

Product Specification for:

NR2-MVR700

1+1 Redundant Power Supply

NegoRack®

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1.0 INPUT(PER UNIT)

1.1 Input Voltage

Minimum	Nominal	Maximum	Units
90Vac	100Vac~240Vac	264Vac	Vrms

1.2 Input Current

10.0A max at 100Vac~240Vac.

1.3 Inrush Current

120A max @ any phase of 230Vac input when 25 °C cold start.

1.4 POWER EFFICIENCY

80% minimum under the load conditions defined in below table and 115Vac input.

Loading Table for Efficiency Measurements

Loading	+12V	+3.3V	+5V	-12V	+5Vsb	EFF
Light	8.8A	3.7A	3.7A	0.2A	0.5A	>80%
Typical	22.0A	9.2A	9.2A	0.4A	1.2A	>82%
Full	44.0A	18.4A	18.4A	0.8A	2.3A	>80%

1.5 POWER FACTOR

0.95min under 230Vac , full load

1.6 LEAKAGE CURRENT

3.5mA (max.) at 115Vac input

2.0 OUPUT(PER UNIT)

2.1 Output Rating Table (Per Unit)

Voltage	+5V	+3.3V	+12V	-12V	+5Vsb
* c Max load	30A	30A	58.0A	1.0A	3.0A
Min load	0.3A	0.3A	0.3A	0.0A	0.0A
* d Regulation	+5,-5%	+5,-5%	+5,-5%	+10,-10%	+5,-5%
* 3 Ripple & Noise	50mV	50mV	120mV	120mV	50mV

* c The continuous total output power is 700W Max.

The combined power of +5V and +3.3V is 200W max.

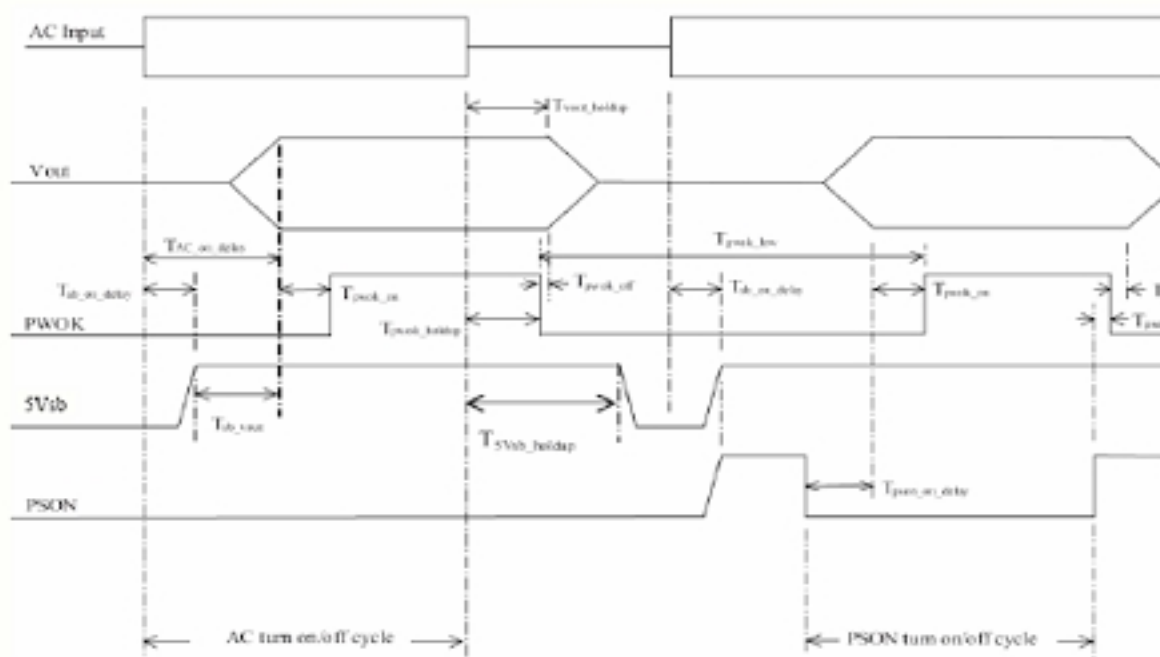
* d LOAD REGULATION TEST TABLE:

