NP302T Series

2-port RS-232/485/422 to Ethernet

User Manual

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【Summarize】

NP302T series is an high performance, industrial grade serial to Ethernet server, it can satisfy some kinds of customer requirements in consumption, temperature, volume and handle ability. It provides 2 port RS232 (RS-232 connector: RJ45) or RS485(RS485 connector: terminal block) and 1 port 10/100Base-Tx Ethernet, can focus manage disperse serial device, master through network, easy, convenience. In application, can configure, upgrade through WEB.

Moreover, NP302T series 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 can flexible configure IP address, server and client mode, data bag size etc.

NP302T series adopts EMC protection design, can work in rugged environment.

【Packing list】

The first time use this product, please check the packaging is intact or not and the attachment is complete or not at first.

1. 3onedata NP302T series x1
2. Instruction x1
3. Warranty card x1

Please handle with care for there are precision components in the device, and it's better to protect the device from excessive vibration to avoid affecting its performance. If you find that the device is damaged or any parts of it is missing during transportation, please notify the Company or the Company's distributor, we will give you proper solution as soon as possible

【Feature】

◎Support 10/100M Ethernet

◎Support 2 Port RS-232 or 2 Port RS-485/422

◎Support WEB and Telnet configuration

◎Support TCP, UDP, ARP, ICMP, DHCP and DNS protocol

◎Support TCP Server, TCP Client, TCP Auto, UDP and Real COM driver working mode

◎Support UDP multicast and UDP subnet mode

◎Support heartbeat time and time over disconnect function

◎Support cross-gateway and cross-router communication

◎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 protect grade

◎No fac, low consumption design

◎Working temperature: -40～85℃

【Panel design】

NP302T-2D(RS-232)
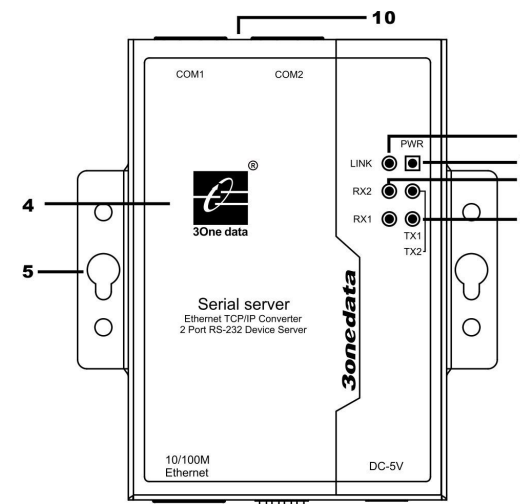
NP302T-2D(RS-485)
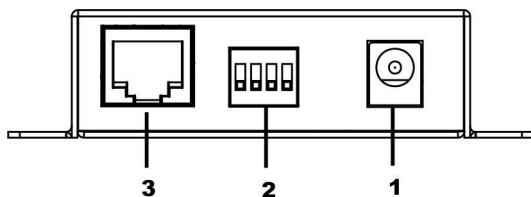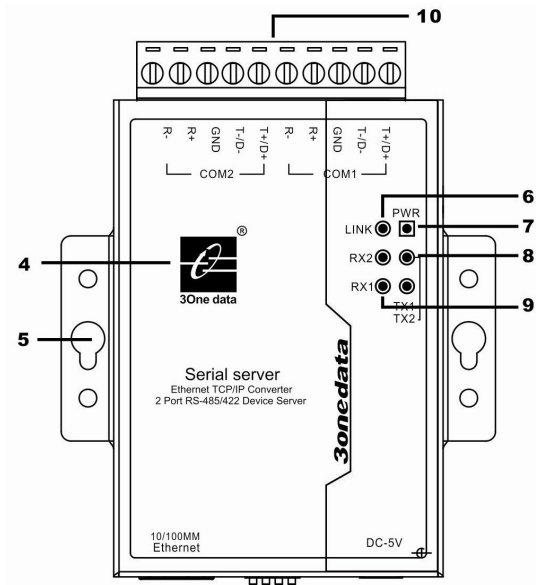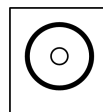
1. Power input 5VDC±5%

