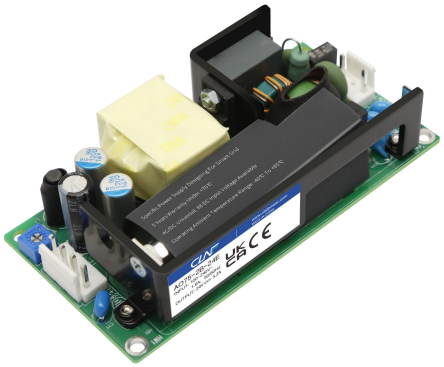
Description

75W，AC-DC Converter



RoHS

CE Report EN62368-1

UKCA Report BS EN62368-1

Features

- Specific power supply designing for smart grid
- Universal 85-264VAC or 88-370VDC input voltage
- Ultra-wide operating ambient temperature range: -40℃ to +85℃
- High reliability, low output ripple & noise
- Immunity meets electricity standard Level 4
- Meets impulse voltage requirements of 1.2/50us 5KV

Application

- Transformer substation
- Micro protective equipment
- Bus Voltage protection equipment
- Other 110VDC input high reliability equipment

Selection Guide

Certification	Part No	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range(V)*	Efficiency at 230VAC (%) Typ.	Capacitive Load (uF) Max.
EN/BS EN	AO75-2B-03E	39.6	3.3V/12A	--	82	8500
	AO75-2B-05E	60	5V/12A	4.5-5.5	84	8500
	AO75-2B-09E	75.6	9V/8.4A	8.1-9.9	86	7500
	AO75-2B-12E	76.8	12V/6.4A	10.8-13.2	88	6800
	AO75-2B-15E	75	15V/5A	13.5-16.5	88	4700
	AO75-2B-24E	76.8	24V/3.2A	21.6-26.4	89	2200
	AO75-2B-27E	75.6	27V/2.8A	24.3-29.7	89	1200
	AO75-2B-48E	76.8	48V/1.6A	43.2-52.8	90	680

Note:1. *The actual adjustment range may extend outside the values stated, care should be exercised to ensure that the output voltage and power levels remain within the published maximum values.
2.The product picture is for reference only. For details, please refer to the actual product.

Specifications

Product characteristics	Item		Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range		AC input		85	--	264	VAC
			DC input		88	--	370	VDC
	Input Frequency				47	--	63	Hz
	Input Current		115VAC		--	--	1.6	A
			230VAC		--	--	0.9	
	Inrush Current		115VAC		--	25	--	
			230VAC		--	45	--	
	Contact Leakage Current		240VAC		0.5mA RMS max.			
	Hot Plug				Unavailable			
Output Specifications	Output Voltage Accuracy		0% - 100% load	3.3V output	--	±3	--	%
				Other output	--	±2	--	
	Line Regulation		Rated load	3.3V output	--	±0.8	--	
				Other output	--	±0.5	--	
	Load Regulation		0% - 100% load		--	±1	--	
	Ripple & Noise*		20MHz bandwidth (peak-to-peak value)		--	--	200	mV
	Minimum Load				0	--	--	%
	Stand-by Power Consumption				--	0.5	--	W
	Start-up Delay Time		85VAC-264VAC input, Io=100%		--	--	500	ms
	Hold-up Time		115VAC input, Io=100%		--	12	--	ms
			230VAC input, Io=100%		--	90	--	
	Short Circuit Protection				Hiccup, continuous, self-recovery			
	Over-current Protection				≥110%Io, self-recovery			
	Over-voltage Protection		3.3VDC output	≤5.25V	Output voltage clamp or hiccup			
			5VDC output	≤7.25V				
			9VDC output	≤13V				
			12VDC output	≤16V				
			15VDC output	≤21V				
			24VDC output	≤35V				
			27VDC output	≤39V				
			48VDC output	≤60V				
General Specifications	Isolation	Input - output	Electric Strength Test for 1min., leakage current <8mA		4000	--	--	VAC
		Input - PE	Electric Strength Test for 1min., leakage current <5mA		2000	--	--	
		Output - PE	Electric Strength Test for 1min., leakage current <10mA		500	--	--	

