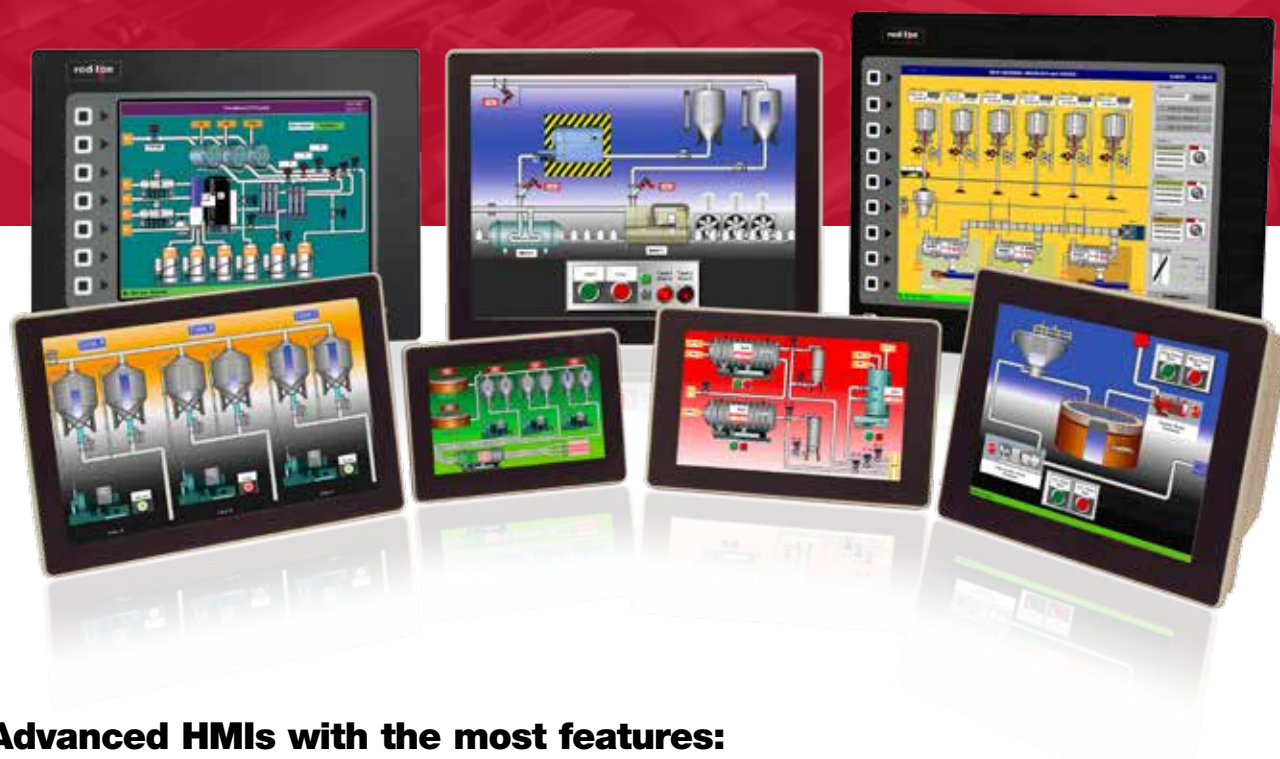**red lion®**

HMI Solutions

Graphite™ and G3 Series of Advanced Operator Panels

Advanced HMIs with the most features:

> Converts over 300 protocols
> Built-in web server
> On-board data logging
> Easy-to-install plug-in modules
> Email and SMS text messaging
> Indoor and outdoor models
> Remote monitoring and control

industrial
automation
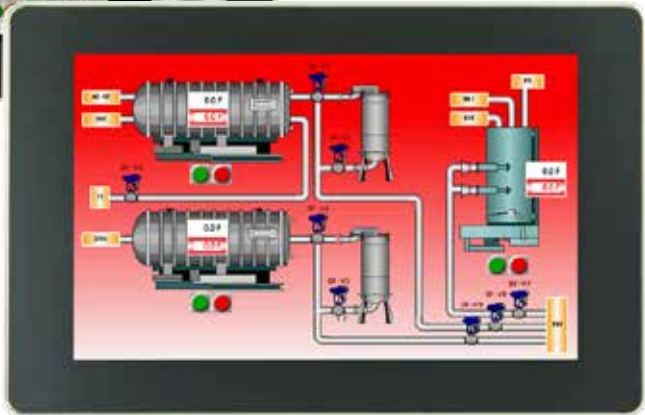
►►► Graphite Series HMIs. Sleek. Rugged. Flexible.

Connect, monitor and control... anywhere, anytime.

