

# Digitrax Operating Instructions

**These instructions assume the Throttle is plugged into loconet and battery installed.**

The blinking direction light indicates which knob is selected.

If light is green, loco will move forward. If light is red, loco will move backward.

## Track Power

To turn track power on:

- Hold Run button and press '+’.

To turn track power off:

- Hold Run button and press '-’.

## Select two digit address

- Rotate the knob you wish to use to operate the locomotive.
- Press SEL button once. The blinking word Se:l will appear in the window.
- Rotate the desired knob to the address of the locomotive.
- Press SEL button again. The display will stop blinking. Loco is now selected.

## Select four digit address

- Press and hold down SEL button to release loco and start address selection.
- Turn one of the knobs clockwise. The red EXP light will come on, indicating extended address selection mode.
- Release SEL button and browse for the loco address using both knobs.
- When the desired address is in the window, press SEL button again. The display will stop blinking. Loco is now selected, and red EXP light will be on.

## To return to two digit address selection

- Press SEL button once. The blinking address last accessed will appear in the window.
- rotate the knob counter-clockwise to zero. The EXP light will extinguish.
- Select two digit address as above.

## Turn Headlight on and off

- Press FUNC button. Press FUNC button one more time to turn on headlight.
- To turn off light, Press FUNC button again. You will see the result in the throttle window.

The headlight will reverse automatically with the engine direction.

If the decoder is set for rule 17 dimming of headlight through station: (*Digitrax FX Decoders only*)

- Press FUNC button then F4.
- Press F4 again after engine has passed the station. You must do this within 6 seconds or the throttle will revert to loco mode. Then you must hit FUNC then F4.

## Release Loco

Method one

- Press SEL button and select another loco. Left two digits will flash. Press SEL to finish. The original loco will be released. The display will stop blinking.

Method two

- Press SEL button, then press MODE button. This dispatches the loco to 'common' then others may access the loco.

## Edit the loco status

If you have a loco that you know works but you can't turn on the lights or responds to commands 'funny', you may be sending it the wrong instructions. To change instructions sent from the Chief to the decoder.

128 speed steps = x3

16 speed steps = x2

28 speed steps = x1

- While selecting a loco. The right two digits will be flashing. Dial down to x3 or x2 or x1. Be sure the left number stays the same.
- Press SEL to finish selecting the loco.

## Consisting

### Consisting two locomotives

The loco on the right knob is the 'top' loco. The loco to be added is on the left knob.

- While you have a locomotive selected on each knob, bring both together with their direction the same.
- Turn left knob CCW. Press MODE button twice. You will notice the dot at the top of the window moves under the MU label.
- Press "+" button once.

The two loco's are now consisted. The right knob will operate both loco's.

### Delete a consist

Select the 'top' loco by turning the right knob slightly counterclockwise.

- Press MODE button twice. Press "-" button once.

the consist may be selected by another throttle by selecting the 'top' loco address.

### Consisting more than two locomotives

The locomotive on the right knob is the 'top' engine. You add loco's by selecting them using the left knob.

- Turn left knob to select it.
- Press SEL button.
- Press MODE button twice.
- Press "+" button once.

To add more loco's, repeat the above steps. You may also Consist a non-decoded loco to the other's. The loco selected on the right knob is the 'top' loco and can be physically located anywhere in the consist. Be sure to remember which loco is the 'top' because this is the address you must enter to control the consist.

### Deleting Loco's from a consist

- Select the loco to be deleted with the left knob.
- Press MODE button twice. Press "-" button once.

### To access the light functions of a consisted loco

- Select the loco address using the left knob.
- The display will state that the loco is consisted.
- You can now access the desired functions.

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## IMPORTANT

**At the end of a session**, if you don't release all locomotives you had been using, next time you operate, you may have trouble accessing the locomotive. The system will think it is busy, indicated by a 3x in the right side of the window when you try to SEL a loco.

- Press SEL, then MODE for each loco.
- Remove batteries from all throttles that use them.

