

ULTRA COMPACT, 48V, 24V and 12V INTEGRATED DC POWER SYSTEMS



GRAVITAS X100



LVD73/23/EEC

KEY FEATURES

- ◆ Compact, 2RU High
- ◆ Fully Integrated System
- ◆ Hot-Swap Rectifier Modules
- ◆ Integrated Controller
- ◆ 100A at +13.6VDC
- ◆ 99A at +27.2VDC
- ◆ 60A at -54.4VDC
- ◆ Pluggable Circuit Breakers
- ◆ Quick-Connect Terminals
- ◆ Wide Range AC Input
- ◆ Less Than 12-Inches (305mm) Depth

SAFETY CERTIFICATIONS

AGENCY	STANDARD
UL	UL1950
CUL	CSA22.2, No. 950
DEMKO	EN60950

TWO-YEAR WARRANTY

DESCRIPTION

Gravitas X100 is an ultra-compact, integrated, DC power system. It consists of up to three high power-density, hot-swap rectifier modules which can produce 60 amperes at -54.4VDC, 99 amperes at +27.2VDC and two rectifiers for 100A at +13.6VDC. In 2+1 redundant operation the output current is 40 amperes or 66 amperes, respectively for -54.4VDC & 24.72VDC, or 50 amperes for +13.6VDC.

The system has a DC distribution panel with up to 5 load circuits which are protected by circuit breakers (standard) and GMT fuses (option). A battery breaker is standard and a low-voltage battery disconnect is optional.

The integral controller has LED visual alarms, Form C relay alarms, test points and set-point adjustments including over- and under-voltage adjustments. There is also a temperature compensation option.

The complete Gravitas X100 is only 2RU high (3.47 inches or 88.1mm) and is easily installed by a qualified technician. All power connections are at the rear of the unit to DIN-rail terminal blocks. A comprehensive operating manual explains all the details of operation and installation. The units may be mounted in 19- or 23-inch racks.



**PLUGGABLE
CIRCUIT
BREAKERS**

GRAVITAS X100 SUMMARY FEATURES

- | | |
|---|--|
| <ul style="list-style-type: none"> ◆ -48, +24, or +12VDC Hot-Swap Rectifiers ◆ 120 or 230VAC Input ◆ Power Factor Corrected ◆ Pluggable Circuit Breakers ◆ Class B EMI Input Filter ◆ Up to 60A at -54.4VDC ◆ Up to 99A at +27.2VDC ◆ Up to 100A at +13.6VDC ◆ 2+1 Redundant Operation | <ul style="list-style-type: none"> ◆ Up to 5 DC Load Circuits ◆ Field-Changeable Breakers ◆ Battery String Breaker(s) ◆ LV Battery Disconnect Option ◆ Integral Controller ◆ Quick, Easy Installation ◆ Modular Design ◆ Only 2RU (3.47 Inches) High ◆ 19- or 23-Inch Rack Mounting |
|---|--|

SYSTEM CAPABILITY

SYSTEM CAPABILITY	X100-48P/60	X100-24P/100	X100-12P/100
System Voltage	-54.4VDC	+27.2VDC	+13.6VDC
System Max. Current	60A	99A	100A
System Current, 2+1	40A	66A	50A ⁴
Input Range, VAC	85-264	85-264	85-264
Rectifier Model	RPCP48/20	RPCP24/33	RPCP12/50
Rectifiers Required, max.	3	3	2
Battery String Breakers	1 standard	2 standard	2 standard
Low Voltage Disconnect ¹	optional	optional	optional
Total No. of DC Loads, max. ²	5	5	5
1A-50A Breakers (standard)	2	2	2
1A-20A Breakers (standard)	2	2	2
½A-12A GMT Fuses (option)	4	4	4
Control Features			
Alarm Outputs	4 standard	4 standard	4 standard
Temp. Compensation	optional	optional	optional
Rack Height	2RU	2RU	2RU
Rack Width, Inches ³	19	19	19

NOTES:

1. Battery disconnect.
2. Up to 4 loads standard. Up to 5 loads with combination of breakers and optional GMT fuses.
3. 23-Inch mounting brackets can be supplied.
4. 1+1 redundant.

