AC&DC Power Source

Hangyu Power System (Shanghai) Co., Ltd.

HY-HVLSU Series

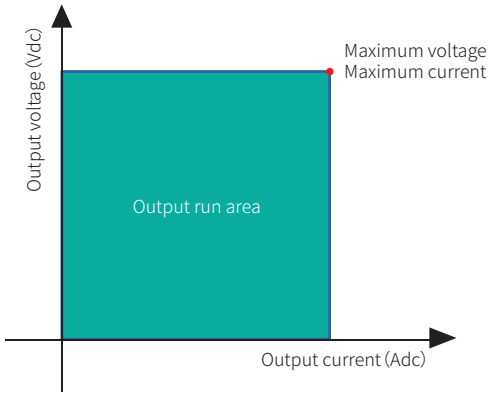
Linear High Voltage DC Power Supply

Military Quality Power Supply Expert

www.hangyupower.com

HY-HVLSU Series Linear High Voltage DC Power Supply

Low interference, Low ripple, High precision



Product Features

The HY-HVLSU Series Linear High Voltage DC Power Supply is specially designed for high-demand scenarios. The output voltage range is from 1.25kV to 50kV, the output current ranges from 500μA to 20mA, catering to diverse requirements.

It adopts linear amplification technology, its ripple RMS is as low as 0.02% F.S., with extremely low interference, making it ideal for high-precision test.

- Output voltage range:1.25kV-50kV
- Output current range:500μA-20mA
- Positive polarity, negative polarity, reversible polarity output
- Linear amplification technology, ultra-low interference, ultra-low ripple
- 16-bit D/A high precision converter, accurate output
- 20-bit A/D high precision converter, more accurate read back

Application Field

It is often used for high-voltage and high-precision current power supply of power semiconductor devices, the voltage is up to 100kV, and the power semiconductor devices such as IGBT, MOS tube, diode, SiC device, photolithographic machine light source lamp are tested for voltage resistance and breakdown.

- Breakdown test of high voltage devices
- High voltage component testing
- High energy physics research
- High voltage resistivity test
- High voltage insulation test
- EMC Laboratory
- Power semiconductor test
- X-ray system
- Diode reverse bias test
- Shore-based power supply
- High voltage capacitor charging
- High energy particle injection
- High voltage amplifier offset
- Aging of electronic components
- Deep sea observation network power supply
- High voltage direct current transmission
- Electrostatic electret
- Laser
- Semiconductor process
- Electron accelerator
- Ion beam
- Electron beam
- Industrial Applications
- Scientific Research

High Voltage Breakdown Test

High voltage breakdown test is a commonly used destructive test in laboratories, which does not set a voltage upper limit and usually has no duration. In the breakdown test, the voltage gradually increases until the insulation of the tested object can no longer withstand such high voltage and is broken down. This voltage value is the critical voltage at which an insulator becomes a electric conductor.

Therefore, high-voltage breakdown testing has high requirements for the accuracy and anti-interference ability of the power supply. The HY-HVLSU series programmable high-voltage linear DC power supply from Hangyu Power has voltage ranges of 1.25kV, 2.5kV, 5kV, 10kV, 20kV, 30kV, 40kV, 50kV, etc. to choose from, with ultra-low interference and ultra-low ripple, suitable for laboratory high-voltage high-precision testing and measurement.

HY-HVLSU Series Product Selection Table

Product Model Naming Rules

Product Series	Output Voltage		Output Current		Choose And Buy Function
HY-HVLSU	10kV	-	1	-	CF

Selection examples:
Product model: HY-HVLSU 10kV-1-CF
Maximum output voltage 10kV, maximum output current 1mA,
Custom features that users choose to purchase
Instructions:
P: Positive polarity, N: Negative polarity, PN: Reversible polarity (Choose to purchase)

Choose And Buy Function

- SG :Suspension grounding
- T1 : Operating temperature -10°C to 50°C
- T2 : Operating temperature -20°C to 50°C
- CF :User defined features (please specify when ordering)

Communication Protocol	Standard Communication Interface	Optional Communication Interface
Modbus SCPI	RS-485 RS-232 Digital I/O LAN	- CAN :CAN communication interface - GPIB :GPIB communication interface - IA :Analog quantity programming and monitoring interface (isolated type)

HY-HVLSU Series Product Model Selection And Parameters

Special specifications outside the voltage/current/power range in the selection table can be customized.

