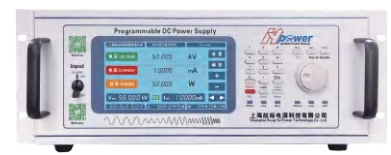
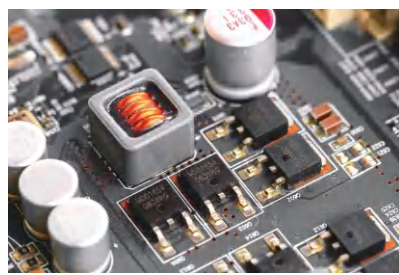
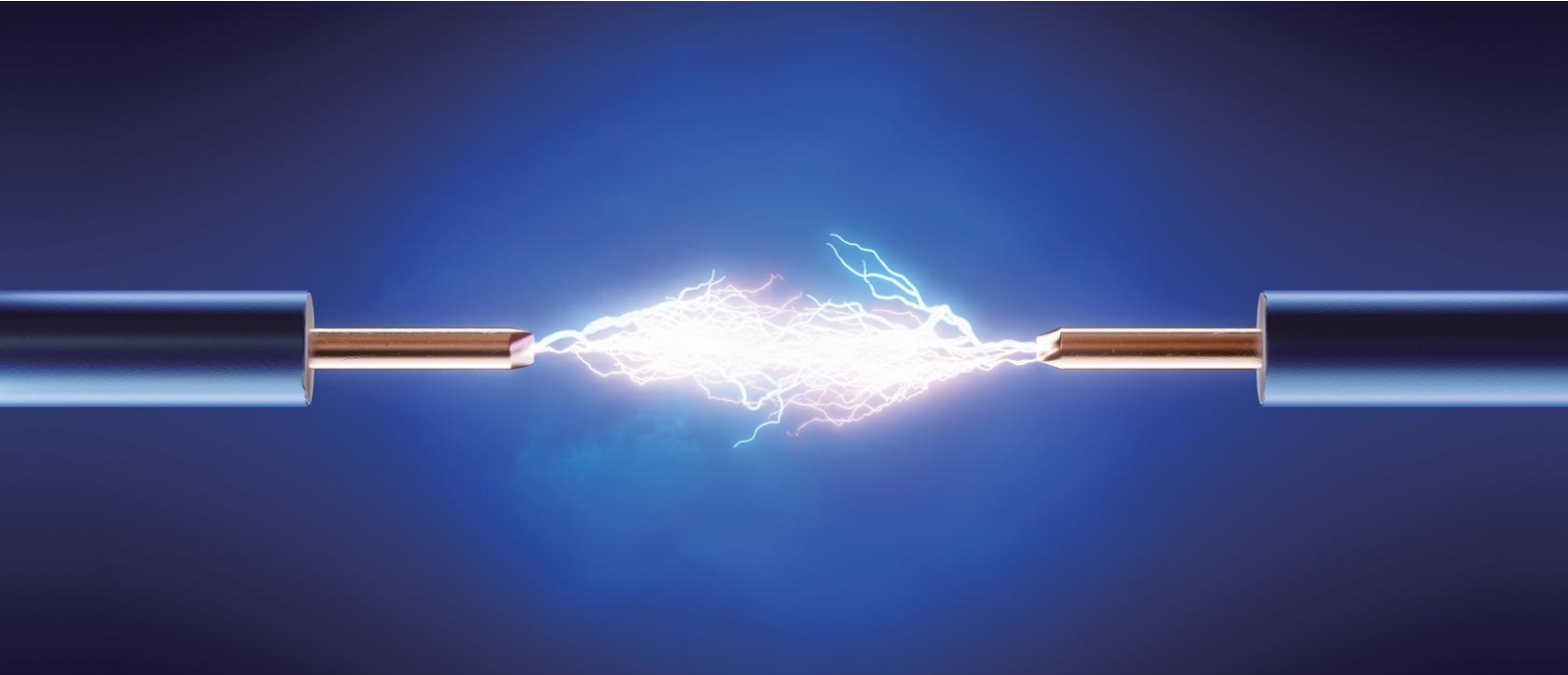




