

# **SPECIFICATION**

**Model Name :**

**R1J series**

**Description :**

**250W 、 300W 、 350W 、 400W 1U Redundant Power Supply**

**Version : B0**

**Issued Date : 20221109**

## 1. General Description

This specification defines the characteristic of 1 + 1 redundant power supply with 1 Unit high. And model name is R1J-250I1H2A0 for 250W 、 R1J-300I1H2A0 for 300W 、 R1J-350I1H2A0 for 350W 、 R1J-400I1H2A0 for 400W output.

## 2. Input Characteristic

### 2.1. Input connector

The input connector shall be an IEC60320 C14 inlet, rated for 15A/250Vac.

### 2.2. Input Voltage and Frequency

<i>Minimum</i>	<i>Nominal</i>	<i>Maximum</i>	<i>Measure</i>
90	100~240	264	Vac
47	50~60	63	Hz

### 2.3. Input Current and Inrush Current

<i>Input Voltage</i>	<i>Max. Input Current</i>	<i>Inrush Current</i>
115Vac	6A	25A
230Vac	3A	60A

### 2.4. Power Factor

The minimum power factor shall be 0.95 with full load and input 115Vac/60Hz.

## 3. Output Characteristic

### 3.1. DC Output Characteristic

<i>Output Voltage</i>	<i>Min. Current</i>	<i>Max. Current</i>	<i>Regulation</i>	<i>Ripple &amp; Noise</i>
+3.3V	1A	20A	±5%	60mV
+5V	1A	20A	±5%	60mV
+12V	1A	20A/24A/28A/32A	±5%	120mV
-12V	0A	0.5A	±5%	120mV
+5VSB	0.1A	2A/2A/2.5A/2.5A	±5%	50mV

Note :

1. The combined power from +3.3V and +5V shall not exceed 135W/140W/145W/150W.
2. The max total power shall not exceed 250W/300W/350W/400W.
3. Ripple and noise bandwidth is set to 20MHz.
4. Add a 0.1uF ceramic capacitor in parallel with a 10uF tantalum capacitor at output connector terminals for ripple and noise measurement.

### 3.2. Efficiency

The minimum efficiency of power supply is 80% with full load and 230Vac/50Hz input.

### 3.3. Hold up Time

The output voltages stay in regulation at least 16ms with 100% load after loss of AC input.

### 3.4. Rise Time

The output voltages rise from 10% to 90% with full load shall be in 20ms maximum.

### 3.5. Dynamic Loading

The output voltages shall remain in regulation for the step loading, and in the limits for the capacitive loading specified below :

<i>Output</i>	<i>Step Load Size</i>	<i>Load Slew Rate</i>	<i>Capacitive Load</i>
+3.3V	30% of max load	0.5A / $\mu$ sec	1000uF
+5V	30% of max load	0.5A / $\mu$ sec	1000uF
+12V	65% of max load	0.5A / $\mu$ sec	2200uF
+5VSB	25% of max load	0.5A / $\mu$ sec	1uF

### 3.6. PSON Remote on/off Control

The PSON signal is required to remotely turn on/off the power supply.

PSON is an active low TTL compatible signal that turns on the main power rails.

	<i>PSU On</i>	<i>PSU Off</i>
PSON Signal	LOW (0.8V max.)	HI (2V min.)

### 3.7. Power Good Signal

Power Good, also called PG or PWOK, is an active high TTL compatible signal.

PG signal is to indicate that all output voltages are in regulation and ready for use.

Below is for a representation of the timing characteristics of PG signal.

Power Good on delay time	100ms to 500ms
Power Good off delay time	1ms (min.)

## 4. Protection

### 4.1. Over Current Protection

<i>Output</i>	<i>Min.</i>	<i>Max.</i>	<i>Comment</i>
+3.3V	110%	150%	PSU shutdown
+5V	110%	150%	PSU shutdown
+12V	110%	150%	PSU shutdown

### 4.2. Over Voltage Protection

<i>Output</i>	<i>Min.</i>	<i>Max.</i>	<i>Comment</i>
+3.3V	3.7V	4.1V	PSU shutdown
+5V	5.7V	6.5V	PSU shutdown
+12V	13.5V	14.7V	PSU shutdown

### 4.3. Short Circuit Protection

<i>Output</i>	<i>Comment</i>
+3.3V	PSU shutdown
+5V	PSU shutdown
+12V	PSU shutdown

### 4.4. Over Temperature Protection

The power supply would be protected against over temperature condition by loss of cooling or excessive ambient temperature. The PSU will shutdown in an OTP condition.