Model Selection According To Voltage Size

Models	Output Voltage	Output Current	Output Power
HY-HVLSU 1.25kV-20	1.25kV	20mA	25W
HY-HVLSU 2.5kV-10	2.5kV	10mA	25W
HY-HVLSU 5kV-5	5kV	5mA	25W
HY-HVLSU 10kV-1	10kV	1mA	10W
HY-HVLSU 15kV-1	15kV	1mA	15W

Model Selection According To Voltage Size

Models	Output Voltage	Output Current	Output Power
HY-HVLSU 20kV-0.5	20kV	0.5mA	10W
HY-HVLSU 20kV-1	20kV	1mA	20W
HY-HVLSU 30kV-1	30kV	1mA	30W
HY-HVLSU 40kV-1	40kV	1mA	40W
HY-HVLSU 50kV-1	50kV	1mA	50W

Instructions:
1. In addition to the specifications listed in the selection table, products of 60 kV, 70 kV, 80 kV, 90 kV, 100 kV and higher are available upon customization.
2. For the voltage range of 1.25kV~50kV, positive polarity, negative polarity, and reversible polarity output are optional. For the 10kV~50kV range, reversible positive and negative polarity switching cannot be achieved internally.
3. There may be restrictions in multiple optional combinations. For specific details, please contact Hangyu Power.

HY-HVLSU Series Technical Parameters

Constant Voltage Mode (CV Mode)

Voltage Output Range Can Be Set	0.5%~100% Output value
Line Regulation Rate (CV Model)	≤0.01% F.S. (AC input 220 V ± 10%, constant load)
Load Regulation Rate (CV Model)	≤0.01% F.S. (No load to full load, constant input voltage)
Ripple rms (3Hz - 300kHz)	0.02%F.S.

Constant Current Mode (CC Mode)

Output Range Can Be Set	0~Rated output value
Line Regulation Rate (CC Model)	0.01% +2mA of rated output current (AC input 220 V ± 15%, constant load)
Load Regulation Rate (CC Model)	0.02% +5mA of rated output current (no-load to full load, constant input voltage)
Ripple rms (3Hz - 300kHz)	0.02%F.S.

Programming And Readback Accuracy & Resolution

Voltage Output Programming Accuracy	0.05%+0.05% F.S.
Current Output Programming Accuracy	0.05%+0.05% F.S.
Voltage Setting Resolution	0.1V (≤6kV), 1V (>6kV)
Current Setting Resolution	0.1μA (≤6mA), 1μA (≤60mA)
Voltage Output Read-Back Accuracy	0.05%+0.05% of output voltage
Current Output Read-Back Accuracy	0.05%+0.05% of output current
Voltage Read Back Resolution	0.01V (≤10kV) , 0.1V (>10kV)
Current Read Back Resolution	0.01μA (≤1mA), 0.1μA (≤10mA), 1μA (≤100mA)

*For voltages above 30kV and higher specifications: Setting and Read-Back Accuracy 0.5% + 0.5% F.S.

Stability Temperature Coefficient

Stability (Rated Output Voltage/Current)	U:0.05% I:0.05% (After 30 minutes of power on at a certain input voltage and load ambient temperature, 8 hours)
Temperature Coefficient (Rated Output Voltage/Current)	U:200ppm/°C I: 300ppm/°C (30 minutes after power on)

** All technical indicators can only be guaranteed when the equipment runs continuously for more than 30 minutes at the specified operating temperature.*

Protection Function

OVP Overvoltage Protection Setting Range	10~110%, beyond the limit output immediately off
OCP Overcurrent Protection Setting Range	0~105%, beyond the limit output immediately off
OTP Overtemperature Protection	Beyond the limit output immediately off
OPP Overpower Protection	10~110%, beyond the limit output immediately off

Environmental Condition

Environment	Indoor use; Installation overvoltage class: II; Pollution level: P2; Class II equipment
Operating Ambient Temperature	0°C~50°C, optional -10°C~50°C, -20°C~50°C
Storage Ambient Temperature	-20°C~65°C
Working Ambient Humidity	20%~90% RH, no dew formation, continuous operation
Storage Environment Humidity	10%~95% RH, no dew formation
Altitude Above Sea Level	Above 2000 meters above sea level, every 100 meters up, the power will be reduced by 2%, or reduce the maximum working ambient temperature by 1°C per 100 meters; When not in operation, the altitude can reach 12,000 meters
Cooling	Forced air cooling, intelligent speed regulating fan, front/side air inlet, rear air outlet
Noise	⩽ 65dB(A), use 1m to weighted measurement

