DESCRIPTIONS DC/DC Converter



RoHS

CE Report EN62109-1

UKCA Report BS EN 62109-1

FEATURES

- Ultra-wide 200 - 1000VDC input voltage range
- High I/O isolation test voltage of 4000VAC
- Industrial grade operating temperature -40℃ to +70℃
- High efficiency, low ripple & noise
- Input undervoltage protection, input reverse polarity protection, output short circuit, over-current, over-voltage protection
- High reliability, long lifespan

APPLICATIONS

- photovoltaic power generation
- energy storage
- high voltage DC conversions

Selection Guide

Certification	Part No.	Output Power	Nominal Output Voltage and Current (Vo/Io)	Efficiency at 600VDC (%) Typ.	Capacitive Load (μF) Max.
EN/BS EN	DPV200-10B-12	120W	12V/10A	86	6000
	DPV200-10B-15	150W	15V/10A	87	4000
	DPV200-10B-24	200W	24V/8.333A	87	2000
	DPV200-10B-26		26V/7.692A	87	2000
	DPV200-10B-48		48V/4.166A	87	1000

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

Specifications

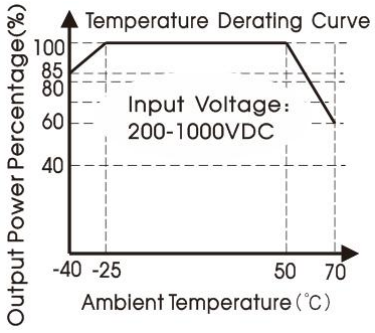
Product Specifications	Item		Operating Conditions			Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range		DPV200-10B-12/15			200	--	1000	VDC
			DPV200-10B-24/26/48			250	--	1000	
	Input Current		DPV200-10B-12/15	250VDC		--	--	0.8	A
				600VDC		--	--	0.4	
			DPV200-10B-24/26/48	250VDC		--	--	1.0	
				600VDC		--	--	0.5	
	Inrush Current		600VDC			--	100	--	A
			1000VDC			--	180	--	
	Input Undervoltage Protection		12/15V	Lockout activation range		155	--	185	VDC
				Lockout deactivation range		180	--	200	
			24V/26V/48V	Lockout activation range		205	--	230	
				Lockout deactivation range		230	--	250	
	External Input Fuse					6A/1000VDC, required			
	Hot Plug					Unavailable			
Output Specifications	Output Voltage Accuracy					--	±2	--	%
	Line Regulation		Full load			--	±0.5	--	
	Load Regulation		0% - 100% load			--	±2	--	
	Ripple & Noise*		20MHz bandwidth (peak-to-peak value)			--	--	200	mV
	Temperature Coefficient					--	±0.02	--	%/℃
	Short Circuit Protection					Hiccup, continuous, self-recovery			
	Over-current Protection					≥110%Io, hiccup, self-recovery			
	Over-voltage Protection		12V output			≤20VDC (Output voltage clamp)			
			15V output			≤25VDC (Output voltage clamp)			
			24V output			≤33VDC (Output voltage clamp)			
			26V output			≤35VDC (Output voltage clamp)			
			48V output			≤60VDC (Output voltage clamp)			
	Minimum Load					0	--	--	%
	Trim Range		Output power constant			--	--	±10	
	Hold-up Time		Room temperature, full load	600VDC input		--	8	--	ms
				1000VDC input		--	20	--	
General Specifications	Isolation	Input - output	Electric Strength Test for 1min., leakage current ≤5mA			4000	--	--	VAC
		Input - PE	Electric Strength Test for 1min., leakage current ≤10mA			2000	--	--	
		Output - PE	Electric Strength Test for 1min., leakage current ≤5mA			2000	--	--	VDC
	Operating Temperature					-40	--	+70	℃
	Storage Temperature					-40	--	+85	
	Storage Humidity					--	--	95	%RH
	Power Derating		-40℃ to -25℃			1.0	--	--	%/℃
			+50℃ to +70℃	DPV200-10B-12/15		2.0	--	--	

		+50℃ to +70℃	DPV200-10B-24/26/48	2.5	--	--	
		200VDC-250VDC	DPV200-10B-12/15	0.45	--	--	%/VDC
		250VDC-300VDC	DPV200-10B-24/26/48	1.5	--	--	
	Switching Frequency			--	65	--	kHz
	MTBF	MIL-HDBK-217F@25℃		≥ 300,000 h			
Mechanical Specifications	Case Material	Metal					
	Dimensions	168.0 x 121.35 x 42.5 mm					
	Weight	1000g (Typ.)					
	Cooling method	Free air convection					
Note: * The "Tip and barrel method" is used for ripple and noise test.							

