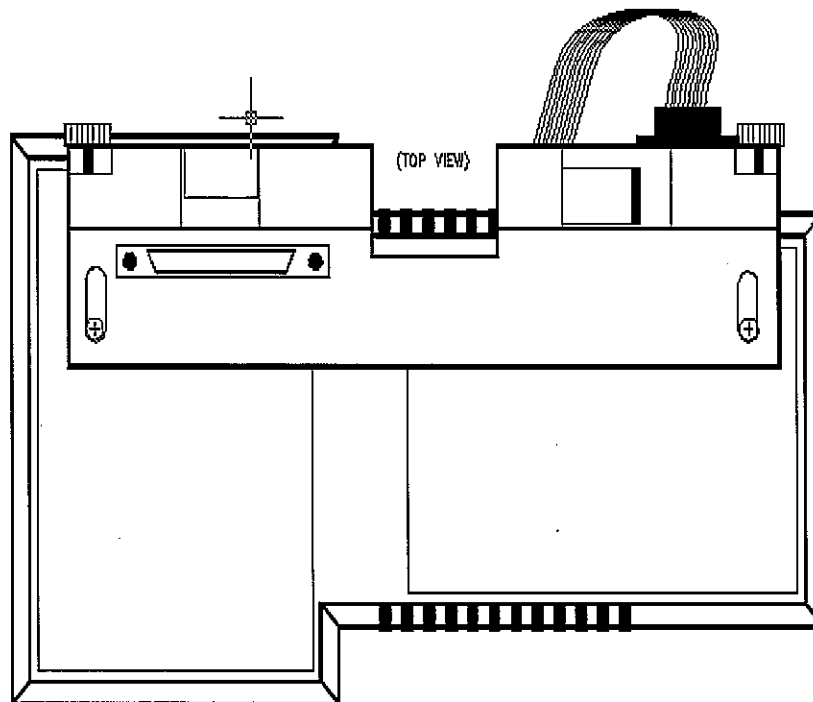


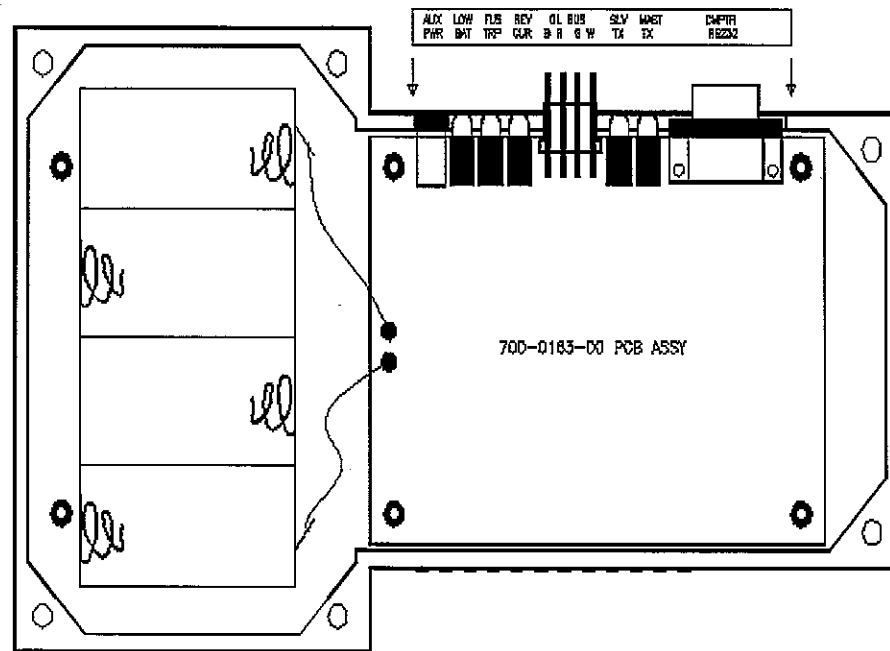
DCN Manager Hardware Features & Notes

OVERVIEW:

The DCN Manager is a generic RS232-to-O/L device that can be used portably in the field. It consists of a battery powered RS-232-to-O/L converter that interfaces on any Network O/L connection to act as the O/L Master device. Battery power management and fault detection is built into the device. The DCN Manager may also be powered from any AC or DC 6 volt to 24-volt power supply using a standard 2.1 millimeter power plug.

Please see the list of features below for more complete details on hardware operation and capability.





HARDWARE FEATURES & NOTES:

- DCN Manager hardware acts as an O/L Master Device capable of driving up to 32 DCNs (or BELls) on a single Network O/L bus.
- Uses + 10VDC O/L drive voltage (not suitable for Local O/L systems - use Acres #014-101-00 product for Local O/L Master control via an RS232 port).
 - RS232 signal "DTR" is set high to activate voltage pump, conserving battery power, and disabling O/L output when the device is not being used.
- O/L activity LED indicators
 - Red "MASTER TX" and Green "SLAVE TX" LEDs match O/L wiring convention. (Black is + VOL, Red is Master Tx, Green is Slave Tx, and White is OL Common).
- Transient protected O/L inputs to help protect RS232 computer device.

- Over-Current protection using automatically re-settable thermal fuse.
 - Red "FUSE TRIP" LED indication of fuse tripping (no software detection).
- Over-Voltage/Reverse-Current detection indicates presence of another O/L Master already on bus (other Master must have O/L drive voltage greater than about 10.3 VDC).
 - Red "OL CONFLICT" LED lights up.
 - RS232 "Ring Indicator" signal set to logic low (voltage high) for software detection and indication.
- 4 Alkaline C-Cell Battery Power
 - Typical Alkaline C-Cell has about 4.5 Amp-Hour capacity at 10 milliamp loading and 3.2 A-Hr at 100 milliamp loading. The Batteries can drive 32 DCNs approximately 10 hours continuously before needing replacement.
 - An 8-DCN network with continuous communications for about 30 minutes each hour for a 10 hour day should last about 25 days or so. (This equates to 25% average active duty cycle per hour - probably a high estimate of normal communications duty.)
 - Long shelf life. Nominal idle current draw is 0.4 milliamps with computer disconnected and 1.8 milliamps with computer connected and "DTR" set low. This implies an expected shelf life of about 1.3 years with no computer connected and about 4 months with a computer continuously connected. (Note that idle current is about 16 milliamps idle with computer connected and "DTR" set high activating the O/L voltage pump and about 25 milliamps idle with DCN Manager software also active in Tx search mode.)
- Low Battery LED Indicator and RS232 indicator.
 - "DSR" is always set high when sufficient Battery Power is present (or Auxiliary power is connected).
 - Yellow "LOW BAT" LED lights at about 4.7 Volts (1.175 Volts per Battery).
 - "DSR" goes low at about 4.5 Volts (1.125 Volts per Battery).
- Optional 6 - 24 VAC/DC Power Supply with a 2.1 mm plug (female center) can be used for power.
 - Automatically disconnects the batteries from the system.
- Simple connection directly to standard 9-pin serial computer port; port variants can be handled by off-the-shelf cables.
- Standard Network O/L 4-pin MTA156 connector; any standard O/L cables can be used to reach arbitrary distances to any Network O/L bus as needed.