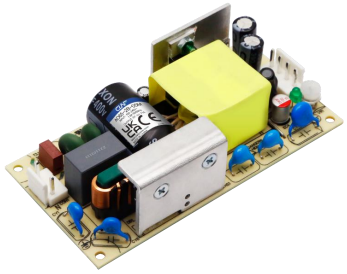
## DESCRIPTIONS

65W, AC/DC Open Frame Power Supply



RoHS

3 Years Warranty

CE Report EN62368-1

UKCA Report BS EN62368-1

## FEATURES

- Universal 85-264VAC or 100-370VDC input voltage
- Input withstand 305VAC/5s
- Accepts AC or DC input (dual-use of same terminal)
- 4 × 2 inch
- Operating ambient temperature range: -40℃ to +85℃ (-30℃ full load)
- High I/O isolation voltage up to 4000VAC
- Output voltage adjustable
- Output short circuit, over-current, over-voltage protection
- Surge immunity meets Level 4
- Installing in system of Safety Class I is available

## APPLICATIONS

- Industrial
- Office
- Civil

## Selection Table

| Certification | Part No. | 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 | AO65-2B-05M | 55 | 5V/11A | 4.5-5.5 | 84 | 20000 |
| | AO65-2B-12M | 65.04 | 12V/5.42A | 10.8-13.5 | 88 | 8000 |
| | AO65-2B-15M | 65.1 | 15V/4.34A | 13.5-16.5 | 88 | 7000 |
| | AO65-2B-24M | 65.04 | 24V/2.71A | 21.6-27 | 89 | 1500 |
| | AO65-2B-36M | 65.16 | 36V/1.81A | 32.4-39.6 | 89 | 1000 |
| | AO65-2B-48M | 65.28 | 48V/1.36A | 43.2-52.8 | 90 | 1000 |

Note: 1. *The actual adjustment range may extend outside the values stated, care should be exercised to ensure that the output voltage and power levels remain within the published maximum values.

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

## Product Characteristics

| Product characteristics | Item | | Operating Conditions | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|---|
| Input Specifications | Input Voltage Range | | AC input | | 85 | -- | 264 | VAC |
| | | | DC input | | 100 | -- | 370 | VDC |
| | Input Voltage Frequency | | | | 47 | -- | 63 | Hz |
| | Input Current | | 115VAC | | -- | -- | 1.8 | A |
| | | | 230VAC | | -- | -- | 1 | |
| | Inrush Current | | 115VAC | Cold start | -- | 30 | -- | |
| | | | 230VAC | | -- | 60 | -- | |
| | Input Temporary Over-voltage | | Rated load output, 305VAC input | | 5s/time, interval 10s, product without damaging | | | |
| | Hot Plug | | | | Unavailable | | | |
| Output Specifications | Output Voltage Accuracy | | Full load range | 5V/12V/15V | -- | ±2 | -- | % |
| | | | | 24V/36V/48V | -- | ±1 | -- | |
| | Line Regulation | | Rated load | | -- | ±0.5 | -- | |
| | Load Regulation | | 230VAC | | -- | ±1 | -- | |
| | Ripple & Noise* | | 20MHz bandwidth (peak-to-peak value) | 5V | -- | 80 | 100 | mV |
| | | | | 12V/15V | -- | 100 | 150 | |
| | | | | 24V/36V/48V | -- | 150 | 200 | |
| | Stand-by Power Consumption | | Room temperature, 230VAC input | | -- | 0.3 | 0.5 | W |
| | Temperature Coefficient | | 0℃ to +50℃ | | -- | ±0.03 | -- | %/℃ |
| | Short Circuit Protection | | | | Hiccup, continuous, self-recovery | | | |
| | Over-current Protection | | Normal temperature, high temperature | | 115% - 300% Io, self-recover | | | |
| | | | Low temperature | | ≥115% Io, self-recover | | | |
| | Over-voltage Protection | | 5V | | ≤7V | Output voltage clamp or hiccup | | |
| | | | 12V | | ≤16V | | | |
| | | | 15V | | ≤22V | | | |
| | | | 24V | | ≤32.4V | | | |
| | | | 36V | | ≤46.8V | | | |
| | | | 48V | | ≤63V | | | |
| | Minimum Load | | | | 0 | -- | -- | % |
| | Hold-up Time | | 115VAC input | | -- | 12 | -- | ms |
| | | | 230VAC input | | -- | 50 | -- | |
| General Specifications | Isolation | Input - output | Electric Strength Test for 1min., leakage current <5mA | | 4000 | -- | -- | VAC |
| | | Input - ⏚ | | | 2000 | -- | -- | |
| | | Output - ⏚ | | | 500 | -- | -- | |
| | Insulation Resistance | Input - output | Test voltage: 500VDC | | 100 | -- | -- | MΩ |
| | | Input - ⏚ | | | 100 | -- | -- | |
| | | Output - ⏚ | | | 100 | -- | -- | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| General Specifications | Operating Temperature | | | | -40 | -- | +80 | ℃ |
| | Storage Temperature | | | | -40 | -- | +85 | |
| | Storage Humidity | Non-condensing | | | -- | -- | 95 | %RH |
| | Operating Humidity | | | | -- | -- | 90 | |
| | Altitude** | | | | -- | -- | 4000 | m |
| | Output Power Derating | Operating temperature derating | -40℃ to -30℃ | | 6.5 | -- | -- | %/℃ |
| | | | +40℃ to +70℃ | 5V | 2 | -- | -- | |
| | | | +50℃ to +70℃ | Other output | 2.5 | -- | -- | |
| | | | +70℃ to +85℃ | 5V | 0.67 | -- | -- | |
| | | | | Other output | 1 | -- | -- | |
| | | Input voltage derating | 85VAC - 100VAC | | 1 | -- | -- | %/VAC |
| | Leakage Current | 240VAC | | | < 0.5mA RMS | | | |
| | Safety Class | | | | CLASS I | | | |
| | MTBF | MIL-HDBK-217F@25℃ | | | ≥300,000 h | | | |
| Mechanical Specifications | Dimension | 101.60 x 50.80 x 31.00mm | | | | | | |
| | Weight | 106g (Typ.) | | | | | | |
| | Cooling Method | Air cooling | | | | | | |

Note: *The "Tip and barrel method" is used for ripple and noise test: by using a 12 twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.

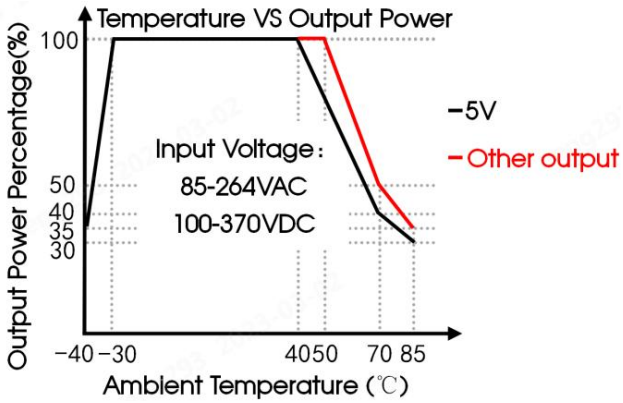
**Note: *For operation of altitude between 2000-4000m.

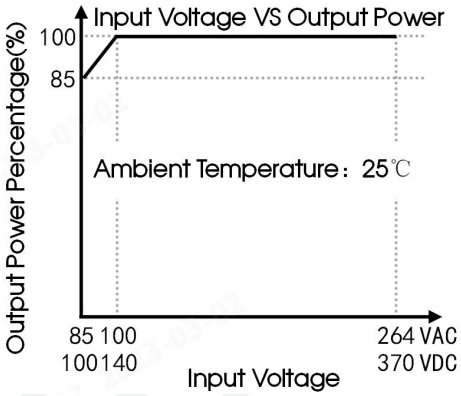
## Electromagnetic Compatibility (EMC)

| | | | | |
|---|---|---|---|---|
| Electromagnetic Compatibility (EMC) | Emissions | CE | CISPR32/EN55032 CLASS B | |
| | | RE | CISPR32/EN55032 CLASS B | |
| | | Harmonic current | IEC/EN61000-3-2 CLASS A | |
| | Immunity | ESD | IEC/EN61000-4-2 Contact ±4KV/Air ±8KV | 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 PE ±4KV | Perf. Criteria A |
| | | CS | IEC/EN61000-4-6 10Vr.m.s | Perf. Criteria A |
| | | PFMF | IEC/EN61000-4-8 30A/m | Perf. Criteria A |
| | | Voltage dips, short interruption and voltage variations | IEC/EN61000-4-11 100% dip 1 periods, 30% dip 25 periods (50Hz), 30 periods (60Hz) | Perf. Criteria B |

Note: All EMC performance are been tested on a metal plate with a thickness of 1mm and a length of 360mm × 360mm.

## Product Characteristic Curve

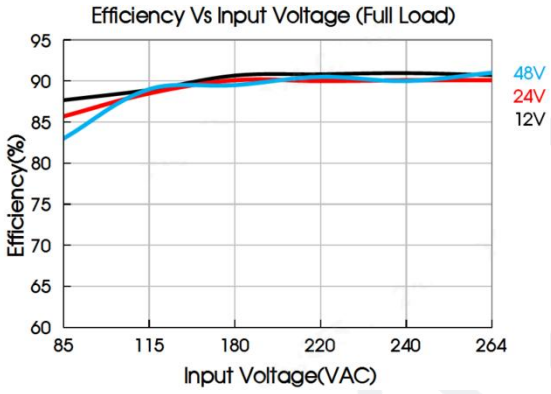


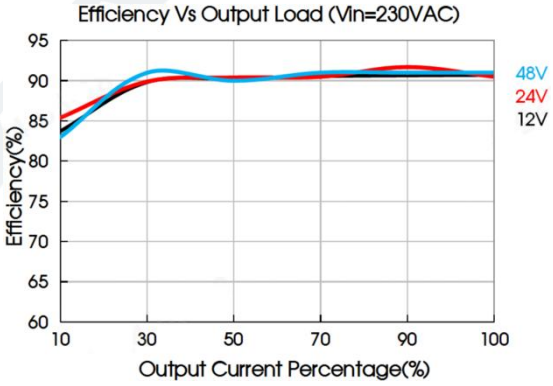




Note:

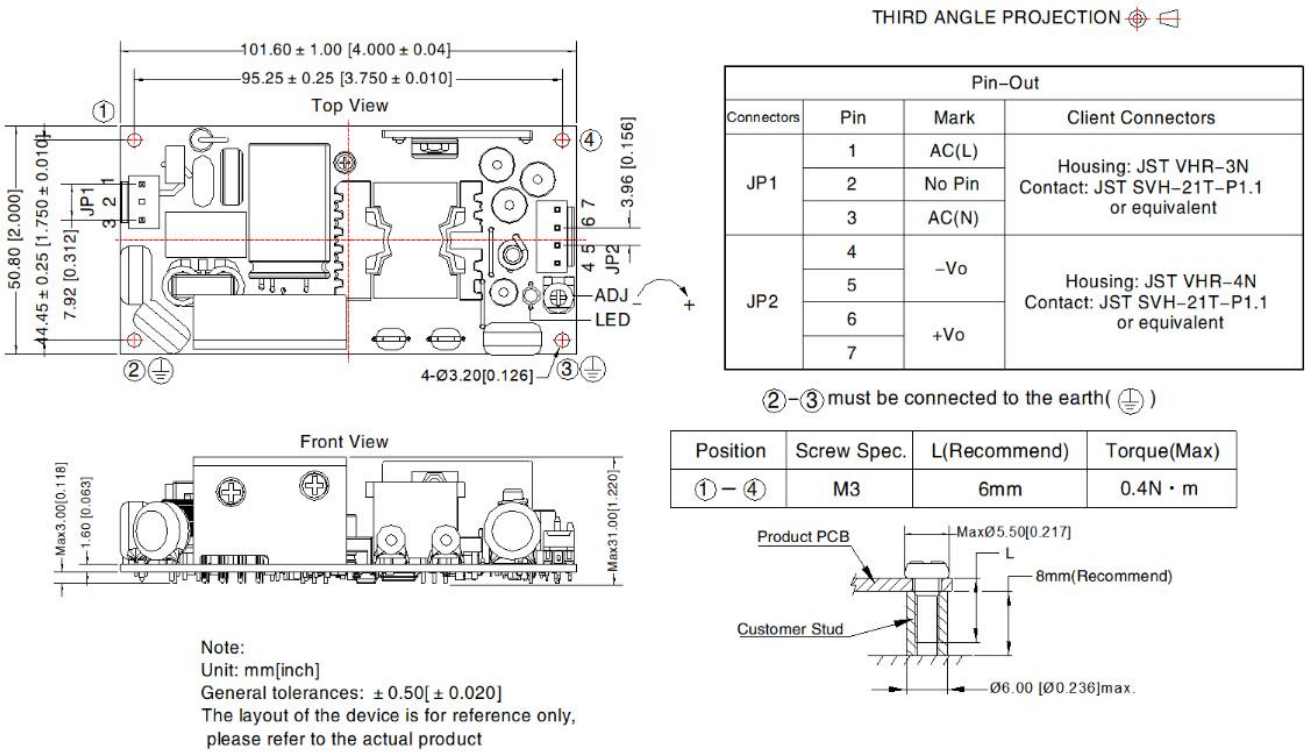
1.With an AC input voltage between 85-100VAC and a DC input between 100-140VDC the output power must be derated as per the temperature derating curves;

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



## Dimensions and Recommended Layout




| Pin-Out | | | |
|---|---|---|---|
| Connectors | Pin | Mark | Client Connectors |
| JP1 | 1 | AC(L) | Housing: JST VHR-3N<br>Contact: JST SVH-21T-P1.1<br>or equivalent |
| | 2 | No Pin | |
| | 3 | AC(N) | |
| JP2 | 4 | -Vo | Housing: JST VHR-4N<br>Contact: JST SVH-21T-P1.1<br>or equivalent |
| | 5 | | |
| | 6 | +Vo | |
| | 7 | | |

②-③ must be connected to the earth( ⏚ )

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

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity <75% RH with nominal input voltage and rated output load;
2. The room temperature derating of 3.5℃/1000m is needed for operating altitude greater than 2000m;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. The output voltage can be adjusted by the ADJ, clockwise to increase;
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
9. The power supply is considered a component which will be installed into a terminal equipment. All EMC tests should be confirmed with the final equipment.