# Graphite® Advanced Rugged HMIs
*Red Lion Automation Series*

**red lion®**

►►► **Graphic Operator Interface Panels with Modular I/O**

**Graphite HMIs are the industry's first rugged HMI solution to combine plug-in modules with protocol conversion, data logging and web-based monitoring and control.**

From factories to extreme locations, Graphite HMIs allow customers to easily connect, monitor and control their processes and equipment. Graphite HMIs provide powerful protocol conversion between 300 drivers providing up to 13 simultaneous protocol conversions ensuring every device is integrated. Available in eight different models with sizes ranging from 7" to 15", Graphite's sleek design provides full-color touchscreen displays that consume minimal panel space.

## APPLICATIONS

> Machine Automation
> Oil and Gas
> Water/Wastewater
> Plastic Extrusion
> Data Acquisition

## PRODUCT HIGHLIGHTS

> Protocol Conversion With Over 300 Drivers
> Up to Eight Plug-In I/O and Communication Module Slots
> Built-in Web Server for Remote Access
> On-Board Data Logging to SD Card or via FTP
> Industrial Construction, Die-Cast Aluminum Housing Provides Extreme Protection
> Wide -20° to 60°C Operating Temperature Range
> Outdoor Sunlight Readable Models Available
> Dual USB Host Capability

## FEATURES & BENEFITS

> Plug-in I/O, PID Control and Communication Modules
  • Minimizes equipment complexity with an all-in-one solution
> Full-Color Touchscreen Display
  • Outdoor sunlight readable models
  • Optional widescreen
  • Narrow bezel reduces installation space
> Rugged Construction
  • Wide -20° to 60°C operating temperature
  • High tolerance to shock and vibration
  • UL Class 1, Division 2, ABS, ATEX and IECEx approvals for hazardous locations

> Configured via Crimson® 3 Software
  • Intuitive drag-and-drop graphical software for easy setup
  • Quickly create simple applications using step-by-step process
  • Over 300 built-in drivers can be mapped to PLCs, drives and scanners in seconds
> Powerful Integration Features
  • Ethernet, USB and serial ports make communication simple
  • Built-in data logging for all connected equipment ensures equipment uptime
  • Robust web server provides remote access and control

**industrial automation**

CE   c(UL)us LISTED   ‹Ex›   IECEx   ABS TYPE APPROVED PRODUCT

## COMMUNICATION PROPERTIES
USB Ports
Programming Port: One (1) USB Type B adheres to USB specification 1.1
Host Ports: Two (2) USB Type A complies with USB specification 2.0
Supports full-speed data transfers
Hardware over current protected (0.5 A max per port)
Serial Ports: Format/Baud rates independently configurable
Programming Port: One (1) RS-232 port with RJ12 connector
Communication Ports:
One (1) RS-232 port via RJ12 connector
One (1) RS-422/485 port via RJ45 connector
Optional Serial Ports:
One (1) RS-232 port via RJ12 connector
One (1) RS-422/485 port with via RJ45 connector
Ethernet Ports: 1500 Vrms network isolation
One (1) 10/100Base-T(X) port via RJ45 connector
Optional Ethernet Port: One (1) 10/100Base-T(X) port via RJ45 connector

## POWER INPUT
24 VDC ± 20%

| Model | Typical | Max | With Modules |
|---|---|---|---|
| G07C | 9 W | 16 W | 37 W |
| G07S | 10 W | 17 W | 38 W |
| G09 | 13 W | 20 W | 45 W |
| G10C/R | 12 W | 19 W | 48 W |
| G10S | 18 W | 24 W | 53 W |
| G12 | 16 W | 23 W | 56 W |
| G15 | 20 W | 27 W | 60 W |

Must use a Class 2 circuit according to National Electrical Code (NEC), NFPA-70 or Canadian Electrical Code (CEC), Part I, C22.1 or a Limited Power Supply (LPS) according to IEC 60950-1 or Limited-energy circuit according to IEC 61010-1. Power connection via removable three position terminal block.
Battery: Lithium coin cell
Typical lifetime of 10 years

## POWER CONNECTION
High compression cage-clamp terminal block
Wire Strip Length: 0.3" (7.5 mm)
Wire Gauge Capacity: One 14 AWG (1.63 mm) solid, two 18 AWG (1.02 mm) or four 20 AWG (0.81 mm)

