

VRM4830 Introduction

1. Diagram of VRM4830:



Dimensions: 208mm*116.5mm*41.6mm

Weight:≤1.5Kg

2. Technical specifications of VRM4830

Input					
Parameter	Min.	Typical	Max.	Unit	Remark
Input voltage range	90	220	280	Vac	
Input frequency	45	50	65	Hz	
Input current			13.5	A	
Power factor	0.98				Rated input/Rated load

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Output					
Parameter	Min.	Typical	Max.	Unit	Remark
Output voltage range	42	53.5	58	Vdc	
Output current range	0	30		A	176~290V ac input
Regulation			±1	%	
Weighted psophometric noise			2	mv	
Wide frequency noise voltage			100	mV	3.4 ~ 150KHz
			30	mV	150 ~ 30000KHz
Ripple (Vp-p)			200	mv	Rated input/output, add 0.1uFfilm capacitor and10uF high frequency electrolyte capacitor, oscilloscope bandwidth is20MH z
Output power	0	1620		W	176-280V input
	0	800		W	151-175V input
	0	600		W	90-150V input
Output efficiency	91			%	220V AC input
	83			%	110V AC input
Temperature coefficient			±0.02	%/°C	
Transient response recovery			200	us	25% ~ 50% ~ 25% and 50% ~ 75% ~ 50% load variation
Transient response overshoot			±5	%	
Turn-on time	3		8	s	Rated input/rated load; Start up under rated input, output voltage to 42VDC; Start up output shall adopt pre-limiting current.
Overshoot/undershoot @ star-up/shutdown			5	%	Rated input, rated load
Hold-up time	10			ms	Rated input, rated load
Current sharing			±5	%	

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Protection					
Item	Unit	Min.	Typical	Max.	Recovery Property
Input over-voltage	Vdc	285	295		Auto recovery
Input over-voltage recovery set point	Vdc	280			Hysteresis not less than 5V
Input under-voltage	Vdc			85	Auto recovery
Input under-voltage recovery set point	Vdc			90	Hysteresis not less than 5V
Output over-voltage protection set point	V	58.5	59	61.5	Lock up
Output current-limiting	A	32	33	34	Auto recovery
Short circuit	A	Long-term short circuit permissible; Hiccup when short circuit detected			Auto recovery
Power over temperature		Auto Recovery within ambient temperature of 60°C			
Fan failure		When one fan fails, the module will run with automatic derating. (when input voltage is 220Vac, the output current is 15A, 7.5A with 110Vac) and report alarm till the module high temp. protection cut off output. When both fans fail, the module cut off output after reporting alarm.			

Insulation		
Item	Class	Standard(test condition)
Insulation voltage (output-GND)	500Vac	500Vac / 1 Min / leakage current≤30mA
Insulation voltage (input-GND)	1500Vac	1500Vac / 1 Min / leakage current≤30mA
Insulation voltage (input-output)	2000Vac	3000Vac / 1 Min / leakage current≤30mA
Insulation resistance	10MΩ	Relative humidity: 90%, testing voltage: DC500V, insulation resistance (input-output, input-GND, output-GND) is not less than 10MΩ
Leakage current	≤3.5mA	280VACinput

Remark: Remove the discharge tube when testing.

Mechanical Spec.	
Length (in./mm)	8.2/208
Width (in./mm)	4.6/116.5
Height (in./mm)	1.6/41.6
Weight (kg)	1.55

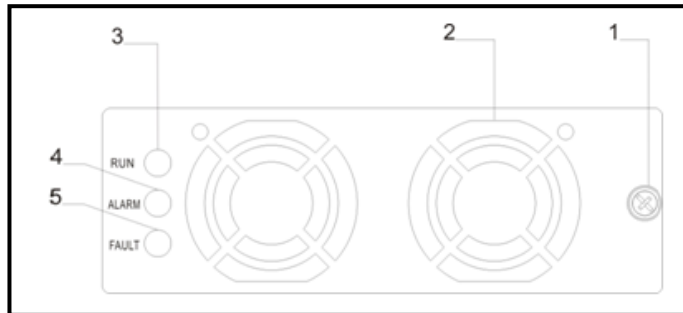
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3. Operating ambient requirements of VRM4830

- 1) Operating ambient temperature: $-33^{\circ}\text{C} \sim +55^{\circ}\text{C}$ (under ambient temperature of 55°C , system normally works with full load $+55 \sim +65^{\circ}\text{C}$ linear derating $2\%/^{\circ}\text{C}$)
- 2) Relative humidity: $5\% \sim 95\%$ (no condensing)
- 3) Storage temperature: $-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$
- 4) Atmospheric pressure: $70 \sim 106\text{KPa}$
- 5) Cooling method: fan forced cooling

4. Description and maintenance of VRM4830

4.1 Description of panel and interface



1. Fixing screw
3. Operation indicator (green)
5. Fault alarm indicator (red)

2. Fan
4. Failure alarm indicator (yellow)

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4.2 Indicating LED

Indication	Color	Normal	Abnormal	Cause of abnormality
Operation	Green	ON	OFF	Off when AC mains fails or no output in module
Alarm	Yellow	OFF	ON	On when auto derating, current limiting, fan pre-alarm or temperature pre-alarm abnormally occur.
Failure	Red	OFF	ON	On when module shutdown under situation of output over-voltage, over temperature, fan failure, remote shutdown or no output caused by internal errors.

