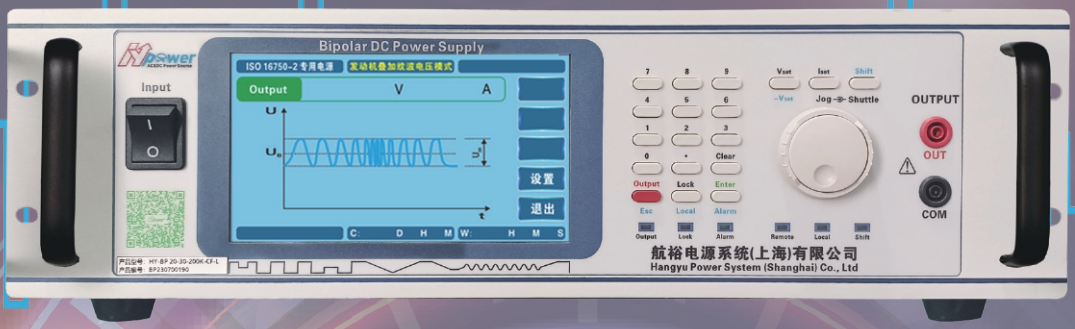
# HY-BP Series

## High Speed Power Supply for Automotive Electronice Test




AC&DC Power Source

# HY-BP Series High Speed Power Supply For Automotive Electronice Test

Bipolar broadband, high-speed, high current, and high voltage

HY-BP picture album

HY-BP Measured Video

The HY-BP series of automotive electronic testing high-speed power supplies have undergone comprehensive innovation and upgrading,promote Product accuracy, added constant current function, adjustable internal resistance range of 10m Ω - 500m Ω, optional Industrial computer,Greatly improve the efficiency of automotive electronic testing.

in addition, New and old customers who purchase this series of power supplies enjoy cost reduction and efficiency increase in the later stage of the product Services (product expansion, software upgrade).

The HY-BP series is a type of device that has no positive or negative pole switching at the output end and can continuously pass through zero points, A bipolar DC regulated power supply with bidirectional variable positive and negative poles. Through four quadrant action, achieve A testing method that can provide both power as a power source and absorb power as a load.

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## Product Features

- Output voltage: maximum -100V~+100V
- Output current: 0~±500A
- Output power: 200W~10kW
- Output broadband: DC~20kHz/50kHz/100kHz/150kHz/ 200kHz/300kHz/500kHz (CV mode)
- Timing function
- 内阻可调（10mΩ-500mΩ）
- 任意波编辑功能，内置波形适用于：ISO16750-2；ISO7637.2；GB28046.2；LV124；LV148；SMTC3800001；VW80000；GS95024-2；GMW3172；ISO/DIS21780。
- Unipolar/bipolar function
- Adopting "new linear technology" to achieve low ripple/low noise
- High speed response speed, voltage response time ≤ 10 μ S
- Type of load used: inductive load, capacitive load
- 16 bits D/A High precision converter with precise output
- 16 bits A/D High precision converter for more accurate read back

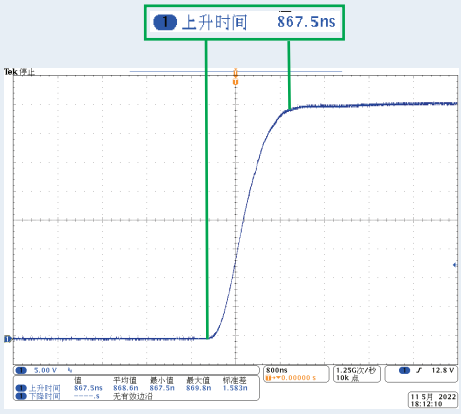
## Application Area

This power supply can be applied to vehicle electrical power supply variation experiments, secondary battery charging and discharging Experiments, simulated battery charging and discharging experiments, constant current source for pulse electroplating, ripple superposition experiments Verification, DC motor life test, constant current source for generating magnetic field, motor, large capacity capacitor Characteristic testing of leakage switches, solenoid valves, and coils.

Used as a testing power supply and load simultaneously, with diverse uses.

- Vehicle mounted electrical equipment testing(Car central control box, car generator, steering equipment) Motor, onboard radar system, DC motor/DC-DC converter, wiper, etc.)
- Vehicle mounted electrical components testingSensors, solenoids, and connections for the power circuit Devices, relays, car fuses, lights, etc.)
- Wireless power supply
- Magnetic drive(Magnetic flux testing, B-H curve testing, etc.)
- Power supply for magnetic field generation(Helmholtz coils, etc.)

## Actual Measurement Display




frequency characteristic100kHz-500kHz (CV mode) rise Response time of edge and falling edge≤10μS。

The actual measurement is shown in the figure above (some models)。


Measure the accuracy of 20V under full scale conditions, The deviation is less than 0.01, and the accuracy reaches level 0.05。

## Product Selection Instructions

| Product series | Output voltage | Output current | Output broadband |
|---|---|---|---|
| HY-BP | 40 | 10 | 500k |

■ Selection examples:

Model: HY-BP 40-10-500K

■ Description: Output voltage ± 40V, output current ± 10A Output bandwidth DC~500kHz

### Standard communication interface

- RS-485
- RS-232
- Digital I/O

### Purchase communication interface
(Users can install it themselves)

- LAN Ethernet communication interface
- GPIB GPIB communication interface
- IA Analog programming and monitoring interface (isolated type)

*Only when the equipment operates continuously at the specified operating temperature for more than 30 minutes can all technical indicators be guaranteed。

## HY-BP Series Product Selection And Parameters

This series of products can choose a wide frequency band for power output: 0-50kHz/0-100kHz/0-200kHz/0-300kHz/0-400kHz/0-500kHz

If there is no model in the selection table that meets your needs, it can be proposed separately for special customization.

### Output Voltage-20V~+20V Series Power Selection

| Models | Output voltage | Output current | Output power |
|---|---|---|---|
| HY-BP 20-10 | ±20V | ±10A | 200W |
| HY-BP 20-20 | ±20V | ±20A | 400W |
| HY-BP 20-30 | ±20V | ±30A | 600W |
| HY-BP 20-40 | ±20V | ±40A | 800W |
| HY-BP 20-60 | ±20V | ±60A | 1.2kW |
| HY-BP 20-90 | ±20V | ±90A | 1.8kW |

| Models | Output voltage | Output current | Output power |
|---|---|---|---|
| HY-BP 20-100 | ±20V | ±100A | 2kW |
| HY-BP 20-120 | ±20V | ±120A | 2.4kW |
| HY-BP 20-150 | ±20V | ±150A | 3kW |
| HY-BP 20-200 | ±20V | ±200A | 4kW |
| HY-BP 20-500 | ±20V | ±500A | 10kW |

### Output Voltage-30V~+30V Series Power Selection

| Models | Output voltage | Output current | Output power |
|---|---|---|---|
| HY-BP 30-10 | ±30V | ±10A | 300W |
| HY-BP 30-13.4 | ±30V | ±13.4A | 400W |
| HY-BP 30-20 | ±30V | ±20A | 600W |
| HY-BP 30-26.7 | ±30V | ±26.7A | 800W |
| HY-BP 30-40 | ±30V | ±40A | 1.2kW |

| Models | Output voltage | Output current | Output power |
|---|---|---|---|
| HY-BP 30-60 | ±30V | ±60A | 1.8kW |
| HY-BP 30-100 | ±30V | ±100A | 3kW |
| HY-BP 30-134 | ±30V | ±134A | 4kW |
| HY-BP 30-200 | ±30V | ±200A | 6kW |
| HY-BP 30-267 | ±30V | ±267A | 8kW |

## Output Voltage-40V~+40V Series Power Selection

| Models | Output voltage | Output current | Output power |
|---|---|---|---|
| HY-BP 40-7.5 | ±40V | ±7.5A | 300W |
| HY-BP 40-10 | ±40V | ±10A | 400W |
| HY-BP 40-15 | ±40V | ±15A | 600W |
| HY-BP 40-20 | ±40V | ±20A | 800W |
| HY-BP 40-30 | ±40V | ±30A | 1.2kW |
| HY-BP 40-45 | ±40V | ±45A | 1.8kW |
| HY-BP 40-50 | ±40V | ±50A | 2kW |

| Models | Output voltage | Output current | Output power |
|---|---|---|---|
| HY-BP 40-60 | ±40V | ±60A | 2.4kW |
| HY-BP 40-75 | ±40V | ±75A | 3kW |
| HY-BP 40-100 | ±40V | ±100A | 4kW |
| HY-BP 40-150 | ±40V | ±150A | 6kW |
| HY-BP 40-200 | ±40V | ±200A | 8kW |
| HY-BP 40-250 | ±40V | ±250A | 10kW |

## Output Voltage-60V~+60V Series Power Selection

| Models | Output voltage | Output current | Output power |
|---|---|---|---|
| HY-BP 60-6.7 | ±60V | ±6.7A | 400W |
| HY-BP 60-10 | ±60V | ±10A | 600W |
| HY-BP 60-13.4 | ±60V | ±13.4A | 800W |
| HY-BP 60-20 | ±60V | ±20A | 1.2kW |
| HY-BP 60-30 | ±60V | ±30A | 1.8kW |
| HY-BP 60-33.5 | ±60V | ±33.5A | 2kW |

| Models | Output voltage | Output current | Output power |
|---|---|---|---|
| HY-BP 60-40 | ±60V | ±40A | 2.4kW |
| HY-BP 60-50 | ±60V | ±50A | 3kW |
| HY-BP 60-67 | ±60V | ±67A | 4kW |
| HY-BP 60-100 | ±60V | ±100A | 6kW |
| HY-BP 60-133.3 | ±60V | ±133.4A | 8kW |
| HY-BP 60-167 | ±60V | ±167A | 10kW |

## Output Voltage-80V~+80V Series Power Selection

| Models | Output voltage | Output current | Output power |
|---|---|---|---|
| HY-BP 80-5 | ±80V | ±5A | 400W |
| HY-BP 80-7.5 | ±80V | ±7.5A | 600W |
| HY-BP 80-10 | ±80V | ±10A | 800W |
| HY-BP 80-15 | ±80V | ±15A | 1.2kW |
| HY-BP 80-22.5 | ±80V | ±22.5A | 1.8kW |
| HY-BP 80-25 | ±80V | ±25A | 2kW |

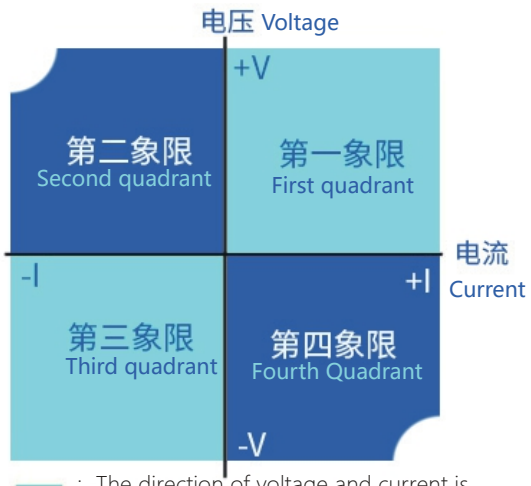
| Models | Output voltage | Output current | Output power |
|---|---|---|---|
| HY-BP 80-30 | ±80V | ±30A | 2.4kW |
| HY-BP 80-37.5 | ±80V | ±37.5A | 3kW |
| HY-BP 80-50 | ±80V | ±50A | 4kW |
| HY-BP 80-75 | ±80V | ±75A | 6kW |
| HY-BP 80-100 | ±80V | ±100A | 8kW |
| HY-BP 80-125 | ±80V | ±125A | 10kW |

## Output Voltage-100V~+100V Series Power Selection

| Models | Output voltage | Output current | Output power |
|---|---|---|---|
| HY-BP 100-4 | ±100V | ±4A | 400W |
| HY-BP 100-6 | ±100V | ±6A | 600W |
| HY-BP 100-8 | ±100V | ±8A | 800W |
| HY-BP 100-12 | ±100V | ±12A | 1.2kW |
| HY-BP 100-18 | ±100V | ±18A | 1.8kW |
| HY-BP 100-20 | ±100V | ±20A | 2kW |

| Models | Output voltage | Output current | Output power |
|---|---|---|---|
| HY-BP 100-24 | ±100V | ±24A | 2.4kW |
| HY-BP 100-30 | ±100V | ±30A | 3kW |
| HY-BP 100-40 | ±100V | ±40A | 4kW |
| HY-BP 100-60 | ±100V | ±60A | 6kW |
| HY-BP 100-80 | ±100V | ±80A | 8kW |
| HY-BP 100-100 | ±100V | ±100A | 10kW |

## Four Quadrant Action Concept Diagram




: The direction of voltage and current is the same (source)

: The direction of voltage and current is opposite (sink)

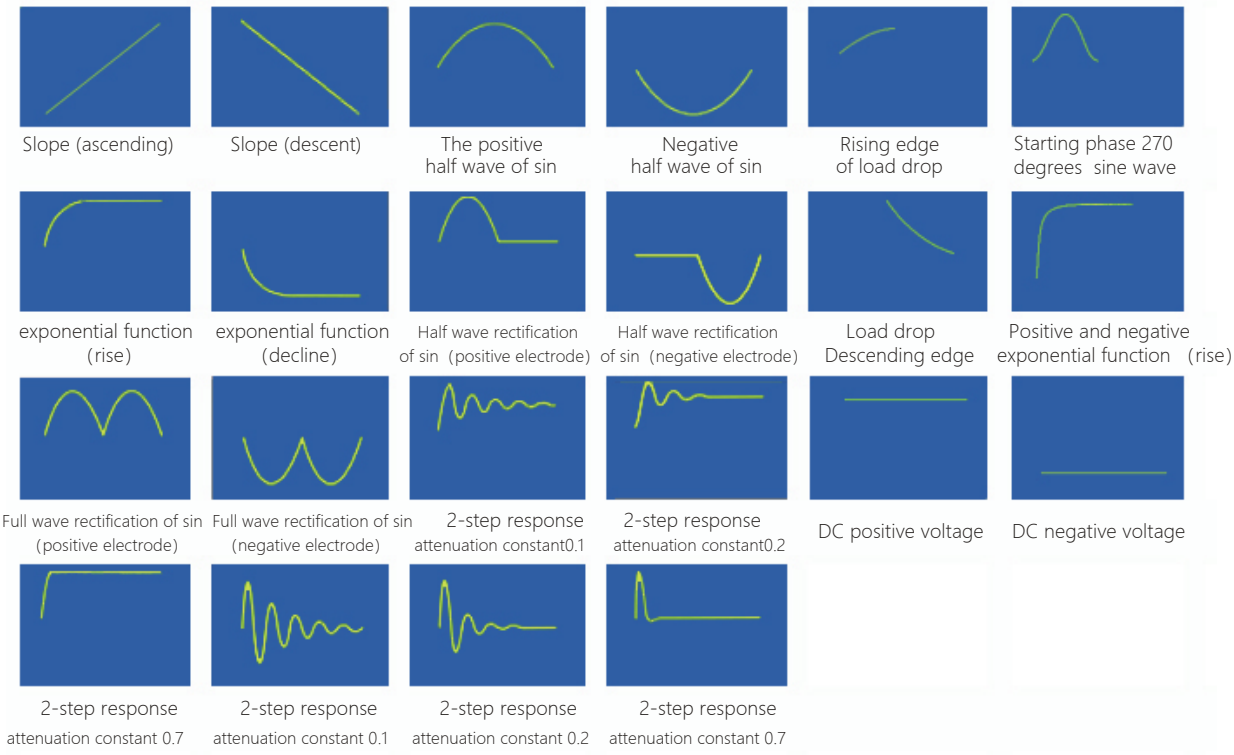
## Any Wave Editing Function

The HY-BP series is capable of achieving sine wave, square wave, and triangular wave Based on this, there are 22 built-in waveform elements. Implement any of 22 waveforms Edit, save, and recall. And can set amplitude, frequency, and initial Phase, sweep frequency, square wave. Moreover, the timing function can be applied to various waves Set 22 programs from 1 Step to 200 Step.

■ Three basic waveforms

Sinusoidal waveform Triangular waveform Square waveform

■ 22 Arbitrary waveforms



Slope (ascending) | Slope (descent) | The positive half wave of sin | Negative half wave of sin | Rising edge of load drop | Starting phase 270 degrees sine wave

exponential function (rise) | exponential function (decline) | Half wave rectification of sin (positive electrode) | Half wave rectification of sin (negative electrode) | Load drop Descending edge | Positive and negative exponential function (rise)

Full wave rectification of sin (positive electrode) | Full wave rectification of sin (negative electrode) | 2-step response attenuation constant0.1 | 2-step response attenuation constant0.2 | DC positive voltage | DC negative voltage

2-step response attenuation constant 0.7 | 2-step response attenuation constant 0.1 | 2-step response attenuation constant 0.2 | 2-step response attenuation constant 0.7

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## Power Test Items

### 1. ISO16750-2 Test Items

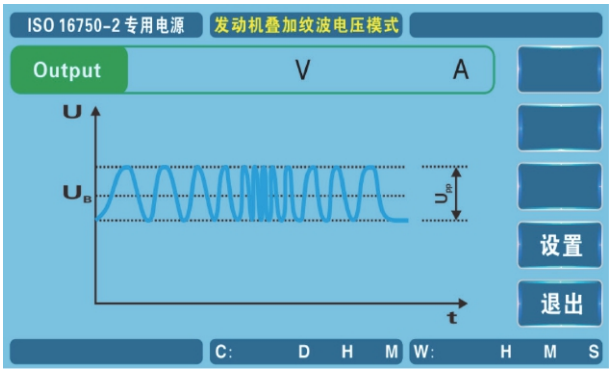
- Long term overvoltage
- Transient overvoltage
- Instantaneous low voltage
- Jump voltage start
- Load drop
- Generator superimposed ripple voltage
- Slow decrease/increase in working voltage
- Slow decrease/rapid increase in power supply
- RESET TEST
- Pulse voltage at engine start
- Reference grounding and power supply


Test mode selection interface

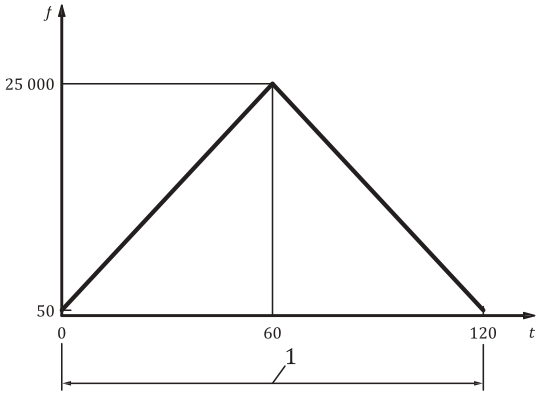
### 1.1 Generator Superimposed Ripple Voltage

Simulate the ripple voltage of the generator and superimpose the residual AC components on the power supply circuit of the electrical system for testing during generator operation. This test simulates this working condition。

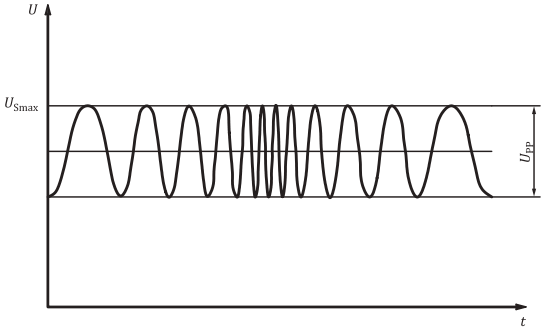
| Generator Ripple Voltage Superposition Test Parameters | |
|---|---|
| Working mode of the tested sample | Working mode II.b |
| Input Resistance RIn | 50-100mΩ |
| Test time | 30 min |
| Frequency range | 50Hz-25kHz |
| Duration | 120s |
| Wave form | Triangular wave, logarithmic type |
| Peak-to-peak upp | 4V |
| Sample quantity | At least 6 pieces |




Display diagram of generator superimposed ripple voltage interface

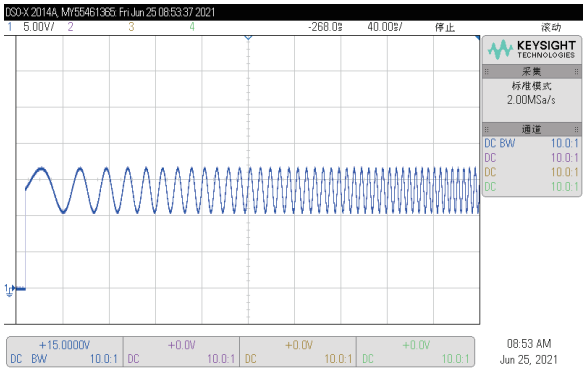



Ripple superimposed voltage

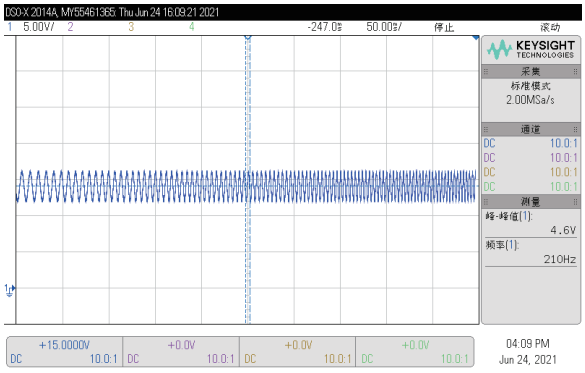



Generator ripple superposition test pulse frequency timing

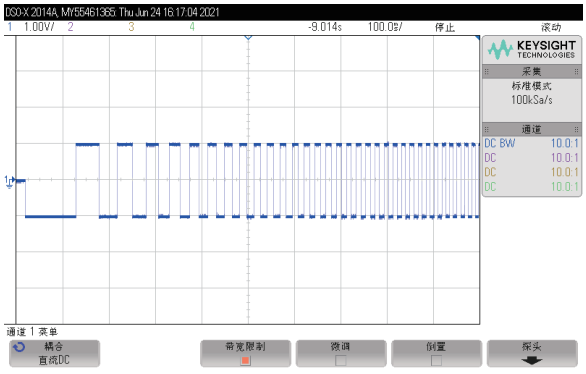
## Actual Measurement Diagram Of Generator Superimposed Ripple Voltage




E-06 Superimposed AC voltage measurement diagram




Sinusoidal superimposed voltage

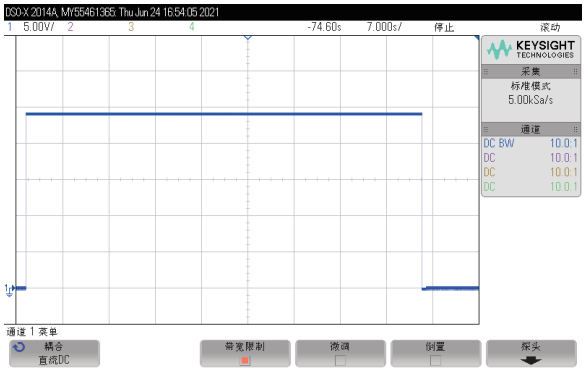



Pulse superimposed voltage.

## 1.2 Long Term Overvoltage

Test the resistance of parts under long-term overvoltage. Simulate the situation of overvoltage caused by the failure of the generator control module during driving.

| Long term overvoltage test parameters. | |
|---|---|
| Working mode of the tested sample | Working mode II.b |
| Working mode | 60 min |
| Continuous test voltage | 18V |
| Test temperature | $T_{max}$-20℃ |
| Number of test cycles | 1 |
| Sample quantity | At least 6 pieces |

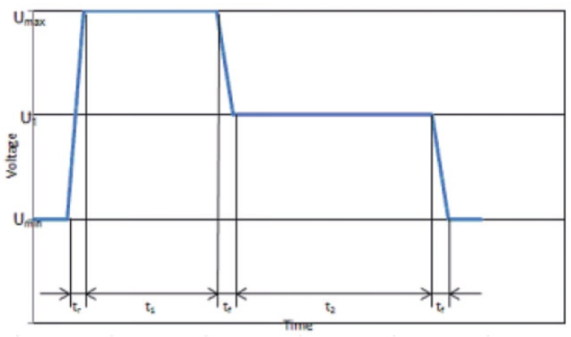



measured drawing

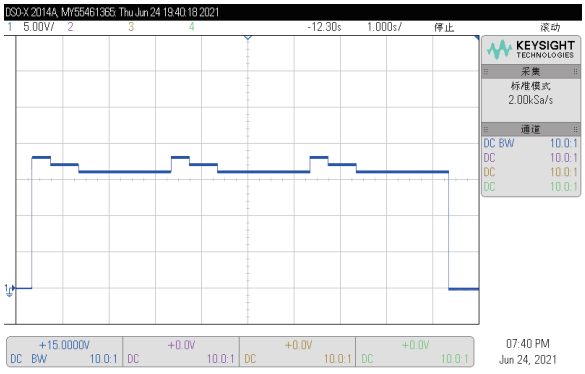
## 1.3 Transient Overvoltage

Test simulation when turning off high-power loads or accelerating rapidly for a short time Short term overvoltage occurs under certain conditions.

| Instantaneous Overvoltage Test Parameters | |
|---|---|
| Working mode of the tested sample | Working mode II.b |
| $U_{Bmin}$ | 16V |
| $U_1$ | 17V |
| $U_{Bmax}$ | 18V |
| $t_r$ | 1ms |
| $t_f$ | 1ms |
| $t_1$ | 400ms |
| $t_2$ | 600ms |
| Number of cycles | 1、Short time test: 3 pulses within 10 seconds |
| | 2、Life test: 1000 test pulses Impulse, with a time interval of 9 seconds |
| Sample quantity | At least 6 pieces |




Schematic diagram of instantaneous overvoltage test

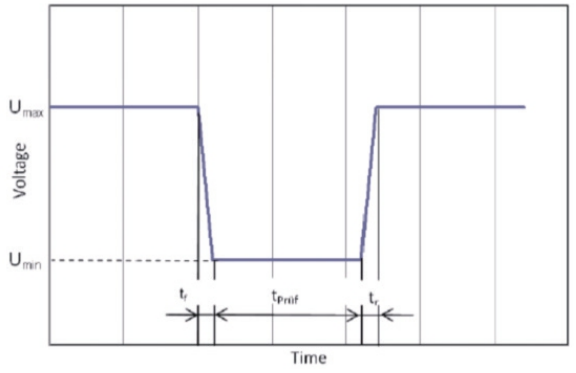



Measured drawing

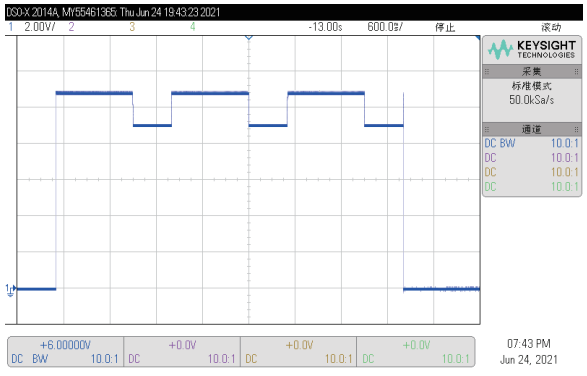
## 1.4 Instantaneous Low Voltage

Test and simulate short-term low voltage when turning on high-power loads Under voltage condition occurs。

| Instantaneous Overvoltage Test Parameters | |
|---|---|
| Working mode of the tested sample | Working mode II.b |
| $U_{Bmax}$ | 10.8V |
| $U_{Bmin}$ | 9V |
| $T_r$ | 1.8ms |
| $T_r$ | 1.8ms |
| $T_{pruf}$ | 500ms |
| Number of cycles | 1 |
| Sample quantity | At least 6 pieces |




Schematic diagram of instantaneous low voltage test

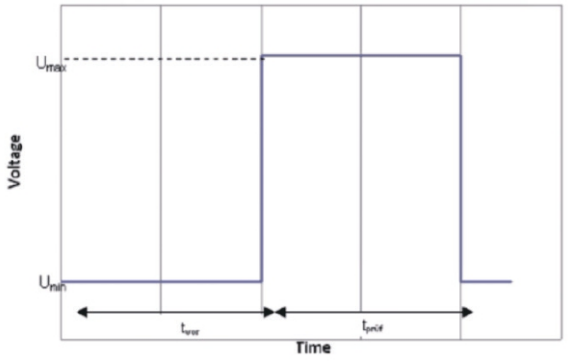



Measured drawing

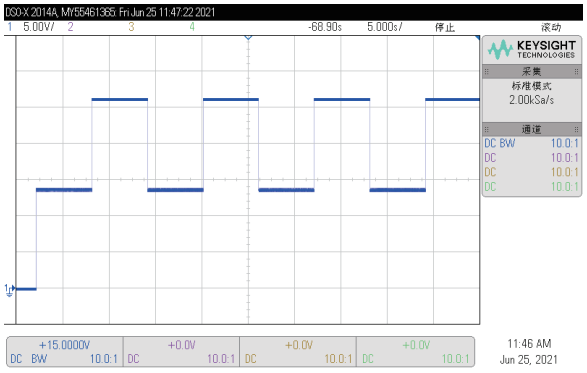
## 1.5 Jump Voltage Start

Simulate the working conditions of starting the vehicle with an external power source. Maximum measurement The test voltage can come from an external commercial vehicle power source for start-up。

| Jump Voltage Start Test Parameters | |
|---|---|
| Working mode of the tested sample | Working mode II.b |
| $U_{Bmax}$ | 26V |
| $U_{Bmin}$ | 13.5V |
| $T_r$ | 60s |
| $T_{pruf}$ | 60s |
| Number of cycles | 1 |
| Sample quantity | At least 6 pieces |




Schematic diagram of jump voltage start test

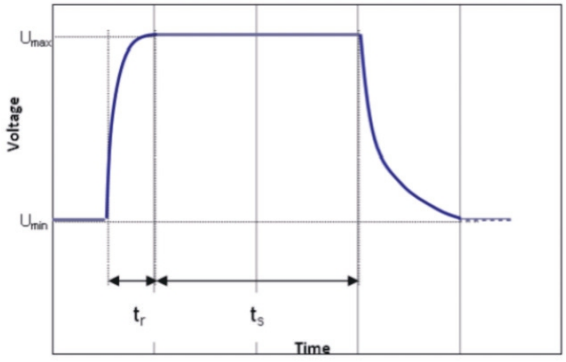



measured drawing

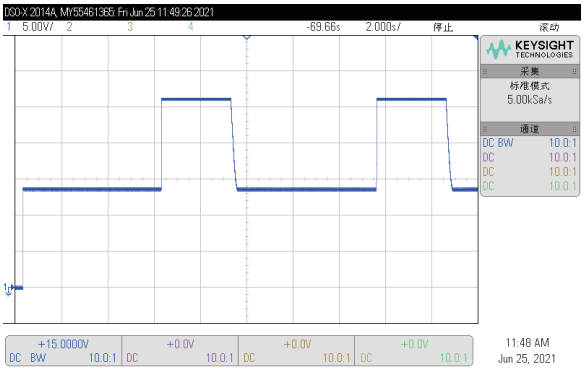
## 1.6 Load Drop

Due to the inherent characteristics of the generator, in larger electrical systems After the load is turned off, overvoltage pulses will be generated real The verified waveform is used to simulate this working condition。

| Load Drop Test Parameters | |
|---|---|
| Working mode of the tested sample | Working mode II.b |
| $U_{Bmax}$ | 26V |
| $U_{Bmin}$ | 13.5V |
| $T_r$ | 10ms |
| $T_s$ | 300ms |
| Interval time | 1min |
| Number of cycles | 10 |
| Sample quantity | At least 6 pieces |




Schematic diagram of load drop test

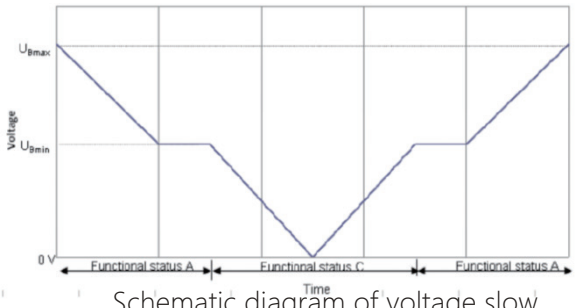



Measured drawing

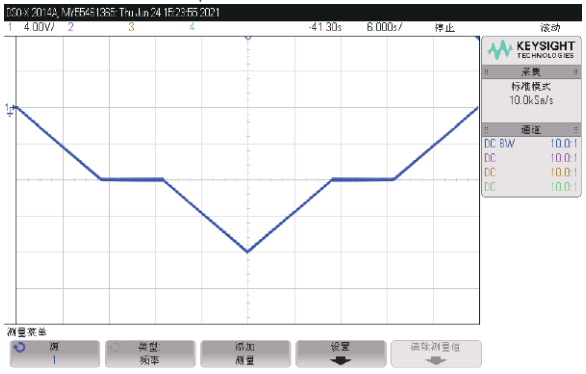
## 1.7 Slow Decrease/Increase In Working Voltage

Simulate slow voltage of the vehicle battery during slow charging and discharging process A situation of slow ascent and descent.

| Test Parameters For Slow Decrease/ Slow Increase Of working Voltage | |
|---|---|
| Working mode of the tested sample | Test 1: T.30 on and KL15 on<br>Test 2: T.15 on |
| Start voltage | $U_{Bmax}$ |
| Voltage change rate | 0.5V/min |
| Holding voltage | $U_{Bmin}$ |
| HOLD (At $U_{Bmin}$) | Until the event record of the part is read out |
| Minimum voltage | 0V |
| End voltage | $U_{Bmax}$ |
| Number of cycles | Working mode II. b 1 cycle<br>Working mode II.a 1 cycle |
| Sample quantity | At least 6 pieces |




Schematic diagram of voltage slow drop and slow rise test

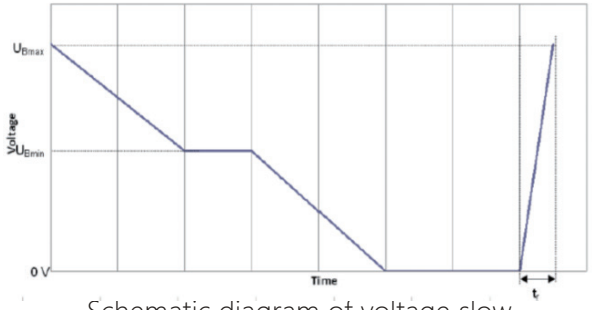



Measured drawing

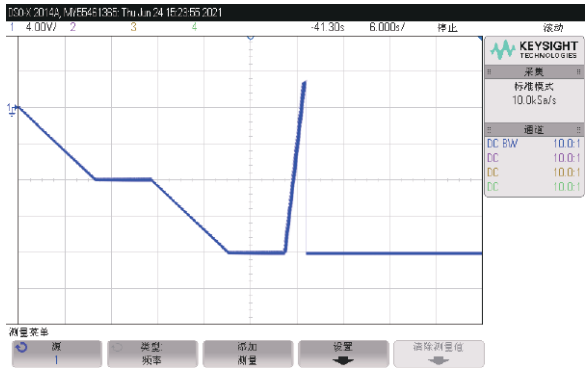
## 1.8 Slow Decrease/Rapid Increase In Working Voltage

This experiment simulates a slow decrease in battery voltage to 0V, but Due to the sudden increase in external power supply, the actual operating conditions were affected.

| Test Parameters For Slow Decrease/ Rapid Increase Of Working Voltage | |
|---|---|
| Working mode of the tested sample | Test 1: T.30 on and KL15 on<br>Test 2: T.15 on |
| Start voltage | $U_{Bmax}$ |
| Voltage change rate | 0.5V/min |
| Holding voltage | $U_{Bmin}$ |
| HOLD (At $U_{Bmin}$) | Until the event record of the part is read out |
| End voltage | $U_{Bmax}$ |
| OV HOLD | At least 1 minute to ensure complete discharge of internal capacitance |
| Tr | ≤0.5s |
| Number of cycles | The sample should be at least at T.15 and T.30 conditions Test once each |
| Sample quantity | At least 6 pieces |




Schematic diagram of voltage slow decrease/rapid increase test

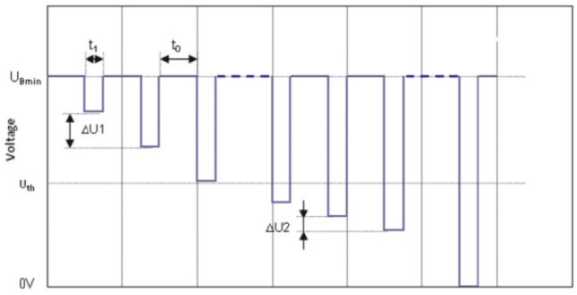



Measured drawing

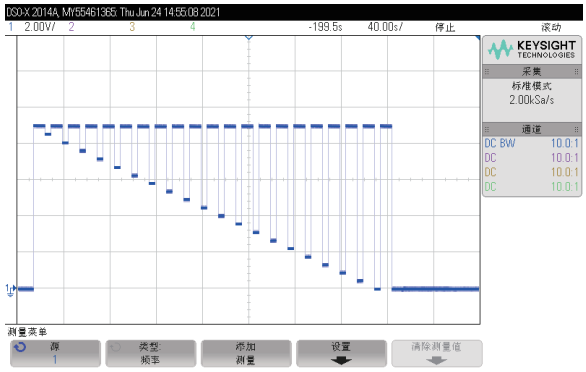
## 1.9 Reset Test

Simulate the environment of part reset behavior and reset the parts Conduct behavior testing. Boundary conditions for testing (such as assembly, connection A detailed description of the system must be provided.

