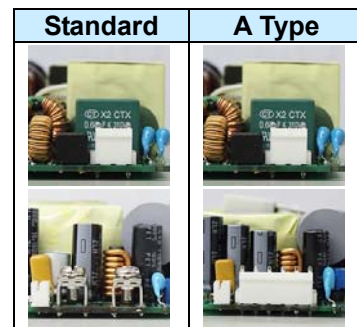


## KEY FEATURES

- Universal Input 90-264Vac
- 240 Watt with 8CFM Forced Air
- 180W with Conduction Cooling
- 160 Watt with Natural Convection
- High Efficiency up to 94%
- No Load Power Consumption<0.5W
- Over-Voltage Category OVC III
- Built-in 12V / 0.5A Fan Supply
- -40°C to +80°C Wide Range Operation Temperature
- Operating Altitude 5000M (OVC II)
- Active PFC Function
- I/O Isolation 4250VAC
- EMI for Both Class I (with PE) and Class II (without PE) Configuration
- Safety Approval to UL / IEC / EN 62368-1
- 3-Year Product Warranty



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.



## ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

| Model No.                                            |                                         | ARF2400-12S                                                                                                         | ARF2400-24S | ARF2400-48S |
|------------------------------------------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------|-------------|
| Max Output Wattage (with 8CFM FAN) (W)               |                                         | 240 W                                                                                                               |             |             |
| Max Output Wattage (Conduction Cooling) (W) (Note 6) |                                         | 180 W                                                                                                               |             |             |
| Max Output Wattage (Natural Convection) (W)          |                                         | 160 W                                                                                                               |             |             |
| Input                                                | Voltage (Note 3)                        | 90-264 VAC                                                                                                          |             |             |
|                                                      | Frequency (Hz)                          | 47-63 Hz                                                                                                            |             |             |
|                                                      | Current (Full load)                     | < 3.0 A max. (115 VAC) / < 1.5 A max. (230 VAC)                                                                     |             |             |
|                                                      | Inrush Current (<2ms)                   | < 45 A max. (115 VAC) / < 90 A max. (230 VAC)                                                                       |             |             |
|                                                      | Leakage Current                         | < 0.75mA / 264 VAC (Touch Current)                                                                                  |             |             |
|                                                      | Power Factor                            | PF>0.9 at Full Load                                                                                                 |             |             |
|                                                      | No Load                                 | < 0.5W (115 / 230 VAC)                                                                                              |             |             |
| Output                                               | Voltage (V.DC.)                         | 12V                                                                                                                 | 24V         | 48V         |
|                                                      | Voltage Adj Range (V.DC.)               | ±5% Output Voltage                                                                                                  |             |             |
|                                                      | Voltage Accuracy                        | ±2%                                                                                                                 |             |             |
|                                                      | Current (with 8CFM FAN) (A) (max.)      | 20                                                                                                                  | 10          | 5           |
|                                                      | Current (Conduction Cooling) (A) (max.) | 15                                                                                                                  | 7.5         | 3.75        |
|                                                      | Current (Natural Convection) (A) (max.) | 13.33                                                                                                               | 6.66        | 3.33        |
|                                                      | Line Regulation                         | ±1%                                                                                                                 |             |             |
|                                                      | Load Regulation (0-100%)                | ±1%                                                                                                                 |             |             |
|                                                      | Minimum Load                            | 0%                                                                                                                  |             |             |
|                                                      | Maximum Capacitive Load                 | 8000μF                                                                                                              | 3000μF      | 470μF       |
|                                                      | Ripple & Noise (max.) (Note 1)          | 1% Vout                                                                                                             |             |             |
|                                                      | Efficiency (at 230VAC) (Note 5)         | 92.5%                                                                                                               | 93%         | 94%         |
|                                                      | Hold-up Time (at 115 VAC) (Note 2)      | 10 ms min.                                                                                                          |             |             |
| Protection                                           | Over Power Protection                   | Auto recovery(110-210%), Hiccup mode                                                                                |             |             |
|                                                      | Over Voltage Protection                 | Auto recovery                                                                                                       |             |             |
|                                                      | Over Temperature Protection             | Auto recovery                                                                                                       |             |             |
|                                                      | Short Circuit Protection                | Protection level 1 (nominal) : Continuous, Auto recovery<br>Protection level 2 (instantaneous high current) : Latch |             |             |
| Isolation                                            | Input-Output (Note 4)                   | 4250VAC or 6000VDC                                                                                                  |             |             |
|                                                      | Input-PE (Note 4)                       | 2830VAC or 4000VDC                                                                                                  |             |             |
|                                                      | Output-PE (Note 4)                      | 1500VAC or 2121VDC                                                                                                  |             |             |

