SICOM3024P Industrial Ethernet Switch

Hardware Installation Manual

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KYLAND

SICOM3024P Industrial Ethernet Switch

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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 or ongoing vibrations 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 soft cotton cloth.
- Do not place any irrelevant materials on the device or cables. Ensure adequate heat dissipation and tidy cable layout without being entangled or knotted.
- 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 lightning.
- 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……1
2 Structure and Interface……2
2.1 Front Panel……3
2.2 Rear Panel……3
3 Switch Installation……5
3.1 Dimension Drawing……5
3.2 Mounting Modes and Steps……5
4 Cable Connection……7
4.1 10/100Base-T(X) Ethernet port……7
4.2 100Base-FX Port……8
4.3 100Base-X SFP Slot……9
4.4 10/100/1000Base-T(X) Ethernet Port……9
4.5 1000Base-X, 10/100/1000Base-T(X) SFP Slot……10
4.5.1 Gigabit SFP Optical Module……11
4.5.2 Gigabit SFP Electrical Module……12
4.6 Console Port……13
4.7 Grounding……14
4.8 Power Terminal Block……15
4.9 Alarm Terminal Block……16
5 LEDs……17
6 Switch Access……19
6.1 Access through Console Port……19
6.2 Access through Telnet……21
6.3 Access through Web……22
7 Basic Features and Specifications……22

1 Product Overview

SICOM3024P includes a series of managed industrial Ethernet switches tailored for power, rail transit, and coal mining industries. Capable of working properly in rugged environment, SICOM3024P conforms to IEC61850-3 and IEEE1613 standards and adopts internal modular design for flexible expansion.

The series switches support 19 inch 1U rack mounting by front/rear panel. They provide up to four slots for 1000Base-X, 10/100/1000Base-T(X) SFP modules (Gigabit SFP Slot) or four 10/100/1000Base-T(X) Ethernet ports, and twenty-four fast Ethernet fiber or RJ45 (optional) ports, suitable for access layer networks.

Table 1 Models (with GX/GE)

Models (including GX/GE)	**SICOM3024P-Ports1Ports2-Connector-PS1-PS2**
Code definition	Code option
Ports1: GX/GE	4GX，4GE，2GX
	Note: *4GX: four slots for 1000Base-X, 10/100/1000Base-T(X) SFP modules* *4GE: four 10/100/1000Base-T(X) Ethernet ports*
Ports2: S/M/SFP, T	24S，24M，20S4T，20M4T，16S8T，16M8T，16S，16M，12S12T，12M12T，8S16T，8M16T，8S，8M，4S20T，4M20T，2S22T，2M22T，24T，24SFP，16SFP8T，16SFP，8SFP16T
	Note: *20S4T: twenty 100Base-FX ports, SM; four 10/100Base-T(X) ports* *20M4T: twenty 100Base-FX ports, MM; four 10/100Base-T(X) ports* *16SFP8T: sixteen 100Base-X, SFP modules; eight 10/100Base-T(X) ports*
Connector: parameters for S/M	**Ports2 with M:** SC05=SC connector, 1310nm, 5km ST05=ST connector, 1310nm, 5km FC05=FC connector, 1310nm, 5km **Ports2 with S:** SC40=SC connector, 1310nm, 40km ST40=ST connector, 1310nm, 40km FC40=FC connector, 1310nm, 40km SC60=SC connector, 1310nm, 60km SC80=SC connector, 1550nm, 80km **Ports2 without S or M:** N/A **Ports2 with SFP:** N/A
PS1: power input 1	HV(220AC/DCW), L1(48DC), L3(24DC)
PS2: power input 2	HV(220AC/DCW), L1(48DC), L3(24DC), N/A

Table 2 Models (without GX/GE)

Models (without GX/GE)	**SICOM3024P-Ports1-Connector-PS1-PS2**
Code definition	Code option
Ports1: S/M, T	24S，24M，22S2T，22M2T，20S4T，20M4T，18S6T，18M6T，16S8T，16M8T，16S，16M，14S10T，14M10T，12S12T，12M12T，12S4T，12M4T，10S14T，10M14T，8S20T，8M20T，8S16T，8M16T，8S8T，8M8T，8S，8M，6S22T，6M22T，6S18T，6M18T，6S14T，6M14T，6S10T，6M10T，4S24T，4M24T，4S20T，4M20T，4S16T，4M16T，4S12T，4M12T，4S8T，4M8T，2S26T，2M26T，2S22T，2M22T，2S14T，2M14T，24T，16T，12T，8T
	Note: *20S4T: twenty 100Base-FX ports, SM; four 10/100Base-T(X) ports* *20M4T: twenty 100Base-FX ports, MM; four 10/100Base-T(X) ports*
Connector: parameters for S/M	**Ports1 with M:** SC05=SC connector, 1310nm, 5km ST05=ST connector, 1310nm, 5km FC05=FC connector, 1310nm, 5km **Ports1 with S:** SC40=SC connector, 1310nm, 40km ST40=ST connector, 1310nm, 40km FC40=FC connector, 1310nm, 40km SC60=SC connector, 1310nm, 60km SC80=SC connector, 1550nm, 80km **Ports1 without S or M:** N/A
PS1: power input 1	HV(220AC/DCW), L1(48DC), L3(24DC)
PS2: power input 2	HV(220AC/DCW), L1(48DC), L3(24DC), N/A

