

## MODEL XCCN - CANopen OPTION CARD FOR DATA STATION PLUS AND MODULAR CONTROLLER



- CONFIGURED USING CRIMSON SOFTWARE (VERSION 2.0 OR LATER)
- DIGITALLY ISOLATED CANopen PORT CAPABLE OF COMMUNICATING WITH ANY CANopen DEVICE
- EASY INSTALLATION



### GENERAL DESCRIPTION

Both the Modular Controller Master (enhanced models) and Data Station Plus contain a proprietary expansion port which provides a high speed, parallel architecture that extends the functionality and flexibility of the platform. This approach allows these products 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 XCCN option card adds a CANopen communication port to the series. This isolated card protects user equipment from potentially harmful ground loops while providing the ability to communicate to any high speed CANopen device. The XCCN option card has a termination resistor built-in, which is selectable via a jumper setting. Additionally, the XCCN connector is pluggable for easy removal of the Modular Controller Master or Data Station Plus from the CANopen bus without disturbing communications with other devices on the bus.

The XCCN communication card is easily installed by removing the blank expansion port cover of your Modular Controller or Data Station Plus, and plugging the XCCN card into the expansion port. Configuration is simple using Red Lion's free Crimson 2.0 software.

### 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.



### ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PART NUMBER
XCCN	CANopen option card for Modular Controller or Data Station Plus	XCCN0000
SFCRM2	Crimson 2.0 with G3/Data Station Manual <sup>1</sup>	SFCRM200
SFCRM2	Crimson 2.0 with Modular Controller Manual <sup>1</sup>	SFCRM2MC

<sup>1</sup> Use these part numbers to purchase Crimson 2.0 on CD with a printed manual, USB cable and RS-232 cable. Otherwise, download free of charge from www.redlion.net.

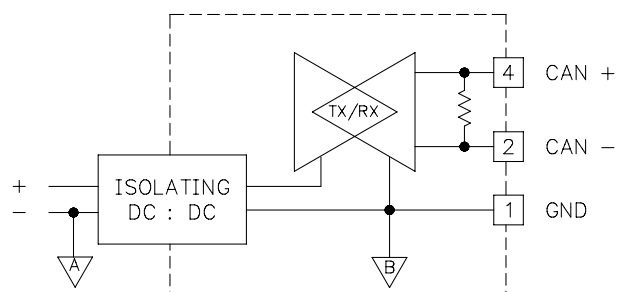
### CONTENTS OF PACKAGE

- XCCN option card
- This hardware bulletin

### SPECIFICATIONS

- POWER REQUIREMENTS:** Power is supplied to the option card from the main board of the Modular Controller Master or Data Station Plus.
- 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 for currently supported protocols.
  - Isolation from XCCN Communication ports to the Modular Controller Master or Data Station Plus:** 1000 VDC for 1 minute.
- CERTIFICATIONS AND COMPLIANCES:** Refer to main unit manual or "Agency Approvals" section of Red Lion's website for agency certifications.
  - ELECTROMAGNETIC COMPATIBILITY**
  - Emissions and Immunity to EN 61326: Electrical Equipment for Measurement, Control and Laboratory use.
  - Reference Modular Controller Master or Data Station Plus unit for EMC specifications
- 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.
- CONSTRUCTION:** Installation Category I, Pollution Degree 2.
- INSTALLATION REQUIREMENTS:** See "Installing the XCCN Option card" for more details.

### BLOCK DIAGRAM



## INSTALLING THE XCCN OPTION CARD

1. Remove power from the unit
2. Insert a flat-bladed screwdriver into the slot at the top of the expansion port cover. Gently apply pressure on the screwdriver in an upward direction until the expansion port cover disengages from the unit as shown in Figure 1.
3. Verify that the option card knobs are in the “unlocked” position as shown in Figure 2.
4. Carefully insert the option card into the expansion port opening while aligning the card-edge connector on the option card with the main board's header, as shown in Figure 3. Once aligned, gently press on the front of the card until it is flush with the front of the case.
5. Turn the option card knobs to the locked position as shown in Figure 4.



**Caution:** The expansion 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: Risk of Danger:** Be sure to remove all power before removing the expansion port cover

