

# 3P Power

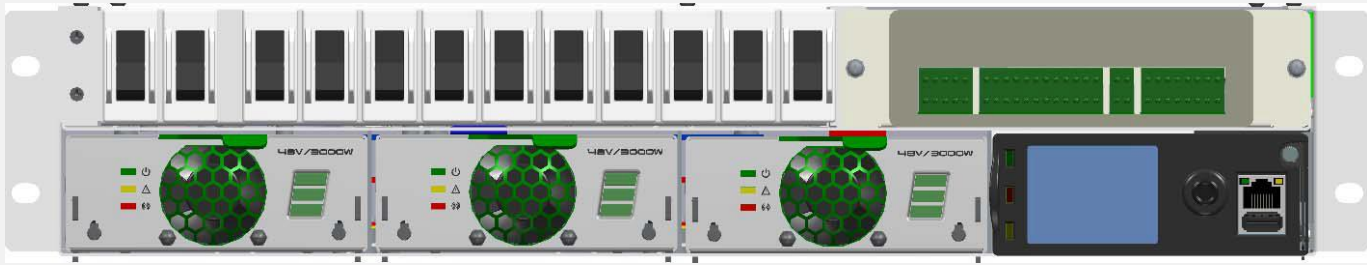
Passion Profession Perfection



## PRODUCT CATALOGUE

MR Series Rectifier

# MR Series Rectifier - 2U FRONT ACCESS 3 POSITIONS



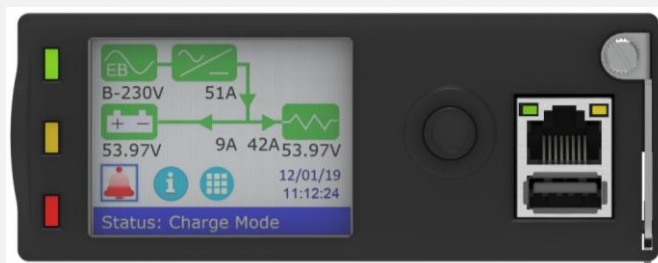
## KEY FEATURES

- >96% Efficiency Rectifiers
- Full Front Access
- Field Replaceable Controller
- Ethernet Comm. with SNMP
- Remote Monitoring & Control
- -48Vdc 9000W Output Capacity
- 3 LED Alarm/Status Indicators
- 4 Form-C Relay Alarms
- 10 Load & 2 Battery Breakers
- Bulk Feed for External PDU
- LCD Display/Touchpad
- Easy Installation

<b>MODEL</b>	<b>MR23</b>	
<b>OUTPUT CAPACITY</b>	<b>48Vdc / 3000W to 9000W</b>	
<b>Input Parameters</b>		
Voltage (nominal)	1-phase 100-120/200-240Vac (L+N + PE)	
	3-phase 230/400Vac (L1 L2 L3+N + PE)	
Frequency	45 to 66 Hz	
Rectifier Power Factor	>0.99 ( Typical )	
Protection Devices	Standard: Built-in AC Input MCB, Option: SPD 1Phase or 3Phase	
<b>OUTPUT PARAMETERS</b>		
System Voltage	-48Vdc Nominal	
Maximum Capacity	Load	187.5 A
	Battery	100A Discharge   900W Charge
No. Rectifier Slots	3	
<b>DC DISTRIBUTION PARAMETERS</b>		
Loads Circuits	10 x 1A to 30A	
Bulk Feed For External PDU Connection	1 x 150A	
Battery Circuits & Management	2 x 30A to 100A & LVBD @ 100A	
<b>CONFIGURATION AND PHYSICAL INFORMATION</b>		
Numbers of Rectifier per Sub-rack	3 Rectifier Modules	
Approx. Gross Weight (kg) per Sub-rack	10kg	
Dimensions in mm per Sub-rack	442 W x 358 D x 89 H (2U)	