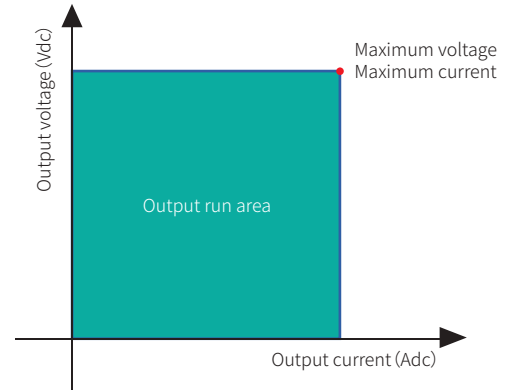
HY-HVLSU Series

Linear High Voltage DC Power Supply

Military Quality Power Supply Expert



Low interference, Low ripple, High precision



Product Features

This power supply adopts linear amplification technology, has the advantages of ultra-low interference, ultra-low ripple, high precision, high voltage, low current, and is mostly used for high-voltage performance testing of power semiconductor devices.

- Output voltage range: 1.25kV-100kV
- Output current range: 500 μ A-20mA
- Optional negative polarity output (N)
- Ultra-low interference, ultra-low ripple, suitable for high precision test and measurement
- 16 bits D/A high precision converter, accurate output
- 20 bits 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 50kV, and the power semiconductor devices such as IGBT, MOS tube, diode, silicon carbide device, photolithographic machine light source lamp are tested for voltage resistance and breakdown.

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

High Voltage Breakdown Test

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

Therefore, the high voltage breakdown test has high requirements for the precision and anti-interference ability of the power supply. HY-HVL series programmable high-voltage linear DC power supply of Hangyu Power Supply, with 1.25kV, 2.5kV, 5kV, 10kV, 20kV, 30kV, 40kV, 50kV... 100kV and other voltage ranges, ultra-low interference, ultra-low ripple, suitable for laboratory high-voltage and high-precision testing and measurement.

HY-HVLSU Series Product Selection Table

Product Model Naming Rules

Product series	Output voltage	Output current	Output polarity	Optional function	Optional function
HY-HVLSU	10kV	- 1	- N	- CF	
Selection examples: Product model: HY-HVLSU 10kV-1-N-CF Output voltage 0-10kV, output current 0-1mA, N represents negative polarity, without N is positive polarity Choose user-defined features					- SG :Suspendively - R :Positive and negative high-pressure reversible (some models) - SP :Sequence, function programming functions - T1 :Operating temperature -10°C to 50°C - T2 :Operating temperature -20°C to 50°C - T4 :Operating temperature -40°C to 50°C - CF :User-defined functions (please specify when ordering) - MR :Measurement report (issued by CNAS certified third party)

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

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

HY-HVLSU Series Product Model Selection And Parameters

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

Type 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
HY-HVLSU 20kV-0.5	20kV	0.5mA	10W
HY-HVLSU 20kV-1	20kV	1mA	20W

Type Selection According To Voltage Size

Models	Output voltage	Output current	Output power
HY-HVLSU 30kV-1	30kV	1mA	30W
HY-HVLSU 40kV-1	40kV	1mA	40W
HY-HVLSU 50kV-1	50kV	1mA	50W
HY-HVLSU 60kV-1	60kV	1mA	60W
HY-HVLSU 70kV-1	70kV	1mA	70W
HY-HVLSU 80kV-1	80kV	1mA	80W
HY-HVLSU 100kV-1	100kV	1mA	100W

HY-HVLSU Series Technical Parameters

Constant Pressure Mode (CV Mode)

Voltage Output Range Can Be Set	<5kV: 0.5%-100% Output value; ≥10kV: 1%-100% Output value
Input Adjustment Rate (CV Model)	≤0.01% F.S. (AC input 220 V ± 10%, constant load)
Load Adjustment 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
Input Adjustment Rate (CC Model)	0.01% +2mA of rated output current (AC input 220 V ± 15%, constant load)
Load Adjustment 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	0.01%+0.05% F.S.
Current Output Programming Accuracy	0.02%+0.05% F.S.
Voltage Setting Resolution	0.1V (≤6KV), 1V (> 6KV)
Current setting resolution	0.1μA (≤6mA), 1uA (≤60mA)
Voltage Output Read-Back Accuracy	0.01%+0.05% of output voltage
Current Output Read-Back Accuracy	0.02%+0.05% to output current
Voltage Read Back Resolution	0.01V (≤10kV), 0.1V (> 10kV)
Current Read Back Resolution	0.01μA (≤1mA), 0.1uA (≤10mA), 1uA (≤100mA)

