# GUARDIAN ACCESS M38

19” Rack-Mount Integrated DC Power System
-48VDC @ 60A to 600A N+1

## INDUSTRIES & APPLICATIONS

Telecom · Cable · Utilities · Government · Industrial

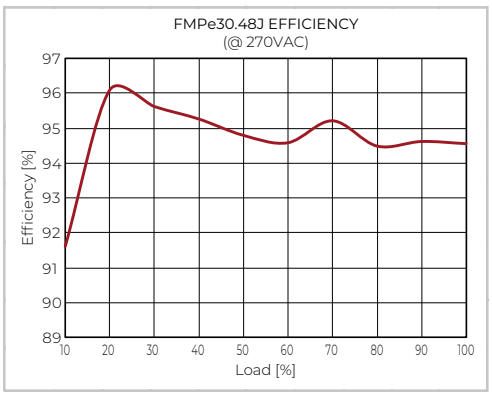
## KEY FEATURES

- >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/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 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 32GB 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 and Keypad are 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.

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# SYSTEM SPECIFICATION & CAPABILITY GUIDE

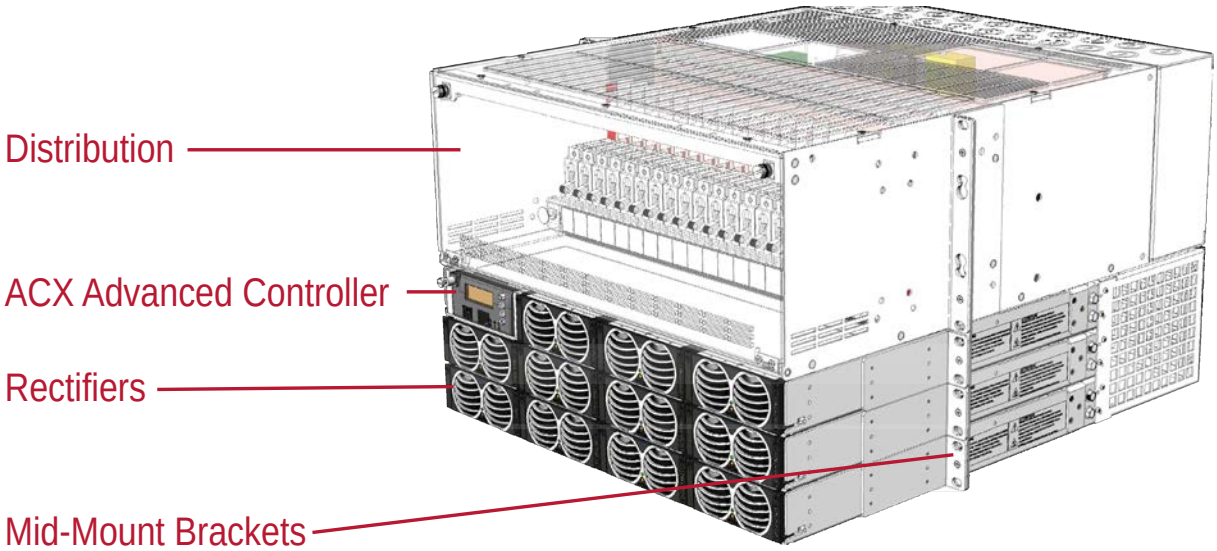
| SYSTEM DESIGNATION | | GUARDIAN ACCESS - M00038 | |
|---|---|---|---|
| **OUTPUT** | | | |
| System Voltage | | -48VDC nominal \| 53.5VDC float (factory default, user adjustable via controller) | |
| Maximum Capacity | | Load | 600A |
| | | Battery | 600A discharge \| s/w controlled charge |
| No. Rectifier Slots | | 3 to 11 (see configuration guide on page 7) | |
| **DC DISTRIBUTION** (see configuration guide) | | | |
| Load Circuits<br>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<br>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)<br>2-phase 240VAC (L1-L2-PE)<br>3-phase (3-wire Wye) - 190/200/216/208/220/240VAC (L1-L2-PE / L2-L3-PE / L3-L1-PE)<br>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 (32GB max,) for data logging | |
| Remote Interface | | Ethernet / Modem using PowCom™ software package<br>Ethernet port allows monitoring and control over a TCP/IP network.<br>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 | | CAN/CSA C22.2 No 62368-1:2014; UL 62368-1:2014; EN 62368-1:2014/A11:2017 | |
| **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 | |
| | | | | | Vnom | Vfloat[2] |
| FMPe30.48J | >96.2% | 180-275VAC | 18.5A | 3000W | 62.5A | 56.1A |

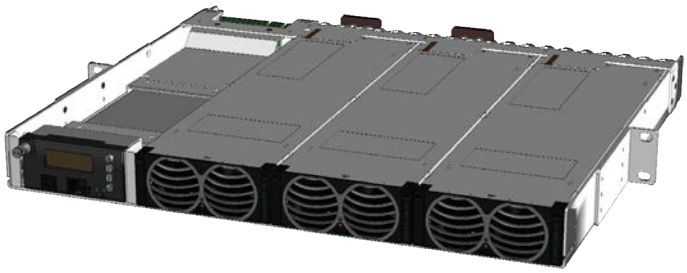
Notes:
1. Input currents shown are expected maximums at 185VAC.
3. Factory set to 53.5V. Adjustable via system controller.