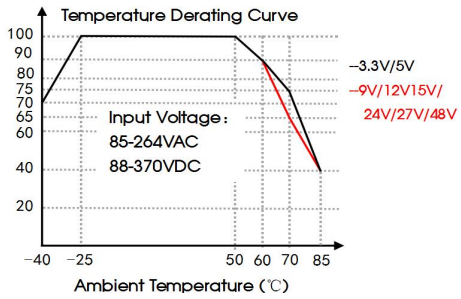
General Specifications	Insulation Resistance	Input - output	500VDC	50	--	--	MΩ
		Input - PE					
		Output - PE					
	Impulse Withstand Voltage	Input - output	5KV, 1.2/50 us Impulse voltage				
		Input - PE					
	Operating Temperature			-40	--	+85	℃
	Storage Temperature			-40	--	+105	
	Storage Humidity			--	--	90	%RH
	Altitude			--	--	5000	m
	Switching Frequency			--	65	--	kHz
	Power Derating		-40℃ to -25℃	2	--	--	%/℃
			+50℃ to +60℃	1	--	--	
			+60℃ to +70℃ 3.3V/5V	1.5	--	--	
			+60℃ to +70℃ 9V/12V/15V/24V/27V/48V	2.5	--	--	
			+70℃ to +85℃ 3.3V/5V	2.33	--	--	
			+70℃ to +85℃ 9V/12V/15V/24V/27V/48V	1.67	--	--	
			85VAC - 100VAC	1.33	--	--	%/VAC
			2000m-5000m	5	--	--	%/Km
	Safety Class			CLASS I			
	MTBF			MIL-HDBK-217F@25℃ > 300,000 h			
	Designed life	230VAC	+25℃	≥130 x 10^3 h			
			+50℃	≥70 x 10^3 h			
			+70℃	≥44 x 10^3 h			
			+85℃	> 29 x 10^3 h			
Mechanical Specifications	Dimension		101.60 x 50.80 x 27.00mm				
	Weight		140g (Typ.)				
	Cooling Method		Convection air cooling				

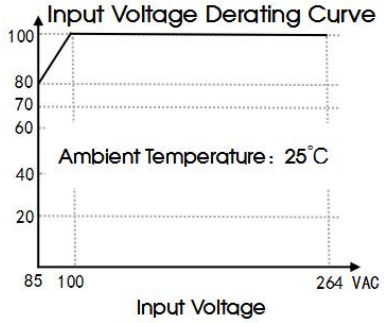
Note: *The "Tip and barrel method" is used for ripple and noise test, with a 0.1uf ceramic capacitor & 100uf parallel capacitor, please refer to AC-DC Converter Application Notes for specific information.

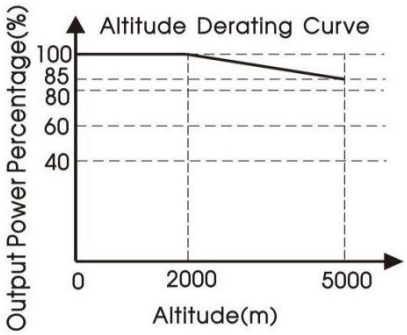
Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions	CE	CISPR32/EN55032 CLASS B	
		RE	CISPR32/EN55032 CLASS A	
		Harmonic current	IEC/EN61000-3-2 CLASS A	
		Voltage flicker	IEC/EN61000-3-3 CLASS A	
	Immunity	ESD	IEC/EN61000-4-2 Contact ±8KV/Air ±15KV	Perf. Criteria B
		RS	IEC/EN61000-4-3 10V/m	Perf. Criteria A
		EFT	IEC/EN61000-4-4 ±4KV	Perf. Criteria B
		Surge	IEC/EN61000-4-5 Line to line ±2KV/ line to ground ±4KV	Perf. Criteria B
		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 (50Hz), 30 periods (60Hz)	Perf. Criteria B
		Walkie-talkie interference test	AT-SOP-TEST-0002	Perf. Criteria B

