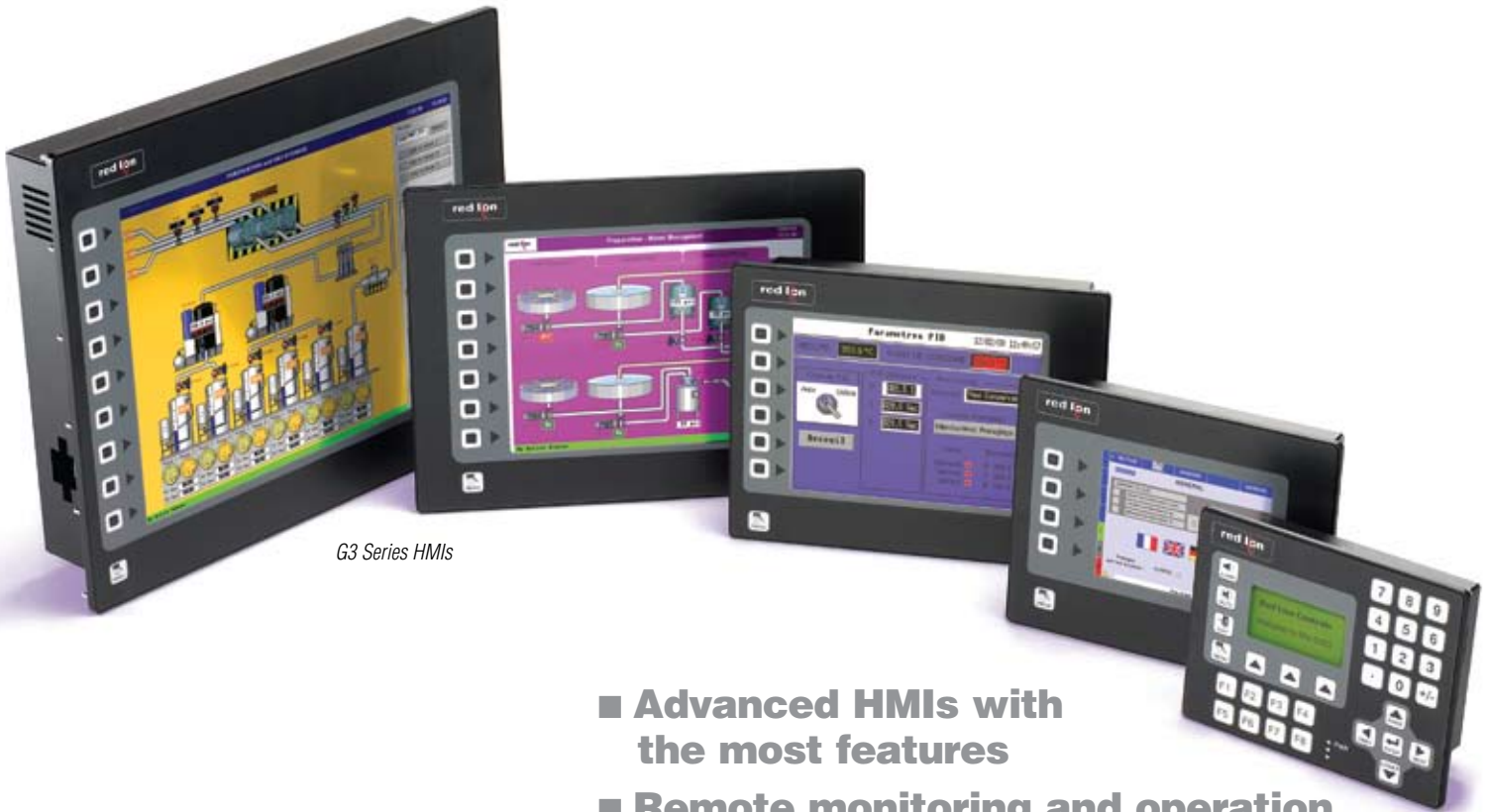# G3 Series HMI

Web-Enabled Graphic Operator Interface Terminals

G3 Series HMIs

- ■ **Advanced HMIs with the most features**
- ■ **Remote monitoring and operation**
- ■ **The most on-board comms ports**
- ■ **Integrated Ethernet & web server**
- ■ **Built-in protocol converter**
- ■ **Free software and support**
- ■ **New G3 Kadet™ models offer excellent value**

G3 Kadet™ Series HMIs

red lion®

INSIGHT ENABLED

The factory floor speaks out.

In an ideal world, all your devices, your equipment and your process would speak— seamlessly communicating, sharing and collecting process data to a centralized portal. It would create a window providing a continuous view inside your process: A hub connecting multiple device types and converting the diverse languages of industry to Ethernet. An agent consolidating vital data into universal business platforms, revealing valuable insight through a scheduled daily e-mail, dynamic web pages or FTP downloads. A sentry continuously monitoring your process for potential problems and delivering alerts via text message or e-mail to your mobile devices.

