64- Or 128-Output Driver Expansion Board User Manual

The user can manipulate up to 128 drivers using MIDI Note On messages received on the same channel. Eight maps are provided to assign specific MIDI Note numbers to specific drivers.

Operating Instructions

HOW DO I...

...CONNECT THE EQUIPMENT?
Connect the relays, etc., to the multipin connector(s). Connect the external power supply to the two large circular pads on the expansion PCB(s).

...SET THE GLOBAL MIDI RECEIVE CHANNEL?
Press the CHAN key. The global receive channel is selected using the +/- key and/or the VALUE fader. The device will continue to respond to MIDI Note On commands. The default channel is 1.

...SAVE THE DEVMAP AND CHANNEL?
Press the SAVE key. Both parameters are stored in nonvolatile EEPROM and will be recalled at powerup. When storing values, LED #3 blinks.

...LOCK THE DISPLAY?
Pressing the LOCK key prevents any parameter changes from taking place unless the channel or map buttons are pushed.

...USE NOTE MESSAGES TO AUTOMATICALLY TRIGGER RELAYS?
A Note On message (with nonzero velocity) will energize (pull the output to external ground) the driver corresponding to the note number. A Note Off message (Note On message with velocity 0), will de-energize (open the output of) the driver.

...RESET THE DRIVERS?
Press the ALLOFF key. All drivers will return to their deenergized state. At power up all drivers are de-energized.

NOTES FOR 64/128 OUTPUT DRIVER BOARD

This is a stock MIDItools Computer Kit with a new expansion board (the 64-Output Driver Board).

DRIVERS:
The drivers are ULN2803 Darlington transistor arrays. The collector current of each driver is rated at 500mA, continuous. Note that the drivers SINK current: the driver ground is connected to the GROUND connection of your relay's coil via the external ground connection point on the board. This way, when the driver (MIDI NOTE) is ON, current will flow through the coil, turning your relay ON. THESE DRIVERS ARE FOR DC VOLTAGES/CURRENTS ONLY.
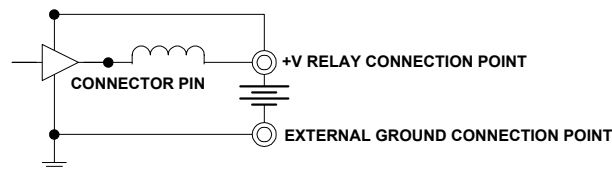
RELAY POWER SUPPLY:
You must supply external power to the expansion board for your relays (9VDC-15VDC should do...) If you look at the solder side of the expansion board, you will see 2 large pads for connecting +V RELAY and GND. These are labeled on the silkscreen on the PCB. You may want to study the layout diagram before connecting these. You can solder directly to the PCB or connect with screws and nuts. Be sure the screws do not touch the metal of the chassis, or in the case of 128 Output units, the other PCB.

CONNECTORS:
On the board are two (2) DIGI-KEY #CHR34G-ND, 34-pin connectors. The mating connectors can be purchased with 34-wire ribbon cable already attached to it: DIGI-KEY #C1DXG-3436G-ND. To contact DIGI-KEY, call 800-344-4539 (the cables and connectors are stocked and can ship overnight.)

MAPS:
The software for the MIDItools 64/128 Output Driver Expansion Board contains eight maps. Map 1 matches the drivers to the incoming MIDI note. See the provided Connection Diagram for an explanation of the maps. Please note the second sheet of the connection diagram refers to maps and drivers available only if two expansion board are used to create 128 output drivers. If you are using only one expansion board (i.e. have 64 output drivers) only the first sheet of the connection diagram applies.