

HMI Operator Interfaces

GRAPHITE®, CR3000 & CR1000 HMIS

RED LION®

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Visualize Data Onsite or Virtually.

OPTIMIZING THE PERFORMANCE

of industrial assets can only occur when both those in the field and in management can see the right data at the right time and act on it. This is a truth that remains consistent even as the details of various industrial installations and applications change. From factory floors to hazardous remote locations, whether simple systems or complex multi-vendor environments, the ability to acquire, manage, and interact with your data on site or virtually is critical to operational success.

This is why Red Lion Controls offers a comprehensive array of HMI operator panels to address the varying requirements found within the industrial automation space. With a full spectrum of indoor and outdoor models ranging in size from 4” through 15” touchscreens, our HMIs give organizations the ability to select exactly the functionality they need to acquire, manage, and interact with their data on site or virtually.

BY COMBINING POWERFUL FEATURES

such as web serving and data logging with built-in protocol conversion, our award-winning HMIs work with over 300 leading industrial protocols to connect disparate systems and devices across industries that include manufacturing, packaging, oil and gas, water/ wastewater and more.

Whether installing new best-in-class equipment from multiple vendors or extending the lifespan of existing equipment, Red Lion’s protocol conversion capabilities provide the path toward seamless equipment integration. Supporting up to 20 simultaneous protocol conversions, our database of over 300 industrial drivers offers the most powerful cross-communication platform available today.

SLEEK. RUGGED. FLEXIBLE.
RED LION IS THE BEST CHOICE FOR HMI PANELS.

From factories to extreme remote locations, Red Lion’s HMI solutions enable customers to acquire, manage, and interact with their data on site or virtually. across a diverse range of industries that include manufacturing, oil and gas and water/ wastewater.



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More Than Machine Access

With features ranging from protocol conversion to sms message alerting, Red Lion HMIs are powerful tools that provide real-time information access—anywhere, anytime.

UNIFY DISPARATE EQUIPMENT

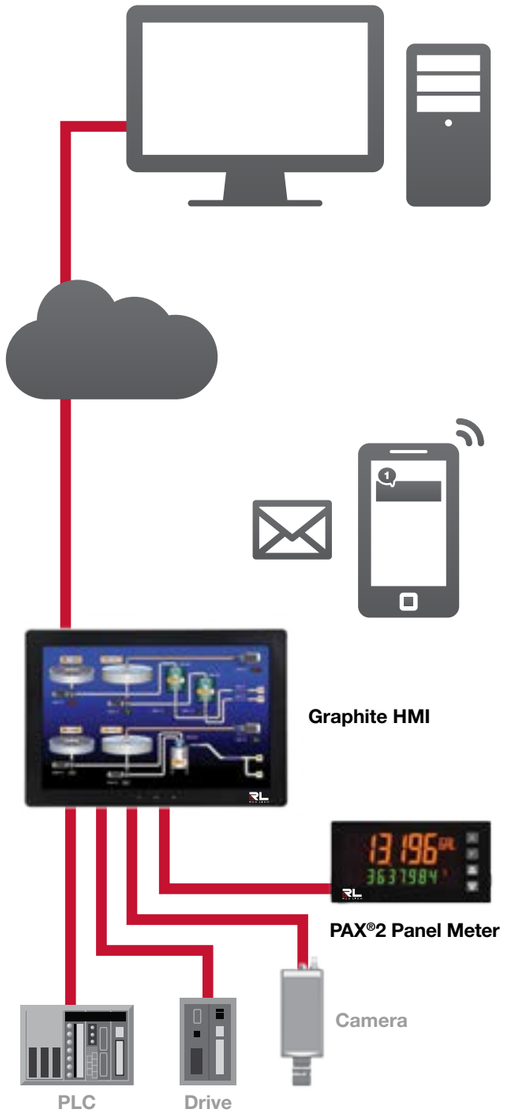
By easily integrating into single or multi-vendor environments, our HMIs provide the ability to network-enable and web-serve different devices through a variety of built-in connection methods that include serial, USB and 10/100Base-T(X) Ethernet ports. These features allow you to choose best-in-class equipment from virtually any vendor to create machines, systems and processes and control them all from a single point. From PLCs to drives, cameras, PID controllers and more, Red Lion HMIs unify disparate equipment to help ensure everything communicates seamlessly.

