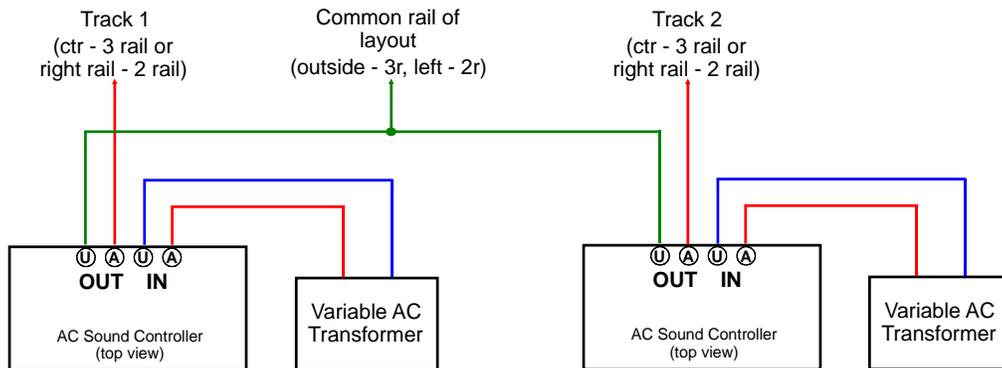
Fig2



Standard Connection.

One power source with one variable AC transformer.

Fig3

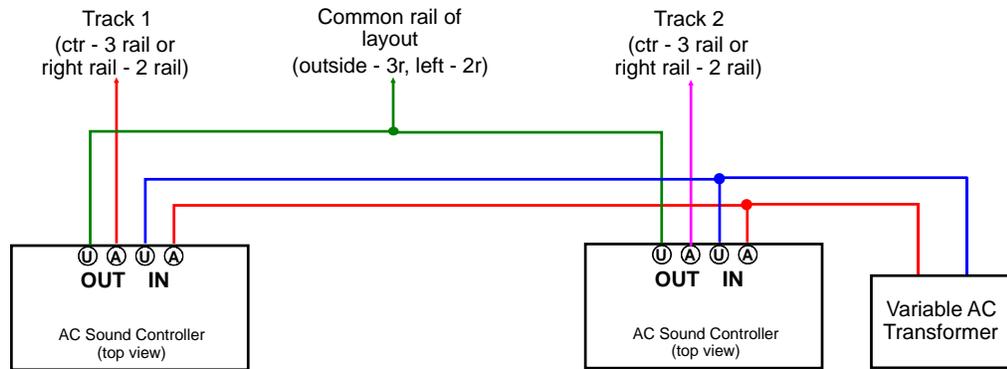


Common rail operation with two separate power sources

Remember to have transformers properly phased!

AC Controller wiring instructions, cont.

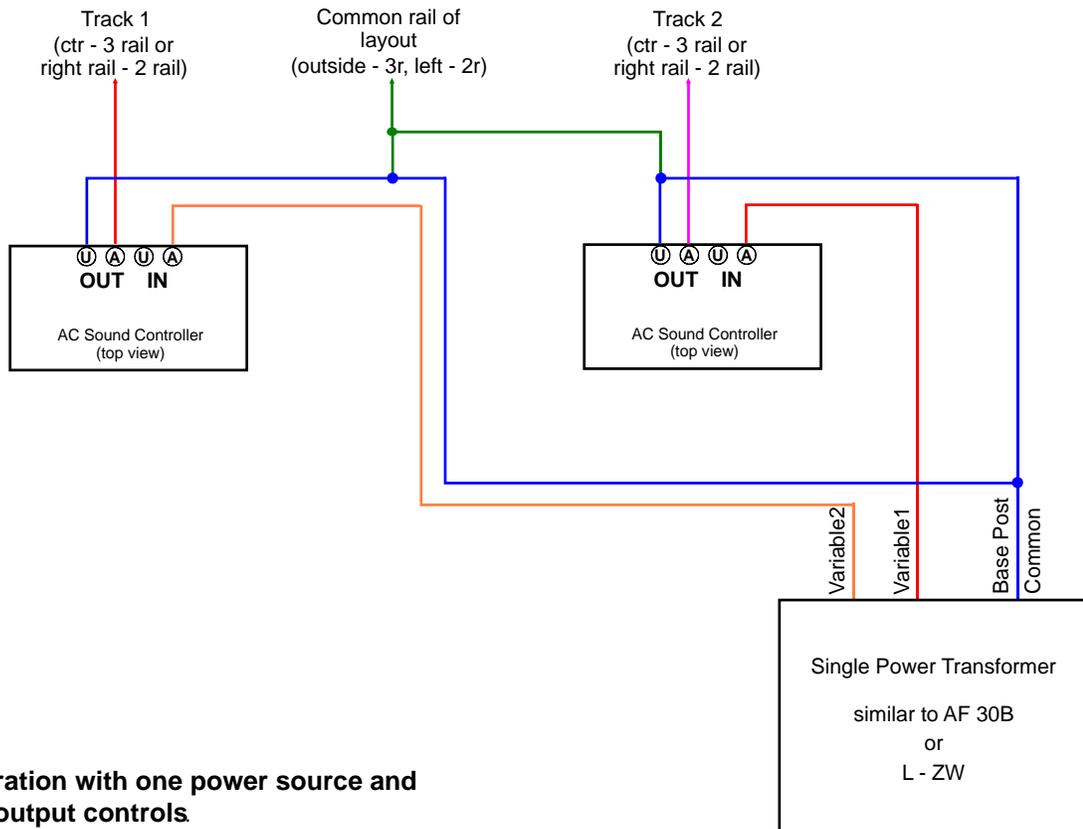
Fig4



Common rail operation with one power source

Each Controller box shares the same AC track power but offer independent operation.

Fig5



Common rail operation with one power source and multiple variable output controls

The AC Sound Controller connection "U" is not connected as shown since it is already internally connected.

Many older transformers feature many variable output's while only containing one power transformer. While only 1 connection is shown for the Base Post / Common terminal, multiple connections can be made as long as they all connect together when feeding the track as shown.