	+12V	+3.3V	+5V	-12V	+5Vsb
LOAD1	0.3A	0.3A	0.3A	0.0A	0.0A
LOAD2	8.8A	3.7A	3.7A	0.2 A	0.5A
LOAD3	22.0A	9.2A	9.2A	0.4A	1.2A
LOAD4	44.0A	18.4A	18.4A	0.8A	2.3A
LOAD5	39.5A	30.0A	20.0A	0.5A	3.0A
LOAD6	39.5A	15.0A	30.0A	1.0A	3.0A
LOAD7	55.0A	1.0A	1.0A	1.0A	3.0A

* 3The ripple & noise is measured over a bandwidth of 10Hz to 20MHz at the power supply output connectors. A 10 μ F electrical capacitor in parallel with a 0.1 μ F ceramic capacitor is placed at the point of measurement.

2.2 Power Supply Timing

Below figure & table shows the power supply timing & requirements



Turn	Description	Min	Max	Units
Tvout_rise	Output voltage rise from 10% to 90% time	1	20	ms
Tsb_on_delay	Delay from AC being applied to 5Vsb being within regulaton		2000	ms
Tac_on_delay	Delay from AC being applied to 12V being within regulaton		2000	ms
Tsb_vout	Delay from 5Vsb being in regulation to 12V being in regulation at AC turn on	50	1000	ms
Tpson_on_delay	Delay from PSON active to output voltages being within regulation limits	5	500	ms
Tpwok_on	Delay from output voltages within regulation limits to PWOK asserted at turn on	100	500	ms
Tvout_holdup	All output stay within regulation after loss of AC	16		ms
Tpwok_holdup	Delay from loss of AC to de-assertion of PWOK	14		ms
Tpwok_off	Delay from PWOK de-asserted to output voltages dropping out of regulation limits	1		ms

2.2.1 Rise Time(Tvout_rise)

The output must rise from 10% to 90% within regulation limits within 1 to 20ms.

All outputs must rise monotonically.

2.2.2 Tsb-on & Tac-on Delay Time

The Tsb-on delay time for 5Vsb should be $\leq 2s$ at 115Vac/230Vac when full load.

The Tac-on delay time for 12V should be $\leq 2s$ at 115Vac/230Vac when full load.

2.2.3 Main Output Delay Time(Tsb_vout)

The main output being in regulation delay from 5Vsb being in regulation should be 50 to 1000ms when at AC turn on.

2.2.4 Tpson_on_delay

The output must be within regulation after PSON active for 5 to 500ms.

2.2.5 Power Work OK Delay(Tpwok_on)

PWOK should delay from all output within regulation for 100 to 500ms.

2.2.6 Hold Up Time(Tvout_holdup)

The hold up time for all output should >16 ms, at 115Vac/230Vac input when 80% full load.

The hold up time for PWOK should >14 ms, at 115Vac/230Vac input when 80% full load.

2.2.7 Power Fail Delay Time(Tpwok_off)

All output dropping out of regulation delay from PG should ≥ 1 ms when power off at full load

2.3 TRANSIENT OVERSHOOT

The overshoot is less than 10% with 30% load change:

Output voltage	+5V	+3.3V	+12V
Max. step size	30%	30%	30%

Load-changing repetition rate of 10m seconds.

Load slew rated 1.0A/uS and capacitive load as below :

+5V	+3.3V	+12V	-12V	+5Vsb
10000uF	10000uF	10000uF	330uF	10000uF

2.4 Current Sharing and hot plug

As this power supply has redundant function, the output current sharing should within $\pm 10\%$

when half , full load and within $\pm 15\%$ at light load. The supplies must be able to load share in parallel and operate in a hot-swap/redundant configuration.

LOAD REGULATION TEST TABLE:

	+12V	+3.3V	+5V	-12V	+5Vsb	SPEC
LOAD1	0.3A	0.3A	0.3A	0.0A	0.0A	REF
LOAD2	11.6A	0.0A	0.0A	0.0A	0.0A	$\pm 15\%$
LOAD3	29.0A	0.0A	0.0A	0.0A	0.0A	$\pm 10\%$
LOAD4	58.0A	0.0A	0.0A	0.0A	0.0A	$\pm 10\%$
LOAD5	0.0A	6.0A	0.0A	0.0A	0.0A	$\pm 15\%$
LOAD6	0.0A	15.0A	0.0A	0.0A	0.0A	$\pm 10\%$
LOAD7	0.0A	30.0A	0.0A	0.0A	0.0A	$\pm 10\%$
LOAD8	0.0A	0.0A	6.0A	0.0A	0.0A	$\pm 15\%$
LOAD9	0.0A	0.0A	15.0A	0.0A	0.0A	$\pm 10\%$
LOAD10	0.0A	0.0A	30.0A	0.0A	0.0A	$\pm 10\%$
LOAD11	44.0A	18.4A	18.4A	0.0A	0.0A	$\pm 10\%$

