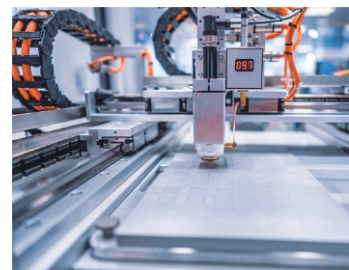


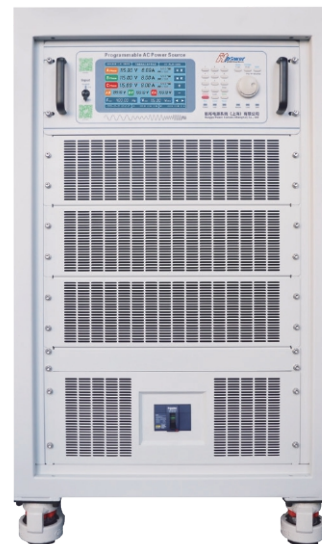
HY-PLA Series Linear Programmable AC Power Supply



Hangyu Power System (Shanghai) Co., LTD



3 years
Free warranty period



HY-PLA Series Linear Programmable AC Power Supply



High Purity
High Precision
High Reliability



Application Field

- ◆ Household appliance industry
- ◆ Testing laboratory
- ◆ Industrial power supply
- ◆ Motor/Compressor
- ◆ IT manufactures electronics
- ◆ New energy
- ◆ Medical treatment
- ◆ Low interference situation



Product Features

- Output frequency range 45Hz-70Hz,
- Output capacity range 300VA-30kVA
- Output voltage L-N 0-150Vrms/300Vrms/1kVrms
- Three-phase voltage independent adjustable, phase difference 0-359.99° adjustable
- Linear power technology, ultra-low distortion rate, ultra-low external interference
- Support front panel programming, without computer software control
- The voltage rise and fall slopes are adjustable
- Power output soft start function
- 16 bits D/A high precision converter for accurate output
- 16 bits A/D high precision converter, more accurate read back
- Multiple protection functions OVP, OCP, and OTP
- 19 "standard rack size
- 7 inch LCD screen
- Touch screen operation & digital key input
- Multistage shuttle adjustment knob
- The power input is controlled by circuit breaker, which is more secure
- Output the ON/OFF button
- Fan intelligent speed control design, reduce noise
- Front/side air in, rear air out, saving heat dissipation space
- Supports Modbus protocol
- Standard interface: RS-485&RS-232
- Optional interface: LAN、CAN、GPIB、USB
- Analog programming and monitoring (isolated)

PLA

01

HY-PLA Series Product Selection Table

Product Model Naming Rules

Product Series	Input Phase Number	Output Phase Number	Output Capacity	Optional Function
HY-PLA	1	3	003	- CF
Series name	1: Input single phase 3: Input three-phase	1: Output single phase 3: Output three-phase	Output capacity 3kVA	Short for optional function See Optional features
Selection examples: Product model: HY-PLA 13003-CF Input single-phase, output three-phase, output capacity 3kVA, optional user-defined function.				

Optional Function

HR	High resolution/high precision
D028	DC input, DC 28.5V(some models support, please specify when ordering)
D270	DC input, DC 270V(some models support, please specify when ordering)
T2	operating temperature -20°C to 45°C
CF	user-defined function (please specify when ordering)
MR	Measurement Report (issued by CNAS certified third party)

In the selection table, special specifications outside the voltage/frequency/output capacity range are accepted for customization.

PLA

02

Product Model	Output Capacity	Input	Exportation	Product model	Output Capacity	Input	Exportation	Phase Voltage (L-N, Vrms)	Output Frequency (Hz)
HY-PLA 1103L	300VA	Single phase	Single phase	HY-PLA 1303L	300VA	Single phase	Three phase	0-150V 0-300V (Standard configuration) High and low output	45-70Hz
HY-PLA 1105L	500VA			HY-PLA 1306L	600VA				
HY-PLA 11001	1kVA			HY-PLA 1309L	900VA				
HY-PLA 11002	2kVA			HY-PLA 1315L	1.5kVA				
HY-PLA 11003	3kVA			HY-PLA 13003	3kVA				
HY-PLA 31005	5kVA	Three phase	Single phase	HY-PLA 3345L	4.5KVA	Three phase	Three phase	0-600V 0-1000V (assorting)	45-70Hz
HY-PLA 31010	10kVA			HY-PLA 33006	6kVA				
				HY-PLA 33010	10kVA				
				HY-PLA 33015	15kVA				
				HY-PLA 33030	30kVA				

*When the equipment runs continuously for more than 30 minutes at the specified operating temperature, all technical indicators can be guaranteed.

