

FEATURES

1. Universal AC input 80~264VAC
2. 5"x3"miniature size
3. Refer to ANSI/AAMIES60601-1 and IEC/BSEN/EN60601-1Medical Safety Certification(2xMOPP)
4. Cooling by free air convection for 200W and 320W with25CFM forced air
5. No load power consumption<0.5W by PS-ON control
6. 5Vdc standby,12V fan supply,power good,power Fail and remote sense
7. Protections:Short circuit/Overload/Over voltage/Over temperature
8. Operate at 5000 meters above sea level
9. 3 years warranty

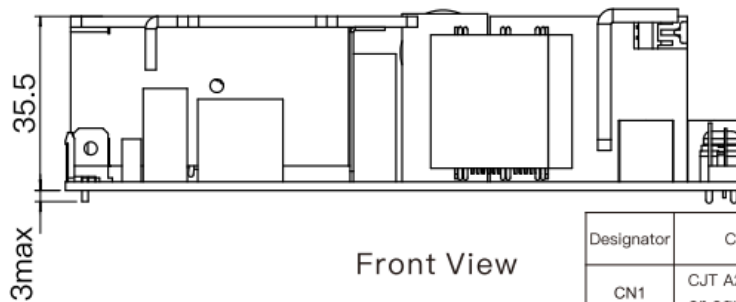
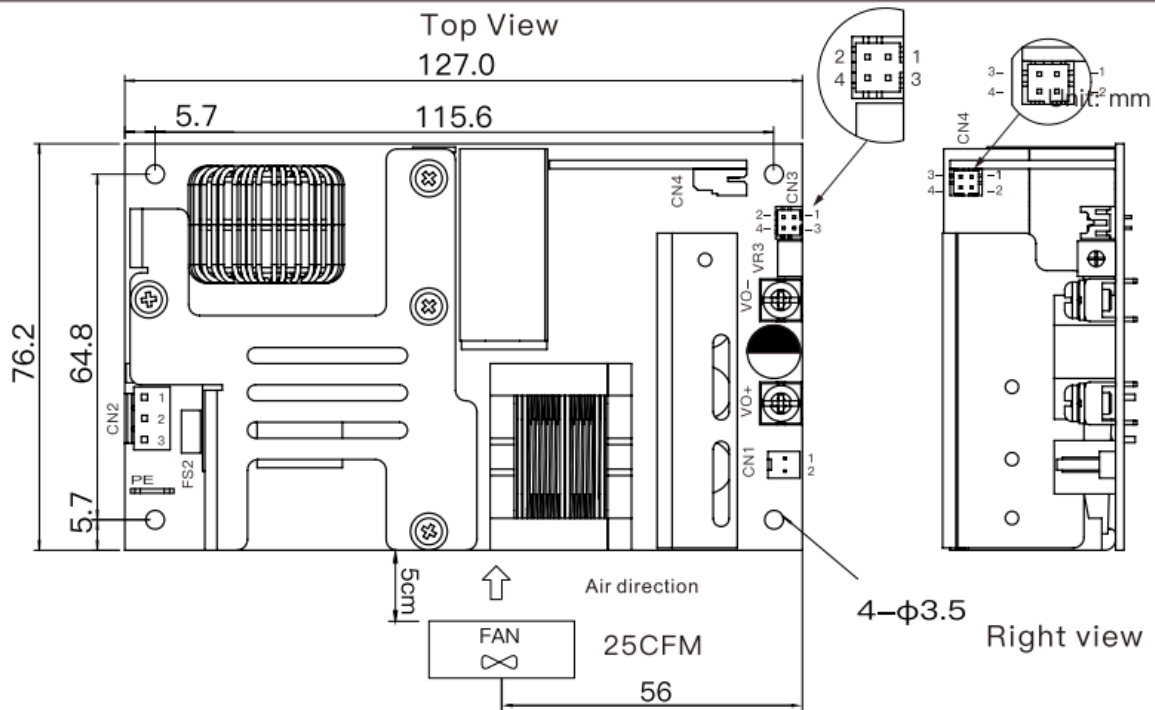


