DESCRIPTIONGS

150W, DC/DC Converter



RoHS 3 Years Warranty

FEATURES

- Ultra-wide 250 - 1500VDC input voltage range (Transient 1700VDC last for 30s)
- Operating ambient temperature range: -40℃ to +85℃
- High I/O isolation voltage up to 4000VAC
- 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/IEC62109, EN/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.
--	DPV150-15B-12V2	120	12V/10.0A	12-15	87	3500
	DPV150-15B-24V2	150	24V/6.25A	24-28	90	2000
	DPV150-15B-28V2		28V/5.36A	28-32	91	1500
	DPV150-15B-32V2		32V/4.69A	30-36	91	1500
	DPV150-15B-48V2		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)	--	--	1700	VDC
			250	--	1500	
	Input Current	250VDC	--	--	0.8	A
		800VDC	--	--	0.4	

	Inrush Current		800VDC	Cold start	--	100	--	
			1500VDC		--	200	--	
	Input Under-voltage Protection		Under-voltage protection start		200	--	220	VDC
			Under-voltage protection release		220	--	240	
	Input Reverse Polarity Protection				Available			
	Start-up Delay Time				--	1	3	s
	External Input Fuse				4A/1500VDC, required (brand: Adler, model: A841400b00, base model: BH200)			
	Hot Plug				Unavailable			
Output Specifications	Output Voltage Accuracy		All load range		--	±1.5	--	%
	Line Regulation		Rated load		--	±0.25	--	
	Load Regulation		1000VDC		--	±0.5	--	
	Ripple & Noise		20MHz bandwidth (peak-to-peak value)		--	--	300	mV
	Temperature Coefficient				--	±0.02	--	%/℃
	Short Circuit Protection				Hiccup, continuous, self-recovery			
	Over-current Protection				110% - 330% Io, constant current mode when output voltage > 70%, automatic recover after fault condition is removed			
	Over-voltage Protection		12V		≤20V	Output voltage clamp or hiccup , self-recovery		
			24V		≤32V			
			28V		≤35V			
			32V		≤45V			
			48V		≤62V			
	Over-temperature Protection				Output voltage turn off, self-recovery			
	Minimum Load				0	--	--	%
	Hold-up Time		Room temperature, full load	1000VDC input	--	10	--	ms
General Specifications	Isolation	Input - output	Electric strength test for 1min., leakage current ≤5mA		4000	--	--	VAC
		Input - Shell			4000	--	--	
		Output - Shell			2000	--	--	
	Insulation Resistance	Input - output	Test voltage: 500VDC		100	--	--	MΩ
		Input - Shell						
		Output - Shell						
	Operating Temperature				-40	--	+85	℃
	Storage Temperature				-40	--	+85	
	Storage Humidity		Non-condensing		--	--	95	%RH
	Power Derating		Operating temperature derating	-40℃ to -25℃	3.33	--	--	%/℃
				+55℃ to +85℃	2.33	--	--	

		Input voltage derating	250 - 300VDC	0.4	--	--	%/VDC
			300 - 400VDC	0.2	--	--	
			1400 - 1500VDC	0.2	--	--	
		Altitude derating	2000 - 5000m	10	--	--	%/Km
	Safety Class			Class I(Connecting PE terminal), Class II(No PE terminal)			
	MTBF	MIL-HDBK-217F@25℃		≥300,000 h			
Mechanical Specifications	Case Material	Metal					
	Dimensions	171.00 x 70.00 x 42.00mm					
	Weight	550g (Typ.)					
	Cooling Method	Free air convection					

Note:

1.Start-up delay time test conditions: full voltage input range, full output load range(The cooling-time between input power-off and re-power-on shall be longer than 10s.)

2.The "Tip and barrel method" is used for ripple and noise test, for 12V output, add a 47uF/25V electrolytic capacitor to the output side.

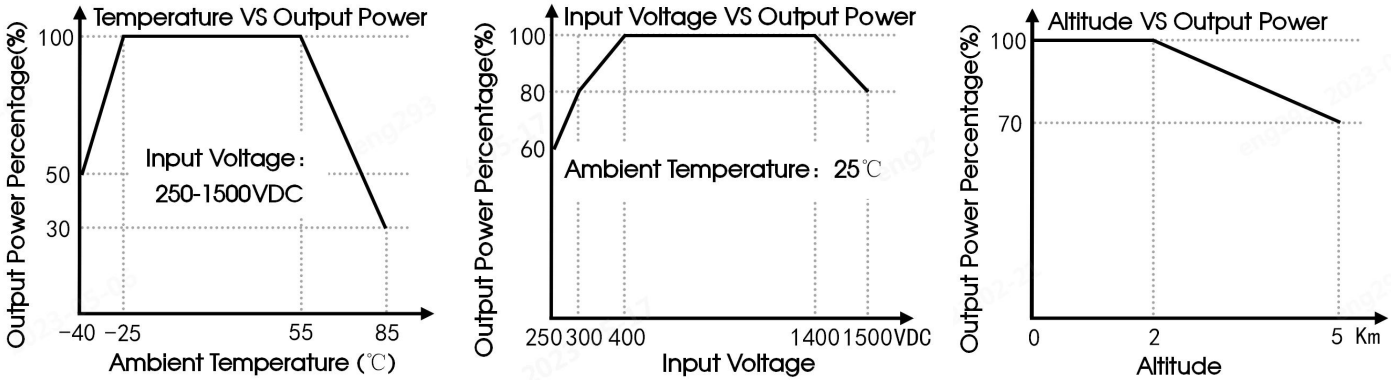
3.After the over-temperature protection is triggered, the output voltage is turned off, and it is restored after the over-temperature anomaly is resolved.

