

General Instructions (i.e. for Lionel® products)

Using previous diagram as a reference, terminals 1 & 2 are the normally closed contacts, and terminals 3 and 4 are normally open. Terminal #7 brings power to the relay circuit from your transformer and terminal #8 is connected to your insulated block. When a train enters your block, this “makes” the circuit activating the relay. Finally, terminals 5 & 6 power the NC & NO contacts. Assuming you’re using 10 –14VAC, you can use a jumper wire from #7 to access voltage. Use one side or the other of the relay (i.e. 2, 4 & 6) or both if the application requires.

Wiring Examples:

Lionel 450 Signal Bridge – Requires two relays, one for each track, for prototypical operation. Connect #2 (NO) from signal bridge to #3 on relay, #1 (NC) to #1 and connect common externally to transformer. Wire terminals #7 and #8 per “General Instructions” above and don’t forget the jumper from #7 to #5.

Lionel 2324 Switch Tower - #2 from tower (NO) to #3 on relay, #3 to #1, and connect common externally to transformer. Connect #7 and #8 per above and don’t forget jumper.

Final Notes:

1. Mount the relay and base combination on your table horizontally. Whether it’s upside down or not is o.k., they just don’t like to be vertical.
2. Note: Can use an auxiliary transformer such as our T-45 to power both the relay and the accessory(ies). Follow instructions included with T-45 for complete information.
3. If you want to use a lesser voltage on your NO/NC contacts, instead of running the jumper to terminal #5, which is about 12VAC, bring in separate voltage input instead, i.e. 8VAC.

DPDT-1 Instruction Sheet

Thanks for choosing the DPDT-1 relay and base for use on your layout.

Applications for this relay in Model Railroading include operation of any device that has wiring requirements for NO and NC (normally open and normally closed) connections. This means that a particular accessory includes a feature that is normally turned on most of the time (NC), but another feature is ready to be turned on instead (NO). So, referencing a train layout, a dwarf signal hooked up to a pre-designated block of track would normally show a green light for “all clear” (NC). But when a passing train enters this block, the DPDT-1 relay will activate the NO red light on the dwarf signal to warn that the track is occupied. As soon as the train is clear of the block, the red light is turned off and the green turns on again. With this theory in mind, we can apply this relay for a number of applications.

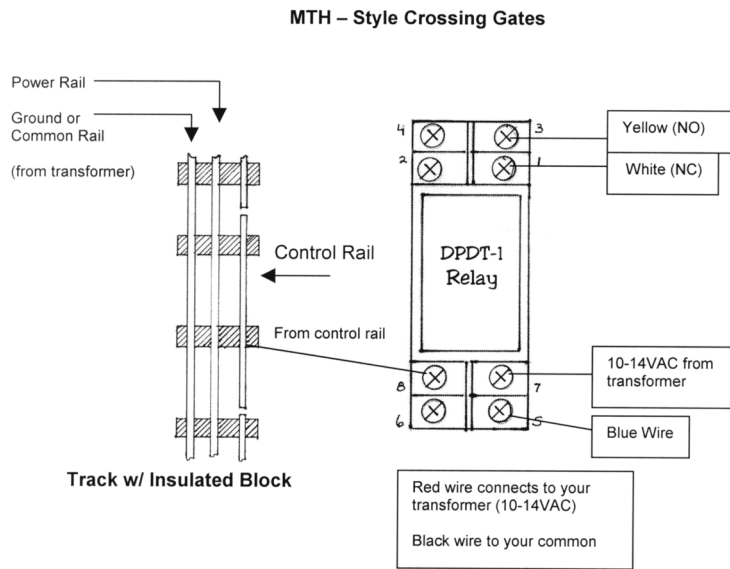
So much for a basic overview, let’s wire:

For MTH® Scale Crossing Gates:

1. Insert the relay into the relay base. Attach to your layout (probably under the table) – I suggest using hot glue. (The base also connects to DIN rail if you’re using one.) Ignore writing on relay; it was put there by electronic engineers to confuse good people.
2. The red and black wires on the crossing gates need to be connected to the power (10 – 14VAC) and common, respectively, from the transformer.
3. Identify the block that will control the relay. Run a wire from the “control rail” to screw terminal #8 on the relay.
4. Connect power from transformer, typically 10 – 14 VAC, to screw terminal #7.
5. Connect NO wire (yellow) from accessories to NO screw on base, identified as #3 and #4, one for each crossing gate.
6. Connect NC wire (white) from accessories to NC screw on base, identified as #1 and #2, again, one for each crossing gate.
7. Similarly, connect the blue wires to #5 and #6.

Note 1: If running a double track – or more – multiple “control rails” can activate this one relay, which would operate 1 pair of crossing gates. Simply connect to contact #8 as necessary.

Note 2: Yes, the relay can work off of track voltage, but the voltage must be high enough to activate relay, which is approx. 10VAC. If you don’t want to control the relay off your primary transformer, maybe you should consider an auxiliary transformer, instead.



For Cantilevered Signal Bridge, 7 Light Block Signal, Scale Dwarf Signal, or operating block signal.

1. Insert the relay into the relay base. Attach to your layout (probably under the table) – I suggest using hot glue. Ignore writing on relay; it was put there by electronic engineers to confuse good people.
2. Identify the block that will control the relay. Run a wire from the “control rail” to screw terminal #8 on the relay.
3. Connect power from transformer, typically 10 – 14 VAC, to screw terminal #7.

4. On these accessories, black is common. Connect to your common already identified on your layout (i.e. common on transformer).
5. Connect NO wire (usually red) from accessory to NO screw on base, identified as #3.
6. Connect NC wire (usually green) from accessory to NC screw on based, identified as #1.
7. Connect a jumper wire – just a short length of wire – from terminal #7 to terminal #5. This will power the green light or NC circuit.

Note 1: Cantilevered bridge with two lights (one for each block) require two relays for prototypical operation. Same for 1 over 1 signal.

Note 2: For a block where you want a signal on either end of the block, only one relay is needed! Wire second signal to #2 (NC), #4 (NO), and black to ground.

TIP: If installing several relays close together, save yourself some trouble and run common ground (terminal strip) and “jump” power from transformer from terminal #7 from the first relay to #7 on the second relay and so on.

