ZAO-30-BxxMU Series

30W，AC/DC Converter

DESCRIPTIONS

ZAO-30-BxxMU series is one of AC-DC miniaturize open frame power supply and suitable for all kinds of BF type (be accessible to patients) medical system equipment. It features universal AC input and at the same time accepts DC input voltage, cost-effective, high efficiency, high reliability and double or reinforced insulation. they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home, medical, etc.

RoHS

CE Report

EN62368-1

FEATURES

- Universal 80-264VAC or 100-370VDC input voltage
- Operating ambient temperature range: -30℃ to +85℃
- High I/O isolation voltage up to 4000VAC
- Meets 5000m altitude requirements
- Extremely low leakage current＜75uA
- Stand-by power consumption＜0.25W
- Output short circuit, over-current, over-voltage protection
- Efficiency up to 90%
- Meets 2 x MOPP safety class
- Suitable for BF application
- OVC Ⅲ (EN61558-1 standards)
- Safety according to IEC/EN/ES60601, UL/IEC62368

APPLICATIONS

- Industrial control
- LED
- street lightcontrol
- Electricity
- Security
- Telecommunications
- Smart home
- Medical
- Etc

Selection Guide

Certification	Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range ADJ (V)	Efficiency at 230VAC (%) Typ.	Capacitive Load (μF) Max.
EN	ZAO-30-B03MU	19.8	3.3V/6.00A	2.97-3.63	82	20000
	ZAO-30-B05MU	30	5V/6.00A	4.50-5.50	85	20000
	ZAO-30-B12MU		12V/2.50A	10.20-13.80	88	8000
	ZAO-30-B15MU		15V/2.00A	13.50-18.00	89	7000
	ZAO-30-B19MU		19V/1.58A	17.10-20.90	88	2500
	ZAO-30-B24MU		24V/1.25A	21.60-28.50	89	1500
	ZAO-30-B36MU		36V/0.833A	32.40-39.60	90	1000
	ZAO-30-B48MU		48V/0.625A	43.20-52.80	90	470

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Specifications

Product Specifications	Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range	AC input		80	--	264	VAC
		DC input		100	--	370	VDC
	Input Frequency			47	--	63	Hz
	Input Current	115VAC		--	--	1.0	A
		230VAC		--	--	0.5	
	Inrush Current	115VAC		--	--	30	
		230VAC		--	--	60	
	Leakage Current	240VAC		75uA Max.			
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy	0% - 100% load	Other output	--	--	±2.0	%
			24V/36V/48V	--	--	±1.0	
	Line Regulation	Rated load		--	--	±0.5	
	Load Regulation	230VAC		--	--	±1.0	
	Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	3.3V/5V output	--	--	80	mV
			Other output	--	--	100	
	Stand-by Power Consumption	3.3V/5V/12V/15V output		--	0.10	0.15	W
		19V/24V/36V/48V output		--	0.20	0.25	
	Temperature Coefficient			--	--	±0.03	%/° C
	Short Circuit Protection			Hiccup, continuous, self-recover			
	Over-current Protection			⩾115%Io, self-recover			
	Over-voltage Protection	3.3VDC output		⩽5.25V	Output voltage hiccup		
		5VDC output		⩽7V			
		12VDC output		⩽16V			
		15VDC output		⩽22V			
		19VDC output		⩽28V			
		24VDC output		⩽32.4V			
		36VDC output		⩽42.4V			
		48VDC output		⩽60V			
	Minimum Load			0	--	--	%
	Hold-up Time	115VAC input		--	16	--	ms
		230VAC input		--	30	--	
General Specifications	Isolation	Input - output	Electric Strength Test for 1min., leakage current <5mA	4000	--	--	VAC
	Insulation Resistance	Input - output	500VDC	100	--	--	MΩ
	Operating Temperature			-30	--	+85	℃
	Storage Temperature			-40	--	+85	
	Storage Humidity			--	--	95	%RH
	Altitude*			--	--	5000	m

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General Specifications	Power Derating	+50℃ to +70℃	Other output	2.50	--	--	%/℃
		+50℃ to +70℃	24V/36V/48V	1.00	--	--	
		+70℃ to +85℃	Other output	1.35	--	--	
		+70℃ to +85℃	24V/36V/48V	3.33	--	--	
		80VAC - 100VAC		1.00	--	--	%/VAC
	Safety Distance	Clearance		7.4	--	--	mm
		Creepage		8.0	--	--	
	Safety Class			CLASS II			
	MTBF			MIL-HDBK-217F@25℃＞300,000 h			
Mechanical Specifications	Dimension	76.20 x 50.80 x 24.00 mm (Substrate + Plug-in height, see the external dimension drawing for details)					
	Weight	80g (Typ.)					
	Cooling method	Free air convection					

Note: *The "Tip and barrel method" is used for ripple and noise test: Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
**For operation of altitude between 2000-5000m.

Electromagnetic (EMC)		Compatibility		
Electromagnetic Compatibility (EMC)	Emissions	CE	CISPR32/EN55032/EN55011 CLASS B	
		RE	CISPR32/EN55032/EN55011 CLASS B	
		Harmonic current	IEC/EN61000-3-2 CLASS A	
	Immunity	ESD	IEC/EN61000-4-2 Contact ±8KV/Air ±15KV	Perf. Criteria A
		RS	IEC/EN61000-4-3 10V/m	Perf. Criteria A
		EFT	IEC/EN61000-4-4 ±2KV	Perf. Criteria A
		Surge	IEC/EN61000-4-5 line to line ±2KV	Perf. Criteria A
		CS	IEC/EN61000-4-6 10Vr.m.s	Perf. Criteria A
		Voltage dips, short interruption and voltage variations	IEC/EN61000-4-11 100% dip 1 periods, 30% dip 25 periods,100% interruptions 250 periods	Perf. Criteria B

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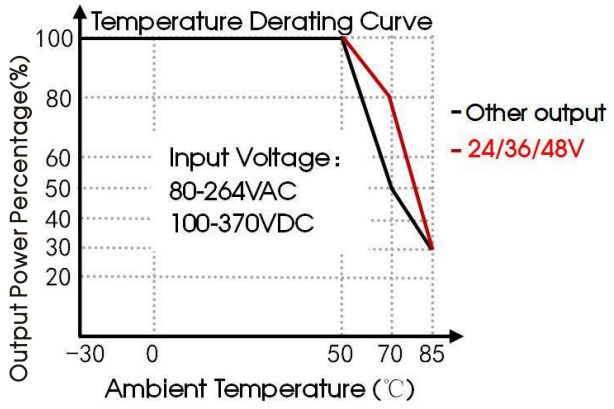
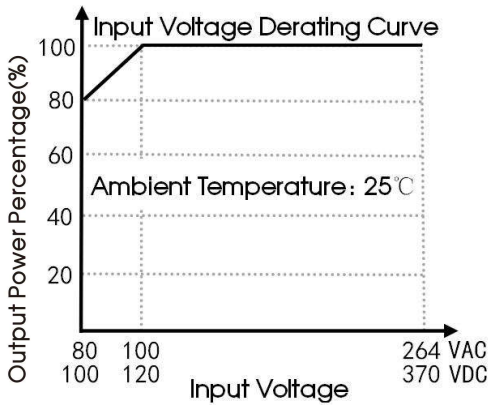
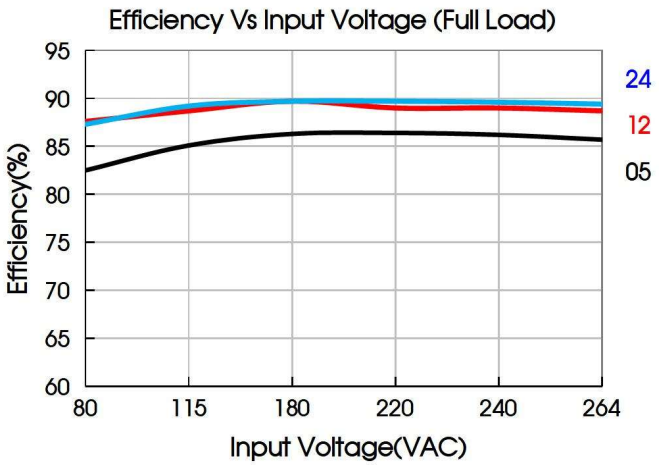
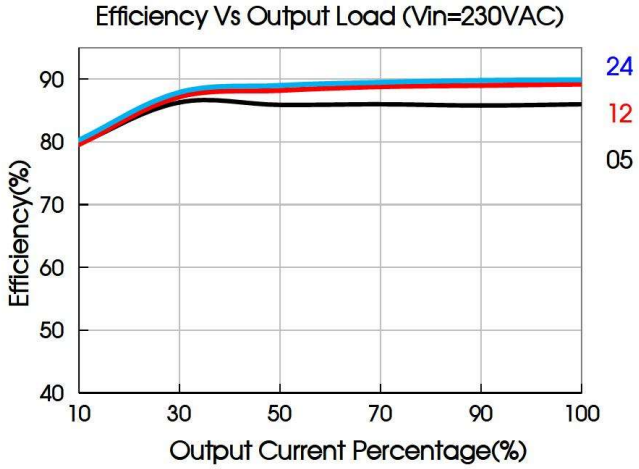
Product Characteristic Curve





Note: ① With an AC input between 80-100VAC and a DC input between 100-120VDC, the output power must be derated as per temperature derating curves;
② This product is suitable for applications using natural air cooling;





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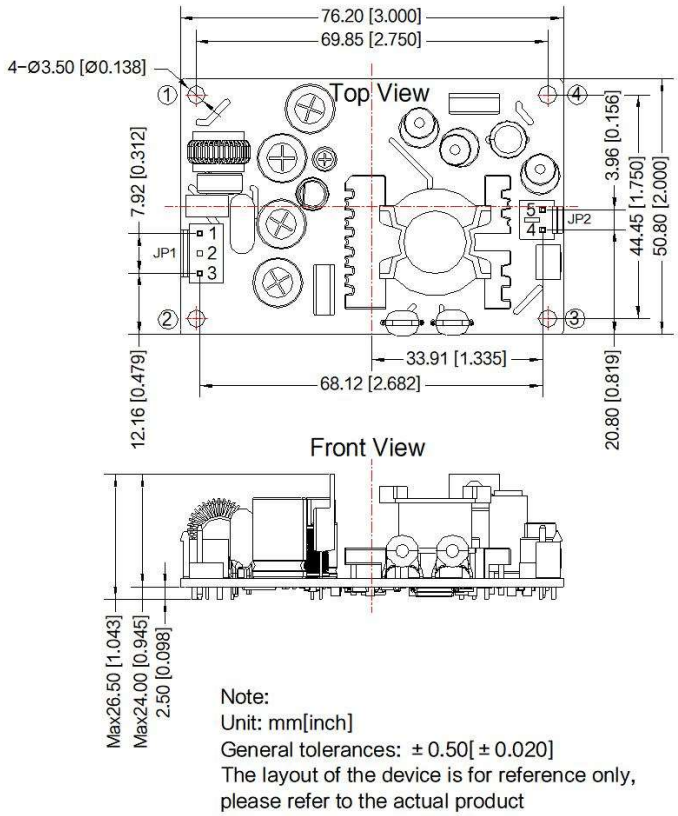
Dimensions and Recommended Layout

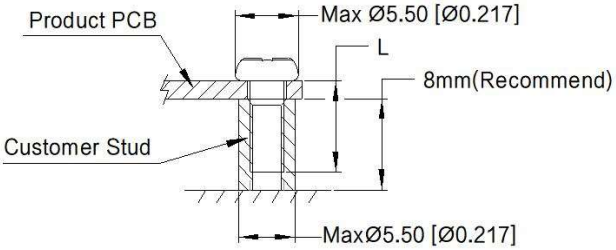
THIRD ANGLE PROJECTION



Note:
Unit: mm[inch]
General tolerances: ± 0.50[± 0.020]
The layout of the device is for reference only, please refer to the actual product

Pin-Out			
Connectors	Pin	Mark	Client Connectors
CON1	1	AC(L)	Housing: JST VHR Contact: JSTSVH-21T-P1.1 or equivalent
	2	No Pin	
	3	AC(N)	
CON2	4	+Vo	Housing: JST VHR Contact: JSTSVH-21T-P1.1 or equivalent
	5	-Vo	

Position	Screw Spec.	L(Recommend)	Torque(max)
① - ④	M3	6mm	0.4N · m



Note:

1. 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;
2. All index testing methods in this datasheet are based on our company corporate standards;
3. We can provide product customization service, please contact our technicians directly for specific information;
4. Products are related to laws and regulations: see "Features" and "EMC";
5. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.