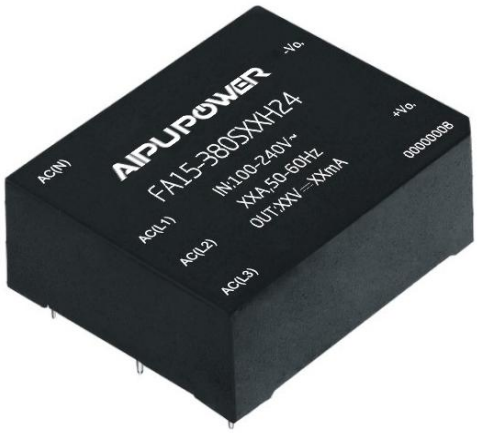
Typical Features

- ◆ Wide Input Voltage Range :180-460VAC Three-phase four wire system
- ◆ No load power consumption ≤0.6W
- ◆ Transfer Efficiency: 77% (typ.)
- ◆ Switching Frequency: 65KHz
- ◆ Protections: Short-circuit, Over-current, Over-voltage, Over- temperature
- ◆ Isolation voltage: 4000Vac
- ◆ Meet IEC60950/UL60950/EN60950 test standard
- ◆ Full shield plastic case, UL94 V-0
- ◆ PCB Mounting



Application Field

FA15-380S05H24 *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

Certification	Part No	Output Specification					Max. Capacitive Load	Ripple& noise 20MHz (Max)	Efficiency@ Full Load, 220Vac (Typical)
		Power	Voltage 1	Current 1	Voltage 2	Current 2			
		(W)	Vo1(V)	Io1(m A)	Vo2(V)	Io2(m A)	u F	mVp-p	%
-	FA15-380S05H24	15	5	3000	-	-	6000	120	77

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.

Input Specifications

Item	Operating Condition	Min.	Typ.	Max.	Unit
Input Voltage Range	AC Input	180	380	460	VAC
	DC Input	/	/	/	VDC
Input Frequency Range	-	47	50	63	Hz
Input Current	180VAC	/	/	0.20	A
	380VAC	/	/	0.15	
Surge Current	/	/	/	/	
	380VAC	/	/	25	

Leakage Current	-	0.5mA TYP/230VAC/50Hz
External Fuse Recommend Value	-	1A-2A/400VAC slow-fusing
Hot Plug	-	Unavailable
Remote Control	-	Unavailable

Output Specifications

Item	Operating Condition		Min.	Typ.	Max.	Unit
Voltage Accuracy	Full input voltage range, Any load	Vo1	-	±1.0	±2.0	%
		Vo2	-	-	-	%
Line Regulation	Nominal Load	Vo1	-	-	±1.0	%
		Vo2	-	-	-	%
Load Regulation	Nominal input voltage, 20%~100% load	Vo1	-	-	±3.0	%
		Vo2	-	-	-	%
No load consumption	Input 180VAC		-	-	0.6	W
	Input 380VAC		-	-		
Minimum Load	Single Output		0	-	-	%
	Dual output common ground		-	-	-	
	Dual output isolated		-	-	-	
Turn-on Delay Time	Nominal input voltage(full load)		-	500	-	mS
Power-off Holding Time	Input 220VAC(full load)			30		mS
	Input 380VAC(full load)		--	60	-	
Dynamic Response	25%~50%~25% 50%~75%~50%		Overshoot range(%):≤±5.0			%
			Recovery time(mS):≤5.0			mS
Output Over-shoot	Full input voltage range		≤10%Vo			%
Short circuit protection			Continuous, Self-recovery			Hiccup
Drift Coefficient	-		-	±0.03%	-	%/℃
Over Current Protection	Full input voltage range		≥110% Io Self-recovery			Hiccup
Over Voltage Protection	Output 5.0VDC		≤7.5			VDC

Ripple& Noise	-	-	50	120	mV
	Note: ripple and noise is tested by twisted-pair method, for details please see at back.				

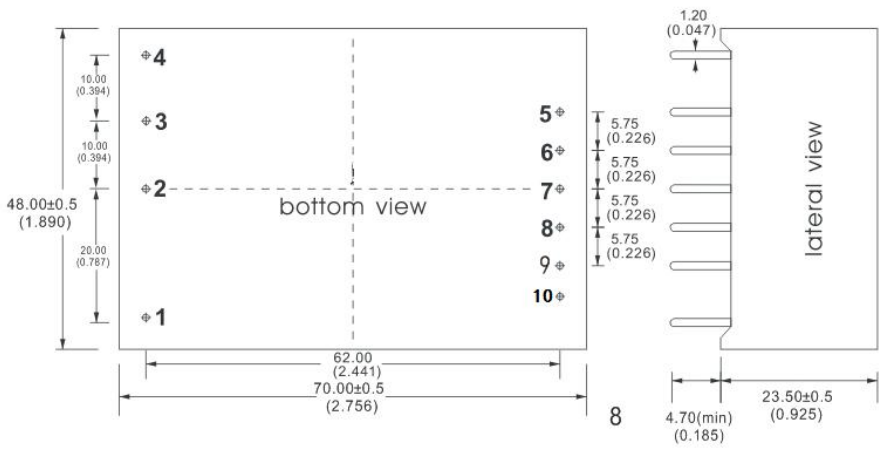
General Specifications

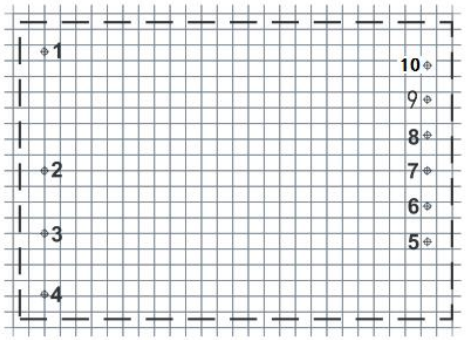
Item	Operating Condition	Min.	Typ.	Max.	Unit
Switching Frequency	-	-	65	-	KHz
Operating Temperature	-	-40	-	+75	℃
Storage Temperature	-	-40	-	+85	
Soldering Temp.	Waver soldering	260±4℃,timing 5-10S			
	Manual soldering	360±8℃,timing 4-7S			
Relative Humidity	-	10	-	90	%RH
Isolation Voltage	Input-Output Test 1min,leakage current ≤5mA	4000	-		VAC
Insulation Resistance	Input-Output@DC500V	100	-		MΩ
Safe Standard	-	EN60950、IEC60950			
Vibration	-	10-55Hz,10G,30Min,alongX,Y,Z			
Safety Class	-	CLASS Ⅱ			
Case Material Class	-	UL94 V-0			
MTBF	-	MIL-HDBK-217F@25℃＞300,000H			

EMC Characteristics

Total Item		Sub Item	Test standard	Class
EMC	EMI	CE	CISPR22/EN55032	CLASS A
		RE	CISPR22/EN55032	CLASS A
	EMS	RS	IEC/EN61000-4-3	10V/m Perf.Criteria B (Recommended circuit see Photo 1)
		CS	IEC/EN61000-4-6	3Vr.m.s Perf.Criteria B (Recommended circuit see Photo 1)
		ESD	IEC/EN61000-4-2	Contact ±6KV / Air ±8KV Perf.Criteria B
		Surge	IEC/EN61000-4-5	±1KV Perf.Criteria B
		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

Dimension





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

Code	L x W x H	
H24	70.0X48.0X23.5 mm	2.756X1.890X0.925inch

Pin Definition

Pin-out	1	2	3	4	6	9
Single(S)	AC(N)	AC(L1)	AC(L2)	AC(L3)	+Vo	-Vo

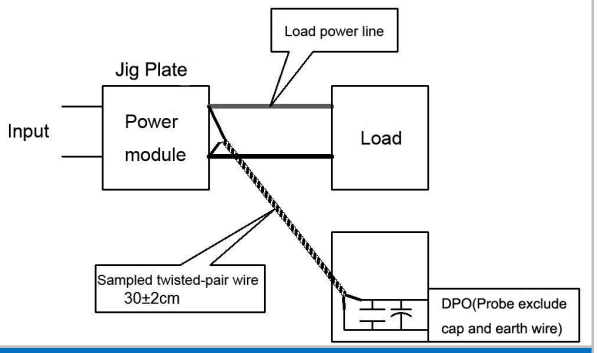
Note: If the definition of pin is not in accordance with the model selection manual, please refer to the label on actual item

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

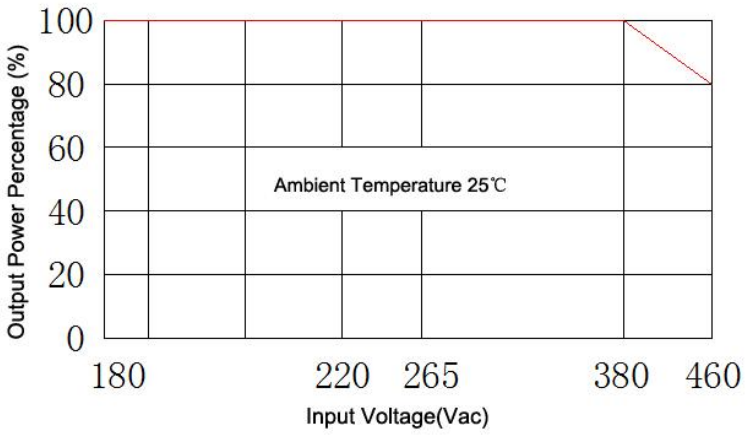
Test Method:

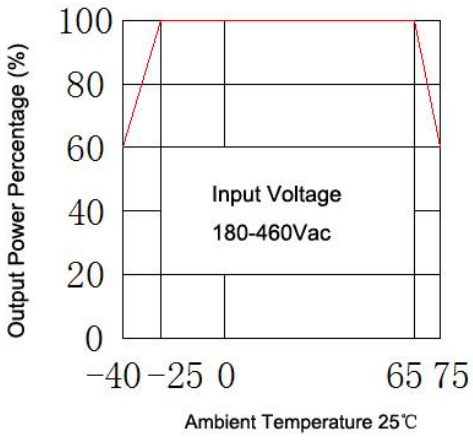
(1) 12# twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 10uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern.

(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 based on Input voltage derating curve when it is180~460VAC.

Note 2: Our product is suitable to use under natural air cooling environment, if use it under closed condition, please contact with us.

Typical Application Circuit and EMC recommended parameters

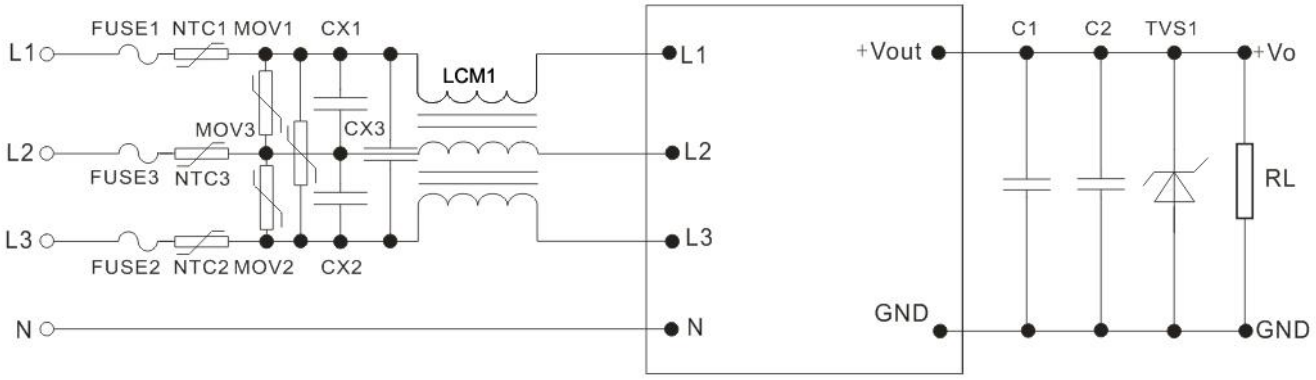


Photo 1

Note:

1) FUSE1-3, recommend to use 2A~400Vac slow fusing;

2) NTC1-3 are thermistors, recommend model 5D-9;

3) MOV1-3 are voltage dependent resistor, recommend model 10D821K;

4) CX1-3 are X capacitor, recommend 0.1uF/400Vac;

5) LCM1 is common mode inductor, recommend 40mH;

6) C1 choose high frequency low impedance capacitors, whose capacitance less than capacitive load, withstand voltage is above 1.5 times than output voltage;

7) C2 choose 0.1uF ceramic chip capacitor, withstand voltage is above 1.5 times more than output voltage;

8) TVS1 is TVS tube: 5V output recommend :SMBJ7.0A

Note:

1. The product should be used within the specification range, or it will cause permanent damage to it;

2. The input terminal should connect to fuse;

3. If the product is operated under the minimum load request, the product performance cannot be guaranteed to comply with all parameters in the datasheet;

4. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;

5. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75% with nominal input voltage and rated output load(pure resistance load);

6. All index testing methods in this datasheet are based on our Company's corporate standards;

7.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;

8. We can provide product customization service,

9. Specifications are subject to change without prior notice.

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