

INDUSTRIES & APPLICATIONS



Telecom



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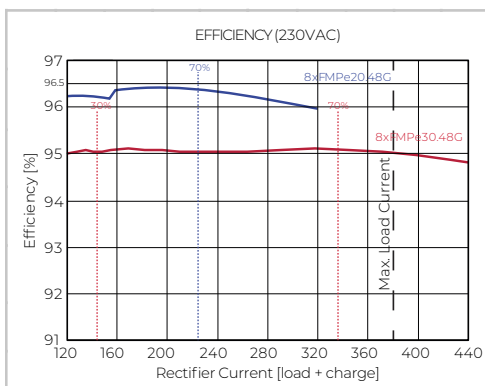
KEY FEATURES

- ◆ >96% Efficiency Rectifiers
- ◆ 60A to 600A (N+1) Capacity
- ◆ Remote Monitoring & Control
- ◆ Field Replaceable Controller
- ◆ Ethernet Comm. with SNMPv3
- ◆ 3 LED Alarm/Status Indicators
- ◆ 10 Form-C Relay Alarms
- ◆ Up to 20 Load Circuits
- ◆ LVBD Standard with Battery Breakers
- ◆ LCD Display/Touchpad
- ◆ Easy Installation

SAFETY CERTIFICATION

UL60950-1 2nd Ed.
CAN/CSA22.2 No. 60950-1-07

THREE YEAR WARRANTY



DESCRIPTION

Guardian Access M38 is a 5-7RU high 19" rack-mounted, integrated DC power system providing an output of -48VDC. These highly configurable systems incorporate 3 rectifier shelves with up to 11 Guardian family high efficiency hot-swap rectifiers. A maximum total current of 600A (N+1) is available. This may be shared between the load and battery charge current, the latter being programmable via the controller. The rectifiers are internally fan cooled with speed control which is a function of load and temperature, keeping acoustic noise to a minimum.

DC distribution can accommodate up to 20 pluggable breakers. 4 or 8 of these in each case may be connected to the bus via a Low Voltage Battery Disconnect (LBVD).

The ACX Advanced remote access controller monitors system parameters, controls rectifier output, and provides alarms for system failures. The Controller Module is also 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 up to 8GB card which is sufficient 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/Touchpad is included for local metering, status, and setup.

The Guardian Access 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 - M00038	
OUTPUT			
System Voltage		-48VDC nominal 53.5VDC float (factory default, user adjustable via controller)	
Maximum Capacity		Load	600A
		Battery	600A discharge s/w controlled charge
No. Rectifier Slots		3 to 11 (see configuration guide on page 6)	
DC DISTRIBUTION (see configuration guide)			
Load Circuits Up to 20	Breakers	Pluggable bullet type - 3A to 100A single position, 125 to 200A two position	
	TPS Fuses	Pluggable module provides 1 fused load circuit using 1 position - 3A to 70A available	
Battery Circuits 0, 4 or 8	Breakers	Pluggable bullet type - 100A one position, 125A two position or 200A two position	
INPUT			
Voltage (nominal) - configured during installation		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 table below for maximum rectifier currents	
Rectifier Power Factor		>0.98 (typical)	
MONITORING & CONTROL (ACX Advanced Controller)			
Alarm Relays		10	
Local Interface		4 x 20 LCD, 4-key menu, USB / RS232, microSD card slot (4GB max,) 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)	
BATTERY MANAGEMENT			
Symmetry Inputs		6 or 12 (can be redefined as analog inputs up to 100VDC)	
Low Voltage Disconnect (LBVD)		1 x 600A Programmable	
Temperature Compensated Charging		Programmable	
COMPLIANCE			
EMC		EN 300 386 ; EN61000-6-3 (Emission) ; EN61000-6-2 (Immunity)	
Safety		IEC60950-1:2005 2 Ed. +A1:2009	
ENVIRONMENTAL			
Operating Temperature		-40°C to +65°C, derated above +55°C (see manual and rectifier datasheets)	
Storage Temperature		-40°C to +85°C	

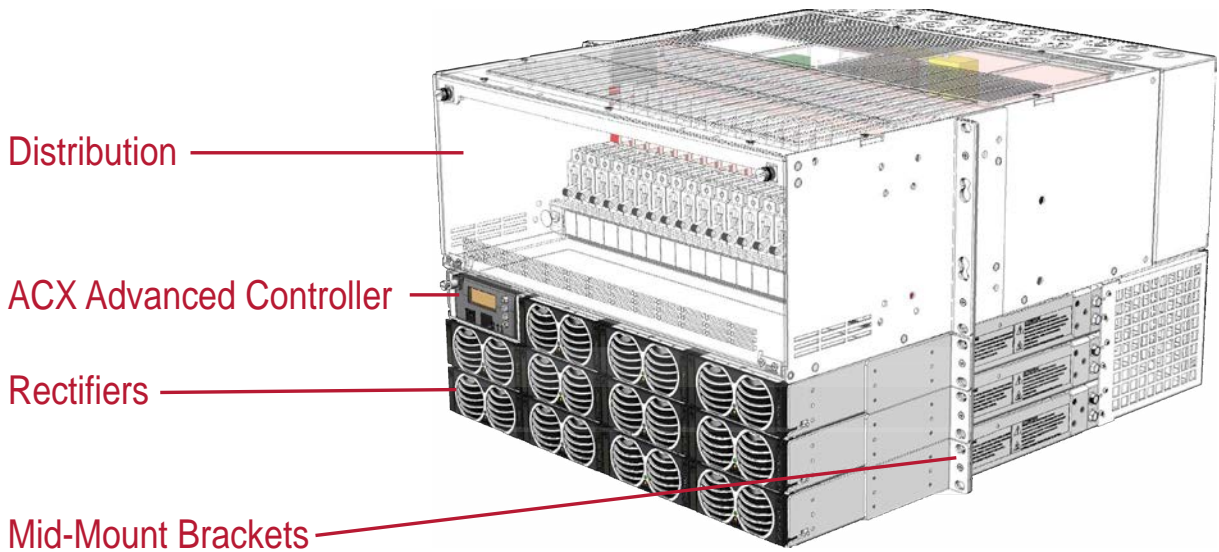
RECTIFIER MODULES CAPACITIES

RECTIFIER MODULES						
MODEL NUMBER	PEAK EFFICIENCY	INPUT VOLTAGE	INPUT CURRENT ¹	OUTPUT POWER	OUTPUT CURRENT	
					V _{nom}	V _{float} ²
EMPe20.48C	96.5%	180-275VAC	11.6A	2000W	41.7A	37.4A
EMPe30.48C	96.0%	180-275VAC	17.0A	2900W	60.4A	53.5A

Notes:

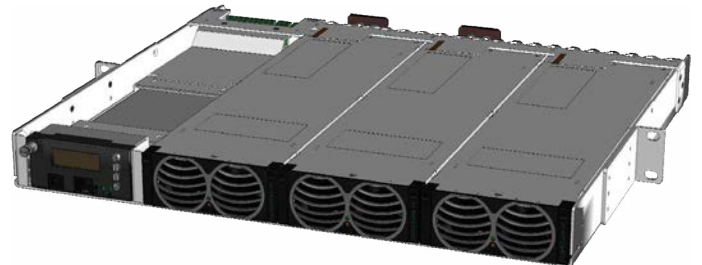
1. Input currents shown are expected maximums at 180VAC.
3. Factory set to 53.5V. Adjustable via system controller.

SYSTEM DESCRIPTION

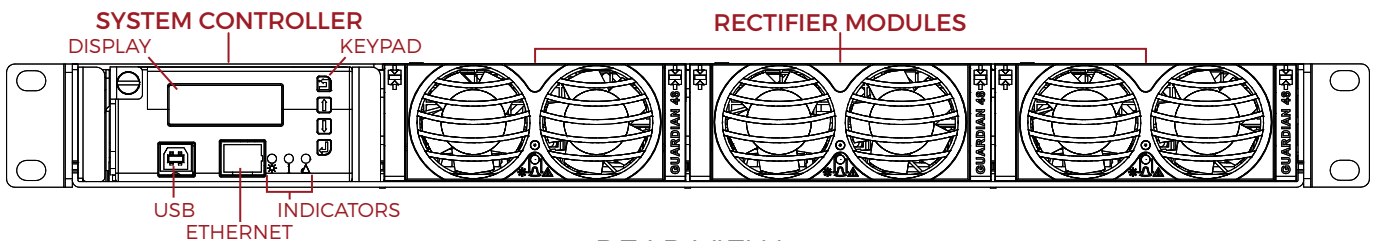


CENTRAL UNIT DESCRIPTION

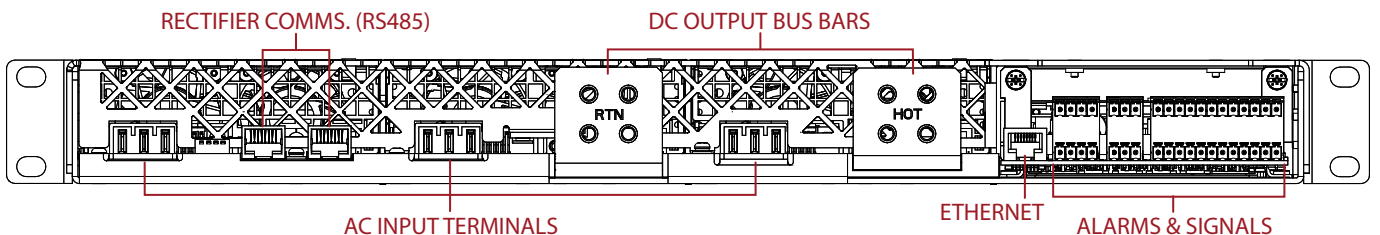
The Central Unit is the heart of the system and consists of a 1RU shelf that houses the ACX Advanced controller and three rectifier modules along with the alarm and signal connections. The minimum Guardian Access M38 system configuration incorporates the Central Unit and a distribution module; but the Central Unit is also available as a separate item for customers who want to build a power system with their own distribution. In such cases 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



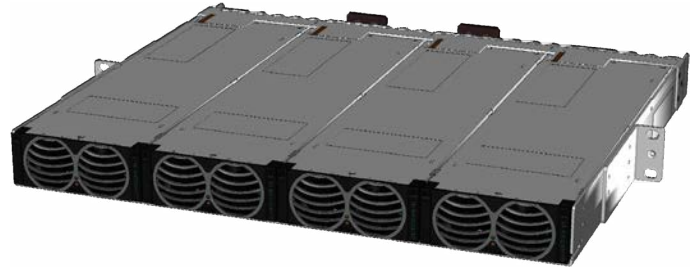
REAR VIEW



RECTIFIER SHELF DESCRIPTION

Guardian Access M38 systems can be configured with one or two additional rectifier shelves, each housing 4 rectifier modules.

The configuration guide on page 6 of this datasheet shows the various options that are available.



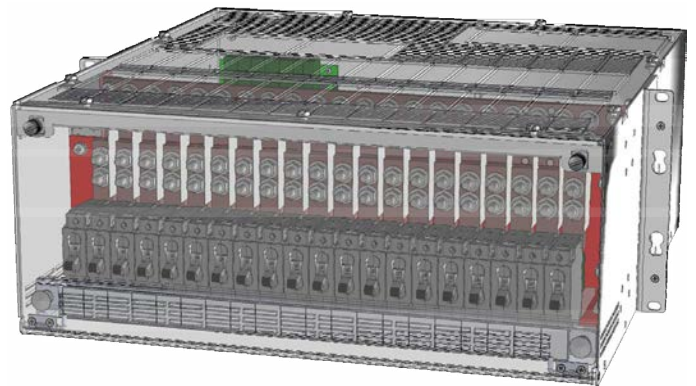
DISTRIBUTION MODULE DESCRIPTION

The Guardian Access M38 system incorporates a distribution module.

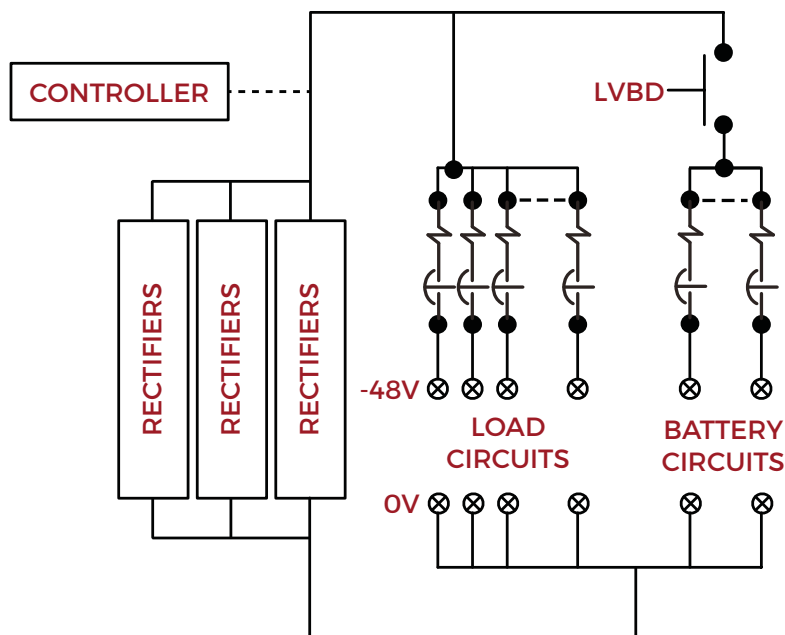
The module is a 4RU high unit that provides a total of 20 DC circuits. These may be populated with a range of 1, 2 and 3 pole magnetic circuit breakers or TPS Fuse modules.

The system can be configured with 0, 4 or 8 breakers for battery string protection, giving optimum user flexibility.

An LVBD rated at 600A is included in systems that incorporate battery breakers to provide protection for the batteries against excessive discharging which might cause damage.



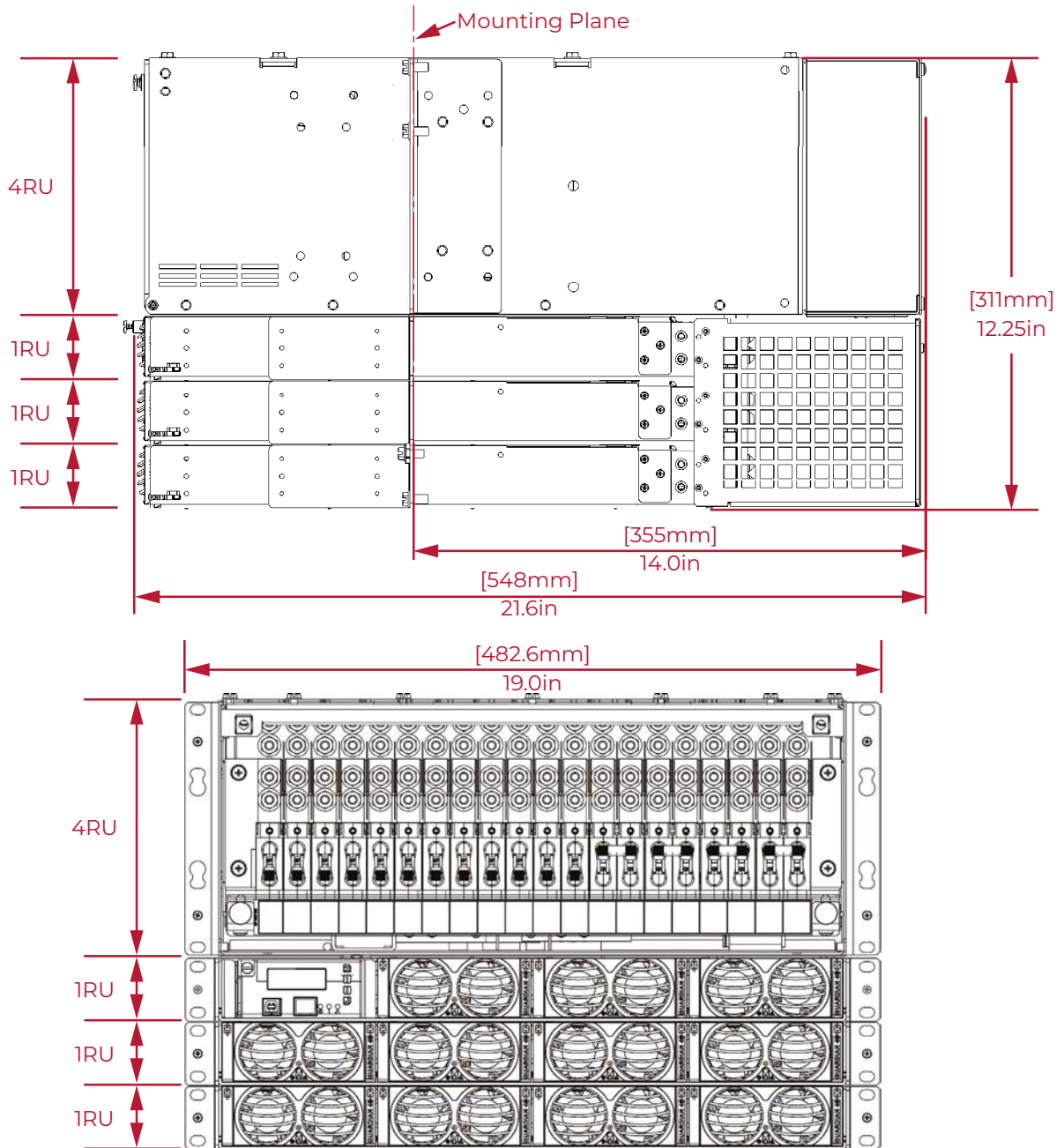
SYSTEM BLOCK SCHEMATIC



DISTRIBUTION

20 Circuits Total
0, 4 or 8 Battery Circuits

SYSTEM DIMENSIONS



WEIGHTS & DIMENSIONS

UNIT TYPE	UNIT				PACKAGED				
	Width	Height	Depth	Weight	Width	Height	Depth	Weight	# in box
System Unit	18.9 (481)	5RU 6RU 7RU	21.6 (548)	xx.x lbs (xx kg) max.	xx.x (xxx)	xx.x (xxx)	xx.x (xxx)	xx.x lbs (xx kg) max.	1
Rectifier Module	4.2 (107)	1.6 (41)	14.0 (355)	4.6 lbs (2.1 kg)	15.5 (394)	2.3 (58)	8.2 (208)	4.8 lbs (2.2 kg)	1

Dimensions in inches (mm)

CONFIGURATION SUMMARY

OUTPUT RATING (N+1)	MAX. # RECTIFIERS (N+1)	DISTRIBUTION OPTIONS			PART #	FRONT VIEW
		CONFIGURATION				
		BREAKERS		LVBD		
		LOAD	BATTERY			
180A (120A)	3 (2+1)	12	8	YES	M38012-AN201C M38012-AN202C M38012-AN203C	
		16	4	YES		
		20	0	NO		
420A (375A)	7 (6+1)	12	8	YES	M38036-AN201C M38036-AN202C M38036-AN203C	
		16	4	YES		
		20	0	NO		
600A (600A)	11 (10+1)	12	8	YES	M38060-AN201C M38060-AN202C M38060-AN203C	
		16	4	YES		
		20	0	NO		

CIRCUIT PROTECTION DEVICES

BATTERY BREAKERS

Battery breakers are AM1 style pluggable Units. Depending on the system unit chosen up to 4 or 8 battery breakers can be installed. Ratings of 80A and 100A are available in a single pole format while higher ratings of 125A, 150A and 200A are available in 2-pole format. Under normal circumstances all battery breakers installed should be of the same rating.

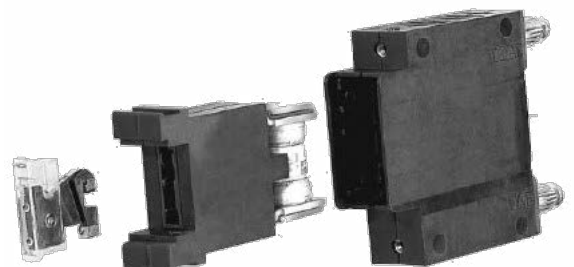


LOAD BREAKERS

Load breakers are the same type as the battery breakers described above. Up to 20 individual breakers can be installed. Ratings range for 2.5A to 100A in single pole format with higher ratings of 125A to 200A being 2-pole and consuming two circuit positions.

TPS FUSE MODULE & FUSES

Also available is a TPS fuse module that is of the same form factor as a single pole breaker and which fits into a single circuit position. The module accommodates a single TPS type fuse which can be rated at a number of currents between 3A and 70A. The module also accommodates an alarm fuse rated at 0.5A.



CONFIGURATION GUIDE

PLEASE COMPLETE THE BELOW TABLE AND SUBMIT TO UNIPOWER FOR VERIFICATION AND CONF. NO. ALLOCATION
(This form is fully interactive and may be completed electronically OR it can be printed and complete by hand)

STEP 1 - CUSTOMER DETAILS

Company: _____ Address: _____ Zip Code: _____ Country: _____	Contact Name: _____ Email Address: _____ Telephone: _____ Quantity for quotation: _____
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STEP 2 - CHASSIS TYPE - Choose one version only

3 Rectifier Positions - 180A (120A N+1) - 8 Battery Breaker Positions, 12 Load Breaker / TPS Fuse Positions, LVBD Included
OR 3 Rectifier Positions - 180A (120A N+1) - 4 Battery Breaker Positions, 16 Load Breaker / TPS Fuse Positions, LVBD Included
OR 3 Rectifier Positions - 180A (120A N+1) - No Battery Breaker Positions, 20 Load Breaker / TPS Fuse Positions, No LVBD
OR 7 Rectifier Positions - 420A (375A N+1) - 8 Battery Breaker Positions, 12 Load Breaker / TPS Fuse Positions, LVBD Included
OR 7 Rectifier Positions - 420A (375A N+1) - 4 Battery Breaker Positions, 16 Load Breaker / TPS Fuse Positions, LVBD Included
OR 7 Rectifier Positions - 420A (375A N+1) - No Battery Breaker Positions, 20 Load Breaker / TPS Fuse Positions, No LVBD
OR 11 Rectifier Positions - 600A (600A N+1) - 8 Battery Breaker Positions, 12 Load Breaker / TPS Fuse Positions, LVBD Included
OR 11 Rectifier Positions - 600A (600A N+1) - 4 Battery Breaker Positions, 16 Load Breaker / TPS Fuse Positions, LVBD Included
OR 11 Rectifier Positions - 600A (600A N+1) - No Battery Breaker Positions, 20 Load Breaker / TPS Fuse Positions, No LVBD

STEP 3 - RECTIFIER MODULES - Choose one type only and enter quantity between 0 and 11 - blanks will be inserted into unused slots

FMPe20.48G - 2000W / 40A - >96% Efficiency FMPe30.48G - 2900W / 60A - >95% Efficiency	FMPe20.48G OR FMPe30.48G Quantity ____
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STEP 6 - BATTERY BREAKERS - Choose rating and quantity based on step 2 choice (Breakers MUST be identical rating)

80A (1 pole) - 4 or 8 max. OR 100A (1 pole) - 4 or 8 max. OR 125A (2-pole) - 2 or 4 max. OR 150A (2-pole) - 2 or 4 max. OR 200A (3-pole) - 2 or 4 max.	Quantity ____
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STEP 8 - LOAD BREAKERS & FUSES - Choose quantity for desired ratings, total 20, 16 or 12 positions based on step 2 selection. When fuses are selected a carrier module and alarm fuse will automatically be added. [Configuration will be checked by UNIPOWER]

BREAKERS 2.5A single pole (1 position) - Quantity ____ 5A single pole (1 position) - Quantity ____ 10A single pole (1 position) - Quantity ____ 15A single pole (1 position) - Quantity ____ 20A single pole (1 position) - Quantity ____ 25A single pole (1 position) - Quantity ____ 30A single pole (1 position) - Quantity ____ 40A single pole (1 position) - Quantity ____ 50A single pole (1 position) - Quantity ____ 60A single pole (1 position) - Quantity ____ 80A single pole (1 position) - Quantity ____ 100A single pole (1 position) - Quantity ____ 125A two pole (2 positions) - Quantity ____ 150A two pole (2 positions) - Quantity ____ 200A two pole (2 positions) - Quantity ____	TPS FUSES 3A single pole (1 position) - Quantity ____ 5A single pole (1 position) - Quantity ____ 6A single pole (1 position) - Quantity ____ 10A single pole (1 position) - Quantity ____ 15A single pole (1 position) - Quantity ____ 20A single pole (1 position) - Quantity ____ 25A single pole (1 position) - Quantity ____ 30A single pole (1 position) - Quantity ____ 40A single pole (1 position) - Quantity ____ 50A single pole (1 position) - Quantity ____ 60A single pole (1 position) - Quantity ____ 70A single pole (1 position) - Quantity ____
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STEP 9 - TEMPERATURE SENSOR - available for battery and ambient temperature measurement

None OR 3.0m (~10ft) [Preferred] OR 6.0m (~20ft)	NONE OR Qty 1 OR Qty 2 OR Qty 1 OR Qty 2
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STEP 10 - SYMMETRY CABLES - choose none or type and length as desired. Quantity will be matched to battery breakers installed.

None OR - End Measure (3-wire 4 block) 3.0m (~10ft) [Preferred] OR - End Measure (3-wire 4 block) 6.0m (~20ft) OR - Mid Measure (1-wire 2 block) 3.1m (~10ft) [Preferred] OR - Mid Measure (1-wire 2 block) 6.0m (~20ft)	NONE OR End Measure 3.0m OR End Measure 6.0m OR Mid Measure 3.1m OR Mid Measure 6.0m
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STEP 12 - SUBMIT COMPLETED FORM TO UNIPOWER FOR CHECKING AND ALLOCATION OF CONFIGURATION PART NUMBER

Configuration Part Number: M00038G _____ (leave blank for completion by UNIPOWER)