

## LocoMatic™ Sound & Control system and DC Sound CONTROLLER #755

**OVERVIEW:** The LocoMatic™ Controller contains ten push buttons to operate up to 18 various functions. These functions depend on the LocoMatic™ sound system it is operating. The LocoMatic™ Controller requires a 9 volt external DC source and is included as a wall transformer. The LocoMatic™ Controller is designed to handle 10 amperes of continuous track current. The LocoMatic™ Controller is a passive device until a button (other than the "ALT") is depressed. This means that it can remain connected to any system without interference. Pressing any button to another system other than the LocoMatic™ system, should not produce any adverse effects. In fact, the signal is generally ignored to any other system on the market at the present time. The LocoMatic™ Controller operates all LocoMatic™ sound systems and our DC-V3 sound systems. **The functions controlled vary as per installation and sound system. See the instructions for your sound system.** Although the mold on the box states "assembled in china", the unit in fact, is assembled in U.S.A.. The box is molded in china and only assembled there if bought with a different front label for other OEM production with custom labels. The main electronics board is designed and assembled in the U.S.A.. The main label is made of stainless steel and is printed with epoxy ink for long wear. The label is just laid on the face. You may choose to glue it in place or use a thin double sided tape.

**INSTALLATION INSTRUCTIONS:** The LocoMatic™ Controller box, when looking at it's back, consists of the DC power input jack and another connector block for four wires. This four place connector block provides for the connection of the LocoMatic™ Controller (refer to drawing below) between your existing power pack or throttle and your track. Connect two wires from the output of your power pack or throttle 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 throttle connections previously were). The "A" and "U" are only for polarity reference. The "U" terminal is usually referred to as a "common" connection such as the outer rails for 3 rail operators or "base post" for most 2 rail AF operators. The "A" post is generally the center rail, for 3 rail operators, and the right hand rail for all 2 rail operators. The "U" post is generally the outside rail, for 3 rail operators, and the left hand rail for all 2 rail operators. For those operating in Command Mode with DC track power follow the same as above for 2 rail operators.

If multiple control segments are required you can connect multiple control boxes to one power transformer. When multiple units are connected to one transformer, which is not the preferred method, it is possible for a small signal to cross over to another units output for a locomotive to respond to. Therefore, it is highly recommended to use multiple transformers with equal output and proper phasing. 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"). If the light bulb illuminates, 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 come with polarized plugs. For common rail operators requiring multiple control boxes, refer to drawing 2 for connections.

The LocoMatic™ Controller has press on feet located in the box that can be placed over or near the screw holes that hold the box together. Plug the 9vDC wall transformer into an appropriate outlet with the power end plugged into the round power jack at the rear of the box.

**OPERATING INSTRUCTIONS:** The LocoMatic™ Controller's sole function is to transmit a signal to the LocoMatic™ Sound & Control system, or DC-V3 sound system, to activate the specific functions or appropriate sounds. Since your sound equipped locomotive can be located anywhere on your track it is required that the LocoMatic™ Controller also be connected to the track. In order for your locomotive to operate on the track, propulsion power from your power pack or throttle must also be connected to the track so it was a simple matter to establish the LocoMatic™ Controller as a pass through between the power and the track.

While the LocoMatic™ Controller does need a power source, it only consumes power while actually transmitting its signal. The LocoMatic™ Controller is activated when any button is depressed (other than the ALT). The correct signal is transmitted for the particular button sequence selected. The response depends on the type of LocoMatic™ Sound & Control system installed and what part is used. Obviously, if all of the lighting is not connected to the LocoMatic™ Sound & Control board you cannot control the lighting from the LocoMatic™ control box.

Any load on the track such as conventionally lighted passenger cars or cabooses will have a tendency to reduce the signal strength of the LocoMatic™ Controller. If the loss is such that the sounds or other requested operations do not activate properly, it will be necessary to install a supplementary circuit in conjunction with the lights. This is referred to as a CHOKE and is available in various amperage ratings (items 702, 703). See the installation instructions of your sound system for proper installation. Also note that the passenger car / caboose lighting can be upgraded to use our RL-ADJ (Item #379) which has the appropriate filtering already installed.

**PROBLEMS:** One of the best indicators for a problem with an incorrect load, dirty wheel pickup, bad wheel pickup, improper installation is indicated by the intermittency of a Horn/Whistle or lack of being able to control the Bell (at idle or slow speeds). An easy way to determine if a lighted car needs a choke or is interfering with the signal is to place it on the track with the sound system. If control seems intermittent, it needs the additional choke installation. Also, if another locomotive is on the track that does not have a choke installed the same problem can occur. Or if the existing engine has a separate lighting circuit or a smoke unit connected to the track, it also needs to have it's power passed through a choke first.