INTEGRAL CONTROLLER

This controller controls the system rectifier, monitors the system parameters and has alarms for system failures. There are eight red LED alarms which indicate a failure: Major Alarm, Minor Alarm, Fuse or Breaker Alarm, Overvoltage or Undervoltage Alarm, Temperature Compensation Alarm, Rectifier Failure Alarm, and AC Input Failure Alarm.

Four Form C relay outputs give alarms: Major Alarm, Minor Alarm, Rectifier Failure Alarm and AC Input Failure Alarm. Four front-panel voltage-set adjustments are for Float Voltage, Battery Overvoltage, Battery Undervoltage and Temperature Compensation. Test points for load voltage and current permit external measurement of these values. An option for this controller includes a temperature compensated output from the rectifier.

RPCP RECTIFIER MODULE SPECIFICATIONS

INPUT

Voltage Range _____ 85-264VAC
 Power Factor _____ 0.99
 Total Harmonic Distortion, Max. _____ 5%
 Frequency _____ 47-63Hz
 Inrush Current Limiting _____ 50A Peak
 EMI Filter, Conducted _____ FCC20780 pt. 15J Curve B
 _____ EN55022 Curve B
 Input Current, 230VAC _____ 5.6A
 120VAC _____ 10.8A
 Input Immunity, Conducted
 Fast Transients, Line-Line ±2kV (EN61000-4-4 Level 3)
 Surges, Line-Line _____ ±2kV (EN61000-4-5 Level 3)
 Surges, Line-Ground _____ ±4kV (EN61000-4-5 Level 4)

Overvoltage Protection, 48V Nominal _____ 58V
 24V Nominal _____ 29V
 12V Nominal _____ 14.5V
 Filtering: Wideband Noise, 20Mhz BW,
 48V Nominal, P-P _____ 500mV
 24V Nominal, P-P _____ 250mV
 12V Nominal, P-P _____ 125mV
 Voice Band Noise _____ <32dBnC
 Current Limit _____ 105% Rated Current
 Efficiency _____ 82-87%

OUTPUT

Current & Voltage, 48V Nominal _____ 20@54.4VDC
 24V Nominal _____ 33A@27.2VDC
 12V Nominal _____ 50A@13.6VDC
 Voltage Adjustment Range, 48V Nominal _____ 45-58VDC
 24V Nominal _____ 22-29VDC
 12V Nominal _____ 11-14.5VDC
 Output Power, Rated 48V Nominal _____ 1,088W
 24V Nominal _____ 898W
 12V Nominal _____ 680W
 Total Regulation, Max. _____ 2%
 Holdup Time _____ 20msec.

