

## 1 RU-HIGH 48V, 24V and 12V INTEGRATED DC POWER SYSTEMS



### GRAVITAS X75 BASE SYSTEM



### DESCRIPTION

#### KEY FEATURES

- ◆ 1RU-High Base System
- ◆ 1RU-High Expander Shelf
- ◆ Remote Monitoring & Control
- ◆ Fully Integrated System
- ◆ Hot-Swap Rectifier Modules
- ◆ Up to 60.6A at -54.4VDC
- ◆ Up to 75A at +27.2VDC
- ◆ Up to 75A at +13.6VDC
- ◆ Wide Range AC Input
- ◆ Up to 10 DC Load Circuits
- ◆ Ckt. Breakers or GMT Fuses
- ◆ Quick and Easy Installation
- ◆ Universal 19/23-Inch Brackets

Gravitas X75 is an ultra-compact, integrated DC power system. The base system is a 1RU shelf holding up to three hot-swap rectifier modules. This system produces up to 1650 watts output at -54.4, +27.2 or +13.6VDC. It can also be operated as a 2+1 redundant system with up to 1100 watts output. The expanded system consists of a base shelf plus an expander shelf with a 2RU total height. This system holds up to six rectifier modules with up to 3300 watts output; it can be operated as a 5+1 redundant system with up to 2750 watts output. Each rectifier module is cooled by a fan that operates at a speed which is a function of load and temperature.

There are up to five circuit-breaker protected DC outputs or up to 10 GMT fuse protected outputs on the base system. A battery string breaker and a low-voltage battery disconnect are standard features. The expander shelf comes with a ribbon cable and connectors to link the signals between the two units at their rear panels. It also comes with bus bar links to parallel the rectifier output bus bars.

#### SAFETY STANDARDS

UL60950  
CSA22.2, No. 60950  
EN60950

The base and expander shelves can also be operated as a battery backup, single feed power system (without load circuit breakers or fuses).

#### TWO-YEAR WARRANTY



GRAVITAS X75 EXPANDED

The remote access controller has LED visual indicators and Form C relay alarms. It is programmed by means of a remote PC web page display with communication by Ethernet LAN. Temperature compensated rectifier output is provided by means of an accessory TC probe. The X75 can be quickly installed by a qualified technician.

## GRAVITAS X75 SUMMARY FEATURES

- ◆ -48, +24, or +12VDC Rectifiers
- ◆ Hot-Swap Rectifiers Modules
- ◆ Power Factor Corrected
- ◆ Class B EMI Input Filter
- ◆ Base and Expander Shelves
- ◆ N+1 Redundant Operation
- ◆ Up to 10 DC Load Circuits
- ◆ Circuit Breakers or GMT Fuses
- ◆ Battery String Breaker
- ◆ LV Battery Disconnect
- ◆ Remote Monitoring & Control
- ◆ Quick, Easy Installation
- ◆ 19 or 23-Inch Rack Mounting
- ◆ Four Form C Alarms

