

## INDUSTRIES & APPLICATIONS



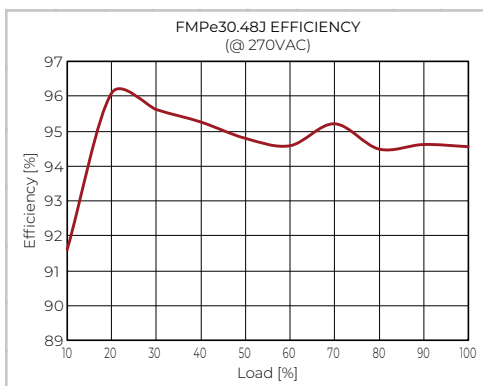
## KEY FEATURES

- ◆ >96% Efficiency Rectifiers
- ◆ 1200A (N+1) Capacity
- ◆ Remote Monitoring & Control
- ◆ Field Replaceable Controller
- ◆ Ethernet Comm. with SNMPv3
- ◆ 3 LED Alarm/Status Indicators
- ◆ 10 Form-C Relay Alarms
- ◆ Control for External LVD
- ◆ LCD Display/Keypad
- ◆ Easy Installation

## SAFETY COMPLIANCE

CAN/CSA C22.2 No 62368-1:2014  
UL 62368-1:2014  
EN 62368-1:2014/A11:2017

## THREE YEAR WARRANTY



## DESCRIPTION

Guardian Bulk M42 is a 10RU high 19" rack-mounted, DC power system providing a bulk output of -48VDC. The system incorporates 6 rectifier shelves accommodating up to 23 Guardian family high efficiency hot-swap rectifiers. A maximum total current of 1200A (N+1) is available. The rectifiers are internally fan cooled with speed control which is a function of load and temperature, keeping acoustic noise to a minimum.

The ACX Advanced controller monitors system parameters, controls rectifier output, and provides alarms for system failures. The controller is hot-pluggable for easy field replacement in case of failure. There are 2 LED alarm indicators which indicate failures, (RED) Alarm and (YELLOW) Message. A third green LED indicates the controller is working properly. As standard ten form-C relay outputs provide the alarms for remote use. Two digital inputs and outputs are also provided as well as an SD card with sufficient capacity for more than 20 years data logging.

The system can be programmed by means of a remote PC web page display. Communication is by Ethernet LAN with SNMPv3 including alarm trapping. It also has provision for temperature compensated charging of an external battery using a supplied TC probe. An LCD Display and Keypad are included for local metering, status, and setup.

Guardian Bulk is compatible with UNIPOWER's free [PowCom™ software](#) which offers local and remote management through an advanced Windows GUI.

## SYSTEM SPECIFICATION & CAPABILITY GUIDE

SYSTEM DESIGNATION	GUARDIAN ACCESS - M00042	
<b>OUTPUT</b>		
System Voltage	-48VDC nominal   53.5VDC float (factory default, user adjustable via controller)	
Maximum Capacity	Load	1200A
No. Rectifier Slots	23 (see configuration guide)	
<b>DC CONNECTIONS</b>		
Bus Bars	Lugs - ½" on 1¼" centers or ¾" on 1" centers with oversized washers.	
<b>INPUT</b>		
Voltage (rectifier module)	1-phase 180-275VAC	
AC Supply Configurations	1-phase 230/240VAC (L-N-PE) 2-phase 240VAC (L1-L2-PE) 3-phase (3-wire Wye) - 190/200/216/208/220/240VAC (L1-L2-PE / L2-L3-PE / L3-L1-PE) 3-phase (4-wire Delta) - 200/210/220/230/240VAC (L1-N-PE / L2-N-PE / L3-N-PE)	
Frequency	47-63Hz	
Maximum Input Current	see rectifier module capacity table below	
Rectifier Power Factor	>0.98 (typical)	
<b>AC CONNECTIONS</b>		
Terminals Blocks	L/N or L1/L2 per rectifier position - accepting wire gauge 24-10AWG	
<b>MONITORING &amp; CONTROL (ACX Advanced Controller)</b>		
Alarm Relays	10	
Local Interface	4 x 20 LCD, 4-key menu, USB / RS232, microSD card slot for data logging	
Remote Interface	Ethernet / Modem using PowCom™ software package Ethernet port allows monitoring and control over a TCP/IP network. Web browser support + SNMPv3	
LED Indications	Green - System ON; Yellow - Message(s); Red LED - Alarm(s)	
External Digital I/O	2 x Inputs, 2 x Outputs (Open Collector)	
<b>BATTERY MANAGEMENT</b>		
Symmetry Inputs	6 or 12 (can be redefined as analog inputs up to 100VDC)	
Low Voltage Disconnect (LVD)	Optional external: Programmable via system controller	
Temperature Compensated Charging	Optional: Programmable via system controller	
<b>COMPLIANCE</b>		
EMC	EN 300 386 ; EN61000-6-3 (Emission) ; EN61000-6-2 (Immunity)	
Safety	CAN/CSA C22.2 No 62368-1:2014; UL 62368-1:2014; EN 62368-1:2014/A11:2017	
<b>ENVIRONMENTAL</b>		
Operating Temperature	-40°C to +65°C, derated above +55°C (see manual and rectifier datasheets)	
Storage Temperature	-40°C to +85°C	