The G3 HMI changes the way you look at your process, because it makes your process interactive and accessible.

Between you and your process, there would exist an interface with the power and sophistication to make all these operations not only possible, but simple.

This world exists. Today. The G3 Series HMIs from Red Lion incorporate communications, data management, and remote access into a single product that communicates data seamlessly with multiple-vendor device-level products including PLCs, drives, PID controllers, serial peripherals and more. G3 Series HMIs move data freely across over 170 different industrial protocols including DeviceNet™, PROFIBUS™ and CANopen/J1939. Meanwhile, powerful protocol conversion and data acquisition tools transparently capture and refine the data you need to trend, monitor and control your process efficiently. Yet with this level of sophistication, the G3 Series is easily configured with Crimson®, Red Lion's free software featuring drag-and-drop data mapping and extensive libraries of pre-configured device drivers and graphical interface elements.

G3 Series standard features include:

- Minimum one RS-422/485 port and two RS-232 ports (expandable)
- Protocol Converter supports over 170 different industrial protocols
- Web and FTP Server for remote access
- 10 Base-T/100 Base-TX Ethernet
- USB port for fast transfer of data between your HMI and PC
- CompactFlash® slot for database/recipe storage and collection of logged data
- 4-32 MB Flash memory for nonvolatile configuration and firmware storage
- Three user-programmable LED indicators
- Free Crimson® software

G303 3" LCD Interface Terminal

- 3.2" graphical monochrome backlit LCD
- Durable 32-key membrane keypad
- Integrated programmable membrane keypad with 5 navigation keys, 10 + 2 numeric keys, 4 dedicated keys, 8 user-legendable keys and 3 Soft-Keys
- 5.85" x 7.45" x 2.1" (148.6 x 189.2 x 52 mm)
- Sunlight-readable model available (G303S)

G306A & G306MS 6" Operator Interface Touchscreen with NEMA 4X/IP66 Panels

- 5.7" TFT Analog Touchscreen
- 320 x 240 pixel, 256-color QVGA display
- Integrated 5-key programmable membrane keypad with dedicated MENU Key and 4 Soft-Keys
- 3 front panel LED indicators
- 7.08" x 8.83" x 2.3" (179.8 x 224.3 x 58 mm)
- Monochrome sunlight-readable model (G306MS)

G308A & G308C 8" Operator Interface Touchscreens

- 8.4" TFT Analog Touchscreen (G308A)
- 7.7" DSTN Resistive Analog Touchscreen (G308C)
- 640 x 480 pixel, 256-color display
- Integrated 7-key programmable membrane keypad with dedicated MENU Key and 6 Soft-Keys
- G308A: 8.18" x 10.32" x 2.6" (207.8 x 262 x 66 mm)
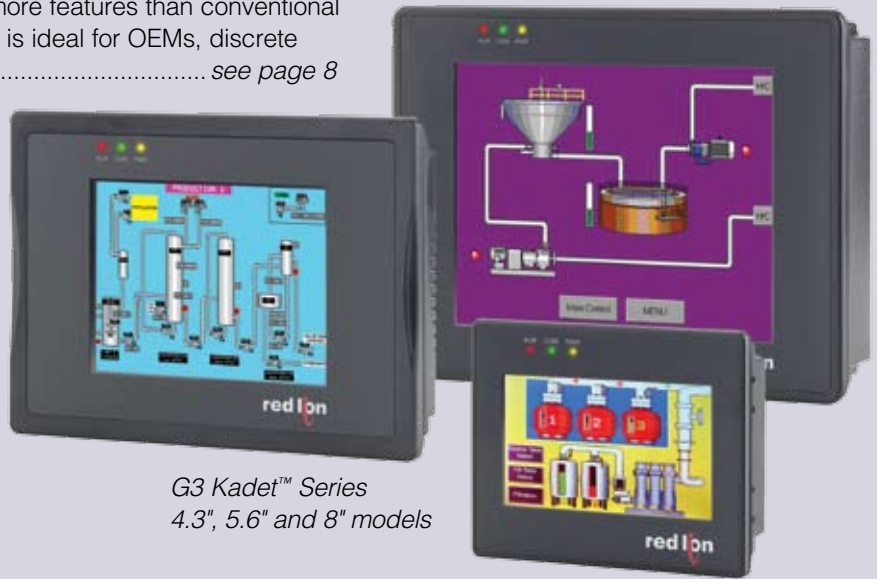 G308C: 8.18" x 10.32" x 2.2" (207.8 x 262 x 56 mm)

The G3 Kadet™ Series. Essential HMI features.

Essential features. Exceptional value.

The G3 Kadet™ Series offers a host of functional interface and connectivity features for applications where FTP access, data logging and web server capabilities are not needed. Based on the G3 Series with many of the same capabilities, the G3 Kadet offers far more features than conventional HMIs, providing an advanced interface that is ideal for OEMs, discrete machinery and process machinery ....

