AP21-12W05N User Manual

12W Aluminum Housing AC-DC Voltage-decreasing Power Adapter

Chengdu Ebyte Electronic Technology Co.,Ltd.

Contents

Disclaimer

EBYTE reserves all rights to this document and the information contained herein. Products, names, logos and designs described herein may in whole or in part be subject to intellectual property rights. Reproduction, use, modification or disclosure to third parties of this document or any part thereof without the express permission of EBYTE is strictly prohibited.

The information contained herein is provided “as is” and EBYTE assumes no liability for the use of the information. No warranty, either express or implied, is given, including but not limited, with respect to the accuracy, correctness, reliability and fitness for a particular purpose of the information. This document may be revised by EBYTE at any time. For most recent documents, visit www.ebyte.com.

1 Introduction

1.1 Brief Introduction

AP21-12W05N is a small size, aluminum housing, AC to DC power adapter. It has the advantages of input voltage 85~264Vac/100~370Vdc, ultra-low ripple, ultra-low power consumption, high efficiency, safety isolation, high reliability, etc.; it complies with IEC60950, EN60950, UL60950 certification standards. Users do not need to add EMI peripheral parts, greatly reducing the difficulty of user design. Users do not need to worry about stability, even in extremely complex voltage environments, the power adapter can work stably.

Features

- Input voltage: international universal full-voltage AC input 85 ~ 264Vac/100~370Vdc;
- Static power consumption: <0.1W;
- Ultra-low ripple: 90mV ripple at full load;
- Ultra-small size: 70x39x31mm;
- Certification standards: in line with IEC60950, EN60950, UL60950 certification standards, no need to add EMC-related components for peripherals;
- Protection measures: over voltage protection, over current protection, short circuit protection, over temperature protection;
- High-quality solutions: greatly improve work efficiency;
- High-quality components: 105°C high-quality brand electrolytic capacitors;
- Working temperature: the highest can work at 70°C ambient temperature.

1.2 Applications

- Industrial equipment.
- Instrumentation.
- Solenoid valve, relay.
- Large billboard.
- Charging pile.
- Security equipment.
- Smart home.
- Traffic lights, smart street lights.
- RF communication base station equipment.

2 Specification and parameter

2.1 Limit parameter

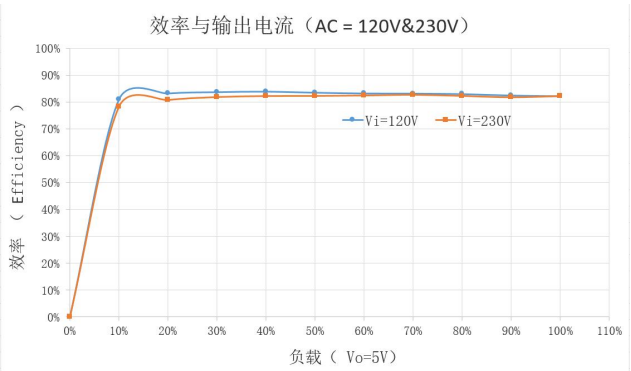
No.	Patameters	Min.	Max.	Note:
1	Input voltage	85	264	Vac
2	Input voltage	100	370	Vdc
3	Output Power	0	12	W
4	Operating temperature	-40	+85	ta=40°C,tc=85°C