| Reset test parameters | |
|---|---|
| Working mode of the tested sample | Working mode II.b |
| Uth | 6V |
| ▵U1 (UBmax to 6V) | 0.5V |
| ▵U2 (6V to 0V) | 0.2V |
| T0-DUT on | The time should be greater than 10 seconds until the tested sample Fully restore functionality (all system functions are heavy New startup with no errors) |
| T1-Test Sequence 1 | 5s |
| T1-Test Sequence 2 | 100ms |
| Rise/fall time | 100ms |
| Number of cycles | 1 |
| Sample quantity | At least 6 pieces |



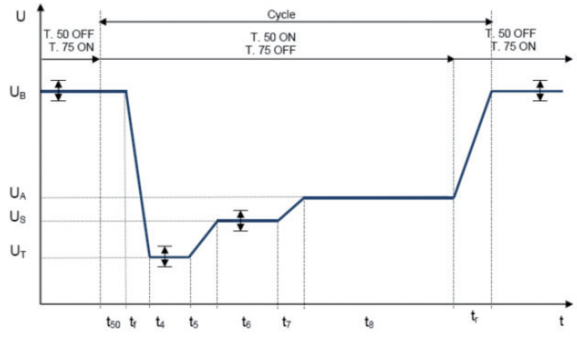

Schematic diagram of reset test pulse test



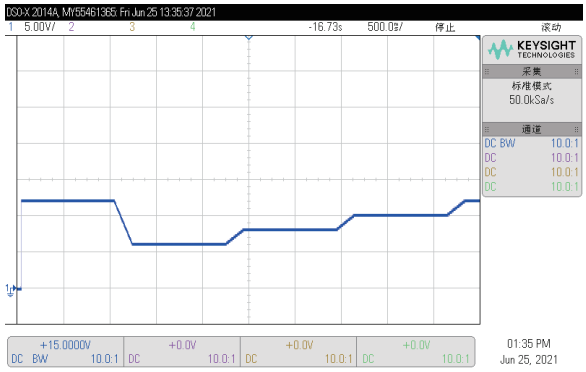

Measured drawing

## 1.10 Pulse Voltage During Engine Start (Hot Start)

| Hot Qi Artery Pulse Test Parameters | | |
|---|---|---|
| Parameter | Test pulse "short time" | Test pulse "long duration" |
| UB | 11.0V | |
| UT | 7.0V | |
| US | 8.0V | |
| UA | 9.0V | |
| T50 | ≥10ms | |
| Tf | ≤1ms | |
| T4 | 15ms | |
| T5 | 70ms | |
| T6 | 240ms | |
| T7 | 70ms | |
| T8 | 600ms | |
| Tr | ≤1ms | |
| Ri | 0.01Ω | |
| Interval between two cycles | 2s | 20s |
| Number of test cycles | 10 | 100 |




Schematic diagram of engine hot start mode



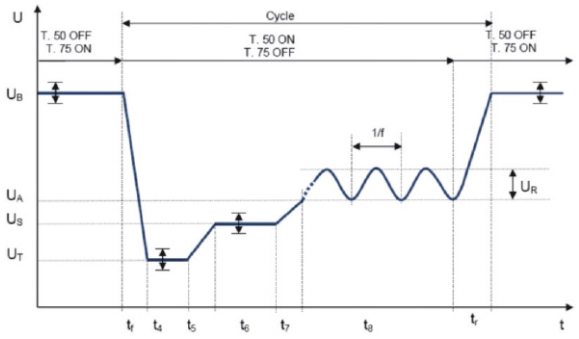

Measured drawing

## 1.11Pulse Voltage During Engine Start (Cold Start)

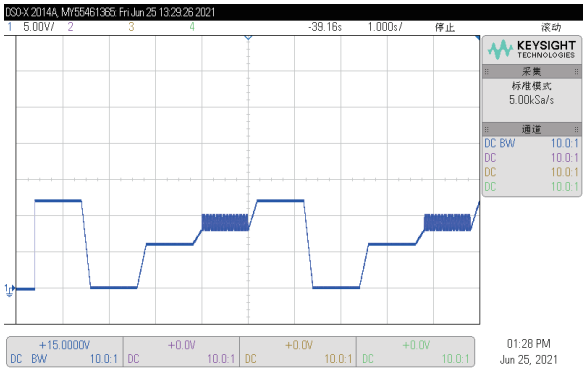
During the engine start-up process, the battery voltage will briefly drop to a very low level and then slightly increase. Most parts are activated before startup, Inactive during startup, active again after successful startup。

This test is to verify whether the parts meet the requirements under startup conditions. The entire vehicle will start under different conditions, such as cold start and hot start. For the sake of fullness Different working conditions require the use of two different test sequences to test the parts. The part must meet all test sequences。

| Cold Start Test Parameters | | |
|---|---|---|
| Parameter | Test pulse "normal" | Test pulse 'severe' |
| $U_B$ | 11.0V | 11.0V |
| $U_T$ | 4.5V | 3.2V |
| $U_S$ | 4.5V | 5.0V |
| $U_A$ | 6.5V | 6.0V |
| $U_R$ | 2V | 2V |
| $T_f$ | ≤1ms | ≤1ms |
| $T_4$ | 0ms | 19ms |
| $T_5$ | 0ms | ≤1ms |
| $T_6$ | 19ms | 329ms |
| $T_7$ | 50ms | 50ms |
| $T_8$ | 10s | 10s |
| $T_r$ | 100ms | 100ms |
| F | 2Hz | 2Hz |
| $R_i$ | 0.01Ω | 0.01Ω |
| Interval between two cycles | 2s | 2s |
| Number of test cycles | 10 | 10 |




Schematic diagram of cold start mode



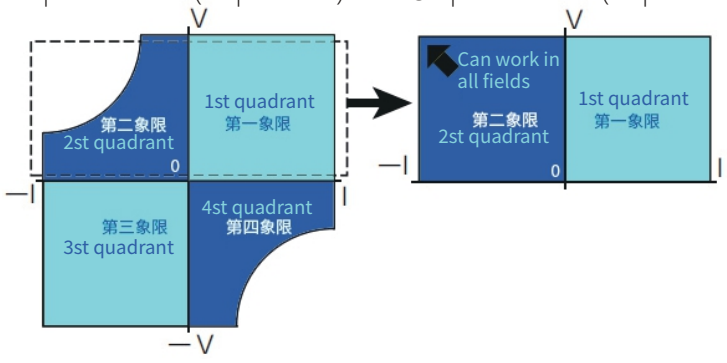

Measured drawing

## 1.12 Unipolar Mode

This is a unique feature of this product. The voltage is in a single polarity, hence it is called a unipolar mode. Generally, the current of a unipolar power supply only flows in a single direction, but In the unipolar mode of HY-BP, the current can flow in both directions (sink, source)。

According to the following figure, in the cross plot of voltage (vertical axis) and current (horizontal axis), it can operate in the first and second quadrants. For safety, in bipolar mode In the formula, the unipolar mode can work in all fields of the second quadrant。

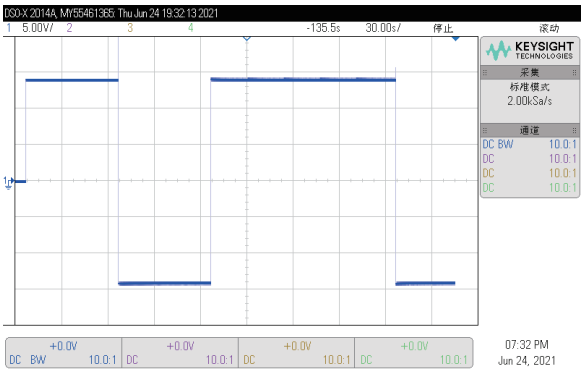
Bipolar mode (4 quadrant) Unipolar mode (2 quadrant)



## 1.13 Reverse Polarity Test

Simulate the resistance of DUT to reverse polarity during jump start of the battery Connection. Reverse polarity may occur multiple times without causing component damage Test the resistance of electronic and electrical components under reverse polarity of input voltage。

Testing voltage: -14 V
Test time : 2 min

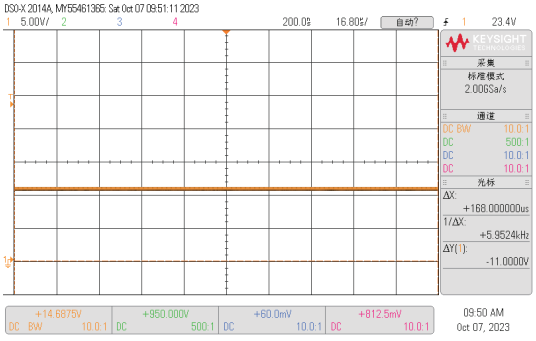


Measured drawing

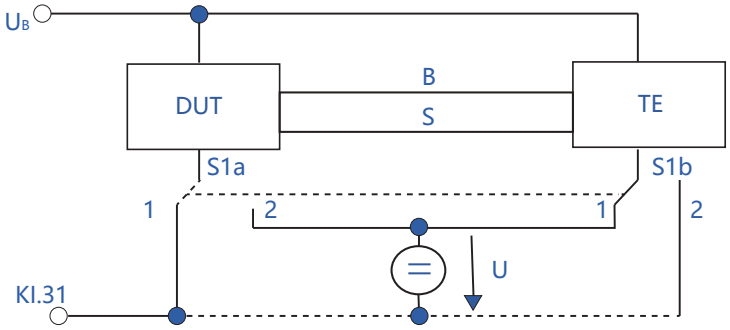
## 1.14 Ground Offset (Option Supported)

If the part has several sets of power inputs, potential differences may occur between different power sources. +/-1 V deviation between the ground of each power supply In poor cases, it is necessary to ensure that the parts function properly。

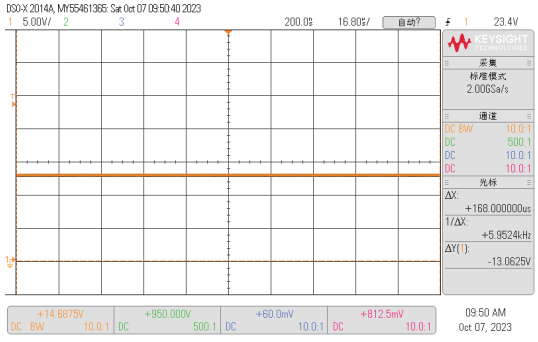
| Ground Offset Test Parameters | |
|---|---|
| Working mode of the tested sample | Working mode II.b |
| Source voltage | 1V |
| Number of cycles | Arrangement of all switch positions |
| Sample quantity | At least 6 pieces |



12V Shifting+1V




Circuit schematic ground offset



12V Shifting-1V

## 1.15 Pin Interruption (Option Supported: HY-PIS 001 Pin Interrupt Simulator)


HY-PIS 001 Pin interrupt simulator

### HY-PIS 001 Pin Interrupt Simulator

The wire harness interruption (micro interruption) simulator is specifically designed for wiring harnesses in power and signal lines Interrupt testing, simulating the interruption, insertion, and removal of power and signal lines. Widely used in automotive electronics Occasions for interrupt testing of sub wiring harnesses。

**Compliant with standards**

- BMW QV65013
- GMW3172
- MBN LV124 (2013)
- MBN LV148
- Renault 36-00-808/--M
- Nissan 28401 NDS02

**Tests that can be met**

- E-10 Brief Voltage Drop
- E-13 Dropout Pin
- E-14 Dropout Connector
- E48-09 Short interruptions

### Machine Parameters

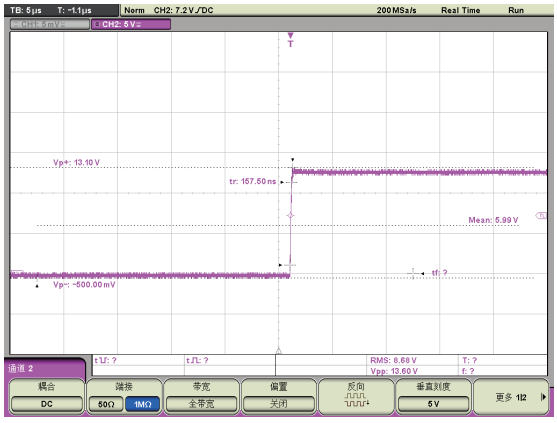
- Working power supply: 220V±10% AC 50/60Hz
- The minimum interruption time for both power and signal lines can reach 1 μ S
- Switching time of both power and signal lines<200 ns

### Power Cord Switch

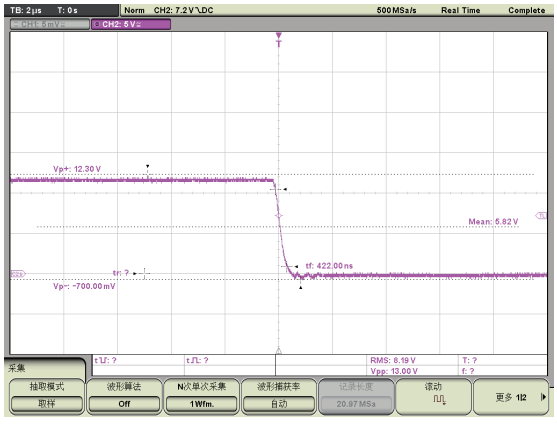
- Power switch: 2-way switch: - DC+power cord- DC grounding wire
- EUT voltage: ±80V
- EUT Maximum current: 50A、100A、200A Optional
- S2 discharge resistor: open circuit、0Ω、0.1Ω、1Ω、100Ω
- Switching time: ＜200ns
- Drop duration: 1μs
- Rising/falling edge: ＜ 1μs@1Ω， 1μs@100Ω

### Signal Line Switch

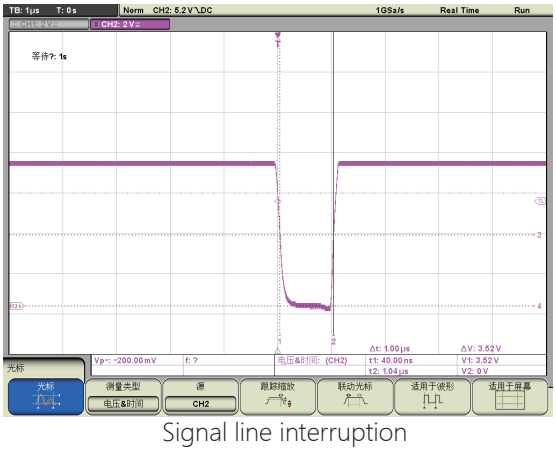
- Number of channels: 16
- EUT voltage: ±50V/3A
- Switching method: automatic switching
- Test mode: single channel test, multi channel simultaneous test
- Switching time: ＜200ns
- Drop duration: 1μs
- Rising/falling edge: ＜1μs@1Ω,1μs@1kΩ



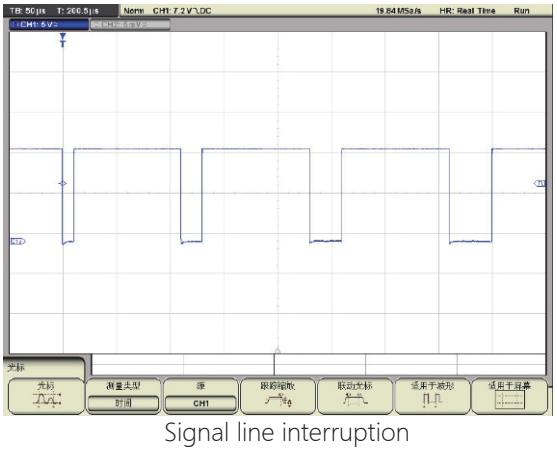
Signal line up



Signal line descent

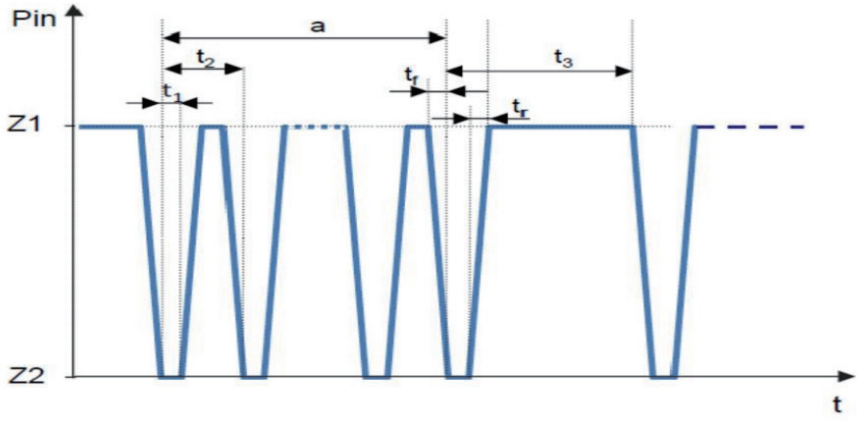


Signal line interruption



Signal line interruption

Simulate the interruption of wires on a single pin. Considering that the duration of interrupts may vary greatly, two different types of tests should be applied Simulate waveform (poor contact or permanent open circuit)。




| Pin Interruption Test Parameters | | |
|---|---|---|
| Sample working mode | Working mode II.a与II.c<br>The test must cover all relevant power modes (e.g.,T.15,T.30,T.87) | |
| Z1 | Scenario 1: Pin connection | |
| Z2 | Scenario 2: Pin disconnected | |
| Tr | ≤ (0.1*t1) | |
| Tf | ≤ (0.1*t1) | |
| Number of cycles | One requirement applies to two testing methods and their final status:<br>3 cycles II.a<br>3 cycles II.c<br>Each test needs to be evaluated separately | |
| Sample quantity | At least 6 pieces | |
| Test 1 | Each pin is removed for 10 seconds before resetting again | |
| Number of cycles | To simulate poor contact, apply a pulse group to each pin。 | |
| | The number of pulses t2 included in a pulse group | 4000 |
| | A | burst |
| | T1 | 0.1ms |
| | T2 | 1ms |
| | T3 | 10s |

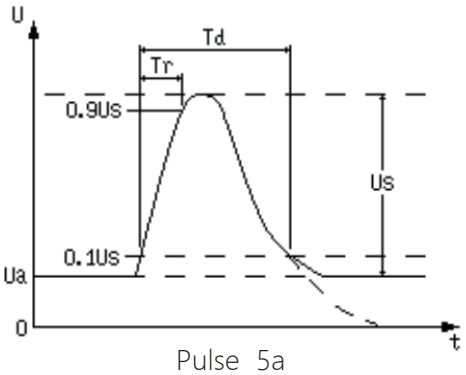
## 1.16 Load Shedding (Option Support: HY-7637-P5A、HY-7637-P5B)