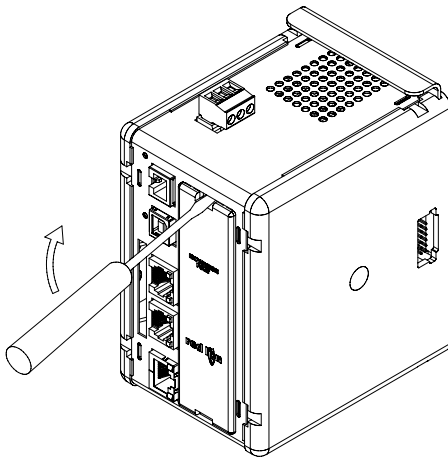


Figure 1

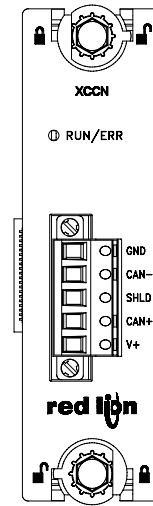


Figure 2

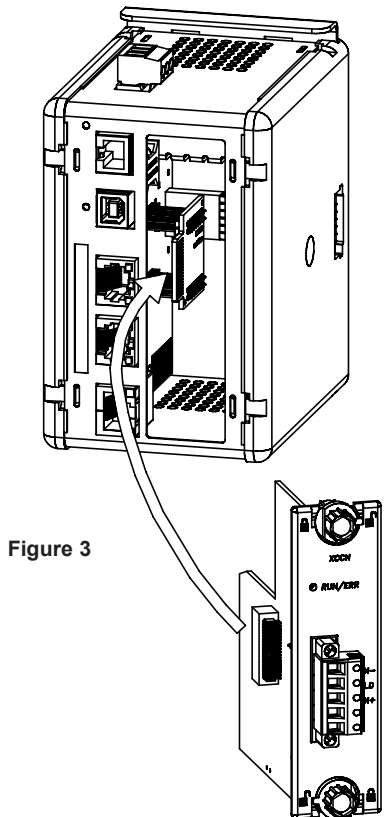


Figure 3

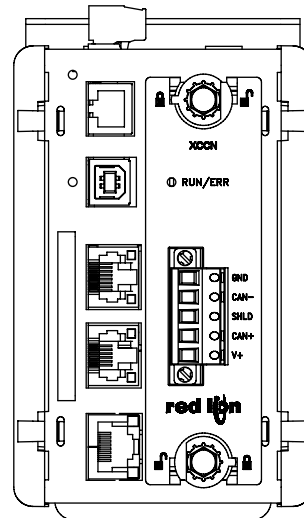


Figure 4

## POWER SUPPLY REQUIREMENTS NEW AND EXISTING INSTALLATIONS

The XCCN option card draws all of its power from the main board of the Modular Controller Master or Data Station Plus. The specifications of the Modular Controller Master or Data Station Plus account for the power needs of an option card.

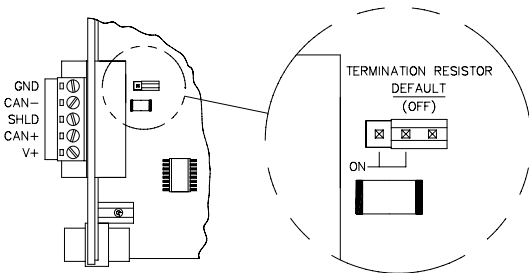
## COMMUNICATING WITH THE XCCN OPTION CARD CONFIGURING A XCCN OPTION CARD

The XCCN is configured using Crimson software. Crimson is available as a free download from [www.redlion.net](http://www.redlion.net), 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 XCCN 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 XCCN through the RS232 PGM port, USB port, Ethernet port, or CompactFlash socket on your Modular Controller Master or Data Station Plus. Additional information can be found in your Modular Controller Master or Data Station Plus hardware bulletin and the Crimson user manual.

## CANopen PORT PROTOCOLS

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

## XCCN PORT PIN OUTS



## TERMINATION RESISTOR

An onboard termination resistor is selectable via 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 and connect your own termination resistor between positions 2 and 4 of the five position connector.

## GND

Position 1 of the pluggable connector provides a CAN ground connection. This terminal is isolated from the Modular Controller Master and Data Station Plus.

## CAN-

Position 2 of the pluggable connector provides the CAN- bus line (active low). This terminal is isolated from the Modular Controller Master and Data Station Plus.

## 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 XCCN option card or Modular Controller Master and Data Station Plus.

## CAN+

Position 4 of the pluggable connector provides the CAN+ bus line (active high). This terminal is isolated from the Modular Controller Master and Data Station Plus.

## 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 XCCN 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 XCCN option card or Modular Controller Master and Data Station Plus.

## LED

The LED will illuminate green when the XCCN 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 XCCN OPTION CARD

If for any reason you have trouble operating, connecting, or simply have questions concerning your new XCCN 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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Red Lion Controls  
20 Willow Springs Circle  
York PA 17406  
Tel +1 (717) 767-6511  
Fax +1 (717) 764-0839

Red Lion Controls BV  
Printerweg 10  
NL - 3821 AD Amersfoort  
Tel +31 (0) 334 723 225  
Fax +31 (0) 334 893 793

Red Lion Controls AP  
31, Kaki Bukit Road 3,  
#06-04/05 TechLink  
Singapore 417818  
Tel +65 6744-6613  
Fax +65 6743-3360