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)

HY-HVLSU Series Technical Parameters

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	Output beyond the limit is turned off immediately
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 to 50°C, optional -10°C to 50°C, -20°C to 50°C, -40°C to 50°C
Storage Ambient Temperature	-20°C to 65°C,
Working Ambient Humidity	20%-90% RH, no dew formation, continuous operation
Storage Environment Humidity	10% - 95% RH, no dew formation
Altitude	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 1 m to weighted measurement

Control Panel

Display	4/7 inch LCD display, touch screen
Control Function	Digital key input, multi-stage shuttle knob adjustment (outer ring coarse adjustment/inner ring fine adjustment), output ON/OFF switch, Lock keyboard and touch lock, Reset Restart status indicator (Shift/Local/Remote/Alarm/Lock/Output)

Input Power Supply

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

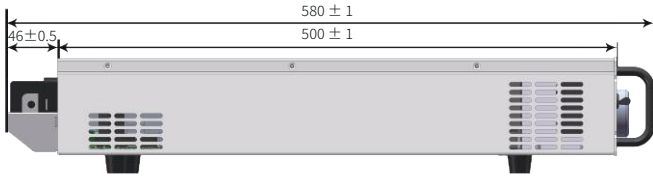
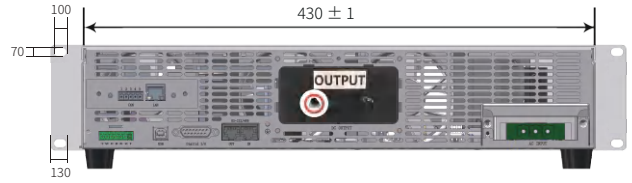
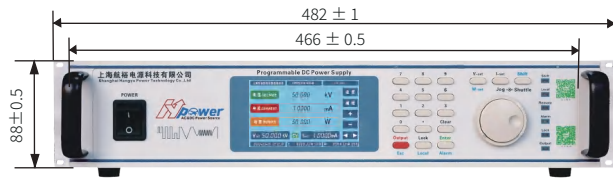
Size And Weight

Note: See page P112 for more information on appearance and display

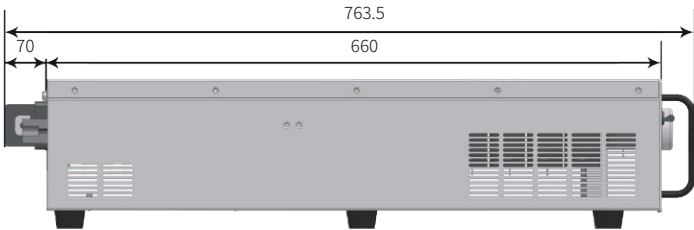
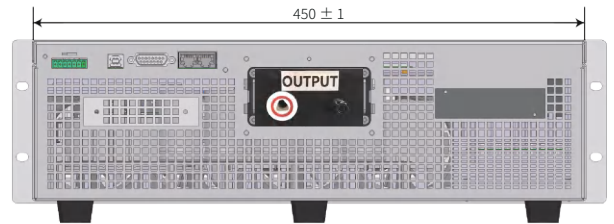
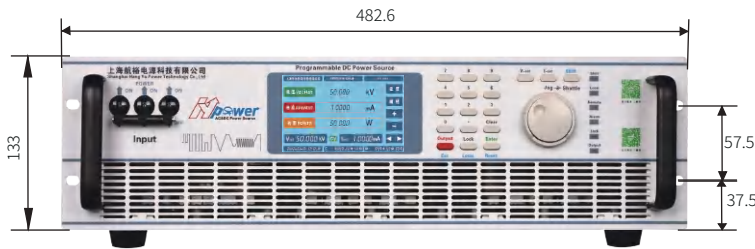
Size	1U half wide model: 214(W) * 457.5(D) * 43.7(H) mm 1U model: 430(W) * 513(D) * 44(H) mm 2U model: 430(W) * 500(D) * 88(H) mm
Weight	3.5kg/1U half width; 5kg/1U full width; 15kg/2U
Colour	RAL 7035