HY-7637-P5A

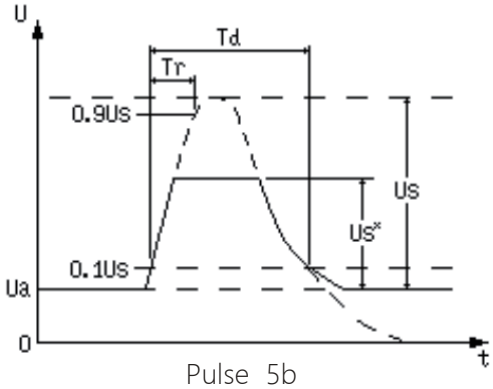

HY-7637-P5B

Load shedding is the energy pulse generated by the generator when supplying power to on-board devices after the battery is disconnected for certain reasons in a simulated automotive electrical system Charge. The waveform of load 5a without any suppression devices, 5b is the waveform after adding surge suppression devices, and 5a and 5b output pulse width Maintain consistency in degree。

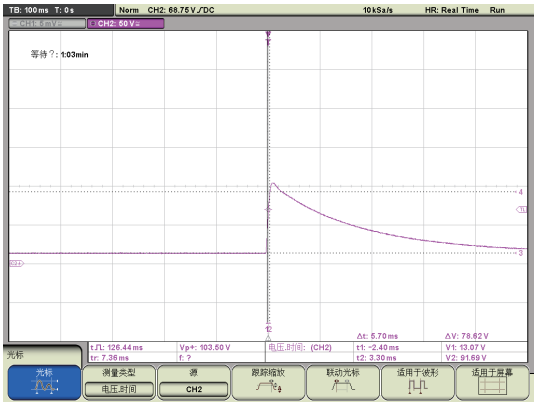
| | |
|---|---|
| Pulse 5a | Simulate that the AC generator is generating charging current while disconnecting the battery, while the generator circuit is still Transient phenomena with other loads |
| Pulse 5b | Simulate the transient phenomenon that occurs in the appealed case due to the presence of suppression devices in the generator circuit |
| Compliant with standards | Testing of ISO 7637-2 and other related standards |
| FEATURES | ■ Built in 60V/30A coupled decoupling network (CDN), can be used separately<br>■ Both output voltage and interval time can operate in step mode |



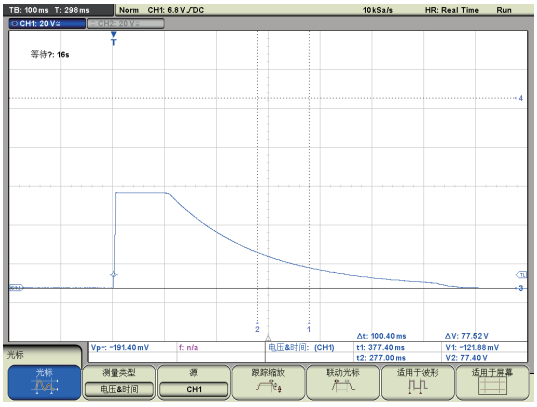

Pulse 5a




Pulse 5b



Pulse 5a Actual measurement



Pulse 5b Actual measurement



| Pulse 5a (Testing Parameters) | | |
|---|---|---|
| | 12V system | 24V system |
| Output voltage (Us) | -10~-800V | 10~800V |
| Output resistance (Ri) | 0.5~8Ω | 1~8Ω |
| Pulse width (Td) | 40ms、100ms、200ms、350ms、400ms | 100ms、200ms、350ms、400ms |
| Rise time (Tr) | 10ms | |
| Interval time (T1) | 60~999ms | |
| Pulse count | 1~60000 | |
| Size | (W) 495mm* (D) 550mm* (H) 285mm | |
| Weight | about 38kg | |
| Pulse 5b (Test Parameter) | | |
| Suppression voltage (Us*) | 10.0~100.0V | 10.0~200.0V |
| Size | (W) 495mm* (D) 550mm* (H) 195mm | |
| Weight | about 11kg | |

## Technical Parameter

### 20V Series Technical Parameters

| Models | | HY-BP 20-10 | HY-BP 20-20 | HY-BP 20-30 | HY-BP 20-40 | HY-BP 20-60 | HY-BP 20-90 | HY-BP 20-100 |
|---|---|---|---|---|---|---|---|---|
| Rated output voltage | | ±20V | ±20V | ±20V | ±20V | ±20V | ±20V | ±20V |
| Output current | | ±10A | ±20A | ±30A | ±40A | ±60A | ±90A | ±100A |
| Rated output power | | 200W | 400W | 600W | 800W | 1200W | 1800W | 2000W |
| AC Frequency | Setting range | CV Optional in mode: 0~50.00kHz\0~100.00kHz\0~200.00kHz\0~300.00kHz\0~400.00kHz\0~500.00kHz<br>CC Optional in mode: 0.01Hz~10.00kHz | | | | | | |
| | Set resolution | 0.01Hz | | | | | | |
| | Setting accuracy | ±100ppm, T=(18℃~28℃) | | | | | | |
| | Sweep frequency | Linear, logarithmic | | | | | | |
| | Sweep time | 100μs-1000s (resolution ratio 100μs) | | | | | | |
| AC Waveform | Type | Sine wave, square wave, triangular wave, arbitrary waveform (22 types) | | | | | | |
| | Start phase | 0~359° | | | | | | |
| | Square wave DUTY | 0.1%~99.9% (F < 100Hz), 1%~99% (100Hz≤F < 1kHz), 10%~90% (1kHz≤F < 10kHz), 50% regular (10kHz < F) | | | | | | |
| **CV Mode** | | | | | | | | |
| DC Voltage | Setting range (bipolar) | 0~±20V | | | | | | |
| | Setting range (single pole) | 0~20V | | | | | | |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Voltage | Setting range | 0~20V | | | | | | |
| Voltage response time (see note 2、3) | | (Visible annotations1)<br>Frequency characteristic (TYP value) DC~150kHz, voltage response time: 2.3 μ s. 6.7 μ s. 23 μ s. 67 μ S optional<br>Frequency characteristic (TYP value) DC~100kHz, voltage response time: 3.5 μ s. 10 μ s. 35 μ s. 100 μ S optional | | | | | | |
| Note 1: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 1Hz, reaction time 3.5 μ s. Rated load)<br>Note 2: Rising edge time/falling edge time (rated load, excluding output ON/OFF). The frequency characteristics will also change according to the set reaction time (frequency range=0.35/rising edge time).<br>Note 3: Rise time: When the output voltage changes from 0V to the rated voltage, the change in output voltage is 10% to 90% of the rated time. Falling edge time: When the output voltage changes from the rated voltage to 0V, the output voltage The change in pressure is between 90% and 10% of the rated time. | | | | | | | | |
| **CC Mode** | | | | | | | | |
| DC Current | Setting range (bipolar) | 0~±10A | 0~±20A | 0~±30A | 0~±40A | 0~±60A | 0~±90A | 0~±100A |
| | Setting range (single pole) | 0~±10A | 0~±20A | 0~±30A | 0~±40A | 0~±60A | 0~±90A | 0~±100A |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Current | Setting range | 0~20App | 0~40App | 0~60App | 0~80App | 0~120App | 0~180App | 0~200App |
| Current reaction time (Visible annotations5、6) | | (Visible annotations4)<br>Frequency characteristic (TYP value) DC~5kHz, voltage response time: 70 μ s. 100 μ s. 350 μ s. 1ms optional<br>Frequency characteristic (TYP value) DC~10kHz, voltage response time: 35 μ s. 100 μ s. 350 μ s. 1ms optional | | | | | | |
| Note 4: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 100Hz, reaction time 35 μ s. Rated load). The frequency characteristics will change based on the Impedance value of the load. The Imperformance value of the load increases The time-frequency characteristics decrease.<br>Note 5: Rising edge time/falling edge time (rated load, excluding output ON/OFF). According to the different times of load Impedance, it will also change.<br>Note 6: Rise time: When the output current changes from 0A to the rated current, the change in output current is 10% to 90% of the rated time. Falling edge time: When the output current changes from the rated current to 0A, the output current The variation of flow is between 90% and 10% of the rated time. | | | | | | | | |
| **Accuracy** | | | | | | | | |
| Voltage measurement | DC | ± (0.05% reading +0.05% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.05% reading +0.05% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (0.5% reading +0.5% range ) (10kHz-500kHz) ,T=(18℃~28℃) | | | | | | |
| Current measurement | DC | ± (0.5% reading +0.5% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.5% reading +0.5% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (5% reading +10% range ) (10kHz-300kHz) ,T=(18℃~28℃) | | | | | | |

| **Resolution Ratio** | | |
|---|---|---|
| Voltage setting | DC、AC、DC+AC | 0.001V ( U≤60V ) |
| Current setting | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) |
| Voltage read back | DC、AC、DC+AC | 0.001V ( U≤60 V ) |
| Current reading back | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) |

## 20V-30V Series Technical Parameters

| Models | | HY-BP 20-120 | HY-BP 20-150 | HY-BP 20-200 | HY-BP 20-500 | HY-BP 30-10 | HY-BP 30-13.4 | HY-BP 30-20 |
|---|---|---|---|---|---|---|---|---|
| Rated output voltage | | ±20V | ±20V | ±20V | ±20V | ±30V | ±30V | ±30V |
| Output current | | ±120A | ±150A | ±200A | ±500A | ±10A | ±13.4A | ±20A |
| Rated output power | | 2400W | 3000W | 4000W | 10kW | 300W | 400W | 600W |
| AC Frequency | Setting range | CV Optional in mode: 0~50.00kHz\0~100.00kHz\0~200.00kHz\0~300.00kHz\0~400.00kHz\0~500.00kHz<br>CC Optional in mode: 0.01Hz~10.00kHz | | | | | | |
| | Set resolution | 0.01Hz | | | | | | |
| | Setting accuracy | ±100ppm, T=(18℃~28℃) | | | | | | |
| | sweep frequency | Linear, logarithmic | | | | | | |
| | Sweep time | 100μs-1000s (resolution ratio 100μs) | | | | | | |
| AC Waveform | Type | Sine wave, square wave, triangular wave, arbitrary waveform (22 types) | | | | | | |
| | Start phase | 0~359° | | | | | | |
| | Square wave DUTY | 0.1%~99.9% (F < 100Hz), 1%~99% (100Hz≤F < 1kHz), 10%~90% (1kHz≤F < 10kHz), 50% regular (10kHz < F) | | | | | | |
| **CV Mode** | | | | | | | | |
| DC Voltage | Setting range (bipolar) | 0~±20V | | | | 0~±30V | | |
| | Setting range (single pole) | 0~20V | | | | 0~30V | | |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | ±100ppm/℃ (range) | | |
| AC voltage | Setting range | 0~20V | | | | 0~30V | | |
| Voltage response time (see note 2、3) | | (Visible annotations1)<br>Frequency characteristic (TYP value) DC~150kHz, voltage response time: 2.3 μ s. 6.7 μ s. 23 μ s. 67 μ S optional<br>Frequency characteristic (TYP value) DC~100kHz, voltage response time: 3.5 μ s. 10 μ s. 35 μ s. 100 μ S optional | | | | | | |

Note 1: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 1Hz, reaction time 3.5 μ s. Rated load)
Note 2: Rising edge time/falling edge time (rated load, excluding output ON/OFF). The frequency characteristics will also change according to the set reaction time (frequency range=0.35/rising edge time).
Note 3: Rise time: When the output voltage changes from 0V to the rated voltage, the change in output voltage is 10% to 90% of the rated time. Falling edge time: When the output voltage changes from the rated voltage to 0V, the output voltage The change in pressure is between 90% and 10% of the rated time.

| **CC Mode** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DC Current | Setting range (bipolar) | 0~±120A | 0~±150A | 0~±200A | 0~±500A | 0~±10A | 0~±13.4A | 0~±20A |
| | Setting range (single pole) | 0~±120A | 0~±150A | 0~±200A | 0~±500A | 0~±10A | 0~±13.4A | 0~±20A |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Current | Setting range | 0~240App | 0~300App | 0~400App | 0~1000App | 0~20App | 0~26.8App | 0~40App |
| Current reaction time (Visible annotations5、6) | | (Visible annotations4)<br>Frequency characteristic (TYP value) DC~5kHz, voltage response time: 70 μ s. 100 μ s. 350 μ s. 1ms optional<br>Frequency characteristic (TYP value) DC~10kHz, voltage response time: 35 μ s. 100 μ s. 350 μ s. 1ms optional | | | | | | |

Note 4: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 100Hz, reaction time 35 μ s. Rated load). The frequency characteristics will change based on the Impedance value of the load. The Imperformance value of the load increases The time-frequency characteristics decrease.
Note 5: Rising edge time/falling edge time (rated load, excluding output ON/OFF). According to the different times of load Impedance, it will also change.
Note 6: Rise time: When the output current changes from 0A to the rated current, the change in output current is 10% to 90% of the rated time. Falling edge time: When the output current changes from the rated current to 0A, the output current The variation of flow is between 90% and 10% of the rated time.

| **Accuracy** | | |
|---|---|---|
| Voltage measurement | DC | ± (0.05% reading +0.05% range ) ,T=(18℃~28℃) |
| | AC<br>DC+AC | ± (0.05% reading +0.05% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (0.5% reading +0.5% range ) (10kHz-500kHz) ,T=(18℃~28℃) |
| Current measurement | DC | ± (0.5% reading +0.5% range ) ,T=(18℃~28℃) |
| | AC<br>DC+AC | ± (0.5% reading +0.5% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (5% reading +10% range ) (10kHz-300kHz) ,T=(18℃~28℃) |

| **Resolution Ratio** | | |
|---|---|---|
| Voltage setting | DC、AC、DC+AC | 0.001V ( U≤60V ) |
| Current setting | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) |
| Voltage read back | DC、AC、DC+AC | 0.001V ( U≤60V ) |
| Current reading back | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) |

## 30V Series Technical Parameters

| Models | | HY-BP 30-26.7 | HY-BP 30-40 | HY-BP 30-60 | HY-BP 30-100 | HY-BP 30-134 | HY-BP 30-200 | HY-BP 30-267 |
|---|---|---|---|---|---|---|---|---|
| Rated output voltage | | ±30V | ±30V | ±30V | ±30V | ±30V | ±30V | ±30V |
| Output current | | ±26.7A | ±40A | ±60A | ±100A | ±134A | ±200A | ±267A |
| Rated output power | | 800W | 1200W | 1800W | 3000W | 4000W | 6000W | 8000W |
| AC Frequency | Setting range | CV Optional in mode: 0~50.00kHz\0~100.00kHz\0~200.00kHz\0~300.00kHz\0~400.00kHz\0~500.00kHz<br>CC Optional in mode: 0.01Hz~10.00kHz | | | | | | |
| | Set resolution | 0.01Hz | | | | | | |
| | Setting accuracy | ±100ppm, T=(18℃~28℃) | | | | | | |
| | Sweep frequency | Linear, logarithmic | | | | | | |
| | Sweep time | 100μs-1000s (resolution ratio 100μs) | | | | | | |
| AC Waveform | Type | Sine wave, square wave, triangular wave, arbitrary waveform (22 types) | | | | | | |
| | Start phase | 0~359° | | | | | | |
| | Square wave DUTY | 0.1%~99.9% (F < 100Hz), 1%~99% (100Hz≤F < 1kHz), 10%~90% (1kHz≤F < 10kHz), 50% regular (10kHz < F) | | | | | | |
| **CV Mode** | | | | | | | | |
| DC Voltage | Setting range (bipolar) | 0~±30V | | | | | | |
| | Setting range (single pole) | 0~30V | | | | | | |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Voltage | Setting range | 0~30V | | | | | | |
| Voltage response time (see note 2、3) | | (Visible annotations1)<br>Frequency characteristic (TYP value) DC~150kHz, voltage response time: 2.3 μ s. 6.7 μ s. 23 μ s. 67 μ S optional<br>Frequency characteristic (TYP value) DC~100kHz, voltage response time: 3.5 μ s. 10 μ s. 35 μ s. 100 μ S optional | | | | | | |
| Note 1: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 1Hz, reaction time 3.5 μ s. Rated load)<br>Note 2: Rising edge time/falling edge time (rated load, excluding output ON/OFF). The frequency characteristics will also change according to the set reaction time (frequency range=0.35/rising edge time).<br>Note 3: Rise time: When the output voltage changes from 0V to the rated voltage, the change in output voltage is 10% to 90% of the rated time. Falling edge time: When the output voltage changes from the rated voltage to 0V, the output voltage The change in pressure is between 90% and 10% of the rated time. | | | | | | | | |
| **CC Mode** | | | | | | | | |
| DC Current | Setting range (bipolar) | 0~±26.7A | 0~±40A | 0~±60A | 0~±100A | 0~±134A | 0~±200A | 0~±267A |
| | Setting range (single pole) | 0~±26.7A | 0~±40A | 0~±60A | 0~±100A | 0~±134A | 0~±200A | 0~±267A |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Current | Setting range | 0~53.4App | 0~80App | 0~120App | 0~200App | 0~268App | 0~400App | 0~534App |
| Current reaction time (Visible annotations5、6) | | (Visible annotations4)<br>Frequency characteristic (TYP value) DC~5kHz, voltage response time: 70 μ s. 100 μ s. 350 μ s. 1ms optional<br>Frequency characteristic (TYP value) DC~10kHz, voltage response time: 35 μ s. 100 μ s. 350 μ s. 1ms optional | | | | | | |
| Note 4: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 100Hz, reaction time 35 μ s. Rated load). The frequency characteristics will change based on the Impedance value of the load. The Imperformance value of the load increases The time-frequency characteristics decrease.<br>Note 5: Rising edge time/falling edge time (rated load, excluding output ON/OFF). According to the different times of load Impedance, it will also change.<br>Note 6: Rise time: When the output current changes from 0A to the rated current, the change in output current is 10% to 90% of the rated time. Falling edge time: When the output current changes from the rated current to 0A, the output current The variation of flow is between 90% and 10% of the rated time. | | | | | | | | |
| **Accuracy** | | | | | | | | |
| Voltage measurement | DC | ± (0.05% reading +0.05% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.05% reading +0.05% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (0.5% reading +0.5% range ) (10kHz-500kHz) ,T=(18℃~28℃) | | | | | | |
| Current measurement | DC | ± (0.5% reading +0.5% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.5% reading +0.5% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (5% reading +10% range ) (10kHz-300kHz) ,T=(18℃~28℃) | | | | | | |

| Resolution Ratio | | |
|---|---|---|
| Voltage setting | DC、AC、DC+AC | 0.001V ( U≤60V ) |
| Current setting | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) |
| Voltage read back | DC、AC、DC+AC | 0.001V ( U≤60V ) |
| Current reading back | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) |