## ELECTRICAL SPECIFICATIONS

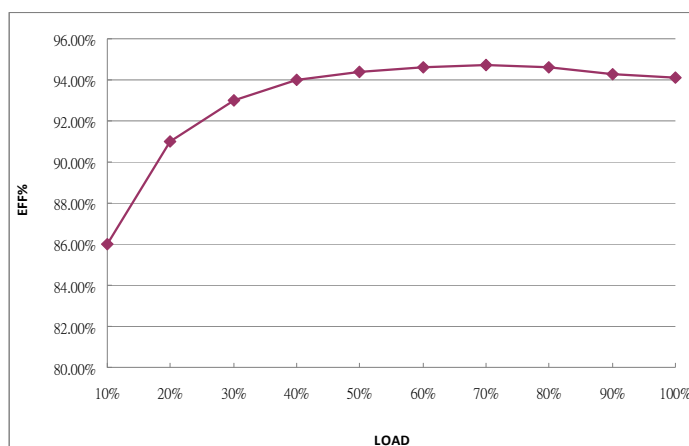
All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

| Model No.   |                           | ARF2400-12S                                                               | ARF2400-24S | ARF2400-48S                        |
|-------------|---------------------------|---------------------------------------------------------------------------|-------------|------------------------------------|
| Environment | Operating Temperature     | -40°C...+80°C (with derating)                                             |             |                                    |
|             | Storage Temperature       | -40°C...+80°C                                                             |             |                                    |
|             | Temperature Coefficient   | ±0.05%/°C                                                                 |             |                                    |
|             | Altitude During Operation | 5000m (OVC II), 4000m (OVC III)                                           |             |                                    |
|             | Humidity                  | 20~90% RH                                                                 |             |                                    |
|             | MTBF                      | >400,000 h @ 25°C (MIL-HDBK-217F, Notice 1)                               |             |                                    |
|             | Vibration                 | IEC60068-2-6 (10~500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes) |             |                                    |
|             | Shock                     | IEC60068-2-27 (Acceleration:75G ; pulse duration:11ms ; Filter:500Hz)     |             |                                    |
| Physical    | Dimensions (L x W x H)    | 4.02 x 2.05 x 1.09 Inches ( 101.9 x 52.1 x 27.6 mm ) Tolerance ±0.5 mm    |             |                                    |
|             | Weight                    | 220 g                                                                     |             |                                    |
|             | Cooling Method            | Natural Convection / Conduction Cooling / 8CFM FAN                        |             |                                    |
| Safety      | Approval                  | UL / IEC / EN 62368-1                                                     |             |                                    |
| Parameter   | Standards & Level         | Performance                                                               |             |                                    |
| EMI         | Conducted (Note 7)        | EN55032                                                                   |             | Class B                            |
|             | Radiated (Note 7)         | EN55032                                                                   |             | Class I Class B / Class II Class A |
| Harmonic    | Harmonic currents         | EN61000-3-2 (Full Load)                                                   |             | Class A                            |
| EMS         | EN 55035                  |                                                                           |             | A                                  |
|             | ESD                       | IEC 61000-4-2 Air ± 15KV , Contact ± 8KV                                  |             | A                                  |
|             | RS                        | IEC 61000-4-3 3V/m                                                        |             | A                                  |
|             | EFT/B                     | IEC 61000-4-4 ± 2KV , ± 4KV(L/N-PE)                                       |             | A                                  |
|             | Surge                     | IEC 61000-4-5 ± 2KV , ± 4KV(L/N-PE)                                       |             | A                                  |
|             | CS                        | IEC 61000-4-6 3Vrms                                                       |             | A                                  |
|             | PFMF                      | IEC 61000-4-8 1A/m                                                        |             | A                                  |