HY-PLA Series Technical Parameters

Single-phase Output

Single in, single out						Three in, single out	
Product model	PLA 1103L	PLA 1105L	PLA 11001	PLA 11002	PLA 11003	PLA 31005	PLA 31010
Power	300VA	500VA	1kVA	2kVA	3kVA	5kVA	10kVA
Model size	4U	4U	4U	10U	18U	24U	Non-standard cabinet
	*1) 4U, standard 19-inch rack mount, or tabletop (fixed pad); 2) 10U, standard 19-inch rack type, or floor type (with movable universal casters and brakes); 3) 18U and above non-standard cabinets, floor to floor cabinets, with movable universal casters and brakes.						
Circuit mode	Linear amplification technique						
Communication mode	Standard: RS-485 & RS-232 Options: LAN, CAN, USB, GPIB, analog programming and monitoring interface (isolated type)						

Input		
Connection mode	Single-phase two-wire + Ground (LN+PE)	Three-phase three-phase + ground wire & three-phase four-wire + ground wire (ABC+PE/ABCN+PE)
Input phase	Single phase 1Φ	Three-phase 3Φ
Input waveform	Sinusoidal wave	Sinusoidal wave
Input voltage	220Vrms±10%	380Vrms±10%
Input frequency	47Hz-63Hz	47Hz-63Hz

Exportation								
Output phase	Single phase 1Φ							
Rated set voltage	L-N 0-300Vrms Continuously adjustable (high grade), L-N 0-150Vrms continuously adjustable (low grade) Max1000Vrms continuously adjustable (Optional voltage, output current will be proportionally reduced)							
Rated current	Top grade	1A	1.67A	3.34A	6.67A	10A	16.67A	33.34A
	low-end	2A	3.34A	6.67A	13.34A	20A	33.4A	66.67A
	Annotati-on	The high-grade rated current is calculated according to 300V voltage; The low rated current is calculated based on the 150V voltage.						
Maximum current	Top grade	1.25A	2.1A	4.2A	8.4A	12.5A	20.84A	41.7A
	low-end	2.5A	4.2A	8.34A	16.7A	25A	41.8A	83.4A
	Annotati-on	The high grade maximum current is calculated according to 300V voltage; The maximum low current is calculated based on the 150V voltage.						
Frequency	45Hz-70Hz continuously adjustable							

Property	
Input adjustment rate	≤0.5%F.S. (Resistance test)
Load adjustment rate	≤0.5%F.S. (Resistance test)
Waveform distortion (THD)	Sine wave, THD≤0.5% (resistance test)
Frequency stability	≤0.02%F.S.
Voltage stability	≤0.5%F.S.
Voltage crest coefficient	1.414±0.05
Noise	≤65dB(A), use 1m to weigh the measurement

PLA

03

HY-PLA Series Technical Parameters

Programming And Readback Accuracy & Resolution

Settings	Voltage output programming accuracy	$\pm 0.3\%F.S.$
	Frequency output programming accuracy	$\pm 0.01\%F.S.$
	Voltage setting resolution	0.01V
	Frequency setting resolution	0.01Hz
Backward read	Voltage output read-back accuracy	$\pm 0.3\%F.S.$
	Current output read back accuracy	$\pm 0.3\%F.S.$
	Frequency output read-back accuracy	$\pm 0.01\%F.S.$
	Voltage read back resolution	0.01V
	Current read back resolution	0.01A
	Frequency read-back resolution	0.01Hz

Protection Function

Protection function	Overvoltage, overcurrent, internal overheating, short circuit
Overload capacity	125% current 15s, 150% current 5s, 200% current 2s, 300% current Stop output immediately
Memory function	Parameters of the last run
Preset function	Adjust the output voltage and frequency online

Environmental Condition

Environment	Indoor use; Installation overvoltage class: II; Pollution level: P2; II equipment
Operating ambient temperature	0°C to 45°C; Choose from -20°C to 45°C
Storage ambient temperature	-20°C to 65°C
Working ambient humidity	20%-90%RH, no condensation, continuous operation
Storage environment humidity	10%-95%RH, no condensation
Altitude	Above 2000 meters above sea level, the power is reduced by 2% per 100 meters, or the maximum working ambient temperature is reduced by 1°C per 100 meters;When not in operation, it can reach an altitude of 12,000m.
Cooling condition	Forced air cooling, intelligent speed control fan, both sides/front air, rear air
Transport condition	Road transport

