

## INDUSTRIES & APPLICATIONS



Telecom



Cable



Utilities



Government



Industrial



LVD2006/95/EC  
EMC2004/108/EC  
ROHS2011/65/EU



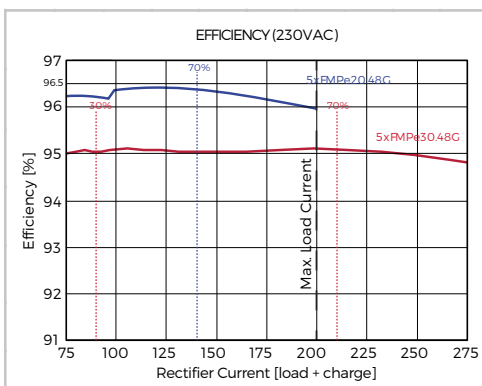
## KEY FEATURES

- ◆ >96% Efficiency Rectifiers
- ◆ 300A / 14.5kW Total Capacity
- ◆ Remote Monitoring & Control
- ◆ Field Replaceable Controller
- ◆ Ethernet Comm. with SNMPv3
- ◆ 3 LED Alarm/Status Indicators
- ◆ Up to 10 Form-C Relay Alarms
- ◆ Up to 13 Load Breakers
- ◆ Up to 3 Battery Breakers
- ◆ LCD Display/Touchpad
- ◆ Easy Installation

### SAFETY COMPLIANCE

UL60950-1 2nd Ed.  
CSA22.2 No. 60950-1 2nd Ed.  
EN60950-1 2nd Ed.

## THREE YEAR WARRANTY



## DESCRIPTION

Guardian Access 3U is a 3RU high 19" rack-mounted, integrated DC power system providing an output of -48VDC. These systems can accommodate up to 5 Guardian family high efficiency hot-swap rectifiers. A total load current of 200A is available with battery charge current up to 100A in addition. The rectifiers are internally fan cooled with speed control which is a function of load and temperature, keeping acoustic noise to a minimum.

The DC output circuits can provide up to 13 loads which utilize circuit breakers rated from 4A to 150A plus up to three 80A, 100A or 125A breakers that provide battery protection. A programmable 200A low voltage battery disconnect (LVBD) is available; while a partial load disconnect (PLD), rated at 125A and also programmable, can provide non-critical load shedding when operating on batteries.

The ACC Extended 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 four form-C relay outputs provide the alarms for remote use. An additional 6 can be included as an option. Two digital inputs and outputs are also provided as well as a microSD card slot that accepts an up to 4GB 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 3U 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 3U - 1-MS0027C	
<b>OUTPUT</b>		
System Voltage	-48VDC nominal   53.5VDC float	
Maximum Capacity @ 120VAC nominal	Load	175A
	Battery	175A discharge   75A charge (s/w controlled)
Maximum Capacity @ 230/400VAC nominal	Load	200A
	Battery	200A discharge   100A charge (s/w controlled)
No. Rectifier Slots	3 or 5 (see configuration guide on page 5)	
<b>DC DISTRIBUTION</b>		
Loads Circuits	13 x 13mm or 9 x 18mm (4A to 150A - see configuration guide on page 5)	
Battery Circuits	1 to 3 x (80A, 100A or 125A)	
<b>INPUT</b>		
Voltage (nominal)	1-phase 100-120/200-240VAC (L + N + PE) 3-phase 230/400VAC (L1 L2 L3 + N + PE)	
Frequency	47-63Hz	
Maximum Input Current	82A @ 100-120VAC   65A @ 200-240VAC   26A per phase @ 400/230VAC	
Rectifier Power Factor	>0.98 (typical)	
Surge Protection	Optional (see configuration guide on page 5)	
<b>MONITORING &amp; CONTROL (ACC Extended Controller)</b>		
Alarm Relays	4 standard, option for 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)	
<b>BATTERY MANAGEMENT</b>		
Symmetry Inputs	6 or 12 (can be redefined as analog inputs up to 100VDC)	
Low Voltage Battery Disconnect (LVBD)	1 x 200A Programmable	
Partial Load Disconnect (PLD)	1 x 125A Programmable (Optional)	
Temperature Compensated Charging	Programmable	
<b>COMPLIANCE</b>		
EMC	EN 300 386 ; EN61000-6-3 (Emission) ; EN61000-6-2 (Immunity)	
Safety	IEC60950-1:2005 2 Ed. +A1:2009	
<b>ENVIRONMENTAL</b>		
Operating Temperature	-40°C to +55°C	
Storage Temperature	-40°C to +85°C	

