

MicroMate®

Rackmount Switch Mode DC Power Systems



BS Series

Modular Design

Rackmount Rectifier / Battery Charger



Telecom



Data Center



Local area
Networks



Industrial
Processes



Servers



E-business

Overview

MicroMate modular DC power systems offer unrivalled reliability and protect communication systems against mains disturbances or mains power failure for business critical infrastructure within the modern telecommunication and information industry. Advanced manufacturing techniques, improved circuit design and the use of state of the art semiconductor components all lead to greater equipment efficiencies >95%.

Additionally the weight and volume of the rectifiers and distribution units was also reduced to maximize the effective use of rack space and better power density. The modular architecture consists of a 2U 19" system rack with monitoring module and could be configured with various power capacities by adding the necessary numbers of rectifier modules. The modular system design with parallel operating hot-plug DC power modules (plug and play) provides high availability and allows easy output power scaling as well as N+1 redundancy

These systems are available for DC output voltages 24V, 48V, 110V, 220V and allow operation with or without batteries.

Features

- User friendly LCD + LED for accurate display of system operation status
- Compact design and light weight
- 2U 19" rack mount
- High efficiency conversion
- Force air cooled by temperature controlled fan
- Soft start function
- Hot & swappable monitor module and rectifier module provide high system reliability
- Reliable N+1 redundancy design and capacity expansion
- RS232, RS485 and dry contacts and optional SNMP, MODBUS, TCP/IP standard communication interfaces
- Integrated IGBT and MOSFET rectifier module
- DC Output voltage: 24V, 48V, 110V, 220V
- Operation with or without batteries
- Wide input voltage range (single phase 185~290VAC; three phase 300~480VAC)



Technical Specifications:

Input Properties

AC Input Voltage:	Single Phase 185 ~ 290 VAC Three Phase 300 ~ 485 VAC
AC Input Frequency:	50 / 60 Hz ± 6%
Input Power Factor:	≥ 0.99

Output Properties

DC Output Voltage:	24VDC, 48VDC, 110VDC, 220VDC (see Type List)
DC Output Current:	Up to 500 A (see Type List)
Voltage Static Regulation:	± 1% in following conditions: - At float charge mode - 0 to 100% load variation - Input voltage ± 10% - Input frequency ± 6% - Temperature at 0 to 40°C
Voltage Dynamic Regulation:	With standard filter and battery connected (battery capacity is higher than 5x charger rating): Load step Deviation 10 to 100% - 5%, recover in 250 ms 100 to 10% +5%, recover in 70 ms
Long-Term Stability:	0.15% of Vdc for 1000 hours
Temperature Coefficient:	0.02% of Vdc per °C
Output Ripple Voltage:	2.5% rms typical (max. 5%) without battery connected Max. 1% rms with battery connected (battery capacity equals to 5x charger rating)
Current Regulation:	± 1% to maximum current
Charging Characteristic:	Constant current/constant voltage (I/V as per IEC 478-1) during float charge mode
Insulation Resistance:	> 10 MΩ, 500 Vdc
Input/Output Insulation:	2000 Vac between input/output and electrical earth

Environment

Working Temperature:	-25°C ~ 65°C
Storage Temperature:	-40°C ~ 85°C
Relative Humidity:	≤ 97% RH
Altitude Above Sea Level:	≤ 3000 m
Audible Noise Level:	≤ 45 dBA

Protections

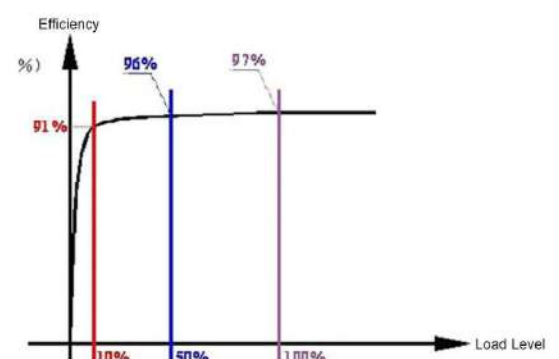
- Short circuit protection
- Output current limitation to 100% of rated current
- Non volatile storage of system parameters and user setting
- Mains failure shutdown
- Rectifier failure shutdown
- DC high voltage shutdown
- Thermal protection

Standard Compliances

- EN 50081-2, EN 50082-2 for EMC emissions
- EN 50178 for safety

Optional

- AC and DC surge limitation
- Battery polarity reversal
- Internal DC fuse
- Modbus, TCP/IP, SNMP, CAN, RS 232, RS 485 communication interfaces
- Centralized remote control and monitoring with web based software, able to generate reports
- Over- temperature protection
- Battery temperature compensation
- Diode droppers (SID) to regulate DC output load voltage within specified range
- Additional dry contacts
- Customized solution in rack/cabinet
- Advanced battery management system
- Others upon request



Product Rating List:

Single Phase Rectifier Module

Nominal DC Output Voltage	24VDC			48VDC			110VDC			220VDC		
Rated Output Current * Note	60A	120A	180A	50A	100A	150A	20A	40A	60A	10A	20A	30A
Float Voltage Adjustment Range	18V - 30V			36V - 60V			82.5V - 137.5V			165V - 275V		
Default Float Voltage Setting	26.8V			53.5V			120.4V			240.8V		
Boost Voltage Adjustment Range	18V-32.5V			36V - 65V			82.5V - 148.5V			165V - 297V		
Default Boost Voltage Setting	28.0V			55.9V			125.8V			251.6V		
Equalize Voltage Adjustment Range	18V - 32.5V			36V - 65V			82.5V - 148.5V			165V - 297V		
Default Equalize Voltage Setting	28.8V			57.6V			129.6V			259.2V		
DC High Protection	29.5V			59V			135V			265V		

* Note: Parallel design to realize higher output current rating and/or redundancy

Three Phase Rectifier Module

Nominal DC Output Voltage	48VDC		110VDC		110VDC	
Rated Output Current * Note	20A	50A	20A	10A	10A	10A
Float Voltage Adjustment Range	36V - 60V		82.5V - 137.5V		165V - 275V	
Default Float Voltage Setting	53.5V		120.4V		240.8V	
Boost Voltage Adjustment Range	36V - 65V		82.5V - 148.5V		165V - 297V	
Default Boost Voltage Setting	55.9V		125.8V		251.6	
Equalize Voltage Adjustment Range	36V - 65V		82.5V - 148.5V		165V - 297V	
Default Equalize Voltage Setting	57.6V		129.6V		259.2V	
DC High Protection	59V		135V		265V	

* Note: Parallel design to realize higher output current rating and/or redundancy