### **To acquire a loco stranded by a busy signal (3x):**

- Be sure that no one else is actually using the loco to be acquired.
- turn the knob desired counterclockwise slightly.
- Press SEL button and turn the knob to the address of the stranded loco.
- While the address is still blinking, Hold down RUN/STOP button and press FUNC button twice.

You will now have control of the loco.

**If during a session, you hear the Chief sound three beeps, it means that it is purging locos that were left selected and have not been used for a preset period of time. So if you did leave a loco selected, after the 'time out' period, the Chief will automatically release the loco to common.**



# Decoder Programming

Place loco on programming track. Be sure it is not connected to track power, just programming power!

## Set up Short Address

- ❑ Select address of loco, usually 03 if new install. If address is unknown, select anything.
- ❑ Enter Program mode by holding the Run button and pressing the FUNC button.
- ❑ 'Ad 03' or 'AD\_\_' will appear in the display. Rotate the right knob to select desired address.
- ❑ Press SET button. 'Good' will be in display if successful.
- ❑ Return to operation mode by holding the RUN button and pressing the FUNC button.

## Set up Long Address

- ❑ Enter Program mode by holding the Run button and pressing the FUNC button.
- ❑ Press FUNC button to get into PAGE mode
- ❑ Turn left knob to read CV29. Press DISP. Note value displayed on right side. Usually 06, sometimes 07.
- ❑ Rotate right knob to display 26 (sometimes 27) in right side of display. Press SET button.
- ❑ Use left knob to select CV18 in left 2 digits. Press DISP.
- ❑ Press DISP a second time to see total extended address. Four digits blinking will be addr. LAD will show in display while retrieving long addr.
- ❑ Use both knobs to change address to desired address.
- ❑ Press SET. Will display GOOD if all goes well.
- ❑ Return to operation mode by holding the RUN button and pressing the FUNC button.

## Set for Rule 17 lighting effect *(Digitrax FX Decoders only)*

- ❑ Enter Program mode by holding the RUN button and pressing the FUNC button. (either Paged or OPS mode).
- ❑ Use left knob to select CV49 in left 2 digits.
- ❑ Use right knob to display 68 in right half of display. e.g. 49:68
- ❑ Press SET. Will display GOOD if all goes well.
- ❑ Return to operation mode by holding the RUN button and pressing the FUNC button.

## To Reverse Locomotive Direction

- ❑ Enter Program mode by holding the RUN button and pressing the FUNC button. (either Paged or OPS mode).
- ❑ Use left knob to select CV29. Will usually contain 06.
- ❑ Use right knob to change 06 to 07. Now, forward will be the opposite direction and all the lighting functions will be reversed. For long address, enter 27 in right side.
- ❑ Return to operation mode by holding the RUN button and pressing the FUNC button.

## All Functions "ON" (lights) in Analog mode (operation using DC)

- ❑ CV13 = CF

## Ditch Lights *(Digitrax FX Decoders only)*

- ❑ Wire right ditch light to F1 lead (Green), left to F2 (Violet), other side of lamps to blue.
- ❑ Set CV51=6a
- ❑ Set CV52=6b
- ❑ Set CV63=40
- ❑ Turn on FO, F1
- ❑ Operation: Press F2 (Whistle) and lights will blink for duration set into CV63

## Non-Directional headlight

Front Headlight ON & OFF controlled by F0 as usual. Back lamp ON & OFF controlled by F4.

All 'Effects' still controlled by CV49 & CV50.

- ❑ CV61=01

# Digitrax FX Decoder Programming

## Table IV b & c

These values are used in CV49-CV53 to generate lighting effects.

Phase A is forward light, Phase B is rear light.

