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NO.2-1, DAAN ROAD, SHULIN .DIST., NEW TAIPEI CITY 238, TAIWAN

SPECIFICATION

Model Name :

R4S *series*

Description :

400W 、 500W Mini Redundant Power Supply (PSII)

Version : B0

Issued Date : 20201106



1. General Description

This specification defines the characteristic of 1 + 1 redundant power supply with 4 Unit high. And **SURE STAR** model name is R4S-400G1V2 for 400W 、R4S-500G1V2 for 500W output.

2. Input Characteristic

2.1. Input connector

The input connector shall be an IEC60320 C14 inlet, rated for 10A/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	8A	25A
230Vac	4A	50A

2.4. Power Factor

The minimum power factor shall be 0.95 with full load and input 230Vac/50Hz.

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 & Noise</i>
+3.3V	1A	25A	±5%	50mV
+5V	1A	25A	±5%	50mV
+12V	1A	33A/41A	±5%	120mV
-12V	0A	0.8A	±5%	120mV
+5VSB	0.1A	3.5A	±5%	50mV

Note :

1. The combined power from +3.3V and +5V shall not exceed 170W.
2. The max total power shall not exceed 400W/500W.
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 115Vac/60Hz 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	13.1V	14.5V	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 +50°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 5000m.

9.4. Cooling Method

By DC fan.

