

ELGAR

**GLOBAL
BATTERY PACK
(GBP)
MODEL GBP-1-102/GBP-2-102**

OPERATION MANUAL

ELGAR ELECTRONICS CORPORATION

9250 Brown Deer Road
San Diego, CA 92121-2294
1-800-733-5427
Tel: (858) 450-0085
Fax: (858) 458-0267
Email: sales@elgar.com
www.elgar.com

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ELGAR ONE-YEAR WARRANTY

Elgar Electronics Corporation (hereinafter referred to as Elgar) warrants its products to be free from defects in material and workmanship. This warranty is effective for one year from the date of shipment of the product to the original purchaser. Liability of Elgar under this warranty shall exist provided that:

- the Buyer exposes the product to normal use and service and provides normal maintenance on the product;
- Elgar is promptly notified of defects by the Buyer and that notification occurs within the warranty period;
- the Buyer receives a Return Material Authorization (RMA) number from Elgar's Repair Department prior to the return of the product to Elgar for repair, phone 800-73-ELGAR (800-733-5427), ext. 2295;
- the Buyer returns the defective product in the original, or equivalent, shipping container;
- if, upon examination of such product by Elgar it is disclosed that, in fact, a defect in materials and/or workmanship does exist, that the defect in the product was not caused by improper conditions, misuse, or negligence; and,
- that Elgar QA seal and nameplates have not been altered or removed and the equipment has not been repaired or modified by anyone other than Elgar authorized personnel.

This warranty is exclusive and in lieu of all other warranties, expressed or implied, including, but not limited to, implied warranties of merchantability and fitness of the product to a particular purpose. Elgar, its agents, or representatives shall in no circumstance be liable for any direct, indirect, special, penal, or consequential loss or damage of any nature resulting from the malfunction of the product. Remedies under this warranty are expressly limited to repair or replacement of the product.

CONDITIONS OF WARRANTY

- To return a defective product, contact an Elgar representative or the Elgar factory for an RMA number. Unauthorized returns will not be accepted and will be returned at the shipper's expense.
- For Elgar products found to be defective within thirty days of receipt by the original purchaser, Elgar will absorb all ground freight charges for the repair. Products found defective within the warranty period, but beyond the initial thirty-day period, should be returned prepaid to Elgar for repair. Elgar will repair the unit and return it by ground freight pre-paid.
- Normal warranty service is performed at Elgar during the weekday hours of 7:30 am to 4:30 pm Pacific time. Warranty repair work requested to be accomplished outside of normal working hours will be subject to Elgar non-warranty service rates.
- Warranty field service is available on an emergency basis. Travel expenses (travel time, per diem expense, and related air fare) are the responsibility of the Buyer. A Buyer purchase order is required by Elgar prior to scheduling.
- A returned product found, upon inspection by Elgar, to be in specification is subject to an inspection fee and applicable freight charges.
- Equipment purchased in the United States carries only a United States warranty for which repair must be accomplished at the Elgar factory.

ELGAR

Committed to Quality...Striving for Excellence

SAFETY NOTICE

BEFORE APPLYING POWER to the System, verify that the Global Battery Pack (GBP) is properly configured for the user's particular application.

WARNING

HAZARDOUS VOLTAGES IN EXCESS OF 230 Vdc MAY BE PRESENT WHEN COVERS ARE REMOVED. QUALIFIED PERSONNEL MUST USE EXTREME CAUTION WHEN SERVICING THIS EQUIPMENT. CIRCUIT BOARDS AND OUTPUT VOLTAGES MAY ALSO BE FLOATING ABOVE (BELOW) CHASSIS GROUND.

Installation and servicing must be performed by QUALIFIED PERSONNEL who are aware of properly dealing with attendant hazards. This includes such simple tasks as fuse verification.

Ensure that the ac power line ground is properly connected to the input connector or chassis of the GUPS unit. Similarly, other power ground lines including those to application and maintenance equipment **MUST** be properly grounded for both personnel and equipment safety.

Always ensure that facility ac input and dc input power to the GUPS unit is de-energized prior to connecting or disconnecting the power cables between the GBP and the GUPS unit.

