Power Supply System-ZTT

Spec No.:XJ34118-1-4-A

Features

- Wide AC input voltage range from 85V AC to 300V AC
- Perfect battery management function
- Perfect AC and DC lightning protection design
- Network design, providing one COM interface, one RS485/RS232 interface
- Support SNMP protocol and electric master protocol, can communicate with ZTT network management platform or third-party network management, flexible networking, remote management, unattended
- Support LCD interface display and key operation
- Support hot swap of rectifier module
- The power factor of the rectifier module reaches 0.99
- Support hot swap of monitoring module

General Introduction

The ESPS48250_8U3P switching power supply is an embedded switching power supply for -48V DC series communication equipment. The whole machine includes basic AC power distribution, rectifier module, monitoring module and DC power distribution, which is a complete switching power system. A total of 5 module slots, support rectifier module and photovoltaic module mixed, to achieve fast stacking light.

ESPS48250_8U3P

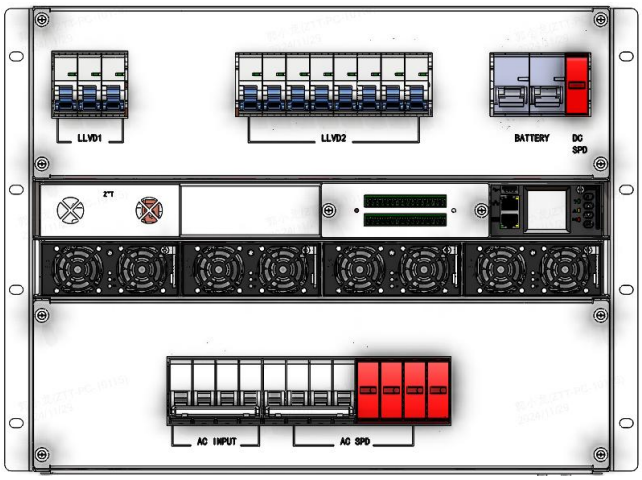


Table of Configuration

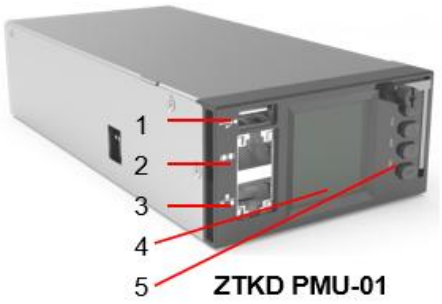
Item		ESPS48250_8U3P
1	Dimension(W*H*D)	465 *354.6*380mm(W*H*D)
2	AC Input	380V/3-phase and 220V/single-phase, 50Hz
3	AC SPD	Nominal 20KA, 3+1 P
4	Number of Rectifier Modules & capacity	Standard config. 4pcs of RM4850 (3KW) =12KW. Up to 5 pcs=15KW
5	Output Power Capacity	Max. 15KW, ≥ 250A @48VDC(rated voltage)
6	DC SPD	Nominal 10KA, 1P
7	Circuit Breaker	Typical load (LLVD): 1U/1P DC, 3x63A Priority load (BLVD): 1U/1P DC ,4x32A, 4x16A Battery Circuit Breaker: 1U/1P DC, 125A*2pcs
8	Contactors for LVD	200A
9	Monitoring unit	ZTKD PMU-01, 1 pcs With display, keyboard, USB & RJ45 port
10	User interface module	ZTKD SIU-01, 1 pcs Digital input *6, Dry contact output *6, Temp. sensor ports *2, RS485 *2
11	Operating Environment	-20℃ to 65℃, humidity from 5% to 90%, non-condensing
12	Battery charging modes.	Temperature Compensation, Float charge, Boost charge, Equalize charge

Power Supply System-Monitoring Module

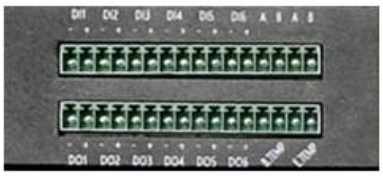
Spec No.:XJ34118-1-4-A

Appearance

1. USB
2. RJ45(for uplink)
3. RS485(for battery)
4. Screen
5. Button



ZTKD PMU-01



ZTKD SIU-03

Monitoring Module

- A microprocessor system can monitor the status of the rectifier, PV module, BMS, and it sends out audio and visal alarms.
- Configured with RS485 and ethernet port which support MODBUS_RTU and SNMP, the monitor enables remote detecting, remote control and remote adjusting.
- User-friendly interface includes LED indicators, buttons, and a LCD display.
- Hot Swap
- Operation records up to 10000
- Flexible use of config. files to program the system

Functions

Measurement

AC input	Voltage, current, frequency
DC output	Voltage, current
Load	Total load current, MCB status
Battery	Lithium BMS, voltage, current, capacity, remaining capacity, number of cycles, temperature, MCB status
Environment	Temperature
Time	Real time clock availble

Rectifier management

- Rectifier power-on and power-off control
- Rectifier operation status
- Rectifier output power control
- Rectifier Over-voltage protection
- Rectifier dormancy management
- Each rectifier status(In-out voltage,in-out current,Serial number)
- PV module management

Load management

- Load low voltage disconnection (LLVD)
- Battery low voltage disconnection (BLVD)

Parameter setting

Battery charging current limit, float charging, boost charging/Battery capacity/ High DC voltage cut-off/ High/low DC/AC voltage warning/ Temperature warning level

Alarm

- Output voltage/current over/high/low
- Load/bat. disconnect, CB(Load/Bat.) Fail
- Battery voltage high/low
- Current limiting point
- AC input fail/loss
- Envir./battery temperature high
- Rectifier: fail/over load/over current / over voltage/ high temperature/ fan fail /imbalance load sharing
- Flexible DI/DO alarm setting
- Set alarm on/off

Battery management

- Battery equalizing and floating charge setting
- Disconnection protection
- Battery charging management
- Battery testing
- Battery temperature compensation
- Battery high temperature protection
- Battery capacity detection and report
- Battery backup time setting
- The charging voltage can be set according to the battery specifications

Power Supply System-Rectifier Module

Spec No.:XJ34118-1-4-A

Input Characteristics

1	Input voltage	85 ~ 300VAC(Nominal 220VAC) Pout derate when ＜176Vac
2	Frequency range	45~65Hz
3	Input power factor	≥99%(@ 50% load, rate power)
4	THD	＜5%(half~full load), @230Vac Input
5	Inrush current	≤27.75A, @230Vac Input
6	Max. Input Current	18.5A

Output Characteristics

1	Output Voltage	42~58Vdc Nominal Voltage 48Vdc
2	Output Current Max.	62.5A
3	Output Power	3000W （@220Vac）
4	Efficiency	≥96.5%(peak) （@230Vac） ≥ 95% at load from 25% to 80%
5	Peak – peak Noise Psophometric Noise	≤200mVp-p, Oscilloscope bandwidth limited to 20MHz 1.8mv
6	Output Holding Time	≥8ms
7	Temperature Coefficient	≤±0.02ms
8	Voltage Adjustment	≤144mV
9	Load Adjustment	≤144mV
10	Output Voltage Accuracy	≤0.5%
11	Output Current Accuracy	≤1%
12	Load sharing	yes

Protective Characteristics

1	Input undervoltage protection	80±5Vac
2	Input undervoltage recovery	100±5Vac
3	Input overvoltage protection	305±5Vac
4	Input overvoltage recovery	290±5Vac
5	Output overvoltage protection	≥58.5Vdc, Tested with 5A
6	Output short circuit protection	Have
7	Over temperature protection	≥75℃
8	CAN communication	Have
9	Parallel operation	Have, Maximum 48 power supplies can be paralleled
10	Remote control	Have （CAN control）
11	Output overcurrent protection	≥62.5A
12	Reverse polarity protection	Yes

RM4850

Features

- Wide input voltage: 85V ac ~ 300V ac
- Multiple battery management functions
- Hot-swappable modular design
- High efficiency, peak＞ 96.5%
- With working status indicator light
- High input power factor, low harmonic distortion
- Low ripple noise
- Overvoltage/ Overtemperature/ Output overcurren/ Output short circuit/ Output overvoltage protection
- Compliant with RoHS requirements
- Soft Start function/ soft switching technology

Reference Standards

- EN55032
- UL61000
- UL60950-1
- CISPR32
- ETSI EN 300 019
- IEC 61000-4-5 2014, IEC 61000-4-4 2012, IEC 61000-4-11 2003, IEC 61000-4-3 2006/ IEC 61000-4-2 2018/ IEC 61000-4-8 2009/ IEC 61000-3-2:2018/ IEC 61000-4-6: 2018

