DESCRIPTIONS

150W, DC/DC Converter



RoHS

FEATURES

- Ultra-wide 250 - 2200VDC input voltage range (Transient 2300VDC last for 30s)
- Operating ambient temperature range: -40℃ to +85℃
- High I/O isolation voltage up to 5000VAC
- High reliability, efficiency up to 92%
- Input under-voltage protection, input reverse polarity protection, output short circuit, over-current, over-voltage,over-temperature protection
- Operating altitude up to 5000m
- Safety Class I, Class II
- Design refer to UL1741, EN/IEC/BS EN62109, IEC62477

APPLICATIONS

- Photovoltaic inverter
- Energy storage systems
- Charging pile
- Industrial control

Selection Guide

Certification	Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range ADJ (V)	Efficiency at 1000VDC (%) Typ.	Capacitive Load (μF) Max.
--	DPV150-20B-12	120	12V/10.0A	12-15	87	3500
	DPV150-20B-24	150	24V/6.25A	24-29	90	2000
	DPV150-20B-28		28V/5.36A	28-33.6	91	1500
	DPV150-20B-36		36V/4.20A	36-43.2	91	1500
	DPV150-20B-48		48V/3.125A	48-58	92	1000

Note: 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		Transient (30s)		--	--	2300	VDC
					250	--	2200	
	Input Current		250VDC		--	--	0.8	A
			800VDC		--	--	0.4	
	Inrush Current		800VDC	Cold start	--	--	100	
			2000VDC		--	--	250	
	Input Under-voltage Protection		Under-voltage protection start		120	150	180	VDC
			Under-voltage protection release		180	210	250	
	Input Reverse Polarity Protection				Available			
	Start-up Delay Time*				--	3	5	s
	External Input Fuse				2500VDC/4A, required			
					2000VDC/4A,required (brand:Adler, model:A901400b00,base model:BH300-01)			
	Hot Plug				Unavailable			
Output Specifications	Output Voltage Accuracy		All load range		--	--	±2	%
	Line Regulation		Rated load		--	--	±1	
	Load Regulation		1000VDC		--	--	±1	
	Ripple & Noise**		20MHz bandwidth (peak-to-peak value)		--	--	300	mV
	Stand-by Power Consumption		1500VDC		--	3	5	W
	Temperature Coefficient				--	±0.02	--	%/℃
	Short Circuit Protection				Hiccup, continuous, self-recovery			
	Over-current Protection				110% - 330% Io Hiccup, self-recovery after fault conditions is removed			
	Over-voltage Protection		12V		≤20V	Output voltage clamp, self-recovery		
			24V		≤32V			
			28V		≤45V			
			36V		≤48V			
			48V		≤60V			
	Over-temperature Protection***		800VDC		Output voltage turn off, self-recovery			
	Minimum Load				0	--	--	%
	Hold-up Time		1000VDC, full load		--	10	--	ms
	Isolation	Input - output	Electric strength test for 1min., leakage current <10mA		5000	--	--	VAC
		Input - PE			5000	--	--	

General Specifications		Output - PE	Electric strength test for 1min., leakage current <5mA		2000	--	--	
	Insulation Resistance	Input - output	Test voltage: 500VDC		100	--	--	MΩ
		Input - PE						
		Output - PE						
	Operating Temperature				-40	--	+85	℃
	Storage Temperature				-40	--	+85	
	Storage Humidity		Non-condensing		--	--	95	%RH
	Output Power Derating		Operating temperature derating	-40℃ to -25℃	3.33	--	--	%/℃
				+55℃ to +85℃	2.67	--	--	
			Input voltage derating	250 - 300VDC	0.4	--	--	%/VDC
				300 - 400VDC	0.2	--	--	
				2000 - 2200VDC	0.1	--	--	
			Altitude derating	2000 - 5000m	10	--	--	%/Km
	Safety Class				Class I, Class II			
	MTBF		MIL-HDBK-217F@25℃		≥300,000h			
Mechanical Specifications	Case Material		Metal					
	Dimensions		201.00 x 70.00 x 42.00mm					
	Weight		645g (Typ.)					
	Cooling Method		Free air convection					

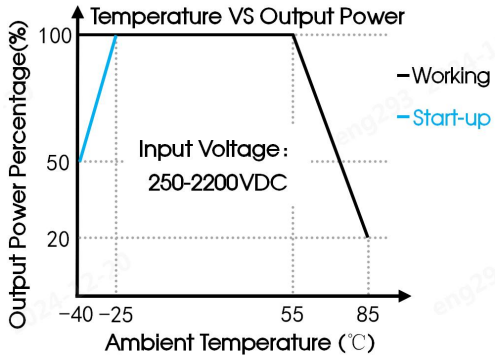
Note:
*Repeated Start-up: Start-up Delay Time < 15s;
**The "Tip and barrel method" is used for ripple and noise test, 12V with a 100uf parallel capacitor;
***Output voltage turn off, self-recovery after fault conditions is removed.

