



Description: **10W 4KVAC Isolation Wide Input AC/DC Converters**

10W with wide input voltage range, for both AC input and DC input application, come with low no-load consumption 60mW, low Leakage current @0.1mA, miniature size: 50.8*25.4*15.5mm, and good EMC performance, can meet the EMC and safety specifications: IEC/EN61000-4, CISPR22/EN55022, UL60950/EN60950/EN60601 and other related standards. This series of products are widely used in smart home, high-end lighting, medical, industrial control, office and civil industries, etc. please refer to the application circuit when the parts is applied in the environment with severe electromagnetic compatibility.

FEATURES

Universal input voltage range	low no-load consumption	Wide input 4:1
low power consumption	higher efficiency, high power density	Output over-load, short circuit protection
Low Ripple&noise	RoHS compliant	Operating temperature: -40°C to 70°C

SELECTION GUIDE

Part Number	Input		Output		Efficiency (%) (Typ)
	voltage		voltage (VDC)	current (A)	
	VAC	VDC			
S10AC220S03W	85-265	120-370	3.3	2.00	66
S10AC220S05W	85-265	120-370	5	2.00	78
S10AC220S09W	85-265	120-370	9	1.05	80
S10AC220S12W	85-265	120-370	12	0.83	81
S10AC220S15W	85-265	120-370	15	0.66	82
S10AC220S24W	85-265	120-370	24	0.42	83

suffix with "A" for wire package, for example: S10AC220S05WA

All specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified.

INPUT CHARACTERISTICS

Parameter	conditions	Min.	Typ.	Max.	units
Input voltage	VDC	120	220	370	VDC
Input voltage	VAC	85	220	265	VAC
Input Frequency		50		60	HZ
Input Current	115VAC			210	mA
Input Current	230VAC			100	mA
Inrush Current	115VAC		16		A
Inrush Current	230VAC		30		A
External Fuse Recommended VALUE		1A/250V slow fusing, necessary			
Hot plug		Unavailable			
Leakage Current	265VAC/50Hz		< 0.1		mA

OUTPUT CHARACTERISTICS

Parameter	conditions	Min.	Typ.	Max.	units
Voltage accuracy				±2	%
Line regulation				±1	%
Load regulation				±1	%
short circuit protection	Over-voltage, over-current, short circuit protection	Hiccup, continuous, self-recovery			
Ripple & noise	20MHz bandwidth (peak-peak value)		50	100	mv
Temperature coefficient			±0.03		%/°C
Start rising time	115VAC input @ full load		200		ms
Start rising time	230VAC input @ full load		100		ms
Output hold time	115VAC input @ full load		15		ms
Output hold time	230VAC input @ full load		40		ms

TEMPERATURE CHARACTERISTICS

Parameter	conditions	Min.	Typ.	Max.	units
Isolated voltage	I/P-O/P TEST 1 MINUTES	4000			VAC
Operating temperature	See derating curve	-40		+70	°C
Storage temperature		-40		+85	°C
Storage humidity		10		95	% .RH max

Notes ; the shell temperature can not exceed the max. shell temperature at any operation environment

SAFETY & ELECTROMAGNETIC COMPATIBILITY

Safety standard	UL1012,EN60950,EN60601,UL60950,UL60601 compliant
Isolated voltage	I/P-O/P:4000VAC
Isolation resistance	I/P-O/P>100M Ohms/500VDC 25°C 70% RH
Conduction and radiation	EN55011, EN55022 (CISPR22) CLASS B
Electrostatic discharge(ESD)	IEC/EN 61000-4-2 level 4 8kV/15kV
Rf radiation immunity (RF)	IEC/EN 61000-4-3
EFT	IEC/EN 61000-4-4 level 4 4kV (refer to APPLICATION CIRCUIT)
Surge	IEC/EN 61000-4-5 level 4 2kV (refer to APPLICATION CIRCUIT)
MTBF	200K hrs min. MIL-HDBK-217F(25)

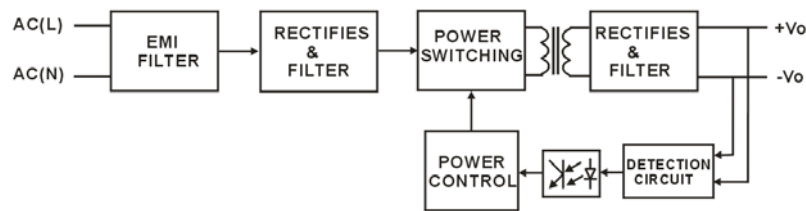
NOTES

1. The data in this manual are measured at TA = 25 ° C, humidity <75%, input nominal voltage (230Vac) and output rated load,except for special instructions.

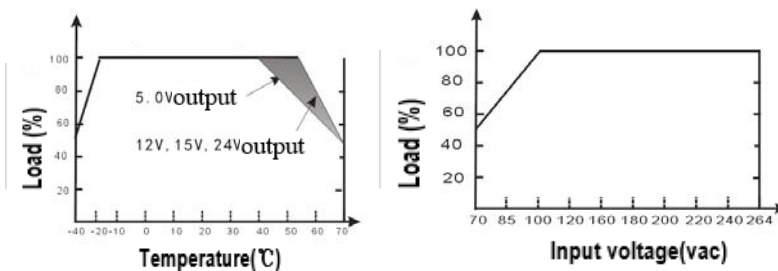
2.Ripple and noise were measured using a 300mm twisted pair with a bandwidth of 20MHz,

3. The parts in the system is considered as a component, need to combine the terminal equipment for electromagnetic compatibility related confirmation.

