



IPS-BS150-30
Programmable dc power supply

Name: Programmable dc power supply

Model: IPS-BS150-30



Name	Programmable DC power supply		IDEALPLUSING®
Model	IPS-BS150-30	VER	A/0

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1. Product overview

1.1 Physical image of the product



1.2 Product introduction

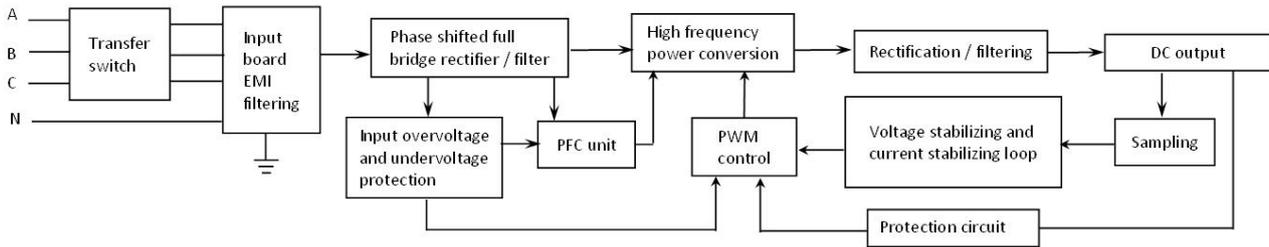
BS series high precision programmable DC power supply is the product for the needs of customers with high quality, high power density, multi-function and cost-effective, launched by our company.

The power density of 10kW is only 2U, and the maximum voltage and current can reach 2000V and 400A respectively. It is an ideal output for applications requiring a wide range of output voltage or current range regulation, and has two working modes of constant voltage and constant current. Therefore it can be applied in situations where call for high-quality DC stable power supply like automatic test, process control, battery charging, aging test etc.

This series of products has the function of zero voltage “soft switching” and it can reduce the switching transient stress, thus a quite low output noise. Soft switching can as well improve the efficiency and reduce the heat so that the power supply can be with higher stability.

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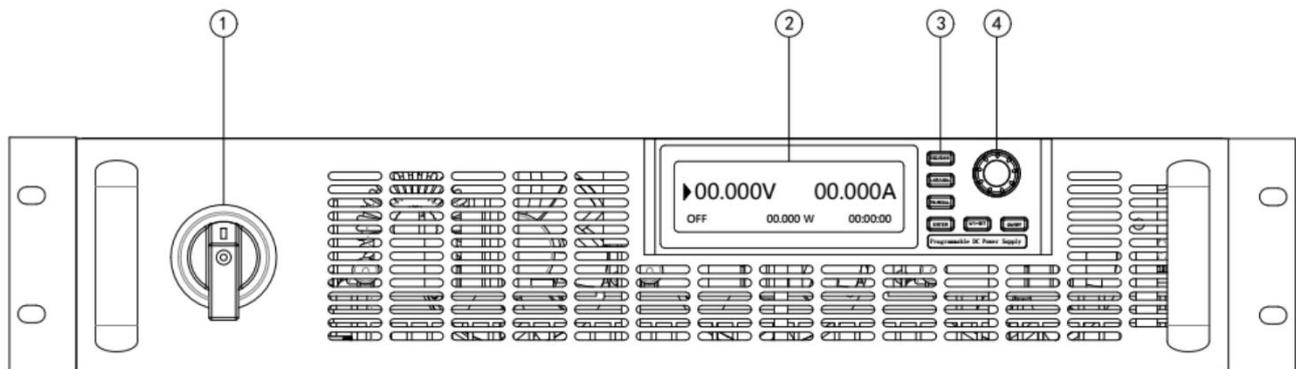
1.3 Working principle block diagram



1.4 Features

- ✿ OLED screen displays voltage, current, power and working time.
- ✿ High performance, high power density, compact and portable.
- ✿ Input with PFC power factor correction, power factor ≥ 0.97 .
- ✿ Built in analog monitoring interface.
- ✿ Supporting multi machine serial and parallel operation.
- ✿ Built in RS-485 communication interface.
- ✿ Support Modbus communication protocol.
- ✿ Zero voltage or current with a wide range of adjustment.
- ✿ Low ripple and low noise, comparable to the pure linear power supply.
- ✿ Combined operation of multi-function keys and encoder.
- ✿ Support list dynamic programming output; Multi data storage.
- ✿ With voltage and current preset function.

