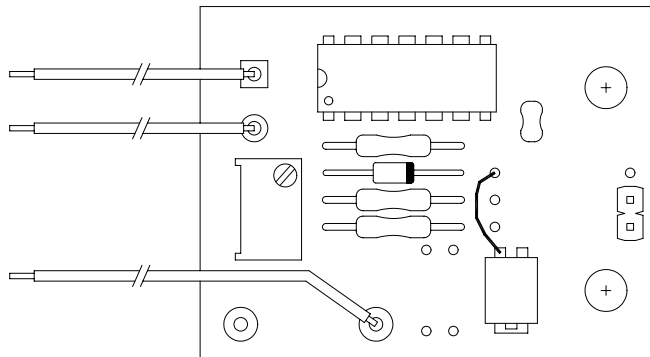


Installation & Setup Guide

CNI Battery Monitor



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Introduction:

It is the intent of this document to provide guidance for wiring and board mounting of the CNI Battery Monitor. This accessory to the CNI product line adds utility by permitting the user to monitor the voltage level of the main supply. If this voltage level should drop below a defined point, then an alarm will be triggered, causing the CNI to call-in and report the event. Figure-1 illustrates the board layout of the CNI Battery Monitor.

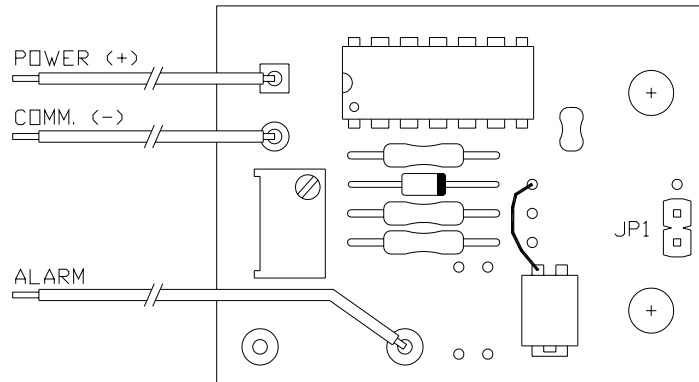


Figure-1
CNI Battery Monitor

Aside from the board itself, two additional parts are also included with the kit as shown in Figure-2.

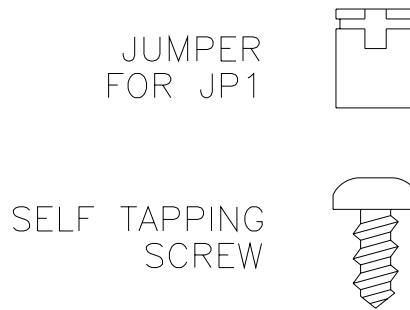


Figure-2
JP1 Jumper & Screw

Board Mounting & Wiring:

Figure-3 illustrates the proper mounting position for the board onto the enclosure boss. Only a single self-tapping screw is required for securing the board.

