DCC HARDWARE ACCY CONTROL

MID CONTINENT REGIONAL CONVENTION KC-2023

By Martin Wade

ACCESSORY CONTROL: TURNOUTS AND MORE

Today: Martin

- DC: You can control Turnouts with all types of switch machines and most all of them only need a DC voltage with polarity setting the throw. These can be nothing more than a power supply and a switch.

Today: Martin

- DCC: The next step are controllers that "listen" to the DCC bus for commands. These allow control directly from your handheld throttle. NMRA DCC definitions define a standard for "Accessory" control so that most all DCC vendors operate the same and controllers are system independent. Most of these controllers still allow switches and indicator lights as well. Basic and just works without additional Control. JMRI???

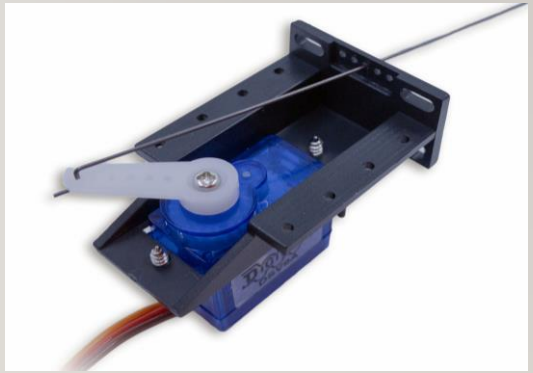
Next Mo. Mark

- Accessory Bus: CMRI, LCC, 2nd Digitrax Locobus, and others stepped in to separate the Accessories from the DCC bus. At some point there just became too much "traffic" on the DCC bus.

A MYRIAD OF HARDWARE DEVICES

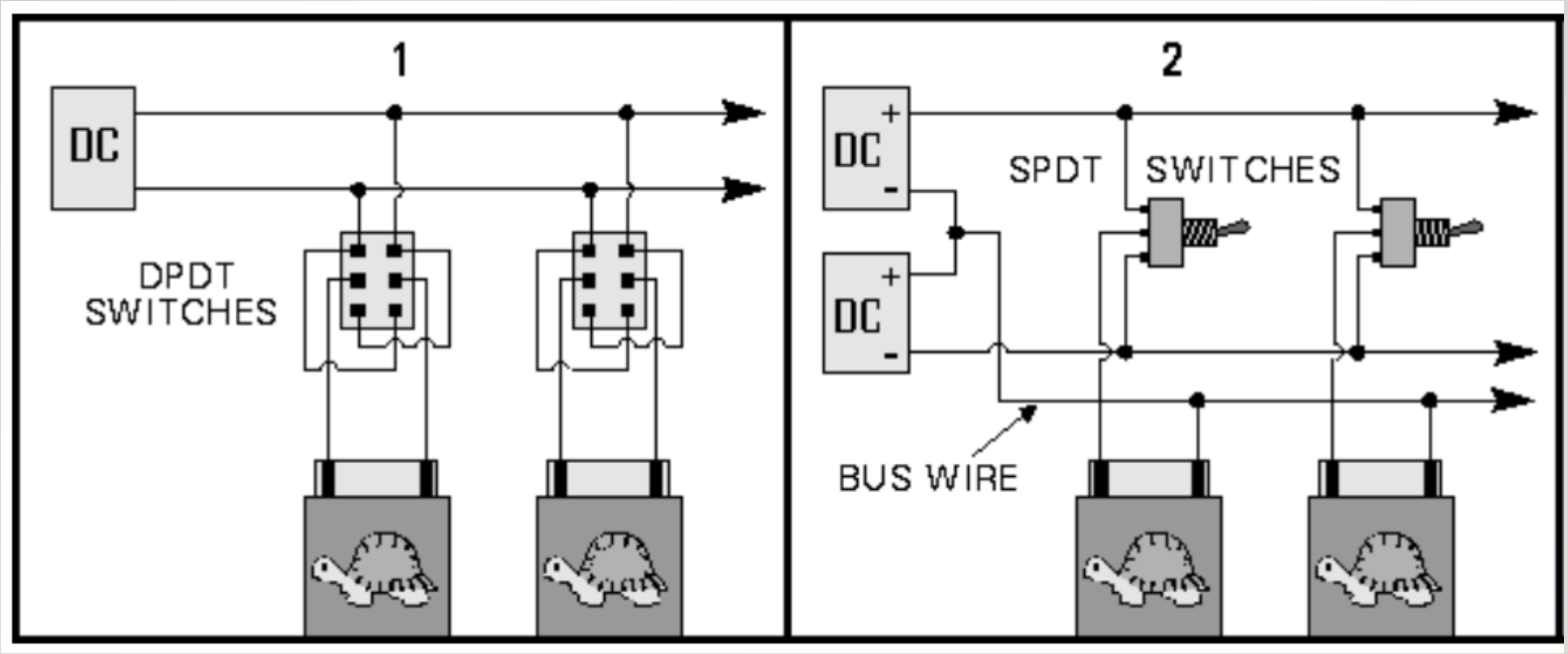
Manual

DC with Polarity

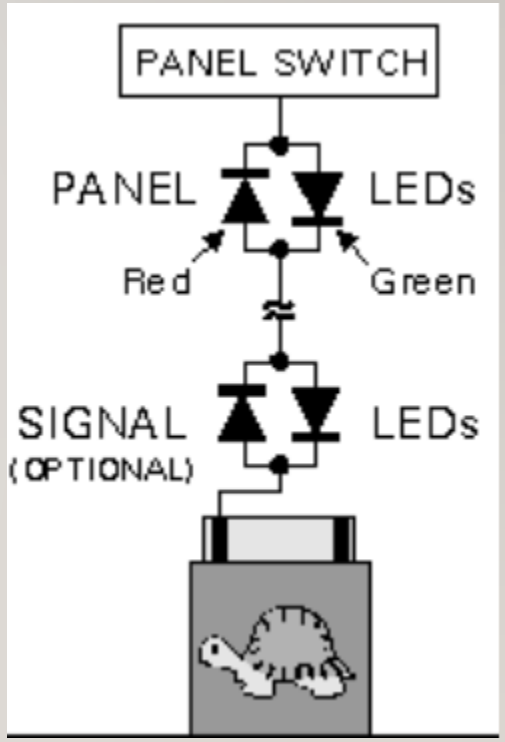


Special:
PWM
5 to 12v

JUST PLAIN OLD DC

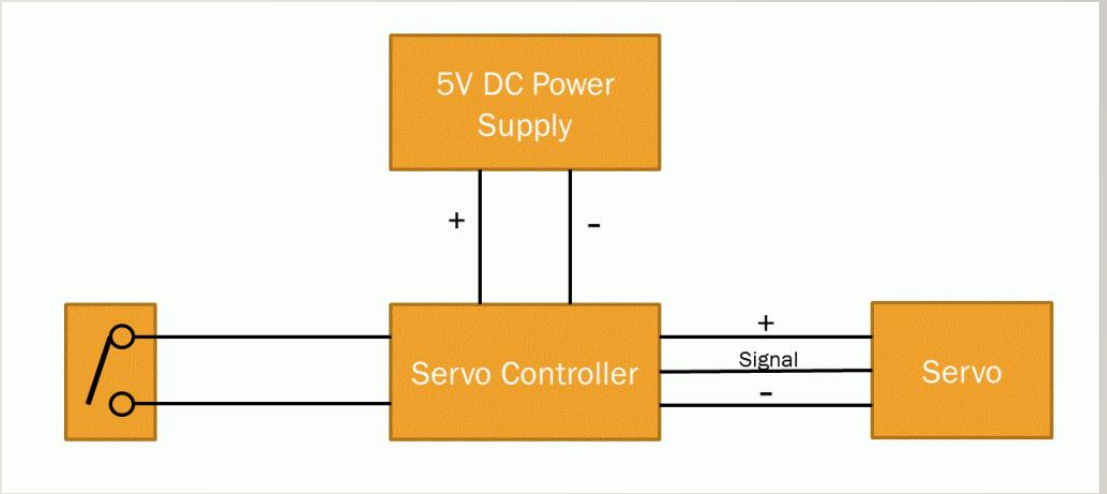


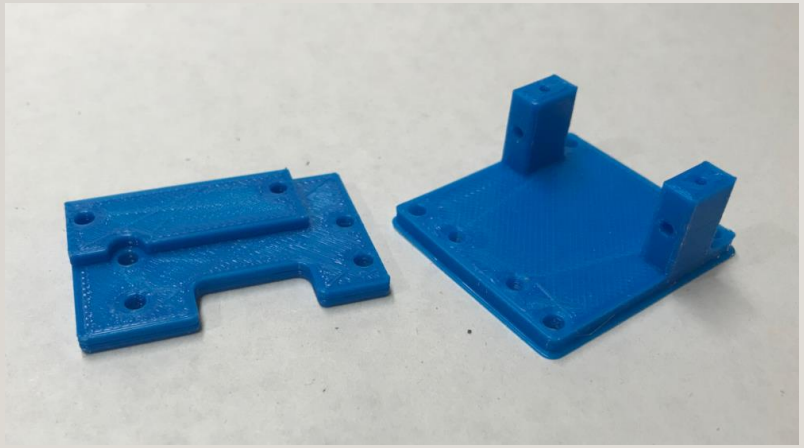
DC is 12v or less. Dual DC can be a single +/- 12v supply or 2 separate supplies

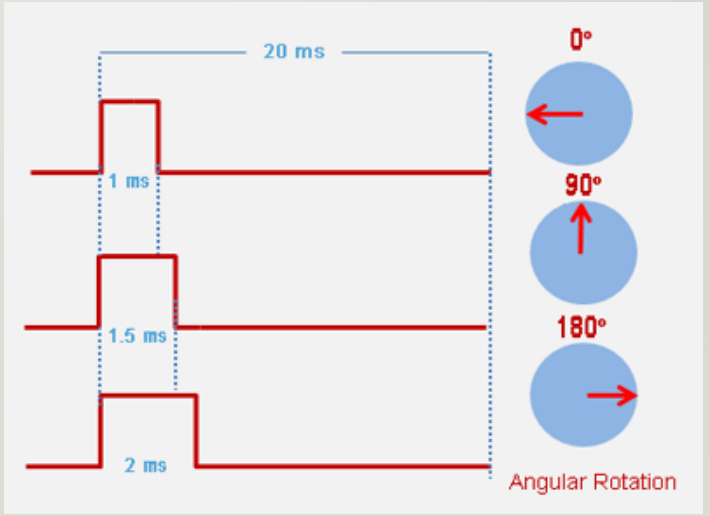


Bi-Directional LED
(tortoise is resistor)

