DESCRIPTIONS

50W, DC/DC Converter



RoHS

3 Years Warranty

CE Report EN 62109-1

UKCA Report BS EN62109-1

FEATURES

- Ultra-wide input voltage range of 80 - 1000VDC (Transient 1100VDC last for 10s)
- Industrial grade operating temperature -40℃ to +85℃
- High I/O isolation voltage up to 4000VAC
- High efficiency, low ripple & noise
- High reliability, long lifespan, low power consumption
- Input under-voltage protection, input reverse polarity protection, output short circuit, over-current, over-voltage protection
- Operating up to 5000m altitude
- Design refer to UL1741, EN/IEC62109

APPLICATIONS

- SVG
- photovoltaic inverter
- High voltage inverter
- Household energy storage

Selection Guide

Certification	Part No.*	Output Power (W)		Nominal Output Voltage and Current (Vo/Io)	Efficiency at 400VDC(%) Typ.	Capacitive Load (μF) Max.
		Steady	Transient (duration 3s)			
EN/BS EN	DPV50-10B-12V2	40	80	12V/3.33A	84	2000
	DPV50-10B-24V2	50		24V/2.08A	86	1000

Note: 1.*Use suffix "-W" for lead type version.

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

Specifications

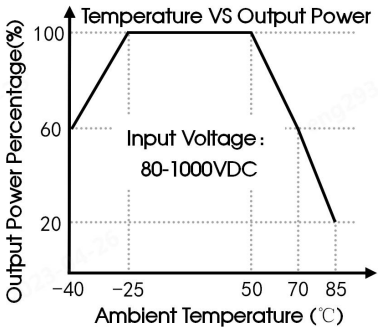
Product Specifications	Item		Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range				80	--	1000	VDC
			Full load		150	--	1000	
	Input Current		80VDC		--	--	1.0	A
			1000VDC		--	--	0.1	
	Inrush Current		80VDC	Cold start	--	30	--	
			1000VDC		--	180	--	
	Input Under-voltage Protection		Lockout activation range		20	--	70	VDC
			Lockout deactivation range		30	--	80	
	Input Reverse Polarity Protection				Available			
	Start-up Delay Time				--	2	3	s
	Required External Input Fuse				3A/1000VDC(Adler brand, model A831300710) ,required			
	Hot Plug				Unavailable			
Output Specifications	Output Voltage Accuracy		All load range		--	±2	--	%
	Line Regulation		Rated load		--	±1	--	
	Load Regulation		400VDC		--	±1	--	
	Ripple & Noise*		20MHz bandwidth (peak-to-peak value)		--	100	300	mV
	Stand-by Power Consumption		80VDC		--	0.3	0.4	W
			400VDC		--	0.4	0.5	
			1000VDC		--	1	1.5	
	Temperature Coefficient				--	±0.02	--	%/℃
	Short Circuit Protection				Hiccup, continuous, self-recovery			
	Over-current Protection				160%-400%Io, hiccup, self-recovery			
	Over-voltage Protection		12V		≤16VDC	Output voltage clamp or hiccup, self-recovery		
			24V		≤32VDC			
	Minimum Load				0	--	--	%
	Hold-up Time		Room temperature, full load	400VDC	--	5	--	ms
				1000VDC	--	10	--	
General Specifications	Isolation	Input - output	Electric Strength Test for 1min., leakage current < 10mA		4000	--	--	VAC
		Input - PE			4000	--	--	
		Output - PE			2000	--	--	
	Insulation Resistance	Input - output	500VDC		50	--	--	MΩ
		Input - PE						
		Output - PE						
	Operating Temperature				-40	--	+85	℃
	Storage Temperature				-40	--	+85	
	Storage Humidity		Non-condensing		--	--	95	%RH

