

# ZXDU48 B600(V5.0)-Series DC Power System Quick Installation Guide

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## Safety Instructions

### Cabinet Installation Requirements

- Do not place any heavy object on the cabinet. Failure to comply may result in device damage.
- Do not install the device near any liquid. No liquid should drip on to the device.

### Electrical Connection Requirements

- Do not connect or disconnect any cable while the power is on.
- Do not wear any electric conductor such as watches, bracelets, and rings while connecting a cable. It is recommended that you wear a pair of insulating gloves.
- Use insulating tools while connecting a cable. The bare part of a screw terminal must be taken with insulation measures after cable routing.

### Battery Pack Requirements

- The batteries in a battery pack must be of the same brand, model, specifications, and delivery time and connected in series.
- The batteries cannot be short circuited in any means.

### Cable Requirements

- The cross-sectional area of a cable must be appropriate for its load.
- Cable colors must meet local electricity engineering requirements. A black cable must be used when a cable of a non-standard color is required and marked with heat shrink tubing or insulating tapes of the same color to avoid confusion.
- The radius of a cable bend cannot be lower than 10 times of the diameter of the cable. Failure to comply may result in damage of cable sheath or insulation tubing and short circuit. After a cable is connected, you must check its ends and bends to avoid any damage of cable sheath or insulation tubing.
- Cables must be connected properly to avoid any short circuit or open circuit.

## Related Documentation

- ZXDU48 Series ( HV5.0/SV1.20 ) DC Power System Commissioning Guide.
- Download the following manuals from <http://support.zte.com.cn>. Send a mail to doc@zte.com.cn if there is any problem in user account registration.
  - DC Power System Safety Information
  - ZXDU48 B600 (V5.0R01M01) DC Power System Production Description
  - ZXDU48 Series ( V5.0 ) DC Power System Maintenance Guide

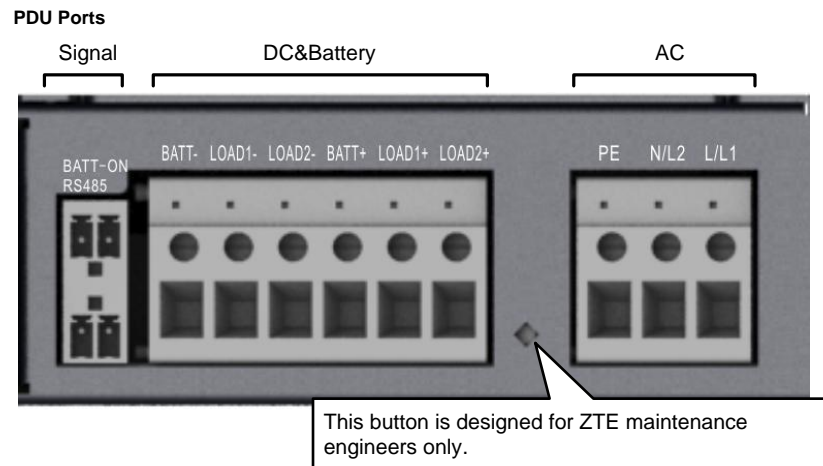
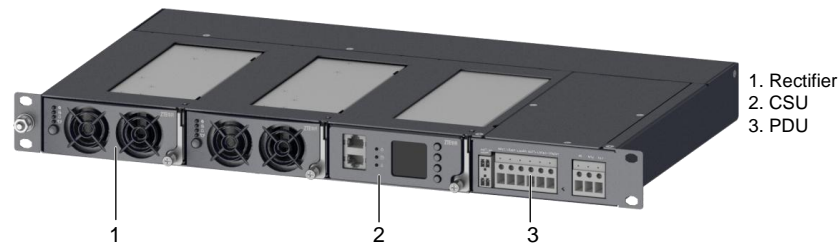
## Device Overview

This series has three models. For details, refer to the following table.