10. Reliability

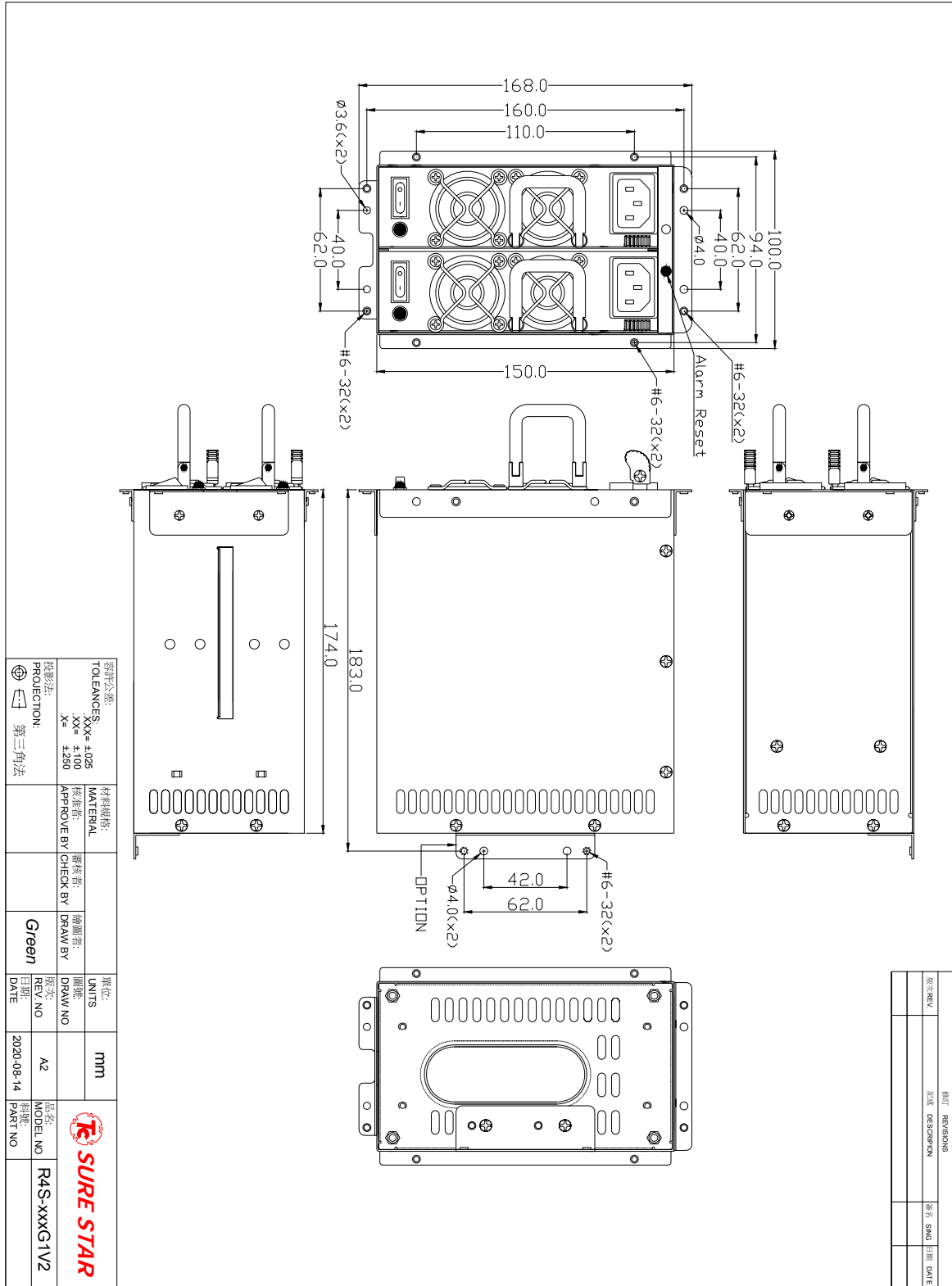
10.1. MTBF

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



11. Mechanical Drawing and Output Wire

11.1. Outline (bracket optional) : W150 * H86 * D174mm.





11.2. Output Wire (could be customization) :

Housing No.	Pin No.	Wire Color	Signal	Wire Type	Length
S1	1	ORANGE	+3.3V	18AWG	480mm±20mm
	2	BLACK	COM	18AWG	
	3	RED/RED	+5V	18AWG	
	4	BLACK	COM	18AWG	
	5	YELLOW	+12V	18AWG	
S2	1	ORANGE	+3.3V	18AWG	150mm±15mm
	2	BLACK	COM	18AWG	
	3	RED/RED	+5V	18AWG	
	4	BLACK	COM	18AWG	
	5	YELLOW	+12V	18AWG	
S3	1	ORANGE	+3.3V	18AWG	150mm±15mm
	2	BLACK	COM	18AWG	
	3	RED	+5V	18AWG	
	4	BLACK	COM	18AWG	
	5	YELLOW	+12V	18AWG	
P2	1	YELLOW	+12V	18AWG	100mm±10mm
	2	YELLOW	+12V	18AWG	
	3	YELLOW	+12V	18AWG	
	4	BLACK	COM	18AWG	
	5	BLACK	COM	18AWG	
	6	BLACK	COM	18AWG	
	7	BLACK	COM	18AWG	
	8	BLACK	COM	20AWG	
P6	1	YELLOW	+12V	18AWG	480mm±20mm
	2	YELLOW	+12V	18AWG	
	3	YELLOW	+12V	18AWG	
	4	BLACK	COM	18AWG	
	5	BLACK	COM	18AWG	
	6	BLACK	COM	18AWG	
	7	BLACK	COM	18AWG	
	8	BLACK	COM	20AWG	
P22	1	BLACK	COM	24AWG	980mm ±20mm
	2	RED	+5V	24AWG	

Housing No.	Pin No.	Wire Color	Signal	Wire Type	Length
P24	1	ORANGE (+3.3V)	18AWG	13	480mm±20mm
	2	ORANGE (+3.3V)	18AWG	14	480mm±20mm
	3	BLACK	18AWG	15	480mm±20mm
	4	RED (+5V)	18AWG	16	480mm±20mm
	5	BLACK	18AWG	17	480mm±20mm
	6	RED (+5V)	18AWG	18	480mm±20mm
	7	BLACK	18AWG	19	480mm±20mm
	8	RED (+5V)	18AWG	20	480mm±20mm
	9	BLACK	18AWG	21	480mm±20mm
	10	YELLOW (+12V)	18AWG	22	480mm±20mm
	11	YELLOW (+12V)	18AWG	23	480mm±20mm
	12	ORANGE (+3.3V)	18AWG	24	480mm±20mm
P4A	1	BLACK	COM	18AWG	480mm±20mm
	2	BLACK	COM	18AWG	
	3	YELLOW	+12V	18AWG	
	4	YELLOW	+12V	18AWG	
P4B	1	BLACK	COM	20AWG	150mm±15mm
	2	BLACK	COM	20AWG	
	3	YELLOW	+12V	20AWG	
	4	YELLOW	+12V	20AWG	
P4C	1	YELLOW	+12V	18AWG	480mm±20mm
	2	BLACK	COM	18AWG	
	3	BLACK	COM	18AWG	
	4	RED	+5V	18AWG	
P4D	1	YELLOW	+12V	18AWG	480mm±20mm
	2	BLACK	COM	18AWG	
	3	BLACK	COM	18AWG	
	4	RED	+5V	18AWG	
P4E	1	YELLOW	+12V	18AWG	480mm±20mm
	2	BLACK	COM	18AWG	
	3	BLACK	COM	18AWG	
	4	RED	+5V	18AWG	
P4F	1	YELLOW	+12V	18AWG	480mm±20mm
	2	BLACK	COM	18AWG	
	3	BLACK	COM	18AWG	
	4	RED	+5V	18AWG	
P4G	1	YELLOW	+12V	18AWG	480mm±20mm
	2	BLACK	COM	18AWG	
	3	BLACK	COM	18AWG	
	4	RED	+5V	18AWG	
P4H	1	YELLOW	+12V	18AWG	150mm ±15mm
	2	BLACK	COM	18AWG	
	3	BLACK	COM	18AWG	
	4	RED	+5V	18AWG	
P4I	1	YELLOW	+12V	18AWG	150mm ±15mm
	2	BLACK	COM	18AWG	
	3	BLACK	COM	18AWG	
	4	RED	+5V	18AWG	
P4J	1	YELLOW	+12V	24AWG	150mm ±15mm
	2	BLACK	COM	24AWG	
	3	BLACK	COM	24AWG	
	4	RED	+5V	24AWG	

DATE	DESCRIPTION	BY	CHK

查核公差 TOLERANCE 公差 DIMENSION 公差 XX- 查核 APPROVE BY 查核 CHECK BY 查核 PROJECTION 第三角法	材料規格 MATERIAL 規格 APPROVE BY 規格 CHECK BY 規格 DRAW BY 規格 DATE 2020/1/06 PART NO.	單位 UNIT mm 圖號 DRAW NO. A0 日期 DATE 2020/1/06 料號 PART NO.	繪圖 DRAWN BY 繪圖 CHECK BY 繪圖 DATE 2020/1/06 料號 PART NO.	姓名 MODEL NO. WireOut_R4b+R4s 料號 PART NO. STD
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12. Customization Note

Customization note shall be listed here.

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NOTE : This data is subject to change without notice.