INSTALLATION INSTRUCTIONS

MicroComm DXI

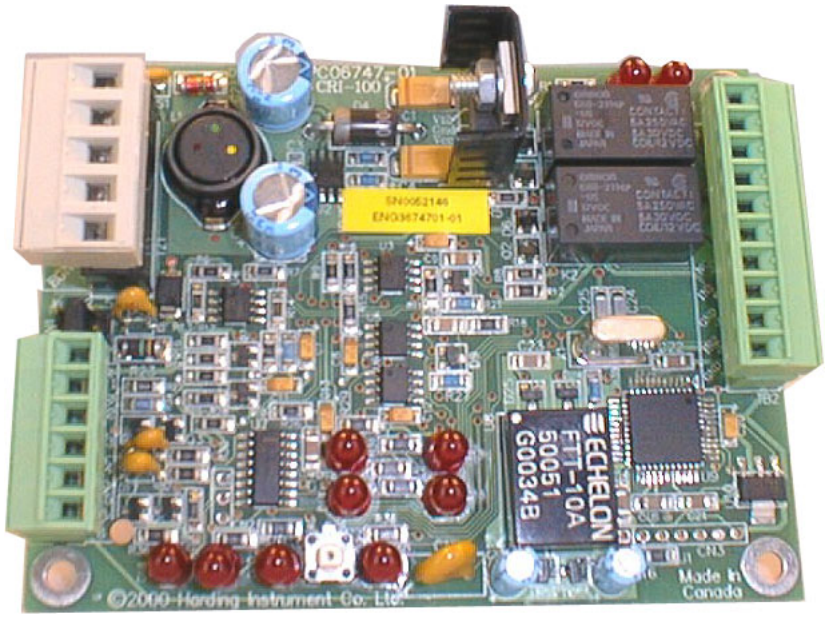
CRI-100 Card Reader Interface

1. Intent & Scope

This document describes the installation procedure for the CRI-100 Card Reader Interface.

2. Description

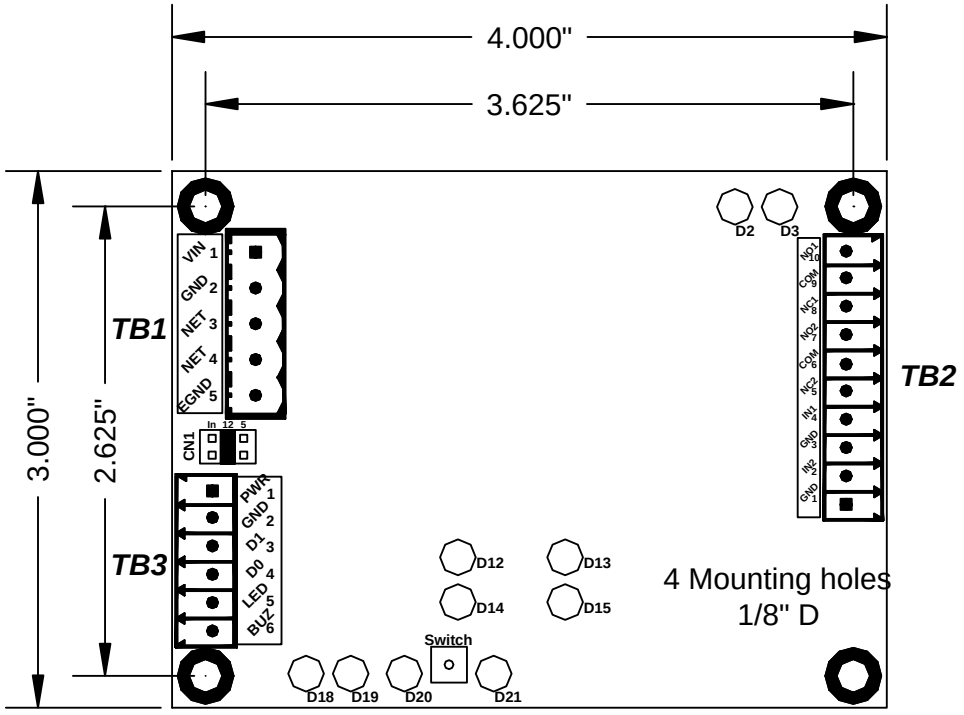
The CRI-100 Card Reader Interface allows a card reader with a standard Wiegand interface to be connected to a free topology LonWorks network. Card data received on the Wiegand interface is processed and made available to the LonWorks network. LonWorks devices can also send commands to the CRI that controls the state of LED and buzzer outputs that are connected to the card reader. An expanded I/O version also adds two form C relay outputs and two supervised switch inputs to the CRI. These I/O points can be monitored and controlled from the LonWorks network.



CRI-100 Card Reader Interface

3. Electrical Connections to the CRI-100

A simplified diagram of the CRI-100 is shown below. It has three terminal block connectors to interface the CRI to a power supply, LonWorks network, the card reader, optional external switches and optional form C relay outputs. Ten LEDs indicate the status of the CRI.



CRI-100 Interface Board showing Terminal Blocks TB1, TB2 and TB3

3.1 Electrical Connections

Electrical conections to the CRI-100 are made via three terminal blocks connectors (labeled TB1, TB2 and TB3) located on the printed circuit board. The connecting wires are screw fastened to the matching terminal blocks that plug into the terminal block connectors.

