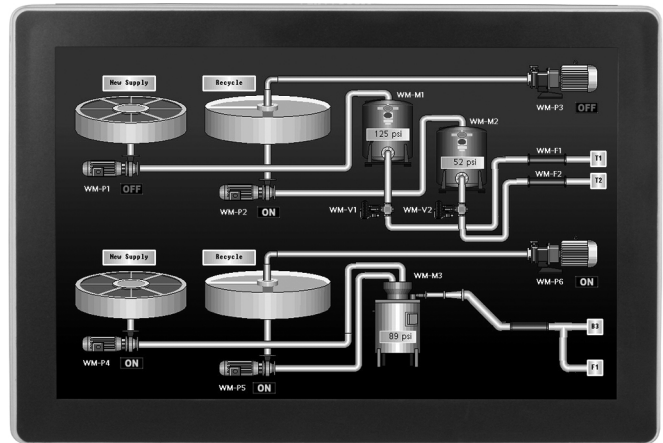
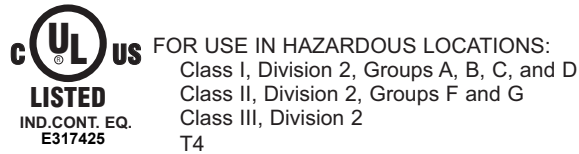


# Model G12 - Graphite® 12" Color Touchscreen Operator Interface Terminal



See the Red Lion website at [www.redlion.net](http://www.redlion.net) for full user manual, Crimson® software and software manual.

## SAFETY SUMMARY

All safety related regulations, local codes and instructions that appear in the manual or on equipment must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Do not use the controller to directly command motors, valves, or other actuators not equipped with safeguards. To do so can be potentially harmful to persons or equipment in the event of a fault to the unit.



**CAUTION: Risk of Danger.**

Read complete instructions prior to installation and operation of the unit.



**WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS.**



**WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.**

## ORDERING INFORMATION

DESCRIPTION	PART NUMBER
12" Color Touch Screen, Indoor Use	G12C0000
12" Color Touch Screen, Indoor Use, Additional Ethernet and Serial Port	G12C1100
12" Color Touch Screen, Outdoor Use, Additional Ethernet and Serial Port	G12S1100

## SPECIFICATIONS

POWER:	G12C			G12S		
	10	24	30	10	24	30
Input Voltage (V)	10	24	30	10	24	30
Typical Power HMI only (W):	13	14	15	16	17	17
Maximum Power HMI only (W):	19	20	20	22	22	23
Available Power for Modules (W):	33			33		
Max Power HMI With Module(s) (W):	52	54	55	56	57	57

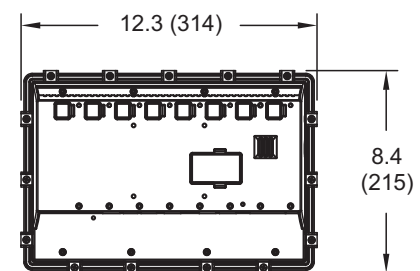
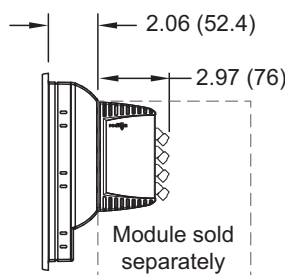
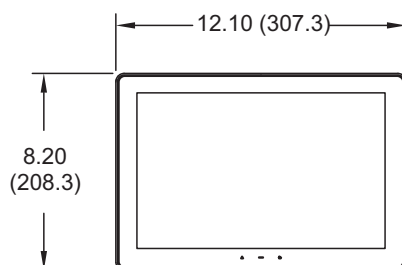
Must use a Class 2 circuit according to National Electrical Code (NEC), NFPA-70 or Canadian Electrical Code (CEC), Part I, C22.1 or a Limited Power Supply (LPS) according to IEC/EN 60950-1 or Limited-energy circuit according to IEC/EN 61010-1.