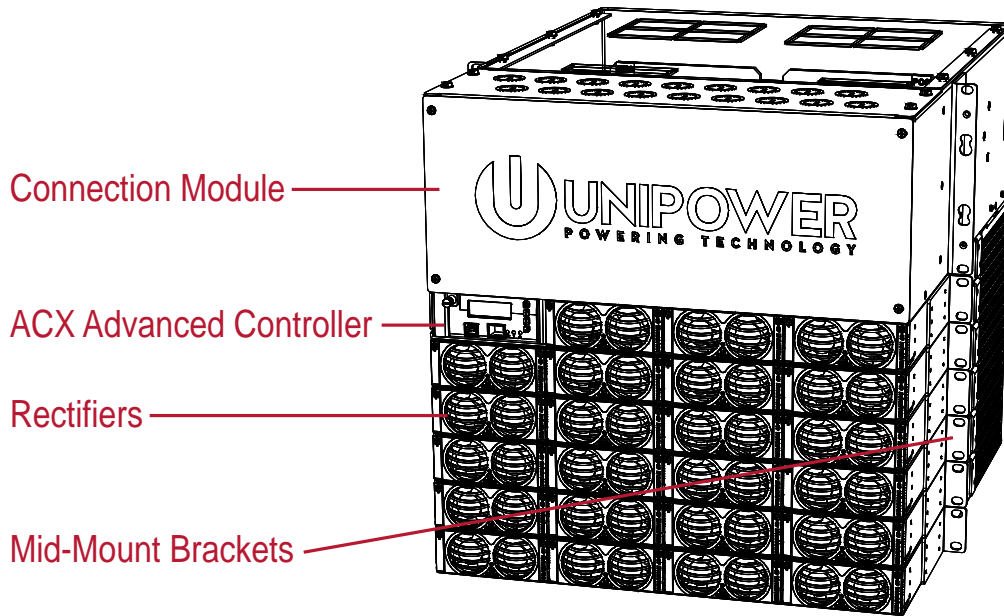
## RECTIFIER MODULE CAPACITIES

RECTIFIER MODULES						
MODEL NUMBER	EFFICIENCY <sup>1</sup>	INPUT VOLTAGE <sup>2</sup>	INPUT CURRENT <sup>2</sup>	OUTPUT POWER	OUTPUT CURRENT	
					Vnom	Vfloat <sup>3</sup>
<a href="#">FMPe30.48J</a>	96.2%	180-275VAC	18.0A	3000W	62.5A	56.0A

Notes:

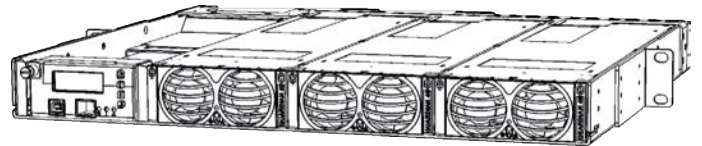
1. When operating at peak 230VAC.
2. Input currents shown are expected maximums at 180VAC.
3. Factory set to 53.5V. Adjustable via system controller.

