PRELIMINARY

VER : PA_4 update : 2026.06.19

AC-DC ITE Switching Power Supply

# ARF1300F SERIES 1300 Watts

## KEY FEATURES

- Universal Input 90-264Vac
- High Efficiency up to 93%
- Operating Altitude 5000M
- Standby 5V@1A with Fan
- Active PFC Function
- I/O Isolation 4000VAC
- Safety Approval to UL / IEC / EN 62368-1
- 3-Year Product Warranty

(In Progress)

## ELECTRICAL SPECIFICATIONS

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

| Model No. | | | ARF1300F-12S | ARF1300F-24S | ARF1300F-48S |
|---|---|---|---|---|---|
| Max Output Wattage (W) | | (Note 6) | 1000 W (115 VAC) / 1100 W (230 VAC) | 1300 W | |
| Input | Voltage | (Note 6) | 90-264 VAC | | |
| | Frequency (Hz) | | 47-63 Hz | | |
| | Current (Full load) | | < 14 A max. (115 VAC) / < 7 A max. (230 VAC) | | |
| | Inrush Current (<2ms) (Clod Start) | | < 70 A max. (115 VAC) / < 105 A max. (230 VAC) | | |
| | Leakage Current | | < 0.75mA / 264 VAC (Touch Current) | | |
| | Power Factor (at 230 VAC) | | PF>0.9 at Full Load | | |
| Output | Voltage (V.DC.) | | 12V | 24V | 48V |
| | Voltage Adj Range (V.DC.) | | ±5% Output Voltage | | |
| | Voltage Accuracy | | ±2% | | |
| | Current (A) (max.) | | 91.6 | 54.1 | 27.1 |
| | Line Regulation (100-264 VAC) | | ±1% | | |
| | Load Regulation (10-100%) (typ.) | | ±1% | | |
| | Maximum Capacitive Load | | In Progress | In Progress | In Progress |
| | Ripple & Noise (10-100%) (typ.) | (Note 1) | 160mV | 1% Vout | |
| | Efficiency (at 230VAC) | | 90.5% | 92% | 93% |
| | Hold-up Time (at 115 VAC) | (Note 2) | 3ms min. | | |
| Protection | Over Power Protection | | Auto recovery | | |
| | Over Voltage Protection | | Auto recovery | | |
| | Overt Temperature Protection | | Auto recovery | | |
| | Short Circuit Protection | | Protection level 1 (nominal)：Continuous, Auto recovery | | |
| | | | Protection level 2 (instantaneous high current)：Latch | | |
| Isolation | Input-Output | (Note 3) | 4000VAC or 5656VDC | | |
| | Input-PE | (Note 3) | 2000VAC or 2828VDC | | |
| | Output-PE | (Note 3) | 1500VAC or 2121VDC | | |
| Environment | Operating Temperature (Note 6) | | -30°C…+70°C (with derating) | | |
| | Storage Temperature | | -30°C…+85°C | | |
| | Temperature Coefficient | | ±0.03%/°C ( 0~50°C ) | | |
| | | | ±0.06%/°C (Other ) | | |
| | Altitude During Operation | | 5000m | | |
| | Humidity | | 95% RH | | |
| | MTBF | | >100,000 h @ 25°C (MIL-HDBK-217F) | | |
| | Vibration | | IEC60068-2-27 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes) | | |
| | Shock | | IEC60068-2-6 | | |

## ELECTRICAL SPECIFICATIONS

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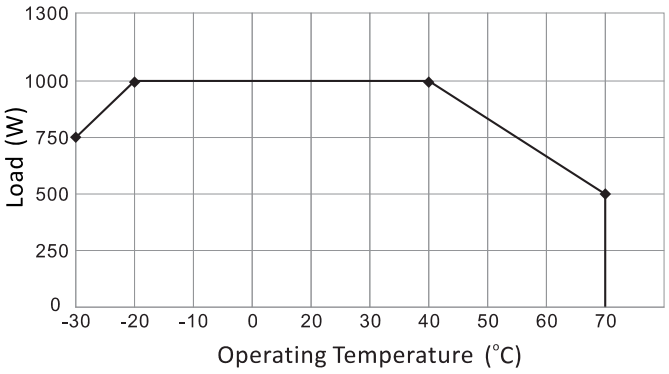
| Model No. | | | ARF1300F-12S | ARF1300F-24S | ARF1300F-48S |
|---|---|---|---|---|---|
| Physical | Dimension (L x W x H) | | 8.84 x 4.3 x 1.62 Inches (224.5 x 114.0 x 41.0 ) Tolerance ±0.5 mm | | |
| | Weight | | In Progress | | |
| | Cooling Method | | Natural Convection / Conduction Cooling / 30CFM FAN | | |
| Safety | Approval | | UL / IEC / EN 62368-1 (In Progress) | | |
| EMC | Conducted EMI | (Note 5) | EN55032 Class B (In Progress) | | |
| | Radiated EMI | (Note 5) | EN55032 Class B (In Progress) | | |
| | EMS | | EN55035 (In Progress) | | |