From factories to extreme remote locations, Red Lion's HMI solutions allow customers to easily connect, monitor and control their processes across a broad range of industries that include manufacturing, oil and gas and water/wastewater. Our new Graphite series provides the industry's first rugged HMI solution to combine a wide range of flexible plug-in modules with protocol conversion, data logging and web-based monitoring and control. Available in eight different models with sizes ranging from 7" to 15", Graphite's sleek bezels provide a relatively large display given their overall dimension.
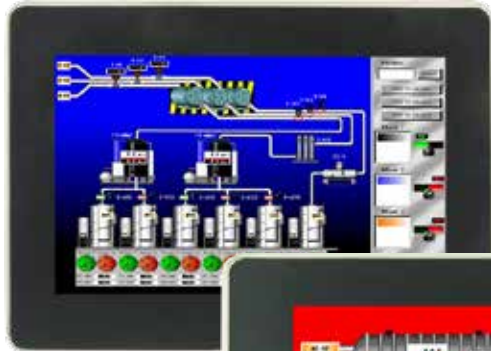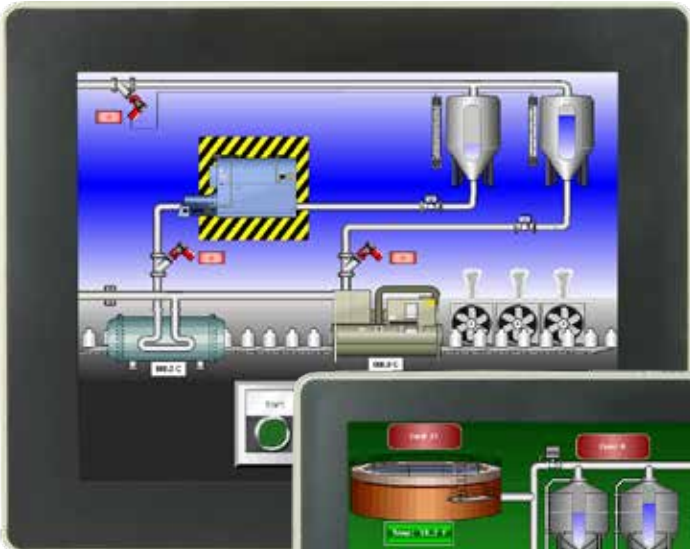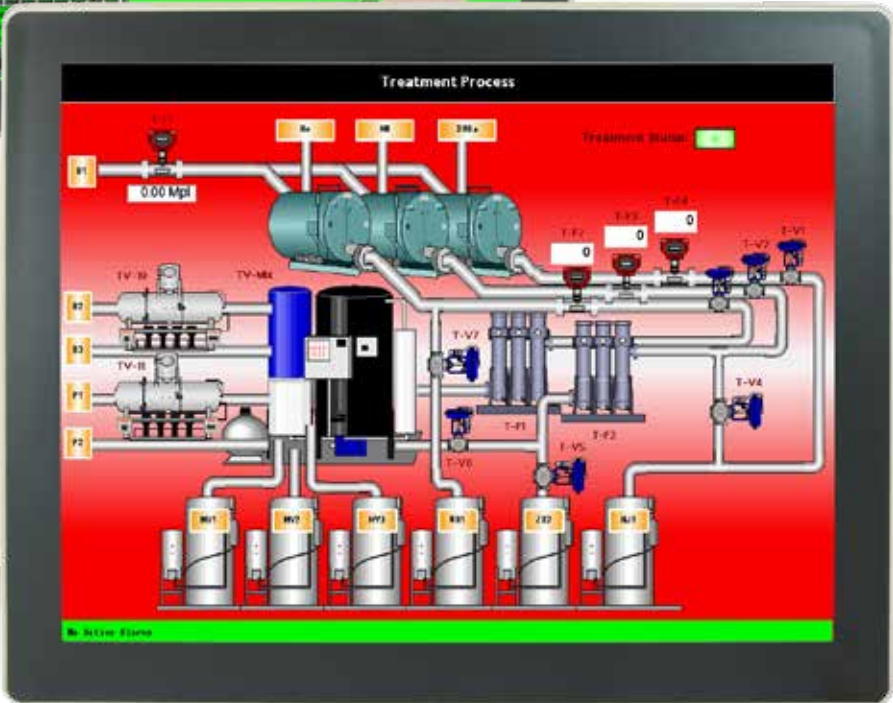
Graphite and G3 features include:

> Protocol converter supports over 300 different industrial protocols

> Data logging

> Web and FTP Server for remote access

> Minimum three serial ports (expandable)

> USB synchronization of database and log files

> 10 Base-T/100 Base-TX Ethernet ports

> Memory card support slot for database/recipe storage and collection of logged data
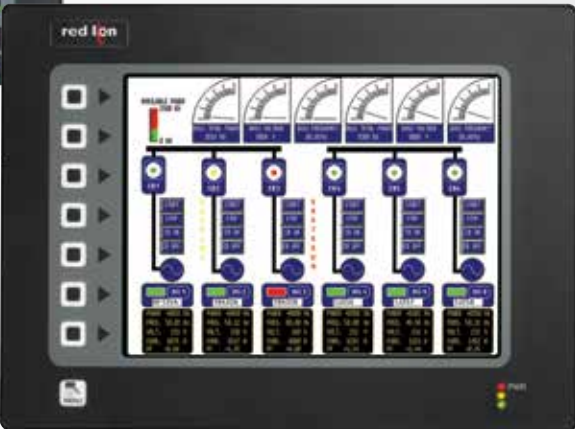
> Crimson® software included

Graphite G10

G307K
7" Touchscreen

G304K
4.3" Touchscreen

Graphite G07

Graphite G12

Graphite G09

G306

Graphite G15

G310 *10" Operator Interface Touchscreen*
(Not pictured: 3", 8" and 15")

New
Graphite features include:

> Sleek indoor and outdoor displays

> Rugged cast-aluminum housing

> Flexible plug-in modules

> Easy protocol conversion

> Real-time data logging

> Remote monitoring and control

> SD card slot

Learn more at www.redlion.net/Graphite
Learn how you can add total integration, data logging, trending, remote access and more to your machines quickly and easily with a Graphite HMI and Crimson software. Call +1 (717) 767-6511 to speak to a representative.

Red Lion's **Graphite** not only communicates with a minimum of 13 devices simultaneously, but lets you access, monitor and control these devices remotely—from across your network or around the globe.