Upper Digit  
Value

**Table IV c Effect Control**  
Selects how the effect will behave

0x	Forward Effect/ ON with function/ effect phase A
1x	Reverse Effect/ ON with function/ effect phase B
2x	ON with function/Effect phase A/non-directional
3x	ON with function/Effect phase B/non-directional
4x	ON with F0 ON & Fwd Direction/Effect phase A
5x	ON with F0 ON & Rev Direction/Effect phase B
6x	Special logic for Fwd ditch light or rule 17 dimming
7x	Special logic for Rev ditch light or rule 17 dimming

Lower Digit  
Value

**Table IV b Type of Effects**  
Selects the type of effect

x0	No effect, normal Function control of lead.
x1	Random flicker
x2	Mars light
x3	flashing headlight
x4	single pulse strobe
x5	double pulse strobe
x6	rotary beacon
x7	gyralite
x8	Rule 17 Dimmable Headlight, DIM when F4 active or locomotive Direction Contrary to DIR bit
x9	"FRED" or end of train light
xa	Right Ditch light. Qualified by Direction bit, F0 ON and F2 ON for blinking
xb	Left Ditch light. Qualified by Direction bit, F0 ON and F2 ON for blinking

To obtain the value to put into CV\_\_, do it like you are in a Chinese restaurant. Pick one number from table c and one from table b.

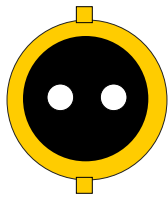
For Rule 17 dimming:

- 6x Special logic for Fwd light for rule 17 dimming
- x8 rule 17 dimmable headlight, Dim when F4 active or loco direction bit reversed.
- 68 = this is the value to program into CV49 (the front light CV).

From the chart, if you wish the back light to respond to rule 17 dimming, you see from table IV c that you use 7x. This plus the x8 gives you 78 to put into CV50 (the back light CV).

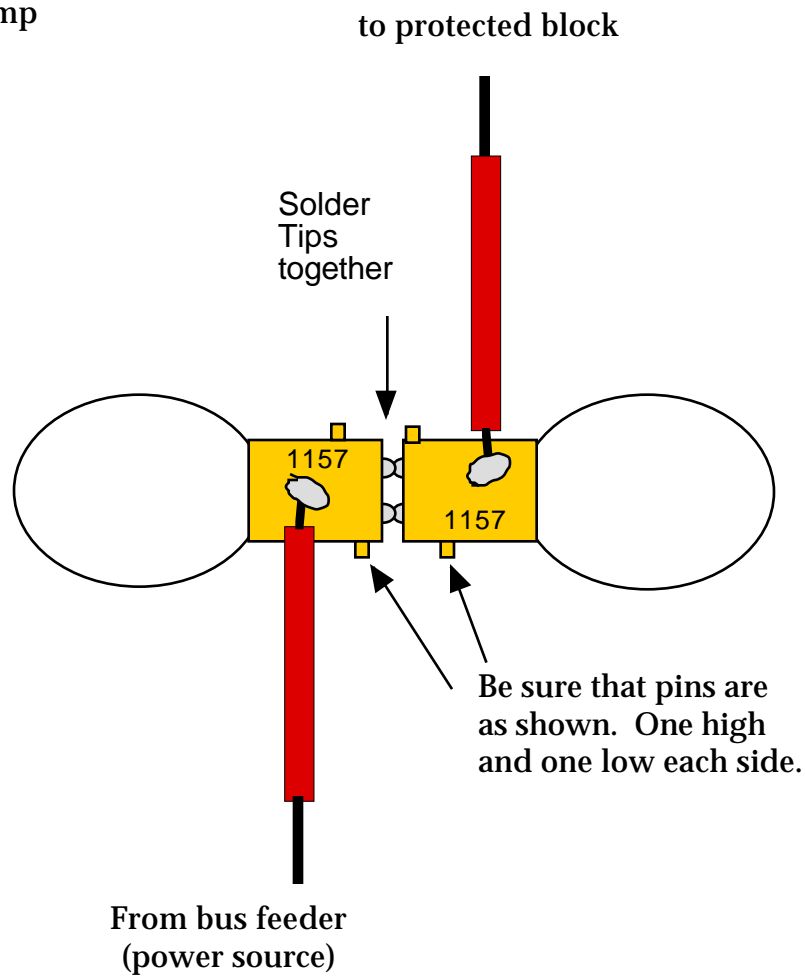
# Circuit Breakers for DCC

1. Solder the two contacts on bottom of lamps to corresponding pins on the other lamp. Be sure that pins on sides are located as shown below.
2. Solder #16 or #18 Stranded wire to each base. Orient wires so that one comes out each direction.
3. Install Circuit breaker lamp assembly in series with one lead going to track.