3.0 PROTECTION

When OVP,OCP,OPP,OTP or short protection is triggered, the main outputs will be latched off. The main outputs can be reset by cycling the DC remote on/off . +5Vsb output is auto recovery when fault condition removed.

3.1 OVER CURRENT PROTECTION (PER UNIT)

+5V output: 35A~45A

+3.3V output: 35A~45A

+12V output: 62A~72A

3.2 No-load operating

No damage or hazardous condition should occur with all the DC output connectors disconnected from the load. The power supply may latch into the shut down state.

3.3 OVER VOLTAGE PROTECTION

+3.3V output: 4.5 Vmax.

+5.0V output: 7.0 Vmax.

+12.0V output: 15.6 Vmax.

3.4 SHORT PROTECTION

All output to GND.

3.5 OVER POWER PROTECTION (PER UNIT)

110%~160% of full load

3.6 OVER TEMPERATURE PROTECTION (PER UNIT)

Ambient 55 ±3 °C

3.7 WARNING METHOD

Status		Module LED	Backplane LED	Buzzle	TTL Level
Normal		green	green	quiet	high
Fault	Only +5Vsb	yellow	flash	alarm	low
	No +5Vsb	off	flash	alarm	low
Reset		Yellow/off	flash	quiet	low

* Audio alarm: buzzer sounds: di...di..., Can be eliminated by the reset button.

Unplug the abnormal modules, all signals will be back to normal.

4.0 ENVIRONMENT:

4.1 Operating Temperature:

0°C to +50°C

4.2 Storage Temperature:

-20°C to +70°C

4.3 Operating Humidity:

10% to 90%, non-condensing at 40°C

4.4 Storage Humidity:

5% to 95%, non-condensing at 50°C

4.5 Operating Altitude:

0 to 5000m

5.0 SAFETY:

5.1 Primary to Secondary (PCBA)

3000Vac or 4242Vdc for 60 seconds

5.2 Primary to Earth

1500Vac or 2121Vdc for 60 seconds

5.3 Grouding Resistance

Earth ground to ground 32A , 100m ohms Max.