Mobile Phone

Database

SCADA OPC

Cloud

Web-Enabled Phone

Remote Programming/Control

Send and Receive Files via FTP

Red Lion Switch

ETHERNET #1

Red Lion Switch

Text Msg (SMS)

SD Card

TRANSFER LOGGING

USB Thumb

USB Keyboard

USB Barcode Reader

Serial

Drive

Red Lion Modular Controller

Square D PLC

Mitsubishi PLC

Allen-Bradley PLC

Drive

Siemens® PLC

Red Lion Panel Meter

Learn more at www.redlion.net/Graphite

Learn how you can add total integration, data logging, trending, remote access and more to your machines quickly and easily with a Graphite HMI and Crimson software. Call +1 (717) 767-6511 to speak to a representative.

▶▶▶ Crimson 3.0® Absolutely the best interface software

Choose from over 300 drivers.

Over 5000 graphics make configuring your application quick and easy.

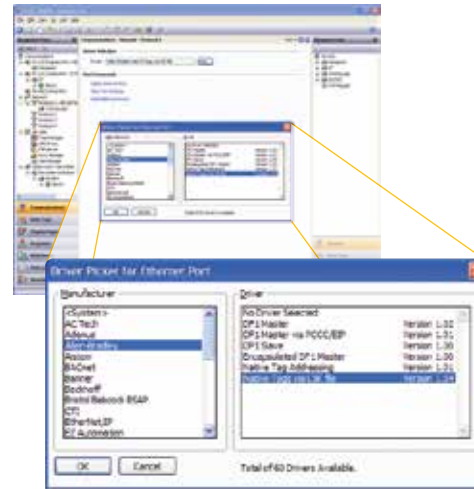*C-type syntax programming provides maximum control.*

Configure.

Red Lion Crimson software gives users unprecedented operator interface configuration and control.

Red Lion's powerful and universal Crimson 3.0 software is a remarkable programming platform that gives the Graphite a number of exclusive functions. And unlike competitive HMIs that charge you extra for cumbersome proprietary software, with Crimson the set up of even sophisticated applications—configuring communications protocols, defining data tags and creating a user interface—is easier and virtually self-explanatory.

Here are just a few of the exclusive features and capabilities included with Crimson:
> An extensive library of point-and-click device drivers to quickly establish communications between the Graphite and any device
> Built-in gateway and protocol converter to Ethernet-enable any connected device
> Multi-lingual capability with support for thousands of characters used in formats like Cyrillic or Thai that lets OEMs use a single database for global markets
> Complete library of over 5,000 industrial graphics in over 60 different categories
> Built-in emulator to test user interface, data logging and even the web server
> Full-featured C-type syntax programming environment to extend capabilities and use advanced math, local variables, pass parameters, calls, return values and more
> Flexible, direct access to many internal Graphite Series features such as: read/write to the SD card, manage serial ports, create TCP/IP connections to extract data from web sites or create custom interfaces to unique products
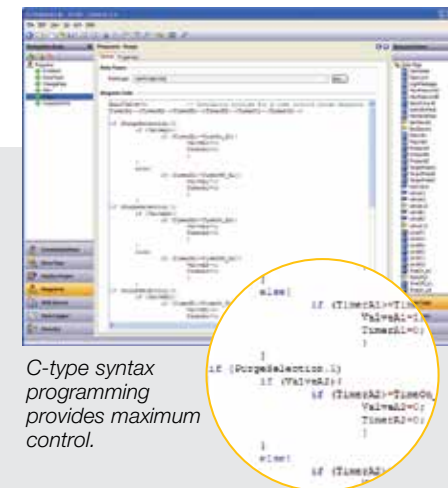
Best of all, Crimson is included. As are software updates, support, cabling instructions and communication drivers. In fact, if a specific device driver does not exist, contact us regarding your requirements. Free online updates allow you to keep your version of Crimson current with the most up-to-date features. New updates include enhanced functionality, product support, drivers and firmware.
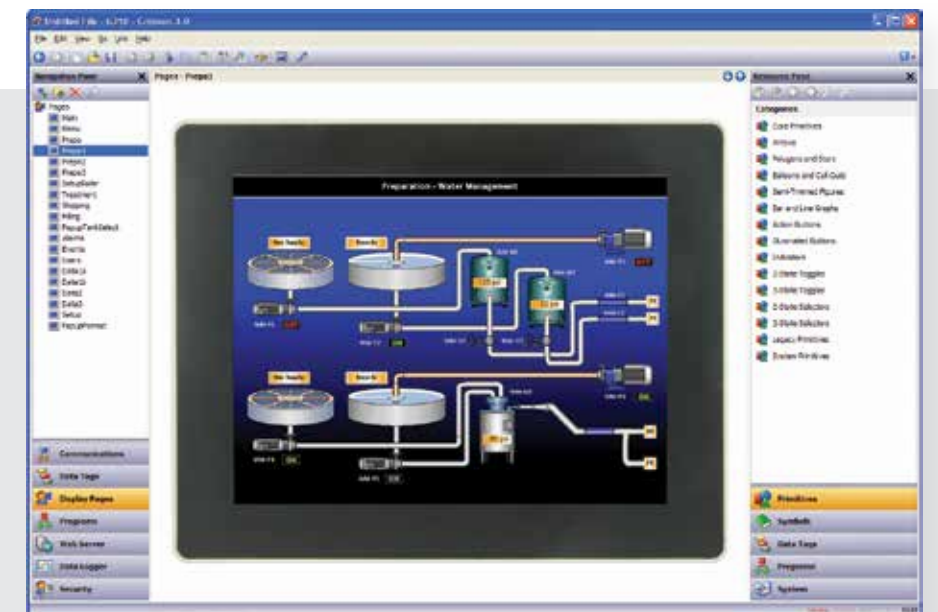
▶▶▶ The only rugged, modular HMI that web-enables any device for remote operation across your LAN or the Internet.

