DESCRIPTIONS

10W，AC/DC Converter





RoHS

CE Report UKCA Report

EN62368-1 BS EN62368-1

FEATURES

- Ultra wide input voltage range: 90 - 528VAC/100 - 745VDC
- Regulated output, Low ripple & noise
- Operating temperature range: -40℃ to +70℃
- Output short circuit, over-current, over - voltage protection
- Isolation voltage: 4KVAC
- EFT /Surge: ±4KV perf. Criteria B

APPLICATIONS

- Electric power
- Instrumentation

Selection Guide

Certification	Part No.*	Output Power	nominal Output Voltage and Current(vo/Io)	Efficiency at 230VAC (%) Typ.	Capacitive Load (uF) Max.
-	APDW10-03	6.6W	3.3V/2000mA	72	15000
EN/BS EN	APDW10-05	10W	5V/2000mA	76	15000
EN/BS EN	APDW10-09		9V/1100mA	78	6000
EN/BS EN	APDW10-12		12V/900mA	80	5000
EN/BS EN	APDW10-15		15V/700mA	80	3000
EN/BS EN	APDW10-24		24V/450mA	82	1000

Note:1.Part No. with suffix of "E2" means chassis mounting and suffix of "D4" means DIN-Rail mounting (e.g. APDW10-03E2 means chassis mounting; APDW10-03D4 means DIN-Rail mounting)

2.The product picture is for reference only.For details, please refer to the actual product.

Specifications

Product Specifications	Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range	AC input	90	--	528	VAC
		DC input	100	--	745	VDC
	Input Frequency		47	--	63	Hz
	Input Current	115VAC	--	--	0.40	A
		230VAC	--	--	0.23	
	Inrush Current	115VAC	--	25	--	
		230VAC	--	40	--	
	Leakage current	230VAC/50Hz	0.25mA RMS Typ.			
	Recommended External Input Fuse		3.15A/500VAC, slow-blow, required			
	Hot Plug		Unavailable			
Output Specifications	Output Voltage Accuracy	3.3V	--	±3	--	%
		Others	--	±2	--	
	Line Regulation	Full load	--	±0.5	--	
	Load Regulation	0% - 100% load	--	±1.0	--	
	Ripple & Noise*	20MHz bandwidth (peak-peak value)	--	--	150	mV
	Temperature Coefficient		--	±0.02	--	%/℃
	Stand-by Power Consumption		--	--	0.75	W
	Short Circuit Protection		Hiccup, continuous, self-recover			
	Over-current Protection		130 - 400%Io, self-recover			
	Over-voltage protection	3.3/5V output	≤ 7.5 V (Output voltage clamp)			
		9V output	≤ 15 V (Output voltage clamp)			
		12/15V output	≤ 20 V (Output voltage clamp)			
		24V output	≤ 30 V (Output voltage clamp)			
	Min. Load		0			%
	Hold-up Time	230VAC input	--	35	--	ms
		400VAC input	--	100	--	
General Specifications	Isolation Input-output	Electric Strength Test for 1min.	4000	--	--	VAC
	Operating Temperature	Work in the power drop curve range	-40	--	+70	℃
	Storage Temperature		-40	--	+85	
	Storage Humidity		--	--	95	%RH
	Welding Temperature	Wave-soldering	260 ± 5℃; time: 5 - 10s			
		Manual-welding	360 ±10℃; time: 3 - 5s			
	Switching Frequency		--	65	--	kHz