Environmental conditions

1	Working Temp.	-40~+75℃ -40℃ can work normally. 45℃~ 75℃ Pout derate.
2	Storage Temp.	-40 ~+85℃
3	Humidity	Working≤90%； torage≤95%
4	Altitude	≤2000m ＞2000m Pout derate
5	Cooling	Forced air cooling(The speed is automatically adjusted according to the temperature)

Safety and EMI characteristics

Items		Standard (or test condition)	Remarks
Electrical Strength	Input-Ground	1500Vac/30mA/ 1min	No breakdown, flying arc phenomenon; leakage current less than 30mA
	Input-Output/CAN	2500Vac/30mA/ 1min	
	Output/CAN-Ground	707Vdc/30mA/ 1min	
Insulation resistance	Input-Ground	≥5MΩ@500Vdc	Ambient temperature: 25±5℃ Relative humidity: less than 95% (non-condensing)
	Input-Output/CAN	≥5MΩ@500Vdc	
	Output/CAN-Ground	≥5MΩ@500Vdc	
Safety Standards		UL60950-1, UL508, CSA C22.2 No.60950-1	
Leakage Current		7mA	230Vac
Lightning		8/20us 5KA	
Surge Resistance	Input Line to Line, Line to Ground	4kV	No cracks or alarms were found in the power supply during or after testing
	Output Line to Line, Line to Ground	500V	
Electrostatic Discharge Immunity		Contact Discharge 6kV, Air Discharge 8kV	No cracks or alarms were found in the power supply during or after testing
Radiated Electromagnetic Field Immunity		Frequency range 30 MHz-1 GHz according to EN 55032 class A, 10 m distance	
Conductivity Immunity		Frequency range 150 kHz-30MHz according to EN 55032 class A	

Mechanical properties

Product weight	≤2000g
Overall Dimension(L×W×H)	280.0±0.5×105.0±0.3×41.0±1.0mm
Standard	IEC 61000, EN55032, EN55035

Li-iron battery - ZTT-48100B

Spec No.:XJ34118-1-4-A

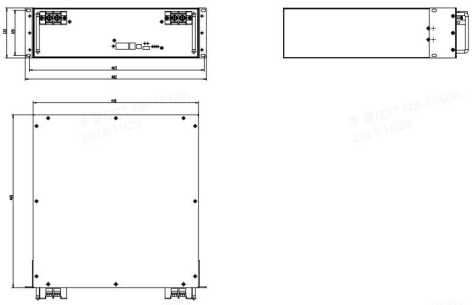
Features

- Intrasystem balance
- UL94V-0 Flame retardant grade
- Good high temperature performance, high cycle number and long service life
- Safe li-iron phosphate technology
- High energy density and high conversion efficiency
- Environmentally friendly, without any heavy metals
- Built-in battery management system
- 19-inch standard rack or wall-mounting
- Built-in overcharge, over-discharge and over-temperature automatic protection

Applications

- Backup power supply for communication base stations
- Emergency power supply for wired communication bureaus (stations), switching stations
- Wireless communication bureaus (stations), decentralized base stations
- Various types of private network communication base stations for power, military, etc.

Dimension



Appearance

Main Characteristic

Item	Parameter
Model	ZTT-48100B
Nominal Capacity	100 Ah
Nominal Voltage	48V
Discharge cut-off voltage	40.5V
Charge Limit Voltage	54V
Maximumcharge/discharge current	100A
Weight (approx.)	40KG
Charging capacity	4800Wh
Display unit	With display screen
Maximum number of parallel connections	40
Dimensions (W*D*H) mm	482*460*133
Design life	10 years
Cycles	3500 times (0.2C 80%DOD,25℃) ≥ 1,000 cycles(0.2C80%DOD, 45 ℃) ≥ 2,000 cycles (0.2C 100%DOD,25℃)
Protection Level	IP30
Enclosure Material	SPCC
Temperature Characteristics	Charge: 0 to +45℃ Discharge: -10 to +55℃ Storage: -20 to +60℃
Terminal	M6
Number of Cells	15
Design life	≥ 10 years(at 20 -25 degrees Celsius)
Turn on/off battery operation manually	There is an ON/OFF switch
Certification & Standard	UL/UN38.3/EN61000-6/ISO9001,ISO 14001

25℃ Constant Current Discharge Meter (Amperes)					
Time	1h	2h	3h	5h	10h
Discharge cut-off voltage 40.5V	100A	50A	33.3A	20A	10A

25℃ Constant Power Discharge Meter (Watts)					
Time	1h	2h	3h	5h	10h
Discharge cut-off voltage 40.5V	4800 W	240 0W	1600 W	960 W	480 W