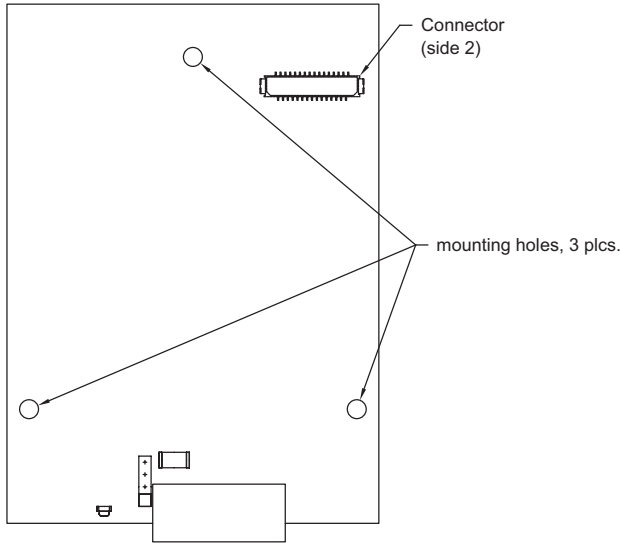


## MODEL G3CN - CANopen OPTION CARD FOR G3 OPERATOR INTERFACE TERMINALS



- CONFIGURED USING CRIMSON SOFTWARE (VERSION 2.0 OR LATER)
- DIGITALLY ISOLATED CANOPEN PORT CAPABLE OF COMMUNICATING WITH ANY CANopen DEVICE
- POWERED AND CONFIGURED FROM G3 OPERATOR INTERFACE TERMINAL
- BUILT-IN TERMINATION RESISTOR SELECTABLE THROUGH JUMPER SETTING
- INSTALLATION AND CONNECTION HARDWARE INCLUDED WITH CARD

### GENERAL DESCRIPTION

The G3 proprietary expansion slot provides a high speed, parallel architecture that extends the functionality and flexibility of the G3 series HMI. This approach allows the G3 series to evolve concurrently with the latest advances in communications and standards, without sacrificing performance. This high bandwidth channel has significantly greater throughput when compared to the traditional (external) serial gateway approach.

The G3CN option card is easily installed by removing the rear cover of your G3 operator interface, attaching the card using three screws and connecting a single cable. Adding this card gives the operator interface a CANopen communications port. It is built with digital isolation to protect the operator interface from the CANopen bus and vice versa. It provides the ability to communicate to any high speed CANopen device. The G3CN option board has a termination resistor built-in, and is selectable through a jumper setting. A connector housing is provided to function as a strain relief for the wires that terminate into the five position connector. The connector is pluggable for easy removal of the G3 operator interface from the CANopen bus, without disturbing communications with other devices on the bus.

### SAFETY SUMMARY

All safety related regulations, local codes and instructions that appear in the literature or on equipment must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Do not use the controller to directly command motors, valves, or other actuators not equipped with safeguards. To do so can be potentially harmful to persons or equipment in the event of a fault to the controller.



**CAUTION: Risk of Danger.**  
 Read complete instructions prior to installation and operation of the unit.

### CONTENTS OF PACKAGE

- G3CN Option Card with pluggable connector
- Cable already attached to G3CN option card
- Hardware pack consisting of three screws and a connector housing for the pluggable connector
- This hardware bulletin

### ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PART NUMBER
G3CN	CANopen option card for G3 operator interfaces with isolated high speed communications ports	G3CN0000
SFCRM2	Crimson 2.0 <sup>1</sup>	SFCRM200

<sup>1</sup> Use this part number to purchase Crimson on CD with a printed manual, USB cable, and RS-232 cable. Otherwise, download from [www.redlion.net/g3](http://www.redlion.net/g3).



THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D, HAZARDOUS LOCATIONS, OR NON-HAZARDOUS LOCATIONS ONLY



WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS.



WARNING - EXPLOSION HAZARD - SUBSTITUTION OF ANY COMPONENT MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2

# SPECIFICATIONS

## 1. POWER REQUIREMENTS:

Power is supplied to the option card from the main board of your G3 operator interface.

## 2. COMMUNICATIONS:

**CANopen Port:** The CANopen port has format and baud rates that are software programmable up to 1M baud and are digitally isolated. This port may be configured for various CANopen protocols. Check [www.redlion.net/g3](http://www.redlion.net/g3) for currently supported protocols.