Power connection via removable three position terminal block.

**BATTERY:** Lithium coin cell. Typical lifetime of 6 years nominal.

To maintain UL rating, replacement battery must be: Rayovac BR2032-BA or Panasonic BR2032.

## DIMENSIONS In inches (mm)



(MOUNTING CLIPS INSTALLED)



**ENVIRONMENTAL CONDITIONS:**

Operating Temperature Range: -20 to 60 °C, or lowest range among equipment used in your Graphite system. Consult the user manual or [www.redlion.net/OpTemp](http://www.redlion.net/OpTemp) for further details.  
 Storage Temperature Range: -20 to 70 °C  
 Vibration to IEC 68-2-6: Operational 5-500 Hz, 4 g  
 Shock to IEC 68-2-27: Operational 40 g (10 g, modules w/relays)  
 Operating and Storage Humidity: 0 to 85% max. RH non-condensing  
 Altitude: Up to 2000 meters  
 Installation Category II, Pollution Degree 2 as defined in IEC/EN 60664-1.

**CERTIFICATIONS AND COMPLIANCES:**

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 tc IIIC T135°C Dc  
 DEMKO 14 ATEX 1387X

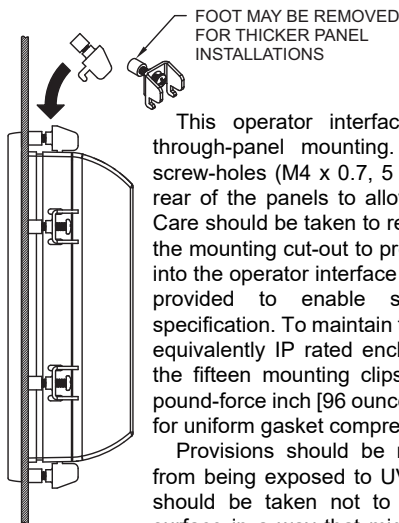
EN 60079-0, -11, -15, -31  
 IECEx Approved  
 Ex ic nA IIC T4 Gc  
 Ex tc IIIC T135°C Dc  
 IECEx UL 15.0035X  
 IEC 60079-0, -11, -15, -31  
 UL Listed: File #E302106  
 UL Hazardous: File #E317425  
 Type 4X Indoor / IP66 Enclosure rating (Face only) for G12Cxxxx models  
 Type 4X Outdoor Enclosure rating (Face only) for G12Sxxxx  
 IP20 Enclosure rating (Rear of unit)

**ABS Type Approval for Shipboard Applications**

**CONNECTIONS:** 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)  
**CONSTRUCTION:** Cast aluminum enclosure with NEMA 4X/IP66 rating when correctly fitted with the gasket provided. These devices have only been evaluated for low risk of mechanical impact.  
**WEIGHT:** 5.06 lb. (2.29 Kg)

**OPERATOR INTERFACE INSTALLATION**

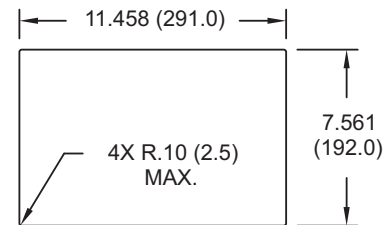
**MOUNTING INSTRUCTIONS**



This operator interface is primarily designed for through-panel mounting. Four VESA mount tapped screw-holes (M4 x 0.7, 5 mm deep) are present on the rear of the panels to allow for stand or wall mounting. Care should be taken to remove any loose material from the mounting cut-out to prevent that material from falling into the operator interface during installation. A gasket is provided to enable sealing to NEMA 4X/IP66 specification. To maintain the IP66 rating of the panel, an equivalently IP rated enclosure should be used. Install the fifteen mounting clips provided and tighten to 6.0 pound-force inch [96 ounce-force inch] (0.68 N m) evenly for uniform gasket compression.