## NOTE

1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. Hold-up Time measured at 90% Vout.
3. Please check the derating curve for more details.
4. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from Arch power supply.
- 5.

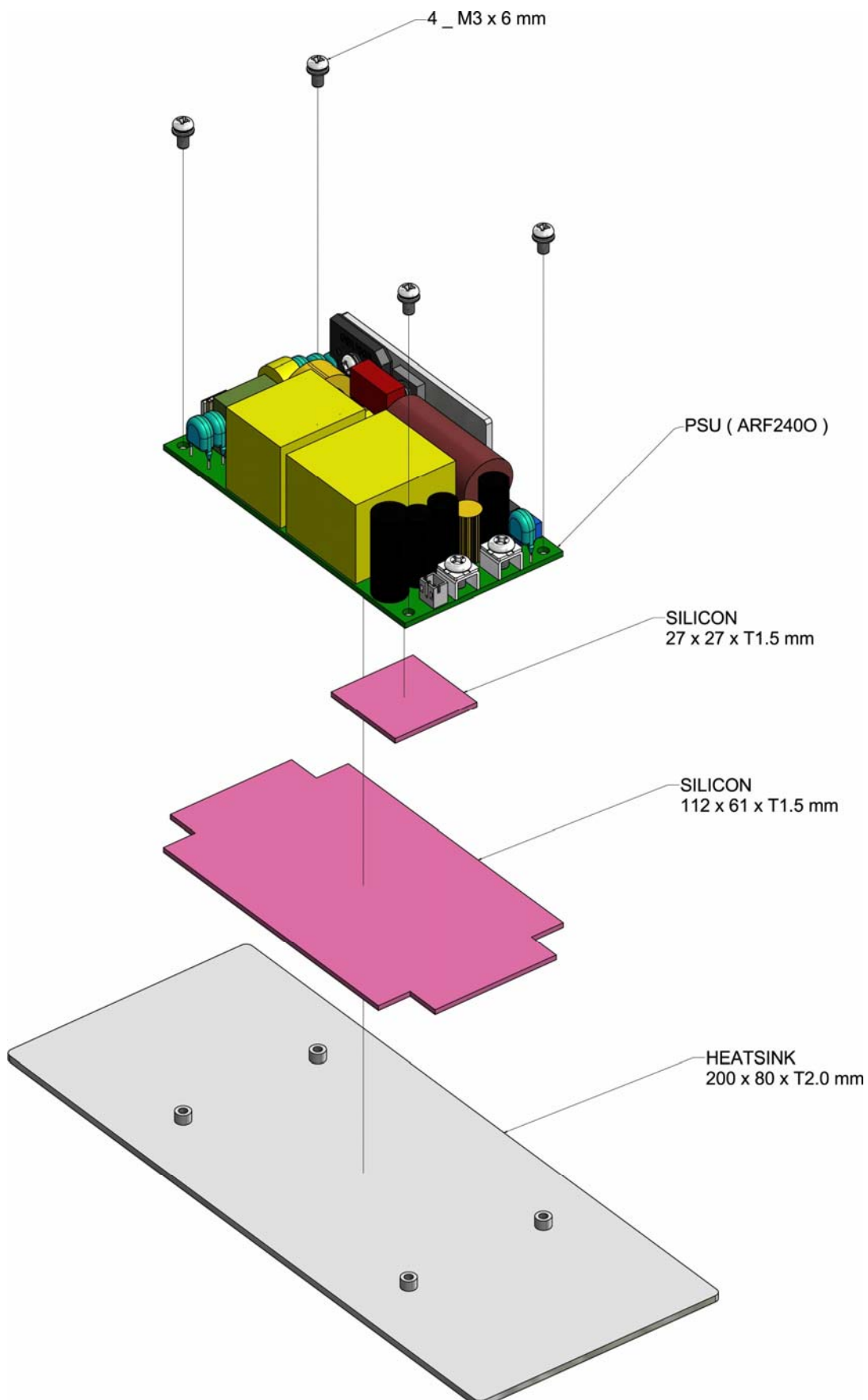
Vin at 230 VAC & 48 Vout



(After 30 minutes of burn-in)

**NOTE**

6.



## NOTE

7. Considering that most casings of the system equipment are made of metal. The EMI test of the power supply is installed on the aluminum plate (600 x 450 x 3.0 mm) to simulate the end-product application.

8. Fan Supply=12V/0.5A (max) for driving a fan..

9. The FAN supply is designed to serve as the source of the additive external fan for the cooling of the power supply, enabling the full load delivery and assuring the best life span of the product. Please do not use this FAN supply to drive other devices.

| For 12S, 24S, 48S |                       |                        |                       |
|-------------------|-----------------------|------------------------|-----------------------|
