

# MRC1800H SERIES

## 1800W TELECOM RECTIFIERS



### Output

- 33A, 48V/54V
- 56A, 24V/27V

### Features

- 91% efficiency including series output diode
- High power density 242mW/cm<sup>3</sup>, 4.00W/in<sup>3</sup>
- Power Factor Corrected to EN61000-3-2
- Convection cooled
- Comprehensive alarm signal packages
- Compatible with  $\mu$ P control systems
- -40°C to +55°C operation
- International safety approvals
- Hot-pluggable

**T**he new MRC1800H Series rectifiers from Advance Power offer the latest in high power density technology for critical fault tolerant applications. The hot-pluggable MRC1800H delivers up to 1800 watts of output power in a convection cooled environment. Input current harmonic distortion is minimized by the rectifier's active input power factor correction.

Five MRC1800 rectifiers can be inserted into a 6U high 19" **powerdeck**<sup>®</sup> chassis to produce a maximum current of 165A for 48V systems.

### Applications

- PSTN, central office
- Network datacom
- Distributed power systems
- N+1 redundant power systems
- Mobile base stations
- PABX

### Systems & Power Shelves

**powerdeck**<sup>®</sup> 1800 - is a "rack-ready" pre-wired 19" x 6U modular power shelf housing up to five hot-pluggable rectifiers.

**Power Systems** - Available in cabinets and relay frames configured using **powerdeck**<sup>®</sup> 1800 and other rack mounting modules such as distribution, fuse panels and system controllers.



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### Input Specifications

		Minimum	Typical	Maximum
<b>Voltage Range, <math>V_{IN}</math></b>	Single phase TN-S (as defined by IEC 364)	176Vac	230Vac	264Vac
<b>Frequency</b>		45Hz		66Hz
<b>R.M.S. Current</b>	Maximum power output 230Vac input 176Vac input			9.6A 11.8V
<b>Peak Inrush Current</b>	264Vac input 230Vac input		13.0A	19.5A
<b>Power</b>	2400W output power Maximum load (current limit)		2,013W	2,209W
<b>Apparent Power Factor</b>		98%	99%	
<b>Efficiency</b>	$V_{IN}=230Vac$ , $P_{OUT}=1800W$ Includes integral series output diode	54V 27V	90% 88%	91% 89%
<b>Harmonic Distortion</b>	Units comply with the requirements of EN61000-3-2		3%	10%thd
<b>Turn On Voltage</b>		165Vac	172Vac	176Vac
<b>Turn Off Voltage</b>		145Vac	152Vac	156Vac
<b>Input Fuse</b>	Internally fitted fuse rated at 20AT 250V			

### 54V Output Specifications (For Additional Data, See General Output Specifications, p.4)

		Minimum	Typical	Maximum
<b>Nominal Voltage, <math>V_{OUT}</math></b>		54.8V	54.9V	55.0V
<b>Adjustment Range</b>	Front panel potentiometer default range is 52V to 58V Range can be offset to 47.8V to 53.8V using DIL switch #3 See figures 10 & 12 (p.11)	47.8V		58.0V
<b>Maximum terminal voltage</b>				59.0V
<b>Current, <math>I_{MAX}</math> Continuous</b>	<45°C ambient. $V_{OUT}=54.9V$ , $V_{IN}>198Vac$ ,	33.0A		
<b>Current Limit</b>	Rectifier automatically reduces its current limit set point with changes in ambient temperature, input voltage and output voltage. Current limit characteristics are shown in figures 1 and 2, (p.3). A selection of output currents available under various operating conditions is shown in table 1, (p.3)			
<b>Output Short Circuit</b>	See figures 1 and 2, (p.3)			
<b>Power, <math>P_{MAX}</math> Continuous</b>	$V_{IN}>198Vac$			1,800W
<b>Load Regulation</b>	Load change from 0 to $I_{MAX}$			60mV
<b>Line Regulation</b>	Input voltage change over the operating range			20mV

### 54V Output Specifications *Continued*

		Minimum	Typical	Maximum
<b>Combined Regulation</b>	A combination of load change from 0 to 100% and input voltage variation over the operating range			100mV
<b>Dynamic Regulation Maximum Deviation</b>	A step change in output current from 10% to 90% of full load			±1V
<b>Recovery</b>	To within 500mV of final value			2ms
<b>Hold up time</b>	V <sub>OUT</sub> 54.9V dropped to 54.6V, 220Vac input, 33A output V <sub>OUT</sub> 54.9V dropped to 40V, 220Vac input, 33A output		22ms 45ms	
<b>Output Overvoltage</b>		59.0V		59.9V
<b>Parallel Voltage</b>	Maximum allowable voltage applied to output terminals			80V

### 54V Output Current Limit Characteristics

Foldback Setting

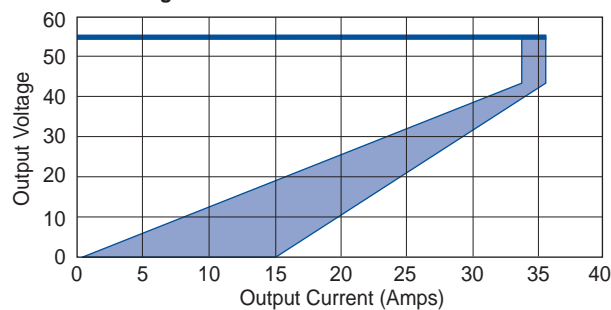


Figure 1

Constant Current Setting

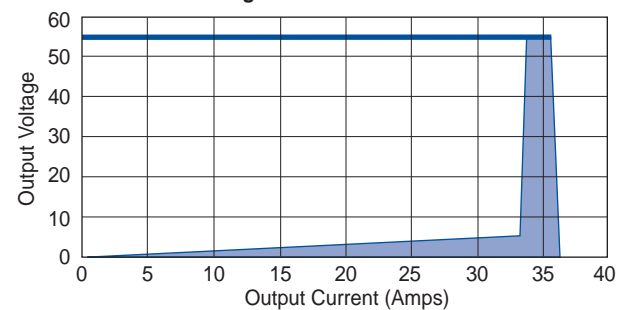


Figure 2

(Table 1)

### Operating Conditions

Ambient Temperature	V <sub>IN</sub>	V <sub>OUT</sub>	Minimum	Typical	Maximum
45	198	54.9	33.5A		35.6A
55	198	54.9	29.2A		32.3A
45	176	54.9	30.2A		33.4A
55	176	54.9	27.1A		29.9A
45	198	59.0	30.5A		33.7A
55	198	59.0	27.4A		30.2A
45	176	59.0	28.2A		31.2A
55	176	59.0	25.5A		28.2A