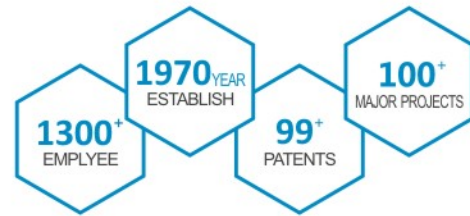


POWER MODULE SIZING GUIDANCE



Sichuan Changhong Battery Co., Ltd.
(State-owned Factory No.756)

COMPANY PROFILE



Sichuan Changhong Battery Co., Ltd. (State-owned Factory No.756), founded in 1970 is located in Mianyang, the Silicon Valley Science and Technology City in western China. The company is now China's largest solution provider and leader of alkaline batteries and power system solutions for industrial applications with military qualification certificates and related confidentiality qualifications.

For nearly 55 years, we have been focusing on military and civilian applications such as aerospace, rail transportation, petroleum and petrochemical, electric power communication, application vehicles and energy storage market. Now, in order to expand the power supply market furtherly, our company has signed a strategic cooperation agreement with Huawei Digital Energy Company, and launched various types of fully domestic, high-efficiency, high-density, high-reliability and digital (AC/DC, DC/DC) power supply modules. The products can be used in aerospace, weapons, radar and so on in military field and rail transport, electric power, communication equipment, instrumentation, industrial control equipment and so on in industrial field.





ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATE OF CONFORMITY

This is to certify that Environmental Management System of Sichuan Changhong Battery Co., Ltd. Consolidated Social Credit Code: 91510700205418582R (Register ADD: 519#, Sanjiang Avenue, Economic Development Zone, Mianyang, Sichuan Province, postcode: 621000) by reason of its Environmental Management System has been awarded this certificate for compliance with the standard GB/T 24001-2016/ISO 14001:2015

The production and the related activities of Lithium Ion Battery, Nickel Cadmium Battery, Silver Zinc Battery, Nickel Iron Battery Power System (including the control system), Charger (except the one requested CCC certification), Nickel-metal Hydride Battery, the related activities of battery maintenance

ADD: 519#, Sanjiang Avenue, Economic Development Zone, Mianyang, Sichuan Province. The No. of this certificate is: 02814E10395R3L This certificate is valid from: Sep.12.2023 to Sep.11.2026 Date of issue: Sep.12.2023

Beijing Zhong'an-Zhi-Huan Certification Center Co., Ltd (Former 8# Certification Center of Quality System) (ADD: A 22th floor, Free Town, No. 58 South Road, East 3rd Ring Road Chaoyang District, Beijing Postcode: 100022)

Issued by: 任磊



中国认可 国际互认 管理体系 MANAGEMENT SYSTEM CNAS C028-M



Certificate Status



Contact Info

证书信息查询方式 (the Website of inquiry certificate): <http://www.cnca.gov.cn>



China National Accreditation Service for Conformity Assessment LABORATORY ACCREDITATION CERTIFICATE (Registration No. CNAS L11032)

Sichuan Changhong Battery Co., Ltd. Testing Center

(Legal Entity: Sichuan Changhong Battery Co., Ltd.)

No. 519, Sanjiang Avenue, Economic Development Zone, Mianyang, Sichuan, China

is accredited in accordance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence to undertake the service described in the schedule attached to this certificate.

The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule forms an integral part of this certificate.

Effective Date: 2024-05-18

Expiry Date: 2030-05-17

Signed on behalf of China National Accreditation Service for Conformity Assessment

任朝华

China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is a signatory of the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) and the Asia Pacific Accreditation Cooperation Mutual Recognition Arrangement (APAC MRA). The validity of the certificate can be checked on CNAS website at <http://www.cnas.org.cn/english/findanaccreditedbody/index.shtml>.

CERTIFICATE OF CONFORMITY OF QUALITY MANAGEMENT SYSTEM CERTIFICATION

Unify Society Credit Code No. 91510700205418582R Certificate No. 00823Q30237R1M

SICHUAN CHANGHONG BATTERY CO., LTD.

---No. 519 Sanjiang Avenue, Economic Development Zone, Mianyang, Sichuan, (621000) is in conformity with

GB/T19001-2016/ISO9001:2015 standard

This certificate is valid to the following area

Design, Development, Production and Service of Power Supply System, Lithium-ion Battery (Includes Battery Module and Battery Packs) and Alkaline Battery

Branch 1: Parts Machining Workshop (Building B) Elevator Industrial Park, Baisheng Village, Shina Town, Youxian District, Mianyang, Sichuan Processing of mechanical Parts for Power Supply system, Lithium-ion Battery (Includes Battery Module and Battery Packs) and Alkaline Battery Branch 2: Scientific research Branch No. 1 Office Building, No. 3 Workshop, No. 1288 Shuxin Avenue, Pidu District, Chengde, Sichuan Design and Development of Some Power Supply System, Lithium-ion Battery (Includes Battery Module and Battery Packs) and Alkaline Battery

Issuance Date: 2023.10.23

Expiration Date: 2026.11.17

The first Certification Date: 2020.11.18

China Xinshida Certification Body

Building 6, No. 1 Huangmchang Rd.,

Chaoyang District, Beijing

Director: 李胜利



中国认可 国际互认 管理体系 MANAGEMENT SYSTEM CNAS C008-M



Organization Must Accept the Supervise and Audit and Regularly Audited Eligible Continues Effective

If you want to check the validity of this certificate, please land the WEBSITE: WWW.XQC.COM.CN or WWW.CNCA.GOV.CN at any time.