## LCD DISPLAY
Touchscreen: Resistive analog

| Model | Size | Pixels | Brightness | Backlight |
|---|---|---|---|---|
| G07C | 7 in | 800 X 480 | 500 cd/m$^2$ | 50,000 HR TYP. |
| G07S | 7 in | 800 X 480 | 1000 cd/m$^2$ | 70,000 HR TYP. |
| G09 | 9 in | 800 X 480 | 400 cd/m$^2$ | 70,000 HR TYP. |
| G10C | 10 in | 640 X 480 | 450 cd/m$^2$ | 70,000 HR TYP. |
| G10R | 10 in | 800 X 600 | 400 cd/m$^2$ | 70,000 HR TYP. |
| G10S | 10 in | 640 X 480 | 1500 cd/m$^2$ | 35,000 HR TYP. |
| G12 | 12 in | 1280 X 800 | 400 cd/m$^2$ | 70,000 HR TYP. |
| G15 | 15 in | 1024 X 768 | 400 cd/m$^2$ | 70,000 HR TYP. |

## NETWORK MEDIA
10BaseT: ≥ Cat3 cable
100BaseTX: ≥ Cat5 cable

## ENVIRONMENTAL
Operating Temperature: -20° C to 60° C
Storage Temperature: -20° C to 70° C
Operating Humidity: 0 to 85% (non condensing)
Operating Altitude: Up to 2000 meters
Shock: 40 g per IEC 68-2-27
Vibration: 4 g @ 5-500 Hz (7" model see lit) per IEC 68-2-6

## CERTIFICATION & COMPLIANCE
Product Safety:
UL Safety: Class I, Division 2, Groups A, B, C, D , Class II, Division 2, Groups F and G , Class III Hazardous Locations certificate number #E317425
CE Approved: EN 61326-1 Immunity to Industrial Locations
Emission CISPR 11 Class A, IEC/EN 61010-1, RoHS Compliant
ABS Type Approval for Shipboard Applications
Outdoor Enclosure Rating: IP40, UL50 (Face only)
Enclosure Rating: IP66 (Face only)
Enclosure Rating: IP20 (Rear of unit)

## MECHANICAL
Construction: Cast aluminum enclosure with NEMA 4X/IP66 rating for indoor/outdoor use when correctly fitted with the gasket provided. Installation Category II, Pollution Degree 2.
Weight:
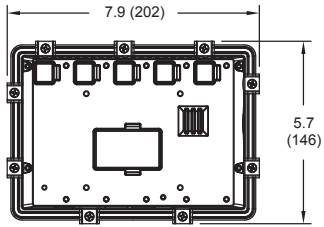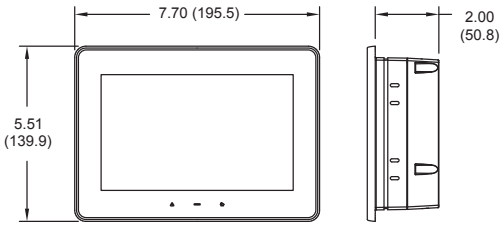G07 – 2.26 lb. (1.03 kg)
G09 – 3.39 lb. (1.54 kg)
G10 – 4.80 lb. (2.18 kg)
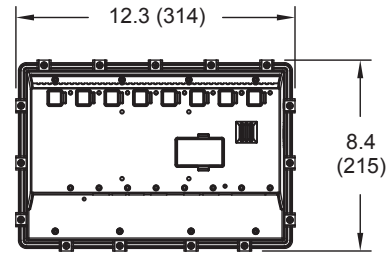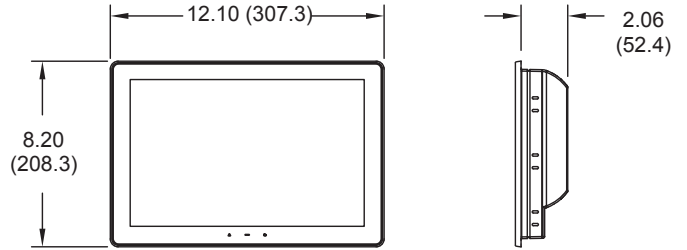G12 – 5.06 lb. (2.29 kg)
G15 – 7.73 lb. (3.50 kg)

**G07**

7.70 (195.5)
2.00 (50.8)
5.51 (139.9)
7.9 (202)
5.7 (146)

(MOUNTING CLIPS INSTALLED)

**G09**

10.06 (255.6)
2.06 (52.4)
6.47 (164.4)
10.3 (262)
6.7 (171)

(MOUNTING CLIPS INSTALLED)

**G10**

10.84 (275.2)
2.06 (52.4)
8.57 (217.7)
11.1 (281)
8.8 (224)

(MOUNTING CLIPS INSTALLED)

