Rectifier Module

R4875G5



Introduction

R4875G5 is a high power density, high efficiency digital rectifier module with power up to 4000W and maximum efficiency up to 97%. The module supports input of 85VAC - 300VAC or 85VDC - 420VDC, and output -42VDC to -58VDC (adjustable) or -57VDC constant. The module has the features of soft start, hot swappable and low noise, and adopts the latest power monitoring technology to realize real-time monitoring of the rectifier module and the load.



Overview of R4875G5

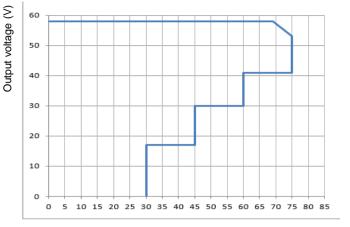
Features

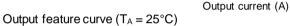
- Maximum efficiency up to 97%, saving energy
- Wide input voltage range: 85VAC 300VAC or 85VDC 420VDC
- Wide operating temperature range: -40°C to +75°C (full output up to 55°C)
- Total harmonic distortion (THD) : ≤ 3% (load rate ≥ 50%)
- Hot-swappable
- Digital control
- CAN communication
- Supporting voltage, current regulation and current balancing
- Certified by TUV, CE and UL, and got CB certification

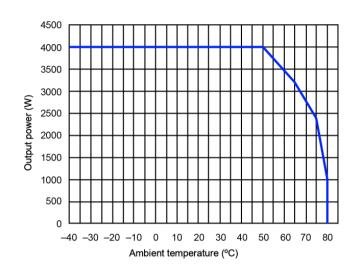
Scenarios

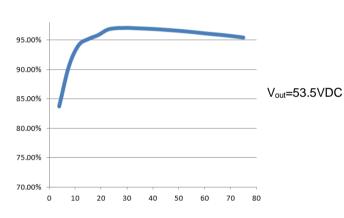
- Access network
- Transmission network
- Communication network of enterprises

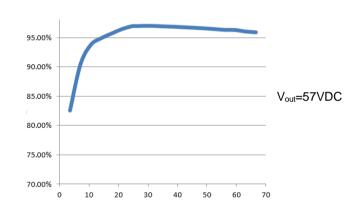
Feature Curve





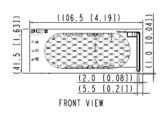


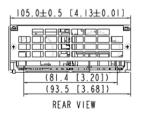


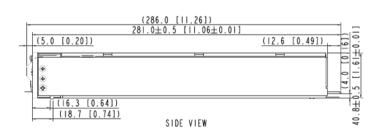


Output efficiency curve ($V_{in} = 230VAC, V_{out} = 53.5VDC / 57VDC, T_A = 25^{\circ}C$)

