

OVERVIEW

These modules provide simple and secure remote monitoring for sites located in harsh environments. Offering the low cost per I/O point and rugged environmental ratings, they are ideal for both control rooms and extreme locations across industries that include oil & gas, power & energy, transportation, mining, and water/wastewater.



This guide covers initial configuration for the E3 I/O™ Modules.

FEATURES

- Flexible mix of I/O Channels support all instrumentation needs
- Dual independent Ethernet™ ports enable flexible networking
- Extensive health diagnostics and reporting reduce downtime
- Rugged design supports extreme temperatures and Class I, Div 2
- Marine and offshore tested and/or verified to meet standards such as ABS, DNV 2.4 and Lloyds

DATA INTERFACES

Ethernet: Dual 10/100 Mbps Auto-sensing Female RJ45 port

USB: USB 2.0 Type B Female

GETTING STARTED
1. Mount the Hardware

These I/O modules snap onto standard DIN rail in the typical fashion. Alternatively they can be mounted directly to any flat surface.

2. Connect Power

Connect 10-30 VDC power to the power input screws. A Class 2 power source is recommended because it has built-in current limiting to protect against short circuits. However, it is not required.

3. Connect I/O

Make your field wiring connections between the I/O module's screw terminals and your peripheral equipment. Refer to the module's I/O wiring guide and the remote equipment's user manuals for I/O connection details.

4. Install Communication Wiring

Make the necessary Ethernet, USB, and/or RS485 communication connections between the I/O modules and other devices (such as a master I/O polling device).

5. Set Configuration Jumpers

Remove the configuration door and move the Network Mode and DI COM jumpers to the desired settings. Note that the Network Mode jumper is found on the back of the configuration door and the DI COM jumper resides inside the module.

6. Turn ON the Power

Turn on the 10-30 VDC power. Observe the status (OK) LED. Typically a solid ON indicates proper operation. A blinking LED may indicate that the unit needs to be configured. Please view the E3 I/O module manual for detailed information on the LED status lights.

7. Configure Using the Crimson® Software via USB

Application-specific configuration choices may be made by using the Crimson configuration software running on a Windows® PC. First, download the latest version of Crimson 3.0 from www.redlion.net/crimson-30, and then install Crimson 3.0. The USB driver for the E3 I/O module will be installed with Crimson 3.0. Connect your PC to the USB-B port on the I/O Module. In Crimson, go to Link-->Options. Select the "USB" communication selection. Only one E3 should be connected to the PC at one time.

8. Configure Using the Web Server

Alternatively, the web server embedded with the I/O module may be used to make configuration changes in the I/O module. To access the web server first, open a web browser (Internet Explorer®, Chrome™ or Firefox® supported). Enter the I/O module's IP address into the web browser's address bar (default IP address from the factory is 192.168.1.21).

9. Test the Hardware

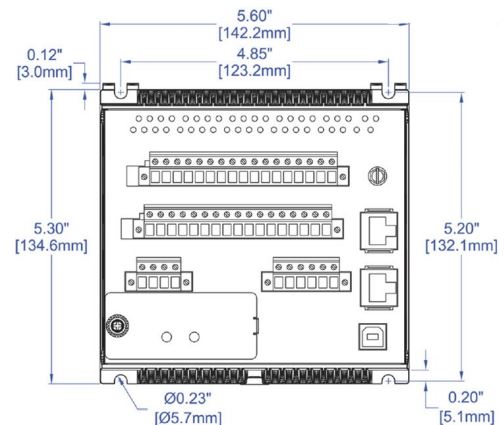
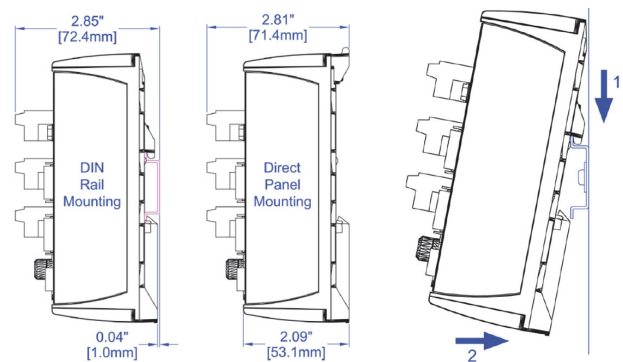
Use the Test I/O feature in the web server or Crimson software to verify proper operation of all I/O modules in your system. Refer to the web server or Crimson on-line help system for further instructions.

10. Configure your I/O Master

Refer to the user manual for your I/O master software or hardware on how to configure and run Modbus or Sixnet protocol polling of these I/O modules.

11. For Technical Support

Please contact Red Lion Support at 1-877-432-9908 (inside US) or +1(717)767-6511 (outside US).