6.0 SAFETY and EMI REQUIREMENT

6.1 EMI

6.1.1 MEET FCC: Class A

6.1.2 MEET CCC

6.1.3 MEET CE

6.2 SAFETY STANDARDS

6.2.1 MEET CCC

7.0 MTBF at 25°C(Demonstrated)

100K hrs Minimum

8.0 Dimensions

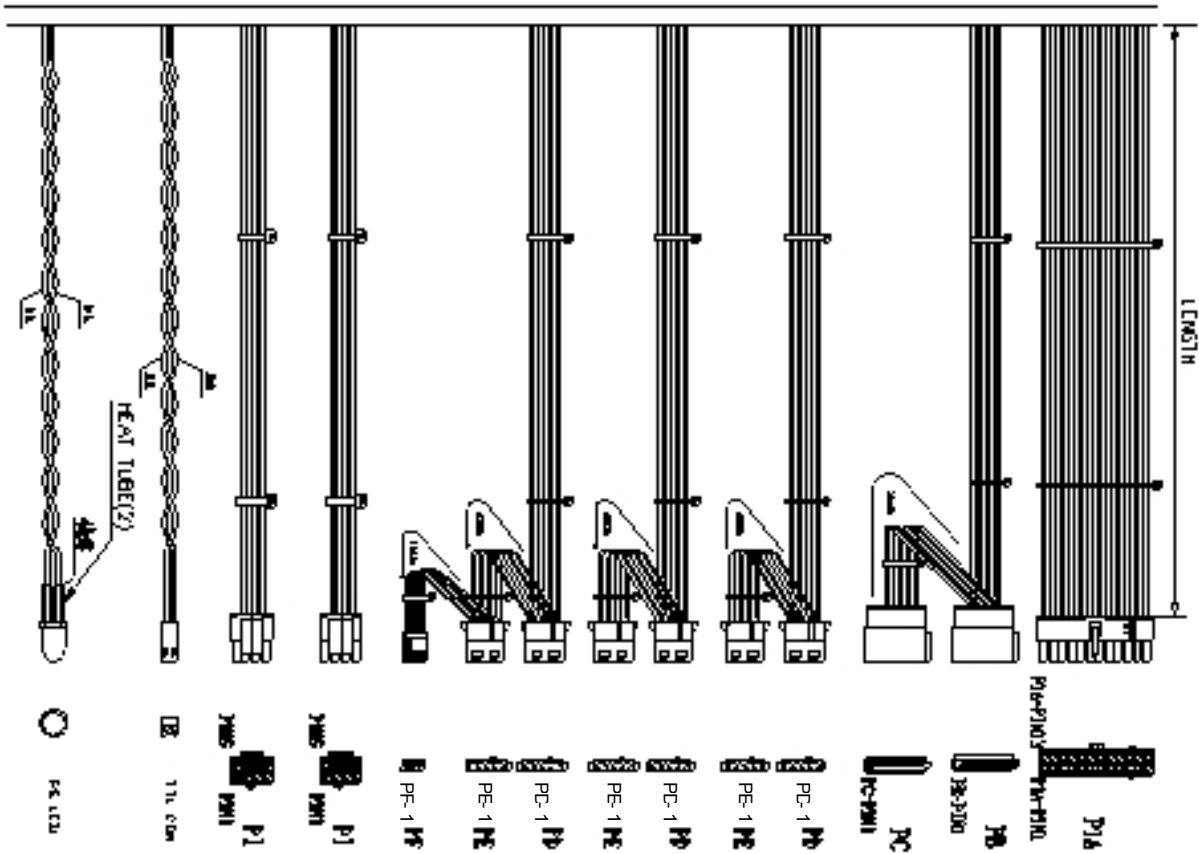
8.1 OUTLINE

NR2-MVR700 H86mm*W150mm*D185mm

8.2 Shown in Figure

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	1.1				

正式	A0				
	A1				

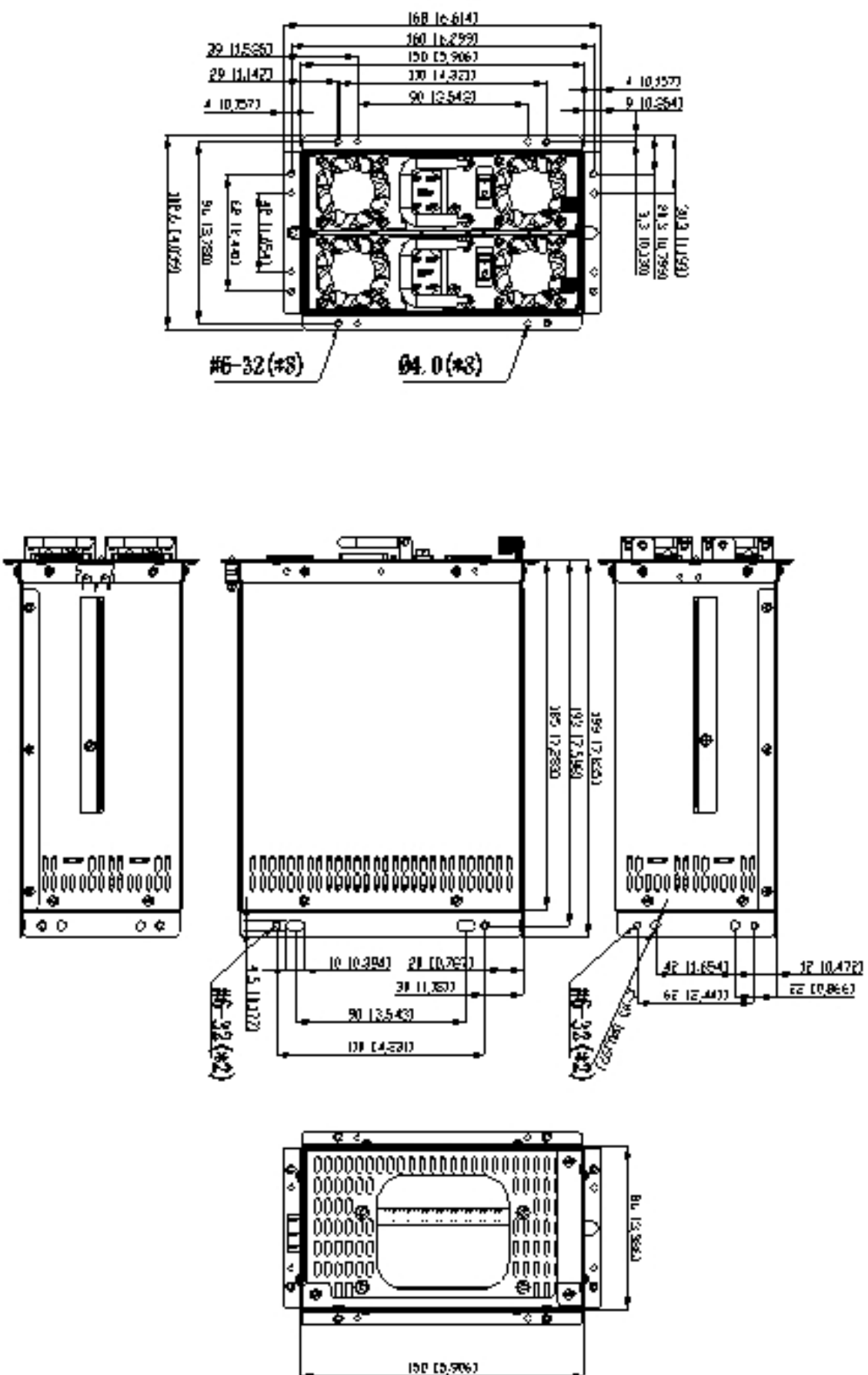


Item	Part	Material	Quantity	Unit	Notes
1	PC-1	PC-1	1	PC-1	PC-1
2	PC-2	PC-2	1	PC-2	PC-2
3	PC-3	PC-3	1	PC-3	PC-3
4	PC-4	PC-4	1	PC-4	PC-4
5	PC-5	PC-5	1	PC-5	PC-5
6	PC-6	PC-6	1	PC-6	PC-6
7	PC-7	PC-7	1	PC-7	PC-7
8	PC-8	PC-8	1	PC-8	PC-8
9	PC-9	PC-9	1	PC-9	PC-9
10	PC-10	PC-10	1	PC-10	PC-10
11	PC-11	PC-11	1	PC-11	PC-11
12	PC-12	PC-12	1	PC-12	PC-12
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NOTE:

P1A	PC-1A	PC-1A	PC-1A	PC-1A
P1B	PC-1B	PC-1B	PC-1B	PC-1B
