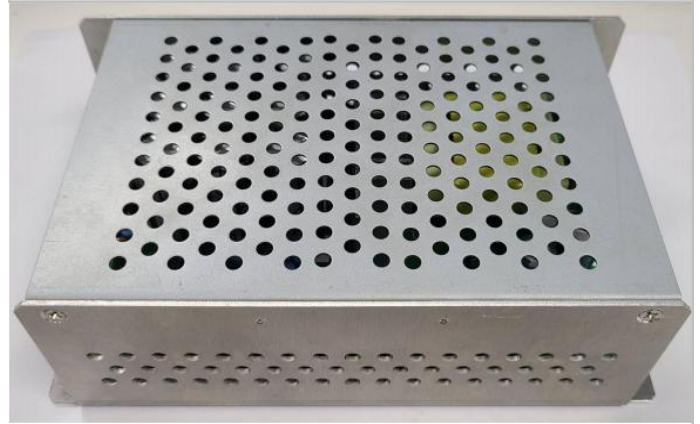


**Typical Features**

- ◆ Wide input voltage range:85-900VAC
- ◆ No-load power consumption≤1W
- ◆ Transfer efficiency (typ. 89%)
- ◆ Switching frequency: 65KHz
- ◆ Protection: Short Circuit, Over Current, Over Voltage
- ◆ Isolation voltage: 4000VAC
- ◆ Meet CE, RoHS Test Standard
- ◆ Designed for coal mine electrical equipment



**Application Field**

**DA120-1000SXXG1N4 Series**----- is a special high-voltage power supply designed and developed by Aipu for customers specifically for coal mine electrical customers, with regard to equipment power supply safety, convenient installation, reliable application, technological innovation and other development requirements. This series of power supplies have the advantages of global input voltage range, low ripple, low temperature rise, low power consumption, high efficiency, high reliability, and high safety isolation. This series of products can be widely used in coal mine monitoring and security industries and other occasions.

**Typical Product List**

Certificate	Part No.	Output Specification					Max. Capacitive Load, 330Vac (Typical)	Ripple & Noise 20MHz (Max)	Efficiency @ Full Load 220Vac (Typical)
		Power	Voltage 1	Current 1	Voltage 2	Current 2			
		(W)	Vo1(V)	Io1(mA)	Vo2(V)	Io2(mA)			
/	DA120-1000S24G1N4	120	24	5000	-	-	5000	120	88
	DA120-1000S28G1N4	120	28	4300	-	-	3000	150	88
	DA120-1000S35G1N4	122.5	35	3500	-	-	2000	150	89
	DA120-1000S48G1N4	120	48	2500	-	-	2000	150	90

Note 1: Due to space limitations, above is only a part of our product list, please contact our sales team for more items.

Note 2: "\*" is model under developing.

Note 3: The typical output efficiency is based on that product is full loaded and burned-in after half an hour.

Note 4: The fluctuation range of full load efficiency(% ,TYP) is ±2%, full load output efficiency= total output power/module's input power.

**Input Specification**

Item	Operating Condition	Min.	Typ.	Max.	Unit
Input Voltage Range	AC Input	85	330	900	VAC
	DC Input	-	-	-	VDC
Input Frequency Range	-	47	50	63	Hz
Input Current	100VAC	/	/	2.5	A

	330VAC	/	/	1.0	
Surge Current	330VAC	/	/	130	
	660VAC	/	/	270	
	900VAC	/	/	360	
Leakage Current	-	0.5mA TYP/230VAC/50Hz			
Remote Control	-	Not available			
Hot plug	-	Unavailable			
External Input Fuse	-	6A/1000VAC, Necessary			

**Output Specification**

Item	Operating Condition	Min.	Typ.	Max.	Unit
Voltage Accuracy	Full input voltage Range, Any load	-	±2.0	±3.0	%
Line Regulation	Nominal Load	-	-	±1.0	%
Load Regulation	Nominal input Voltage, 20%~100% load	-	-	±2.0	%
No load power consumption	Input 330VAC	-	-	1.0	W
	Input 900VAC	-	-		
Minimum load	Single Output	0	-	-	%
	Positive Negative Dual output common ground	-	-	-	
	Positive Negative Dual output isolated	-	-	-	
Turn-on Delay Time	Nominal input voltage, full load	-	1000	-	mS
Power-off Holding Time	Input 330VAC (full load)	-	150	-	mS
	Input 660VAC (full load)	-	350	-	
Dynamic Response	25%~50%~25%	Overshoot range(%): ≤±5.0			%
	50%~75%~50%	Recovery time(mS): ≤5.0			mS
Output Overshooting	Full input voltage range	≤10%Vo			%
Short Circuit Protection		Continuous, Self-recovery			Hiccup
Drift Coefficient	-	-	±0.03%	-	%/°C
Over Current Protection	Input 330VAC	≥110% Io, Self-recovery			Hiccup
Over Voltage Protection	Output 24VDC	≤35			VDC
	Output 28VDC	≤42			
	Output 35VDC	≤45			

Ripple & Noise	-	-	50	150	mV
	Note: Ripple& Noise is tested by Twisted Pair Method, details please see Ripple& Noise Test at back.				

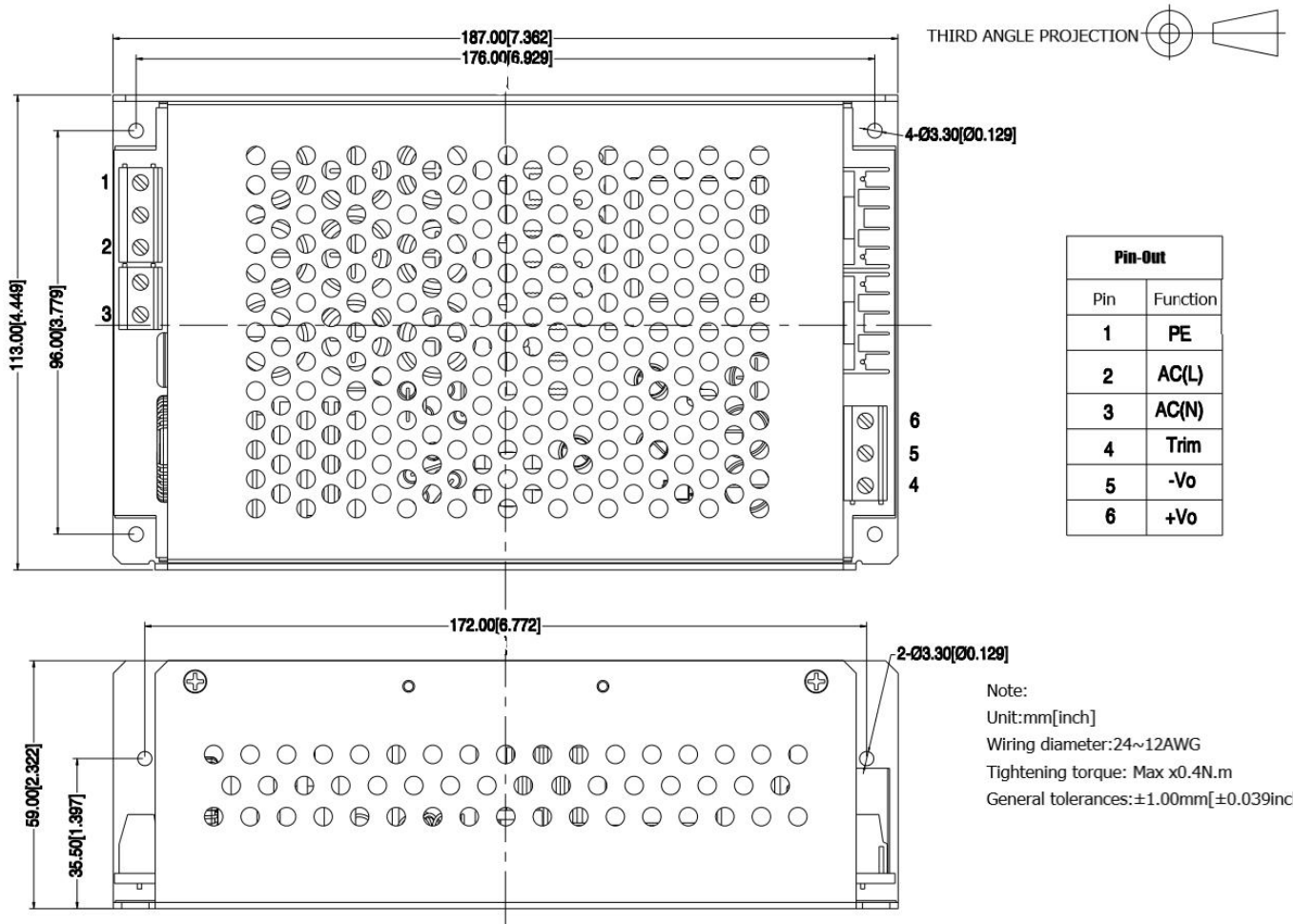
**General Specifications**

Item	Operating Condition	Min.	Typ.	Max.	Unit
Switching Frequency	-	-	65	-	KHz
Operating Temperature	-	-25	-	+70	°C
Storage Temperature	-	-40	-	+85	
Soldering Temperature	Wave-soldering	260±4°C, timing 5-10S			
	Manual-soldering	360±8°C, timing 4-7S			
Relative Humidity	-	10	-	90	%RH
Isolation Voltage	Input to output ≤3.0mA/1Min	4000	-	-	VAC
Insulation Resistance	Input-Output@DC500V	50	-	-	MΩ
Vibration	-	10-55Hz, 10G, 30Min, along X, Y, Z			
Safety Class	-	CLASS I			
MTBF	-	MIL-HDBK-217F@25°C > 300,000H			

**EMC Characteristics**

Total Item	Sub Item	Test Standard	Class
EMS	ESD	IEC/EN61000-4-2	Contact ±6KV Perf.Criteria B
	RS	IEC/EN61000-4-3	10V/m Perf.Criteria A
	Surge	IEC/EN61000-4-5	Line to line ±2KV line to ground ±4KV Perf.Criteria B
	EFT	IEC/EN61000-4-4	±4KV Perf.Criteria B
	CS	IEC/EN61000-4-6	10Vr.m.s Perf.Criteria A

**Dimension and Pin out Specifications**



Pin-Out	
Pin	Function
1	PE
2	AC(L)
3	AC(N)
4	Trim
5	-Vo
6	+Vo

Note:  
Unit:mm[inch]  
Wiring diameter:24~12AWG  
Tightening torque: Max x0.4N.m  
General tolerances:±1.00mm[±0.039inch]

Package Code	L x W x H	
With Case	187.0X113.0X59.0mm	7.362X4.449X2.323inch

**Pin Definition**

Pin-out	1	2	3	4	5	6
Single(S)	PE	AC(L)	AC(N)	Trim	-Vo	+Vo

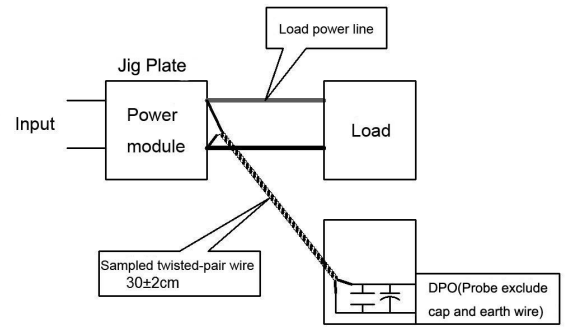
Note: If the definition of pin is not in accordance with the model selection manual, please refer to the label on actual item.

**Ripple & Noise Test: (Twisted Pair Method 20MHZ bandwidth)**

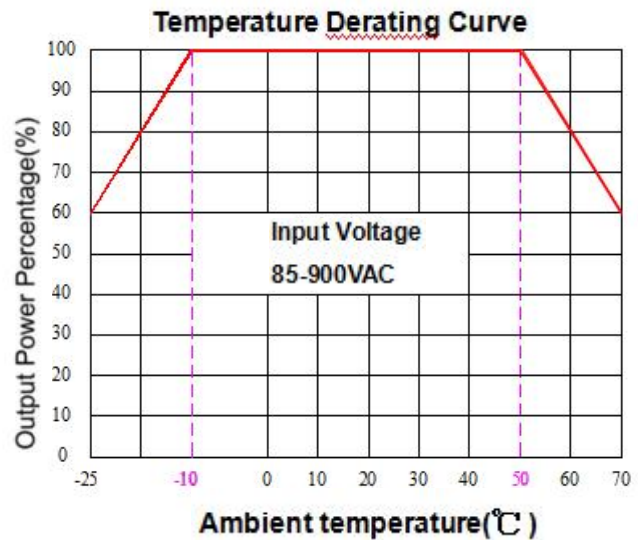
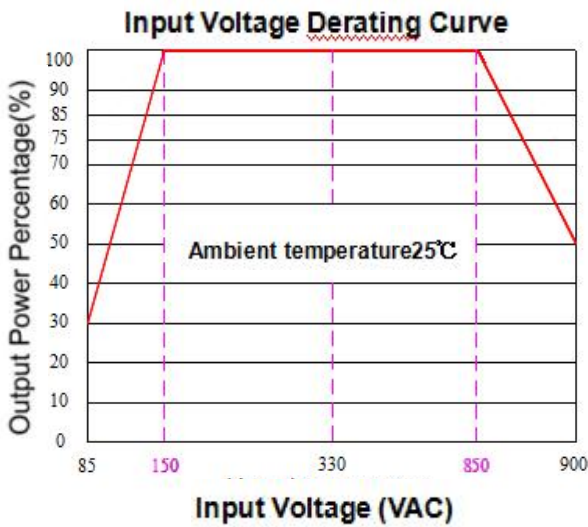
Test Method:

(1) 12# twisted pair to connect, Oscilloscope bandwidth set as 20MHZ, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 10uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern.

(2) Input terminal connect to power supply, output terminal connect to electronic load through jig plate, Use 30cm±2 cm sampling line. Power line selected from corresponding diameter wire with insulation according to the flow of output current.

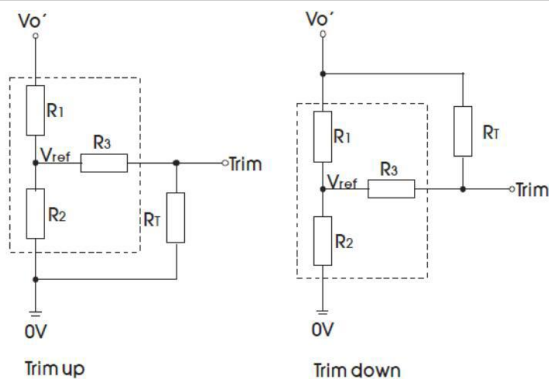


**Product Characteristic Curve**



- Note
- 1: Input Voltage should be derated base on Input Voltage Derating Curve when it is 85~150VAC/850~900VAC.
  - 2: Our product is suitable to use under natural air cooling environment, if use it under closed condition, please contact with us.

**The usage of Trim and Calculating Trim resistor values**



Calculating Trim resistor values:

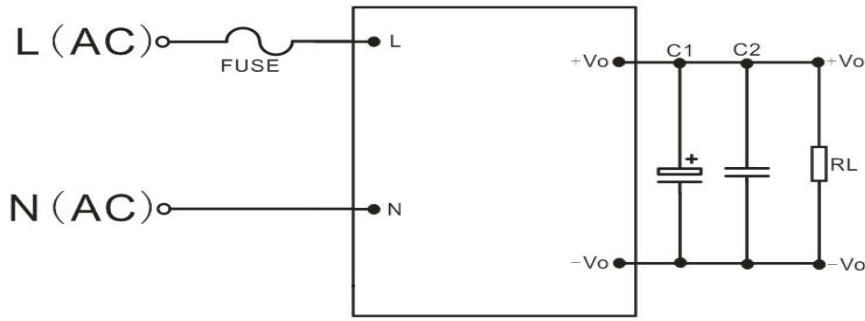
$$\text{up: } R_T = \frac{aR_2}{R_2 - a} - R_3 \quad a = \frac{V_{ref}}{V_{o'} - V_{ref}}$$

$$\text{down: } R_T = \frac{aR_1}{R_1 - a} - R_3 \quad a = \frac{V_{o'} - V_{ref}}{V_{ref}}$$

RT= Trim Resistor value;  
a= self-defined parameter, no actual meaning;  
Vo' is the actual voltage to increase or decrease;

Vout(VDC)	R1(KΩ)	R2(KΩ)	R3(KΩ)	Vref(V)
24	10.55	1.2	1	2.5
28	12.33	1.2	1	2.5
35	19.86	1.5	1	2.5

**Typical application circuit**



Component	Component Name	Recommended Value
FUSE	Fuse	6A/1000VAC, Necessary
C1	High frequency electrolytic capacitor	10uF/50V
C2	Ceramic capacitors	1uF/50V

- Note:**
- 1.The product should be used under the specification range, otherwise it will cause permanent damage to it.
  - 2.Product's input terminal should connect to fuse;
  - 3.If the product is not worked under the load range(below the minimum load or beyond the load range), we cannot ensure that the performance of product is in accordance with all the indexes in this manual;
  - 4.Unless otherwise specified, data in this datasheet are tested under conditions of **Ta=25°C**, **humidity<75%** when inputting nominal voltage and outputting rated load(pure resistance load);
  - 5.All index testing methods in this datasheet are based on our Company's corporate standards
  - 6.The performance indexes of the product models listed in this manual are as above, but some indexes of non-standard model products will exceed the above-mentioned requirements, please directly contact our technician for specific information;
  - 7.We can provide customized product service;
  - 8.The product specification may be changed at any time without prior notice.

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