2.2 Operating Parameter

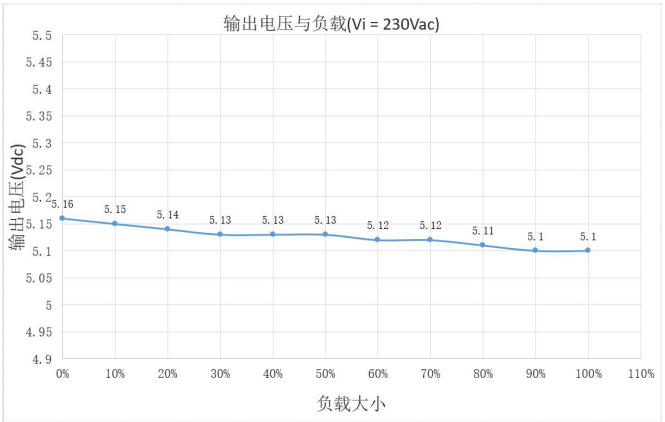
No.	Patameters	Min.	Typical	Max.	Note:
Input	Input voltage-AC	100	220	250	Vac
	Input voltage-DC	120	-	350V	Vdc
	working frequency	-	50/60	-	Hz
	Inrush current	-	-	10	10 A at 230 Vac
	Static power	-	-	< 0.1	W
	Highest efficiency	78.2	-	83.9	%
Output	The output voltage	4.5	5	5.5	V
	Continuous current	0	-	2.4	A
	Output Power	0	-	12	W
	Ripple noise	50	-	90	mV
	Voltage adjustment range	-	±0.5	-	V
	Output voltage accuracy	-	-	±1.5	%
	Boot time	400	550	1000	ms
	Linear adjustment rate	-	0.5	-	%
	Load Regulation	-	1.0	-	%
Protection	Overcurrent protection	110	-	150	%
	Short circuit protection	-	-	-	Hiccup mode, automatic recovery after the fault state is eliminated
Surroundings	Operating temperature	-40	25	85	ta=40°C,tc=85°C
	Working humidity	20	-	90	No condensation
	storage temperature	-40	+25	+85	Dry and room temperature
	Storage humidity	10	-	90	
Safety	Insulation withstand voltage	-	-	3000	VAC I/P - O/P
	Insulation resistance	-	-	500	I/P - O/P: 100M ohms / 500VDC at 25 °C
	safety regulations	Comply with IEC60950, EN60950, UL60950 certification standards			
other	Product Size	70x39x31mm			
	product weight	-	60	-	g

2.3. Working Efficiency and Working Load

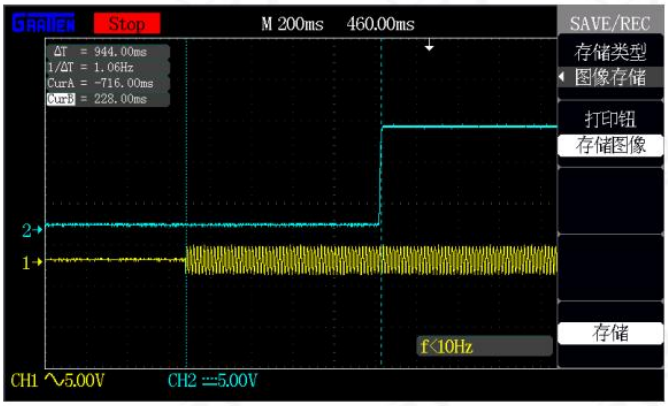
Efficiency and Output current



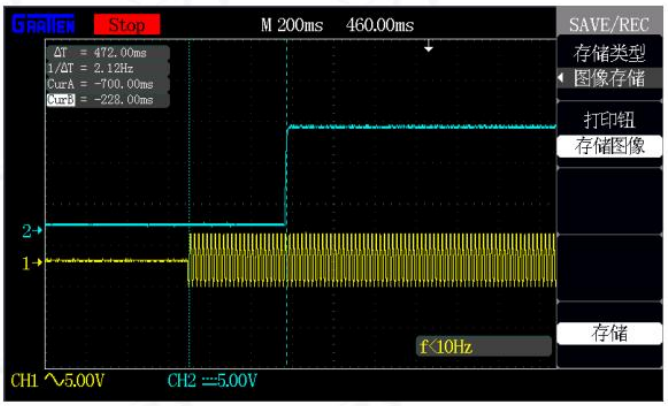
Output Voltage and load



2.4. Booting Time

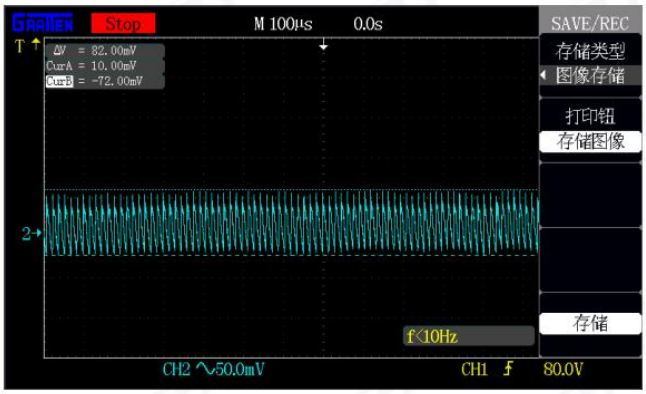


INPUT:AC 120V OUTPUT:5V 2.4A

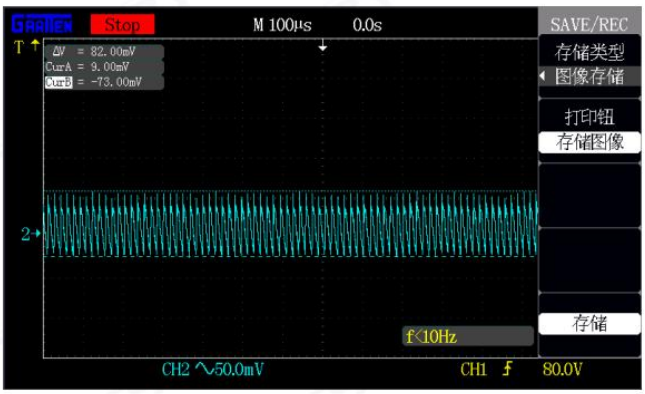


INPUT:AC 230V OUTPUT: 5V 2.4A

2.5. Full load working ripple

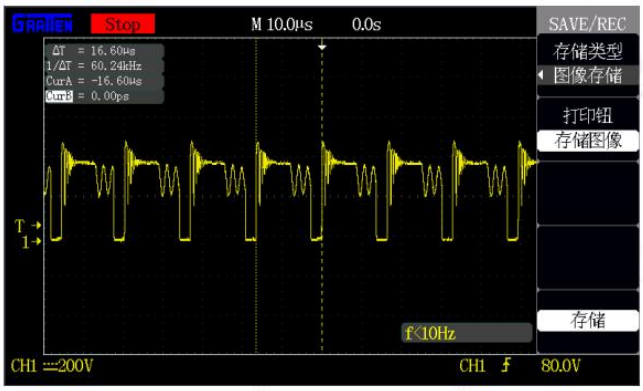


INPUT:AC 120V OUTPUT: 5V 2.4A

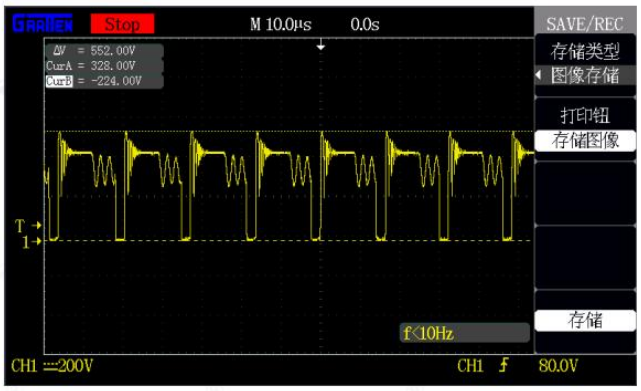


INPUT:AC 230V OUTPUT: 5V 2.4A

2.6. Working frequency

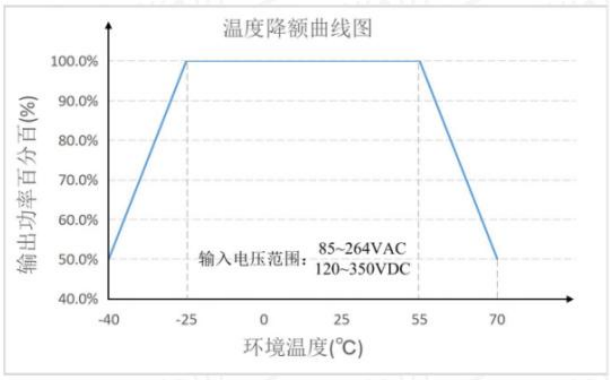


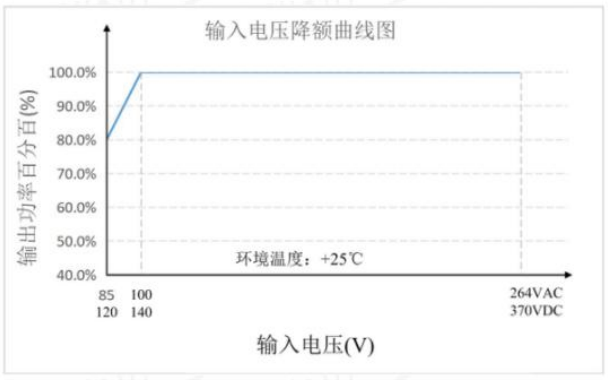
INPUT:AC 120V OUTPUT: 5V 2.4A



INPUT:AC 230V OUTPUT: 5V 2.4A

2.7. Characteristic curve-derating design





Note:

1. For an input voltage of 85-100VAC/120-140VDC, the input voltage must be derated on the basis of temperature derating;

2. This product is suitable for use in a natural air cooling environment. If it is used in a closed environment, please consult our FAE.

3 Basic operation

3.1 Safety Cautions

1.Operation of this module requires certain professional skills, rigorous non-professional life to operate it!

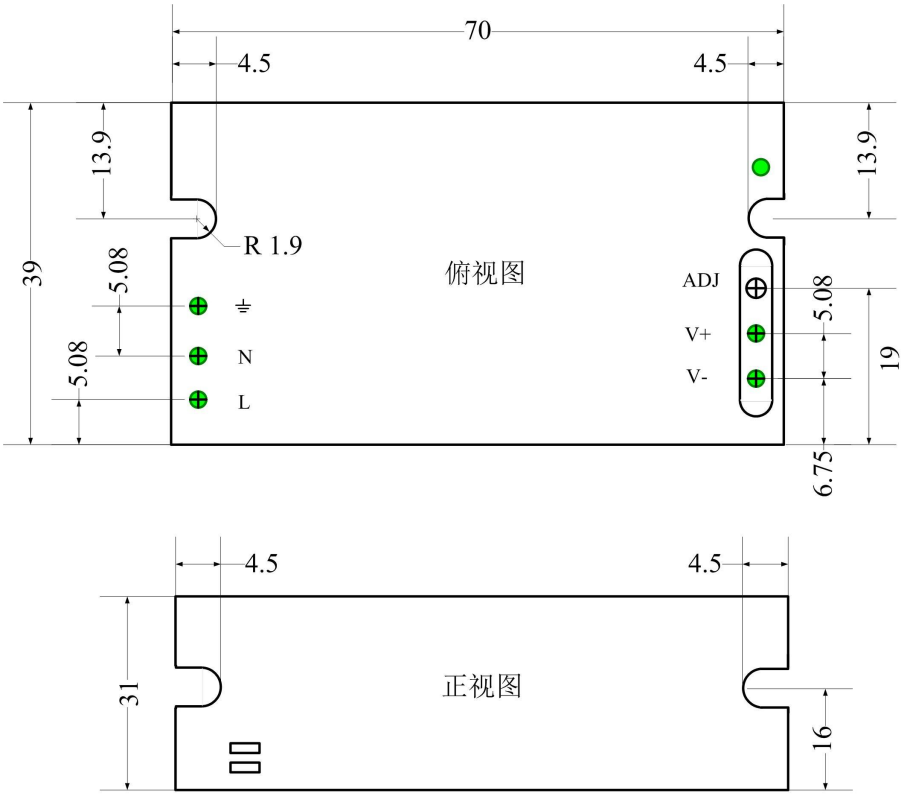
2.Be sure to carefully study the knowledge of safe use before use.

3.Strict human body contact with L and N power lines after power-on to prevent accidents due to electric shock, it is recommended to increase isolation at the input front end.

4.The maximum input voltage must not exceed 250Vac, otherwise it may cause permanent damage to the module.

5.During daily maintenance, the input power should be disconnected to prevent accidents caused by electric shock.

4 Size and pin definition



单位：mm 公差：±0.2

No.	Name	Direction	Functions
1	L	Input	AC power input
2	N	Input	AC power input
3	⏚	/	Grounded
4	V-	Output	DC output, power ground
5	V+	Output	DC output, power supply positive

4 Power Adapter Models

Model	Input Power	Output V	Output I	Efficiency	Installation method
AP21-12W05N	100 ~ 250Vac	5V	2.4A	83.9%	Plastic plug-in
AP21-12W12N		12V	1.0A	85.3%	Plastic plug-in
AP21-12W24N		24V	0.5A	86.4%	Plastic plug-in

Revision history

Version	Date	Description	Issued by
1.0	20191203	Initial version	LJ

About us

Technical support: support@cdebyte.com

Documents and RF Setting download link: www.cdebyte.com

Thank you for using Ebyte products! Please contact us with any questions or suggestions: lirong@cdebyte.com

---

Phone：028-61543675

Web: www.cdebyte.com

Address:Building B5, Mould Industrial Park, 199# Xi-Qu Ave, West High-tech Zone, Chengdu, 611731, Sichuan, China

Chengdu Ebyte Electronic Technology Co.,Ltd.