Rackmount 3IN1 Series

Serial Device Server User Manual

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【Summarize】

Rackmount 3IN1 series of product is a high performance, industrial grade serial to Ethernet server, it can satisfy some kinds of customer requirements in consumption, temperature, volume and handle ability. The NP3008T-8D(3IN1)-P(85/265VAC) consists of 8 port RS232/485/422 (connector: RJ45) and 1 port 10/100Base-Tx Ethernet. NP3016T-16D(3IN1)-P(85/265VAC) consists of 16 port RS232/485/422 (connector: RJ45) and 1 port 10/100Base-Tx Ethernet. NP3116T-16D(3IN1)-2P(85/265VAC) consists of 16 port RS232/485/422 (connector: RJ45) and 2 port 10/100Base-Tx Ethernet can focus manage disperse serial device, master through network, easy, convenience. In application, can configure, upgrade through WEB. Support TCP, UDP, ARP, ICMP, HTTP, DNS and DHCP protocol, Support virtual serial COM port access and Network interruption automatic recovery.

Moreover, the product provide strong function configuration tools based in Windows platform, it can guide user configure the device step by step, all configurations are coming true by WEB or Telnet, support cross-gateway and cross-router, user can flexible configure IP address, server and client mode, data bag size etc.

It adopts EMC protection design, can work in rugged environment. Appearance design support 1U RACK type installation, convenient for engineering use.

【Packing list】

The serial device server is shipped with the following items. If any of these items are missing or damaged, please contact your customer service representative for assistance.

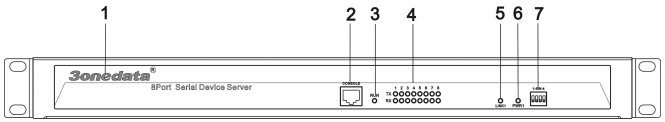
- Serial Device Server x 1
- Documentation and software CD x 1
- User manual x 1
- Rackmount ears x 2
- Warranty card x 1

【Feature】

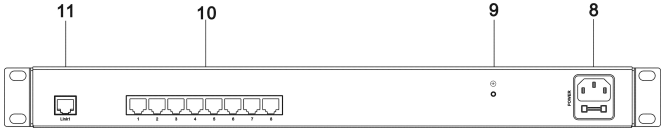
- Support 1 or 2 port 10/100M Ethernet
- Support 8 or 16 port RS-232/485/422
- Support 300bps to 921600bps non-blocking communication
- Support TCP, UDP, ARP, ICMP, HTTP, DNS and DHCP protocol
- Support TCP Server, TCP Client, UDP Server, UDP Client, UDP Multicast, UDP Rang, Pair Slave, Pair master and Real Com working mode
- Support cross-gateway and cross-router communication
- Support the polling mode
- Compatible with a variety of virtual serial port management software
- Support FIFO functionality
- Support WEB and Telnet configuration
- Support heartbeat time and time over disconnect function
- Support virtual serial COM port access and Network interruption automatic recovery
- Provide Windows configuration tools for easy to use, easy to bath install.
- Industrial grade design, IP30 protection grade
- No fan, low consumption design
- Working temperature: -25～60℃

【Panel layout】

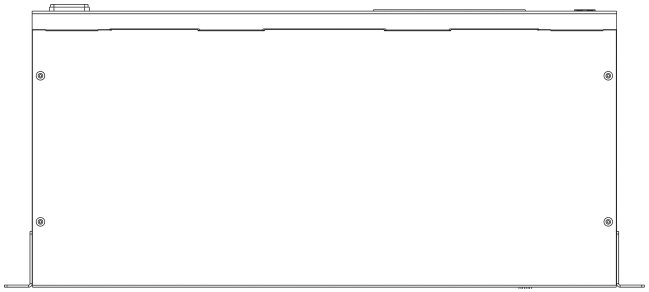
NP3008T-8D(3IN1)-P(85/265VAC)



