

# Graphite<sup>®</sup> Edge Controller

Red Lion Automation Series



## ▶▶▶ Rugged Standalone Industrial Controller

The Graphite<sup>®</sup> Edge Controller is a rugged all-in-one industrial solution that reduces cost and complexity by combining IEC 61131 control capabilities with networking and data visualization.

Integrating communication and control into factory automation and process control applications has never been easier. With all-metal construction, a built-in web server, data logging with SD card, and Red Lion's Crimson<sup>®</sup> 3.0 software with Crimson Control functionality, our rugged controller operates in the harshest environments to provide a single programming solution for control, networking and data visualization. Simply use 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 of additional software. In addition, select from a variety of I/O, PID control and communications modules to connect, monitor and control a wide array of field devices – regardless of location – to meet specific application requirements.



### INDUSTRY APPLICATIONS

- > Factory Automation
- > Oil & Gas
- > Power & Utilities
- > Water/Wastewater
- > Transportation
- > Industrial Internet of Things (IIoT)

### PRODUCT HIGHLIGHTS

- > Industry-Standard Control Language Support
- > Protocol Conversion of over 300 Drivers
- > Support up to 18 Simultaneous Protocol Conversions
- > Web Server for Data Visualization
- > Real-Time Data Logging to SD Card or via FTP
- > Rugged Construction for Extreme Protection
- > Wide Operating Temperature Range
- > Scalable Modules & Expansion Options

### FEATURES & BENEFITS

- > Powerful Crimson 3.0 Software with Crimson Control
  - Intuitive drag-and-drop graphical software for easy setup
  - Use industry-standard IEC 61131 programming languages such as ladder logic, function block, structured text and instruction list
  - No special gateways or added fees for protocol conversion
  - Easy single-solution configuration eliminates need for third-party software
- > Versatile I/O Module & Expansion Options
  - Support small scale applications using on-board module slot for functions including PID control, digital or analog I/O or specialized communications
  - Connect Graphite Expansion Racks to easily scale for larger application or additional I/O
  - Extend even further with E3 I/O™ high-density modules
- > Industry-Leading Protocol Conversion
  - Communicate with over 300 major industrial protocols
  - Support up to 18 simultaneous protocol conversions
  - Convert between serial, USB and Ethernet devices
  - Manage multi-vendor environments with ease
- > Rugged Environmental Specifications
  - Wide -40° to 70°C operating temperature
  - High shock and vibration tolerance
  - CE, UL/cUL and UL/cUL Hazardous approvals
- > Powerful Integration Functionality
  - Ethernet, USB and serial ports make communication simple
  - Built-in data logging enhances troubleshooting and helps meet regulatory requirements
  - Robust web server provides remote visualization, access and control to reduce costly site visits

industrial

automation



# ▶▶▶ Graphite Edge Controller Specifications

## POWER INPUT

Input Voltage: 10-30 VDC  
 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.

Input Voltage	GRAC0001 Power Ratings (Watts)			
	10 V	12 V	24 V	30 V
Typical Power (GRAC00C5 only)	4 W	4 W	5 W	5 W
Maximum Power (GRAC00C5 only)	10 W	10 W	10 W	11 W
Available Power for Modules	21 W			
Max Power GRAC00C5 With Module(s)	31 W	31 W	32 W	32 W

## CONNECTORS

USB Port: One (1) USB Type B complies with USB specification 2.0 (high speed, full speed)  
 USB 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:  
 Two (2) RS-422/485 port via RJ45 connector  
 Ethernet Ports: 1500 Vrms network isolation  
 Two (2) 10/100Base-T(X) port via RJ45 connector  
 Power: 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)