Device	System Capacity	Rectifier (2 at most)	Overall Height
ZXDU18 B200 ( V5.0R02M01 )	1200 W/25 A	ZXD500 ( V5.1 )	1 U
ZXDU38 B400 ( V5.0R01M01 )	2140 W/44 A	ZXD1000 ( V5.0 )	1 U
ZXDU48 B600 ( V5.0R01M01 )	3200 W/66 A	ZXD1000 ( V5.0 )	1 U

This manual uses the ZXDU48 B600 (V5.0R01M01) as an example.

### Subrack Overview (Height: 1 U)



### PDU Port Descriptions

Port	Pin	Description
DC&battery port	BATT -	Connected to the negative pole of the battery pack (maximum current: 30 A; fusible link: 40 A )
	LOAD 1-	Connected to the negative pole of LOAD 1 (maximum current: 20 A; fusible link: 40 A)
	LOAD 2-	Connected to the negative pole of LOAD 2 (maximum current: 20 A; fusible link: 40 A)
	BATT +	Connected to the positive pole of the battery pack
	LOAD 1+	Connected to the positive pole of LOAD 1
	LOAD 2+	Connected to the positive pole of LOAD 2
AC input port	PE	Connected to the protective earth
	N	Connected to the neutral wire of the AC input cable (maximum current: 20 A)
	L	Connected to the live wire of the AC input cable (maximum current: 20 A)

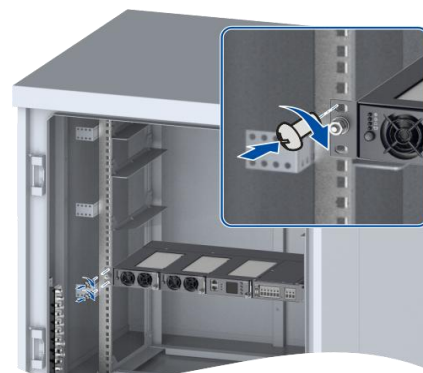


The total current at LOAD 1 and LOAD 2 is 30 A at most.

## 1 Installing the Power Subrack

### Steps

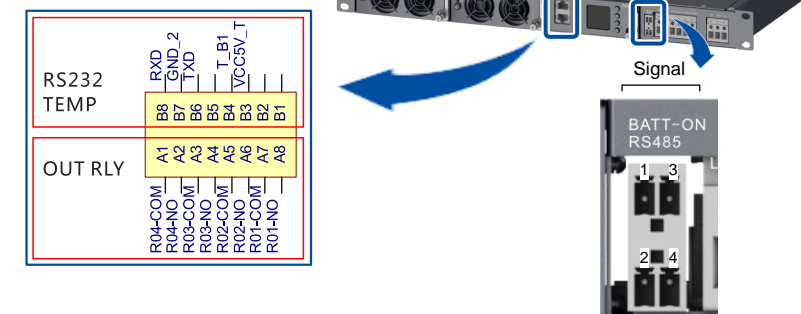
Use bolts to fix the 1U power subrack into the 19-inch cabinet.



- The cabinet must be properly grounded.
- If there are heat dissipation holes on the rear cabinet door, a minimum of 50 mm space between the power subrack and the rear door is required for heat dissipation.
- If there are no heat dissipation holes on the rear cabinet door, a minimum of 80 mm space between the power subrack and the rear door is required for heat dissipation.

## 2 Connecting the Signal Monitoring Cables

The signal ports available for users are located on the panel of the CSU. Connect the signal cables to the corresponding ports based on onsite alarm monitoring requirements.



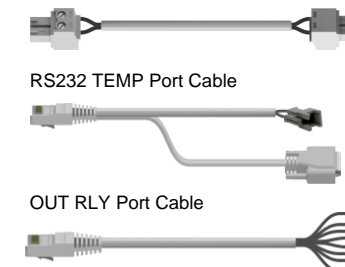
### Descriptions of Ports on CSU

Port	Pin	Signal	Description
RS232 TEMP	B1	NC	Null
	B2	NC	Null
	B3	VCC5V_T	5 V power
	B4	T_B1	Battery temperature detection
	B5	NC	Null
	B6	TXD	Transmit pin of RS232
	B7	GND	Grounding pin of RS232
	B8	RXD	Receive pin of RS232
OUT RLY	A1	R04-NO	Output dry contact 4_normally open
	A2	R04-COM	Output dry contact 4_common
	A3	R03-NO	Output dry contact 3_normally open
	A4	R03-COM	Output dry contact 3_common
	A5	R02-NO	Output dry contact 2_normally open
	A6	R02-COM	Output dry contact 2_common
	A7	R01-NO	Output dry contact 1_normally open
	A8	R01-COM	Output dry contact 1_common