**Remember, the controller only controls items available in the Sound system. If you are using a DC-V3 type sound system, the controller will not control any locomotive lights or speed since there is no controls built into the sound system for these features. Only LocoMatic™ Sound & Control systems contain motor control features. Some of our more deluxe DC sound systems also offer lighting or other functions. Again, refer to the sound system for all functions controllable from the LocoMatic™ Controller.**

IN - variable track power supply (AC or DC). This is your power Transformer or Throttle.

OUT - connects to your layout. For simplicity sake of an explanation, you can take the two wires connecting to your layout at present, cut them in half, insert the LocoMatic™ Controller and your done.

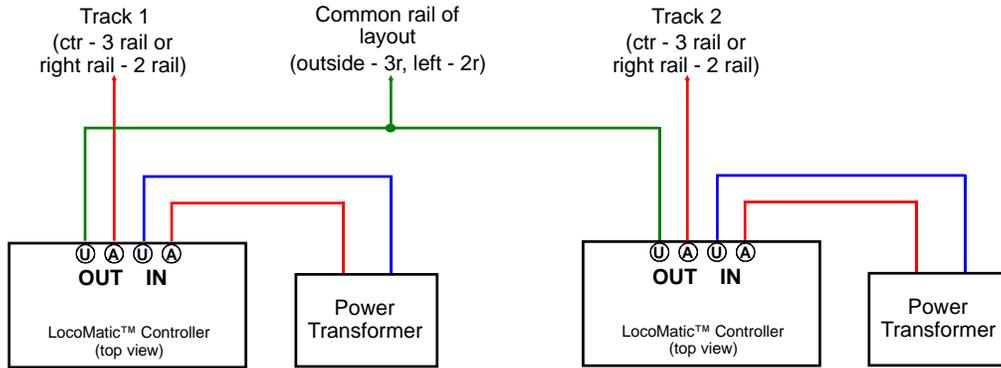


Rear of LocoMatic™ Controller

DC input power from wall transformer

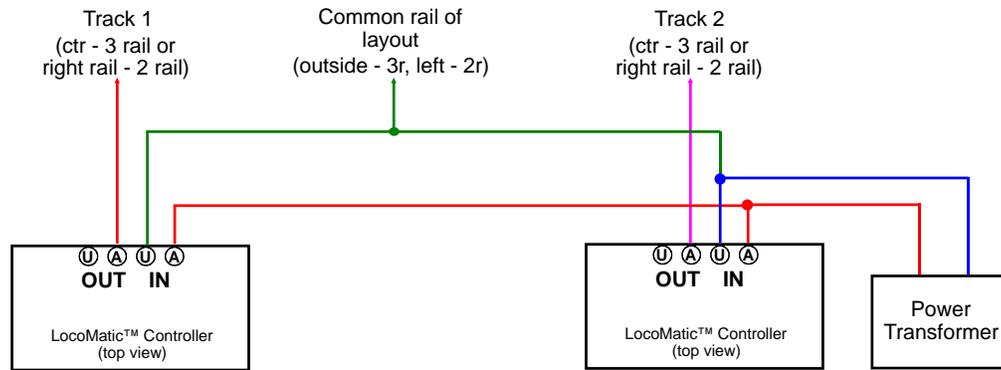
Use only stranded wires from 14 to 22 gauge. Install by stripping insulation back 3/16", place wire in hole, run screw down to clamp in position. If removing wires, back screw almost all of the way out before pulling wire out.

## Controller (#755) wiring instructions, cont.



### Common rail operation with two separate power sources

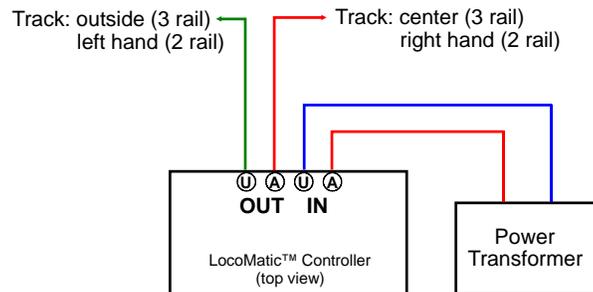
Remember to have transformers properly phased!



### Common rail operation with one power source

(wired for the least interference between controllers)

The Controller box connection "U" is NOT CONNECTED as shown.



### Standard operation with separate power sources

If using a command control system in conjunction with the LocoMatic™ system the "Power Transformer" would be the output from the command system that would normally power the track. For those utilizing a DC source, the "Power Transformer" would be your DC power pack cab output.