

KGW3204/KPS3204Serial Protocol Converters

Hardware Installation Manual

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The logo consists of the word "KYLAND" in a bold, italicized, sans-serif font. The letter "Y" is stylized with a diagonal slash through it.

KGW3204/KPS3204 Serial Protocol Converters**Hardware Installation Manual**

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Safety Instructions

This product has good and reliable performance within the design range, but it is necessary to avoid human damage or damage to the equipment. Before using the device, please read this manual carefully to ensure the safety of the user and the device. Please keep this manual in a safe place after reading it. For future reference. Our company is not responsible for personal injury or equipment damage caused by violating the safety instructions.

- Do not place or install the device near water or humid places, and keep the relative humidity around the device within 5%~95% range without condensation.
- Do not place or install the device in a place with high magnetism, strong vibration or high temperature, and keep the working and storage temperature of the device within the specified range.
- within.
- Keep the equipment in place to prevent falling; keep the equipment installed tightly to prevent slipping.
- Keep the equipment and surrounding environment clean, wipe with a dry soft cotton cloth if necessary.
- Do not place sundries on the device or cables, keep the device dissipating heat and the cables smoothly and without knots.
- Wear anti-static gloves or take other safety precautions when operating the device.
- Avoid bare metal wires when wiring, and prevent metal wires from being oxidized at high temperature or combined with electricity.
- Equipment must be installed in accordance with national and local electrical regulations.
- Before powering on, confirm the power supply specifications supported by the device to prevent damage to the device due to excessive voltage.
- Keep the power plug and other equipment connections firmly connected to prevent poor contact from affecting the use.
- Do not plug in or unplug the power supply with wet hands, and do not touch the equipment and its supporting parts with wet hands before the power is turned off.
- Before operating live equipment, please remove jewelry (rings, bracelets, watches, necklaces, etc.) or other metal objects to prevent electric shock
- or burns.
- During lightning weather, do not operate the device or connect or disconnect cables.
- Please use the connectors and cables approved by our market personnel or technical support personnel to avoid
- The specification affects the function of the module.
- Please do not disassemble the equipment by yourself. When the equipment is faulty or suspected to be faulty, please consult our marketing personnel or technical support personnel.
- When the equipment parts are lost, please purchase replacement parts under the guidance of our market personnel or technical support personnel match.
- It is necessary to scrap the equipment in accordance with relevant national regulations to reduce environmental pollution.
- In the following cases, please disconnect the power immediately and contact our company.
- Water has entered the device.

- The device is broken or the case is cracked.
- The device is not working abnormally or its performance has changed.
- The device produces odors, smoke, or unusual noises.
- The equipment should be installed in a suitable place, and if the equipment is not used correctly according to the requirements of the company, the protective measures provided by the equipment will be affected.

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1 Product description

KGW3204/KPS3204 It is our company for factory automation, wind power, distribution network automation, subway PIS, electricity SCADA, Protocol converters developed in sewage treatment, metallurgy, intelligent transportation, rail transportation and other industries, support Modbus Gateways and Serial Servers model selection. With dual power and dual IP Address input, built-in serial port 2KV Electromagnetic isolation protection. Dial by setting code switch to enable or disable the serial port RS-485 terminating resistors.

This series of equipment supports rail mounting. KGW3204/KPS3204 Configurable 2 x 10/100Base-T(X) Ethernet interface, 4 x RS-232/RS-422/RS-485 Serial interface, the specific configuration is shown in the table below.

Table 1 Configuration table

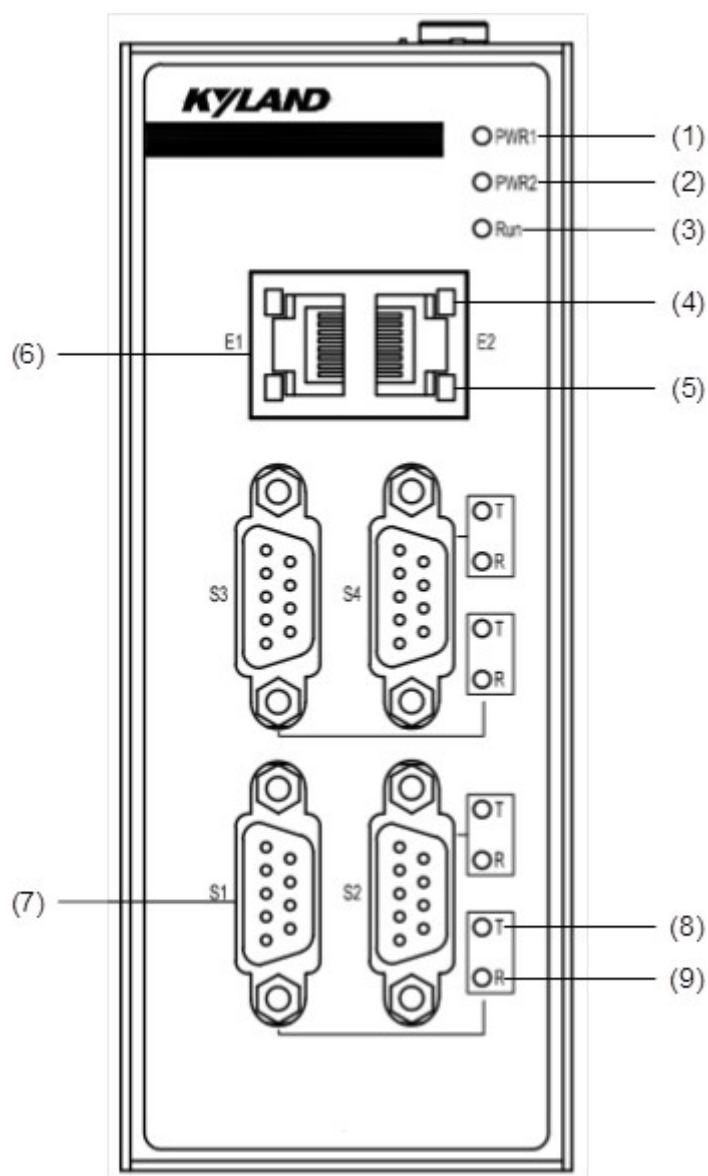
Product number	KGW3204-2T4D-L17- L17 KPS3204-2T4D-L17- L17
Code definition	Code selection
KGW/KPS	KGW: Modbus Gateway Product Model, Operating Temperature: -40°C~+75°C KPS: Serial server product model, operating temperature: -40°C~+75°C
Ports: port	2T4D
	Note: 2 x 10/100Base-T(X) Electrical interface, 4 x RS-232/RS-422/RS-485 serial interface
PWR1-PWR2: power input	L+-N:24VDC (12-48VDC, redundant input)

2 Structure and interface

**Notice:**

In order to keep the interface clean and ensure the operation performance of the device, it is recommended that the user order the interface dust cover separately according to the interface type of the device.

2.1 Front panel



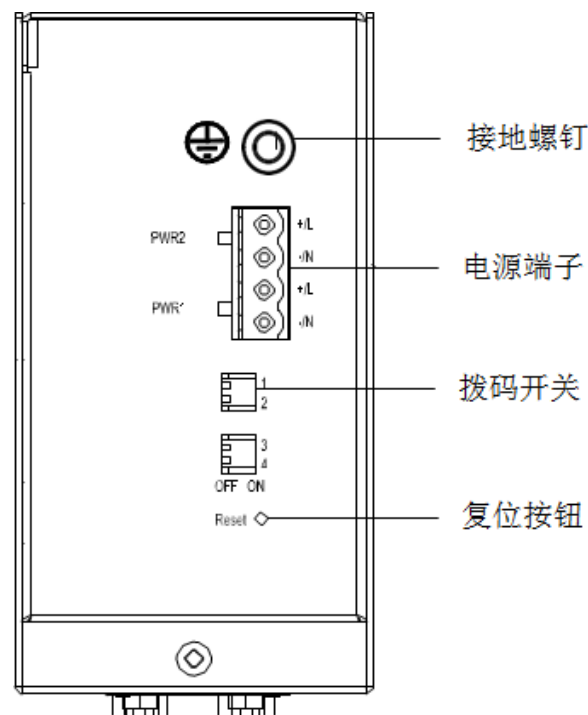
Picture 1 Front panel callout

Table 2 Front panel label description

Label serial number	Panel identification	Description
(1)	PWR1	Power supply1indicator light
(2)	PWR1	Power supply2indicator light
(3)	Run	Device running indicator
(4)	-	10/100Base-T(X)Ethernet interface connection status indicator (green light)
(5)	-	10/100Base-T(X)Ethernet interface speed indicator (yellow light)
(6)	E1/E2	10/100Base-T(X)Ethernet interface
(7)	Sn-T	Serial interface sending data indicator (green light)
(8)	Sn	RS-232/RS-422/RS-485serial interface
(9)	Sn-R	Serial interface receiving data indicator (green light)

Note: in the above table n value of 1,2,3,4, like S1 Indicates serial port1.

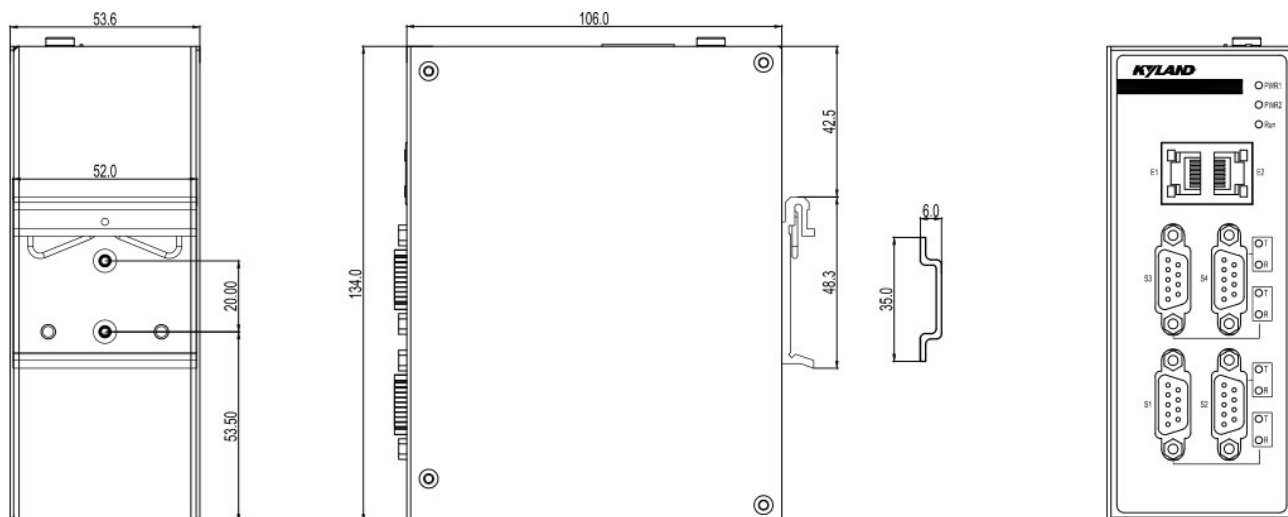
2.2 Upper Cover



Picture 2 Labeling of the upper cover

3 Install

3.1 Dimensions



Picture 3 KGW3204/KPS3204 Installation dimension drawing (unit: mm)

Notice:



- The case of the device is part of the cooling system of the whole machine. During normal operation, the case will heat up. Do not cover the case when the device is working.
- The pictures in this manual are schematic diagrams, please refer to the actual product for details.

3.2 Installation method and steps

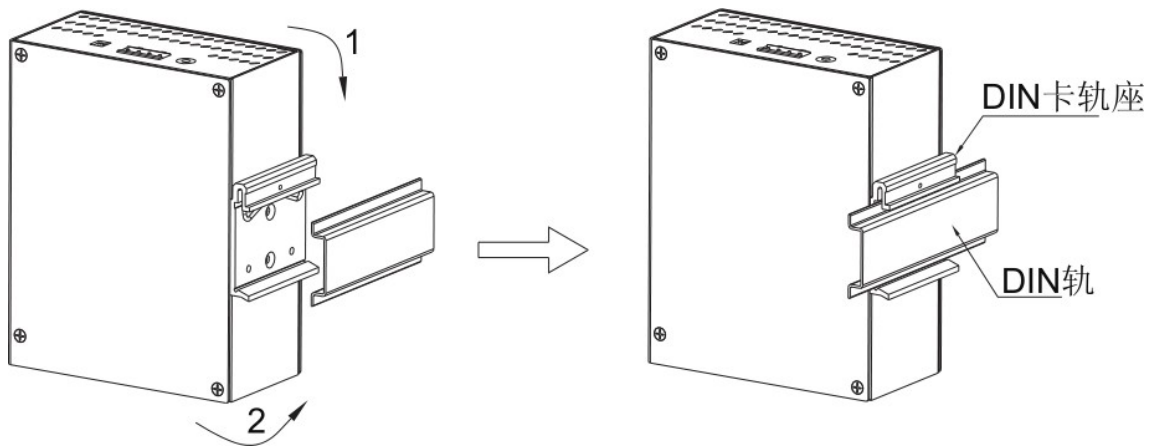
This device is rail mounted. Before installing the device, please confirm the following installation requirements:

- 1) Environmental requirements: operating temperature ($-40^{\circ}\text{C} \sim +75^{\circ}\text{C}$) need to correspond to the product model (see the table for details 1), Relative humidity 5% ~ 95% (no condensation).
- 2) Power requirements: Make sure the operating voltage matches the voltage range marked on the device.
- 3) Ground resistance requirements: $<5\Omega$.
- 4) Avoid direct sunlight, away from heat sources or areas with strong electromagnetic interference.
- 5) The installation environment satisfies ATEX/IECEX Certified IP40 requirements, do not touch the device directly with your hands to avoid causing personal injury.

3.2.1 Card rail installation

Step 1, select the installation location of the equipment, and ensure that the installation space is sufficient and the heat dissipation is smooth (dimensions (W×H×D): 54mm×135mm×106mm).

Step 2, snap the upper part of the caliper seat on the DIN On the card rail, apply a little upward force on the lower end of the device, and press the arrow in the figure below. 2 direction Turn the device until the device is securely mounted to the DIN Complete the installation on the rail.

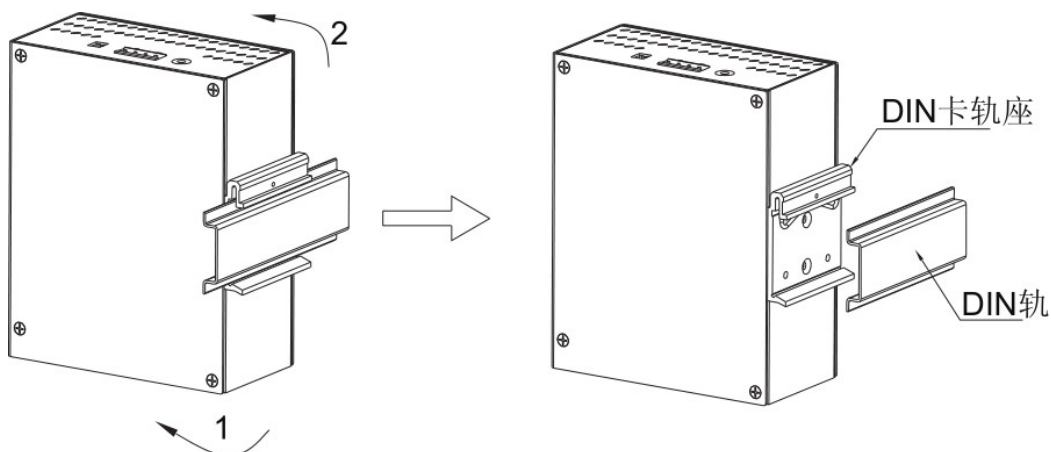


Picture 4 Card rail installation diagram

3.2.2 Card rail removal

Step 1, press down on the device and press the arrow 1 Turn the device in the direction until the lower end of the device disengages DIN rail.

Step 2, lift the device up and press the arrow 2 Turn the device in the direction until the device disengages DIN Rails are disassembled.



Picture 5 Disassembly drawing of card rail

3.2.3 Installation clearance

The installation clearance needs to be taken into consideration when the product is installed. Recommended installation clearance:

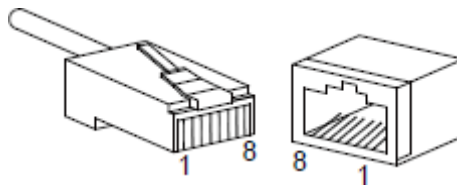
- Top and bottom: 30 mm
- Both sides: 20 mm
- Front: 30 mm

4 Wiring

4.1 10/100Base-T(X)Ethernet interface

10/100Base-T(X)Ethernet interface adopts standardRJ45connector, with self-adaptive function, can be automatically configured to 10M/100Mstatus and full-duplex/half-duplex mode of operation, and supports cable MDI/MDI-X Self-identification function, i.e. and the end device and the network device can be connected using a straight-through network cable or a cross-over network cable.

- Interface definition



Picture 6 RJ45Interface pin number

Table 3 10/100Base-T(X)RJ45Interface pin definition

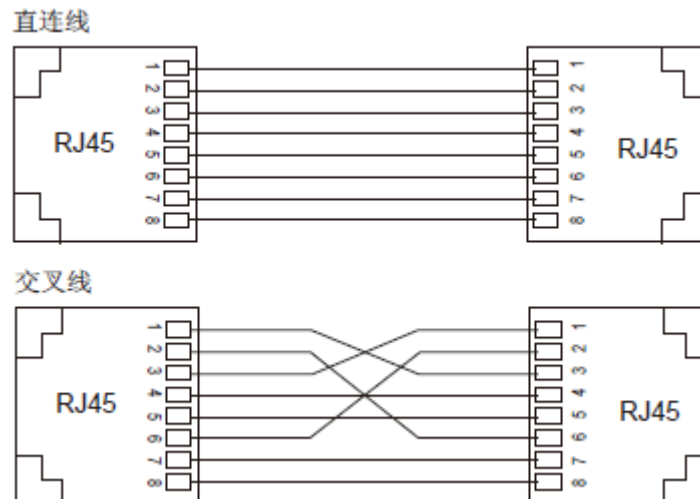
pin	MDI-X signal name	MDI signal name
1	Receive data + (RD+)	send data + (TD+)
2	Receive data- (RD-)	send data- (TD-)
3	send data + (TD+)	Receive data + (RD+)
6	send data- (TD-)	Receive data- (RD-)
4,5,7,8	unused	unused



Note:

"+" "-"Represents the level polarity.

-Connector Sequence



Picture 7 10/100Base-T(X) RJ45 Connector straight line, cross line interconnection



Note:

RJ45 Connector wiring as standard 568B (1-orange white, 2-orange, 3-green and white, 4-blue, 5-blue and white, 6-green, 7-brown and white, 8-brown).

4.2 RS-232/RS-422/RS-485interface

RS-232/RS-422/RS-485 The interface adopts the standard DB9 male interface, RS-232 Interface support RTS/CTS. Book The serial interface pin definitions supported by the device are shown in the table below.

Table 4 Serial Interface Pin Definition

Pin	RS-232	RS-422	RS-485
1	CTS	RxD-(B)	-
2	RxD	RxD+(A)	-
3	TxD	TxD-(Z)	Data-(B)
4	RTS	TxD+(Y)	Data+(A)
5	GND	GND	GND
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-

4.3 Ground

The normal grounding of the equipment is an important guarantee for the lightning protection and anti-interference of the equipment, so the user must connect the grounding wire correctly. and power up

Ground before disconnecting the grounding wire after power off.

The upper cover of the device has a ground screw (see fig.2), that is, the ground wire of the chassis, called "chassis ground". Connect one end of the ground wire

After being crimped with the cold-pressed terminal, fix it at the "chassis ground" with a grounding screw, and the other end of the grounding wire is reliably connected to the ground.



Note:

Cross-sectional area of ground wire 2.5 mm² Above; grounding resistance requirements: <5 Om.

4.4 Power terminal

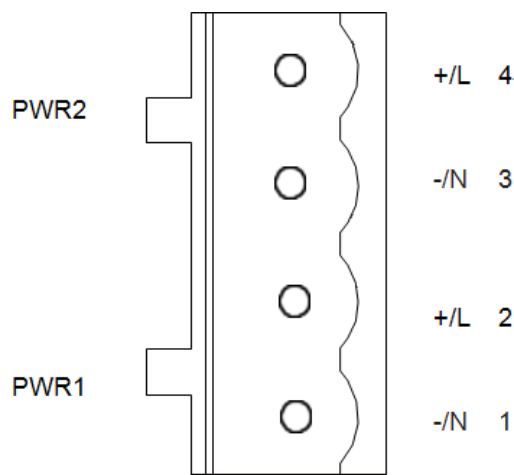
The power terminal is located on the upper cover of the device, and the power cable is connected to the device through the power terminal to supply power to the device. This series of equipment supports redundant power source input, using 4 pin 5.08mmSpacing plug-in terminals, when any one of the power supply fails, the equipment can be with uninterrupted normal operation, the reliability of network operation is improved.



Note:

Cross-sectional area of power cord 0.75 mm² above (maximum cross-sectional area of wiring 2.5 mm²); grounding resistance requirements: <5 Om.

- 4 pin 5.08 mm Spacing plug-in terminals



Picture 8 4 pin 5.08 mm Spacing Terminals

4 pin 5.08mmSpacing terminals are defined as shown in the table below.

Table 5 4 pin 5.08 mm Spacing Terminal Definitions

Terminal number	signal name	DC Power Definition
1	N/-	PWR1: -
2	L/+	PWR1: +

3	N/-	PWR2: -
4	L/+	PWR2: +

- Wiring and Installation

Step 1, according to 4.3 Steps Ground the "chassis ground" of the device well.

Step 2, remove the power terminal plug from the device.

Step 3, place one end of the power cord and ground wire according to the meter 5 Requires insertion into the power terminal plug and secures the power cord and ground Wire.

Step 4, insert the plug of the connected power cord back into the corresponding power terminal socket of the device.

Step 5: According to the power supply requirements identified by the device, connect the other end of the power cord to the corresponding external power supply system, check whether the corresponding power indicator of the device turns on, if the light is on, it means the power connection is correct. Wiring and installation should meet the following specifications.

Table 6 Wiring and Installation Specifications

Terminal Type	Torque requirement	Wiring cross-sectional area range (AWG)
Plug-in terminals	WEIDMUELLER Terminal: 5.0 lb-in	12-24



Notice:

- Before connecting to the power supply, please confirm whether the power supply is consistent with the power supply requirements marked on the device to avoid damage to the device.
- Warning: The ambient temperature of the cable used should meet the 85°C

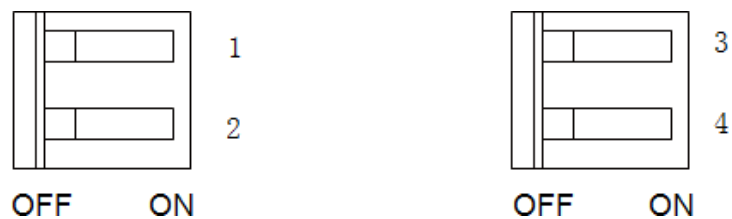


Warn:

- Do not touch any exposed wires, terminals and parts marked with dangerous voltage signs in the product to avoid personal injury.
- Do not disassemble parts or plug or unplug connectors during power-on.

4.5 DIP switch

There are four DIP switches on the upper cover of the device, each DIP switch has ON, OFF Both states, the default configuration is OFF state. DIP switch can achieve RS-485 Enable and disable the terminal matching resistance of serial port, DIP switch 1-4 correspond respectively serial port S1-S4.



Picture 9 DIP switch

Table 7 DIP switch function description

DIP switch	State	Function description
1	ON	enable serial portS1ofRS-485Termination resistor
	OFF	Disable serial portS1ofRS-485Termination resistor
2	ON	enable serial portS2ofRS-485Termination resistor
	OFF	Disable serial portS2ofRS-485Termination resistor
3	ON	enable serial portS3ofRS-485Termination resistor
	OFF	Disable serial portS3ofRS-485Termination resistor
4	ON	enable serial portS4ofRS-485Termination resistor
	OFF	Disable serial portS4ofRS-485Termination resistor

5 Reset

The reset button is located on the upper cover of the device and has the function of restoring the default configuration. Keep pressing the reset button for more than 5 seconds and let go to restore the default configuration (including IP address) and reboot, the default IP address is E1: 192.168.0.249, E2: 192.168.1.249.