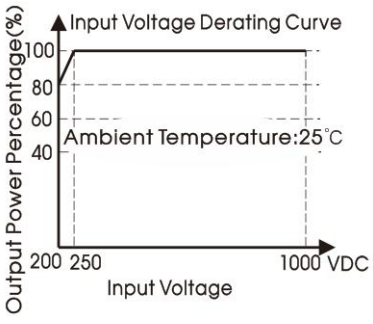
Electromagnetic Compatibility (EMC)

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

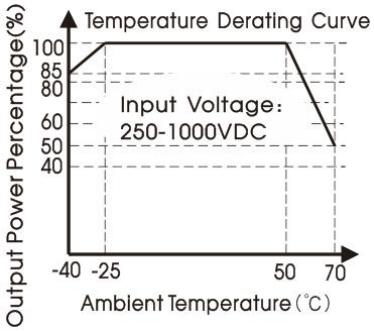
Product Characteristic Curve



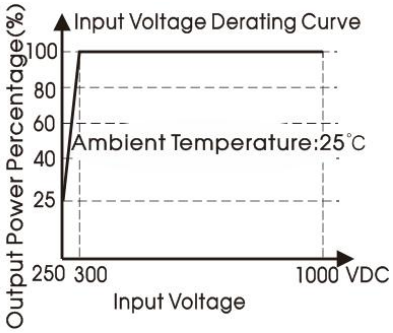
12/15V



12/15V



24/26/48V



24/26/48V

Note: ① With an input between 200-250VDC for 12/15V and 250-300VDC for 24/26/48V, the output power must be derated as per temperature derating curves;

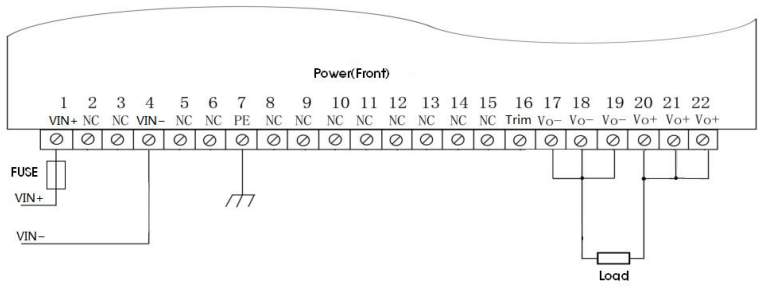
② This product is suitable for applications using natural air cooling.

Wiring Description

1.Terminal Definition

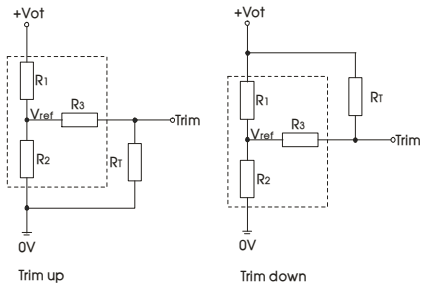
Terminal No.	Terminal name	Definition	Terminal No.	Terminal name	Definition	Terminal No.	Terminal name	Definition
1	VIN+	Input (+)	9	NC	No electrical connection	17	Vo-	Load output (-)
2	NC	No electrical connection	10	NC	No electrical connection	18	Vo-	Load output (-)
3	NC	No electrical connection	11	NC	No electrical connection	19	Vo-	Load output (-)
4	VIN-	Input (-)	12	NC	No electrical connection	20	Vo+	Load output (+)
5	NC	No electrical connection	13	NC	No electrical connection	21	Vo+	Load output (+)
6	NC	No electrical connection	14	NC	No electrical connection	22	Vo+	Load output (+)
7	PE	Protective grounding	15	NC	No electrical connection			
8	NC	No electrical connection	16	Trim	Adjustable Output Voltage			

2.Wiring diagram



Design Reference

Trim Function for Output Voltage Adjustment (open if unused)



TRIM resistor connection (dashed line shows internal resistor network)

Calculating Trim resistor values:

$$\text{up: } R_T = \frac{aR_2}{R_2 - a} - R_3 \qquad a = \frac{Vref}{Vot - Vref} \cdot R_1$$

$$\text{down: } R_T = \frac{aR_1}{R_1 - a} - R_3 \qquad a = \frac{Vot - Vref}{Vref} \cdot R_2$$

