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SPECIFICATION

Model Name :

TCPS1D41Y series

Description :

400W 、 500W 、 600W Single 4U Power Supply (PSII)

Version : A0

Issued Date : 20170502



1. General Description

This specification defines the characteristic of output 400W、500W、600W single 4Unit power supply, **SURE STAR** model name TCPS1D41Y040、TCPS1D41Y050、TCPS1D41Y060.

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

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	10A	25A
230Vac	5A	50A

2.4. Power Factor

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

3. Output Characteristic

3.1. DC Output Static Characteristic

Output Voltage	Min. Current	Rated Current	Regulation	Ripple & Noise
+3.3V	0.1A	25A	±5%	50mV
+5V	0.1A	25A	±5%	50mV
+12V	0.1A	33A/41A/49A	±5%	120mV
-12V	0A	0.8A	±10%	120mV
+5VSB	0A	3.5A	±5%	50mV

Note : 1. The combined power from +3.3V & +5V shall not exceed 170W/170W/180W.

2. The max total power shall not exceed 400W/500W/600W.

3. Ripple & 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 & noise measurement.



3.2. Efficiency

The minimum efficiency shall be 80% with full load and 115Vac/60Hz.

3.3. Hold up Time

The output voltages stay in regulation at least 18ms with 70% 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 :

Output	Step Load Size	Load Slew Rate
+3.3V	30% of full load	0.5A / μ sec
+5V	30% of full load	0.5A / μ sec
+12V	65% of full load	0.5A / μ sec
+5VSB	25% of full load	0.5A / μ sec

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.

	PSU On	PSU Off
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

Output	Over Current (Min.)	Over Current (Max.)	Comment
+3.3V	110%	150%	PSU shutdown
+5V	110%	150%	PSU shutdown
+12V	110%	150%	PSU shutdown

4.2. Over Voltage Protection

Output	Min.	Max.	Comment
+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

Output	Comment
+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.

The OTP trip level shall have a minimum of 4degree C of ambient temperature hysteresis.



5. Insulation

5.1. Insulation Resistance

Primary to Secondary	500Vdc 、 30M ohm Min. (at room temperature)
Primary to Ground	500Vdc 、 30M ohm Min. (at room temperature)

5.2. Dielectric Withstand Voltage

Primary to Secondary	1500Vac (10mA) for 1 second
Primary to Ground	1500Vac (10mA) for 1 second

5.3. Leakage Current

Leakage current is 3.5mA maximum at 240Vac/60Hz.

6. Safety

CB 、 CE 、 TUV 、 UL 、 BSMI 、 CCC 。

Please visit our website and get the latest safety certificate.

7. EMC

CE 、 FCC 、 BSMI 、 CCC 。（Class B）

Please visit our website and get the latest EMC certificate.



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8. Environmental Requirement

8.1. Temperature

Operating : 0°C to +50°C

Non Operating : -20°C to +70°C

8.2. Humidity

Operating : 5% to 95% , non-condensing

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

8.3. Altitude

Operating : Up to 5000m

8.4. Cooling Method

By ball bearing DC fan.