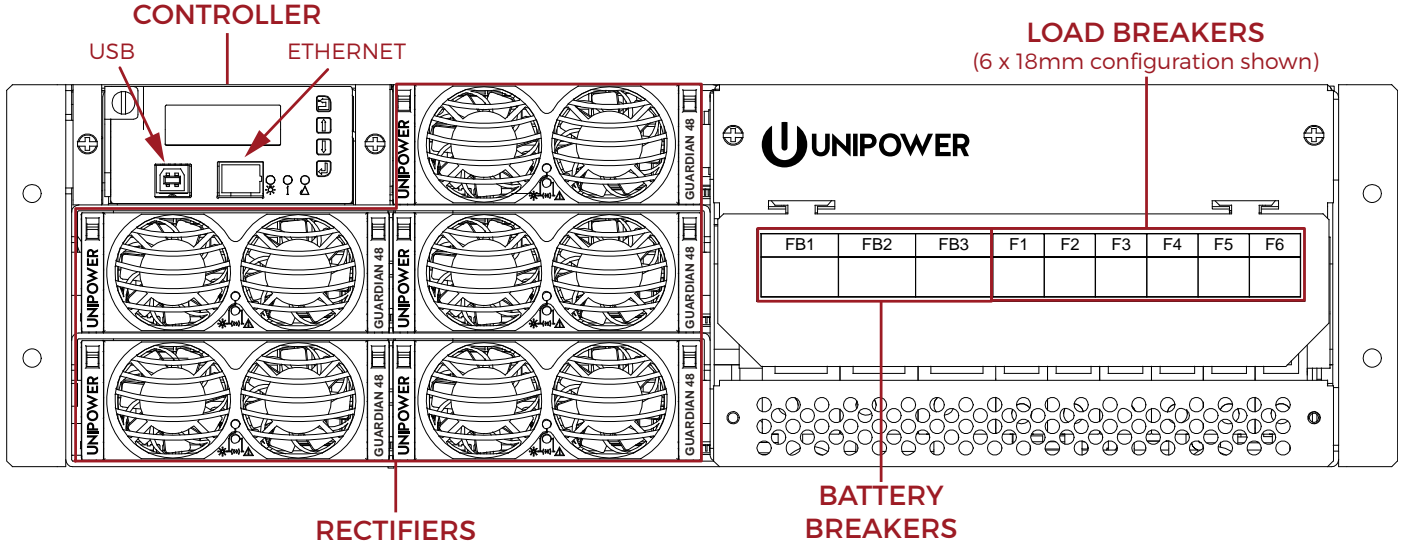
### RECTIFIER MODULES vs. SYSTEM CAPACITIES

