



SURE STAR COMPUTER CO., LTD 添誠資訊股份有限公司
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NO.2-1, DAAN ROAD, SHULIN .DIST., NEW TAIPEI CITY 238, TAIWAN

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 **SURE STAR** 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

Minimum	Nominal	Maximum	Measure
90	100~240	264	Vac
47	50~60	63	Hz

2.3. Input Current and Inrush Current

Input Voltage	Max. Input Current	Inrush Current
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

Output Voltage	Min. Current	Max. Current	Regulation	Ripple & Noise
+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 / μ sec	1000uF
+5V	30% of max load	0.5A / μ sec	1000uF
+12V	65% of max load	0.5A / μ sec	2200uF
+5VSB	25% of max load	0.5A / μ 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。

Please visit our website and get the latest safety certificate.



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8. EMC

CE 、 FCC 、 BSMI 、 CCC ◦ (Class B)

Please visit our website and get the latest EMC certificate.

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.



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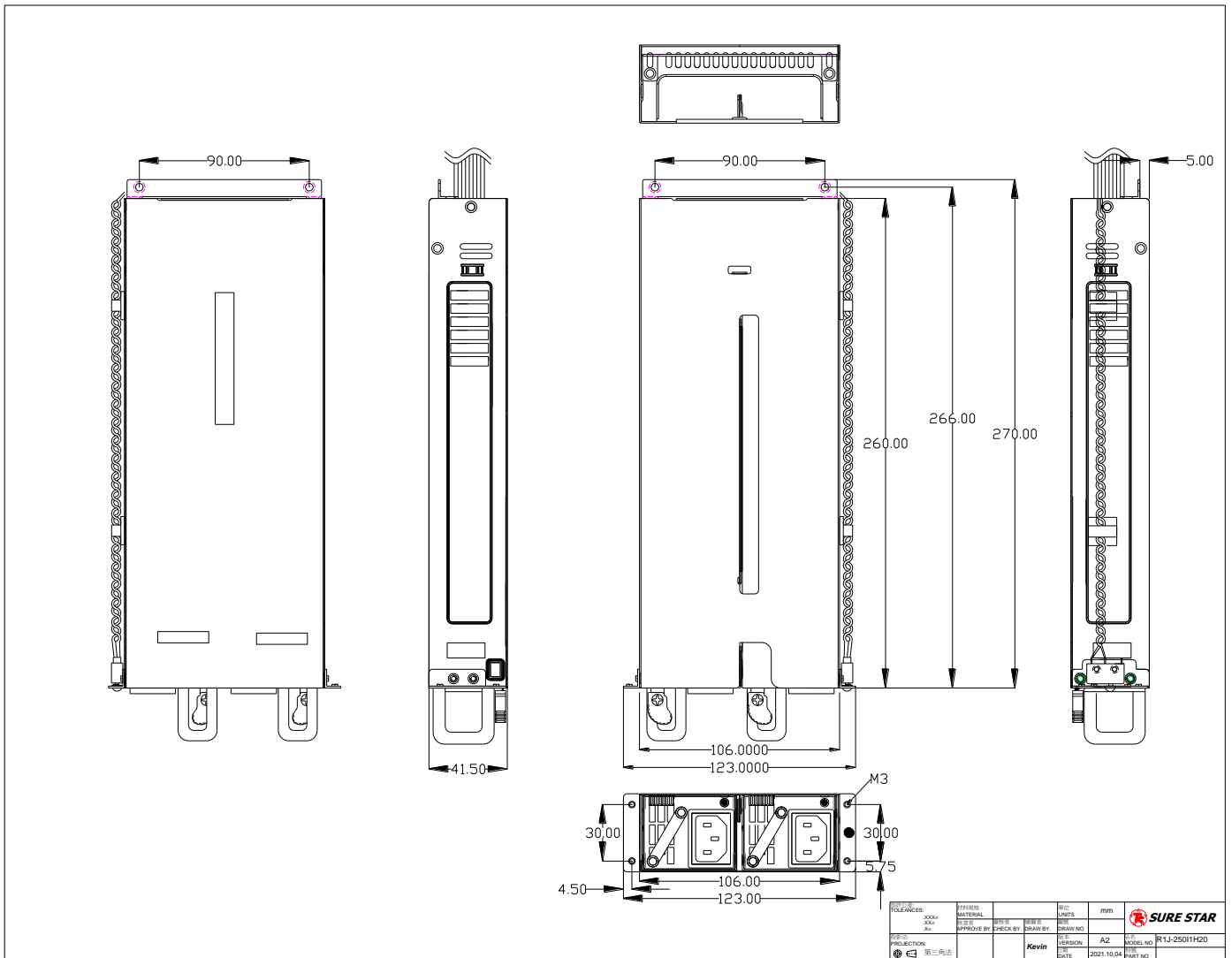
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11. Mechanical Drawing and Output Wire

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





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11.2. Output Wire (could be customization) :

VERSIONS			
VER	DESCRIPTION	SIGN	DATE
			/ /

Wiring diagrams showing connections for various connectors and cables. Each diagram includes a length specification (L=500mm±20mm) and a terminal block diagram. The connectors shown are P24, P8, P4, P4H1, P4H2, P4H3, P4H4, P4H5, P4F, S1, S2, S3, LED, and TTL Signal Cable.