## 40V Series Technical Parameters

| Models | | HY-BP 40-7.5 | HY-BP 40-10 | HY-BP 40-15 | HY-BP 40-20 | HY-BP 40-30 | HY-BP 40-45 | HY-BP 40-50 |
|---|---|---|---|---|---|---|---|---|
| Rated output voltage | | ±40V | ±40V | ±40V | ±40V | ±40V | ±40V | ±40V |
| Output current | | ±7.5A | ±10A | ±15A | ±20A | ±30A | ±45A | ±50A |
| Rated output power | | 300W | 400W | 600W | 800W | 1200W | 1800W | 2000W |
| AC Frequency | Setting range | CV Optional in mode: 0~50.00kHz\0~100.00kHz\0~200.00kHz\0~300.00kHz\0~400.00kHz\0~500.00kHz<br>CC Optional in mode: 0.01Hz~10.00kHz | | | | | | |
| | Set resolution | 0.01Hz | | | | | | |
| | Setting accuracy | ±100ppm, T=(18℃~28℃) | | | | | | |
| | Sweep frequency | Linear, logarithmic | | | | | | |
| | Sweep time | 100μs-1000s (resolution ratio 100μs) | | | | | | |
| AC Waveform | Type | Sine wave, square wave, triangular wave, arbitrary waveform (22 types) | | | | | | |
| | Start phase | 0~359° | | | | | | |
| | Square wave DUTY | 0.1%~99.9% (F < 100Hz), 1%~99% (100Hz≤F < 1kHz), 10%~90% (1kHz≤F < 10kHz), 50% regular (10kHz < F) | | | | | | |
| **CV Mode** | | | | | | | | |
| DC Voltage | Setting range (bipolar) | 0~±40V | | | | | | |
| | Setting range (single pole) | 0~40V | | | | | | |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Voltage | Setting range | 0~40V | | | | | | |
| Voltage response time (see note 2、3) | | (Visible annotations1)<br>Frequency characteristic (TYP value) DC~150kHz, voltage response time: 2.3 μ s. 6.7 μ s. 23 μ s. 67 μ S optional<br>Frequency characteristic (TYP value) DC~100kHz, voltage response time: 3.5 μ s. 10 μ s. 35 μ s. 100 μ S optional | | | | | | |
| Note 1: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 1Hz, reaction time 3.5 μ s. Rated load)<br>Note 2: Rising edge time/falling edge time (rated load, excluding output ON/OFF). The frequency characteristics will also change according to the set reaction time (frequency range=0.35/rising edge time).<br>Note 3: Rise time: When the output voltage changes from 0V to the rated voltage, the change in output voltage is 10% to 90% of the rated time. Falling edge time: When the output voltage changes from the rated voltage to 0V, the output voltage The change in pressure is between 90% and 10% of the rated time. | | | | | | | | |
| **CC Mode** | | | | | | | | |
| DC Current | Setting range (bipolar) | 0~±7.5A | 0~±10A | 0~±15A | 0~±20A | 0~±30A | 0~±45A | 0~±50A |
| | Setting range (single pole) | 0~±7.5A | 0~±10A | 0~±15A | 0~±20A | 0~±30A | 0~±45A | 0~±50A |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Current | Setting range | 0~15App | 0~20App | 0~30App | 0~40App | 0~60App | 0~90App | 0~100App |
| Current reaction time (Visible annotations5、6) | | (Visible annotations4)<br>Frequency characteristic (TYP value) DC~5kHz, voltage response time: 70 μ s. 100 μ s. 350 μ s. 1ms optional<br>Frequency characteristic (TYP value) DC~10kHz, voltage response time: 35 μ s. 100 μ s. 350 μ s. 1ms optional | | | | | | |
| Note 4: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 100Hz, reaction time 35 μ s. Rated load). The frequency characteristics will change based on the Impedance value of the load. The Imperformance value of the load increases The time-frequency characteristics decrease.<br>Note 5: Rising edge time/falling edge time (rated load, excluding output ON/OFF). According to the different times of load Impedance, it will also change.<br>Note 6: Rise time: When the output current changes from 0A to the rated current, the change in output current is 10% to 90% of the rated time. Falling edge time: When the output current changes from the rated current to 0A, the output current The variation of flow is between 90% and 10% of the rated time. | | | | | | | | |
| **Accuracy** | | | | | | | | |
| Voltage measurement | DC | ± (0.05% reading +0.05% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.05% reading +0.05% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (0.5% reading +0.5% range ) (10kHz-500kHz) ,T=(18℃~28℃) | | | | | | |
| Current measurement | DC | ± (0.5% reading +0.5% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.5% reading +0.5% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (5% reading +10% range ) (10kHz-300kHz) ,T=(18℃~28℃) | | | | | | |

| Resolution Ratio | | |
|---|---|---|
| Voltage setting | DC、AC、DC+AC | 0.001V ( U≤60V ) |
| Current setting | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) |
| Voltage read back | DC、AC、DC+AC | 0.001V ( U≤60V ) |
| Current reading back | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) |

## 40V-60V Series Technical Parameters

| Models | | HY-BP 40-60 | HY-BP 40-75 | HY-BP 40-100 | HY-BP 40-150 | HY-BP 40-200 | HY-BP 40-250 | HY-BP 60-6.7 |
|---|---|---|---|---|---|---|---|---|
| Rated output voltage | | ±40V | ±40V | ±40V | ±40V | ±40V | ±40V | ±60V |
| Output current | | ±60A | ±75A | ±100A | ±150A | ±200A | ±250A | ±6.7A |
| Rated output power | | 2400W | 3000W | 4000W | 6000W | 8000W | 10kW | 400W |
| AC Frequency | Setting range | CV Optional in mode: 0~50.00kHz\0~100.00kHz\0~200.00kHz\0~300.00kHz\0~400.00kHz\0~500.00kHz<br>CC Optional in mode: 0.01Hz~10.00kHz | | | | | | |
| | Set resolution | 0.01Hz | | | | | | |
| | Setting accuracy | ±100ppm, T=(18℃~28℃) | | | | | | |
| | Sweep frequency | Linear, logarithmic | | | | | | |
| | Sweep time | 100μs-1000s (resolution ratio 100μs) | | | | | | |
| AC Waveform | Type | Sine wave, square wave, triangular wave, arbitrary waveform (22 types) | | | | | | |
| | Start phase | 0~359° | | | | | | |
| | Square wave DUTY | 0.1%~99.9% (F < 100Hz), 1%~99% (100Hz≤F < 1kHz), 10%~90% (1kHz≤F < 10kHz), 50% regular (10kHz < F) | | | | | | |
| **CV Mode** | | | | | | | | |
| DC Voltage | Setting range (bipolar) | 0~±40V | | | | | | 0~±60V |
| | Setting range (single pole) | 0~40V | | | | | | 0~60V |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Voltage | Setting range | 0~40V | | | | | | 0~60V |
| Voltage response time (see note 2、3) | | (Visible annotations1)<br>Frequency characteristic (TYP value) DC~150kHz, voltage response time: 2.3 μ s. 6.7 μ s. 23 μ s. 67 μ S optional<br>Frequency characteristic (TYP value) DC~100kHz, voltage response time: 3.5 μ s. 10 μ s. 35 μ s. 100 μ S optional | | | | | | |

Note 1: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 1Hz, reaction time 3.5 μ s. Rated load)
Note 2: Rising edge time/falling edge time (rated load, excluding output ON/OFF). The frequency characteristics will also change according to the set reaction time (frequency range=0.35/rising edge time).
Note 3: Rise time: When the output voltage changes from 0V to the rated voltage, the change in output voltage is 10% to 90% of the rated time. Falling edge time: When the output voltage changes from the rated voltage to 0V, the output voltage The change in pressure is between 90% and 10% of the rated time.

| CC Mode | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DC Current | Setting range (bipolar) | 0~±60A | 0~±75A | 0~±100A | 0~±150A | 0~±200A | 0~±250A | 0~±6.7A |
| | Setting range (single pole) | 0~±60A | 0~±75A | 0~±100A | 0~±150A | 0~±200A | 0~±250A | 0~±6.7A |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Current | Setting range | 0~120App | 0~150App | 0~200App | 0~300App | 0~400App | 0~500App | 0~13.4App |
| Current reaction time (Visible annotations5、6) | | (Visible annotations4)<br>Frequency characteristic (TYP value) DC~5kHz, voltage response time: 70 μ s. 100 μ s. 350 μ s. 1ms optional<br>Frequency characteristic (TYP value) DC~10kHz, voltage response time: 35 μ s. 100 μ s. 350 μ s. 1ms optional | | | | | | |

Note 4: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 100Hz, reaction time 35 μ s. Rated load). The frequency characteristics will change based on the Impedance value of the load. The Imperformance value of the load increases The time-frequency characteristics decrease.
Note 5: Rising edge time/falling edge time (rated load, excluding output ON/OFF). According to the different times of load Impedance, it will also change.
Note 6: Rise time: When the output current changes from 0A to the rated current, the change in output current is 10% to 90% of the rated time. Falling edge time: When the output current changes from the rated current to 0A, the output current The variation of flow is between 90% and 10% of the rated time.

| Accuracy | | |
|---|---|---|
| Voltage measurement | DC | ± (0.05% reading +0.05% range ) ,T=(18℃~28℃) |
| | AC<br>DC+AC | ± (0.05% reading +0.05% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (0.5% reading +0.5% range ) (10kHz-500kHz) ,T=(18℃~28℃) |
| Current measurement | DC | ± (0.5% reading +0.5% range ) ,T=(18℃~28℃) |
| | AC<br>DC+AC | ± (0.5% reading +0.5% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (5% reading +10% range ) (10kHz-300kHz) ,T=(18℃~28℃) |

| Resolution Ratio | | |
|---|---|---|
| Voltage setting | DC、AC、DC+AC | 0.001V ( U≤60V ) |
| Current setting | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) |
| Voltage read back | DC、AC、DC+AC | 0.001V ( U≤60V ) |
| Current reading back | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) |

## 60V Series Technical Parameters

| Models | | HY-BP 60-10 | HY-BP 60-13.4 | HY-BP 60-20 | HY-BP 60-30 | HY-BP 60-33.5 | HY-BP 60-40 | HY-BP 60-50 |
|---|---|---|---|---|---|---|---|---|
| Rated output voltage | | ±60V | ±60V | ±60V | ±60V | ±60V | ±60V | ±60V |
| Output current | | ±10A | ±13.4A | ±20A | ±30A | ±33.5A | ±40A | ±50A |
| Rated output power | | 600W | 800W | 1200W | 1800W | 2000W | 2400W | 3000W |
| AC Frequency | Setting range | CV Optional in mode: 0~50.00kHz\0~100.00kHz\0~200.00kHz\0~300.00kHz\0~400.00kHz\0~500.00kHz<br>CC Optional in mode: 0.01Hz~10.00kHz | | | | | | |
| | Set resolution | 0.01Hz | | | | | | |
| | Setting accuracy | ±100ppm, T=(18℃~28℃) | | | | | | |
| | Sweep frequency | Linear, logarithmic | | | | | | |
| | Sweep time | 100μs-1000s (resolution ratio 100μs) | | | | | | |
| AC Faveform | Type | Sine wave, square wave, triangular wave, arbitrary waveform (22 types) | | | | | | |
| | Start phase | 0~359° | | | | | | |
| | Square wave DUTY | 0.1%~99.9% (F < 100Hz), 1%~99% (100Hz≤F < 1kHz), 10%~90% (1kHz≤F < 10kHz), 50% regular (10kHz < F) | | | | | | |
| **CV Mode** | | | | | | | | |
| DC Voltage | Setting range (bipolar) | 0~±60V | | | | | | |
| | Setting range (single pole) | 0~60V | | | | | | |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Voltage | Setting range | 0~60V | | | | | | |
| Voltage response time (see note 2、3) | | (Visible annotations1)<br>Frequency characteristic (TYP value) DC~150kHz, voltage response time: 2.3 μ s. 6.7 μ s. 23 μ s. 67 μ S optional<br>Frequency characteristic (TYP value) DC~100kHz, voltage response time: 3.5 μ s. 10 μ s. 35 μ s. 100 μ S optional | | | | | | |
| Note 1: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 1Hz, reaction time 3.5 μ s. Rated load)<br>Note 2: Rising edge time/falling edge time (rated load, excluding output ON/OFF). The frequency characteristics will also change according to the set reaction time (frequency range=0.35/rising edge time).<br>Note 3: Rise time: When the output voltage changes from 0V to the rated voltage, the change in output voltage is 10% to 90% of the rated time. Falling edge time: When the output voltage changes from the rated voltage to 0V, the output voltage The change in pressure is between 90% and 10% of the rated time. | | | | | | | | |
| **CC Mode** | | | | | | | | |
| DC Current | Setting range (bipolar) | 0~±10A | 0~±13.4A | 0~±20A | 0~±30A | 0~±33.5A | 0~±40A | 0~±50A |
| | Setting range (single pole) | 0~±10A | 0~±13.4A | 0~±20A | 0~±30A | 0~±33.5A | 0~±40A | 0~±50A |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Current | Setting range | 0~20App | 0~26.8App | 0~40App | 0~60App | 0~67App | 0~80App | 0~100App |
| Current reaction time (Visible annotations5、6) | | (Visible annotations4)<br>Frequency characteristic (TYP value) DC~5kHz, voltage response time: 70 μ s. 100 μ s. 350 μ s. 1ms optional<br>Frequency characteristic (TYP value) DC~10kHz, voltage response time: 35 μ s. 100 μ s. 350 μ s. 1ms optional | | | | | | |
| Note 4: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 100Hz, reaction time 35 μ s. Rated load). The frequency characteristics will change based on the Impedance value of the load. The Imperformance value of the load increases The time-frequency characteristics decrease.<br>Note 5: Rising edge time/falling edge time (rated load, excluding output ON/OFF). According to the different times of load Impedance, it will also change.<br>Note 6: Rise time: When the output current changes from 0A to the rated current, the change in output current is 10% to 90% of the rated time. Falling edge time: When the output current changes from the rated current to 0A, the output current The variation of flow is between 90% and 10% of the rated time. | | | | | | | | |
| **Accuracy** | | | | | | | | |
| Voltage measurement | DC | ± (0.05% reading +0.05% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.05% reading +0.05% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (0.5% reading +0.5% range ) (10kHz-500kHz) ,T=(18℃~28℃) | | | | | | |
| Current measurement | DC | ± (0.5% reading +0.5% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.5% reading +0.5% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (5% reading +10% range ) (10kHz-300kHz) ,T=(18℃~28℃) | | | | | | |
| **Resolution Ratio** | | | | | | | | |
| Voltage setting | DC、AC、DC+AC | 0.001V ( U≤60V ) | | | | | | |
| Current setting | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) | | | | | | |
| Voltage read back | DC、AC、DC+AC | 0.001V ( U≤60V ) | | | | | | |
| Current reading back | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) | | | | | | |

# HY-BP Series Technical Parameter

## 60V-80V Series Technical Parameters

| Models | | HY-BP 60-67 | HY-BP 60-100 | HY-BP 60-133.4 | HY-BP 60-167 | HY-BP 80-5 | HY-BP 80-7.5 | HY-BP 80-10 |
|---|---|---|---|---|---|---|---|---|
| Rated output voltage | | ±60V | ±60V | ±60V | ±60V | ±80V | ±80V | ±80V |
| Output current | | ±67A | ±100A | ±133.4A | ±167A | ±5A | ±7.5A | ±10A |
| Rated output power | | 4000W | 6000W | 8000W | 10kW | 400W | 600W | 800W |
| AC Frequency | Setting range | CV Optional in mode: 0~50.00kHz\0~100.00kHz\0~200.00kHz\0~300.00kHz\0~400.00kHz\0~500.00kHz<br>CC Optional in mode: 0.01Hz~10.00kHz | | | | | | |
| | Set resolution | 0.01Hz | | | | | | |
| | Setting accuracy | ±100ppm, T=(18℃~28℃) | | | | | | |
| | Sweep frequency | Linear, logarithmic | | | | | | |
| | Sweep time | 100μs-1000s (resolution ratio 100μs) | | | | | | |
| AC Waveform | Type | Sine wave, square wave, triangular wave, arbitrary waveform (22 types) | | | | | | |
| | Start phase | 0~359° | | | | | | |
| | Square wave DUTY | 0.1%~99.9% (F < 100Hz), 1%~99% (100Hz≤F < 1kHz), 10%~90% (1kHz≤F < 10kHz), 50% regular (10kHz < F) | | | | | | |
| **CV Mode** | | | | | | | | |
| DC Voltage | Setting range (bipolar) | 0~±60V | | | | 0~±80V | | |
| | Setting range (single pole) | 0~60V | | | | 0~80V | | |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | ±100ppm/℃ (range) | | |
| AC Voltage | Setting range | 0~60V | | | | 0~80V | | |
| Voltage response time (see note 2、3) | | (Visible annotations1)<br>Frequency characteristic (TYP value) DC~150kHz, voltage response time: 2.3 μ s. 6.7 μ s. 23 μ s. 67 μ S optional<br>Frequency characteristic (TYP value) DC~100kHz, voltage response time: 3.5 μ s. 10 μ s. 35 μ s. 100 μ S optional | | | | | | |
| Note 1: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 1Hz, reaction time 3.5 μ s. Rated load)<br>Note 2: Rising edge time/falling edge time (rated load, excluding output ON/OFF). The frequency characteristics will also change according to the set reaction time (frequency range=0.35/rising edge time).<br>Note 3: Rise time: When the output voltage changes from 0V to the rated voltage, the change in output voltage is 10% to 90% of the rated time. Falling edge time: When the output voltage changes from the rated voltage to 0V, the output voltage The change in pressure is between 90% and 10% of the rated time. | | | | | | | | |
| **CC Mode** | | | | | | | | |
| DC Current | Setting range (bipolar) | 0~±67A | 0~±100A | 0~±133.4A | 0~±167A | 0~±5A | 0~±7.5A | 0~±10A |
| | Setting range (single pole) | 0~±67A | 0~±100A | 0~±133.4A | 0~±167A | 0~±5A | 0~±7.5A | 0~±10A |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Current | Setting range | 0~134App | 0~200App | 0~266.8App | 0~334App | 0~10App | 0~15App | 0~20App |
| Current reaction time (Visible annotations5、6) | | (Visible annotations4)<br>Frequency characteristic (TYP value) DC~5kHz, voltage response time: 70 μ s. 100 μ s. 350 μ s. 1ms optional<br>Frequency characteristic (TYP value) DC~10kHz, voltage response time: 35 μ s. 100 μ s. 350 μ s. 1ms optional | | | | | | |
| Note 4: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 100Hz, reaction time 35 μ s. Rated load). The frequency characteristics will change based on the Impedance value of the load. The Imperformance value of the load increases The time-frequency characteristics decrease.<br>Note 5: Rising edge time/falling edge time (rated load, excluding output ON/OFF). According to the different times of load Impedance, it will also change.<br>Note 6: Rise time: When the output current changes from 0A to the rated current, the change in output current is 10% to 90% of the rated time. Falling edge time: When the output current changes from the rated current to 0A, the output current The variation of flow is between 90% and 10% of the rated time. | | | | | | | | |
| **Accuracy** | | | | | | | | |
| Voltage measurement | DC | ± (0.05% reading +0.05% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.05% reading +0.05% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (0.5% reading +0.5% range ) (10kHz-500kHz) ,T=(18℃~28℃) | | | | | | |
| Current measurement | DC | ± (0.5% reading +0.5% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.5% reading +0.5% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (5% reading +10% range ) (10kHz-300kHz) ,T=(18℃~28℃) | | | | | | |
| **Resolution Ratio** | | | | | | | | |
| Voltage setting | DC、AC、DC+AC | 0.001V ( U≤60V ), 0.01V ( 60V < U≤100V ) | | | | | | |
| Current setting | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) | | | | | | |
| Voltage read back | DC、AC、DC+AC | 0.001V ( U≤60V ), 0.01V ( 60V < U≤100V ) | | | | | | |
| Current reading back | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) | | | | | | |