Protocol Conversion

> Converts over 300 major industrial protocols
> Gateway from any protocol to another
> Drag-and-drop data mapping via Crimson
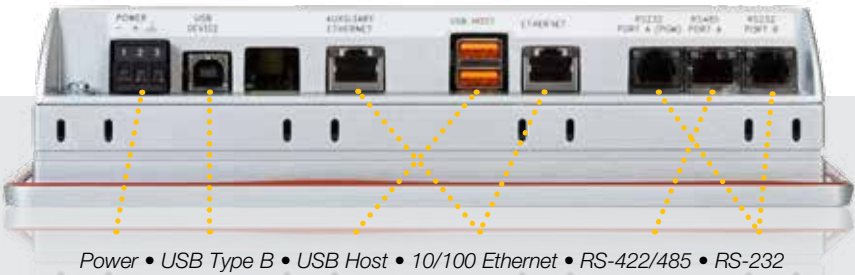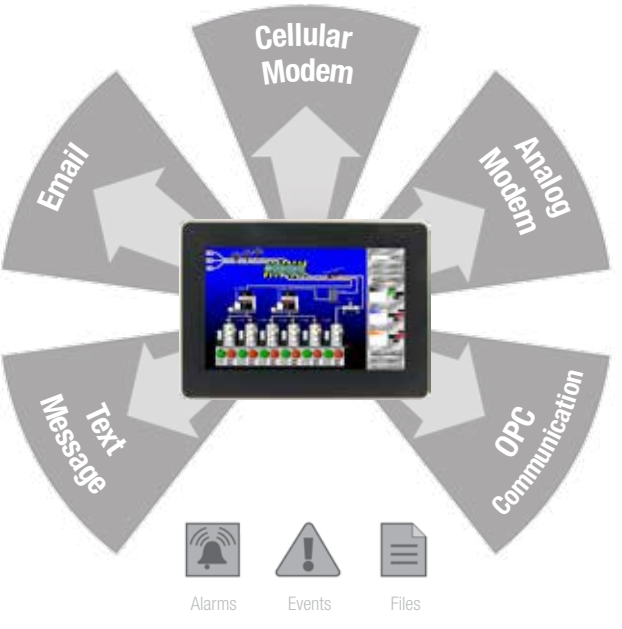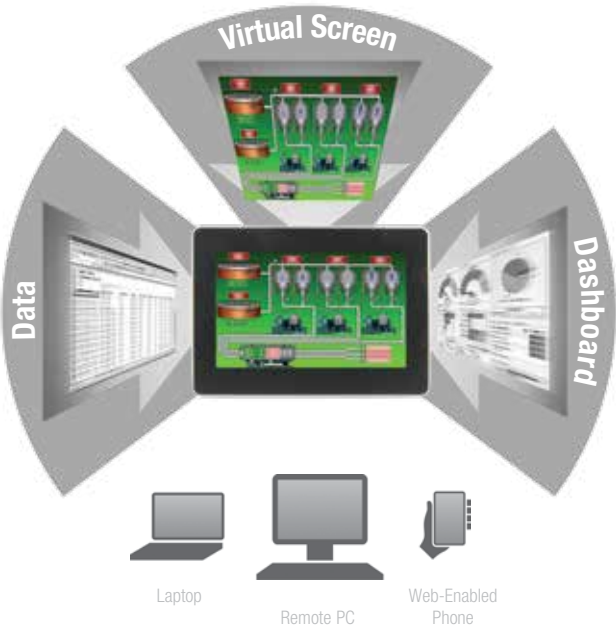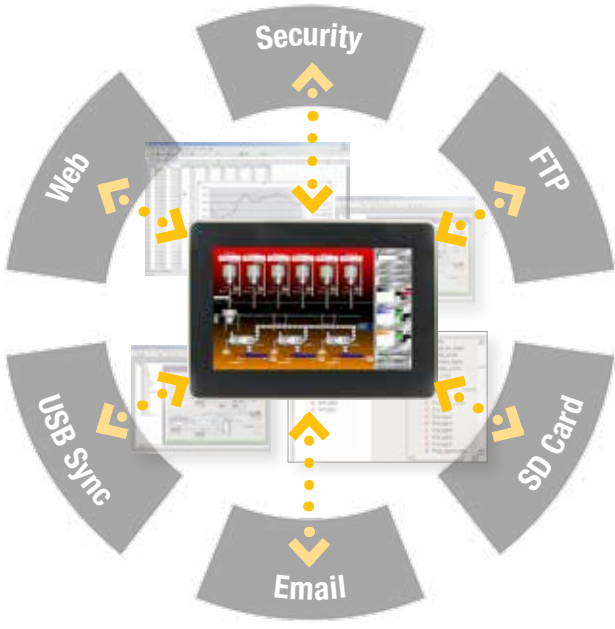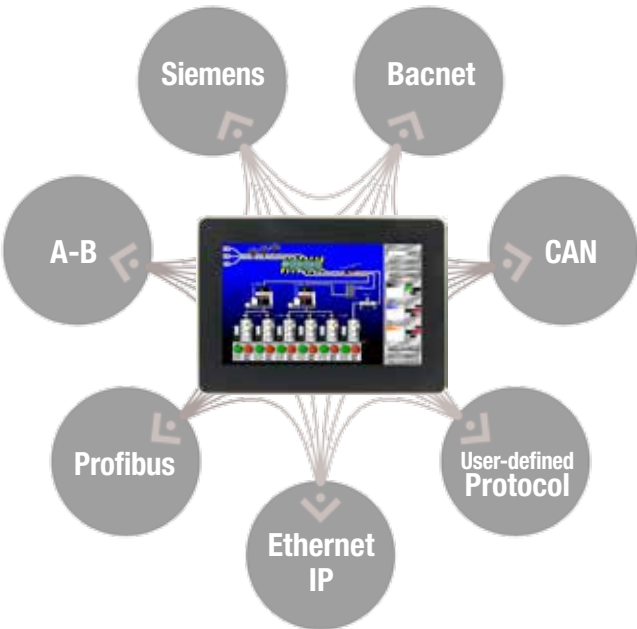> Easily manage multi-vendor environments

Data Logging

> Acquire data at user-defined rates from any or all connected devices into a single file
> Data stored in open CSV file format (Excel compatible)
> Collect, store, display data
> Email or FTP logged files

Web Serving

> Web- and network-enable any and all connected devices
> Auto-uploads data to FTP, web pages and/or dashboards
> Display the screen, view tags only or serve custom pages

Remote Access

> Securely monitor, access or control all system functions
> Upload/download databases, recipes or log files
> Email or text message alarm and event notifications
> Pass-through programming to other devices

Siemens · Bacnet · A-B · CAN · Profibus · User-defined Protocol · Ethernet IP

Security · Web · FTP · USB Sync · SD Card · Email

Virtual Screen · Data · Dashboard

Laptop · Remote PC · Web-Enabled Phone

Cellular Modem · Email · Analog Modem · Text Message · OPC Communication

Alarms · Events · Files

Power • USB Type B • USB Host • 10/100 Ethernet • RS-422/485 • RS-232

Communicate.

Communicating with over 300 different protocols, the Red Lion Graphite HMI Series is the most powerful communications platform available today. Graphite 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—Graphite will make sure they communicate seamlessly with each other. 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
• Additional RS-485 port on some models
• All serial ports independently isolated

• Optional Dual Ethernet port provides communications separately to the factory floor and enterprise
• Simultaneous communication with a minimum of 13 different protocols

Multi-vendor device environments with different protocols communicate seamlessly with Graphite HMIs.

Collect.

With an installed memory card, USB port and web/FTP upload connectivity, data acquisition and transfer capabilities are endless with the Graphite Series. Data can be acquired from any or all connected devices and compiled into a single CSV-formatted file, where it can be stored, displayed, emailed or uploaded to an FTP or posted to custom web pages. The built-in web server can be used to expose system data via a standard web browser, allowing remote access to diagnostic information or to the values recorded by the data logger.

• Log tags at user-programmable rates with automatic time/date stamp
• Download, upload and remotely access recipes, data and configuration files from the SD card or a USB drive; load database/configuration updates without a PC
• Automatically synchronize logged data between the Graphite and remote FTP site

• Upload data values to your custom web page
• Create batch logs or record data from each batch run separately for each plant shift
• Store security logs to capture user ID when performing tasks and capture alarm event data
• Create customized data screens accessible by password to privately provide selected data for users

Connect.

The ability to monitor only or securely facilitate full control from your remote computer or web-enabled mobile phones and devices is standard.

• Standard web browsers provide remote virtual display and control with screens identical to those on the Graphite
• Browse data or screens, extract or view files from the SD card, or change the program remotely

• Use pass-through programming for connected devices that don't typically allow remote programming

Graphite Series	G07	G09	G10	G12	G15
Display Type	WVGA, 16M Color (Widescreen)	WVGA, 16M Color (Widescreen)	VGA, 16M Color High Res SVGA, 16M Color	WXGA, 16M Color (Widescreen)	XGA, 16M Color
Sunlight Readable	Outdoor model available		Outdoor model available		
Resolution	800 x 480	800 x 480	640 x 480 High Res Model 800 x 600	1280 x 800	1024 x 768
Comms Ports	3	3	3	3	3
SD Card Slot	Yes	Yes	Yes	Yes	Yes
USB Device and USB Host	USB Device and 2 High Retension USB Host				
Power Supply	+24 VDC +/-20%				
Dimensions	196 x 140 mm	256 x 164 mm	275 x 218 mm	307 x 208 mm	356 x 281 mm
Protocol Conversion	Yes	Yes	Yes	Yes	Yes
Data Logging	Yes	Yes	Yes	Yes	Yes
Web/FTP Server	Yes	Yes	Yes	Yes	Yes
Software	Red Lion Crimson software with free upgrades and support; drag-and-drop data mapping, free device drivers, multi-language support, 4000+ graphics library included				
Module Slots	5	6	7	8	8
Ratings	NEMA 4X/IP66				
Temperature	-20° - 60° C				
Certifications	See website for current certifications				

Have an outdoor application?

No problem, we have a Graphite model for you. Both the 7" and 10" sizes are available with a sunlight readable display and UV protective overlay, providing one of the easiest to read HMIs on the market. Add our wide temperature range and rugged shock and vibration specs and you have the perfect combination for your next outdoor application.

Ordering Guide

Model	Indoor					Outdoor	
	Ports					Ports	
	Standard	Dual Ethernet	Dual Ethernet Dual RS-485	800 x 600 Display	800 x 600 Display Dual Ethernet	Standard	Dual Ethernet
7"	G07C0000					G07S0000	
9"	G09C0000	G09C1000					
10"	G10C0000	G10C1000		G10R0000	G10R1000	G10S0000	G10S1000
12"	G12C0000		G12C1100				
15"	G15C0000		G15C1100				

Learn more at www.redlion.net/Graphite
Call +1 (717) 767-6511 to speak to a representative.

	G303M, G303S	G306A, G306M, G306MS	G308A2, G308C1	G310C2, G310R2, G310S2	G315C2
Display Type	3.2" Graphical Monochrome LCD with yellow backlight	5.7" TFT Active Matrix, 256-color QVGA display Monochrome Models Available	G308A: 8.4" TFT 32K-color G308C: 7.5" TFT 32K-color	10.4" TFT 32K-color G310C/G310S: VGA G310R: SVGA	32K Color XGA LCD display
Sunlight Readable	G303S Only	G306MS Only	No	G310S Only	No
Keypad	Programmable 32-key membrane	Programmable 5-key membrane	Programmable 7-key membrane	Programmable 8-key membrane	Programmable 10-key membrane
Resolution	128 x 64 pixels	320 x 240 pixels	640 x 480 pixels	G310C, G310S: 640 x 480 pixels G310R: 800 x 600 pixels	1024 X 768 pixels
Comms Ports	Two RS-232, one RS-422/485 standard; expandable with optional card (Isolated ports except in G303, G306A, G306M, G306MS, G308C)				Two RS-232, two RS-422/485 (expandable) Isolated ports
CompactFlash Slot	Yes				
USB Device and USB Host	USB Device Only	USB Device Only	G308A: Yes G308C: USB Device Only	Yes	Yes
Power Supply	24 VDC +/-20%				
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: 2.9" (73 mm)	9.50" x 12.83" x 2.45" (241.3 x 325.8 x 62 mm)	13.0"x 16.0" x 2.8" (330.2 x 406.4 x 71.5 mm)
Protocol Conversion	Yes	Yes	Yes	Yes	Yes
Data Logging	User-programmable logging rates with time/date stamp and security management; data synchronization, PLC and alarm triggering; CSV file format				
Web/FTP Server	Remote access and control, access to logged data via FTP or web browser; pass-through programming; notification and alarms; automatic HTML page population				
Software	Red Lion Crimson software with free upgrades and support; drag-and-drop data mapping, free device drivers, multi-language support, 4000+ graphics library included				
Optional Cards	CANopen, J1939, DeviceNet™, PROFIBUS DP™, RS-232/485 Expansion, GSM/GRPS Modem				
Ratings	NEMA 4X/IP66				
Certifications	UL Class I, Div 2				

G3 Series 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 the industry's most flexible, intuitive and powerful programming environment.

Optional G3 Expansion Cards:

- CANopen or J1939 (model G3CN)
- RS-232/485 (one each additional isolated port; model G3RS)
- DeviceNet™ (model G3DN)
- PROFIBUS DP™ (model G3PB)
- GSM/GPRS Cellular Modem (model G3GSM)

Ordering Guide

Model	Indoor				Outdoor	
	Ports				Ports	
	Standard	Dual Ethernet	800 x 600 Display	800 x 600 Display Dual Ethernet	Standard	Dual Ethernet
3"	G303M000				G303S000	
6"	G306A000				G306MS00	
8"	G308A210	G308A230				
10"	G310C210	G310C230	G310R210	G310R230	G310S210	G310S230
15"	G315C210*	G315C230*				

* 15" models provide an additional RS-485 port
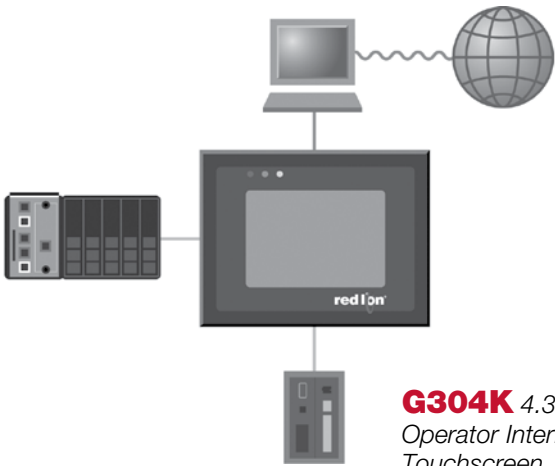
G3 Kadet Series HMIs

G3 Kadet HMIs are ideal for many applications that don't require data logging while offering the high performance and features of the G3 Series.

	G304K2	G307K2
Display Type	4.3" TFT 32K-color	7" TFT 32K-color
Sunlight Readable	N/A	
Keypad	Touchscreen only	
Resolution	480 x 272 pixels	800 x 480 pixels
Comms Ports	One RS-232, one RS-232/422/485	One RS-232, two RS-232/422/485
Ethernet	10 Base-T 100 Base-TX	10 Base-T 100 Base-TX
CompactFlash Slot	No	No
USB Device and USB Host	No	No
Power Supply	24 VDC +/-20%	24 VDC +/-20%
Dimensions	4.016" x 5.039" x 1.50" (102 x 128 x 38 mm)	5.76" x 7.88" x 1.67" (146 x 200 x 43 mm)
Protocol Conversion	Yes	Yes
Data Logging	N/A	
Web/FTP Server	N/A	
Software	Red Lion Crimson software with free upgrades and support; drag-and-drop data mapping, free device drivers, multi-language support, 4000+ graphics library included	
Optional Cards	N/A	
Ratings	NEMA 4/IP65	
Certifications	UL Listed	

Ordering Guide

Model	Indoor
4"	G304K200
7"	G307K200

G307K *7" Operator Interface Touchscreen*
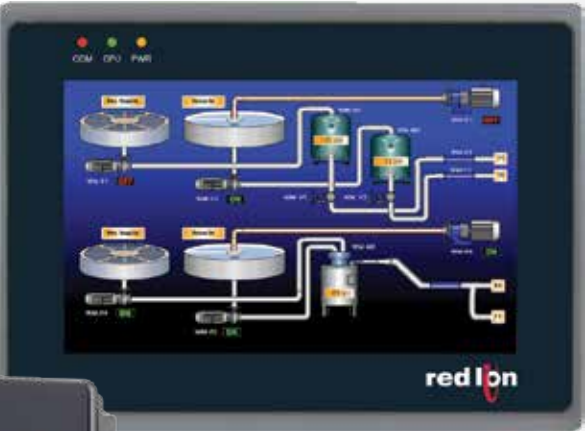
G304K *4.3" Operator Interface Touchscreen*

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

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

The G3 Kadet Series offers a host of functional interface and connectivity features for applications where protocol conversion and simple touchscreen capabilities are 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, both discrete and process machinery.