| Main Output Power | FAN Voltage (at 0.1A) | FAN Voltage (at 0.25A) | FAN Voltage (at 0.5A) |
| 25%               | 12.1V                 | 11.8V                  | 11.5V                 |
| 50%               | 12.2V                 | 11.9V                  | 11.7V                 |
| 75%               | 12.3V                 | 12.0V                  | 11.8V                 |
| 100%              | 12.5V                 | 12.2V                  | 11.9V                 |

10. Please secure the power supply unit to your metal case by using the four screw holes in the corners for either Class I or Class II equipment

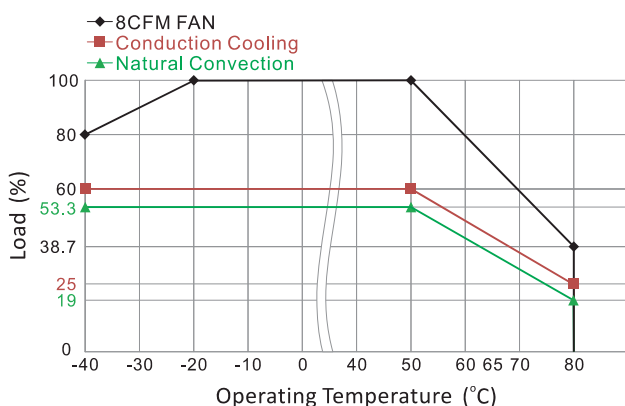
11. At least 15mm insulation distance on the bottom of the unit should be kept and a Mylar film should be added between the unit and the system

12. CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.

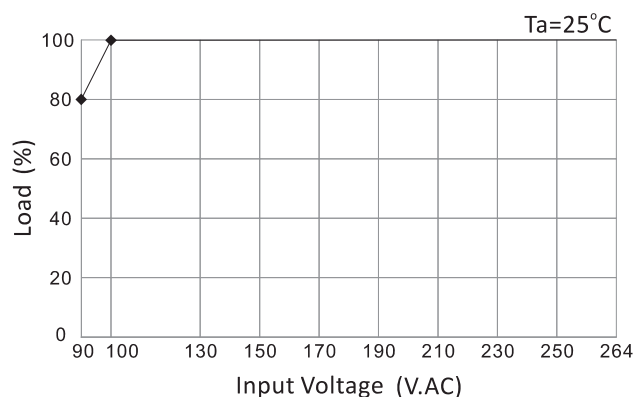
(ATTENTION : 2 poles avec fusible sur le neutre. Deconnecter le secteur avant intervention.)

