Typical Features

- ◆ Wide input voltage range 85-305VAC/120-430VDC
- ◆ No-load power consumption≤0.25W
- ◆ Transfer efficiency: (type 84%)
- ◆ Switching frequency 65KHz
- ◆ Protection: Short Circuit, Over Current, Over temperature
- ◆ Isolation voltage: 4000VAC.
- ◆ Meet IEC62368/UL62368/EN62368 test standard
- ◆ Plastic Case, meet UL94 V-0 Class
- ◆ PCB Mounting

Application Field

FA10-220SXXY2D4(-T)(-TS) Series *------ a compact size, high efficient, meet CE standard power converter offered by Aipu. It features universal input voltage range, AC and DC dual-use, low ripple, low temperature rise, low power consumption, high efficiency, high reliability, safer isolation, with good EMC performance, meet EN55032, IEC/EN61000 standard. The series widely used for power, industry, instrument, smart home application, etc. The application circuit in the datasheet is strongly recommended for harsh EMC environment.*

Typical Product List

Certificate	Part No.	Output Specification			Max. Capacitive Load (MAX)	Ripple& Noise 20MHz (Max)	Efficiency@ Full Load 220Vac (Typical)
		Power	Voltage 1	Current 1			
		(W)	Vo1(V)	Io1(m A)	u F	mVp-p	%
CE RoHS	FA10-220S4V8Y2D4	10	4.8	2083	6000	100	78
	FA10-220S05Y2D4	10	5	2000	4000	100	78
	FA10-220S12Y2D4	10	12	833	2000	120	83
	FA10-220S24Y2D4	10	24	417	1000	120	84

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

Note 3: The fluctuation range of full load efficiency(%,TYP) is ±2%, full load output efficiency= total output power/module's input power.

Note 4: Ripple a nd noise is tested by Twisted Pair method, for details please check at back of datasheet.

Input Specification

Item	Operating Condition	Min.	Typ.	Max.	Unit
Input Voltage Range	AC Input	85	220	305	VAC
	DC Input	120	310	430	VDC
Input Frequency Range	-	47	50	63	Hz
Input Current	100VAC	/	/	0.20	A

	220VAC	/	/	0.10	
Surge Current	100VAC	/	/	10	
	220VAC	/	/	20	
Leakage Current	-	0.5mA TYP/230VAC/50Hz			
External Fuse Recommend Value	-	1A-3A/250VAC slow-fusing			
Hot plug	-	Unavailable			
Remote Control Terminal	-	Unavailable			

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	±2.0	%
Load Regulation	Nominal input Voltage 20%~100% load	-	±1.0	±2.0	%
No Load Power Consumption	Input 100VAC	-	-	0.25	W
	Input 220VAC	-	-		
Minimum load	Single Output	10	-	-	%
	Positive Negative Dual output common grounded	-	-	-	%
	Positive Negative Dual output isolated	-	-	-	
Turn-on Delay Time	Input nominal voltage (full load)	-	600	-	mS
Power-off Holding Time	Input 115VAC (full load)	-	100	-	mS
	Input 220VAC (full load)	-	80	-	
Dynamic Response	25%~50%~25% 50%~75%~50%	Overshoot range(%):≤±5.0			%
		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%	-	%/℃
Over Current Protection	Input 220VAC	≥130% Io Self-recovery			Hiccup

General Specifications

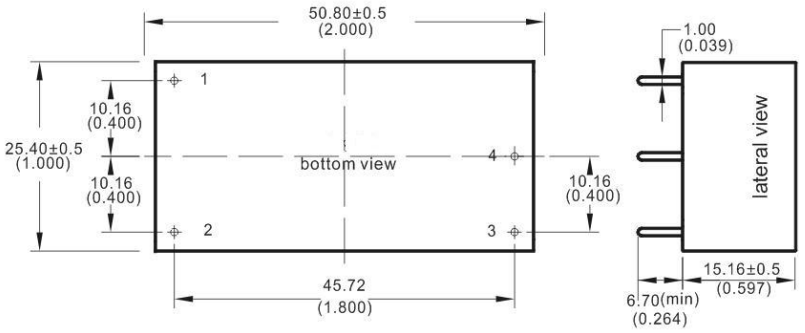
Item	Operating Condition	Min.	Typ.	Max.	Unit
Switching Frequency	-	-	65	-	KHz
Operating Temperature	-	-40	-	+75	℃
Storage Temperature	-	-40	-	+85	

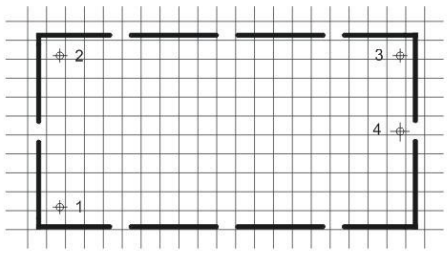
Soldering Temperature	Wave-soldering	260±4℃, timing 5-10S			
	Manual-soldering	360±8℃, timing 4-7S			
Relative Humidity	-	10	-	90	%RH
Isolation Voltage	Input-Output,Test 1min, leakage current ≤5mA	4000	-		VAC
Insulation Resistance	Input-Output@DC500V	100	-		MΩ
Safety Standard	-	EN62368、IEC62368			
Vibration	-	10-55Hz,10G,30Min, alongX,Y,Z			
Safety Class	-	CLASS Ⅱ			
Class of Case Material	-	UL94 V-0 Class			
MTBF	-	MIL-HDBK-217F@25℃＞300,000H			

EMC Characteristics

Total Item		Sub Item	Test Standard	Class
EMC	EMI	CE	CISPR22/EN55032	CLASS B
		RE	CISPR22/EN55032	CLASS B
	EMS	RS	IEC/EN61000-4-3	10V/m Perf.Criteria B (Recommended Circuit 1)
		CS	IEC/EN61000-4-6	3Vr.m.s Perf.Criteria B (Recommended Circuit 1)
		ESD	IEC/EN61000-4-2	Contact ±6KV / Air ±8KV Perf.Criteria B
		Surge	IEC/EN61000-4-5	line to line ±2KV / line to ground ±4KV Perf.Criteria B (Recommended Circuit 2)
		EFT	IEC/EN61000-4-4	±2KV Perf.Criteria B
		Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11	0%~70% Perf.Criteria B

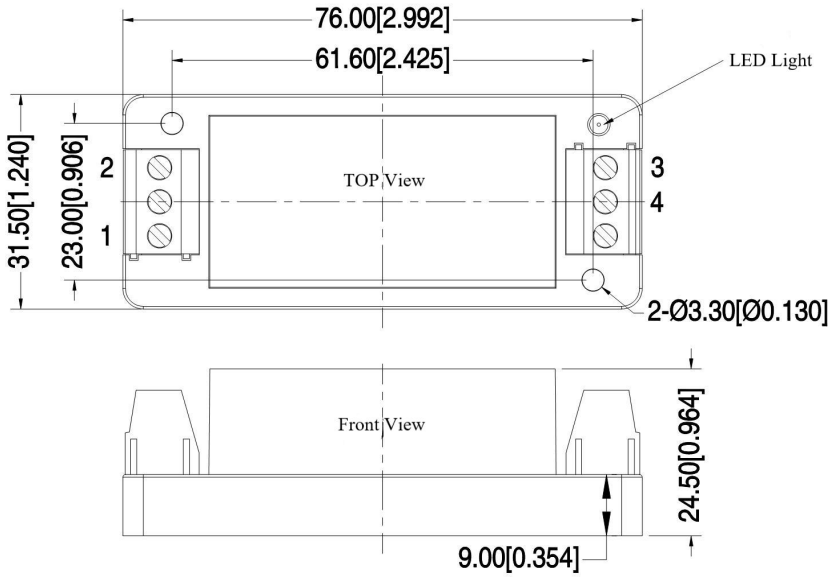
Y2 Packing Dimension



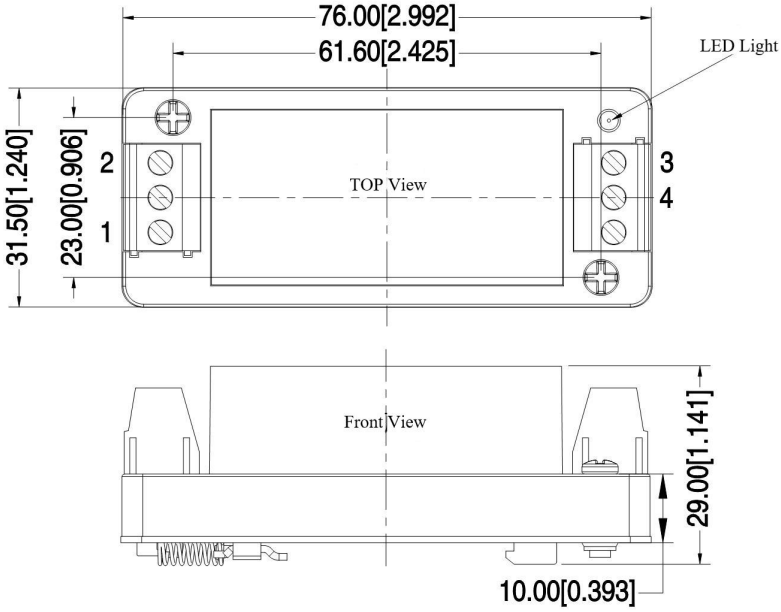


Unit: mm(inch); Grid:2.54mm(0.1inch);
Printed board vertical view;
General tolerances: ±0.25mm;
General Pin Diameter tolerances: ±0.10mm

Y2-T Packing Dimension



Y2-TS Packing Dimension



Packing Code	L x W x H	
Y2	50.8X25.4X15.16 mm	2.000X1.000X0.597inch
Y2-T	76.0X31.5X24.5mm	2.992X1.240X0.964inch
Y2-TS	76.0X31.5X29.0mm	2.992X1.240X1.141inch

Pin Definition

Pin-out	1	2	3	4
Single(S)	AC(N)	AC(L)	+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.

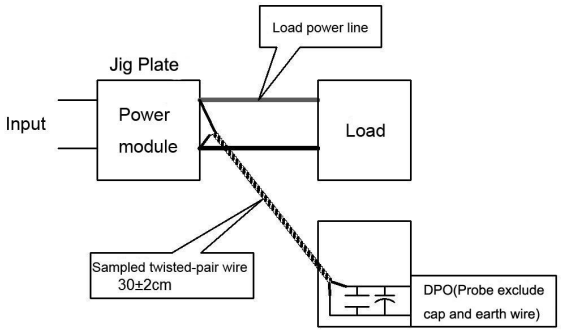
Ripple& Noise Test: (Twisted Pair Method 20MHZ bandwidth)

Test Method:：

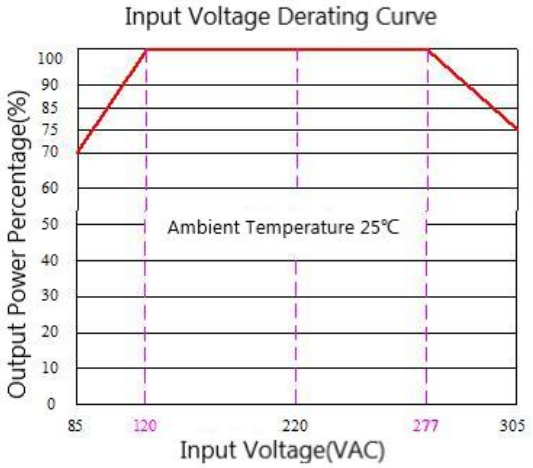
1) 12# twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 10uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern.

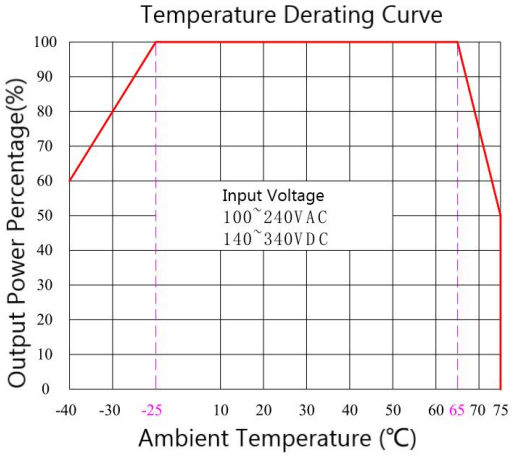
2、

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



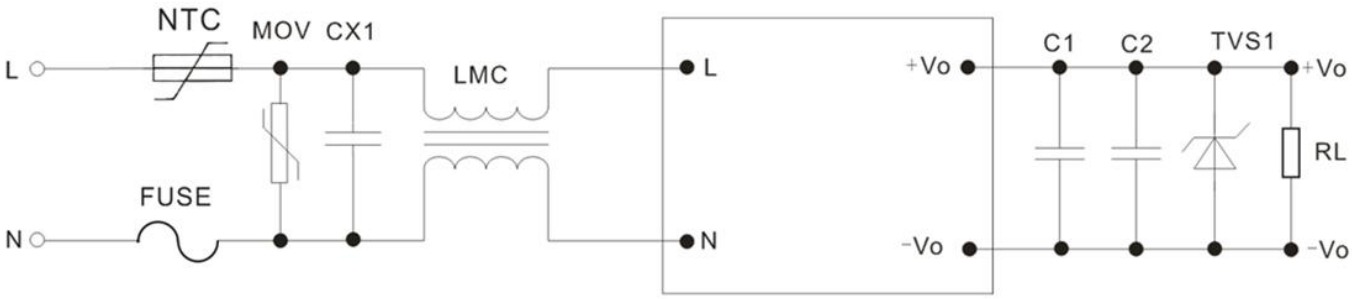


Note:

1. Input Voltage should be derated base on Input Voltage Derating Curve when it is 85~120VAC/277~305VAC/ 120~170VDC/ 390~430VDC.
2. Our product is suitable to use under natural air cooling environment, if use it under closed condition, please contact with us.

Typical EMC Recommended Application Circuit

1. Recommended Circuit:



Recommend Circuit 1

Note 1:

1). FUSE: necessary, suggest 2A~250Vac, slow fusing, block form;

2). MOV is voltage dependent resistor, suggest model: 10D561K;

3). NTC1 is thermistors, suggest model:10D-11, to prevent the module from damage when lightning surge.

4). LMC is common mode inductance, recommended value: 30mH;

5). CX1 is X Capacitor, recommended value: 0.22uF/275Vac;

6). C1 is high frequency low impedance electrolytic capacitor whose capacitance value less than capacitive load, withstand voltage is above 1.5 times or more of output voltage.

7). C2 is 0.1uF ceramic chip capacitors, withstand voltage is 1.5 times more than output voltage.

8). TVS1 is TVS tube:

5V output recommend: SMBJ7.0A, 9V output recommend: SMBJ12.0A, 12V output recommend: SMBJ20A, 15V output recommend :SMBJ20.0A, 24V output recommend:SMBJ30.0A, 48V output recommend:SMBJ64A

Note 2:

1. The product should be used within the specification range, otherwise it will cause permanent damage to the product;
2. The product input terminal must be connected to a fuse;
3. If the product works below the minimum required load, it cannot be guaranteed that the product performance meets all the performance indicators in this manual;
4. If the product works beyond the product load range, it cannot be guaranteed that the product performance meets all the performance indicators in this manual;
5. Unless otherwise specified, the above data are measured at Ta=25℃, humidity<75%, input nominal voltage and output rated load (pure resistance load);
6. All the above index test methods are based on our company's standards;
7. The above are the performance indicators of the product models listed in this manual. Some indicators of non-standard model products will exceed the above requirements. For specific circumstances, please contact our technical personnel directly;
8. Our company can provide product customization;
9. Product specifications are subject to change without prior notice. Please pay attention to the latest manual published on our official website.

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