

XINJE XD series BD board

Fast manual

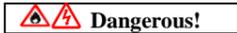
Features

XD series expansion communication BD board includes RS232 port expansion board XD-NS-BD, RS485/fieldbus/motion control bus communication port expansion board XD-NE-BD, RS485/fieldbus communication port expansion board XD-NO-BD.

- XD-NS-BD can be used to RS232 communication between XD series PLC and other device.
- XD-NE-BD can be used to RS485/fieldbus control/ motion control bus communication for XD series PLC, TN series HMI, DS3E series servo drive, other device.
- XD-NO-BD can be used to RS485/fieldbus control communication for XD series PLC.

Safety notes

Control system design notes



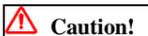
- ◆ Make sure design the safety circuit, to ensure that the control system can still work safety when the external power supply cut off or PLC broken.
- ◆ Make sure set emergency braking circuit, protection circuit, interlock circuit of forward-reverse running in PLC external circuit and upper-lower limit switch to prevent from machine damage.
- ◆ In order to make the equipment safe operation, please design external protection circuit for important output signal.
- ◆ PLC CPU will close all the output when detecting the system error; the output will lose control when the PLC circuit has problem. Please design suitable external control circuit to ensure the device working normally.

- ◆ If the PLC relay or transistor unit is broken, the output cannot be ON or OFF.
- ◆ The PLC is designed for indoor environment, the lightning protection must be installed in the power supply system to avoid PLC and other device damage.

Installation and wiring notes



- ◆ Do not use the PLC in the following environment: dust, soot, corrosive gases, flammable gas, high temperature, condensation, vibration, impact, lightning, fire.
- ◆ Do not let the metal scrap and wire head drop into the ventilation hole of PLC, otherwise it will cause fire or error operation.
- ◆ Do not cover the ventilation hole of PLC, otherwise it will cause fire, error operation.
- ◆ The I/O wiring must be fixed enough, otherwise the bad contactor will cause fault.

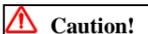


- ◆ Please use shield cable for high frequency I/O wiring to avoid interference.

Run and maintenance



- ◆ Please connect all the cable include PLC, extension module and BD board after shutting down the power supply.
- ◆ Please operate as the manual for online operation, forced output, RUN, STOP.



- ◆ Please discard the product as industrial waste.
- ◆ Make sure cut off the power supply when installing or uninstalling the extension card.

Product information

Naming rule

XD- n - BD

- ① ② ③

- ① Series XD: XD series extension BD board
- ② Communication type: NS: RS232
NE: RS485/fieldbus/motion fieldbus
NO: RS485/fieldbus
- ③ Extension type BD: extension BD board

Basic parameters

XD series PLC 24/32 points can extend 1 BD board, XD series PLC 48/60 points can extend 2 BD boards, XD series PLC 16 points cannot extend BD board.

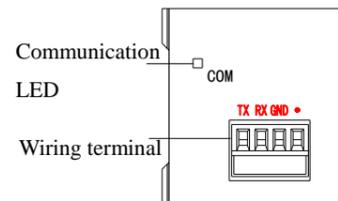
Table 1: XD series extension BD board specifications

Installation mode	Install in the XD series PLC directly
Dimension	40mm×42mm×14mm
Using environment	No corrosive gas
Environment	0°C~60°C
Environment humidity	5~95%

Profile

Structure

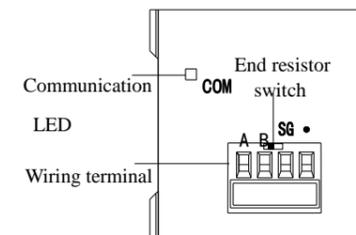
XD-NS-BD



XD-NE-BD

Name	Function	
Communication LED	LED is ON when BD board communication is normal	
Wiring terminal	TX	Signal sending
	RX	Signal receiving
	GND	Ground
	•	Vacant

XD-NE-BD

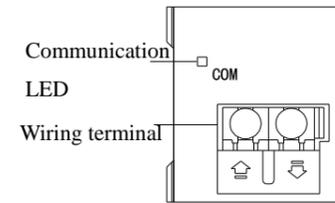


XD-NO-BD

Name	Function	
Communication LED	The LED is ON when BD board communication normal	
Wiring terminal	A	485+
	B	485-
	SG	Signal ground
	•	Vacant
End resistor switch	Select end resistor through the switch (120Ω)	

XD-NE-BD has switch inside which can select the end resistor. XD-NE-BD switch default setting is OFF (not use resistor). If the XD-NE-BD is at the beginning or end of the fieldbus, it needs to add 120ohm end resistor at each side. The switch turns right.