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## M2000 Controller Module



MODEL / PART NUMBER	MRCM00200000 / HE513360
<b>GENERAL INFORMATION</b>	
Operating Voltage	38 ~ 60Vdc
Power Consumption	4W (max)
Operating Environment	-20°C to +6°C, 95% Humidity non-condensing
Display	2.2*, 320 x 240 resolution, 65k Colours TFT
Dimensions in mm	110 W x 130 D x 43 H
<b>IO UNITS</b>	
Number of IO's supported	4
Voltage sensing	Bus Voltage + 5 channels, ± 72Vdc
Current sensing	3 channels, ± 50mV
Temperature sensing	2 channels, -20°C to 100°C
LVD control	3, NO/NC, 10A@60Vdc
Digital Inputs	8, opto-isolated
Relay Outputs	8, NO/NC, 1 form C, 1A @ 48Vdc
<b>COMMUNICATION</b>	
System control bus	2 x CAN V2.0b for communication with rectifiers and system units
Serial bus	2 x RS485, MODBUS RTU master & devise modes
Modern Interface	1 x RS232, modem interface for remote monitoring over GPRS/GSM and SMS alarms
Ethernet	10.100 Base T, MDI/ MDI-X, IP protocols: HTTP, HTTPS, SNMP V2c/V3, SNTP, FTP, IPV4, IPV6 (Static, Stateless & State full, DHCPv6)
USB	USB 2.0 Type A, USB Flash Drive Support
Web Interface	HTML5, Java script base secure web interface, encrypted w/TLS
SNMP	SNMP V2c/V3, Get/ Get Bulk/ Set/ TRAPS, multiple user profiles
<b>FUNCTIONS</b>	
Battery	Float, boost and equalize charge modes, configurable battery temperature compensation, manual charge mode
	Low voltage disconnect and under voltage pre-warning
	Back up time and SoC monitoring
	Automatic battery health test, battery isolation for maintenance, symmetry supervision
System	Li-ion battery support, settable charge profiles and communication with battery BMS
	AC voltage measurement, grid power /phase failure detect
	Integrated support for renewable (solar) hybrid system
	Alarm grouping, alarm output mapping and alarm naming
	User configuration analog alarm engine and Boolean logic alarms
	User profile configuration & password protection
Rectifiers	Application and configuration update locally or remotely, offline configuration tool
	Individual rectifier current, temperature and status monitoring
	Power limited walk in, configurable power control in case of controller communication loss
	Linear or cyclic rectifier sleep mode for system efficiency
	Active current sharing and system overload monitoring
<b>LOGS</b>	
Up to 10,000 event logs, performance logs on SD card or internal memory based on user configurable parameters, 1,000 change logs, and energy & run hour logs for grid, battery and DG	
<b>Certifications</b>	
Electromagnetic Compatibility (EMC)	ETSI EN 300 386 V2.1.1
Safety	EN 62368-1:2014

