

SmartGen

MAKING CONTROL SMARTER

DCP102410 DC/DC CONVERTER USER MANUAL



郑州众智科技股份有限公司
SMARTGEN(ZHENGZHOU)TECHNOLOGY CO.,LTD.

SmartGen Registered trademark

No. 28 Xuemei Street, Zhengzhou, Henan, China

Tel: +86-371-67988888/67981888/67992951

+86-371-67981000(overseas)

Fax: +86-371-67992952

Web: www.smartgen.com.cn/

www.smartgen.cn/

Email: sales@smartgen.cn

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Table 1 Software Version

Date	Version	Content
2025-01-04	1.0	Original release.

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1 OVERVIEW

DCP102410 is a high-voltage, multi-protection DC/DC isolated power supply, suitable for equipment requiring isolated power supply with input below 1000VDC and output 24VDC, with a rated output current of 10A. It is widely used in photovoltaic power generation, energy storage systems and other scenarios.

2 PERFORMANCE AND CHARACTERISTICS

- Switch power supply structure, wide input DC voltage range and high efficiency;
- Input and output isolation design, isolation voltage is AC 4kV;
- With multiple protections;
- With power input indicator;
- With output indicator;
- With metal shell, horizontal screw installation method, which is simple and convenient.

3 TECHNICAL PARAMETERS

Table 2 Technical Parameter

Category	Item	Parameter
Input Characteristics	Input Voltage	(200~1000) VDC
	Max. Input Power	280W
	Max. Input Current	1.5A
	Max. Efficiency	93% (830VDC Input)
	Recommended Value for External Fuse	6A 1000VDC
Output Characteristics	Rated Output Voltage	24VDC
	Rated Output Current	10A
	Rated Output Power	240W
Protection	Input Undervoltage	√
	Input Reverse	√
	Input Overvoltage	√
	Output Overvoltage	Stop working, can be automatically restored after the abnormal load condition is removed
	Output Overcurrent Short Circuit Protection	In hiccup mode, it can be automatically restored after the abnormal load condition is removed
Safety Requirement & EMC	Safety Specifications	EN 62477-1: 2023
	Insulation Withstand Voltage	Input and output: AC4kV 50Hz 1min (DC5600V 1min) Leakage current $I_L \leq 12\text{mA}$ Input and output: AC4kV 50Hz 1min (DC5600V 1min) Leakage current $I_L \leq 5\text{mA}$ Input and output: AC1kV 50Hz 1min (DC1400V 1min) Leakage current $I_L \leq 3.5\text{mA}$
	Insulation Impedance	Insulation resistance $R_L \geq 50\text{M}\Omega$ when input and output, input and shell are DC 0.5kV for 1min
	EMC Emission	Meet IEC/EN61000-2
	EMS	Meet IEC/EN61000-4
Work Environment	Operating Temperature	(-40~+70)°C (Refer to "Derating Curve")
	Operating Humidity	20%RH~93%RH (No condensation)
	Storage Temperature	(-40~+85)°C

Category	Item	Parameter
	Vibration	5Hz~8Hz: displacement=±7.5mm 8Hz~500Hz: a=±2g IEC 60068-2-6
	Bump	20g, 16ms, half-sine IEC 60255-21-2
Shape Structure	Dimensions	210mm×131mm×55mm
	Installation Dimension	190mm×120mm
	Weight	1.2kg