Provisions should be made to prohibit the product from being exposed to UV radiation while in use. Care should be taken not to rub or buff the touchscreen surface in a way that might cause the accumulation of static charges.

**PANEL CUT-OUT**

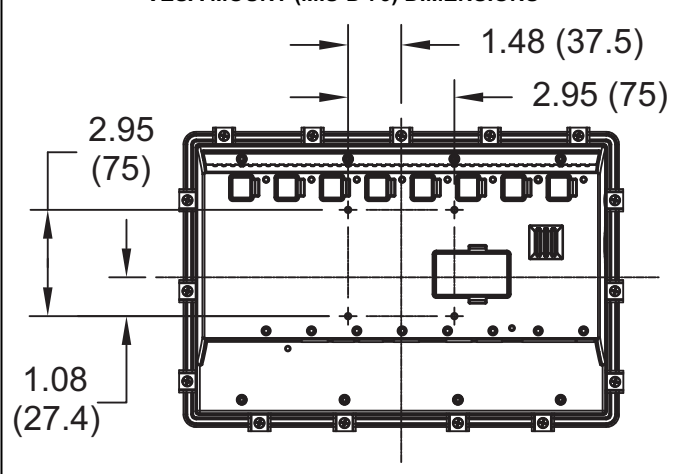


All tolerances ±.059" (±1.5 mm)

For hazardous location installation the following shall be taken into consideration:

- When used in a Zone 22 environment, the device shall be panel mounted in at least Zone 22 IECEx/ATEX-Certified tool accessible enclosure with a minimum ingress protection rating of at least IP64 as defined in IEC/EN 60529.
- When used in a Zone 2 environment, the device shall be panel mounted in at least Zone 2 IECEx/ATEX-Certified tool accessible enclosure with a minimum ingress protection rating of at least IP54 as defined in IEC/EN 60529.
- This device is open-type and must be mounted in a tight end-enclosure in accordance with articles 500 and 502 of the NEC and positioned so only the face of the display is exposed.
- Must be wired using Division 2 wiring methods as specified in article 501-4(b), 502-4(b), and 503-3(b) of the National Electric Code, NFPA 70 for installation within the United States, or as specified in section 19-152 of Canadian Electrical Code for installation in Canada.

**VESA MOUNT (MIS-D 75) DIMENSIONS**



**CONNECTING TO EARTH GROUND**

Each operator panel has a chassis ground terminal on the back of the unit. Your unit should be connected to earth ground. Steps should be taken beyond connecting to earth ground to eliminate the buildup of electrostatic charges.

The chassis ground is not connected to signal common of the unit. Maintaining isolation between earth ground and signal common is not required to operate your unit. But, other equipment connected to this unit may require isolation between signal common and earth ground. *To maintain isolation between signal common and earth ground care must be taken when connections are made to the unit.* For example, a power supply with isolation between its signal common and earth ground must be used. Also, plugging in a USB cable may connect signal common and earth ground.<sup>1</sup>

<sup>1</sup> USB's shield may be connected to earth ground at the host. USB's shield in turn may also be connected to signal common.

**POWER SUPPLY REQUIREMENTS**

The G12 requires a 10-30 VDC power supply. Your unit may draw considerably less than the maximum rated power depending upon the features being used. As additional features are used your unit will draw increasing amounts of power. Items that could cause increases in current are modules, additional on-board communications, SD card, and other features programmed through Crimson.

