Rectifier modules – Smart Power II Series

Smart Power II 48/2000 HE

Features

- High efficiency and highest power density
  96% efficiency and 22.40 W/in³ power density.
- Digitalized control
  Digitalized Primary and secondary controls could realize excellent monitoring and regulation.
- High reliability design
  One fan front-to-back air flow with latest thermal solution and experienced electric synthezine ensure suitable working environment and high reliability.
- Disconnect mains when hazardous input
  Smart Power II will disconnect mains to protect itself when it cannot sustain the input voltage.
- Excellent EMC performance
- Lower interference and excellent susceptibility give module better reliability
- Global approvals
  Smart Power I is CE marked, UL recognized and TUV certified for worldwide application.

Introduction

Smart Power II 48/2000 HE is a digitalized rectifier with outstanding reliability, efficiency, and power density. It is specially designed for telecom, network access, center data room applications with outstanding reliability and performance as DC power.

Applications

- Wireless communication
- Broadband and network access
- Satellite communication ground station
- 3G base station
- Telecom roadside cabinets
## Technical Specifications

### Input
- **AC Supply**: 85-300VAC (Nominal 176-300VAC)
- **Over-voltage alarm**: 305±5VAC hysteresis voltage >10V
- **Under-voltage alarm**: 80±5 VAC, hysteresis voltage >15V
- **Frequency**: 45-65Hz
- **Input current**: ≤18Arms at nominal input, ≤21Arms at 176Vac input
- **Power Factor**: >0.99 at 40% load or more
- **Startup time**: 3S-8S
- **Input protection**: Varistors for transient protection

### Output
- **Output Voltage**: 53.5VDC (±0.15V) (42–58VDC adjustable)
- **Output Power**: 2000W at nominal input
- **Output Current**: 37.9A±0.5A@normal input
- **Voltage Regulation**: ±0.6%
- **Efficiency**: Typical 95%, max 96%
- **Current sharing**: ±5% unbalance of average current of all paralleled modules
- **Holdup time**: >10ms
- **Output protection**: 59±1VDC Overvoltage shutdown
- **Short circuit proof**
- **High temperature protection**
- **Fuse**

### Other specifications
- **Isolation**: 3.0KVAC-input and output
- **1.5KVAC-input and earth**
- **0.5KVAC-output and earth**
- **Alarm**: Mains or under voltage
- **Mains over voltage disconnection**
- **High or low ambient temperature**
- **Short on output from outside**
- **Faults**: Fan failure
- **PFC failure**
- **Over voltage shutdown on output**
- **Over temperature on hot point**
- **Communication failure between primary and secondary**

### Protection level
- **IP20**

### Cooling
- **One fan (front to back airflow)**

### MTBF
- **> 300,000 hours** (T ambient : 25°C)

### Fan speed
- **Temperature and output current regulated**

### Acoustic noise
- **<55dBA at nominal input and full load (Tambient < 30°C)**

### Operating temp
- **-40 to +75°C (-40 to +167°F)**
- **-40 to +55°C (-40 to +131°F) full load**

### Storage temp
- **-40 to +85°C (-40 to +185°F)**

### Humidity
- **Operating: ±95% non-condensing**
- **Storage: ±99% non-condensing**

### Dimensions
- **108W x 327.2D x 41.4 H (mm)**

### Weight
- **2.2kg**

### Applicable Standards
- **Electrical Safety**: IEC60950 UL60950
- **EMC**: EN55022 ClassB(emission)
  - IEC61000-4-6(conducted immunity)
  - IEC61000-4-3(radiated immunity)
  - IEC61000-4-2(electrostatic discharge)
  - IEC61000-4-4(fast transients)
  - IEC61000-4-5(surge immunity)
  - IEC61000-4-11
  - IEC61000-3-3
- **Harmonics**: EN 61000-3-2
- **Environment**: ETSI EN 300 019-2-(1,2,-3)
  - ETSI EN 300 132-2
  - Telcordia NEBS GR63 CORE Zone 4
  - RoHS compliant