SAFETY STANDARDS UL 1950, CSA22.2-950, EN60950

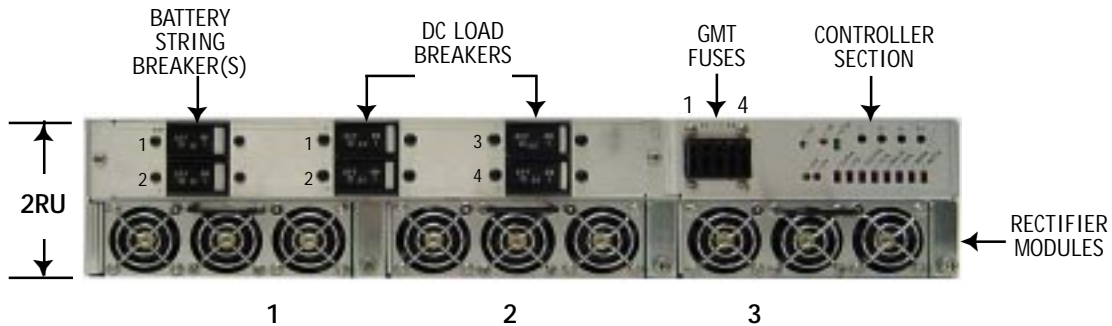
STATUS INDICATORS

AC Good _____ Green LED
 DC Good _____ Green LED

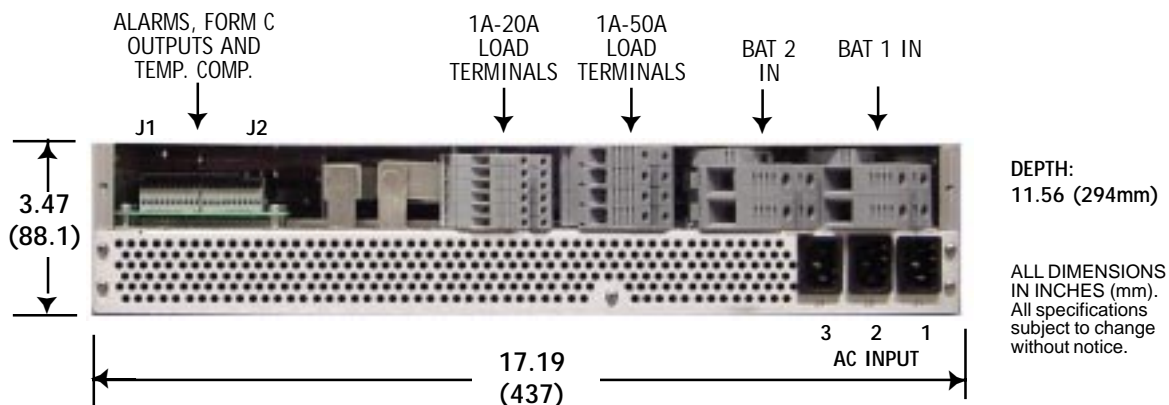
ENVIRONMENTAL

Operating Temp. Range _____ 0°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 Fans

SYSTEM FRONT VIEW



SYSTEM REAR VIEW



ALL DIMENSIONS
 IN INCHES (mm).
 All specifications
 subject to change
 without notice.

X100 CONFIGURATION GUIDE

SYSTEM MODEL NO.	SYSTEM OUTPUT, MAX.	INPUT, VAC	RECTIFIER MODULES	MAX. NO. OF MODULES			
<input type="checkbox"/> X100-48P/60	-54.4VDC@60A	85-264VAC	RPCP48/20	3			
<input type="checkbox"/> X100-24P/100	+27.2VDC@99A	85-264VAC	RPCP24/33	3			
<input type="checkbox"/> X100-12P/100	+13.6VDC@100A	85-264VAC	RPCP12/50	2			
HOT-SWAP RECTIFIER MODULES							
<input type="checkbox"/> RPCP 48/20	Number Ordered _____ (Include Spares)						
<input type="checkbox"/> RPCP 24/33	Number Ordered _____ (Include Spares)						
<input type="checkbox"/> RPCP 12/50	Number Ordered _____ (Include Spares)						
BATTERY PROTECTION							
<input type="checkbox"/>	1 Battery String Breaker (Standard for 48V System)						
<input type="checkbox"/>	2 Battery String Breakers (Standard for 24V and 12V System)						
<input type="checkbox"/>	1 Extra Battery String Breaker (Option for 48V System)						
<input type="checkbox"/>	Low-Voltage Battery Disconnect (Option)						
DC DISTRIBUTION							
Up to 4 Breakers (Standard) & Up to 4 GMT Fuses (Option). Total of 5 Max.							
1.	Breaker _____ A (1A-50A)						
2.	Breaker _____ A (1A-50A)						
3.	Breaker _____ A (1A-20A)						
4.	Breaker _____ A (1A-20A)						
<input type="checkbox"/>	GMT Fuse Block (Option). Up to 4 Fuses, 48A Max.						
BREAKERS & FUSES AVAILABLE							
Breakers: 1, 2.5, 5, 10, 15, 20, 25, 30, 40, & 50A							
GMT Fuses: Order the number required. Maximum total current is 48A.							
AMPS	BUSSMAN NO.	COLOR	NO. REQ'D	AMPS	BUSSMAN NO.	COLOR	NO. REQ'D
0.5A	GMT- 1/2	Red		3	GMT- 3	Blue	
0.75	GMT- 3/4	Brown		5	GMT- 5	Green	
1	GMT - 1	Gray		10	GMT - 10	Red-White	
1.33	GMT-1 ^{1/3}	White		12	GMT- 12	Green-Yel	
2	GMT-2	Orange		0	GMT-Dummy	Orange	
CONTROLLER OPTION							
<input type="checkbox"/> Temperature Compensation							
BLANK COVERS (FOR UNUSED RECTIFIER SLOTS)							
Cover Position: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 (left to right)							
MOUNTING BRACKETS							
<input type="checkbox"/> 19-Inch <input type="checkbox"/> 23-Inch							

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