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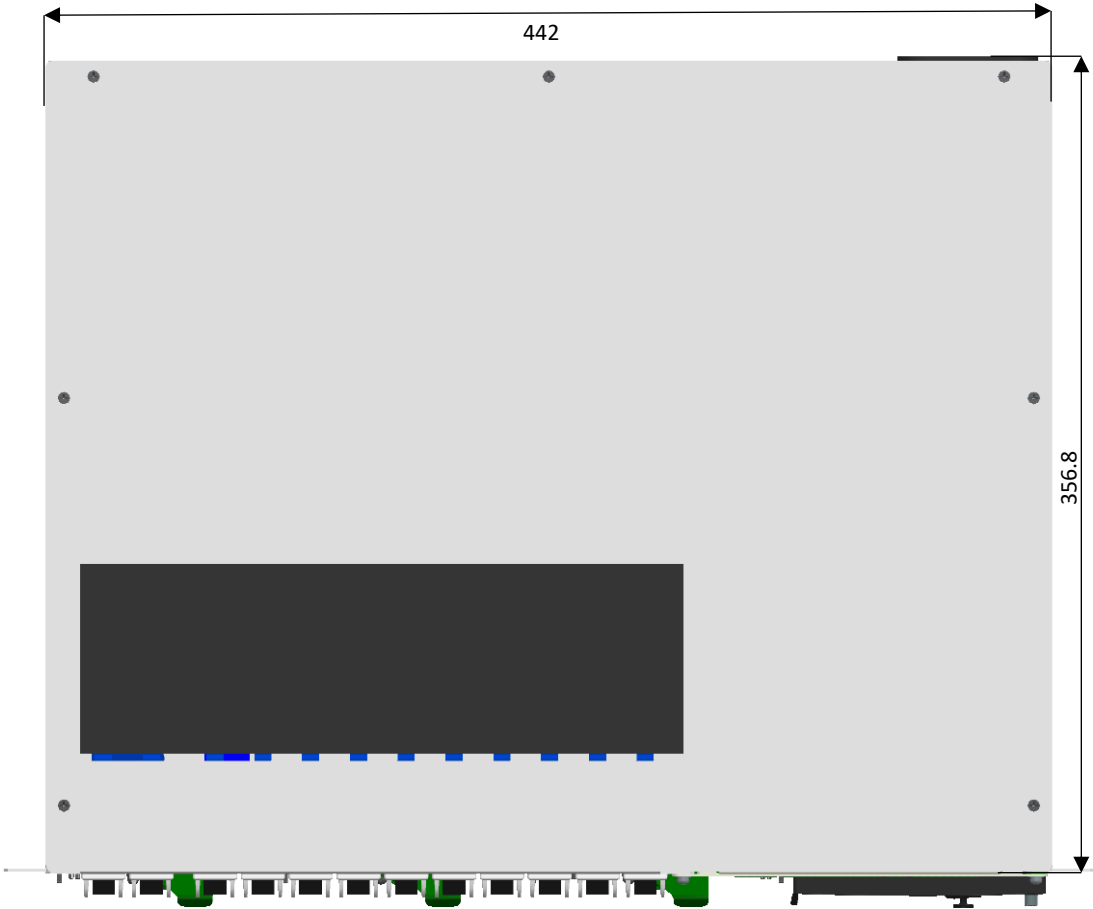
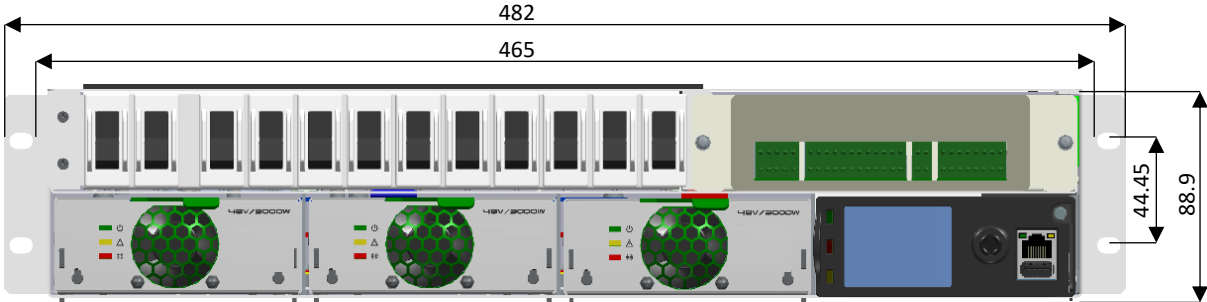
## High Efficiency Rectifier Module