- Communicate with over 300 major industrial protocol
- Support up to 20 simultaneous protocol conversions
- Convert between serial, USB and Ethernet devices
- Manage multi-vendor environments with ease

MONITOR & CONTROL REMOTELY

Web-enabled remote monitoring allows organizations to monitor and control operations in real time, regardless of where process operations are occurring. With a built-in web server, our HMIs provide you with real-time access to remote locations or factory floor data, even when that data is derived from legacy serial-connected equipment. Virtual HMI capabilities give operators full control over a remote HMI or simply provide view-only access for process monitoring.

- Synchronize logged data between HMIs and remote FTP sites automatically
- Download, upload and remotely access data and configuration files from SD card or use a USB drive to load database and configuration updates
- Use pass-through programming for connected devices that don't typically allow remote programming
- Provide remote virtual HMI display and/or full control from any web browser



STAY INFORMED IN REAL TIME

A rapid response to issues as they occur can be the difference between a major crisis and a small hiccup. Red Lion HMIs feature powerful messaging capabilities that automatically send email or SMS text messages to notify operators or management should a process issue occur or if a value moves out of a specified range. Given the stakes, being proactively notified of issues as they happen can help you stay on top of operations and give you the competitive advantage needed today.

- Send email or SMS text messages based on alarms and system values
- Alert operators or management in real time on critical processes



IMPROVE PERFORMANCE

Communicating between devices is an important step in the drive toward efficiency, but it is only the beginning of overall process improvement efforts. To be able to truly improve performance requires review and analysis of cumulative data and results. The powerful data-logging capabilities found in Red Lion HMIs allow you to compile data from all connected devices in a single CSV file, even in the most complex multi-vendor, multi-protocol, multi-device environments. With the ability to store, view and analyze data locally or transfer it via email, FTP or posting to custom web pages, our HMIs provide options that make data logging easy and intuitive.

- Acquire data from connected devices into a single file
- Create batch logs or record data from each batch run separately
- Store security logs to capture user IDs when performing tasks as well as note alarm event data
- Create password-protected data screens to segment data by user
- Automatically push stored data to SQL server for reporting and analysis

SAVE TIME

Changing equipment parameters and configurations is unavoidable, but the time and resources required to program equipment and protocol converters equates to process and equipment downtime and reduced productivity. This makes minimizing the duration of these interruptions critically important. This is why Red Lion HMIs are programmed using our flagship Crimson® software, an intuitive, easy-to-use Windows-based program that combines drag-and-drop simplicity with unprecedented configuration power. The best part is that Crimson software is included with every HMI and comes with free updates and ongoing support.

- Configure HMIs with drag-and-drop interface and programming tools
- Use built-in gateway and protocol converter to quickly Ethernet-enable connected devices

A Red Lion HMI for Every Application & Environment

While connected equipment may vary from application to application, our industry-leading protocol conversion capabilities let you integrate virtually any device with ease. With a wide range of features in a variety of sizes, Red Lion lets you choose the best HMI to address your specific needs.

RUGGED GRAPHITE HMIS

- Convert up to 20 protocols simultaneously from over 300 supported drivers
- Offer unparalleled expansion capabilities via plug-in modules
- Feature wide -20° to 60°C operating temperature range
- Crimson Control module allows for enhanced IEC 61131 logic control programming
- Include sunlight readable outdoor-rated models
- Provide built-in data logging (SD card), web server and FTP for remote access
- Send email and/or SMS notifications on alarm conditions
- UL, cUL, UL hazardous, ATEX, IECEx, ABS approvals, CCC (G10 & G15) and PESO Approved



OUTDOOR APPLICATIONS?

No problem, we have Graphite® HMI models for you. Our rugged 7", 10" & 12" touchscreens are available with sunlight-readable displays and UV protective overlays to support outdoor environments. Add a wide operating temperature range coupled with high shock/vibration tolerances and Graphite HMIs offer the perfect outdoor solution.





POWERFUL CR HMIS

- Convert up to 15 protocols simultaneously from over 300 supported drivers
- Provide built-in data logging (CF card), web server and FTP for remote access
- Send email and/or SMS notifications on alarm conditions
- Offer multiple connectivity ports including serial, Ethernet and USB
- UL, cUL and UL hazardous approvals

Features	GRAPHITE HMIs	CR1000/CR3000 HMIs
Serial Ports	4*	4*
Ethernet	2*	2*
USB Host	2	2*
Crimson Software	Yes	Yes
C-Type User Programming	Yes	Yes
Protocol Converter	Yes	Yes
Simultaneous Conversions	20	15*
Web Server, FTP, Data Logging	Yes	Yes*
Expansion Card Slots	8*	1*
Temperature Range	-20˚ to 60˚C	-10˚ to 50˚C

*Model-dependant

Rugged Graphite HMIs

1 Power
2 USB Device
3 10/100 Ethernet
4 USB Host
5 RS-232
6 RS-422/485













	G15	G12	G10		G09	G07
Display Type	15” XGA, 16M Color	12” WXGA, 16M Color (Widescreen)	10” G10R SVGA, 16M Color (High Res)	10” G10C & G10S VGA, 16M Color	9” WVGA, 16M Color (Widescreen)	7” WVGA, 16M Color (Widescreen)
Resolution	1024 x 768	1280 x 800	800 x 600	640 x 480	800 x 480	800 x 480
Dimensions	14.03” x 11.10” x 2.14” (356.3 x 281.8 x 54.3 mm)	12.10” x 8.20” x 2.06” (307.3 x 208.3 x 52.4 mm)	10.84” x 8.57” x 2.06” (275.2 x 217.7 x 52.4 mm)		10.06” x 6.47” x 2.06” (255.6 x 154.4 x 52.4 mm)	7.70” x 5.51” x 2.00” (195.5 x 139.9 x 50.8 mm)
Sunlight Readable		G12S Models	G10S Models			G07S Model
Module Slots	8	8	7		6	5
Serial Ports	Up to 4	Up to 4	3		3	3

SLEEK DESIGN. VIRTUAL PLUG-IN MODULES.

Red Lion Graphite advanced operator panels are the industry’s first rugged HMI touchscreens to combine a wide range of versatile plug-in modules with protocol conversion, data logging and web-based monitoring and control. With all cast-aluminum construction and hazardous approvals, Graphite HMIs support wide operating temperatures and high shock/vibration tolerances to enable you to connect, monitor and control processes regardless of environment. For outdoor applications, sunlight-readable models are available in 7”, 10” & 12” sizes.

- Rugged cast-aluminum housing for outdoor and indoor display
- Powerful protocol conversion with support for up to 20 simultaneous conversions across 300+ industrial protocols
- Crimson Control module enables enhanced IEC 61131 logic control programming
- Real-time data logging provides historic visibility to support process improvements
- Web and FTP servers enable remote monitoring and control
- Variety of plug-in modules expand capabilities
- USB synchronization of database and log files
- Crimson 3.1 software for easy drag-and-drop programming

SPECIFICATION HIGHLIGHTS

Graphite HMIs come standard with one 10/100Base-T(X) Ethernet port, two RS-232 and one RS-422/485 serial ports, one USB Device and two USB Host ports. Additional Ethernet and/or RS-422/485 ports are available on specific models.

- SD memory card slot for data log storage
- Extreme -20˚ to 60˚C operating temperature range
- +24 VDC +/-20% power input
- ATEX and IECEx zone 2/22 approvals

CE Approved: EN 61326-1 Immunity to Industrial Locations; Emission CISPR 11 Class A; IEC/EN 61010-1; RoHS Compliant

ATEX Approved: II 3 G Ex ic nA IIC T4 Gc; II 3 D Ex tc IIIC T135°C Dc; DEMKO 14 ATEX 1387X; EN 60079-0, -11, -15, -31

IECEx Approved: Ex ic nA IIC T4 Gc; Ex tc IIIC T135°C Dc; IECEx UL 15.0035X; IEC 60079-0, -11, -15, -31

UL Approved: cULus Listed for Hazardous Location: File #E317425; Class I, Division 2, Groups A, B, C and D; Class II, Division 2, Groups F and G; Class III, Division 2

ABS Type Approval for Shipboard Applications

PESO Approved: A/P/HQ/MH/104/7441(P549599)

CCC Approved: These products have obtained CCC certification and meet the requirements of GB/T3836.1-2021, GB/T3836.3-2021, GB/T3836.4-2021 & GB/T3836.31-2021

Graphite Plug-In Modules

BUILD THE PERFECT HMI SOLUTION

With up to eight available plug-and-play module slots, Graphite HMIs can integrate complex multi-vendor environments. Employing modules to address PID control, data acquisition and communication, Graphite HMIs allow you to connect a wide array of equipment to meet your specific needs.



DATA ACQUISITION

Advanced data acquisition and management is easy with our powerful Graphite plug-in modules. For instance, a fully-populated 7" Graphite HMI can monitor and control up to 40 onboard I/O points, while our 15" Graphite HMIs can support up to 64 I/O points using data acquisition modules with integrated I/O. Even better, this high-density data acquisition tool also lets you log data and access files remotely through any Internet browser and enables remote alerts that you can receive via email or SMS text messages.

FULL PID CONTROL

Lifting the burden of temperature control from the PLC is a wise choice. But integrating real-time PID controllers previously meant hours and hours of custom PLC protocol development with costly and complex standalone controllers. Now, with Graphite PID module drag-and-drop configuration and built-in drivers, you can easily configure and integrate high-density multi-zone systems in only minutes.

COMMUNICATION

Programmed using our award-winning Crimson software, Graphite HMI communication modules provide a space-saving solution that simplifies installation and reduces external hardware. From high-speed cellular to protocol specific modules, Graphite HMIs offer a comprehensive communication platform.

CRIMSON CONTROL

Expand the power of the rugged Graphite HMIs with the new Crimson Control module. This new component enables users to leverage industry-standard IEC 61131 programming languages such as Ladder Logic, Function Block, Structured Text and Instruction List to develop logic code much like a Programmable Logic Controller (PLC) or Remote Telemetry Unit (RTU) without the added expense.



Crimson Software

BUILD THE PERFECT HMI SOLUTION

Red Lion's Crimson software is an easy-to-use programming tool that is included with our HMIs to give you unprecedented control. Unlike competitive HMIs that charge extra for cumbersome proprietary software, our award-winning Crimson software simplifies the setup of even the most sophisticated applications. Configuring communications protocols, defining data tags and creating intuitive user interfaces are easier and virtually self-explanatory with Crimson software.



More control options with Crimson Control. Red Lion's Graphite family of devices offer expanded Crimson capabilities with the introduction of Crimson Control. Available via Graphite HMI plug-in module and natively on the Graphite controllers, this feature enables organizations to use IEC 61131 programming languages – such as Ladder Logic, Function Block, Structured Text and Instruction List – to solve specific application needs by developing logic control much like a Programmable Logic Controller (PLC) or Remote Telemetry Unit (RTU) without the added expense. The end result adds IEC 61131 control functionality to provide a single solution for control, networking and data visualization without requiring additional panel space or a separate programming package.

OTHER CRIMSON SOFTWARE FEATURES INCLUDE:

- Easily establish communication between HMIs and connected devices using extensive library of over 300 industrial protocols
- Quickly enable data logging, protocol conversion, web serving and remote access
- Rapidly build graphic interfaces with comprehensive image library of over 5,000 industrial graphics
- Extend HMI capabilities using full-featured C-type syntax programming environment to support advanced math, local variables, pass parameters, calls, return values and more

Graphite Expansion Racks

AMPLIFIED AND EXPANDED I/O FOR GRAPHITE HMIS

Rugged Graphite expansion racks allow for easy back-of-cabinet mounting and support for additional plug-in modules without extensive wiring. These expansion racks work with the Graphite platform to provide scalable solution that enables organizations to acquire, manage, and interact with their data on site or virtually for more industrial processes.

- Support up to 12 additional Graphite modules using standard and wide racks in combination
- USB cable connects expansion rack to Graphite HMI
- High shock and vibration tolerance



Aucontech

Powerful CR HMIs

1 Power
2 USB Device
3 10/100 Ethernet
4 USB Host
5 RS-232
6 RS-422/485







	CR1000-04000-00210	CR1000-07000-00210	CR1000-10000-00210	CR3000-04000-00310	CR3000-07000-00420	CR3000-10000-00420	CR3000-15000-00420
Resolution	480 x 272	800 x 480	800 x 600	480 x 272	800 x 480	800 x 600	1024 x 768
Dimensions	5.14″ x 4.12″ x 1.50″ (130.65 x 104.69 x 38.1 mm)	7.63″ x 5.43″ x 2.00″ (193.98 x 138.02 x 50.8 mm)	10.78″ x 8.50″ x 2.00″ (273.73 x 215.99 x 50.8 mm)	5.14″ x 4.12″ x 1.50″ (130.65 x 104.69 x 38.1 mm)	7.63″ x 5.43″ x 2.00″ (193.98 x 138.02 x 50.8 mm)	10.78″ x 8.50″ x 2.00″ (273.73 x 215.99 x 50.8 mm)	14.36″ x 11.42″ x 2.64″ (364.6 x 290.1 x 67.20 mm)
Sunlight Readable	No	No	No	No	No	No	No
USB Host	0	0	0	1	2	2	2
Serial Ports	2	2	2	3	4	4	4
Data Logging & Web Server	No	No	No	Yes	Yes	Yes	Yes

SLEEK DESIGN. VIRTUAL PLUG-IN MODULES.

With a proven track record of reliable performance in industrial environments, Red Lion CR HMIs provide durability and functionality beyond the industry standard with an intuitive, easy-to-use programming interface. Our CR HMIs feature built-in, powerful protocol conversion with support for over 300 industrial drivers to connect disparate devices and simplify communication across multi-vendor environments.

- Convert up to 13 protocols simultaneously from over 300 supported drivers
- Real-time data logging provides historic visibility to support process improvements
- FTP servers enable remote monitoring and control
- Communication cards extend connectivity options (CR3000 only)
- USB synchronization of database and log files
- Crimson software for easy drag-and-drop programming

SPECIFICATION HIGHLIGHTS

CR3000 HMIs come standard with one 10/100Base-T(X) Ethernet port, two RS-232 and one RS-422/485 serial ports, and one USB Device port. Additional Ethernet and/or RS-422/485 ports are available on specific models.

- CompactFlash® slot for storage and collection of logged data
- Wide 0˚ to 50˚C operating temperature range
- +24 VDC +/-20% power input
- NEMA 4x/IP66 rated

CE c UL US LISTED

CE Approved: EN 61326-1 Immunity to Industrial Locations; Emission CISPR 11 Class A; IEC/EN 61010-1; RoHS Compliant

UL Approved: cULus Listed for Hazardous Location: File #E211967; Class I, Division 2, Groups A, B, C and D; Class II, Division 2, Groups F and G; Class III, Division 2

HMI Ordering Guide

GRAPHITE HMIS

Model Number	Indoor/ Outdoor	Display Size	Display	Serial Ports	Ethernet Ports	USB Host	Expansion	Card Support
G07C0000	Indoor	7"	800 x 480	3 iso.	1	2	5 Module Slots	SD Card
G07S0000	Outdoor	7"	800 x 480	3 iso.	1	2	5 Module Slots	SD Card
G09C0000	Indoor	9"	800 x 480	3 iso.	1	2	6 Module Slots	SD Card
G09C1000	Indoor	9"	800 x 480	3 iso.	2	2	6 Module Slots	SD Card
G10C0000	Indoor	10"	640 x 480	3 iso.	1	2	7 Module Slots	SD Card
G10C1000	Indoor	10"	640 x 480	3 iso.	2	2	7 Module Slots	SD Card
G10R0000	Indoor	10"	800 x 600	3 iso.	1	2	7 Module Slots	SD Card
G10R1000	Indoor	10"	800 x 600	3 iso.	2	2	7 Module Slots	SD Card
G10S0000	Outdoor	10"	640 x 480	3 iso.	1	2	7 Module Slots	SD Card
G10S1000	Outdoor	10"	640 x 480	3 iso.	2	2	7 Module Slots	SD Card
G12C0000	Indoor	12"	1280 x 800	3 iso.	1	2	8 Module Slots	SD Card
G12C1100	Indoor	12"	1280 x 800	4 iso.	2	2	8 Module Slots	SD Card
G12S1100	Outdoor	12"	1280x800	4 iso.	2	2	8 Module Slots	SD Card
G15C0000	Indoor	15"	1024 x 768	3 iso.	1	2	8 Module Slots	SD Card
G15C1100	Indoor	15"	1024 x 768	4 iso.	2	2	8 Module Slots	SD Card

CR HMIS

Model Number	Indoor/ Outdoor	Display Size	Display	Serial Ports	Ethernet Ports	USB Host	Expansion	Card Support
CR1000-04000-00210	Indoor	4.3	480 x 272	2	1	0	No	SD Card
CR1000-07000-00210	Indoor	7	800 x 480	2	1	0	No	SD Card
CR1000-10000-00210	Indoor	10	800 x 600	2	2	0	No	SD Card
CR3000-04000-00310	Indoor	4.3	480 x 272	3	2	1	Yes	SD Card
CR3000-07000-00420	Indoor	7	800 x 480	4	2	2	Yes	SD Card
CR3000-10000-00420	Indoor	10	800 x 600	4	2	2	Yes	SD Card
CR3000-15000-00420	Indoor	15	1024 x 768	4	2	2	Yes	SD Card

GRAPHITE EXPANSION RACK

Model Number	Function
GEXRACK1	Graphite Wide Expansion Rack for Modules
GEXRACK2	Graphite Standard Expansion Rack for Modules
CBLUSBM0	USB Tethering Cable, 0.5 M Metal Jacketed
CBLUSBM1	USB Tethering Cable, 1 M Metal Jacketed
CBLUSBM2	USB Tethering Cable, 2 M Metal Jacketed

See product manuals for model-specific certifications. Specifications are subject to change. Visit www.redlion.net for more information.

DATA ACQUISITION MODULES

Model Number	Input(s)	Input Type	Control Output(s)	Analog Output
GMDIOR00	8 - Digital	DC Inputs or Switch Closures	6 - Relays	-
GMDIOS00	8 - Digital	DC Inputs or Switch Closures	6 - SSR	-
GMINI800	8 - DC Current	0/4 to 20mA Inputs	-	-
GMINV800	8 - DC Volt	+/-10 V Inputs	-	-
GMOUT400	-	-	4 - Analog	+/-10 V or 0/4 to 20 mA
GMTC8000	8 - Thermocouple	T, E, J, K, R, S, B, N, C and Millivolt	-	-
GMRTD600	6 - RTD	385, 392, 428, 672 and Ohms	-	-
GMSG10R0	1 - Strain Gage	±20 mV, ±33 mV, or ±200 mV	3 - Relays	+/- 10 V or 0/4 to 20 mA
GMSG10S0	1 - Strain Gage	±20 mV, ±33 mV, or ±200 mV	3 - SSR	+/- 10 V or 0/4 to 20 mA
GMSG11R0	2 - Strain Gage	±20 mV, ±33 mV, or ±200 mV	3 - Relays	+/- 10 V or 0/4 to 20 mA
GMSG11S0	2 - Strain Gage	±20 mV, ±33 mV, or ±200 mV	3 - SSR	+/- 10 V or 0/4 to 20 mA
GMUIN400	4 - Universal	0/4 to 20 mA, 0 to 10 V, Thermocouple or RTD	-	-

FULL PID CONTROL MODULES

Model Number	Input(s)	Input Type	Control Output(s)	Analog Output
GMP1RA00	Single PID Loop	3 - Relays	+/- 10 V or 0/4 to 20 mA	-
GMP1RM00	Single PID Loop	3 - Relays	-	Heater Current Monitor
GMP1SA00	Single PID Loop	4 - SSR	+/- 10 V or 0/4 to 20 mA	-
GMP1SM00	Single PID Loop	4 - SSR	-	Heater Current Monitor
GMP2R000	Dual PID Loops	4 - Relays	-	-
GMP2RM00	Dual PID Loops	4 - Relays	-	Heater Current Monitor
GMP2S000	Dual PID Loops	4 - SSR	-	-
GMP2SM00	Dual PID Loops	4 - SSR	-	Heater Current Monitor

COMMUNICATION MODULES

Model Number	Function
GMCAN000	CAN Communication
GMJ19390	J1939 Communication
GMDN0000	DeviceNet Communication
GMPBDP00	PROFIBUS DP Communication

CRIMSON CONTROL MODULE

Model Number	Function
GMCC0000	Graphite Module, Enables Crimson Control on HMI



NEED MORE I/O?

Easily expand your Graphite HMI's I/O capabilities with Red Lion's rugged E3 I/O™ modules. Featuring mixed I/O configurations — including discrete, analog and temperature — E3 I/O modules add powerful I/O monitoring to any industrial application. Configured with Red Lion's Crimson software, E3 I/O modules can be quickly set up and deployed.

About Red Lion

Red Lion is focused on being THE Industrial Data Company ™. We empower industrial organizations around the world to unlock the value of data by developing and manufacturing innovative products and solutions to access, connect and visualize their information. Red Lion's global manufacturing and support facilities serve customers in factory automation, alternative energy, oil and gas, power and utilities, transportation, water and wastewater industry segments. We provide scalable solutions for cloud connectivity, edge intelligence and asset management, industrial Ethernet switches and industry leading panel meters and operator panels, to make it easy for companies to gain real-time data visibility that drives productivity. For more information, please visit **www.redlion.net**

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