## 5. Power System Signal Status

### 5.1. Buzzer Status

<i>Power Supply Condition</i>	<i>Buzzer Status</i>
No input power to PSU	OFF
Input present/ only standby output on	OFF
Power supply outputs ON and OK	OFF
Power supply failure	Beeping

### 5.2. LED Indicator

<i>Power Supply Condition</i>	<i>Module LED</i>	<i>System LED</i>	<i>PW1/PW2 LED</i>
No input power to PSU	OFF	OFF	OFF
Input present/ only standby output on	Red	Amber	OFF
Power supply outputs ON and OK	Green	Green	Amber
Power supply failure	Red or OFF	Green Blinking	OFF

System LED and PW1 PW2 LED are optional.

### 5.3. TTL Signal

<i>Power Supply Condition</i>	<i>Output Condition</i>	
	<i>Min.</i>	<i>Max.</i>
Normal (Power Supply ON)	3V	5.25V
Failure (Power Supply OFF)	0V	1V

## 6. Insulation

### 6.1. Dielectric Withstand Voltage

Primary to Ground	1500Vac (10mA) for 1 second
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### 6.2. Leakage Current

Leakage current is 3.5mA maximum at 240Vac/50Hz.

## 7. Safety

CB、CE、TUV、UL、BSMI、CCC。

## **8. EMC**

CE 、 FCC 、 BSMI 、 CCC ◦ (Class B)

## **9. Environmental Requirement**

### 9.1. Temperature

Operating : 0°C to +45°C.

Non Operating : -20°C to +70°C.

### 9.2. Humidity

Operating : 20% to 90% , non-condensing.

Non Operating : 5% to 95% , non-condensing.

### 9.3. Altitude

Operating : Up to 2000m.

### 9.4. Cooling Method

By DC fan.

