

Flatpack2 24/2000WOR

The combination of cost-effective design, power density and reliability makes the Flatpack2 a product family that truly stands out and provides unparalleled network availability. The versatility of the Flatpack2 rectifier means that it can be used in a wide variety of 48V_{DC} and 24V_{DC} applications across the globe.



FLATPACK2 24/2000WOR

(RECTIFIER MODULE)

Doc 241115.250.DS3 – rev8

APPLICATIONS

Wireless, fiber and fixed line communication

Today's communications demand state of the art, cost effective and compact DC power systems. Flatpack2 delivers an industry leading power density and superb reliability at lowest lifetime cost

Broadband and network access

Increasing network speed demands flexible and expandable DC power solutions. The Flatpack2 rectifiers are your key building blocks for future needs.

Small and large

Due to the high power density, cost competitive design and a highly flexible system communication interface, Flatpack2 rectifiers are used in system solutions from 5kW to 96kW.

PRODUCT DESCRIPTION

The Flatpack2 WOR 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. It's output voltage window is optimized for use with any type of batteries.

Flatpack2 is optimized for a wide range of system sizes. Digital communication over CAN bus with Smartpack simplifies system design and enhances flexibility. Realization of Flatpack2 systems is possible by fitting 4 rectifiers across a 23" or 19" shelf.

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**
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 chassis-integrated heat sinks and no limitations in the scalability of the desired system solution.
- **UNIQUE CONNECTION**
Time - to- install and cost-reducing solution.
- **GLOBAL APPROVALS**
Flatpack2 WOR is CE and UL marked.

INPUT DATA

Voltage	85-300 V _{AC} (Nominal 185 – 275 V _{AC})
Frequency	44 to 66Hz
Maximum Current	12.5 A _{rms} maximum at nominal input and full load
Power Factor	> 0.99 at 50% load or more
Input Protection	<ul style="list-style-type: none"> ○ Varistors for transient protection ○ Mains fuse in both lines ○ Disconnect above 300 V_{AC}

OUTPUT DATA

Voltage	<ul style="list-style-type: none"> ○ Adjustable range: 21.5-36.0 V_{DC} ○ Default voltage: 26.7 V_{DC}
Output Power	2000 W at nominal input
Maximum Current	70.0 Amps at 29 V _{DC} and nominal input
Current Sharing	±5% of maximum current from 10% to 100% load
Static voltage regulation	±0.5% from 10% to 100% load
Dynamic voltage regulation	±5.0% for 10-90% or 90-10% load variation, regulation time < 50ms
Hold up time	> 20ms; output voltage > 21.5 V _{DC} at 1500W load
Ripple and Noise	< 100 mV peak to peak, 30 MHz bandwidth < 0.96 mV rms psophometric
Output Protection	<ul style="list-style-type: none"> ○ Overvoltage shutdown ○ Fuse on output ○ Short circuit proof ○ High temperature protection

OTHER SPECIFICATIONS

Efficiency	Typical 91%	
Isolation	3.0 kV _{AC} – input and output 1.5 kV _{AC} – input earth	0.5 kV _{DC} – output earth
Alarms	<ul style="list-style-type: none"> ○ Low mains shutdown ○ High temperature shutdown ○ Rectifier Failure ○ Overvoltage shutdown on output 	<ul style="list-style-type: none"> ○ Fan failure, one or two fans. ○ Low voltage alarm at 21.0V ○ CAN bus failure
Warnings	<ul style="list-style-type: none"> ○ Low temperature shutdown ○ Rectifier in power derate mode ○ Remote battery current limit activated 	<ul style="list-style-type: none"> ○ Input voltage out of range, flashing at overvoltage ○ Loss of CAN communication with control unit, stand alone mode
Visual indication	Green LED: ON, no faults Red LED: rectifier failure Yellow LED : rectifier warning	
Operating temp.	-40 to +75°C (-40 to +167°F)	
Storage temp.	-40 to +85°C (-40 to +185°F)	
Cooling	2 fans (front to back airflow)	
Fan Speed	Temperature and load regulated	
MTBF	> 200, 000 hours Telcordia SR-332 Issue I, method III (a) (T _{ambient} : 25°C)	
Acoustic Noise	< 65dBA at nominal input and 70% load (T _{ambient} < 30°C)	
Humidity	Operating: 5% to 95% RH noncondensing	Storage: 0% to 99% RH non-condensing
Dimensions	109 x 41.5 x 327mm (wxhxd) (4.25 x 1.69 x 13")	
Weight	1.9 kg (3.97 lbs)	

APPLICABLE STANDARDS

Electrical safety	IEC 60950-1 UL 60950-1	CSA 22.2
EMC	ETSI EN 300 386 V.1.3.2 (telecommunication network) EN 61000-6-4 (emission, industry) EN 61000-6-3 (emission, light industry)	EN 61000-6-2 (immunity, industry) EN 61000-6-1 (immunity, light industry) Telcordia NEBS GR1089 CORE
Mains Harmonics	EN 61000-3-2	
Environment	ETSI EN 300 019-2 ETSI EN 300 132-2	Telcordia NEBS GR63 CORE Zone 4 RoHS compliant

ORDERING INFORMATION

Part No.	Description
241115.250	Flatpack2 24/2000 WOR