2. Panel Function Description



Front panel diagram

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1. Power switch

2. Front Panel Display indicators (The signal code is shown in the table below)

Display	Description
CC	Constant current control mode
CV	Constant voltage control mode
CP	Constant power control mode
OVP	Overvoltage protection
OCP	Overcurrent protection
OPP	Over power protection
🔒	Key lock (hold down the encoder knob for 3 seconds and release to unlock)
REM	Remote control mode

3. Number key and function key operation area (function description is shown in the table below)

ESC/SAVE	Exit/Store key: Short press this key to exit in any state; Long press this key to store the current setting value of the power supply to the specified position
LIST/LOCAL	List operation/local operation key: Short press this key to execute the previously executed List file; When the power supply is working in remote control mode, press and hold this key to switch to local operation mode
TRI/RECALL	Trigger/callback key: used to trigger in List and Auto Test working modes; Press this key to call up the power setting value from the specified memory location in normal working mode
ENTER	Confirm key
V/I-SET	Voltage and current setting keys
ON/OFF	Power output on/off key

4. Encoder knob:

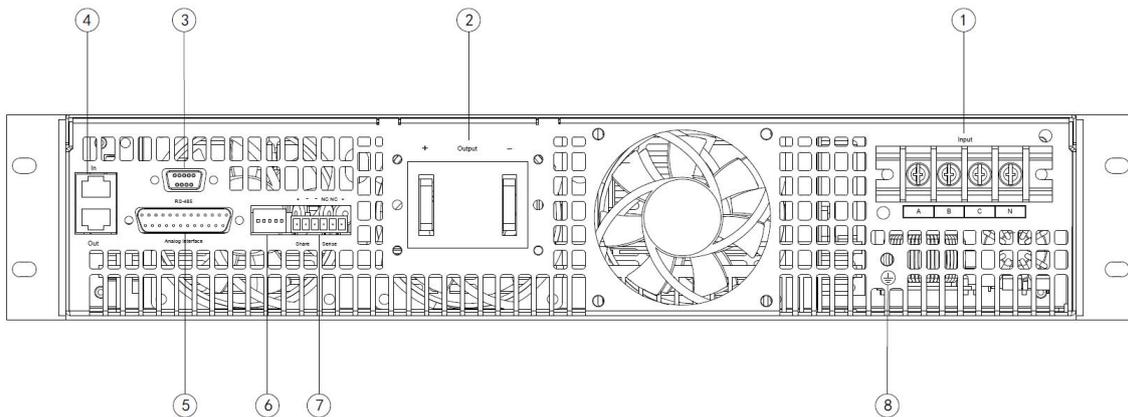
4.1 Press and hold the knob inward for about 5 seconds to activate the Menu function.

4.2 It is used to adjust the value size: when adjusting the voltage/current value, rotate clockwise to increase the value from 0 to 9 in cycles, in steps of 1. When the digit value increases from 0 to 9 by one cycle, the ten digit value increases by one bit, the two cycles increase by two bits, and so on. When the ten digit value increases by one cycle, the hundred digit value increases by one bit, and so on; When rotating counterclockwise, the values decrease sequentially from 9 to 0, and the principle of decreasing is the same as that of increasing.

4.3 To improve adjustment efficiency, the encoder button can be used to move the target

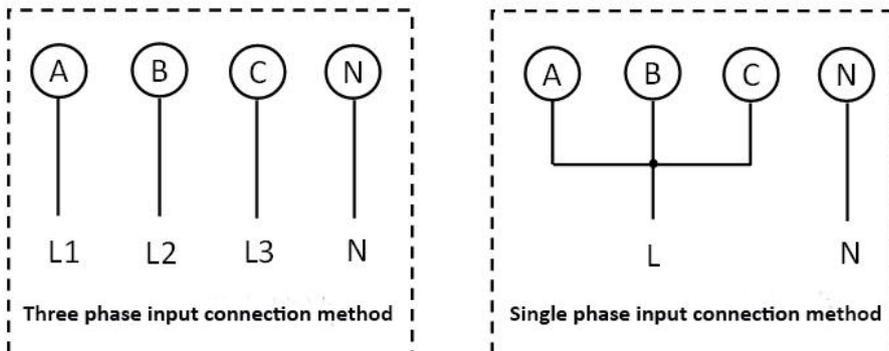
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digit that needs to be adjusted. Press and move one digit at a time. When the current digit value flashes, the value can be adjusted by the knob, increasing clockwise and decreasing counterclockwise. Press inward to use as a confirmation button; When the power output is working, the voltage and current values can be adjusted online by rotating the knob; When entering the menu operation interface, you can rotate the knob to select the menu.