P1C	PC-1C	PC-1C	PC-1C	PC-1C
P1D	PC-1D	PC-1D	PC-1D	PC-1D
P1E	PC-1E	PC-1E	PC-1E	PC-1E
P1F	PC-1F	PC-1F	PC-1F	PC-1F
P1G	PC-1G	PC-1G	PC-1G	PC-1G
P1H	PC-1H	PC-1H	PC-1H	PC-1H
P1I	PC-1I	PC-1I	PC-1I	PC-1I
P1J	PC-1J	PC-1J	PC-1J	PC-1J
P1K	PC-1K	PC-1K	PC-1K	PC-1K
P1L	PC-1L	PC-1L	PC-1L	PC-1L
P1M	PC-1M	PC-1M	PC-1M	PC-1M
P1N	PC-1N	PC-1N	PC-1N	PC-1N
P1O	PC-1O	PC-1O	PC-1O	PC-1O
P1P	PC-1P	PC-1P	PC-1P	PC-1P
P1Q	PC-1Q	PC-1Q	PC-1Q	PC-1Q
P1R	PC-1R	PC-1R	PC-1R	PC-1R
P1S	PC-1S	PC-1S	PC-1S	PC-1S
P1T	PC-1T	PC-1T	PC-1T	PC-1T
P1U	PC-1U	PC-1U	PC-1U	PC-1U
P1V	PC-1V	PC-1V	PC-1V	PC-1V
P1W	PC-1W	PC-1W	PC-1W	PC-1W
P1X	PC-1X	PC-1X	PC-1X	PC-1X
P1Y	PC-1Y	PC-1Y	PC-1Y	PC-1Y
P1Z	PC-1Z	PC-1Z	PC-1Z	PC-1Z

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版本				
1.0	首次发行		王登攀	2014.02.12
临时				
1.1				
A0				
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深圳欧陆通电子有限公司

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