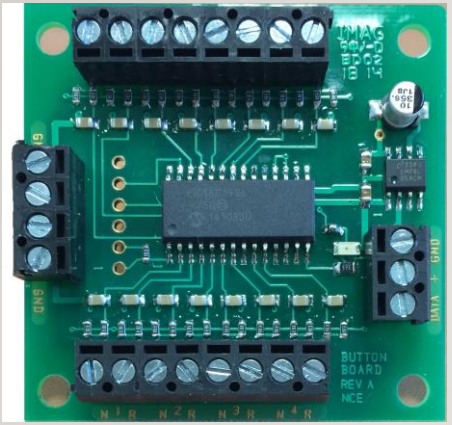
PWM DC SERVO CONTROL

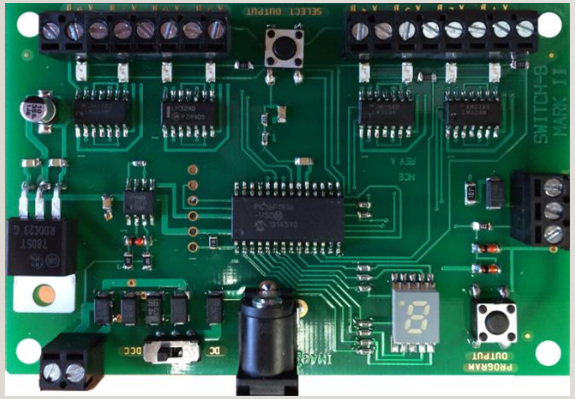


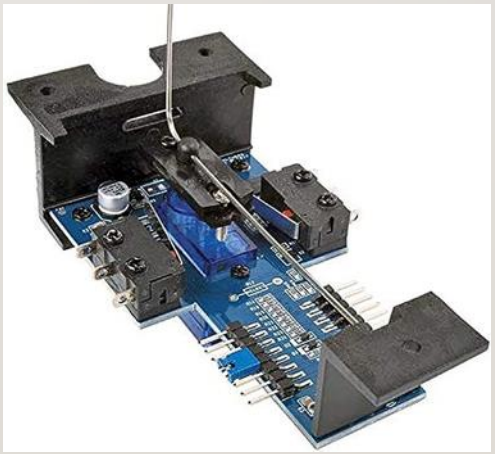




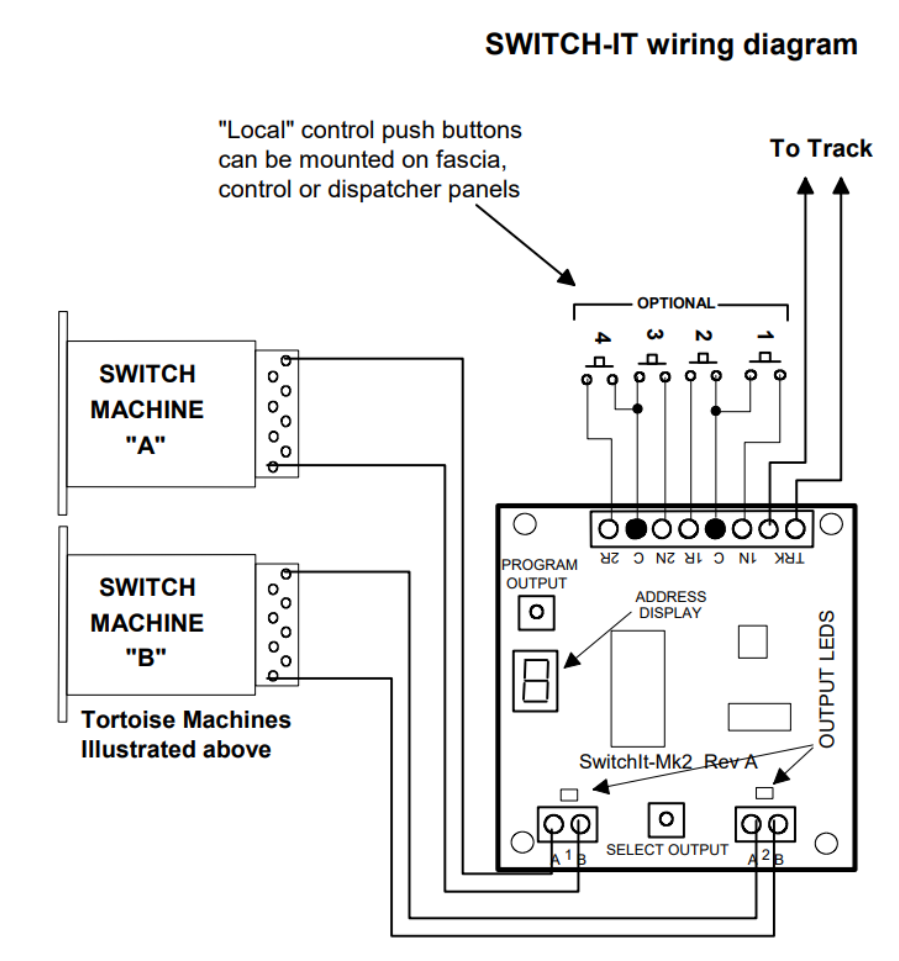
BASIC DCC CONTROLLERS





