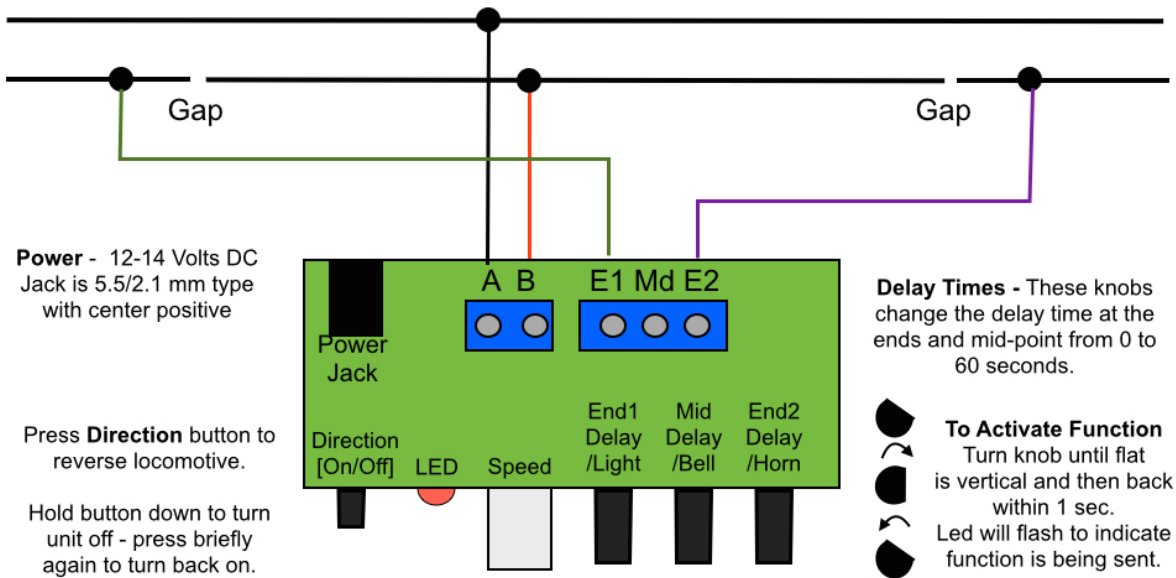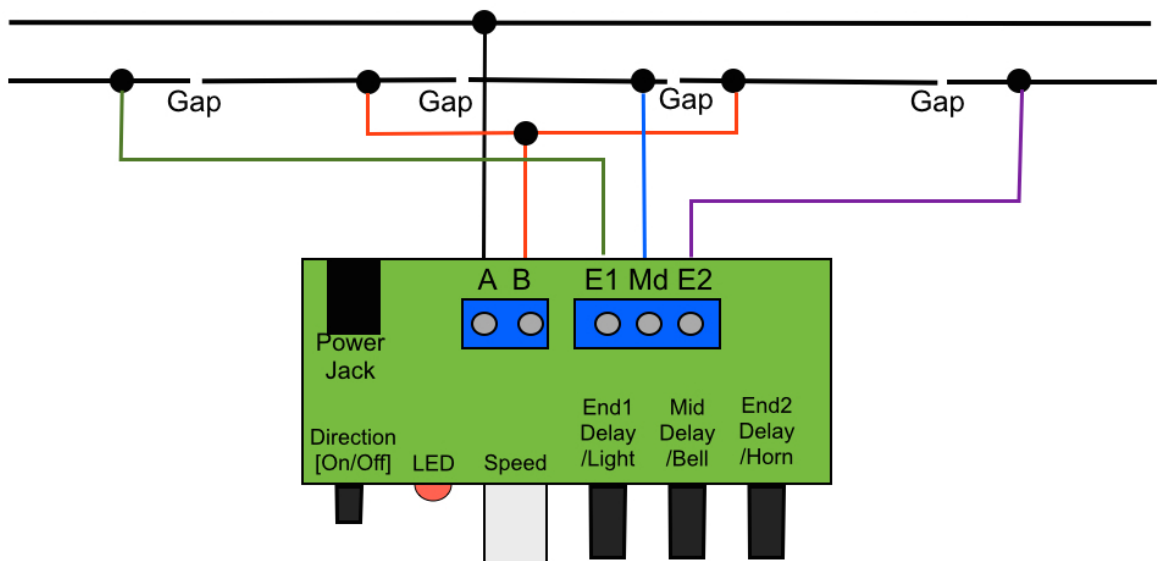# Train Shuttle Manual v2

The Train Shuttle is a simple DCC Command station with built-in detectors. Two of the detectors, End1 and End2 wait for a settable delay time and then reverse the locomotive direction. Mid1 stops the train for a delay period and then continues the locomotive in the same direction (station stop). The speed of the locomotive is set with the speed knob and the direction can be changed with the Direction button. The Train Shuttle can also be used as a simple DCC throttle. *In the new version you can activate F0 (light), F1 (bell) and F2 (horn) by twiddling the delay pots. We have also added a better output stage that can source 2 Amps and up to 23V peak-to-peak. The unit is supplied with a 15V power supply that gives 14V p-p.* Any locomotive with a short (2-digit) address in the range of 1-99 can be run without the need to set an address. If you have a locomotive with a long (4-digit) address there are several choices: program it to use the secondary 2-digit address temporarily; program in a 2-digit consist address; or program the address into the Train Shuttle with an optional adapter (See **Four Digit Addresses** below).
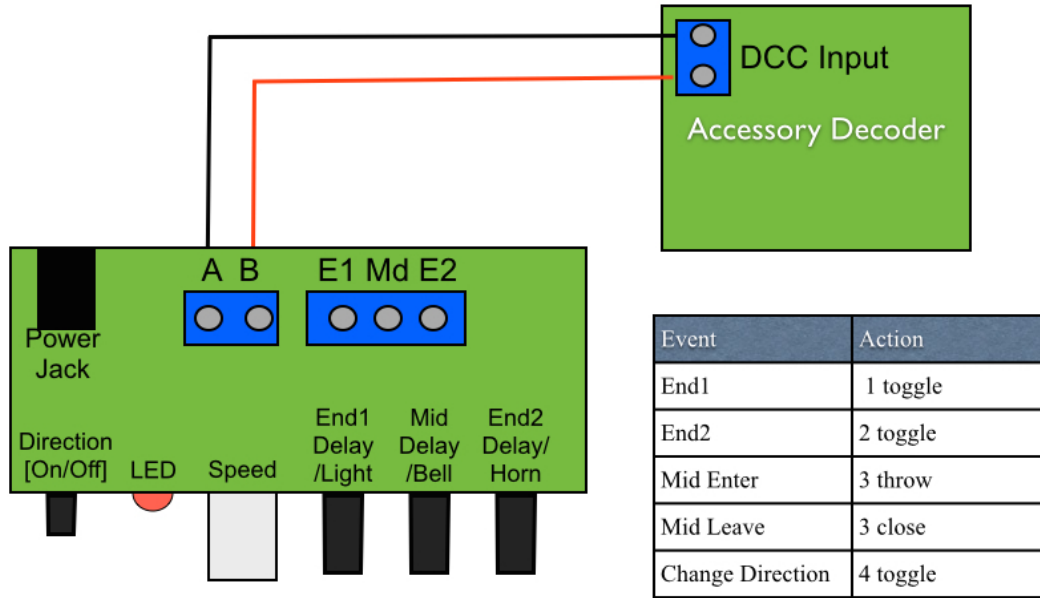
Automatic Shuttle Hook-up Diagram

Power - 12-14 Volts DC
Jack is 5.5/2.1 mm type
with center positive

Press **Direction** button to
reverse locomotive.

Hold button down to turn
unit off - press briefly
again to turn back on.

Delay Times - These knobs
change the delay time at the
ends and mid-point from 0 to
60 seconds.

To Activate Function
Turn knob until flat
is vertical and then back
within 1 sec.
Led will flash to indicate
function is being sent.

Automatic Shuttle With Station Stop

Adding Accessory Decoder

Event	Action
End1	1 toggle
End2	2 toggle
Mid Enter	3 throw
Mid Leave	3 close
Change Direction	4 toggle

Every time the Train Shuttle senses a train at a gap it sends DCC Accessory Commands with a number that signifies the event. See the table above for a list of events and the address of each event. For example each time the train crosses in to End1 a command at address 1 is sent. The command alternates between throw and close. Thus if a turnout is connected to an accessory decoder with address 1, it will alternate between thrown and closed allowing the train to go down a different track fork each time. The end of each fork should have a gap and be connected to End2 so that the train will reverse at the end of each fork.

Functions- The functions are toggled by quickly turning the delay buttons until the flat is vertical and then back to 0 within 1 second (the time is how the system differentiates between functions and delay time settings). The 3 knobs are set to activate F0, F1 and F2. These are usually light, bell and horn but many decoders let you remap the functions.

Notes

You should put a barrier at the end of the tracks to prevent the train from falling off in case the train fails to stop.If the train starts in an end block it may start the wrong way - in this case press the direction button to reverse the train. If you want the train to decelerate (CV 4) and accelerate gently (CV 3) you can program this in the locomotive decoder.

The gap should be the length of the locomotive. However, the length of the gap will need to be longer if you run your trains fast. It takes about half a second for a decoder to react after the gap is reached. You will also want longer end sections if the locomotive decoder has gradual deceleration set. The exact stopping point will vary as it depends on where in the internal cycle the train hits the gap. The faster the train the more variation there will be. When the train leaves the end sections, the system waits for 5 seconds before detecting again, so if the train returns before the 5 seconds are up it will not set off the detector.

Output voltage is the power voltage less about 1 volt. The input is limited to 24V.

4-Digit Addresses (Long) Addresses using the Optional Adapter

Up to 16 -digit addresses can be added to the Train Shuttle with an optional adapter. The adapter allows you to use the 4-dials to set a long address. Note that so called 4-digit addresses can be less than 1000 - for example 0033 is a long address. Connect the adapter to the 3-pin connector on the back next to the power jack. The white wire goes towards the back (see photo to left).

 To activate, press the Direction button until the LED flashes and then let go. The screen will show the first of 16 available address positions.

   Use the button to step the address and then use the 4 dials to set the address. *Press the button again to save*. The address will be saved when the power goes off. To abort, hold the button down until the screen goes blank.
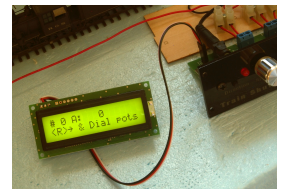
Use button to step

Dial in the loco address and the press button to save

tamvalleydepot.com