

SPECIFICATION

Model Name :

SS-2UxxEx *series*

Description :

400W 、 500W 、 600W 、 700W 2U Single Power Supply

Version : B0

Issued Date : 20230803

1. General Description

This specification defines the characteristic of Single power supply with 2Unit high.

And model name is SS-2U40ES for 400W、SS-2U50ES for 500W、SS-2U60EL for 600W、SS-2U70EL for 700W 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 | 8A/8A/10A/10A | 25A |
| 230Vac | 4A/4A/5A/5A/ | 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 | 32A/40A/48A/56A | ±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 160W/170W/180W/180W.
2. The max total power shall not exceed 400W/500W/600W/700W.
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. Insulation

5.1. Dielectric Withstand Voltage

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

5.2. Leakage Current

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

6. Safety

CB 、 CE 、 TUV 、 UL 、 BSMI 、 CCC 。

7. EMC

CE 、 FCC 、 BSMI 、 CCC 。（Class A）

8. Environmental Requirement

8.1. Temperature

Operating: 0°C to +45°C.

Non Operating: -20°C to +70°C.

8.2. Humidity

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

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

8.3. Altitude

Operating: Up to 2000m.

8.4. Cooling Method

By DC fan.

9. Reliability

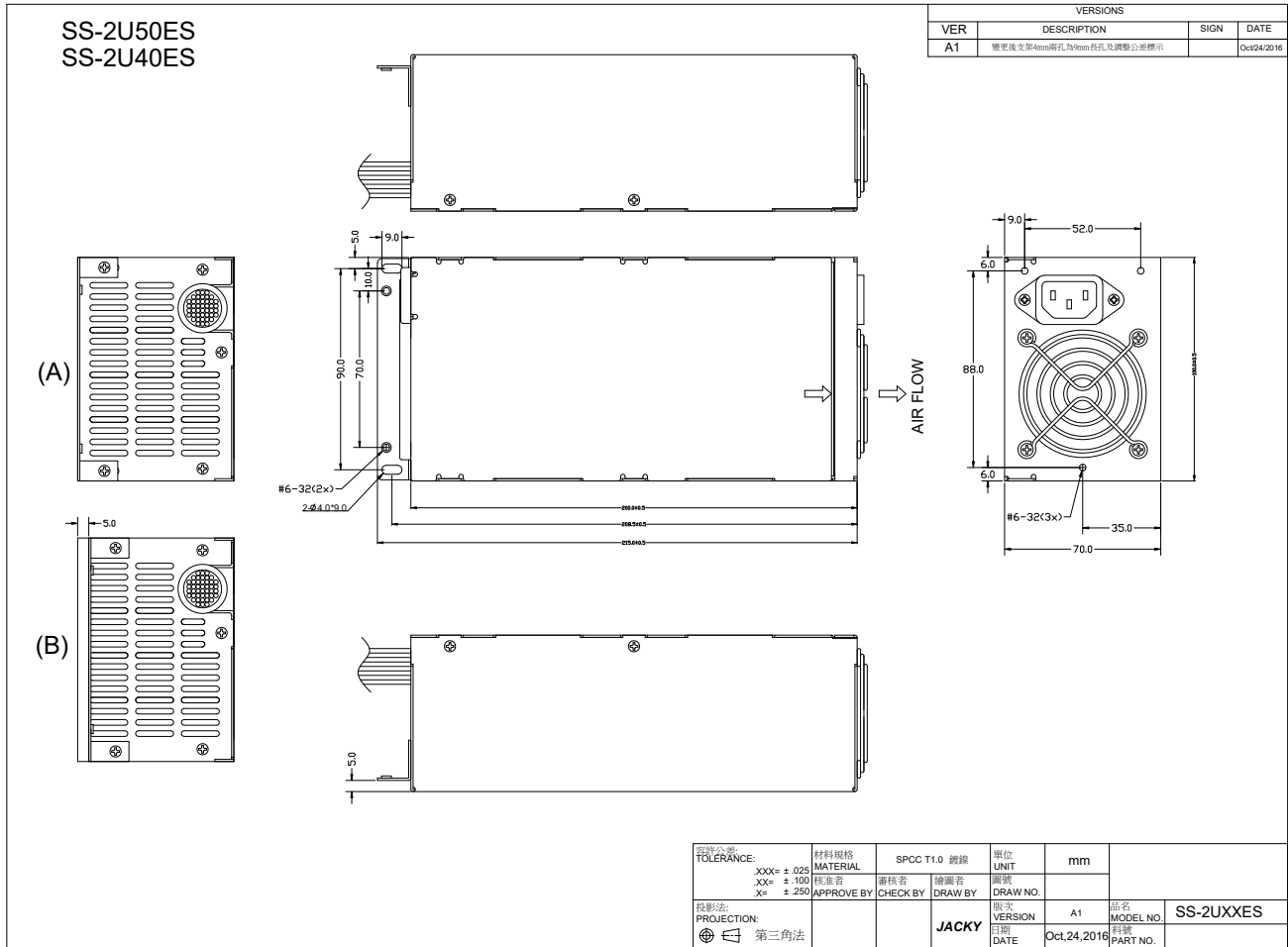
9.1. MTBF

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

10. Mechanical Drawing and Output Wire

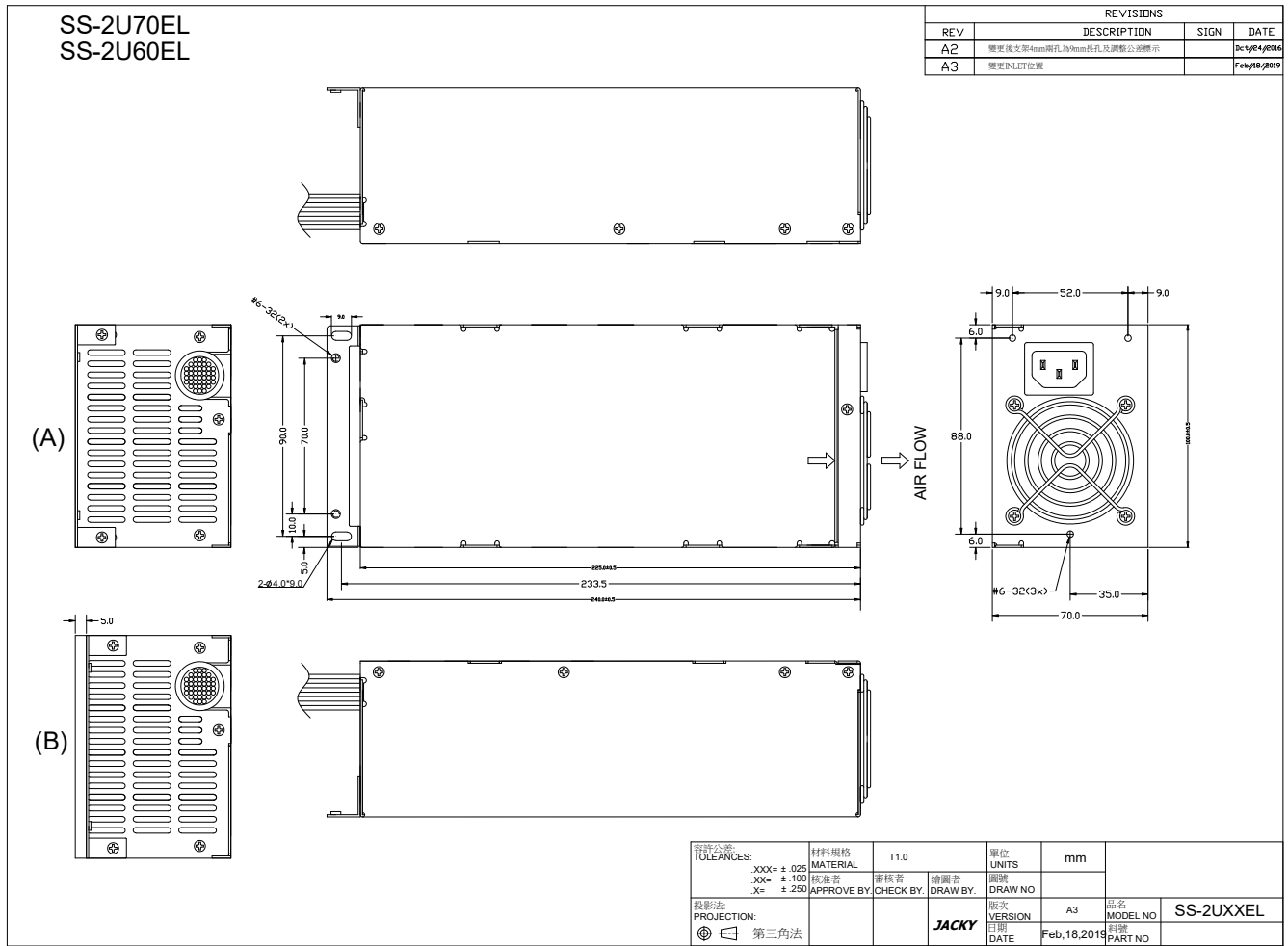
10.1. Outline (bracket optional): L 200 x W 100 x H 70 mm.