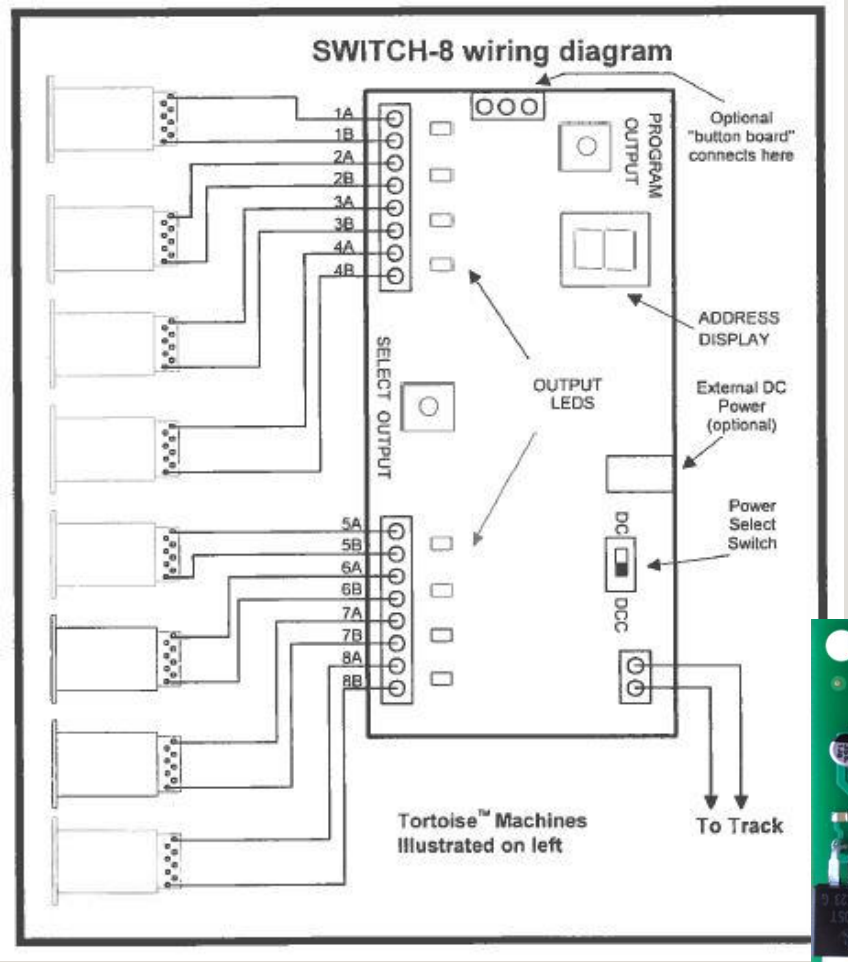


NCE SWITCH WIRING SWITCHIT MK2

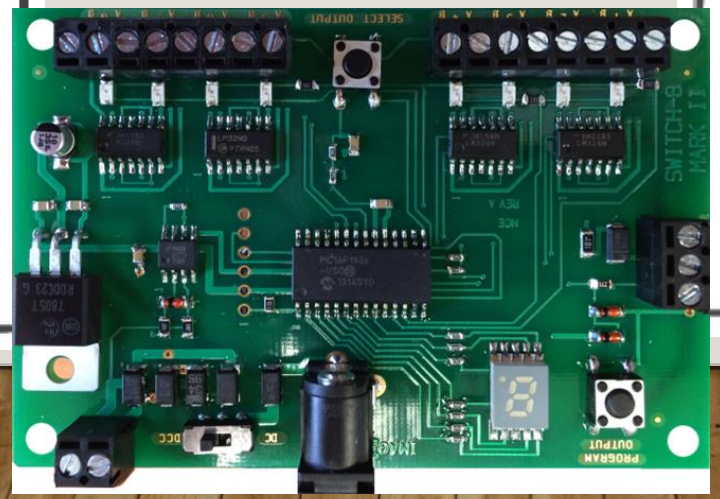


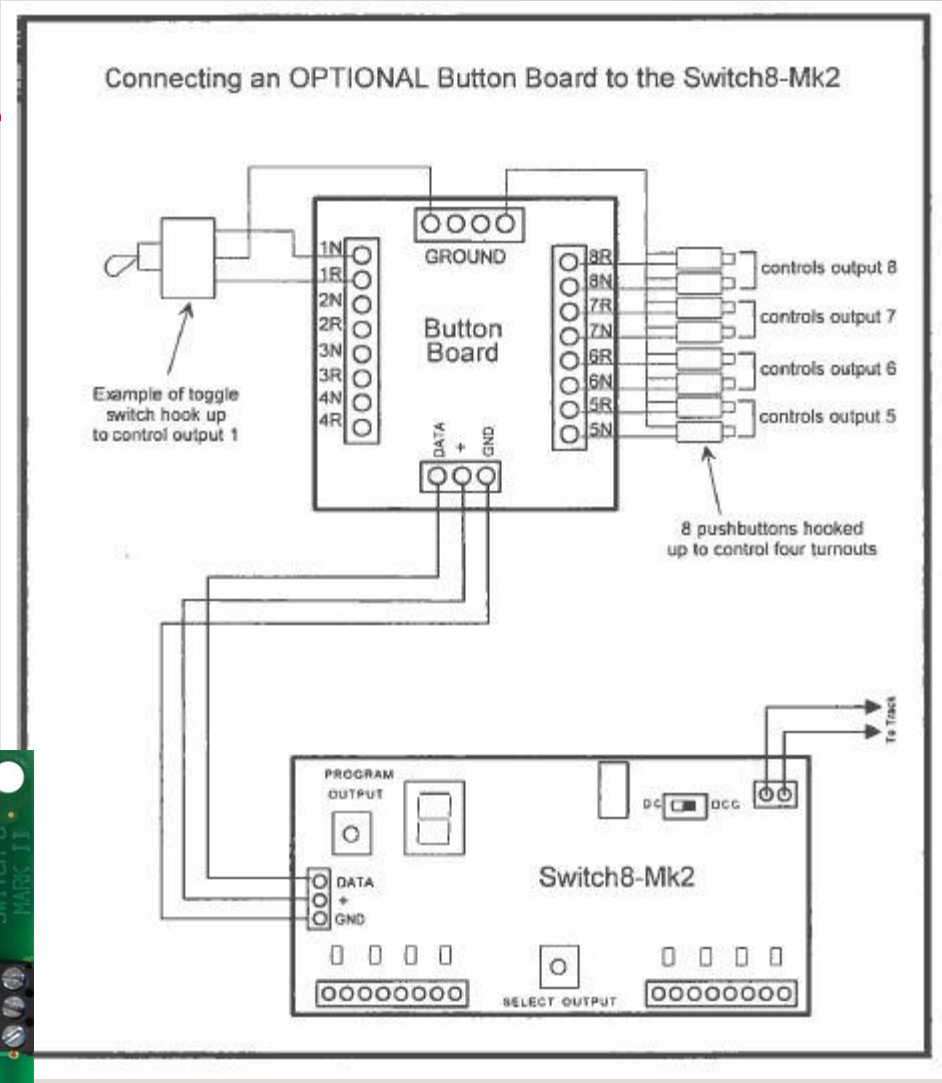
- SwitchIT Mk2 Bd
- Built in Button Board
- 2 turnouts
- Toggle or Push buttons