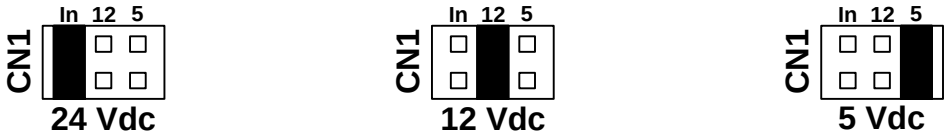
External power supply connections and LonWorks connections are made to TB1. The +24 Vdc power supply is connected to the terminals labeled VIN and GND. The supply voltage at the terminals inputs to the CRI is +24 Vdc +10%-40% (14.4 Vdc to 26.4 Vdc), and must be capable of suppling 250 mA of current.

The terminal labeled EGND should be connected to earth ground. This terminal provides a discharge path for any high voltage transients on the LonWorks network lines.

The two terminals labeled NET are used for LonWorks connections. Terminal 3 is for the NETA connection while terminal 4 is for the NETB connection.

The CRI-100 can supply either +24 Vdc, +12 Vdc or +5 Vdc to the card reader. The power selection is made by positioning a jumper on header CN1. If the jumper is in position In the power supplied to the card reader is the same as the input power to the CRI (nominally +24 Vdc). If the jumper is in position 12 the output power to the card reader is from a regulated +12 Vdc supply, and if the jumper is in position 5 the output power to the card

reader is from a regulated +5 Vdc supply. When shipped from the factory the jumper is positioned to supply +12 Vdc to the card reader. You should place the jumper in the correct position for your card reader before powering up the CRI-100, otherwise you could damage the card reader.



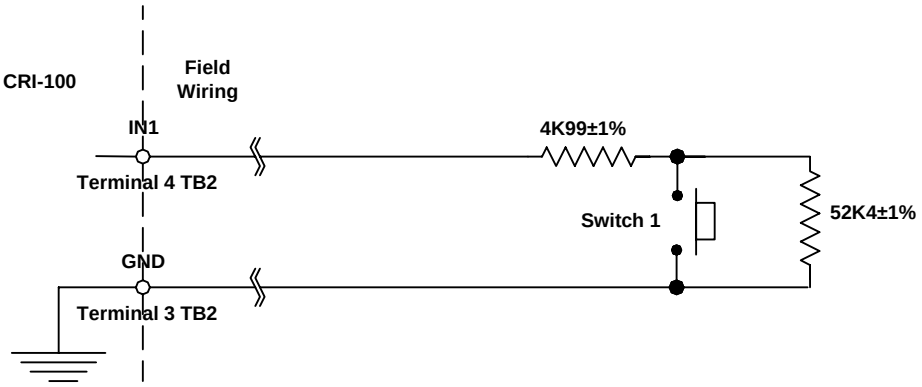
Jumper Position on CN1 for 12 Vdc or 5 Vdc Supply to Card Reader

The connections from the card reader to the CRI are made by means of terminal block TB3. The connection for power to the card reader is made to terminals 1 and 2 of TB3 (labeled PWR and GND). The data ouputs from the card reader are made to terminal 3 (D1) and terminal 4 (D0). LED and Buzzer ouputs from the CRI to the card reader are available on terminals 5 and 6 of TB3. The wire colors for a Wiengard standard interface are specified as follows:

Signal Name	Wire Color	TB2 terminal number
PWR	Red	1
GND	Black	2
D1	White	3
D0	Green	4
LED	Brown	5
Buzzer	Blue	6

Terminal Block TB2 is used for optional switch inputs to the CRI and to provide relay contact ouputs to operate external devices. Two form C relay outputs are available. Relay 1 ouputs are available on terminals 10, 9 and 8 of TB2, and Relay 2 outputs are available on terminals 7, 6, and 5 of TB2.

Switch inputs can be connected to IN1 and GND (terminals 4 and 3 of TB2) or IN2 and GND (terminals 2 and 1 of TB2). The switches can be either supervised or non-supervised switches. Supervised switches require terminating resistors that allows the CRI to detect open or shorted switch lines. For supervised switches the following resistor network is required (shown for Switch 1).



Terminating Resistors for Supervised Switches

Terminal block TB1 can accept 14 gauge wire, or two 18 gauge wires per terminal for daisy chain wiring of power and the LonWorks network. Terminal blocks TB2 and TB3 can accept one 18 gauge wire.

3.2 Status LEDs

The ten status LEDs shown on the diagram have the following functions:

	LED	Operation
*	D2	Lights when Relay 1 operates
*	D3	Lights when Relay 2 operates
*	D12	On if terminals for Switch 1 are open or shorted
*	D14	On if Switch 1 is pressed
*	D13	On if terminals for Switch 2 are open or shorted
*	D15	On if Switch 2 is pressed
	D18	Flashes if card is passed by reader
	D19	Flashes if there is activity on the LonWorks network
	D20	On if power is on
	D21	Used with Service pin for troubleshooting.

* 0ptional

The Service switch and LED (D21) interface to a standard LonWorks node and are connected directly to the onboard Neuron.

4. Mounting the CRI-100

The CRI-100 is a single 3″ X 4″ printed circuit board designed to fit in a standard 4″ x 4″ electrical box with a minimum depth of 1“. The unit should be mounted on standoffs or washers that will provide 1/8″ clearance from the back plate of the electrical box. The dimension and position of the four mounting holes are given in the previous diagram.