	G3 Kadet	G3 HMI
RS-232 Port	✔	✔
RS-485/422 Port	✔	✔
Ethernet	✔*	✔
Programs with Crimson®	✔	✔
C-Type user programming	✔	✔
Protocol Converter	✔	✔
CompactFlash® programming	✔*	✔
USB program download		✔
Keypads		✔
Log Data		✔
FTP		✔
Web Server		✔
Expansion Cards		✔

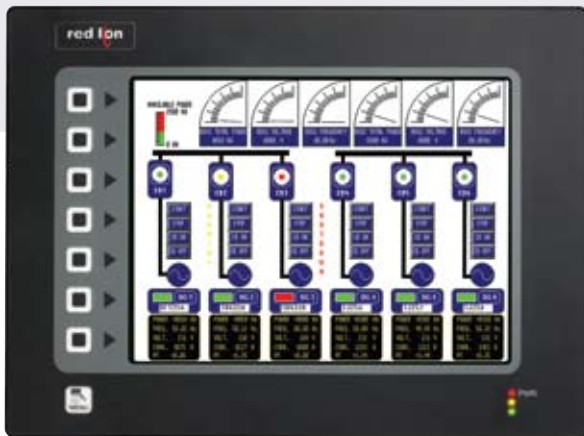*Available on 5.6" & 8" models only*

G3 Kadet™ Series
4.3", 5.6" and 8" models

Optional G3 Expansion Cards:

■ *CANopen/J1939 Card adds a digitally isolated CANopen port (model G3CN)*
■ *DeviceNet™ Card adds a DeviceNet port capable of communicating with any DeviceNet Master (model G3DN)*
■ *RS-232/485 Card adds additional isolated RS-232 and RS-485 ports to any G3 HMI (model G3RS)*

■ *PROFIBUS™ Card adds PROFIBUS DP™ connectivity to any G3 HMI (model G3PB)*
■ *GSM/GPRS Cellular Modem Card adds mobile phone connectivity to G3 HMIs (model G3GSM)*

G310 10" Operator Interface Touchscreen Terminal

■ *10.4" TFT Analog Touchscreen*
■ *640 x 480 pixel, 256-color VGA display*
■ *Integrated 8-key programmable membrane keypad with dedicated MENU Key and 7 Soft-Keys*
■ *9.50" x 12.83" x 2.2" (241.3 x 325.8 x 56 mm)*
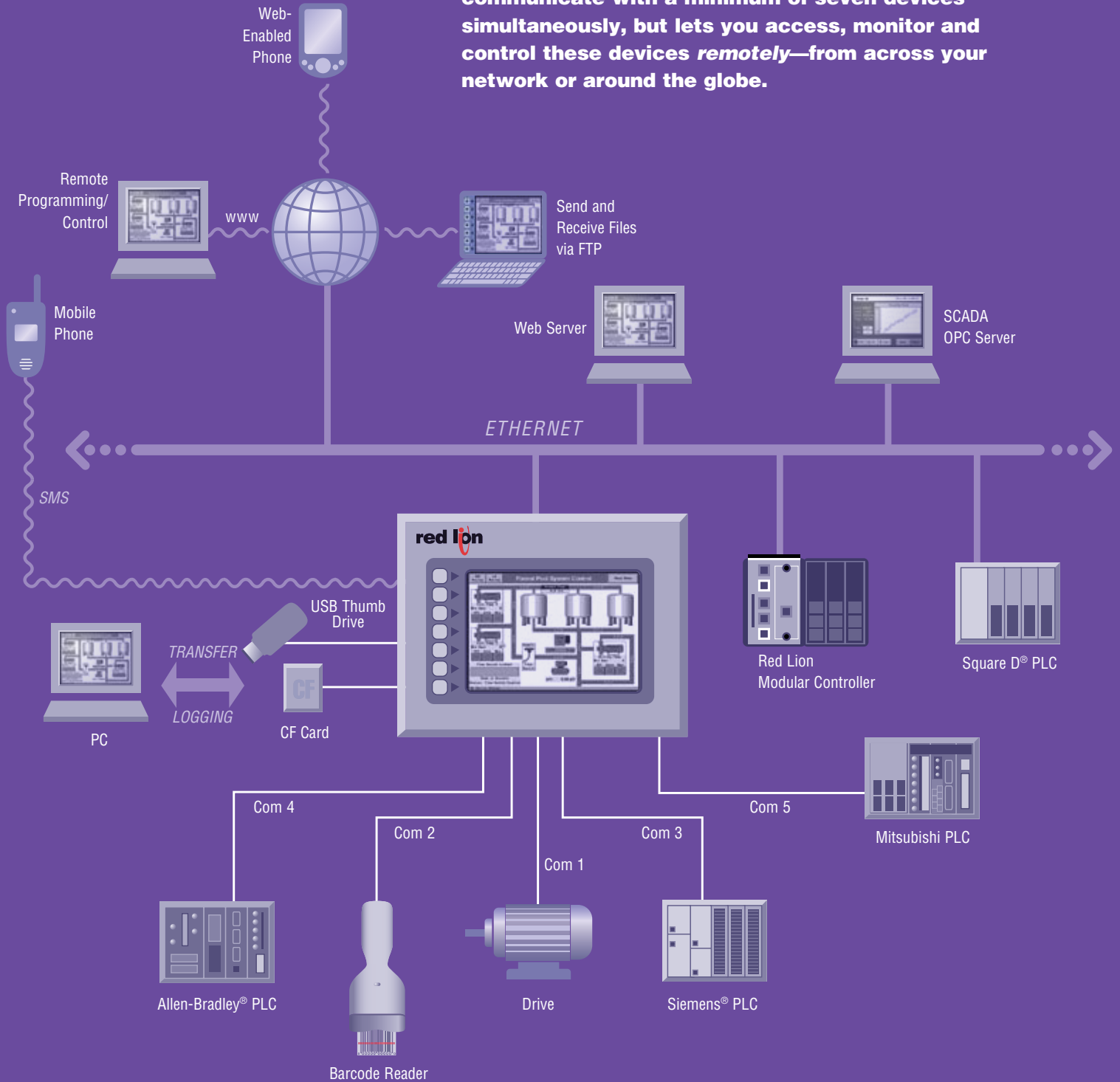■ *Sunlight-readable model available (G310S)*