For SS-2U40ES,SS-2U50ES



10.2. Outline (bracket optional): L 225 x W 100 x H 70 mm.

For SS-2U60EL,SS-2U70EL



10.3. Output Wire (could be customization): For SS-2U40ES,SS-2U50ES

VERSIONS

| VER | DESCRIPTION | SIGN | DATE |
|-----|-------------|------|------|
| | | | / / |

20+4Pins(EP512V)
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(+3.3V) | 420mm±18AWG | 13 | ORANGE(+3.3V) | 420mm±18AWG |
| | 2 | ORANGE(+3.3V) | 420mm±18AWG | 14 | BLUE(-12V) | 420mm±18AWG |
| | 3 | BLACK(GND) | 420mm±18AWG | 15 | BLACK(GND) | 420mm±18AWG |
| | 4 | RED(+5V) | 420mm±18AWG | 16 | GREEN(+5V) | 420mm±18AWG |
| | 5 | BLACK(GND) | 420mm±18AWG | 17 | BLACK(GND) | 420mm±18AWG |
| | 6 | RED(+5V) | 420mm±18AWG | 18 | BLACK(GND) | 420mm±18AWG |
| | 7 | BLACK(GND) | 420mm±18AWG | 19 | BLACK(GND) | 420mm±18AWG |
| | 8 | GRAY(PG) | 420mm±20AWG | 20 | NC | |
| | 9 | PURPLE(+5VSB) | 420mm±18AWG | 21 | RED(+5V) | 420mm±18AWG |
| | 10 | YELLOW(+12V) | 420mm±18AWG | 22 | RED(+5V) | 420mm±18AWG |
| | 11 | YELLOW(+12V) | 420mm±18AWG | 23 | RED(+5V) | 420mm±18AWG |
| | 12 | ORANGE(+3.3V) | 420mm±18AWG | 24 | BLACK(GND) | 420mm±18AWG |

8Pins(EP512V)
HOUSING : MOLEX 5557 series or equivalent
TERMINAL : MOLEX 5556 series or equivalent

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 |
|---------|---------|-------------|--------|-------------|------------|
| P8 | 1 | BLACK/BLACK | COM | 18AWG/18AWG | 440mm±20mm |
| | 2 | BLACK/BLACK | COM | 18AWG/18AWG | |
| | 3 | BLACK/BLACK | COM | 18AWG/18AWG | |
| | 4 | BLACK/BLACK | COM | 18AWG/18AWG | |
| | 5 | YELLOW | +12V | 18AWG | |
| | 6 | YELLOW | +12V | 18AWG | |
| | 7 | YELLOW | +12V | 18AWG | |
| | 8 | YELLOW | +12V | 18AWG | |
| P4 | 1 | BLACK | COM | 18AWG | 150mm±15mm |
| | 2 | BLACK | COM | 18AWG | |
| | 3 | YELLOW | +12V | 18AWG | |
| | 4 | YELLOW | +12V | 18AWG | |

4Pins(HD/CD-ROM/RW)
HOUSING : MOLEX 8981 series or equivalent
TERMINAL : MOLEX 8980 series or equivalent

| Housing | Pin No. | WIRE COLOR | SIGNAL | WIRE SIZE | LENGTH |
|---------|---------|---------------|--------|-----------|-------------|
| P4H | 1 | YELLOW/YELLOW | +12V | 18AWG | 430mm ±20mm |
| | 2 | BLACK/BLACK | COM | 18AWG | |
| | 3 | BLACK/BLACK | COM | 18AWG | |
| | 4 | RED/RED | +5V | 18AWG | |
| P4H1 | 1 | YELLOW/YELLOW | +12V | 18AWG | 150mm ±15mm |
| | 2 | BLACK/BLACK | COM | 18AWG | |
| | 3 | BLACK/BLACK | COM | 18AWG | |
| | 4 | RED/RED | +5V | 18AWG | |
| P4H2 | 1 | YELLOW | +12V | 18AWG | 150mm ±15mm |
| | 2 | BLACK | COM | 18AWG | |
| | 3 | BLACK | COM | 18AWG | |
| | 4 | RED | +5V | 18AWG | |

4Pins(HD/CD-ROM/RW)
HOUSING : MOLEX 8981 series or equivalent
TERMINAL : MOLEX 8980 series or equivalent

4Pins(FLOPPY DISK)
HOUSING : AMP 171822 series or equivalent
TERMINAL : AMP 170262 series or equivalent

| Housing | Pin No. | WIRE COLOR | SIGNAL | WIRE SIZE | LENGTH |
|---------|---------|---------------|--------|-----------|-------------|
| P4H3 | 1 | YELLOW/YELLOW | +12V | 18AWG | 430mm±20mm |
| | 2 | BLACK/BLACK | COM | 18AWG | |
| | 3 | BLACK/BLACK | COM | 18AWG | |
| | 4 | RED/RED | +5V | 18AWG | |
| P4H4 | 1 | YELLOW/YELLOW | +12V | 18AWG | 150mm ±15mm |
| | 2 | BLACK/BLACK | COM | 18AWG | |
| | 3 | BLACK/BLACK | COM | 18AWG | |
| | 4 | RED/RED | +5V | 18AWG | |
| P4H5 | 1 | YELLOW/YELLOW | +12V | 18AWG | 150mm ±15mm |
| | 2 | BLACK/BLACK | COM | 18AWG | |
| | 3 | BLACK/BLACK | COM | 18AWG | |
| | 4 | RED/RED | +5V | 18AWG | |
| P4F1 | 1 | YELLOW/YELLOW | +12V | 18AWG | 150mm ±15mm |
| | 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 | 430mm±20mm |
| | 2 | BLACK/BLACK | COM | 18AWG | |
| | 3 | RED/RED | +5V | 18AWG | |
| | 4 | BLACK/BLACK | COM | 18AWG | |
| | 5 | YELLOW/YELLOW | +12V | 18AWG | |
| S2 | 1 | ORANGE | +3.3V | 18AWG | 150mm ±15mm |
| | 2 | BLACK | COM | 18AWG | |
| | 3 | RED | +5V | 18AWG | |
| | 4 | BLACK | COM | 18AWG | |
| | 5 | YELLOW | +12V | 18AWG | |

TOLERANCE 3000+
MATERIAL 300+
PRODUCTION 第三角法

UNIT mm

DATE 2023/7/25

Wayton

Wireout_SS-2U40-50ES

10.4. Output Wire (could be customization): For SS-2U60EL,SS-2U70EL

| VERSIONS | | | | | |
|----------|-------------|------|------|--|--|
| VER | DESCRIPTION | SIGN | DATE | | |
| | | | | | |

| 20+4Pins(EPS12V) | | | | | |
|--|---------|---------------|-------------|---------|---------------|
| HOUSING : MOLEX 5557 series or equivalent | | | | | |
| TERMINAL : MOLEX 5556 series or equivalent | | | | | |
| Housing | Pin No. | WIRE COLOR | LENGTH | Pin No. | WIRE COLOR |
| P24 | 1 | ORANGE(+3.3V) | 420mm±18AWG | 13 | ORANGE(+3.3V) |
| | 2 | ORANGE(+3.3V) | 420mm±18AWG | 14 | BLUE(-5V) |
| | 3 | BLACK(GND) | 420mm±18AWG | 15 | BLACK(GND) |
| | 4 | RED(+5V) | 420mm±18AWG | 16 | GREEN(PUL-ON) |
| | 5 | BLACK(GND) | 420mm±18AWG | 17 | BLACK(GND) |
| | 6 | RED(+5V) | 420mm±18AWG | 18 | BLACK(GND) |
| | 7 | BLACK(GND) | 420mm±18AWG | 19 | BLACK(GND) |
| | 8 | GRAY(PG) | 420mm±20AWG | 20 | NC |
| | 9 | PURPLE(+5VSB) | 420mm±18AWG | 21 | RED(+5V) |
| | 10 | YELLOW(-12V) | 420mm±18AWG | 22 | RED(+5V) |
| | 11 | YELLOW(-12V) | 420mm±18AWG | 23 | RED(+5V) |
| | 12 | ORANGE(+3.3V) | 420mm±18AWG | 24 | BLACK(GND) |

| 8Pins(EPS12V) | | | | | |
|--|---------|-------------|--------|-------------|------------|
| HOUSING : MOLEX 5557 series or equivalent | | | | | |
| TERMINAL : MOLEX 5556 series or equivalent | | | | | |
| 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 |
| P8 | 1 | BLACK/BLACK | COM | 18AWG/18AWG | 440mm±20mm |
| | 2 | BLACK/BLACK | COM | 18AWG/18AWG | |
| | 3 | BLACK/BLACK | COM | 18AWG/18AWG | |
| | 4 | BLACK/BLACK | COM | 18AWG/18AWG | |
| | 5 | YELLOW | +12V | 18AWG | |
| | 6 | YELLOW | +12V | 18AWG | |
| | 7 | YELLOW | +12V | 18AWG | |
| P4 | 1 | BLACK | COM | 18AWG | 150mm±15mm |
| | 2 | BLACK | COM | 18AWG | |
| | 3 | YELLOW | +12V | 18AWG | |
| | 4 | YELLOW | +12V | 18AWG | |

| 4Pins(HD/CD-ROM/RW) | | | | | |
|--|---------|---------------|--------|-----------|-------------|
| HOUSING : MOLEX 8981 series or equivalent | | | | | |
| TERMINAL : MOLEX 8980 series or equivalent | | | | | |
| Housing | Pin No. | WIRE COLOR | SIGNAL | WIRE SIZE | LENGTH |
| P4H | 1 | YELLOW/YELLOW | +12V | 18AWG | 430mm ±20mm |
| | 2 | BLACK/BLACK | COM | 18AWG | |
| | 3 | BLACK/BLACK | COM | 18AWG | |
| | 4 | RED/RED | +5V | 18AWG | |
| P4H1 | 1 | YELLOW/YELLOW | +12V | 18AWG | 150mm ±15mm |
| | 2 | BLACK/BLACK | COM | 18AWG | |
| | 3 | BLACK/BLACK | COM | 18AWG | |
| | 4 | RED/RED | +5V | 18AWG | |
| P4H2 | 1 | YELLOW | +12V | 18AWG | 150mm ±15mm |
| | 2 | BLACK | COM | 18AWG | |
| | 3 | BLACK | COM | 18AWG | |
| | 4 | RED | +5V | 18AWG | |

| 4Pins(HD/CD-ROM/RW) | | | | | |
|--|---------|---------------|--------|-----------|-------------|
| HOUSING : MOLEX 8981 series or equivalent | | | | | |
| TERMINAL : MOLEX 8980 series or equivalent | | | | | |
| 4Pins(FLOPPY DISK) | | | | | |
| HOUSING : AMP 171822 series or equivalent | | | | | |
| TERMINAL : AMP 170262 series or equivalent | | | | | |
| Housing | Pin No. | WIRE COLOR | SIGNAL | WIRE SIZE | LENGTH |
| P4H3 | 1 | YELLOW/YELLOW | +12V | 18AWG | 430mm±20mm |
| | 2 | BLACK/BLACK | COM | 18AWG | |
| | 3 | BLACK/BLACK | COM | 18AWG | |
| | 4 | RED/RED | +5V | 18AWG | |
| P4H4 | 1 | YELLOW/YELLOW | +12V | 18AWG | 150mm ±15mm |
| | 2 | BLACK/BLACK | COM | 18AWG | |
| | 3 | BLACK/BLACK | COM | 18AWG | |
| | 4 | RED/RED | +5V | 18AWG | |
| P4H5 | 1 | YELLOW/YELLOW | +12V | 18AWG | 150mm ±15mm |
| | 2 | BLACK/BLACK | COM | 18AWG | |
| | 3 | BLACK/BLACK | COM | 18AWG | |
| | 4 | RED/RED | +5V | 18AWG | |
| P4F1 | 1 | YELLOW | +12V | 22AWG | 150mm ±15mm |
| | 2 | BLACK | COM | 22AWG | |
| | 3 | BLACK | COM | 22AWG | |
| | 4 | RED | +5V | 22AWG | |

| 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 | 430mm±20mm |
| | 2 | BLACK/BLACK | COM | 18AWG | |
| | 3 | RED/RED | +5V | 18AWG | |
| | 4 | BLACK/BLACK | COM | 18AWG | |
| | 5 | YELLOW/YELLOW | +12V | 18AWG | |
| S2 | 1 | ORANGE | +3.3V | 18AWG | 150mm ±15mm |
| | 2 | BLACK | COM | 18AWG | |
| | 3 | RED | +5V | 18AWG | |
| | 4 | BLACK | COM | 18AWG | |
| | 5 | YELLOW | +12V | 18AWG | |

| | | | | | |
|--|-------------------------------|---|---|-------------------|--|
| 公差 TOLERANCE XXX XX X X | 材料 MATERIAL X X X | 审核 CHECK BY 设计 DRAW BY 日期 DATE | 单位 UNIT mm | 比例 SCALE A0 | 图号 MODEL NO W/reout_SS-2U60-70EL |
| 投影 PROJECTION 第三角法 | | | 公司 VERSION DATE Wayon 2022/7/25 | | 图号 PART NO |

11. Customization Note

Customization note shall be listed here.

End of File

NOTE : This data is subject to change without notice.