Appearance&Size Outline Dimension

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



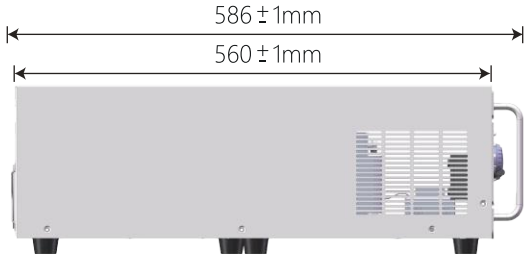
3U 482.6(W) * 660(D) * 133(H) mm



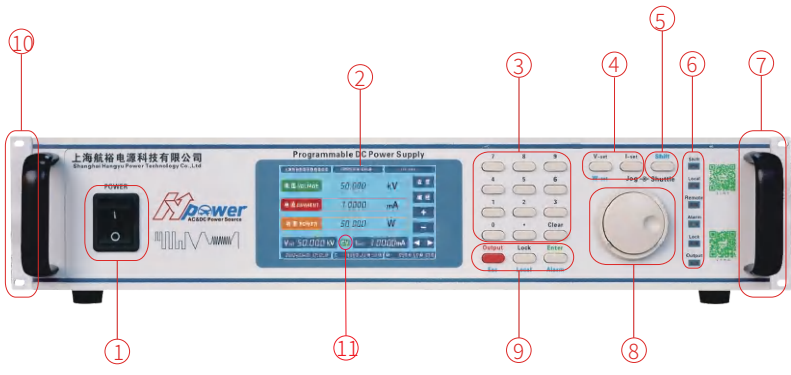
4U 430(W) * 560(D) * 178(H) mm



Appearance&Size Outline Dimension

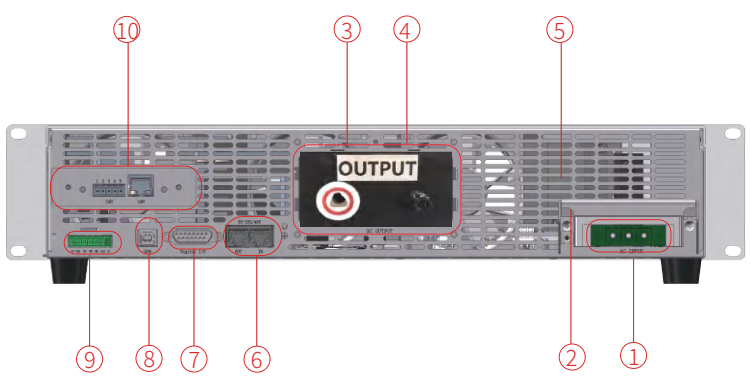


Control Panel



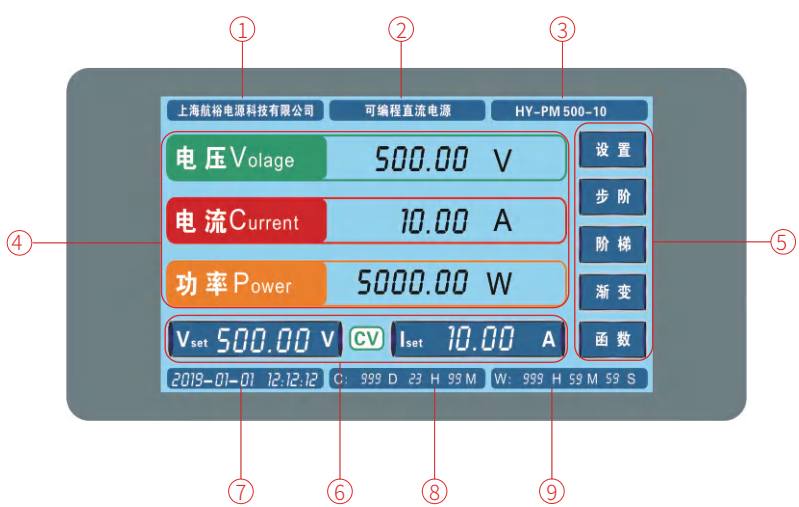
- ① Power input circuit breaker (2U single-phase, 3U three-phase)
- ② LCD display (4-inch, touch screen)
- ③ Number input keyboard
- ④ Voltage/current setting key
- ⑤ Shift function reset key
- ⑥ Status
- ⑦ Chassis handle
- ⑧ Multistage shuttle adjustment knob (inner circle fine adjustment/outer circle coarse adjustment)
- ⑨ Lock, Enter to confirm, Esc to exit, Local, Reset restart
- ⑩ Output ON/OFF switch
- ⑪ 19 inch standard rack mounting holes
CC/CV Priority can be set