## 80V Series Technical Parameters

| Models | | HY-BP 80-15 | HY-BP 80-22.5 | HY-BP 80-25 | HY-BP 80-30 | HY-BP 80-37.5 | HY-BP 80-50 | HY-BP 80-75 |
|---|---|---|---|---|---|---|---|---|
| Rated output voltage | | ±80V | ±80V | ±80V | ±80V | ±80V | ±80V | ±80V |
| Output current | | ±15A | ±22.5A | ±25A | ±30A | ±37.5A | ±50A | ±75A |
| Rated output power | | 1200W | 1800W | 2000W | 2400W | 3000W | 4000W | 6000W |
| AC Frequency | Setting range | CV Optional in mode: 0~50.00kHz\0~100.00kHz\0~200.00kHz\0~300.00kHz\0~400.00kHz\0~500.00kHz<br>CC Optional in mode: 0.01Hz~10.00kHz | | | | | | |
| | Set resolution | 0.01Hz | | | | | | |
| | Setting accuracy | ±100ppm, T=(18℃~28℃) | | | | | | |
| | Sweep frequency | Linear, logarithmic | | | | | | |
| | Sweep time | 100μs-1000s (resolution ratio 100μs) | | | | | | |
| AC Waveform | Type | Sine wave, square wave, triangular wave, arbitrary waveform (22 types) | | | | | | |
| | Start phase | 0~359° | | | | | | |
| | Square wave DUTY | 0.1%~99.9% (F < 100Hz), 1%~99% (100Hz≤F < 1kHz), 10%~90% (1kHz≤F < 10kHz), 50% regular (10kHz < F) | | | | | | |
| **CV Mode** | | | | | | | | |
| DC Voltage | Setting range (bipolar) | 0~±80V | | | | | | |
| | Setting range (single pole) | 0~80V | | | | | | |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Voltage | Setting range | 0~80V | | | | | | |
| Voltage response time (see note 2、3) | | (Visible annotations1)<br>Frequency characteristic (TYP value) DC~150kHz, voltage response time: 2.3 μ s. 6.7 μ s. 23 μ s. 67 μ S optional<br>Frequency characteristic (TYP value) DC~100kHz, voltage response time: 3.5 μ s. 10 μ s. 35 μ s. 100 μ S optional | | | | | | |
| Note 1: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 1Hz, reaction time 3.5 μ s. Rated load)<br>Note 2: Rising edge time/falling edge time (rated load, excluding output ON/OFF). The frequency characteristics will also change according to the set reaction time (frequency range=0.35/rising edge time).<br>Note 3: Rise time: When the output voltage changes from 0V to the rated voltage, the change in output voltage is 10% to 90% of the rated time. Falling edge time: When the output voltage changes from the rated voltage to 0V, the output voltage The change in pressure is between 90% and 10% of the rated time. | | | | | | | | |
| **CC Mode** | | | | | | | | |
| DC Current | Setting range (bipolar) | 0~±15A | 0~±22.5A | 0~±25A | 0~±30A | 0~±37.5A | 0~±50A | 0~±75A |
| | Setting range (single pole) | 0~±15A | 0~±22.5A | 0~±25A | 0~±30A | 0~±37.5A | 0~±50A | 0~±75A |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Current | Setting range | 0~30App | 0~45App | 0~50App | 0~60App | 0~75App | 0~100App | 0~150App |
| Current reaction time (Visible annotations5、6) | | (Visible annotations4)<br>Frequency characteristic (TYP value) DC~5kHz, voltage response time: 70 μ s. 100 μ s. 350 μ s. 1ms optional<br>Frequency characteristic (TYP value) DC~10kHz, voltage response time: 35 μ s. 100 μ s. 350 μ s. 1ms optional | | | | | | |
| Note 4: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 100Hz, reaction time 35 μ s. Rated load). The frequency characteristics will change based on the Impedance value of the load. The Imperformance value of the load increases The time-frequency characteristics decrease.<br>Note 5: Rising edge time/falling edge time (rated load, excluding output ON/OFF). According to the different times of load Impedance, it will also change.<br>Note 6: Rise time: When the output current changes from 0A to the rated current, the change in output current is 10% to 90% of the rated time. Falling edge time: When the output current changes from the rated current to 0A, the output current The variation of flow is between 90% and 10% of the rated time. | | | | | | | | |
| **Accuracy** | | | | | | | | |
| Voltage measurement | DC | ± (0.05% reading +0.05% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.05% reading +0.05% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (0.5% reading +0.5% range ) (10kHz-500kHz) ,T=(18℃~28℃) | | | | | | |
| Current measurement | DC | ± (0.5% reading +0.5% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.5% reading +0.5% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (5% reading +10% range ) (10kHz-300kHz) ,T=(18℃~28℃) | | | | | | |
| **Resolution Ratio** | | | | | | | | |
| Voltage setting | DC、AC、DC+AC | 0.001V ( U≤60V ), 0.01V ( 60V < U≤100V ) | | | | | | |
| Current Setting | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) | | | | | | |
| Voltage read back | DC、AC、DC+AC | 0.001V ( U≤60V ), 0.01V ( 60V < U≤100V ) | | | | | | |
| Current reading back | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) | | | | | | |

## 80V-100V Series Technical Parameters

| Models | | HY-BP 80-100 | HY-BP 80-125 | HY-BP 100-4 | HY-BP 100-6 | HY-BP 100-8 | HY-BP 100-12 | HY-BP 100-18 |
|---|---|---|---|---|---|---|---|---|
| Rated output voltage | | ±80V | ±80V | ±100V | ±100V | ±100V | ±100V | ±100V |
| Output current | | ±100A | ±125A | ±4A | ±6A | ±8A | ±12A | ±18A |
| Rated output power | | 8000W | 10kW | 400W | 600W | 800W | 1200W | 1800W |
| AC Frequency | Setting range | CV Optional in mode: 0~50.00kHz\0~100.00kHz\0~200.00kHz\0~300.00kHz\0~400.00kHz\0~500.00kHz<br>CC Optional in mode: 0.01Hz~10.00kHz | | | | | | |
| | Set resolution | 0.01Hz | | | | | | |
| | Setting accuracy | ±100ppm, T=(18℃~28℃) | | | | | | |
| | Sweep frequency | Linear, logarithmic | | | | | | |
| | Sweep time | 100μs-1000s (resolution ratio 100μs) | | | | | | |
| AC Waveform | Type | Sine wave, square wave, triangular wave, arbitrary waveform (22 types) | | | | | | |
| | Start phase | 0~359° | | | | | | |
| | Square wave DUTY | 0.1%~99.9% (F < 100Hz), 1%~99% (100Hz≤F < 1kHz), 10%~90% (1kHz≤F < 10kHz), 50% regular (10kHz < F) | | | | | | |
| **CV Mode** | | | | | | | | |
| DC Voltage | Setting range (bipolar) | 0~±80V | | 0~±100V | | | | |
| | Setting range (single pole) | 0~80V | | 0~100V | | | | |
| | Temperature coefficient | ±100ppm/℃ (range) | | ±100ppm/℃ (range) | | | | |
| AC VColtage | Setting range | 0~80V | | 0~100V | | | | |
| Voltage response time (see note 2、3) | | (Visible annotations1)<br>Frequency characteristic (TYP value) DC~150kHz, voltage response time: 2.3 μ s. 6.7 μ s. 23 μ s. 67 μ S optional<br>Frequency characteristic (TYP value) DC~100kHz, voltage response time: 3.5 μ s. 10 μ s. 35 μ s. 100 μ S optional | | | | | | |
| Note 1: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 1Hz, reaction time 3.5 μ s. Rated load)<br>Note 2: Rising edge time/falling edge time (rated load, excluding output ON/OFF). The frequency characteristics will also change according to the set reaction time (frequency range=0.35/rising edge time).<br>Note 3: Rise time: When the output voltage changes from 0V to the rated voltage, the change in output voltage is 10% to 90% of the rated time. Falling edge time: When the output voltage changes from the rated voltage to 0V, the output voltage The change in pressure is between 90% and 10% of the rated time. | | | | | | | | |
| **CC Mode** | | | | | | | | |
| DC Current | Setting range (bipolar) | 0~±100A | 0~±125A | 0~±4A | 0~±6A | 0~±8A | 0~±12A | 0~±18A |
| | Setting range (single pole) | 0~±100A | 0~±125A | 0~±4A | 0~±6A | 0~±8A | 0~±12A | 0~±18A |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Current | Setting range | 0~200App | 0~250App | 0~8App | 0~12App | 0~16App | 0~24App | 0~36App |
| Current reaction time (Visible annotations5、6) | | (Visible annotations4)<br>Frequency characteristic (TYP value) DC~5kHz, voltage response time: 70 μ s. 100 μ s. 350 μ s. 1ms optional<br>Frequency characteristic (TYP value) DC~10kHz, voltage response time: 35 μ s. 100 μ s. 350 μ s. 1ms optional | | | | | | |
| Note 4: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 100Hz, reaction time 35 μ s. Rated load). The frequency characteristics will change based on the Impedance value of the load. The Imperformance value of the load increases The time-frequency characteristics decrease.<br>Note 5: Rising edge time/falling edge time (rated load, excluding output ON/OFF). According to the different times of load Impedance, it will also change.<br>Note 6: Rise time: When the output current changes from 0A to the rated current, the change in output current is 10% to 90% of the rated time. Falling edge time: When the output current changes from the rated current to 0A, the output current The variation of flow is between 90% and 10% of the rated time. | | | | | | | | |
| **Accuracy** | | | | | | | | |
| Voltage measurement | DC | ± (0.05% reading +0.05% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.05% reading +0.05% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (0.5% reading +0.5% range ) (10kHz-500kHz) ,T=(18℃~28℃) | | | | | | |
| Current measurement | DC | ± (0.5% reading +0.5% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.5% reading +0.5% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (5% reading +10% range ) (10kHz-300kHz) ,T=(18℃~28℃) | | | | | | |

| Resolution Ratio | | |
|---|---|---|
| Voltage setting | DC、AC、DC+AC | 0.001V ( U≤60V ), 0.01V ( 60V < U≤100V ) |
| Current Setting | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) |
| Voltage read back | DC、AC、DC+AC | 0.001V ( U≤60V ), 0.01V ( 60V < U≤100V ) |
| Current reading back | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) |

## 100V Series Technical Parameters

| Models | | HY-BP 100-20 | HY-BP 100-24 | HY-BP 100-30 | HY-BP 100-40 | HY-BP 100-60 | HY-BP 100-80 | HY-BP 100-100 |
|---|---|---|---|---|---|---|---|---|
| Rated output voltage | | ±100V | ±100V | ±100V | ±100V | ±100V | ±100V | ±100V |
| Output current | | ±20A | ±24A | ±30A | ±40A | ±60A | ±80A | ±100A |
| Rated output power | | 2000W | 2400W | 3000W | 4000W | 6000W | 8000W | 10kW |
| AC Frequency | Setting range | CV Optional in mode: 0~50.00kHz\0~100.00kHz\0~200.00kHz\0~300.00kHz\0~400.00kHz\0~500.00kHz<br>CC Optional in mode: 0.01Hz~10.00kHz | | | | | | |
| | Set resolution | 0.01Hz | | | | | | |
| | Setting accuracy | ±100ppm, T=(18℃~28℃) | | | | | | |
| | Sweep frequency | Linear, logarithmic | | | | | | |
| | Sweep time | 100μs-1000s (resolution ratio 100μs) | | | | | | |
| AC Waveform | Type | Sine wave, square wave, triangular wave, arbitrary waveform (22 types) | | | | | | |
| | Start phase | 0~359° | | | | | | |
| | Square wave DUTY | 0.1%~99.9% (F < 100Hz), 1%~99% (100Hz≤F < 1kHz), 10%~90% (1kHz≤F < 10kHz), 50% regular (10kHz < F) | | | | | | |
| **CV Mode** | | | | | | | | |
| DC Voltage | Setting range (bipolar) | 0~±100V | | | | | | |
| | Setting range (single pole) | 0~100V | | | | | | |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Voltage | Setting range | 0~100V | | | | | | |
| Voltage response time (see note 2、3) | | (Visible annotations1)<br>Frequency characteristic (TYP value) DC~150kHz, voltage response time: 2.3 μ s. 6.7 μ s. 23 μ s. 67 μ S optional<br>Frequency characteristic (TYP value) DC~100kHz, voltage response time: 3.5 μ s. 10 μ s. 35 μ s. 100 μ S optional | | | | | | |
| Note 1: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 1Hz, reaction time 3.5 μ s. Rated load)<br>Note 2: Rising edge time/falling edge time (rated load, excluding output ON/OFF). The frequency characteristics will also change according to the set reaction time (frequency range=0.35/rising edge time).<br>Note 3: Rise time: When the output voltage changes from 0V to the rated voltage, the change in output voltage is 10% to 90% of the rated time. Falling edge time: When the output voltage changes from the rated voltage to 0V, the output voltage The change in pressure is between 90% and 10% of the rated time. | | | | | | | | |
| **CC Mode** | | | | | | | | |
| DC Current | Setting range (bipolar) | 0~±20A | 0~±24A | 0~±30A | 0~±40A | 0~±60A | 0~±80A | 0~±100A |
| | Setting range (single pole) | 0~±20A | 0~±24A | 0~±30A | 0~±40A | 0~±60A | 0~±80A | 0~±100A |
| | Temperature coefficient | ±100ppm/℃ (range) | | | | | | |
| AC Current | Setting range | 0~40App | 0~48App | 0~60App | 0~80App | 0~120App | 0~160App | 0~200App |
| Current reaction time (Visible annotations5、6) | | (Visible annotations4)<br>Frequency characteristic (TYP value) DC~5kHz, voltage response time: 70 μ s. 100 μ s. 350 μ s. 1ms optional<br>Frequency characteristic (TYP value) DC~10kHz, voltage response time: 35 μ s. 100 μ s. 350 μ s. 1ms optional | | | | | | |
| Note 4: According to the external model input voltage, the amplitude ratio of the output current is -3dB frequency (reference frequency 100Hz, reaction time 35 μ s. Rated load). The frequency characteristics will change based on the Impedance value of the load. The Imperformance value of the load increases The time-frequency characteristics decrease.<br>Note 5: Rising edge time/falling edge time (rated load, excluding output ON/OFF). According to the different times of load Impedance, it will also change.<br>Note 6: Rise time: When the output current changes from 0A to the rated current, the change in output current is 10% to 90% of the rated time. Falling edge time: When the output current changes from the rated current to 0A, the output current The variation of flow is between 90% and 10% of the rated time. | | | | | | | | |
| **Accuracy** | | | | | | | | |
| Voltage measurement | DC | ± (0.05% reading +0.05% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.05% reading +0.05% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (0.5% reading +0.5% range ) (10kHz-500kHz) ,T=(18℃~28℃) | | | | | | |
| Current measurement | DC | ± (0.5% reading +0.5% range ) ,T=(18℃~28℃) | | | | | | |
| | AC<br>DC+AC | ± (0.5% reading +0.5% range ) (5Hz-10kHz) ,T=(18℃~28℃)<br>± (5% reading +10% range ) (10kHz-300kHz) ,T=(18℃~28℃) | | | | | | |
| **Resolution Ratio** | | | | | | | | |
| Voltage setting | DC、AC、DC+AC | 0.001V ( U≤60V ), 0.01V ( 60V < U≤100V ) | | | | | | |
| Current Setting | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) | | | | | | |
| Voltage read back | DC、AC、DC+AC | 0.001V ( U≤60V ), 0.01V ( 60V < U≤100V ) | | | | | | |
| Current reading back | DC、AC、DC+AC | 0.001A ( I≤60 A ), 0.01A ( 60A < I≤500A ) | | | | | | |

## Protection Function

| | |
|---|---|
| OVP Over voltage protection setting range | 10 - 110%，Immediate shutdown of output beyond limit |
| OCP Over current protection setting range | 0 - 105%，Immediate shutdown of output beyond limit |
| OTP Over temperature protection | Immediate shutdown of output beyond limit |

## Ambient Condition



| | |
|---|---|
| Environment | Indoor use; Installation overvoltage level: II; Pollution level: P2; Class II equipment |
| Ambient temperature | 0℃ to 50℃，optional -10℃ to 50℃， -20℃ to 50℃， -40℃ to 50℃ |
| Storage environment temperature | -20℃ to 65℃， |
| Working environment humidity | 20%-90% RH，No condensation, continuous operation |
| Storage environment humidity | 10% - 95% RH，No condensation |
| Altitude | Above an altitude of 2000 meters, the power decreases by 2% for every 100 meters increase, or the maximum working environment temperature decreases by 1 ℃ for every 100 meters; When not in operation, it can reach an altitude of 12000 meters |
| Burial | Forced air cooling, intelligent variable speed fan, front/side air inlet, rear air outlet |
| Noise | ≤ 65dB(A)，Weighted measurement with 1 m |

## Control Panel

| | |
|---|---|
| Monitor | 7-inch LCD display, touch screen |
| Control function | Number button input, multi-level shuttle knob adjustment (outer circle coarse adjustment/inner circle fine adjustment)Output ON/OFF switch, Lock keyboard and touch lock, Reset restart Status indicator light （Shift/Local/Remote/Alarm/Lock/Output） |

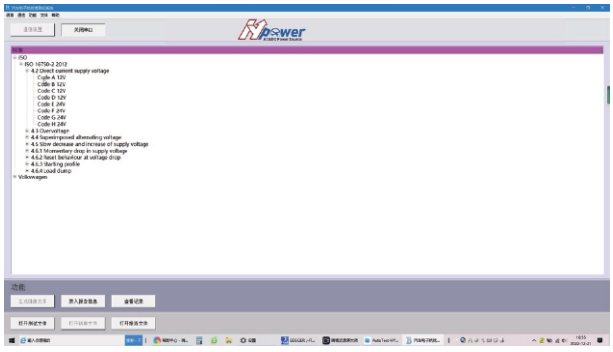
## Input Power Supply

| | |
|---|---|
| Frequency | 47 Hz - 63 Hz |
| Connection | Single phase two wire+ground wire, 220 V ± 15%/three-phase four wire+ground wire, 380 V ± 15% |