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:

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

2.1 Front Panel

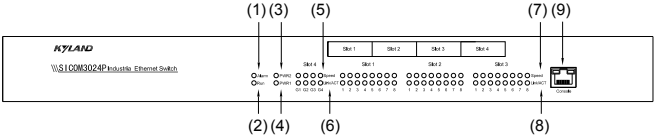


Figure 1 Front Panel

(1) Alarm LED (2) Running LED (3) Power 2 LED (4) Power 1 LED
(5) Four speed LEDs in Slot 4 (6) Four connection status LEDs in Slot 4
(7) Twenty-four 100M Ethernet port speed LEDs in Slot 1, Slot 2 and Slot 3
(8) Twenty-four 100M Ethernet port connection status LEDs in Slot 1, Slot 2 and Slot 3
(9) Console port

2.2 Rear Panel

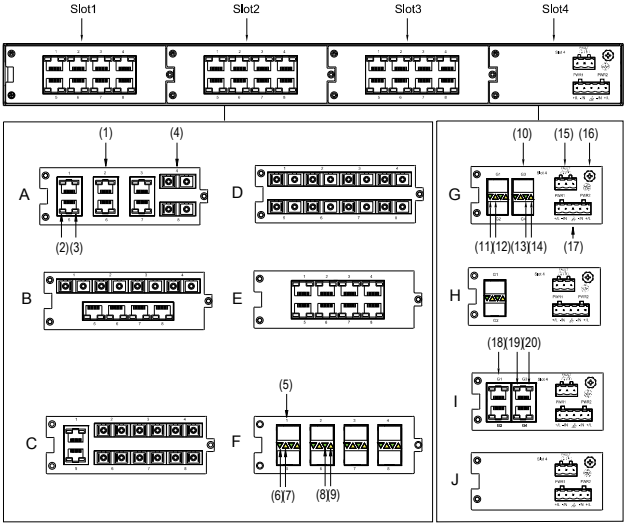


Figure 2 Rear Panel

Table 3 Description of Rear Panel

No.	Description	
(1)	10/100Base-T(X) Ethernet port, RJ45 connector	
(2)	10/100Base-T(X) RJ45 port speed LED (yellow)	
(3)	10/100Base-T(X) RJ45 port connection status LED (green)	
(4)	100Base-FX port	
(5)	100Base-X SFP slot	
(6)	100Base-X SFP slot connection status LED (green, indicating the status of the lower slot)	
(7)	100Base-X SFP slot speed LED (yellow, indicating the speed of the lower slot)	
(8)	100Base-X SFP slot connection status LED (green, indicating the status of the upper slot)	
(9)	100Base-X SFP slot speed LED (yellow, indicating the speed of the upper slot)	
(10)	1000Base-X, 10/100/1000Base-T(X) SFP slot	
(11)	1000Base-X, 10/100/1000Base-T(X) SFP slot connection status LED (green, indicating the status of the lower slot)	
(12)	1000Base-X, 10/100/1000Base-T(X) SFP slot speed LED (yellow, indicating the speed of the lower slot)	
(13)	1000Base-X, 10/100/1000Base-T(X) SFP slot connection status LED (green, indicating the status of the upper slot)	
(14)	1000Base-X, 10/100/1000Base-T(X) SFP slot speed LED (yellow, indicating the speed of the upper slot)	
(15)	Alarm terminal block	
(16)	Grounding screw	
(17)	Power terminal block	
(18)	10/100/1000Base-T(X) Ethernet port, RJ45 connector*	10/100Base-T(X) Ethernet port, RJ45 connector*
(19)	10/100/1000Base-T(X) RJ45 port Speed LED (yellow)	10/100Base-T(X) RJ45 port speed LED (yellow)
(20)	10/100/1000Base-T(X) RJ45 port Connection status LED (green)	10/100Base-T(X) RJ45 port connection status LED (green)

Note:

- Figure 2shows the rear panel of the device. The layout of Slot 1, Slot 2, and Slot 3 can be A, B, C, D, E, F, and the layout of Slot 4 can be G, H, I, J. The actual layout of these slots depends on the models (as
- listed inTable 1and Table 2) you select.
  Panel I can provide four 10/100/1000Base-T(X) Ethernet ports or four 10/100Base-T(X) Ethernet ports. You can find the port type of your device in the software.

