HY-PSASU Series
Programmable Switching AC Power Supply

Hangyu Power System (Shanghai) Co., LTD

AC&DC Power Source

www.hangyupower.com

HY-PSASU Series Programmable Switching AC Power Supply

High Power
High Precision
High Reliability

Application Field

- motor
- Household appliance industry
- Testing laboratory
- Industrial power supply
- Motor/Compressor
- IT manufactures electronics
- New energy
- Medical treatment
- Dock shore power/shipyard
- National defense industry

Product Features

- Output frequency range 45Hz-70Hz
- Output power range 1kVA-900kVA
- Output voltage L-N 0-150 Vrms/300Vrms/1 kVrms
- Three-phase voltage independent adjustable, phase difference 0-359.99° adjustable
- 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
- Standard 19-inch rack size, or floor-to-ceiling cabinet
- 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
- Supports Modbus protocol
- Supports Modbus protocol
- Optional interface: LAN、CAN、GPIB、USB Analog programming and monitoring (isolated)

HY-PSASU Series Product Selection Table

Product Model Naming Rules

Product Series	Input Phase Number	Output Phase Number	Output Capacity		Optional Function
HY-PSASU	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-PSASU 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.

Product Model	Output Capacity	Input	Expor Tation	Product Model	Output Capacity	Input	Expor Tation	Phase Voltage (L-N,Vrms)	Output Frequency
HY-PSASU 11001	1kVA	Single phase	Single phase	HY-PSASU 1315L	1.5kVA	Single phase	Three phase	0-150V 0-300V High and low output 0-600V 0-1000V (assorting)	45-70Hz
HY-PSASU 11002	2kVA								
HY-PSASU 11003	3kVA			HY-PSASU 13003	3kVA				
HY-PSASU 11005	5kVA			HY-PSASU 1345L	4.5KVA				
HY-PSASU 31010	10kVA	Three phase		HY-PSASU 33010	10kVA	Three phase			
HY-PSASU 31015	15kVA			HY-PSASU 33015	15kVA				
HY-PSASU 31030	30kVA			HY-PSASU 33030	30kVA				
HY-PSASU 31045	45kVA			HY-PSASU 33045	45kVA				
HY-PSASU 31060	60kVA			HY-PSASU 33060	60kVA				
HY-PSASU 31075	75kVA			HY-PSASU 33075	75kVA				
HY-PSASU 31100	100kVA			HY-PSASU 33090	90kVA				
HY-PSASU 31120	120kVA			HY-PSASU 33120	120kVA				
HY-PSASU 31150	150kVA			HY-PSASU 33150	150kVA				
HY-PSASU 31180	180kVA			HY-PSASU 33180	180kVA				
HY-PSASU 31200	200kVA			HY-PSASU 33210	210kVA				
HY-PSASU 31250	250kVA			HY-PSASU 33240	240kVA				
HY-PSASU 31300	300kVA			HY-PSASU 33300	300kVA				
HY-PSASU 31450	450kVA			HY-PSASU 33450	450kVA				
HY-PSASU 31500	500kVA			HY-PSASU 33600	600kVA				
				HY-PSASU 33900	900kVA				

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

Single-phase output

	Single in, single out				Three in, one out						
Product model	PSASU 11001	PSASU 11002	PSASU 11003	PSASU 11005	PSASU 31010	PSASU 31015	PSASU 31030	PSASU 31045	PSASU 31060	PSASU 31075	PSASU 31100
Power	1kVA	2kVA	3kVA	5kVA	10kVA	15kVA	30kVA	45kVA	60kVA	75kVA	100kVA
Model size	4U	4U	10U	10U	15U	18U	30U	404	405	405	405
	*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) 15U, 18U and above non-standard cabinets, floor type cabinets, with movable universal casters and brakes.										
Circuit mode	IGBT/PWM pulse width modulation mode										
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±15%	380Vrms±15%
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 model, output current will be reduced proportionally)											
Rated current	Top grade	3.34A	6.67A	10A	16.67A	33.34A	50A	100A	150A	200A	250A	333.34A
	low-end	6.67A	13.34A	20A	33.34A	66.67A	100A	200A	300A	400A	500A	666.67A
	Annotation	The high grade rated current calculated based on 300V voltage; The low rated current is calculated based on the 150V voltage.										
Maximum current	Top grade	4.2A	8.4A	12.5A	20.84A	41.68A	62.5A	125A	187.5A	250A	312.5A	416.68A
	low-end	8.4A	16.7A	25A	41.7A	83.34A	125A	250A	375A	500A	625A	833.34A
	Annotation	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	⩽1%F.S. (Resistance test)
Waveform distortion (THD)	Sine wave, THD⩽2% below 100kVA; 100kVA-300kVA THD⩽3%; ⩽5% above 300kVA (resistance test)
Efficiency	⩽150kVA model efficiency ⩾90%; > 150kVA model efficiency ⩾92%;
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

