SICOM3005A Switching Serial Port Server

Hardware Installation Manual

Publication Date: May. 2014

Version: V0.1

KYLAND

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Hardware Installation Manual

Disclaimer: Kyland Technology Co., Ltd. tries to keep the content of this manual as accurate and as updated as possible. This document is not guaranteed to be error-free, and we reserve the right to amend it without notice to users.

Notice for Safety Operation

The product performs reliably as long as it is used according to the guidance. Artificial damage or destruction of the device should be avoided. Before using the device, read this notice carefully for personal and equipment safety. Please keep the manual for further reference. Kyland is not liable to any personal or equipment damage caused by violation of this notice.

- Do not place the device near water sources or damp areas. Keep the ambient relative humidity within the range from 5% to 95% (non-condensing).
- Do not place the device in an environment with high magnetic field, strong shock, or high temperature. Keep the working and storage temperatures within the allowed range.
- Install and place the device securely and firmly.
- Please keep the device clean; if necessary, wipe it with a soft cotton cloth.
- Do not place any irrelevant materials on the device or cables. Ensure adequate heat dissipation and tidy cable layout without knots.
- Wear antistatic gloves or take other protective measures when operating the device.
- Avoid any exposed metal wires because they may be oxidized or electrified.
- Install the device in accordance with related national and local regulations.
- Before power-on, make sure the power supply is within the allowed range of the device. High voltage may damage the device.
- Power connectors and other connectors should be firmly interconnected.
- Do not plug in or out the power supply with wet hands. When the device is powered on, do not touch the device or any parts with wet hands.
- Before operating a device connected to a power cable, remove all jewelry (such as rings, bracelets, watches, and necklaces) or any other metal objects, because they may cause electric shock or burns.
- Do not operate the device or connect or disconnect cables during an electrical storm.
- Use compatible connectors and cables. If you are not sure, contact our sales or technical support personnel for confirmation.

- Do not disassemble the device by yourself. When an anomaly occurs, contact our sales or technical support personnel.

- If any part is lost, contact our sales or technical support personnel to purchase the substitute. Do not purchase parts from other channels.

- Dispose of the device in accordance with relevant national provisions, preventing environmental pollution.

In the following cases, please immediately shut down your power supply and contact your Kyland representative:

- Water gets into the equipment.

- Equipment damage or shell damage.

- Equipment operation or performance has abnormally changed.

- The equipment emits odor, smoke or abnormal noise.

Contents

1 Product Overview

SICOM3005A includes a series of access and aggregation devices tailored specifically for power. Equipped with dual systems, the series devices can serve as switches and serial port server. The device is easy to install, and it occupies only a small space. A switch or serial port server for network access does not need to be separately purchased, greatly reducing the power consumption and cost. SICOM3005A supports mutual conversion between RS232/485/422 and Ethernet data with the serial port server system. The device supports data transmission over network cable.

SICOM3005A provides powerful network management functions. The device can be managed through CLI, Telnet, Web, SNMP-based network management software.

SICOM3005A supports DIN rail mounting and panel mounting. It provides up to two 100Base-FX Ethernet ports, four 10/100Base-T(X) Ethernet ports, and four RS232/485/422 serial ports. For details, see the following table.

Table 1 SICOM3005A Models

Model	Port			Power Supply
	100Base-FX Ethernet port	10/100Base-T(X) Ethernet port	RS232/485/ 422 serial port	
SICOM3005A-2S4T-4D	2	4	4	L5 (12DCW, redundant) L2 (24DCW, redundant) HV (220AC/DCW: DC: redundant AC: single-PWR1)
SICOM3005A-2M4T-4D	2	4	4	
SICOM3005A-2S4T	2	4	--	
SICOM3005A-2M4T	2	4	--	
SICOM3005A-6T-4D	--	6	4	
SICOM3005A-6T	--	6	--	

NOTE:

We reserve the right to amend the product information listed in the table above without notice.

To obtain the latest information, contact our sales or technical support personnel.

2 Structure and Interface

![CAUTION] **CAUTION:**

It is recommended to purchase the port dustproof shield (optional) to keep ports clean and ensure
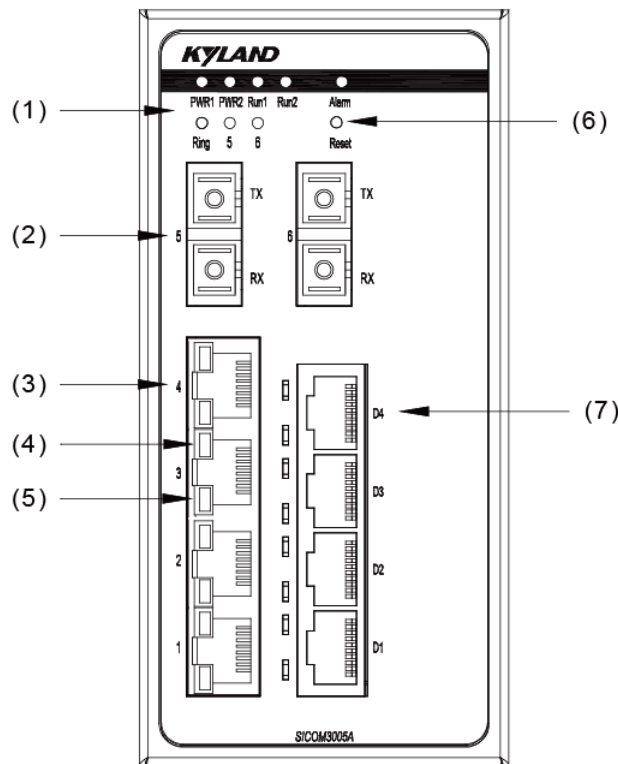
device performance.

2.1 Front Panel

Figure 1 Front Panel

Table 2 Description of Front Panel

No.	Identifier	Description
(1)	PWR1	Power 1 LED
	PWR2	Power 2 LED
	Run1	Switch Running LED
	Run2	Serial port server Running LED
	Ring	Ring LED
	Alarm	Alarm LED

|	5-6	100Base-FX Ethernet port LEDs
(2)	5-6 , TX / RX	two 100Base-FX Ethernet ports
(3)	1-4	four 10/100Base-T(X) Ethernet ports
(4)	--	10/100Base-T(X) Ethernet port speed LED (yellow)
(5)	--	10/100Base-T(X) Ethernet port connection status LED (green)
(6)	Reset	Reset button
(7)	D1-D4	four serial ports and serial port LEDS (upper LED indicates the status of receiving, while lower LED indicates the status of transmitting)

2.2 Top Panel
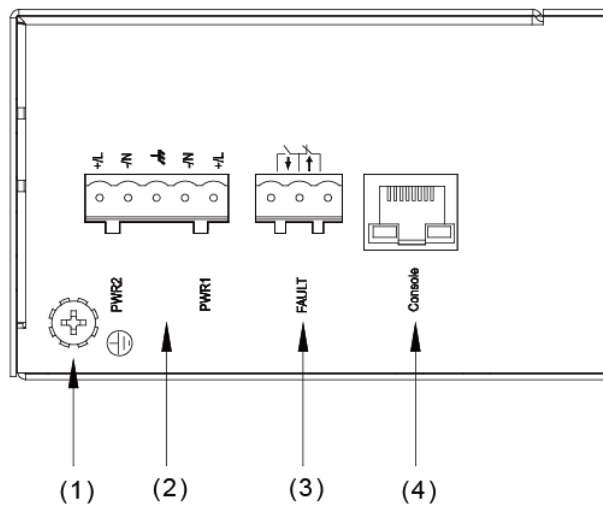
Figure 2 Top Panel

Table 3 Description of the Top Panel

No.	Identifier	Description
(1)	--	Grounding screw
(2)	PWR1 / PWR2	Power terminal block
(3)	FAULT	Alarm terminal block
(4)	Console	Console port

3 Mounting

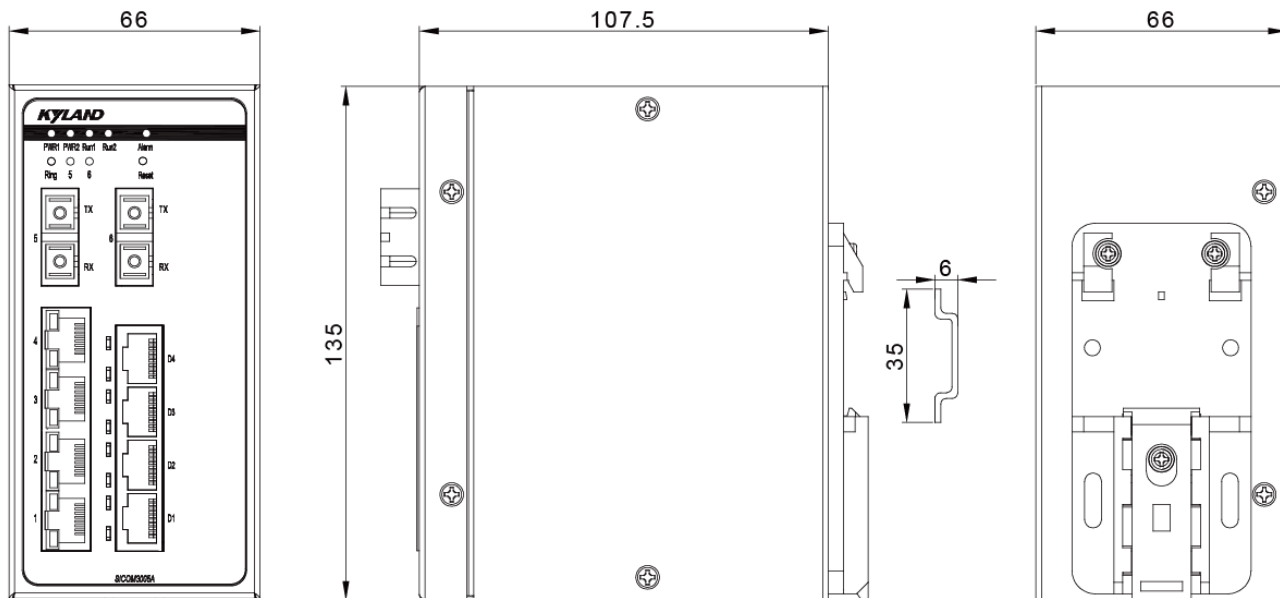## 3.1 Dimension Drawing (Unit: mm)
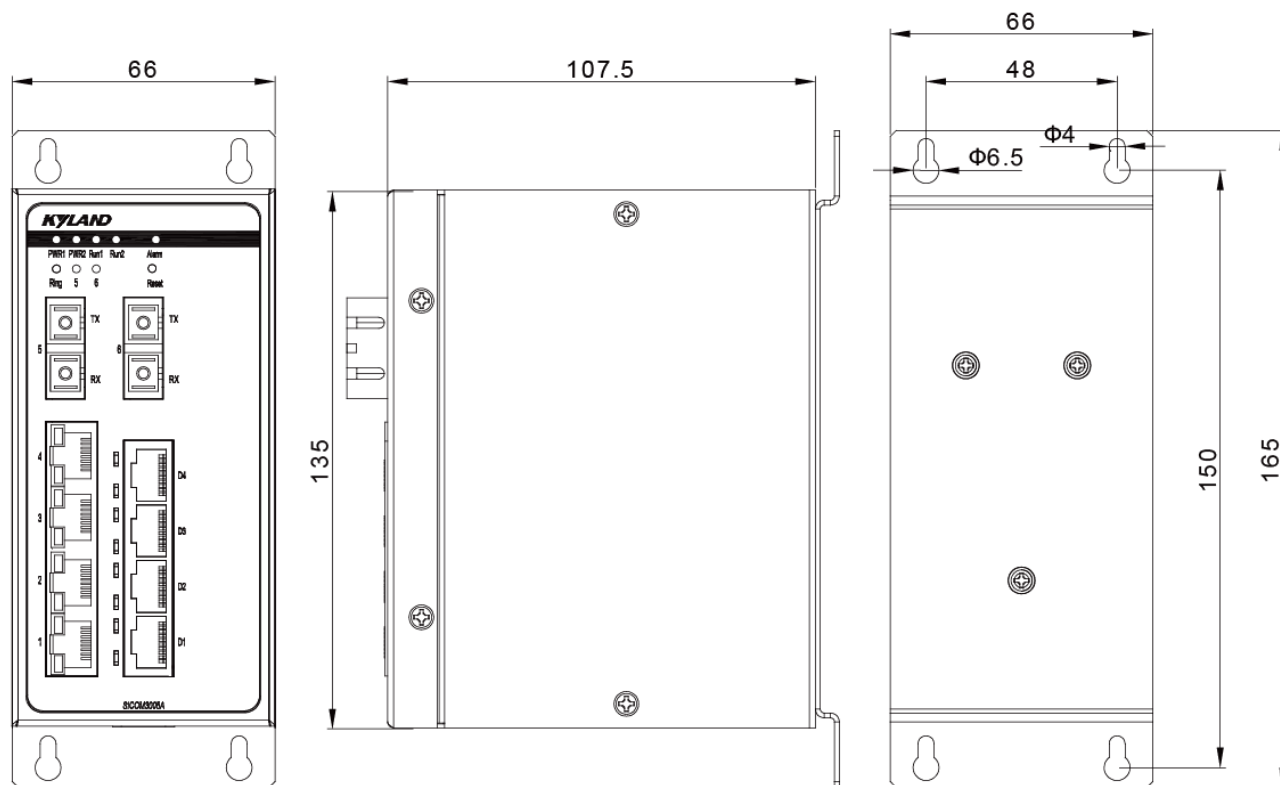

Figure 3 Dimensions for DIN-rail Mounting

Figure 4 Dimensions for Panel Mounting

> **CAUTION:**
> ● As part of the heat dissipation system, the device housing becomes hot during operation. Please use caution when coming in contact and avoid covering the device housing when the device is running.
> ● The figures in this chapter are only for reference.

3.2 Mounting Modes and Steps

The device supports both DIN-rail mounting and panel mounting. Before installation, make sure that the following requirements are met.

1) Environment: temperature (-40℃ to 75℃), ambient relative humidity (5% to 95%, non-condensing)

2) Power requirement: The power input is within the voltage range of the device.

3) Grounding resistance: <5Ω

4) No direct sunlight, distant from heat source and areas with strong electromagnetic interference.

3.2.1 DIN-rail Mounting

● Mounting

Step 1: Select the mounting position for the device and guarantee adequate space and heat dissipation for it (dimensions: 66mm×135mm×107.5mm).

Step 2: Insert the connecting seat onto the top of the DIN rail, and push the bottom of the device inward and upward to ensure the DIN rail fits in the connecting seat. Make sure the device is firmly installed on the DIN rail, as shown in the following figure.
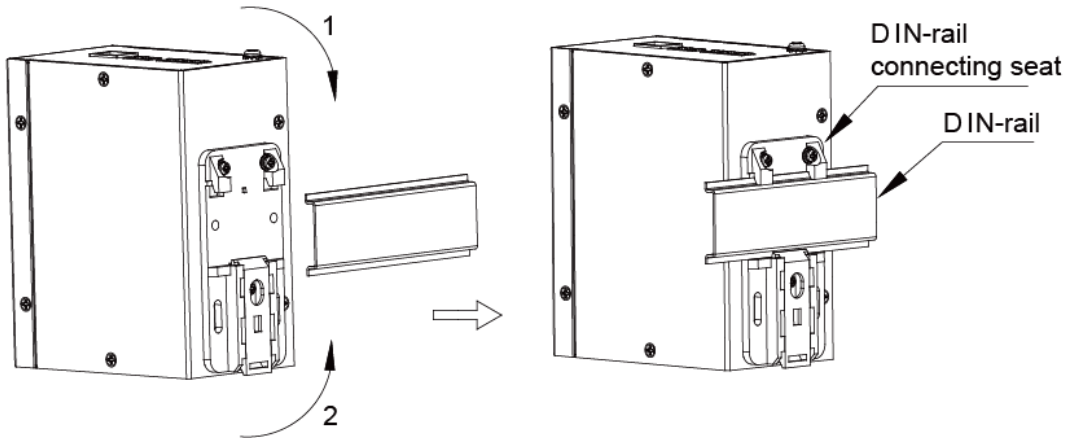
Figure 5 DIN-rail Mounting

- Dismounting

Step 1: Insert the head of a screwdriver into the opening of the spring locking piece at the bottom from the left. Lift the handle of the screwdriver to open the spring locking piece of the connecting seat, as shown on the left of the following figure.

Step 2: Move the device in direction 2 until the bottom of the device is detached from the DIN rail. Then move the device in direction 3 and uplift the device until the top of the connecting seat is detached from the DIN rail. In this way, the device is removed from the DIN rail completely.
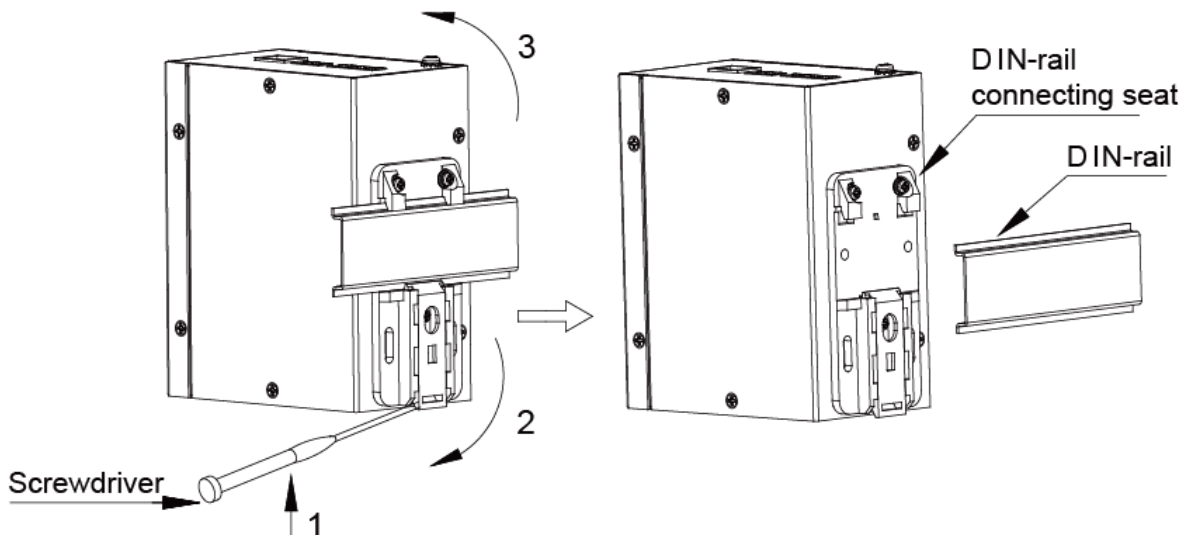

Figure 6 DIN-rail Dismounting

3.2.2 Panel Mounting

> **NOTE:**
>
> To adopt panel mounting, you need to purchase the plate for panel mounting (optional).

● Mounting

Step 1: Use screws to fix the plate for panel mounting to the rear panel of the device.

Step 2: Select the mounting position (on a wall or inner wall of a cabinet) for the device and guarantee adequate space and heat dissipation for it (dimensions: 66mm×135mm×107.5mm).

Step 3: Punch four holes in the selected position according to the dimensions for panel mounting. Insert four screws into the four holes respectively, and turn the screws with a screwdriver until about a 5mm distance is left between each screw head and the wall.

Step 4: Align the four mounting holes on the plate for panel mounting with the four screws. Make the screws pass through the Φ6.5 positions in the following figure. Move the device in direction 1 until the four screws are in the Φ4 positions. Then tighten the screws to complete mounting.
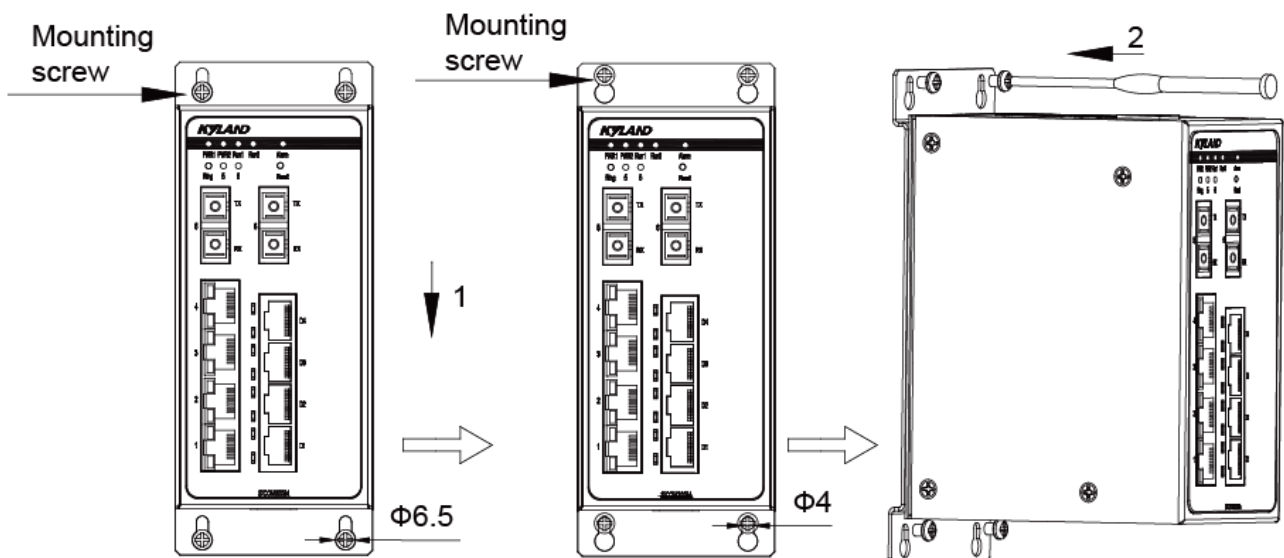

Figure 7 Panel Mounting

● Dismounting

Step 1: Loosen the four screws with a screwdriver. Move the device upward until the four screws are in the Φ6.5 positions in the following figure. Then remove the plate for panel mounting from the four screws to detach the device from the wall or inner wall of the cabinet.

Step 2: Loosen the screws completely with a screwdriver. Remove them from the wall or inner wall of the cabinet. Then remove the plate for panel mounting from the rear panel to complete dismounting the device.
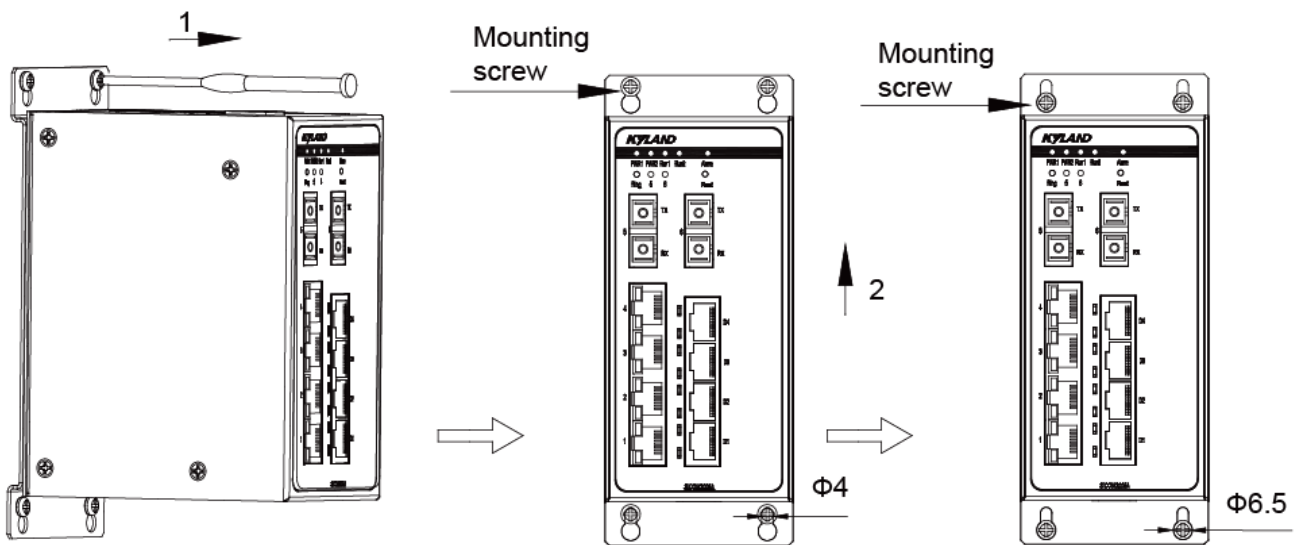

Figure 8 Panel Dismounting

4 Cable Connection

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

10/100Base-T(X) Ethernet port is equipped with RJ45 connector. The port is self-adaptive. It can automatically configure itself to work in 10M or 100M state, full or half duplex mode. The port can also adapt to MDI or MDI-X connection automatically. You can connect the port to a terminal or network device with a straight-through or cross-over cable.

● Pin Definition
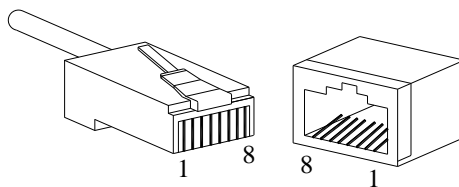
Figure 9 RJ45 Port

Table 4 Pin Definitions of 10/100Base-T(X) RJ45 Port

Pin	MDI-X Signal	MDI Signal
1	Receive Data+ (RD+)	Transmit Data+ (TD+)
2	Receive Data- (RD-)	Transmit Data- (TD-)
3	Transmit Data+ (TD+)	Receive Data+ (RD+)
6	Transmit Data- (TD-)	Receive Data- (RD-)
4, 5, 7, 8	Unused	Unused

NOTE:

"+" and "-" indicate level polarities.

● Wiring Sequence

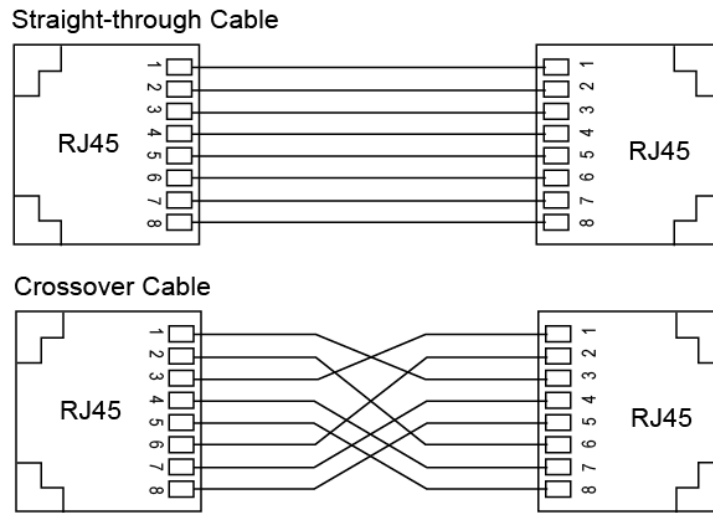Straight-through Cable

Crossover Cable

Figure 10 Connection Using Straight-through/Cross-over Cable

NOTE:

The color of the cable for RJ45 connector meets the 568B standard: 1-orange and white, 2-orange, 3-green and white, 4-blue, 5-blue and white, 6-green, 7-brown and white, and 8-brown.

4.2 100Base-FX Ethernet Port

100Base-FX port is equipped with FC/ST/SC connector, and each port consists of TX (transmit) port and RX (receive) port. To enable communication between Device A and Device B, connect the TX (transmit) port of Device A to the RX (receive) port of Device B, and the RX (receive) port of Device A to the TX (transmit) port of Device B. The following figure shows the cable connection of the 100Base-FX Ethernet port. (The SC port is used as an example. ST/FC cable connection is the same with SC.)
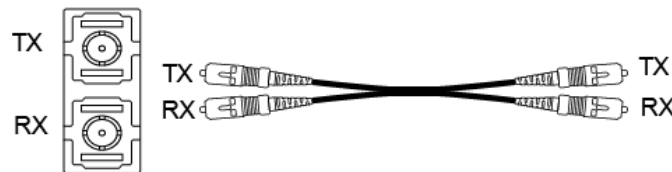
Figure 11 Cable Connection of 100Base-FX Ethernet Port

CAUTION:

A laser is used to transmit signals in fiber cables. The laser meets the requirements of level 1

laser products. Routine operation is not harmful to your eyes, but do not look directly at the

100Base-FX Ethernet port when the device is powered on.

4.3 RS232/485/422 Serial Port

This device provides four serial data ports. They support RS232, RS422, and RS485 modes.

You can configure the specific mode as needed. Only one mode can be configured for each

port at the same time.
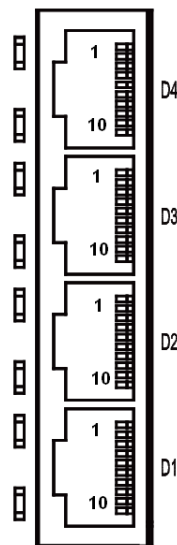
Figure 12 Srial data port

Table 5 Definitions of srial data port

Pin	RS232 (Full-duplex)	RS485 (Half-duplex)	RS422 / RS485 (Full-duplex)
1	--	--	TXD-
2	TXD	--	TXD+
3	RXD	RXD+ / TXD+	RXD+
4	--	RXD- / TXD-	RXD-
5	GND	GND	GND
6	--	--	RTS-
7	RTS	--	RTS+
8	CTS	--	CTS+
9	--	--	CTS-

10	GND	GND	GND

> **NOTE:**
> - You can configure the RS232, RS422, or RS485 through Web as needed. For details, refer to the Web operation manual in the delivered CD.
> - Two connected data ports must work in the same mode. For example, if the local port is in RS232 mode, the peer port must be configured to work in RS232 mode.

4.4 Console Port

The device provides a console port on the top panel. Connect the 9-pin serial port of a PC to the console port of the switch with a DB9-RJ45 console cable. Then you can configure, maintain, and manage the switch by running Hyper Terminal in Windows OS of a computer.
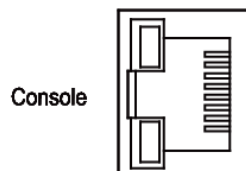

Figure 13 Console Port

- DB9-RJ45 Console Cable

One end of a DB9-RJ45 console cable is the DB9 connector to be inserted into the 9-pin serial port of a PC, and the other end is crimped RJ45 connector to be inserted into the console port of the switch.
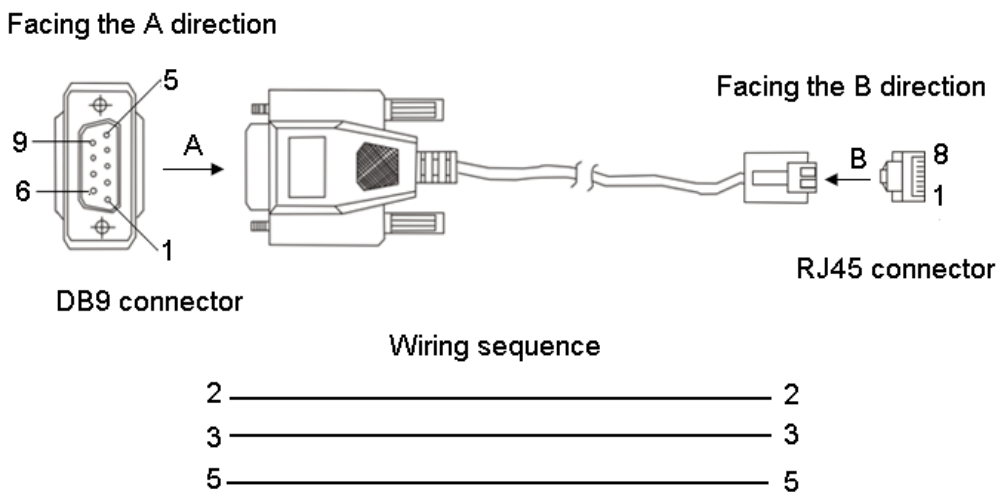

Figure 14 Wiring Sequence of DB9-RJ45 Console Cable

Table 6 Pin Definitions of DB9 Port (9-Pin Serial Port) and RJ45 Port (Console Port)

DB9 Port (9-Pin Serial Port)		RJ45 Port (Console Port)	
Pin	Signal	Pin	Signal
2	RXD (Receive data)	2	TXD (Transmit data)
3	TXD (Transmit data)	3	RXD (Receive data)
5	GND (Grounding)	5	GND (Grounding)

4.5 Grounding

Grounding protects the device from lightning and interference. Therefore, you must ground the device properly. You need to ground the device before it is powered on and disconnect the grounding cable after the device is powered off.

There is a grounding screw on the top panel of the device. The screw is for chassis grounding. After crimping one end of the grounding cable to a cold pressed terminal, secure the end to the grounding screw and firmly connect the other end to ground.
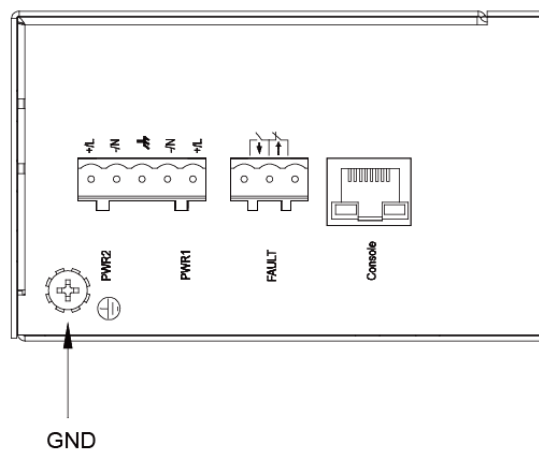

GND

Figure 15 Grounding

NOTE:

Cross-sectional area of the chassis grounding cable>2.5mm^2; Grounding resistance<5Ω.

4.6 Power Terminal Block

There is a power terminal block on the top panel of the device. You need to connect the power cable to the terminal block to provide power for the device.

The device supports single (PWR1) and redundant (PWR1 and PWR2) power supply with a 5-pin 5.08mm-spacing plug-in terminal block. When the redundant power supply is used and one power input is faulty, the device can continue operating properly, thereby improving network reliability.

NOTE:

0.75mm^2<Cross-sectional area of the power cable<2.5mm^2; Grounding resistance: <5Ω

● 5-pin 5.08mm-spacing plug-in terminal block
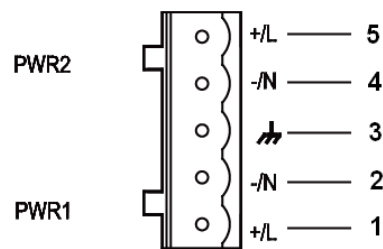
Figure 16 5-Pin 5.08mm-Spacing Plug-in Terminal Block

Table 7 Pin Definitions of 5-Pin 5.08mm-Spacing Plug-in Terminal Block

No.	Signal	DC Definition	AC Definition
1	+/L	PWR1：+	PWR1：L
2	-/N	PWR1：-	PWR1：N
3	⏚	PGND	PGND
4	-/N	PWR2：-	PWR2：N
5	+/L	PWR2：+	PWR2：L

CAUTION:

For single power supply, only pins 1, 2, and 3 (PWR1) of the terminal block can be connected. Do not use pins 4 and 5.

● Wiring and mounting

Step 1: Ground the device properly according to section 4.5.

Step 2: Remove the power terminal block from the device.

Step 3: Insert the power cable into the power terminal block according to Table 7 to fix the power cable.

Step 4: Insert the terminal with the connected cable into the terminal block on the device.

Step 5: Connect one end of the power cable to an external power supply system (with the allowed power range). If the power LED on the front panel of the device turns on, the power supply is connected properly.

CAUTION:

The device supports 12DCW, 24DCW and 220AC/DCW power input. Before connecting the device to power supply, make sure that the power input meets the power requirement. If connected to an incorrect power input, the device may be damaged.

WARNING:
- Do not touch any exposed conducting wire, terminal, or component with a voltage warning sign, because it may cause personal injury.
- Do not remove any part or plug in or out any connector when the device is powered on.

4.7   Alarm Terminal Block

The alarm terminal block is used for alarm output. When the device works properly, the normally-open contacts of the alarm relay are closed and the normally-closed contacts are open. When an alarm occurs, the normally-open contacts are open and the normally-closed contacts are closed. The alarm is outputted through a 3-pin 5.08mm spacing terminal block
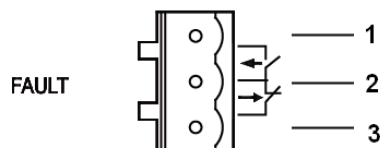
Figure 17 Alarm Terminal Block

Electrical parameters of the relay:

Max Device Voltage: 250VAC/220VDC

Max Device Current: 2A

Max Device Power: 60W

Maximum dielectric voltage withstand: 2KV

NOTE:

Pin 1 and pin 2 are normally-open contacts; pin 2 and pin 3 are normally-closed contacts. When the device works properly, pin 1 and pin 2 are closed, pin 2 and pin 3 are open; when an alarm occurs, pin 1 and pin 2 are open; pin 2 and pin 3 are closed.

● Wiring and mounting

Step 1: Remove the alarm terminal block from the device.

Step 2: Secure the three cables for alarm into the alarm terminal block in the required sequence.

Step 3: Insert the alarm terminal block into its socket.

5 Reset

The device provides a Reset button on the front panel. The button can be used to restart the

device or restore factory default settings.

You can restart the device by pressing and holding the button for one to five second.

You can restore factory default settings (including the IP address) by pressing and holding

the button for five seconds or more. The default IP address is 192.168.0.2.

⚠ **CAUTION:**
CAUTION

To restart the device only, do not press and hold the button for five seconds or more, because the

operation will restore factory default settings.

6 LEDs

Table 8 Front Panel LEDs

LED	State	Description
Power 1 LED	On	Power 1 is connected and operates properly.
	Off	Power 1 is not connected or operates abnormally.
Power 2 LED	On	Power 2 is connected and operates properly.
	Off	Power 2 is not connected or operates abnormally.
Switch Running LED (Run1)	Blinking	The CPU operates properly.
	Off	The CPU does not start up.
Serial port server Running LED (Run2)	On	The CPU is starting up.
	Blinking slowly	Effective port connection
	Blinking quickly	Ongoing network activities
	Off	No effective port connection
Ring LED	On	Master (DT-Ring mode)/Root (DRP mode)
	Blinking	Slave (DT-Ring mode)/B-Root or Normal (DRP mode)
	Off	No ring
Alarm LED	On	An alarm occurs.
	Off	No alarm occurs.
100Base-FX Ethernet port LED	On	Effective port connection
	Blinking	Ongoing network activities
	Off	No effective port connection
RS232/485/422 serial port TX LED -TX	Blinking	Sending data
	Off	No data transmission
RS232/485/422 serial port RX LED -RX	Blinking	Receive data
	Off	No data transmission

Speed (yellow)
Connection status
(green)
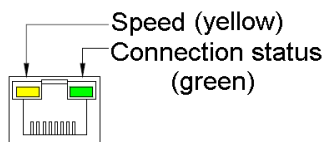
10/100Base-T(X) Ethernet port speed LED (yellow)	On	100M working state (100Base-TX)
	Off	10M working state (10Base-T) or no connection
10/100Base-T(X) Ethernet port connection status LED (green)	On	Effective port connection
	Blinking	Ongoing network activities
	Off	No effective port connection

7 Access

You can access the switch through the console port, Telnet, or Web. If the device works as a Serial port server, you can access it through Telnet or Web.

Table 9 Default Parameters

	Switch	**Serial port server**
Default IP address	192.168.0.2	192.168.0.3
Default user name	admin	admin
Default password	123	123

Table 10 Switch Commands

View	**Command**	**Description**
General mode	SWITCH>enable	Enter the Privileged mode.
Privileged mode	SWITCH#show interface	Query the current IP address of the switch.
Privileged mode	SWITCH#show version	Query the version of the switch.
Privileged mode	SWITCH#reboot	Restart the switch.
Privileged mode	SWITCH#load default	Restore the factory default settings (excluding the IP address).
Privileged mode	SWITCH#configure terminal	Enter the configuration mode.

Table 11 Serial port server Commands

Command	**Description**
[admin@system /admin]# channelc -c [*channel-id*] –-show	Query the settings of a serial port. [*channel-id*] indicates the ID of the serial port. The value ranges from 1 to 4.
[admin@system /admin]# ifconfig	Query the IP and MAC addresses of the device.
[admin@system /admin]# cat /etc/version	Query the version of the device.
[admin@system /admin]# reboot	Restart the device.
[admin@system /admin]#loadfactory.sh	Restore the factory default settings (including the IP address).

7.1 Access through Console Port

⚠ **Caution:**

CAUTION

The device cannot be accessed through the console port when serving as a serial port server.

Step 1: Connect the 9-pin serial port of a PC to the console port of the switch with the delivered DB9-RJ45 console cable.

Step 2: Open Hyper Terminal in Windows OS. On the computer's desktop, click Start → All Programs → Accessories → Communications → Hyper Terminal.

Step 3: Create a connection "Switch", as shown in the following figure.

Figure 18 Creating a Connection

Step 4: Connect the communication port in use, as shown in the following figure.

Figure 19 Selecting the Serial Port in Use

Step 5: Set port parameters (Bits per second: 115200, Data bits: 8, Parity: None, Stop bits: 1,

and Flow control: None), as shown in the following figure.

Figure 20 端口设置

Step 6: Click OK to enter the switch CLI. Then you can run the commands in Table 10 to

perform operations.

7.2 Access through Telnet

Step 1: Connect the network port of a PC to the Ethernet port of the switch with a network

cable.

Step 2: Enter "telnet *IP address*" in the Run dialog box. For example, if the IP address of the

switch is 192.168.0.2 (default IP address of a Kyland switch), enter "telnet
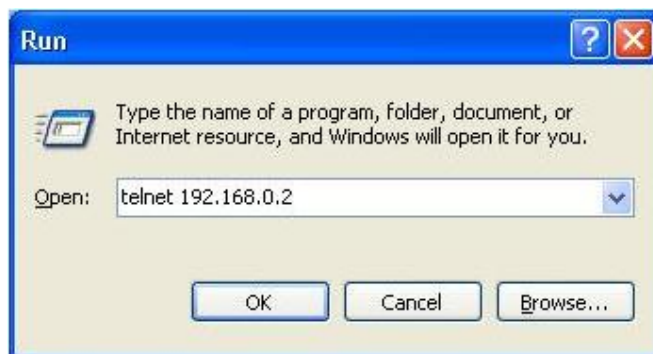
192.168.0.2" in the dialog box.

Figure 21 Access through Telnet

Step 3: Click OK. The Telnet CLI is displayed. Then you can enter commands (as shown in
Table 10 or Table 11) to perform operations.

7.3 Access through Web

Step 1: Connect the network port of a PC to the Ethernet port of the switch with a network
cable.

Step 2: Enter the IP address of the device in the address box of the browser. The user login
interface is displayed. You can log in to the Web UI by using default user name and
password.

NOTE:

● Enter the required IP address, user name, and password according to the system in use, as
listed in Table 9.

● IE8.0 or a later version is recommended.

● For details about how to access the device and other operations, refer to the Web operation
manual in the delivered CD.

8 Basic Features and Specifications

Power Requirements

Power Identifier	Rated Voltage Range	Maximum Voltage Range
L5 (12DCW)	12-24VDC	9-36VDC
L2 (24DCW)	24-48VDC	18-72VDC
HV (220AC/DCW)	100-240VAC, 50/60Hz; 110-220VDC	85-264VAC/77-300VDC
Power terminal	5-pin 5.08mm-spacing plug-in terminal block	

Rated Power Consumption

Rated Power Consumption	12W (MAX)

Physical Characteristics

Housing	Metal, aluminum, fanless
Installation	DIN-rail mounting or panel mounting
Dimensions (W×H×D)	66mm×135mm×107.5mm (excluding the connector, DIN rail, and component for panel mounting)
Weight	1Kg

Environmental Limits

Operating temperature	-40℃～+75℃
Storage temperature	-40℃～+85℃
Ambient relative humidity	5%~95% (non-condensing)

MTBF

MTBF	307699h

Warranty

Warranty	5 years

KYLAND

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Email: support@kyland.com

For more information about KYLAND products, please visit our website:

http://www.kyland.com