

#1653 Helper Control Unit (Sheet 39)

**Summary:** This sheet shows how to connect the Helper Control Unit to the Main Control Unit.

**Summary:** The #1651 Main Control Unit by itself controls the 2-track automatic switching block. To control the 4-track Zellner Yard, you need to connect the #1653 Helper Control Unit to the Main Control Unit.

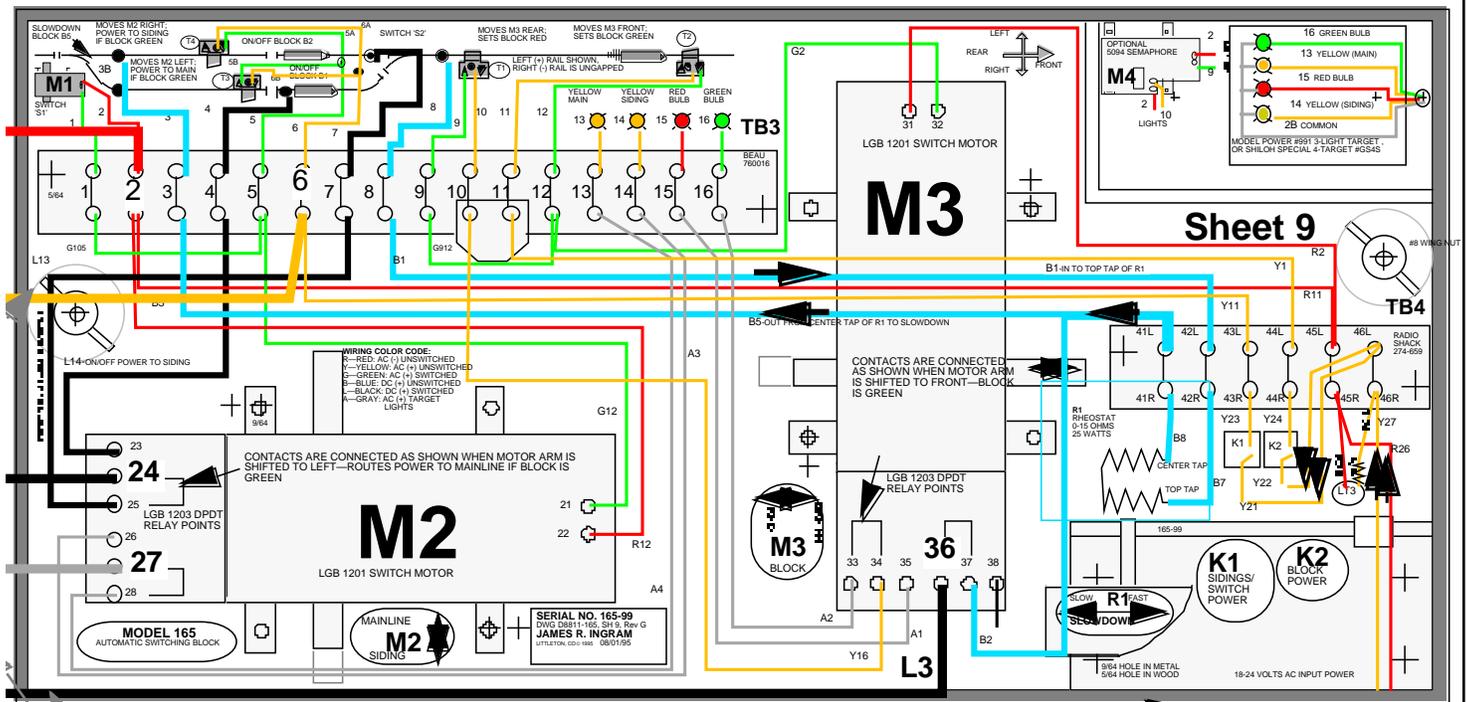
Fig 40a shows (for reference) the Main Control Unit with the standard wiring to operate the 2-track automatic switching block. Figure 40b shows the two control units wired together.

To connect the Helper unit to the Main unit, you need to remove 2 wires from the Main unit, and then connect 5 wires from the Helper Unit to the Main unit.

