The Graphite® operator panels are the industry’s first rugged HMI touchscreens to combine I/O modules with protocol conversion, data logging, web-based monitoring and IEC 61131 control capabilities.

Available in nine different sizes ranging from 7” to 15”, Graphite HMIs feature sleek full-color touchscreens in a streamlined, compact footprint for easy installation. Rugged cast-aluminum construction supports outdoor and indoor display with wide operating temperatures and high shock/vibration tolerances that enable organizations to connect, monitor and control processes regardless of environment. Unify disparate devices by converting up to 20 industrial protocols simultaneously from a built-in library of over 300 supported drivers. In addition, select from a wide variety of module and expansion options to seamlessly extend capabilities and address varying requirements.

**INDUSTRY APPLICATIONS**

- Factory Automation
- Oil & Gas
- Power & Utilities
- Maritime
- Water/Wastewater
- Plastic Extrusion
- Data Acquisition
- Industrial Internet of Things (IIoT)

**PRODUCT HIGHLIGHTS**

- Protocol Conversion of over 300+ Drivers
- Built-In Web Server for Remote Access
- Real-Time Data Logging to SD Card or via FTP
- Rugged Construction for Extreme Protection
- Wide Operating Temperature Range
- Outdoor Sunlight-Readable Models
- Scalable Modules and Expansion Options
- IEC 61131 control capabilities with Crimson Control

**FEATURES & BENEFITS**

- Sleek Full-Color HMI Touchscreens
  - 7" to 15" models with narrow tablet-style bezels
  - Outdoor sunlight-readable and widescreen models
- Versatile Module and Expansion Options
  - Choose from a mix of I/O, PID control or communication to populate up to 8 local module slots* 
  - Use Crimson Control module for enhanced IEC 61131 logic control programming
  - Connect Graphite Expansion Racks to easily scale
  - Extend even further with E3 I/O™ high-density modules
- Rugged Environmental Specifications
  - Wide -20° to 60°C HMI operating temperature
  - High shock and vibration tolerance
  - CE, UL/cUL, UL/cUL Hazardous, ATEX, IECEx and ABS approvals
- Industry-Leading Protocol Conversion
  - Communicate with over 300 industrial protocols
  - Support up to 20 simultaneous protocols
  - Convert between serial, USB and Ethernet devices
  - Manage multi-vendor environments with ease
- Powerful Integration Functionality
  - Intuitive Crimson 3.0 software for easy drag-and-drop configuration
  - Ethernet, USB and serial ports make communication simple
  - Built-in data logging enhances troubleshooting and helps meet regulatory requirements
  - Robust web server provides remote access and control to reduce costly site visits

* Model dependent
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
- Serial Ports: Format/Baud rates independently configurable
- Programming Port: One (1) RS-232 port via 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 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

10 to 30 VDC

<table>
<thead>
<tr>
<th>Model</th>
<th>Typical</th>
<th>Max</th>
<th>With Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>G07C</td>
<td>8 W</td>
<td>14 W</td>
<td>35 W</td>
</tr>
<tr>
<td>G07S</td>
<td>9 W</td>
<td>15 W</td>
<td>36 W</td>
</tr>
<tr>
<td>G09</td>
<td>12 W</td>
<td>18 W</td>
<td>43 W</td>
</tr>
<tr>
<td>G10C</td>
<td>16 W</td>
<td>22 W</td>
<td>52 W</td>
</tr>
<tr>
<td>G10R</td>
<td>15 W</td>
<td>20 W</td>
<td>55 W</td>
</tr>
<tr>
<td>G12C</td>
<td>17 W</td>
<td>23 W</td>
<td>57 W</td>
</tr>
<tr>
<td>G12S</td>
<td>18 W</td>
<td>24 W</td>
<td>58 W</td>
</tr>
<tr>
<td>G15</td>
<td>18 W</td>
<td>24 W</td>
<td>58 W</td>
</tr>
</tbody>
</table>

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 6 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)

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 per IEC 68-2-6

CERTIFICATION & COMPLIANCE

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 ic 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
IET 60079-0, -11, -15, -31

UL Approved
cULus Listed for Ordinary Location: File #E302106
UL 61010-1, -2-201
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
ANSI/ISA 12.12.01, C22.2 No. 213-M1987, 157-92
Type 4X Indoor / IP66 Enclosure rating (Face only) for all models
Type 4X Outdoor Enclosure rating (Face only) for GxxSxxxx models
ABS Type Approval for Shipboard Applications

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)

Specifications are subject to change. Visit www.redlion.net for more information.