Rear Panel



- ① AC input terminal
- ② AC input terminal protective cover
- ③ DC output terminal (+/-)
- ④ DC output terminal protective cover
- ⑤ Heat dissipation air outlet
- ⑥ RS-485 & RS-232 communication interface
- ⑦ Digital I/O communication interface
- ⑧ USB communication interface
- ⑨ Remote compensation measurement terminal
- ⑩ Purchase communication interface (one out of three)
LAN & CAN communication interface
GPIB communication interface
Analog programming and monitoring interface (isolated type)

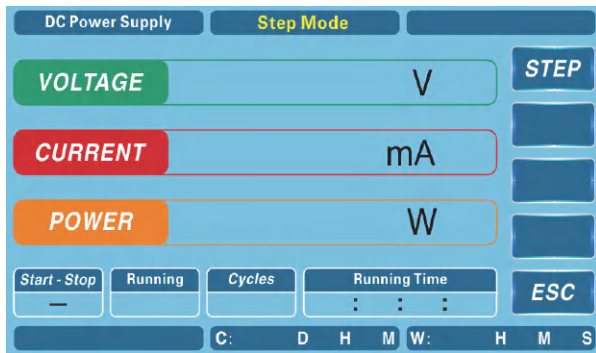
Display Interface



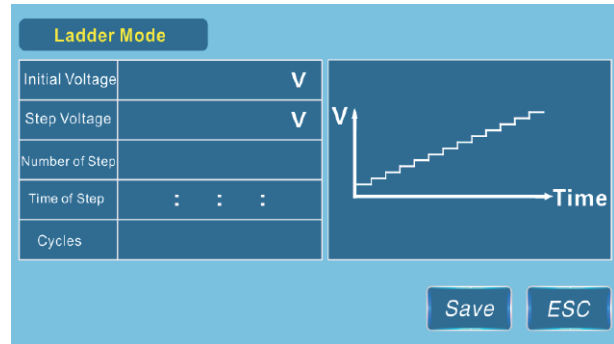
- ① Manufacturer's name
- ② Product name
- ③ Model
- ④ Voltage/current/power read back display area
- ⑤ Function setting area
- ⑥ Voltage/Current Setpoints&CV/CC Status
- ⑦ TIME
- ⑧ Accumulated running time
- ⑨ This run time

programmability

Programmable Function



Homepage



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

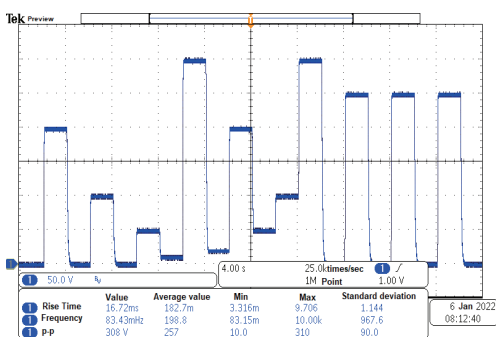


The step setting page can set the required frequency, voltage, running time, initial step, end step and cycle times.

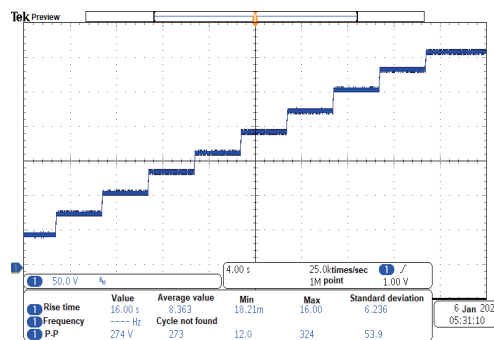


The gradient setting page can set the required voltage, frequency, running time, initial step and end step.