**G12**

12.10 (307.3)
2.06 (52.4)
8.20 (208.3)
12.3 (314)
8.4 (215)
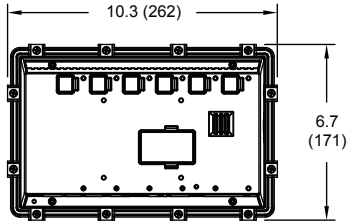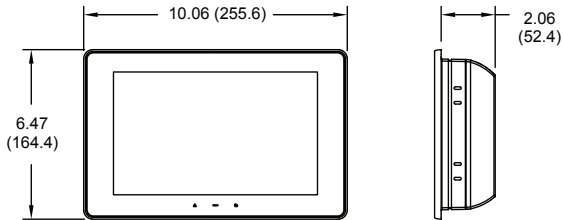
(MOUNTING CLIPS INSTALLED)

**G15**

14.03 (356.3)
2.14 (54.3)
11.10 (281.8)
14.3 (363)
11.3 (288)
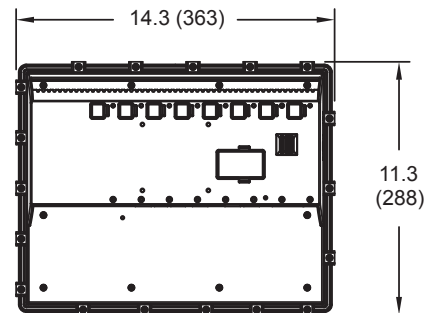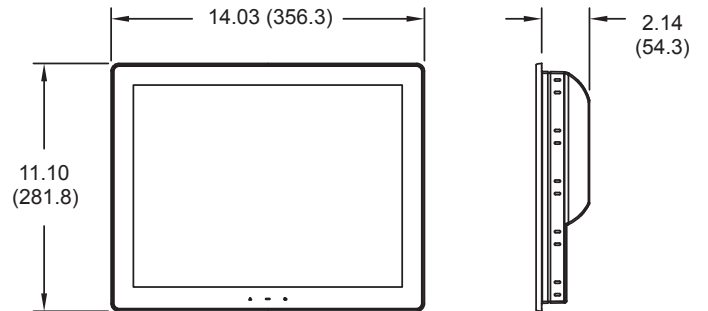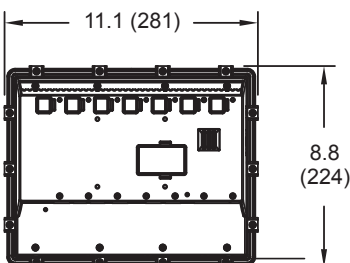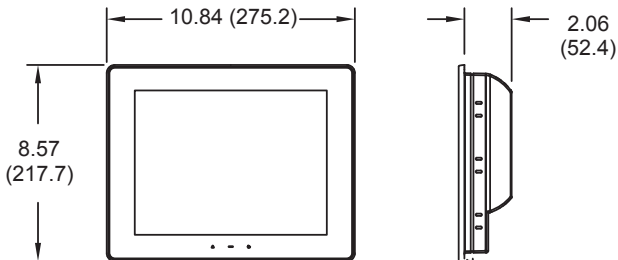
(MOUNTING CLIPS INSTALLED)

## GRAPHITE OPERATOR PANELS

| PART NUMBER | DESCRIPTION |
|---|---|
| G07C0000 | 7" Operator Interface Terminal for Indoor Use |
| G07S0000 | 7" Operator Interface Terminal for Outdoor Use |
| G09C0000 | 9" Operator Interface Terminal for Indoor Use |
| G10C0000 | 10" Operator Interface Terminal for Indoor Use |
| G10S0000 | 10" Operator Interface Terminal for Outdoor Use |
| G10R0000 | 10" Operator Interface Terminal, High Resolution Display for Indoor Use |
| G12C0000 | 12" Operator Interface Terminal for Indoor Use |
| G12C1100 | 12" Operator Interface Terminal with Aux. Ethernet and dual RS485 ports |
| G15C0000 | 15" Operator Interface Terminal for Indoor Use |
| G15C1100 | 15" Operator Interface Terminal with Aux. Ethernet and dual RS485 ports |