**Isolation from G3CN Communication ports to G3 operator interface:** 1000 VDC for 1 minute.

## 3. ENVIRONMENTAL CONDITIONS:

**Operating Temperature Range:** 0 to 50°C

**Storage Temperature Range:** -20 to 80°C

**Operating and Storage Humidity:** 80% maximum relative humidity (non-condensing) from 0 to 50°C.

**Altitude:** Up to 2000 meters.

## 4. CERTIFICATIONS AND COMPLIANCES:

### ELECTROMAGNETIC COMPATIBILITY

Emissions and Immunity to EN 61326: Electrical Equipment for Measurement, Control and Laboratory use.

**Immunity to Industrial Locations:** Reference G3 unit for emissions and immunity specifications

## 5. CONSTRUCTION:

 Installation Category I, Pollution Degree 2.

## 6. INSTALLATION REQUIREMENTS:

 Card must be installed inside the rear cover of a G3 operator interface with the hardware provided. See “Installing the G3CN Option Card” for more details.

# INSTALLING THE G3CN OPTION CARD

## INSTALLATION INSTRUCTIONS



**Caution:** The option and main circuit boards contain static sensitive components. Before handling the cards, discharge static charges from your body by touching a grounded bare metal object. Ideally, handle the cards at a static controlled clean workstation. Also, handle the cards by the edges only. Dirt, oil, or other contaminants that may contact the cards can adversely affect circuit operation.



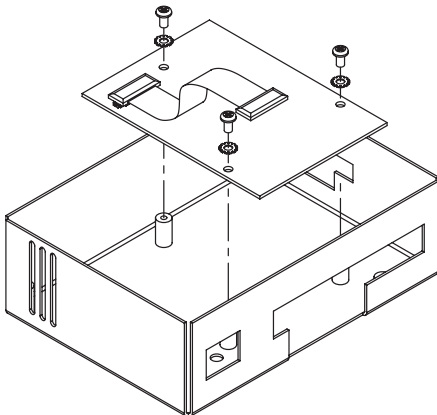
**Warning:** Depending upon the G3 operator interface, high voltage may be present inside the operator interface. Be sure to remove all power before removing the rear cover of the operator interface.

Each G3CN option card comes with a cable for communications and three screws for attaching the option card to the inside of the G3 operator interface's rear cover.

To install the option card, remove all power and I/O communications cables from the unit. The G3 operator interface literature contains instructions for removing the rear cover. Refer to the “Battery & Time Keeping” section.

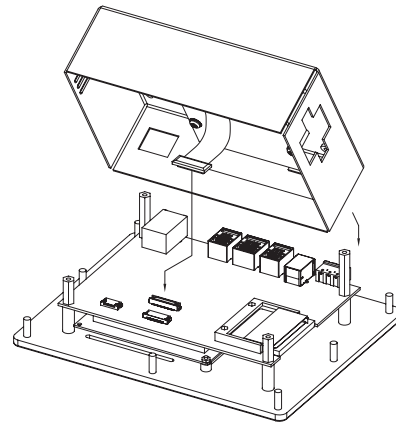
Using the three screws provided, connect the option card to the rear cover as shown in Figure 1.

Figure 1



Connect the cable from the option card to CN11 on the main board of the G3 operator interface as shown in Figure 2. Be sure both ends of the cable are firmly seated into their appropriate connector housings.

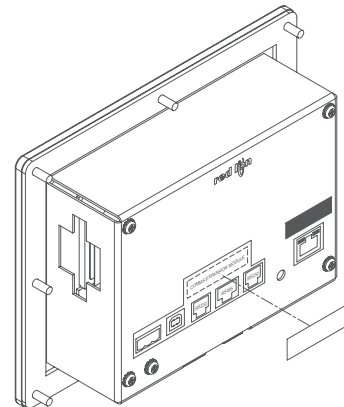
Figure 2



Carefully replace the rear cover by reversing the instructions for removing the rear cover.

## THE OPTION CARD LABEL

Place the option card label on your rear cover in the space indicated by the dashed lines and labeled “COMMS EXPANSION MODULE.”



## POWER SUPPLY REQUIREMENTS

### NEW AND EXISTING INSTALLATIONS

The G3CN option card draws all of its power from the main board of your G3 operator interface. The specifications of your G3 operator interface account for the power needs of an option card.