## GRAVITAS X75 CONFIGURATION GUIDE

SYSTEM CAPABILITY	48V		24V		12V	
	BASE SYSTEM	EXPANDED SYSTEM	BASE SYSTEM	EXPANDED SYSTEM	BASE SYSTEM	EXPANDED SYSTEM
System Model No.	X75-48S	X75-48S +ES75	X75-24S	X75-24S +ES75	X75-12S	X75-12S +ES75
Rectifier Model	RSG7000-Z	RSG7000-Z	RSG5000-Z	RSG5000-Z	RSG3000-Z	RSG3000-Z
System Voltage	-54.4VDC	-54.4VDC	+27.2VDC	+27.2VDC	+13.6VDC	+13.6VDC
Rated Load, Non-Redundant No. Modules	30.3A 3	60.5A 6	55.2A 3	75.0A 5	75.0A 3	— —
Rated Load, Redundant No. Modules Redundancy	20.2A 3 2+1	50.5A 6 5+1	36.8A 3 2+1	75.0A 6 5+1	66.0A 3 2+1	75.0A 4 3+1
Input Range, VAC	85-264	85-264	85-264	85-264	85-264	85-264
Battery String Breakers Low Voltage Disconnect <sup>2</sup>	1 Standard	1 Standard	1 Standard	1 Standard	1 Standard	1 Standard
Load Protection 1A-30A Circuit Breakers or ½A-12A GMT Fuses	5 10	5 10	5 10	5 10	5 10	5 10
Control Features Alarm Outputs, Form C Temp. Compensation Probe Ethernet LAN Communication Ethernet LAN + SNMP	4 Accessory Standard Option	4 Accessory Standard Option	4 Accessory Standard Option	4 Accessory Standard Option	4 Accessory Standard Option	4 Accessory Standard Option
Rack Height Rack Mounting, Inches <sup>3</sup>	1RU 19/23	2RU 19/23	1RU 19/23	2RU 19/23	1RU 19/23	2RU 19/23

## REMOTE ACCESS CONTROLLER (BASE SHELF)

This controller controls the system rectifier, monitors the system parameters and has alarms for system failures. There are six red LED alarms which indicate a failure: Major Alarm, Minor Alarm, Rectifier Alarm, AC Input Alarm, Overtemperature Alarm and Overvoltage Alarm. A green LED indicates that the controller is operating. Four Form C relay outputs give alarms: Major Alarm, Minor Alarm, Rectifier Alarm and AC Input Alarm. The controller is programmed by means of a remote PC webpage display. Communication is by Ethernet LAN with an SNMP (Simple Network Management Protocol) option. It also has provision for temperature compensated charging of an external battery using a TC probe which can be supplied as an accessory item.

## EXPANDER SYSTEM

This expander shelf allows up to 3 additional rectifier modules to be connected to the rectifier bus for additional power capability. The expander rectifiers are paralleled to the system bus via bus bar and expansion interface connections.

## RSG RECTIFIER MODULE SPECIFICATIONS

### INPUT

Voltage Range \_\_\_\_\_ 85-264VAC  
 Power Factor \_\_\_\_\_ 0.99  
 Total Harmonic Distortion, Max. \_\_\_\_\_ 5%  
 Frequency \_\_\_\_\_ 47-63Hz  
 Inrush Current Limiting \_\_\_\_\_ 30A Peak  
 EMI Filter, Conducted \_\_\_\_\_ FCC20780 pt. 15J Curve B  
 \_\_\_\_\_ EN55022 Curve B  
 Input Current, max., 230VAC \_\_\_\_\_ 2.7A  
 120VAC \_\_\_\_\_ 5.2A

### Input Immunity, Conducted

Fast Transients, Line-Line  $\pm 2$ kV (EN61000-4-4 Level 3)  
 Surges, Line-Line  $\pm 2$ kV (EN61000-4-5 Level 3)  
 Surges, Line-Ground  $\pm 4$ kV (EN61000-4-5 Level 4)

### OUTPUT

Current & Voltage, 48V Nominal \_\_\_\_\_ 10.1@54.4VDC  
 24V Nominal \_\_\_\_\_ 18.4@27.2VDC  
 12V Nominal \_\_\_\_\_ 33.0@13.6VDC  
 Voltage Adjustment Range, 48V Nominal \_\_\_\_\_ 45-58VDC  
 24V Nominal \_\_\_\_\_ 22-29VDC  
 12V Nominal \_\_\_\_\_ 11-14.5VDC  
 Output Power, Rated, 54.4V \_\_\_\_\_ 550W  
 27.2V \_\_\_\_\_ 500W  
 13.6V \_\_\_\_\_ 450W

