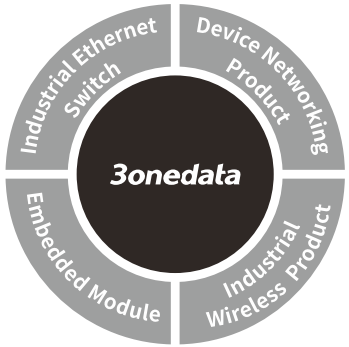
3onedata
Make network communication more reliable

NP5100 Series Serial Server Quick Installation Guide



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【Package Checklist】

Please check the integrity of package and accessories while first using the serial server.

1. Serial Server
2. Straight-through cable
3. Power line ×2
4. Foot pad ×4
5. Serial cable ×1 (for 3IN1 products only)
6. Mounting lug ×2
7. Certificate
8. Warranty card

If any of these items are damaged or lost, please contact our company or dealers, we will solve it ASAP.

【Product Overview】

The series products are managed rack-mounted industrial safe serial servers, including the following models:

Model I. NP5100-2T-8DI(3IN1)-RJ-OLED-2P(85-265VAC) (2 10/100Base-T(X) copper ports + +8 RS-232/485/422 serial ports + 1 OLED display + 2 85-265VAC power supplies)

Model II. NP5100-2T-8DI(3IN1)-RJ-2P(85-265VAC) (2 10/100Base-T(X) copper ports + +8 RS-232/485/422 serial ports + 2 85-265VAC power supplies)

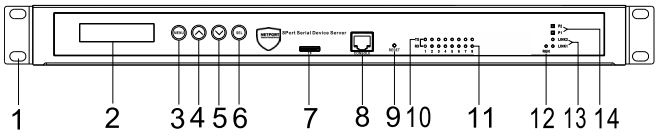
Model III. NP5100-2T-16DI(3IN1)-RJ-OLED-2P(85-265VAC) (2 10/100Base-T(X) copper ports + 16 RS-232/485/422 serial ports + 1 OLED display + 2 85-265VAC power supplies)

Model IV. NP5100-2T-16DI(3IN1)-RJ-2P(85-265VAC) (2 10/100Base-T(X) copper ports + 16 RS-232/485/422 serial ports + 2 85-265VAC power supplies)

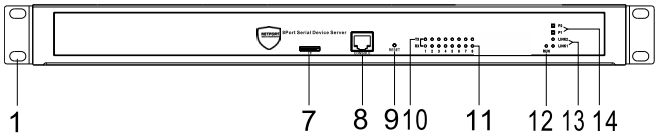
Model V. NP5100-2T-32DI(3IN1)-RJ-2P(85-265VAC) (2 10/100Base-T(X) copper ports + 32 RS-232/485/422 serial ports + 2 85-265VAC power supplies)