### SYSTEM DESCRIPTION

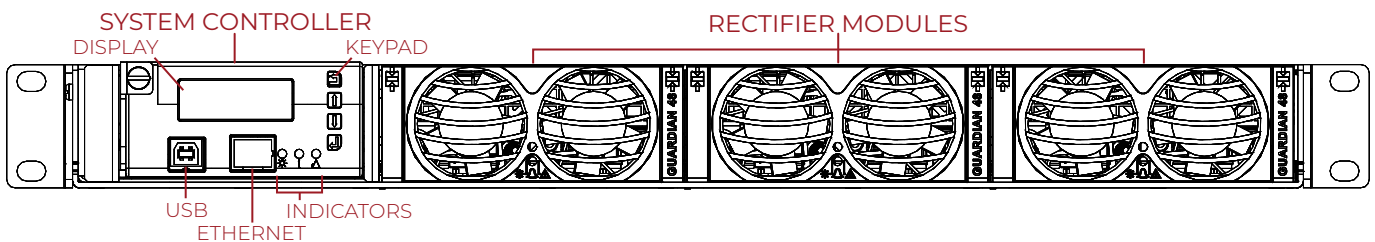


### CENTRAL UNIT DESCRIPTION

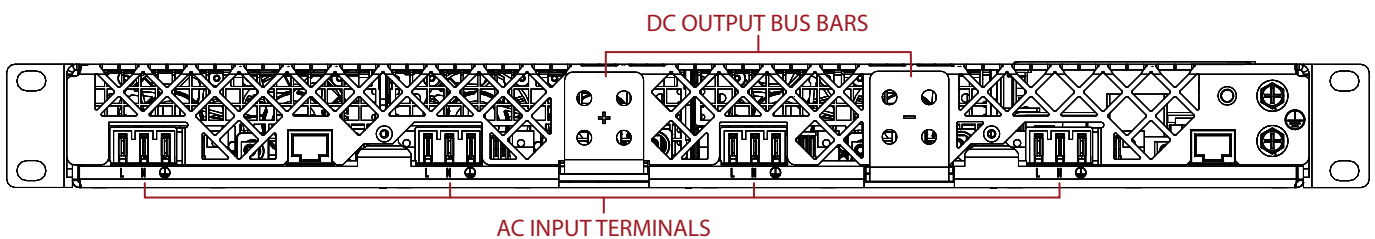
The Central Unit is the heart of the system and consists of a 1RU shelf that houses the ACX Advanced controller and three rectifier modules along with the alarm and signal connections. The Guardian Bulk M42 system configuration incorporates the Central Unit, five additional rectifier shelves and the connection module. The Central Unit is capable of supporting up to 64 rectifier modules directly or 256 rectifier modules when UNIPOWER's 4 x 64 rectifier multiplexer card is also used.



### FRONT VIEW



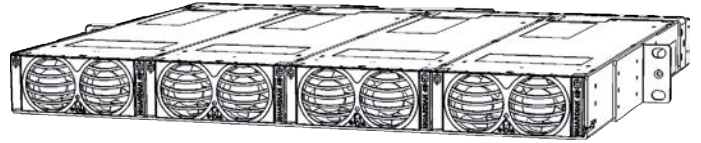
### REAR VIEW



## RECTIFIER SHELF DESCRIPTION

Guardian Bulk M42 systems are configured with 5 additional rectifier shelves.

Each shelf houses up to 4 rectifier modules, giving a total of 23 for the complete system.



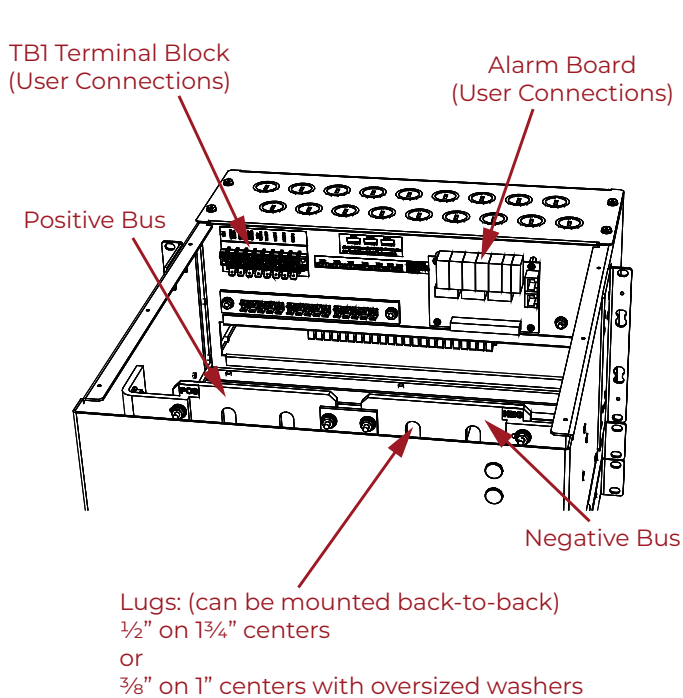
## CONNECTION MODULE DESCRIPTION

The Guardian Bulk M42 system incorporates a 4RU high connection module.

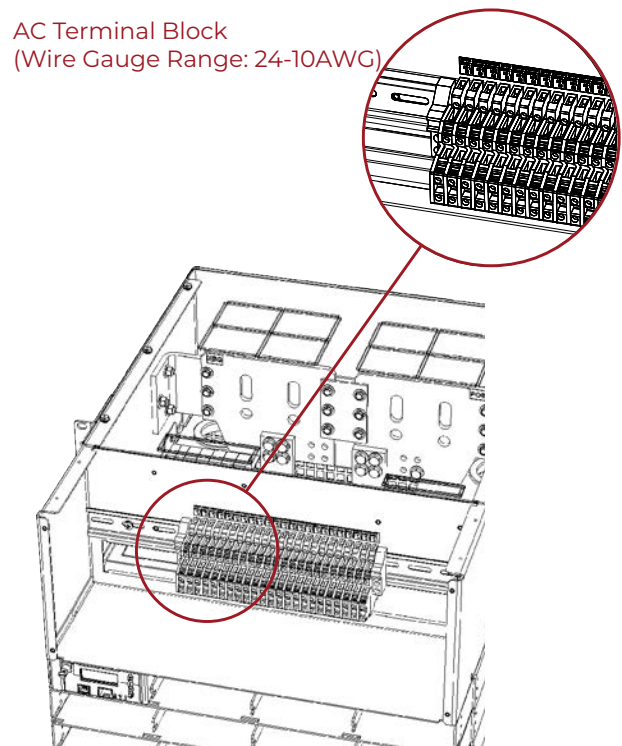
The module provides landing points for positive and negative DC output connections.

AC input connections are provided separately for each rectifier position. This allows configuration for single phase and 3 phase (individual rectifier L + N + PE) connection to the AC source as require.

All alarm and data connections are also made to the system via this module.

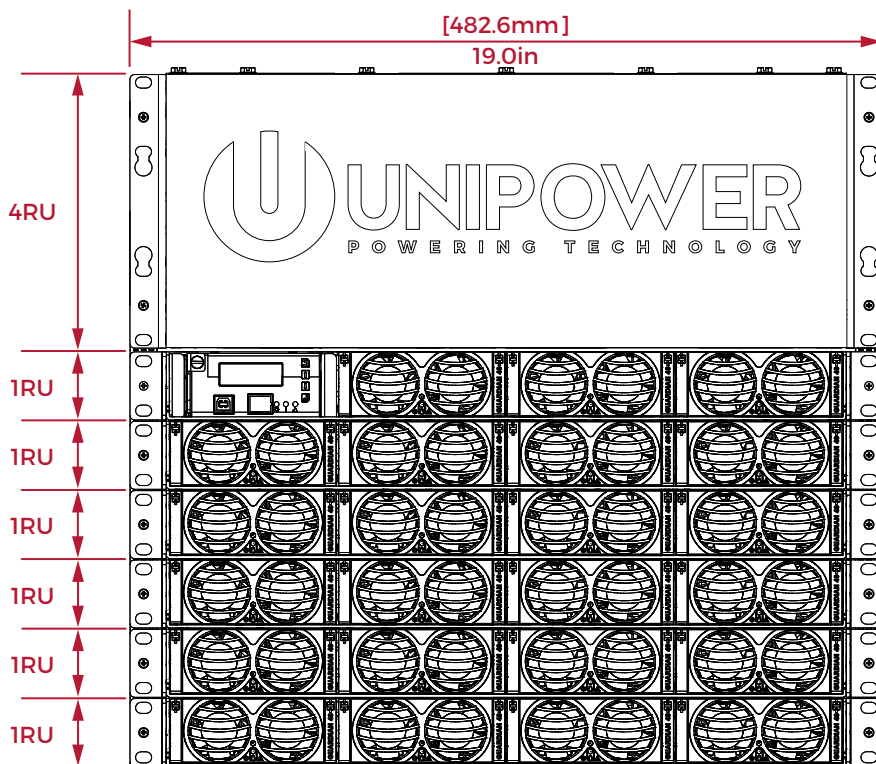
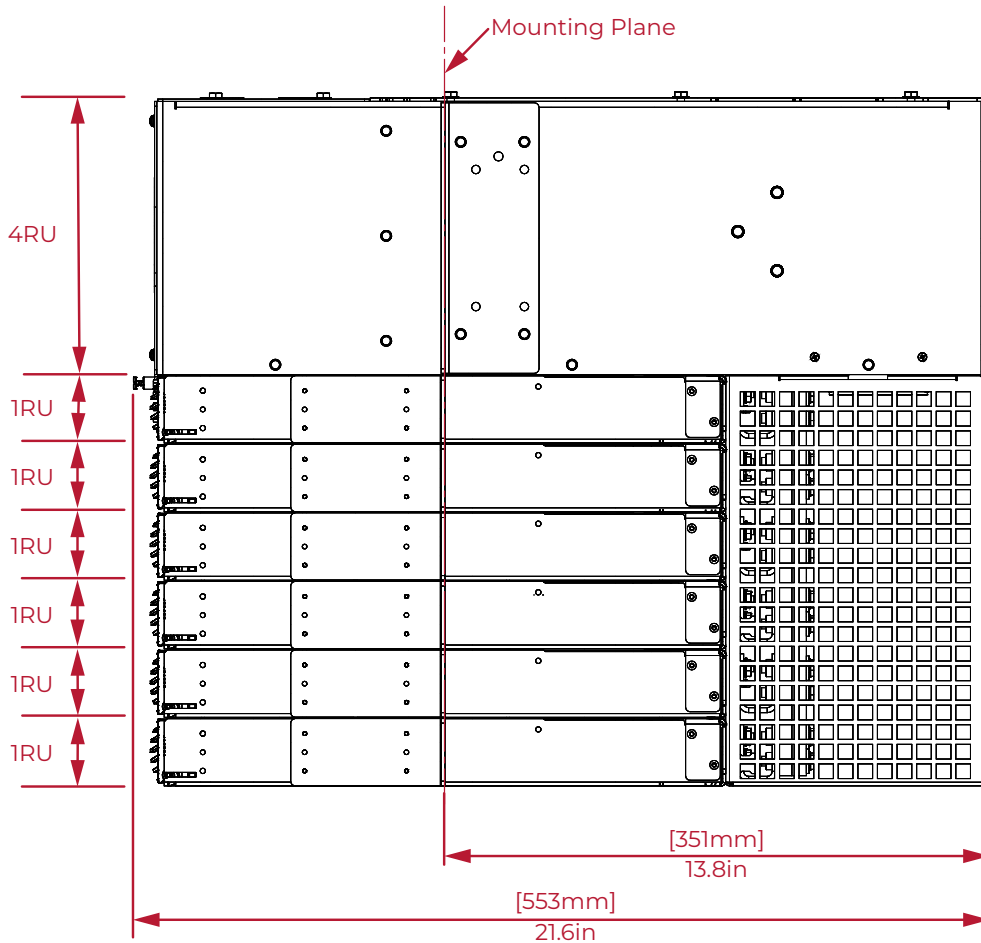


REAR VIEW  
(top cover removed)



FRONT VIEW  
(conduit plate and front panel removed)

SYSTEM DIMENSIONS



## ORDERING GUIDE

### STEP 1: SELECT SYSTEM

OUTPUT RATING (N+1)	MAX. # RECTIFIERS (N+1)	SYSTEM MODEL NUMBER
1200A (1200A)	23 (22+1)	M42

### STEP 2: SELECT RECTIFIERS

Enter the quantity of rectifier modules that you require.

Rectifier modules are shipped separately for installation on site and should be ordered as a separate line item from the main system unit.

MODULE POWER	RECTIFIER MODEL NUMBER	QUANTITY
3000W	FMPe30.48J	