能源管理体系认证证书

编号: 11323ZEn30082R0M

兹证明

四川长虹电源股份有限公司

四川省绵阳市经济开发区三江大道 519 号

统一社会信用代码: 91510700205418582R 邮编: 621000

能源管理体系符合

GB/T 23331-2020/ISO 50001:2018

该体系覆盖范围

锂电池、镍镉电池、银锌电池、铁镍电池、电源系统(含控制系统)、充电器、镍氢电池的生产相关活动所涉及的能源管理活动

(获证组织能源绩效、能源管理体系边界和多场所信息见附件)

颁证日期: 2023 年 8 月 15 日

换证日期: 2023 年 9 月 14 日

有效期至: 2026 年 8 月 14 日



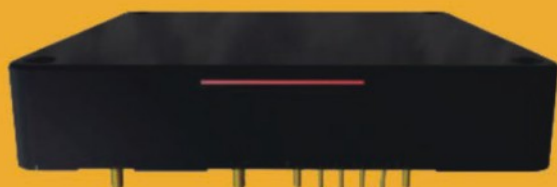
本证书信息在工业和信息化部官方网站(<http://cnca.net>)、国家认证认可监督管理委员会官网(<http://www.cnca.gov.cn>)上查询,电话: 010-68022700 网址: 北京市朝阳区东三环南路 58 号质检中心 A 座 201 室

Energy Management System

CATALOGUE

Specialty Power Supply	1
Railway Power Supply	4
General Purpose Power Supply	5
Server Power Supply	6
Box Power Supply	8
DC Charging Module	11
AVS Power Module	12
Network Power Module	13
ICT Power Module	14
PSIP Packaged Power Supply	15
Consumer Electronics	16
Liquid-cooled Supercharging	19
Customized Power Supply	21

SPECIALTY POWER SUPPLY AC-DC POWER MODULES



Product Description

The CHA H500-220S28 is a new generation of AC-DC power supply module. It adopts industry-standard one-half brick structure with high efficiency and power density, low output ripple and noise. It has an input voltage range of 90~264VAC and provides a rated output voltage of 28V DC and a maximum output current of 18A. It can be used in roadside radar, marine, industrial control system, measurement and control system, security, VPX and other power supply systems, powering computer motherboards, radar modules, and three power supplies and so on.

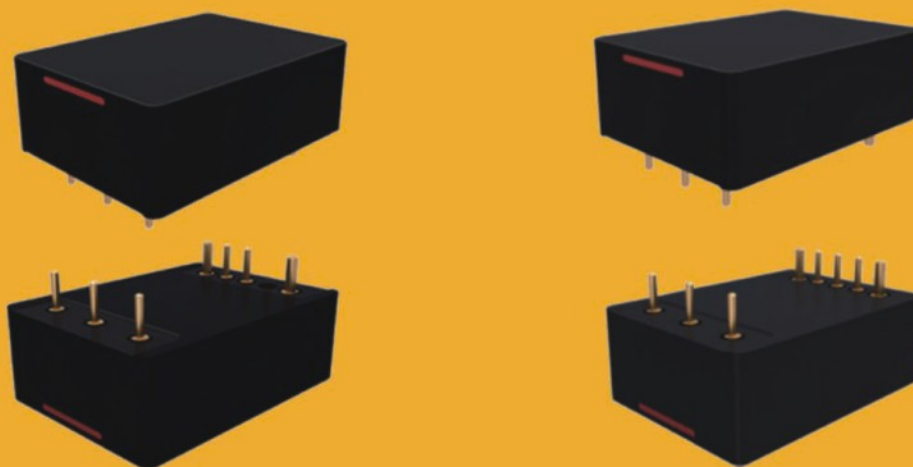
Features

- High Power Densities
- Low Output Ripple & Noise
- High Reliability
- With input undervoltage/overvoltage protection, output overcurrent protection, output short-circuit protection, output overvoltage protection, over-temperature protection and other key protections
- Adopting vacuum sealing technology, with dust-proof, moisture-proof and other characteristics.

Datasheet

Product model	Input voltage	Output voltage	Maximum output current	Output power	Efficiency	Dimension (L*W*H)
CHAH500-220S28	90~264V AC	28V DC	18A	500W	92%	63.0mm*61.0mm*12.7mm

DC-DC POWER MODULE



Product Description

This series is a new generation of isolated DC-DC power module. Adopting industry standard one-sixteenth brick structure, it has high efficiency and power density, low output ripple and noise. They can be applied to power supply systems for vehicles, aircraft, drones, underwater equipment, ships, communication equipment, etc., and supply power for chips, sensors, and three power supplies.

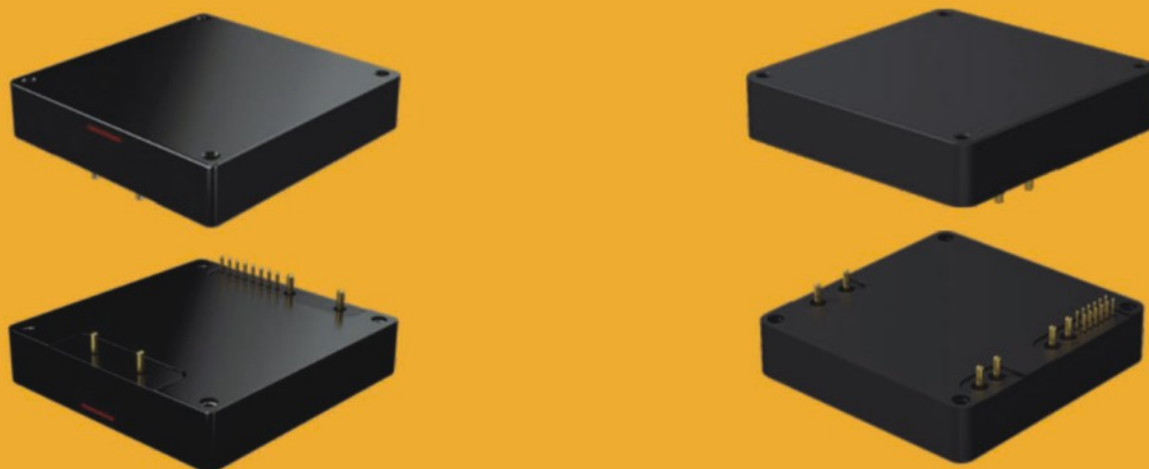
Features

- High Power Densities
- Low Output Ripple & Noise
- High Reliability
- With input undervoltage/overvoltage protection, output overcurrent protection, output short-circuit protection, output overvoltage protection, over-temperature protection and other key protections
- Adopting vacuum sealing technology, with dust-proof, moisture-proof and other characteristics.