4.3 Operations and maintenance of VRM4830

1. If the red indicator (FAULT) on the panel of rectifier module is on during normal situation, it means that the rectifier module is faulted. Then the module shall be removed from system for maintenance. If the rectifier is damaged, please contact special personnel for maintenance, or contact Technical Service Department of our company. Debugging is prohibited if it is not implemented by professional staff from NIMAC POWER SYSTEMS.

2. Hot-swappable

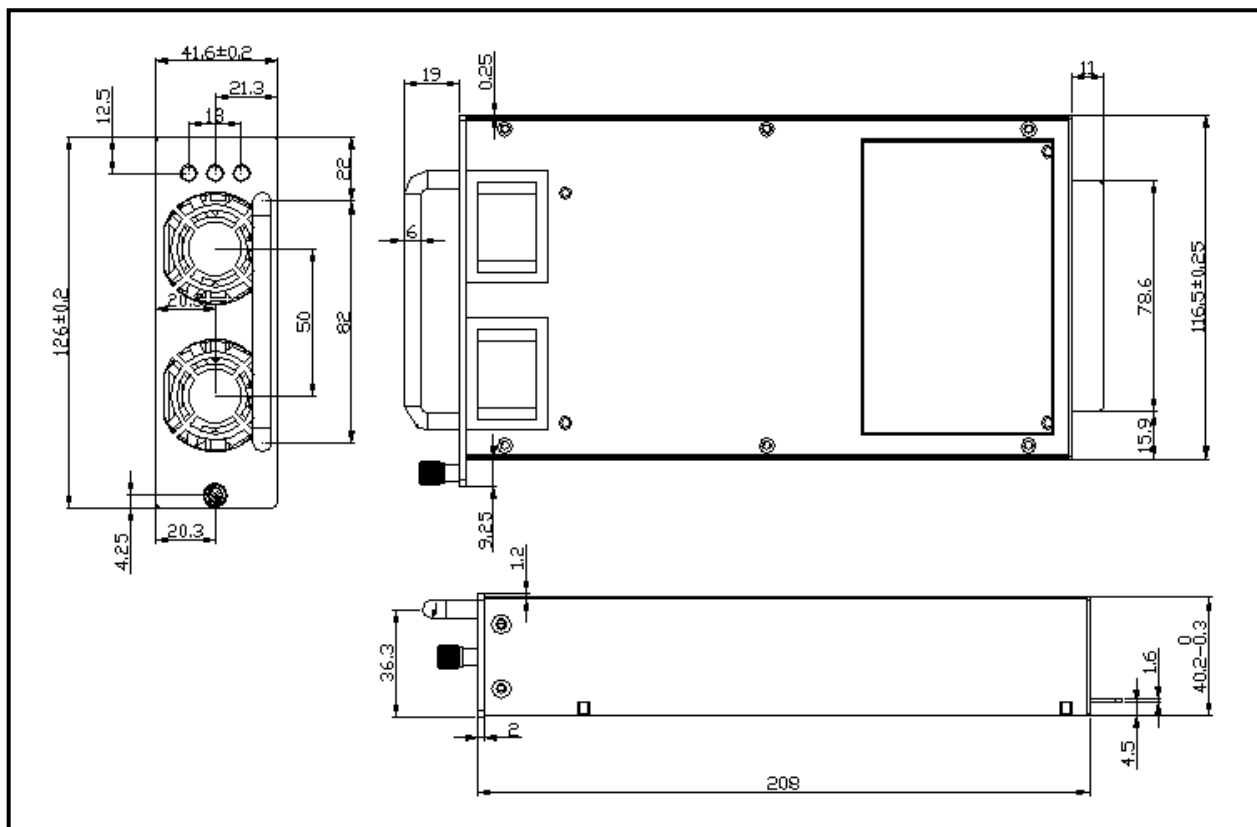
(1) Users don't have to switch off the AC power while removing faulted module, just screw off the fixing screw, and then pull out the module while holding the handle. If certain module needs to be maintained, the whole system doesn't power off in order to ensure the normal operation of power system.

(2) Be sure that indicators on the panel of rectifier modules are off before the electrical interface of rectifier module is connected with power system.



RECTIFIER MODULE

VRM4830 Drawing:



Click / Scan Here

