



# **SURE STAR COMPUTER CO., LTD**

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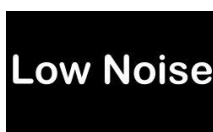
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## **Model Name: SS-1U40ES**

**(400W power supply for 1U Single Efficiency  $\geq 86\%$ )**



### **1. Specification**

1.1.AC Input Voltage Range: 100VAC ~ 240VAC,  $\pm 10\%$ , 47 to 63 Hz.

1.2.INPUT CURRENT:8.0 A ( RMS ) FOR 115VAC /4.0 A ( RMS ) FOR 230VAC.

1.3. Input Power Factor: The minimum power factor at full load shall be  
0.98/115V 60 Hz and 0.95/230V 50 Hz.

1.4. Inrush current: 35A MAX. FOR 115 VAC / 55A MAX. FOR 230 VAC.

1.5.DC Output: 400W maximum.

|                         | Output-1  | Output-2  | Output-3  | Output-4  | Output-5  |
|-------------------------|-----------|-----------|-----------|-----------|-----------|
| Output Voltage          | +5V DC    | +12V DC   | -12V DC   | +3.3V DC  | +5VSB     |
| Output Current (Max.)   | 25A       | 32A       | 0.8A      | 25A       | 3.5A      |
| Output Current (Min.)   | 0.5A      | 2A        | 0A        | 0.5A      | 0.1A      |
| Ripple/Noise Max.(P-P): | 60mV      | 120mV     | 120mV     | 60mV      | 60mV      |
| Line Regulation:        | $\pm 1\%$ | $\pm 1\%$ | $\pm 1\%$ | $\pm 1\%$ | $\pm 1\%$ |
| Load Regulation:        | $\pm 5\%$ | $\pm 5\%$ | $\pm 5\%$ | $\pm 5\%$ | $\pm 5\%$ |

#### **Note:**

1. Noise Test – Noise bandwidth is from DC to 20 MHz.

2. Ripple frequencies greater than 1MHz shall be attenuated by the measurement System.

3. Add 0.1uF/10uF capacitor at output connector terminals for ripple and noise measurements.

4. The combined total power from 5V & 3.3V shall not exceed 160W.

## 1.6. PS-ON

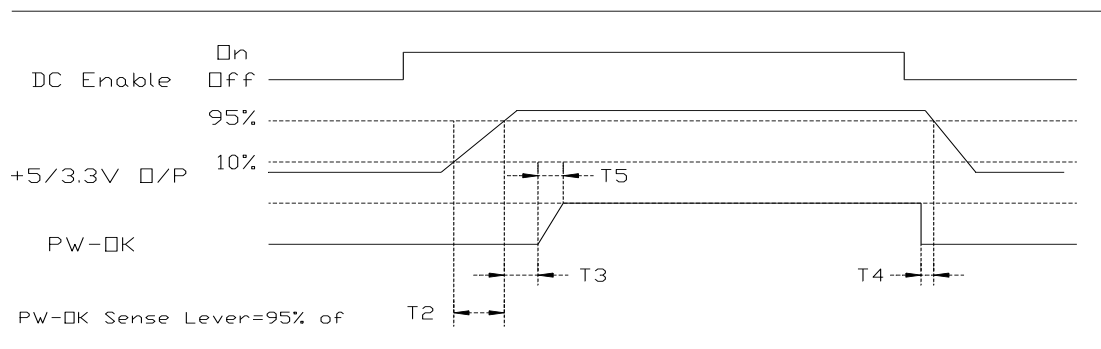
### Remote On/Off Control:

When PS-ON is pulled to TTL Low, the DC output is to be enabled.

When PS-OFF is pulled to TTL high, the DC output is to be disabled.

## 1.7. PW-OK

PW-OK is power good signal and should be asserted high by the power supply to indicate that +5VDC and +3.3VDC output are above the under voltage thresholds of the power supply TTL compatible signal out with 100ms to 500ms.