In normal operation, the operator does not have access to hazardous voltages within the chassis. However, depending on the user's application configuration, **HIGH VOLTAGES HAZARDOUS TO HUMAN SAFETY** may be normally generated on the output terminals. The Customer/User must ensure that the output power lines are properly labeled as to the SAFETY hazards and that any inadvertent contact with hazardous voltages is eliminated.

Guard against risks of electrical shock during open cover checks by **NOT TOUCHING** any portion of the electrical circuits. Even when power is OFF, the batteries are a source of electrical energy. Use **SAFETY GLASSES** during open cover checks to avoid personal injury by any sudden component failure.

Always remove the battery module (also disconnect the ac and dc input power to the GUPS unit) prior to performing any internal servicing. The battery module weighs 48 lbs. (21.7 kg); ensure adequate support is provided when removing the module.

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SECTION I

GENERAL DESCRIPTION

1.1 INTRODUCTION

The Elgar Model GBP-1-102/GBP-2-102 are extended battery packs for the GUPS 2400 product family. The GBP-1-102 contains one battery module, and will double the backup time of the GUPS (with its one internal battery module). The GBP-2-102 contains two battery modules, and will triple the backup time of the GUPS. Multiple extended battery packs could be connected in parallel to further increase the backup time.

1.2 GENERAL DESCRIPTION

The Elgar Model GBP-1-102/GBP-2-102 have rack-mount enclosures that measure 7" (178 mm) high by 19" (483 mm) wide by 21" (533 mm) deep. They contain either one or two drawer-mounted battery modules that are removable from the front of the units without use of tools.

These battery modules contain 96 series-connected cells, providing 192 Vdc output. The cells are maintenance-free lead-acid technology, with a rating of 2.0 Vdc and 2.5 AH. The GBP-1-102 has a single series-connected string of cells, while the GBP-2-102 has two series-connected strings connected in parallel. The output of the extended battery pack is connected parallel with the battery bus of the GUPS; therefore, the batteries of the GBP are charged and discharged with the internal battery of the GUPS.

Two connectors are provided on the rear of the GBP; they could be used either for connection to the GUPS or for connection of additional GBPs (the packs would be connected in a "daisy-chain" manner). There are no operator adjustments and no maintenance is necessary.

1.3 SPECIFICATIONS

Battery Output Voltage: 192 Vdc, nominal.

Battery Backup Time (including GUPS Battery Module):

GBP-1-102: 10 minutes at 2400 VA, 0.8 pf and 25°C (77°F);

GBP-2-102: 18 minutes at 2400 VA, 0.8 pf and 25°C (77°F).

Battery Recharge Time (including GUPS Battery Module, following a discharge at 2400 VA, 0.8 pf and 25°C:

GBP-1-102: 4 hours to 90% of backup time;

GBP-2-102: 7 hours to 90% of backup time.

Temperature: Operating: 0° to 40°C (32°F to 104°F); Non-Operating: -40°C to 66°C (-40°F to 149°F).

Humidity: 5% to 95%, non-condensing.

Altitude: Operating: 0 to 10,000 feet (0 to 3,048 meters); Non-Operating: 0 to 40,000 feet (0 to 12,192 meters).

Dimensions:

Height: 7" (178 mm)
Depth: 21" (533 mm)
Width: 19" (483 mm). Fits
standard RETMA rack.

Weight:

GBP-1-102: 67 lbs. (30 kg)
GBP-2-102: 115 lbs. (52 kg)
Removable Internal Battery Module:
48 lbs. (22 kg)

**SPECIFICATIONS ARE SUBJECT TO CHANGE
WITHOUT NOTICE.**

SECTION II

INSTALLATION

2.1 INTRODUCTION

The Elgar Models GBP-1-102/GBP-2-102 have been fully charged and tested prior to shipment. Therefore, they are ready for immediate use upon receipt. The enclosure is designed to be installed in a standard 19" (483 mm) RETMA rack or a transit case; pem-nuts are provided for mounting optional slides.

The following checks should be made to ensure that the instrument was not damaged during shipment.

WARNING

The GBP requires a minimum two person lift!

WARNING

Hazardous voltages are present when operating this equipment. Read the "SAFETY" notices on page ii prior to performing installation, operation, or maintenance.

2.2 UNPACKING

Perform a visual inspection of the shipping container prior to accepting the package from the carrier. If extensive damage to the shipping container is evident, a description of the damage should be noted on the carrier's receipt and signed by the driver of the carrier agent.

If damage is not apparent until the unit is unpacked, a claim for concealed damage should be placed with the carrier. In addition, the shipping container(s) and filler material should be saved for inspection. Forward a report of damage to the Elgar Service Department. Elgar will provide instructions for repair or replacement of the instrument.

If the unit needs to be returned to Elgar, suitable shipping containers and packing materials must be used. If proper packing material is not available, contact Elgar to provide containers and shipping instructions.

2.3 PRE-INSTALLATION INSPECTION

Perform a visual inspection of the unit when it is removed from the shipping container. Check for shipping damage such as dents, scratches, distortion, and damaged connectors. If the unit or container(s) show signs of rough handling, remove the covers from the unit to ensure that no loose or broken components are evident.

2.4 INSTALLATION

The GBP is 7" (178 mm) high and is designed to be installed in a standard 19" (483 mm) wide cabinet enclosure or a transit case.

CAUTION

Install the GBP adjacent to the GUPS unit so that both enclosures are at the same ambient temperature. This is necessary to ensure proper charging temperature compensation since the temperature is monitored in the GUPS unit.

2.5 INSTALLATION/DIMENSIONAL DRAWING

Refer to Figures 2-1 through 2-3 for information on GBP outline and mounting dimensions.

2.6 INPUT/OUTPUT CONNECTORS

Table 2-1 provides a listing of the GBP connectors while Table 2-2 provides a listing of the connector pinouts.

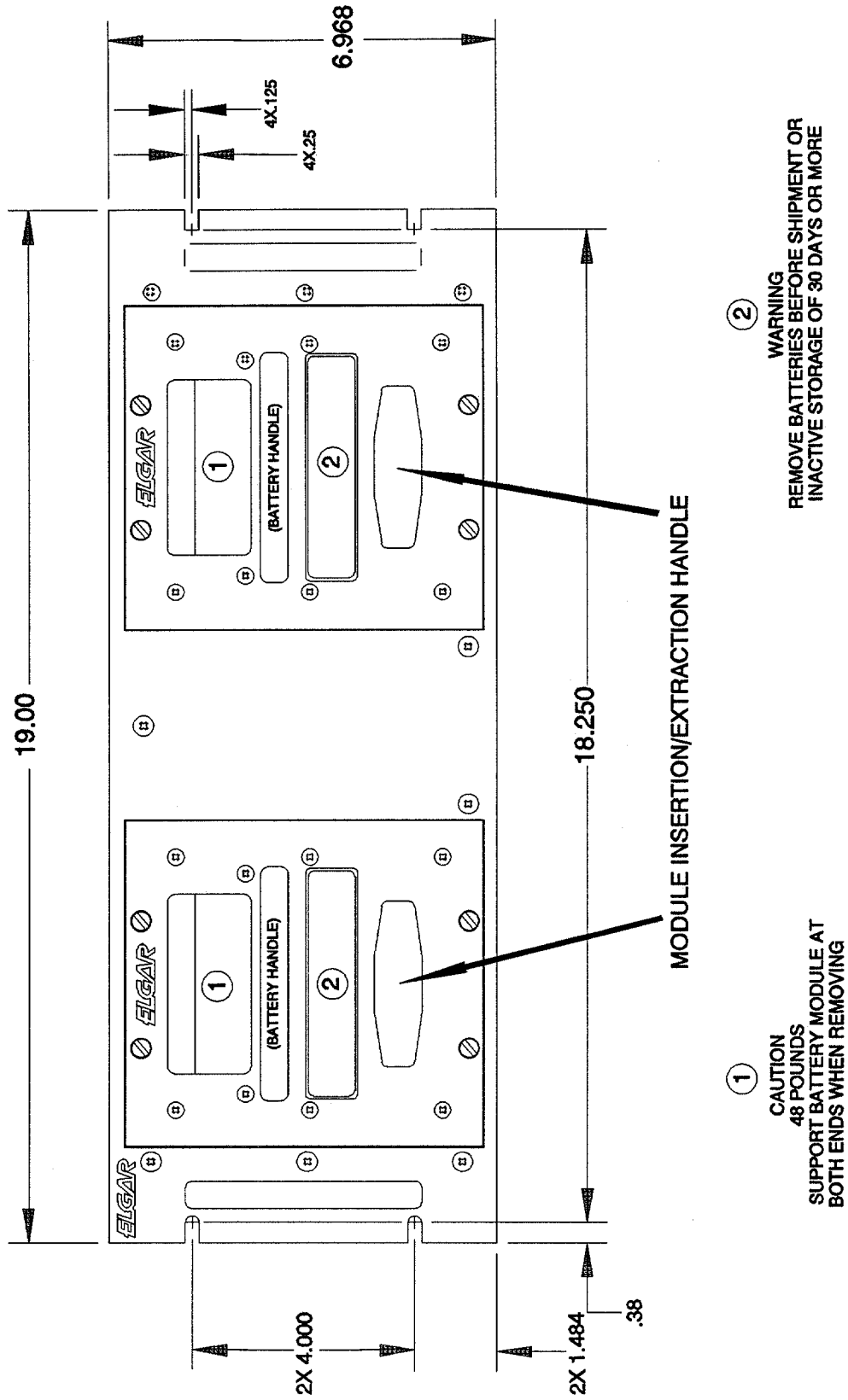
Table 2-1. GBP Connectors

Extended Battery Connectors	
Panel Connector	AMP# 350715-1
Mating Connector	AMP# 350781-1
GND	
Panel Stud	10-32 UNF-1A

Table 2-2. GBP Connector Pinout

Extended Battery Connectors*	
Pin 1	+192 Vdc
Pin 2	-192 Vdc
Pin 3	Safety Ground (Chassis)
Pin 4	Shield

* Both connectors have the same pinout.



②

WARNING
REMOVE BATTERIES BEFORE SHIPMENT OR
INACTIVE STORAGE OF 30 DAYS OR MORE

①

CAUTION
48 POUNDS
SUPPORT BATTERY MODULE AT
BOTH ENDS WHEN REMOVING

Figure 2-1. GBP-1-102/GBP-2-102 (Front View, GBP-2-102 Shown)

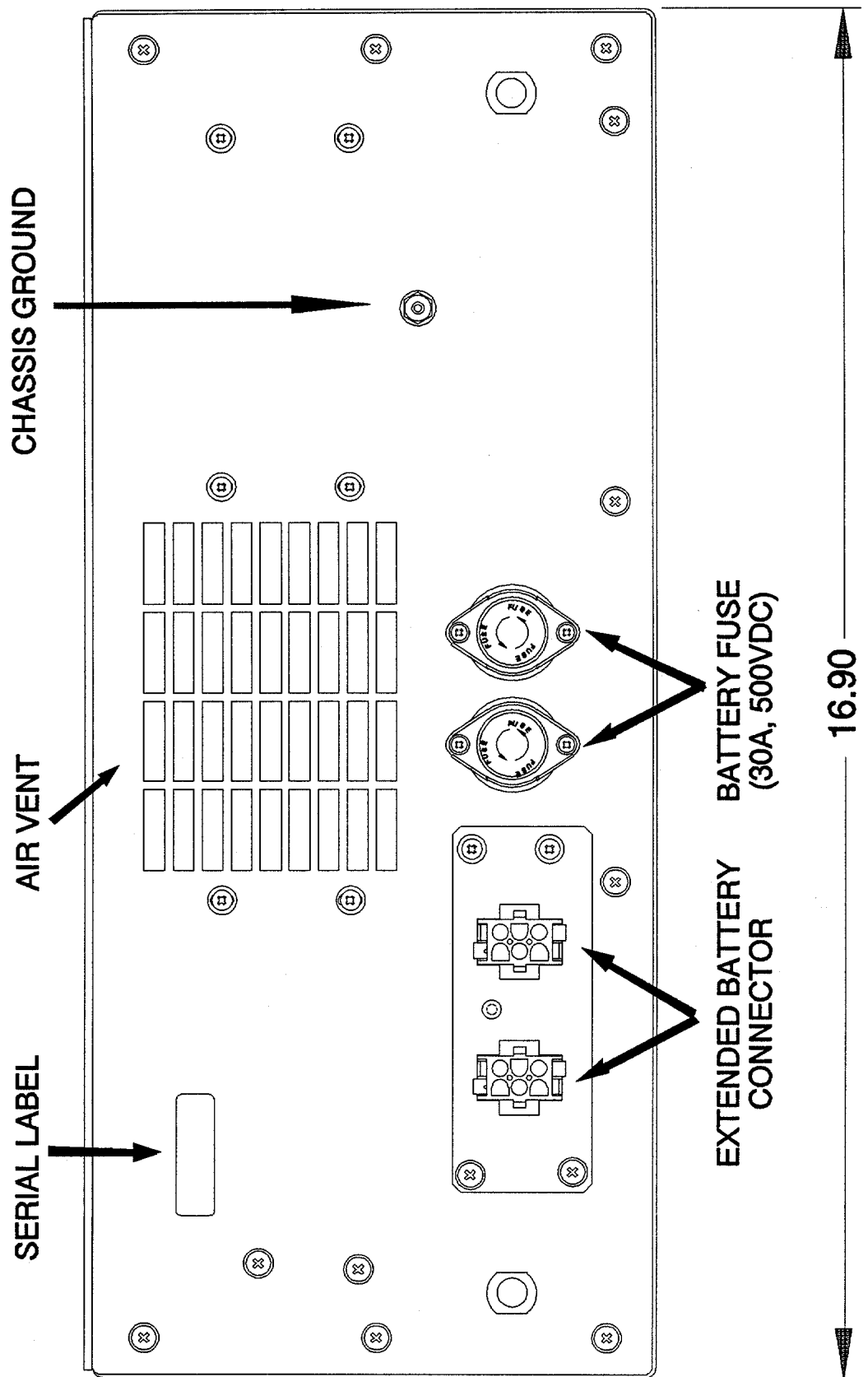


Figure 2-2. GBP-1-102/GBP-2-102 (Rear View)

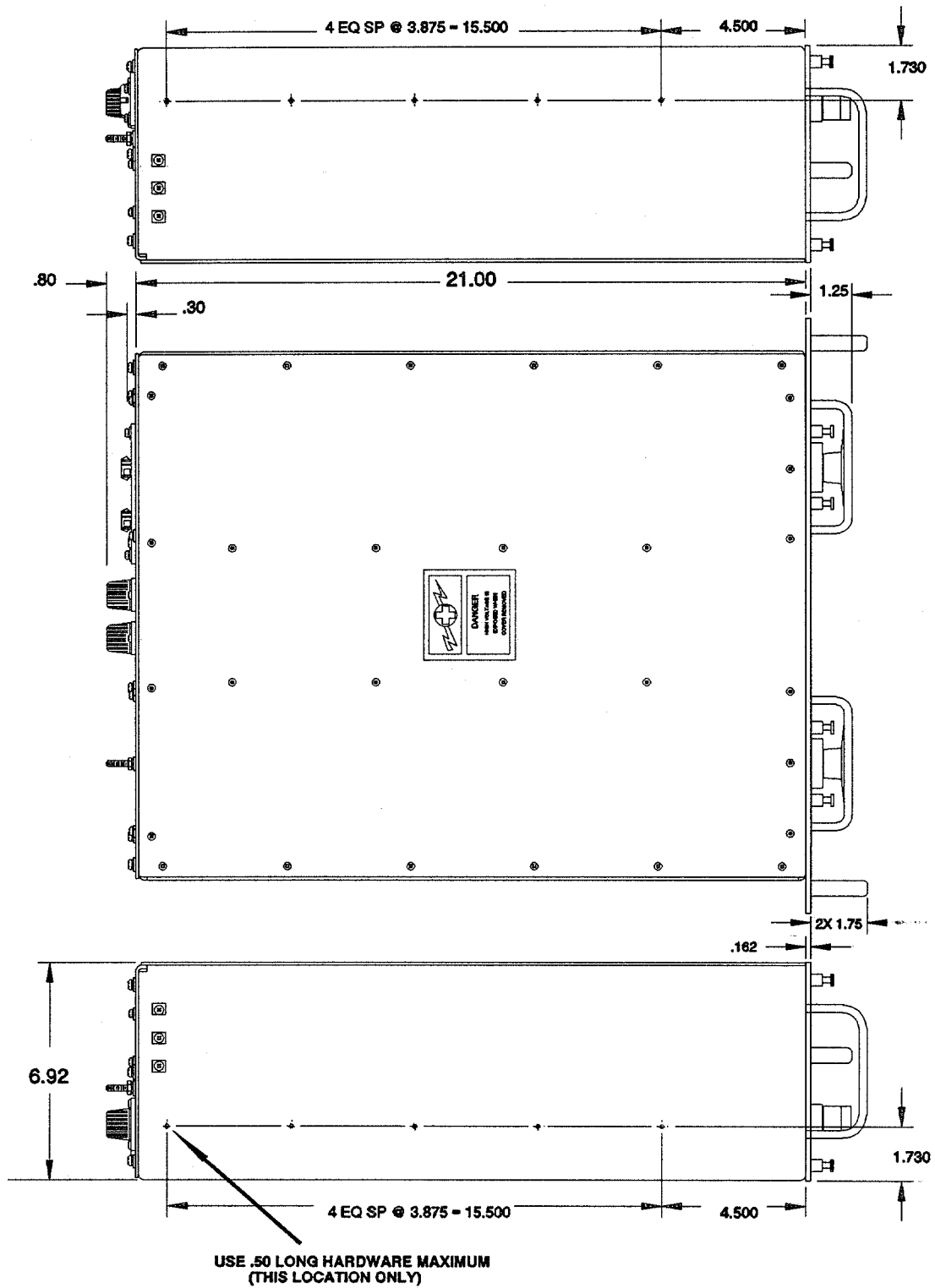


Figure 2-3. GBP-1-102/GBP-2-102 (Top and Side Views)

2.7 POWER CONNECTION**WARNING**

Hazardous voltages are present when operating this equipment. Read the "SAFETY" notices on page ii prior to performing installation, operation, or maintenance.

WARNING

To minimize shock hazard, the GBP chassis must be connected to an electrical ground. The GBP chassis is connected to the GUPS chassis through the three-conductor interconnecting cable. Also, a ground stud is located on the rear panel of the unit.

The corresponding pins of the two connectors on the rear panel of the GBP are connected together internal to the unit; either connector could be used to connect the GBP to the GUPS unit. The remaining connector could be used to connect additional extended battery packs. The GBP should be connected using the supplied cable.

SECTION III

OPERATION AND MAINTENANCE

3.1 INTRODUCTION

There are no operator adjustments on the GBP and the GBP requires no maintenance during the life of the batteries. Under optimal conditions, the battery life could reach 8 years; the actual life will depend on operating temperature, depth of discharge, and the number of charge/discharge cycles.

3.2 BATTERY INFORMATION, CARE AND HANDLING

The battery used in the GBP requires proper storage and recharging if it is to remain reliable.

During storage, the self-discharge of the battery results in a sulfate coating that builds up on the plates. This coating reduces the effective surface area of the plates, which reduces the backup time. Allowing the batteries to self-discharge for too long a period of time may result in problems with recharging or battery degradation.

Storing the battery at reduced temperatures reduces the level of chemical activity, thus sulphation takes

longer to take place. Reasonable storage times can be found in Table 3-1 for several different temperatures.

The batteries should be recharged for 24 hours after coming out of storage. Prolonged storage may require a 72-hour recharge to recover full battery capacity.

CAUTION

Failure to recharge the batteries after the storage time may result in permanent battery degradation.

3.3 BATTERY REPLACEMENT

Replacement of the batteries is easily accomplished because of the drawer-mounted battery modules; the GBP enclosure does not have to be removed from the rack.

WARNING

Before removing a battery module, turn off the GUPS unit and disconnect the ac and dc input power.

Table 3-1. Battery Storage Times

Storage Temperature	Storage Time
0°C (32°F)	20 Months
10°C (50°F)	10 Months
20°C (68°F)	5 Months
40°C (104°F)	1.5 Months

NOTES