## Description

120W, AC/DC Open Frame Power Supply

RoHS

CE Report EN62368-1

UKCA Report BS EN62368-1

## Features

- Universal 85-264VAC or 120-370VDC input voltage
- High power density, compact size: 4" × 2" × 1.26"
- Operating ambient temperature range: -30℃ to +70℃
- High I/O isolation test voltage up to 4000VAC
- Meets 5000m altitude requirements
- Extremely low leakage current < 100uA
- Stand-by power consumption < 0.3W
- Output short circuit, over-current, over-voltage, over-temperature protection
- Efficiency up to 91%
- Meets 2 x MOPP safety class
- Suitable for BF application
- Over-voltage class III (designed to meet EN61558-1)
- Installing in system of Safety Class I/II is available

## Application

- Industrial Control
- LED
- Lamp control
- Power
- Security
- Comnicate
- Smart Home
- Medical treatment

## Selection Guide

| Certification | Part No.* | Cool Mode | Output Power (W) | Nominal Output Voltage and Current (Vo/Io) | Output Voltage Adjustable Range ADJ (V) | Efficiency at 230VAC (%) Typ. | Capacitive Load (μF) Max. |
|---|---|---|---|---|---|---|---|
| EN/BS EN | AOMU120-2B-12 | Air cooling | 84 | 12V/7A | 11.4-12.6 | 89 | 6000 |
| | | 10CFM | 120 | 12V/10A | | | |
| | AOMU120-2B-15 | Air cooling | 84 | 15V/5.6A | 14.3-15.8 | 89 | 5000 |
| | | 10CFM | 120 | 15V/8A | | | |
| | AOMU120-2B-24 | Air cooling | 84 | 24V/3.5A | 22.8-25.2 | 90 | 3200 |
| | | 10CFM | 120 | 24V/5A | | | |
| | AOMU120-2B-27 | Air cooling | 84 | 27V/3.11A | 25.6-28.4 | 90 | 2400 |
| | | 10CFM | 120 | 27V/4.44A | | | |
| | AOMU120-2B-36 | Air cooling | 84 | 36V/2.33 A | 35.28-37.8 | 90 | 2000 |
| | | 10CFM | 120 | 36V/3.33A | | | |
| | AOMU120-2B-48 | Air cooling | 84 | 48V/1.75A | 45.6-50.4 | 91 | 1600 |
| | | 10CFM | 120 | 48V/2.5A | | | |
| | AOMU120-2B-54 | Air cooling | 84 | 54V/1.56A | 51.3-55.5 | 91 | 1300 |
| | | 10CFM | 120 | 54V/2.22A | | | |

Notes: 1. *Under any conditions, the total power of the product should not exceed the rated power of 120w and the output current should not exceed the rated output current.

2. The product picture is for reference only. For details, please refer to the actual product.

## Characteristic

| Product characteristics | Item | Operating Conditions | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| Input Specifications | Input Voltage Range | AC input | | 85 | -- | 264 | VAC |
| | | DC input | | 120 | -- | 370 | VDC |
| | Input Frequency | | | 47 | -- | 63 | Hz |
| | Input Current | 115VAC | | -- | -- | 3 | A |
| | | 230VAC | | -- | -- | 1.5 | |
| | Inrush Current | 115VAC | | -- | -- | 30 | |
| | | 230VAC | | -- | -- | 60 | |
| | Leakage Current | 264VAC | Normal operation | 100uA Max. | | | |
| | | | Single fault | 500uA Max. | | | |
| Output Specifications | Output Voltage Accuracy | 0% - 100% load | 12V/15V output | -- | ±2 | -- | % |
| | | | Other output | -- | ±1 | -- | |
| | Line Regulation | Rated load | | -- | ±0.5 | -- | |
| | Load Regulation | 230VAC | | -- | ±1 | -- | |
| | Ripple & Noise* | 20MHz bandwidth (peak-to-peak value) | 12V/15V output | -- | 100 | 150 | mV |
| | | | Other output | -- | 120 | 200 | |
| | Stand-by Power Consumption | 12V/15V/24V output | | -- | 0.25 | 0.3 | W |
| | | Other output | | -- | 0.30 | 0.5 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Output Specifications | Temperature Coefficient | | | -- | ±0.03 | -- | %/℃ |
| | Short Circuit Protection | | | Hiccup, continuous, self-recover | | | |
| | Over-current Protection | | | ≥115%Io, self-recover | | | |
| | Over-voltage Protection | | 12VDC output | ≤16V | Output voltage clamp or hiccup | | |
| | | | 15VDC output | ≤25V | | | |
| | | | 24VDC output | ≤32V | | | |
| | | | 27VDC output | ≤35V | | | |
| | | | 36VDC output | ≤50V | | | |
| | | | 48VDC output | ≤60V | | | |
| | | | 54VDC output | ≤60V | | | |
| | Over-temperature Protection | | | Output voltage turn off, re-power on to recovery after abnormal removed | | | |
| | Fan power | | 12V/24V/27V/36V/48V/54V | Offer output power of 12V/0.5A with output voltage accuracy ±15% | | | |
| | | | 15V | Offer output power of 15V/0.4A with output voltage accuracy ±15% | | | |
| | Minim Load | | | 0 | -- | -- | % |
| | Hold-up Time | | 230VAC input | -- | 50 | -- | ms |
| General Specifications | Isolation | Input - output | Electric Strength Test for 1min., leakage current <5mA | 4000 | -- | -- | VAC |
| | | Input - PE | | 2000 | -- | -- | |
| | | Output - PE | | 1500 | -- | -- | |
| | Insulation Resistance | Input - output | 500VDC | 100 | -- | -- | MΩ |
| | | Input - PE | | | | | |
| | | Output - PE | | | | | |
| | Isolation level | Input - output | | 2 × MOPP | | | |
| | | Input - PE | | 1 × MOPP | | | |
| | | Output - PE | | 1 × MOPP | | | |
| | Operating Temperature | | | -30 | -- | +70 | ℃ |
| | Storage Temperature | | | -40 | -- | +85 | |
| | Operating Humidity | | Non-condensing | -- | -- | 90 | %RH |
| | Storage Humidity | | Non-condensing | -- | -- | 95 | |
| | Altitude* | | | -- | -- | 5000 | m |
| | Power Derating | | Air cooling +45℃ to +70℃ 12V/15V | 1.2 | -- | -- | %/℃ |
| | | | Air cooling +50℃ to +70℃ 24V/27V/36V/48V/54V | 1.5 | -- | -- | |
| | | | 10CFM +50℃ to +70℃ | 3 | -- | -- | |
| | | | 85VAC - 115VAC | 0.67 | -- | -- | %/VAC |

