Huawei Energy Powering the Future

Huawei Site Power Solutions

HUAWEI TECHNOLOGIES CO., LTD.

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Contents

Embedded Telecom Power System

ETP4830&ETP4890&ETP48200

Introduction

The embedded power system includes series of embedded power products such as ETP4830, ETP4890, ETP48200. Its output range is from 30A to 200A. It is applicable to various scenarios and each function unit adopts standard-size design. Its height varies from1U, 2U, 5U to 6U. With its compact design, it supports various installations such as 19-inch rack and cabinet installation.

ETP4830

Features

- Wide range of voltage output from 30A to 200A, compact design, save space
- Advanced module efficiency in industry (up to 97%), non-derating below 55°C
- MTBF of rectifier is over 500,000 hours, better than industry level and reduce maintenance cost.
- E-label function, the carrier can achieve assets management of the whole site, easy for assets management and location of problem quality.
- Battery anti-reversed connection function, prevent battery connection error and battery damage, prolong battery lifespan.
- Support remote management visible, convenient to check real time data and operation status and set parameters remotely.

ETP4890

Application scenarios

ETP4830&ETP4890&ETP48200 supply power to communication network equipments, such as wire access site, wireless access site, transmission network (including Microwave site), etc.

ETP48200

Specifications

Type		ETP4830	ETP4890	ETP48200
System specification	Dimension	43.6mm(H) ×442mm(W) ×255mm(D)	86.1mm(H) ×442mm(W) ×255mm(D)	266.7mm(H)×482.6mm(W) ×310mm(D)
	Weight	≤8kg (full configured)	≤10kg (full configured)	≤25Kg(without rectifiers)
	Rated capacity	30A (2PSU)	45/90A (compatible with 15A and 30A rectifier) (3PSU)	200A(4PSU)
	Cooling mode	Natural cooling		
	Maintenance mode	Front access maintenance, supporting module-level replacement		
	Cabling mode	Cable outlet from the bottom of the cabinet		
	Installation mode	Installed on 19-inch rack or 21-inch rack, embedded in cabinet		
	Protection level	IP20		
Environmental specification	Operating temperature	-40~+70℃		-20~+50℃
	Operating humidity	5%~95%(non-condensing)		
	Altitude	0~4000m (at the altitude from 2000m to 4000m, the temperature declines by 1℃ for each increase of 200m in altitude)		
AC distribution	AC input	220V single phase/110V dual live wire	380V three phase/220V single phase/110V dual live wire	
	AC output	N/A	N/A	ETP48200-A6: 2x100A MCB ETP48200-B6: 2x100A MCB, 1x20A MCB
	AC input voltage	85~300VAC, rated: 220VAC		
	AC input frequency	45~65Hz, rated: 50Hz/60Hz		
	SPD for AC input	N/A		30/60kA(8/20μs)
DC distribution	Output voltage	42~58VDC, default value: 53.5VDC		
	maximum output power	2000W	4800W	12000W
	Battery branch	1x20A fuse	1×80A MCB	2x125A MCB
	BLVD	2x20A fuse	1×10A MCB, 1×32A MCB, 2×40A MCB	1x63A MCB, 1x32A MCB, 3x16A MCB
	LLVD	N/A	N/A	ETP48200-A6: 2x100A MCB ETP48200-B6: 2x100A MCB, 1x20A MCB
Rectifier module	Efficiency	Up to 96%	Up to 97%	Up to 97%
	Input voltage	85~300VAC, rated: 220VAC		
Monitoring unit	Sensors interface	Gate, water, smoke, battery temperature, environmental temperature & humidity (when configured with convertor box)		
	Digital input	7 branches (configured with converter box)		6 branches
	Alarm output	8 branches (configured with converter box)		8 branches
	Communication port	RS485/RS232		RS485/RS232, FE

Wall-mounted Power System

TP4860C&TP4860H

Introduction

TP4860C&TP4860H are two types of wall-mounted power system, which can convert AC power into stable -48VDC power, and output uninterrupted -48VDC and 220AC through optional inverter simultaneously. The system configures two 48V/30A rectifiers at most, provides 60A rated output current, configures 20AH/40AH VRLA or 40AH lithium battery as option. It has excellent performance of compact design, high efficiency, intelligent monitoring, flexible backup of power, smooth expansion, etc.