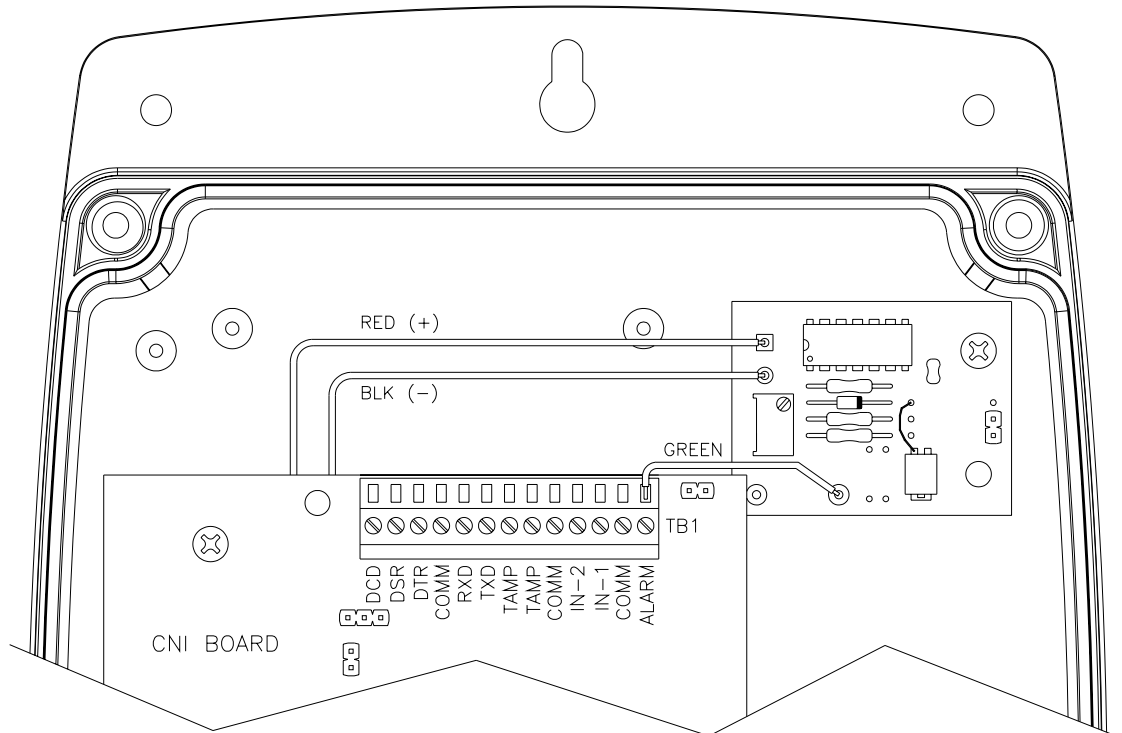


Figure-3
Top Half of Enclosure

Wiring connections are straightforward with the green wire feeding into the alarm input on the CNI terminal block. To minimize wiring congestion, it is recommended that the red and black wires be routed underneath the CNI board as shown in Figures 3 & 4.

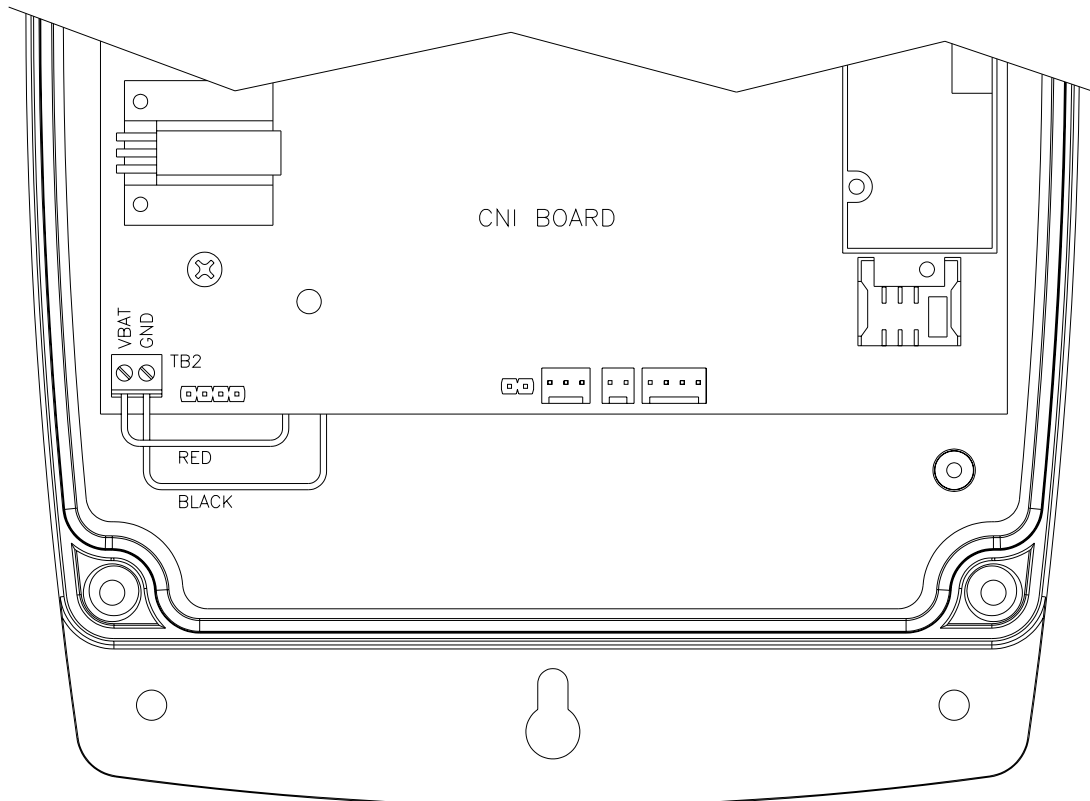


Figure-4
Bottom Half of Enclosure

Observation of polarity is, of course, critical when attaching the red and black wires to TB2. The two wires coming from the main power supply source are then wired in parallel into TB2. Sufficient space exists for insertion of two wires into each position of TB2.

