

Rectifier Module

R4830G1



Introduction

R4830G1 is a digital controlled high power density rectifier, the power consumption is 2000W and efficiency is 96%. It converts input Voltage ranges between 85 to 300V AC/ 85 to 420V DC into 42 to 58V DC adjustable output voltage. With comprehensive protection functions, it supports walk-in start function, with low noise operation and latest technology on real time state monitoring.



Features

- **High efficiency:** $\geq 96\%$
- **Wide operation temperature range:** from $-40\text{ }^{\circ}\text{C}$ to $80\text{ }^{\circ}\text{C}$ (full output up to $55\text{ }^{\circ}\text{C}$)
- **Wide hybrid input voltage:**
85 to 300 V AC / 85 to 420 V DC
- Total harmonic distortion (THD): $\leq 3\%$
- **Hot-swappable** rectifier
- **Digital control**
- **Intelligent electric meter**
- **CAN communication**
- Adjustable voltage and current
- **TUV, CE, UL, CB** certifications

Specifications

Product		R4830G1	
Basic specifications	Dimension	95.5 mm(W) × 208 mm(D) × 40.8 mm(H)	
	Weight	≤ 1.5 kg	
	Cooling	Forced Air cooling (Built-in fan)	
Input feature	Input Voltage	85 to 300 V AC	85 to 420 V DC
	AC Input Mode	220 V AC single phase (or 110 V DC dual live lines)	HVDC, rated: 240 V DC/336 V DC
	Frequency	45 to 66 Hz, rated: 50 Hz / 60 Hz	-
	Input Current	≤ 13 A	
	Power Factor	≥ 0.99 (> 50% load at 230 V AC)	-
	THD	≤ 3% (> 50% load at 230 V AC)	
Output feature	Efficiency	≥ 95% (30% to 90% load) > 96% Max	
	Output Voltage	42 to 58 V DC, rated voltage: 53.5 V DC	
	Output Power	2000 W (176 to 300 V AC)	2000 W (200 to 420 V DC)
	Ripple and Noise	<200 mV pk-pk, 20 M bandwidth	
	Hold-up Time	> 10 mS	
	Output Regulated Voltage Precision	≤ 0.6% Vo from no load to full load	
Environmental specifications	Operating Temperature	-40 °C to +80 °C (full output below 55°C), ETS EN 300-019	
	Storage Temperature	-40 °C to +80 °C; ETS EN 300-019	
	Relative Humidity	5% to 95% (non-condensing), ETS EN 300-019	
	Altitude Range	≤ 5000 m (If the altitude is within the range of 2000 m to 5000 m, the maximum operating temperature decreases by 1°C as the altitude increases by 200 m)	
Protection	Input Overvoltage Protection	Protection point: > 300 V AC / 420 V DC	
	Input Under-voltage Protection	Protection point: < 80 V AC / 80 V DC	
	Output Overvoltage Protection	56 to 60 V DC (can be set by monitoring unit)	
	Output Short Circuit Protection	A long term short circuit is allowed. After the fault is rectified, the rectifier will restore automatically	
	Over-temperature Protection	Protection point: ≥ 80 °C	
Reliability	MTBF	> 500,000 hours (Telcordia SR-332 issue2 Method 1 at 25 °C)	
Audible noises	Specification	≤ 45 dB (25 °C, full load); sound pressure@1m distance, ISO3744	
Safety/EMC/Lightening protection	Safety Certification	Passed TUV, CE, UL certifications; got the CB certificate; complies with UL60950-1, IEC60950-1, EN60950-1, CAN/CSA C22.2 No. 60950 -1, IEC62368-1, UL 62368 -1, CAN/CSA-C22.2 No. 62368 -1, EN62368-1	
	EMC	EN55032 Class B, EN55024, EN61000-3-2, EN61000-3-3, ETSI EN300 386, ETSI EN301489, ITU-T K.20	
	Lightening Protection	Common model(input to earth) / differential model(input to input): 5KA (8/20uS, ITU-T K.44)	

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