### Timing of PS-ON, PW-OK, and Germane Voltage Rails

Although there is no requirement to meet specific timing parameters, The following signal timings are recommended:

$$2\text{ms} \leq T2 \leq 200\text{ms}$$

$$100\text{ms} \leq T3 \leq 500\text{ms}$$

$$T4 > 1\text{ms}$$

$$T5 \leq 10\text{ms}$$

1.8 Efficiency: TYPICAL >86% AT 115VAC , FULL LOAD.

1.9 Hold-Up Time: 16ms at maximum load & normal input voltage.

## 2. PROTECTIONS

### 2.1. OVER-VOLTAGE PROTECTION

| OUTPUT | Min   | Max   |
|--------|-------|-------|
| +3.3V  | 3.7V  | 4.1V  |
| +5V    | 5.7V  | 6.5V  |
| +12V   | 13.1V | 14.5V |

### 2.2. SHORT CIRCUIT PROTECTION

A short circuit placed between the DC Return and the output shall cause No damage and the power supply shall shutdown.

### 2.3. OVER POWER PROTECTION

The power supply shall shut down when output power exceeds 110% to 160% of full load and require a power on cycle be performed by the operate

### 2.4 NO LOAD OPERATION

No parts shall be damaged on the power supply.

## 3. ENVIRONMENT TEMPERATURE

3.1. Operation Temperature: 0°C to 45°C

3.2. Cooling: ONE 40mm DC FANS.

3.3. Storage Temperature:-20°C to 70°C

3.4. Humidity: 5 to 90% non-condensing.

## 4. Mean Time Between Failure(MTBF)

Using MIL - HDBK -217F the calculated MTBF=100,000 hours at 25°C 75% loading.

## 5. SAFETY:

UL 60950-1, 2<sup>ND</sup> Edition, CSA C 22.2 No. 60950-1-07, 2<sup>nd</sup> Edition, 2007-03

TUV EN60950-1: 2006+A11+A1+A12

CB IEC60950-1: 2005

BSMI CNS14336-1, CNS13438

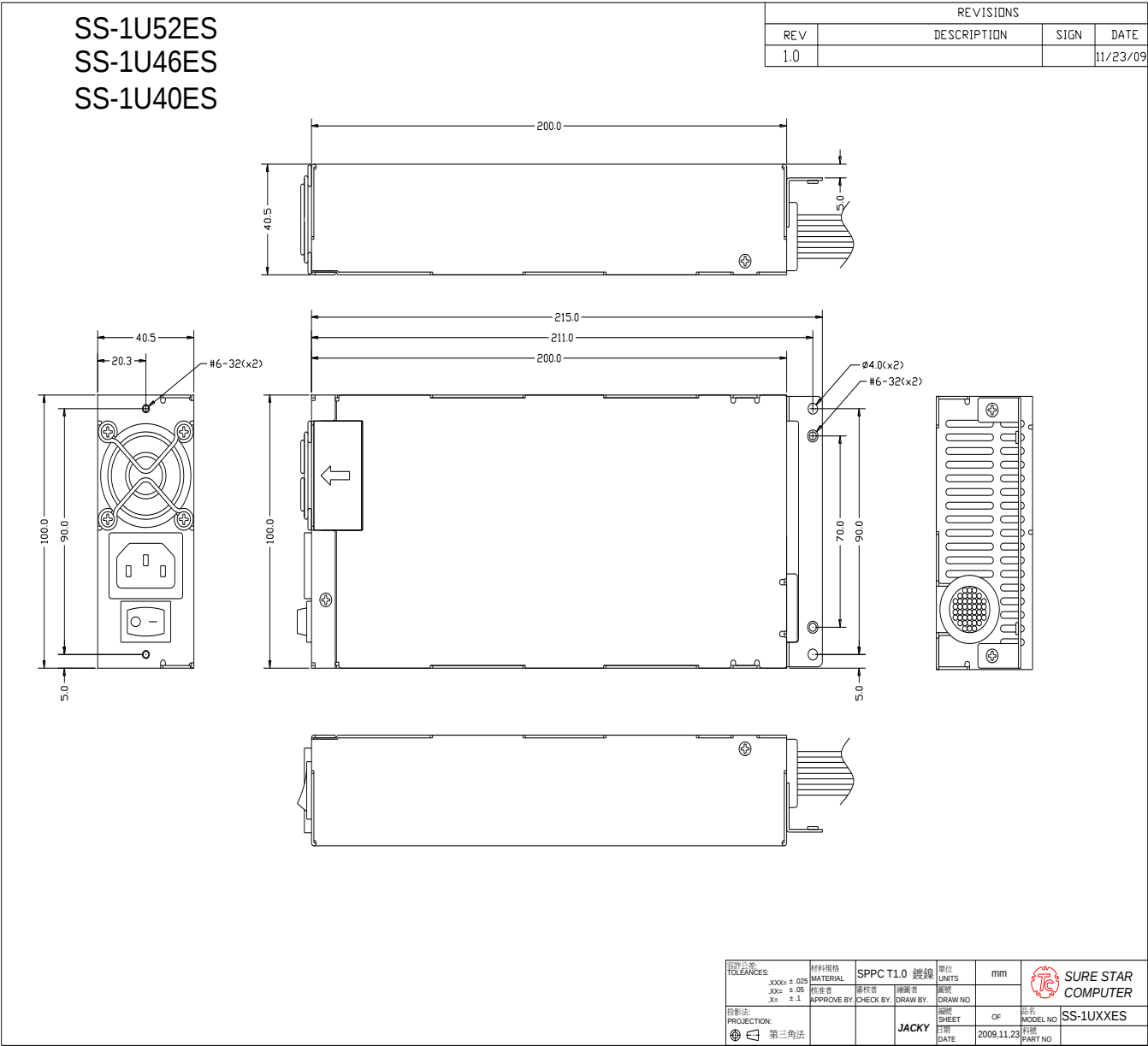
## 6. EMI NOISE FILTER:

