# Powerpack

## Rectifier Module 48V
## 11kW 480VAC / 10kW 400VAC


**Powerful 3 phase AC DC rectifier module**

The Powerpack rectifier is optimized for medium and large system sizes. Bay configuration of Powerpack systems is possible by adding up to 10 modules in a 23" cabinet.

### Applications

**Wireless, fiber and fixed line communication**

Today's communications demand state of the art, cost efficient and compact DC power systems. Powerpack has a space saving power density of 650W/liter.

**Broadband and network access**

Increasing network speed demands flexible and expandable DC power solutions. Powerpack is your key building block for future needs.

### Product Description

The Powerpack is a battery charger and rectifier for working in parallel as part of a DC power system controlled and monitored by the Smartpack. Digital communication over CAN bus with Smartpack simplifies system design and improves flexibility.

### Key Features

**High efficiency**

Rectifier technology utilizes soft switching and three-level boost converter that make the module efficiency industry leading and compact size.

**Local module monitoring**

Display and push buttons gives easy local monitoring of individual rectifier as an addition to the Smartpack monitoring.

**Heat management**

Front-to-back air flow with chassis integrated heat-sinks and chimney gives the module the best reliable working environment.

**Unique connection**

It is a real plug-and-play connection system that shortens installation time and reduces total cost. User friendly handles lock the module to the shelf.

**Global approvals**

Powerpack is CE marked, UL recognized and NEBS certified for worldwide installation.

See reverse side for specifications

# Powerpack Rectifier Module — 48V, 11W 480VAC / 10kW 400VAC

## Additional Technical Specifications

### AC Input

| | |
|---|---|
| Voltage | Nominal: 430 – 530 VAC 3ph (Y)<br>Tolerances: 260-550 VAC 3ph (Y) |
| Frequency | 45 to 66Hz |
| Maximum Current | 16.5 Arms maximum at nominal input and full load |
| Power Factor | > 0.99 at 50% load or more @480VAC |
| Total Harmonic distortion (THD) | < 5% at 50% load or more @480VAC |
| Input Protection | o Varistors for transient protection<br>o Mains fuse in all lines |

### DC Output

| | |
|---|---|
| Voltage | 53.5 VDC (adj. range: 43-58.5 VDC) |
| Output Power | 11 kW at nominal input, 10kW at 400Vac. Derating below 430VAC |
| Maximum Current | 230 Amps at 48 VDC and nominal input |
| Current Sharing | ±3% of maximum current from 10 to 100% load |
| Static voltage regulation | ±0.5% at 0-100% load |
| Dynamic voltage regulation | ±3.5% for 10-90% or 90-10% load variation, regulation time < 10ms |
| Hold up time | > 20ms; output voltage > 44 VDC at full load |
| Ripple and Noise | o < 100 mV peak to peak, 30 MHz bandwidth<br>o < 2.0 mV rms psophometric |
| Output Protection | o Overvoltage shutdown (level adjustable)<br>o Overload and Short circuit proof<br>o High temperature protection |

### Other Specifications

| | |
|---|---|
| Efficiency | Typical 92%, 93.5% at 50% load |
| Isolation | o 3.0 kVAC – input / output<br>o 1.5 kVAC – input / earth<br>o 1.0 kVDC – output / earth |
| Rectifier Alarms | o Low mains alarm<br>o High mains alarm<br>o Low output voltage alarm<br>o Over voltage shutdown alarm<br>o Current limit alarm<br>o Current sharing alarm<br>o Fan Alarm<br>o Temperature alarm<br>o Rectifier failure alarm |
| Visual indications | o Green LED: ON, no faults<br>o Red LED: rectifier failure<br>o Yellow LED blinking: no communication<br>o Yellow LED solid: derating power |
| User interface | o LCD and 3 push buttons<br>o ON/OFF switch |
| Operating temp | -10 to +70°C (-40 to +158°F)<br>Derating above +55°C (+131°F) |
| Storage temp | -25 to +85°C (-13 to +185°F) |
| Cooling | Fans (front to back airflow) ball bearing |
| Fan Speed | Temperature regulated |
| MTBF | > 200, 000 hours Telcordia Issue I, method III (a) at 20°C ambient |
| Acoustic Noise | < 72dBA, compliant to ETS 300 753 |
| Humidity | o Operating:<br>5% to 95% RH non-condensing<br>o Storage:<br>0% to 99% RH non-condensing |
| Dimensions | 23" x 2U x 500 mm (wxhxd) |
| Weight | 18.5 kg (40.8 lbs) |

### Applicable Standards

| | |
|---|---|
| Electrical safety | o IEC 60950-1<br>o UL 60950-1 |
| EMC | o ETSI EN 300 386 V.1.3.1 (telecommunication network)<br>o EN 61000-6-3 (emission, light industry)<br>o EN 61000-6-2 (immunity, industry)<br>o NEBS Telcordia GR-1089 CORE |
| Harmonics | EN 61000-3-2 |
| Environment | o ETSI EN 300 019-2 (-1. -2, -3)<br>o ETSI EN 300 132-2<br>o NEBS Telcordia GR-63 CORE Zone 4 |

Specifications are subject to change without notice

241246.000.DS3 – v5

Ordering Information

| Part no. | Description |
|---|---|
| 241246.000 | Powerpack 48/11kW 3ph 480/400VAC |


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