G315 15" Operator Interface Touchscreen

■ *15" TFT Analog Touchscreen*
■ *1024 X 768 pixel, 32K Color XGA LCD*
■ *Integrated 10-key programmable membrane keypad with dedicated MENU Key and 9 Soft-Keys*
■ *Two RS-232 and two RS-422/485 comms ports on board (expandable to six RS-232/422/485)*
■ *16.0" x 13.0" x 2.8" (406.4 x 330.2 x 71.5 mm)*

The only HMI that web-enables any device for remote operation across your LAN or the Internet.

Red Lion's G3 HMI Series is not only the first to communicate with a minimum of seven devices simultaneously, but lets you access, monitor and control these devices *remotely*—from across your network or around the globe.
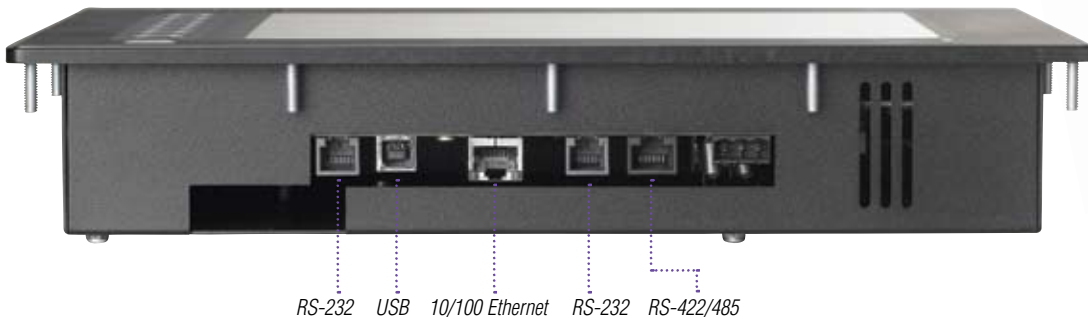
Web-Enabled Phone

Remote Programming/ Control

www

Send and Receive Files via FTP

Web Server

SCADA OPC Server

Mobile Phone

SMS

ETHERNET

red lion

USB Thumb Drive

TRANSFER

LOGGING

CF

CF Card

PC

Red Lion Modular Controller

Square D® PLC

Com 4

Com 2

Com 1

Com 3

Com 5

Mitsubishi PLC

Allen-Bradley® PLC

Barcode Reader

Drive

Siemens® PLC

CANopen

DeviceNet™

PROFI PROCESS FIELD BUS BUS

OPC FOUNDATION

EtherNet/IP™

3

Simultaneously communicate with a minimum of seven different device types.

Communicate.

Communicating with over 170 different protocols, the Red Lion G3 HMI Series is the most powerful communications platform available today. G3 Series HMIs easily manage multi-vendor devices and provide the ability to web- and network-enable these different hardware types via the most on-board comms and integrated Ethernet. Choose the best-in-class PLC, drives, PCs, PID controllers, etc. from your vendor of choice and control them all from a single point—the G3 will make sure they communicate seamlessly to the HMI and even between devices. All connected devices come to life—even serial devices become rejuvenated providing information over Ethernet.

One RS-422/485 port and two RS-232 ports are standard on all models (except the 15" model, which includes an additional RS-422/485). Integrated Ethernet provides communications with up to four additional device types, facilitating communications with a minimum of seven different protocols simultaneously! An expansion slot lets you add either two more serial ports, DeviceNet™, CANopen/J1939, PROFIBUS DP™ or a cellular modem. No other HMI offers that kind of connectivity at any price.
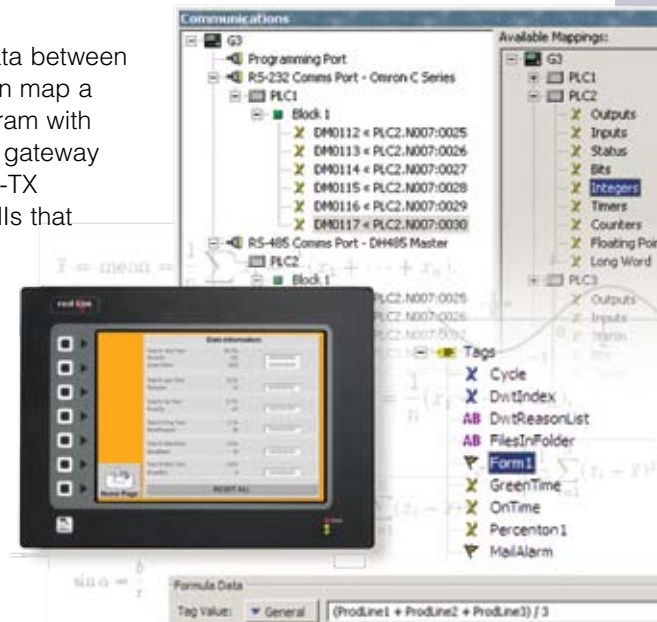
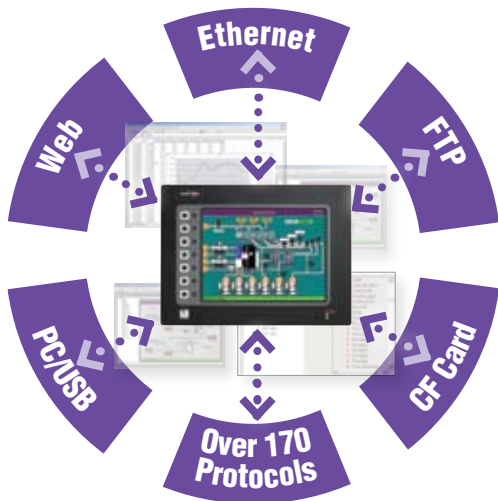And the best news is, the G3 HMIs actually cost LESS than many HMIs with far fewer features.

RS-232   USB   10/100 Ethernet   RS-232   RS-422/485

Multi-vendor device environments with different protocols communicate seamlessly with G3 Series HMIs

Convert.

G3 Series HMIs feature a powerful protocol converter to exchange data between any of the connected devices. With a few clicks of the mouse, you can map a setpoint from a PLC to a variable speed drive, or provide a PLC program with information as to the status of a PID controller. In addition, the built-in gateway converts any attached device's serial protocol to 10 Base-T/100 Base-TX Ethernet, automatically web-enabling the device. And unlike other HMIs that require you to purchase a protocol converter for up to $1,000 additional—on the G3 Series, it's standard. Use the drag-and-drop software to simply map registers from one device to another, automatically sharing data between them.

Collect.

Acquire and log data from each connected device into a single file.

Crimson® allows users to quickly set up any number of devices in a control application, collect performance data, display it, store it for evaluation, or trigger PLC functions with one panel—either live or remotely. Data can be acquired from any or all connected devices. The G3 will log tags at user-programmable rates, and automatically time/date stamp them. Information is stored in open CSV file format, allowing access with virtually any application, such as Microsoft® Excel® spreadsheet software. The G3 HMI's built-in web server can be used to expose system data via the G3 panel's Ethernet port, allowing remote access to diagnostic information, or to the values recorded by the data logger.

Store logged data, e-mail the data file, or automatically upload it to an FTP site with the included G3 Series SyncManager. Edit and store recipes. Create batch logs or record data from each batch run, separately for each plant shift. Store security logs to capture user ID when performing logon, logoff, change value, button pressed, page change, and more. Store active, accepted and cleared alarm data. Data acquisition capabilities are endless with the G3 Series.
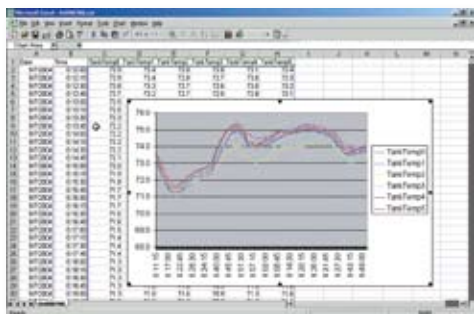
Virtually unlimited data storage with CompactFlash®.

An integrated CompactFlash® slot accommodates readily available Type I and II CompactFlash cards, letting you collect, retain and transfer data easily. If you need to update the configuration file within a machine that is already installed at a customer's site, Crimson allows you to save a copy of the application database to a CompactFlash card, ship that card to your customer, and have the G3 load the new configuration file from that card. Not only does the CompactFlash interface provide a means to load the panel's database without a PC, it provides expandable storage for data and event logging.

Upload data automatically to FTP.