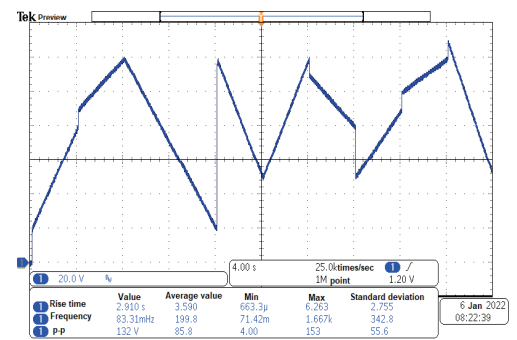
Output Waveform



Step order



Ladder



Gradual change

Cooperative Customers (Part)

Power Semiconductor Customer



Enterprise In The Field Of Automotive Electronics



High-Tech R&D Enterprise



Cooperative Customers (Part)

Aerospace & Defense Military Industry Research Institute



CASC



CASIC



AVIC



AECC



CETC



CSSC



CSIC

- | | | |
|--|--|---|
| CASC 800 (Shanghai Aerospace Precision Machinery Research Institute) | AVIC 603 (AVIC Xi 'an Aircraft Design and Research Institute) | CETC 14 (Nanjing Institute of Electronic Technology) |
| CASC 801 (Shanghai Institute of Space Propulsion) | AVIC 613 (Luoyang Electro-Optical Equipment Research Institute of Aviation Industry Corporation of China) | CETC 21 (Shanghai Micromotor Research Institute) |
| CASC 803 (Shanghai Aerospace Control Technology Institute) | AVIC 615 (Aeronautical Radio Electronics Research Institute of China) | CETC 23 (Shanghai Transmission Line Research Institute) |
| CASC 804 (Shanghai Aerospace Electronic Communication Equipment Research Institute) | AVIC 618 (Xi 'an Flight Automatic Control Research Institute) | CETC 36 (Gangnam Electronics and Communication Research Institute) |
| CASC 805 (Shanghai Aerospace System Engineering Institute) | AVIC 631 (Aviation Computing Technology Research Institute of AVIC) | CETC 38 (East China Institute of Electronic Engineering) |
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| CASC 811 (Shanghai Space Power Research Institute) | AVIC 115 Factory (Shaanxi Aero Electric Co., LTD.) | CETC 51 (Shanghai Microwave Equipment Research Institute) |
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| CASIC 307 Factory (Aerospace Chenguang Co., LTD.) | Jiangnan Shipbuilding (Group) Co., LTD | CSIC 726 (Shanghai Marine Electronic Equipment Research Institute) |
| CASIC 33 (33 Aerospace Science and Industry Institutes) | Nanjing Panda Electronics Co., LTD | |
| CASIC 3651 Factory (Shanghai Aerospace Control Technology Institute) | State-owned 741 Factory (Nanjing Huadong Electronics Group Co., LTD.) | |
| | Institute of Modern Physics, Chinese Academy of Sciences | |

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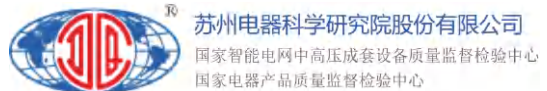
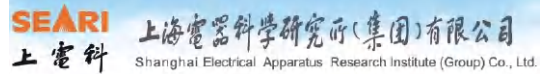
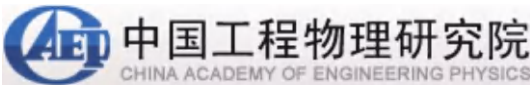
Technical Institute of Physics and Chemistry (Beijing)

Institute of Urban Environment (Xiamen)



Electrotechnical Research Institute (Beijing)

Institute of Applied Physics (Shanghai)



The Chinese People's Liberation Army

South Sea Fleet
 East China Sea Fleet
 North Sea Fleet
 Navy Factory 701 / Factory 702
 4724 Factory (Shanghai Haiying Machinery Factory)
 Unit 95861 (Air First Base)
 5720 Factory of the People's Liberation Army of China

Commercial Aviation



Guangzhou Aircraft Maintenance Engineering Co., LTD

Beijing Aircraft Maintenance Engineering Co., LTD

Military Academies & Local Universities





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Programmable DC Power Supply Product Catalog, version 08.00, April 2024

All technical data and instructions are based on the actual product

If there is any change, Hangyu Power has the final interpretation right

Authorized distributor: