



AP21-24W05N User Manual

24W Chassis AC-DC Step-down Switching Power Supply



Contents

Disclaimer	1
Chapter 1 Overview	1
1.1. Introduction	1
1.2. Features	1
1.3. Application scenarios	1
Chapter 2 Specifications	2
2.1. Limit Parameters	2
2.2. Operating Parameters	2
2.3. Efficiency & Load	3
2.4. Boot time	3
2.5. Full load working ripple	3
2.6. Operating frequency	4
2.7. Characteristic curve-derating design	4
Chapter 3 Basic operation	4
3.1. Precautions	4
Chapter 4 Mechanical Characteristics and Pin Definition	5
4.1. Size	5
4.2. Pin Definition	5
Chapter 5 Product Selection	6
Revision history	6
About us	6

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.

Chapter 1 Overview

1.1. Introduction

AP21-24W05N is a small size chassis type switching power supply, AC and DC dual purpose, input voltage 85~264Vac/100~370Vdc, ultra-low ripple, ultra-low power consumption, high efficiency, safe isolation, high reliability, etc.; Complies with IEC60950, EN60950, UL60950 certification standards, peripherals do not need to add EMI-related components, greatly reducing user design thresholds; users do not need to consider stability, even in extremely complex voltage environments, they can also stabilize output.



1.2. Features

- Input voltage: international universal full-voltage AC input 85 ~ 264Vac/100~370Vdc;
- Static power consumption: <0.1W;
- Ultra-low ripple: 120mV ripple at full load;
- Ultra-small size: 85x58x33mm;
- Certification standards: Comply with IEC60950, EN60950, UL60950 certification standards,
- Peripherals do not need to add EMC-related components;
- 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℃ high-quality brand electrolytic capacitors;
- Working temperature: can work up to 70℃ ambient temperature.

1.3. Application scenarios

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

Chapter 2 Specifications

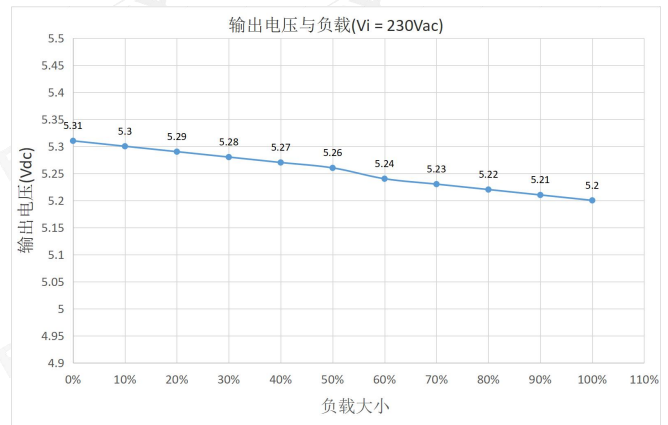
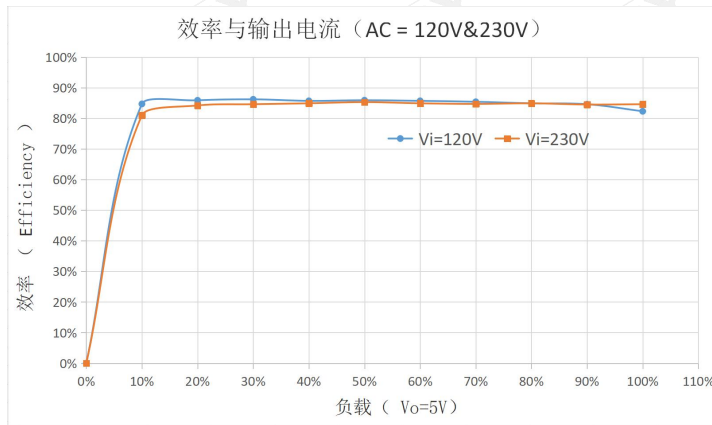
2.1. Limit Parameters

Num	Limit Parameters	Min	Max	Remark
1	Input voltage (Vac)	85	264	Vac
2	Input voltage (Vdc)	100	370	Vdc
3	Output power (W)	0	25	W
4	Working temperature (°C)	-40	+85	ta=40°C,tc=85°C

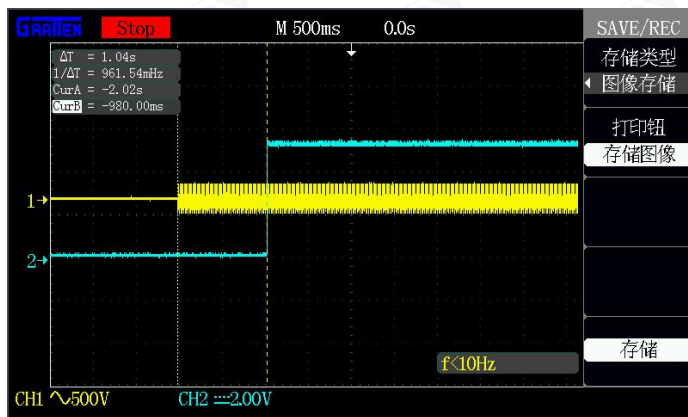
2.2. Operating Parameters

Num	Main Parameter	Min	Type	Max	Remark
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	81	-	85.3	%
Output	Output voltage	4.5	5	5.5	V
	Continuous current	0	-	4.8	A
	Output Power	0	-	24	W
	Ripple noise	50	-	120	mV
	Voltage adjustment range	-	±0.5	-	V
	Output voltage accuracy	-	-	±1.5	%
	Boot time	400	550	1100	ms
	Linear adjustment rate	-	0.5	-	%
	Load Regulation	-	1.0	-	%
Protection	Overcurrent protection	110	-	150	%
	Short circuit protection	-	-	-	Automatic recovery after the fault state is eliminated
Condition	Operating temperature	-40	25	85	ta=40°C,tc=85°C
	Working humidity	20	-	90	No condensation
	storage temperature	-40	+25	+85	Dry and store at room temperature
	Storage humidity	10	-	90	Dry and store at room temperature
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	IEC60950、EN60950、UL60950			
Other	Size	85x58x33mm			
	Weight	-	116	-	g

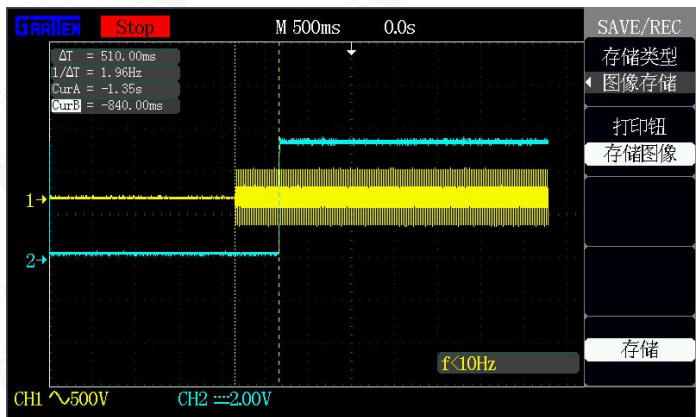
2.3. Efficiency & Load



2.4. Boot time

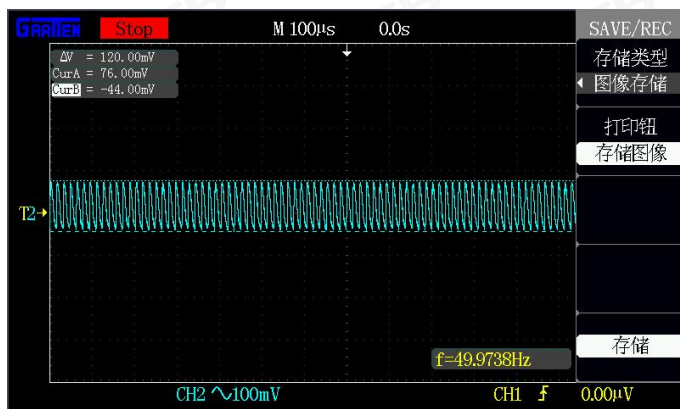


INPUT:AC 120V OUTPUT:5V 4.8A

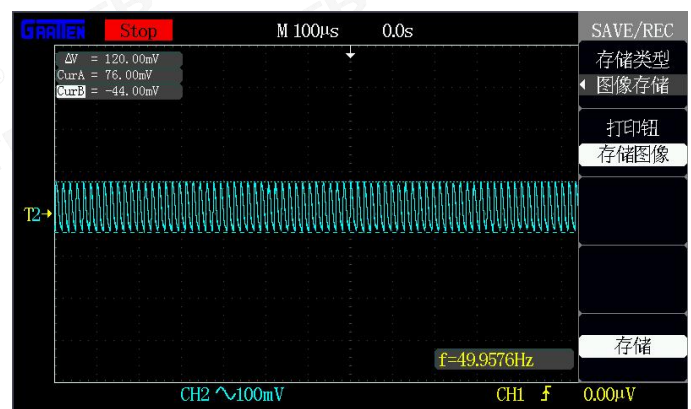


INPUT:AC 230V OUTPUT:5V 4.8A

2.5. Full load working ripple



INPUT:AC 120V OUTPUT:5V 4.8A

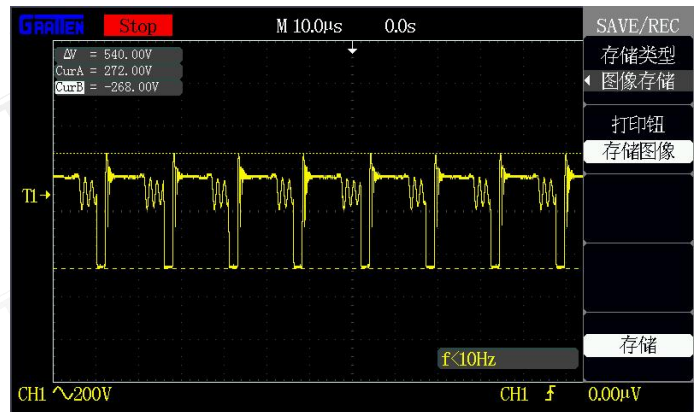


INPUT:AC 230V OUTPUT:5V 4.8A

2.6. Operating frequency

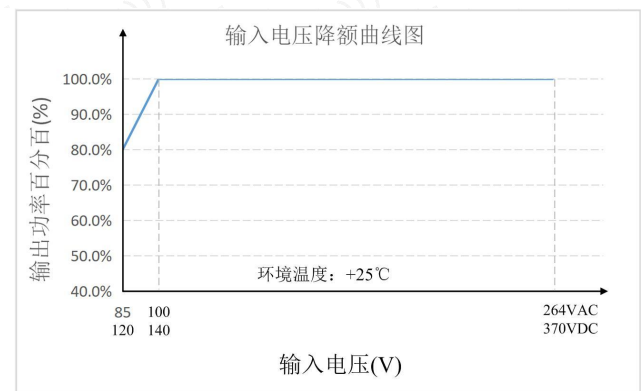
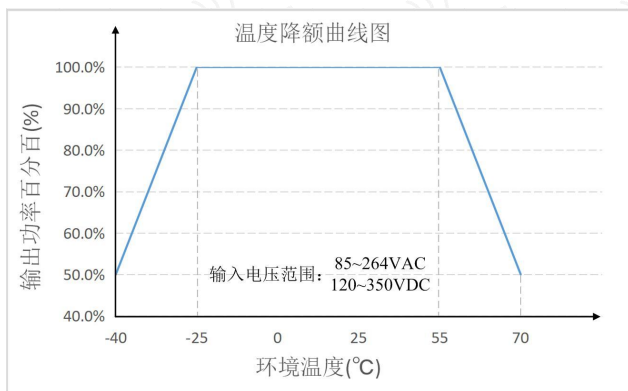


INPUT:AC 120V OUTPUT:5V 4.8A



INPUT:AC 230V OUTPUT:5V 4.8A

2.7. Characteristic curve-derating design



Note: ①For input voltage of 85-100VAC/120-140VDC, input voltage derating shall be performed on the basis of temperature derating;

