

# **HY-PMCSU** series

# Programmable Multi-Channel DC Power Supply

Military Quality Power Supply Expert











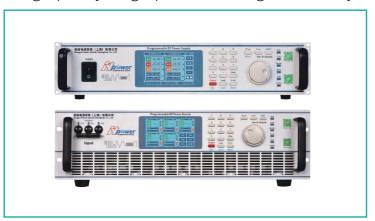


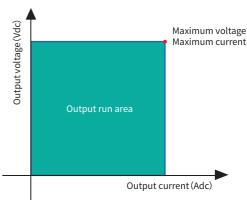




# HY-PMCSU Series Programmable Multi-Channel DC Power Supply

## High purity, High precision, High reliability





The modular architecture of this multi-channel power supply is flexible, and users can configure each channel arbitrarily according to the test requirements of the product under test to meet a variety of test requirements.

## **Product Features**

- High precision
- High resolution 1mV / 1mA
- Linear amplification technology, ultra-low ripple noise
- More than two channels output, up to 120 channels, each channel voltage/current independent control can be adjusted, each channel output with isolation
- 16 bits D/A high precision converter, accurate output
- 20 bits A/D high precision converter, more accurate read back

## **Application Field**

This multi-channel power supply is suitable for production line aging test and automatic test system construction, and is also suitable for various experiments and evaluation, quality management and other occasions.

- For rf and microwave circuit or component provides pure power supply
- Industrial DC/DC converter
  - Automotive electronic circuit test
- Production line scale aging test
- Power semiconductor test
- Research and development laboratory testing
- System integration test
- National defense Industry
- Aerospace

## **Product Model Naming Rules**

Product series	Output voltage	Outp	out currei	nt cha	Output nnel numb	oer Opti	onal func	tion
HY-PMCSU	80	-	10	-	2CH	-	CF	
Output voltage	n Example: HY-PMCSU 80-10 0-80 V, output cu s that users choo	rrent 0-1	10 A, the n	iumber o	of output cha	annels is	two chann	iels,

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

#### Optional function

- PN : Positive/negative switchover

- CP : Constant power function

- ABD: anti-backdown diode

- BD : anti-bonding anti-diode

- TVS: transient suppression diode

- HR : High resolution/precision

- DI : DC input, DC 28 V / 270 V (please specify when ordering)

- T1 : Operating temperature -10°C to 50°C

- T2 : Operating temperature -20°C to 50°C

- T4 : Operating temperature -40°C to 50°C

- CF : User-defined functions (please specify when ordering)

- MR : Measurement report (issued by CNAS certified third party)

- SP : Sequence, function programming functions

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

# **HY-PMCSU Series Product Selection Table**

## **HY-PMCSU Series Product Model Selection And Parameters**

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

Models	Output voltage	Output current	Output power
HY-PMCSU 80-10	0 - 80V	0 - 10A	800W
HY-PMCSU 80-5	0-800	0 - 5A	400W
HY-PMCSU 60-10	0 - 60V	0 - 10A	600W
HY-PMCSU 60-5	0 - 00V	0 - 5A	300W
HY-PMCSU 40-20	0 - 40V	0 - 20A	800W
HY-PMCSU 40-10	0 - 40 V	0 - 10A	400W
HY-PMCSU 30-20	0 - 30V	0 - 20A	600W
HY-PMCSU 30-10	0 - 30V	0 - 10A	300W
HY-PMCSU 20-40	0 - 20V	0 - 40A	800W
HY-PMCSU 20-20	0 - 20V	0 - 20A	400W

#### Constant Pressure Mode (CV Mode)

Output Range Can Be Set	0- Rated Output Value
Input Adjustment Rate	≤0.01% +0.01% (Range of measuring)
Load Adjustment Rate	≤0.01% +0.01% (Range of measuring)
Ripple Effective Value rms ( 3Hz-300kHz)	≤0.01% (80%-100% rated output)
Maximum Compensation Voltage For Telemetry	<30V 2V;≥30V 8V; (Can be customized according to demand)
Transient Response Time	≤100μs

#### Constant Current Mode (CC Mode)

Output Range Can Be Set	0- Rated Output Value
Input Adjustment Rate	≤0.03%+0.03% (Range of measuring)
Load Adjustment Rate	≤0.03%+0.03% (Range of measuring)
Ripple Effective Value rms (3Hz-300kHz)	≤0.03% (80%-100% rated output)