TP4860H

TP4860C

Features

Smallest in industry, flexible backup of power, smart installation

- The cabinet can hold 40Ah Lithium battery or 20/40Ah VRLA, and you can configure another battery cabinet
- Configurable inverter, AC and DC power supply at the same time, the local DC, the remote AC power supply sharing (1km)

High efficiency, high reliability, high temperature adaptability

- Advanced module efficiency in industry (up to 97%), non-derating below 55ºC
- MTBF of rectifier is over 500,000 hours.

Intelligent monitor, intelligent battery management

- Intelligent battery management function such as charging, discharging, and BLVD. it also can adjust the current according to the quality of power grid, effectively prolongs battery lifespan.

Application scenarios

TP4860H&TP4860C applies to 2G/3G coverage, Microwave, WLAN, RRU, etc.

Specifications

Type		TP4860H	TP4860C	
System specification	Dimension	450mm(W) ×300mm(D)×580mm(H)	450mm(W, excluding 50mm protuberant part on the vent port) ×630mm(H)×300mm(D)	
	Weight	≤ 22Kg (without rectifiers and battery)	≤32kg(without rectifier and storage battery)	
	Rated capacity	30A/60A (compatible with 15A and 30A module) , 700WAC (with optional inverter)		
	Cooling mode	Natural cooling	Direct ventilation	
	Maintenance mode	Front maintenance, supporting module-level replacement		
	Cabling mode	Cable outlet from the bottom of the cabinet		
	Installation mode	Wall-mounted or floor-mounted	Wall-mounted/pole-mounted/land-mounted	
	Protection level	IP21	IP55	
	Battery (optional)	Built-in 40Ah Lithium battery or 20Ah/40Ah VRLA battery, 40Ah battery can be parallel connected through battery cabinet		
Environmental specification	Operating temperature	-20°C ~ +45°C	-40°C~+45°C	
	Operating humidity	5%~95%(non-condensing)		
	Altitude	0~4000m (at the altitude from 2000m to 4000m, the temperature declines by 1°C for each increase of 200m in altitude)		
AC distribution	AC input	Single phase (L,N,PE) or 110V dual line (L1,L2,PE) Only support single phase 220V, 50Hz when AC configured		
	inverter output (optional)	1000VA/700W, 3×10A/1P MCB		
	AC input voltage	85~300VAC, rated: 220VAC		
	AC input frequency	45~66Hz, rated: 50Hz/60Hz		
	AC SPD	20/40kA (8/20μs)		
	DC SPD	N/A	Differential mode: 10kA, 8/20μs, Common mode: 20kA, 8/20μs	
	Signal port SPD	N/A	Differential mode: 3kA, 8/20μs, Common mode: 5kA, 8/20μs	
DC distribution	Output voltage	42~58VDC, default value: 53.5VDC	Differential mode: 3kA, 8/20μs, Common mode: 5kA, 8/20μs	
	Maximum output power	4800W		
	Battery branch	1x63A/1P (MCB)		
	BLVD	3x16A/1P (MCB)		
Rectifier module	Efficiency	Up to 97%		
	Input voltage	85~300VAC, rated: 220VAC		
Monitoring unit	Sensors interface	Gate, water, smoke, battery temperature, environmental temperature & humidity		
	Digital input	4 branches		
	Alarm output	4 branches		
	Communication port	RS485/RS232		
Battery (optional)	Rated capacity	20Ah VRLA battery	40Ah VRLA battery	40Ah Li-battery
	Weight	6.35kg×4	14.6Kg×4	25kg
	Nominal voltage	12V	12V	48V

Indoor Power System

TP48200B&TP48300B&TP48600B

Introduction

The indoor power system mainly includes TP48200B (integrated power), TP48300B and TP48600B, whose output range varies from 200A to 600A. The series support Antistatic floor installation and ground installation.

Features

Footprint saving: Highly integrated, multiple scenarios

- Integrated power system saves footprint by installing batteries in the cabinet.
- Outstanding housing capacity for Integrated system: 2 groups of batteries + 16U user space or 4 groups of batteries

Energy saving: High efficiency rectifiers

- Advanced module efficiency (up to 97%), non-derating below 55°C
- High reliability: MTBF of rectifier ≥ 500,000 hours, better than industry level and reducing maintenance cost.

OPEX saving: Excellent monitoring

- Prolonging lifespan of batteries: Battery intelligent management, including battery temperature, capacity and in position detection, etc.
- Support remote management: Visible, convenient to check real time data, operation status and set parameters remotely.
- Zero Investment in Environmental Monitor: In-band Transmission saves CAPAX

Application scenarios

TP48200B, TP48300B and TP48600B are applicable to various indoor scenarios such as access network, transmission network, medium and small macro sites,etc.

TP48300B

TP48200B

TP48600B

Specifications

Type		TP48200B	TP48300B	TP48600B
System specification	Dimension	2000mm(H)×600mm(W) ×600mm(D)	1600mm(H)×600mm(W)×400mm(D)	
	Weight	≤100kg(without rectifiers and batteries)	≤100kg(without rectifier modules)	
	Rated capacity	200A(can configure 2~4 rectifiers)	300A(can configure 2~6 rectifiers)	600A(can configure 2~12 rectifiers)
	Cooling mode	Natural cooling		
	Maintenance mode	Front access maintenance		
	Cabling mode	Top inlet and top outlet	Top or Bottom inlet and outlet	
	Installation mode	Antistatic floor installation, ground installation		
	User space/ built-in batteries	0~16U user space 2~4 groups of battery	N/A	
	Protection level	IP20		
Environmental specification	Operating temperature	-10°C~+45°C	-10°C~+50°C	
	Operating humidity	5%~95%(non-condensing)		
	Altitude	0~4000m (at the altitude from 2000m to 4000m, the temperature declines by 1°C for each increase of 200m in altitude)		
AC distribution	AC input	One phase three line(L,N,PE); Three phase four line (L1,L2,L3,N); Three phase five line(L1,L2,L3,N,PE); 110V dual live wire(L1, L2)	Three phase five line(L1, L2, L3, N, PE); single phase(L, N)	
	AC input voltage	85~300VAC, rated: 220VAC		
	AC input frequency	45~66Hz, rated: 50Hz/60Hz		
	SPD for AC input	Standard lightning discharge current: 20kA, 8/20μs Maximum lightning discharge current: 40kA, 8/20μs		
DC distribution	Output voltage	42~58VDC, default value: 53.5VDC		
	maximum output power	12000W	18000W	36000W
	Battery branch	125A x 4/2 MCBs	250A×2(fuse)	500A×2(fuse)
	BLVD	32A x 2 MCBs,16A x 3 MCBs,10A x 1 MCB	32A×2 MCB, 10A×2 MCB (4×63A MCB installation position reserved)	MCB:63A×2, 32A×2, 10A×2 (2× 63A MCB installation position reserved)
	LLVD	80A x 2 MCBs,32A x 1 MCB,20A x 2 MCBs	100A×3(NT00 fuse), 32A×1 MCB; 10 reserved installation position (maximum 100A×3 NT00 fuse and maximum 63A×7 MCB)	160A×3(NT00 fuse), 100A×2(NT00 fuse), 63A×2 MCB, 32A×3 MCB, 10A×2 MCB; 5 installation position reserved (maximum 160A×1 NT00 fuse and 63A×4 MCB)
Rectifier module	Efficiency	Up to 97%		
	Input voltage	85~300VAC, rated: 220VAC		
Monitoring unit	Sensors interface	TEM_HUM, WATER,GATE,SMOKE,BTEMP	SMOKE, TEM_BAT, TEM2	
	Digital input	DIN1~DIN6	DIN1~DIN7	
	Alarm output	ALM1~ALM8	ALM1~ALM5	
	Communication port	Support RS232/485 Support FE	RS485/RS232 Ethernet interface(available with optional SNMP card)	

Large Capacity Power System

TP482000B&TP483000D

Introduction

Huawei TP483000D and TP482000B are the first all-digital large capacity telecom power systems in industry. The systems consist of 1U 100A/50A high efficiency rectifiers. For TP482000B, the output of one cabinet can reach 2000A while for TP483000D, the output of single rectifier cabinet can reach 3000A and can be expanded to 24000A. The systems have tremendous features such as high reliability, high efficiency, high power density, high capacity, low noise and easy maintenance.

TP482000B

TP483000D

Features

High reliability

- MTBF of system is over 500,000 hours, better than industry level and reducing maintenance cost.

High efficiency

- Efficiency up to 97%, the most energy saving rectifier in industry, cutting energy loss for over 50%

High power density

- The smallest 100A rectifier in industry, only 1U height, 50% smaller, power density 25.4W/inch^3
- The highest power density of 50A rectifier 42.7W/inch^3, saving over 25% footprint (for TP482000B)
- 3000A output in single cabinet, saving footprint for over 30% compared with other vendors (for TP483000D)

Highly intelligent

- all-CAN communication, fast response speed and high reliabiliy
- 8 shunts to support early current warning for key loads (for TP483000D)
- Built-in FE port, one netting twine to achieve perfect management

Application scenarios

TP482000B and TP483000D can be widely applied in telecom and enterprise scenarios, such as telecom central office, data center and enterprise network etc.

Specifications

Type		TP482000B	TP483000D	
System specification	Dimension	2000mm(H)×600mm(W) ×600mm(D)	2000mm(H)×2000mm(W)×600mm(D)	
	Weight	≤150Kg (without rectifier modules)	≤450kg (without rectifier modules)	
	Rated capacity	2000A (40PSU)	3000A (30PSU)	
	Cooling mode	System: nature cooling; Rectifier: forced cooling		
	Maintenance mode	Front access, front and rear maintain		
	Cabling mode	Top or bottom inlet & outlet	Top or Bottom inlet and outlet	
	Installation mode	Floor installation (Antistatic floor or ground installation)		
	Protection level	IP20		
Environmental specification	Operating temperature	-10°C ~ +45°C		
	Operating humidity	5%~95%(non-condensing)		
	Altitude	0~4000m(at the altitude from 2000m to 4000m, the temperature declines by 1°C for each increase of 200m in altitude)		
AC distribution	Separate AC cabinet	NA	TPA38631B-N20A1	TPA38401B-N20A1
	Dimension/weight	NA	2000mm(H)×600mm(W)×600mm(D)/<120kg	
	AC input mode	Three phase (L1, L2, L3, PE or L1, L2, L3, N, PE)	Three phase four/five line mode, support TN, TT	
	AC input voltage	85VAC~300VAC, rated: 208VAC	260VAC~530VAC, rated: 380VAC	
	AC input frequency	45~65Hz, rated: 50Hz/60Hz		
	AC input configuration	2×230A/3P (Terminal)	1×630A/4P (two inputs/manual switchover)	1×400A/4P (two inputs/ manual switchover)
	AC output configuration	NA	6×160A/3P (MCCB) 1×63A/3P (MCB) 1×32A/3P (MCB) 3×32A/1P (MCB)	4×160A/3P (MCCB) 1×63A/3P (MCB) 1×32A/3P (MCB) 3×32A/1P (MCB)
	AC input surge protection	Standard surge discharge current: 20kA, 8/20μs Maximum surge discharge current: 40kA, 8/20μs		
DC distribution	Separate DC cabinet	NA	TPD48302B-N20A1	
	Dimension/weight	NA	2000mm(H)×800mm(W)×600mm(D)/<180kg	
	Output voltage	42~58VDC, default value: 53.5VDC		
	Maximum output power	120kW	180kW	
	Battery fuse	2×(1000A×2)(NT4)	2×(1250A×2)(NT4)	
	Load fuse	6×500A(NT3); 6×160A(NT00); 6×100A(NT00)	8×500A(NT3); 4×400A(NT2); 4×200A(NT1); 8×160A(NT00); 6×100A(NT00)	
Rectifier	Separate rectifier cabinet	NA	TPR48202B-N20C1	TPR48302B-N20C1
	Cabinet dimension/ weight	NA	2000mm(H)×600mm(W)×600mm(D)/<150kg (without rectifier modules)	
	Module efficiency	Up to 97%		
	Module input voltage	Three phase, 85VAC~300VAC	Three phase, 260VAC~530VAC	
Monitoring unit	Sensors interface	Gate, water, smoke, battery temperature, environmental temperature & humidity, generator		
	Digital input	4 branches		
	Alarm output	8 branches		
	Communication port	Ethernet, RS485/232,CAN		

Outdoor Telecom Power System

TP48200A

Introduction

TP48200A is an outdoor telecom power system which configures 48V/50A rectifier modules to supply rated 200A output current. TP48200A has different cooling modes to meet various scenarios, such as heat exchange, direct ventilation, TEC, providing stable and reliable integrated or distributed power supply solution for various outdoor communication devices. The system has excellent performances such as wide range of AC input voltage, high power efficiency, surge protection, temperature control, intelligent battery management, and remote monitoring.