2. DIP switch

3. 10Base-T /100Base-TX Ethernet port

4. Company name, product series

5. Wall mounting installation nut

6. Ethernet port LED indicator

7. Power LED indicator

8. Serial transmit data indicator

9. Serial receive data indicator

10. Serial（COM1, COM2）

【Dimension（mm）】
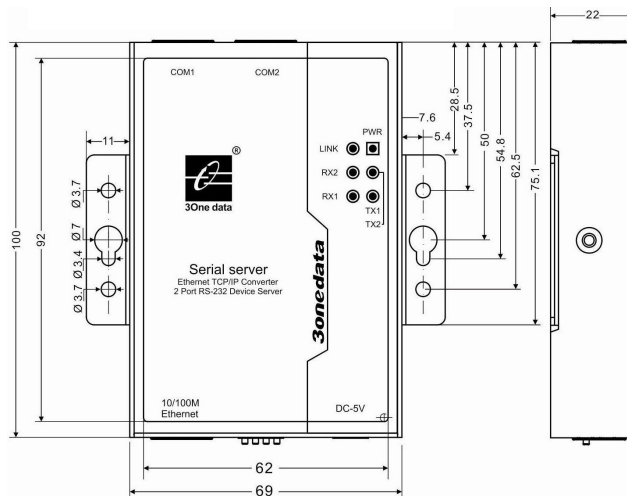
【Power input】

DC

NP302T series provide DC power input, voltage input is, DC power adapter specification is internal size 2.5mm, external size 5.5mm.

【DIP switch】

Top panel provide 4 bit DIP switch to set function(ON is effective), 1, 3, 4 is hold, 2 is factory default, if you change the DIP switch statue, please power off and power on.
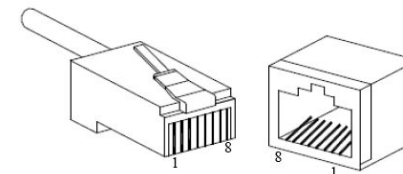
【Communication connector】

NP302T series provide 1pcs 10Base-T/100BaseTX Ethernet

port （RJ45） and 2 port RS-232（RJ45）or 2 port RS-485/422。

10/100BaseT(X) Ethernet port

The pinout of RJ45 port display as below, connect by UTP or STP. The connect distance is no more than 100m. 100Mbps is used 100Ωof UTP 5 , 10Mbps is used 100Ωof 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.
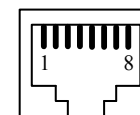
NO.	MDI signal	MDI-X signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
6	RX-	TX-
4、5、7、8	—	—

Note："TX±"Transmit Data±, "RX±"Receive Data±, "—" Not use。

MDI (straight-through cable)

MDI-X (Cross over cable)

RJ45

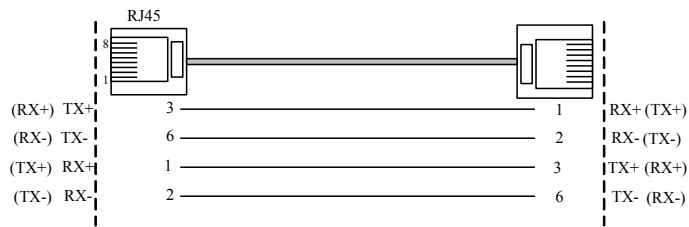|					
(RX+) TX+	3	—	1	RX+ (TX+)
(RX-) TX-	6	—	2	RX- (TX-)
(TX+) RX+	1	—	3	TX+ (RX+)
(TX-) RX-	2	—	6	TX- (RX-)
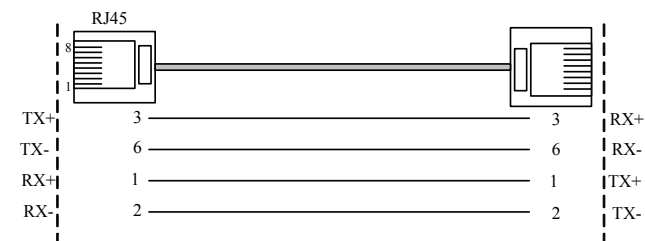
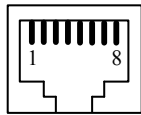## Serial port connection