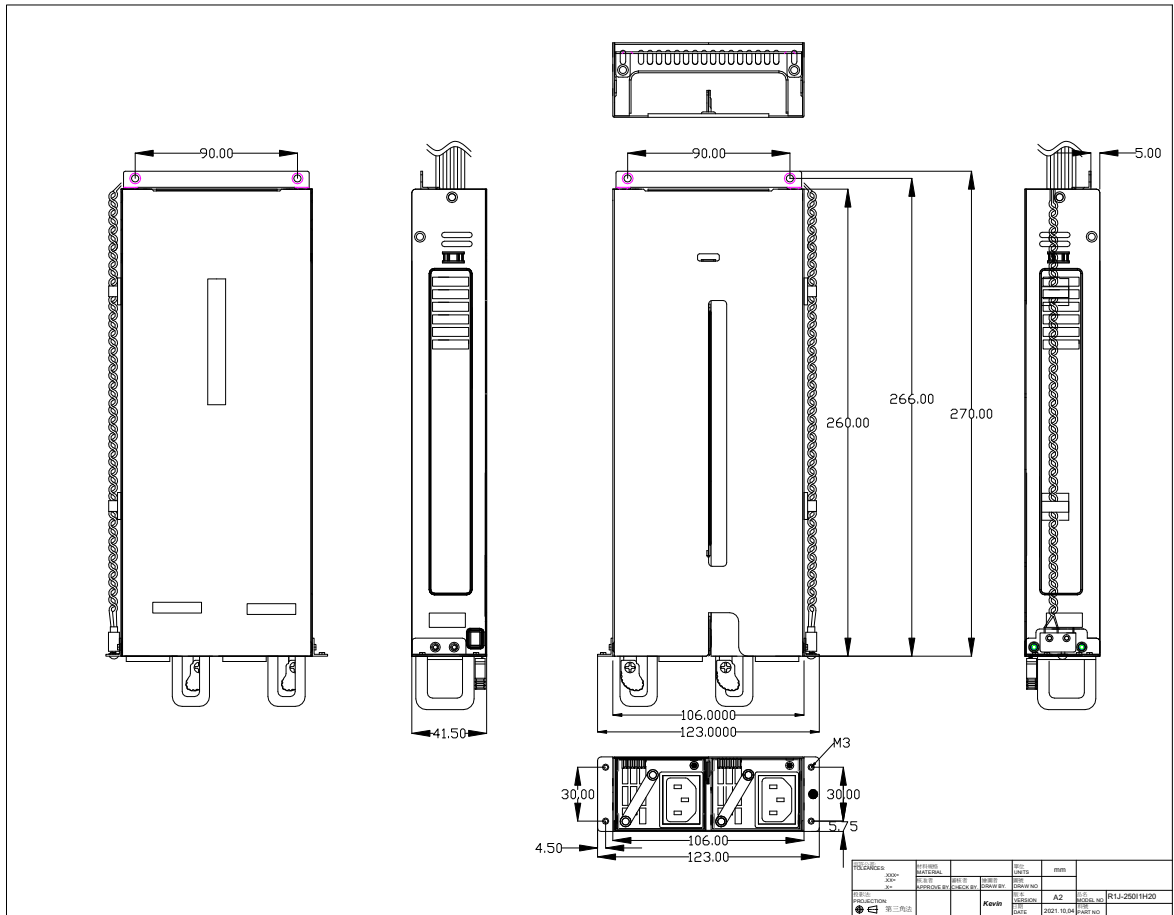
## **10. Reliability**

### 10.1. MTBF

Using MIL - HDBK -217F the calculated MTBF > 100,000 hours at 25°C.

# 11. Mechanical Drawing and Output Wire

11.1. Outline (bracket optional) : W106 \* H41.5 \* D260mm.



# 11.2. Output Wire (could be customization) :

VERSIONS			
VER	DESCRIPTION	SIGN	DATE
			/ /

24Pin(EPS12V)						
HOUSING: Molex 5557 series or equivalent						
TERMINAL: Molex 5556 series or equivalent						
House#	Pin No.	WIRE COLOR	LENGTH	Pin No.	WIRE COLOR	LENGTH
P24	1	ORANGE(+3V)	80mm±15mm	13	ORANGE(+3V)	80mm±15mm
	2	ORANGE(+3V)	80mm±15mm	14	BLUE(-5V)	80mm±15mm
	3	BLACK(COM)	80mm±15mm	15	BLACK(COM)	80mm±15mm
	4	RED(+5V)	80mm±15mm	16	GREEN(+5V)	80mm±15mm
	5	BLACK(COM)	80mm±15mm	17	BLACK(COM)	80mm±15mm
	6	RED(+5V)	80mm±15mm	18	BLACK(COM)	80mm±15mm
	7	BLACK(COM)	80mm±15mm	19	BLACK(COM)	80mm±15mm
	8	GRAY(GND)	80mm±15mm	20	NA	
	9	PURPLE(+5V)	80mm±15mm	21	RED(+5V)	80mm±15mm
	10	YELLOW(+12V)	80mm±15mm	22	RED(-5V)	80mm±15mm
	11	YELLOW(+12V)	80mm±15mm	23	RED(+5V)	80mm±15mm
	12	ORANGE(+3V)	80mm±15mm	24	BLACK(COM)	80mm±15mm

8Pin(EPS12V)					
HOUSING: Molex 5557 series or equivalent					
TERMINAL: Molex 5556 series or equivalent					
House#	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
P8A	1	BLACK	COM	18AWG	500mm
	2	BLACK	COM	18AWG	500mm
	3	BLACK	COM	18AWG	500mm
	4	BLACK	COM	18AWG	500mm
	5	YELLOW	+12V	18AWG	500mm
	6	YELLOW	+12V	18AWG	500mm
	7	YELLOW	+12V	18AWG	500mm
	8	YELLOW	+12V	18AWG	500mm