XD-NO-BD



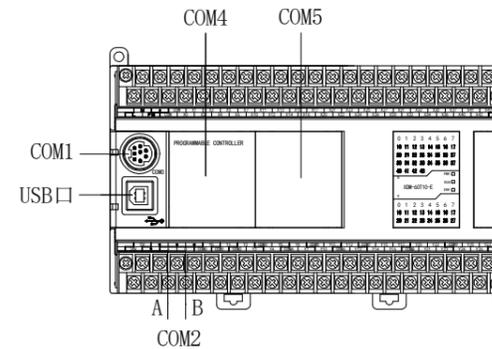
Part name:

Name	Function
Communication LED	The LED is ON when BD board communication normal
Wiring terminal	Left side is signal input, right side is signal output

Dimension and installation

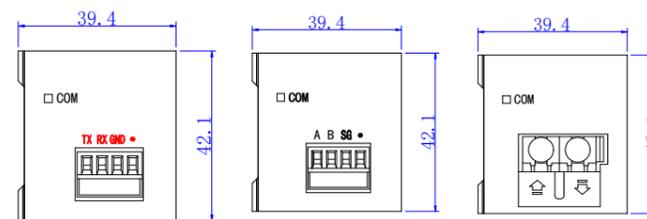
Installation

XD extension BD board can be installed in the COM4 or COM5 of XD series PLC. Please remove the cover of PLC and insert the BD in it.



Product profile (unit:mm)

XD series extension BD board dimension:



Electric design reference

Configuration mode

- XD-NS-BD can be used to communicate between the XD series PLC, XD PLC and other devices through RS232.
- XD-NE-BD can be used to communicate between XD series PLC, TN series HMI, DS3E series servo drive, other devices through RS485 or fieldbus(X-NET).
- XD-NO-BD can be used to communicate between XD series PLC through RS485 or fieldbus(X-NET).

XD series extension BD board needs special software XNETConfig to configure. This software can set two communication mode including Modbus and XNET.

XINJEConfig software installation

XINJEConfig software is inside XDPpro software installation package, please open it and install as the guide. Please install and run "as administrator".

XINJEConfig using steps

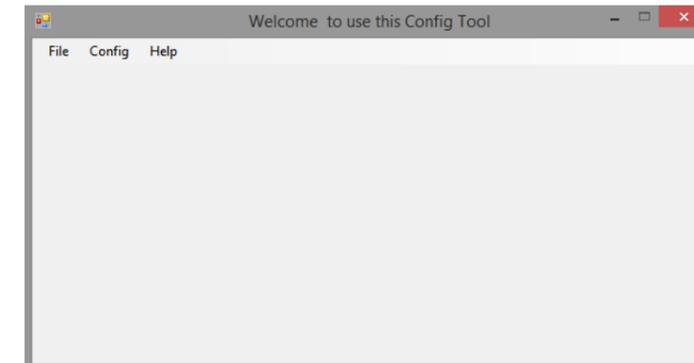
Here is an example of communicating between two XD3-32T-E PLC through XD-NE-BD via X-NET.

Note: please use USB cable connect PLC with PC when configuring the BD board.

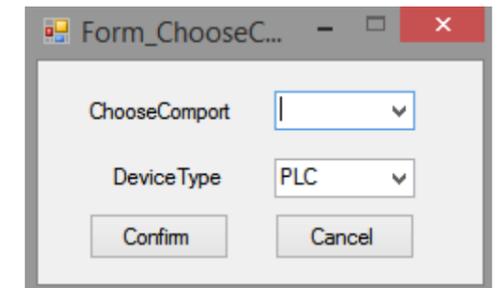


USB cable needs to install the USB driver, please download on www.xinje.com.

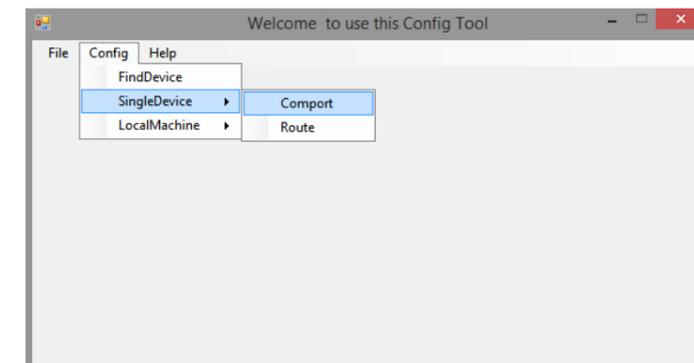
1. Open the XINJEConfig, it will show below window:



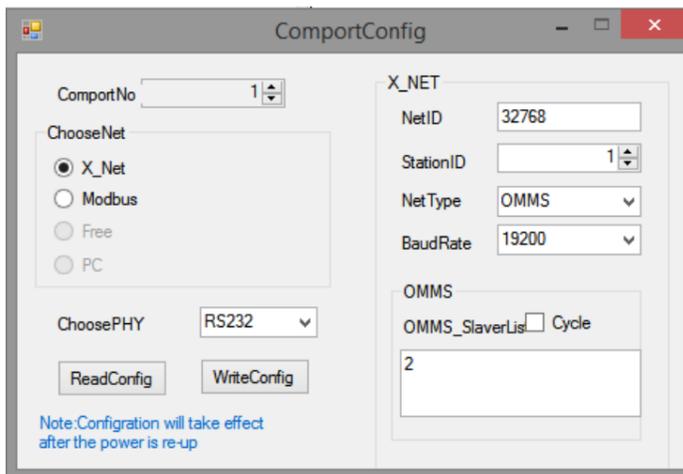
2. click Config/Find device, it will show below window:



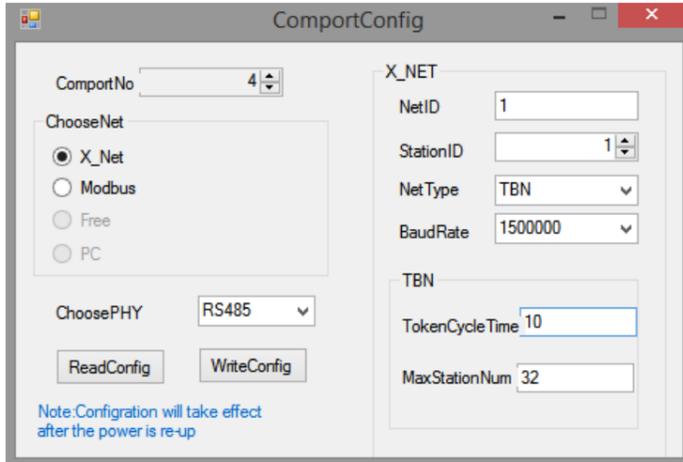
3. choose the com port no. between PC and PLC, the device type please select PLC, then click confirm. Then back to main window, click Config/single device/com port.



4. it will show the com port setting window.



5. As XD3-32T-E only can connect one BD board, which is COM4, here we set Comport 4 for XD-NE-BD. The net please select X-NET. The PHY please select RS485.



NetID: the network no. of the two PLC. The network no. must be same for the same network, here it is set to 1.

StationID: every PLC station no. in the network. In this network, the two PLC station no. is 1 and 2.

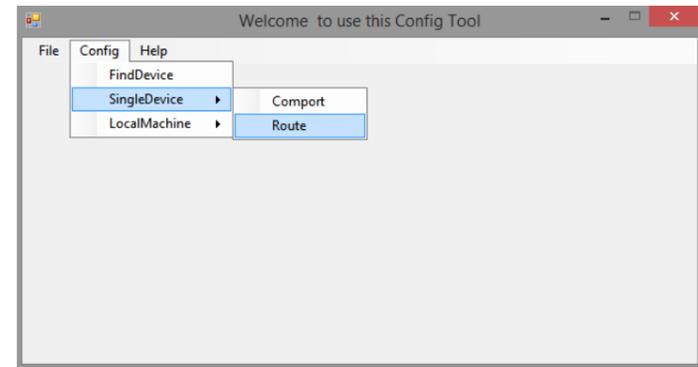
Net type: please select TBN for PLC communication, OMMS or TBN is for communication between HMI and PLC. OMMS is also suitable for communication between PLC and servo.

Baud rate: for this application 1.5M

Token cycle time: each station cycle once in the same network, the unit is ms. For this application, there are only two PLC, so we set it to 10ms.

Max station number: the max station numbers in the network. X-NET max station no. cannot over 32.

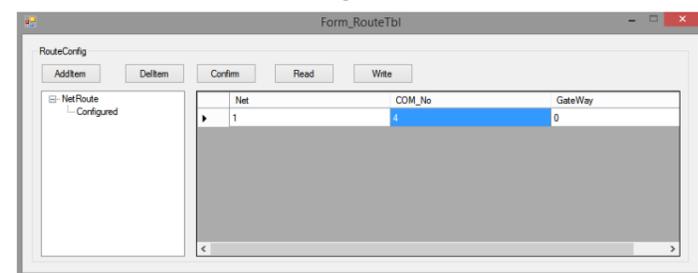
6. click write config, it will show write config successful.
7. click confirm, cut off the PLC power supply, then power on again. Now the configuration is effective.
8. click config/single device/route.



9. it will show below window.



10. click the additem, it will show the configuration window.



Net: it is same to the Net ID set in the former serial port configuration window.

COM no.: the PLC serial port no., here we use XD-NE-BD, so the port no. is COM4.

Gateway: please keep it as default value 0.

11. click write after setting all the things. It will show write config successful message.
12. click confirm. Then cut off the PLC power supply and power on again. Now all the configuration is completed.

Note:

1. after changing the device, it needs to configure again.
2. if it shows the error message "Xnet server read config error", please restart the software and configure again.

Please refer to XD series PLC programming manual chapter 7 for X-NET and Modbus communication details.