## SYSTEM DESCRIPTION

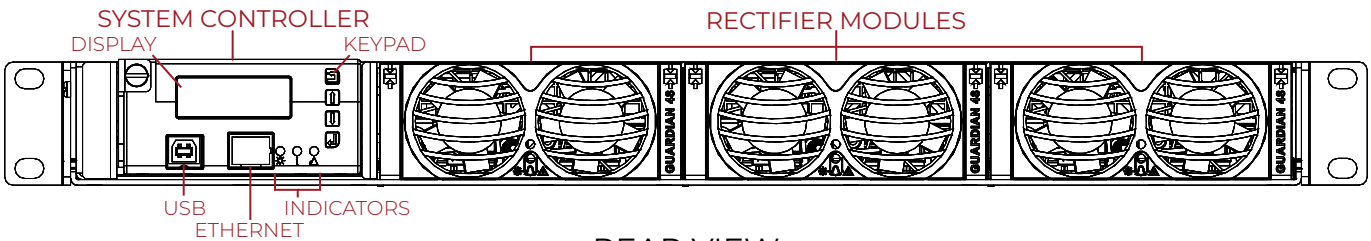



## CENTRAL UNIT DESCRIPTION

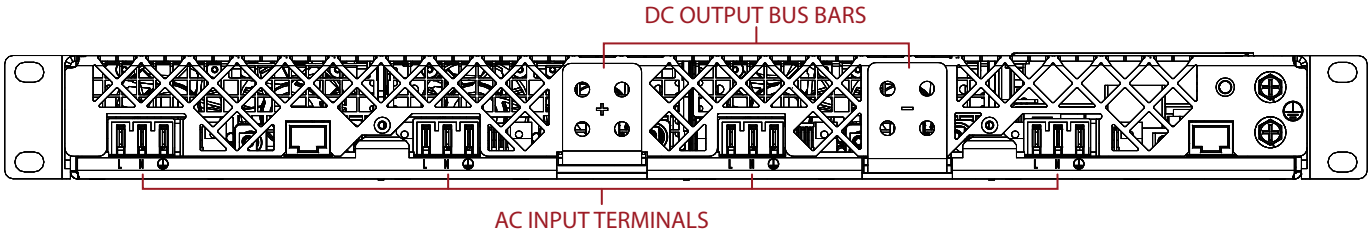
The Central Unit is the heart of the system and consists of a 1RU shelf that houses the ACX Advanced controller and three rectifier modules along with the alarm and signal connections. The minimum Guardian Access M38 system configuration incorporates the Central Unit and a distribution module; but the 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



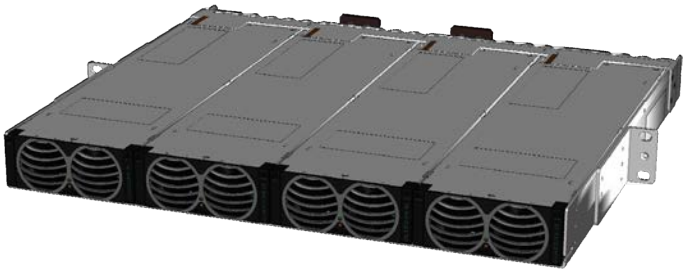

## REAR VIEW



## 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.



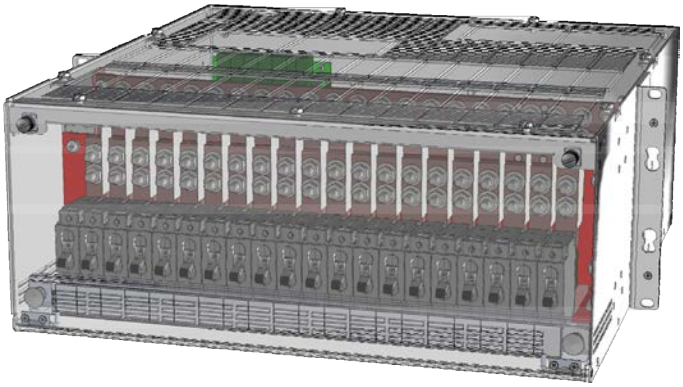
## DISTRIBUTION MODULE DESCRIPTION

The Guardian Access M38 system incorporates a distribution module.

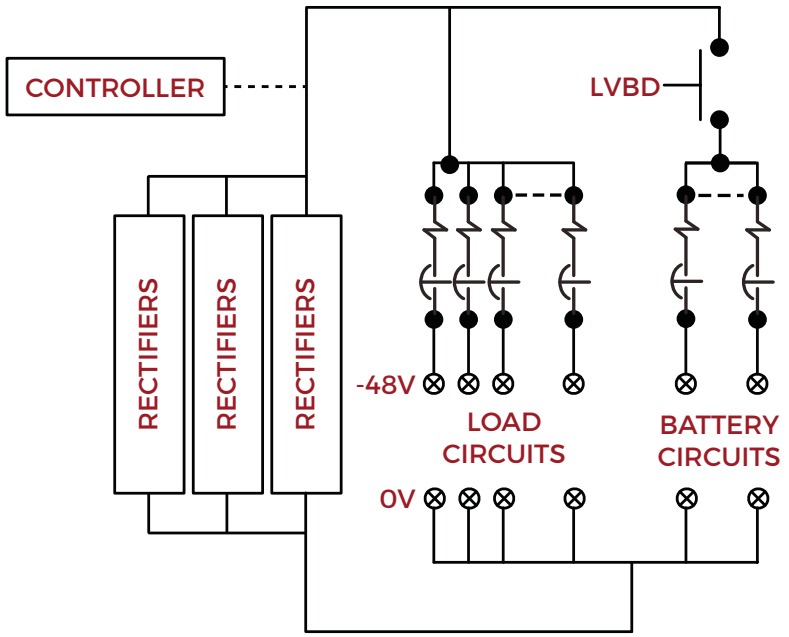
The module is a 4RU high unit that provides a total of 20 DC circuits. These may be populated with a range of 1, 2 and 3 pole magnetic circuit breakers or TPS Fuse modules.

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.



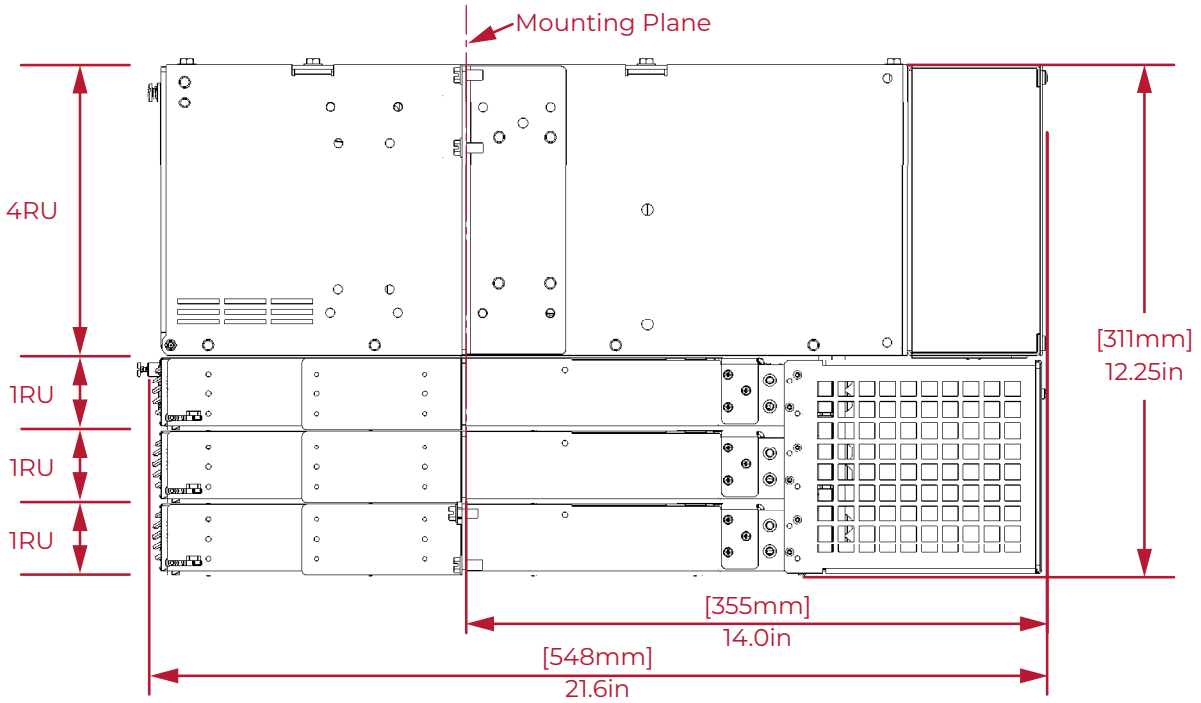
## SYSTEM BLOCK SCHEMATIC

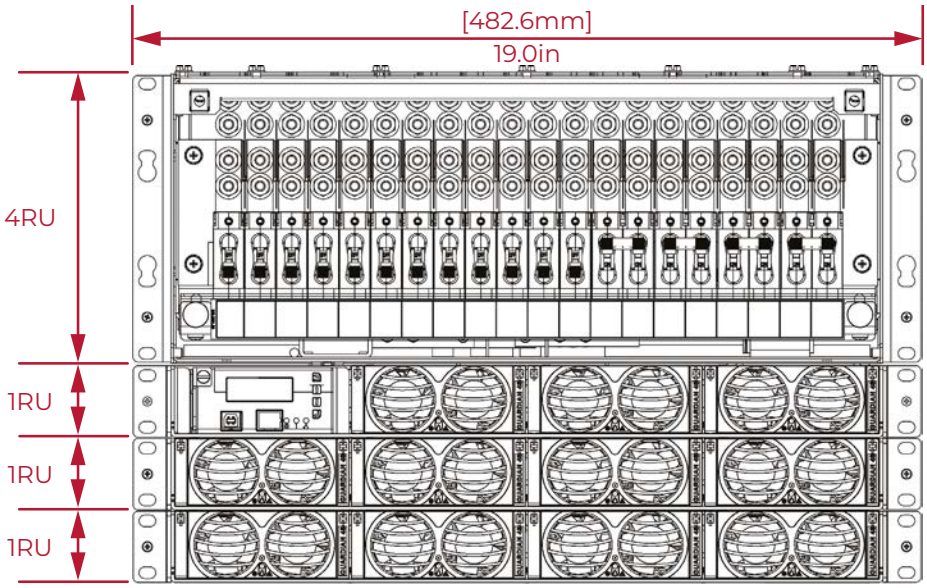



**DISTRIBUTION**

**20 Circuits Total**
**0, 4 or 8 Battery Circuits**

## SYSTEM DIMENSIONS



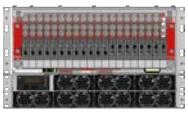
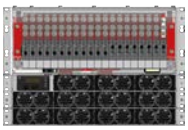




## WEIGHTS & DIMENSIONS

| 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) | 73 lbs (33 kg) max. | 23.4 (595) | 20.0 (508) | 24.0 (610) | 80 lbs (36.4 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 | | | | FRONT VIEW |
|---|---|---|---|---|---|---|
| | | CONFIGURATION | | | PART # | |
| | | BREAKERS | | LVBD | | |
| | | LOAD | BATTERY | | | |
| 187.5A (125A) | 3 (2+1) | 12<br>16<br>20 | 8<br>4<br>0 | YES<br>YES<br>NO | M38012-AN201C<br>M38012-AN202C<br>M38012-AN203C |  |
| 437.5A (365A) | 7 (6+1) | 12<br>16<br>20 | 8<br>4<br>0 | YES<br>YES<br>NO | M38036-AN201C<br>M38036-AN202C<br>M38036-AN203C |  |
| 600A (600A) | 11 (10+1) | 12<br>16<br>20 | 8<br>4<br>0 | YES<br>YES<br>NO | M38060-AN201C<br>M38060-AN202C<br>M38060-AN203C |  |

* 187.5A & 437.5A variants are available to special order only. Consult applications engineering about availability.

## CIRCUIT PROTECTION DEVICES

### BATTERY BREAKERS

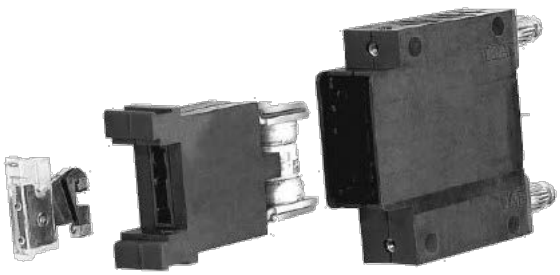
Battery breakers are AM1 style pluggable Units. Depending on the system unit chosen up to 4 or 8 battery breakers can be installed. Ratings of 80A and 100A are available in a single pole format while higher ratings of 125A, 150A and 200A are available in 2-pole format. Under normal circumstances all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

## STEP 2 - CHASSIS TYPE - Choose one version only

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 - Enter quantity between 0 and 11 - blanks will be inserted into unused slots

FMPe30.48J - 3000W / 62.5A — Quantity ____

## STEP 4 - 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 (2-pole) - 2 or 4 max. ☐

Quantity ____

## STEP 5 - 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 ____

## STEP 6 - 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 ☐

## STEP 7 - 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 ☐

## STEP 8 - SUBMIT COMPLETED FORM TO UNIPOWER FOR CHECKING AND ALLOCATION OF CONFIGURATION PART NUMBER

Configuration Part Number: M00038G_____ (leave blank for completion by UNIPOWER)





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