Dimension Drawings







Specifications

Description	Product Type		R4875G5	
Protection Very Protectio		71		
		Weight	≤ 2.2kg	
Input Voltage		Cooling	Forced air cooling (Built-in fan)	
Protection Safety/EMC/ Lightening Protection Safety/EMC/ Lightening Protection Safety/EMC/ Lightening Protection Safety/EMC/ Lightening Protection Protection Protection Protection Safety/EMC/ Lightening Protection Safety/EMC/ Lightening Protection Protection Safety/EMC/ Lightening Protection Safety/EMC/ Lightening Protection Protection Safety/EMC/ Lightening Protection PMC Protection Safety/EMC/ Lightening Protection Safety/EMC/ Lightening Protection Safety/EMC/ Lightening Protection Safety/EMC/ Lightening Protection PMC	•	Input Mode	,	DC
Power Factor 2 0.99 (load≥ 50%) -		Input Voltage	85VAC - 300VAC	85VDC - 420VDC
Rated liptur Current		Frequency	45Hz - 66Hz, rated: 50/60 Hz	-
Protection Pr		Rated Input Current	< 21A	
Efficiency 97% Max ≥96% (230VAC, 30% - 80% load) Output Voltage 42VDC - 58 VDC, rated voltage; 53.5VDC / 57VDC		Power Factor	≥ 0.99 (load≥ 50%)	-
Output Power Output Power Output Power Output Power Output Power Altitude Range Protection Protection Output Under-voltage Protection Output Dover-voltage Protection Output Short Circuit Protection Output Short Circuit Protection Output Short Circuit Protection Reliability Audible Noises Safety/EMC/ Safety/EMC/ Safety/EMC/ Safety/EMC/ Safety/EMC/ Safety/EMC/ Output Voltage Adv00W (176VAC - 300VAC) , 4000W (85VAC - 175VAC linear derating) Altitude Range / 40°C to +75°C Altitude Range / 40°C to +75°C (without packaging) Some and additional 200m) AC protection threshold: - 300VAC DC protection threshold: - 300VAC DC protection threshold: - 420VDC DC protection threshold: - 420VDC DC protection threshold: - 480VDC DC protection threshold: - 80VAC DC protection threshold: - 80VDC Protection Over-temperature Protection A long term short circuit is allowed. After the fault disappears, the rectifier is restored to a healthy state automatically The rectifier protects against over-temperature Safety/EMC/ Lightening Protection EMC EMC EMC EMC Output Type A (2000 A) A (20		THD	≤ 3% (load≥ 50%)	-
Output Feature Protection Protection Output Nore A000W (176VAC - 300VAC) 1600W (85VAC - 175VAC linear derating)	· ·	Efficiency		
Output Feature Ripple and Noise Ripple and Noise S 200mVp-p (bandwidth ≤ 20 MHz) Hold-up Time Output Regulated Voltage Precision Current Share Storage Temperature Specifications Altitude Range Input Overvoltage Protection Input Under-voltage Protection Output Short Circut Protection Output Short Circut Protection Reliability Reliability Audible Noises Safety/EMC/ Lightening Protection Ripple and Noise S 200mVp-p (bandwidth ≤ 20 MHz) 1600W (85VAC - 175VAC linear derating) S 20.6% Vo from no load to full load		Output Voltage	42VDC - 58 VDC, rated voltage: 53.5VDC / 57VDC	
Feature Ripple and Noise ≤ 200mVp-p (bandwidth ≤ 20 MHz)		Output Power		
Output Regulated Voltage Precision Current Share Departing Temperature Corrent Share Operating Temperature Altitude Range Altitude Range Altitude Range Input Overvoltage Protection Output Overvoltage Protection Output Short Circuit Protection Output Short Circuit Protection Reliability Reliability MTBF Safety/EMC/ Lightening Protection Safety/EMC/ Lightening Protection Current Share ±5% output rated current from 10% to 100% load ±5% output rated current from 10% to 100% load -40°C to +75°C (without packaging) -40°C for each additional 200m) -40°C for each additional		Ripple and Noise	≤ 200mVp-p (bandwidth ≤ 20 MHz)	
Voltage Precision ±5% output rated current from 10% to 100% load		·	> 10ms	
Protection Protection Protection Protection Output Over-voltage Protection Output Short Circuit Protection Over-temperature Protection Over-temperature Protection Over-temperature Protection Over-temperature Protection Over-temperature Over-t			≤ 0.6% Vo from no load to full load	
Environmental Specifications Storage Temperature —40°C to +75°C (without packaging) Relative Humidity 5% - 95% RH (non-condensing) Altitude Range 0 - 5000m (When the altitude ranges from 2000m to 5000m, the operating temperature decreases by 1°C for each additional 200m) AC protection 1nput Overvoltage Protection DC protection threshold: > 300VAC DC protection threshold: > 420VDC 1nput Under-voltage Protection DC protection threshold: < 80VAC DC protection threshold: < 80VDC Output Over-voltage Protection Output Short Circuit Protection A long term short circuit is allowed. After the fault disappears, the rectifier is restored to a healthy state automatically The rectifier protects against over-temperature Protection Specification ≤ 550 (40°C, full load) Safety/EMC/ Lightening EMC EMC EN55032 Class B; EN55024; EN61000-3-2; EN61000-3-3; ETSI EN300386 ITU-T K.20		Current Share	±5% output rated current from 10% to 100% load	
Relative Humidity 5% - 95% RH (non-condensing)		Operating Temperature	-40°C to +75°C	
Altitude Range 0 - 5000m (When the altitude ranges from 2000m to 5000m, the operating temperature decreases by 1°C for each additional 200m) Input Overvoltage Protection DC protection threshold: > 300VAC DC protection threshold: > 420VDC Input Under-voltage Protection DC protection threshold: < 80VAC DC protection threshold: < 80VDC Output Over-voltage Protection DC protection threshold: < 80VDC Protection and the set on the monitoring module) Protection Deprotection Deprotection and the set on the monitoring module) Reliability MTBF ≥ 500,000 hours Audible Noises Specification Safety/EMC/ Lightening Protection EMC EMC EN55032 Class B; EN55024; EN61000-3-2; EN61000-3-3; ETSI EN300386 ITU-T K.20		Storage Temperature	-40°C to +75°C (without packaging)	
