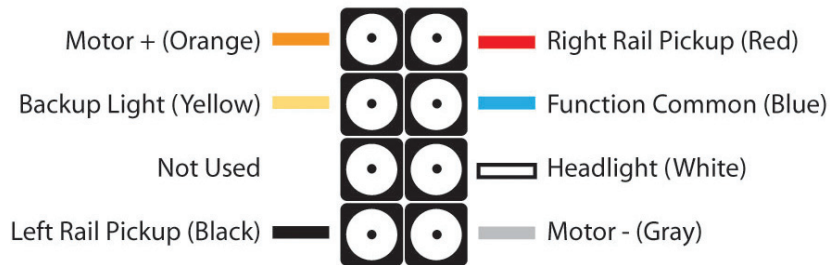


Technical Note #16

Testing NMRA-Compatible 8-Pin Connector

Some model manufactures have included an 8-Pin connector, but have wired it incorrectly; therefore, it is important to always test the connector to verify that the socket is wired correctly. Failure to isolate the motor connections from the rail pickups will damage the decoder. Refer to the procedure outlined below to test these connections using a multimeter set to measure resistance (Ohms) or continuity.

NMRA 8-Pin Wiring Diagram

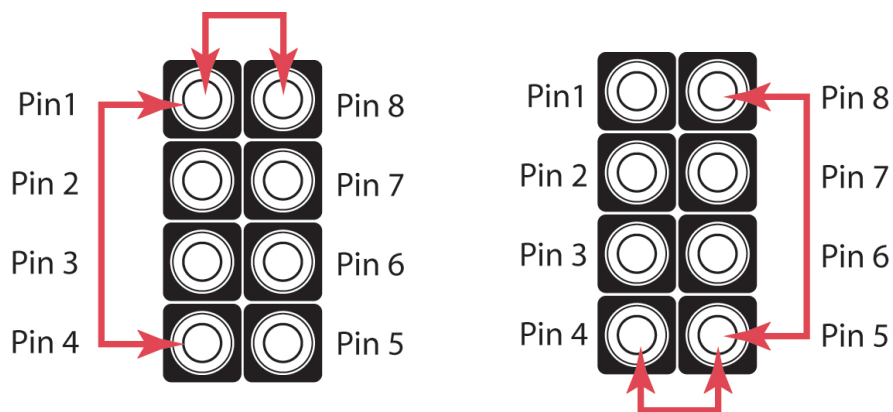


Test Connections

Be sure to solder the decoder wires to the cup side of the connector, and use an ohmmeter to verify the socket is properly connected before plugging in the decoder:

1. Remove the “dummy” plug from the NMRA socket.
2. Refer to **Figure 1** to test motor connections:
3. Touch the ohmmeter probes to Pin 1 and Pin 8.
4. Verify there is no response from the ohmmeter.
5. Then touch the ohmmeter probes to Pin 1 and Pin 4.
6. Verify there is no response from the ohmmeter.
7. Then touch the ohmmeter probes to Pin 5 and Pin 8.
8. Verify there is no response from the ohmmeter.
9. Touch the ohmmeter probes to Pin 5 and Pin 4.
10. Verify there is no response from the ohmmeter to confirm motor is connected.

Figure 1 Testing the Motor



Technical Note #16

Testing NMRA-Compatible 8-Pin Connector

11. Refer to **Figure 2** to test lighting connections:
12. Touch the ohmmeter probes to Pin 8 and Pin 2, and verify there is no response from the ohmmeter.
13. Then touch the ohmmeter probes to Pin 8 and Pin 6, and verify there is no response from the ohmmeter.
14. Then touch the ohmmeter probes to Pin 8 and Pin 7, and verify there is no response from the ohmmeter.
15. Continue by touching the ohmmeter probes to Pin 4 and Pin 2, Pin 4 and Pin 6, and Pin 4 and Pin 7, and verify there is no response from the ohmmeter after testing each pair of connections to confirm lighting outputs are connected.
16. Plug the wired connector into the socket, oriented with the decoder's orange wire plugged into Pin 1 on the manufacturer's circuit board; most manufacturers label Pin 1 and Pin 8 for this reason.
17. Wire the speaker to the decoder according to the instructions located in this section under "Speaker Connections."

Figure 2 Testing the Headlight Connections