9. Reliability

9.1. MTBF

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

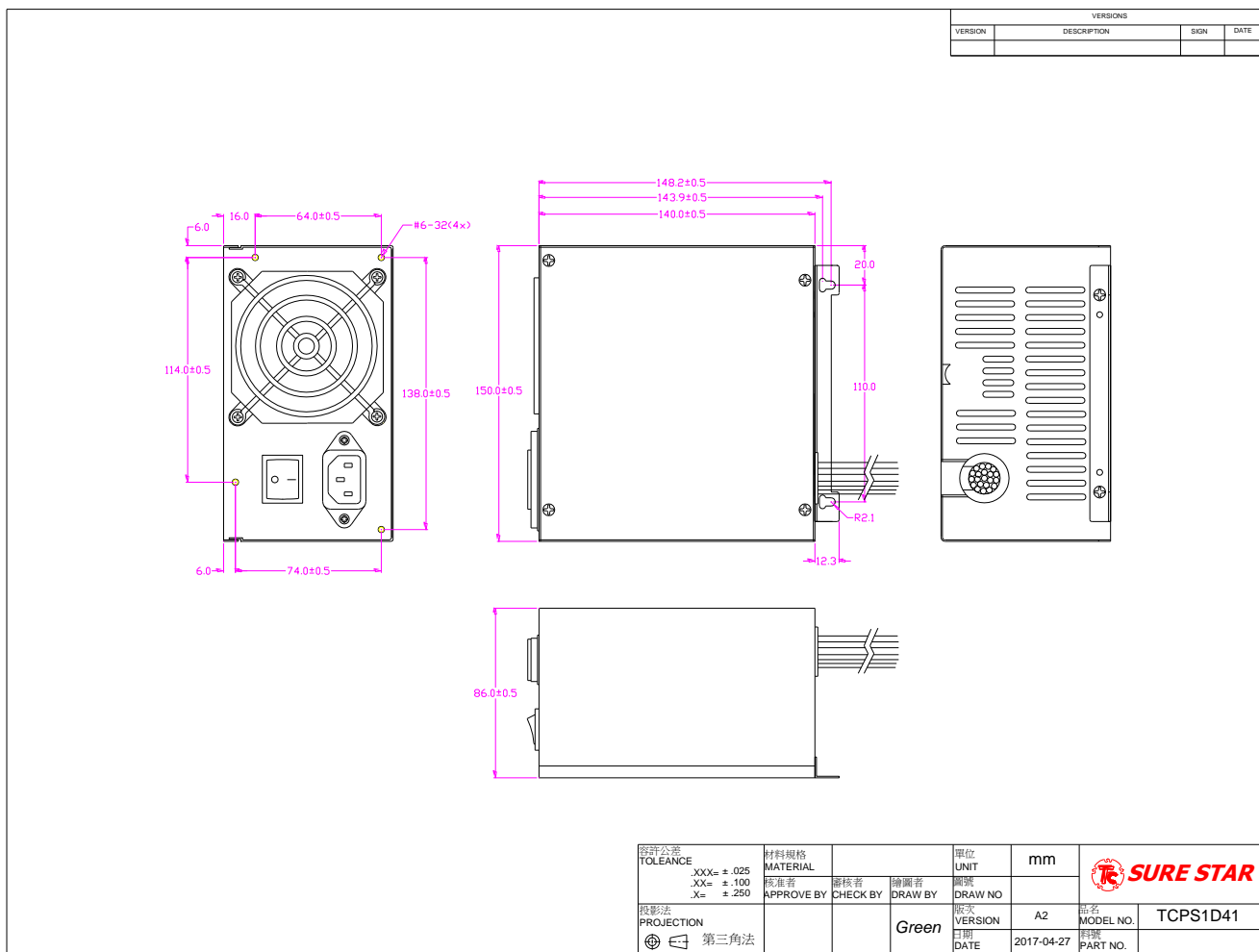
10. Customization Note

Customization note shall be listed here.



11. Mechanical Drawing and Output Wire

11.1. Outline (bracket optional) : W150 * H086 * D140mm.





11.2. Output Wire (could be customization) :

11.2.1. STANDARD A

VERSIONS			
VER	DESCRIPTION	SIGN	DATE

20+4Pins(EP812V)						
HOUSING : MOLEX 5557 series or equivalent						
TERMINAL : MOLEX 5556 series or equivalent						
Housing	Pin No.	WIRE COLOR	LENGTH	Pin No.	WIRE COLOR	LENGTH
P24	1	ORANGE(+3V)	50mm±18AWG	13	ORANGE(+3V)	50mm±18AWG
	2	ORANGE(+3V)	50mm±18AWG	14	ORANGE(+3V)	50mm±18AWG
	3	BLACK(GND)	50mm±18AWG	15	BLACK(GND)	50mm±18AWG
	4	RED(+5V)	50mm±18AWG	16	GREEN(PS-ON)	50mm±18AWG
	5	BLACK(GND)	50mm±18AWG	17	BLACK(GND)	50mm±18AWG
	6	RED(+5V)	50mm±18AWG	18	BLACK(GND)	50mm±18AWG
	7	BLACK(GND)	50mm±18AWG	19	BLACK(GND)	50mm±18AWG
	8	BROWN(PS)	50mm±24AWG	20	NC	50mm±18AWG
	9	PURPLE(+5V)	50mm±18AWG	21	RED(+5V)	50mm±18AWG
	10	YELLOW(+12V)	50mm±18AWG	22	RED(+5V)	50mm±18AWG
	11	YELLOW(+12V)	50mm±18AWG	23	RED(+5V)	50mm±18AWG
	12	ORANGE(+3V)	50mm±18AWG	24	BLACK(GND)	50mm±18AWG