Control Panel

Display	7 inches, LCD LCD display, touch screen
Display item	Line voltage/phase voltage (set value & measured value), current measurement value, output power display, power factor display,Frequency set value, working time, cumulative working time, current time and date
Control function	Output ON/OFF/Lock keyboard and touch lock /Reset Restart/reset/setting/status indicator
Mode of operation	Key input/LCD input/shuttle knob input (outer ring coarse adjustment/inner ring fine adjustment)
Control mode	Local control/remote control
Programming function	Step/ladder/gradient

PLA

04

HY-PLA Series Technical Parameters

Three-phase output											
One in, three out						Three in, three out					
Product model	PLA 1303L	PLA 1306L	PLA 1309L	PLA 1315L	PLA 13003	PLA 3345L	PLA 33006	PLA 33010	PLA 33015	PLA 33030	
Power	300VA	600VA	900VA	1.5kVA	3kVA	4.5kVA	6kVA	10kVA	15kVA	30kVA	
Model size	4U	4U	10U	10U	18U	Non-standard cabinet	Non-standard cabinet	Non-standard cabinet	Non-standard cabinet	Non-standard cabinet	
	*1) 4U, standard 19-inch rack mount, or tabletop (fixed pad); 2) 10U, standard 19-inch rack type, or floor type (with movable universal casters and brakes); 3) 18U and above non-standard cabinets, floor to floor cabinets, with movable universal casters and brakes.										
Circuit mode	Linear amplification technique										
Communication mode	Standard: RS-485 & RS-232 Options: LAN, CAN, USB, GPIB, analog programming and monitoring interface (isolated type)										
Input											
Connection mode	Single-phase two-wire + Ground (LN+PE)					Three-phase three-phase + Ground wire & Three-phase four-wire + Ground wire (ABC+PE/ABCN+PE)					
Input phase	Single phase 1Φ					Three-phase 3Φ					
Input waveform	Sinusoidal wave					Sinusoidal wave					
Input voltage	220Vrms±10%					380Vrms±10%					
Input frequency	47Hz-63Hz					47Hz-63Hz					
Exportation											
Output phase	Three-phase 3Φ										
Rated set voltage	L-N 0-300Vrms continuously adjustable (high grade), L-N 0-150Vrms continuously adjustable (low grade) (customizable), Max1000Vrms continuously adjustable (Optional voltage, output current will be proportionally reduced)										
Rated current	Top grade	0.34A	0.67A	1A	1.67A	3.34A	5A	6.67A	11.1A	16.67A	33.34A
	low-end	0.67A	1.34A	2A	3.34A	6.67A	10A	13.34A	22.2A	33.34A	66.67A
	Annotati-on	The high-grade rated current is calculated according to 300V voltage; The low rated current is calculated based on the 150V voltage.									
Maximum current	Top grade	0.42A	0.84A	1.25A	2.1A	4.2A	6.25A	8.34A	13.88A	20.84A	41.68A
	low-end	0.84A	1.68A	2.5A	4.2A	8.4A	12.5A	16.68A	27.76A	41.68A	83.34A
	Annotati-on	The high grade maximum current is calculated according to 300V voltage; The maximum low current is calculated based on the 150V voltage.									
Frequency	45Hz-70Hz continuously adjustable										
Property											
Input adjustment rate	≤0.5%F.S. (Resistance test)										
Load adjustment rate	≤0.5%F.S. (Resistance test)										
Waveform distortion(THD)	Sine wave, THD≤0.5% (resistance test)										
Frequency stability	≤0.02%F.S.										
Voltage stability	≤0.5%F.S.										
Voltage crest coefficient	1.414±0.05										
Voltage unbalance	Three-phase output ≤0.5Vrms (no load or balanced load)										
Phase difference	Load three-phase balance or no-load ±2°										
Three-phase voltage/phase difference	Three-phase voltage independent adjustable, phase difference 0-359.99° adjustable										
Noise	≤65dB(A), use 1m to weigh the measurement										

PLA

05

HY-PLA Series Technical Parameters

Programming And Readback Accuracy & Resolution

Settings	Voltage output programming accuracy	$\pm 0.3\%F.S.$
	Frequency output programming accuracy	$\pm 0.01\%F.S.$
	Voltage setting resolution	0.01V
	Frequency setting resolution	0.01Hz
Backward read	Voltage output read-back accuracy	$\pm 0.3\%F.S.$
	Current output read back accuracy	$\pm 0.3\%F.S.$
	Frequency output read-back accuracy	$\pm 0.01\%F.S.$
	Voltage read back resolution	0.01V
	Current read back resolution	0.01A
	Frequency read-back resolution	0.01Hz

Protection Function

Protection function	Overvoltage, overcurrent, internal overheating, short circuit
Overload capacity	125% current 15s, 150% current 5s, 200% current 2s, 300% current Stop output immediately
Memory function	Parameters of the last run
Preset function	Adjust the output voltage and frequency online