Datasheet

Product model	Input voltage	Output voltage	Maximum output current	Output power	Efficiency	Dimension (L*W*H)
CHDS100-28S05	16~40V DC	5V DC	20A	100W	89%	36.5mm*26.3 mm*12.7mm
CHDS100-28S12	17~40V DC	12V DC	8.5A	100W	90%	36.5mm*26.3mm*12.7mm

HVDC POWER MODULE



Product Description

This series of modules is a new generation of isolated HVDC-DC power module. It adopts the industry standard one-half brick structure, with high efficiency and power density, low output ripple and noise, and supports CAN bus communication. CHDH900-270S28 can be applied to power supply system of vehicle, aircraft, UAV, underwater equipment, ship, security system, etc., and supply power for computer motherboard, optoelectronic module, radar module, and third-party power supply, etc. CHDH1200-380S12 can be applied to IT scenarios of supercomputing and VPX, and supply power for VRM, AVS, and third-party power supply.

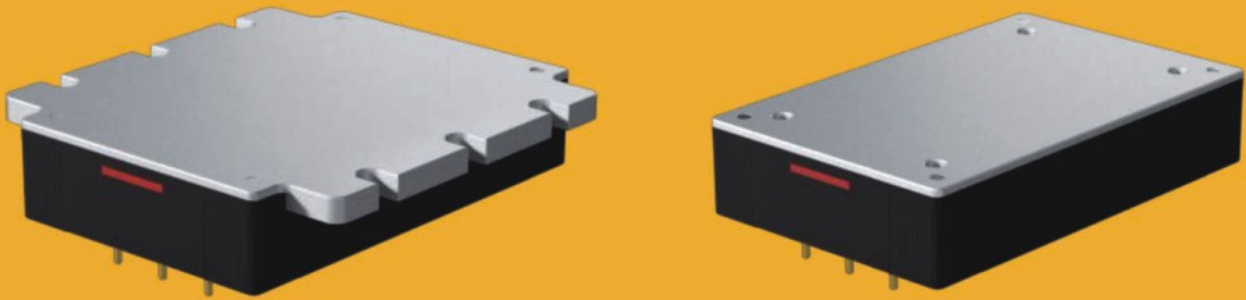
Features

- High Power Density
- Low Output Ripple & Noise
- Steady communication
- High Reliability
- With input undervoltage/overvoltage protection, output overcurrent protection, output short-circuit protection, output overvoltage protection, over-temperature protection and other key protections
- Adopting vacuum sealing technology, with dust-proof, moisture-proof and other characteristics.

Datasheet

Product model	Input voltage	Output voltage	Maximum output current	Output power	Efficiency	Dimension (L*W*H)
CHDH900-270S28	200~400V DC	28V DC	32A	900W	94%	63.0mm*61.0mm*12.7mm
CHDH1200-380S12	360~400V DC	12.2V DC	98.3A	1200W	95%	63.0mm*61.0mm*12.7mm

RAILWAY POWER SUPPLY DC-DC POWER MODULE



Product Description

The Railway Series is a new generation of isolated DC-DC power module. It adopts industry non-standard quarter-brick structure with high efficiency and power density, low output ripple and noise. The Railway Power Supplies can be used in train lighting system, door control, train network communication and in-vehicle entertainment scenarios.

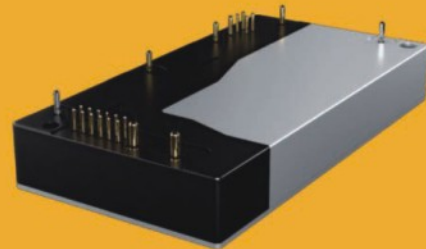
Features

- low disturbance
- High Reliability
- With input undervoltage/overvoltage protection, output overcurrent protection, output short-circuit protection, output overvoltage protection, over-temperature protection and other key protections
- Adopting vacuum sealing technology, with dust-proof, moisture-proof and other characteristics.

Datasheet

Product model	Input voltage	Output voltage	Maximum output current	Output power	Efficiency	Dimension (L*W*H)
TDQ06S24F-4& TDQ06S24G-4	60~160V DC	24V DC	6A	144W	91%	60.6mm*55.9mm*12.7mm (F) 60.6mm*39.0mm*12.7mm (G)
TDQ10S15F-4& TDQ10S15G-4	60~160V DC	15V DC	10A	150W	92%	
TDQ30S05F-4& TDQ30S05G-4	60~160V DC	5V DC	30A	150W	89%	

GENERAL PURPOSE POWER SUPPLY AC-DC POWER MODULE



Product Description

This series of modules is a new generation of industrial grade non-standard half-brick structure, high power density isolated AC-DC modules, to provide users with rated DC output voltage. Support wide range of AC input, support shell cooling and heat sink cooling; support two power modules in parallel, and with PMBus communication and related protection functions, surge protection meets IEC61000-4-5 standard. Self-supporting shell, natural heat dissipation. PMBus communication can be reported through the power supply working information, such as power supply version information, input power, alarms, etc... It is suitable for industrial, communication, instrumentation and LED applications.

Features

- Support case-mounted and heat sink cooling
- Support two modules in parallel
- Support PM Bus communication: report power supply SN number, version information, black information, alarm information.
- Input under-voltage protection, input over-voltage protection, output over-current protection, output over-voltage protection, output short-circuit protection, over-temperature protection
- Support offline upgrade
- Meets NTRL, CE and CB approvals
- Conforms to UL/ IEC/EN/CSA60950-1 and UL/ IEC/EN 62368-1 standards.

Datasheet

Product model	Input voltage	Output voltage	Maximum output current	Output power	Efficiency	Dimension (L*W*H)
ACG10S50CH	90~290V AC	50V DC	10A	500W	94%	86.0mm*45.0mm*12.8mm
ACG42S12CH	90~290V AC	12V DC	42A	500W	91%	86.0mm*45.0mm*12.8mm

SERVER POWER SUPPLY

CRPS SERVER POWER SUPPLY



Product Description

This series module is a power supply module supporting 90~264V AC input and 180~320V DC input. The module adopts the industry's advanced all-digital control technology, combined with a patented topology. This series of power supply features high efficiency, high density, overclocking, digitalisation and high reliability, supporting hot-swappable and easy application. They meet CE, TUV, CCC, NRTL and CB certification standards, and have complete specifications. It can be widely used in servers, storage, MEC, video matrix and other scenarios.

Features

- Support 1+1, 2+1, 3+1, 2+2 parallel operation
- PM Bus1.2 protocol, support black box function
- High-precision input power report (3%@50% load)
- Support cold standby mode and hot-swapping
- Support AC, HVDC two input systems
- 12V DC & 12Vsb DC two-way output
- Support anti-supply function, and power-down module information reporting
- Input overvoltage/undervoltage protection, output overcurrent/overvoltage protection, output short-circuit protection, over-temperature protection, Or ing isolation protection
- Meet CE, TUV, CCC, NRTL and CB certifications
- Complies with IEC/UL/EN 60950-1, IEC/UL/EN 62368-1 and GB 49431 certification standards
- Complies with RoHS standard

Datasheet

Product model	Input voltage	Output voltage	Maximum output current	Output power	Efficiency	Dimension (L*W*H)
PAC800D12-B1	90~264V AC / 180~320V DC	12V DC/12Vsb	66A/2.5A	800W	94%	185.0mm*73.5mm*40.0mm
PAC1K3D12-B1	90~264V AC / 180~320V DC	12V DC/12Vsb	108A/3A	1300W	95%	185.0mm*73.5mm*40.0mm

KUNPENG SERVER POWER SUPPLY



Product Description

This series are a power supply module that supports 90~264V AC input and 180~300V DC input. The power supply adopts the industry's advanced all-digital control technology, combined with a patented topology. This series of power supply features high efficiency, high density, digitalisation and high reliability, and supports hot-swapping. Easy to apply. They meet CE, TUV, CCC, NRTL and CB certification standards, and have complete specifications. It can be widely used in server, storage, MEC, video matrix and other scenarios.

Features

- Supports 1+1, 2+2 parallel operation
- PM Bus1.2 protocol, support black box function
- High-precision input power report (3%@50% load)
- Support hot standby/cold standby/deep sleep (input power less than 1W), support hot swapping
- Support AC, HVDC two input systems
- Support three output modes: MV12, SV12 and Mv6.
- Input overvoltage/undervoltage protection, output overcurrent protection, output short-circuit protection, output overvoltage protection, over-temperature protection, Oring isolation
- Protection in accordance with IEC/EN/UL60950-1, GB4943.1 and IEC62368-1 standards.
- Complies with RoH S standard

Datasheet

Product model	Input voltage	Output voltage	Maximum output current	Output power	Efficiency	Dimension (L*W*H)
PAC900S12-B2	90~264V AC / 180~300V DC	12V DC	75A	900W	94%	183.0mm*68.0mm*40.5mm
PAC2000S12-B1	90~264V AC / 180~300V DC	12V DC	167A	2000W	94%	183.0mm*68.0mm*40.5mm

BOX POWER SUPPLY

DUAL-INPUT BOX POWER SUPPLY MODULE (AC/HVDC -DC)



Product Description

This module is a high efficiency power supply module that converts AC and high voltage DC inputs to DC outputs. The module has a built-in fan, and the fan adopts the method of forward air and rear air outlet to support the heat dissipation of the power supply. CAN communication interface can be provided to communicate with the host computer and send the electronic serial number to the host computer, which is convenient for monitoring and management by the host computer. It is widely used in global telecommunication centre room, data centre room and other class A environment scenarios.

Features

- Support dual-channel AC/HV DC mixed supply, active switching by upper computer, and adaptive switching by PM.
- Input over-voltage protection, input under-voltage protection, output over-voltage protection, output over-current protection, output short-circuit protection, over-temperature protection
- CAN communication for controlling and monitoring power modules
- Meet CE, TUV, UL and CB certifications.
- Complies with UL 62368, EN 62368 and IEC 62368
- Complies with RoH S-6 standard

Datasheet

Product model	Input voltage	Output voltage	Maximum output current	Output power	Efficiency	Dimension (L*W*H)
PAH-3000WA	90~290V AC/ 188~400V DC	53.5V DC	56A	3000W	≥95%	485.0mm*104.8mm*40.8mm

2200W DC POWER MODULE (DC-DC)



Product Description

This module is a high efficiency DC-DC power supply module. It provides CAN communication ports to communicate with the host and send electronic serial numbers for monitoring and management of power modules. Supports N+1 or N+N redundant ($N \geq 2$) parallel applications, up to 32 power modules can be connected in parallel for redundant use. It is widely used in data centers for routers/switches, servers/storage, telecommunication equipment and other scenarios.

Features

- Supports hot-swapping
- Support fan speed regulation
- Input under-voltage protection, input reverse connection protection, output over-voltage protection, output current limit protection, output short-circuit protection, over-temperature protection
- CAN communication for controlling and monitoring power modules
- Meet CE, T UV, UL and CB certification
- Complies with IEC 62368-1 standard
- Compliant with RoHS-6 Standard

Datasheet

Product model	Input voltage	Output voltage	Maximum output current	Output power	Efficiency	Dimension (L*W*H)
PDC-2200WC	-38~-72V DC	53.5V DC	42A	2200W	$\geq 94\%$	485.0mm*106.5mm*41.0mm

TMN 1APSU Power Module



Product Description

The module is an AC to DC power supply module with an input range of 90~290V AC or 190~290V DC, a rated output of 53.5V DC, and a rated output power of 3000 W. The module is equipped with an I2C communication function, an equalization function, and support for 1+1 parallel use and hot-swappable applications.

Features

- Weight : <2.0Kg
- Input under-voltage protection, input over-voltage protection, output over-voltage protection, output over-current protection, output short-circuit protection, over-temperature protection
- I2C communication for control, programming and monitoring
- Meet NRTL, TUV, COC and CB certification
- Conforms to IEC 60950-1, IEC 62368-1, EN 60950-1, EN 62368-1, UL 60950-1, UL 62368-1 and GB 4943.1. Standards
- Complies with RoH S2.0 standard

Datasheet

Product model	Input voltage	Output voltage	Maximum output current	Output power	Efficiency	Dimension (L*W*H)
TMN1APSU	90~290V AC/ 190~290V DC	53.5V DC	56A	3000W	≥95%	132.0mm*91.0mm*81.5mm

30KW DC CHARGING MODULE



40KW DC CHARGING MODULE



Product Description

This module is a high-efficiency, high-power density AC-DC charging module. The charging module adopts isolated CAN communication interface, and the communication with the monitoring module adopts CAN communication protocol. Through the system monitoring, the output voltage mode of the charging module can be set, and the functions of voltage regulation, current limitation and module switching can be realized.

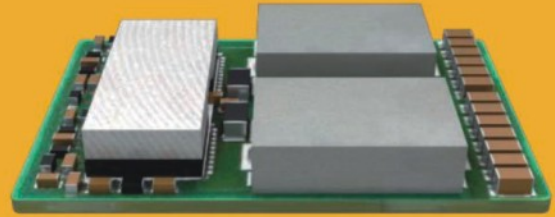
Features

- Support hot-swapping
- Support fan speed regulation
- Support CAN bus communication function
- Support LED and digital tube display alarm
- Support voltage regulation, current limiting and equalizing functions
- Complete protection function
- Low/over-temperature protection
- Input side: support over/under voltage protection, three-phase unbalance protection
- Output side: Support over-voltage and short-circuit protection
- Supports output back irrigation isolation
- Supports group settings
- Support system monitoring for group control of different groups of modules on the bus
- Support packet number and hardware address power-down storage

Datasheet

Product model	Input voltage	Output voltage	Maximum output current	Output power	Efficiency	Dimension (L*W*H)
R100030G1	260 ~ 485V AC	200~1000V DC	100A	30KW	96.4%	458mm*218mm*84mm
R100040G2	260~485V AC	150~1000 V DC	133A	40KW	96.5%	438mm*218mm*120mm

AVS POWER MODULE



Product Description

AVS series power supply module is a non-isolated DC-DC power supply module, which consists of a power module (NDD12S55-P1) and a control module (NDD12S55-C1). AVS power supply has a very small output ripple and good dynamic characteristics. It supports PMBus communication, and can report power supply working information, such as: input voltage, output voltage, output current, alarm information, etc. It is mainly used in server/network/computing equipment to supply power to XPU/ARM/ASIC and other high-current processors.

Features

- Maximum 800A steady state current output to meet the power supply requirements of AI, HPC and other high performance computing
- Highly integrated, DRMOS, inductor, resistor and capacitor in one integrated design
- 3.7mm thin, can be placed underneath the processor cooler for simple thermal design
- Adopts PID+fast phase adjustment+phase equalisation algorithm to provide ultra-fast transient response and improve power supply stability.
- Low response overshoot, less voltage fluctuation, reduced rear stage capacitor configuration
- Can be laid out close to the processor with low power distribution losses

Datasheet

Product model	Input voltage	Output voltage	Maximum output current	Switching Frequencies	Efficiency	Dimension (L*W*H)
NDD12S55-P1	9~14V DC	0.5~1.2V DC	50A	450~550kHz	88%	27.0mm*18.0mm*3.7mm
NDD12S55-C1	9~14V DC	5V DC		450~550kHz	88%	26.3mm*23.2mm*3.2mm

NETWORK ISOLATED POWER MODUL

BRICK POWER SUPPLY (DC-DC MODULE)



	GBS20S5V5-4E	GBE30S3V3-E	GDE25S12B-E	GDE25S12B-PE
Input voltage	36V DC~75V DC	36V DC~75V DC	36V DC~75V DC	36V DC~75V DC
Output voltage	5.5V DC	3.3V DC	12V DC	12V DC
Output power	100W	100W	300W	300W
Dimension(L*W*H)	33.3*23.1*9.9mm (standard 1/16 brick)	57.9*22.9*10.3mm (standard 1/8 brick)	58.4*22.9*12.1mm (standard 1/8 brick)	58.4*22.9*13.2mm (standard 1/8 brick)
Efficiency	91.5%	92.5%	94.2%	94.2%
Topological Structure	Isolated	Isolated	Isolated	Isolated



	GDE33S12B-4	GDQ54S12B-4PD	GDQ54S12B-4A	GDQ75S12B-4Q
Input voltage	36V DC~75V DC	36V DC~75V DC	36V DC~75V DC	36V DC~75V DC
Output voltage	12V DC	12V DC	12V DC	12V DC
Output power	400W	650W	650W	900W
Dimension(L*W*H)	58.4*22.9*13.2mm (standard 1/8 brick)	57.9*36.8*13.4mm (standard 1/4 brick)	57.9*36.8*13.4mm (standard 1/4 brick)	57.9*36.8*13.4mm (standard 1/4 brick)
Efficiency	95%	95%	95.5%	96.5%
Topological Structure	Isolated	Isolated	Isolated	Isolated



	GDQ100S12B-4P
Input voltage	36V DC~72V DC
Output voltage	12V DC
Output power	1200W
Dimension(L*W*H)	57.9*40.8*14.8mm (standard 1/4 brick)
Efficiency	95%
Topological Structure	Isolated

ICT POWER MODULE

BRICK POWER SUPPLY (DC-DC MODULE)



	GDC800D2854-PC	GDC800T5054-UC	GDC39S28-PE	GDC1K5D5023-PD
Input voltage	36V DC~60V DC	36V DC~60V DC	34V DC~72V DC	34V DC~72V DC
Output voltage	28V DC/5.4V DC	50V DC/5.4V DC/-9.5V DC	28V DC	50V DC/23V DC
Output power	800W	800W	1100W	1500W@50V DC ; 5.5W@23V DC
Dimension(L*W*H)	64.8*50.0*9.5mm	64.8*50.0*12.5mm	64.8*50.0*9.7mm	64.8*50.0*9.7mm
Efficiency	95%	95%	95%	96%
Topological Structure	non-isolated	non-isolated	non-isolated	non-isolated



