NOTES:

Warranty
This decoder is fully factory tested and warranted against manufacturing defects for a period of 1 year. As the circumstances under which this decoder is installed can not be controlled, failure of the decoder due to installation problems can not be warranted. This includes misuse, miswiring, operation under loads beyond the design range of the decoder or short circuits. If the decoder fails for non-warranted reasons NCE will replace the decoder, no questions asked, for $20 US plus $2 shipping. For warranty or non-warranty replacement send the decoder (an any payment, if required) to:

NCE Warranty Center, 82 East Main Street, Webster, New York 14580

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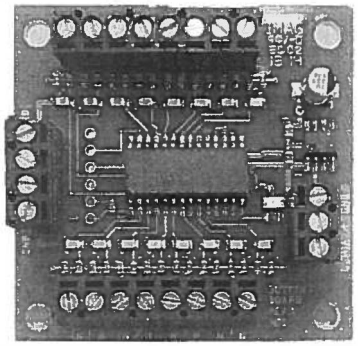
NCE
The Power of DCC

Button Board

Age 14+



Version 1.0

FOR USE WITH Switch8-Mk2

$29.95

Add pushbutton control to Switch8-Mk2!

- ✓ Up to 16 push buttons can be added to Switch8-Mk2
- ✓ Accomodates Momentary N.O. Pushbuttons or toggle switches
- ✓ Simple hook up, 3 wires to Switch8-Mk2

05240152

Warning: This product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

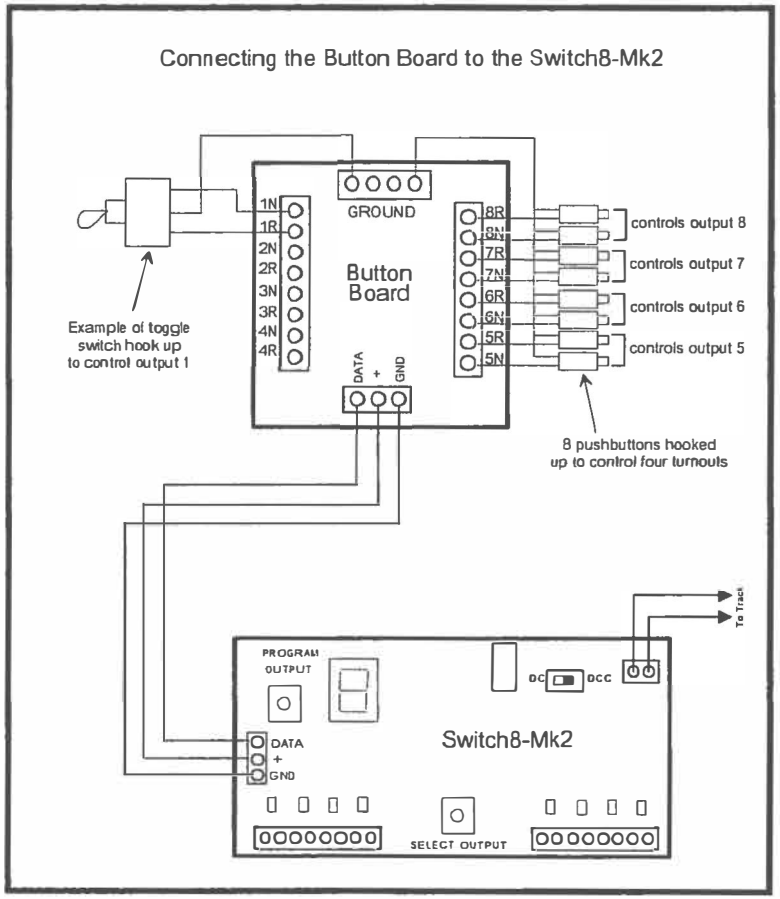
Connecting the Button Board

This "Button Board" allows connection of normally open (N.O.) pushbuttons or toggle switches to the Switch8-Mk2 for purposes of turnout control via a control panel near the Switch8-Mk2. Toggle switches must be momentary.

Three wires will connect the button board to the Switch8 these wires can be small gauge. We recommend using #22-#26 AWG hookup wires. If the length of these wires is longer than 2 feet we suggest twisting (or braiding) the 3 wires together with about 6 twists per foot

Connect "DATA" terminal on the Button Board to the "DATA" terminal on the Switch8
Connect "+" to "+"
Connect "GND" to "GND"

Grounding terminal 1N of the button board will activate output 1 of the Switch 8 to the "normal" position. Grounding 1R will throw the Switch8 to the "reverse" position. The other terminals on the button board work similarly to activate the corresponding outputs on the Switch8.



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Switch8-Mk2 options when used with the button board:

More options may have been added to the Switch8-Mk2 than just the ones below since this manual was printed. Always consult the manual for your version of the Switch8-Mk2 for the latest information.

Setting outputs to toggle when used with optional Button Board

Setting CV548 to 1 will cause pushbuttons connected via the optional Button Board to to "toggle" the switch machine output. Each press of a button will alternate the switch position. Setting CV548 = 1 enables the toggle option. CV548 = 0 disables it.
CV548 is "global" to the Switch8-Mk2, meaning it will affect all button commands coming from the Button Board. (Factory default = 0)

Pushbutton Lockout (CV556):

On some layouts it may be desirable to disable operation of the local control pushbuttons. Setting CV556 to a value of 1 prevents operation of all the decoder outputs by the optional Button Board pushbuttons. Setting CV556 to 0 enables operation of these buttons. You can disable or enable ALL decoders on the layout at the same time by using the accessory decoder broadcast address of 2044 when programming CV556. CV556 is "global" to the Switch8-Mk2, meaning it will lockout all button inputs from the button board. (Factory default = 0) **NOTES:**

Technical stuff:

NCE recommends that button or toggle switches be connected to the Button Board with wires less than 2 feet in length. Longer wires may be used if you twist them together (about 6 or more twists per foot) or use pretwisted wire such as part number 224BW/C-R from Jameco Electronics (www.jameco.com). Light gauge wire is easiest to use of between #22AWG to #28AWG.

Wires connecting the Button Board to the Switch8-Mk2 may be the same light weight gauge as above.

Communications details:
The Button Board communicates with the Switch8-Mk2 via asynchronous serial communications (9600,N,8,1). It uses 1 packet, 2 bytes long for each button "event".

Button "down" event: transmitts the following pattern of bits 1000nnnn with nnnn being the button number (0-15) that is pressed. The second byte is the compliment of the first

Button "up" event: transmitts the following pattern of bits 0100nnnn with nnnn being the button number (0-15) that is released. The second byte is the compliment of the first.

The Button Board only transmits, it is never in receive mode.

The button board draws about 10mA of DC power from the Switch8-Mk2

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