AM21-12W12N Product Specification Manual

12W Low-power AC-DC Buck Power Supply Module



成都亿佰特电子科技有限公司

Chengdu Ebyte Electronic Technology Co.,Ltd.

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1.product introduction

1.1. Brief introduction

AM21-12W12N is a AC-DC low-power power adapter，Module internal design strictly complies with:UL60950 safety design specification， and conforms to: FCC Part 15B:2016 ; EN55035 : 2017 ; EN61000-3-2:2014 , EN 61000-3-3:2013,EN 55032:2015.Users do not need to add additional components in the module peripherals, which greatly reduces the users design threshold.wide voltage input range:100 ~ 250V，the Maximum input up to 264V，all components from the regular procurement channels, users do not need to worry about stability, when in complex voltage environment ,it also outputs steadily.



1.2. Module features

Authentication standards: meet the FCC, CE design standards, users do not need to add related EMI components in peripherals.
Super-low ripple：It conforms with Industrial grade design to meet various need of power supply system.
Over current protection:module internal presets constant current limitation,it can be automatically restored.
High-quality scheme：It's working efficiency has been greatly improved, the average efficiency is 85%。
Over temperature protection：module internal presets highest temperature,it can be automatically restored.
Short-circuit protection： the module is equipped with short-circuit protection measures, hiccup mode, auto restore after the elimination of fault status.
Safety Specification: Module design conforms to UL60950, users do not need to add security authentication components in the module peripherals.

1.3. Application scenarios

- Intelligent home ;
- Industrial sensors ;
- Internal power supply system of security alarm ;
- Industrial control ;
- MCU motherboard, toys ;
- Smart street lamp ;
- Intelligent switch, socket ;

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2.specification parameters

2.1. Limit parameters

Order number	Main parameter	Minimum	Maximum	Remarks
1	Input voltage（Vdc）	85	264	Vac
2	Input voltage（Vdc）	100	370	Vdc
3	Output power（W）	0	12	Load power should not exceed 100%. It is recommended that the load power should be less than 90%.
4	Working temperature（℃）	-40	+80	Full load limit temperature is 60℃.