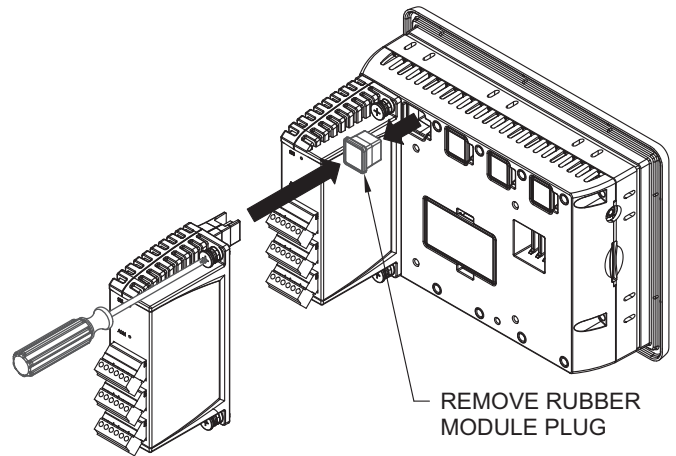
To ensure you do not exceed the capacity of your Graphite host power supply, calculate the total power consumption required for all of your planned modules. Each module's maximum power consumption is listed in the Specifications of their Product Bulletin. The total power available for modules is listed in the specifications of the Graphite host.

In any case, it is very important that the power supply is mounted correctly if the unit is to operate reliably. Please take care to observe the following points:

- The power supply must be mounted close to the unit, with usually not more than 6 feet (1.8 m) of cable between the supply and the operator interface. Ideally, the shortest length possible should be used.
- The wire used to connect the operator interface's power supply should be at least 22-gage wire suitably rated for the temperatures of the environment to which it is being installed. If a longer cable run is used, a heavier gage wire should be used. The routing of the cable should be kept away from large contactors, inverters, and other devices which may generate significant electrical noise.
- A power supply with an NEC Class 2 or Limited Power Source (LPS) and SELV rating is to be used. This type of power supply provides isolation to accessible circuits from hazardous voltage levels generated by a mains power supply due to single faults. SELV is an acronym for "safety extra-low voltage." Safety extra-low voltage circuits shall exhibit voltages safe to touch both under normal operating conditions and after a single fault, such as a breakdown of a layer of basic insulation or after the failure of a single component has occurred. A suitable disconnect device shall be provided by the end user.

**I/O MODULE INSTALLATION**

The physical order of all installed modules must match the modules order in Crimson. Torque screws to 6.0 pound-force inch [96 ounce-force inch] (0.68 N m).



**WARNING: Disconnect all power to the unit before installing or removing modules.**

**COMMUNICATING WITH THE G12**

**CONFIGURING A G12**

The G12 is configured using Crimson® software. Crimson is available as a no charge download from Red Lion's website. Crimson updates for new features and drivers are posted on the website as they become available. By configuring the G12 using the latest Crimson version, you are assured that your unit has the most up to date feature set. Crimson software can configure the G12 through the RS232 PGM port, USB port, or SD card.

The USB port is connected using a standard USB cable with a Type B connector. The driver needed to use the USB port will be installed with Crimson.

The RS232 PGM port uses a programming cable made by Red Lion to connect to the DB9 COM port of your computer. If you choose to make your own cable, use the "G12 Port Pin Out Diagram" for wiring information.

The SD card can be used to program a G12 by placing a configuration file and firmware on the SD card. The card is then inserted into the target G12 and powered. Refer to the Crimson literature for more information on the proper names and locations of the files.

**USB, DATA TRANSFERS FROM THE SD CARD**

**WARNING - DO NOT CONNECT OR DISCONNECT CABLES WHILE POWER IS APPLIED UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS. USB DEVICE PORT IS FOR SYSTEM SET-UP AND DIAGNOSTICS**