4Pins+4Pins(ATX12V FOR P4)					
HOUSING : MOLEX 5557 series or equivalent					
TERMINAL : MOLEX 5556 series or equivalent					
Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
P4A	1	BLACK/BLACK	COM	18AWG	500mm±20mm
	2	BLACK/BLACK	COM	18AWG	
	3	YELLOW/YELLOW	+12V	18AWG	
	4	YELLOW/YELLOW	+12V	18AWG	
P4B	1	BLACK	COM	20AWG	150mm±10mm
	2	BLACK	COM	20AWG	

8+2Pins(PCI Express)					
HOUSING : MOLEX 45559 series or equivalent					
TERMINAL : MOLEX 5556 series or equivalent					
Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
P6	1	YELLOW	+12V	18AWG	500mm±20mm
	2	YELLOW	+12V	18AWG	
	3	YELLOW	+12V	18AWG	
	4	YELLOW	+12V	18AWG	
	5	BLACK	COM	18AWG	
	6	BLACK/BLACK	COM	18AWG	
	7	BLACK/BLACK	COM	18AWG	
P2	1	BLACK	COM	20AWG	100mm±10mm
	2	BLACK	COM	20AWG	

4Pins(DD-40MM) P4H1-P4H7					
HOUSING : MOLEX 8081 series or equivalent					
TERMINAL : MOLEX 8080 series or equivalent					
4Pins(FLOPPY DISK) P4H4					
HOUSING : AMP 17182 series or equivalent					
TERMINAL : AMP 170262 series or equivalent					
Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
P4H1	1	YELLOW	+12V	18AWG	500mm ±20mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	
P4H2	1	YELLOW	+12V	18AWG	150mm ±10mm
	2	BLACK/BLACK	COM	18AWG	
P4H3	1	YELLOW	+12V	18AWG	150mm ±10mm
	2	BLACK/BLACK	COM	18AWG	
P4H4	1	YELLOW	+12V	18AWG	150mm ±10mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	
P4H5	1	YELLOW	+12V	18AWG	150mm ±10mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	
P4H6	1	YELLOW	+12V	18AWG	150mm ±10mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	
P4H7	1	YELLOW	+12V	18AWG	150mm ±10mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	

SATA HDD					
HOUSING : MOLEX 67582 series or equivalent					
TERMINAL : MOLEX 67581 series or equivalent					
Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
S1	1	ORANGE	+3.3V	18AWG	500mm ±20mm
	2	BLACK	COM	18AWG	
	3	RED/RED	+5V	18AWG	
	4	BLACK	COM	18AWG	
	5	YELLOW	+12V	18AWG	
S2	1	ORANGE/ ORANGE	+3.3V	18AWG	150mm ±10mm
	2	BLACK	COM	18AWG	
S3	1	RED/RED	+5V	18AWG	150mm ±10mm
	2	BLACK	COM	18AWG	
	3	RED	+5V	18AWG	
	4	BLACK	COM	18AWG	
	5	YELLOW	+12V	18AWG	

公差 TOLERANCE	30% 35% X-	材料 MATERIAL	製程 PROCESS	檢查 CHECK BY	繪圖 DRAW BY	單位 UNIT	mm
製圖 PROJECTION	第三角法	批准 APPROVE BY	日期 DATE	2016.12.30	Waylon	圖號 MODEL NO.	Wireout_ID41std
						公司 SURE STAR	零件號 PART NO.



11.2.2. STANDARD B

VERSIONS				
VER	DESCRIPTION	SIGN	DATE	

20+4Pins(EPS12V)						
HOUSING : MOLEX 5557 series or equivalent						
TERMINAL : MOLEX 5556 series or equivalent						
Housing No.	PIN No.	WIRE COLOR	LENGTH	PIN No.	WIRE COLOR	LENGTH
P24	1	ORANGE(+3.3V)	30mm±18AWG	13	ORANGE(+3.3V)	30mm±18AWG
	2	ORANGE(+3.3V)	30mm±18AWG	14	ORANGE(+3.3V)	30mm±18AWG
	3	BLACK(GND)	30mm±18AWG	15	BLACK(GND)	30mm±18AWG
	4	RED(+5V)	30mm±18AWG	16	GREEN(+5V)	30mm±24AWG
	5	BLACK(GND)	30mm±18AWG	17	BLACK(GND)	30mm±18AWG
	6	RED(+5V)	30mm±18AWG	18	BLACK(GND)	30mm±18AWG
	7	BLACK(GND)	30mm±18AWG	19	BLACK(GND)	30mm±18AWG
	8	RED(+5V)	30mm±18AWG	20	NC	
	9	PURPLE(+5VSB)	30mm±18AWG	21	RED(+5V)	30mm±18AWG
	10	YELLOW(+12V)	30mm±18AWG	22	RED(+5V)	30mm±18AWG
	11	YELLOW(+12V)	30mm±18AWG	23	RED(+5V)	30mm±18AWG
	12	ORANGE(+3.3V)	30mm±18AWG	24	BLACK(GND)	30mm±18AWG