Rear panel diagram

1. AC input terminal (A、B、C、N)。



Note: When using single-phase input, please choose the appropriate input wire diameter based on the actual load size, and fully consider the distribution load of single-phase power supply in the current electrical environment.

2.DC output.

3. RS-485 DB9 interface

DB9	1	2	3	4	5	6	7	8	9
RS-485	A	B			GN				
5					D				

4.Parallel signal interface.

5. Analog signal monitoring and control interface.

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6.Voltage and current analog programmable dial switch.

7.Voltage compensation terminal.

8. Ground stud.

3. Specifications

OUTPUT RATING	IPS-BS150-30
Voltage adjustable range (*1)	150V(0 ~ 155V)
Current adjustable range (*2)	30A (0 ~ 33A)
Rated power	4500W (OPP=110% of rated value)

INPUT CHARACTERISTICS	
Voltage	Single phase 187~253Vac and three-phase 323V~437Vac compatible
Frequency	47~63Hz
Power factor	≥0.97@ 380VAC at full load
Efficiency @ 380VAC at full load	≥87%

CONSTANT VOLTAGE MODE (CV)	
Max. Line regulation (*3)	0.05% of rated output voltage + 10mV
Max. Load regulation	0.2% of rated output voltage + 10mV
Ripple and noise (p-p, 20MHz)	400mV
Ripple r.m.s. 5Hz~1MHz	100mV
Transient response time	≤2mS (Time for output voltage to recover within 0.5% of its rated output for a load change 10~90% of rated output current.)
Start delay	≤6S (Turn on the power switch, the time when the power starts and enters standby mode)

CONSTANT CURRENT MODE (CV)	
Max. Line regulation (*3)	0.05% of rated output current + 10mV
Max. Load regulation	0.2% of rated output current + 10mV
Ripple r.m.s. 5Hz~1MHz	≤80 mA

ANALOG PROGRAMMING AND MONITORING (Non-Isolated)	
Vout voltage programming	0~100%, 0~5V or 0~10V(default). Accuracy: +1% of rated Vout.
I-out voltage programming	0~100%, 0~5V or 0~10V(default). Accuracy: +1% of rated Iout.
Output voltage monitoring	0~100%, 0~5V or 0~10V(default). Accuracy: +1% of rated Vout.
Output current monitoring	0~100%, 0~5V or 0~10V(default). Accuracy: +1% of rated Iout.
Output power on / off control signal	Through high and low voltage or dry contact. (default low voltage is on)
Digital control and monitoring	Built in RS-485 communication interface, optional RS-232 and USB communication conversion module cable, supporting Modbus-rtu communication protocol.

FUNCTION	
Series / parallel operation	Support series / parallel operation of the same specification and model to expand voltage, current and power; Automatic current sharing in parallel master-slave operation mode.
Slew rate control	Programmable Output rise and Output fall slew rate. Programming

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	range: 0.01~100 V/mSec. or A/mSec.
List dynamic output	
Timer function	0-9999 minutes can be set
Quick data storage and recall	It can store 4 groups of commonly used working data of voltage, current and other parameters
Protect	Output overvoltage protection, overcurrent protection, overload protection, over-temperature protection, short circuit protection, input undervoltage protection, overvoltage protection

FRONT PANEL

Operation mode	Encoder knob and multifunction key
Display mode	5-bit OLED screen displays output voltage, current, power, working status and other information; Support Chinese and English dual language menu switching display
Voltage display accuracy	0.1%+0.1% F.S.
Current display accuracy	0.1%+0.1% F.S.
Voltage setting accuracy	0.1%+0.1% F.S.
Current setting accuracy	0.1%+0.1% F.S.
Set value resolution	0.01V; 0.001A
Display value resolution	5 digits OLED; display format: 99999, current value decreases by one digit, decimal point automatically increases by one digit, maximum resolution: 1mV; 1mA

ENVIRONMENTAL CONDITIONS

Operating temperature	0°C~+50°C
Storage temperature	-20°C~+70°C
Operating humidity	20~90%RH (no condensation)
Storage humidity	10~95%RH (no condensation)
Cooling	Forced air cooling by internal fans. Air flow direction: from Front panel to power supply rear. (Temperature control and speed regulation fan, taking into account the fan noise on the premise of ensuring normal operation, so as to prolong the service life of the fan).