	GDC75S12-PD
Input voltage	34V DC~72V DC
Output voltage	12V DC
Output power	900W
Dimension(L*W*H)	64.8 * 42.0 * 9.5mm
Efficiency	95%
Topological Structure	Isolated

PSIP PACKAGED POWER SUPPLY

CHIP-SCALE POWER SUPPLY (PSIP MODULE)



	NAE03S03-B	NAE12S03-B	NAM03S06-D	NAM12S06-D	NAE12S17-B	NAE12S20-C
Input Voltage	3.0V DC~5.75V DC	6.3V DC~14V DC	3.0V DC~5.75VDC	9.0V DC~14V DC	3.0V DC~14V DC	3.0V DC~14V DC
Maximum output current	3A	3A	6A	6A	17A	20A
Output voltage	0.8V DC~3.7V DC	0.8V DC~5.2V DC	0.9V DC~3.7V DC	0.7V DC~5.4V DC	0.6V DC~5.5V DC	0.6V DC~5.5V DC
Dimension (L*W*H)	3.0*2.8*1.6 mm	3.0*2.8*1.6 mm	8.0*8.0*4.0mm	7.0*7.0*4.0mm	7.0*7.0*6.0mm	11.0*11.0*4.0 mm
Efficiency	93.5%	92%	96.5%	93.5%	92%	92%



	NDE12D15R-S				
Input Voltage	6.0V DC~15.0V DC				
Maximum output current	50A				
Output voltage	0.5V DC~5.5V DC				
Dimension (L*W*H)	11.1*7.1*4.025mm				
Efficiency	96.5%				

CONSUMER ELECTRONICS FAST CHARGING MODULE

65W 1A2C WIRED FAST CHARGING MODULE



CYAC65T2020G0

Dimension (L*W*H)	60.15mm*61.15mm*24.50mm
Support for charging protocols	SCP,PD3.0/PPS, QC2.0
Output Interface	USB-C*2,USB-A*1
Protocol ratings Output Power	USB-A single port output SCP: 10V4A Max, 10V2.25A, 20V2A QC2.0: 12V1.5A, 9V2A, 5V3A
	USB-C1 single port output PD3.0/PPS: 20V3.25A Max, 15V3A, 12V3A, 9V3A, 5V3A SCP: 10V4A Max, 10V2.25A, 20V2A QC2.0: 12V1.5A, 9V2A, 5V3A
	USB-C2 single port output PD3.0/PPS: 20V2A, 15V2.66A, 12V3A, 9V3A, 5V3A SCP: 10V4A Max, 10V2.25A, 20V2A QC2.0: 12V1.5A, 9V2A, 5V3A
	USB-C1 and USB-C2 simultaneous output: 62.5W max (40W+22.5W)
	USB-C1 and USB-A simultaneous output: 62.5W max (40W+22.5W)
	USB-C2 and USB-A simultaneous output: Maximum 20W (5V2A+5V2A)
	Simultaneous output from three ports: 60W Max (40W Max+5V2A+5V2A)
Input Voltage	90V AC~264V AC (Rated 100VAC~240VAC, 50/60Hz)
Input Current	≤1.6A

Note:

The module is only designed to be compatible with PD/PPS and QC2.0, and QC2.0 only supports 5V/9V/12V output.

45W 1A1C WIRED FAST CHARGING MODULE



CYHA45D2012L0

Dimension (L*W*H) 52.15mm*37.00mm*26.20mm

Support for charging protocols SCP,PD3.0/PPS, QC2.0

Output Interface USB-C*1, USB-A*1

**Protocol ratings
Output Power**

USB-A single port output:

SCP: 10V4A Max, 10V2.25A, 20V2A

QC2.0: 12V1.5A, 9V2A5V3A

USB-C single port output:

PD3.0/PPS: 20V2.25A Max, 20V2A, 15V3A, 12V3A, 9V3A, 5V3A

SCP: 10V4A Max, 10V2.25A, 20V2A

QC2.0: 12V1.5A, 9V2A, 5V3A

USB-A and USB-C Simultaneous Output:

20W max (5V2A+5V2A)

Input Voltage 100V AC~264V AC(Rated 200VAC~240VAC, 50/60Hz)

Input Current $\leq 1.2A$

Note:

1. The module is only compatible with PD/PPS and QC2.0, and QC2.0 only supports 5V/9V/12V output.
2. When both ports are used at the same time, and the device is inserted or removed, the product will re-judge the fast charging protocol for intelligent power allocation and protection of the device (there will be a phenomenon that the output is disconnected for 1-2S and recharged to the device). This is a normal phenomenon.
3. If USB-A plugged into the device and it can not be charged / fast charged, please re-plug the cable.
4. To ensure that the USB-C port is charged above 10W, if the USB-A port is connected with an A to lightning cable, please remove it.

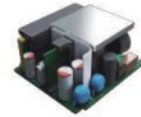
40W WIRED FAST CHARGING MODULE



40W A-port wired fast charging module with case



40W A-port wired fast charging module



40W C-port wired fast charging module

	PAC40S10	CYAC40S12G1	CYAC40S12G0
Dimension (L*W*H)	46.30mm*42.80mm*25.40mm	45.20mm*41.00mm*23.80mm	46.00mm*41.00mm*23.80mm
Support for charging protocols	SCP, QC2.0	SCP, QC2.0	SCP, PD3.0/PPS, QC2.0
Output Interface	USB-A*1	USB-A*1	USB-C*1
Protocol ratings Output Power	SCP: 10V4A Max, 10V2.25A QC2.0: 9V2A, 5V2A	SCP: 10V4A Max, 10V2.25A QC2.0: 9V2A, 5V2A	SCP: 10V4A Max, 10V2.25A PD3.0: 12V2A, 9V3A, 5V3A PD3.0/PPS: 11V3A QC2.0: 9V3A, 5V3A
Input Voltage	90V AC~264V AC 100V AC~240V AC (Rated 50/60Hz)		
Input Current	≤1.2A		

Note:

40W C-port wired fast charging module is only compatible with PD/PPS and QC2.0. Two 40W A-port wired fast charging module is compatible with QC2.0, QC2.0 only support 5V/9V/12V three voltage output.

57.5W 1A1C WIRED DC-DC FAST CHARGER MODULE



CYDC57D1105G0

Dimension (L*W*H)	25.30mm*77.60mm*19.70mm
Support for charging protocols	SCP,PD3.0/PPS, QC2.0
Output Interface	USB-C*1, USB-A*1
Protocol ratings Output Power	USB-C single port output: 40W Max (10V4A) USB-A single port output: 17.5W (5V3.5A) Dual port simultaneous output: Max (40W+17.5W) 57.5W
Input Voltage	10.8V DC~30V DC (Rated 12V DC/24V DC)
Input Current	≤7A

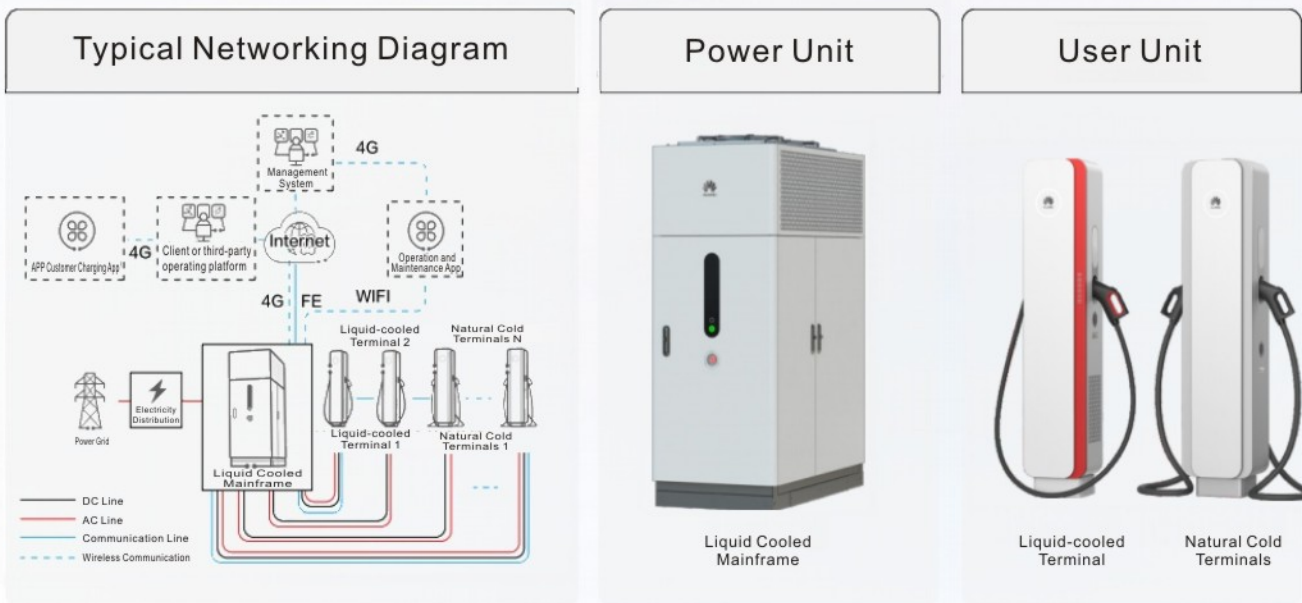
Note:

The module is only compatible with PD/PPS and QC2.0. QC2.0 only supports 5V/9V/12V output.

LIQUID-COOLED SUPERCHARGING

Product Description

DS720-720LCNA1 is a fully liquid-cooled supercharging architecture for new energy vehicle charging. Compared with traditional solutions, it is innovative in using new liquid-cooling technology and DC busbar architecture, and consists of two parts: power unit and user unit. The power unit is used to realize energy conversion and distribution, and can be expanded to support 720kW power output (full configuration). With built-in 120kWAC/DC and 60kWDC/DC liquid-cooled modules and power sharing unit, the power unit can be expanded to support 12 gunline outputs (full configuration).



Product Characteristics

The Extreme Experience	Extremely High Quality	Excellent Profitability
<p>Fast Charging and Low Noise Maximum approx. 600kW, Noise <55dB</p>	<p>Long Lifespan, Maintenance-free Fully liquid-cooled closed system, 2-3 times longer life than traditional air-cooling</p>	<p>Charge more, quicker turnaround Charge turnover rate double improved</p>
<p>Available for all brands, no restrictions the success rate of a charge is about 99% +</p>	<p>Intelligent Camping Maintenance, less labor Fully online operation and maintenance free</p>	<p>High efficiency, Low energy consumption E2E Efficiency about 95.5%</p>
<p>Lightweight gun line Easy to handle Liquid gun line is about 9KG, 50% lighter than normal</p>	<p>No leakage of liquid, No leakage of electricity Liquid transport with plates, Hydropower-isolated design</p>	<p>Easy Expansion, Optimal Storage Continuous evolution, no need to switch to mains power</p>

The above data comes from internal laboratory theoretical values/statistical values over time, and is obtained under specific test environments. Actual use may vary due to differences in vehicle models, software versions, usage conditions and environmental factors, so please refer to the actual use of the situation.