4Pin(ATX FOR P4)					
HOUSING: Molex 5557 series or equivalent					
TERMINAL: Molex 5556 series or equivalent					
House#	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
P4	1	BLACK	COM	18AWG	300mm ±20mm
	2	BLACK	COM	18AWG	300mm ±20mm
	3	YELLOW	+12V	18AWG	300mm ±20mm
	4	YELLOW	+12V	18AWG	300mm ±20mm

4Pin(SATA FOR P4H1-P4H4)					
HOUSING: Molex 8981 series or equivalent					
TERMINAL: Molex 8980 series or equivalent					
4Pin(FLOPPY DISK) P4					
HOUSING: AMP 17122 series or equivalent					
TERMINAL: AMP 17022 series or equivalent					
House#	Pin No.	WIRE COLOR	SIGNAL	WIRE SIZE	LENGTH
P4H1	1	YELLOW	+12V	18AWG	500mm ±20mm
	2	BLACK/BLACK	COM	18AWG	500mm ±20mm
	3	BLACK/BLACK	COM	18AWG	500mm ±20mm
	4	RED/RED	+5V	18AWG	500mm ±20mm
P4H2	1	YELLOW	+12V	18AWG	150mm ±15mm
	2	BLACK/BLACK	COM	18AWG	150mm ±15mm
P4H3	1	YELLOW	+12V	18AWG	150mm ±15mm
	2	BLACK	COM	18AWG	150mm ±15mm
P4H4	1	YELLOW	+12V	18AWG	150mm ±15mm
	2	BLACK	COM	18AWG	150mm ±15mm
P4F	1	RED	+5V	24AWG	150mm ±15mm
	2	BLACK	COM	24AWG	150mm ±15mm

SATA HDD					
HOUSING: Molex 67582 series or equivalent					
TERMINAL: Molex 67581 series or equivalent					
House#	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
S1	1	ORANGE	+3V3	18AWG	500mm ±20mm
	2	BLACK	COM	18AWG	500mm ±20mm
	3	RED	+5V	18AWG	500mm ±20mm
	4	BLACK	COM	18AWG	500mm ±20mm
	5	YELLOW	+12V	18AWG	500mm ±20mm
S2	1	ORANGE	+3V3	18AWG	150mm ±15mm
	2	BLACK	COM	18AWG	150mm ±15mm
	3	RED	+5V	18AWG	150mm ±15mm
	4	BLACK	COM	18AWG	150mm ±15mm
	5	YELLOW	+12V	18AWG	150mm ±15mm
S3	1	ORANGE	+3V3	18AWG	150mm ±15mm
	2	BLACK	COM	18AWG	150mm ±15mm
	3	RED	+5V	18AWG	150mm ±15mm
	4	BLACK	COM	18AWG	150mm ±15mm
	5	YELLOW	+12V	18AWG	150mm ±15mm

External Power System & Module Status LED (DO 5mm)					
Name	Pin No.	WIRE COLOR	WIRE TYPE	LED COLOR	LENGTH
PW1LED	1	BROWN	24AWG	ORANGE	860mm±20mm
	2	WHITE	24AWG	ORANGE	860mm±20mm
PW2LED	1	RED	24AWG	ORANGE	860mm±20mm
	2	WHITE	24AWG	ORANGE	860mm±20mm
System LED	1	GREEN	24AWG	RED	860mm±20mm
	2	WHITE	24AWG	GREEN	860mm±20mm

TTL Signal					
Connector: HOUSING: Molex 22-01-302T or equivalent.					
Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH	
1	BLACK	COM	24AWG	860mm±20mm	
2	RED	+5V	24AWG	860mm±20mm	

容許公差 TOLERANCE _XXX= _XX= _X=	材料規格 MATERIAL 核准者 APPROVE BY	審核者 CHECK BY	繪圖者 DRAW BY	單位 UNIT mm	圖號 DRAW NO.	版本 VERSION A0	品名 MODEL NO. WireOut_R1J
投影法 PROJECTION 第三角法	Waylon					日期 DATE 2021,11,01	料號 PART NO. STD

**End of File**

NOTE : This data is subject to change without notice.