

Serial server hardware interface manual

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Industrial Ethernet communication solution specialist

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Overview

1. Overview

The industry rail serial server , IP40 protection grade, can support networking function of serial device and centrally manage serial device and the main frame through network. The product supports 1~4 channel RS-485 to 2 channel 100M Ethernet, can realize dual IP and dual MAC addresses, and multi-network management, meets the demand of backup, adopts 35mm railed or wall-mounted installation, meets the different demands of the different application sites.

Serial server supports kinds of network protocols, TCP,UDP,ARP,ICMP,HTTP,DNS,DHCP,SNMP , Telnet , SSH protocol,etc., with prefect management function, supports visit control, quick setting, online update, etc.. Each serial supports 4-channel TCP or UDP conversation connection, supports kinds of work models, TCP Server,TCP Client,UDP Server,UDP Client, etc.. It supports WEB visit method. In addition, we provide match management setting tool based on Windows, through simple setting to make the networking of serial device. The network management system interface design is easy and convenient for operating, can bring a nice user experience for you.

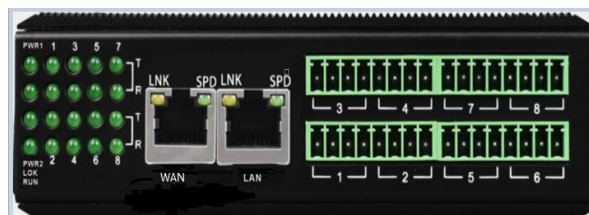
Hardware adopts no-fan, low power consumption, wide temperature and wide voltage design, passes the strict test complied with industry standard, adapts to industry spot environment has harsh demands for EMC, can be widely used in PLC control and management, building self-control, medical and health care automation system, measure instrument and environment motive monitoring system and so on.

It can use in many inserted network control application products:

- industry automation produce
- security access control: network access control, alarm equipment, infrared detector, remote card-reader

- Smart furniture device: smart furniture network gate, smart socket, smart switch
- network IO controller: industry remote IO input, remote relay control
- architecture smart and energy monitoring
- medical monitoring device

1.2 Photo(only 1, 2, 3, 4 serial interface are effected)



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Features

2.1 Features

- Adopt ARM 9 processor , main frequency 300MHz processor, operate Linux OS OPENWRT system;
- Support 2 channels of 10/100M self-adaptive Ethernet, provide dual IP and dual MAC addresses, meet the demand of multi-network management or network backup;
- Ethernet supports 10/100Base-T self-adaptive Ethernet interface; support auto-negotiation, full/half duplex, auto crossover line detect(MDI/MIDX)
- Serial supports 300bps-150000bps wire speed no-blocking communication
- Two modes of serial data interface :
 - Each channel only provide one of RS-485 , set at factory
 - Each channel provide all of RS-485 , can be set by dialing number ;
- Support TCP Server, TCP Client, UDP Server, UDP Client, etc
- Can realize the transparent conversion from Modbus-RTU to Modbus-TCP and read serial device data by network ;
- Support serial state and serial parameters monitoring, easy to know communication state
- Support communication through network gate or modem; support virtual serial drive visit mode and network automatically reconnect function;
- Flexible serial data frame distribution setting, meeting the subscriber packet distribution demand
- Support standard TCP/IP SOCKET application program visit, TCP support multi-connection, meeting 4 users monitor or manage serial device at the same time;
- On UDP mode, support single machine or multi machine communication, meeting several subscribers monitor or manage serial device at the same time;
- Support Windows setting tool, SSH, Telnet and WEB and other setting mode, support SNMP network management;

- Support local and remote system hardware update;
- Support wide range 9~55V AC and DC power input;
- Support internal isolation, redundant dual power input;
- Power support overload protection,reverse connection protection;
- Comply with the recommend of industry four grade electromagnetic compatibility;
- Super anti lightning function: anti lightning, anti inductive high voltage, anti surge, etc.;
- No-fan high efficient heat dissipation, reducing repairing time;
- Anode oxidation aluminum alloy shell, IP40 protection grade, can withstand the test of the harsh environment;
- Railed or wall-mounted installation;
- Wide temperature: working temperature -40°C~+85°C;
- All model of product pass the test of 100% baking machine.

2.2 Technical parameters

Protocol : comply IEEE 802.3ab , IEEE 802.3z

Rate : 10/100 self-adaptive, full/half duplex self-adaptive

MAC address table : 4096 MAC address

Physical port : RJ45 port support Auto-MDIX

Serial interface standard

EIA/TIA-232 RS-232 (ITU-T V.28)

EIA/TIA-422 RS-422 (ITU-T V.11)

EIA/TIA-485 RS-485 (ISO/IEC8284)

Serial interface:

RS-422: TxD+ TxD- RxD+ RxD- GND

RS-485 4 wires: TxD+ TxD- RxD+ RxD- GND RS-485 2 wires: A(corresponding to TX+)

B(corresponding to TX-) GND

RS-232: RXD TXD GND

Environmental indicators

Working temperature : -40°C—+85°C

Storage temperature : -40°C—+85°C

Working humidity : 0%—95% (no condensation)

MTBF : > 100,000 hours

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Technical

specifications

3.1 Technical specifications

Product function description	Transmitting 4 channels of RS485 serial data on Ethernet, industry railed
Service port description	4 ports Rs485 serial ports, 2 FE electric ports
Power	redundant dual power input DC9~55V or AC7~43V, power consumption<5W overload protection:support; reverse connection protection: support; redundancy protection: support access terminal: 4 cores 5.08mm space plug-in terminal
Size	Shell: IP40 protection grade, aluminum alloy material size: 133mm(length) x 120mm(width) x 40.0mm(height) Installation: railed installation,wall-mounted installation
Weight	0.65Kg/piece

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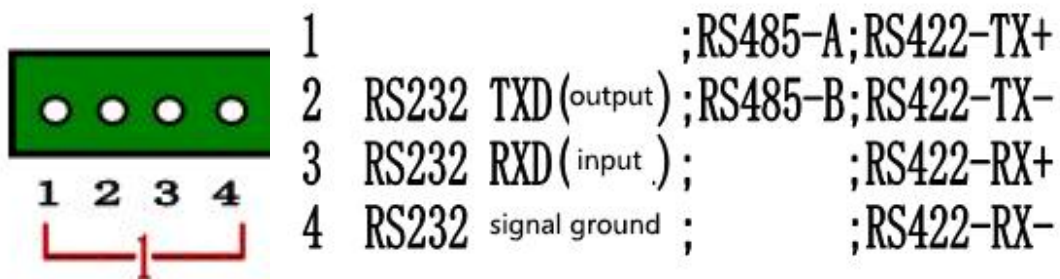
Hardware

port definition

4.1 Interface definition

Note: the following serial interface only can be chosen one ,they can not be used at the same time.(If you want one supporting three kinds of serial port at the same time, please choose the version of supporting three kinds)

RS232:



4 Route 1 RS485 shield ground

8 Route 2 RS485 shield ground

RS422 and four wires RS485 (4W) :



Data device

data terminal device

Two wires RS485 (2W)



Data device

data terminal device

4.2 Indicator lights definitions

Name	Color	Status	Description
PWR1	Green	On	Local device power 1 is connected
		Off	Local device power 1 is disconnected
PWR2	Green	On	Local device power 2 is connected
		Off	Local device power 2 is disconnected
LOK	Green	On	Connected successfully
		Off	No connection
RUN	Green	Flash	Device is normally working
		Off	Device program working in abnormal
RX	Green	Flash	1-4 channels of serial is receiving data normally
		Off	There is no data received on 1-8 channels of serial
TX	Green	Flash	1-4 channels of serial is transmitting data normally
		Off	There is no data transmitted on 1-8 channels of serial

4.3 Multi-channel switch definition

The switch to reset the factory hardware setting of the device is the eighth pin of the multi-channel selector switch:



Restore factory settings: Pull up the eighth pin before power on, after power on, wait until the running indicator flashes and then pause. Then dial down the dial code, and the device powered off and restarted.

Hardware change serial port module type: the first and second serial ports are controlled by 1, 2 dial codes, the serial is RS232 when it is dialed all down, the serial is RS485 when it is dialed all up, and the serial is RS422 when there are up and down. The third and fourth serial port is controlled by dialing 3, 4, the serial is RS232 when it is dialed all down, the serial is RS485 when it is dialed all up, and the serial is RS422 when there are up and down.