## DERATING

Derating Output Load versus Operating Temperature

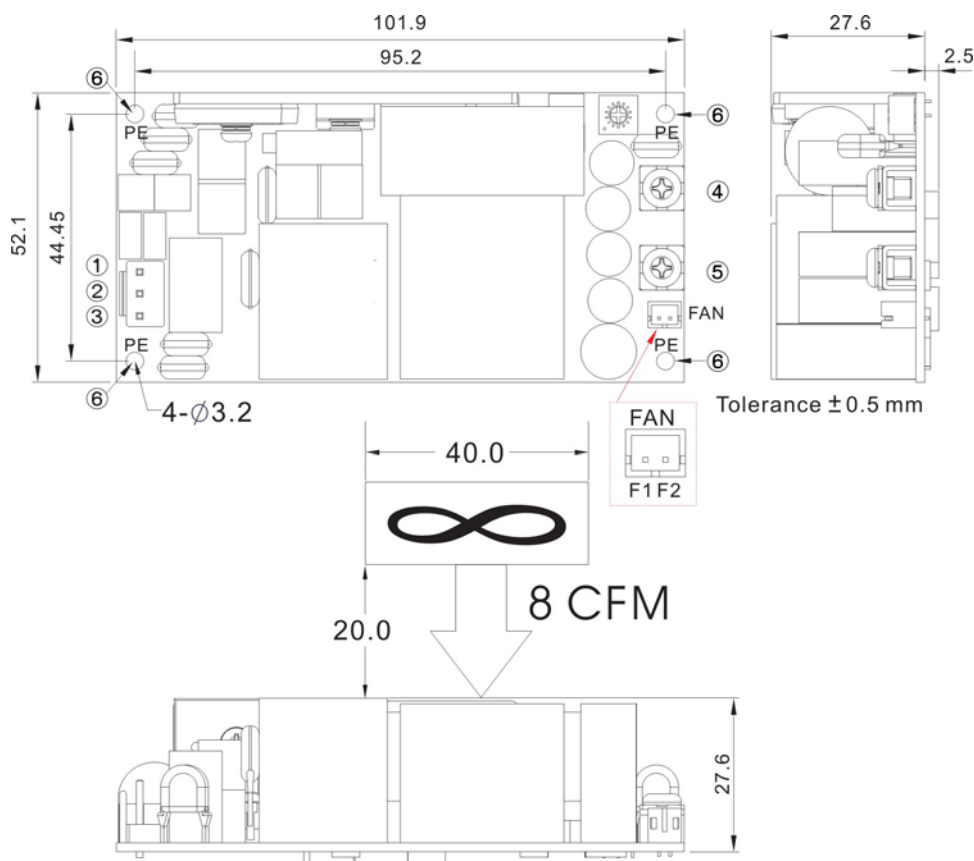


Derating Load versus Input Voltage



# MECHANICAL DIMENSIONS ( Top View )

## Standard



## Standard



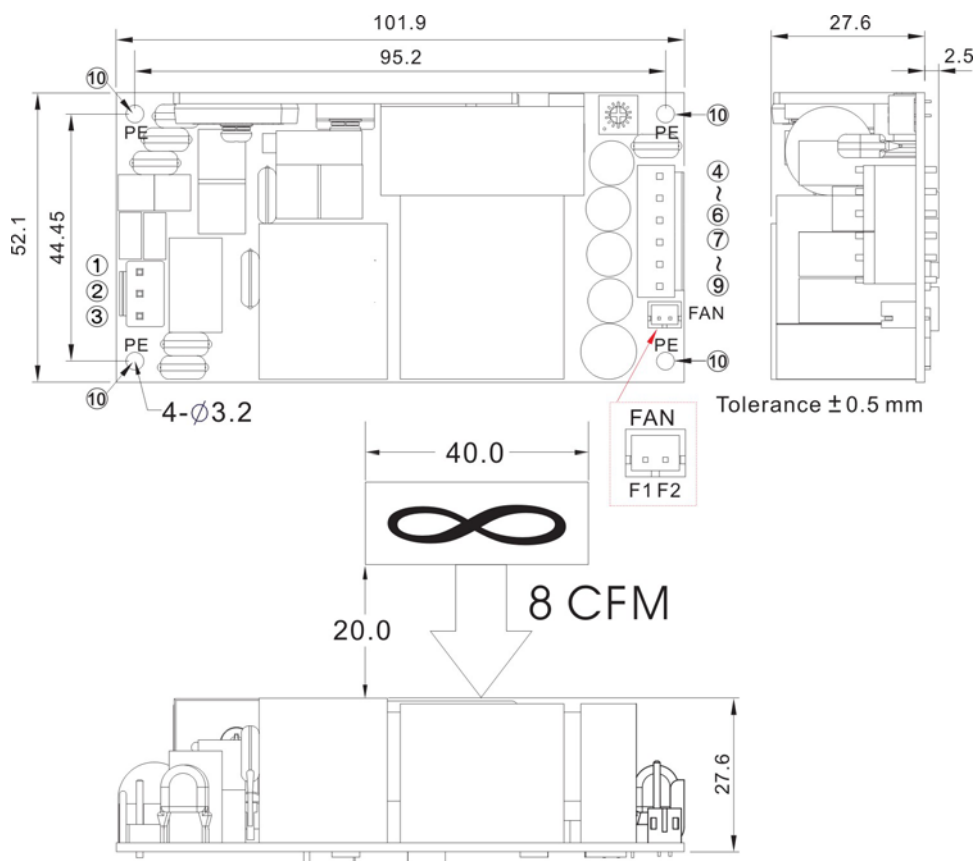
Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.

| Brands |           | Alex                                                                              |            | JST            |              |
|--------|-----------|-----------------------------------------------------------------------------------|------------|----------------|--------------|
| PIN#   | Single    | Mating Housing                                                                    | Terminal   | Mating Housing | Terminal     |
| 1      | AC IN (N) | 9396-3                                                                            | 96T series | VHR-3N         | SVH-41T-P1.1 |
| 2      | NO PIN    |                                                                                   |            |                |              |
| 3      | AC IN (L) |                                                                                   |            |                |              |
| 4      | +DC OUT   | Terminal :<br>M3.5 Pan HD screw in 2 positions<br>Torque to 8 lbs-in(90 cNm) max. |            |                |              |
| 5      | -DC OUT   |                                                                                   |            |                |              |
| 6      | PE        | —                                                                                 | —          | —              | —            |

| Connector Pin (FAN) |          |                |          |                |                |
|---------------------|----------|----------------|----------|----------------|----------------|
| Brands              |          | Cherng Weei    |          | JST            |                |
| PIN#                | Single   | Mating Housing | Terminal | Mating Housing | Terminal       |
| F1                  | +AUX OUT | CX-H20-02      | CP-T20B  | PHR-2          | SPH-002T-P0.5L |
| F2                  | -AUX OUT |                |          |                |                |

# MECHANICAL DIMENSIONS ( Top View )

## A Type



## A Type



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.

| Brands |           | Alex           |            | JST            |              |
|--------|-----------|----------------|------------|----------------|--------------|
| PIN#   | Single    | Mating Housing | Terminal   | Mating Housing | Terminal     |
| 1      | AC IN (N) | 9396-3         | 96T series | VHR-3N         | SVH-41T-P1.1 |
| 2      | NO PIN    |                |            |                |              |
| 3      | AC IN (L) |                |            |                |              |
| 4~6    | +DC OUT   | 9396-6         | 96T series | VHR-6N         | SVH-41T-P1.1 |
| 7~9    | -DC OUT   |                |            |                |              |
| 10     | PE        | —              | —          | —              | —            |

## Connector Pin (FAN)

| Brands |          | Cherng Weei    |          | JST            |                |
|--------|----------|----------------|----------|----------------|----------------|
| PIN#   | Single   | Mating Housing | Terminal | Mating Housing | Terminal       |
| F1     | +AUX OUT | CX-H20-02      | CP-T20B  | PHR-2          | SPH-002T-P0.5L |
| F2     | -AUX OUT |                |          |                |                |