**3 years
Warranty**

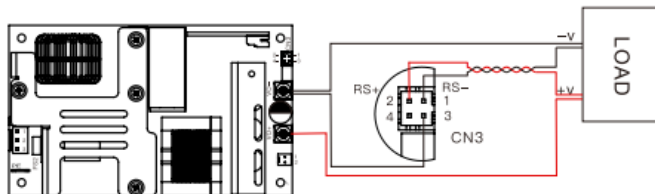
Specification								
MODEL		RAOF320-20B12	RAOF320-20B15	RAOF320-20B24	RAOF320-20B27	RAOF320-20B36	RAOF320-20B48	
INPUT	VOLTAGE RANGE	80~264VAC(refer to 'static characteristic')						
	FREQUENCY RANGE	47~63Hz						
	POWER FACTOR	PF>0.93/230VAC PF>0.98/115VAC at full load						
	EFFICIENCY(Typ.)	90%	90%	92.5%	92.5%	93%	93%	
	AC CURRENT(Typ.)	3.5A/115VAC 1.8A/230VAC						
	INRUSH	35A/115VAC 70A/230VAC(cold start)						
	LEAKAGE CURRENT	Earth leakage current<200uA/264VAC50Hz,touch current<70uA/264VAC						
OUTPUT	DC VOLTAGE	12V	15V	24V	27V	36V	48V	
	VOLTAGE ADJ.RANGE	11.4~12.6V	14.25~15.75V	22.8~25.2V	25.7~28.4V	34.2~37.8V	45.6~50.4V	
	RATED CURRENT	Convection	0~16.67A	0~13.33A	0~8.33A	0~7.4A	0~5.56A	0~4.17A
		25CFM	0~27A	0~21.6A	0~13.5A	0~11.1A	0~8.3A	0~6.75A
	RATED POWER	Convection	200W	200W	200W	200W	200W	200W
		25CFM	324W	324W	324W	300W	300W	324W
	RIPPLE&NOISE(max.)	120mVp-p	120mVp-p	150mVp-p	200mVp-p	225mVp-p	250mVp-p	
	VOLTAGE TOLERANCE	±3.0%	±3.0%	±2.0%	±2.0%	±2.0%	±2.0%	
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	
SETUP,RISE TIME	1000ms,30ms/230VAC			1500ms,30ms/115VACat full load				
HOLD UP TIME(Typ.)	16ms/230VAC			16ms/115VACat full load				
PROTECTION	OVERLOAD	105-135%rated output power Protection type:Hiccup mode,recovers automatically after fault condition is removed						
	OVER VOLTAGE	13.5~15V	16.2~18.5V	26~30V	29.2~33.7V	39~33.7V	52~59.5V	
		Protection type:Shut down,recovers after repower on						
OVER TEMPERATURE	Protection type:Shut down,recovers after repower on							
FUNCTION	5V STANDBY	5Vsb:5V@0.6A without fan,1A with fan 25CFM;tolerance 2%,ripple:150mVp-p(max.)						
	FAN SUPPLY	12V@0.5Afor driving a fan;Tolerance-15%~+10%at main output 35%rated current						
	PS-ON INPUT SIGNAL	Power on:PS-ON="Hi"or"2~5V";Power off:PS-ON="Low"or"0~0.5V"						

