

Compact HE rectifiers for marine, offshore and process industry applications

Applications in these markets demand state of the art, reliable and safe DC power systems. Flatpack S delivers an industry leading power density in its segment, many safety functions, wide operating temperature range and superb reliability in its small 210mm deep housing.

The Flatpack S 24/1000 SIL3 OVP is targeted Safety and Automation Systems (SAS) in offshore and process industry requiring SIL rated overvoltage protection on DC output.

Used in the 3U rack with Smartpack S controller, the Flatpack S rectifiers cover 2 to 8kW applications using a minimum of space, less than 18 liters, and low heat dissipation.



FLATPACK S 24V RECTIFIER

1000W SIL3 OVP

Doc 241122.290.DS3 - v3

APPLICATIONS

OFFSHORE AND PROCESS INDUSTRY

- **SAFETY AND AUTOMATION SYSTEMS (SAS)**



3 TIMES 2 RECTIFIERS SYSTEM IN A 3U RACK



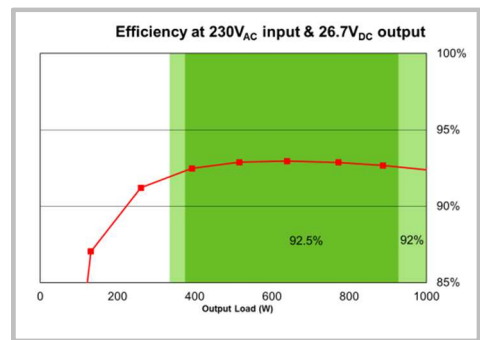
SMARTPACK S CONTROLLER



8 RECTIFIERS 3U SYSTEM - BULK OUTPUT

KEY FEATURES

- SMALL
- SHORT
- POWER DENSE, 26 W / CU IN
- HIGH EFFICIENCY
- ORING PROTECTION ON OUTPUT
- SIL3 RATED OVERVOLTAGE PROTECTION ON OUTPUT
- HOT PLUGGABLE
- VOLTAGE KEYING



FLATPACKS 24V 1000W EFFICIENCY PLOT

FLATPACK S 24V RECTIFIER

1000W SIL3 OVP



Model		24/1000 SIL3 OVP
Part number		241122.290
INPUT DATA		
Voltage (nominal)		230 V _{AC/DC}
Voltage (full power)		185 - 275 V _{AC/DC}
Voltage (full power, reduced power factor)		275 - 305 V _{AC/DC}
Voltage (reduced power, linear de-rating)		85 - 185 V _{AC/DC}
Frequency (nominal / range)		45 - 66 Hz / 0 Hz
Current (maximum)		5.9 A _{RMS}
Power Factor	> 0.99 at 50% load or more	
Protection	Fuse and Shutdown above 305 V _{AC} / 300 V _{DC} and below 85V _{AC/DC}	
OUTPUT DATA		
Voltage (default)		26.7 V _{DC}
Voltage (adjustable range)		21.5 - 28 V _{DC}
Power (maximum) @ nominal input		1000 W
Power @ 85 V _{AC}		420 W
Current (maximum) @ nominal input		41.7 A (@V _{OUT} < 24 V _{DC})
Current sharing (10 - 100% load)	±5% of maximum current from 10 to 100% load	
Static Voltage regulation (10 - 100% load)	±0.5%	
Dynamic Voltage regulation	±5.0% for 10-90% or 90-10% load variation, regulation time < 50ms	
Hold up time	>20ms; output voltage > 41 V _{DC}	
Ripple	< 200 mV peak to peak, 30 MHz bandwidth	
Protection	Blocking OR-ing Diode, Short circuit proof and High temperature protection	
Overvoltage protection, SIL3 parameters	<ul style="list-style-type: none">• Protection level: 30V• Proof test interval: 15 years• Handles dual component failure• PFD = TBS• SFF = TBS	
OTHER SPECIFICATIONS		
Efficiency @ nominal input	92.50 %	
Isolation	3.0 kV _{AC} - input to output, 1.5 kV _{AC} - input to earth & 0.5 kV _{DC} - output to earth	
Alarms: Red LED	Low mains shutdown, High and low temperature shutdown, Rectifier Failure, Overvoltage shutdown on output, Fan failure, Low voltage alarm, CAN bus failure	
Warnings: Yellow LED	Rectifier in power derate mode, Remote battery current limit activated, Input voltage out of range, flashing at overvoltage	
Normal operation: Green LED		
Potential alarm relay (normally open)	Opens on alarms, mains outage and >40% loaded (ensures redundancy in 1+1 system) when not connected to a controller	
Normal (module running): Green LED 'on'		
Acoustic noise	< 46dBA at nominal input and full load	
MTBF (Telcordia SR-332 Issue I method III (a))	>300 000 (@ T _{ambient} : 25 °C)	
Operating temperature	-40 to +85°C (-40 to +185°F), humidity 5 - 95% RH non-condensing Output power de-rates linear from 1000W @ 45°C (113°F) to 400W @ 85°C(185°F)	
Storage temperature	-40 to +85°C (-40 to +185°F), humidity 0 - 99% RH non-condensing	
Dimensions[WxHxD] / Weight	72 x 41.5 x 210mm (2.83 x 1.63 x 8.27") / < 1 kg (2 lbs)	
DESIGN STANDARDS		
Electrical safety	UL 60950-1, EN 60950-1, IEC 61508	
Marine	DNV-OS-D202, Ch.2 Sec.4 (DNV2.4): Temperature Cl.B, Humidity Cl.B, Vibration Cl.A, EMC Cl.B ¹⁾ IEC 60945-4 th edition	
EMC	ETSI EN 300 386 V.1.4.1 EN 61000-6-1 / -2 / -3 / -4 / -5 FCC Part 15 Subpart 109	
Environment	ETSI EN 300 019: 2-1 (Class 1.2), 2-2 (Class 2.3) & 2-3 (Class 3.2) RoHS (2011/65/EU) and WEEE (2002/96/EC) compliant	
1) Class B requires external filter on input (p/n 241120.930)		