Front view



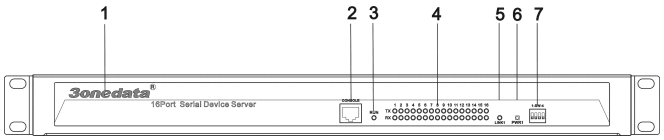
Rear view



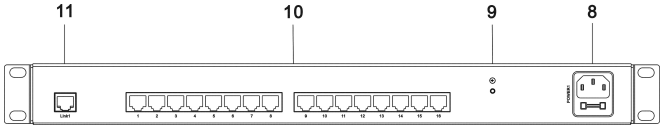
Top view

1. Product information
2. Console port
3. Running statues indicator
4. Serial port receive and transmits data indicator
5. Ethernet port Link/ACT LED
6. Power indicator
7. DIP switch
8. power input
9. Ground screw
10. RS-232/485/422 Serial port (COM1~COM8)
11. 10Base-T /100Base-TX Ethernet port

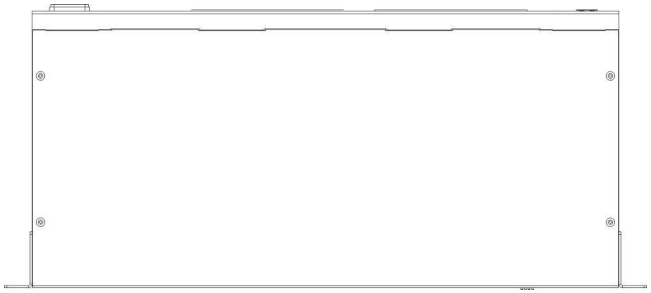
NP3016T-16D(3IN1)-P(85/265VAC)



Front view



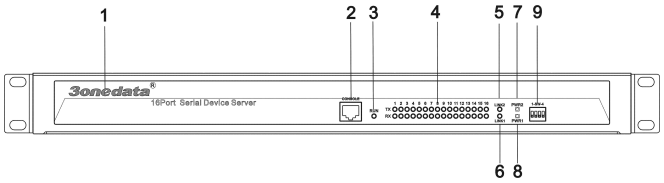
Rear view



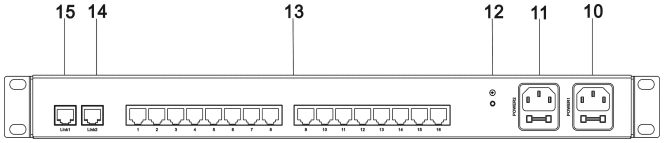
Top view

1. Product information
2. Console port
3. Running statues indicator
4. Serial port receive and transmits data indicator
5. Ethernet port Link/ACT LED
6. Power indicator
7. DIP switch
8. power input
9. Ground screw
10. RS-232/485/422 Serial port (COM1~COM16)
11. 10Base-T /100Base-TX Ethernet port

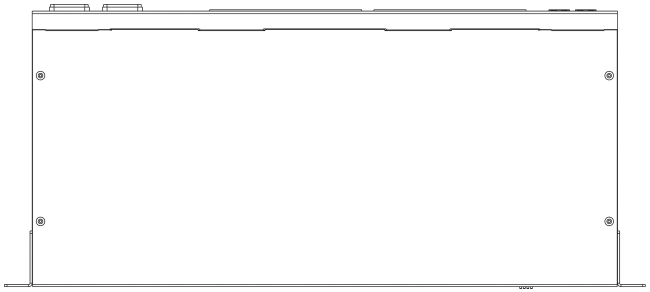
NP3116T-16D(3IN1)-2P(85/265VAC)