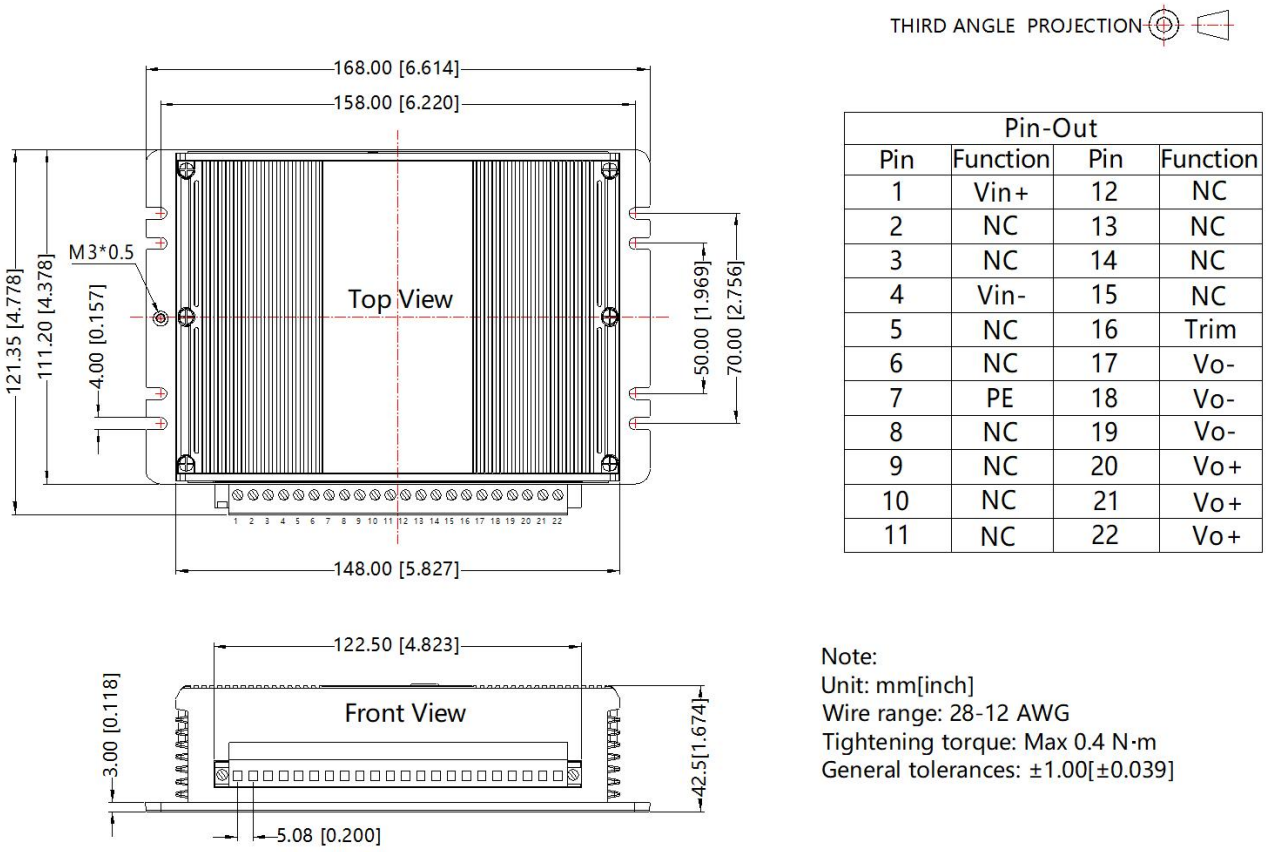
R_T = Trim Resistor value;

a = self-defined parameter;

Vot = desired output voltage

Vout	R1(KΩ)	R2(KΩ)	R3(KΩ)	Vref(V)	Vot(V)
12V	3.83	1	1	2.5	Output voltage after regulation, variation ≤ ±10%
15V	7.5	1.5	1	2.5	
24V	8.66	1	1	2.5	
26V	8.66	0.91	1	2.5	
48V	33	1.8	1	2.5	

Dimensions and Recommended Layout



Pin-Out			
Pin	Function	Pin	Function
1	Vin+	12	NC
2	NC	13	NC
3	NC	14	NC
4	Vin-	15	NC
5	NC	16	Trim
6	NC	17	Vo-
7	PE	18	Vo-
8	NC	19	Vo-
9	NC	20	Vo+
10	NC	21	Vo+
11	NC	22	Vo+

Note:
Unit: mm[inch]
Wire range: 28-12 AWG
Tightening torque: Max 0.4 N·m
General tolerances: ±1.00[±0.039]

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

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

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

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

3.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, data in this datasheet should be tested under the conditions of Ta=25℃, humidity<75% when inputting nominal voltage and outputting rated 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. 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.