DIMENSION & WEIGHT

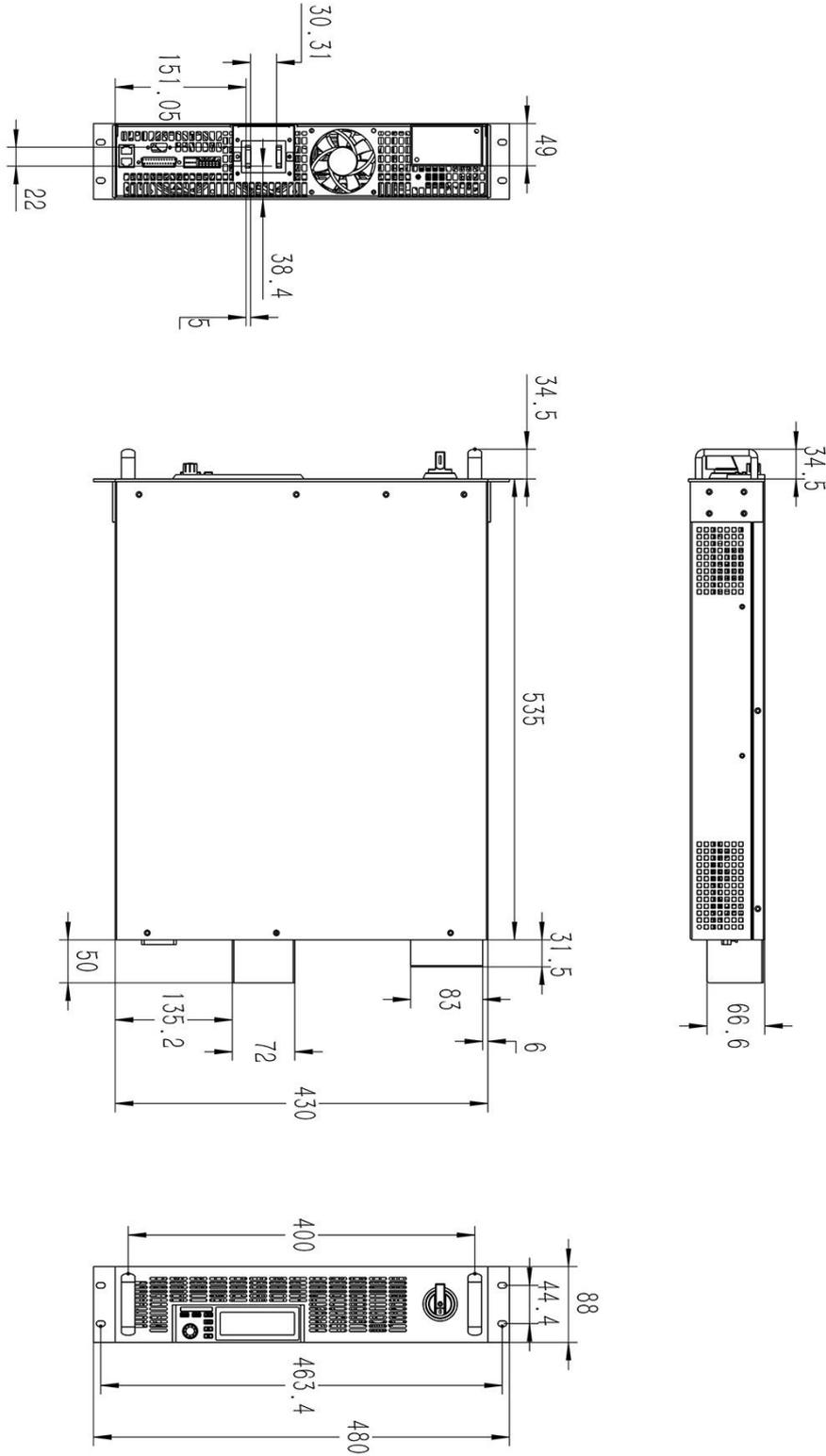
Dimension (WxHxD)	19- inch 2U standard rack-mounted chassis W430mm, H88mm, D535mm (Without busbars and busbars cover)
Weight	About 20Kg

NOTES:

- *1: Minimum voltage is guaranteed to maximum 0.2% of rated output voltage.
- *2: Minimum current is guaranteed to maximum 0.3% of rated output current.
- *3: Make sure the load is constant.

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4.Dimension drawing





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