Front view



Rear view



Top view

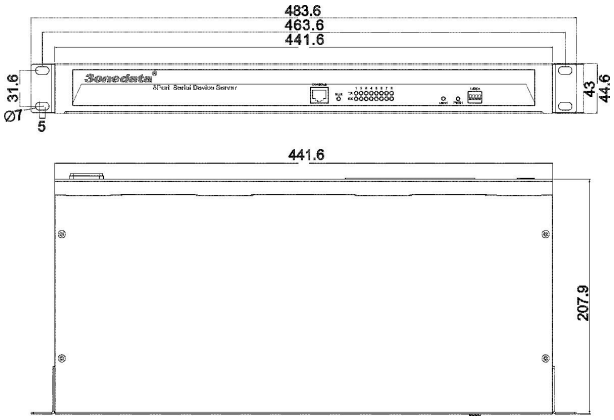
1. Product information
2. Console port
3. Running statues indicator
4. Serial port receive and transmits data indicator
5. Ethernet port 1 Link/ACT LED
6. Ethernet port 2 Link/ACT LED
7. Power 1 indicator
8. Power 2 indicator
9. DIP switch
10. Power 1 input
11. Power 2 input
12. Ground screw
13. RS-232/485/422 Serial port (COM1~COM16)
14. 10Base-T /100Base-TX Ethernet port 1
15. 10Base-T /100Base-TX Ethernet port 2



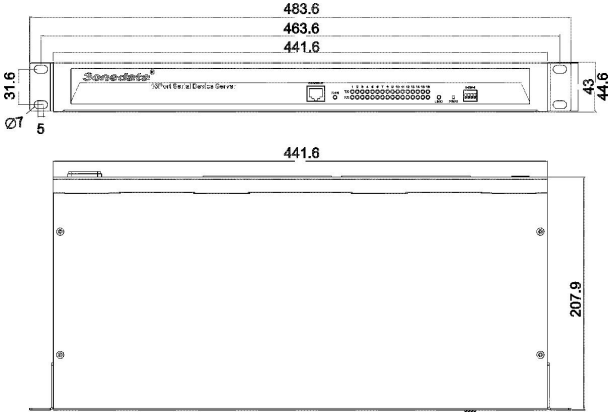
Side view

【Dimension (mm)】

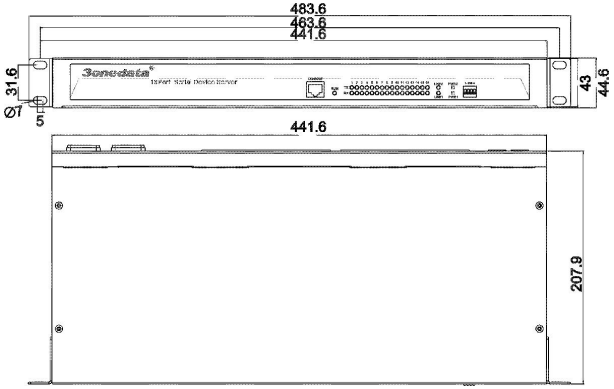
NP3008T-8D(3IN1)-P(85/265VAC):



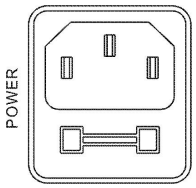
NP3016T-16D(3IN1)-P(85/265VAC):



NP3116T-16D(3IN1)-2P(85/265VAC):



【Power supply input】



The product rear panel provided power supply input port, the range is 85~265VAC. NP3116T-16D(3IN1)-2P(85~265VAC) support redundant power.

Important notice:

1. Power ON operation: first of all, insert power cable's terminal block into device's power port, then insert power supply plug into power source

2. Power OFF operation: First off all, unpin power plug, then strike the terminal block, please take care of operation sequence.

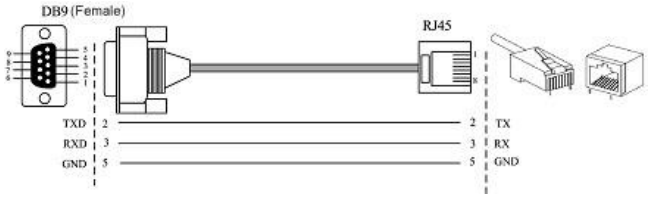
【DIP switch】



Top panel provided 4 bits DIP switch to do function configure (OFF is default factory). 1 and 4 are keeping for future function. 2 is recovery default factory. 3 is for upgrade. Please power off and power on when you change the status of DIP switch.