P24Pin(EP512V)					
HOUSING: Molex 5557 series or equivalent					
TERMINAL: Molex 5556 series or equivalent					
Housing No.	WIRE COLOR	LENGTH	Pin No.	WIRE COLOR	LENGTH
1	RANGE(+3V)	30mm±15mm	13	BLACK(+3V)	30mm±15mm
2	RANGE(+3V)	30mm±15mm	14	BLUE(+3V)	30mm±15mm
3	BLACK(GND)	30mm±15mm	15	BLACK(GND)	30mm±15mm
4	RED(+5V)	30mm±15mm	16	GREEN(+5V)	30mm±15mm
5	BLACK(GND)	30mm±15mm	17	BLACK(GND)	30mm±15mm
6	RED(+5V)	30mm±15mm	18	BLACK(GND)	30mm±15mm
7	BLACK(GND)	30mm±15mm	19	BLACK(GND)	30mm±15mm
8	BROWN	30mm±15mm	20		
9	PURPLE(+5V)	30mm±15mm	21	RED(+5V)	30mm±15mm
10	YELLOW(+12V)	30mm±15mm	22	RED(+5V)	30mm±15mm
11	YELLOW(+12V)	30mm±15mm	23	RED(+5V)	30mm±15mm
12	RANGE(+3V)	30mm±15mm	24	BLACK(GND)	30mm±15mm

P8Pin(EP512V)					
HOUSING: Molex 5557 series or equivalent					
TERMINAL: Molex 5556 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE TYPE	WIRE LENGTH	
1	BLACK	COM	18AWG	500mm	
2	BLACK	COM	18AWG	500mm	
3	BLACK	COM	18AWG	500mm	
4	BLACK	+12V	18AWG	500mm	
5	YELLOW	+12V	18AWG	500mm	
6	YELLOW	+12V	18AWG	500mm	
7	YELLOW	+12V	18AWG	500mm	
8	YELLOW	+12V	18AWG	500mm	

P4Pin(EP512V) P4H					
HOUSING: Molex 5557 series or equivalent					
TERMINAL: Molex 5556 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH	
1	BLACK	COM	18AWG	500mm ±20mm	
2	BLACK	COM	18AWG	500mm ±20mm	
3	YELLOW	+12V	18AWG	500mm ±20mm	
4	YELLOW	+12V	18AWG	500mm ±20mm	

P4H1~P4H5					
HOUSING: Molex 6981 series or equivalent					
TERMINAL: Molex 6980 series or equivalent					
P4H1: COPPY DISK P4H					
HOUSING: AMP 171822 series or equivalent					
TERMINAL: AMP 170282 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE SIZE	LENGTH	
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~P4H5					
HOUSING: Molex 6981 series or equivalent					
TERMINAL: Molex 6980 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE SIZE	LENGTH	
1	YELLOW	+12V	18AWG	150mm ±15mm	
2	BLACK/BLACK	COM	18AWG	150mm ±15mm	
3	BLACK/BLACK	COM	18AWG	150mm ±15mm	
4	RED/RED	+5V	18AWG	150mm ±15mm	

P4H3					
HOUSING: Molex 6981 series or equivalent					
TERMINAL: Molex 6980 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE SIZE	LENGTH	
1	YELLOW	+12V	18AWG	150mm ±15mm	
2	BLACK	COM	18AWG	150mm ±15mm	
3	BLACK	COM	18AWG	150mm ±15mm	
4	RED	+5V	18AWG	150mm ±15mm	

P4F					
HOUSING: Molex 6981 series or equivalent					
TERMINAL: Molex 6980 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE SIZE	LENGTH	
1	YELLOW	+12V	24AWG	150mm ±15mm	
2	BLACK	COM	24AWG	150mm ±15mm	
3	BLACK	COM	24AWG	150mm ±15mm	
4	RED	+5V	24AWG	150mm ±15mm	

SATA HDD					
HOUSING: Molex 67582 series or equivalent					
TERMINAL: Molex 67581 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH	
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	

S1					
HOUSING: Molex 67582 series or equivalent					
TERMINAL: Molex 67581 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH	
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	

S2					
HOUSING: Molex 67582 series or equivalent					
TERMINAL: Molex 67581 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH	
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					
HOUSING: Molex 67582 series or equivalent					
TERMINAL: Molex 67581 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH	
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 (OD 5mm)					
Name	Pin No.	WIRE COLOR	WIRE TYPE	LED COLOR	LENGTH
PW1LED	1	BROWN	24AWG	ORANGE	860mm±20mm
PW1LED	2	WHITE	24AWG	ORANGE	
PW2LED	1	RED	24AWG	ORANGE	860mm±20mm
PW2LED	2	WHITE	24AWG	ORANGE	
System LED	1	GREEN	24AWG	RED	860mm±20mm
System LED	2	WHITE	24AWG	GREEN	

TTL Signal Connector HOUSING: Molex 22-01-3027 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	審核者 CHECK BY	繪圖者 DRAW BY	單位 UNIT
投影法 PROJECTION	第三角法	Waylon	Waylon	Waylon	mm

SURE STAR

版本 VERSION	A0	品名 MODEL NO.	WireOut_R1J
日期 DATE	2021,11,01	料號 PART NO.	STD



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12. Customization Note

Customization note shall be listed here.

End of File

NOTE : This data is subject to change without notice.