### Signal Port Descriptions

Port	Pin	Description
1	BAT1_ON	Indicates whether the battery pack is present
2	RS485 A0	Connected to external RS485 signals
3	NC	Null
4	RS485 B0	Connected to external RS485 signals

### Signal Port Cable



### 2.1 Connecting Cables to Alarm Output Dry Contacts

#### Steps

- Check the alarms associated with output dry contacts in accordance with the Alarm List in the *Commissioning Guide*.
- Connect the cables to the corresponding dry contact ports based on the alarms and port descriptions in the following table.

Output Dry Contact Port	Software Code	Relationship to Alarms
COM 1	A 1	<ul style="list-style-type: none"><li>A dry contact can be associated with multiple alarms, but one alarm can be associated to one dry contact only.</li><li>You can check the alarms associated with output dry contacts in accordance with the Alarm List in the <i>Commissioning Guide</i>.</li></ul>
COM 2	A 2	
COM 3	A 3	
COM 4	A 4	

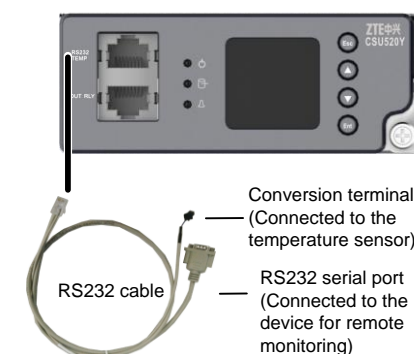
- (Optional) To modify the mapping relationship between a dry contact and an alarm, modify the attribute of the dry contact during system commissioning in accordance with the *Commissioning Guide*.

### 2.2 Connecting the RS232 Cable and Battery Temperature Detection Cable

The RS232/TEMP port is used for RS232 communication and battery temperature detection.

#### Steps

- Connect the cable to the RS232/TEMP port based on the port description.
- (Optional) To monitor this device remotely, connect the serial port end to the corresponding device that provides transmit channels.
- Install the battery temperature sensor. For details, refer to 6 Installing the Battery Temperature Sensor.



### 3 Connecting the Protective Earth and AC Input Cable

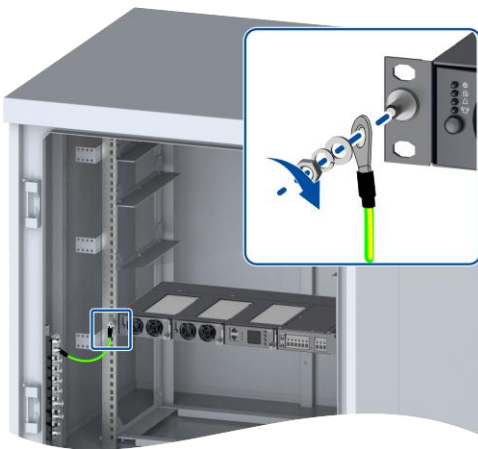


- An air circuit breaker is required on the AC input side.
- Cables cannot be connected or disconnected while the power is on.
- The capacity of the external AC power switch cannot be lower than that of the AC input air circuit breaker of this device in case of power off because a circuit breaker tripped.

#### 3.1 Connecting the Protective Earth

**Step**

Connect the protective earth from the power subrack to the cabinet.

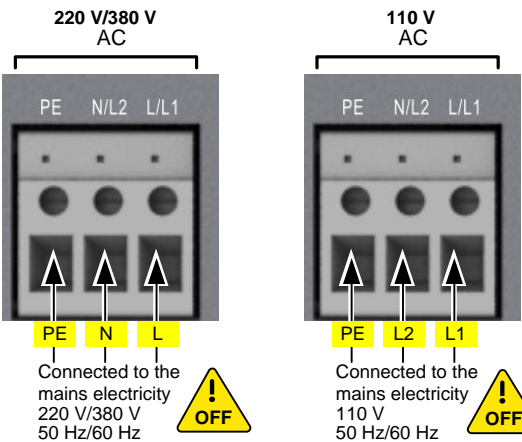


Cable color	Yellow-green
Cross-sectional area	16 mm <sup>2</sup>

#### 3.2 Connecting the AC Input Cable

**Steps**

1. Turn off the power switch (in the AC PDU) externally connected to the device.
2. Connect the AC input cables in sequence.



Common earthing is performed inside the device. To avoid electric shock and device damage, you must connect the cable based on the port labels.

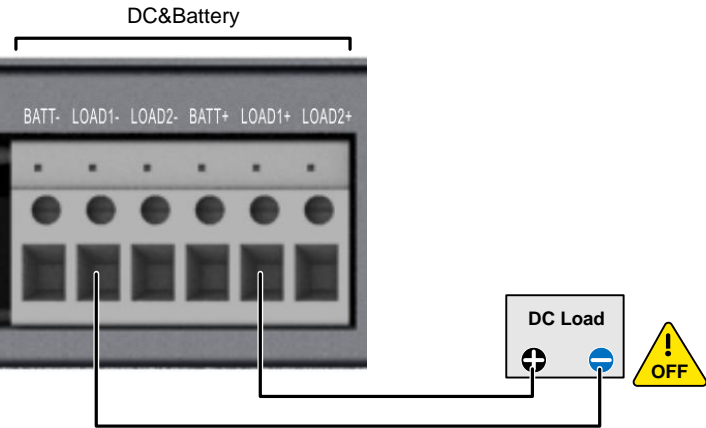
### 4 Connecting the DC Output Cable



- An air circuit breaker is required on the load side.
- The loaded capacity must be lower than the capacity of the terminal. A certain capacity margin is required.

**Steps**

1. Turn the air circuit breaker to OFF.
2. Connect the load cable to the terminal on the device.

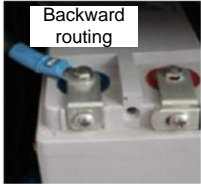


### 5 Installing the Battery Pack

This device can be installed with one 48 V battery pack that comprises four 12 V batteries or twenty-four 2 V batteries in series connection.

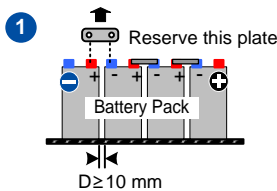


- The positive and negative poles must be connected correctly to avoid device damage.
- The cables connected to the batteries must be routed afterwards.

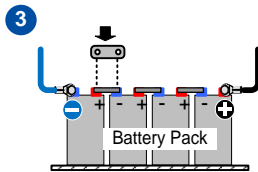


**Steps**

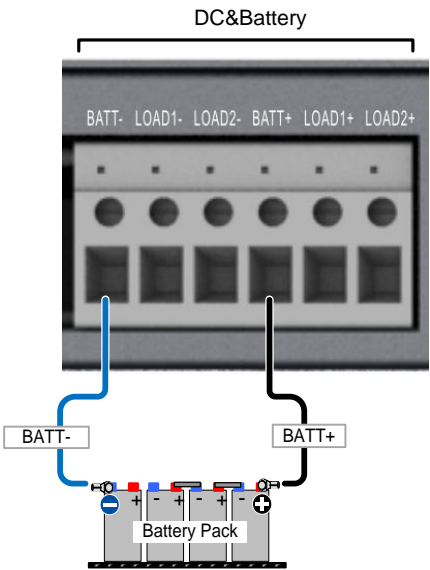
1. Place the batteries into the battery box and install two plates.
2. Connect cables to the battery pack.
3. Install the reserved plate to connect the batteries in series.



The reserved plate must be installed after Step 2.



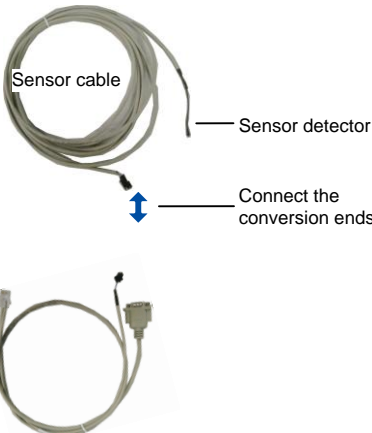
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### 6 Installing the Battery Temperature Sensor

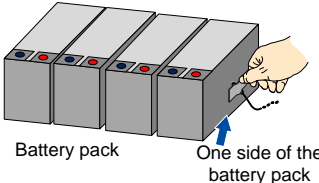
1

Connect the sensor cable to the RS232 TEMP port by referring to 2.2 Connecting the RS232 Cable and Battery Temperature Detection Cable.



2

Clean the middle of one side of the battery pack, and attach the sensor detector on to the battery pack.



Port	Pin	Signal	Description
RS232 TEMP	B4	T_B1	Battery temperature detection
	B3	VCC5V_T	5V power

### 7 Checking Electrical Connections



The electrical connections must be checked to avoid device damage because of improper connections.

#### 7.1 Troubleshooting Short Circuits in the AC Input Loop



Do not troubleshoot short circuits while the power is on. Failure to comply may damage the multimeter.

**Steps**

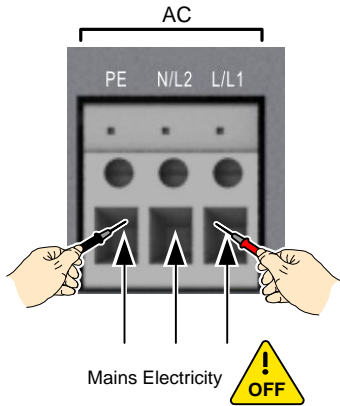
1. Turn off the power switch (in the AC PDU) externally connected to the device.
2. Turn the multimeter to the buzzer position.
3. Check whether there is a short circuit in the AC input loop at the AC input air circuit breaker.

Pins and Standards for Troubleshooting

AC Input	Troubleshooting Pin	Standard
Mains electricity input	L-N	• If the buzzer dose not beep, there is no short circuit.
	L-PE	• If the buzzer beeps, a short circuit exists. Locate the short circuit and reconnect the cable.

**Example**

The following figure shows how to troubleshoot short circuits between the PE and live wire for mains electricity.



Turn the multimeter to the buzzer position

#### 7.2 Checking the AC Input Voltage

**Steps**

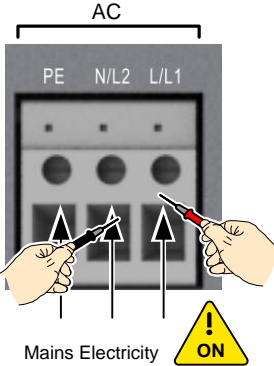
1. Turn on the power switch (in the AC PDU) externally connected to the device.
2. Turn the multimeter to the AC-volts position.
3. Detect the AC input voltage at the AC input air circuit breaker.
4. After the voltage is detected, turn off the power switch (in the AC PDU) externally connected to the device.

Pins and Standards for Troubleshooting

AC Input Mode	Troubleshooting Pin	Standard
Mains electricity input	N-PE	• The voltage between Neutral and Protective Earth must be lower than 5 V. If not, you must reform the electric grid to reduce the voltage.
	L-N	• The Voltage between Live and Neutral must be within the range from 80 V to 300 V. If not, you must reform the electric grid to keep the voltage in the range.

**Example**

The following figure shows how to detect the voltage between terminals L and N for mains electricity.



