red l**i**on ®

HMI Operator Interfaces
Rugged Graphite® & G3 HMIs

Protocol conversion | Multi-vendor support | Web server
Data logging | Email notification | SMS message alerts

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 easily connect, monitor and control processes across a diverse range of industries that include manufacturing, oil and gas and water/wastewater.

Connect Every Device. Anywhere. Anytime.

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 connect devices, monitor performance and control operations 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 3" through 15" touchscreens, our HMIs give organizations the ability to select exactly the functionality they need to connect, monitor and control operations.

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.

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.
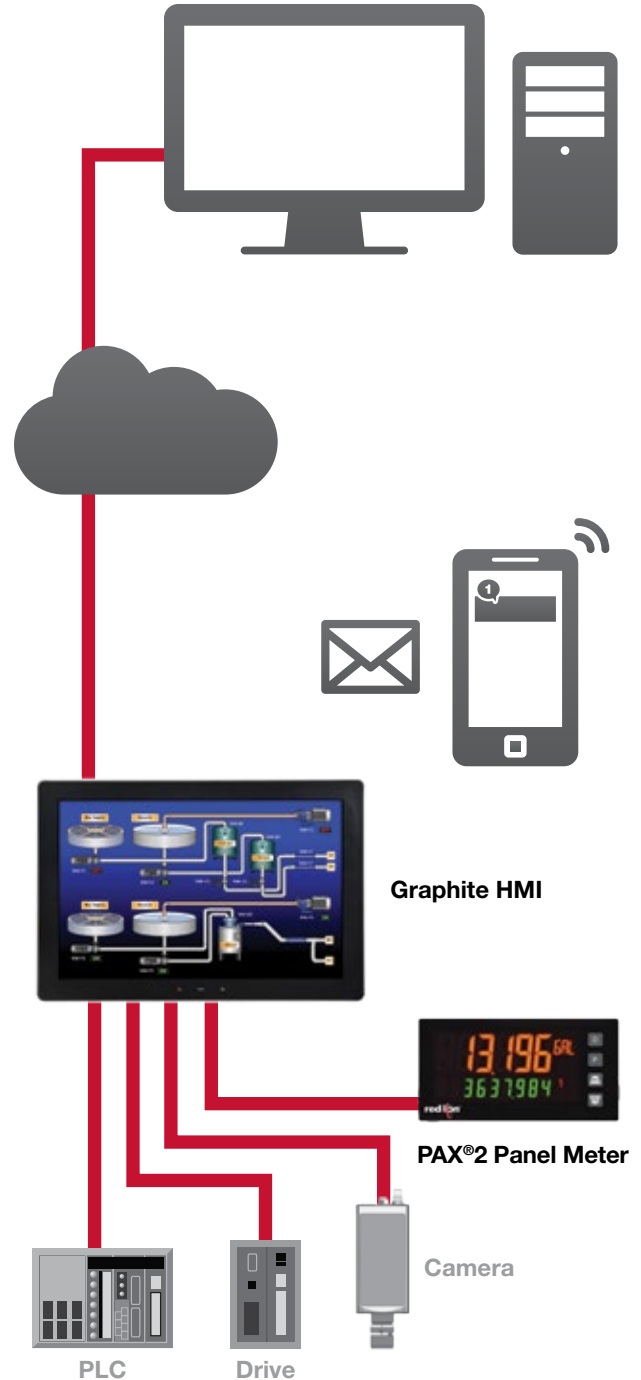
Unify disparate equipment.

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 protocols
- Support up to 20 simultaneous protocol conversions
- Convert between serial, USB and Ethernet devices
- Manage multi-vendor environments with ease

Monitor and 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

Graphite HMI

PAX®2 Panel Meter

Camera

PLC

Drive

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 and 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

- 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 Class 1, Division 2 Listed for hazardous locations, ABS and ATEX/IECEx zone 2/22 approved

Outdoor applications?

No problem, we have Graphite HMI models for you. Our rugged 7" and 10" 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 G3 HMIs

- Convert up to 13 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 Class 1, Division 2 Listed for hazardous locations

G3 Kadet HMIs

- Convert up to seven protocols simultaneously from over 300 supported drivers
- Offer several connectivity ports including serial and Ethernet

HMI Operator Panel Feature Comparison

FEATURES	GRAPHITE HMIs	G3 HMIs	G3 KADET HMIs
Serial Ports	4*	4*	3*
Ethernet	2*	1	1
USB Host	2	1*	
Crimson 3.0 Programmed	•	•*	•
C-Type User Programming	•	•	
Protocol Converter	•	•	•
Simultaneous Conversions	20	13	7
Web Server, FTP, Data Logging	•	•	
Expansion Card Slots	8*	1	
Temperature Range	-20° to 60°C	0° to 50°C	0° to 45°C
On-Display Keypad		•	

* Model specific

Rugged Graphite HMIs

GRAPHITE HMIs	G15	G12
Display Type	15" XGA, 16M Color	12" WXGA, 16M Color (Widescreen)
Resolution	1024 x 768	1280 x 800
Sunlight Readable		
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)
Module Slots	8	8
Serial Ports	Up to 4	Up to 4

Sleek design. Versatile 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 UL Class 1, Division 2, ABS, ATEX and IECEx zone 2/22 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 both 7" and 10" 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
- 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 3.0 software for easy drag-and-drop programming

G10		G09	G07
10" G10R SVGA, 16M Color (High Res)	10" G10C & G10S VGA, 16M Color	9" WVGA, 16M Color (Widescreen)	7" WVGA, 16M Color (Widescreen)
800 x 600	640 x 480	800 x 480	800 x 480
G10S Models			G07S Model
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)
7		6	5
3		3	3

Specification Highlights

1 Power

4 USB Host

2 USB Device

5 RS-232

3 10/100 Ethernet

6 RS-422/485

- SD memory card slot for data log storage
- Extreme -20˚ to 60℃ operating temperature range
- +24 VDC +/-20% power input
- ATEX and IECEx zone 2/22 approvals
- UL Class 1, Division 2 Listed; NEMA 4x/IP66 rated

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.
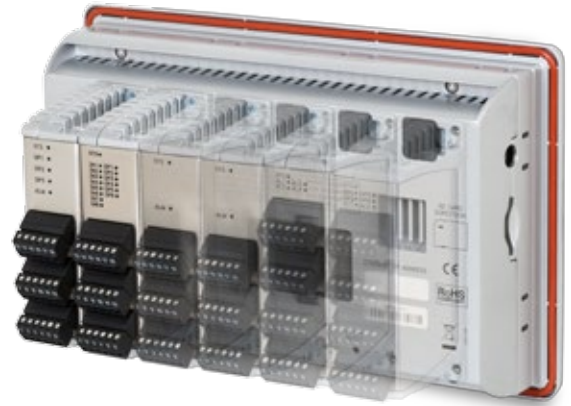
Graphite Plug-In Modules

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.

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

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.

MODEL NUMBER	INPUT(S)	CONTROL OUTPUT(S)	ANALOG OUTPUT	OPTION
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

Programmed using our award-winning Crimson 3.0 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.

MODEL NUMBER	FUNCTION
GMCAN000	CAN Communication
GMJ19390	J1939 Communication
GMDN0000	DeviceNet Communication
GMPBDP00	PROFIBUS DP Communication
GMHSPA00	HSPA+ Cellular modem Communication

See manual for model-specific certifications

Crimson 3.0 Software

Seamless configuration, unprecedented control.

Red Lion's Crimson 3.0 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. Best of all, Crimson software updates, support, cabling instructions and communication drivers come with every Red Lion HMI.

Crimson software benefits 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

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.

Powerful G3 HMIs

G3 SERIES	G315C2	G310C2, G310R2, G310S2	
Display Type	32K Color XGA LCD Display	10.4" TFT 32K-Color G310C/G310S: VGA G310R: SVGA	
Resolution	1024 X 768	G310R: 800 x 600	G310C & G310S: 640 x 480
Dimensions	13.0" x 16.0" x 2.8" (330.2 x 406.4 x 71.5 mm)	9.50" x 12.83" x 2.45" (241.3 x 325.8 x 62 mm)	
Sunlight Readable		G310S Only	
Keypad	Programmable 10-Key Membrane	Programmable 8-Key Membrane	
USB Device & USB Host	Yes	Yes	
Serial Ports	4	3	

Feature-rich functionality. Reliable performance.

With a proven track record of reliable performance in industrial environments, Red Lion G3 HMIs provide durability and functionality beyond the industry standard with an intuitive, easy-to-use programming interface. Our G3 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
- Web and FTP servers enable remote monitoring and control
- Communication cards extend connectivity options
- USB synchronization of database and log files
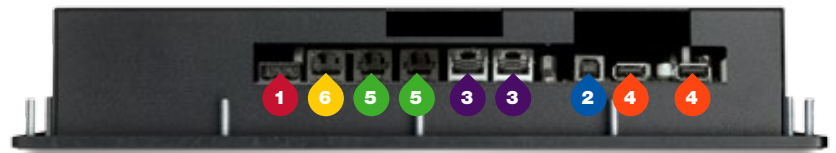- Crimson software for easy drag-and-drop programming