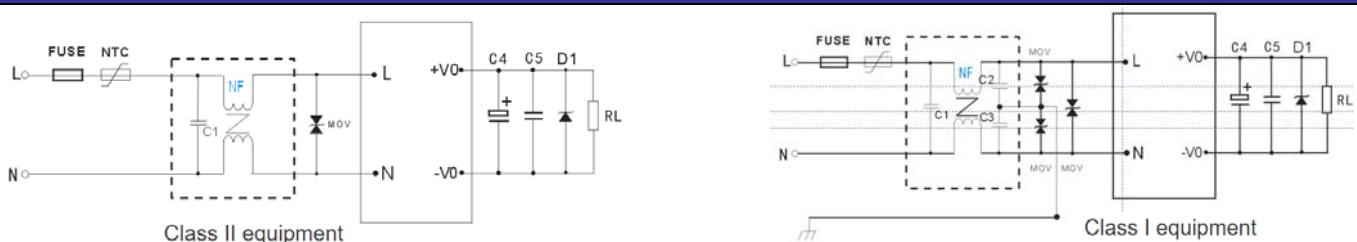
Product schematic diagram



DERATING CURVE



TYPICAL APPLICATION CIRCUIT



NOTES:

1. Output filtering capacitor C4 is a electrolytic capacitor, it is recommended to use high frequency and low impedance electrolytic capacitor. For capacitance and current of capacitor please refer to manufacture's datasheet. Output capacitor withstand voltage derating should be 80% or above. C5 is used to filter high-frequency noise. D1 is a TVS tube that is recommended for protecting the secondary circuit (in case of module abnormalities).

2. The dashed box contains EMC filters connected to meet higher EMC requirements, which can be omitted for general applications.

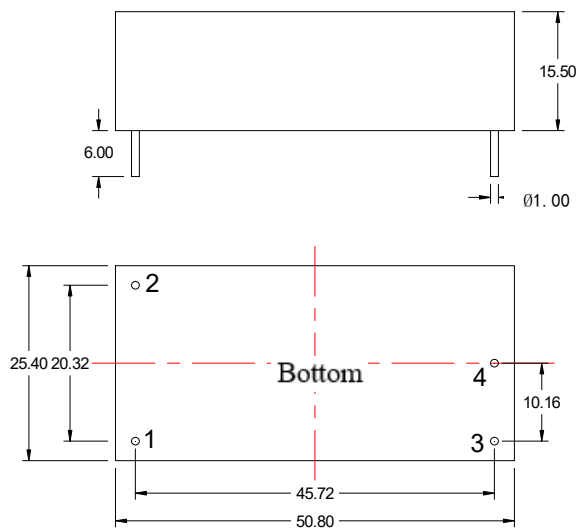
TYPICAL APPLICATION CIRCUIT

component PN	FUSE	NTC	NF	MOV	C1	C2, C3	C4	C5	D1
S10AC220S03W	T1A/25 0V	External NTC thermistor, 10D-9	Common mode inductance, indu ctance value 10mH, 0.2A-0.5A.	MOV is piezoresista nce ,Recom mend value 14D471K	Safe X capacitor 104K/275 V	safe Y capacitor 102K/400 V	470uF/16V	104K/50V (ceramic capacitor)	P6KE6.8A
S10AC220S05W							470uF/16V		P6KE6.8A
S10AC220S09W							150uF/16V		P6KE16A
S10AC220S12W							120uF/16V		P6KE16A
S10AC220S15W							120uF/25V		P6KE20A
S10AC220S24W							100uF/35V		P6KE33A

MECHANICAL DIMENSIONS

PIN DESIGN

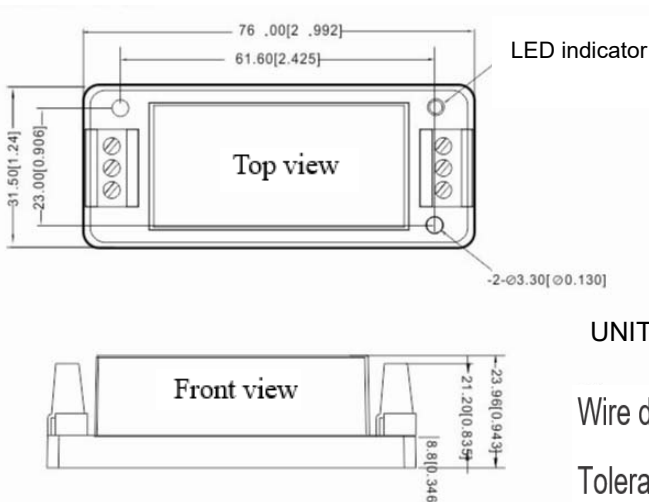
DIP



UNITS: mm Tolerance: ±0.2mm

Pin	Single
1	N
2	L
3	+V0
4	-V0

Wire package (PN suffix with "A")



UNITS: mm

Wire diameter: 24-12AWG

Tolerance : ±0.5mm(±0.02mm)

Pin	Single
1	N
2	NC
3	L
4	+V0
5	NC
6	-V0

SELECTION GUIDE