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 ±1KV/line to shell ±2KV	Perf. Criteria A
			IEC/EN61000-4-5 Line to line ±2KV/ line to shell ±4KV (See Fig. 2 for recommended circuit)	
		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		

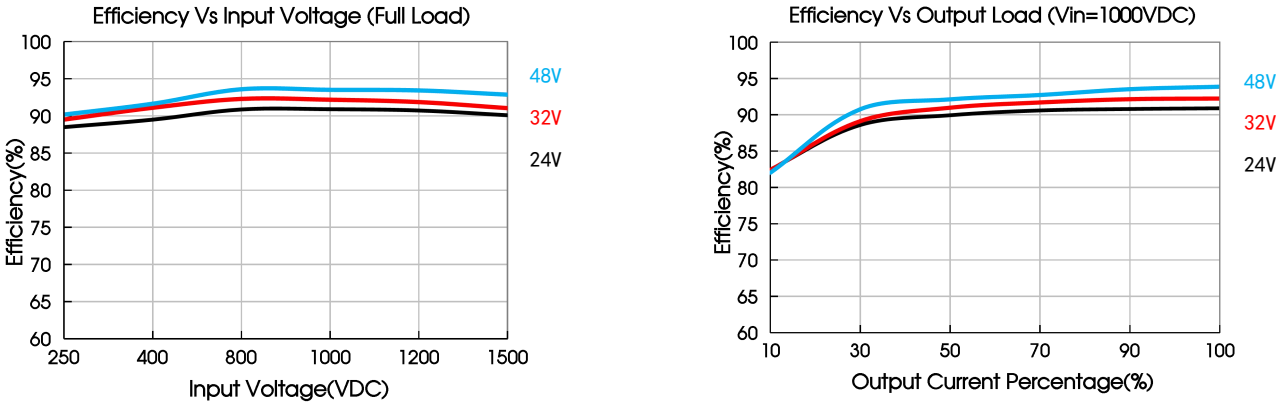
Note: *CLASS II applications do not need to test the line to shell.

Product Characteristic Curve



Note: 1.With an DC input between 250-400VDC/1400-1500VDC, 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

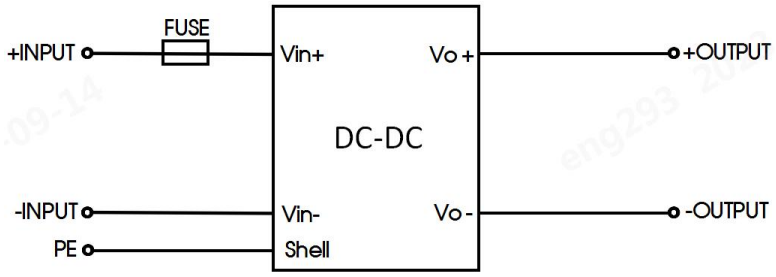


Fig. 1

Part No.	FUSE
DPV150-15B-xxV2	4A/1500VDC, required (brand: Adler ,model: A841400b00 ,base model: BH200)
Note: No PE connection is required for CLASS II application.	