DIMENSIONS

MOUNTING THE MODULE

SETUP IS COMPLETE

The E3 module should be ready for basic I/O gathering requirements. For more advanced configuration, consult the support section on our website: www.redlion.net

ADDITIONAL INFORMATION

Visit our support page at www.redlion.net to access the module's documentation, as well as configuration help, troubleshooting and firmware & software updates. Or contact Technical Support at 1-877-432-9908 or support@redlion.net.

SPECIFICATIONS

Environmental

Power Supply voltage: 10-30 VDC

Input current requirement: 150-355mA @ 24 VDC typical with no loads
(See Hardware Manual for more details)

Operating Temperature: -40 to +75 °C (-40 to +85 °C Storage)

Humidity: 10 to 95% RH (non-condensing)

STANDARDS COMPLIANCE

Electrical Safety: UL 508, CSA C22.2/142, IEC61010-1, CE

EMI Emissions FCC part 15, ICES-003, Class A; EN-55022; EN6100-6-4; CE

EMC Immunity IEC61000-6-2; (EN61000-4-2,3,4,5,6,8); CE

Vibration: IEC60068-2-27

Shock: IEC60068-2-6

Hazardous locations: ANSI/ISA 12.12.01-2013 Edition (Class I, Div. 2, Groups A, B, C, and D), CSA C22.2/213

Marine/Offshore: Tested and/or verified to meet standards such as ABS, DNV 2.4 and Lloyds

Construction: Aluminum base and steel cover with zinc coating. Dimensions: 5.6" (144mm) x 5.3" (135mm) x 2.9" (74mm)

ETHERNET PORTS

Dual 10/100BaseTX (auto-detecting)

RJ45 (auto-crossover)

1500 Volts RMS 1 minute (60 Hz)

Less than 1 ms per message

Solid indicates link but no activity; Blinking indicates link and activity

Modes: Real-time Ring™ with recovery time of 5 ms per hop; Dual network, each with unique MAC and IP address; Pass-through for daisy-chaining the modules

RS485 SERIAL PORT

2-wire half-duplex

Up to 32 (full-load)

Up to 0.5 miles (baud rate dependent)

Protocols: Master and slave; Sixnet UDR and Modbus RTU / ASCII

USB PORT

Type B device

Refer to the hardware user manual on how to acquire and install the USB driver.

Inputs and Outputs

Varies by module. See hardware user manual for details.

WARRANTY

Warranty statement can be found on our website www.redlion.net or in the Hardware Manual.

INSTALLATION AND HAZARDOUS AREA WARNINGS

These products should not be used to replace proper safety interlocking. No software-based device (or any other solid-state device) should ever be designed to be responsible for the maintenance of consequential equipment or personnel safety. In particular, Red Lion Controls disclaims any responsibility for damages, either direct or consequential, that result from the use of this equipment in any application.

All power, input and output (I/O) wiring must be in accordance with Class I, Division 2 wiring methods and in accordance with the authority having jurisdiction.

WARNING – EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS 1, DIVISION 2.

WARNING – EXPLOSION HAZARD – WHEN IN HAZARDOUS LOCATIONS, DISCONNECT POWER BEFORE REPLACING OR WIRING MODULES.

WARNING – EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

These products are operator interface units to be used within control panels. These devices are intended for use in Class I, Division 2, Hazardous Locations, industrial control applications. The enclosure should all be suitable for the location.

AVERTISSEMENTS POUR INSTALLATION ET ENDROITS DANGEREUX

Ces produits ne doivent pas être utilisés pour remplacer le verrouillage de sécurité approprié. Aucun dispositif basé sur un logiciel (ou tout autre dispositif à l'état solide) devraient jamais être conçus pour être responsable de l'entretien de l'équipement consécutifs ou la sécurité du personnel. En particulier, Red Lion décline toute responsabilité pour les dommages, directs ou indirects, résultant de l'utilisation de cet équipement dans n'importe quelle application.

Tout courant, câblage entrée et sortie (I / O) doit être conforme aux méthodes de câblage à la Classe I, Division 2 et conformément à l'autorité compétente.

AVERTISSEMENT – RISQUE D'EXPLOSION – LA SUBSTITUTION DE TOUT COMPOSANT PEUT NUIRE À LA CONFORMITÉ DE CLASSE I, DIVISION 2

AVERTISSEMENT – RISQUE D'EXPLOSION – LORSQUE DANS DES ENDROITS DANGEREUX, DÉBRANCHEZ LE CORDON D'ALIMENTATION AVANT DE REMPLACER OU DE BRANCHER LES MODULES.

AVERTISSEMENT – RISQUE D'EXPLOSION – NE DÉBRANCHEZ PAS L'ÉQUIPEMENT À MOINS QUE L'ALIMENTATION AIT ÉTÉ COUPÉE OU QUE L'ENVIRONNEMENT EST CONNU POUR ÊTRE NON DANGEREUX.

Ces produits sont des unités d'interface opérateur qui doivent être utilisés à l'intérieur des panneaux de commande. Ces appareils sont destinés à une utilisation en Classe I, Division 2, zones dangereuses, applications de contrôle industriel. L'enclos doit être adapté à l'environnement.