



PRODUCT CATALOGUE

MR Series Switch Mode Rectifier

MR Series Rectifier - 2U ~ 13U FRONT ACCESS 4 ~ 48 POSITIONS



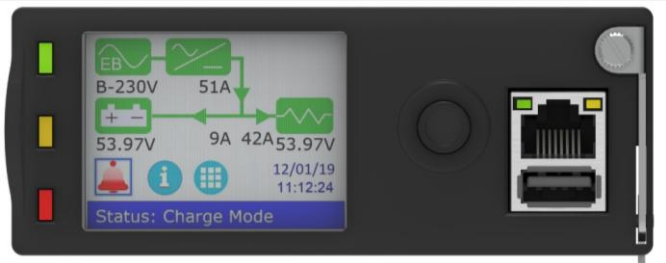
KEY FEATURES

- > 96% ~ 96.5% Efficiency Rectifiers
- Full Front Access
- Field Replaceable Controller
- Ethernet Comm. with SNMP
- Remote Monitoring & Control
- -48Vdc up to 192kW Output Capacity
- 3 LED Alarm/Status Indicators
- 4 Form-C Relay Alarms
- As many as Load & Battery Breakers
- Bulk Feed for External PDU
- LCD Display/Touchpad
- Easy Installation

MODEL	MR0203-009KW ~ MR1348-192KW	
OUTPUT CAPACITY	48Vdc / 9000W to 192000W	
INPUT PARAMETERS		
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	
OUTPUT PARAMETERS		
System Voltage	-48Vdc Nominal	
Maximum Capacity	Load	125A ~ 4000A
	Battery	100A ~ 2000A discharge 0.1C ~ 0.3C
No. of Rectifier Slots	4 ~ 48 Slots	
DC DISTRIBUTION PARAMETERS		
Loads Circuits	Customized	
Bulk Feed For External PDU Connection	1 x 250A ~ 3900A	
Battery Circuits & Management	2 ~ 10 x 32A to 125A & LVBD @ 100A ~ 2000A	
CONFIGURATION AND PHYSICAL INFORMATION		
Numbers of Rectifier per Sub-rack	4 Rectifier Modules ~ 48 Rectifier Modules	
Approx. Gross Weight (kg) per Sub-rack	12kg ~ 120kg	
Dimensions in mm per Sub-rack	442 W x 500 D x 2U ~ 13U	

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M2000 Controller Module



MODEL / PART NUMBER	MRCM00200000 / HE513360
GENERAL INFORMATION	
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
IO UNITS	
Number of IO's supported	4
Voltage sensing	Bus Voltage + 5 channels, $\pm 72V$
Current sensing	3 channels, $\pm 50mV$
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
COMMUNICATION	
System control bus	2 x CAN V2.0b for communication with rectifiers and system units
Serial bus	2 x RS485, MODBUS RTU master & device 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
FUNCTIONS	
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
	Li-ion battery support, settable charge profiles and communication with battery BMS
System	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
LOGS	
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	
Certifications	
Electromagnetic Compatibility (EMC)	ETSI EN 300 386 V2.1.1
Safety	EN 62368-1:2014

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High Efficiency
Rectifier Module