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

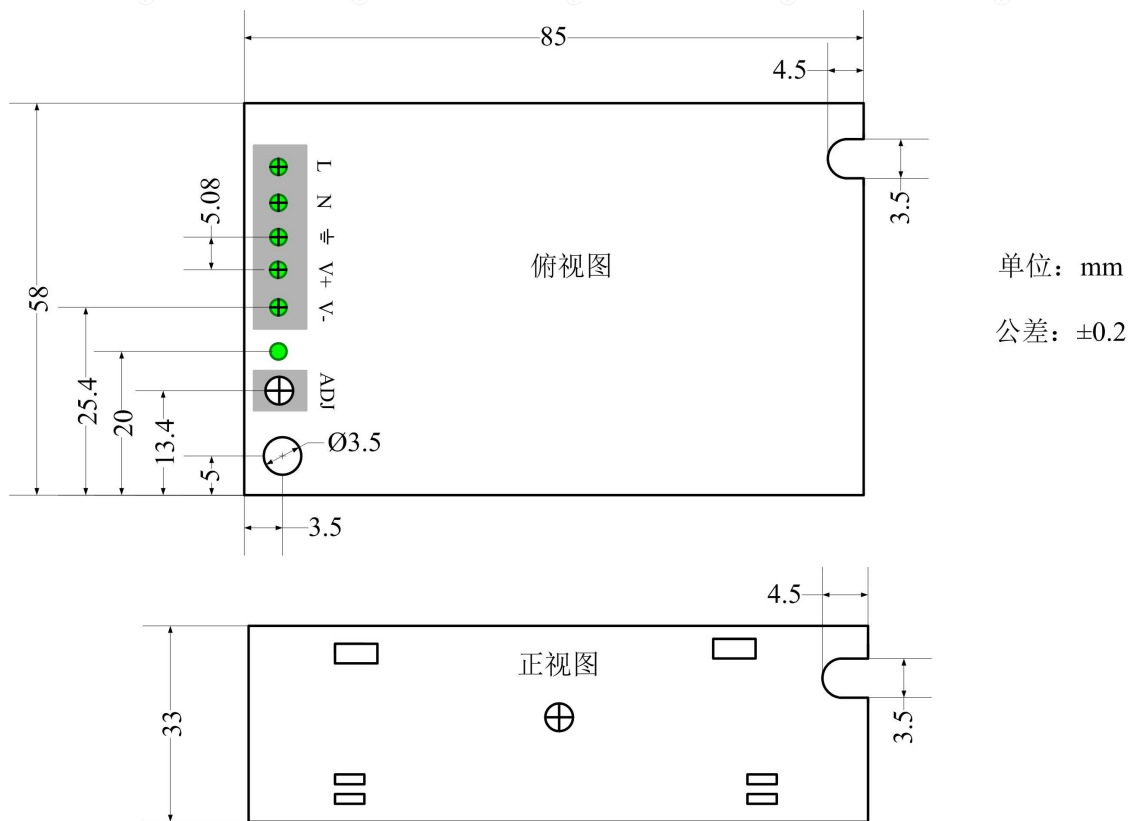
Chapter 3 Basic operation

3.1. Precautions

- Operation of this module requires certain professional skills, rigorous non-professional life to operate it!
- Be sure to carefully study the knowledge of safe use before use.
- Strict human body contact with L and N power lines after power-on to prevent accidents caused by electric shock, it is recommended to increase isolation at the input front end.
- The maximum input voltage must not exceed 250Vac, otherwise it may cause permanent damage to the module.
- During routine maintenance, the input power should be disconnected first to prevent accidents caused by electric shock.

Chapter 4 Mechanical Characteristics and Pin Definition

4.1. Size



4.2. Pin Definition

NUM	Pin	Direction	Application
1	L	Input	AC power input
2	N	Input	AC power input
3	⏏	/	Ground
4	V-	Output	DC output, power ground
5	V+	Output	DC output, power supply positive

Chapter 5 Product Selection

Model	Input voltage	Output voltage	Output current	effectiveness	Installation
AP21-24W05N	100 ~ 250Vac	5Vdc	4.8A	85.3%	Plastic plug-in
AP21-24W12N		12V	2A	86.4%	Plastic plug-in
AP21-24W24N		24V	1A	89.1%	Plastic plug-in

Revision history

Num	Version	Date	Description	Issued by
1	V1.0	20191203	Initial version	LJ

About us

Technical support: support@cdebyte.com

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

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

Fax: 028-64146160 ext. 821

Web: www.ebyte.com

Address: B5 Mould Park, 199# Xiqu Ave, High-tech District, Sichuan, China



Chengdu Ebyte Electronic Technology Co.,Ltd.