- Light indicators wire onto Tortoise

NCE SWITCH WIRING SWITCH8 MK2

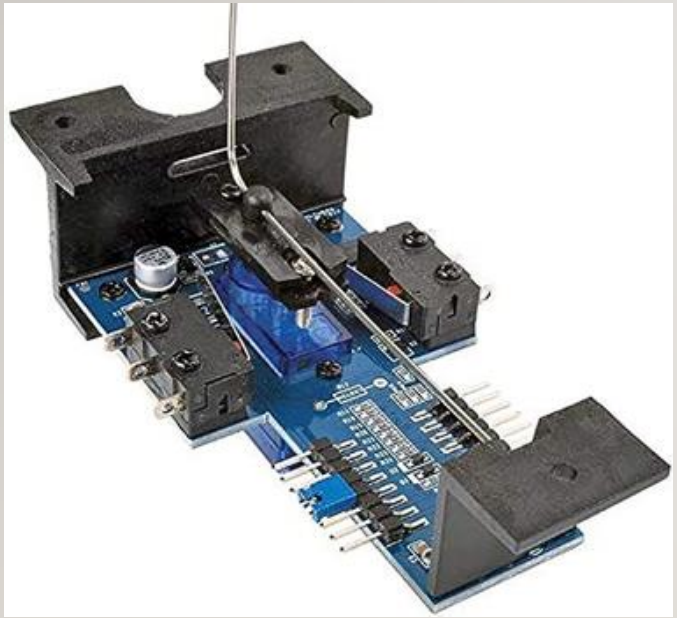


- Switch8 Mk2 Bd
- Opt. Button Board
- 8 turnouts
- Toggle or Push buttons
- Light indicators wire onto Tortoise





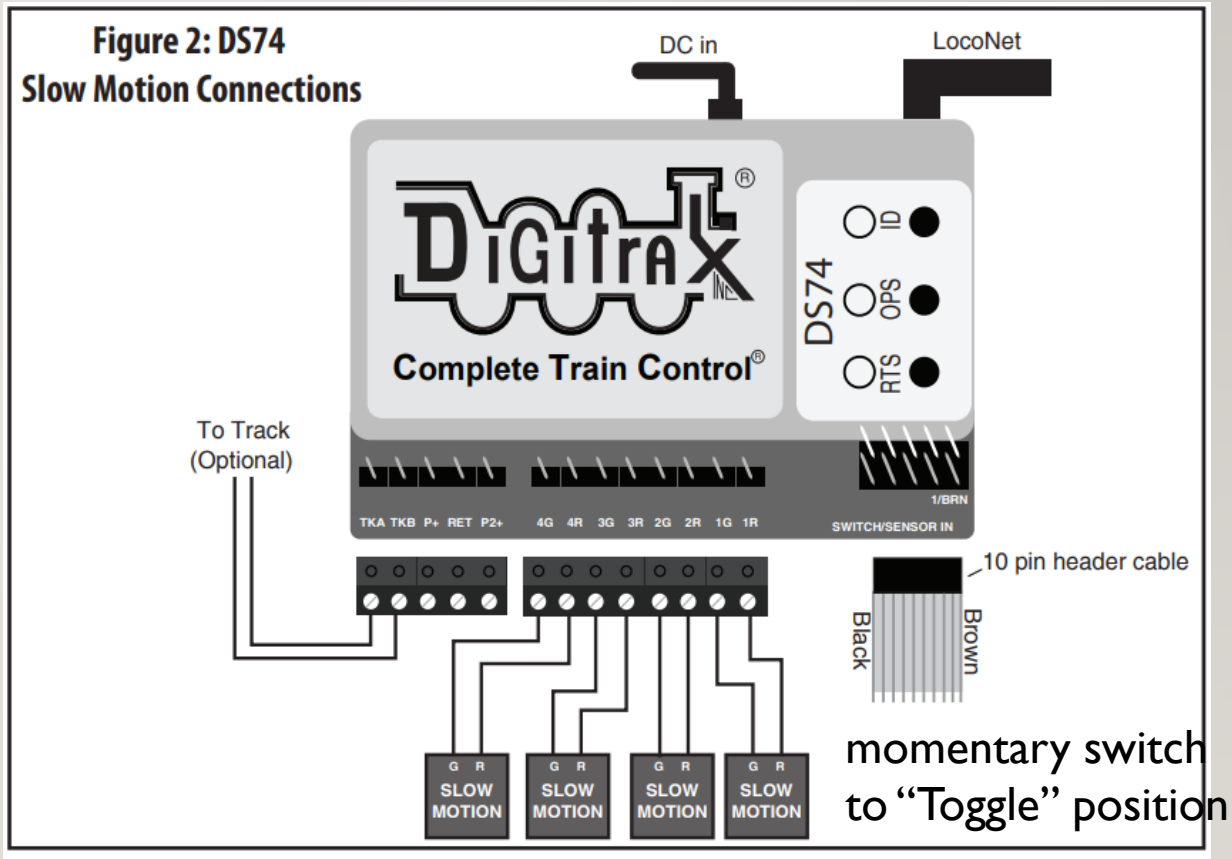
WALTHERS LAYOUT CONTROL



- Remember the PWM Servo system
- Servo and 2 limit switches
- Servo controller and DCC decoder
  - Built in & DCC connected
- Button bd and indicator lights "control"
  - Built in
- Mounting bracket
  - Built in
- Button, Light, and Panel "sold extra"

DIGITRAX LOCOBUS AND DCC

- 4 channel Turnout control Snap or Tortoise
- DCC Accy Decoder built in
- Switch Inputs built in
- Indicator lights wire to Tortoise as in DC operation
- Advanced control with Locobus only
  - Route control
  - 4 Occupancy sensor input
- Configuration requires Digitrax CS for setup only

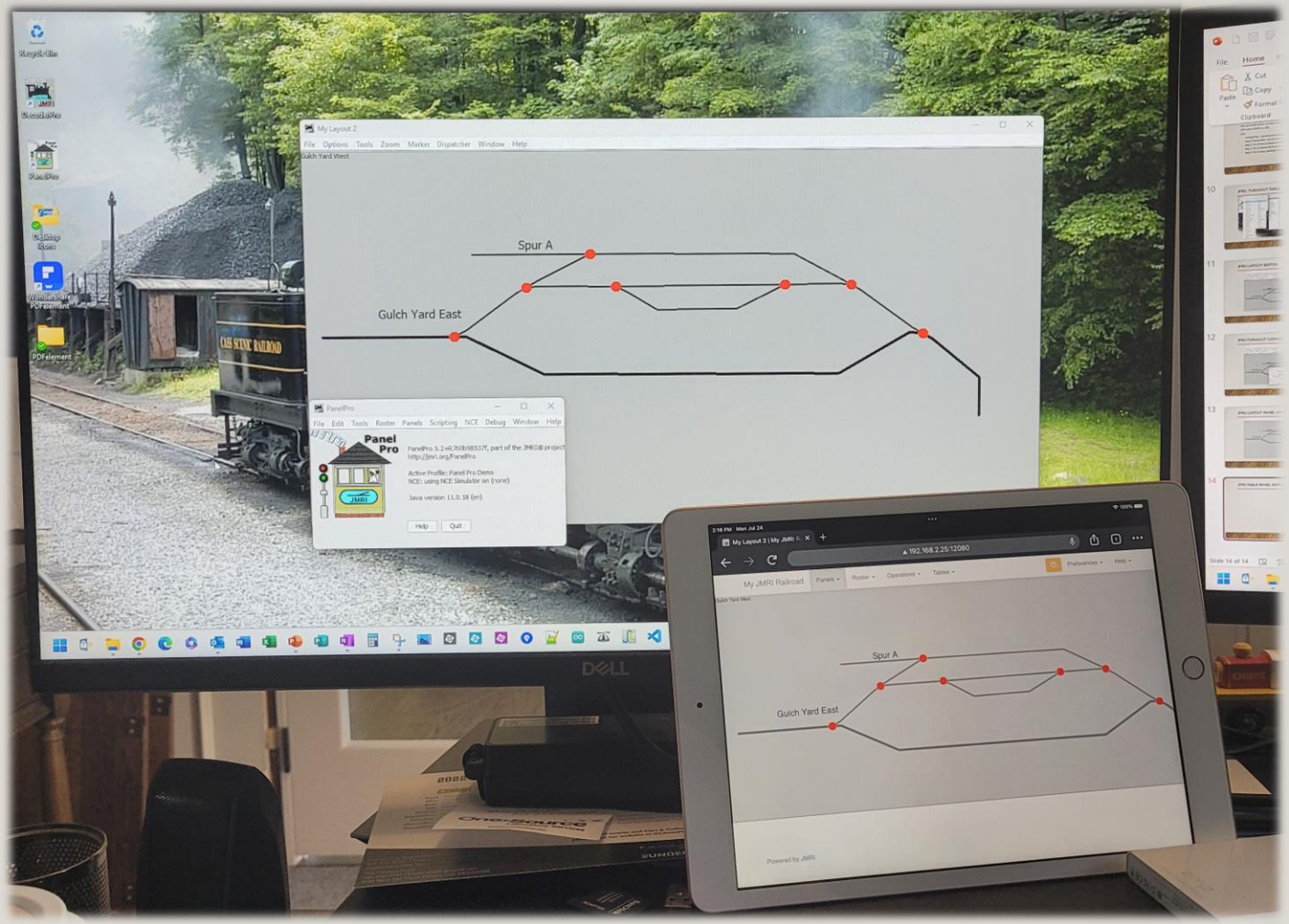


3. You can optionally operate DS74's on TKA/TKB terminals with DCC power only, but control may fail due to track power interruptions from e.g. derailments etc. Also, the total DS74 run and startup current will subtract from the Booster current available for mobile/locomotive decoders in that Power District.

CONTROL PANEL: SOFTWARE VS HARDWARE

- Traditional: Hardware
  - Panel Frame, Panel graphics
  - Switch
  - LEDs or lights
  - Wiring
  - Uh Oh: what if something changes
- Virtual: Software
  - JMRI interfaced to your DCC system. Most use Decoder Pro so are a step closer.
  - JMRI Layout Editor: Graphically draw your layout or layout sections.
  - Web Server: Just one entry to turn it on. This makes it visible like a web page.
  - Tablets: Just capable of network connection with a browser. Just a bookmark webpage!
  - Bring on Change: Any changes are a simple edit to the Layout Editor.

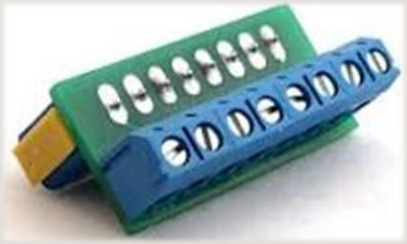
JMRI: TABLET PANEL (REPLACES HARDWARE PANEL)



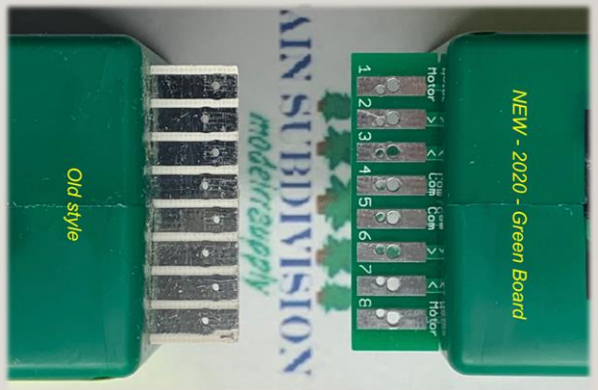
INSTALLATION WIRING: EASIER WIRING ADAPTER

- Edge Connectors have been out a long time but are still soldered. They are cheaper but…. Who wants to solder.
- New (newer) Edge with a Wiring screw connector. At least two brands available.
  - Accu Lites: SNAPS

