



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

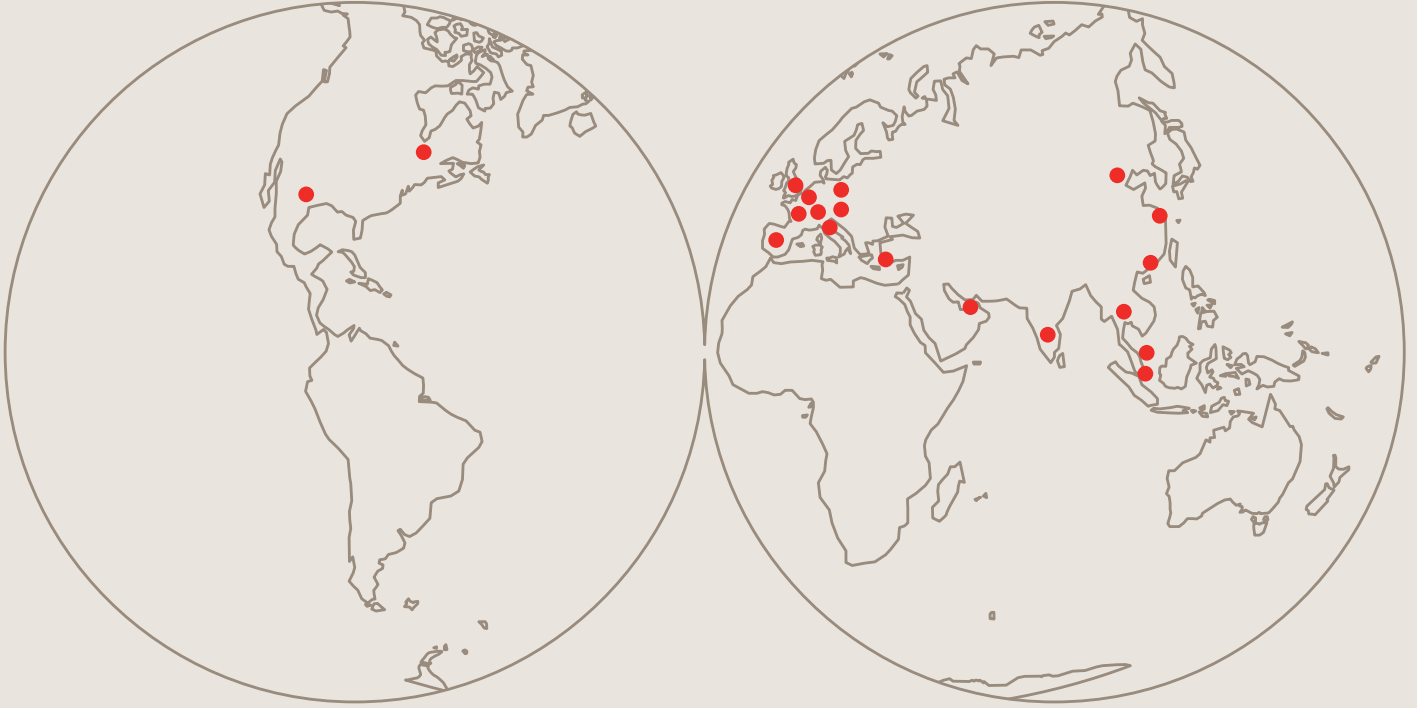
Conducted RF IEC/EN61000-4-6

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



For further information
please refer to:

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