【Console port】

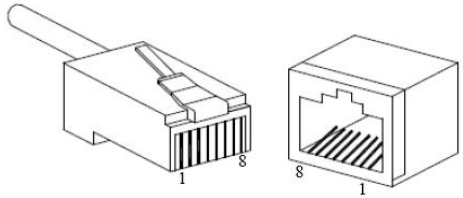
This series product provided 1pcs procedure test port based in serial port. It adopts RJ45 interface, located in front panel, can configure related command through RJ45 to DB9 female cable.



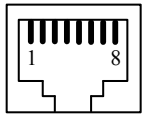
【Communication connector】

10/100BaseT(X) Ethernet port

The pinout define of RJ45 port display as below, connect by UTP or STP. The connect distance is no more than 100m. 100Mbps is used 120Ω of UTP 5, 10Mbps is used 120Ω of UTP 3, 4, 5.



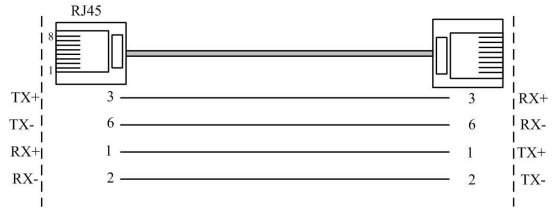
RJ 45 port support automatic MDI/MDI-X operation. can connect the PC, Server, Converter and HUB .Pin 1,2,3,6 Corresponding connection in MDI. 1→3, 2→6, 3→1, 6→2 are used as cross wiring in the MDI-X port of Converter and HUB. 10Base-T/100Base-TX are used in MDI/MDI-X, the define of Pin in the table as below.



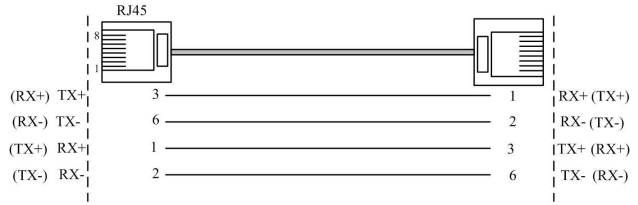
NO.	MDI signal	MDI-X signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
6	RX-	TX-
4, 5, 7, 8	—	—

Note：“TX±” Transmit Data±，“RX±” Receive Data±，“—” Not use.

10/100Base-T(X) MDI (straight-through cable)



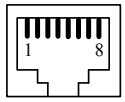
10/100Base-T(X) MDI-X (Cross over cable)



MDI/MDI-X auto connection makes switch easy to use for customers without considering the type of network cable.

Serial port connection

Serial device server adopts RJ45 connector. The PIN defines is as follows, RS-232/485/422 port (3 in 1):



PIN	PIN define		
	RS-232	RS-485	RS-422
1	DSR	—	—
2	RTS	—	R-
3	GND	GND	GND
4	TXD	—	R+
5	RXD	—	—
6	DCD	D-(B)	T-
7	CTS	—	—
8	DTR	D+(A)	T+

【LED Indicator】

LED indictor light on the front panel of product, the function of each LED is described in the table as below.

System statue LED		
LED	Indicate	Description
PWR	ON	Power is connected/Function natural
	OFF	Power is disconnected or function nu-natural
RUN	ON	System did not run or running un-steadily
	Flashing	System Running steadily
	OFF	System Running un-steadily
LINK	ON	Ethernet port connect successfully
	Flashing	Ethernet port has data transmission
	OFF	Ethernet port connect unsuccessfully
RX1~16	OFF	None data receive
	Flashing	In receiving data
TX1~16	OFF	None data transmit
	Flashing	In transmitting data

【Installation】

Before installation, confirm that the work environment meet the installation require, including the power needs and abundant space. Whether it is close to the connection equipment and other equipments are prepared or not.