HY-PSASU Series Technical Parameters

Programming And Readback Accuracy & Resolution		
Settings	Voltage output programming accuracy	±0.5%F.S.
	Frequency output programming accuracy	±0.01%F.S.
	Voltage setting resolution	0.01V
	Frequency setting resolution	0.01Hz
Backward read	Voltage output read-back accuracy	±0.5%F.S.
	Current output read back accuracy	±0.5%F.S.
	Frequency output read-back accuracy	±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

HY-PSASU Series Technical Parameters

Three-phase output

	One in, three out			Three in, three out						
Product model	PSASU 1315L	PSASU 13003	PSASU 1345L	PSASU 33010	PSASU 33015	PSASU 33030	PSASU 33045	PSASU 33060	PSASU 33075	PSASU 33090
Power	1.5kVA	3kVA	4.5kVA	10kVA	15kVA	30kVA	45kVA	60kVA	75kVA	90kVA
Model size	4U	10U	10U	18U	18U	30U	404	405	405	405
	*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) 15U, 18U and above non-standard cabinets, floor type cabinets, with movable universal casters and brakes.									
Circuit mode	IGBT/PWM pulse width modulation mode									
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±15%	380Vrms±15%
Input frequency	47Hz-63Hz	47Hz-63Hz

Exportation

Output phase	Sinusoidal wave										
Rated set voltage	L-N 0-300Vrms Continuously adjustable (high grade), L-N 0-150Vrms continuously adjustable (low grade) Max1000Vrms continuously adjustable (optional model, output current will be reduced proportionally)										
Rated current	Top grade	1.67A	3.34A	5A	11.1A	16.67A	33.34A	50A	66.67A	83.34A	100A
	low-end	3.34A	6.67A	10A	22.2A	33.34A	66.67A	100A	133.34A	166.67A	200A
	Annotation	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	2.1A	4.2A	6.3A	13.9A	20.84A	41.68A	62.5A	83.34A	104.18A	125A
	low-end	4.2A	8.4A	12.5A	27.8A	41.68A	83.34A	125A	166.68A	208.34A	250A
	Annotation	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	⩽1%F.S. (Resistance test)
Waveform distortion(THD)	Sine wave, THD⩽2% below 100kVA; 100kVA-300kVA THD⩽3%; ⩽5% above 300kVA (resistance test)
Efficiency	⩾90%
Frequency stability	⩽0.02%F.S.
Voltage stability	⩽0.5%F.S.
Voltage crest coefficient	1.414±0.05
Voltage unbalance	Three-phase output ⩽1Vrms (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