Control Panel

Display	LCD display, touch screen
Control Function	Adjustment Knob, Output ON/OFF Switch, Vset, Iset, and Output Buttons

Input Power Supply

Frequency	47Hz~63Hz
Connection Mode	Single-phase two-wire + ground wire, 220V ± 15% (-ST standard configuration model)

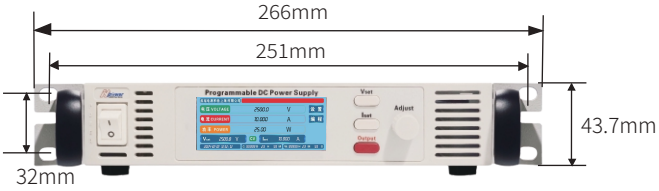
Size And Weight

Size	1U half wide model：214(W) * 457.5(D) * 43.7(H) mm 1U model：430(W) * 513(D) * 44(H) mm 2U model：430(W) * 500(D) * 88(H) mm Different voltage and power use different chassis
Weight	About 5kg/1U half width;About 10kg/1U full width;About 20kg/2U
Colour	RAL 7035

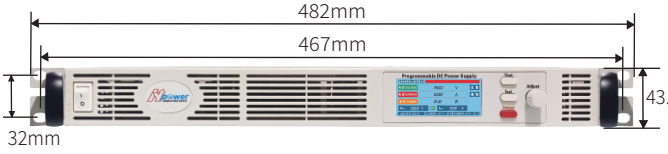
** All technical indicators can only be guaranteed when the equipment runs continuously for more than 30 minutes at the specified operating temperature.*

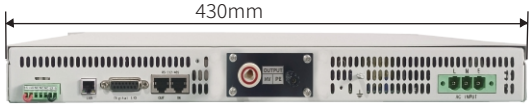
Appearance & Size

1U half wide model： 214(W) * 457.5(D) * 43.7(H) mm

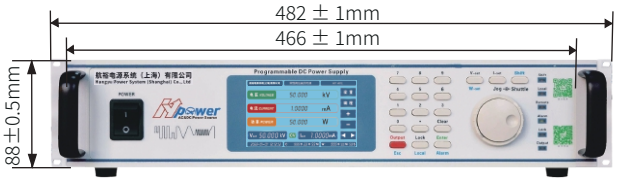


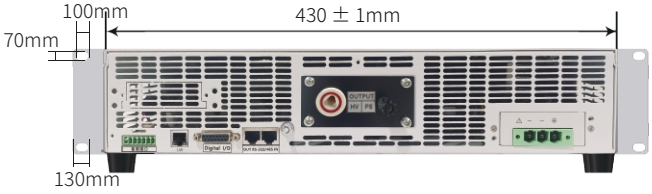
1U model： 430(W) * 513(D) * 43.7(H) mm

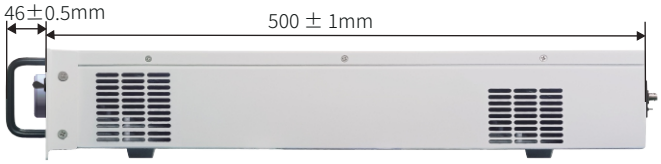




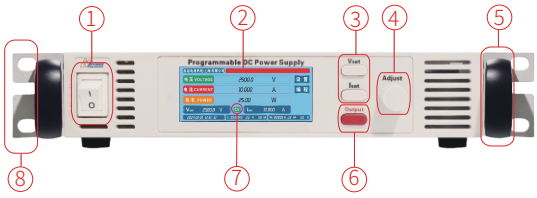
2U model: 430(W) * 500(D) * 88(H) mm





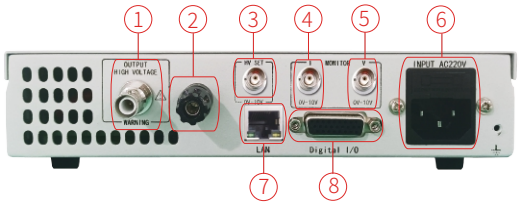


Control Panel



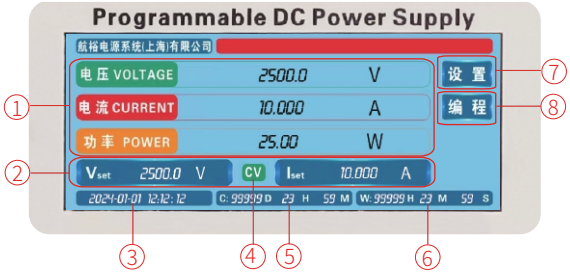
① Power input circuit breaker
② LCD display (touch screen)
③ Voltage/current setting key
④ Adjusting knob
⑤ Chassis handle
⑥ Output: Output/Stop key
⑦ Current working mode: CC/CV mode
⑧ 19 inch standard rack mounting holes