1. Avoid in the sunshine, keep away from the heat fountainhead or the area where in intense EMI.
2. Examine the cables and plugs that installation requirements.
3. Examine whether the cables be seemly or not (less than 100m) according to reasonable scheme.
4. Power: 85~265VAC power input
5. Environment: working temperature: -25～60℃
   Storage Temperature: -30～85℃
   Relative humidity 0%～95%

Rack mount installation

In most of industrial application, it is convenience to use rack mount installation, the step of installation is as follows:

1. Check if have rack mount installation tools and components (The package provided parts of components)
2. Check installation place strong or not, have the place to install the device or not.
3. Put the device into rack, aim at the screw hole of device and rack, fixed it in strong screw. Easy and convenience to operation.

Wiring Requirements

Cable laying need to meet the following requirements,

1. It is needed to check whether the type, quantity and specification of cable match the requirement before cable laying;
2. It is needed to check the cable is damaged or not, factory records and quality assurance booklet before cable laying;
3. The required cable specification, quantity, direction and laying position need to match construction requirements, and cable length depends on actual position;
4. All the cable cannot have break-down and terminal in the middle;
5. Cables should be straight in the hallways and turning;
6. Cable should be straight in the groove, and cannot beyond the groove in case of holding back the inlet and outlet holes. Cables should be banded and fixed when they are out of the groove;
7. User cable should be separated from the power lines. Cables, power lines and grounding lines cannot be overlapped and mixed when they are in the same groove road. When cable is too long, it cannot hold down other cable, but structure in the middle of alignment rack;
8. Pigtail cannot be tied and swerved as less as possible. Swerving radius cannot be too small (small swerving causes terrible loss of link). Its banding should be moderate, not too tight, and should be separated from other cables;
9. It should have corresponding simple signal at both sides of the cable for maintaining.

【Specification】

Ethernet port

Standard: 10Base-T, 100Base-TX

Protocol: Support TCP, UDP, APR, ICMP and DHCP

Signal: Rx+, Rx-, Tx+, Tx-

Speed: 10/100Mbps

Working: Full-duplex and half duplex

Working mode: Support TCP Server、TCP Client、UDP Server、UDP Client、UDP Multicast、UDP Rang、Pair Slave、Pair Master、Real Com

Transfer distance: 100m

Connector: RJ45

Serial port

Serial port number: 8 or 16 port RS232/485/422

RS-232 signal: DSR, RTS, GND, RXD, TXD, DCD, CTS, DTR

RS-485 signal: D+(A), D-(B), GND

RS-422 signal: T+, T-, R+, R-, GND

Parity bit: None, Even, Odd, Space, Mark

Data bit: 5bit, 6bit, 7bit, 8bit

Stop bit: 1bit, 1.5bit, 2bit

Band rate: 300bps～921600bps

RS-232 transfer distance: no more than 15m

RS-485/422 transfer distance: 1200m

RS-232/485/422 connector: RJ45

LED Indicator

Power: PWR1 (PWR2)

Working statue indicator: RUN

Ethernet port connect statue: Link1 (Link2)

Serial port data indicator: TX1~TX16, RX1~RX16

Power supply

Input voltage: 220VAC (85~265VAC)

- NP3008T-8D(3IN1)-P(85/265VAC)

No-load consumption: 3.3W@220VAC

Full-load consumption: 3.8W@220VAC

- NP3016T-16D(3IN1) -P(85/265VAC)

No-load consumption: 6.7W@220VAC

Full-load consumption: 7.3W@220VAC

- NP3116T-16D(3IN1)- 2P(85/265VAC)

No-load consumption: 5.4W@220VAC

Full-load consumption: 5.7W@220VAC

Working environment

Working temperature: -25～60℃

Storage temperature: -30～85℃

Relative Humidity: 0%~95% (no condensation)

Mechanical Structure

Shell: IP30 protect grade, metal shell

Installation: 19” 1U Rack

Weight: 2.5kg

Size (W×H×D): 441.6mm×207.9mm×44.6mm

Industry Standard

EMI: FCC Part 15, CISPR (EN55022) class A

EMS: EN61000-4-2 (ESD), Level 3

EN61000-4-4 (EFT), Level 3

EN61000-4-5 (Surge), Level 2

Shock: IEC 60068-2-27

Free fall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Certification

CE, FCC, RoHS, UL508 (Pending)

Warranty: 3 years