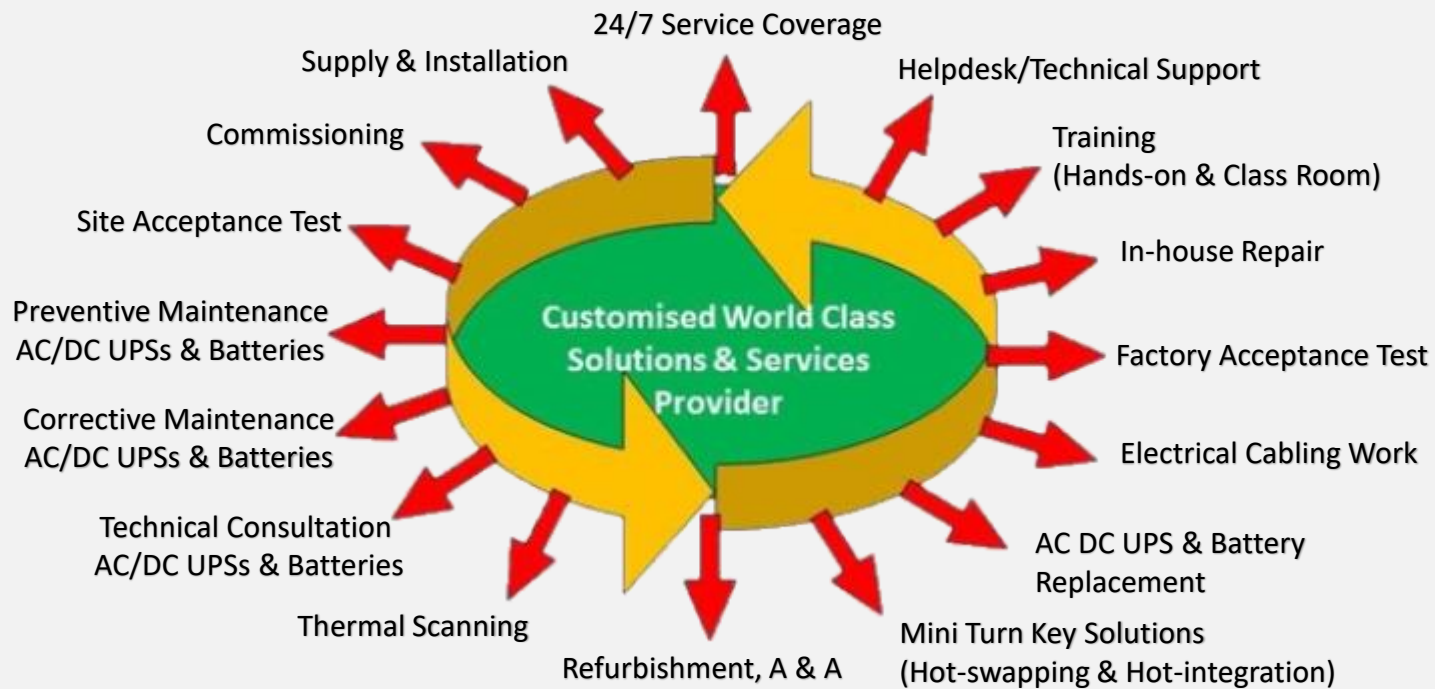
<b>MODEL / PART NUMBER</b>	<b>MRM048300000 / HE513381</b>
<b>OUTPUT CAPACITY</b>	<b>48Vdc / 3000W</b>
<b>RECTIFIER MODULE INPUT PARAMETERS</b>	
Input Power Factor	0.99 @ Nominal Input
Input Voltage	90 to 300Vac
Input Current	17.0A @ Minimum Input 185Vac
Input Frequency	45 - 66 Hz
THD	< 5% (50% to 100% Load)
Protection	Off < 85-310Vac < Off
	Self-protection up to 420Vac
	Line & Neutral input fuses
	MOV Transient Protection
<b>RECTIFIER MODULE OUTPUT PARAMETERS</b>	
Adjustable Voltage Range	42.0Vdc - 58.0Vdc
Output Power	3,000W above 185Vac
Maximum Current	62.5A @ 48Vdc
Current Sharing	± 5% of max. current
Static Voltage Regulation	± 0.5% for 10% - 100% load
Dynamic Voltage Regulation	± 5% for 90% - 10% load
Ripple Noise	< 200mV p-p
Protection	Over voltage shutdown
	Short circuit proof
	Hot-Plugin inrush current limiting
	Over temperature shut-off
	Output fuse
Efficiency	96% peak
<b>COMMUNICATION</b>	
Communication Interface	Can Bus
<b>ENVIRONMENTAL</b>	
Type of Cooling	Fan Cool
Operating Temperature	- 40°C to +75°C
Storage Temperature	- 40°C to +85°C
Humidity	95% Non-condensing
Noise	≤ 55dB
MTBF	>300,000 Hours (25°C ambient)
Safety	EN 62368-1, EN 60950-1, EN 55022 (Class B), EN 55024, EN 300019-1-1/-2/-3, ROHS complied
<b>CONFIGURATION AND PHYSICAL INFORMATION</b>	
Numbers of Rectifier per Sub-rack	3 Rectifier Modules per MR23 Sub-rack
Gross Weight (kg) per Rectifier	2.2kg
Dimensions in mm per Rectifier	106 W x 360 D x 41.5 H
Dimensions in mm per Sub-rack	442 W x 358 D x 89 H (2U)
<b>LED Indication</b>	
Green	No Fault
	Rectifier comm. Ok
	Sleep Mode
Yellow (Alarm)	Input Low/High, rectifier in power de-rate mode, current limit
	Rectifier comm. Fail
Red (Alarm)	Abnormal temp or input shutdown, low o/p voltage alarm, over-voltage
	Rectifier fan fail
<b>Certifications</b>	
Electromagnetic Compatibility (EMC)	ETSI EN 300 386 V2.1.1
Safety	EN 62368-1:2014

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## DETAILED DIMENSIONS – FIXED BRACKET OPTION



## 3P Power One Stop Solution



**3P**Power

Passion Profession Perfection

**3P POWER PTE. LTD.**

1 Genting Link, #04-02,  
Perfect One Building,  
Singapore 349518

T +65 6743 1006 & +65 6019 0772

E [enquiry@3ppower.com](mailto:enquiry@3ppower.com)

W [www.3ppower.com](http://www.3ppower.com)