NP302T series adopts RJ45 connector. The PIN define is as follows:

RS-232 port:

PIN	PIN define	Description
1	TXD	Transmit data
2	RXD	Received Data
3	RTS	Request to send
4	CTS	Clear to send
5	DSR	Data set ready
6	GND	Signal ground
7	DTR	Data terminal ready
8	DCD	Data carrier detect

RS-485/422 port:
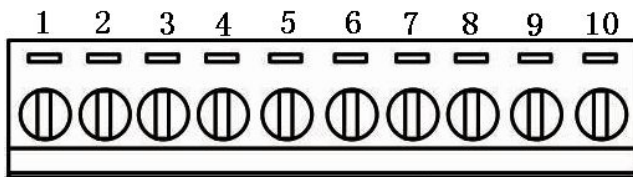
Serial port	PIN	PIN define

	1	R-
	2	R+
COM2	3	GND
	4	T-/D-
	5	T+/D+
	6	R-
	7	R+
COM1	8	GND
	9	T-/D-
	10	T+/D+

【LED Indicator】

The LED indicator on the front panel of NP302T can indicate the running system and the operation status, which makes it easy to find and solve problems, the specific meaning of indicator are shown in the table.

System statue LED		
LED	Indicate	Description
PWR	ON	Power is connected/Function natural
	OFF	Power is disconnected or function nu-natural
LINK	ON	Ethernet port connect successfully
	Flashing	Ethernet port has data transmission
	OFF	Ethernet port connect unsuccessfully
RX1/2	OFF	None data receive
	Flashing	In receiving data
TX1/2	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. Screw, nut, tool provide by yourself.

5.Power need: 5VDC power inputs

6. Environment: -40°C to 85°C

Relative humidity 10% to 95%

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 and Client

Transfer distance: 100m

Serial port

Serial port number: 2 port RS-232 or 2 port RS-485/422

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

RS-485 signal: D+, D-, GND

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

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

Data bit; 5bit,6bit,7bit,8bit

Stop bit: 1bit,1.5bit,2bit

Band rate: 300bps～115200bps

RS-232 Transfer distance: no more than 15m

RS-232 connector: RJ45

RS-485 transfer distance: 1200m

RS-485 connector: 5 bits terminal block

Protection: class 3 static, RS-485/422 side, 1.5KV isolation

LED Indicator

Power (PWR)

Ethernet port connect statue (Link)

Serial port data indicator: TX, RX

Power requirements

Input voltage: 5VDC±5%

NP302T-2D(RS-232)：

No-load consumption (Low consumption):0.56 5W

Full-load consumption (Low consumption): 0.905W

No-load consumption (High performance): 0.91W

Full-load consumption (High performance): 1.215W

NP302T-2D(RS-485)：

No-load consumption (Low consumption): 0.57W

Full-load consumption (Low consumption): 0.845W

No-load consumption (High performance): 0.895W

Full-load consumption (High performance): 1.165W

Mechanical

Shell: IP30 protection, metal shell

Installation: Wall mounting

Weight: 227g

Size (L×W×H): 100mm×69mm×22mm

Environment limits

Working temperature: -40~85℃

Storage temperature: -40~85℃

Relative humidity: 5%~95%（non-condensing）

Standard

EMI: EN 55022 Class A, FCC Part 15 Subpart B Class A

EMS: EN 55024,

EN 61000-4-2 (ESD) Level 3,

EN 61000-4-3 (RS) Level 3,

EN 61000-4-4 (EFT) Level 4,

EN 61000-4-5 (Surge) Level 3,

EN 61000-4-6 (CS) Level 3,

EN 61000-4-8,

EN 61000-4-11

Shock: IEC 60068-2-27

Free fall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Warranty

Warranty time: 5years

Certificates

CE, FCC, RoHS, UL508(pending)