## NOTE

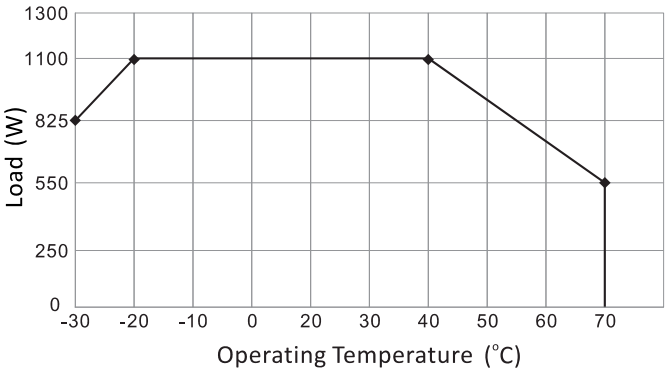
1. Ripple & Noise are measured at 20MHz of bandwidth by using a 6” twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.
2. Hold-up Time measured at 90% Vout.
3. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from Arch power supply.
4. The size of the suggested aluminum plate is shown as below. And for optimizing thermal performance, the aluminum plate must have an even and smooth surface (or coated with thermal grease), and ARF1300F series must be firmly mounted at the center of the aluminum plate (Size=650 x 650 x 3.0 mm )
5. For optimal EMI performance the power supply should be mounted to a grounded aluminium plate (750 x 650 x 12 mm) with electrical contact to the four PCB mounting holes. To comply with safety standards, this plate must be grounded.
6. Please check the derating curve for more details.
7. CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.
   (ATTENTION : 2 poles avec fusible sur le neutre. Deconnecter le secteur avant intervention.)

## DERATING

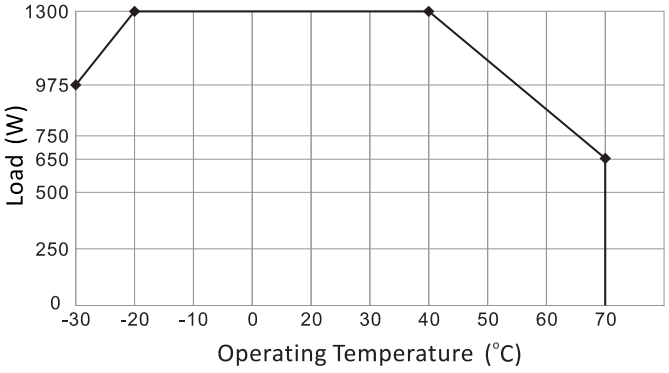
Derating Output Load versus Operating Temperature
ARF1300F-12S at 115-197Vin