# COMMUNICATING WITH THE G3CN OPTION CARD

## CONFIGURING A G3CN OPTION CARD

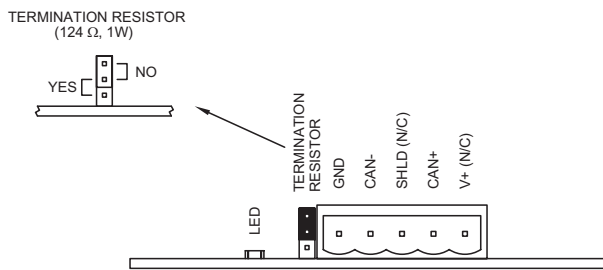
The G3CN is configured using Crimson software. Crimson is available as a free download from [www.redlion.net/g3](http://www.redlion.net/g3), or it can be ordered on CD. Updates to Crimson for new features and drivers are posted on the website as they become available. By configuring the G3CN using the latest version of Crimson, you are assured that your unit has the most up-to-date feature set. Crimson software can configure the G3CN through the RS232 PGM port, USB port, Ethernet port or CompactFlash socket on your G3 operator interface. Additional information can be found in your G3 hardware bulletin and the Crimson user manual.

## CANopen PORT PROTOCOLS

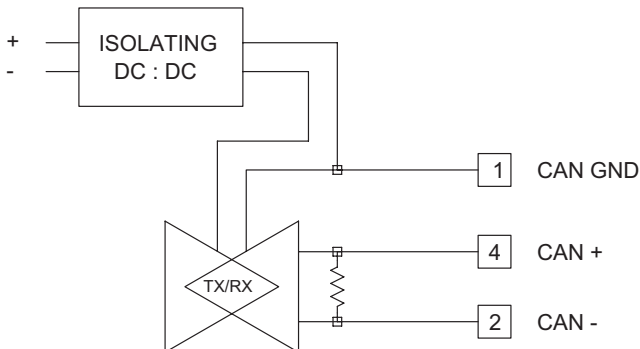
The G3CN option card has one CANopen port. This port may be configured for various CANopen protocols. Check [www.redlion.net/g3](http://www.redlion.net/g3) for currently supported protocols.

### G3CN PORT PIN OUTS

Figure 3



## TERMINATION RESISTOR



An onboard termination resistor is selectable through a jumper setting. The termination resistor is rated for 124Ω at 1W. If a different termination resistance is desired, choose the jumper setting for no termination resistor. At this point you will be required to connect your own termination resistor between positions 2 and 4 of the five position connector.

## CAN GND

Position 1 of the pluggable connector provides a CAN ground connection. This terminal is isolated from the HMI unit.

## CAN-

Position 2 of the pluggable connector provides the CAN- bus line (active low). This terminal is isolated from the HMI unit.

## SHLD (OPTIONAL CAN SHIELD)

Position 3 of the pluggable connector is provided for optional shield connections. This position is available only to tie shield wires together or to earth ground. There is no internal connection to earth ground. The SHLD position is not connected to any circuitry internal to the G3CN option card or G3 HMI unit.

## CAN+

Position 4 of the pluggable connector provides the CAN+ bus line (active high). This terminal is isolated from the HMI unit.

## V+ (OPTIONAL 24 VDC)

Position 5 of the pluggable connector is provided for optional 24 VDC connections. This position is available only to tie 24 VDC wires together. The G3CN card neither provides 24 VDC power nor uses 24 VDC power through this connection. The V+ position is not connected to any circuitry internal to the G3CN option card or G3 HMI unit.

# SOFTWARE/UNIT OPERATION

## LED

The LED will illuminate green when the G3CN option card establishes communication with other CANopen devices (RUN). The LED will illuminate red if no communications have been established with other CANopen devices (ERROR).

## CRIMSON SOFTWARE

Crimson 2.0 software is available as a free download from [www.redlion.net](http://www.redlion.net) or it can be purchased on a CD, see "Ordering Information" for part number. The latest version of the software is always available from the web site, and updating your copy is free.

## TROUBLESHOOTING YOUR G3CN OPTION CARD

If for any reason you have trouble operating, connecting, or simply have questions concerning your new G3CN option card, contact Red Lion's technical support. For contact information, refer to the back page of this bulletin for phone and fax numbers.

EMAIL: [techsupport@redlion.net](mailto:techsupport@redlion.net)

Web Site: <http://www.redlion.net>

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