Rear Panel



① BNC output interface
② Ground wire interface
③ Analog quantity control interface
④ Analog quantity output current interface
⑤ Analog quantity output voltage interface
⑥ Power input port
⑦ LAN communication interface
⑧ Digital I/O communication interface

Display Interface

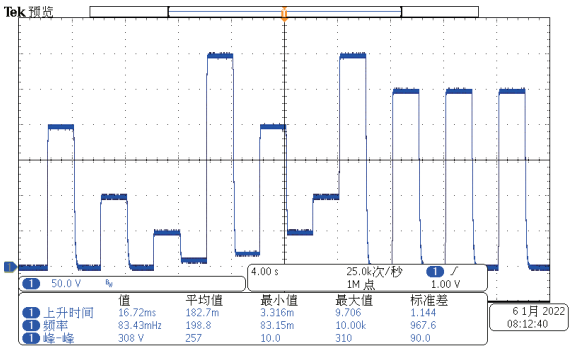


① Voltage/current/power read back display area
② Voltage/current setting value
③ Current time
④ Current working mode: CC/CV mode
⑤ Cumulative running time
⑥ This run time
⑦ Setting function: including parameter setting, communication setting, system setting, protection setting, etc
⑧ Programming function: Step, Ladder, Gradient

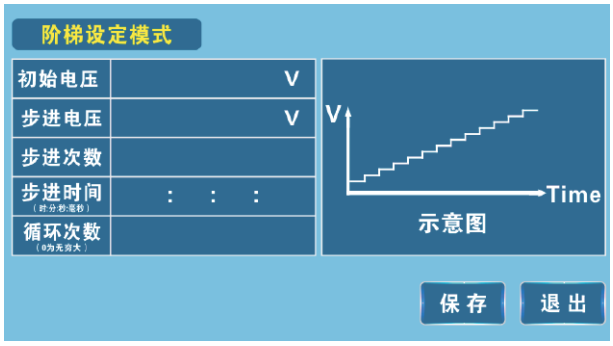
Programmable Function

Programmable Functions Are Introduced

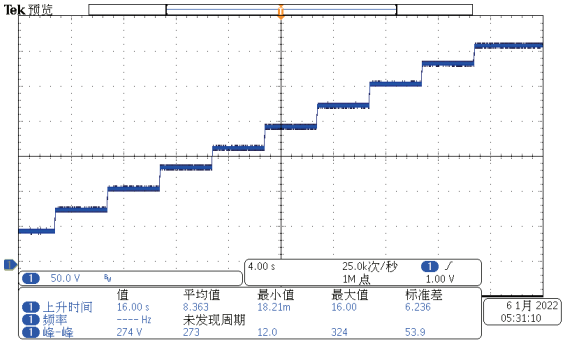
The step setting page allows you to set the required voltage, current, run time, initial step, end step, and number of cycles.



Step

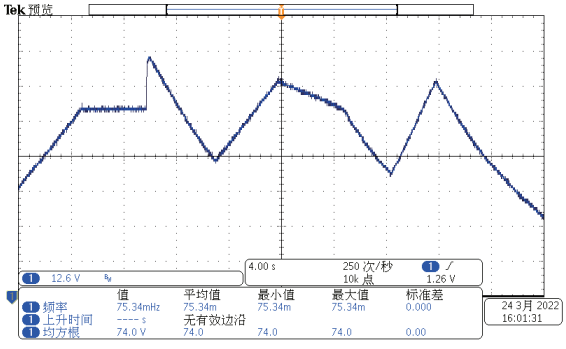


The ladder setting page can set the required initial voltage, stepping voltage, stepping times and stepping time.



Ladder

Gradient Settings page can set the required voltage, current, running time, initial step, end step



Gradient

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Authorized distributor：