

### FEATURES

1. Universal AC input 80~264VAC
2. 4"X2" miniature size
3. High efficiency up to 90%
4. LED indicator for power on
5. Cooling by free air convection for 84W and 120W with 10CFM forced air
6. Built-in 12V/0.5A FAN supply
7. Refer to medical safety (2XMOPP) according to ANSI/AAMI ES60601-1 and IEC/BS EN60601-1
8. 3 years warranty



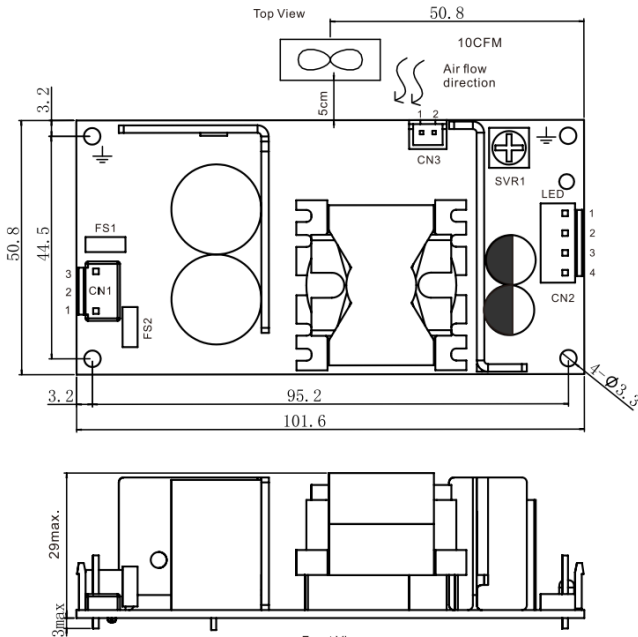
3 years  
Warranty

### Specification

MODEL		RAO120-20B12MU	RAO120-20B15MU	RAO120-20B24MU	RAO120-20B27MU	RAO120-20B36MU	RAO120-20B48MU	
INPUT	VOLTAGE RANGE	80~264VAC 120~370VDC(Refer to"Static characteristics")						
	FREQUENCY RANGE	47~63Hz						
	EFFICENCY(Typ.)	89%	89%	89%	89%	90%	90%	
	AC CURRENT(Typ.)	2.3A/115VAC 1.2A/230VAC						
	INRUSH CURRENT(Typ.)	30A/115VAC 60A/230VAC (cold start)						
	LEAKAGE CURRENT	Earth leakage current<130uA/264VAC,touch current<40uA/264VAC						
OUTPUT	DC VOLTAGE	12V	15V	24V	27V	36V	48V	
	RATED CURRENT	10CFM	10A	8A	5A	4.44A	3.33A	2.5A
		Convection	7A	5.6A	3.5A	3.11A	2.33A	1.75A
	RATED POWER	10CFM	120W	120W	120W	119.88W	119.88W	120W
		Convection	84W	84W	84W	83.97W	83.88W	84W
	RIPPLE&NOISE(max)	100mVp-p 100mVp-p 100mVp-p 100mVp-p 100mVp-p 100mVp-p						
	VOLTAGE ADJ.RANGE	11.4~12.6V	14.2~15.8V	22.8~25.2V	25.6~28.4V	34.2~37.8V	45.6~50.4V	
	VOLTAGE TOLERANCE	±2%	±2%	±1%	±1%	±1%	±1%	
	LINE REGULATON	±0.5%	±0.50%	±0.5%	±0.5%	±0.59%	±0.5%	
	LOAD REGULATION	±1%	±1%	±1%	±1%	±1%	±1%	
SETUP.RISE TIME	500ms,30ms/230VAC 500ms,30ms/115VAC							
HOLD UP TIME(Typ.)	50ms/230VAC 10ms/115VAC							
PROTECTION	OVER LOAD	110%~150%rated output power Protection type:Hiccup mode,recovers automatically after fault condition is removed						
	OVER VOLTAGE	15~18V	18~24V	29~35V	35~42V	43.5~52.5V	56~66V	
		Protection type:Shunt down,recovers after repower on						
OVER TEMPERATURE	Protection type:Shunt down,recovers after repower on							
FUNCTION	FAN SUPPLY	12V@0.5A for driving a fan;tolerance±10% at main output 40% rated current(10CFM)						
ENVIRONMENT	WORKING TEMP.,HUMIDITY	-30~+70°C(Refer to"Derating curve"),20~90%RH non-condensing						
	STORAGE TEMP.,HUMIDITY	-40~+85°C,10~95%RH						
	TEMP.COEFFICIENT	±0.03%/°C(0~50°C)						
	VIBRATION	10~500Hz,2G 10min./1 cycle,each along X、Y、Z axes						

