

## Minipack

### Rectifier Module 48V, 800W WIR

#### Compact and cost effective rectifier module

The fan cooled Minipack rectifier module has been specifically optimized for a wide range of system sizes. Realization of Minipack systems is possible by fitting up to 4 or 6 rectifiers across 2U 19" shelf including controller and distribution or 2 rectifiers in a compact 1U system.



# MINIPACK

## RECTIFIER MODULE 48V, 800W WIR

Doc 241117.130.DS3- rev3

### APPLICATIONS

#### Wireless, fiber and fixed line communication

Today's communications demand state of the art, cost efficient and compact DC power systems. Minipack delivers power density of 14W/in<sup>3</sup> and superb reliability at lowest lifetime cost.

#### Broadband and network access

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

### PRODUCT DESCRIPTION

The Minipack is a battery charger and rectifier for stand-alone use or 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 enhances flexibility.

### KEY FEATURES

- **HIGHEST EFFICIENCY IN MINIMUM SPACE**  
Resonant topology makes the module efficiency industry leading and contributes to the rectifier's ultra-compact dimensions.
- **DIGITAL CONTROLLERS**  
Controller is digitalized, enabling excellent monitoring and regulation characteristics. Thus, the number of component has been reduced by 40% - for highly reliable, long life, trouble free DC power systems.
- **HEAT MANAGEMENT**  
Front-to-back air flow with optimal thermal design gives the module the most suitable working environment and no limitations in the scalability of the desired system solution.
- **UNIQUE CONNECTION**  
A true plug-and-play connection system: time-to-install and cost-reducing solution.
- **GLOBAL APPROVALS**  
Minipack is CE marked, UL recognized for worldwide installation.

## AC INPUT

Voltage	85-300 VAC (Nominal 150 – 276 VAC) Linear derating below 150VAC	
Frequency	44 to 66Hz	
Maximum Current	Input: 7.5 A <sub>rms</sub> maximum at 100VAC input and 640W load Earth leakage: 1.7mA at 250Vac/50Hz	
Power Factor	0.98 at 30% load or more	
THD	< 2.5% at nominal input and full load	
Input Protection	Transient protection	Mains fuse in both lines

## DC OUTPUT

Voltage	<ul style="list-style-type: none"> <li>○ Nominal output: 53.5 VDC</li> <li>○ Float/Boost range: 48 – 57.6Vdc</li> <li>○ Standby test range: 43.5 – 48Vdc</li> </ul>	
Output Power	800W at nominal input / 640W at 100VAC	
Maximum Current	16.7 Amps at 48 VDC and nominal input	
Current Sharing	±5% of maximum current from 10% to 100% load	
Static voltage regulation	±1.0% from 5% to 100% load	
Dynamic voltage regulation	±5.0% for 25-100% or 100-25% load variation, regulation time < 10ms	
Hold up time	> 20ms; output voltage > 43.5 VDC at 80% load	
Ripple and Noise	< 100 mV peak to peak, 20 MHz bandwidth < 2 mV <sub>rms</sub> psophometric	
Output Protection	<ul style="list-style-type: none"> <li>○ Overvoltage shutdown</li> <li>○ Blocking diode</li> </ul>	<ul style="list-style-type: none"> <li>○ Short circuit proof</li> <li>○ High temperature protection</li> </ul>

## OTHER SPECIFICATIONS

Efficiency	Typ. 91% at 60-100% load	
Isolation	<ul style="list-style-type: none"> <li>○ 3.0 KVAC – input and output</li> <li>○ 1.5 KVAC – input earth</li> </ul>	<ul style="list-style-type: none"> <li>○ 0.5 KVDC – output earth</li> </ul>
Alarms	<ul style="list-style-type: none"> <li>○ Low mains shutdown (&lt;85VAC)</li> <li>○ High temperature shutdown</li> <li>○ Rectifier Failure</li> </ul>	<ul style="list-style-type: none"> <li>○ Overvoltage shutdown on output</li> <li>○ Low voltage alarm at 43.0V</li> <li>○ CAN bus failure</li> </ul>
Warnings	<ul style="list-style-type: none"> <li>○ Rectifier in power derate mode</li> <li>○ Remote battery current limit activated</li> <li>○ Input voltage out of range, flashing at overvoltage</li> <li>○ Loss of CAN communication with control unit, stand-alone mode</li> </ul>	
Visual indication	<ul style="list-style-type: none"> <li>○ Green LED: ON, no faults</li> <li>○ Red LED: rectifier failure</li> </ul>	<ul style="list-style-type: none"> <li>○ Yellow LED : rectifier warning</li> </ul>
Operating temp.	-40 to +75°C (-40 to +167°F) Derating above +55°C linear to 280W/200W at +75°C with 230/100VAC input	
Storage temp.	-40 to +80°C (-40 to +176°F)	
Cooling	1 fan (front to back airflow)	
Fan Speed	Temperature and current regulated	
MTBF	> 400, 000 hours Telcordia SR-332 Issue I, method III (a) (Tambient : 25°C)	
Acoustic Noise	< 50dBA at nominal input and full load, T <sub>ambient</sub> < 30°C	
Humidity	<ul style="list-style-type: none"> <li>○ Operating: 5% to 95% RH noncondensing</li> <li>○ Storage: 0% to 99% RH non-condensing</li> </ul>	
Dimensions	42.5 x 88.9 x 250mm (1.67 x 3.5 x 9.84") (wxhxd)	
Weight	1.08 kg (2.38lbs)	

## APPLICABLE STANDARDS

Electrical safety	<ul style="list-style-type: none"> <li>○ IEC 60950-1</li> <li>○ UL 60950-1</li> </ul>	<ul style="list-style-type: none"> <li>○ CSA 22.2</li> </ul>
EMC	ETSI EN 300 386 V.1.3.2 (telecommunication network) EN 61000-6-1 (immunity, light industry) EN 61000-6-2 (immunity, industry)	EN 61000-6-3 (emission, light industry) EN 61000-6-4 (emission, industry)
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> </ul>	<ul style="list-style-type: none"> <li>○ RoHS compliant</li> </ul>

## ORDERING INFORMATION

Part No.	Description
241117.130	Minipack 48/800WIR