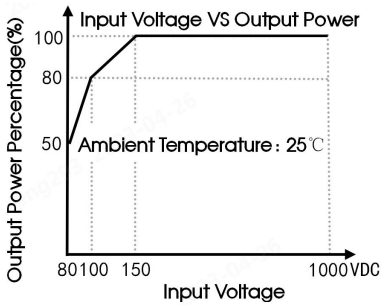
	Operating Humidity			--	--	85	
	Switching Frequency			--	60	--	kHz
	Output Power Derating	Operating temperature derating	-40℃ to -25℃	2.67	--	--	%/℃
			+50℃ to +70℃	2.0	--	--	
			+70℃ to +85℃	2.67	--	--	
		Input voltage derating	80VDC - 100VDC	1.5	--	--	%/VDC
			100VDC - 150VDC	0.4	--	--	
	MTBF	MIL-HDBK-217F@25℃		≥300,000 h			
Mechanical Specifications	Case Material	Metal					
	Dimensions	134.00 x 58.80 x 37.00mm					
	Weight	330g (Typ.)					
	Cooling Method	Free air convection					
Note: * The "parallel cable" method is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 1uF ceramic capacitor.							

Electromagnetic Compatibility (EMC)

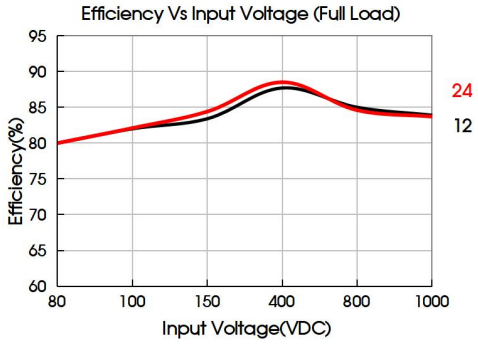
Electromagnetic Compatibility (EMC)	Emissions	CE	CISPR32/EN55032 CLASS B	
		RE	CISPR32/EN55032 CLASS B	
	Immunity	ESD	IEC/EN61000-4-2 Contact ±6KV/Air ±8KV	Perf. Criteria A
		RS	IEC/EN61000-4-3 10V/m	Perf. Criteria A
		EFT	IEC/EN61000-4-4 ±4KV	Perf. Criteria A
		Surge	IEC/EN61000-4-5 Line to line ±1KV/ line to line ±2KV	Perf. Criteria A
		CS	IEC/EN61000-4-6 10Vr.m.s	Perf. Criteria A

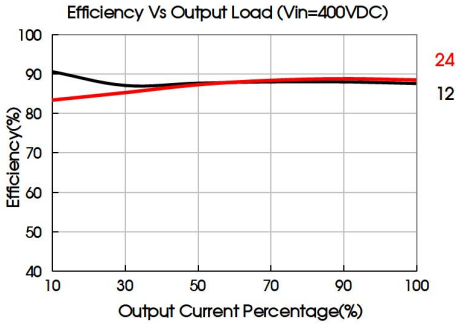
Product Characteristic Curve





Note: 1.With an DC input between 80-150VDC, 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

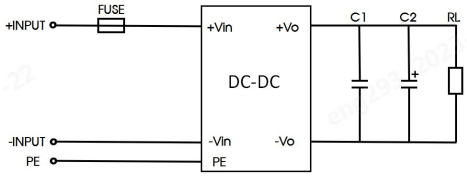


Fig. 1

Model	FUSE	C1	C2
DPV50-10B-12V2	3A/1000VDC(Adler brand, model A831300710) , required	1uF/50V	47uF/35V
DPV50-10B-24V2			