HY-PSASU Series Technical Parameters

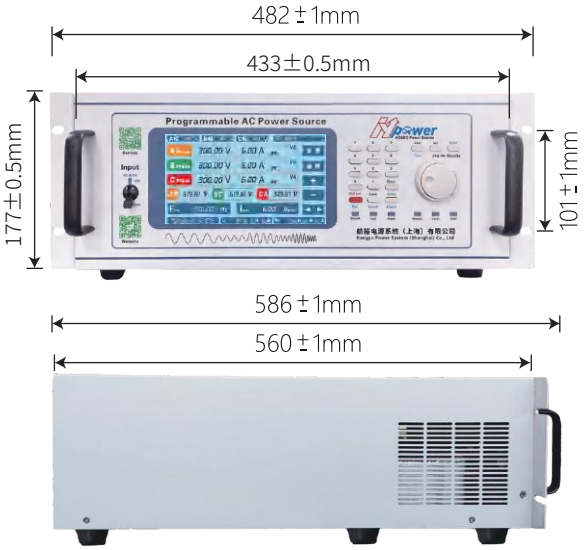
Programming And Readback Accuracy & Resolution		
Settings	Voltage output programming accuracy	±0.5%F.S.
	Frequency output programming accuracy	±0.01%F.S.
	Voltage setting resolution	0.01V
	Frequency setting resolution	0.01Hz
Backward read	Voltage output read-back accuracy	±0.5%F.S.
	Current output read back accuracy	±0.5%F.S.
	Frequency output read-back accuracy	±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

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



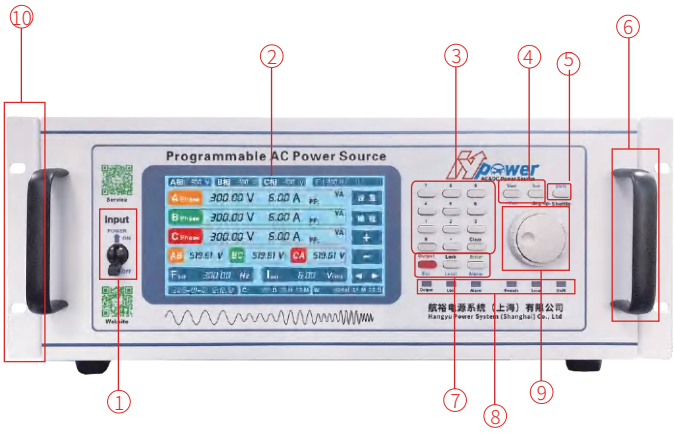
10U 440(W)*600(D)*445(H)mm

Appearance&Size

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

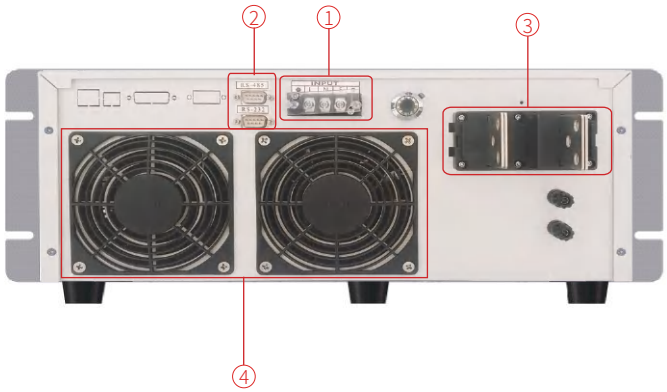
24U 600(W)*800(D)*1190(H)mm
30U 600(W)*800(D)*1453(H)mm
36U 600(W)*800(D)*1718(H)mm

Control Panel



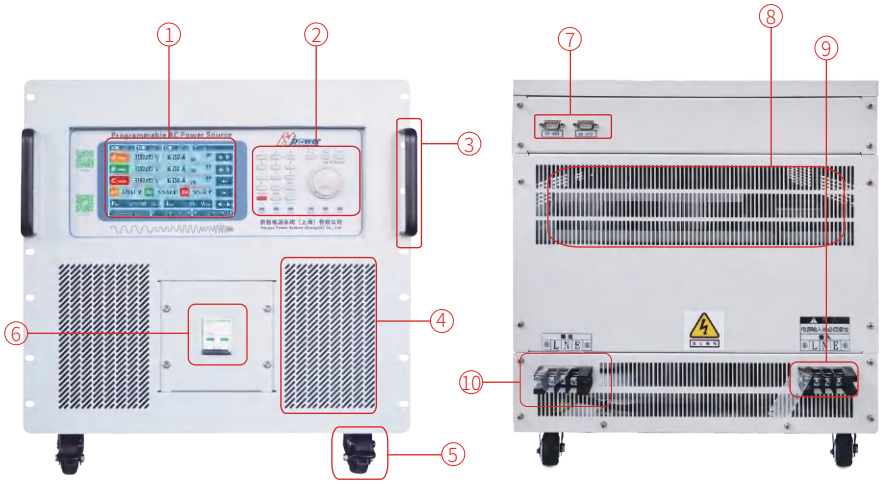
① Power input circuit breaker
② LCD display (7 inches, touch screen)
③ Numeric input keyboard
④ Frequency/voltage or current setting key
⑤ Shift function reuse key
⑥ Chassis handle
⑦ Lock Lock, Enter confirm, Esc exit
Local Local or Reset Restarts
Output ON/OFF Switch
⑧ Status indicator
⑨ Multi-stage 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