RECTIFIER MODULES						SYSTEM CAPACITY @ FLOAT		
MODEL NUMBER	EFFICIENCY <sup>1</sup>	INPUT VOLTAGE <sup>2</sup>	INPUT CURRENT <sup>3</sup>	OUTPUT POWER	OUTPUT CURRENT 48V / 53.5V	MAX. CHARGE CURRENT	MAX. LOAD CURRENT <sup>5</sup>	
							TOTAL	4+1
FMPe20.48G	>96.0%	85-180VAC	9.6A	1100W <sup>4</sup>	22.9A / 20.6A <sup>4</sup>	75A <sup>4</sup>	103A	82A <sup>4</sup>
		180-275VAC	11.6A	2000W	41.7A / 37.4A	100A	187A	150A
FMP25.48G	>92.5%	85-180VAC	14.4A	1400W <sup>4</sup>	29.2A / 26.2A <sup>4</sup>	75A <sup>4</sup>	131A	105A <sup>4</sup>
		180-275VAC	16.8A	2500W	52.1A / 46.7A	100A	200A	187A
FMPe30.48G	>95.0%	85-180VAC	15.7A	1700W <sup>4</sup>	35.4A / 31.8A <sup>4</sup>	75A <sup>4</sup>	175A	140A <sup>4</sup>
		180-275VAC	17.0A	2900W	60.0A / 54.2A	100A	200A	200A

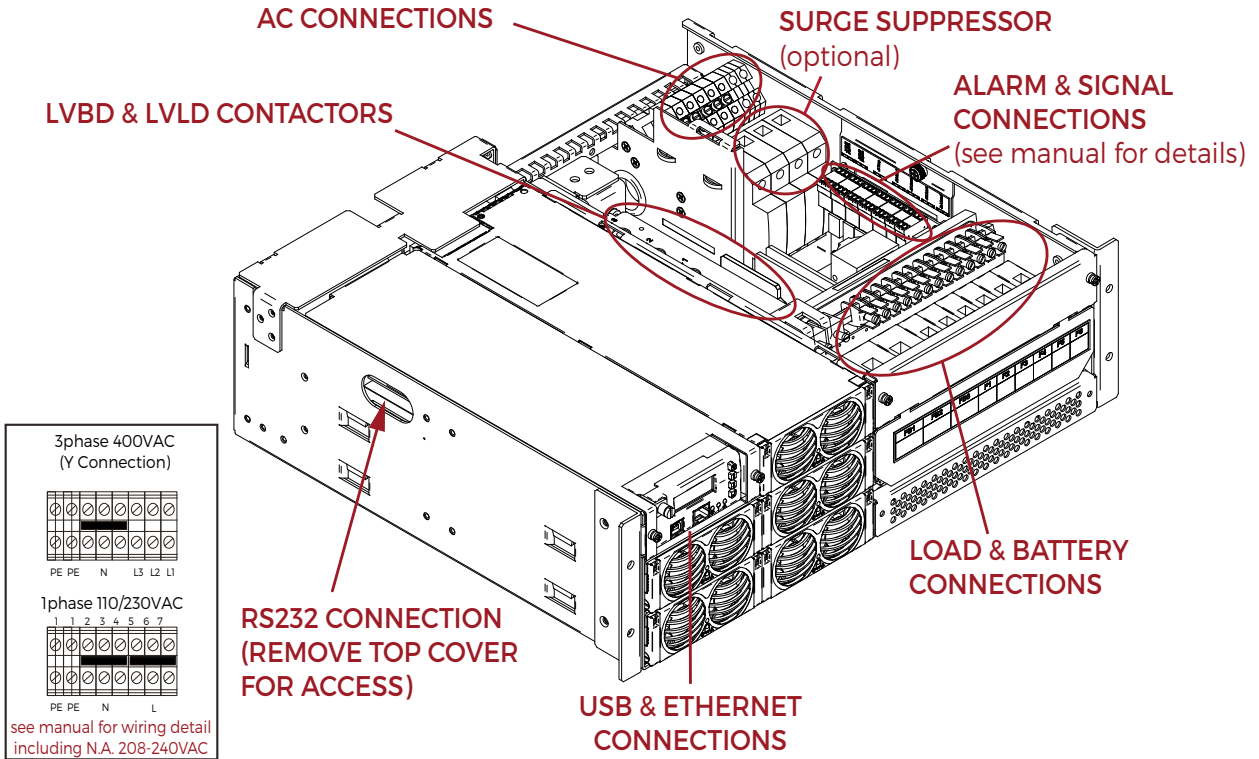
Notes:

1. When operating at 230VAC.
2. All models will operate over the full range, automatically limiting output current/power according to the actual input voltage range applied.
3. Input currents shown are expected maximums at 85VAC/180VAC as appropriate
4. Figures quoted are at 110VAC input. Derating is linear from 180VAC to 85VAC. See separate rectifier datasheets for details.
5. May required reduction in maximum charge current when batteries not fully charged.

