

# Powerpack

## Rectifier Module 48V, 11kW 208VAC



### 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.

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## Additional Technical Specifications

AC Input	
Voltage	Nominal: 185 – 250 VAC 3ph Tolerances: 180 – 264 VAC 3ph
Frequency	45 to 66Hz
Maximum Current	38.5 Arms maximum at nominal input and full load
Power Factor	> 0.99 at 50% load or more @208VAC
Total Harmonic distortion (THD)	< 5% at 50% load or more @208VAC
Input Protection	<ul style="list-style-type: none"> <li>○ Varistors for transient protection</li> <li>○ Mains fuse in all lines</li> </ul>

DC Output	
Voltage	53.5 VDC (adj. range: 43-58.5 VDC)
Output Power	11 kW at nominal input
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	<ul style="list-style-type: none"> <li>&lt; 100 mV peak to peak, 30 MHz bandwidth</li> <li>&lt; 2.0 mV<sub>rms</sub> psophometric</li> </ul>
Output Protection	<ul style="list-style-type: none"> <li>○ Overvoltage shutdown (level adjustable)</li> <li>○ Overload and Short circuit proof</li> <li>○ High temperature protection</li> </ul>

Other Specifications	
Efficiency	Typical 92%, 95.3% at 50% load
Isolation	<ul style="list-style-type: none"> <li>○ 3.0 kVAC – input / output</li> <li>○ 1.5 kVAC – input / earth</li> <li>○ 1.0 kVDC – output / earth</li> </ul>
Rectifier Alarms	<ul style="list-style-type: none"> <li>○ Low mains alarm</li> <li>○ High mains alarm</li> <li>○ Low output voltage alarm</li> <li>○ Over voltage shutdown alarm</li> <li>○ Current limit alarm</li> <li>○ Current sharing alarm</li> <li>○ Fan Alarm</li> <li>○ Temperature alarm</li> <li>○ Rectifier failure alarm</li> </ul>
Visual indications	<ul style="list-style-type: none"> <li>○ Green LED: ON, no faults</li> <li>○ Red LED: rectifier failure</li> <li>○ Yellow LED blinking: no communication</li> <li>○ Yellow LED solid: derating power</li> </ul>
User interface	<ul style="list-style-type: none"> <li>○ LCD and 3 push buttons</li> <li>○ ON/OFF switch</li> </ul>
Operating temp	-10 to +70°C (-40 to +158°F) 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	<ul style="list-style-type: none"> <li>○ Operating: 5% to 95% RH non-condensing</li> <li>○ Storage: 0% to 99% RH non-condensing</li> </ul>
Dimensions	23" x 2U x 500 mm (wxhxd)
Weight	18.5 kg (40.8 lbs)

Applicable Standards	
Electrical safety	<ul style="list-style-type: none"> <li>○ IEC 60950-1</li> <li>○ UL 60950-1</li> </ul>
EMC	<ul style="list-style-type: none"> <li>○ ETSI EN 300 386 V.1.3.1 (telecommunication network)</li> <li>○ EN 61000-6-3 (emission, light industry)</li> <li>○ EN 61000-6-2 (immunity, industry)</li> <li>○ NEBS Telcordia GR-1089 CORE</li> </ul>
Harmonics	EN 61000-3-2
Environment	<ul style="list-style-type: none"> <li>○ ETSI EN 300 019-2 (-1, -2, -3)</li> <li>○ ETSI EN 300 132-2</li> <li>○ NEBS Telcordia GR-63 CORE Zone 4</li> </ul>

Specifications are subject to change without notice

241246.100.DS3 – v3

### Ordering Information

Part no.	Description
241246.100	Powerpack 48/11kW 3ph 208VAC