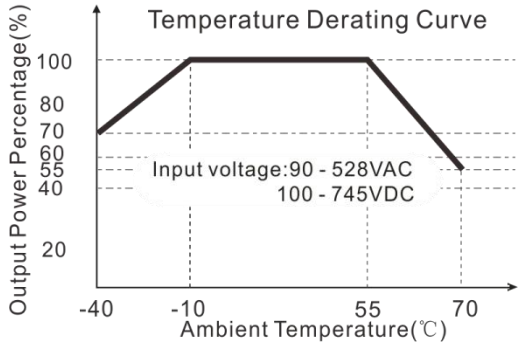
General Specifications	Power Derating	+55℃ to +70℃	3.0	--	--	%/℃
		-40℃ to -10℃	1.0	--	--	
		90VAC - 110VAC	2.0	--	--	%/VAC
		480AVC - 528VAC	0.417	--	--	
	Safety Class		CLASS I I			
	MTBF	MIL-HDBK-217F@25℃	≥ 300,000 h			
Mechanical Specifications	Case Material	Black plastic, flame-retardant and heat-resistant (UL94V-0)				
	Dimension	Horizontal package	62.00 x 45.00 x 30.00 mm			
		E2 chassis mounting	96.10 x 54.00 x 38.50 mm			
		D4 Din-Rail mounting	96.10 x 54.00 x 43.10 mm			
	Weight	Horizontal package	120g (Typ.)			
		E2 chassis mounting	170g (Typ.)			
		D4 Din-Rail mounting	210g (Typ.)			
	Cooling Method	Free air convection				

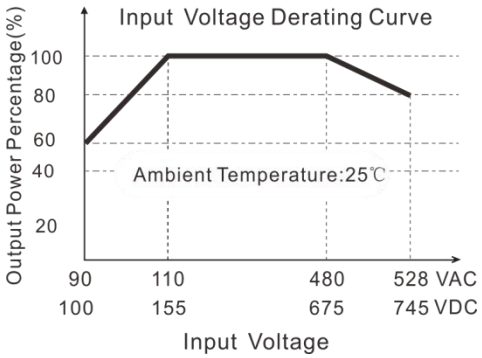
Note: *The "parallel cable" method is used for ripple and noise test.

Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions (EMI)	CE	CISPR32/EN55032 CLASS B	
		RE	CISPR32/EN55032 CLASS B	
	Immunity (EMS)	ESD	IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV	perf. Criteria B
		RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
		EFT	IEC/EN 61000-4-4 ±4KV	perf. Criteria B
		Surge	IEC/EN 61000-4-5 line to line ±2KV	perf. Criteria B
			IEC/EN 61000-4-5 line to line ±4KV (See Fig. 2 or Fig. 3 for recommended circuit)	perf. Criteria B
		CS	IEC/EN61000-4-6 10Vr.m.s	perf. Criteria A
		Voltage dip, short interruption and voltage variation	IEC/EN61000-4-11 0%,70%	perf. Criteria B

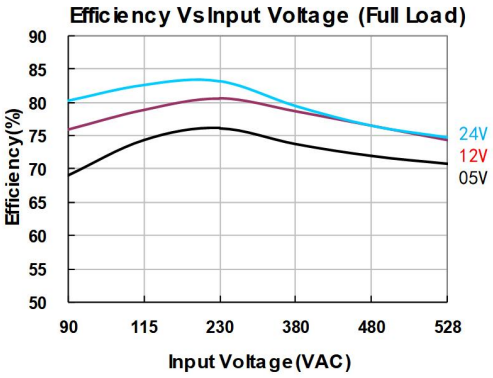
Characteristic Curve

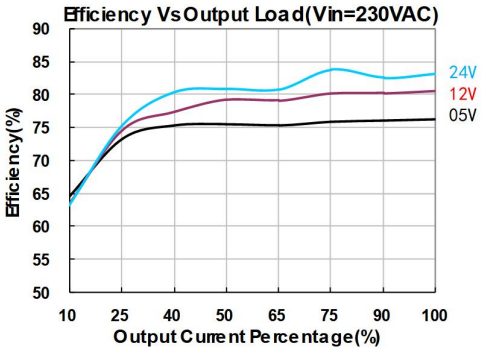




Note: ① With an AC input between 90-110VAC/480-528VAC and a DC input between 100-155VDC/675-745VDC, the output power must be derated as per temperature derating curves;

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





Design Reference

1. Typical application circuit

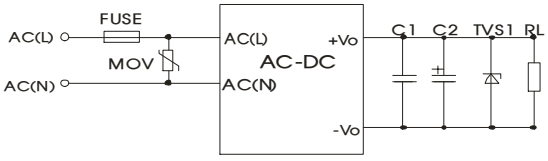


Fig. 1

Part No.	FUSE	MOV	C2 (uF)	TVS1
APDW10-03	3.15A/500VAC, slow-blow, required	S20K625	330	SMBJ7.0A
APDW10-05			330	SMBJ7.0A
APDW10-09			220	SMBJ12A
APDW10-12			220	SMBJ20A
APDW10-15			220	SMBJ20A
APDW10-24			220	SMBJ30A

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.

2. EMC solution-recommended circuit

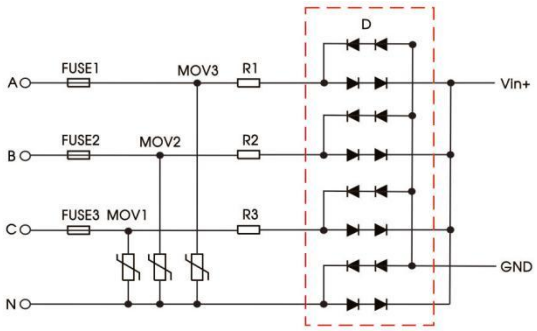


Fig. 2 Recommended circuit for applications which require 4KV differential-mode inrush standard (full-wave rectification)

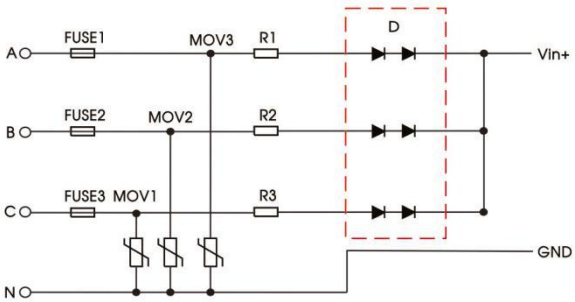
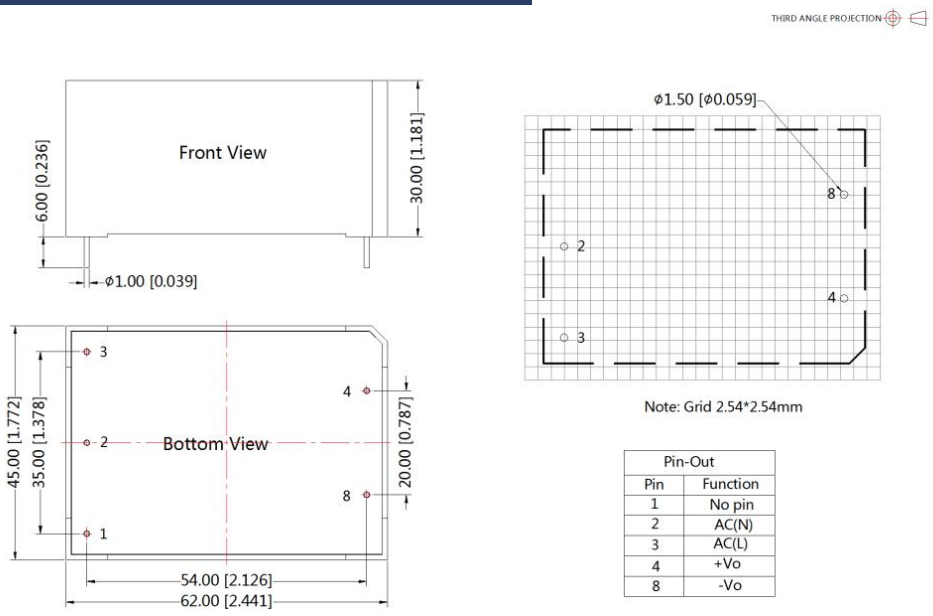


Fig. 3 Recommended circuit for applications which require 4KV differential-mode inrush standard (half-wave rectification)

Recommend Parameter For Higher EMC Standard Circuit	
Component	Recommended value
MOV1, MOV2, MOV3	S20K510
D	2A/1000V
R1/R2/R3	10Ω/5W
FUSE1, FUSE2, FUSE3	3.15A/500VAC, slow-blow, required