## PID CONTROLLER MODULES

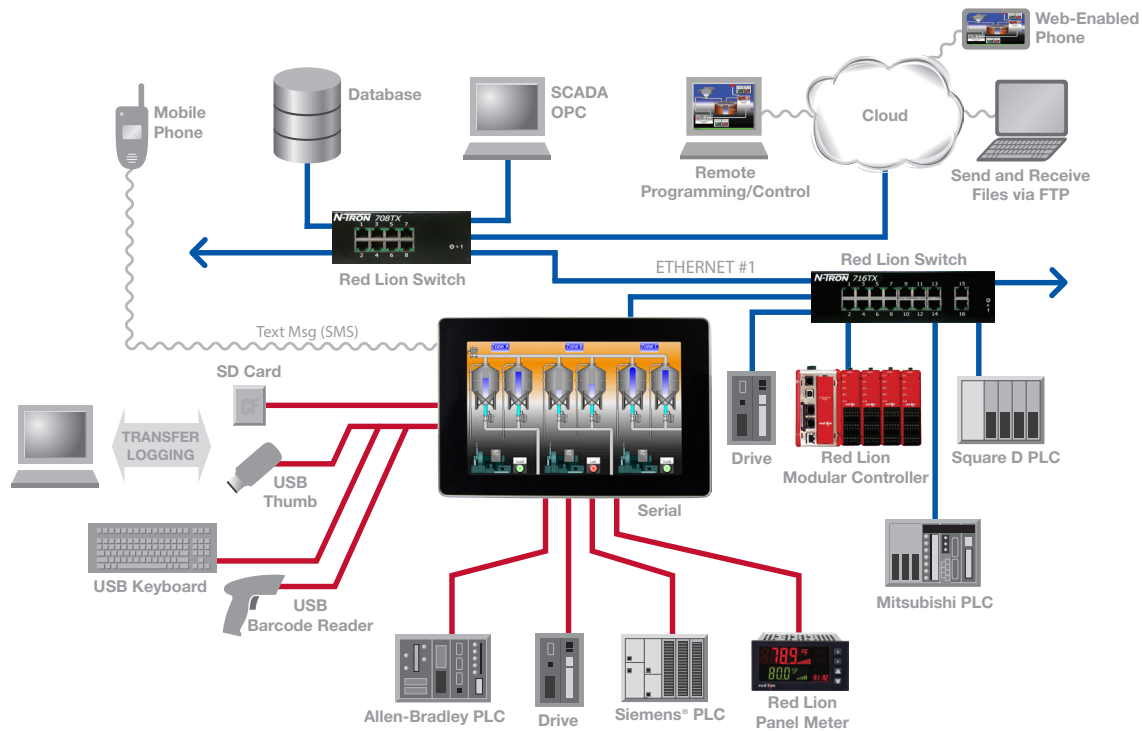| PART NUMBER | DESCRIPTION |
|---|---|
| GMP1RA00* | Graphite Module, Single PID, Relay and Analog Outputs |
| GMP1RM00* | Graphite Module, Single PID, Relay Outputs, Heater Current Monitor |
| GMP1SA00 | Graphite Module, Single PID, SSR and Analog Outputs |
| GMP1SM00 | Graphite Module, Single PID, SSR Outputs, Heater Current Monitor |
| GMP2R000* | Graphite Module, Dual PID, Relay Outputs |
| GMP2RM00* | Graphite Module, Dual PID, Relay Outputs and Heater Current Monitor |
| GMP2S000 | Graphite Module, Dual PID, SSR Outputs |
| GMP2SM00 | Graphite Module, Dual PID, SSR Outputs and Heater Current Monitor |

## DATA ACQUISITION MODULES

| PART NUMBER | DESCRIPTION |
|---|---|
| GMDIOR00* | Graphite Module, Digital I/O, 8 Inputs and 6 Relays Outputs |
| GMDIOS00 | Graphite Module, Digital I/O, 8 Inputs and 6 Solid State Outputs |
| GMUIN400 | Graphite Module, 4 Universal Analog Inputs |
| GMOUT400 | Graphite Module, 4 Analog Outputs |
| GMINI800 | Graphite Module, 8 DC Current Inputs |
| GMINV800 | Graphite Module, 8 DC Voltage Inputs |
| GMTC8000 | Graphite Module, 8 Thermocouple Inputs |
| GMRTD600 | Graphite Module, 6 RTD Inputs |
| GMSG10R0* | Graphite Module, 1 Strain Gage Input, Relay Output |
| GMSG10S0* | Graphite Module, 1 Strain Gage Input, SSR Output |
| GMSG11R0* | Graphite Module, 2 Strain Gage Input, Relay Output |
| GMSG11SO* | Graphite Module, 2 Strain Gage Input, SSR Output |

## COMMUNICATION MODULES

| PART NUMBER | DESCRIPTION |
|---|---|
| GMCAN000* | Graphite Module, CAN Protocol Interface |
| GMJ19390* | Graphite Module, J1939 Protocol Interface |
| GMDN0000* | Graphite Module, DeviceNet Protocol Interface |
| GMPBDP00* | Graphite Module, PROFIBUS DP Protocol Interface |
| GMHSPA00* | Graphite Module, HSPA+ Cellular |

* Non ATEX approved modules



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**Connect. Monitor. Control.**

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