Environmental Condition

Environment	Indoor use; Installation overvoltage class: II; Pollution level: P2; II equipment
Operating ambient temperature	0°C to 45°C; Choose from -20°C to 45°C
Storage ambient temperature	-20°C to 65°C
Working ambient humidity	20%-90%RH, no condensation, continuous operation
Storage environment humidity	10%-95%RH, no condensation
Altitude	Above 2000 meters above sea level, the power is reduced by 2% per 100 meters, or the maximum working ambient temperature is reduced by 1°C per 100 meters;When not in operation, it can reach an altitude of 12,000m.
Cooling condition	Forced air cooling, intelligent speed control fan, both sides/front air, rear air
Transport condition	Road transport

Control Panel

Display	7 inches, LCD LCD display, touch screen
Display item	Line voltage/phase voltage (set value & measured value), current measurement value, output power display, power factor display, Frequency set value, working time, cumulative working time, current time and date
Control function	Output ON/OFF/Lock keyboard and touch lock /Reset Restart/reset/setting/status indicator
Mode of operation	Key input/LCD input/shuttle knob input (outer ring coarse adjustment/inner ring fine adjustment)
Control mode	Local control/remote control
Programming function	Step/ladder/gradient

PLA

06

4U 433(W)*560(D)*177(H)mm



10U 440(W)*600(D)*445(H)mm



Size

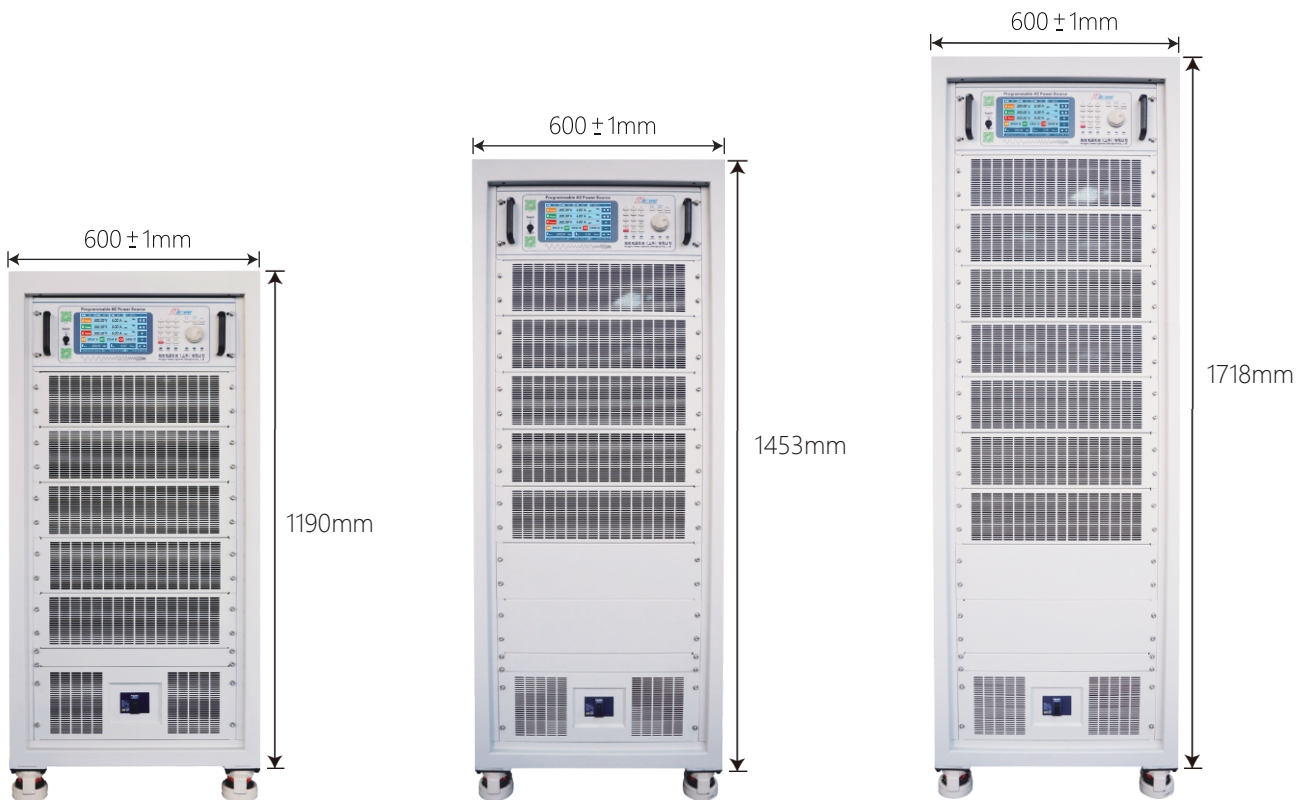
07

Appearance&Size

18U 600(W)*800(D)*920(H)mm



24U 600(W)*800(D)*1190(H)mm
30U 600(W)*800(D)*1453(H)mm
36U 600(W)*800(D)*1718(H)mm