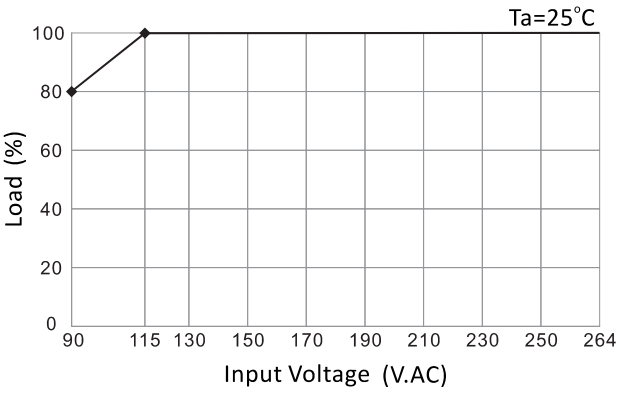

Derating Output Load versus Operating Temperature
ARF1300F-12S at 198-264Vin




Derating Output Load versus Operating Temperature
ARF1300F-24S,48S

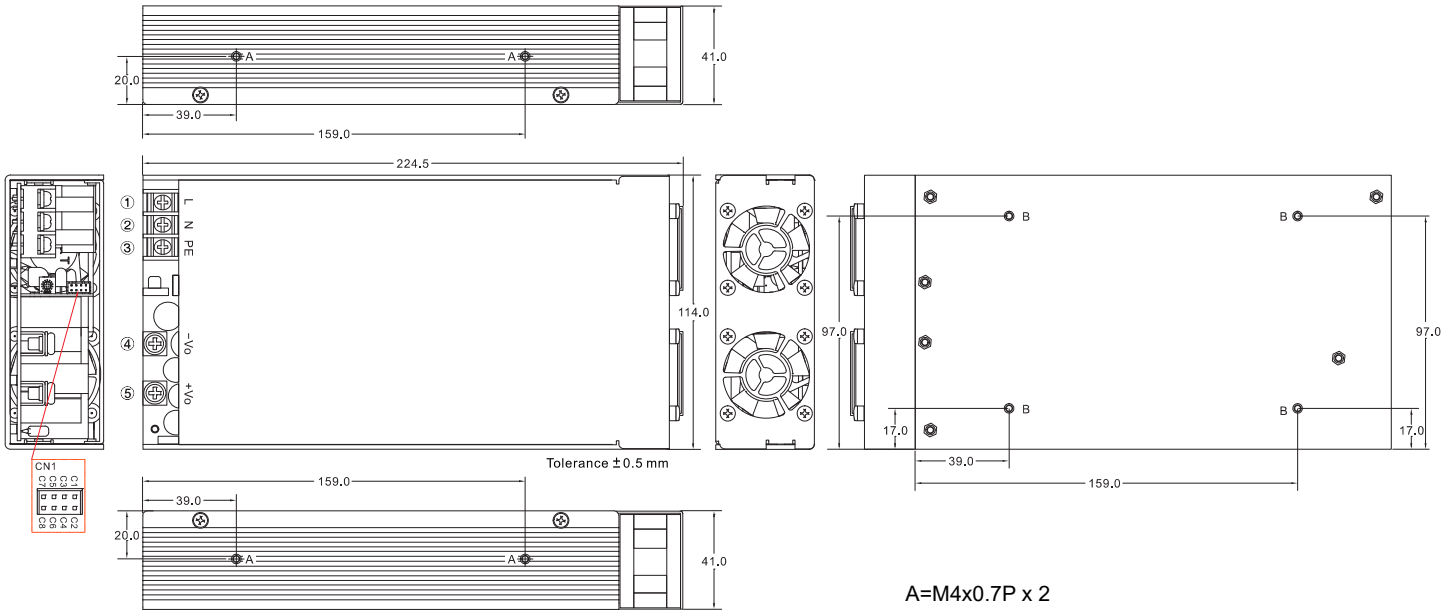



Derating Load versus Input Voltage



# ARF1300F SERIES 1300 Watts

## MECHANICAL DIMENSIONS ( External View )



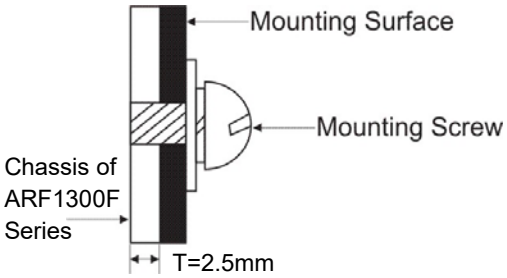

A=M4x0.7P x 2
B=M3x0.5P T2.50 x 4
Torque:3±0.5 Kgf.cm

| Brands | | |
|---|---|---|
| PIN# | Single | Terminal |
| 1 | AC IN (L) | DINKLE DT-49-B01W-03 |
| 2 | AC IN (N) | |
| 3,A | PE | |
| 4 | -DC OUT | M5 Pan HD screw in 2 positions<br>Torque to 8 lbs-in(90 cNm) max. |
| 5 | +DC OUT | |

**ASSEMBLY INSTRUCTIONS**

*U Case T=2.5mm

Customer is advised to screw into the threads no more than 2.5mm




| Connector Pin (CN1) | | | | | |
|---|---|---|---|---|---|
| Brands | | Cherng Weei | | JST | |
| PIN# | Single | Mating Housing | Terminal | Mating Housing | Terminal |
| C1 | +S | PHD-H20-2X4P | PHD-T20 | PHDR-08VS | SPHD-001T-P0.5 |
| C2 | -S | | | | |
| C3 | NC | | | | |
| C4 | -5V SB | | | | |
| C5 | GND / -RC | | | | |
| C6 | +RC | | | | |
| C7 | PG | | | | |
| C8 | +5V SB | | | | |

## FUNCTION DESCRIPITON of CN1

| Pin No. | Function | Description |
|---|---|---|
| C1 | +S | Remote sensing (+) |
| C2 | -S | Remote sensing (-) |
| C3 | NC | |
| C4 | -5V SB | This pin connects to the negative terminal(-V) |
| C5 | GND / -RC | This pin connects to the negative terminal(-V). Return for DC-OK signal output. |
| C6 | +RC | Turns the output on and off by electrical or dry contact between pin C5 (GND / -RC), Short: Power OFF, Open: Power ON. |
| C7 | +PG | DC-OK Signal is a DC output. (DC-OK ) |
| C8 | +5V SB | Stand by voltage output ground 4.4~5.5V, referenced to pin C4 or C5(GND). The maximum load current is 1A. |

## BLOCK DIAGRAM