Adjustment of Setpoint: (optional)

It is possible to change the level at which the alarm triggers by making adjustments to the rectangular blue rheostat on the left side of the voltage monitor board. Total adjustment range is approximately one volt. The equipment setup shown in Figure-5 represents the most practical method to execute this process. In addition, a small jewelers type blade screwdriver is necessary.

- a) The rheostat is a precision type that requires a full 25 turns to sweep across the entire adjustment range. As a starting point, it is recommended that the Technician adjust the rheostat counter-clockwise 10 times before executing the adjustment process.
- b) Set the adjustable power supply to the desired trigger point. We will use 11.35 as an example here. Connect the equipment shown as in Figure-5.

- c) Initially, the ohmmeter should display infinite ohms. This indicates that the alarm is not active with the 11.35 volts applied. (If this is not the case, spin the rheostat another 5 or 10 turns counter-clockwise)
- d) Now slowly turn the rheostat adjustment clock-wise until the point at which the ohmmeter displays nearly zero ohms. A reading of zero ohms indicates that the active-low alarm signal is now asserted.
- e) To confirm proper operation, the Technician can now set the power supply at 12.0 volts, and slowly drop the level to confirm that the alarm triggers at the desired set-point. Bear in mind that the circuit also has a release point (known as hysteresis) that must be overcome when testing the trigger point threshold.

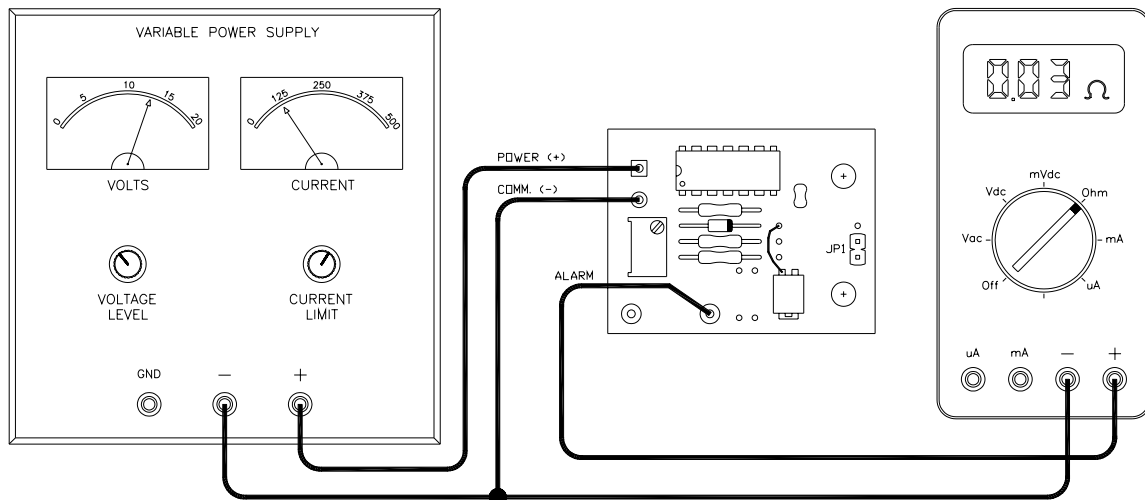


Figure-5
Equipment Setup for Adjustment of Trigger Point.

Specifications & Jumper Configuration:

A single two position header resides on the board, permitting the user to select between monitoring of a 12 volt based system, or a 24 volt system. Table-1 below details the voltage at which the alarm will trigger, and the voltage at which the alarm will release. This table indicates the factory default settings for which the rheostat has been set to. A certain degree of adjustment range is possible (previously discussed) via the rheostat, for applications that might require a different trigger level threshold.

JP1	Alarm Trigger	Alarm Release
In	11.4 volts	11.6 volts
Out	22.3 volts	23.3 volts

Table-1

Input Voltage: Maximum permissible input voltage across the power leads is 35Vdc.

Quiescent Current: 66uA, [Vin = 10.0, jumper set for 12 volt mode]
190uA, [Vin=12.5, jumper set for 12 volt mode]
71uA, [Vin=20.0, jumper set for 24 volt mode]
319uA, [Vin=25.0, jumper set for 24 volt mode]

Alarm Output: Open collector configuration, goes active low when a trigger condition is true. Operates with DC voltage potentials only, with the positive bias applied to the green alarm signal with respect to common. Maximum rated current sink capacity is approximately 900mA.