Protection		Relative Humidity	5% - 95% RH (non-condensing)	
Protection Input Under-voltage Protection Output Over-voltage Protection Output Short Circuit Protection Over-temperature Protection Reliability Audible Noises Safety/EMC/ Lightening Protection Protection Input Under-voltage Protection Output Over-voltage Protection Output Short Circuit Protection Output Short Circuit Protection Output Short Circuit Protection Over-temperature Protection A long term short circuit is allowed. After the fault disappears, the rectifier is restored to a healthy state automatically The rectifier protects against over-temperature Specification Safety Certification EMC Protection threshold: > 420VDC AC protection threshold: < 80VAC DC protection threshold: < 80VAC Protection threshold: < 80VAC Protection threshold: < 80VAC DC protection threshold: < 80VAC Can be set on the monitoring module) The rectifier protects against over-temperature The rectifie		Altitude Range	· · · · · · · · · · · · · · · · · · ·	
Protection Protection Protection Output Over-voltage Protection Output Short Circuit Protection Over-temperature Protection Noises Reliability AC protection threshold: < 80VDC Protection threshold: < 80VDC Protection threshold: < 80VDC A long term short circuit is allowed. After the fault disappears, the rectifier is restored to a healthy state automatically The rectifier protects against over-temperature Protection Audible Noises Safety/EMC/ Lightening Protection EMC Input Under-voltage Protection threshold: < 80VDC Protection threshold: < 80VDC Can be set on the monitoring module) The rectifier is restored to a healthy state automatically The rectifier protects against over-temperature ≥ 500,000 hours ≤ 55dB (40°C, full load) TUV, CE, and UL, CB certificate Complies with UL60950-1, IEC60950-1, CAN/CSA C22.2 No. 60950-1, and EN60950-1. EN55032 Class B; EN55024; EN61000-3-2; EN61000-3-3; ETSI EN300386 ITU-T K.20	Protection			
Protection Output Over-voltage Protection Output Short Circuit Protection Over-temperature Protection Reliability MTBF Audible Noises Safety/EMC/ Lightening Protection Coutput Short Circuit Protection Over-temperature Protection Tuv, CE, and UL, CB certificate Complies with UL60950-1, IEC60950-1, CAN/CSA C22.2 No. 60950-1, and EN60950-1. EMC EMC Protection range: 56VDC - 60VDC (can be set on the monitoring module) A long term short circuit is allowed. After the fault disappears, the rectifier is restored to a healthy state automatically The rectifier protects against over-temperature ≥ 500,000 hours ≤ 55dB (40°C, full load) TUV, CE, and UL, CB certificate Complies with UL60950-1, IEC60950-1, CAN/CSA C22.2 No. 60950-1, and EN60950-1. EMC EN55032 Class B; EN55024; EN61000-3-2; EN61000-3-3; ETSI EN300386 ITU-T K.20		Input Under-voltage	AC protection threshold: < 80VAC	
Output Short Circuit Protection Over-temperature Protection Reliability MTBF Audible Noises Safety/EMC/ Lightening Protection A long term short circuit is allowed. After the fault disappears, the rectifier is restored to a healthy state automatically The rectifier protects against over-temperature ≥ 500,000 hours ≤ 55dB (40°C, full load) TUV, CE, and UL, CB certificate Complies with UL60950-1, IEC60950-1, CAN/CSA C22.2 No. 60950-1, and EN60950-1. EMC EMC EMC EMC EMC A long term short circuit is allowed. After the fault disappears, the rectifier is restored to a healthy state automatically The rectifier protects against over-temperature ≥ 500,000 hours ≤ 55dB (40°C, full load) TUV, CE, and UL, CB certificate Complies with UL60950-1, IEC60950-1, CAN/CSA C22.2 No. 60950-1, and EN60950-1. EN55032 Class B; EN55024; EN61000-3-2; EN61000-3-3; ETSI EN300386 ITU-T K.20		Output Over-voltage		
Over-temperature Protection The rectifier protects against over-temperature Reliability MTBF ≥ 500,000 hours Audible Noises Specification ≤ 55dB (40°C, full load) Safety/EMC/Lightening Protection Safety Certification TUV, CE, and UL, CB certificate Complies with UL60950-1, IEC60950-1, CAN/CSA C22.2 No. 60950-1, and EN60950-1. EMC EN55032 Class B; EN55024; EN61000-3-2; EN61000-3-3; ETSI EN300386 ITU-T K.20		Output Short Circuit		
Audible NoisesSpecification≤ 55dB (40°C, full load)Safety/EMC/ Lightening ProtectionSafety CertificationTUV, CE, and UL, CB certificate Complies with UL60950-1, IEC60950-1, CAN/CSA C22.2 No. 60950-1, and EN60950-1.EMCEN55032 Class B; EN55024; EN61000-3-2; EN61000-3-3; ETSI EN300386 ITU-T K.20		Over-temperature	·	
Noises Safety/EMC/ Lightening Protection Safety/EMC EMC Safety/EMC Lightening Protection Safety/EMC Lightening Protection Safety/EMC EMC Safety/EMC EMC TUV, CE, and UL, CB certificate Complies with UL60950-1, IEC60950-1, CAN/CSA C22.2 No. 60950-1, and EN60950-1. EN55032 Class B; EN55024; EN61000-3-2; EN61000-3-3; ETSI EN300386 ITU-T K.20	Reliability	MTBF	≥ 500,000 hours	
Safety/EMC/ Lightening Protection Safety/EMC/ Lightening Protection Complies with UL60950-1, IEC60950-1, CAN/CSA C22.2 No. 60950-1, and EN60950-1. EMC EMC EMC ITU-T K.20		Specification	≤ 55dB (40°C, full load)	
Lightening Protection EMC EN55032 Class B; EN55024; EN61000-3-2; EN61000-3-3; ETSI EN300386 ITU-T K.20	Lightening	Safety Certification		
Lightening protection 5kA		EMC		
		Lightening protection	5kA	

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