4 DERATING CURVE AND EFFICIENCY CURVE

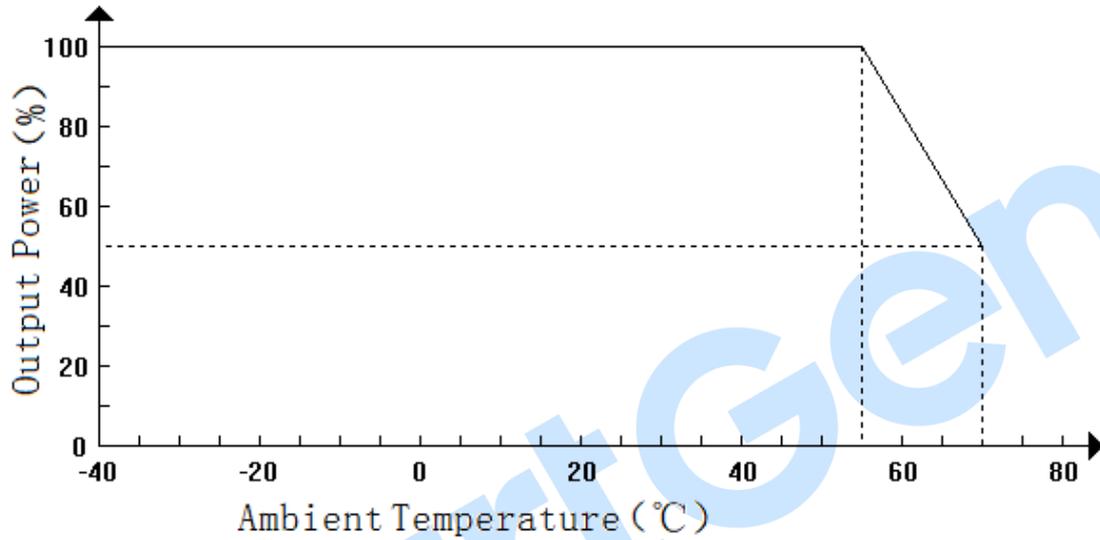


Fig.1 Derating Curve

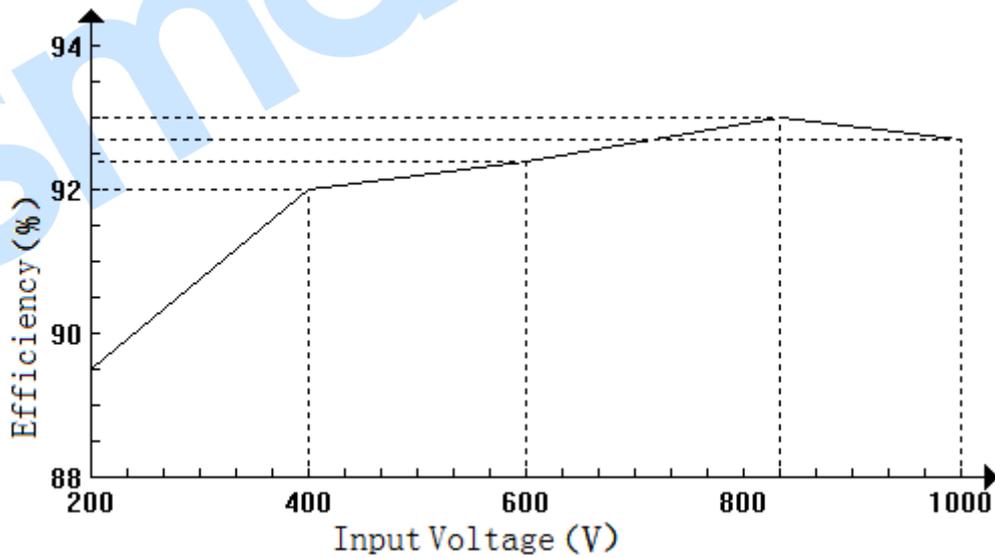


Fig.2 Efficiency Curve

5 OPERATION



Fig.3 DCP102410 Mask

Table 3 Wiring Description

Icon	Function	Description
Vi+	DC input	Terminals Vi + and Vi- are connected to (200 ~ 1000) VDC. It is recommended to use multi-strand copper wire larger than 0.75mm ² .
Vi-		
NC	Hanging	/
Vo+	DC Output	To connect the load, it is recommended to use multi-strand copper wire larger than 2.5mm ² .
Vo-		
INPUT	Input Indicator	The indicator light is on when the input voltage is greater than 50VDC.
OUTPUT	Output Indicator	1. The indicator light flashes when the overload protection is active; 2. The indicator light is always on when the output is normal.

6 WIRING DIAGRAM

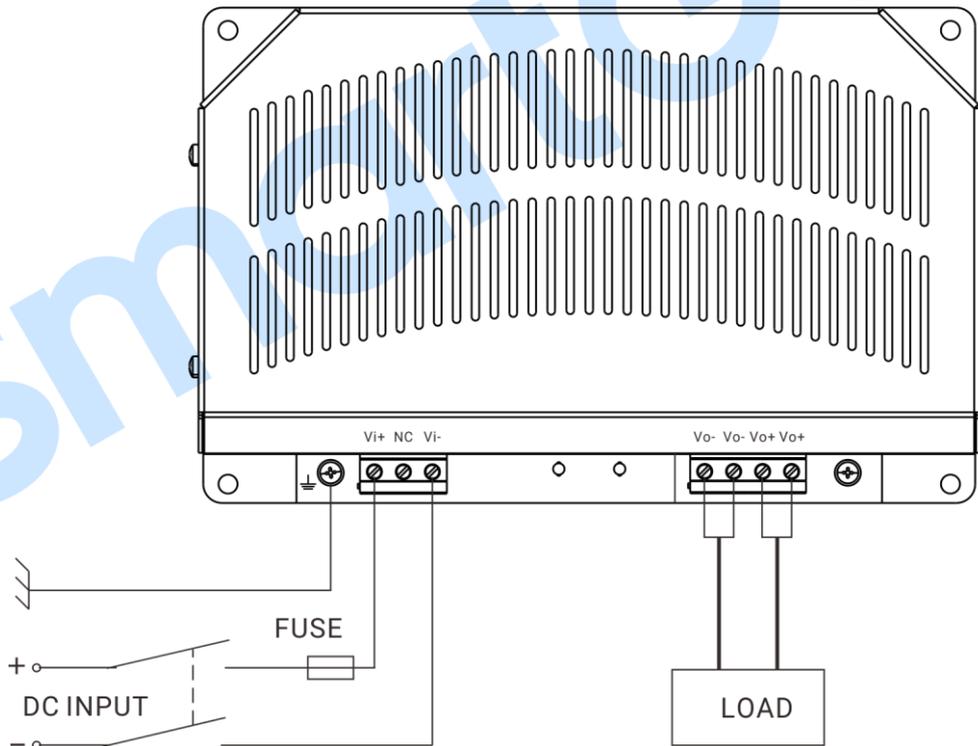


Fig.4 Wiring Diagram

7 OVERALL AND INSTALLATION DIMENSIONS

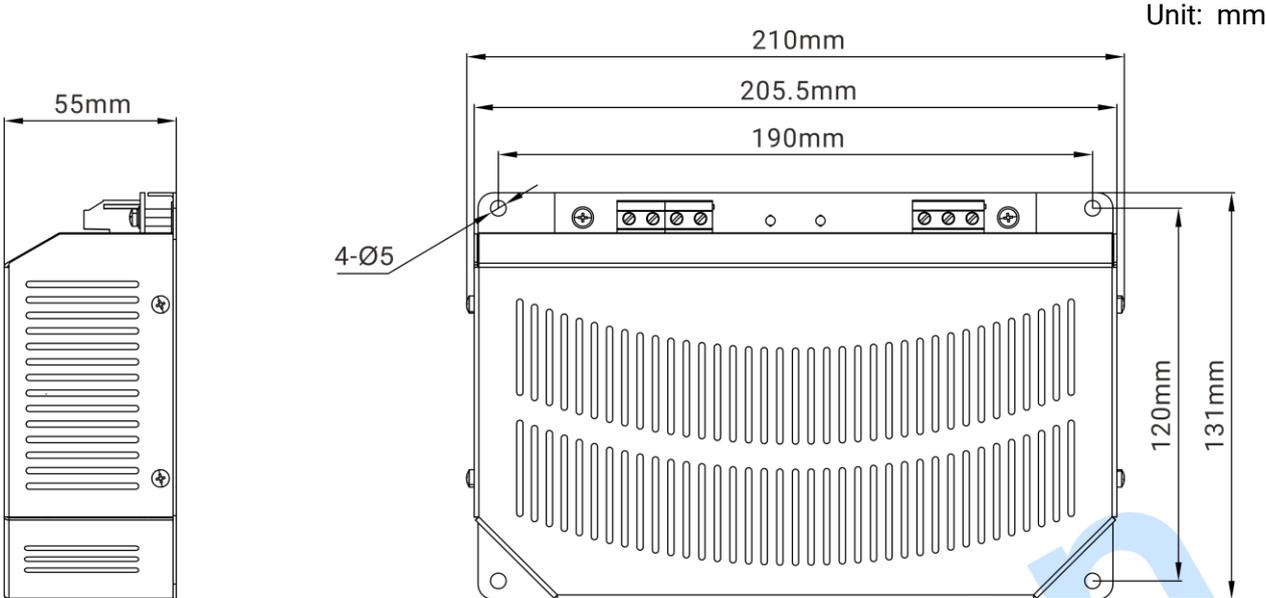


Fig.5 DCP102410 Dimensions

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