Safety and electromagnetic compatibility	Safety standards	Refer to UL62368-1,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	<b>Parameter</b>	<b>Standard</b>	<b>Test Level /Note</b>
		Conducted emission	BS EN/EN55032(CISPR32),FCC PART 15/CISPR22 ,GB9254.	Class B
		Radiated emission	BS EN/EN55032(CISPR32),FCC PART 15/CISPR22 ,GB9254.	Class B
		Harmonic current	BS EN/EN61000-3-2,GB17625.1	Class A
		Voltage flicker	BS EN/EN61000-3-3	
	Electromagnetic compatibility immunity	BS EN/EN55035		
		<b>Paramete</b>	<b>Standard</b>	<b>Test Level /Note</b>
		ESD	BS EN/EN61000-4-2	Level 4,8KV air,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 criteria A
Conducted susceptibility		BS EN/EN61000-4-6	Level 3,criteria A	
Magnetic field immunity		BS EN/EN61000-4-8	Level4.criteri	
Voltage dips and interruptions		BS EN/EN61000-4-11	>95% dip 0.5 periods,30%dip 25 periods, >95%interruption 250 periods	
OTHERS	MTBF	≥500Khrs MIL-HDBK-217F(25°C)		
	DIMENSION	PCB:101.6*50.8*29mm(L*W*H)		
	PACKING	0.19Kg;96pcs/19.24Kg/1.51CUFT		
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 &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF &amp; 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 greater 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 1 mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives.</p>			

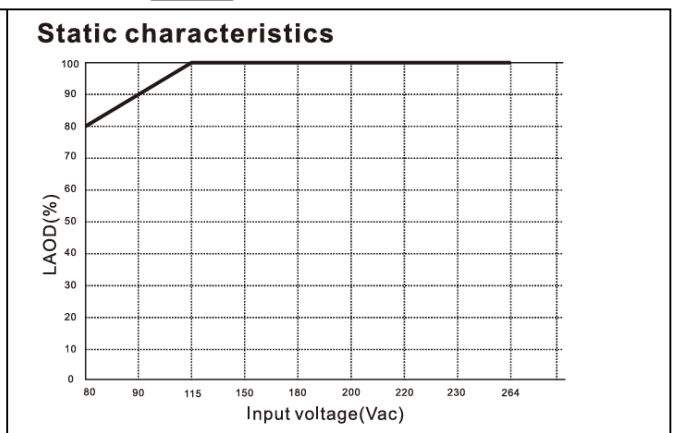
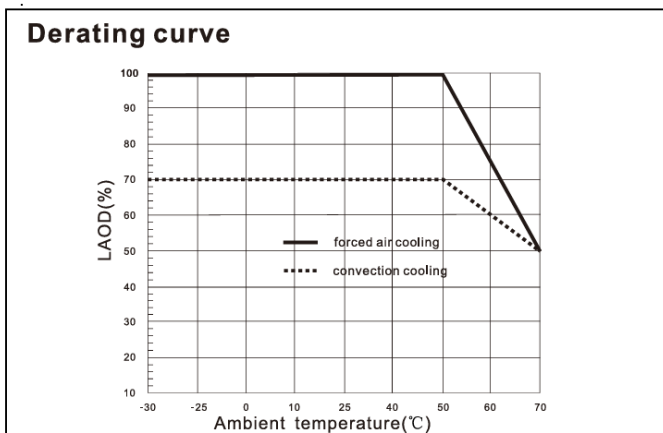
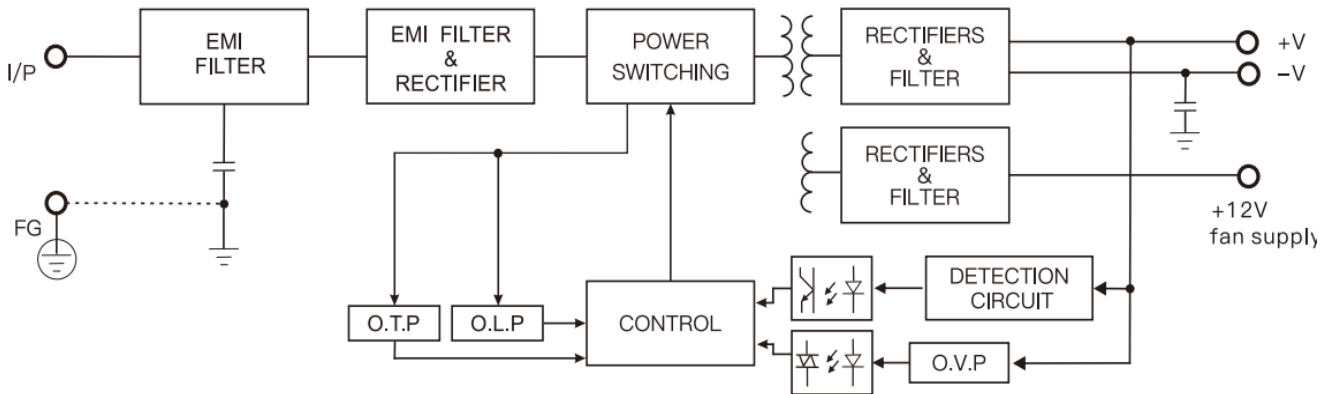
### Mechanical Specification



NOTE:  
Unit: mm  
SVR1: Output adjustable resistor  
TOL:  $\pm 1.00$

Designator	Connector	Function	PIN NO.	Assignment
CN1	CJT A3963WV-3P- A or equivalent	AC input	1	AC/N
			2	NC
			3	AC/L
CN2	CJT A3963WV-6P or equivalent	DC output	1~2	+V
			3~4	-V
CN3	CJT A2501WV-2P or equivalent	12V Fan supply	1	-V
			2	+V

### Block Diagram



**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

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