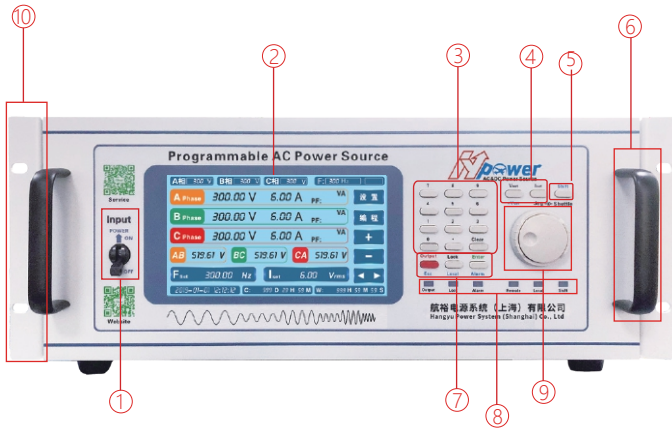


Size

08

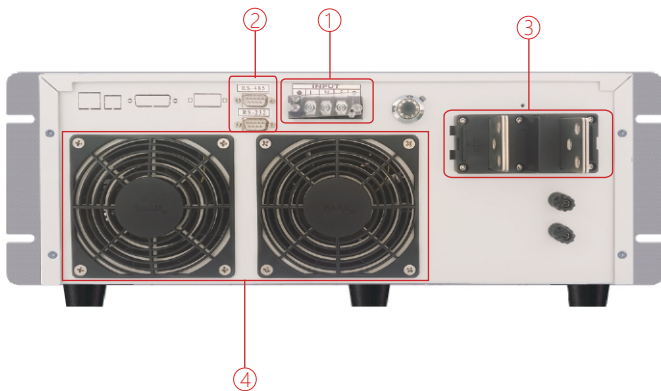
Display And Control Panel

Control Panel



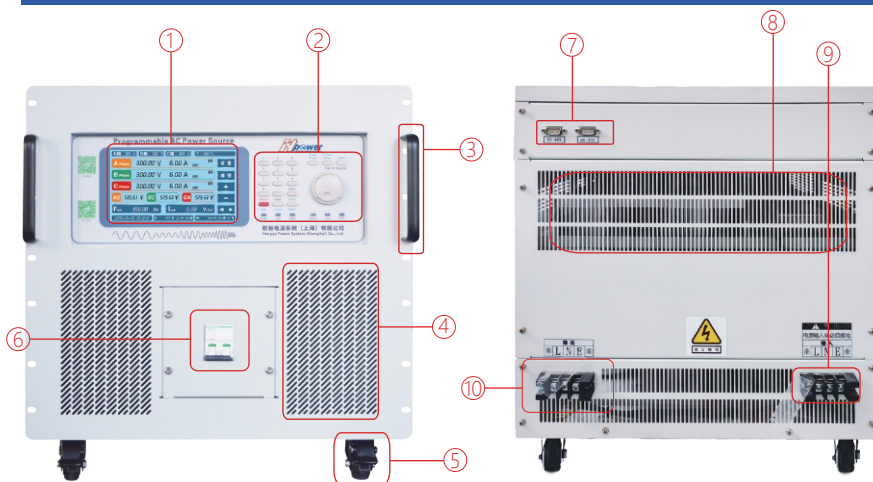
- ① Power input circuit breaker
- ② LCD display (7 inches, touch screen)
- ③ Numeric input keyboard
- ④ Frequency/voltage or current setting key
- ⑤ Shift function reuse key
- ⑥ Chassis handle
- ⑦ Lock Lock, Enter confirm, Esc exit
Local Local or Reset Restarts
Output ON/OFF Switch
- ⑧ Status indicator
- ⑨ Multi-stage shuttle adjustment knob (inner ring fine adjustment/outer ring coarse adjustment)
- ⑩ 19-inch standard rack mounting holes

Rear Panel



- ① AC input terminal
- ② RS-485 & RS-232 communication interface
- ③ AC output terminal
- ④ Heat dissipation outlet

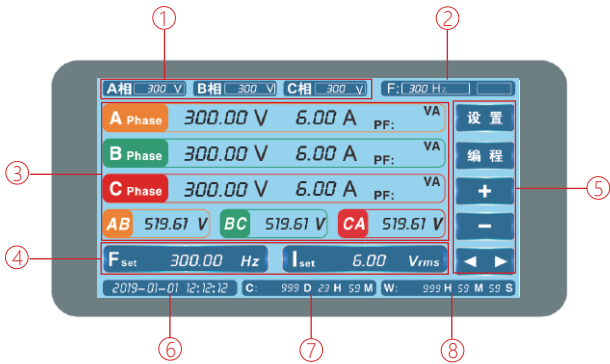
Front Panel & Rear Panel



- ① LCD display (7 inches, touch screen)
- ② Control area
- ③ 19-inch standard rack handle
- ④ Heat dissipation inlet
- ⑤ Casters
- ⑥ Power input circuit breaker
- ⑦ Communication interface
- ⑧ Heat dissipation outlet
- ⑨ AC input terminals
- ⑩ AC output terminal

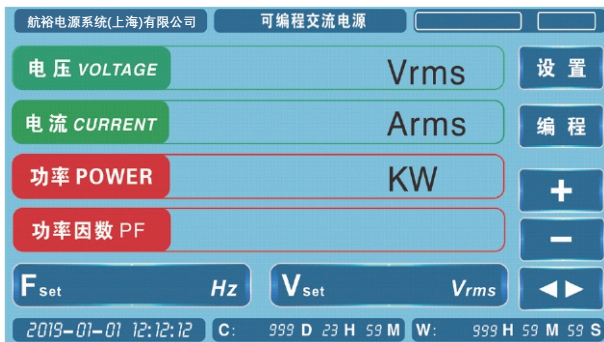
Display And Control Panel

Display Interface



- ① Three-phase voltage
- ② Product frequency
- ③ Three-phase voltage and current display area
- ④ Frequency/voltage setting value
- ⑤ Function setting area
- ⑥ Current time
- ⑦ Cumulative running time
- ⑧ This running time

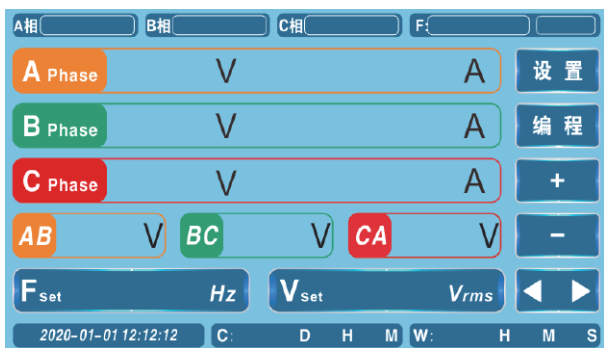
Display Interface



Main interface of single-phase power supply



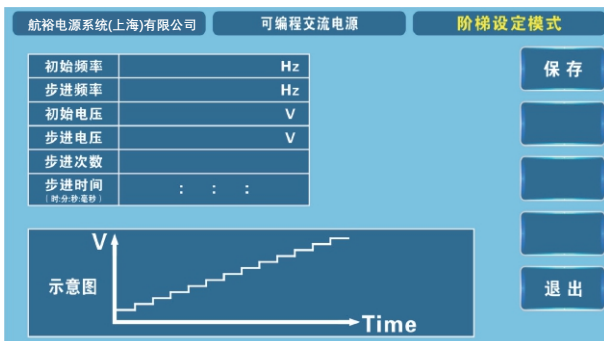
Main interface of the dual phase power supply



Main interface of three-phase power supply



Step setting page can set the required frequency, voltage, Run time, initial step, end step, and number of cycles

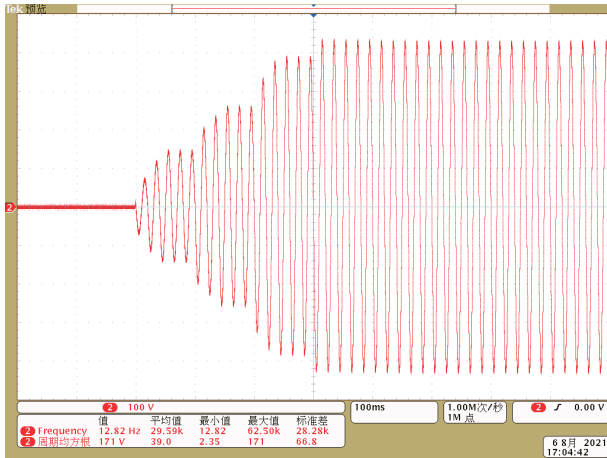


Step setting page can set the required initial frequency, Step frequency, initial voltage, step voltage, step number and step time