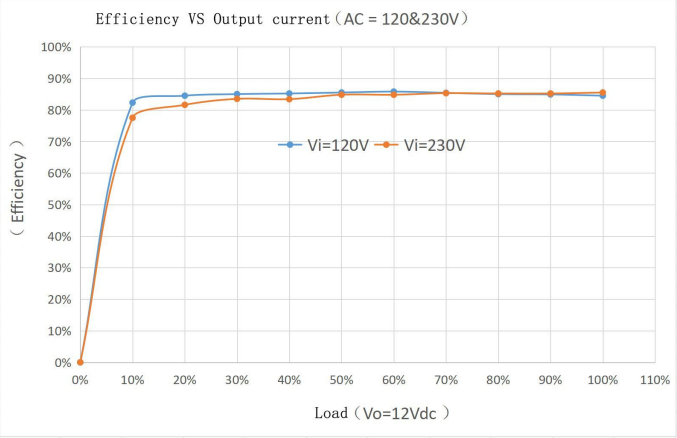
2.2. Work parameters

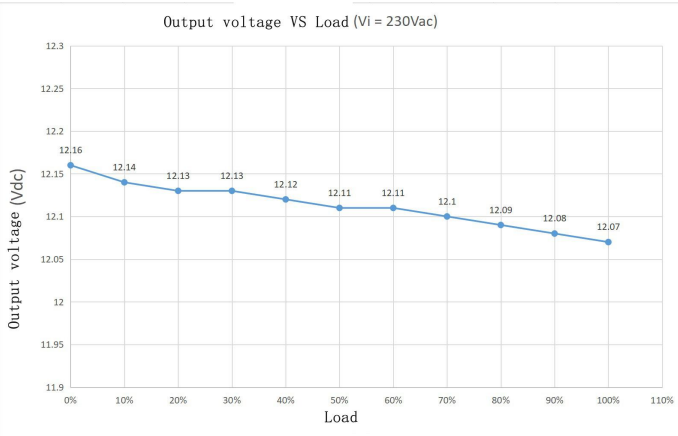
Order number	Main parameter	Minimum	Typical value	Maximum	Remarks
1	Input voltage（Vdc）	100	220	250	Vac
2	Input voltage（Vdc）	120	-	350V	Vdc
3	Working frequency (Hz)	-	50/60	-	AC/50/60Hz
4	Output power(W)	0	-	12	Maximum continuous output power 12 watts.
5	Working temperature(℃)	-40	+25	80	Can full load operation.
6	Power factor	0.4	-	0.55	>0.55 at 120Vac / >0.4 at 230Vac full load.
7	Static power(mA)	-	-	1.0	< =1 mA / 240Vac
8	Output voltage (Vdc)	12.0	12.1	12.16	V

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9	Persistent current(A)	0	-	1	A
10	Ripple noise(mV)	84	-	100	Full lode<=100mV
11	Average efficiency (n%)	-	-	85	%
12	Over current protection (%)	110	-	150	Constant current limit, automatic recovery.
13	Short-circuit protection	-	-	-	Hiccup mode , can be automatic Recover after eliminating the fault state.
14	Work humidity (RH%)	20	-	90	No-condensing.
15	Storage temperature(℃)	-10	+25	+50	Dry storage in normal temperature.
16	Storage humidity (RH%)	10	-	90	Dry storage in normal temperature.
17	withstand voltage test	-	-	3000	I/P - O/P: 3000VAC
18	Insulation impedance	-	-	100	I/P - O/P: 100M ohms / 500VDC at 25 ℃

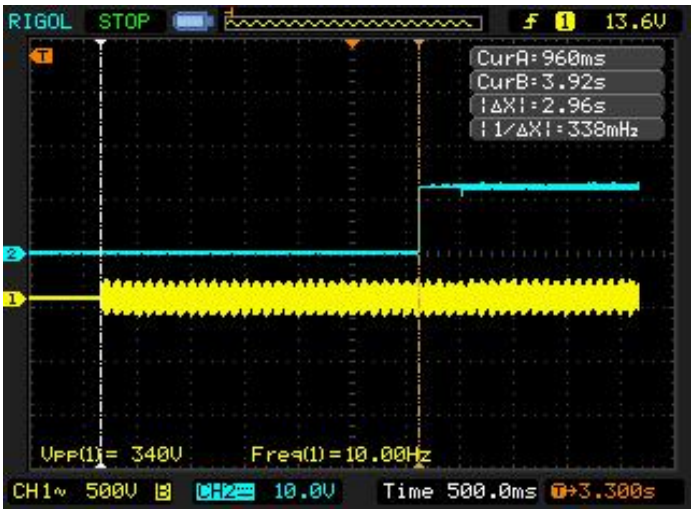
2.3. Work efficiency VS load



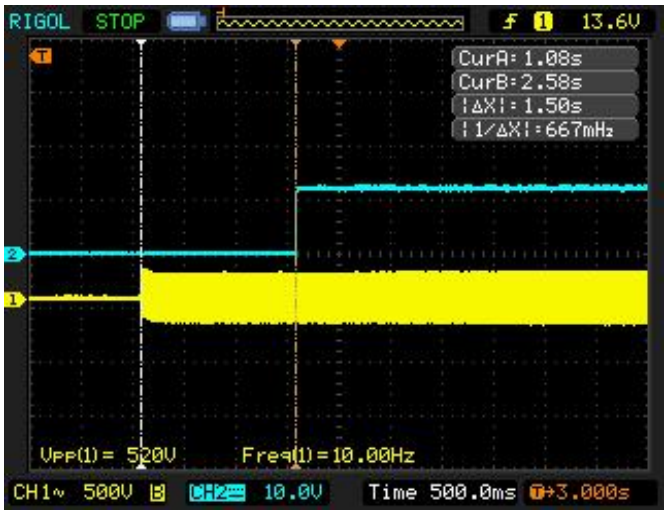


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2.4. Start-up time

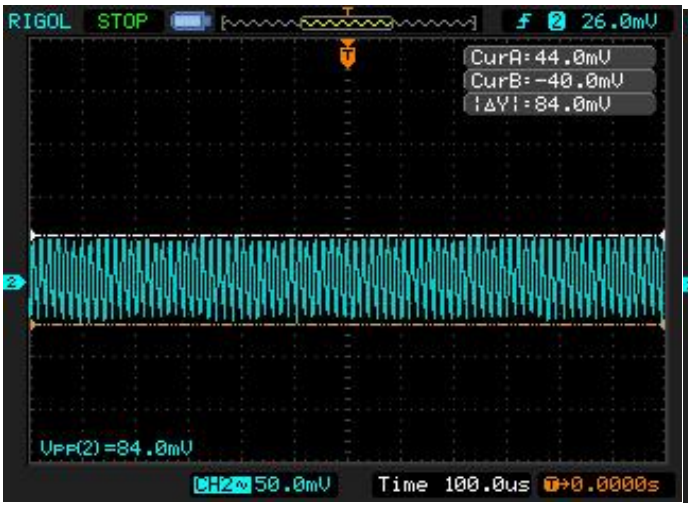


INPUT:AC 120V OUTPUT:12V 1A

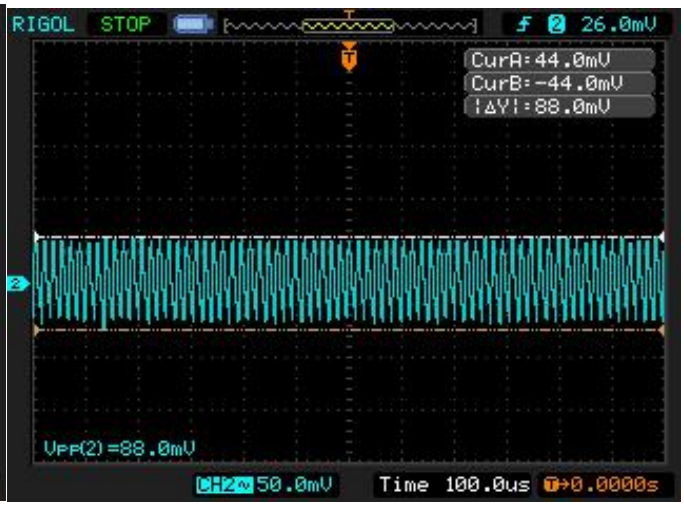


INPUT:AC 230V OUTPUT:12V 1A

2.5. Full-load ripple



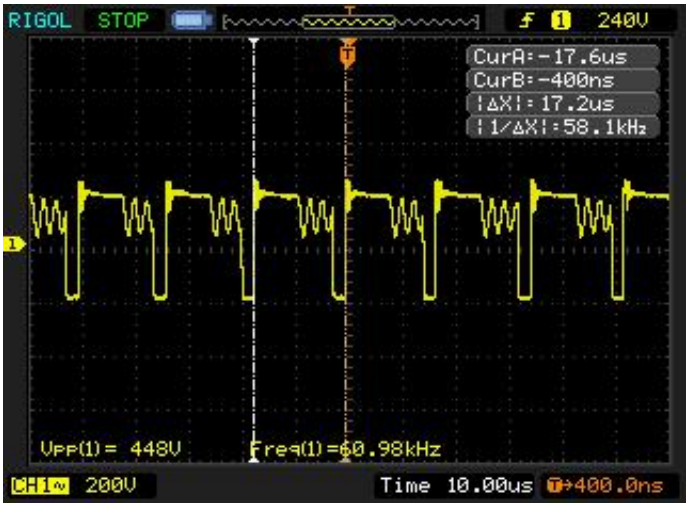
INPUT:AC 120V OUTPUT:12V 1A



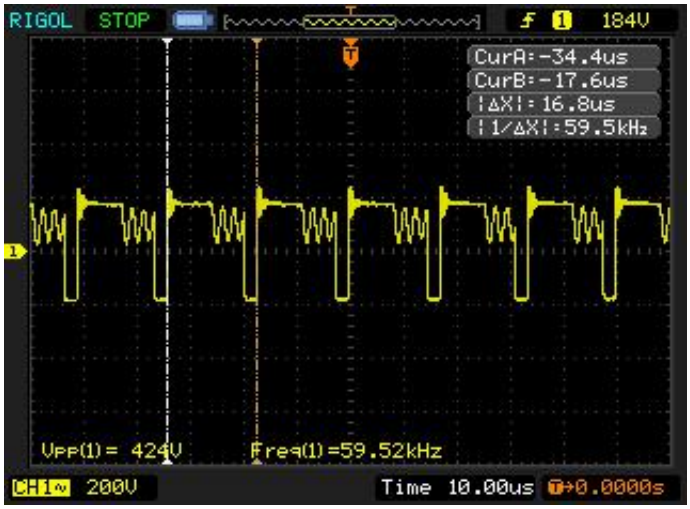
INPUT:AC 230V OUTPUT:12V 1A

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2.6. working frequency



INPUT:AC 120V OUTPUT:12V 1A



INPUT:AC 230V OUTPUT:12V 1A

3.basic operation

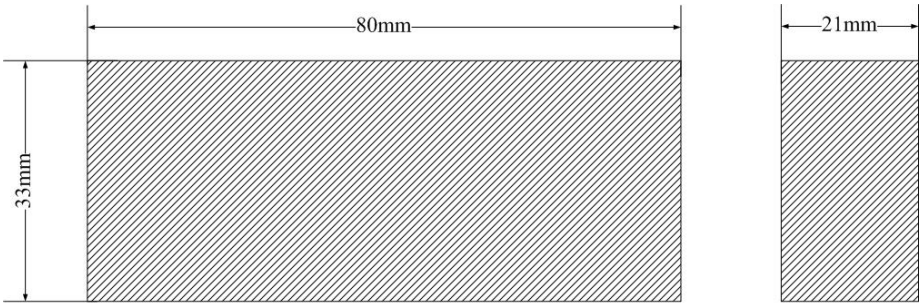
3.1. Matters need attentions

- Operating this module requires certain professional skills, prohibit non-professionals operate on it!
- Before using it, you must study Knowledge of safe use carefully.
- prohibit human body contact with L and N power lines after electrification to prevent accidents caused by electric shock.Recommend input front-end to Increase isolation
- The maximum input voltage shall not exceed 250 Vac, otherwise may occur permanent damage .
- In daily maintenance, the input power should be disconnected to prevent from electric shock accidents.

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4.Mechanical Characteristics and Pin Definition

4.1. Product size



5.Product selection

Product model	Input voltage	Output voltage	Output current	Efficiency	Installation mode
AM21-12W05N	100 ~ 250Vac	5Vdc	2.4A	82%	Bare PCB
AM21-12W12N	100 ~ 250Vac	12Vdc	1A	85%	Bare PCB
AM21-12W24N	100 ~ 250Vac	24Vdc	0.5A	87%	Bare PCB

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Revision history

Order number	Vision	Modification date	Revision notes	Maintain person
1	V1.0	20190301	First edition, first public release.	Deng
2	V1.02	20190528	Modified some parameters.	Deng
3	V1.1	20190923	Modified some parameters.	Deng

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Fax: 028-64146160 ext. 821

Web: www.ebyte.com

Address: Innovation Center D347, 4# XI-XIN Road,Chengdu, Sichuan, China

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