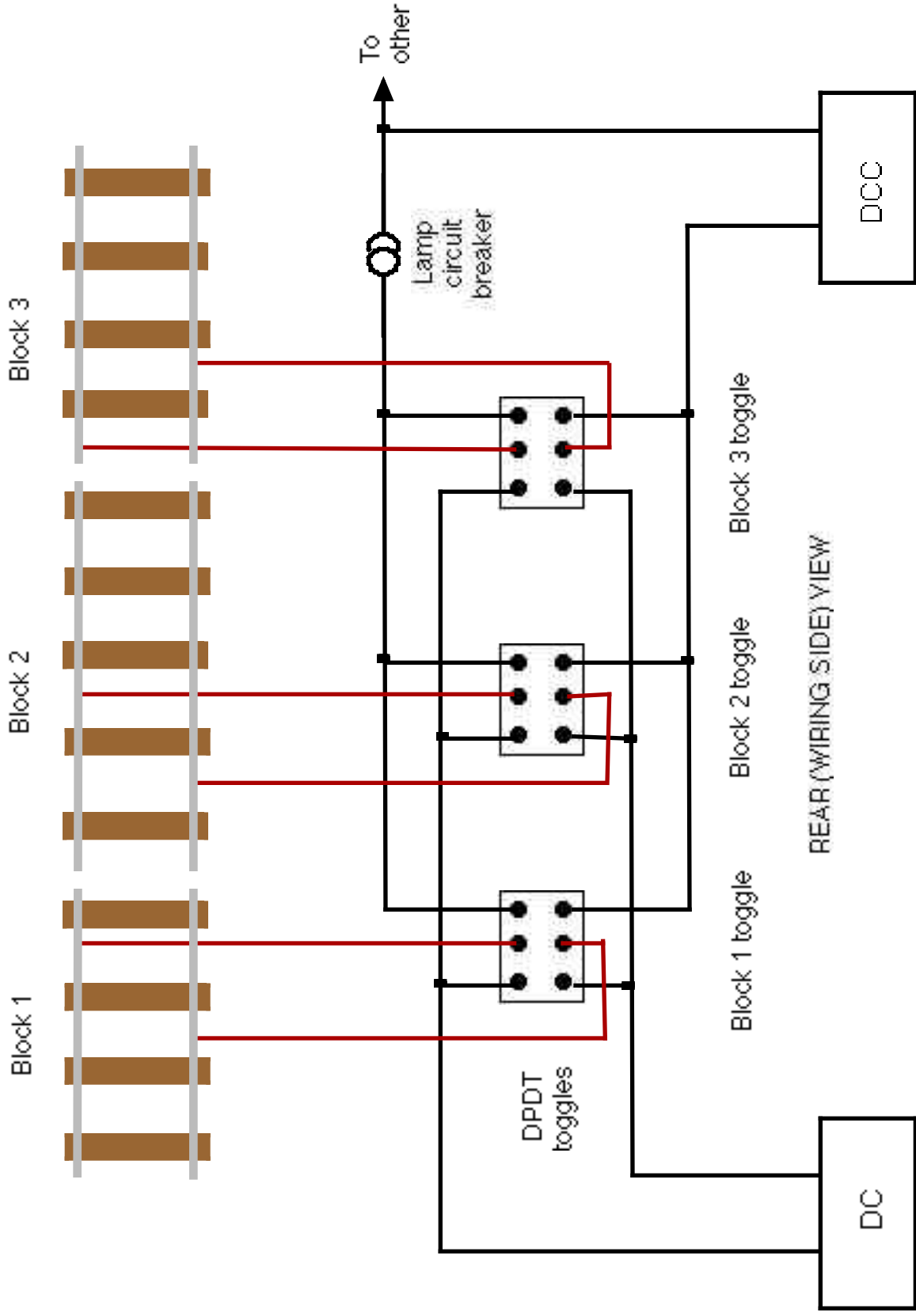
Bottom View

1157 Automotive lamp

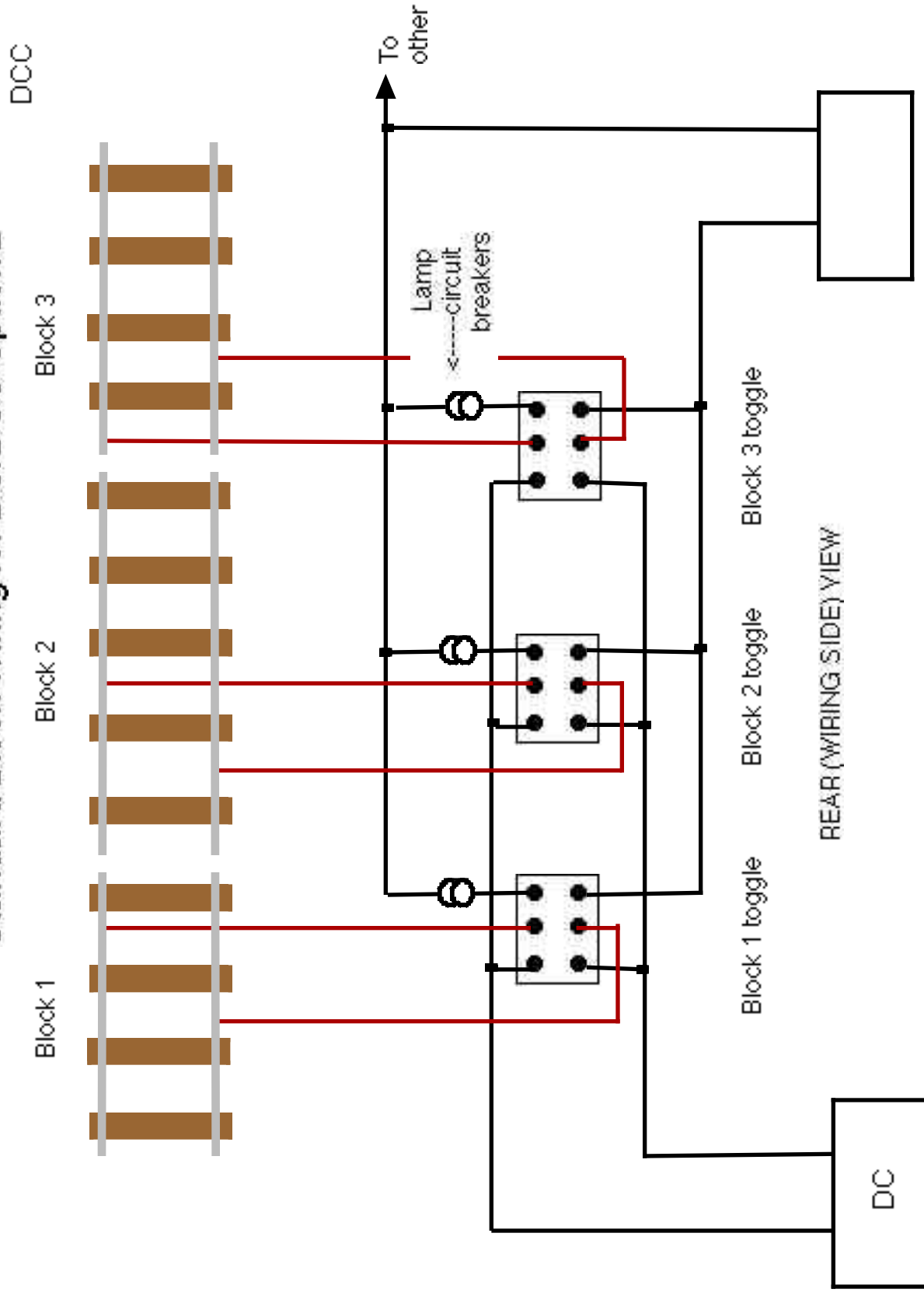


See "Standard Block Wiring for DC/DCC Option" for placement

# Standard Block Wiring for DC/DCC Option



## Standard Block Wiring for DC/DCC Option 2



Use this method for areas of higher current draw. Cut track into smaller sections with a lamp circuit breaker in series with each section.