  - Berret Hill Shops: Terminal Adapter



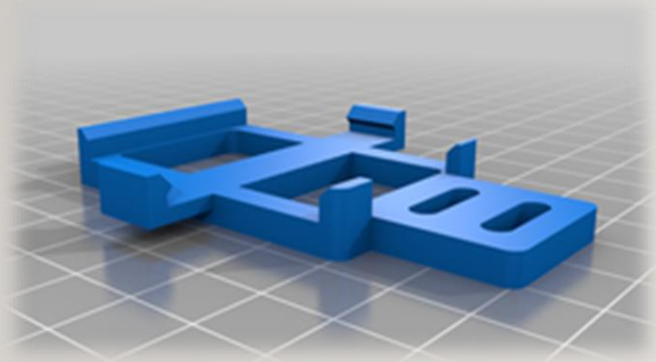
NOTE: Circuitron has made a change to the internal circuit board resulting in a wider board. The new board is green, older ones are white. Please see the photos to see the new July 2020 version against the long time white board.

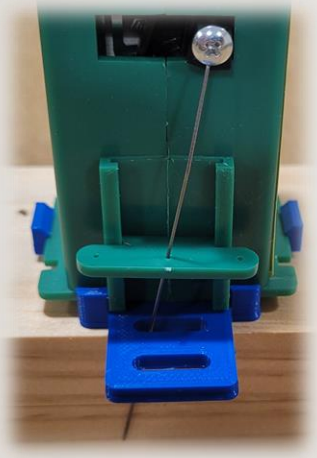


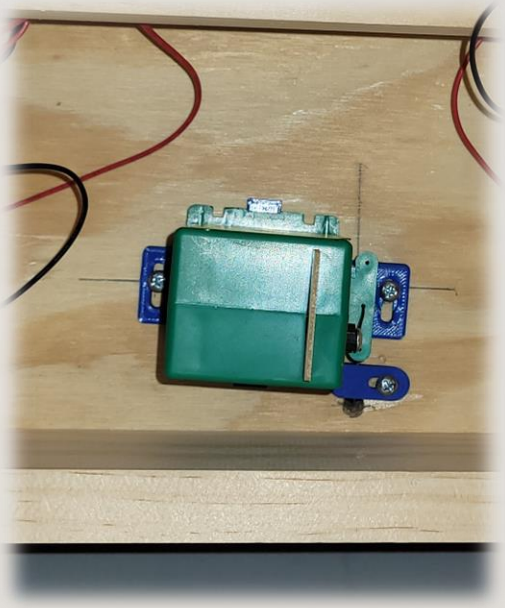
TORTOISE MOUNT & JMRI PANEL CLINIC

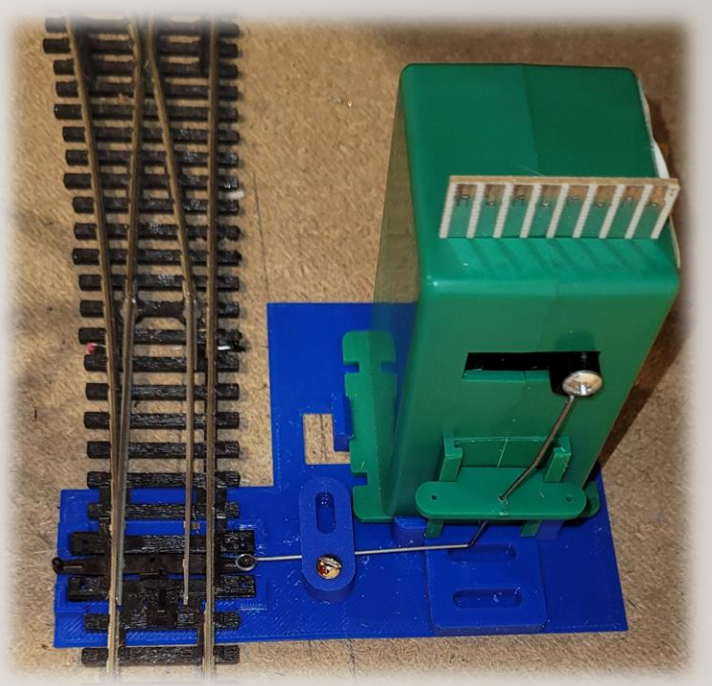
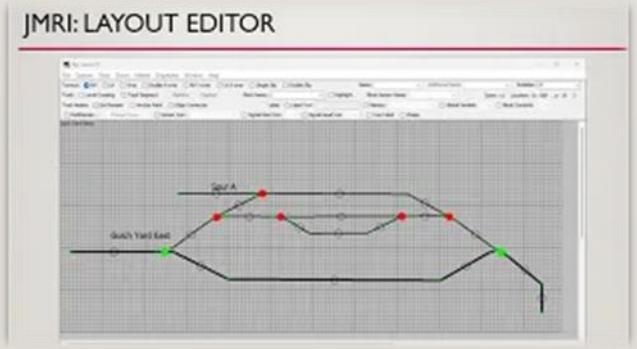
https://www.thingiverse.com/thing:6138591

by HMRrailway









JMRI Panel clinic on YouTube
Channel: HMR Railway
Link to Clinic:
https://youtu.be/LwDEzW6N7As