MODEL / PART NUMBER	MRM048300001 / HE513381		
OUTPUT CAPACITY	48Vdc / 3000W		
RECTIFIER MODULE INPUT PARAMETERS			
Input Power Factor	0.99 @ Nominal Input		
Input Voltage	90 to 300Vac		
Input Current	19.0A Maximum		
Input Frequency	44 - 66 Hz		
THD	< 5% (50% to 100% Load)		
Protection & Galvanic Isolation	Off < 90-300Vac < Off		
	Line & Neutral input fuses		
	MOV Transient Protection		
	Input to Output: 3000Vac, Input to Ground: 1500Vac, Output to Ground: 500Vdc		
RECTIFIER MODULE OUTPUT PARAMETERS			
Adjustable Voltage Range	42.0Vdc - 58.0Vdc		
Output Power	3000W above 176Vac, 1520W @ 90Vac		
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 10% - 90% load & 90% - 10% load, < 20ms Regulation Time		
Ripple Noise	< 300mV p-p at 200MHz BW & < 10ms Hold up Time Ripple		
Protection	Over voltage shutdown		
	Short circuit proof		
	Hot-Plugin inrush current limiting		
	Over temperature shut-off		
	Output fuse		
Efficiency	96% peak		
COMMUNICATION			
Communication Interface	Can Bus		
ENVIRONMENTAL			
Type of Cooling	Fan Cool		
Operating Temperature	- 40°C to +75°C Linear de-rating from 50°C onwards		
Storage Temperature	- 40°C to +85°C		
Humidity	95% Non-condensing		
Noise	≤ 55dB		
MTBF	> 500,000 Hours (30°C ambient)		
Environmental	EN 300019-1-1/-2/-3, ROHS complied		
CONFIGURATION AND PHYSICAL INFORMATION			
Numbers of Rectifier per Sub-rack	3 Rectifier Modules for MRS0203, 4 Rectifier Modules per Sub-rack		
Gross Weight (kg) per Rectifier	2kg		
Dimensions in mm per Rectifier	269 D x 105 W x 40.8 H		
Dimensions in mm per Sub-rack	442 W x 358 D x 89 H (2U) for MR0203, 442 W x 358 D x 44.5 (1U) for 4 Rectifier Modules		
LED Indication			
Green	No Fault		
	Rectifier comm. Ok		
	Sleep Mode		
Yellow (Warnings)	Input Low/High, rectifier in power de-rate mode, current limit		
	Rectifier comm. Fail		
Red (Alarms)	Abnormal temp or input shutdown, low o/p voltage alarm, over-voltage		
	Rectifier fan fail		
Certifications			
Electromagnetic Compatibility (EMC)	ETSI EN 300 386 V2.1.1		
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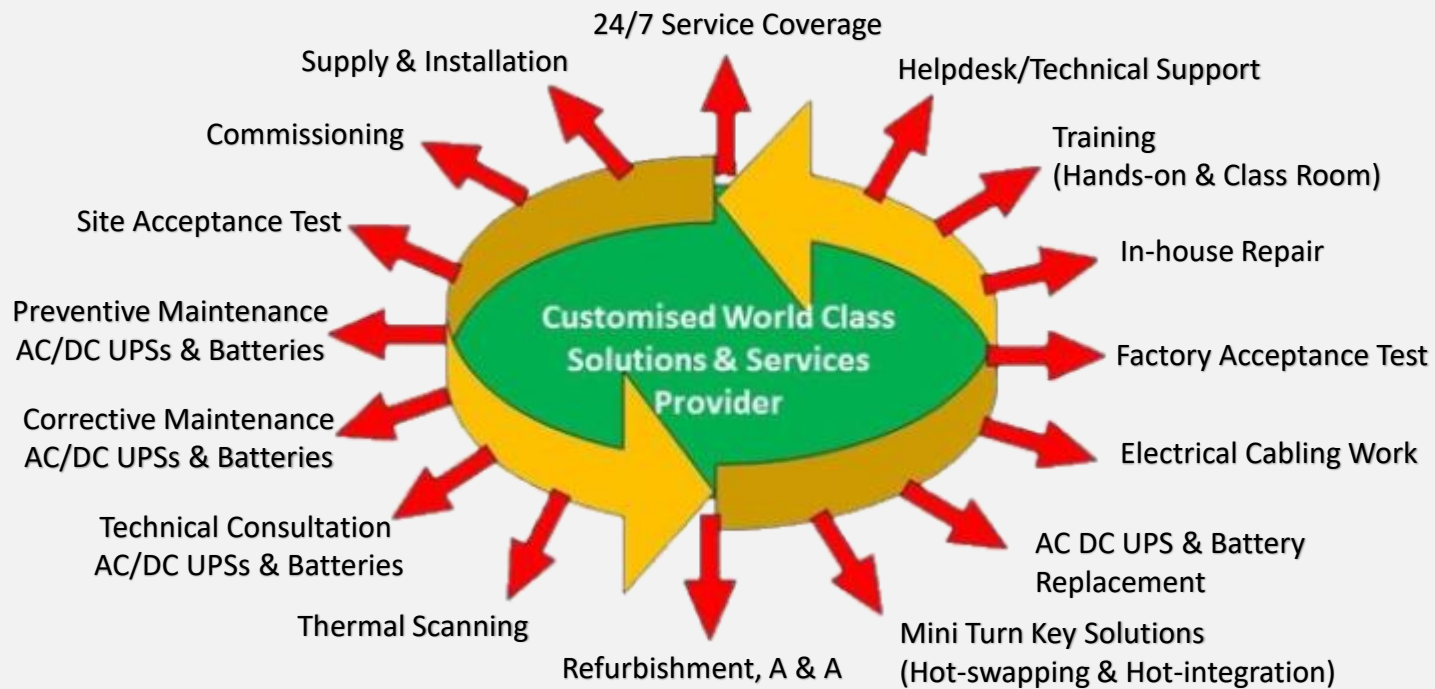
High Efficiency
Rectifier Module



MODEL / PART NUMBER		MRM048400000 / HE513370	
OUTPUT CAPACITY		48Vdc / 4000W	
RECTIFIER MODULE INPUT PARAMETERS			
Input Power Factor	0.99 @ Nominal Input		
Input Voltage	90 to 300Vac		
Input Current	25.0A Maximum		
Input Frequency	44 - 66 Hz		
THD	< 5% (50% to 100% Load)		
Protection & Galvanic Isolation	Off < 90-300Vac < Off		
	Line & Neutral input fuses		
	MOV Transient Protection		
	Input to Output: 3000Vac, Input to Ground: 1500Vac, Output to Ground: 500Vdc		
RECTIFIER MODULE OUTPUT PARAMETERS			
Adjustable Voltage Range	42.0Vdc - 58.0Vdc		
Output Power	4000W above 176Vac, 2050W @ 90Vac		
Maximum Current	83.3A @ 48Vdc		
Current Sharing	± 5% of max. current		
Static Voltage Regulation	± 0.5% for 10% - 100% load		
Dynamic Voltage Regulation	± 5% for 10% - 90% load & 90% - 10% load, < 20ms Regulation Time		
Ripple Noise	< 300mV p-p at 200MHz BW & < 10ms Hold up Time Ripple		
Protection	Over voltage shutdown		
	Short circuit proof		
	Hot-Plugin inrush current limiting		
	Over temperature shut-off		
	Output fuse		
Efficiency	96.5% peak		
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Communication Interface	Can Bus		
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Type of Cooling	Fan Cool		
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Brilliant MR Series Switch Mode Rectifier

3P Power One Stop Solution



3P Power

Passion Profession Perfection

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