Product Characteristic Curve

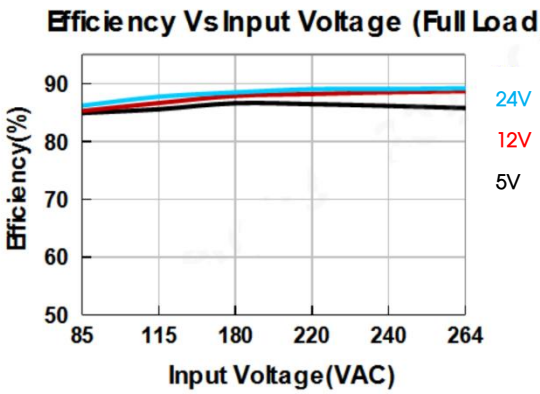


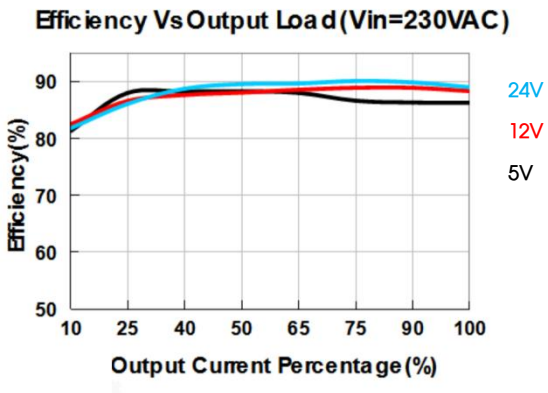




Note: ① With an AC input between 85-100VAC, the output power must be derated as per temperature derating curves;

② This product is suitable for applications using convection air cooling.