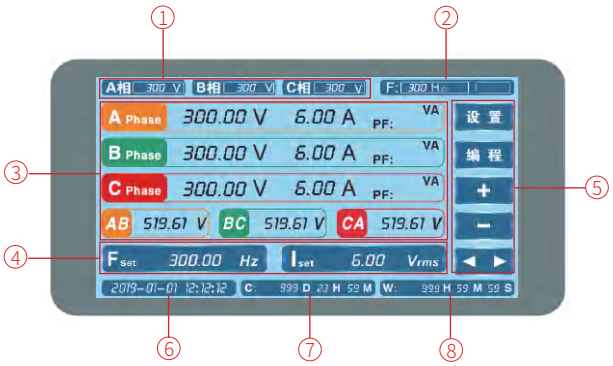
Front Panel & Rear Panel



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

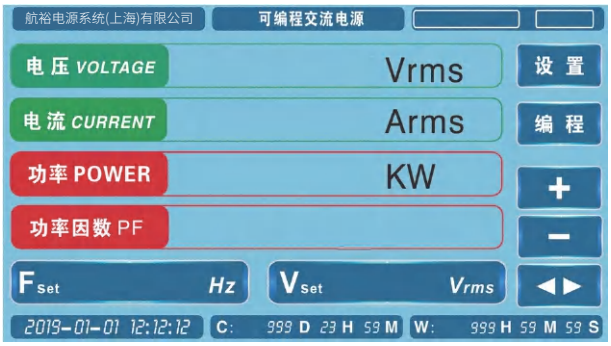
Display And Control Panel

Display Interface



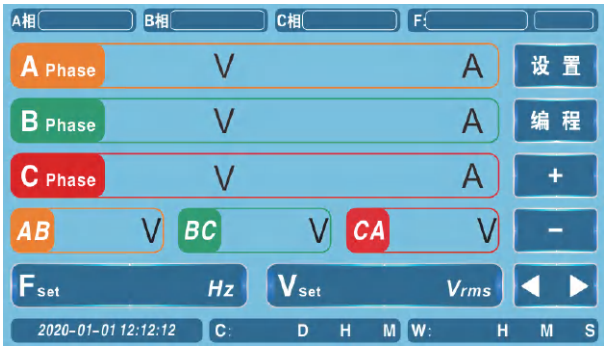
① Three-phase voltage
② Product frequency
③ Three-phase voltage and current display area
④ Frequency/voltage setting value
⑤ Function setting area
⑥ Current time
⑦ Cumulative running time
⑧ This running time

Display Interface



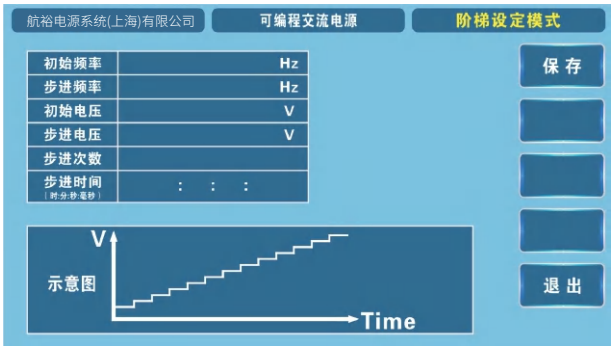
Main interface of single-phase power supply

