

AMRS Downtown Expansion Electrical Assembly Instructions

Note: These instructions are different from the original instructions provided for phase 1 of the layout.

Tools You Will Need:

1. Wire strippers
2. 1/16" drill
3. soldering iron
4. rosin core solder, electrical (non-acidic) flux

Inserting harness into the module

1. Place the module upside down with the back of the module facing towards you. This matches the track diagrams for the modules, as they are viewed from "inside" the layout, with the mainline (red track) towards the top of the diagram.
2. Note the "L" and "R" labels on each end of the module wiring harness.
3. Thread the wiring harness through the center holes under the module as shown, taking care to ensure that L and R end tags are on the left and right sides of the module.
4. Attach the cable ties to the underside of the module near the center of the outside sections of the module, and secure the ends of the harness.



Connecting feeder wires into Track Bus

The wire color assignments in the new harness is slightly different from that of the original modules. The new colors are:

- Red: main line, outside (front) rail
- Black: main line, inside (back) rail
- Yellow: inner track, outside (front) rail
- Green: inner track, inside (back) rail
- White: Accessory power (+12V)
- Brown: Accessory power (Ground)

The harness comes with a number of Scotchlok quick connectors already installed on the different conductors of the harness, along with different colored feeder wires crimped onto the appropriate quick-disconnect tab connectors.

The tab connectors may have to be adjusted to put the tab in the middle of the red shroud, otherwise the tab will not go into the slot in the Scotchlok connector.

If the connector looks like this:

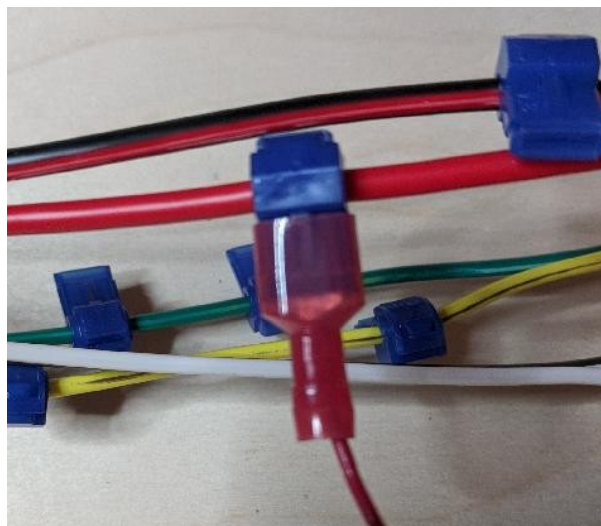


Use a thin screwdriver to bend the tab towards the center of the shroud so it looks like this:



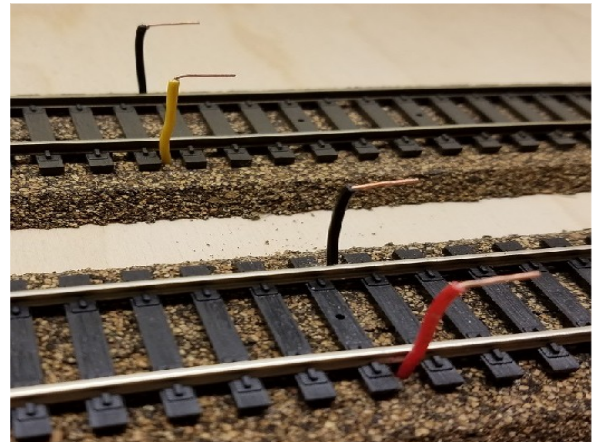
Connect the feeder wires to the appropriate connector on the harness, ensuring that the tab slides all of the way into the Scotchlok housing:

The feeder wires colors match the colors of the conductors on the wiring harness.



Attaching the feeder wires to the track

1. Turn the module back over so that it is right side up.
2. Drill 1/16" holes on the outside edges of each track near the center of the module to correspond with the location of the feeder taps from the previous steps.
3. From the bottom, push the feeder cables up through the holes drilled next to the tracks. The wires from the red/black cable are to be attached to the front track, and the yellow/black wires are for the inner track. In both cases, the black wire goes to the rails toward the back of the module and the colored wire is for the front rail.
4. Strip at least 1/4" of insulation off the end of the feeder wires, and bend the stripped ends of the wires 90 degrees so that they are parallel to the track. The goal is to have a solder joint roughly 1/4" long connecting the feeder wire to the rail. This ensures a good mechanical and electrical connection.
5. Using flux, solder the feeder wires to the outside of the track. When the joint cools it should look shiny. If it's dull and pitted it is a cold solder joint and will be unreliable. In that case, reheat the rail and wire with the soldering iron and add a bit more solder. Be sure the feeder wire doesn't move while the joint is cooling, as movement of the wire is the usual cause of a cold solder joint.



Feeder wires for sidings or additional tracks

1. Feeder taps with multiple wires are provided for yards and multiple sidings. For reliable operation, use a feeder for each track that comes off of a turnout, as this reduces the need to rely on the power routing of the point rails in the turnout.
2. If more feeder wires are needed, additional Scotchlok and blade terminals are available, as well as terminal strips if needed. Contact David Petersen or Joel Davidson.

Accessory power for lighting or animation equipment

1. The White/Brown bus cable is available for 12V DC power. External AC power connections are not allowed in most venues by the fire marshals.
2. There is one tap for the accessory power already provided. Additional taps or terminal strips are available if needed for more accessories.
3. When attaching the leads to the Accessory Bus, the black wire (gnd) should be attached to the brown bus cable and the white wire (+12v) should be attached to the white cable.