	POWER GOOD/ POWER FAIL	500ms>PG>10ms;The TTL signal goes high with 10ms to 500ms delay after power set up; The TTL signal goes low at least 1ms before Vo below 90%of rated value		
ENVIRONMENT	WORKING TEMP	-30~+70°C(Referto "Derating curve")		
	WORKING HUMIDITY	20~90%RH,non-condensing		
	STORAGE TEMP,HUMDITY	-40~+85°C,10~95%RH,non-condensing		
	TEMP.COEFFICIENT	±0.03%(0~50°C)		
	VIBRATION	10-500Hz,2G10min./1 cycle,each along X、 Y、 Z axes		
	OPERATING ALTITUDE	5000m		
Safety and electromagnetic compatibility	Safety standards	Refer toUL62368-1,TUV EN62368-1,CCC GB4943.1,EN60601-1(2XMOPP)		
	Withstand voltage and isolation resistance	I/P-O/P:4KVac;100MΩ/500Vdc/25°C/70%RH		
		I/P-FG:2KVac;100MΩ/500Vdc/25°C/70%RH		
		O/P-FG:1.5KVac;100MΩ/500Vdc/25°C/70%RH		
	Electromagnetic compatibility emission	Parameter	Standard	Test Level/Note
		Conducted emission	BS EN/EN55032(CISPR32),FCC PART 15/CISPR22,GB9254.1	Class B
		Radiated emission	BS EN/EN55032(CISPR32),FCC PART 15/CISPR22,GB9254.1	Class B
		Harmonic current	BSEN/EN61000-3-2,GB17625.1	Class A
		Voltage flicker	BS EN/EN61000-3-3	---
	Electromagnetic compatibility immunity	BS EN/EN55035		
		Parameter	Standard	Test Level /Note
		ESD	BS EN/EN61000-4-2	Level 4,8KVair,Level 2,4KV contact, criteria A
		RF field susceptibility	BS EN/EN61000-4-3	Level 3,criteria A
EFT bursts		BS EN/EN61000-4-4	Level 3,criteria A	
Surge susceptibility		BS EN/EN61000-4-5	Level 4,2KV/L-N,4KV/L/N-FG	
Conducted susceptibility		BS EN/EN61000-4-6	Level 3,criteria A	
Magnetic field immunity		BS EN/EN61000-4-8	Level 4,criteria A	
Voltage dips and interruptions	BS EN/EN61000-4-11	>95%dip 0.5 periods,30%dip 25 periods,>95%interruptions 250 periods		
OTHERS	DIMENSION	PCB:127*76.2*35.5mm(L*W*H)		
	PACKING	0.37Kg;36pcs/14.3Kg/0.96CUFT		
NOTE	<p>1.All parameters NOT specially mentioned are measured at 230VAC input,rated load and 25°C of ambient temperature.</p> <p>2.Ripple &noise are measured at 20MHz of bandwidth by using a 12"twisted pair-wire terminated with a 0.1uF &47uF parallel capacitor.</p> <p>3.Tolerance:includes set up tolerance,line regulation and load regulation.</p> <p>4.Line regulation is measured from low line to high line at rated load.</p> <p>5.Load regulation is measured from 0%to 100%rated load</p> <p>6.Length of set up time is measured at cold first start,Turning ON/OFF the power supply very quickly may lead to increase of the set up time.</p> <p>7.The ambient temperature derating of 5°C/1000m is needed for operating altitude great than 2000m(6500ft).</p> <p>8.The power supply is considered a component which will be installed into a final equipment.All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness.The final equipment must be re-confirmed that it still meets EMC directives.</p>			

Mechanical specification



NOTE:
Unit: mm
VR3: Output adjustable resistor
TOL: ±1.00



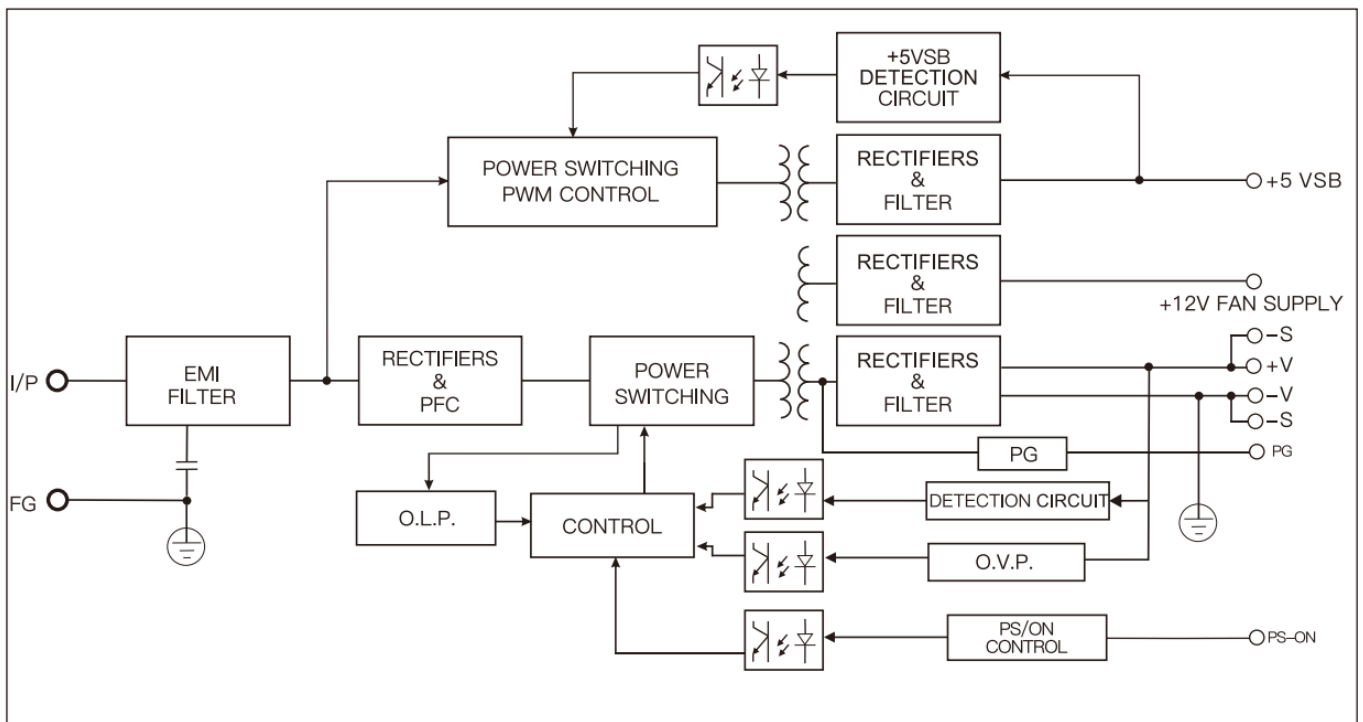
NOTE:

1. RS- and RS+ cannot be short-circuited or reversed; otherwise, the power module will be damaged;
2. The remote sensing compensation function compensates the voltage drop of the output cable, which is included in the positive end of the output Sum of cable voltage drop and output negative end;
3. When using remote sensing compensation function, the signal pin should be connected with the load end using twisted pair;

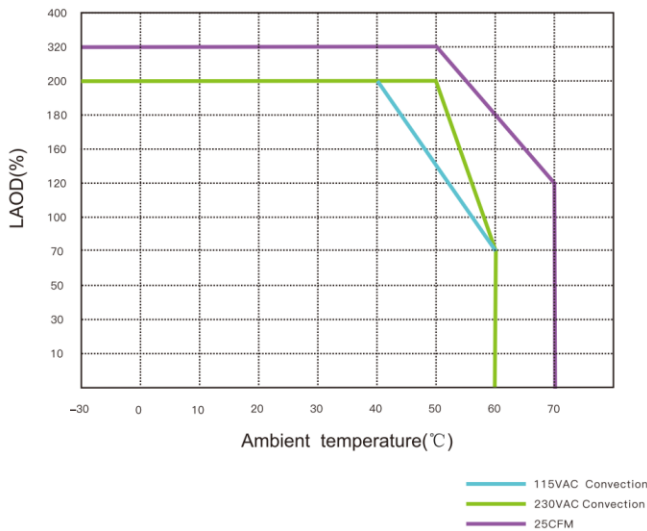
Designator	Connector	Function	PIN	Assignment
CN1	CJT A2543WV-2P or equivalent	FAN SUPPLY	1	FAN-
			2	FAN+
CN2	CJT A3963WV-3P- Aor equivalent	INPUT	1	AC/N
			2	NC
			3	AC/L
CN3	CJT A2006WV-2X2P or equivalent	RS	1	RS-
			2	RS+
		PG	3	GND
			4	PG
CN4	CJT A2006WR-2X2P or equivalent	5V STANDBY	1	+5V
			2	GND
		PS-ON INPUT SIGNAL	3	PS-ON
			4	GND
PE	K12-00A(H) 宁波高松 or equivalent	⏏		
VO-	宁波高正 K93-01A(I) K12-00A(H) DEGSON or	OUTPUT		-V
VO+				+V

K93-01A(H)
DEGSON or

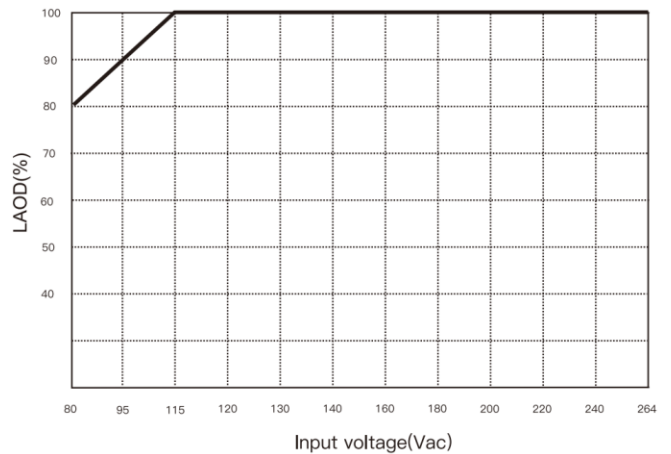
Block diagram



Derating curve



Static characteristics



NORPAS-POWER TECHNOLOGY CO., LTD.

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Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at www.norpas-power.com

REV:07/2024