| | | | | | | |
|---|---|---|---|---|---|---|
| General Specifications | Safety distance | Clearance | 7.60 | -- | -- | mm |
| | | Creepage | 8.00 | -- | -- | |
| | Safety Class | | CLASS I (st be connected with PE)/ CLASS II | | | |
| | MTBF | MIL-HDBK-217F@25℃ | > 300,000 h | | | |
| Mechanical Specifications | Dimension | 101.60 x 50.80 x 32.00mm | | | | |
| | Weight | 162g (Typ.) | | | | |
| | Cooling Method | Free air convection/10CFM | | | | |

Note: *The "Tip and barrel method" and "Twisted pair-wire method" are used for ripple and noise test, with a 0.1uf & 10uf parallel capacitor.

**For operation of altitude between 2000-5000m.

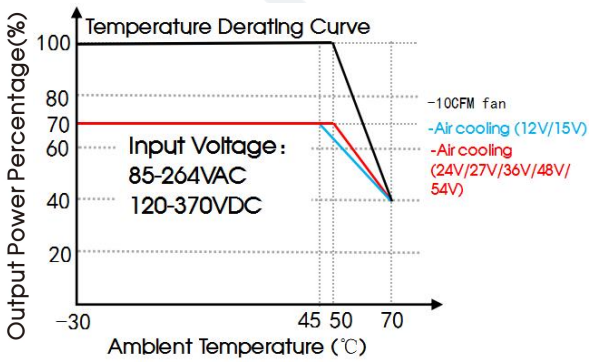
## Electromagnetic Compatibility (EMC)

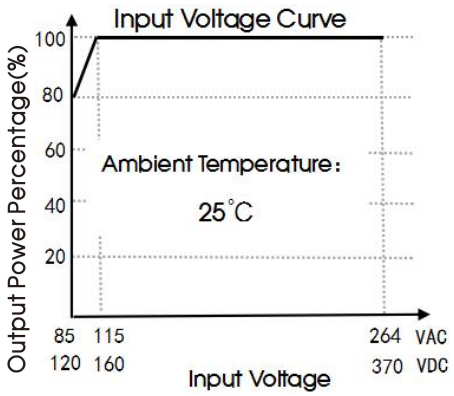
| | | | | |
|---|---|---|---|---|
| Electromagnetic Compatibility (EMC) | Emissions | CE | CISPR32/EN55032/EN55011 CLASS B | |
| | | RE | CISPR32/EN55032/EN55011 CLASS B | |
| | | Harmonic current | IEC/EN61000-3-2 CLASS A | |
| | Imnity | ESD | IEC/EN61000-4-2 Contact ±8KV/Air ±15KV | Perf. Criteria A |
| | | RS | IEC/EN61000-4-3 10V/m | Perf. Criteria A |
| | | EFT | IEC/EN61000-4-4 ±2KV | Perf. Criteria A |
| | | Surge | IEC/EN61000-4-5 Line to line ±2KV/ line to ground ±4KV | Perf. Criteria A |
| | | CS | IEC/EN61000-4-6 10Vr.m.s | Perf. Criteria A |
| | | Voltage dips, short interruption and voltage variations | IEC/EN61000-4-11 100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods | Perf. Criteria B |

Note: 1.The power supply should be considered as a part of the components in the system, for EMC test installation method, please refer to Note 7 & 8 of the dimension drawing;

2.Category I products with PE (which st be connected), category II products without PE.

## Product Characteristic Curve

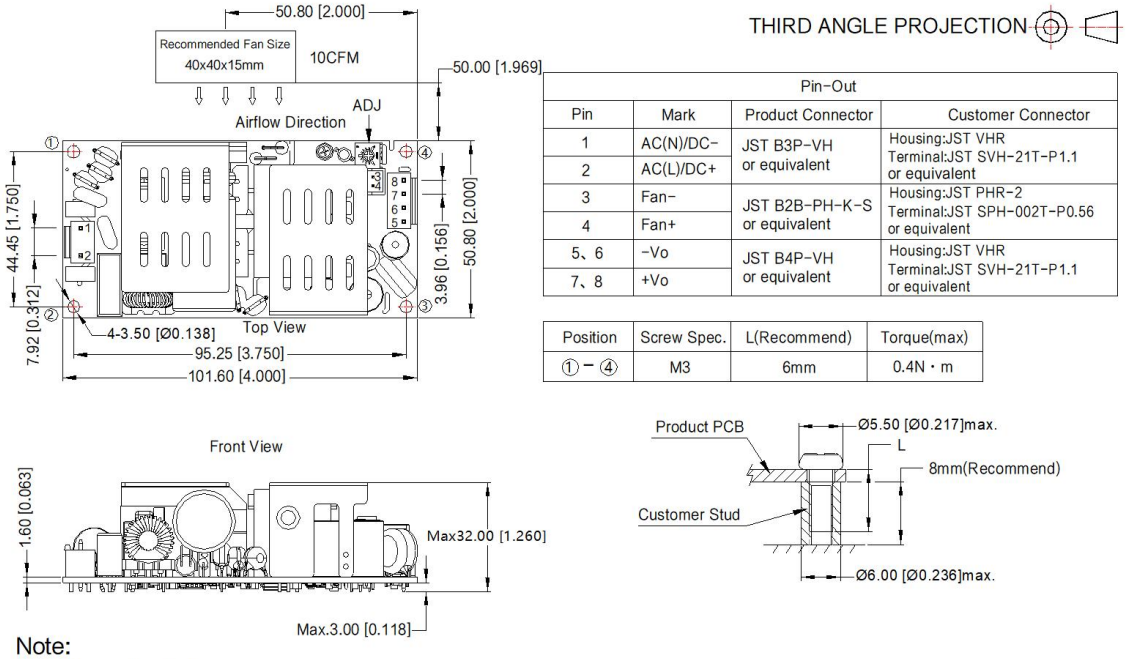



Note: ① With an AC input between 85-115VAC and a DC input between 120-160VDC, the output power st be derated as per temperature derating curves;

② This product is suitable for applications using natural air cooling.

## Dimensions and Recommended




| Pin-Out | | | |
|---|---|---|---|
| Pin | Mark | Product Connector | Customer Connector |
| 1 | AC(N)/DC− | JST B3P-VH or equivalent | Housing:JST VHR<br>Terminal:JST SVH-21T-P1.1<br>or equivalent |
| 2 | AC(L)/DC+ | | |
| 3 | Fan− | JST B2B-PH-K-S or equivalent | Housing:JST PHR-2<br>Terminal:JST SPH-002T-P0.56<br>or equivalent |
| 4 | Fan+ | | |
| 5、6 | −Vo | JST B4P-VH or equivalent | Housing:JST VHR<br>Terminal:JST SVH-21T-P1.1<br>or equivalent |
| 7、8 | +Vo | | |

| Position | Screw Spec. | L(Recommend) | Torque(max) |
|---|---|---|---|
| ① − ④ | M3 | 6mm | 0.4N・m |

Note:
1. Unit: mm[inch]
2. ADJ: Output adjustable resistor
3. General tolerances: ± 1.00[ ± 0.039]
4. Do not use fan power to power other devices
5. The layout of the device is for reference only, please refer to the actual product
6. It is recommended 10mm distance between the PCB and other components for safety purpose
7. Class Ⅰ system ①, ③ positions must be connected to the earth( ⏚ )
8. Class Ⅱ system ①, ③ positions must be connected together

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75% with nominal input voltage and rated output load;
2. All index testing methods in this datasheet are based on our company corporate standards;
3. We can provide product customization service, please contact our technicians directly for specific information;
4. Products are related to laws and regulations: see "Features" and "EMC";
5. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.