FRONT PANEL DESCRIPTION



PERSPECTIVE FRONT VIEW



REAR VIEWS

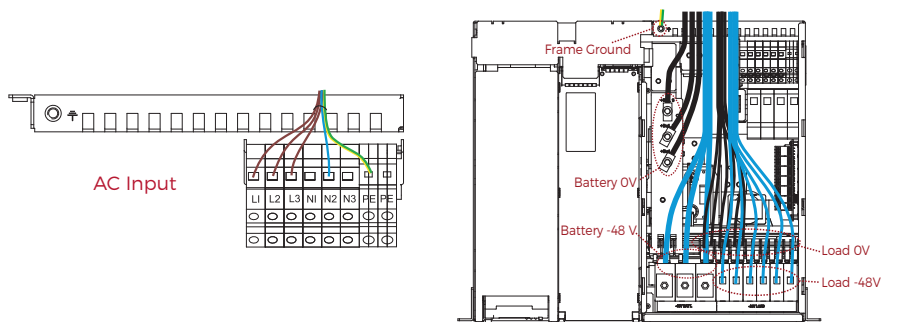


Standard Cover

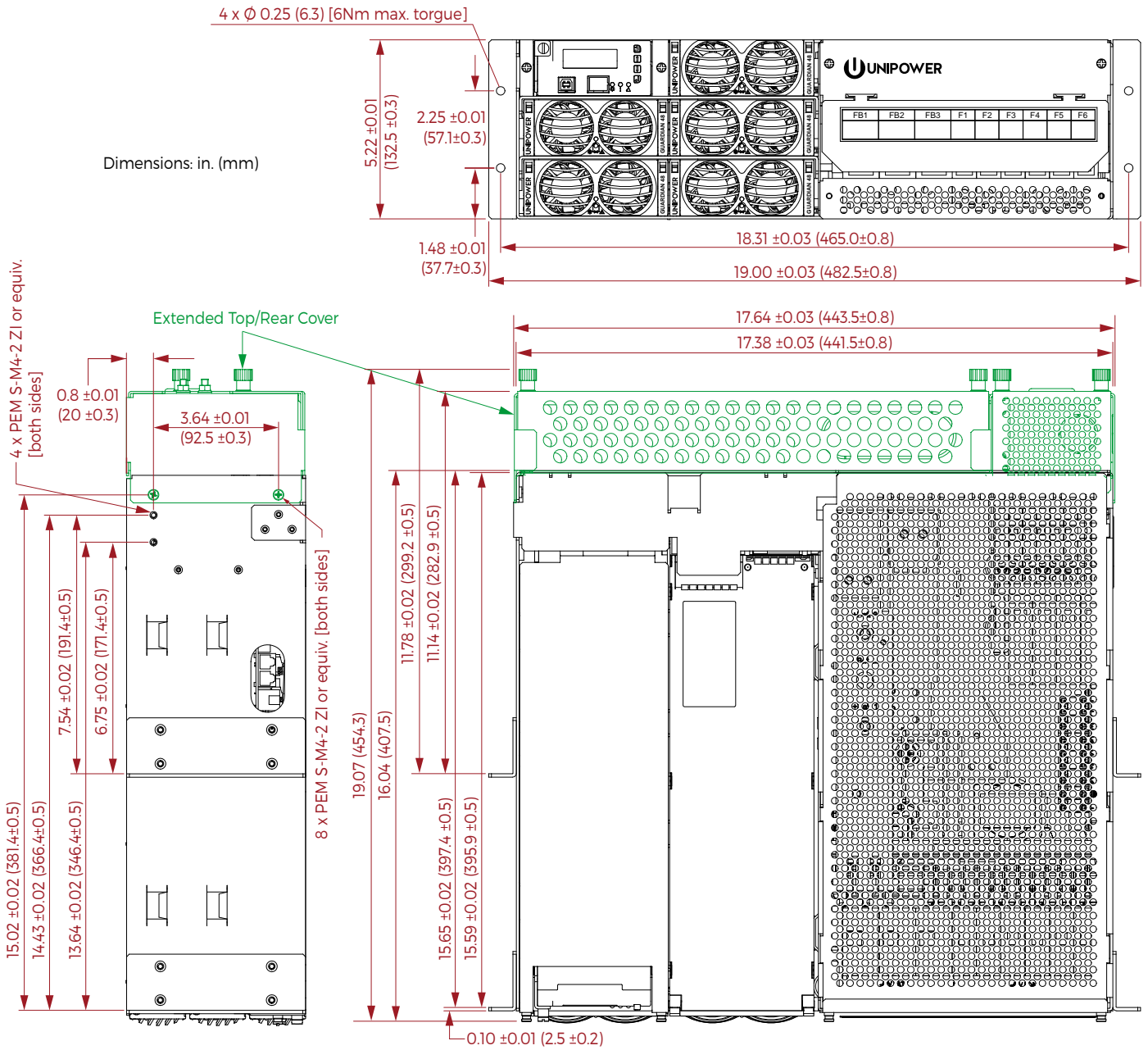


Extended Cover

CABLE ROUTING



### DETAILED DIMENSIONS



### WEIGHTS & DIMENSIONS

UNIT	UNIT				PACKAGED				
	Width	Height	Depth	Weight	Width	Height	Depth	Weight	# in box
System Unit (Standard)	19.00	5.22	16.04	39.6 lbs	22.6	10.2	19.3	46.2 lbs	1
	(482.5)	(132.5)	(407.5)	(18 kg)	(575)	(260)	(490)	(21 kg)	
System Unit (Extended Top)			19.07	44 lbs	22.6	10.2	22.4	50.6 lbs	1
			(454.3)	(20 kg)	(575)	(260)	(570)	(23 kg)	
Rectifier Module	4.2	1.6	14.0	4.6 lbs	15.5	2.3	8.2	4.8 lbs	1
	(107)	(41)	(355)	(2.1 kg)	(394)	(58)	(208)	(2.2 kg)	

Dimensions in inches (mm)

## 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**

3 Rectifier Positions or 5 Rectifier Positions	3 Rectifiers OR 5 Rectifiers
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**STEP 3 - RECTIFIER MODULES - Choose one type only and enter quantity between 1 and 5 - dummies will be inserted into unused slots**

FMPe20.48 - 2000W / 40A - >96% Efficiency	Qty 1	OR Qty 2	OR Qty 3	OR Qty 4	OR Qty 5
FMP25.38 - 2500W / 52A - >92% Efficiency	OR Qty 1	OR Qty 2	OR Qty 3	OR Qty 4	OR Qty 5
FMPe30.48 - 2900W / 60A - >95% Efficiency	OR Qty 1	OR Qty 2	OR Qty 3	OR Qty 4	OR Qty 5

**STEP 4 - ALARM INTERFACE - Select desired alarm interface**

Alarm Interface - 4 Relays or 10 Relays	4 Relays OR 10 Relays
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**STEP 5 - LOW VOLTAGE BATTERY DISCONNECT (LVBD) & PARTIAL LOAD DISCONNECT (PLD) - Select YES or NO**

200A LVBD (battery disconnect)	YES OR NO [YES recommended to provide battery protection]
125A PLD (non-critical load / load shed disconnect)	YES OR NO