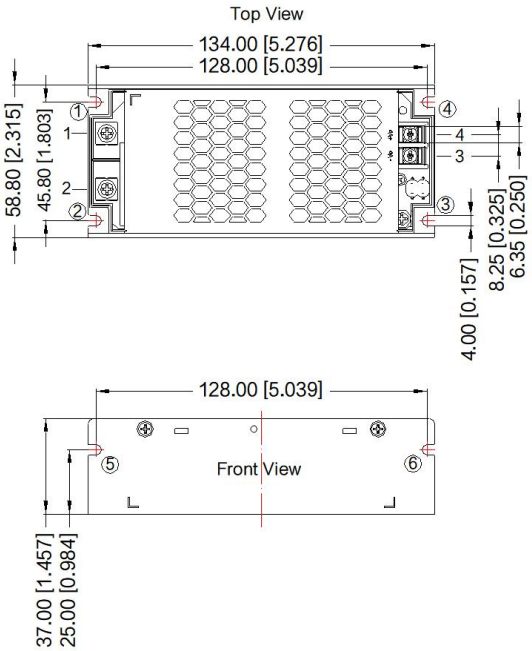
Note on filter components:

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 to filter high-frequency noise. TVS is a recommended suppressor diode to protect the application in case of a converter failure.

2. IMPORTANT SAFETY INSTRUCTIONS

Additional protective devices, such as lightning protector need to be added if there is an transient pulse voltage greater than 6KV at the Input of products in system applications.

Dimensions and Recommended Layout

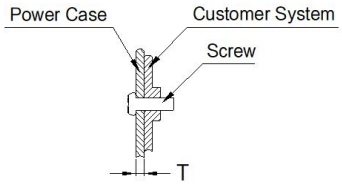


THIRD ANGLE PROJECTION

Pin-Out	
Pin	Mark
1	+Vin
2	-Vin
3	-Vo
4	+Vo

①-⑥any position must be connected to the earth(⏚)

Position	Screw Spec.	T	Torque(max)
①－⑥	M3	1.5mm	0.4N·m



Note:
Unit: mm[inch]
Wire range: Input: 22-12AWG
Output: 12V 18-12AWG
24V 20-12AWG
Input connector tightening torque: M4, 0.9N・m
Output connector tightening torque: M3, 0.4N・m
General tolerances: ± 1.00[± 0.039]

⚠WARNING:

AVERTISSEMENT:

1. CAUTION: "To reduce the risk of fire, connect only to a circuit provided with 4 amperes maximum branch-circuit over-current protection in accordance with the National Electrical Code, ANSI/NFPA70."

1. Avertissement: Pour réduire le risque d'incendie, veuillez connecter uniquement à des circuits de dérivation avec protection contre les surintensités conformes au code électrique national ANSI/ NFPA 70.

2.WARNING: REPLACE ONLY WITH THE SAME RATINGS AND TYPE OF FUSE.

2. AVERTISSEMENT : N'UTILISER QUE DES FUSIBLES DE MÊMECALIBRE ET DE MÊME TYPE QUE LE FUSIBLE DORIGINE.

3. DANGER – HIGH VOLTAGE.

3. DANGER : HAUTE TENSION.

4.CAUTION: RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE.

4.ATTENTION: RISQUES D'ÉLECTROCUTION. NE PAS RETIRER LE COUVERCLE. NE CONTIENT AUCUNE PIÈCE POUVANT ÊTRE RÉPARÉE PAR L' UTILISATEUR.

5.CAUTION: DISCONNECT ALL SOURCES OF SUPPLY BEFORE SERVICING.

5.ATTENTION: COUPER TOUTES LES SOURCES D'ALIMENTATION AVANT DE FAIRE L'ENTRETIEN ET LESL RÉPARATIONS.

6.CAUTION: RISK OF ELECTRIC SHOCK FROM STORED ENERGY. WAIT 5 MIN AFTER DISCONNECTING ALL SOURCES OF SUPPLY BEFORE ACCESSING.

6.ATTENTION:RISQUE D'ÉLECTROCUTION EN RAISON DE L'ÉLECTRICITÉ EMMAGASINÉE. ATTENDRE 5 MINUTES APRÈS AVOIR DÉBRANCHÉ TOUTES LES SOURCES D'ALIMENTATION AVANT D'Y ACCÉDER.

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. If the final product application is connected to a photovoltaic array, the array needs to be grounded and the voltage between the positive and negative poles of the product shall not be greater than 1000VDC.
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.