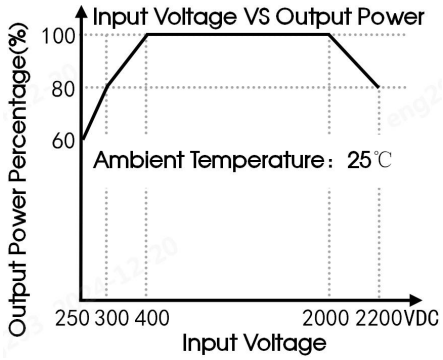
Electromagnetic Compatibility (EMC)

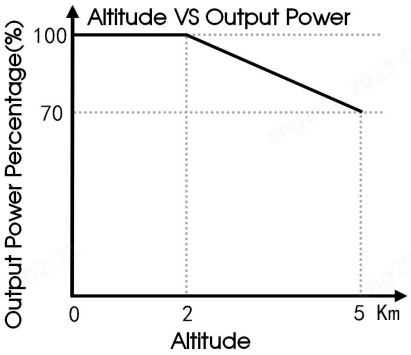
Electromagnetic Compatibility (EMC)	Emissions	CE	CISPR32/EN55032 CLASS A	
		RE	CISPR32/EN55032 CLASS A	
		EN61000-6-4		
	Immunity	ESD	IEC/EN61000-4-2 Contact ±6KV/Air ±8KV	Perf. Criteria A
		RS	IEC/EN61000-4-3 10V/m	Perf. Criteria A
		EFT	IEC/EN61000-4-4 ±4KV	Perf. Criteria A
		Surge*	IEC/EN61000-4-5 Line to line ±2KV /line to PE ±4KV	Perf. Criteria A
		CS	IEC/EN61000-4-6 10Vr.m.s	Perf. Criteria A
		PFMF	IEC/EN61000-4-8 30A/m	Perf. Criteria A
		EN55035、EN61000-6-2		

Note: *CLASS II applications do not need to test the line to shell.

Product Characteristic Curve

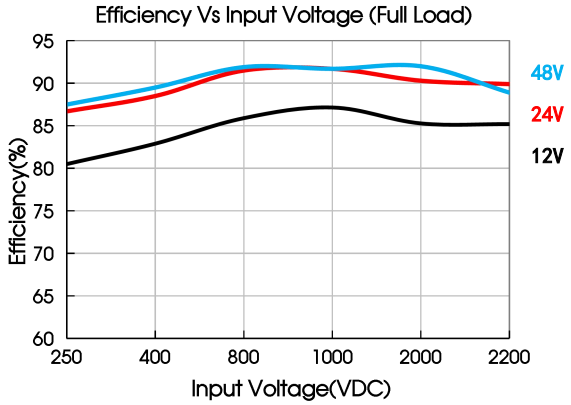


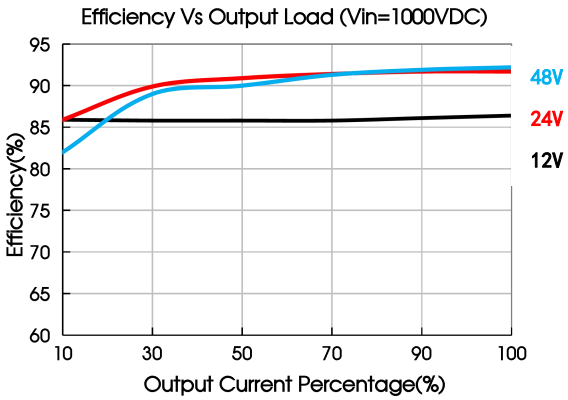




Note: 1.With an DC input between 250-400VDC/2000-2200VDC, the output power must be derated as per temperature derating curves;

2.This product is suitable for applications using natural free air cooling; for applications in closed environment please consult FAE.





