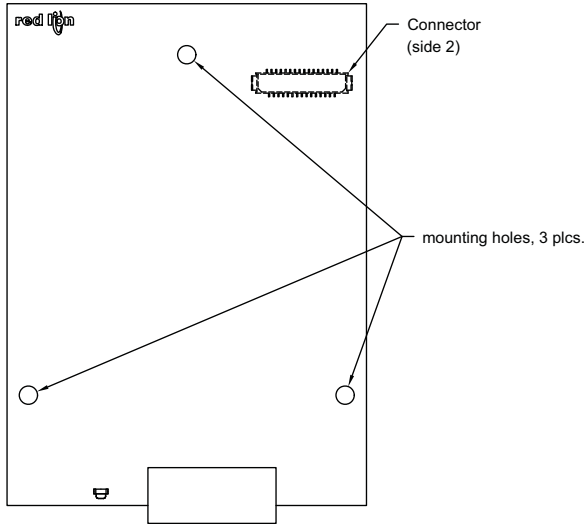# MODEL G3DN - DeviceNet OPTION CARD FOR G3 OPERATOR INTERFACE TERMINALS

- CONFIGURED USING CRIMSON SOFTWARE
- DIGITALLY ISOLATED DEVICENET PORT CAPABLE OF COMMUNICATING WITH ANY DEVICENET MASTER
- POWERED AND CONFIGURED FROM G3 OPERATOR INTERFACE TERMINAL
- 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 G3DN 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 DeviceNet slave communications port. It is built with digital isolation to protect the operator interface from the DeviceNet bus and vice versa. It provides the ability to communicate to any DeviceNet master. 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 DeviceNet 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

- G3DN Option Card with pluggable connector
- Cable already attached to G3DN 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
G3DN	DeviceNet option card for G3 operator interfaces with isolated high speed communications ports	G3DN0000
SFCRM2	Crimson 2.0 [1]	SFCRM200

[1] 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.

SPECIFICATIONS

1. **POWER REQUIREMENTS**:
   Power is supplied to the option card from the main board of your G3 operator interface.
2. **COMMUNICATIONS**:
   DeviceNet Port: The DeviceNet port has format and baud rates that are software programmable up to 500K baud and are digitally isolated. This port may be configured for various DeviceNet protocols. Check www.redlion.net/g3 for currently supported protocols.
   Isolation from G3DN 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 immunity specifications
   Emissions:
   Emissions   EN 55011   Class A

   Note:
       G303 and G306 units' emission level changes from class B to class A levels when G3DN option card is installed.
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 G3DN Option Card" for more details.

INSTALLING THE G3DN 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.
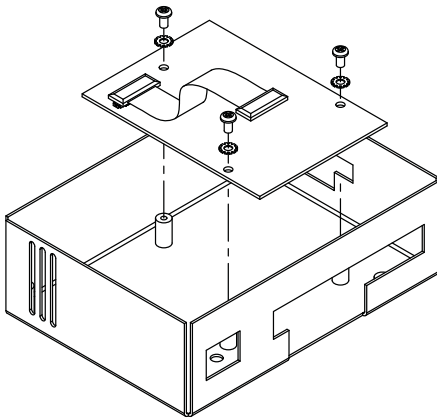
⚠ **Warning**: Depending upon the G3 operator interface, high voltage may be present inside the operator interface. Be sure to remove all power before removing the rear cover of the operator interface. Emissions EN 55011 Class A.

Each G3DN 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.
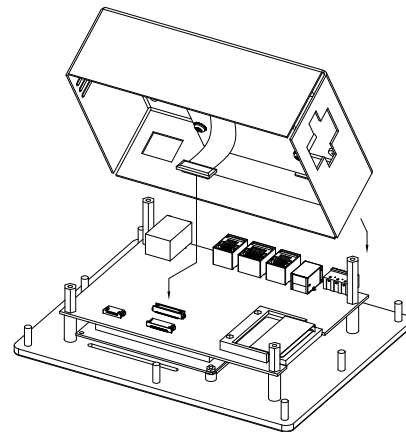
Using the three screws provided, connect the option card to the rear cover as shown in Figure 1.

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.
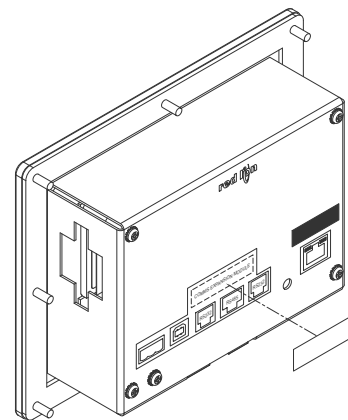
Figure 2

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 G3DN 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 G3DN OPTION CARD
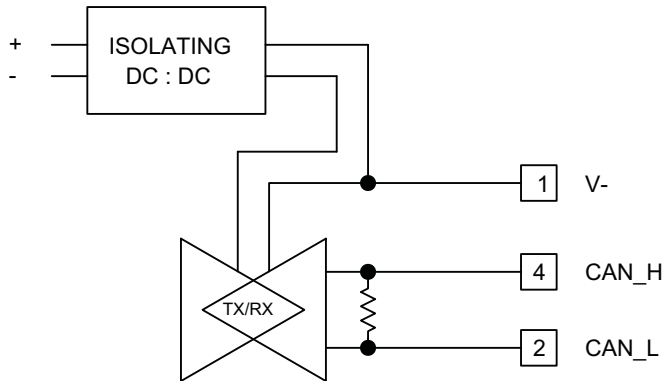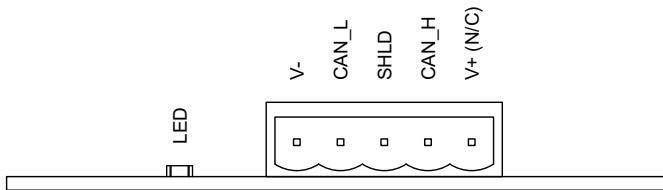
CONFIGURING A G3DN OPTION CARD

The G3DN is configured using Crimson software. Crimson is available as a free download from 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 G3DN 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 G3DN 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.

DeviceNet PORT PROTOCOLS

The G3DN option card has one DeviceNet port. This port may be configured for various DeviceNet protocols. Check www.redlion.net/g3 for currently supported protocols.

G3DN PORT PIN OUTS

Figure 3

V-

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

CAN_L

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

SHLD (CAN SHIELD)

Position 3 of the pluggable connector is provided for shield connections. This position is available to tie shield wires to earth ground. The SHLD position is internally tied to the G3 enclosure.

CAN_H

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

V+

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 G3DN 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 G3DN option card or G3 HMI unit.

SOFTWARE/UNIT OPERATION

LED

LED STATE	G3DN CARD INDICATION
OFF	Initializing
FLASHING GREEN	The device is online and is waiting communications from other devices.
GREEN	The device is online and has established communications with another device.
FLASHING RED	One or more established communications have timed out.
RED	The device has detected an error that has rendered it incapable of communicating on the network (duplicate MAC ID or bus inactivity).

CRIMSON SOFTWARE

Crimson software is available as a free download from 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 G3DN OPTION CARD

If for any reason you have trouble operating, connecting, or simply have questions concerning your new G3DN option card, contact Red Lion's technical support. For contact information, refer to the front page of this bulletin for phone and fax numbers.

EMAIL: techsupport@redlion.net
Web Site: http://www.redlion.net