4Pins+4Pins(ATX12V FOR P4)					
HOUSING : MOLEX 5557 series or equivalent					
TERMINAL : MOLEX 5556 series or equivalent					
Housing No.	PIN No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
P4A	1	BLACK/BLACK	COM	18AWG	500mm±20mm
	2	BLACK/BLACK	COM	18AWG	
	3	YELLOW/YELLOW	+12V	18AWG	
	4	YELLOW/YELLOW	+12V	18AWG	
P4B	1	BLACK	COM	20AWG	150mm±10mm
	2	BLACK	COM	20AWG	
	3	YELLOW	+12V	20AWG	
	4	YELLOW	+12V	20AWG	

2Pins(PCI Express)					
HOUSING : MOLEX 4559 series or equivalent					
TERMINAL : MOLEX 5556 series or equivalent					
Housing No.	PIN No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
P6	1	YELLOW	+12V	18AWG	500mm±20mm
	2	YELLOW	+12V	18AWG	
	3	YELLOW	+12V	18AWG	
	4	YELLOW	+12V	18AWG	
	5	BLACK	COM	18AWG	
	6	BLACK/BLACK	COM	18AWG	
	7	BLACK/BLACK	COM	18AWG	
	8	BLACK/BLACK	COM	18AWG	
P2	4	BLACK	COM	20AWG	100mm±10mm
	8	BLACK	COM	20AWG	

4Pins(DC-DC) (P4H1~P4H4)					
HOUSING : MOLEX 8981 series or equivalent					
TERMINAL : MOLEX 8980 series or equivalent					
4Pins(FLOPPY DISK) (P4H1)					
HOUSING : AMP 171822 series or equivalent					
TERMINAL : AMP 170282 series or equivalent					
Housing No.	PIN No.	WIRE COLOR	SIGNAL	WIRE SIZE	LENGTH
P4H1	1	YELLOW	+12V	18AWG	500mm ±20mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	
P4H2	1	YELLOW	+12V	18AWG	150mm ±10mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	
P4H3	1	YELLOW	+12V	18AWG	150mm ±10mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	
P4H4	1	YELLOW	+12V	24AWG	150mm ±10mm
	2	BLACK	COM	24AWG	
	3	BLACK	COM	24AWG	
	4	RED	+5V	24AWG	

SATA HDD					
HOUSING : MOLEX 67582 series or equivalent					
TERMINAL : MOLEX 67581 series or equivalent					
Housing No.	PIN No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
S1	1	ORANGE	+3.3V	18AWG	500mm ±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 ±10mm
	2	BLACK	COM	18AWG	
	3	RED/RED	+5V	18AWG	
	4	BLACK	COM	18AWG	
	5	YELLOW	+12V	18AWG	
S3	1	ORANGE	+3.3V	18AWG	150mm ±10mm
	2	BLACK	COM	18AWG	
	3	RED	+5V	18AWG	
	4	BLACK	COM	18AWG	
	5	YELLOW	+12V	18AWG	
S4	1	YELLOW	+12V	18AWG	500mm ±20mm
	2	ORANGE	+3.3V	18AWG	
	3	RED/RED	+5V	18AWG	
	4	BLACK	COM	18AWG	
	5	YELLOW	+12V	18AWG	
S5	1	ORANGE	+3.3V	18AWG	150mm ±10mm
	2	BLACK	COM	18AWG	
	3	RED/RED	+5V	18AWG	
	4	BLACK	COM	18AWG	
	5	YELLOW	+12V	18AWG	
S6	1	ORANGE	+3.3V	18AWG	150mm ±10mm
	2	BLACK	COM	18AWG	
	3	RED/RED	+5V	18AWG	
	4	BLACK	COM	18AWG	
	5	YELLOW	+12V	18AWG	

PROCESS TOLERANCE	200μ	MATERIAL	PPS	UNIT	mm	
DATE	2016.12.30	DESIGNER	Waylon	PERSON	AO	
PROJECTION	第三角法	APPROVE BY		CHECK BY		MODEL NO.
						Wfeout_10415MB
						PART NO.

End of File

NOTE : This data is subject to change without notice.