Design Reference

1. Typical application

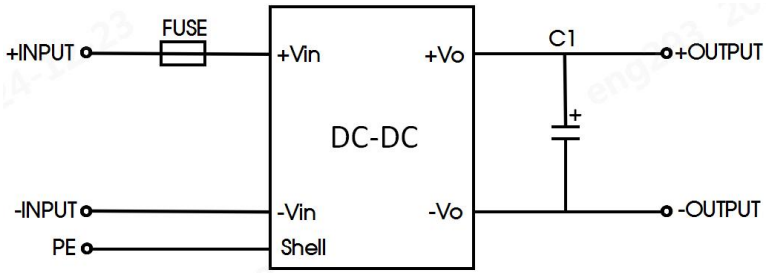


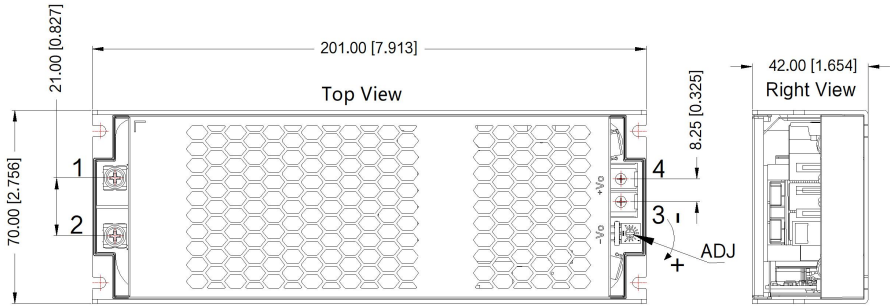
Fig. 1

Part No.	Model	Recommended value
DPV150-20B-xx	FUSE	2500VDC/4A, required
		2000VDC/4A,required (brand:Adler, model:A901400b00, base model:BH300-01)
DPV150-20B-12	C1	100uF/35V
Note: No PE connection is required for CLASS II application.		

2. IMPORTANT SAFETY INSTRUCTIONS

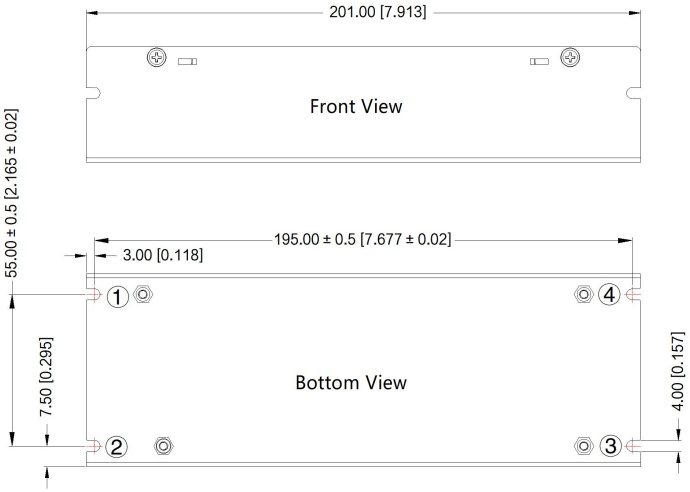
Additional protective devices, such as lightning protector need to be added if there is an transient pulse voltage greater than 6KV at the Input of products in system applications.

Dimensions and Recommended Layout

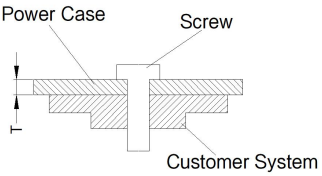


THIRD ANGLE PROJECTION

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



Position	Screw Spec.	T	Torque(max)
①-⑥	M3	1.5mm	0.4 ± 0.04N・m



Note:
1. Unit: mm[inch]
2. General tolerances: ± 1.00 [± 0.040]
3. Wire range:
Input: 20-12AWG
Output: 12V 18-12AWG
24V,28V,36V,48V 20-12AWG
4. Input connector tightening torque: M4, 0.9 ± 0.09N・m
Output connector tightening torque: M3, 0.5 ± 0.05N・m

⚠WARNING:

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 ： HAUTE TENSION.
3. DANGER – HIGH VOLTAGE.
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. The output voltage can be adjusted by the ADJ, clockwise to increase;
6. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
7. 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 2200VDC.