Integrated Power Cabinet

Split Type Equipment Cabinet

Split Type Battery Cabinet

Features

- The power system complies with the CE standard, the power distribution components comply with the CE standard, and the rectifier complies with the UL, CE, and TUV standards.
- Super temperature performance for rectifiers with the range form -40°C to +75°C
- High power efficiency of rectifier: up to 97%, non-derating before 55°C
- High protection level: IP55
- Intelligent temperature control, making sure the system work stably
- Adaptive installation for various scenarios
- Intelligent battery management, prolonging battery lifespan
- Easy to install, modules are hot-swappable
- Remote monitoring, reducing operation expenditure

Application scenarios

TP48200A applies to outdoor Macro BTS and outdoor distributed BTS.

Integrated Power Cabinet Specifications

Type		TP48200A-H15A3	TP48200A-H15A5	TP48200A-D15A1
System specification	Dimension	1500mm(H, excluding base)×650mm(W)×650mm(D)		
	Weight	<120Kg (excluding rectifier and battery)		
	Rated capacity	200A		
	Cooling mode	Heat exchanger for equipment cabin, direct ventilation for battery cabin		Direct ventilation
	Maintenance	In front, supporting modular replacement		
	Cabling mode	Cable outlet from the bottom of the cabinet		
	Installation mode	At the bottom, inlet/outlet downwards		
	Protection level	Equipment cabin: IP55, Battery cabin: IP45		IP55
Environment specification	Operating temperature	-10~+45°C	-40~+45°C	-10~+45°C
	Operating humidity	5%~95%(non-condensing)		
	Altitude	0~4000m (at the altitude from 2000m to 4000m, the temperature declines by 1°C for each increase of 200m in altitude)		
AC distribution	Input mode	Single phase/ Three phase		
	Input voltage	85~300VAC, rated: 220VAC		
	Input frequency	45~65Hz, rated: 50Hz/60Hz		
	Input distribution	1×63A/3P MCB		
	Output distribution	2 ×16A MCB		
	SPD for AC input	Standard surge discharge current: 20kA, 8/20μs Maximum surge discharge current: 40kA, 8/20μs		
DC distribution	Output voltage	42~58VDC, default value: 53.5VDC		
	SPD for DC output	Differential mode: 10kA, 8/20μs; Common mode: 20kA, 8/20μs		
	Maximum output power	12000W		
	Battery branch	2x125A MCB		
	BLVD	2×16A MCB		
	LLVD	2×63A, 2×32A MCB		
Rectifier module	Efficiency	Up to 97%		
	Input voltage	85~300VAC, rated: 220VAC		
Monitoring unit	Communication	RS485/232,FE		
	Sensor	battery temperature, door, environment temperature, environment humidity , smoke, water sensor, 6 battery voltage check points		
	Dry contact	Eight maximum, alarm signal information can be defined		
	Digital signal detection	Eight, one for AC SPD monitor, one for DC SPD monitor, six spared		

Outdoor Telecom Power System

TP48200A

Split Type Cabinet Specifications

Type		TP48200E-H09A1	TP48200E-D09A1	TBC300A-DCA1	TBC300A-TCA1
System specification	Dimension	900mm(H, excluding base)×650mm(W)×650mm(D)			
	Weight	<70Kg (excluding rectifier and battery)			
	Rated capacity	200A		2 group 150AH batteries	
	Cooling mode	Heat exchanger	Direct ventilation	Direct ventilation	TEC
	Maintenance	In front, supporting modular replacement			
	Cabling mode	Cable outlet from the bottom of the cabinet			
	Installation mode	At the bottom, inlet/outlet downwards			
	Protection level	IP55		IP34	IP55
Environment specification	Operating temperature	-40~+45°C	-10~+45°C		
	Operating humidity	5%~95%(non-condensing)			
	Altitude	0~4000m (at the altitude from 2000m to 4000m, the temperature declines by 1°C for each increase of 200m in altitude)			
AC distribution	Input mode	Single phase/ Three phase		-48V	
	Input voltage	85~300VAC, rated: 220VAC		N/A	
	Input frequency	45~65Hz, rated: 50Hz/60Hz		N/A	
	Input distribution	1×63A/3P MCB		N/A	
	Output distribution	2 ×16A MCB		N/A	
	SPD for AC input	Standard surge discharge current: 20kA, 8/20μs Maximum surge discharge current: 40kA, 8/20μs		N/A	
DC distribution	Output voltage	42~58VDC, default value: 53.5VDC		N/A	
	SPD for DC output	Differential mode: 10kA, 8/20μs; Common mode: 20kA, 8/20μs		N/A	
	Maximum output power	12000W		N/A	
	Battery branch	2x125A MCB		N/A	
	BLVD	2×16A, 1×10A MCB		N/A	
	LLVD	2×63A, 2×32A MCB		N/A	
Rectifier module	Efficiency	Up to 97%		N/A	
	Input voltage	85~300VAC, rated: 220VAC		N/A	
Monitoring unit	Communication	RS485/232,FE		RS485/232	
	Sensor	Battery temperature, door, environment temperature, environment humidity , smoke, water sensor, 6 battery voltage check points		Smoke , water	
	Dry contact	Eight maximum, alarm signal information can be defined		Inside temperature, fan alarm, door open alarm	
	Digital signal detection	Eight, one for AC SPD monitor, one for DC SPD monitor, six spared		N/A	

Outdoor Telecom Power System

Mini-shelter

Introduction

To ease operators'pressure in site acquisition and meet their needs in energy saving, fast deployment, multi-scenario application, Huawei has launched Mini-shelter site solution. Huawei Mini-shelter adopts modular design, consisting of integrated cabinet, equipment cabinet and battery cabinet, which can easily be applied to different scenarios. According to different temperature requirement of different equipments, every cabinet independently uses heat exchanger, direct ventilation, thermal electric cooler(TEC), AC air-conditioner, DC air-conditioner and intelligent heat exchanger, to achieve the effect of temperature control and energy saving.

Integrated Cabinet

Equipment Cabinet

Battery Cabinet

Features

Flexible adaptability:

- Based on All-in-One design, each cabinet of Mini-shelter occupies only 1m^2, applies to various site scenarios.

Energy saving:

- Using separate cooling and low power consumption technique, Mini-shelter adopts sandwich panels which ensure excellent thermal control, the power consumption is reduced by 50% to 80%.

Fast deployment:

- With modular design, and assembled and unassembled shipment both supported, the installation of Mini-shelter can be completed within 2 hours by 3-4 assembly workers.

Strong housing capability and smooth expansion:

- Mini-shelter can house equipments from multiple vendors, such as BTS, transmission, rectifier, monitor, battery, etc.

Application scenarios

It is applicable to various site scenarios, such as rooftop site, street site, suburb site, or co-site by different operators. It can also be used as power cabinet, battery cabinet, equipment cabinet and integrated cabinet. It can support equipments sustaining expansion and site reform by add more cabinets.

Integrated Cabinet Specifications

Type		1.8m	2.1m	
System specification	Dimension	905 mm (W) × 1135 mm (D) ×1800 mm (H)	905 mm (W) ×1135 mm (D) × 2110 mm (H)	
	User space	21U for equipment, 12U for battery	22U for equipment, 18U for battery	
	Temperature Control mode	Heat exchanger(HXC70S) for equipment, TEC for battery	Heat exchanger(HXC70S) and intelligent heat exchanger(AH1500, AH1500D) for equipment, direct ventilation, TEC and air conditioner(PC500D) for battery	
	Column material	Aluminum		
	Panel material	Sandwich panel: Steel sheet + EPS + Steel sheet		
	Panel thickness	45mm		
	Door lock	Three points anti-theft lock; European standard DIN18152 lock, replaceable lock cylinder by different operators		
	Protection level	IP55	IP55(IP34 for direct ventilation)	
	Shipping	Integrated shipping, pieces shipping		
Environment specification	Operating temperature	-40~+70°C		
	Operating humidity	5%~100%		
Temperature control for equipment	Mode	HXC07S	AH1500	AH1500D
	Input voltage	-48V	-48V & 220V (or 110V Dual line)	-48V
	Power consumption	50W	L35/L35: 490W(AC)/160W(DC) L35/L55: 640W(AC)/200W(DC)	L35/L35: 580W L35/L55: 660W
	Cooling capacity	80W/K	Heat exchange:80W/K; Air conditioner(L35/L35): 1500W	Heat exchange:80W/K; Air conditioner(L35/L35): 1500W
	Heat exchange effort	Ensure air intake vent temperature is lower than 50°C under 40°C ambient temperature with heating load of 700W Or under 37°C ambient temperature with heating load of 1000W	Ensure inner temperature is lower than 30°C under 45°C ambient temperature with 1500W heating load, or under 55°C ambient temperature with 1000W heating load	Ensure inner temperature is lower than 30°C under 45°C ambient temperature with 1500W heating load, or under 55°C ambient temperature with 1000W heating load
Temperature control for battery	Mode	TEC	PC500D	
	Input voltage	-48V	-48V	
	Cooling Power	300W	200W	
	Cooling capacity	200W	500W	
	Heating Power	400W	/	
	Heat capacity	570W	/	
	Cooling/Heating effort	When 35°C≤ ambient temperature ≤ 40°C, temperature variation Tin – Tout = -7°C; When -10°C≤ ambient temperature ≤ 35°C, Interior temperature: -5°C ~ 30°C; When ambient temperature ≤-10°C, Interior temperature: -5°C ~ 15°C;	When 50°C≤ ambient temperature ≤55°C, Interior temperature : 30°C ~ 35°C When -10°C≤ ambient temperature ≤50°C, Interior temperature: -5°C ~ 30°C When ambient temperature ≤-10°C, Interior temperature: -5°C ~ 15°C	
Power system information (Optional)	AC mode	Single-phase 220 / Three-phase 380V		
	SPD	Nominal discharge capacity (In): 30 kA (8/20 μs); Maximum discharge capacity (Imax): 60 kA (8/20 μs)		
	Rectifier	Efficiency: up to 97%; capacity: 50A; number: 2-4		
	AC circuit breaker	AC Input: 1×63A/3P MCB; AC output: 1×20A/1P, 2×6A/1P MCB		
	DC circuit breaker	LLVD:2×100A MCB; BLVD:1×63A,1×32A,3×16A MCB		
	Battery branch	2×125A MCB		
Monitoring information	Sensor	Door, smoke, water		
	Extended monitoring	Six dry contact inputs		
	Dry contact output	Eight dry contact output for high temperature, high humidity, low temperature, low humidity, smoke and water		
	Display mode	LCD		
	Communication	RS485, SNMP, WEB		