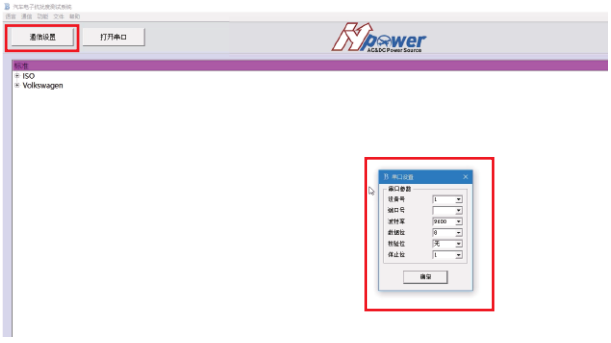
## Upper Computer Description

HY-BP Demonstration operation

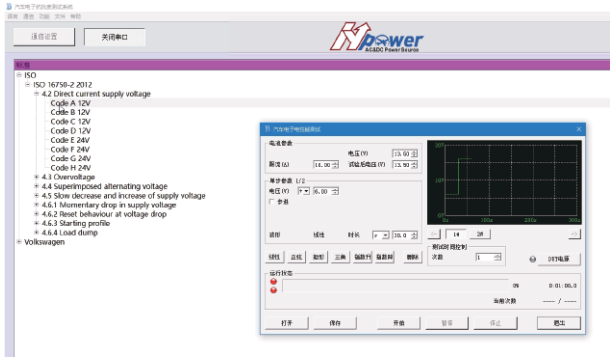
- Equipped with upper computer software, saving development costs and time
- Simple and easy to operate, you can view all corresponding test standard items, double-click to open the settings page
- Scan the QR code on the right side, watch the operation demonstration, including connection communication and instructions for using the upper computer



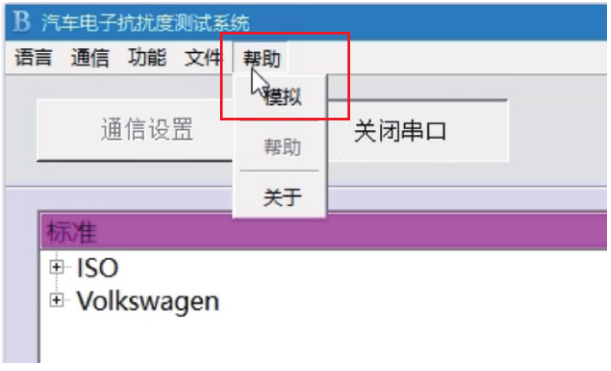
ISO 16750-2 Standard testing items



Click on "Communication Settings" to open the serial port settings and connect to communication

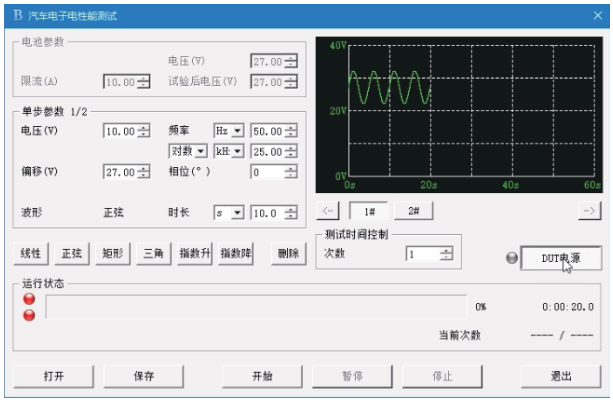


Each test item can adjust the test content according to needs

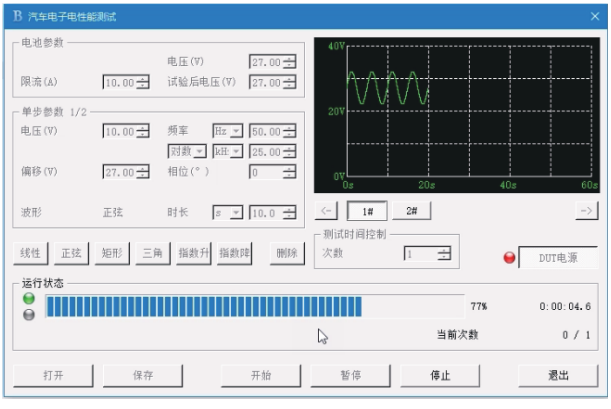



When not online, simulation mode can be used

- With arbitrary wave programming function, users can freely edit waveforms, store, and call according to their own testing situation.

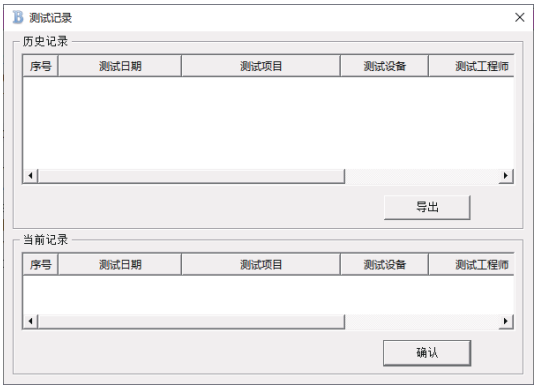


The specific operation method can be scanned by QR code to watch the operation demonstration



After starting operation, the running status can be displayed


Test completed or click 'Stop' to pop up 'Test Report' After completing the report on the page, "export the report" to the computer for saving;




Test record page, where you can view the records: click to enter the test Trial record page to view the current and historical records of the test.

BP

29

## The Upper Computer Software Is Equipped With Various International Testing Standards And Vehicle Enterprise Testing Standards

ISO16750-2Test items (ISO is an international standard, with a maximum voltage of 36V and a maximum sweep frequency of 25kHz)

| Serial Number | Test Items | Notes |
|---|---|---|
| 4.2 | DC power supply voltage | Verify device functionality at minimum and maximum power supply voltages for 12V and 24V system equipment |
| 4.3 | Overvoltage | Simulate generator regulation failure, causing the generator output voltage to be higher than normal |
| 4.4 | Super strong AC voltage | Simulate the remaining AC power on a DC power source |
| 4.5 | Slow decrease and increase in power supply voltage | Simulate the gradual discharge and charging of batteries |
| 4.6 | Discontinuities in power supply voltage | |
| 4.6.1 | Instantaneous drop in power supply voltage | Simulate the effect of traditional fuse components melting in another circuit |
| 4.6.2 | Reset behavior during voltage drop | Verify reset behavior under different voltage drops (generally applicable to devices with reset function, such as devices containing microcontrollers) |
| 4.6.3 | Boot configuration File | It's just a cold start |
| 4.6.4 | Load dump | Requires optional HY-7637-5a, 5b load shedding equipment |
| 4.7 | Reverse voltage | Check the DUT's ability to withstand reverse battery connection when using an auxiliary starting device |
| 4.8 | Ground reference and supply offset | Two power supplies are required for testing together, with a bipolar source providing ± 1V |
| 4.9 | Open circuit test | Optional required HY-PSI 001 |
| 4.9.1 | Single line interruption | Open circuit - single line interruption requires optional configuration HY-PSI 001 |
| 4.9.2 | Multi line interrupt | Open circuit - multi line interruption requires optional configuration HY-PSI 001 |
| 4.11 | Preset voltage | Safety testing |
| 4.12 | Insulation resistance | Safety testing |
| 4.13v | Electromagnetic compatibility | |

LV124 Electrical testing (maximum voltage up to 26V, sweep frequency up to 30kHz) LV: german car manufacturers AUDI, BMW, daimler, porsche, and volkswagen dominate this series of standards。

| Serial Number | Test Items |
|---|---|
| E01 | Long term overvoltage |
| E02 | Transient overvoltages |
| E03 | Transient undervoltage |
| E04 | Start pulse |
| E05 | Load drop |
| E06 | Superimposed AC voltage |
| E07 | Slow decrease and slow increase of power supply voltage |
| E08 | Slow decrease and rapid increase of power supply voltage |

| Serial Number | Test Items |
|---|---|
| E09 | Reset |
| E10 | Short interruption requires optional HY-PSI 001 |
| E11 | Start pulse |
| E12 | Voltage curve with electrical system control |
| E13 | Interrupt pin requires optional configuration HY-PSI 001 |
| E14 | Interruption plug requires optional configuration HY-PSI 001 |
| E15 | Reversed polarity |
| E16 | Ground offset requires two power supplies together |

LV148Electrical testing (maximum voltage up to 70V, sweep frequency up to 200kHz) is a revision of the LV124 standard, which includes additional electrical performance tests for 48V electrical systems。

| Serial Number | Test Items |
|---|---|
| E48-02 | Transient overvoltage, load dump |
| E48-03 | Transient pulses within a lower operating range with functional limitations |
| E48-04 | Restore |
| E48-05 | Superimposed AC voltage |
| E48-06 | Slow decrease and slow increase in power supply voltage |
| E48-08 | Reset behavior . |
| E48-09 | Short interruption |
| E48-10 | Turning pulse . |

| Serial Number | Test Items |
|---|---|
| E48-11 | Loss of grounding BN48 |
| E48-12 | Ground offset |
| E48-15 | Operate within an unrestricted range of functionality |
| E48-16 | Operate within the upper limit of limited functionality |
| E48-17 | Operate within a lower range with limited functionality |
| E48-18 | Overvoltage range |
| E48-19 | Undervoltage range |

GMW3172-2018 General electric testing (maximum voltage up to 26V, sweep frequency up to 25kHz)

| Serial Number | Test Items |
|---|---|
| 9.2.1 | parasitical current |
| 9.2.2 | power interruption |
| 9.2.3 | Functional development in progress |
| 9.2.4 | Superimposed sinusoidal alternating voltage |
| 9.2.5 | Superimposed pulse voltage |
| 9.2.9 | Open circuit - single line interruption requires optional configuration HY-PSI 001 |
| 9.2.10 | Open circuit - multi line interruption requires optional configuration HY-PSI 001 |

| Serial Number | Test Items |
|---|---|
| 9.2.11 | Ground offset requires two power sources to be tested together, with a bipolar source providing ± 1V |
| 9.2.12 | Power offset requires two (three) power sources to be tested together, with a bipolar source providing ± 1V |
| 9.2.13 | Separate digital input voltage |
| 9.2.16 | Insulation resistance safety test |
| 9.2.17 | Crank pulse capability and durability |
| 9.2.18 | Switched battery cables require optional configuration HY-PSI 001 |
| 9.2.19 | Battery line transient requires optional configuration HY-PSI 001 |

ISO/DIS21780-48VInternational power supply voltage - Electrical requirements testing (maximum voltage up to 60V, sweep frequency up to 200kHz)

| Serial Number | Test Items |
|---|---|
| 10.1 Test-01 | Standard voltage range |
| 10.2 Test-02 | Upper and lower transient voltage range |
| 10.3 Test-03 | Temporary overvoltage |
| 10.4 Test-04 | Power component load dump control test |
| 10.5 Test-05 | Boot configuration |
| 10.6 Test-06 | Long term overvoltage |
| 10.7 Test-07 | Overvoltage of consumer components that may provide electrical energy |
| 10.8 Test-08 | Reduction and increase of power supply voltage |

| Serial Number | Test Items |
|---|---|
| 10.9 Test-09 | Voltage fluctuation |
| 10.10 Test-10 | Reinitialize |
| 10.11 Test-11 | Power supply voltage interruption |
| 10.12 Test-12 | Grounding loss |
| 10.13 Test-13 | Fault current |
| 10.14 Test-14 | Ground offset tested together with two power supplies, with a bipolar source providing ± 1V |
| 10.15 Test-15 | Short circuit between signal line and load circuit |
| 10.16 Test-16 | quiescent current |

SMTC3800001-2014 (V4) SAIC group electrical testing (maximum voltage up to 26V, sweep frequency up to 30kHz)

| Serial Number | Test Items |
|---|---|
| 5.1 | Long term overvoltage |
| 5.2 | Transient overvoltage |
| 5.3 | Instantaneous low voltage |
| 5.4 | Jump voltage start |
| 5.5 | Load drop |
| 5.6 | Generator superimposed ripple voltage |
| 5.7 | Slow decrease/increase in working voltage |
| 5.8 | Slow decrease/rapid increase in power supply |

| Serial Number | Test Items |
|---|---|
| 5.9 | RESET TEST |
| 5.1 0 | Pulse voltage at engine start |
| 5.1 1 | Pin interruption requires optional configuration HY-PSI 001 |
| 5.1 2 | Connector interruption requires optional configuration HY-PSI 001 |
| 5.1 3 | Reverse polarity test |
| 5.14 | Ground offset (two power supplies tested together, with a bipolar source providing ± 1V) |
| 5.1 5 | Short circuit protection between signal lines and driving circuits |
| 5.1 6 | Insulation impedance test (safety regulation test) |
| 5.1 8 | Quiescent current Test |

VW80000-2017 Volkswagen Electric testing (maximum voltage up to 27V, sweep frequency up to 200kHz)

| Serial Number | Test Items |
|---|---|
| 8.1 | Long term overvoltage |
| 8.2 | Transient overvoltages |
| 8.3 | Transient undervoltage |
| 8.4 | Quick start |
| 8.5 | Throw load |
| 8.6 | Ripple |
| 8.7 | Slow rise and fall of power supply voltage |
| 8.8 | Slow drop and rapid rise of power supply voltage |
| 8.9 | Reset characteristics |
| 8.10 | Short interruption requires optional HY-PSI 001 power cord |
| 8.11 | Start pulse |

| Serial Number | Test Items |
|---|---|
| 8.12 | Voltage curve with on-board electrical system control |
| 8.13 | Pin interruption requires optional HY-PSI 001 signal wire |
| 8.14 | Connector interruption requires optional configuration HY-PSI 001 |
| 8.15 | Reverse polarity test |
| 8.16 | Ground offset requires two power supplies to be tested together, with a bipolar source providing ± 1V |
| 8.18 | Insulation resistance safety test |
| 8.19 | Quiescent current |
| 8.20 | Dielectric strength safety test |
| 8.23 | Equalizing the current of multiple power supply voltages |
| 8.24 | On/Off Durability test |

Q&WMJ073013A-2019 Weima Electric test (maximum voltage up to 18V, sweep frequency up to 25kHz)

| Serial Number | Test Items |
|---|---|
| 6.2.2 | Long term overvoltage |
| 6.2.3 | Transient overvoltage |
| 6.2.4 | Instantaneous low pressure |
| 6.2.5 | Power supply voltage transient |
| 6.2.6 | Jump voltage start |
| 6.2.7 | Superimposed ripple voltage |
| 6.2.8 | Power supply voltage decrease/increase |
| 6.2.9 | RESET TEST |
| 6.2.10 | Open circuit - single line interruption Optional required HY-PSI 001 |

| Serial Number | Test Items |
|---|---|
| 6.2.11 | Open circuit - multi wire interruption optional required HY-PSI 001 |
| 6.2.12 | Ground offset tested together with two power supplies, with a bipolar source providing ± 1V |
| 6.2.13 | Two or three power sources are tested together for power offset, and the bipolar source provides ± 1V |
| 6.2.14 | Reverse polarity test |
| 6.2.17 | Quiescent current |
| 6.2.18 | Insulation impedance |
| 6.2.19 | Ground path inductance sensitivity |
| 6.2.21 | Discrete digital input threshold voltage |
| 6.2.24 | Power line transient |

GB/T21437.2/ISO7637.2 (Transient anti-interference type test of power line - optional 7600 controller needs to be added)

| Serial Number | Test Items |
|---|---|
| Pulse1、Pulse2a | (Optional equipment required HY-7610) 60V,50A/ 80V,100A |
| Pulse3a、Pulse3b | (Optional equipment required HY-7630) 60V,30A |
| Pulse2b, Pulse4 | No option required |
| Pulse5a、Pulse5b | (Requires optional load shedding equipment HY-7637-5a,5b) Adjustable internal resistance for load shedding |

VS-00.00-T-11019-A1-2015 (Maximum voltage up to 24V, sweep frequency up to 20kHz)

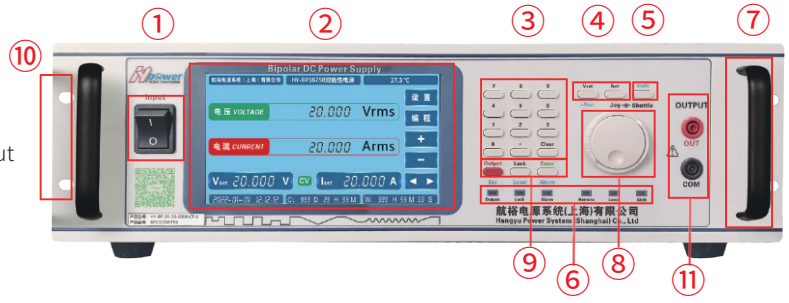
| Serial Number | Test Items |
|---|---|
| 6.1 | Standard voltage range |
| 6.2 | Upper and lower transient voltage range |
| 6.3 | Temporary overvoltage |
| 6.4 | Power component load dump control test |
| 6.5 | Boot configuration |

| Serial Number | Test Items |
|---|---|
| 6.6 | Voltage fluctuation |
| 6.7 | Reinitialize |
| 6.8 | Power supply voltage interruption |
| 6.9 | Grounding loss |
| 7.0 | Fault current |



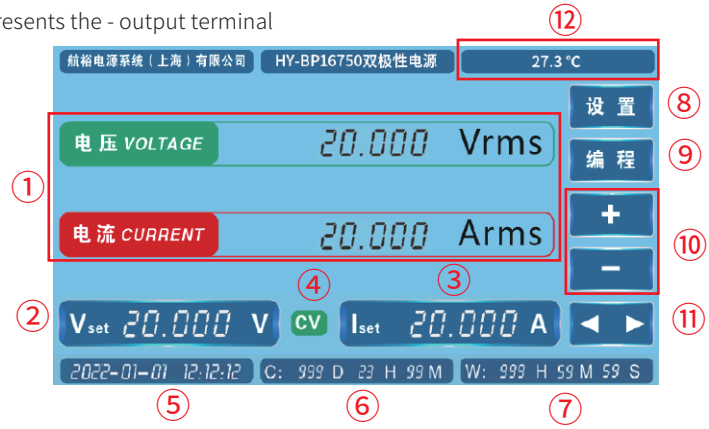
## 7-Inch Large LCD Display Screen

### 1、Control panel description




①、 Power input circuit breaker;
②、 7-Inch LCD display window display: voltage setting value Voltage and current measurement values, function settings menu;
③、 Function buttons: used for required numerical input and parameter settings;
④、 Voltage setting key
⑤、 Shift Function reuse key
⑥、 Status
⑦、 Chassis handle
⑧、 Multistage shuttle adjustment knob, with the inner circle adjusted one word at a time, and the outer circle divided into ± 8 adjustable segments;
⑨、 Lock lock, Enter confirmation, Esc exit Local, Reset restart/Alarm alarm, Output ON/OFF switch
⑩、 19 Inch standard rack mounting holes
⑪、 Red represents the+output terminal, while black represents the - output terminal

