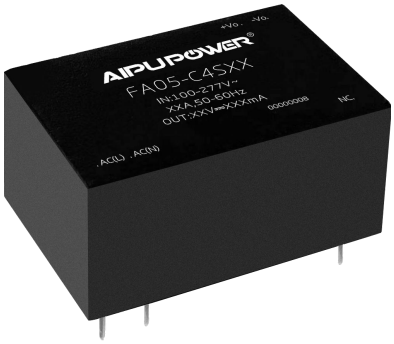
Typical Features

- Wide input voltage range 85-305VAC/120-430VDC
- No load power consumption ≤0.3W@220VAC
- Efficiency 79%(TYP.)
- Operating temperature from -40 to +85℃
- Switching frequency 65KHz
- Short circuit & over current protections
- Isolation voltage 4000Vac
- Altitude during operating 5000m Max
- Compliant with IEC/EN62368/UL62368
- PCB DIP mounting



Application Field

FA05-C4SXX Series ----- Compact size & high-performance AC-DC modular power supplies with global adapted input voltage range (both AC and DC available), low ripple, low temperature rise, low standby power consumption, high efficiency, high reliability, safety isolated and good EMC performance. This series of products can be widely used in the fields of Electric power, Industry, Instrument and Smart home devices, etc. The additional circuit diagram for EMC is recommended for the application with high EMC requirement.

Typical Product List

Certificate	Part No.	Input Voltage		Output Specifications			Max Capacitive Load @220VAC	Ripple & Noise 20MHz (Max)	Efficiency @Full Load, 220VAC (Typ.)
		Nom.	Range	Power	Voltage	Current			
		(VAC)	(VAC)	P(W)	Vo(V)	Io(mA)	(uF)	mVp-p	%
-	FA05-C4S15	220	85-305	5	15	333	1000	100	79

Note 1: The typical value of efficiency is based on the product tested after half an hour burn-in at full load.

Note 2: The full load efficiency should be in ±2% of the typical value in this table. The efficiency is calculated by the way that the full output power is divided by the input power.

Note 3: The Ripple & Noise is tested by the twisted pair method, please refer to the following test instruction.

Note 4: Please contact Aipu sales for other output voltages requirement in this series but not listed in this table.

Input Specifications

Item	Operating Condition	Min	Typ.	Max	Unit
Input voltage range	AC input	85	220	305	VAC
	DC input	120	310	430	VDC
Input frequency	-	47	50	63	Hz
Input current	115VAC input	-	-	0.10	A
	220VAC input	-	-	0.06	

Surge current	115VAC input	-	-	15	
	220VAC input	-	-	20	
No-load power consumption	115VAC input	-	-	0.30	W
	220VAC input	-	-		
Leakage current	-	0.5mA TYP/ 230VAC/ 50Hz			
Recommended external fuse	-	2A/300VAC Time-delay fuse			
Hot plug	-	Unavailable			
ON/OFF Control	-	Unavailable			

Output Specifications

Item		Operating Condition	Min	Typ.	Max	Unit
Voltage accuracy		Full input voltage range, any load	-	±2.0	±3.0	%
Line regulation		Rated load	-	-	±0.5	%
Load regulation		Nominal input voltage, 20%~100% load	-	-	±1.0	%
Minimum load		Single Output	0	-	-	%
Turn-on delay time		Input 115VAC (full load)	-	-	50	mS
		Input 220VAC (full load)	-	-		
Power-off hold up time		Input 115VAC (full load)	-	50	-	mS
		Input 220VAC (full load)	-	80	-	
Dynamic Response	Overshoot range	25%~50%~25% 50%~75%~50%	-5.0	-	+5.0	%
	Recovery time		-5.0	-	+5.0	mS
Temperature drift coefficient		-	-	±0.03%	-	%/℃
Output overshoot		Full input voltage range	≤10%Vo			%
Short circuit protection			Continuous, self-recovery			Hiccup
Over current protection		Input 220VAC	≥130% Io, self-recovery			Hiccup
Ripple & Noise		Full input voltage range	-	50	100	mV
Note: The Ripple & noise is tested by the twisted pair method, please refer to the following test instruction.						

General Specifications

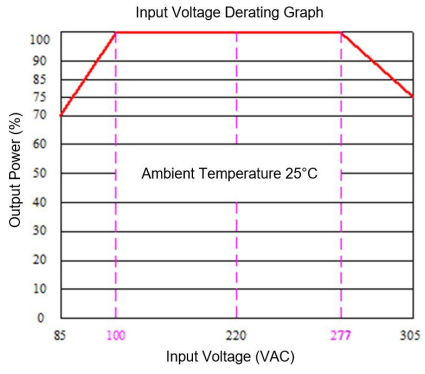
Item	Operating Condition		Min	Typ.	Max	Unit
Switching frequency			-	65	-	KHz
Operating temperature	Refer to the Temperature Derating Graph		-40	-	+85	℃
Storage temperature			-40	-	+105	
Soldering temperature	Wave soldering		260±4℃, time 5-10S			
	Manual soldering		360±8℃, time 4-7S			
Relative humidity			10	-	90	%RH
Isolation voltage	I/P-O/P	Test 1min, leakage current ≤5mA	4000	-	-	VAC
Insulation resistance	I/P-O/P	@ DC500V	100	-	-	MΩ
MTBF	MIL-HDBK-217F@25℃		1000	-	-	K hours
Safety standard			IEC/EN62368			

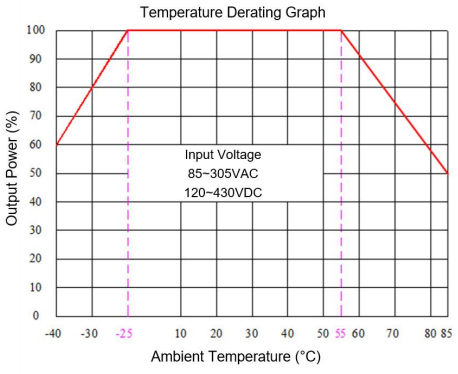
Vibration			10-55Hz,10G,30Min, along X, Y, Z	
Safety standard			CLASS Ⅱ	
Weight & Dimensions	Part No.	Weight (Typ.)	Dimensions L x W x H	
	FA05-C4SXX	27g	37.0 x 24.5x 18.0 mm	1.457 × 0.965 × 0.709 inch

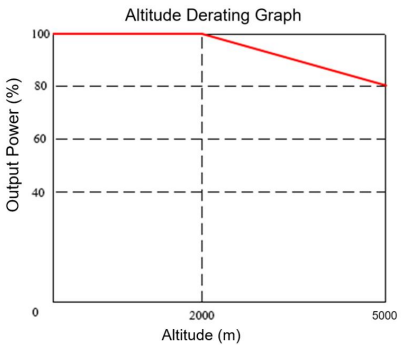
EMC Performance

Total Item		Sub Item	Test Standard	Performance/Class
EMC	EMI	CE	CISPR32/EN55032	CLASS B (with the Recommended Circuit 1)
		RE	CISPR32/EN55032	CLASS B (with the Recommended Circuit 1)
	EMS	RS	IEC/EN61000-4-3	10V/m Perf.Criteria B (with the Recommended Circuit 1)
		CS	IEC/EN61000-4-6	3Vr.m.s Perf.Criteria B (with the Recommended Circuit 1)
		ESD	IEC/EN61000-4-2	Contact ±6KV / Air ±8KV Perf.Criteria B (with the Recommended Circuit 1)
		Surge	IEC/EN61000-4-5	Line to line ±2KV Perf.Criteria B (with the Recommended Circuit 1)
		EFT	IEC/EN61000-4-4	±4KV Perf.Criteria B (with the Recommended Circuit 1)
		Voltage dips & Interruptions	IEC/EN61000-4-11	0%~70% Perf.Criteria B

Product Characteristics Graphs







Note 1: The output power should be derated based on the input voltage derating graph at 85~100VAC/277~305VAC/120~140VDC/ 390~430VDC.

Note 2: This product should operate at the natural air condition, please contact us if it could be used at a closed space.

Recommended Circuit for Application

Typical application circuit diagram

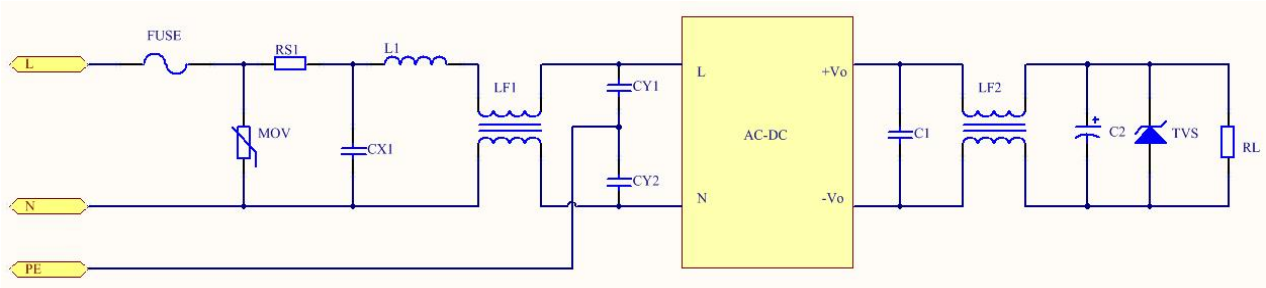
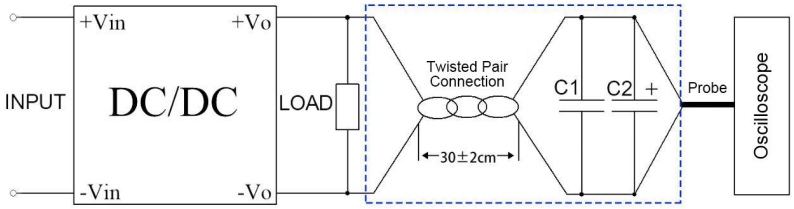


Figure - Circuit 1

Part No.	FUSE (*)	MOV	RS1 (*)	CX1	L1	LF1	CY1 CY2	C1	LF2	C2	TVS
FA05-C4S15	2A/ 300VAC Time delay fuse	14D561K/ 4500A	12Ω/ 3W Wire-wound resistor	X2/ 224K/ 310VAC	820uH 0.5A	25mH 0.5A	Y1/ 102M/ 400VAC	1uF 50V	100uH	68uF 16V	SMBJ20A

Note: The * marked components are necessary for the application, not optional.

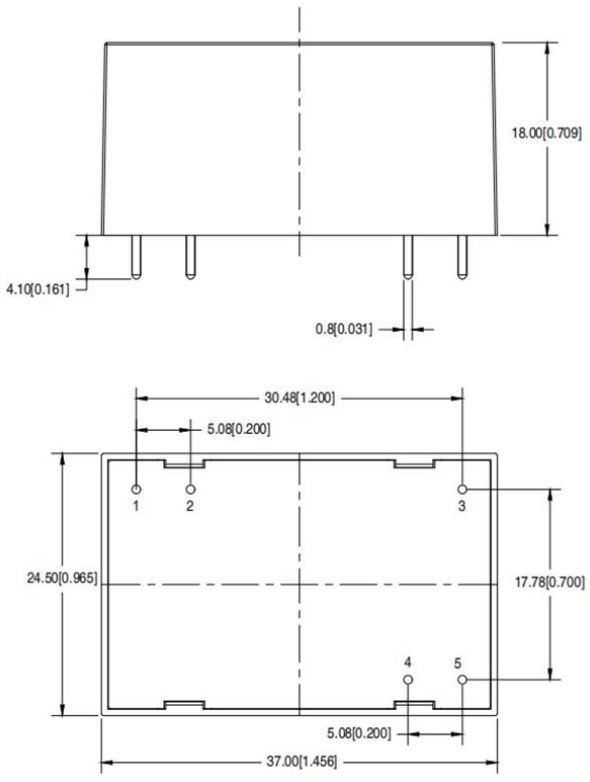
Ripple & Noise Test Instruction (Twisted Pair Method, 20MHz Bandwidth)

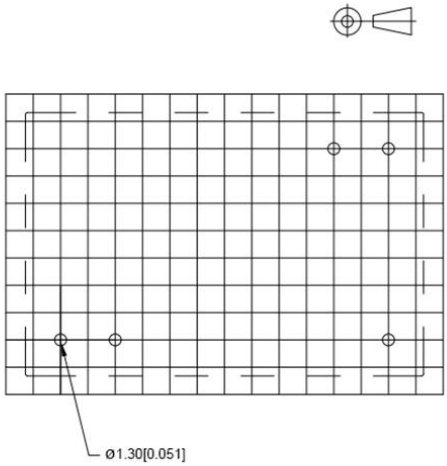


1, The Ripple & noise test needs 12# twisted pair cables, an oscilloscope which should be set at the Sample Mode, bandwidth 20MHz. 100M bandwidth probe with cap and ground removed. C1(0.1uF) polypropylene capacitor and C2(10uF) high-frequency low-resistance electrolytic capacitor are connected in parallel with the probes and one side of the twisted pair.

2, The power supply output connects to the load by the cables. The other side of the twisted pair (length 30cm±2 cm) should be connected in parallel with the load, the polarity of the output and the oscilloscope probe should not be reversed. The test can be start after input power on.

Mechanical Dimensions





PCB layout vertical view
Grid 2.54x2.54[0.10x0.10]

Unit: mm[inch]
General tolerance: ±0.50[±0.020]
Pin diameter tolerance: ±0.10[±0.004]

Pin-out Function Description					
Pin No.	1	2	3	4	5
Function	AC(L)	AC(N)	No Connection	+Vo	-Vo

Application Notice

1.The products should be used according to the specifications in this datasheet, otherwise it could be permanently damaged.

2. A fuse should be connected at input.

3. The product performance in this datasheet cannot be guaranteed if it works at a lower load than the minimum load defined.

4. The product performance in this datasheet cannot be guaranteed if it works at over-load condition.

5. Unless otherwise specified, all values or indicators in this datasheet are tested at Ta=25℃, humidity<75%RH, nominal input voltage and rated load (pure resistance load).

6. All values or indicators in this datasheet had been tested based on Aipupower test specifications.

7.The specifications are specially for the parts listed in this datasheet, any other non-standard model performances could be out of the specifications. Please contact our technician for specific requirements.

8. Aipupower can provide customization service.

Guangzhou Aipu Electron Technology Co., Ltd

Address: Building 4, HEDY Park, No.63, Punan Road, Huangpu Dist, Guangzhou, China.

Tel: 86-20-84206763 Fax: 86-20-84206762 HOTLINE: 400-889-8821

E-mail: sales@aipu-elec.com Website: https://www.aipupower.com