6 LED light status

Table 8 Description of Front Panel Indicators

LED		State	Description
Power supply 1 Indicator -PWR1		Bright	input power1connected and running fine
		extinguish	input power1Not connected or running abnormally
Power supply 2 Indicator -PWR2		Bright	input power2connected and running fine
		extinguish	input power2Not connected or running abnormally
Running lights-Run		Always bright	When the device is powered on
		shiny	The equipment system is running normally
		extinguish	Device is not powered on
			
10/100Base-T(X) Ethernet interface rate Indicator light (yellow light)		Bright	100M working status (i.e.100Base-TX)
		extinguish	10M working status (i.e.10Base-T) or no connection
10/100Base-T(X) Ethernet interface connection Status indicator (green light)		Bright	Port has established a valid network connection
		shiny	Port has network activity
		extinguish	Port does not have a valid network connection
Sn-T (green light)		shiny	serial portnThere are data signals to send
		extinguish	serial portnno data transfer
Sn-R (green light)		shiny	serial portndata signal reception
		extinguish	serial portnno data transfer

Note: in the above table n value of 1,2,3,4, like S1 Indicates serial port1.

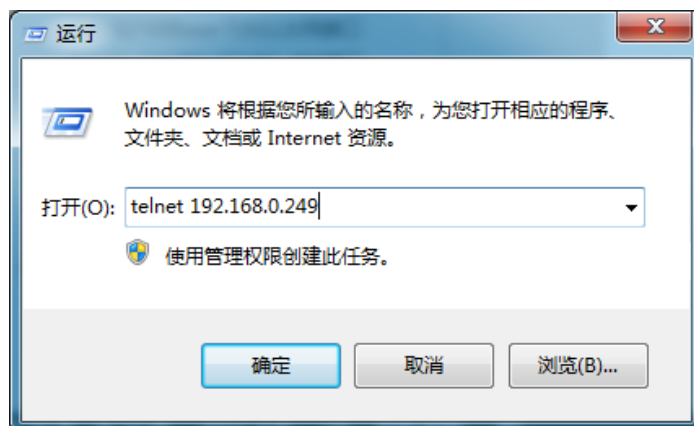
7 Access

The device can be accessed in the following two ways.

7.1 Telnet access

Step 1, connect with a network cable PC The network port and the Ethernet interface of the device.

Step 2, in the Start → Run dialog box, enter "telnet *IP-address*". For example, equipment IP address is 192.168.0.249time (device default IP address), enter "telnet 192.168.0.249".



Picture 10 Telnet access

Step 3, click OK to enter Telnet command line interface, you can enter Shell command to operate.

7.2 Web access

Step 1, connect with a network cable PC The network port and the Ethernet interface of the device.

Step 2, enter the device's IP address, enter the default username after opening the login dialog (admin) and the default password (admin) to successfully log in to the device Web Admin page.



Note:

- Recommended UseIE8.0and above browsers.
- For device access and other specific operations, please refer to the accompanying user manual (see the CD-ROM supplied with the product).

8 Basic Performance and Specifications

Power supply		
Power identification	Input rated voltage range	Input maximum voltage range
L17	24VDC	12-48VDC
Access terminal	4 pin 5.08mm Spacing Terminals	
Rated power		
rated power	3.2W	
Mechanical structure		
Chassis	aluminum, fanless	
Protection class	IP40	
Installation method	Card rail installation	
Size(W×H×D)	54mm×135mm×106mm	
Weight	320g	
Environment		
Operating temperature	- 40℃～+75℃	
storage temperature	- 40℃～+85℃	
Relative humidity	5%~95%no condensation	
Altitude	Gundam2000Meter	
MTBF		
MTBF	2508148 h	
Warranty period		
Warranty period	5 years	



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about KYLAND

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