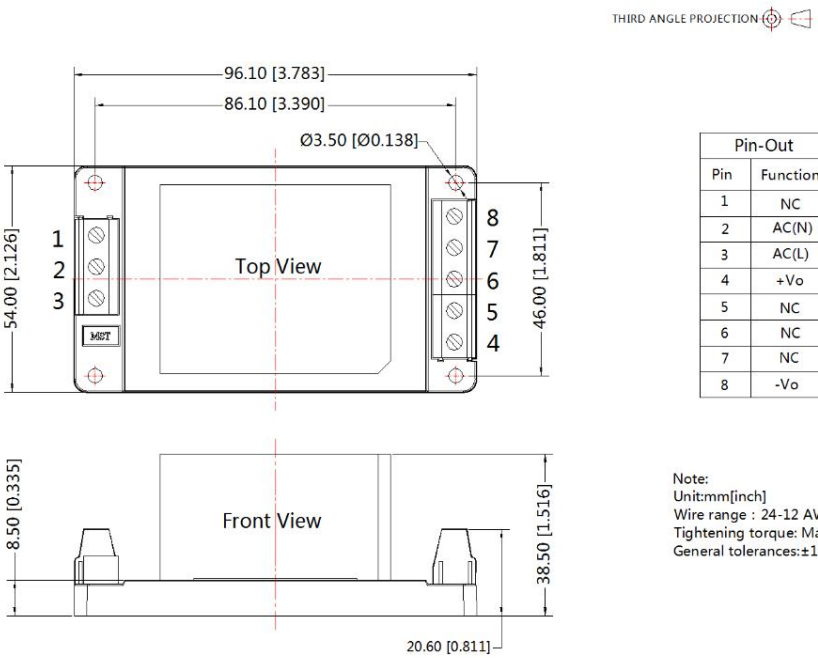
Dimensions and Recommended Layout



Pin-Out	
Pin	Function
1	No pin
2	AC(N)
3	AC(L)
4	+Vo
8	-Vo

Note:
Unit: mm[inch]
Pin diameter tolerances: ±0.10[±0.004]
General tolerances: ±0.50[±0.020]

E2 Dimensions and Recommended Layout

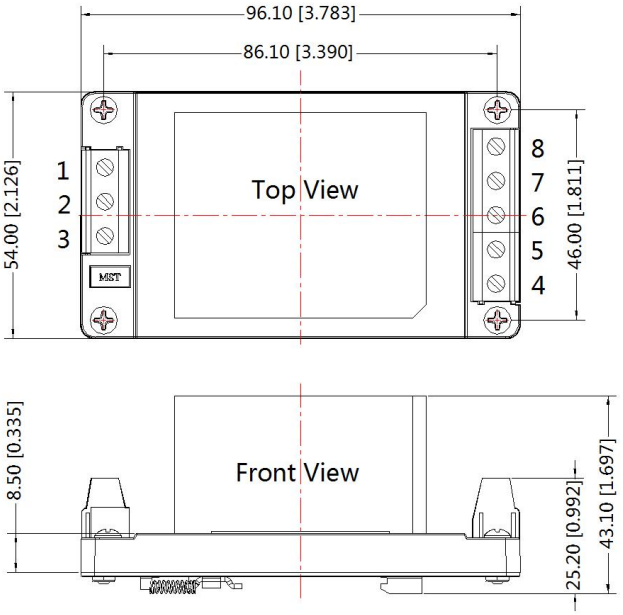


Pin-Out	
Pin	Function
1	NC
2	AC(N)
3	AC(L)
4	+Vo
5	NC
6	NC
7	NC
8	-Vo

Note:
Unit:mm[inch]
Wire range : 24-12 AWG
Tightening torque: Max 0.4 N·m
General tolerances:±1.00[±0.039]

D4 Dimensions and Recommended Layout

THIRD ANGLE PROJECTION



Pin-Out	
Pin	Function
1	NC
2	AC(N)
3	AC(L)
4	+Vo
5	NC
6	NC
7	NC
8	-Vo

Note:
Unit:mm[inch]
Mounting rail: TS35, rail needs to connect safety ground
Wire range : 24-12 AWG
Tightening torque: Max 0.4 N·m
General tolerances:±1.00[±0.039]

Note:

1. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
2. 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;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Products are related to laws and regulations: see "Features" and "EMC";
6. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.
7. 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.