POWER UNIT SPECIFICATIONS

General Information		Product Model	
		DS720-720LCNA1	
Product Configuration		ACDC600kW-DCDC720kW	ACDC480kW-DCDC600kW
Output Power		600kW	480kW
Max. Number of Guns		12个	8个
Dimensions (W * D * H)		800 mm × 1700 mm × 2150 mm	
Installation Method		Floor mounting (supports transport of liquids with plates)	
System Efficiency		Maximum efficiency 95.5%	
Cooling Method		Liquid Cooling	
Protection Level		IP55	
Communication Interface		4G、FE (northward)	
Power Evolution Capability		Expanded capacity support up to 720kw	
Input Characteristics		Input Voltage	
		380vac±15%, 3-phase 5-wire	
		Input Frequency	
		45Hz~66Hz	
		Power Factor	
		=0.99 (load ≥50%)	
		Harmonics	
		=5% (load≥50%)	
		Input Power Distribution	
		AC 800A x 3P circuit breaker; single transformer 2-way feed (360KW per circuit)	
Output Characteristics		Output Voltage	
		200-1000Vdc	
		Steady Current Accuracy	
		≤ ±1%	
		Steady Voltage Accuracy	
		≤ ±0.5%	
Environmental Indicators		Operating Temperature	
		-35℃~+50℃	
		Storage Temperature	
		-35℃~+70℃	
		Altitude	
		≤4000m	
		Relative Humidity	
		5%RH~95%RH	
		Noise Level	
		≤ 55 dB@25℃ (Silent Mode) , ≤65dB@25℃ (Standard Mode)	
Safety Function		Input overvoltage protection, undervoltage protection, output overvoltage protection, constant power overload protection, short-circuit protection, grounding protection, over-temperature protection, lightning protection, emergency stop protection, earth leakage protection, insulation detection, door opener protection, battery reverse connection protection, relay adhesion protection, flooding protection, smoke alarms.	

User Unit Specifications

General Information		Product Model	DT600L1-CNA1	DT250N2-CNA1
		Dimensions (W * D * H)	340*295*1700	390*295*1700
		Number of charging guns	1	2
		Length of gun line	3.5m	5m
		Installation Method	Floor Mounting	Floor Mounting
		Protection Level	IP55	IP55
		Cooling Method	Liquid Cooling	Natural Cooling
Environmental Requirement		Operating Temperature	-35~+50℃	-35~+50℃
		Noise Level	≤55dB@25℃	≤50dB@25℃
		Storage Temperature	-35℃~+70℃	-35℃~+70℃
		Relative Humidity	5%RH~95%RH	5%RH~95%RH
		Altitude	≤4000m	≤4000m
Output Characteristics		Output Voltage	200-1000Vdc	200-1000Vdc
		Charging Current	≤600A	≤250A
Safety Function		Output over-voltage protection, short-circuit protection, protective grounding continuity detection, over-temperature protection, emergency stop protection, leakage protection, insulation detection, door opening protection, blackout protection, battery reverse connection protection, contactor sticking protection, low liquid level warning		

CUSTOMIZED POWER SUPPLY

CUSTOMIZED AMPLIFIER COMPONENT POWER SUPPLY



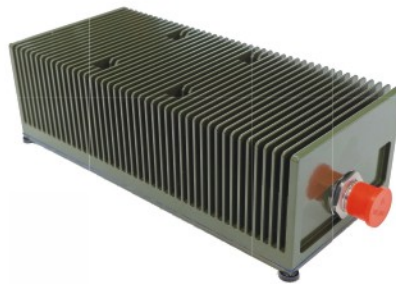
Dimensions (L*W*H): Product structure size according to the size of the output power in turn:
450 × 170 × 42mm, 300 × 145 × 42mm, 200 × 145 × 42mm

Input: Single-phase AC 220V/50Hz

Output: Single output DC36V/3kW, DC28V/3kW, DC36V/2kW, DC28V/2kW; Dual output DC 28V and DC24V with a total power of 2kW, Dual output DC24V with a total power of 1kW and so on.

Features: The output voltage is adjustable to meet the application requirements of special amplifier products. And it has the functions of input over/under-voltage protection, output over-current, short-circuit, over-voltage protection and over-temperature protection, etc. It is a kind of power supply product with high stability and reliability.

CUSTOMIZED POWER ADAPTER (100% DOMESTIC PENETRATION)



Dimensions (L*W*H): 200×90×60mm

Input: Single-phase AC220V/50Hz

Output: DC30V/300W

Features: Meet the application requirements of special ground equipment products, and has an input over-undervoltage protection, output overcurrent, short-circuit, over-voltage protection, over-temperature protection and other functions. It is a kind of high stability and high reliability power supply products.

GROUND EQUIPMENT POWER



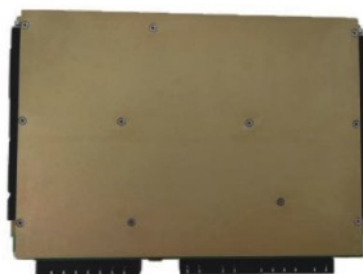
Dimensions (L*W*H): 482.6×420×88.1mm

Input: 440-660VDC

Output: Output 28V/4kW (25-31V adjustable)

Features: Meet the application requirements of special ground equipment products. With CAN communication, input over-under-voltage protection, input anti-reverse, output over-current, over-voltage, short-circuit, over-temperature protection and other functions, it is a kind of high stability and high reliability power supply products.

VPX POWER SUPPLY (100% DOMESTIC PENETRATION)



Dimensions (L*W*H): 233.4×168.5×24.63mm

Input: 14-32VDC

Output: Dual output 12V/400W and 3.3V/30W

Features: Standard 6U 5HP size. With input over & under-voltage protection, input anti-reverse, output over-current, over-voltage, short-circuit, over-temperature protection, etc., it is a high-stability, high-reliability power supply product.

REINFORCEMENT OF SERVER POWER SUPPLY



Dimension (L*W*H): 327.5×153×44mm

Input: Single phase 220VAC/50Hz and 24VDC

Output: Dual output 12V/1500W and 12V/30W

Features: I²C communication, 1+1 redundant backup, hot-swap, slot identification, output current equalization, input over- and under-voltage protection, input anti-reversal, output over-current, over-voltage, short-circuit, over-temperature protection, etc. A high-stability and high-reliability power supply.



SICHUAN CHANGHONG BATTERY CO.,LTD

Address: 519#, Sanjiang Avenue, Economic Development
Zone, Mianyang, Sichuan, P.R. China.

Zip Code: 621000

Tel : (0816) 0816-2439136/077/079

E-mail:fangqiang.jiang@changhong.com

<http://www.changhongbatteries.com>