Connect to the HMI via FTP to download or upload any files available on the CompactFlash Card. Easily update recipe files or access log information from your web browser, including Microsoft Internet Explorer® internet browser or any FTP client software. Synchronize log and event files from the HMI to a PC for permanent storage and further analysis. The G3's FTP synchronization can be performed automatically or on demand.

Faster data transfer and downloading with integrated USB.

The G3 HMI Series features a convenient USB port for fast downloads of configuration files from a PC as well as trending and data logging uploads to your PC for analysis. The USB port also offers full access to the CompactFlash card on the G3, which appears as an extra drive in Microsoft Windows® operating system environments.

Microsoft, Windows, Excel and Internet Explorer are registered trademarks of Microsoft Corporation in the United States and/or other countries.

5

Connect.

Internet access

Use a standard web browser such as Internet Explorer® to see the same screens as the operator. Set for monitor only or facilitate full control from the remote computer, web enabled phone, PDA or any other web enabled device. Don't need to see the visual screens but still want the data? Easily program your G3 HMI to provide an executive dashboard of just the values required.

Create custom web pages using HTML, JAVA script or AJAX with code that instructs the G3 to insert live tag values for real-time monitoring. Privately provide data for users with customized data screens accessible by password.

OPCWorx™ facilitates OPC server communication.

Red Lion's OPCWorx™ is a configuration tool for our OPC servers. This easy-to-use software allows you to create and configure an OPC server to communicate between a G3 series HMI and OPC-enabled software packages such as SCADA. OPCWorx can also connect to other Red Lion products like the Data Station Plus or Modular Controller, as well as any device that supports Modbus.

Stay connected

Use the GSM cell phone option card to enhance the features of the G3 Series. Dial into the G3 Series to web browse data or screens, extract or view files from the CompactFlash® card, or change the program in the G3 Series. Program the G3 Series to dial out when it needs to send a text message or an e-mail, or have it upload the previous day's files to an FTP location.

Remote notification

G3 HMIs can e-mail events, alarms and files to individuals or groups, keeping your team informed of the current process status. There's no need to be on site—let the G3 HMI keep you posted. If e-mail isn't the answer, the G3 Series can send a text message to a cell phone or pager, to individuals or groups. With the built-in SMS relay facility, any response given to the original text message is relayed automatically to everyone on the distribution list. This allows a team of responders to know who has taken ownership of a given situation.

The G3 Series not only offers remote monitoring, but if desired, secure control across remote environments. Extract and load programming remotely from the CompactFlash card. Pass-through programming allows you to program your connected devices remotely. Using a standard modem, cell modem or an Ethernet connection, you can reprogram your PLC, motor drive, etc. from anywhere in the world.

Security

Use the security manager to create multi-user, multi-level password protection. Protect push buttons, data entry fields or entire pages, allowing for the highest level of security and control—assuring your critical processes run as designed. Security logger tracks operator actions and data changes for later review of your critical process.

Configure.

The easiest and most flexible software. And it's free.

Red Lion's remarkable Crimson® software is a powerful programming platform that gives the G3 Series a number of exclusive functions. Its sophistication also makes all the complex capabilities of the G3 manageable, with user-friendly drag-and-drop data mapping. Crimson is universal to all Red Lion HMIs. And unlike competitive HMIs that charge you extra for what is often very cumbersome and difficult proprietary software, the initial set up of Crimson is very easy and virtually self-explanatory.

Crimson includes an extensive library of device drivers to quickly establish communications between the G3 and virtually any device. Once communication is established, anything the G3 can communicate with is now Ethernet-enabled via the built-in gateway and protocol converter. This capability is unavailable in any other HMI panel. Crimson offers support for thousands of characters used in formats like Cyrillic or Thai. With a single button press, you can adjust the panel's operator language. This allows OEMs to use a single database when targeting multiple geographic markets. A built-in Emulator lets you test your application—not only the user interface portion of your configuration, but also data logging and even the web server.

Best of all, Crimson is free. As are software updates, support, cabling instructions and communication drivers. In fact, if a specific device driver does not exist, Red Lion will write one for you. Free online updates allow you to keep your version of Crimson current with the most up-to-date features. New updates include enhanced functionality, product support, drivers and firmware. Try finding this level of support and value with any other HMI!
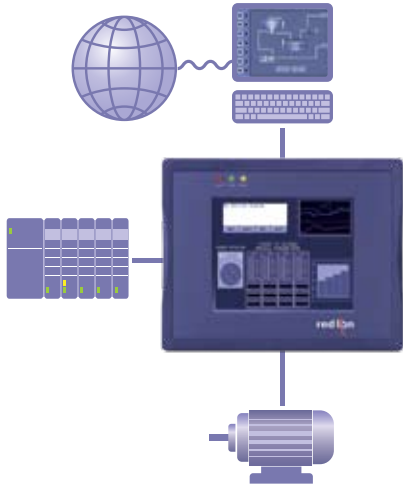
Faster configuration and programming.

Crimson is a powerful, intuitive configuration tool designed specifically to take full advantage of the G3 HMI Series architecture. The majority of simple applications can be quickly set up using the step-by-step process to configure communications protocols, define the data tags and create the user interface. A full set of over 5,000 industrial graphics in over 60 different categories make creation of the interface easy while yielding professional results. Even more advanced features, such as C-type programming, data logging and configuring the G3's web server, are intuitive and easily performed.

Extend G3 Series performance.

Users can further extend the already-powerful feature set of the G3 Series through the use of the full-featured programming environment based on C-type syntax. Create local variables, pass parameters, call other programs, return values and use advanced math capabilities. The programming environment provides direct access to many internal G3 Series features such as: read/write to the CompactFlash® card, manage serial ports and create TCP/IP connections to extract data from web sites, or create custom communications interfaces to unique products.

The new G3 Kadet™ Operator Interface Series.

Touchscreen HMIs that strike the perfect balance of advanced features and value.

With the introduction of the original G3 HMI Series, Red Lion not only liberated vital process data by enabling the communications capabilities of multiple devices and protocols, they web-enabled these devices as well—allowing informative process data from the factory floor to go mobile. But not all applications require this level of mobility. Now, the new G3 Kadet™ Series of HMIs offer the most essential capabilities of the G3 series, designed to meet the requirements for machine monitoring and control.

The right fit for many applications.

If your HMI application doesn't need web-serving, data logging or a keypad, the G3 Kadet Series provides a powerful insight into your process. Available in 4.3", 5.6" and 8" models, the G3 Kadet Series offers the same protocol conversion benefits as the original G3, with multiple serial ports, drag-and-drop configuration via

the free Crimson® software, port sharing capabilities, and integrated Ethernet on the larger models allowing simultaneous communications with up to seven device types including PLCs, PCs, drives, PID controllers and more.

The compact 4" G3 Kadet HMI offers a bright color TFT display that shines above any other product in its class. With two serial ports capable of RS-232, RS-485 and RS-422, this model breathes new life into serial devices. When a larger display is desired, consider the 6" or 8" G3 Kadet models. With the same serial port configuration as the 4" model, these powerful HMIs also offer integrated 10 Base-T Ethernet, providing four additional device types—letting you connect a total of six different device types. As with the original G3 Series HMIs, these models support over 170 different protocols.

Value other HMIs can't touch.

G3 Kadet touchscreens offer a host of innovative features and capabilities you won't even find in panels costing hundreds more. It's the most advanced, best valued HMI in its class.

The G3 Kadet HMI series: impressive features and value for OEMs and machine control.

G3 HMI Series Specifications

The best valued, full-featured HMIs.

For less than many stripped-down HMIs, you can add the powerful capabilities and ease-of-use found only in the G3 Series. G3 HMIs come standard with three serial comms, Ethernet, protocol converter, USB, and CompactFlash® slot. And at no extra charge, you get full-featured Crimson® software with drag-and-drop configuration tools and a flexible programming environment.

G3 Series HMIs

	G303	G306A	G308A and G308C	G310
Description	3" LCD Operator Interface Terminal	6" TFT Analog Touchscreen Terminal	Analog Touchscreen Terminal: G308A: 8.4" TFT Active Matrix G308C: 7.7" DSTN	10" TFT Analog Touchscreen Terminal
Display Type	3.2" Graphical Monochrome LCD with yellow backlight	5.7" TFT Active Matrix, 256-color QVGA display	G308A: 8.4" TFT 256-color G308C: 7.7" DSTN 256-color	10.4" TFT 256-color VGA display
Resolution	128 x 64 pixels	320 x 240 pixels	640 x 480 pixels	640 x 480 pixels
Comms Ports	Two RS-232, one RS-422/485 standard; expandable with optional card			
Ethernet	10 Base-T/100 Base-TX	10 Base-T/100 Base-TX	10 Base-T/100 Base-TX	10 Base-T/100 Base-TX
CompactFlash Slot	Yes	Yes	Yes	Yes
Power Supply	24 VDC +/-20%	24 VDC +/-20%	24 VDC +/-20%	24 VDC +/-20%
Keypad	Programmable 32-key membrane	Programmable 5-key membrane	Programmable 7-key membrane	Programmable 8-key membrane
Dimensions	5.85" x 7.45" x 2.1" (148.6 x 189.2 x 52 mm)	7.08" x 8.83" x 2.3" (179.8 x 224.3 x 58 mm)	8.18" x 10.32" (207.8 x 262 mm) G308A Depth: 2.6" (66 mm) G308C Depth: 2.2" (56 mm)	9.50" x 12.83" x 2.2" (241.3 x 325.8 x 56 mm)
Data Logging	User-programmable logging rates with time/date stamp and security management; data synchronization, PLC and alarm			
Web/FTP Server	Remote access and control, access to logged data via FTP or web browser; pass-through programming; notification and alarms;			
Software	Free Red Lion Crimson® software with free upgrades and support; drag-and-drop data mapping, free device drivers, multi-language			
Optional Cards	CANopen/J1939, DeviceNet™, PROFIBUS DP™, RS-232/485 Expansion, GSM/GRPS Modem			
Ratings	NEMA 4X/IP66	NEMA 4X/IP66	NEMA 4X/IP66	NEMA 4X/IP66
Certifications	UL Class I, Div 2	UL Class I, Div 2	UL Class I, Div 2	UL Class I, Div 2

G3 Kadet™ Series HMIs

Born from the G3 series, the value of the G3 Kadet™ is unrivaled. Performance to match that of the G3 series minus a few features makes the G3 Kadet perfect for many applications.