Main interface of the dual phase power supply



Main interface of three-phase power supply

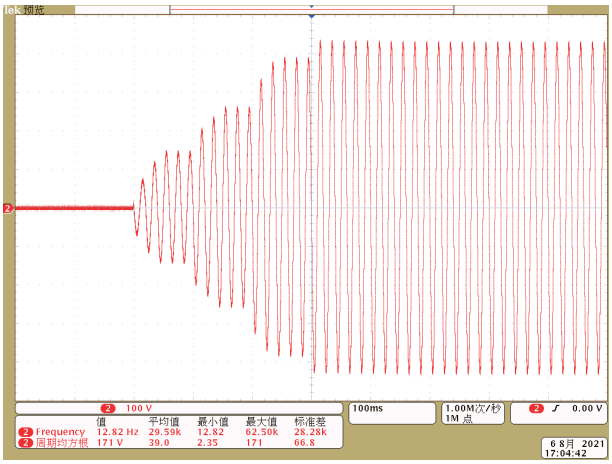
Step setting page can set the required frequency, voltage,
Run time, initial step, end step, and number of cycles



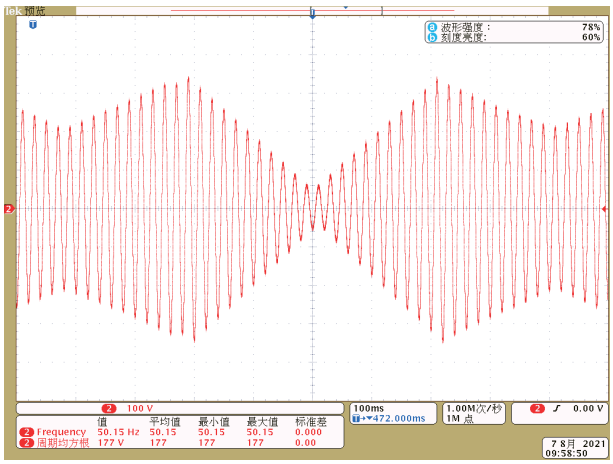
Step setting page can set the required initial frequency,
Step frequency, initial voltage, step voltage, step number and step time

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

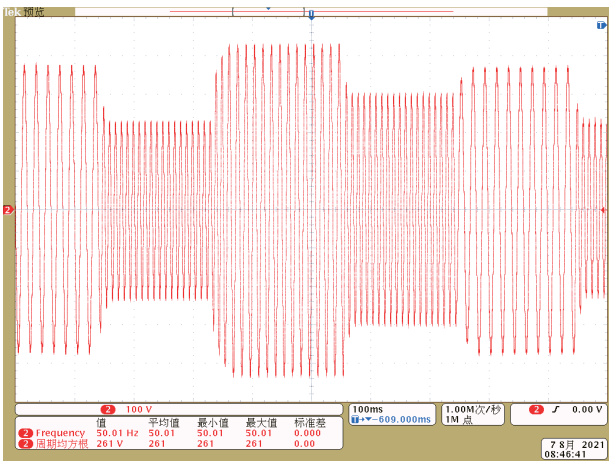
Output Voltage Waveform Of Single-phase Power Supply