Design Reference

1. Typical application

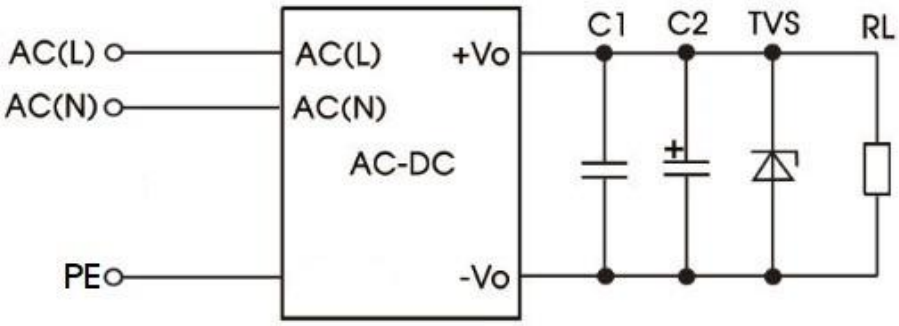


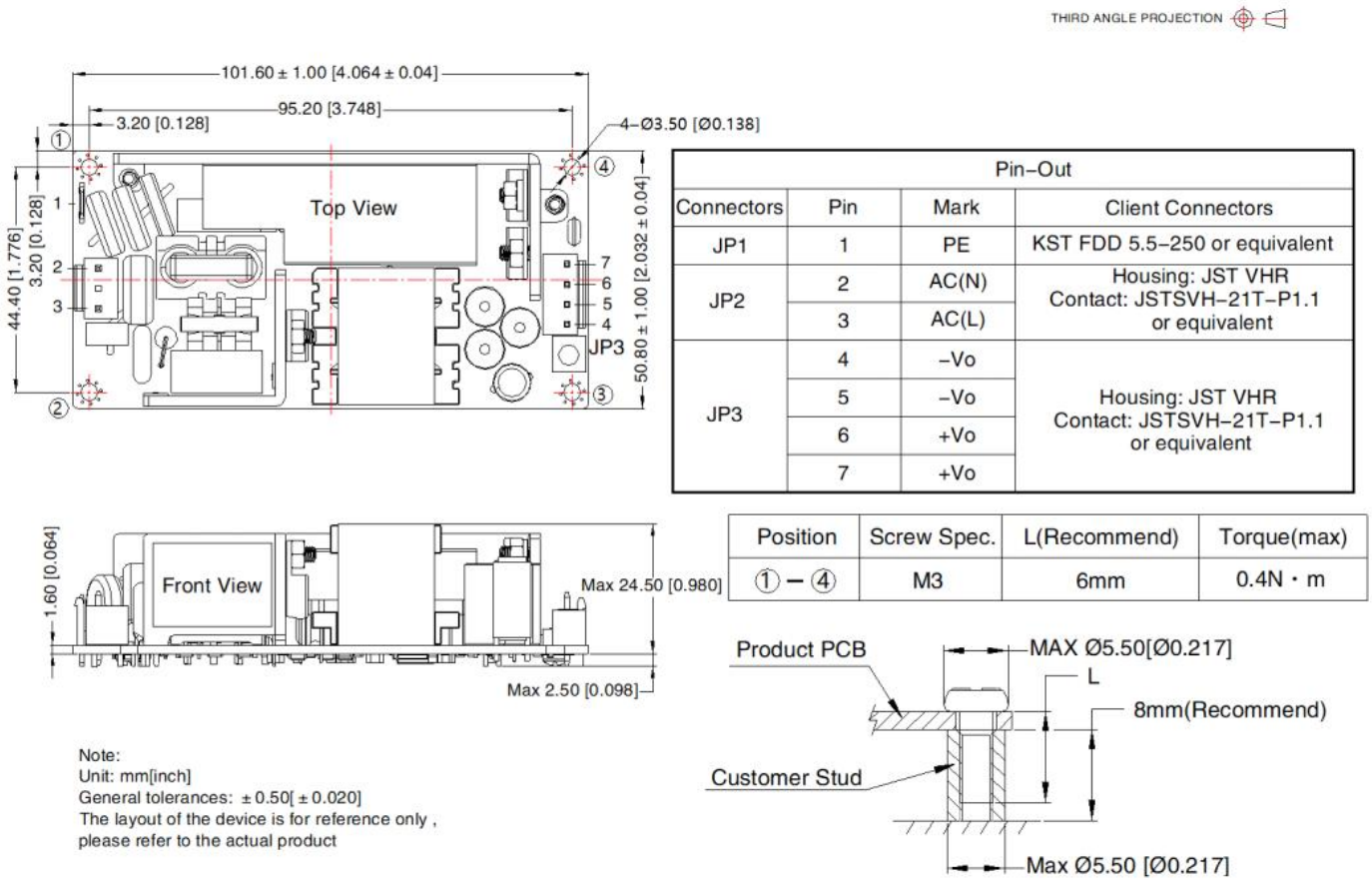
Fig. 1: Typical circuit diagram

Part no.	C1	C2	TVS
AO75-2B-03E	0.1μF/250V	100μF/63V	SMBJ7.0A
AO75-2B-05E			SMBJ7.0A
AO75-2B-09E			SMBJ12A
AO75-2B-12E			SMBJ20A
AO75-2B-15E			SMBJ20A
AO75-2B-24E			SMBJ30A
AO75-2B-27E			SMBJ30A
AO75-2B-48E			SMBJ64A

Output Filter Components:

We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C2 (refer to manufacture's datasheet). Choose a capacitor voltage rating with at least 20% margin, in other words not exceeding 80%. C1 is a ceramic capacitor used for filtering high-frequency noise and TVS is a recommended suppressor diode to protect the application in case of a converter failure.

Dimensions and Recommended Layout



Pin–Out			
Connectors	Pin	Mark	Client Connectors
JP1	1	PE	KST FDD 5.5–250 or equivalent
JP2	2	AC(N)	Housing: JST VHR Contact: JSTSVH–21T–P1.1 or equivalent
	3	AC(L)	
JP3	4	–Vo	Housing: JST VHR Contact: JSTSVH–21T–P1.1 or equivalent
	5	–Vo	
	6	+Vo	
	7	+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.
6. The image certification marks are for reference only; please refer to the selection table for actual specifications. Certification is based on the physical mark or packaging label.