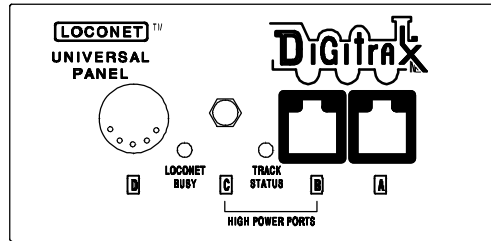


DIGITRAX UP-1 Universal Panel Instructions



The Digitrax Universal Panel makes hookup, maintenance and troubleshooting of your LocoNet[®] network system simple. By using 6 conductor telephone cable with RJ12 6 pin male connectors on each end it's easy to daisy chain your network around the layout without worrying about hooking up a lot of wires. The UP-1 has indicator LED's that show activity on the LocoNet[®] network & monitor the power state of a local track section. The UP-1 also allows you to choose what type of connector you use for your walkaround throttles.

FRONT PANEL:

The front panel has 4 jacks of three different styles to support several styles of Digitrax walk around throttle connections. You can plug into any of these jacks at the same time.

1) **Port A** is an RJ12 6 pin connection for any Digitrax LocoNet[®] throttle (DT200, BT2, etc.). This jack is an exact pin-for-pin "daisy chain" of the three rear RJ12 connectors

2) **Port B** is an RJ12 6 pin connection and in addition draws its power from a local track power connection.

3) **Port C** is a 1/4" Stereo Jack that will support a 3 wire implementation of LocoNet[®]. If you want to use this type of plug with your Digitrax throttles, you will need to change the normal 6 wire RJ12 plug provided on the throttle, or make an adapter. See Diagram 1. Use the following connections from the throttle's 6 conductor flat cable to a 1/4" Stereo plug:

- 1) Connect the YELLOW and BLACK wires to the SLEEVE of the 1/4" jack. This is Ground.
- 2) Connect the BLUE and WHITE wires from the throttle cable to the RING of the 1/4" Stereo jack. This is the +ve power connection.
- 3) Connect the GREEN and RED wires to the TIP connection of the 1/4" plug. This is the LocoNet data line.

This port C also is powered from a local track power connection (see below).

Note that a DT200 wired directly for 3 wire connection cannot be used as a Master Command station, as this connection needs 6 wires, but it will work fine as an advanced throttle. A DT200 running as the "Master" Command Station can only be hooked up via the A port of the LA-1 adapter to the Master booster, and should not be hooked directly into any LocoNet[®] port. The "B" port of the LA1 adapter is designed to connect to LocoNet.

4) **Port D** is a 5pin 180 degree DIN jack that supports network/bus wiring using DIN plugs. *Note that you cannot run non-Digitrax throttles (e.g. Lenz LH100's or Keller throttles) at the same time as Digitrax throttles on this network.* This port provides Modular club layouts the ability to run Digitrax at some sessions and other systems at other sessions without needing to change the network/bus wiring.

If you are a Lenz user, you can run a Lenz X-Bus using the UNIVERSAL PANEL and LocoNet[®] network wiring to carry the bus signals. Be sure to add the X-Bus terminator and follow the straight line bus requirements of the X-Bus. Note: While running X-bus, you will not be able to run Digitrax throttles.

To wire a Digitrax Throttle with a 6 wire cable to a 5 pin Din Plug, See Diagram 2 use the following connections:

- 1) Wire DIN LEFT pin (looking into Universal panel) to WHITE wire.
- 2) Wire DIN second from Left pin to RED wire.

- 3) Wire DIN CENTER pin to YELLOW and BLACK wires.
- 4) Wire DIN RIGHT pin to BLUE wire.
- 5) Wire DIN second from Right pin to GREEN wire.

A DIN plug wired this way to a CT4 throttle will work correctly as a Challenger type throttle bus when connected to a DB100 command station. Note that if you use the network/bus wiring for a Challenger type throttle bus you cannot run LocoNet type digital throttles at the same time, or vice-versa.

5) BUSY INDICATOR:

This RED LED marked "Loconet Busy" will flash red when there is a data transmission on LocoNet[®]. This provides a valuable diagnostic tool by indicating that the network/bus is live and transmitting data properly. As the amount of traffic on the net increases this LED will be continuously lit instead of flashing. If there is no traffic the LED will be unlit. If the network/bus is jammed Active, or there is a break in the data line the LED will be steady RED with no flickering.

6) TRACK STATUS:

This bi-color led reports the power state for a local track section connected to the Universal Panel for monitoring & powering the High Power Ports B/C and the LocoNet Busy indicator. This LED will not be lit if the UP-1 is not hooked up to local power.

REAR PANEL (Diagram 3):

1) Network/Bus Expansion Connectors:

The rear of the Universal Panel has three RJ12 6 pin jacks that are "daisy-chained" pin-for-pin. These are typically used with the LocoNet[®] jumper plug coming from the previous Universal Panel in on e.g. the Left side, and continuing out on another jumper cable on e.g. the Right side, to the next Universal Panel in the line. The extra center RJ12 jack is provided for connection of extra LocoNet[®] devices nearby to this Universal Panel. You can use these three jacks in any convenient order for connection to other devices.

LocoNet[®] can typically support a total cable length of up to 1,200 feet, & no two devices should be connected by more than 600 feet of cable. This allows for the network to be split & branched in a free form style with no stringent connection rules for network transmission. You can "tree" or branch out network stubs wherever it is convenient for the layout and debugging or servicing. The single network termination needed is provided by the LA-1 LocoNet Adapter or the DCS100 Command Station. *We do not recommend looping the network back on itself.*

2) Local Track Power connectors:

There are two #6-32 right angle screw terminals provided at the rear of the UP-1. Connect these to each rail of a convenient track section using 22 to 28AWG wire. These terminals can be hooked up either way to the track. The TRACK STATUS led on the panel front will be lit when the local track has power. This allows individual UP-1's to diagnose whether individual power boosters or "districts" are shorted etc. Note that the BUSY red LED circuit draws its power from this input, and the B and C ports need this connection to provide operating power to throttles connected to them. Normally this Local track input **should** be wired to the track so that the unit can pick up track power.

The Universal Panel has 4 corner mounting holes for #6 screw clearance. The panel is normally flush mounted in the fascia of the layout or module, and the network/bus wiring is accessed and hidden behind the fascia. See Diagram 4.

You can purchase ready made 6pin male RJ12 to RJ12 jumper cables of various lengths from many sources. *Be sure to use 6 conductor and not 4 conductor plugs and wires.* Alternately, you can crimp your own jumper cables. The digital LocoNet[®] will operate with either "reversing" or "non-reversing" type jumper cables. The Universal panels are "reversing" in that all pin 1's of the RJ12 jacks connect to one another.

A Note About Challenger: To use a Challenger CT4 throttle bus on the panel, you will need to use the "reverse" style of jumper plugs so you maintain the pin 1 to pin 1 correspondence throughout the layout wiring. You can identify "reversing" cables in that the end plugs are mounted on opposite sides of the ribbon cable and when you

look at the ends of the plugs, the white wires will both be on the same side (usually the left side). Also, Challenger throttles should only be plugged in to the "A" port of the UP-1.