

Compact DC Power Systems BROCHURE

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SMi2000HD

2000W RECTIFIER



KEY FEATURES

- » Engineered for low environmental impact
- » High Efficiency: 92%
- » Energy saving mode: typically 5W in sleep mode
- » Wide operating temperature:
-25°C to 70°C (up to 55°C no derating)
- » High reliability
- » Wide input range from: 90 - 300Vac
- » Auto set-up from system controller

DESCRIPTION

In a highly competitive business environment and with concerns on global warming, telecom OEMs and Service Providers are looking ever closer at their operating costs. To help them to remain competitive, we deliver cost-effective, high efficiency. We've added the ability to operate at high temperature, without de-rating, to reduce or eliminate the need for expensive air conditioning with its heavy CO² burden and high OPEX. Finally, our all-digital DSP architecture achieves very high levels of circuit integration to get the very best in reliability. The result? - less need for service calls and maintenance trips, reducing CO² throughout the product's life time and lowering OPEX even further.

APPLICATIONS

Wireless, fibre and fixed line

Telecommunication systems today demand more than just raw DC power. What they need is compact, reliable and cost effective power systems, low on CAPEX which deliver low OPEX. SMi2000HD delivers this and more. With world class power density, excellent reliability, near flat efficiency curve, and its sleep mode for power management during periods of low traffic, the SMi2000HD is the perfect rectifier for your telecommunications network.

Broadband and Network Access

With the seemingly inexorable rise in network bandwidth requirements, network providers need expandable and flexible DC powering solutions. Our new generation of systems, of which the SMi2000HD rectifier is part, provide the building blocks for all your needs.

Never mind the size

Thanks to high power density and intelligent, digital system architecture, SMi2000HD rectifiers can be cost-effectively integrated in system solutions from 2kW to 240kW.

SMi2000HD

SPECIFICATION



AC INPUT		
Nominal Voltage	230Vac	
Voltage Range	90 to 300Vac	
Power	180 to 300Vac 90 to 180Vac	$P_o = 2000W$ $P_o = 700W$ to 2000W, linear
Frequency Range	45 to 66 Hz	
Power Factor	0.98 typical	$P_o = 800W$ to 2000W
Maximum Input Current	12.5A	at 180V AC and $P_o = 2000W$
Protection		
Input Voltage	Auto shutdown; auto restart when input voltage is within valid range 300 to 325Vac shutdown 80V to 90Vac shutdown	
Input Current	Electronic current limiting HRC fuses in Line & Neutral conductors	
Inrush Current	< 40A at 230Vac	
Efficiency	92% typical	
Quiescent Power Consumption		
Output OFF	5W typical	$P_o = 0W$, $V_o = 0V$
Output ON	18W typical	$P_o = 0W$, $V_o = 52.5V$
Galvanic Isolation		
Input to Output	3000Vac	
Input to Chassis (ground)	1500Vac	
Output to Chassis (ground)	500Vac	
DC OUTPUT		
Nominal Voltage	52.5Vdc	
Voltage Range	42V to 57Vdc	
Output Power Rating	2000W 700W-1000W	Input $\geq 180Vac \leq 300Vac$ Input $\geq 90Vac \leq 140Vac$
Output Current Rating	41.7A	at 48 Vdc (Constant power characteristic)
Hold Up Time	> 10ms	$P_o = 1800W$
Turn On		
Start up Delay	< 1 second	
Rise Time	< 1.5 seconds	
Walk-In	5 to 10 seconds	
Voltage Regulation		
Set Point Accuracy	< 1.0%	
Total Regulation	< 2.0%	Line, Load & Temperature
Ripple & Noise		
Psophometric	< 2.0mV weighted	
Wideband	< 50mV rms unweighted	5Hz/100MHz
Wideband	< 200mV pk-pk	5Hz/100MHz
Protection		
Power Limit	2000W@48V to 57V	
Current Limit	44A typical, with automatic recovery. Programmable	
Hot plugging	Automatic surge limiting via OR-ing device	
Over Voltage	Shutdown, with auto-restart. Programmable	
Over Temperature	Automatic power derating and excessive temperature shutdown	

SMi2000HD

SPECIFICATION



CONTROL & MONITORING

Alarm & Signalling

Reported via CAN bus to system controller

Visual Indicators

Green LED = Normal operation, $V_{dc} > 42V$
 Fast blinking green LED = communication failure
 Slow blinking green LED = rectifier in standby mode, presence of AC and $V_{dc} = 0V$
 Green LED + red LED = Minor alarms except power de-rating and current limit.
 Green LED + blinking red LED = Power de-rating and/or current limit.
 Green LED off + red LED = Major alarm, no power at output

MECHANICAL

Dimensions (H x W x D)

43.45 (1U) x 109 x 335 mm

Weight

1.9kg

Connections

Rear mounted

ENVIRONMENTAL

IP rating

IP20

Cooling

Forced air, front to back - With automatic speed control

Operating Temperature

-25°C to +75°C

Automatic derating above 55°C

Storage Temperature

-50°C to +85°C

Humidity

5% to 95%

Non-condensing

Acoustic Noise

< 55dB(A)

Fans at maximum speed

RoHS

2002/95/EC

WEEE

2002/96/EC, 2003/108/EC

Altitude

up to 2,500m without de-rating

REGULATORY STANDARDS

Safety

International

EN60950-1

North America

UL/CSA 60950-1

Safety Approvals

CE

Electro-Magnetic Compatibility (EMC)

Installed in system

Emissions, Conducted

EN55022, Class B

Emissions, Radiated

EN55022, Class B

Immunity

ESD

IEC/EN61000-4-2

Radiated 'E' field

IEC/EN61000-4-3

Fast Transient Burst

IEC/EN61000-4-4

Surge

IEC/EN61000-4-5

Conducted RF

IEC/EN61000-4-6

Radiated 'H' field

IEC/EN61000-4-8

Power Line Dips

IEC/EN61000-4-11

'ANSI' Surge

IEEE C62.41

Telecom Networks

EN300-132-2, EN300-386-2

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