The right fit for many applications.

Available in 4" (4.3") and 7" models, the G3 Kadet Series offers the same protocol conversion benefits as the original G3. The capabilities of the G3 Kadet Series include multiple serial ports, drag-and-drop configuration via Crimson software, port sharing capabilities and an integrated Ethernet port which allows simultaneous communications with up to seven device types including PLCs, PCs, drives, bar scanners and many more. As with the G3 Series of HMIs, these Kadet models support over 300 different protocols.

Value other HMIs can't touch.

The 4.3" G3 Kadet was designed for applications in which available mounting space is at a premium. The G304K2 features a bright TFT display with 32K color support and a resolution of 480 x 272. Communication is made easy with two serial ports; one capable of RS-232 and the other RS-232/RS-485/RS-422 as well as a 10 Base-T/100-Base TX Ethernet port which supports up to 4 protocols simultaneously.

Need all the capabilities, but a larger display? Our 7" G3 Kadet is the perfect solution. With three serial ports and an Ethernet port, G307K2 can connect to multiple serial and Ethernet devices simultaneously, including PLCs, motor drives, bar code scanners and more. The display is a bright TFT with 32K color support and a resolution of 800 x 480.

The G3 Kadet Series touchscreens offer a host of innovative features and capabilities that you will not find on other HMIs even at twice the price.

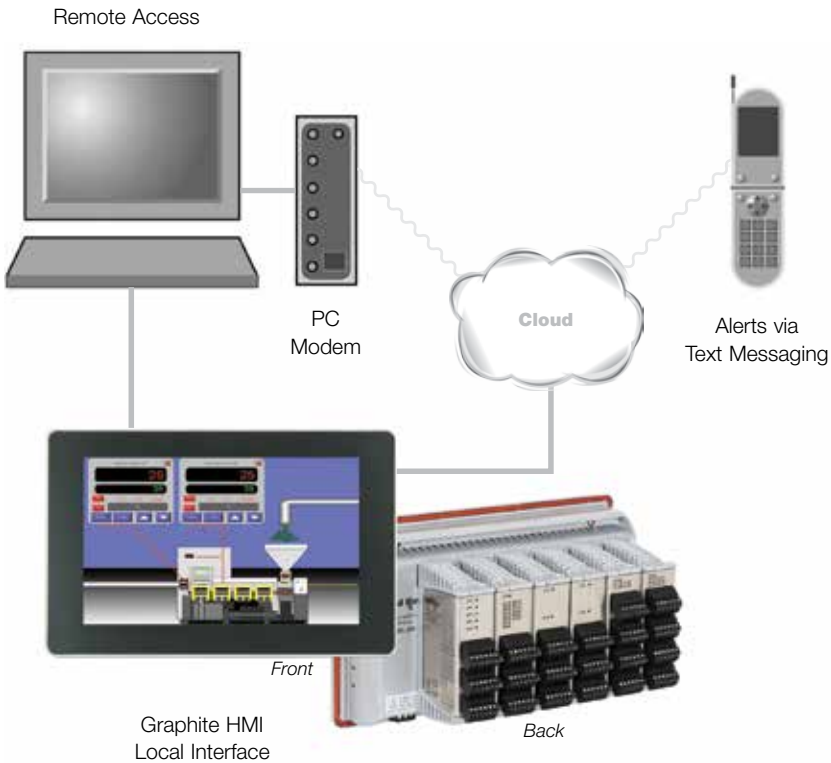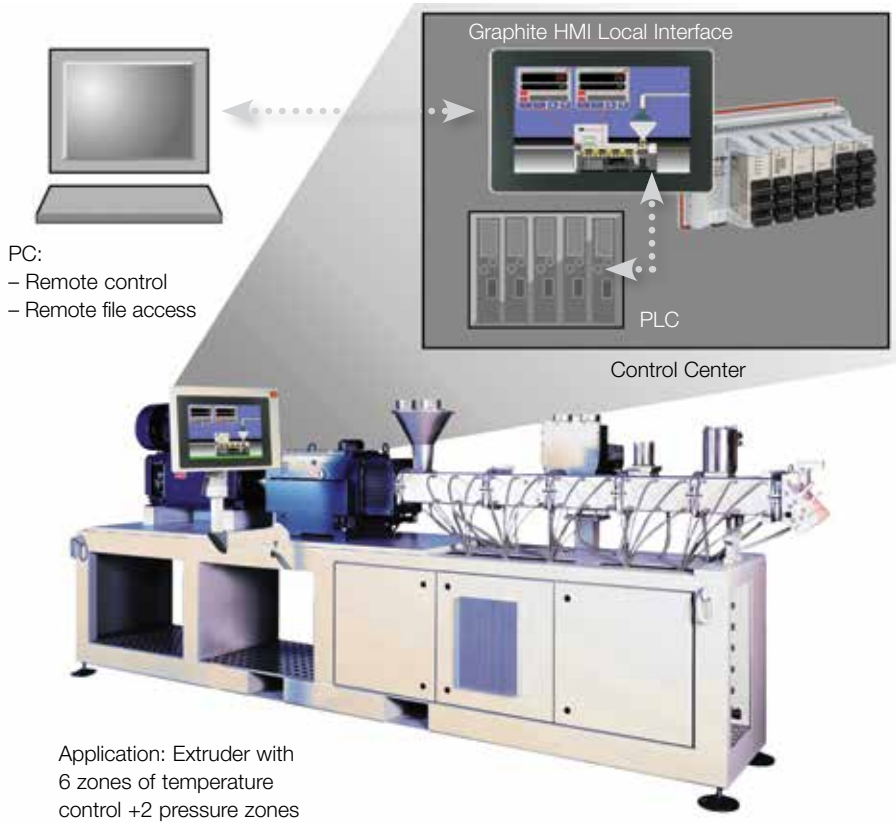|	G3 Kadet	G3 HMI
RS-232 Port	✔	✔
RS-485/422 Port	✔	✔
Ethernet	✔	✔
Crimson Programmed	✔	✔
C-Type User Programming	✔	✔
Protocol Converter	✔	✔
Flash® Programming		✔
USB Program Download		✔
Keypads		✔
Log Data		✔
FTP		✔
Web Server		✔
Expansion Cards		✔

Learn more at www.redlion.net/G3

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 software. Call +1 (717) 767-6511 to speak to a representative.

Full PID Control

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

Graphite HMI Local Interface

PC:
– Remote control
– Remote file access

PLC

Control Center

Application: Extruder with 6 zones of temperature control +2 pressure zones

Remote Access

Data Acquisition

Advanced data acquisition and management is easy with Graphites's powerful, affordable I/O Modules. Monitor up to 8 points per module for up to 40 I/O with a 7" HMI. Log data and access the files remotely through any Internet browser. Enable remote alerts and receive alarms via email or cellular text messages.

PC
Modem

Cloud

Alerts via
Text Messaging

Graphite HMI
Local Interface

Front

Back

GMPID / GMPID2
Single and Dual Loop PID Control Modules

> Performs Heat (reverse), Cool (direct) or Heat/Cool (reverse/direct)
> Universal inputs accept B, C, E, J, K, N, R, S, and T type thermocouples, 100 ohm 385/392 and 120 ohm 672 type RTDs 0-10V and 0/4-20mA signals
> Auto addressing minimizes configuration time
> Fully isolated design provides reliable operation
> PID control with reduced overshoot
> On demand auto-tuning of PID settings
> Discrete outputs available in relay, triac or SSR
> DC analog output (optional, CSPID1 only)
> Heater current input (optional) ensures detection of heater circuit failure

GMTC8 / GMRTD6
Thermocouple and RTD modules

> Models available for thermocouple or RTD inputs
> Unused inputs can be disabled to increase overall reading rate
> Programmable slope and offset correction to remove sensor error
> Ideal for data-acquisition applications
> Auto addressing minimizes configuration time

GMINI8 / GMINV8
Dedicated High-Density Analog Input Modules

> Accept up to eight ±10V or 0/4-20 mA inputs per module
> Unused inputs can be disabled to increase overall reading rate
> Ideal for data-acquisition applications
> Auto addressing minimizes configuration time

GMSG
Strain Gage Modules

> PID control of load cells, and pressure and torque transducers
> Single or dual strain gage inputs
> Three solid-state or relay outputs
> Digital rate, batch totalizer and Peak/Valley Recording
> User selectable output (0-10 VDC, 0-20 mA, or 4-20 mA)

GMDIO14
Digital I/O Module with Logic Engine

> 8 input / 6 output digital module
> Inputs isolated from outputs
> Inputs independently switch selectable for sink or source signals
> Inputs independently configurable for high or low active state
> Inputs independently switch selectable for high or low frequency signals
> Relay or NFET output models available

GMOUT
Analog Output Module

> Four isolated analog outputs
> Can be individually configured and scaled to generate output ranges of 0 to 5 V, 0 to 10 V, ±10 V, 0 to 20 mA, or 4-20 mA
> Auto addressing minimizes configuration time

GMUIN4
Universal Analog Input Module

> 4 universal inputs
> Accepts thermocouples, RTDs, 0/4-20 mA and +/- 10 VDC
> Offers complete isolation: inputs, power and core

GMCAN
CAN Protocol Module

> CAN protocol integration
> Removes need for external CAN gateways
> Built-in user-selectable termination resistor

GMJ1939
J1939 Protocol Module

> J1939 protocol integration
> Removes need for external J1939 gateways
> Built-in user-selectable termination resistor

►►► A comprehensive portfolio of industrial automation and networking solutions to connect. monitor. control.

INDUSTRIAL AUTOMATION

Process Control
▶ PID Controllers
▶ Data Acquisition
▶ RTUs & I/O Modules
▶ Signal Conditioners
▶ Sensors

HMIs & Panel Meters
▶ HMI Operator Panels
▶ Panel Meters
▶ Large LED Displays
▶ Industrial TV Displays

INDUSTRIAL NETWORKING

Ethernet Switches
▶ Unmanaged
▶ Monitored
▶ Managed
▶ PoE
▶ Routers
▶ Wi-Fi Radios

Cellular M2M
▶ Cellular Routers
▶ Cellular RTUs

Communication Converters
▶ Protocol Converters
▶ Media Converters
▶ Serial Converters

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Africa**
europe@redlion.net

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As the global experts in communication, monitoring and control for industrial automation and networking, Red Lion has been delivering innovative solutions for over forty years. Our award-winning technology enables companies worldwide to gain real-time data visibility that drives productivity. Product brands include Red Lion, N-Tron and Sixnet. With headquarters in York, Pennsylvania, the company has offices across the Americas, Asia-Pacific and Europe. For more information, please visit www.redlion.net. Red Lion is a Spectris company.