Total Regulation, Max. \_\_\_\_\_ 2%  
 Holdup Time \_\_\_\_\_ 10msec.  
 Overvoltage Protection, 48V Nominal \_\_\_\_\_ 58V  
 24V Nominal \_\_\_\_\_ 29V  
 12V Nominal \_\_\_\_\_ 14.5V  
 Filtering: Wideband Noise, 20Mhz BW, P-P \_\_\_\_\_ 1.0%  
 Voice Band Noise \_\_\_\_\_ <32dBmC  
 Current Limit \_\_\_\_\_ 105% Rated Current  
 Efficiency \_\_\_\_\_ 85-90%

### SAFETY STANDARDS

UL 60950, CSA22.2-60950, EN60950

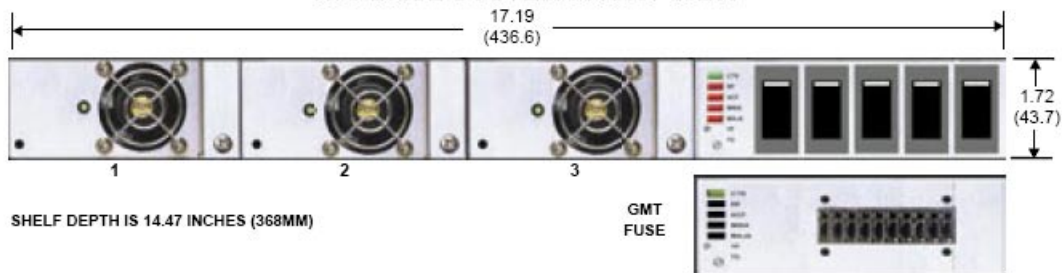
### STATUS INDICATOR

DC Good \_\_\_\_\_ Green LED

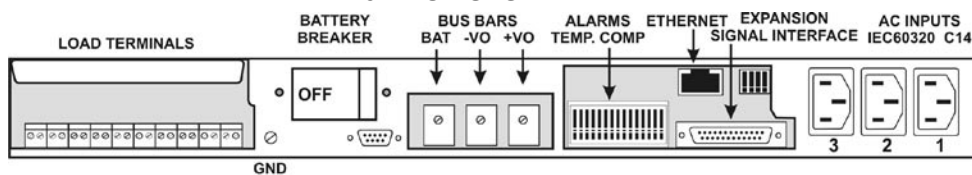
### ENVIRONMENTAL

Operating Temp. Range \_\_\_\_\_ -20°C to +70°C  
 Output Current Derating \_\_\_\_\_ 2.5%/°C, 50°C to 70°C  
 Storage Temp. Range \_\_\_\_\_ -40°C to +85°C  
 Humidity \_\_\_\_\_ 0% to 95%, Non-Condensing  
 ESD \_\_\_\_\_ Bellcore GR-1089-Core and EN61000-4-2  
 Cooling \_\_\_\_\_ Internal Fan