## ENVIRONMENTAL

Operating Temperature: -40°C to 70°C\*  
 Storage Temperature: -40°C to 85°C  
 Operating Humidity: 0% to 85% max. RH non-condensing  
 Altitude: Up to 2000 meters  
 Panel Mount Vibration to IEC 68-2-6: Operational 5-500 Hz, 4 g  
 Panel Mount Shock to IEC 68-2-27: Operational 40 g (10 g, modules w/ relays)  
 DIN Rail Mount Vibration to IEC 68-2-6: Operational 5-500 Hz, 2 g  
 DIN Rail Mount Shock to IEC 68-2-27: Operational 15 g (10 g, modules w/relays)  
 Requires DIN Rail type: DIN 1010, DIN 1065, or DIN 3065

## CERTIFICATIONS AND COMPLIANCES

Product Safety:  
 EN 61326-1 Immunity to Industrial Locations  
 Emission CISPR 11 Class A  
 IEC/EN 61010-1  
 cULus Listed: File #E302106  
 cULus Hazardous: File #E317425  
 Other:  
 RoHS Compliant

## MECHANICAL

Cast aluminum. Installation Category II, Pollution Degree 2 as defined in IEC 60664-1  
 Case Dimensions:  
 Height: 6.35" (16.2 cm)  
 Width: 4.11" (10.5 cm)  
 Depth: 4.40" (11.2 cm)  
 Weight: 2.3 lbs (1.03 kg)  
 Mounting: Panel mount or DIN rail

## ORDERING GUIDE

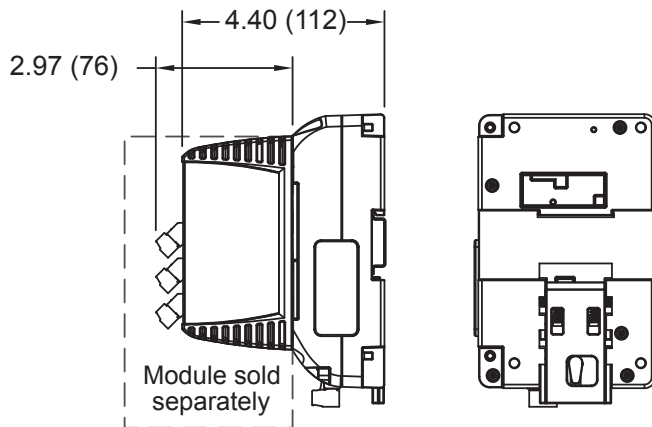
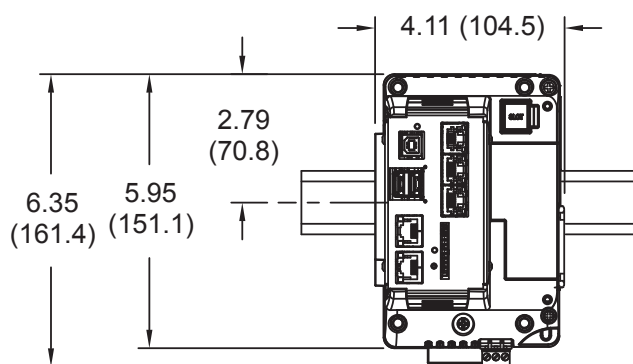
MODEL NUMBER	DESCRIPTION
GRAC0001	Graphite Edge Controller

Up to 4 Optional Expansion Racks (GEXRACK2) can be connected to the Edge Controller and up to 1 Wide Rack (GEXRACK1) and 3 Expansion Racks (GEXRACK2) can be tethered via USB.

\* Lowest range among equipment used in your Graphite system; refer to user manual.

Specifications are subject to change. Visit [www.redlion.net](http://www.redlion.net) for more information.

## DIMENSIONS



[www.redlion.net](http://www.redlion.net)

Connect. Monitor. Control.

**Americas**  
[sales@redlion.net](mailto:sales@redlion.net)

**Asia-Pacific**  
[asia@redlion.net](mailto:asia@redlion.net)

**Europe  
 Middle East  
 Africa**  
[europe@redlion.net](mailto:europe@redlion.net)

+1 (717) 767-6511

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 automation, Ethernet and cellular M2M 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. Red Lion is part of Spectris plc, the productivity-enhancing instrumentation and controls company. For more information, please visit [www.redlion.net](http://www.redlion.net).

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