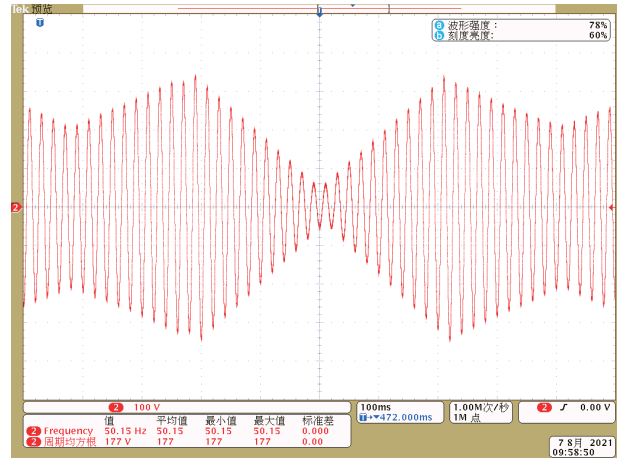


The gradient Settings page can set the required voltage and frequency Run time, initial step, end step

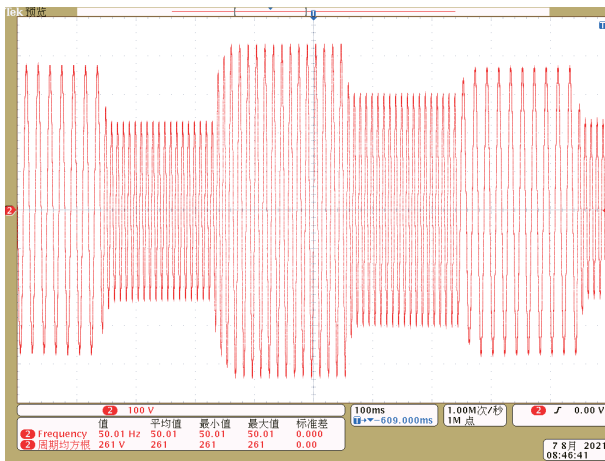
Output Voltage Waveform Of Single-phase Power Supply



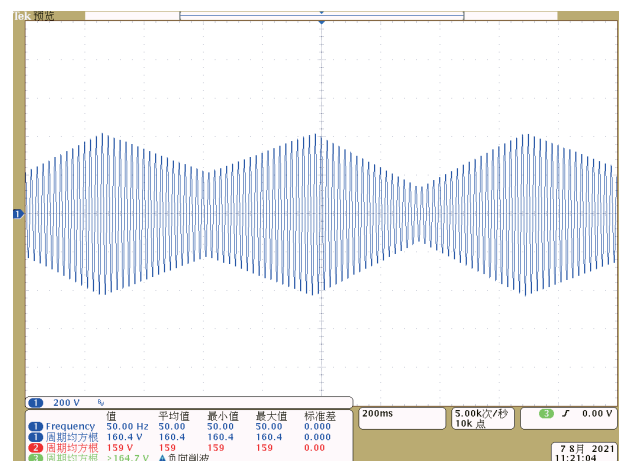
Step



Step

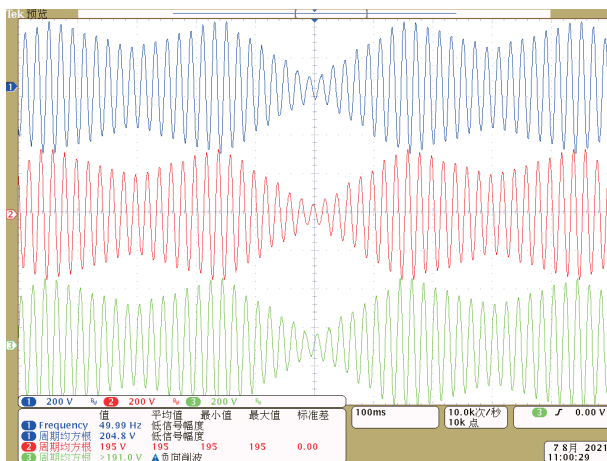


Ladder

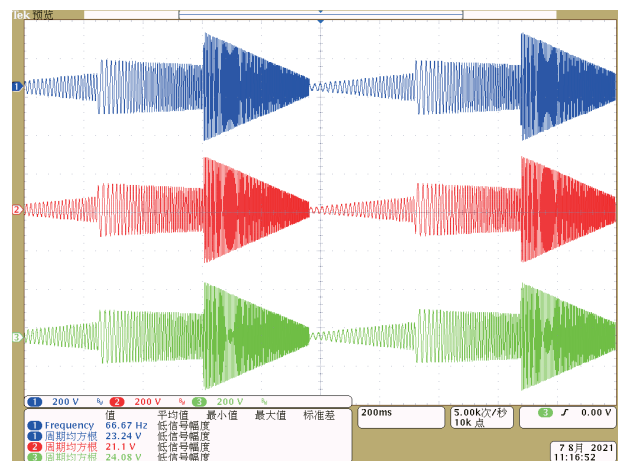


Gradation

Output Voltage Waveform Of Three-phase Power Supply



Three-phase step



Three-phase gradation

Cooperative Customers (Part)

Aerospace & Defense Military Research Institute



China Aerospace



Aerospace science and engineering



Aviation industry



China Air Development



China Electrical Engineering Group



China Shipbuilding Corporation



China Shipbuilding Industry Corporation

CASC 803 (Shanghai Aerospace Control Technology Institute)
 CASC 800 (Shanghai Aerospace Precision Machinery Research Institute)
 CASC 804 (Shanghai Aerospace Electronic Communication Equipment Research Institute)
 CASC 805 (Shanghai Aerospace System Engineering Institute)
 CASC 808 (Shanghai Precision Measurement and Testing Institute)
 CASC 811 (Shanghai Space Power Research Institute)
 CASC 812 (Shanghai Satellite Equipment Research Institute)
 CASC 801 (Shanghai Space Propulsion Research Institute)
 CASC 502 (Beijing Control Engineering Research Institute)
 CASC 510 (Lanzhou Institute of Space Technology Physics)
 CASIC 206 (Beijing Machinery and Equipment Research Institute)
 CASIC 304 Institute (Beijing Great Wall Institute of Measurement and Testing Technology)
 CASIC 307 Factory (Aerospace Chenguang Co., LTD.)
 33 CASIC (33 Aerospace Science and Industry Institutes)
 CASIC 3651 Factory (Guizhou Aerospace Linquan Motor Co., LTD.)
 AVIC 615 (Aeronautical Radio Electronics Research Institute of China)
 AVIC 618 (Xi'an Flight Automatic Control Research Institute)
 AVIC 105 Factory (Tianjin Aviation Electromechanical Co., LTD.)
 AVIC 115 Factory (Shaanxi Aero Electric Co., LTD.)

AVIC 118 Factory (Shanghai Aviation Electric Appliance Co., LTD.)
 AVIC 181 Factory (Wuhan Aviation Instrument Co., LTD.)
 AVIC 607 Institute (China Leihua Electronic Technology Institute)
 AECC 606 Institute (Shenyang Engine Research Institute)
 CETC 14 Institute (Nanjing Institute of Electronic Technology)
 CETC 21 Institute (Shanghai Micromotor Research Institute)
 CETC 23 Institute (Shanghai Transmission Line Research Institute)
 CETC 36 Institute (Jiangnan Institute of Electronic Communication)
 CETC 38 Institute (East China Institute of Electronic Engineering)
 CETC 50 Institute (Shanghai Microwave Technology Research Institute)
 CETC 51 Institute (Shanghai Microwave Equipment Research Institute)
 CETC 54 Institute (Shijiazhuang Communication Measurement and Control Technology Research Institute)
 CETC 55 Institute (Nanjing Institute of Electronic Devices)
 CSIC 707 Institute (Tianjin Institute of Marine Instruments)
 CSIC 719 Institute (Wuhan Second Ship Design Institute)
 CSIC 704 Institute (Shanghai Marine Equipment Research Institute)
 CSIC 726 Institute (Shanghai Marine Electronic Equipment Research Institute)
 Jiangnan Shipbuilding (Group) Co., LTD
 Nanjing Panda Electronics Co., LTD
 State-owned 741 Factory (Nanjing Huadong Electronics Group Co., LTD.)

Chinese People's Liberation Army

South Sea Fleet
 East China Sea Fleet
 North Sea Fleet
 Navy Plant 701 / Plant 702
 4724 Factory (Shanghai Haiying Machinery Factory)
 Unit 95861 (Empty Base 1)

Commercial Aviation



Commercial Aircraft Corporation of China



Collins Aerospace

Rockwell Collins



Guangzhou Aircraft Maintenance Engineering Co., LTD



Beijing Aircraft Maintenance Engineering Co., LTD

Client

12

Scientific Research & Third Party Quality Inspection Agency



Technical Institute of Physics and Chemistry (Beijing)

Institute of Urban Environment (Xiamen)

Electrotechnical Research Institute (Beijing)

Institute of Applied Physics (Shanghai)



Military Academies & Local Universities



High-tech R&D Enterprise



client

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Hangyu Power AC Power Supply Product Manual, version 06.00, february 2024

The warranty period of all standard products in this manual is three years, except non-standard products

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:

