

- Robust Design
- Compact structure
- Temperature compensated charging
- User programmable charge Topologies
- Fully protected AC & DC operation

## DESCRIPTION

The GSU Series of DC UPS Power Supplies are designed and built with high quality components and stringent Quality Control. We trust that the GSU will provide many years of trouble-free and reliable services.

The GSU provides a total power of 120W to the DC bus and the charging of the Backup Batteries. Upon Main's failure, the DC bus is supported by the Backup batteries until Mains is restored. With AC mains present (AC Mode), the GSU recharges the Backup Battery with (temperature compensated) Boost and Float modes. With the AC mains absent (DC mode), the GSU monitors and protects the Backup Battery against deep discharge and overcurrent.

Two solid-state Alarm contacts are available for remote monitoring of the status of the Mains and battery condition. DC OK alarm contacts indicate the presence of Mains and Power Supply is working. Batt OK indicates the charge state of the standby battery during backup mode. Charge topologies are user-programmable by dip switches on side of unit.

The main features of the GSU are:

1. Robust design , which increases reliability and durability of the product
2. Compact structure , which results in easy installation and space saving
3. Temperature compensated charging , which provides optimum charge time and increases battery life
4. User programmable topologies, which results in a more suitable charger for various applications
5. Fully protected operation with or without mains presence, giving peace of mind and protecting your investment

## MODEL TYPES

MODEL	Float Voltage	Boost Voltage	Ouptut Current
GS1208	13.8V	15VDC	8A
GS2404	27.6V	30VDC	4A

## SPECIFICATIONS

<b>Input voltage:</b>	196Vac to 264Vac / 98Vac to 132Vac internal link select
<b>Frequency:</b>	48 to 64Hz
<b>Inrush current:</b>	30A @ 230Vac (cold start)
<b>Isolation:</b>	3KVac Input to Output , 1KVac Input to Earth/Chassis , 500Vac Output to Earth/Chassis
<b>Input connector:</b>	IEC inlet socket
<b>Approvals:</b>	BS/EN60950 & C-tick
<b>Operating temperature range</b>	-20°C to 55°C ambient

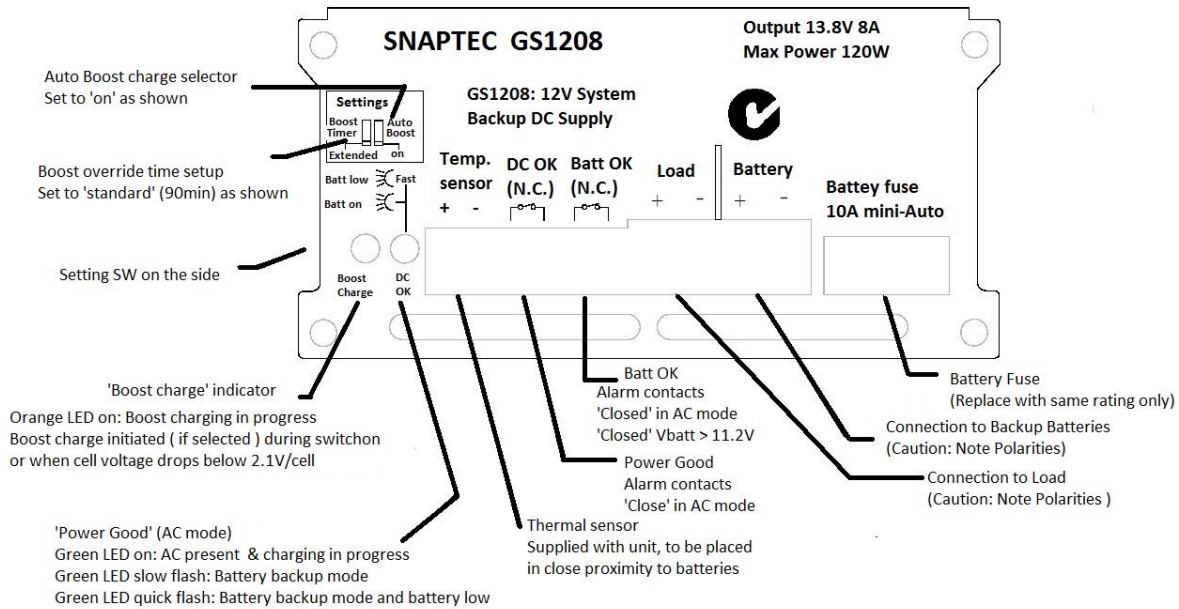
### WITH MAINS PRESENT ( AC MODE )

<b>Output voltage</b>	<b>Float mode:</b> 2.3V/cell @ 25°C, ±1.3% , 12V system: 13.8Vdc , 24V system: 27.6Vdc <b>Boost mode:</b> 2.5V/cell @ 25°C, ±2% , 12V system: 15.0Vdc , 24V system: 30.0Vdc
<b>Regulation (Line and Load)</b>	less than 0.7%
<b>Output noise &amp; ripple (30MHz BW)</b>	0.8%V <sub>out p-p</sub>
<b>Temperature compensation</b>	-3.9mV/°C/cell
<b>Total current limit (Batt &amp; Load)</b>	GS1208: 8.5A ±0.5A GS2404: 4.3A ±0.3A
<b>Boost to Float charge transition:</b>	Charge current taper: GS1208: 1.2A ±0.2A GS2404: 0.6A ±0.1A
<b>Internal timer override</b>	Standard: 90mins ±30% Extended: 180mins ±30%

### WITH MAINS ABSENT ( DC BACKUP MODE )

<b>Battery OK threshold</b>	1.85V/cell ± 8%
<b>Battery undervoltage cutout</b>	1.7V/cell ± 8%
<b>Battery overcurrent cutout</b>	GS1208: 9A ±1A GS2404: 4.5A ±0.5A
<b>Battery drain into PSU</b>	Less than 15mA <sub>average</sub>

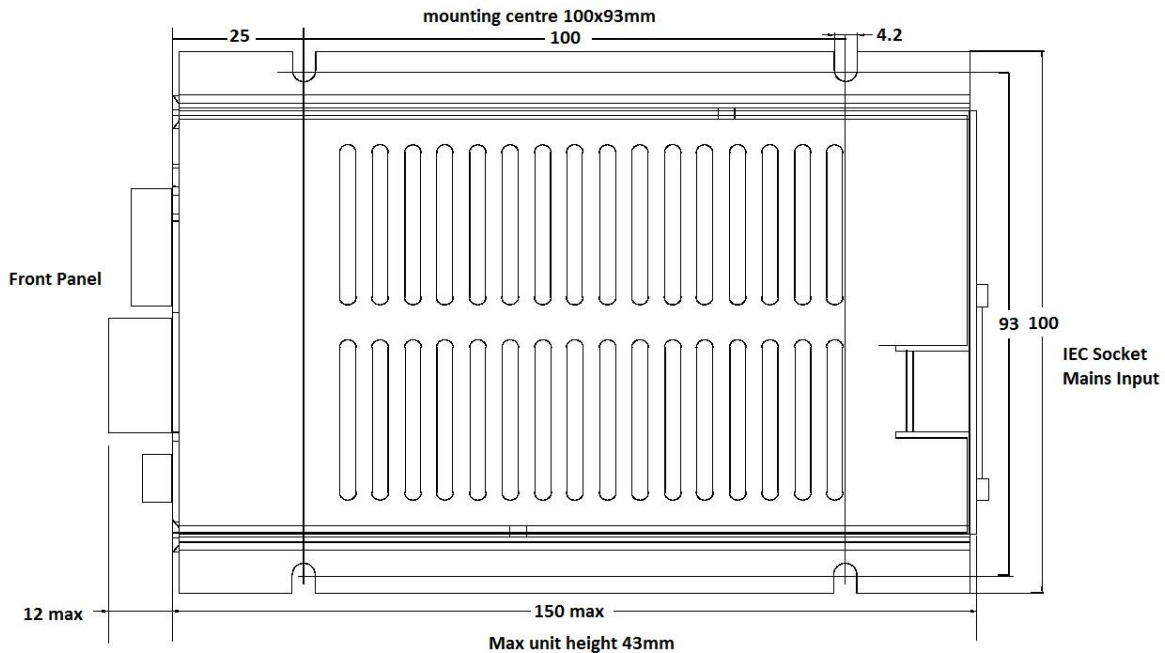
## MECHANICAL DRAWINGS



**Caution:** Internal link change is required for the changover between 115V and 230V operation.  
If link change is required, remove Mains plug and WAIT 5 MINUTES BEFORE REMOVE COVER.  
Remove header link from P2 and insert to the appropriate position as indicated on the circuit board.

**NO USER SERVICEABLE PARTS INSIDE. DO NOT OPEN COVER, TRAINED SERVICE PERSONNEL ONLY. INDOOR USE ONLY.**

### TOP VIEW



## OPERATION:

**CONNECTIONS:** Always connect the positive output of the charger to the positive terminal of the battery. It is essential to periodically check the batteries for any signs of damage or low level electrolyte if using flooded cells. To minimize the volt drop at the output connections use proper size cables.

**AC Input:** the standard model is supplied for connection to 230VAC input. Use a standard AC input IEC cable. If connection to 115VAC input is required please consult with sales office at time of ordering.

**Battery Fuse Ratings:** The battery fuse is installed on the DC UPS, in case the fuse is blown up, please replace with a fuse of the same rating.

**Temperature sensor:** The temperature sensor provided with the unit is to be connected at all times , attach the sensor in close proximity to the batteries.

**DC OK Alarm relay:** The DC OK alarm relay contact provides an indication of the AC input presence and the proper operation of the unit. In case of normal operation the contacts are closed . If there is an AC failure or the unit is not operating properly the contacts are open.

**BATT OK Alarm relay:** The Battery OK alarm relay contact provides an indication of the voltage level on the battery terminals. Under normal conditions the contacts are closed, in case of AC failure and when the battery voltage falls below 11.2V for 12V model and 22.4V for 24V model the contacts are open.

**DC OK LED:** The DC OK Green LED is used to indicate the status of the DC UPS. There are three states the UPS can be in:

GREEN LED ON: AC input is present and charging in progress

GREEN LED SLOW FLASH: AC input is not present unit in battery backup mode

GREEN LED FAST FLASH: AC input is not present unit in battery backup mode and battery voltage is low.

**BOOST SETTING DIP SWITCHES:** The Boost charge feature of the DC UPS can be turned on or off by the dip switches on the side of the unit. There are 2 dip switches on the side of the unit , the dip switch to the right is used to turn the boost charger feature on or off. The dip switch to the left is used to set boost time period to either timed at 90min or 180min.

**Low Voltage Disconnect:** The DC UPS will continue to supply the DC load with AC input power failure. The battery voltage is monitored , as the battery voltage drops first the DC OK changes state to warn of drop in voltage then as the voltage drops further and when the battery voltage reaches 10.2V +/- 8% for 12V model and 20.4V +/-8% for 24V model the battery is disconnected to protect the battery from deep discharge.

**Disclaimer:** All specifications are subject to change at any time without notice. Snaptec Australia Pty. Ltd. Accept no liability for any changes or errors in this manual.