Outdoor Telecom Power System

Mini-shelter

Equipment Cabinet Specifications

Type		1.5m	1.8m	2.1m	2.4m
System specification	Dimension (W×D×H)	905mm×1088mm ×1500mm	905mm×1135mm ×1500mm	905mm×1135mm ×2110mm	905mm×1135mm ×2420mm
	User space	26U	33U	40U	47U
	Temperature Control mode	Heat exchanger (HXC70S) / Intelligent heat exchanger (AH1500)	Intelligent heat exchanger (AH1500)	Direct ventilation / Intelligent heat exchanger (AH1500/AH1500D/ AH3000) / Heat exchanger (HXC70S/HX04/HX05)	Heat exchanger(HX05) / Intelligent heat exchanger(AH3000/ AH3000D)
	Column material	Aluminum			
	Panel material	Sandwich panel: Steel sheet + EPS + Steel sheet			
	Panel thickness	45mm			
	Door lock	Three points anti-theft lock; European standard DIN18152 lock, replaceable lock cylinder by different operators			
	Protection level	IP55			
	shipping	Integrated shipping, pieces shipping			
Environmental specification	Operating temperature	-40~+70°C			
	Operating humidity	5%~100%			
Temperature control	Parameter	Direct ventilation	AH1500/AH1500D	AH3000/AH3000D	
	Input voltage	-48V	AH1500: -48V & 220V (or 110V Dual live) AH1500D: -48V	AH3000: -48V& 220V (or 110V Dual line) AH3000D: -48V	
	Power consumption	50W	AH1500: L35/L35: 490W(AC)/160W(DC) L35/L55: 640W(AC)/200W(DC) AH1500D: L35/L35: 410W/150W L35/L55: 470W/190W	AH3000: L35/L35: 660W(AC)/190W(DC) L35/L55: 860W(AC)/200W(DC) AH3000D: L35/L35: 1050W L35/L55: 1250W	
	Heat exchange capacity	250W/K	Heat exchanger: 80W/K Air-conditioner (L35/L35):1500W	Heat exchanger:120W/K; Air conditioner(L35/L35): 3000W	
	Heat exchange effort	When ambient temperature ≤ 40°C, the temperature variation Tin – Tout ≤ 10 °C;	Ensure inner temperature is lower than 30°C under 45°C ambient temperature with 1500W heating load, or under 55°C ambient temperature with 1000W heating load	Ensure inner temperature is lower than 40°C under 45°C ambient temperature with 3000W heating load, or lower than 35°C under 55°C ambient temperature with 2000W heating load	
	Heating box power	/	500W×2(optional)		
Temperature control	Parameter	Heat exchanger (HXC70S)	Heat exchanger (HX04)	Heat exchanger (HX05)	
	Input voltage	-48V	-48V	-48V	
	Power consumption	56W	130W	260W	
	Heat exchange capacity	80W/K	190W/K	250W/K	
	Heat exchange effort	Ensure air intake vent temperature is lower than 50°C under 38°C ambient temperature with heating load of 936W	Ensure air intake vent temperature is lower than 50°C under 37°C ambient temperature with heating load of 2000W	Ensure air intake vent temperature is lower than 50°C under 37°C ambient temperature with heating load of 3000W	
	Heating box power	500W	500W×2(optional)		
Power specifications (Optional)	AC mode	Single-phase 220 / Three-phase 380V			
	SPD	Nominal discharge capacity (In): 30 kA (8/20 μs); Maximum discharge capacity (Imax): 60 kA (8/20 μs)			
	Rectifier	Efficiency: up to 97%; capacity: 50A; number: 2-4;			
	AC circuit breaker	AC Input :1×63A/3P MCB; AC output: 1×20A/1P, 2×6A/1P MCB;			
	DC circuit breaker	LLVD: 2×100A MCB; BLVD: 1×63A,1×32A,3×16A MCB			
	Battery branch	2×125A MCB			