**STEP 6 - DISTRIBUTION OPTIONS - Select one only**

1 x Battery Breaker + 9 x 18mm Load Breakers	OR 1 x Battery Breaker + 13 x 13mm Load Breakers
OR 2 x Battery Breaker + 8 x 18mm Load Breakers	OR 2 x Battery Breaker + 11 x 13mm Load Breakers
OR 3 x Battery Breaker + 6 x 18mm Load Breakers	OR 3 x Battery Breaker + 9 x 13mm Load Breakers

**STEP 7 - BATTERY BREAKERS - Choose rating and quantity based on step 6 choice or NONE (Breakers MUST be identical rating)**

No Breakers (Not recommended)	None
OR 80A x 1 or x 2 or x 3	OR Qty 1 OR Qty 2 OR Qty 3
OR 100A x 1 or x 2 or x 3	OR Qty 1 OR Qty 2 OR Qty 3
OR 125A x 1 or x 2 or x 3	OR Qty 1 OR Qty 2 OR Qty 3

**STEP 8 - LOAD BREAKERS - Choose quantity for desired ratings - maximum positions dependent on choice made at step 6  
When the PLD option is not selected populate only LVBD 'critical' circuits column. [Configuration will be checked by UNIPOWER]**

<p>Two and three pole options are configured to support a single load at the load capacity indicated.</p> <p>4A single pole (1 position) [load capacity 4A]</p> <p>6A single pole (1 position) [load capacity 6A]</p> <p>10A single pole (1 position) [load capacity 10A]</p> <p>16A single pole (1 position) [load capacity 16A]</p> <p>20A single pole (1 position) [load capacity 20A]</p> <p>25A single pole (1 position) [load capacity 25A]</p> <p>32A single pole (1 position) [load capacity 32A]</p> <p>40A single pole (1 position) [load capacity 40A]</p> <p>50A single pole (1 position) [load capacity 50A] (18mm option only)</p> <p>63A single pole (1 position) [load capacity 63A]</p> <p>50A two pole (2 position) [load capacity 80A]</p> <p>63A two pole (2 position) [load capacity 100A]</p> <p>50A three pole (3 position) [load capacity 120A]</p> <p>63A three pole (3 position) [load capacity 150A]</p>	<p><b>LVBD CIRCUITS (Critical)</b></p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p>	<p><b>PLD CIRCUITS (non Critical)</b></p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p> <p>Quantity _____</p>
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**STEP 9 - TEMPERATURE SENSOR - available for battery and ambient temperature measurement**

Battery Temperature Sensor	NONE OR 3m (-10ft) OR 6m (-20ft)
Ambient Temperature Sensor	NONE OR 3m (-10ft) OR 6m (-20ft)

**STEP 10 - SYMMETRY CABLES (Choose one type only - NONE OR 1 OR 3 with single battery OR 2 OR 4 with two battery breakers)**

1.9m (-6ft) - end measure	NONE
OR 3.0m (-10ft) - end measure	Qty 1 Qty 2 Qty 3 Qty 4
OR 6.0m (-20ft) - end measure	Qty 1 Qty 2 Qty 3 Qty 4
OR 2.3m (-7.2ft) - mid measure	Qty 1 Qty 2 Qty 3 Qty 4

**STEP 11 - OPTIONS & ACCESSORIES (Select required items)**

Standard Top/Rear Cover OR Extended Top/Rear Cover OR None	Standard Top/Rear OR Extended Top/Rear OR None
Surge Protection Kit (factory fit)	NONE OR 1-phase OR 3-phase
3-phase EMI Filter [required with FMP25.48] (factory fit)	NONE OR YES

**STEP 12 - SUBMIT COMPLETED FORM TO UNIPOWER FOR CHECKING AND ALLOCATION OF CONFIGURATION PART NUMBER**

Configuration Part Number: 1-MS0027G \_\_\_\_\_ (leave blank for completion by UNIPOWER)