【Panel Design】

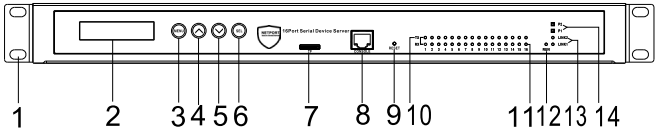
➢ **Front view**



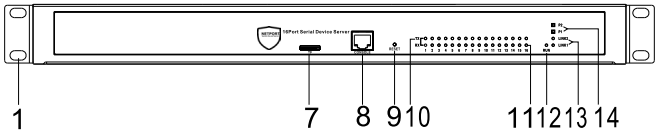
Model I



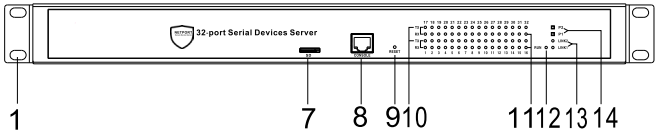
Model II



Model III

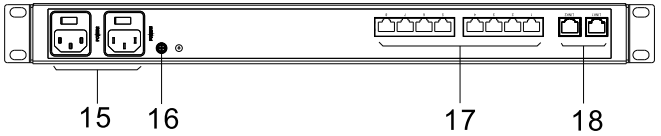


Model IV

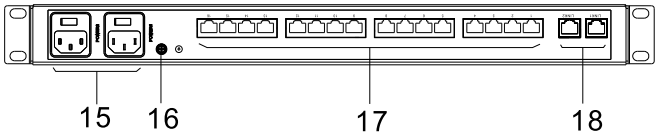


Model V

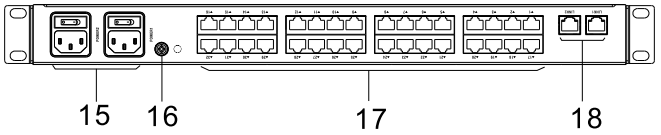
➢ **Rear View**



Model I, II

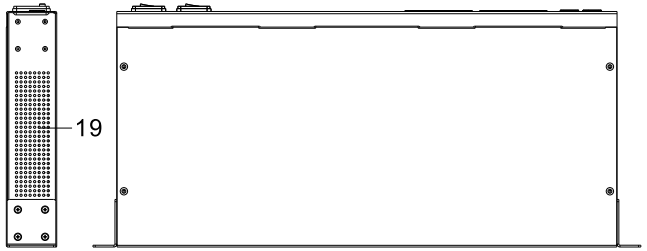


Model III, IV

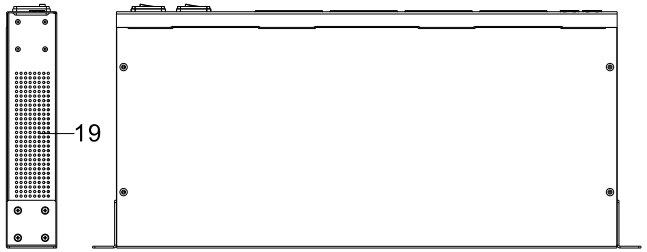


Model V

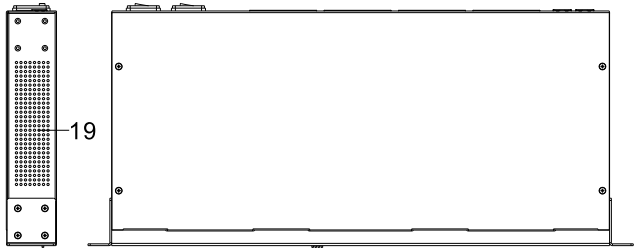
➢ **Right view and top view**



Model I, Model II

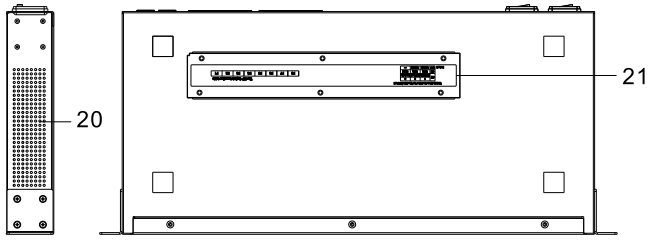


Model III, Model IV

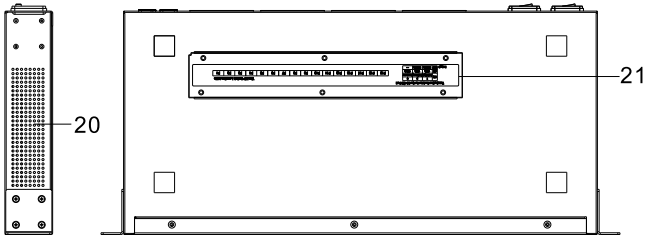


Model V

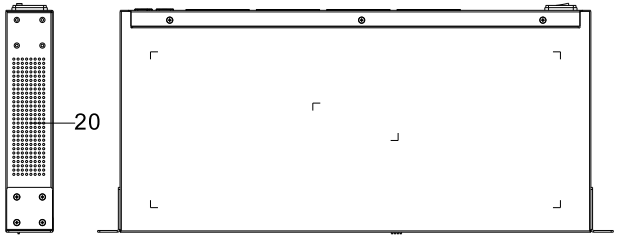
➢ **Left view and bottom view**



Model I, Model II



Model III, Model IV



Model V

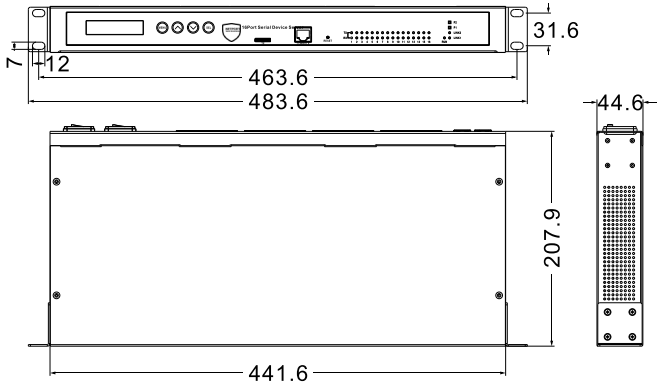
1. Lugs
2. OLED display
3. Menu/Exit button (MENU)
4. Page UP (∧)
5. Page Down (∨)
6. Select/confirm button
7. TF card slot
8. CONSOLE port
9. RESET button
10. Serial port transmitting indicator (TX)
11. Serial port receiving indicator (RX)
12. Running indicator (RUN)
13. Copper port connection indicator (Link1/2)
14. Power supply indicator (P1/2)
15. AC power supply input (POWER1/2)
16. Grounding screw (M5)
17. RS-232/485/422 serial port (1-8/16/32)
18. 100M copper port (Link1/2)
19. Right ventilation hole
20. Left ventilation hole
21. Dip switch (visible after removing the cover)

【Mounting Dimension】

Unit: mm

Note:

The external dimensions of this series of products are the same.



Notice Before Mounting:

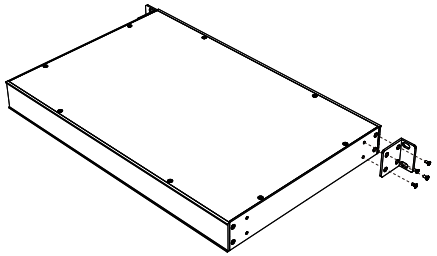
- Don't place or install the device in area near water or moisture, keep the relative humidity of the device surrounding between 5%~95% without condensation.
- Before powering on the device, check the power specifications supported by the device to prevent device damage due to overvoltage.
- The device surface temperature is high after running; please don't directly contact to avoid scalding.

【Install Rack-Mounted Device】

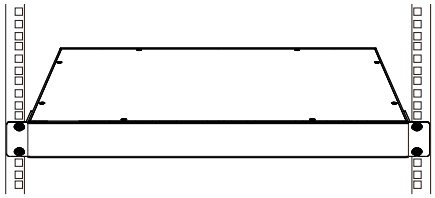
This product adopts rack-mounting, mounting steps as below:

Step 1 Select the device mounting position and ensure enough mounting size is reserved.

Step 2 Adopt 4 bolts to install the mounting lugs in the device position as figure below.



Step 3 Place the device in the rack; adopt 4 bolts to fix two sides mounting lugs in the rack.



Step 4 Check and confirm the product is mounted firmly on the rack, then mounting ends.

【Disassembling Device】

Step 1 Power off the device.

Step 2 Adopt screw driver to loosen the 4 bolts fixed on the mounting lugs in the rack.

Step 3 Shift out the device from rack, disassembling ends.

Notice Before Powering on:

- Power ON operation: First insert the power supply terminal block into the device power supply interface, and then plug the power supply plug and power on.
- Power switch "—" means power ON, "O" means power OFF.
- Power OFF operation: First, put the powers switch to the "O" side and then disconnect the power supply. Finally disconnect the connector between the device and the power cord. Please notice the operation order above.

【Power Supply Connection】



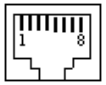
Provide 2 AC power supply access interfaces which come with a rocker switch.
The power supply range is 85~265VAC

【Serial Port Connection】

This device provides 3IN1 serial port, which supports RS232, RS485 and RS422 at the same time. The interface type is RJ45 and its pin definitions are as follows:

PIN	1	2	3	4	5	6	7	8
RS-232	DSR	RTS	GND	TxD	RxD	DCD	CTS	DTR
RS-485	—	—	GND	—	D+	D-	—	—
RS-422	—	TxD+	GND	TxD-	RxD+	RxD-	—	—

【Console Port Connection】



Provide 1 program debugging port based on RS-232 serial port which can conduct device CLI command management after connecting to PC. The interface adopts RJ45 port, and the RJ45 pin definitions are as follows:

Pin No.	2	3	5
Definition	TXD	RXD	GND

【DIP Switch Settings】

Move the dip switch cover to see the dip switch. Models I, II, III, and IV all provide three-bit dip, with each serial port corresponding to one dip. Because the 1K Ω pull-up resistor will weaken the RS-232 signal, and
Shorten the communication distance, so when the serial port is RS-232, do not use a 1K Ω pull-up resistor. The DIP definition is shown in the table below:

No.	1	2	3
	Pull-down resistance	Pull-up resistance	Terminal resistance
ON Status	1KΩ	1KΩ	120Ω
OFF (Default Value)	150 KΩ	150 KΩ	—

【Reset Button Setting】



This device provides 1 reset button, press the button for 3S then release it to reboot the device; press the button for 6S then release it to restore factory defaults.

【Insert/Unplug TF Card Slot】



provide 1 TF card slot This device has 1 self-propelled TF card slot, and supports system debugging and configuration file management. Insert TF card into the card slot. Tap TF card, and then take it out after the card pops up. Before using TF card, please format the TF card into FAT32 format.

Note:

In case of damaging TF card, user needs to power off the device first to change the TF card.

【Set OLED Display】

Model I and model III provide liquid crystal display screens. Under normal working conditions, the liquid crystal display is dark and shows the IP address of LAN1. User can press the button to change the settings and query accordingly:

Key	Name	Command
MENU	Menu/Exit	Enter Main Menu/Back
∧	Page UP	Select the last target
∨	Page Down	Select the next target
SEL	Select/confirm	Select selected item

Display resolution is 128*16, support numbers, English case, ". ", "-", "_", "↑", "↓" and other characters, support single line left and right scroll. Supports cursor blinking to determine the current cursor position. Trigger the button, the screen light is on. If there is no new operation for 30s, the screen would go into sleep state.
Detailed operation steps of OLED display screen are as follows:

Step 1 Start up, the first line shows the device name, the second line shows the LAN1 IP address.

```
Device Server
192.168.001.254
```

Step 2 Trigger the MENU key to enter the menu interface, options:

```
Main menu
Server setting
```

- Server setting: basic information of the device, please skip to step 3 and step 6 for this setting;
- Network setting: network configuration, please skip to step 5 and step 6 for this setting;
- Save/Restart: restart the device, skip to step 6 for this setting.

Step 3 Select Server setting on the Menu interface, trigger SEL key, enter the configuration interface of Server setting, options:

```
Server setting
Serial number
```

- Serial number (read only);
- Server name (read only);
- Firmware ver (read only);
- Model name (read only);

Step 4 Select Network setting on the Menu interface, trigger SEL key, enter the configuration interface of Network setting, options:

```
Network setting
LAN mode
```

- LAN mode: network port mode, which supports single IP and dual IP configuration;
- Mode config: single IP mode configuration, supporting Redundancy mode and Exchange mode configuration;
- LAN 1: network card 1 configuration;
- LAN 2: network card 2 configuration

Note:
"Mode config" and "LAN 1" should be configured when "LAN mode" is "Single IP". "LAN1" and "LAN 2" should be configured when "LAN mode" is "Dual IP".

Step 5 Select LAN 1(LAN 2) on the Network setting interface, trigger SEL key, enter the configuration interface of LAN 1(LAN 2), options:

```
LAN 1
Ethernet status
```

- Ethernet status: network card state (read only);
- MAC address: MAC address (read only);
- IP config: IP configuration method (trigger SEL key configuration)
  Options: STATIC, DHCP, BOOTP;
- IP address (read-write);
- Netmask (read-write);
- Gateway: default gateway (read-write).

Note:
When the configuration needs to be modified, it can be triggered by ∧ and ∨ keys to change the value.

Step 6 Select Save/Restart on the Menu interface, trigger SEL key, enter the configuration interface of Save/Restart, options:

```
Save/Restart
Restart
```

- Restart: reboot the device.

Notice:
Select Restart, and the interface first displays the Disable option (prevent pressing the key too long and misoperation), which can trigger the ∨ key, select the Enable option, and then trigger the SEL key to restart the device.

【Checking LED Indicator】

The series products provide LED indicators to monitor the device working status with a comprehensive simplified troubleshooting; the function of each LED is described in the table as below:

LED	Indicate	Description
POWER (1-2)	ON	Power is connected and running normally
	OFF	Power supply is disconnected or running abnormally
RUN	Blinking	The system is running normally
	OFF	The system is not running or running abnormally
	ON	System is running abnormally
Link (1-2)	ON	Port has established a valid network connection
	Blinking	Port is in a network communication status
	OFF	Port hasn't established valid network connection.
TX (1-32)	OFF	The serial port is not transmitting data or transmitting

LED	Indicate	Description
		data abnormally
	Blinking	The serial port is transmitting data.
RX (1-32)	OFF	The serial port is not receiving data or receiving data abnormally
	Blinking	The serial port is receiving data

【Logging in to WEB Interface】

This device supports WEB management and configuration. Computer can access the device via Ethernet interface. The way of logging in to device's configuration interface via IE browser is shown as below:

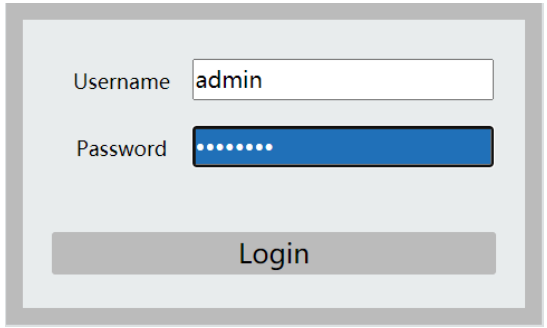
Step 1 Configure the IP addresses of computer and the device to the same network segment (The network segment of Network Port 1 is 1, and the network segment of network port 2 is 8), and the network between them can be mutually accessed.

Step 2 Enter device's IP address in the address bar of the computer browser.

Network Port 1: http://192.168.1.254

Network Port 2: http://192.168.8.254

Step 4 Enter device's username and password in the login window as shown below.



Step 3 Click "Login" button to login to the WEB interface of the device.

Note:

- The default IP address of the device network port 1 is "192.168.1.254", port 2 is "192.168.8.254".
- The default user name and password of the device are "admin".
- If the username or password is lost, user can restore it to factory settings via management software; all modified configurations will be cleared after restoring to factory settings, so please backup configuration file in advance.
- Please refer to user manual for specific configuration method of logging in to WEB interface and other configurations about network management function.

【Specification】

Panel	
100M copper port	10/100Base-T(X) self-adapting RJ45 port, half/full duplex self-adaption or forced working mode, support MDI/ MDI-X self-adaption
Serial port	3IN1 serial port, adopts RJ45, supports 15KV ESD protection
CONSOLE port	CLI command management port (RS-232), RJ45
RESET	Short press with a needle shaped tool to restore factory configuration
Indicator	Power indicator, running indicator, copper port connection indicator, serial port receiving indicator, serial port transmission indicator
OLED display	Menu/Exit, page up, page down, select/confirm
Power Supply	
Input power supply	85~265VAC
Access terminal block	Single-phase socket with rocker switch
Power Consumption	
Model I, II, III, IV	No-load: 5.6W@220VAC Full-load: 13.2W@220VAC
Model V	No-load: 7.3W@220VAC Full-load: 7.97W@220VAC
Working Environment	
Working temperature	-40~75℃
Storage temperature	-40~85℃
Working humidity	5%~95% (no condensation)
Protection grade	IP30 (metal shell)

【Disposal of Waste Electrical and Electronic Equipment (WEEE 2012/19/EU)】

(Applicable in the EU-member states)



The crossed-out wheeled bin symbol on the equipment or its packaging indicates that the product, at the end of its service life, shall not be mixed with unsorted municipal waste but should be collected separately, in accordance with local laws and regulations.

A proper separate collection of end-of-life equipment for the subsequent recycling, treatment, and environmentally compatible disposal, will help prevent potential damage to the environment and human health, facilitating the reuse, recycling and/or recovery of its component materials.

Private users should contact their vendor or municipal waste management service and ask for disposal information.

Professional users should contact their suppliers and check the terms of their selling agreement.

This product must not be disposed of with other commercial waste.

Users’ cooperation in the correct disposal of this product will contribute to saving valuable resources and protecting the environment.