2. EMC compliance recommended circuit

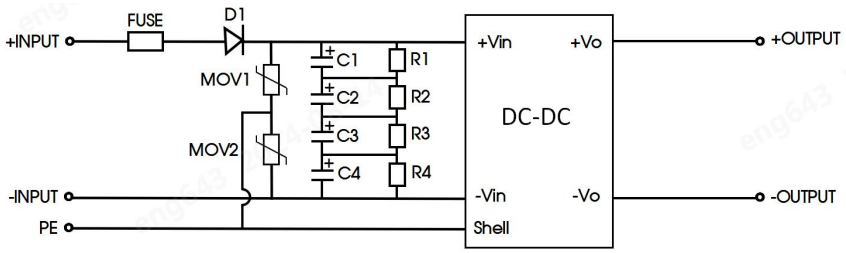
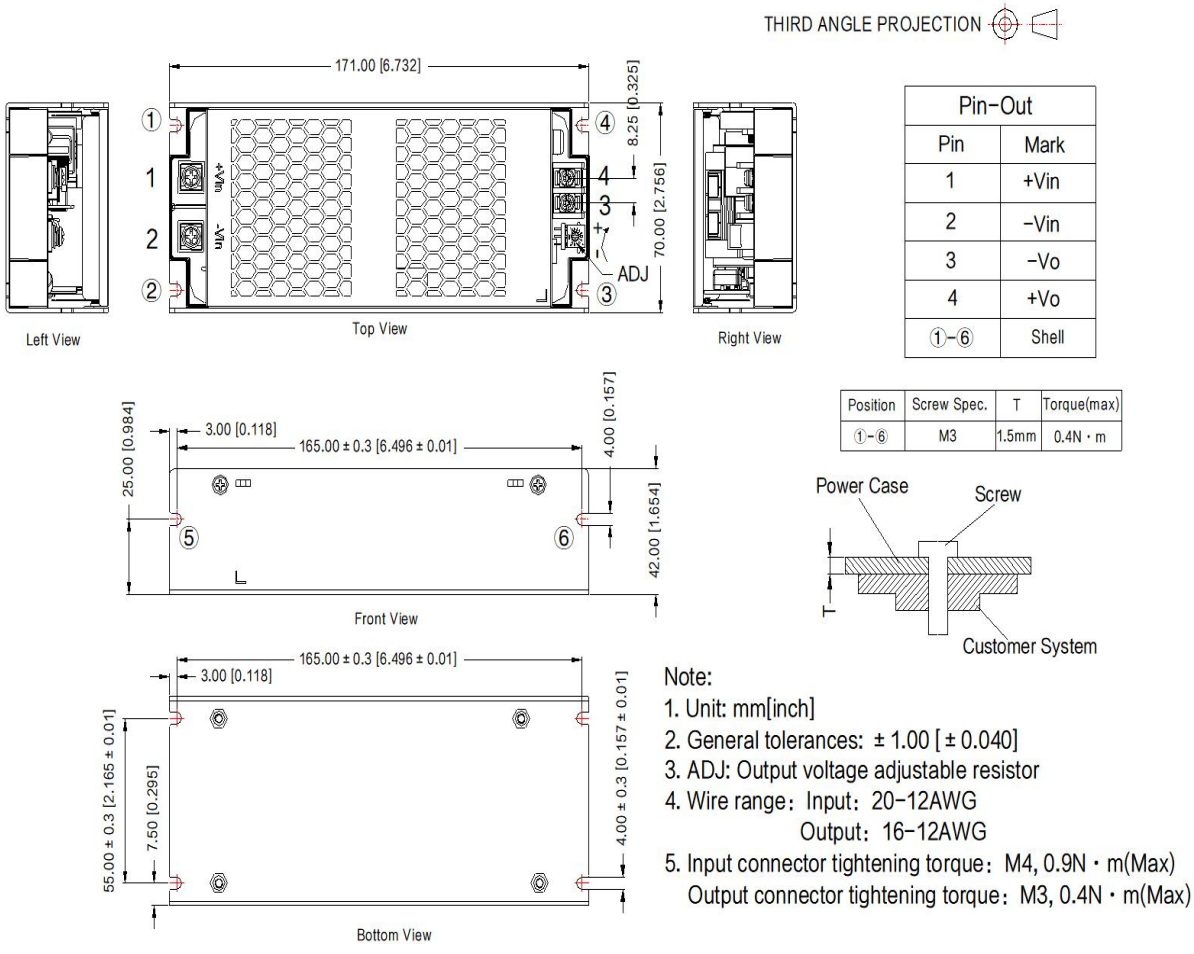


Fig. 2

Model	Recommended value
FUSE	1500VDC/4A, required (brand: Adler, model: A841400b00, base model: BH200)
D1	4000V/10A (two 1000V/10A rectifier bridges in series)
C1/C2/C3/C4	100μF/450VDC
R1/R2/R3/R4	1MΩ/2W
MOV1/MOV2	182K/4500A/14D
Note:1.For CLASS II application, no need to connect PE and no need to add the varistor (MOV1/MOV2); 2.Test the withstand voltage (input/output to PE), need to remove the varistor (MOV1/MOV2).	

Dimensions and Recommended Layout



Pin-Out	
Pin	Mark
1	+Vin
2	-Vin
3	-Vo
4	+Vo
①-⑥	Shell

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

Note:
1. Unit: mm[inch]
2. General tolerances: ± 1.00 [± 0.040]
3. ADJ: Output voltage adjustable resistor
4. Wire range: Input: 20-12AWG
   Output: 16-12AWG
5. Input connector tightening torque: M4, 0.9N・m(Max)
   Output connector tightening torque: M3, 0.4N・m(Max)

⚠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 – 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.ATTENTIONT: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 1500VDC.