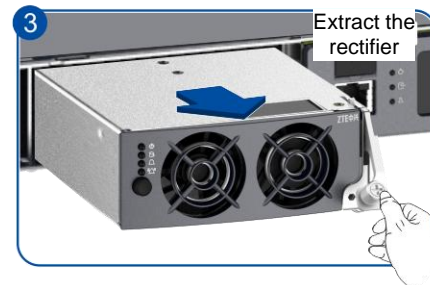
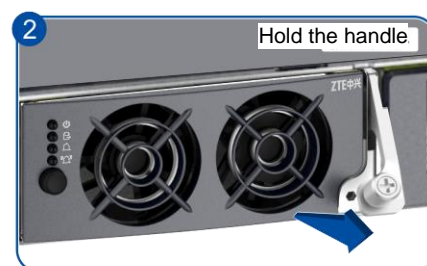
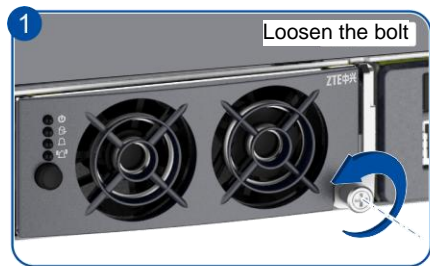
Turn the multimeter to the AC-volts position



## A Removing a Rectifier



If the monitoring unit is working, you need to collect device statistics data. For details, refer to Re-Calculating CAN Devices in the *Commissioning Guide*.



## B Installing a Rectifier



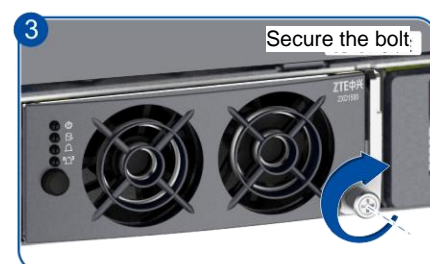
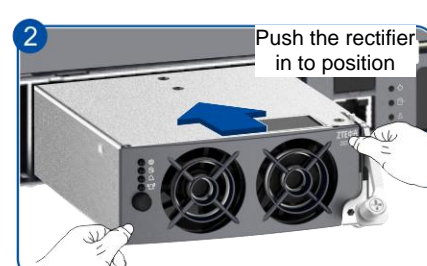
Do not press the air outlets, buttons, or indicators of the rectifier. Failure to comply may damage the rectifier.



Internal components of the rectifier may become loose during the delivery. If there is any abnormal noise inside the rectifier, you must contact the rectifier provider to replace or repair the rectifier.



- The films on the air outlets and other objects that may affect heat dissipation must be removed to avoid any damage to the rectifier because of poor heat dissipation.
- The rectifier may be damaged because of severe heat after the rectifier is powered on if the rectifier is in poor contact with the cabinet. The rectifier must be installed properly.



## C Removing the CSU

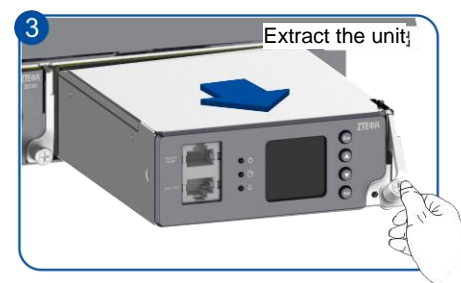
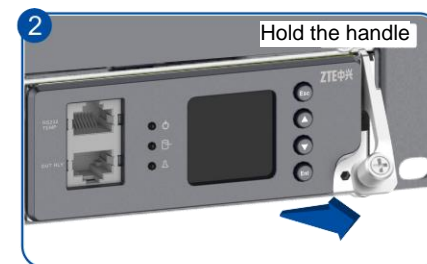
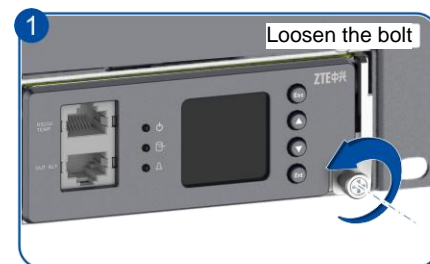


**A faulty CSU must be replaced immediately.**

The power system operates without any monitoring if the CSU is damaged or removed.

The following examples may occur if the CSU is damaged:

- The batteries may discharge deeply because the CSU cannot perform power discharge protection.
- A rectifier can output 53.5 V DC power only to charge the battery pack in floating charge.



## D Installing the CSU



Do not press the air outlets, buttons, or indicators of the CSU. Failure to comply may damage the unit.