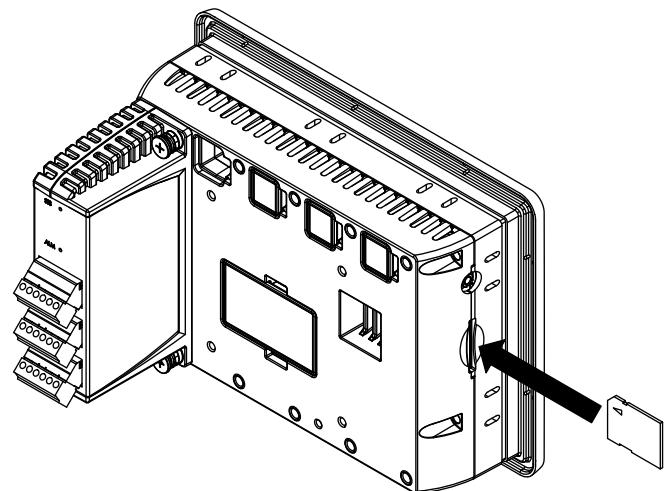
In order to transfer data from the SD card via the USB port, a driver must be installed on your computer. This driver is installed with Crimson and is located in the folder C:\Program Files\Red Lion Controls\Crimson 3.0\Device\ after Crimson is installed. This may have already been

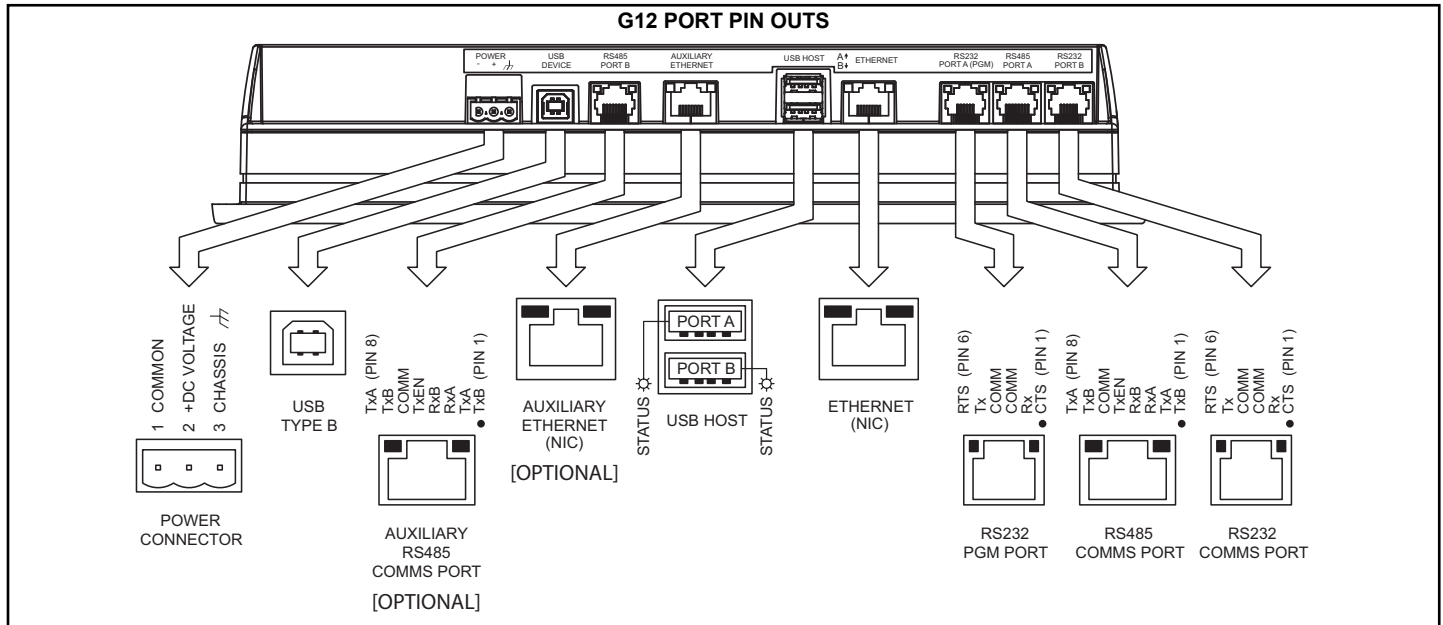
accomplished if your G12 was configured using the USB port.

Once the driver is installed, connect the G12 to your PC with a USB cable, and follow "Mounting the SD" instructions in the Crimson 3 user manual.

**INSERTION/REMOVAL OF THE SD CARD**

Insert the SD card into the slot provided with the card oriented as shown. The card is inserted properly when the end of the card is flush with the Graphite case. To remove the SD card, push in slightly on the card.





## BATTERY & TIME KEEPING



**WARNING - EXPLOSION HAZARD - DISCONNECT POWER AND ENSURE THE AREAS IS KNOWN TO BE NON-HAZARDOUS BEFORE SERVICING/REPLACING THE UNIT AND BEFORE INSTALLING OR REMOVING I/O WIRING AND BATTERY.**



**CAUTION:** Lithium battery. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

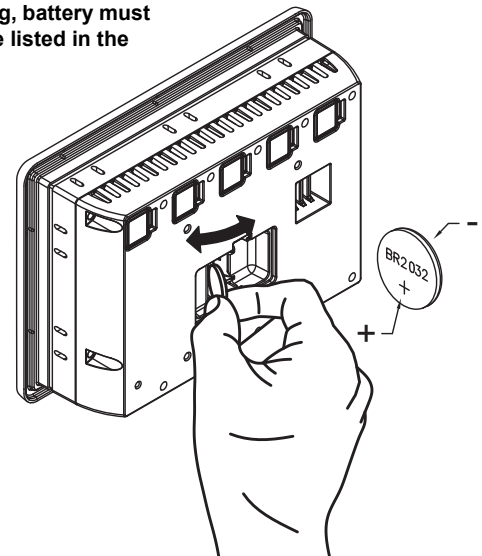
A battery is used to keep time when the unit is without power. Typical accuracy (at 25°C) of the Graphite time keeping is less than one minute per month drift. The battery of a Graphite unit does not affect the unit's memory, all configurations and data is stored in non-volatile memory.

### Changing the Battery

To change the battery of a Graphite, first remove power to the unit. Remove the battery cover. Grasp the top edge of the battery and push to the left to remove the battery from the holder. Lift the battery out and replace with a new battery.

Replace the battery cover, and re-apply power. Using Crimson or the unit's keypad, enter the correct time and date.

To maintain UL rating, battery must be replaced with one listed in the Specifications.



*\* Please note that the old battery must be disposed of in a manner that complies with your local waste regulations. The battery must not be disposed of in fire, or in a manner whereby it may be damaged and its contents could come into contact with human skin.*

### LIMITED WARRANTY

(a) Red Lion Controls Inc. (the "Company") warrants that all Products shall be free from defects in material and workmanship under normal use for the period of time provided in "Statement of Warranty Periods" (available at [www.redlion.net](http://www.redlion.net)) current at the time of shipment of the Products (the "Warranty Period"). **EXCEPT FOR THE ABOVE-STATED WARRANTY, COMPANY MAKES NO WARRANTY WHATSOEVER WITH RESPECT TO THE PRODUCTS, INCLUDING ANY (A) WARRANTY OF MERCHANTABILITY; (B) WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE; OR (C) WARRANTY AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY; WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE.** Customer shall be responsible for determining that a Product is suitable for Customer's use and that such use complies with any applicable local, state or federal law.

(b) The Company shall not be liable for a breach of the warranty set forth in paragraph (a) if (i) the defect is a result of Customer's failure to store, install, commission or maintain the Product according to specifications; (ii) Customer alters or repairs such Product without the prior written consent of Company.

(c) Subject to paragraph (b), with respect to any such Product during the Warranty Period, Company shall, in its sole discretion, either (i) repair or replace the Product; or (ii) credit or refund the price of Product provided that, if Company so requests, Customer shall, at Company's expense, return such Product to Company.

(d) **THE REMEDIES SET FORTH IN PARAGRAPH (c) SHALL BE THE CUSTOMER'S SOLE AND EXCLUSIVE REMEDY AND COMPANY'S ENTIRE LIABILITY FOR ANY BREACH OF THE LIMITED WARRANTY SET FORTH IN PARAGRAPH (a).**