EN55022:2006+A1:2007, EN55024:1998+A1:2001+A2:2003

EN61000-3-2: 2006+A2:2009 EN61000-3-3: 2008, IEC61000-4-2,-3,-4,-5,-6,-8,-11

7. DIMENSION

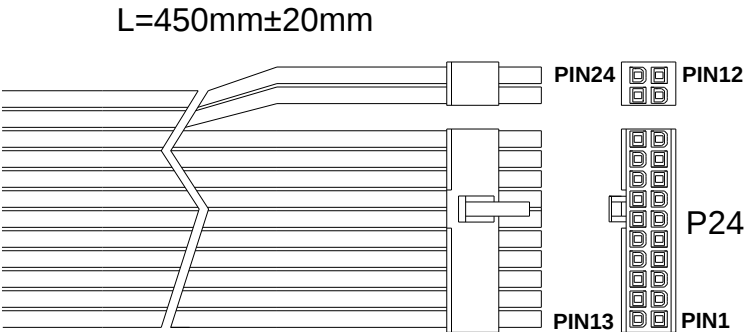
L 200 x W 100 x H 40.5 mm



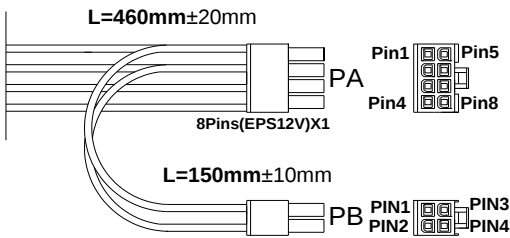
8. PINOUTS OF CONNECTORS

- ATX or EPS (20+4)Pin x 1 ,
- M8P +12V Power Connector x 1 ,
- M4P +12V Power Connector x 1 ,
- H.D.D. x 6 ,
- Floppy x 1
- SATA x 2.

Below cable length start from Outer cage:

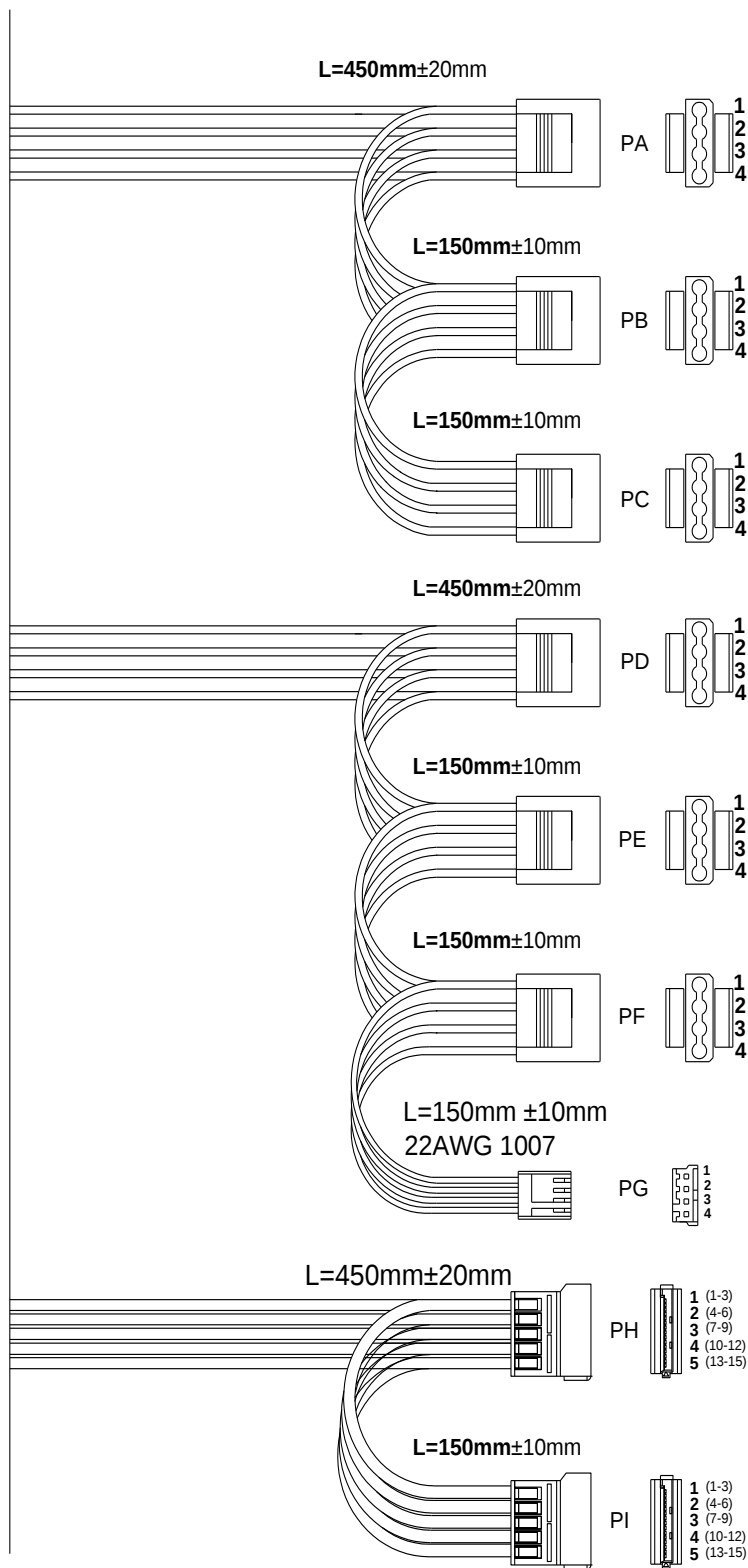


| 24Pins(EPS12V)<br>Connector HOUSING: MOLEX 39-01-2240 or equivalent<br>TERMINAL: MOLEX 39-00-0039 or equivalent |         |               |             |         |                                 |                            |
|-----------------------------------------------------------------------------------------------------------------|---------|---------------|-------------|---------|---------------------------------|----------------------------|
| Housing                                                                                                         | Pin No. | WIRE COLOR    | LENGTH      | Pin No. | WIRE COLOR                      | LENGTH                     |
| P24                                                                                                             | 1       | ORANGE(+3.3V) | 450mm/18AWG | 13      | ORANGE(+3.3V)<br>ORANGE(+3.3Vs) | 450mm/18AWG<br>450mm/22AWG |
|                                                                                                                 | 2       | ORANGE(+3.3V) | 450mm/18AWG | 14      | BLUE(-12V)                      | 450mm/18AWG                |
|                                                                                                                 | 3       | BLACK(GND)    | 450mm/18AWG | 15      | BLACK(GND)                      | 450mm/18AWG                |
|                                                                                                                 | 4       | RED(+5V)      | 450mm/18AWG | 16      | GREEN(PS-ON)                    | 450mm/20AWG                |
|                                                                                                                 | 5       | BLACK(GND)    | 450mm/18AWG | 17      | BLACK(GND)                      | 450mm/18AWG                |
|                                                                                                                 | 6       | RED(+5V)      | 450mm/18AWG | 18      | BLACK(GND)                      | 450mm/18AWG                |
|                                                                                                                 | 7       | BLACK(GND)    | 450mm/18AWG | 19      | BLACK(GND)                      | 450mm/18AWG                |
|                                                                                                                 | 8       | GRAY(PG)      | 450mm/20AWG | 20      | NC                              |                            |
|                                                                                                                 | 9       | PURPLE(+5VSB) | 450mm/18AWG | 21      | RED(+5V)                        | 450mm/18AWG                |
|                                                                                                                 | 10      | YELLOW(+12V)  | 450mm/18AWG | 22      | RED(+5V)                        | 450mm/18AWG                |
|                                                                                                                 | 11      | YELLOW(+12V)  | 450mm/18AWG | 23      | RED(+5V)                        | 450mm/18AWG                |
|                                                                                                                 | 12      | ORANGE(+3.3V) | 450mm/18AWG | 24      | BLACK(GND)                      | 450mm/18AWG                |



| Housing | Pin | WIRE COLOR  | LENGTH      | Pin | WIRE COLOR    | LENGTH      |
|---------|-----|-------------|-------------|-----|---------------|-------------|
| PA      | 1   | Black/Black | 460mm/18AWG | 5   | Yellow/Yellow | 460mm/18AWG |
|         | 2   | Black/Black |             | 6   | Yellow/Yellow |             |
|         | 3   | Black       |             | 7   | Yellow        |             |
|         | 4   | Black       |             | 8   | Yellow        |             |
| PB      | 1   | Black       | 150mm/18AWG | 3   | Yellow        | 150mm/18AWG |
|         | 2   | Black       | 150mm/18AWG | 4   | Yellow        | 150mm/18AWG |

Connector HOUSING: MOLEX 39-01-0280 or equivalent  
Connector HOUSING: MOLEX 39-01-0240 or equivalent



| Housing | Pin No. | WIRE COLOR      | LENGTH      | Pin No. | WIRE COLOR    | LENGTH      |
|---------|---------|-----------------|-------------|---------|---------------|-------------|
| PA      | 1       | Yellow / Yellow | 450mm/18AWG | 3       | Black / Black | 450mm/18AWG |
|         | 2       | Black / Black   | 450mm/18AWG | 4       | Red / Red     | 450mm/18AWG |
| PB      | 1       | Yellow / Yellow | 150mm/18AWG | 3       | Black / Black | 150mm/18AWG |
|         | 2       | Black / Black   | 150mm/18AWG | 4       | Red / Red     | 150mm/18AWG |
| PC      | 1       | Yellow          | 150mm/18AWG | 3       | Black         | 150mm/18AWG |
|         | 2       | Black           | 150mm/18AWG | 4       | Red           | 150mm/18AWG |

Connector Housing: H.D.D. for easy plug

| Housing | Pin No. | WIRE COLOR      | LENGTH      | Pin No. | WIRE COLOR    | LENGTH      |
|---------|---------|-----------------|-------------|---------|---------------|-------------|
| PD      | 1       | Yellow / Yellow | 450mm/18AWG | 3       | Black / Black | 450mm/18AWG |
|         | 2       | Black / Black   | 450mm/18AWG | 4       | Red / Red     | 450mm/18AWG |
| PE      | 1       | Yellow / Yellow | 150mm/18AWG | 3       | Black / Black | 150mm/18AWG |
|         | 2       | Black / Black   | 150mm/18AWG | 4       | Red / Red     | 150mm/18AWG |
| PF      | 1       | Yellow / Yellow | 150mm/18AWG | 3       | Black / Black | 150mm/18AWG |
|         | 2       | Black / Black   | 150mm/18AWG | 4       | Red / Red     | 150mm/18AWG |
| PG      | 1       | Yellow          | 150mm/22AWG | 3       | Black         | 150mm/22AWG |
|         | 2       | Black           | 150mm/22AWG | 4       | Red           | 150mm/22AWG |

Connector Housing: H.D.D. for easy plug

| Housing | Pin No. | WIRE COLOR      | LENGTH      |
|---------|---------|-----------------|-------------|
| PH      | 1       | Orange / Orange | 450mm/18AWG |
|         | 2       | Black / Black   | 450mm/18AWG |
|         | 3       | Red / Red       | 450mm/18AWG |
|         | 4       | Black / Black   | 450mm/18AWG |
|         | 5       | Yellow / Yellow | 450mm/18AWG |
| PI      | 1       | Orange          | 150mm/18AWG |
|         | 2       | Black           | 150mm/18AWG |
|         | 3       | Red             | 150mm/18AWG |
|         | 4       | Black           | 150mm/18AWG |
|         | 5       | Yellow          | 150mm/18AWG |

HOUSING: MOLEX 675820000 or equivalent  
 TERMINAL: MOLEX 675810000 or equivalent

**Note: Specification and wiring diagram subject to change without notice.**

Dec. 25, 2012