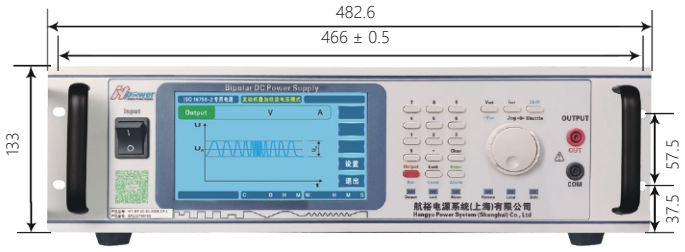
### 2、Display description

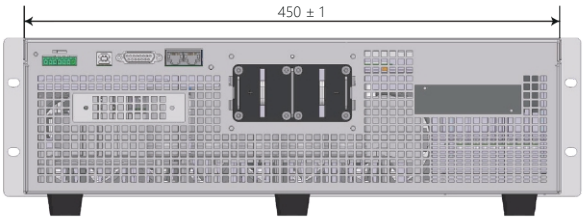


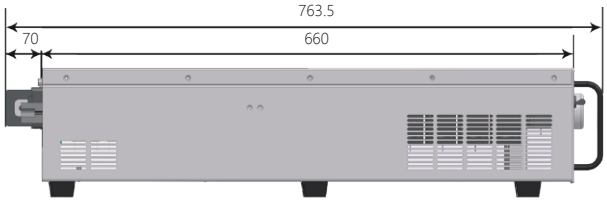

①、 Display of voltage/current measurement values;
②、Current measurement value display;
③、Voltage setting value display;
④、CV\CC Display;
⑤、Current time display;
⑥、Accumulated working time display;
⑦、Current working hours;
⑧、Set menu button for setting system parameters;
⑨、Programming button, click to enter the ISO16750-2 testing project interface;
⑩、Quickly increase and decrease voltage and current values during editing;
⑪、Flipping function;
⑫、Real time temperature monitoring of the power supply, which can control the fan to dissipate heat for the power supply。

# Dimension

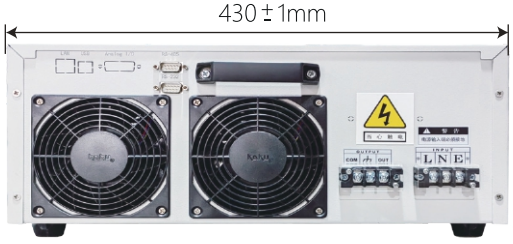
## 3U 482.6(W) * 660(D) * 133(H) mm



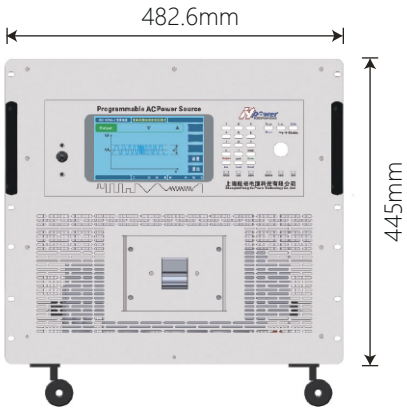



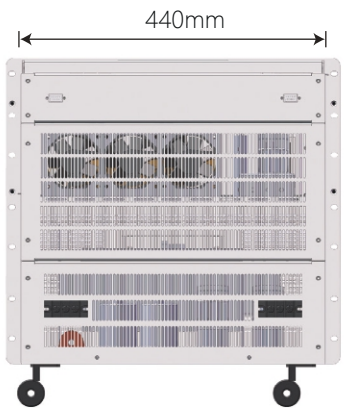



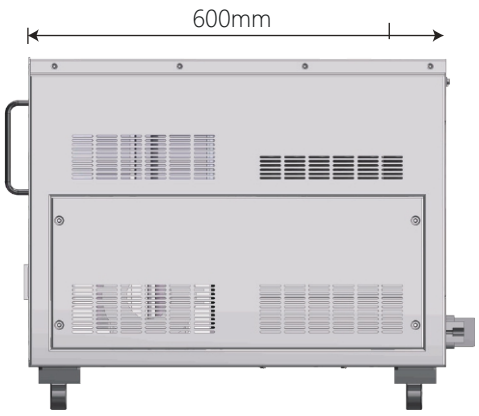

## 4U 430(W)*560(D)*178(H)mm

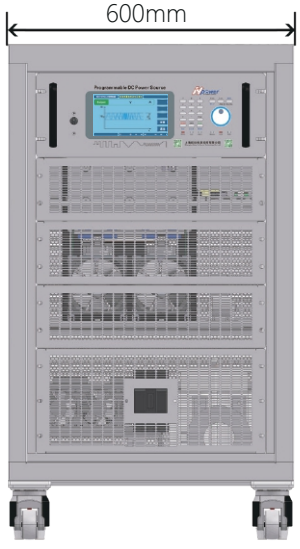

## 10U 440(W)*600(D)*445(H)mm

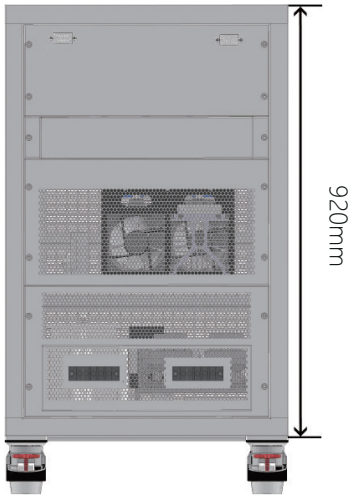


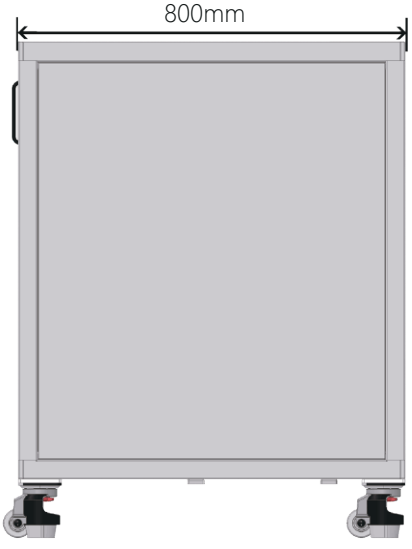



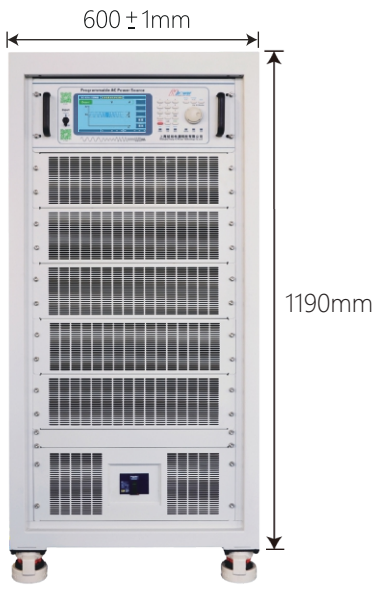

## 18U 600(W)*800(D)*920(H)mm

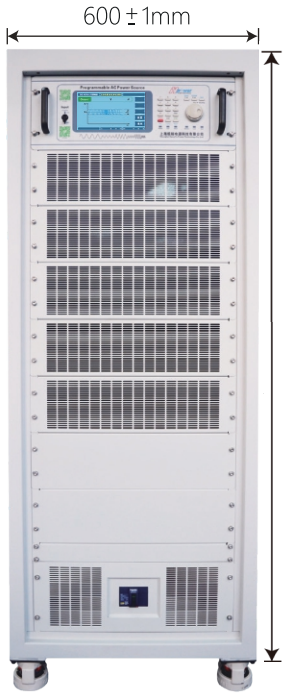


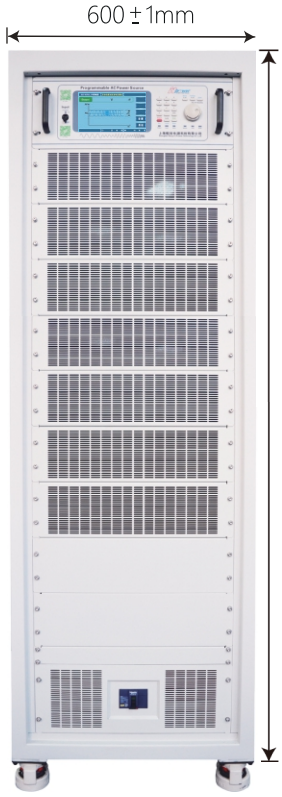



24U 600(W)*800(D)*1190(H)mm
30U 600(W)*800(D)*1453(H)mm
36U 600(W)*800(D)*1718(H)mm



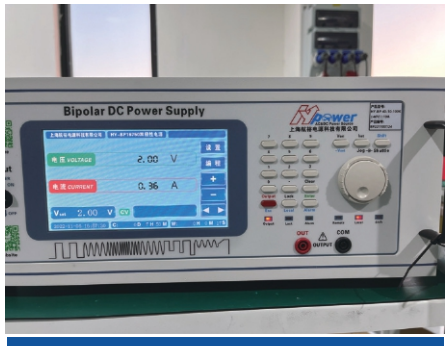





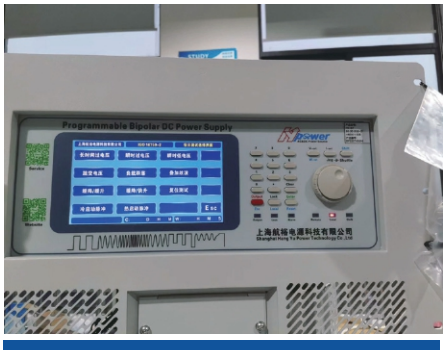

## Customer Cases (Partial)

China FAW

Valeo




BYD



Zhejiang Tiancheng


Shanghai Zhefu Intelligent

Beijing Minmo Zhixing

## Aerospace And National Defense Military Industry Research Institute

china aerospace | CASIC | aviation industry | China Aerospace | CETC | CSSC | CSIC

CASC 800 institute (Shanghai Aerospace Precision Machinery Research Institute)
CASC 801 institute (Shanghai Institute of Space Propulsion)
CASC 803 institute (Shanghai Institute of Space Propulsion)
CASC 804 institute (Shanghai Aerospace Electronic Communication Equipment Research Institute)
CASC 805 institute (Shanghai Aerospace Systems Engineering Research Institute)
CASC 808 institute (Shanghai Institute of Precision Metrology and Testing)
CASC 811 institute (Shanghai Space Power Research Institute)
CASC 812 institute (Shanghai Satellite Equipment Research Institute)
CASC 502 institute (Beijing Institute of Control Engineering)
CASC 510 institute (Lanzhou Institute of Space Technology Physics)
CASIC 206 institute (Beijing Institute of Mechanical Equipment)
CASIC 307 factory (Aerosun Corporation)
CASIC 33 institute (Institute 33 of Aerospace Science and Industry Third Institute)
CASIC 3651 factory (Guizhou Aerospace Linquan Motor Co., Ltd)

AVIC 603 institute (AVIC Xi'an Aircraft Design and Research Institute)
AVIC 613 institute (China Aviation Industry Group Luoyang Electro Optic Equipment Research Institute)
AVIC 615 institute (China Aviation Industry Group Luoyang Electro Optic Equipment Research Institute)
AVIC 618 institute (Xi'an Automatic Flight Research Institute of China Radio Aviation Research Institute)
AVIC 631 institute (AVIC Aerospace Computing Technology Research Institute)
AVIC 105 factory (Tianjin Aviation Electromechanical Co., Ltd)
AVIC 115 factory (Shaanxi Aviation Electric Co., Ltd)
AVIC 118 factory (Shanghai Aviation Electrical Appliances Co., Ltd)
AVIC 181 factory (Wuhan Aviation Instrument Co., Ltd)
AVIC 607 institute (China Leihua Electronic Technology Research Institute)
AVIC 304 institute (Beijing Great Wall Metrology and Testing Technology Research 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 Electronic Communication Research Institute)
CETC 38 institute (East China Electronic Engineering Research Institute)
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 Navigation Instruments)
CSIC 7107 institute (Shaanxi Aerospace Navigation Equipment Co., Ltd)
CSIC 719 institute (Wuhan Second Ship Design and Research Institute)
CSIC 704 institute (Shanghai Shipbuilding Equipment Research Institute)
CSIC 726 institute (Shanghai Institute of Ship Electronic Equipment)
Jiangnan Shipbuilding (Group) Co., Ltd
Nanjing Panda Electronics Co., Ltd
State owned 741 Factory (Nanjing East China Electronics Group Co., Ltd.)

## Scientific Research & Third Party Quality Inspection Institutions

Institute of Physical and Chemical Technology (Beijing)
Urban Environment Research Institute (Xiamen)
Institute of Electrical Engineering (Beijing)
Institute of Applied Physics (Shanghai)

中国科学院 CHINESE ACADEMY OF SCIENCES
SEARI 上电科 上海電器科學研究所(集团)有限公司 Shanghai Electrical Apparatus Research Institute (Group) Co., Ltd.
苏州电器科学研究院股份有限公司 国家智能电网中高压成套设备质量监督检验中心 国家电器产品质量监督检验中心
中国工程物理研究院 CHINA ACADEMY OF ENGINEERING PHYSICS
中国地震局 地壳应力研究所 The Institute of Crustal Dynamics
长春市产品质量监督检验院 Changchun product quality supervision and inspection institute
西安市产品质量监督检验院 Xi'an Supervision & Inspection Institute of Product Quality
福建省产品质量检验研究院 FUJIAN INSPECTION AND RESEARCH INSTITUTE FOR PRODUCT QUALITY
杭州市质量技术监督检测院 Hangzhou Technical Supervision and Procuratorate

## The Chinese People's Liberation Army

South China Sea Fleet

East China Sea Fleet

North Sea Fleet

Navy Factory 701/702

4724 Factory (Shanghai Haiying Machinery Factory)

95861 Unit (Air First Base)

The 5720th Factory of the People's Liberation Army of China

## Commercial Aviation

COMAC
Commercial Aircraft Corporation of China Limited

Collins Aerospace
Rockwell Collins

GAMECO
Guangzhou Aircraft Maintenance Engineering Co., Ltd

Ameco
Beijing Aircraft Maintenance Engineering Co., Ltd

## Military Academies And 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 Aviation University

Beihang University

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 Jiaotong University

Zhejiang University

Tianjin University

Huazhong University of Science and Technology

University of Electronic Science and technology

Shanghai University

Beijing University of Technology

Shanghai Maritime University

Dalian University of Technology

Dalian Maritime University

South China University of Technology

Huazhong University of Science and Technology

Xi'an Electronic Technology

Xi'an Jiaotong University

Sichuan University

donghua university

north china institute of aerospace engineering

Fudan University

Xiamen University

north china electric power university

Changchun Institute of Technology

xiangtan university

zhejiang university of technology

Xi'an University of technology

University of Electronic Science and Technology of China

# Cooperative Clients (Partial)

## Power Semiconductor Customers

Changchun Guoke
Electrical industry
China Resources Microelectronics
Shanghai Huinengtai Semiconductor
Yuexin Technology
Wishing to create technology
Group core microelectronics
Hangzhou Zhongsi
Feishide
Suzhou Lianxun Instrument
Weiyujia Semiconductor
Shanghai Zhanxin Semiconductor
Chengxin Technology
Zhuoxinda Technology



## Enterprises In The Field Of Automotive Electronics

China Automotive Research and Development
Heavy Industry Automotive Research and Development
BMW Brilliance
Red Banner
SAIC Group
SAIC Volkswagen
GEELY
tesla
Weilai
Xiaomi Automobile
BYD
value
polary
Lantu Automobile
Inovance
HAOMO.AI
MKLtech
Shanghai Tongmin Vehicle
Ningde Era
Human Horizons
Hezhong New Energy

## High Tech R&D Enterprises

Huawei
FARATRONIC
Panasonic
EPCOS
TYCO
Weidmuller
Honeywell
Nader
SIEMENS
ABB
Schneider
NOSRK
HONGFA
EOPLE
FLUKE
Philips
Gree
Guilin Rubber Machinery Factory
CASCO
CRRC
US PI
HILTI
BOSCH
linde
NARI-TECHNOLOGY
Shanghai Electric
New Thunder Energy
Silan

Official WeChat:
hypower-cn

# About us

Hangyu Power was founded in 2011 and is a national high-tech enterprise, Located in Songjiang, the birthplace of the G60 Science and Technology Innovation Corridor in the Yangtze River Delta, for over a decade Strive to provide customers with accurate, intelligent, and convenient testing power solutionsPlan.

Our company adheres to the product positioning of "specialty, precision, specialty, and novelty", and On the basis of targeting the market demand for "import substitution", propose "poor The development strategy of "differentiated import substitution" and "high-quality manufacturing"is committed to Innovative development of testing power supply technology in China, promoting the rejuvenation of science and technology in China The national cause is thriving.

Hangyu Power Series products cover power semiconductors, automotive electronics Aerospace, Defense and Military Industry, Low Voltage Electrical Appliances, Medical, Sensors Capacitors, inductors, smart grids, airborne, shipborne, weapons, ships.

Radar, communication, rail transit, power electronics, and other testing and other disciplines In the field of research, we strive to achieve perfect import substitution, with excellent military q uality and service,

Win unanimous praise from users.

# Contact us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| | |
|---|---|
| 2009 | Establishing Shanghai Ouzu Electronics Brand |
| 2010 | Successfully delivered 400kVA high-power AC power supply |
| 2011 | Hangyu Power Supply was established and officially put into operation as a three-phase precision AC power supply and militaryUsing a gyroscope to test the power supply, replacing Russian made products |
| 2012 | Formal production of programmable variable frequency power supply and AC constant current source |
| 2013 | Formal production of programmable AC/DC power supply and HY-AE excitation power supply |
| 2014 | Formal production of high-power bipolar testing power supply |
| 2015 | Formal production of HY-PM series and HY-GT series new models Dual phase/three-phase gyroscope power supply |
| 2016 | HY-HP series programmable high-power DC power supply officially put into operation |
| 2017 | HY-HV series programmable high-voltage DC power supply officially put into operation |
| 2018 | HY-CTL/CTS capacitor testing high-frequency high current testing power supply And successfully delivered 100kHz, 100Arms |
| 2019 | Official production of high-speed power supply for automotive electronic testing within 500kHz |
| 2020 | Officially put into operation LV123 new energy vehicle testing high-voltage ripple testing power supply |
| 2021 | HY-UHS series ultra-high stability magnet power supply officially put into operation |
| 2022 | HY-HVL series linear high-voltage programmable DC power supply officially put into operation |