



Electronics for Model Railroads

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LT-1, LT-2

Logic Translator Circuits

GENERAL DESCRIPTION: The CIRCUITRON LT-1 and LT-2 Logic Translator Circuits contain four independent interface circuits on one circuit board. These circuits can be used to connect Circuitron product which provide (or require) a ground [-] signal to other manufacturer's products that use Positive logic. Mounting pads are provided on all four corners of the printed circuit board, or the board may be mounted by snapping it into a section of CIRCUITRON'S Printed Circuit Mounting Track (PCMT). These circuits can provide up to 250 ma. of output current.

CIRCUIT DESIGN: Both the CIRCUITRON LT-1 and LT-2 circuits are simple, single transistor switches connected in a common emitter configuration. With the LT-1, a ground [-] connection on the control terminal will output a positive voltage (about the same as the power supply voltage) from the corresponding output terminal. With the LT-2, a positive voltage greater than 2 volts on the control terminal will result in a GROUND [-] connection on the corresponding output terminal.

INSTRUCTIONS: The LT-1 and LT-2 can be connected with .110" x .032" solderless connectors (available from CIRCUITRON) or by soldering leads directly to the terminals on the printed circuit board. If soldering, use a small pencil-type iron and electronics-grade rosin core 60/40 solder (available from Amazon). Use only as much heat as necessary to obtain a good joint and do not wiggle the terminal until the solder has cooled completely.

- 1) Mount the circuit board in a convenient location. The mounting pads on the corners of the boards may be drilled out, and you can use small screws and standoffs, or a section of CIRCUITRON's Printed Circuit Mounting Track (PCMT) may be used for the simplest mounting.
- 2) Connect a wire from the output terminal of the driving device and run it to one of the control terminals on the LT-1 or LT-2. Use an LT-1 if connecting to CIRCUITRON detection outputs and desiring to interface to positive logic devices or signals. Use an LT-2 if the device provides a positive [+] voltage output and you want to control CIRCUITRON products such as flashers, bells, relays, etc.
- 3) Connect a 8-24 volt DC source to the terminals labeled [+] and [-]. This should be the same power supply you are using for your Detection Units.

CAUTION

Never connect AC power to the [+] and [-] terminals. Damage to the transistors is likely and is not covered under our warranty. Make certain that the total load applied to the Output Terminals (01, 02, 03, 04) does not exceed 250 ma. EACH. Exceeding this rated specification for the LT-1 or LT-2 will result in overheating of the transistor(s) and likely failure of the device(s). This constitutes abuse and is not covered by warranty.

WARRANTY

CIRCUITRON warrants this device against defects in materials and workmanship for a period of one year from the date of purchase. This warranty covers all defects incurred in normal use of the device and does not apply in the following cases:

- a) damage to the device resulting from abuse, mishandling, accident or failure to follow operating instructions.*
- b) if the device has been serviced or modified by other than the CIRCUITRON factory.*

EXCEPT AS MENTIONED ABOVE, NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED INCLUDING MERCHANTABILITY, ON THE PART OF THE UNDERSIGNED OR ANY OTHER PERSON, FIRM OR CORPORATION, APPLIES TO THIS DEVICE.

CIRCUITRON, INC.