### Programming And Readback Accuracy & Resolution

Voltage Output Programming Accuracy	0.05% of the rated output voltage
Current Output Programming Accuracy	0.1% of output current + 0.1% of rated output current
Voltage Setting Resolution	0.001V (≤60 V),0.01V (≤600 V),0.1V (>600 V)
Current setting resolution	0.001A (<60 A),0.01A (<600 A),0.1A (>600 A)
Voltage Output Read-Back Accuracy	$\pm 0.02\%$ of rated output voltage + $\pm 0.02\%$ of actual voltage
Current Output Read-Back Accuracy	$\pm 0.1\%$ of rated output current + $\pm 0.1\%$ of actual current
Voltage Read Back Resolution	0.0001 V (≤ 100 V), 0.001 V (100 V < U ≤ 1000 V), 0.01 V (>1000 V)
Current Read Back Resolution	0.0001 A (≤ 100 A), 0.001 A (100 A < I ≤ 1000 A)

### Stability And Temperature Coefficient

Stability (Rated Output Voltage/Current)	U:0.01%	I:0.01% (After 30 minutes of power on at a certain input voltage and load ambient temperature, 8 hours)
Temperature Coefficient (Rated Output Voltage/Current)	U:50ppm/°C	I: 70ppm/°C (30 minutes after power on)

#### Protection Function

OVP Overvoltage Protection Setting Range	10-110%, beyond the limit output immediately off
OCP Overcurrent Protection Setting Range	0-105%, beyond the limit output immediately off
OTP Overtemperature Protection	Output beyond the limit is turned off immediately
OPP Overpower Protection	10-110%, beyond the limit output immediately off

#### **Environmental Condition**

Environment	Indoor use; Installation overvoltage class: II; Pollution level: P2; Class II equipment
Operating Ambient Temperature	0°C to 50°C, optional -10°C to 50°C, -20°C to 50°C, -40°C to 50°C
Storage Ambient Temperature	-20°C to 65°C,
Working Ambient Humidity	20%-90% RH, no dew formation, continuous operation
Storage Environment Humidity	10% - 95% RH, no dew formation
Altitude	Above 2000 meters above sea level, every 100 meters up, the power will be reduced by 2%, or reduce the maximum working ambient temperature by 1°C per 100 meters;  When not in operation, the altitude can reach 12,000 meters
Cooling	Forced air cooling, intelligent speed regulating fan, front/side air inlet, rear air outlet
Noise	$\leq$ 65dB(A), use 1 m to weighted measurement

#### Control Panel

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

# **HY-PMCSU Series Technical Parameters**

### Input Power Supply

Frequency	47 Hz - 63 Hz
Connection Mode	Single-phase two-wire + ground, AC220V $\pm$ 15%

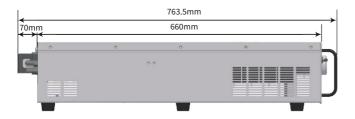
#### Size

Size	430(W) * 500(D) * 88(H) mm, 2U 450(W) * 660(D) * 133(H) mm, 3U 430(W) * 560(D) * 178(H) mm, 4U Different voltage and power use different chassis
Weight	15kg/2U;35kg/3U;45k/4U
Colour	RAL 7035

### 3U Machine Type: 450(W) \* 660(D) \* 133(H) mm

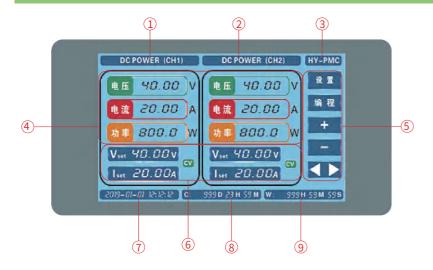








#### Display Interface



- ① Channel 1
- ② Channel 2
- ③ Product series
- 4 Voltage/current/power read back display area
- ⑤ Function setting area
- 6 Voltage/current setting value & CV/CC status
- ⑦ Current time
- 8 Cumulative running time
- 9 Indicates the running time

### **Power Semiconductor Customer**



Changchun

National Science



Electrical industry

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CASCO



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Shanghai Electric









南瑞集团公司

New Thunder Energy

Silan



**BOSCH** 



NARI-TECHNOLOGY

## **Cooperative Clients (Partial)**

## Aerospace & Defense Military Industry Research Institute















CASC

**CASIC** 

AVIC

AECC

CETC

CSSC

CSIC

CASC 800 ( Shanghai Aerospace Precision Machinery) Research Institute
CASC 801 ( Shanghai Institute of Space Propulsion)
CASC 803 ( Shanghai Aerospace Control Technology Institute)
CASC 804 ( Shanghai Aerospace Electronic Communication) Equipment Research Institute
${\sf CASC~805} \ ( \ {\sf Shanghai} \ {\sf Aerospace} \ {\sf System} \ {\sf Engineering} \ {\sf Institute})$
CASC 808 ( Shanghai Precision Measurement and Testing Instit
CASC 811 ( Shanghai Space Power Research Institute)
CASC 812 ( Shanghai Satellite Equipment Research Institute)
CASC 502 ( Beijing Control Engineering Research Institute)
CASC 510 ( Lanzhou Institute of Space Technology Physics)
CASC 203 ( China Ordnance Industry 203 Research Institute)
CASIC 206 (Beijing Machinery and Equipment Research Institut
CASIC 242 Factory (Lanzhou Flight Control Co., LTD.)
CASIC 307 Factory ( Aerospace Chenguang Co., LTD. )
CASIC 33 (33 Aerospace Science and Industry Institutes)

AVIC 603 ( AVIC Xi 'an Aircraft Design and Research Institute)

AVIC 613 ( Luoyang Electro-Optical Equipment Research Institute)

AVIC 613 ( Luoyang Electro-Optical Equipment Research Institute)

AVIC 615 ( Aeronautical Radio Electronics Research Institute of China)

AVIC 618 ( Xi 'an Flight Automatic Control Research Institute of AVIQ

AVIC 631 ( Aviation Computing Technology Research Institute of AVIQ)

tute) AVIC 105 Factory ( Tianjin Aviation Electromechanical Co., LTD.)

AVIC 115 Factory ( Shaanxi Aero Electric Co., LTD.)

AVIC 118 Factory ( State-owned Wanli Electromechanical Factory)

AVIC 181 Factory ( Wuhan Aviation Instrument Co., LTD.)

AVIC 304 ( Beijing Great Wall Institute of Measurement and)

AVIC 607 ( Testing Technology
AECC 606 (Shenyang Engine Research Institute )
AVIC 607 ( China Leihua Electronic Technology Institute)
Jiangnan Shipbuilding (Group) Co., LTD
Nanjing Panda Electronics Co., LTD

CETC 14 ( Nanjing Institute of Electronic Technology)

CETC 21 ( Shanghai Micromotor Research Institute )

CETC 23 ( Shanghai Transmission Line Research Institute )

CETC 36 ( Gangnam Electronics and Communication )

Research Institute

CETC 38 ( East China Institute of Electronic Engineering)

CETC 50 ( Shanghai Microwave Technology Research Institute)

CETC 51 ( Shanghai Microwave Equipment Research Institute)

CETC 54 ( Shijiazhuang Communication Measurement and )

CETC 55 ( Nanjing Institute of Electronic Devices )

CSIC 707 ( Tianjin Institute of Marine Instruments)

CSIC 7107 ( Shaanxi Aerospace Navigation Equipment Co., LTD.)

CSIC 719 ( Wuhan Second Ship Design Institute)

CSIC 704 ( Shanghai Marine Equipment Research Institute)

CSIC 726 (Shanghai Marine Electronic Equipment Research)

CASIC 3651 Factory (Shanghai Aerospace Control Technology)
State-owned 741 Factory (Nanjing Huadong Electronics Group Co., LTD.)
Institute of Modern Physics, Chinese Academy of Sciences

## Scientific Research & Third Party Quality Inspection Agency



Technical Institute of Physics and Chemistry (Beijing)
Institute of Urban Environment (Xiamen)
Electrotechnical Research Institute (Beijing)
Institute of Applied Physics (Shanghai)









## **Cooperative Clients (Partial)**

## The Chinese People's Liberation Army

South Sea Fleet

East China Sea Fleet

North Sea Fleet

Navy Factory 701 / Factory 702

4724 Factory (Shanghai Haiying Machinery Factory)

Unit 95861 (Air First Base)

5720 Factory of the People's Liberation Army of China

### **Commercial Aviation**







Guangzhou Aircraft Maintenance Engineering Co., LTD



Rockwell Collins



Beijing Aircraft Maintenance Engineering Co., LTD

### Military Academies & Local Universities



national university of





Army Engineering University



engineering university



naval university of engineering



Dalian Naval Academy



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



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Dalian Maritime University



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\*Hangyu Power System, 2024
Programmable DC Power Supply Product Catalog, version 08.00, April 2024
All technical data and instructions are based on the actual product
If there is any change, Hangyu Power has the final interpretation right

Authorized distributor: