SmartGen

MAKING CONTROL SMARTER

PDC2420

DC/DC ISOLATED POWER

USER MANUAL

郑州众智科技股份有限公司

SMARTGEN(ZHENGZHOU)TECHNOLOGY CO.,LTD.

SmartGen众智 **Chinese trademark**

SmartGen **English trademark**

SmartGen — make your **generator** ***smart***

SmartGen Technology Co., Ltd.

No.28 Jinsuo Road, Zhengzhou, Henan Province, 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

Table 1 – Software Version

Date	Version	Content
2022-03-03	1.0	Original release.
2022-04-26	1.1	Modify the appearance, dimensions diagram and name of the product .

CONTENT

1 OVERVIEW

PDC2420 is an intelligent DC/DC isolated power with multiple protection, which is suitable for equipment requiring DC24V isolated power supply. The max rated output current is 20A.

2 PERFORMANCE AND CHARACTERISTICS

——It adopts switch power type structure with wide DC range, small size, light weight and high efficiency;
——Isolated design for input and output, isolated voltage is AC3kV;
——With standard RS485 serial communication port applying MODBUS communication protocol;
——With CPU intelligent unit, internal parameters can be adjusted and monitored via RS485 port;
——LED power indicator will illuminate for power-on, flash in fault protection;
——Horizontal screw installation is adopted, simple and easy to install it.

3 SPECIFICATION

Table 2 – Product Parameters

Type	Item	Parameters
Input Characteristics	Rated Voltage	DC 24V
	Voltage Range	DC (18~72)V
	Max Power	605W
	Max Current	34A
	Max Efficiency	92%
Output Characteristics	Voltage Range	DC (22~28)V
	Rated Voltage	DC 24V
	Rated Current	20A
	Rated Power	480W
Protection	Input Undervolt	Undervoltage protection threshold DC17.5V
	Output Overvolt	Shutdown output voltage, recover after auto restart
	Output Undervolt	
	Output Overcurrent	
	Overtemp. Protect	
	Fan Cooling	Built-in DC fan forced cooling.
Safety Requirements & EMC	Safety Requirements	IEC60255-27, CE certificate
	Insulation Withstand Voltage	AC3kV 50Hz 1min for input and output, input and enclosure Leak current I_L≤3.5mA AC500V 50Hz 1min for output and enclosure Leak current I_L≤3.5mA
	Insulation Impedance	DC 0.5kV 1min condition for input and output, input and

Type	Item	Parameters
		enclosure Insulation resistance R_L≥50MΩ
	EMI	Accord with IEC61000-6-4
	EMS	Accord with IEC61000-6-2
Working Environment	Working Temp.	(-30~+60)°C
	Working Humidity	20%RH~93%RH (No condensation)
	Vibration	(8~500)Hz, a=4g, 1 test for each three perpendicular directions
Storage Environment	Storage Temp.	(-40~+85)°C
Overall Structure	Weight	1.51kg
	Overall Dimension	218.9mm×155mm×69mm (L×W×H)
	Installation Dimension	143mm×130mm (L×W)
NOTE: Mix input positive and negative is inhibited, otherwise internal fuse will be damaged and returned for replacement.		

4 PARAMETER CONFIGURATION

Table 3 Parameter Configuration

No.	Type	Default	Range	Description
1	Rated Output Volt	DC 24.0V	Not adjusted	Output voltage value.
2	Rated Output Current	20.0A	(0~20)A	Output current value.
3	Protection Off Time	5s	(0~600)s	Output protection off time.
4	Unvervolt Protection	75%(18.0V)	(0~200)%	DC24V percentage of rated output voltage. Undervoltage protection threshold.
5	Unvervolt Protection Delay	1s	(0~600)s	Undervoltage protection delay of output voltage.
6	Overvolt Protection	120%(28.8V)	(0~200)%	DC24V percentage of rated output voltage. Overvoltage protection threshold.
7	Overvolt Protection Delay	1s	(0~600)s	Overvoltage protection delay of output voltage.
8	Overcurrent Protection	120%(24.0A)	(0~200)%	Rated output current percentage. Overcurrent protection threshold.
9	Overcurrent Protection Delay	1s	(0~600)s	Overcurrent protection delay of output current.
10	Comm. Address	10	1~254	RS485 communication address.
11	Comm. Baud Rate	0	(0~2)	0. 9600bps; 1. 19200bps; 2. 38400bps (1 stop bit)

5 CURVE DIAGRAM

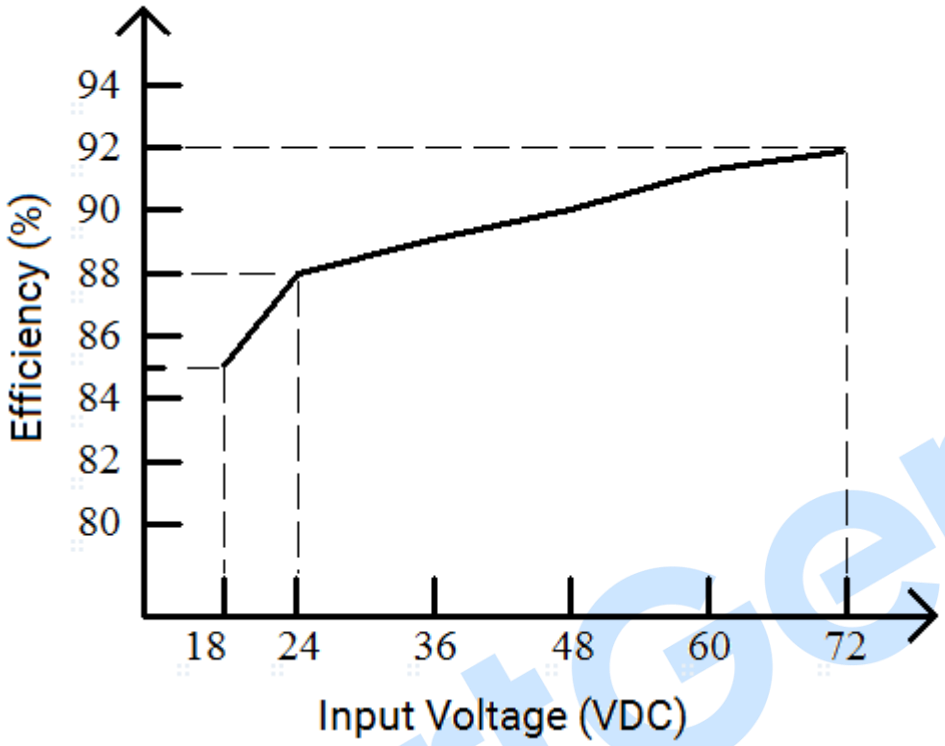

Fig.1 Efficiency Curve

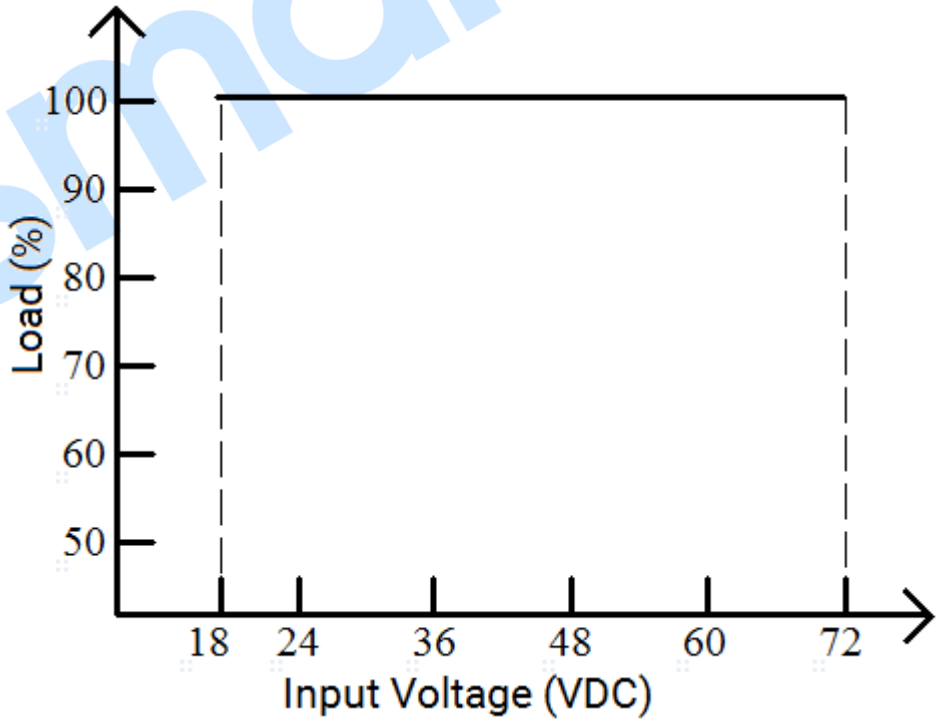

Fig.2 Static Input Curve

6 OPERATION

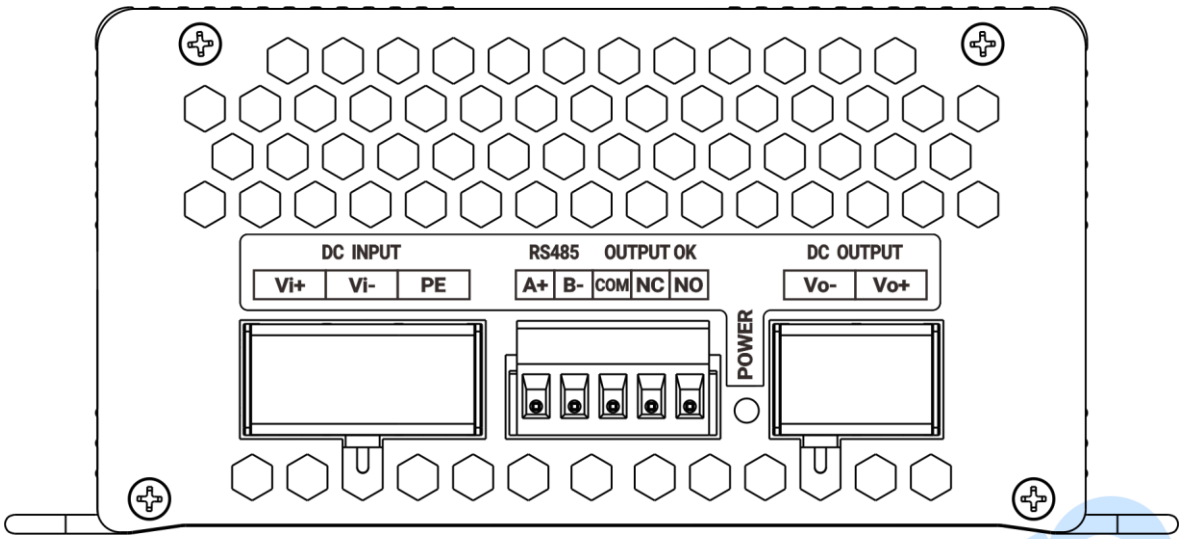

Fig.3 PDC2420 Panel Wiring Diagram

Table 4 Wiring Description

Sign	Function	Description
Vi+	DC Input Terminal	Terminal Vi+, Vi- connects (18~72)V, over BVR6.0mm^2 is recommended to use.
Vi-		
PE	Ground Terminal	Connect to enclosure internally.