Battery Cabinet Specifications

Type	Height	1.5m		2.1m	
System specification	Dimension	905 mm (W) ×1088 mm (D) × 1500 mm (H)		905 mm (W) × 1135 mm (D) × 2110 mm (H)	
	Maximum space	26U		40U	
	Temperature control mode	TEC / Air-conditioner (PC500D)		Direct ventilation / TEC / Air-conditioner (PC500, PC500D)	
	Weight	153KG(TEC) / 168KG(PC500D)		198KG(direct ventilation) / 209KG(TEC) / 228KG(PC500, PC500D)	
	Column material	Aluminum			
	Panel material	Sandwich panel: Steel sheet + EPS + Steel sheet			
	Panel thickness	45mm			
	Door lock	Three points anti-theft lock; European standard DIN18152 lock, replaceable lock cylinder by different operators			
	Protection level	IP55		IP55 / IP34(Direct ventilation)	
	Shipping	Integrated shipping, pieces shipping			
Environmental specification	Operating temperature	-40~+70°C			
	Operating humidity	5%~100%			
Temperature control	Parameter	TEC	Direct ventilation	Air-conditioner (PC500D)	Air-conditioner (PC500)
	Input voltage	-48V	-48V	-48V	220V
	Rated cooling power	300W	33W	200W	250W
	Rated cooling capacity	200W	300W	500W	500W
	Rated heating power	400W	/	/	/
	Rated heating capacity	570W	/	/	/
	Cooling effort	When 35°C≤ ambient temperature ≤ 40°C, the temperature variation Tin – Tout = -7°C; when -10°C≤ ambient temperature ≤ 35°C, the interior temperature: -5°C~30°C; when ambient temperature ≤-10°C: the interior temperature: -5°C~15°C	When ambient temperature ≥33°C, the temperature variation Tin – Tout ≤ 3°C; when 10°C≤exterior ambient temperature<33°C, the interior temperature: 15°C~35°C when ambient temperature<10°C, the interior temperature: -5°C~15°C	When 50°C≤ ambient temperature ≤55°C; the interior temperature: 30°C~35°C; when -10°C≤ ambient temperature ≤50°C; the interior temperature: -5°C~30°C when ambient temperature ≤-10°C; the interior temperature: -5°C~15°C	When 50°C≤ambient temperature ≤55°C, the interior temperature: 30°C~35°C When -10°C≤ ambient temperature ≤50°C, the interior temperature: -5°C~30°C When ambient temperature ≤-10°C,the interior temperature: -5°C~15°C
Battery information (Optional)	Battery specifications	2V/12V AGM battery		2V/12V AGM battery	
	Battery capacity	400Ah(2V)/450Ah(12V)		650Ah(2V) / 600Ah(12V)	
	Group number	One group (2V)/Three groups (12V)		One group(2V)/Four groups(12V)	
Standard and Certification	Security standard	IEC/EN/UL 60 950			
	EMC standard	EN 300 386-2			
	Cabinet certification	TLC, CE,IC,ETL,FCC,C-tick, RoHS, NRTL(ELT)			
Others	Lamp	LED -48V			
	Sensors(Optional)	Smoke / Door switch / Water / Temperature & humidity sensor			

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