**Making the Connections:**

3. **Connect RED** wire R31, from terminal 64 on terminal block TB1 on the Helper, to terminal 2 on terminal block TB3 on the main. (This red wire provides the AC (-) common (ground) connection from the Main unit to the Helper.
4. **Connect YELLOW** wire Y35, from terminal 60 on terminal block TB1 on the Helper, to terminal 6 on terminal block TB3 on the main. (This yellow wire provides AC+ control power from the Main unit to the Helper.
5. **Connect GRAY** wire A46, from terminal 88 on motor M6 on the Helper, to terminal 27 on motor M2 on the Main unit. (This gray wire "cascades" the AC lighting current to power the yellow lights on the target signal for tracks 3 and 4.)
6. **Connect BLACK** wire L44, from terminal 85 on motor M6 on the Helper, to terminal 24 on motor M2 on the Main unit. (This black wire "cascades" the DC track current from the Helper to the Main, to power "stop blocks" in the track for tracks 3 and 4.)
7. **Connect (new) BLACK** wire L3, from terminal 36 on motor M3 on the Main unit, to terminal 74 on motor M8 on the Helper. (This black wire carries the DC track current, from the "red-green" block motor M2, to the first of the switching relay motors M8, where it is "cascaded" to 1 of the 4 "stop blocks".)

APPROX 1/8"



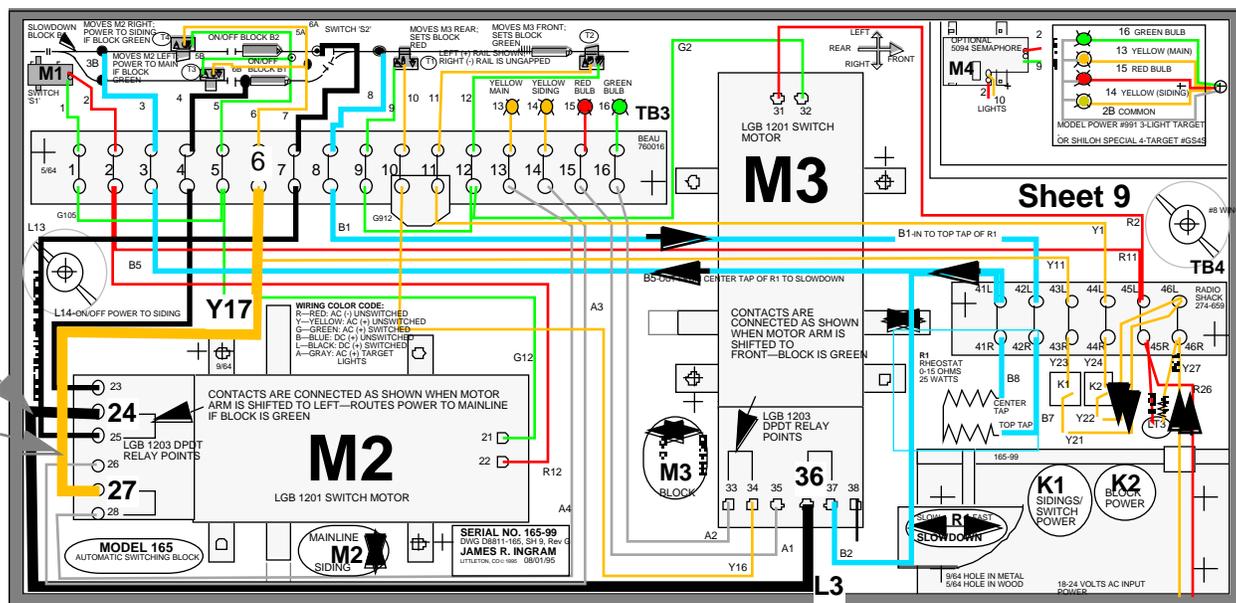
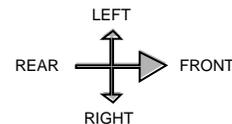
**Fig 40b—#1651 & #1653 Combined Control Units**

This view shows the two control units wired together to operate the 4-track Zellner Yard.

**#1651 Main Control Unit (Sheet 9)**

**Disconnecting Unused Wires:**

1. Remove YELLOW wire Y17 that runs from terminal 6 on terminal block TB3 to terminal 24 on motor M2.
2. Remove (original) BLACK wire L3 that runs from terminal 36 on motor M3 to terminal 24 on motor M2.



**Fig 40a—#1651 Main Control Unit**

This reference view shows the standard unit (for 2-track block) with the standard wires.

<b>JAMES R. INGRAM</b> 303-798-1968 © 1996	7931 SO. BROADWAY, STE. 33 LITTLETON CO 80122-2710 SCALE 1"=1" (11"x17") UNLESS NOTED		TITLE <b>MODEL 165 ZELLNER YARD 4-TRACK BLOCK</b> SH.		<b>40</b>
			DWG SERIES <b>D8811-165</b>	ORIG 21JAN96 REV <b>B, 15AUG96</b> CONTROL UNIT INTERCONNECTIONS	