LCD DISPLAY

Touchscreen: Resistive analog

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>Pixels</th>
<th>Brightness</th>
<th>Backlight</th>
</tr>
</thead>
<tbody>
<tr>
<td>G07C</td>
<td>7 in</td>
<td>800 X 480</td>
<td>500 cd/m²</td>
<td>50,000 HR TYP.</td>
</tr>
<tr>
<td>G07S</td>
<td>7 in</td>
<td>800 X 480</td>
<td>1000 cd/m²</td>
<td>70,000 HR TYP.</td>
</tr>
<tr>
<td>G09</td>
<td>9 in</td>
<td>800 X 480</td>
<td>450 cd/m²</td>
<td>70,000 HR TYP.</td>
</tr>
<tr>
<td>G10C</td>
<td>10 in</td>
<td>800 X 600</td>
<td>400 cd/m²</td>
<td>70,000 HR TYP.</td>
</tr>
<tr>
<td>G10R</td>
<td>10 in</td>
<td>800 X 600</td>
<td>400 cd/m²</td>
<td>70,000 HR TYP.</td>
</tr>
<tr>
<td>G10S</td>
<td>10 in</td>
<td>800 X 600</td>
<td>1600 cd/m²</td>
<td>100,000 HR TYP.</td>
</tr>
<tr>
<td>G12S</td>
<td>12 in</td>
<td>1280 X 800</td>
<td>1600 cd/m²</td>
<td>100,000 HR TYP.</td>
</tr>
<tr>
<td>G15</td>
<td>15 in</td>
<td>1024 X 768</td>
<td>400 cd/m²</td>
<td>70,000 HR TYP.</td>
</tr>
</tbody>
</table>

Graphite Specifications

Mobile Phone
Database
Send and Receive Files via FTP
Remote Programming/Control
Web-Enabled Phone
SCADA OPC
Cloud
Drive
Red Lion Modular Controller
Square D PLC
Mitsubishi PLC
Allen-Bradley PLC
Siemens® PLC
Red Lion Panel Meter
Graphite Dimensions in Inches (mm)

**G07**

- 7.70 (195.5)
- 5.51 (139.9)
- 2.00 (50.8)

**G09**

- 10.06 (255.6)
- 6.47 (164.4)
- 2.06 (52.4)

**G10**

- 10.84 (275.2)
- 8.57 (217.7)
- 11.1 (281)

**G12**

- 12.10 (307.3)
- 8.20 (208.3)
- 2.06 (52.4)

**G15**

- 14.03 (356.3)
- 11.10 (281.8)
- 2.14 (54.3)

(MOUNTING CLIPS INSTALLED)
### Graphite Ordering Guide

#### Graphite Operator Panels

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>G07C0000</td>
<td>7” Operator Interface Terminal for Indoor Use</td>
</tr>
<tr>
<td>G07S0000</td>
<td>7” Operator Interface Terminal for Outdoor Use</td>
</tr>
<tr>
<td>G09C0000</td>
<td>9” Operator Interface Terminal for Indoor Use</td>
</tr>
<tr>
<td>G09C1000</td>
<td>9” Operator Interface Terminal for Indoor Use with Aux. Ethernet port</td>
</tr>
<tr>
<td>G10C0000</td>
<td>10” Operator Interface Terminal for Indoor Use</td>
</tr>
<tr>
<td>G10C1000</td>
<td>10” Operator Interface Terminal for Indoor Use with Aux. Ethernet port</td>
</tr>
<tr>
<td>G10F0000</td>
<td>10” Operator Interface Terminal, High Resolution Display for Indoor Use</td>
</tr>
<tr>
<td>G10F1000</td>
<td>10” Operator Interface Terminal, High Resolution Display for Indoor Use with Aux. Ethernet port</td>
</tr>
<tr>
<td>G10S0000</td>
<td>10” Operator Interface Terminal for Outdoor Use</td>
</tr>
<tr>
<td>G10S1000</td>
<td>10” Operator Interface Terminal for Outdoor Use with Aux. Ethernet port</td>
</tr>
<tr>
<td>G12C0000</td>
<td>12” Operator Interface Terminal for Indoor Use</td>
</tr>
<tr>
<td>G12C1100</td>
<td>12” Operator Interface Terminal with Aux. Ethernet and dual RS485 ports</td>
</tr>
<tr>
<td>G12S1100</td>
<td>12” Operator Interface Terminal for Outdoor Use with Aux. Ethernet and dual RS485 ports</td>
</tr>
<tr>
<td>G15C0000</td>
<td>15” Operator Interface Terminal for Indoor Use</td>
</tr>
<tr>
<td>G15C1100</td>
<td>15” Operator Interface Terminal with Aux. Ethernet and dual RS485 ports</td>
</tr>
</tbody>
</table>

#### Data Acquisition Modules

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMDCIP00*</td>
<td>Graphite Module, Digital I/O, 8 Inputs and 6 Relays Outputs</td>
</tr>
<tr>
<td>GMDCIS00</td>
<td>Graphite Module, Digital I/O, 8 Inputs and 6 Solid State Outputs</td>
</tr>
<tr>
<td>GMUN400</td>
<td>Graphite Module, 4 Universal Analog Inputs</td>
</tr>
<tr>
<td>GMOUT400</td>
<td>Graphite Module, 4 Analog Outputs</td>
</tr>
<tr>
<td>GMNV800</td>
<td>Graphite Module, 8 DC Current Inputs</td>
</tr>
<tr>
<td>GMNVV800</td>
<td>Graphite Module, 8 DC Voltage Inputs</td>
</tr>
<tr>
<td>GMTC8000</td>
<td>Graphite Module, 8 Thermocouple Inputs</td>
</tr>
<tr>
<td>GMRTD800</td>
<td>Graphite Module, 6 RTD Inputs</td>
</tr>
<tr>
<td>GMSTG1R0*</td>
<td>Graphite Module, 1 Strain Gage Input, Relay Output</td>
</tr>
<tr>
<td>GMSTG1S0</td>
<td>Graphite Module, 1 Strain Gage Input, SSR Output</td>
</tr>
<tr>
<td>GMSTG1R0*</td>
<td>Graphite Module, 2 Strain Gage Input, Relay Output</td>
</tr>
<tr>
<td>GMSTG1S0</td>
<td>Graphite Module, 2 Strain Gage Input, SSR Output</td>
</tr>
</tbody>
</table>

#### Communication Modules

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMCAN000</td>
<td>Graphite Module, CAN Protocol Interface</td>
</tr>
<tr>
<td>GMJ19390</td>
<td>Graphite Module, J1939 Protocol Interface</td>
</tr>
<tr>
<td>GMON0000</td>
<td>Graphite Module, DeviceNet Protocol Interface</td>
</tr>
<tr>
<td>GMPBD00</td>
<td>Graphite Module, PROFIBUS DP Protocol Interface</td>
</tr>
<tr>
<td>GMHSPA00</td>
<td>Graphite Module, HSPA+ Cellular</td>
</tr>
</tbody>
</table>

#### Expansion Racks

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEXRACK1</td>
<td>Graphite Wide Expansion Rack for Modules</td>
</tr>
<tr>
<td>GEXRACK2</td>
<td>Graphite Standard Expansion Rack for Modules</td>
</tr>
<tr>
<td>CBLUSBM0</td>
<td>USB Tethering Cable, 0.5 M Metal Jacketed</td>
</tr>
<tr>
<td>CBLUSBM1</td>
<td>USB Tethering Cable, 1 M Metal Jacketed</td>
</tr>
<tr>
<td>CBLUSBM2</td>
<td>USB Tethering Cable, 2 M Metal Jacketed</td>
</tr>
</tbody>
</table>

* Non ATEX approved modules

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**Build the Perfect HMI Solution.**

With up to eight available plug-and-play module slots and additional expansion rack options, Graphite HMIs provide a scalable all-in-one platform to help integrate complex multi-vendor environments. Employing modules to address PID control, data acquisition and communication, Graphite HMIs allow users to connect, monitor and control a wide array of equipment to meet specific application requirements. In addition, our Crimson Control module 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.

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As 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.