G315	G304K	G306K	G308K
15" TFT Analog Touchscreen Terminal	4" TFT Analog Touchscreen Terminal	6" TFT Analog Touchscreen Terminal	8" TFT Analog Touchscreen Terminal
32K Color XGA LCD display	4.3" TFT 256-color HD1080/16 display	5.6" TFT 256-color QVGA display	8" TFT 256-color VGA display
1024 X 768 pixels	480 x 272 pixels	320 x 234 pixels	640 x 480 pixels
Two RS-232, two RS-422/485 expandable	One RS-232, one RS-232/422/485	One RS-232, two RS-232/422/485	One RS-232, two 232/422/485
10 Base-T/100 Base-TX	N/A	10 Base-T	10 Base-T
Yes	No	Yes	Yes
24 VDC +/-20%	12-28 VDC	12-24 VDC	24 VDC +/-5%
Programmable 10-key membrane	Touchscreen only	Touchscreen only	Touchscreen only
13.0"x 16.0" x 2.8" (330.2 x 406.4 x 71.5 mm)	4.016" x 5.039" x 1.262" (102 x 128 x 32 mm)	5.91" x 8.03" x 1.57" (150 x 204 x 40 mm)	6.93" x 9.09" x 1.85" (176 x 231 x 47 mm)
triggering; CSV file format	N/A	N/A	N/A
automatic HTML page population	N/A	N/A	N/A
support, 5000+ graphics library	Free Red Lion Crimson® software with free upgrades and support		
	N/A	N/A	N/A
NEMA 4X/IP66	NEMA 4/IP65	NEMA 4/IP65	NEMA 4/IP65
UL Class I, Div 2	UL Listed	UL Listed	UL Listed

Red Lion: integrated solutions for the plant floor.

Data Station® Plus

Combines the data management and hosting platform capabilities of G3 Series HMIs, without the display interface

- Three serial ports and an Ethernet port facilitate simultaneous communication to multiple devices
- Web-based Virtual HMI offers built-in SCADA functionality and remote access
- Protocol conversion of over 170 protocols
- Data logging to CompactFlash® or FTP
- E-mail alarms or logged files
- Text alarm notifications to mobile phones
- Functions as a data management platform and PFM host at the same time

PFM Series: Plant Floor Marquee

Panoramic Multi-color LED Graphic Displays

- Graphical tri-color (Green/Yellow/Red) display provides instant notice of critical information to the plant floor
- Four sizes for different applications ranging from 26" x 6.6" (66.0 x 16.8 cm) up to the large 39.3" x 22.5" (99.8 x 57.2 cm) display
- Automated collection and calculation of data from multiple I/O points; create your own "OEE" or "Andon" production display
- Uses a Red Lion G3 HMI, Modular Controller or Data Station Plus as a host device—connect to virtually any industrial device or PC via Ethernet or serial
- Communicates with over 170 different protocols and receives data from seven or more device types simultaneously
- Addressable to support multi-drop wiring

BFD: Big Flexible Display

Graphical Red LED Display for the plant floor

- Large external monitor presents the display information from a host device to the plant floor
- Large 38.5" x 19" (97.8 x 48.3 cm) red LED display with 0.2" diameter pixels
- 128 x 64 dot resolution visible up to 250 feet
- Displays graphic images or text
- Field replaceable display boards
- Variable display intensity with flash & blanking commands
- Optional NEMA 4 cooling kit available

Other large displays for factory process monitoring available

Learn more at www.redlion.net/G3

The power, flexibility, ease-of-use and value offered by the G3 HMI Series is unparalleled. Learn how you can add total integration, data logging, trending, remote access and more to your machines quickly and easily with a G3 HMI and Crimson®. For your local representative, call **(717) 767-6511**, or go to **www.redlion.net/G3**.

Other Red Lion Products:

Modular Controller

Cost-effective solution to integrating multi-zone PID control, data acquisition and I/O into your PC, DCS or PLC control system. Red Lion manufactures a broad line of PID controllers, signal conditioners, and data acquisition devices for process control.

Panel Meters

Red Lion has more high quality solutions for your digital panel meter requirements than any other supplier, including a wider range of models, sizes and capabilities.

OEM Customized Products

Red Lion can integrate our technologies into your package or private brand our products to your requirements. Call us for a custom solution.

Operator Interface | Protocol Conversion | Signal Conditioning | Panel Meters | Data Acquisition

red lion®
INSIGHT ENABLED

ADLD 0095