A(+)	RS485 Comm. Port	Standard RS485 serial communication port.
B(-)		
COM	Common Port	Relay action when over/under voltage, overcurrent, over temperature protection occurs (terminal rated current is 5A).
NC	Normally Close	
NO	Normally Open	
Vo-	Output Negative	Connect to negative terminal of equipment to be powered. Over BVR4.0mm^2 is recommended to use.
Vo+	Output Positive	Connect to positive terminal of equipment to be powered. Over BVR4.0mm^2 is recommended to use.
POWER	Green LED Indicator	Power output normal indicator (Flashes when over/under voltage, overcurrent, over temperature protection occurs).
VOLT ADJUST	Output Voltage Adjust	Adjusting output voltage (DC22V~28V) of built-in potentiometer.

7 OVERALL AND INSTALLATION DIMENSIONS

Unit: mm

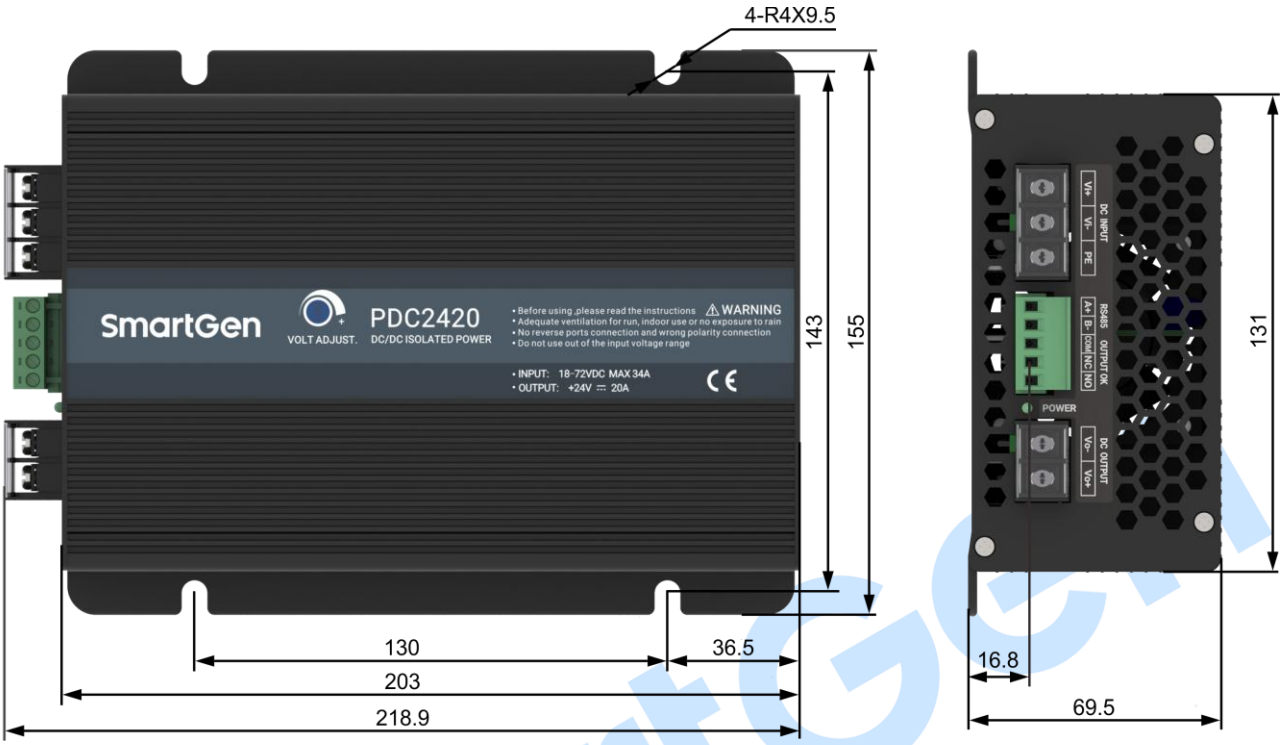

Fig.4 PDC2420 Dimensions