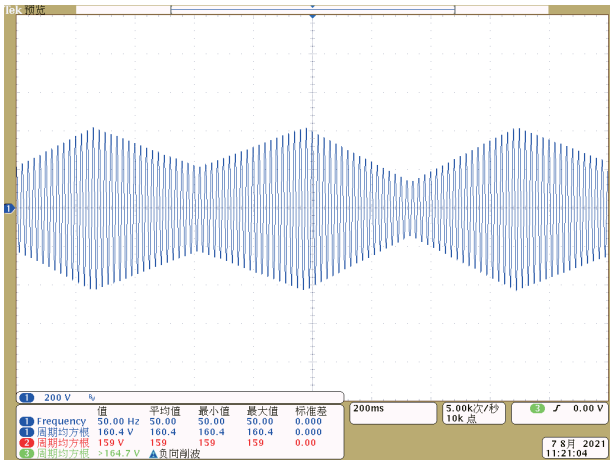
Step



Step

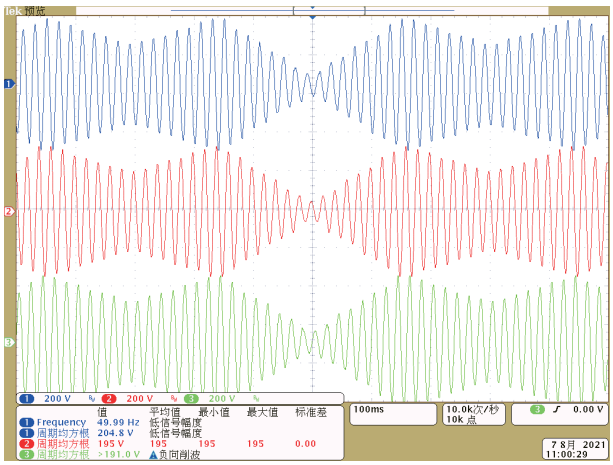


Ladder

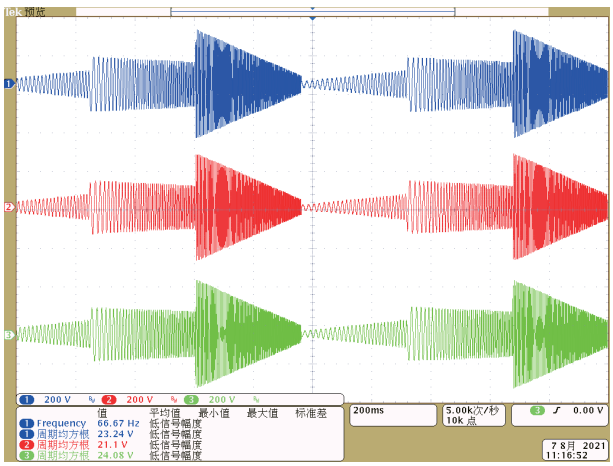


Gradation

Output Voltage Waveform Of Three-phase Power Supply



Three-phase step



Three-phase gradient

Cooperative Customers (Part)

Aerospace & Defense Military Research Lnstitute

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

Rockwell Collins

Guangzhou Aircraft Maintenance Engineering Co., LTD

Beijing Aircraft Maintenance Engineering Co., LTD

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)

Cooperative Customers (Part)

Military Academies & Local Universities

National University of Defense Technology
Aerospace engineering university
Army Engineering University
Air force Engineering University
Naval University of Engineering
Dalian Naval Academy
Naval Aeronautical University
Beijing University of Aeronautics and Astronautics
Beijing Institute of Technology
Harbin Institute of Technology
Harbin Engineering University
Nanjing University of Aeronautics and Astronautics
Nanjing University of Science and Technology
Northwestern Polytechnical University
University of Science and Technology of China
Tsinghua University
Peking University.
Shanghai Jiao Tong University
Zhejiang University
Tianjin University
Hust (Huazhong University of Science and Technology)
Hust (Huazhong University of Science and Technology)
North China Electric Power University
Beijing University of Technology
Zhejiang University of Technology
Xi 'an University of Technology
Dalian Maritime University
South China University of Technology

High-tech R&D Enterprise

Huawei
Xiamen fara
Panasonic
Epcos
Teko
Weidmuller
Honeywell
China Railway Rolling Stock Corporation
Siemens
ABB
Schneider
The Chint Noyak
Xiamen Hongfa
People's electric apparatus
Hilti
Bosch power tools
Gree Electric Appliances
Guilin rubber machinery factory
Guodian Nanrui
Shanghai Electric
American PI
Read core Technology
Willing to create science a nd technology
Group core Microelectronics
Hangzhou Zhongsi
Fexide
Shanghai Zhanxin
Chenxin Technology
China Automotive Research Institute
Heavy duty Automobile Research and Development Corporation
BMW Brilliance
Hongqi Automobile
Saic Motor Corporation
Saic Volkswagen
Geely Automobile
Ulai
BYD
Huichuan
Shanghai Tongmin vehicle
Nind era
Chinese Express
United New Energy

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