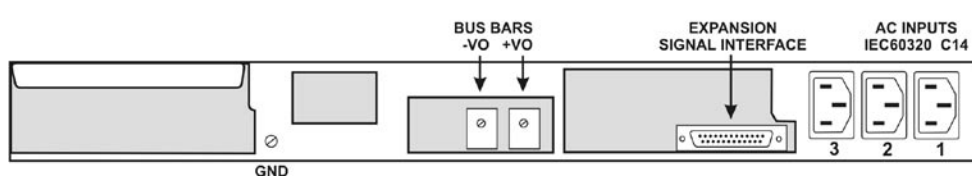
### X75 BASE SYSTEM FRONT VIEW



### X75 BASE SYSTEM REAR VIEW



### ES75 EXPANDER REAR VIEW



## GRAVITAS X75 ORDERING GUIDE

BASE MODEL NO.	SYSTEM OUTPUT, MAX.	INPUT, VAC	RECTIFIER MODULES	MAX. NO. OF MODULES						
<input type="checkbox"/> <b>X75-48S</b>	-54.4VDC@30.3A	85-264VAC	RSG7000-Z	3						
<input type="checkbox"/> <b>X75-24S</b>	+27.2VDC@55.2A	85-264VAC	RSG5000-Z	3						
<input type="checkbox"/> <b>X75-12S</b>	+13.6VDC@75.0A	85-264VAC	RSG4000-Z	3						
EXPANDER MODEL NO.	SYSTEM OUTPUT, MAX.	INPUT, VAC.	RECTIFIER MODULES	MAX. NO. OF MODULES						
<input type="checkbox"/> <b>ES75</b>	-54.4VDC@30.3A	85-264VAC	RSG7000-Z	3						
<input type="checkbox"/> <b>ES75</b>	+27.2VDC@55.2A	85-264VAC	RSG5000-Z	3						
<input type="checkbox"/> <b>ES75</b>	+13.6VDC@75.0A	85-264VAC	RSG3000-Z	3						
<b>HOT-SWAP RECTIFIER MODULES (Order Separately)</b>										
<input type="checkbox"/> <b>RSG7000-Z</b>	-54.4VDC@10.1A	Number Ordered _____								
<input type="checkbox"/> <b>RSG5000-Z</b>	+27.3VDC@18.2A	Number Ordered _____								
<input type="checkbox"/> <b>RSG3000-Z</b>	+13.6VDC@33.0A	Number Ordered _____								
<b>SYSTEM DC DISTRIBUTION (Base or Expanded System)</b>										
<input type="checkbox"/> <b>Circuit Breakers, Up to 5</b> (1, 1.2, 5, 10, 15, 20, 25, 30A) <ul style="list-style-type: none"> <li><input type="checkbox"/> 1. Breaker _____ A (1A-30A)</li> <li><input type="checkbox"/> 2. Breaker _____ A (1A-30A)</li> <li><input type="checkbox"/> 3. Breaker _____ A (1A-30A)</li> <li><input type="checkbox"/> 4. Breaker _____ A (1A-30A)</li> <li><input type="checkbox"/> 5. Breaker _____ A (1A-30A)</li> </ul>										
<input type="checkbox"/> <b>GMT Fuse Block</b> <b>Up to 10 Fuses</b> (Order Fuses Separately)										
<b>OPTIONAL ITEM</b>										
<input type="checkbox"/> <b>SNMP</b> (Simple Network Management Protocol)										
<b>ACCESSORY ITEMS</b>										
<b>1. <input type="checkbox"/> GMT Fuses:</b> 1/2, 3/4, 1, 1 1/3, 2, 3, 5, 10 & 20A +0A Dummy. Specify quantity of each										
<b>2. <input type="checkbox"/> Temperature Compensation Probe</b>										
<b>3. AC Line Cords:</b> 6 ft. long with IEC60320 C-13 connector <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;"><input type="checkbox"/> 125VAC with NEMA 5-15 plug. 3x14AWG</td> <td style="width: 33%;"><input type="checkbox"/> 205VAC with NEMA 6-15 plug. 3x14AWG</td> <td style="width: 33%;"><input type="checkbox"/> 205VAC unterminated 3 x 18AWG</td> </tr> <tr> <td>Qty. _____ No. 364-1412-0000</td> <td>Qty. _____ No. 364-1414-0000</td> <td>Qty. _____ No. 364-1421-0000</td> </tr> </table>					<input type="checkbox"/> 125VAC with NEMA 5-15 plug. 3x14AWG	<input type="checkbox"/> 205VAC with NEMA 6-15 plug. 3x14AWG	<input type="checkbox"/> 205VAC unterminated 3 x 18AWG	Qty. _____ No. 364-1412-0000	Qty. _____ No. 364-1414-0000	Qty. _____ No. 364-1421-0000
<input type="checkbox"/> 125VAC with NEMA 5-15 plug. 3x14AWG	<input type="checkbox"/> 205VAC with NEMA 6-15 plug. 3x14AWG	<input type="checkbox"/> 205VAC unterminated 3 x 18AWG								
Qty. _____ No. 364-1412-0000	Qty. _____ No. 364-1414-0000	Qty. _____ No. 364-1421-0000								
<b>4. <input type="checkbox"/> Blank Covers</b> for Unused Rectifier Slots. Qty. _____										