G308A2, G308C1	G306A, G306M*, G306MS	G303M, G303S*
G308A: 8.4" TFT 32K-Color G308C: 7.5" TFT 32K-Color	5.7" TFT Active Matrix, 256-Color QVGA Display Monochrome Models Available	3.2" Graphical Monochrome LCD with Yellow Backlight
640 x 480	320 x 240	128 x 64
8.18" x 10.32" (207.8 x 262 mm) G308A Depth: 2.9" (73 mm)	7.08" x 8.83" x 2.3" (179.8 x 224.3 x 58 mm)	5.85" x 7.45" x 2.1" (148.6 x 189.2 x 52 mm)
	G306MS Only	G303S Only
Programmable 7-Key Membrane	Programmable 5-Key Membrane	Programmable 32-Key Membrane
G308A: Yes G308C: USB Device Only	USB Device Only	USB Device Only
3	3	3

* Crimson 2.0

Specification highlights

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

- CompactFlash® slot for storage and collection of logged data
- Wide 0˚ to 50˚C operating temperature range
- +24 VDC +/-20% power input
- UL Class 1, Division 2 Listed
- NEMA 4x/IP66 rated

G3 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.

G3 Kadet HMIs

G3 KADET HMIs	G307K2	G304K2
Display Type	7" TFT 32K-Color	4.3" TFT 32K-Color
Resolution	800 x 480	480 x 272
Dimensions	5.76" x 7.88" x 1.67" (146 x 200 x 43 mm)	4.016" x 5.039" x 1.50" (102 x 128 x 38 mm)
Serial Ports	(1) RS-232, (2) RS-232/422/485	(1) RS-232, (1) RS-232/422/485

Essential features. Exceptional value.

Red Lion G3 Kadet HMIs are the perfect choice when what you need is the core functionality and consistent performance of a top-quality HMI to support the ongoing operation of equipment in less complex industrial environments. Available in two sizes, our G3 Kadet HMIs cost-effectively deliver the power of best-in-class communications alongside industry-leading protocol conversion capabilities, allowing you to seamlessly integrate with PLCs, drives, motion controllers and other automation devices.

- Convert up to seven protocols simultaneously from over 300 supported drivers

- Crimson 3.0 software for easy drag-and-drop programming

	G3 KADET	G3 HMI
Serial Ports	3*	4*
Ethernet	1	1
USB Host		1*
Crimson 3.0 Programmed	•	•
C-Type User Programming		•
Protocol Converter	•	•
Simultaneous Conversions	7	13
Web Server, FTP, Data Logging		•
Expansion Card Slots		1
On-Display Keypad		•

HMI Ordering Guide

Rugged 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
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

Powerful G3 HMIs

MODEL NUMBER	INDOOR/ OUTDOOR	DISPLAY SIZE	DISPLAY	SERIAL PORTS	ETHERNET PORTS	USB HOST	EXPANSION	CARD SUPPORT
G303M000	Indoor	3"	128 x 64	3	1	-	1 Card Slot	CF Card
G303S000	Outdoor	3"	128 x 64	3	1	-	1 Card Slot	CF Card
G306M000	Indoor	6"	320 x 240	3	1	-	1 Card Slot	CF Card
G306A000	Indoor	6"	320 x 240	3	1	Expansion Card	1 Card Slot	CF Card
G306MS00	Outdoor	6"	320 x 240	3	1	-	1 Card Slot	CF Card
G308C100	Indoor	8"	640 x 480	3	1	-	1 Card Slot	CF Card
G308A210	Indoor	8"	640 x 480	3 iso.	1	1	1 Card Slot	CF Card
G310C210	Indoor	10"	640 x 480	3 iso.	1	1	1 Card Slot	CF Card
G310R210	Indoor	10"	800 x 600	3 iso.	1	1	1 Card Slot	CF Card
G310R230	Indoor	10"	800 x 600	3 iso.	2	1	1 Card Slot	CF Card
G310S210	Outdoor	10"	640 x 480	3 iso.	1	1	1 Card Slot	CF Card
G310S230	Outdoor	10"	640 x 480	3 iso.	2	1	1 Card Slot	CF Card
G315C210	Indoor	15"	1024 x 768	3 iso.	1	1	1 Card Slot	CF Card
G315C230	Indoor	15"	1024 x 768	3 iso.	2	1	1 Card Slot	CF Card

G3 Kadet HMIs

MODEL NUMBER	INDOOR/ OUTDOOR	DISPLAY SIZE	DISPLAY	SERIAL PORTS	ETHERNET PORTS	USB HOST	EXPANSION	CARD SUPPORT
G304K200	Indoor	4"	480 x 272	2	1	-	-	-
G307K200	Indoor	7"	800 x 480	3	1	-	-	SD Card