3 Switch Installation

3.1 Dimension Drawing

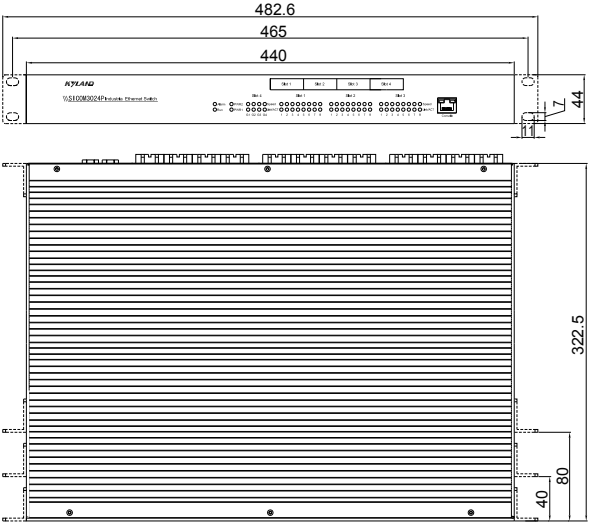


Figure 3 Dimension Drawing (unit: mm)

Caution:

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

3.2 Mounting Modes and Steps

The series switches support rack mounting by front/rear panel. The following uses mounting by front panel as an example to describe mounting steps. The steps for mounting by rear panel are similar to those for mounting by front panel. Before installation, make sure that the following requirements are met.

1) Environment:temperature (-40℃ to 85℃), ambient relative humidity (5% to 95%, non-condensing)
2) Power requirement:The power input is within the voltage range of the switch.
3) Grounding resistance:<5Ω
4) No direct sunlight, distant from heat source and areas with strong electro magnetic interference.
5) Devices are to be installed in an authority certified enclosure and accessible only by the use of a tool.
6) Devices should be installed and accessed by service personnel or users who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken.

- Installing Mounting Brackets

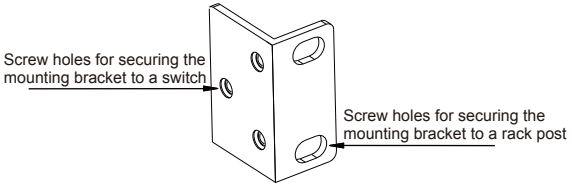


Figure 4 Mounting Bracket

You can select the screw holes for front or rear panel mounting to install the mounting brackets. If you select front panel mounting, three mounting positions are available, as indicated by 1, 2, and 3 in the following figure. If there are screws inserted in the screw holes, remove the screws and keep them for future use.
As shown in the following figure, use three screws to secure two mounting brackets to the switch respectively.

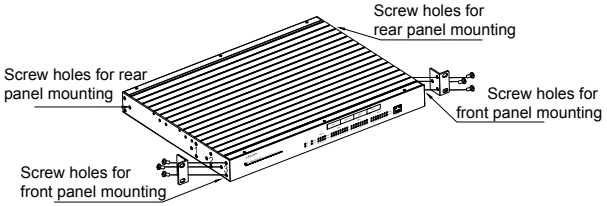


Figure 5 Installing Mounting Brackets

- Mounting

Step 1: Select the mounting position for the device and guarantee adequate space and heat dissipation for it (dimensions: 440mm×44mm×322.5mm).

Step 2: Move the switch in direction 1 until the screw holes for securing the mounting brackets to rack posts are in alignment with the corresponding holes in the rack posts. Then use four screws and supporting captive nuts to secure the mounting brackets to the rack posts.

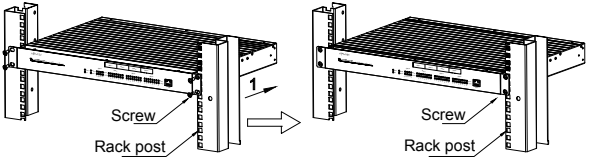


Figure 6 Mounting by Front Panel

- Dismounting

Step 1: Remove the four screws and supporting captive nuts securing the mounting brackets to the rack posts.

Step 2: Remove the switch from the rack posts. Then unscrew the mounting brackets to complete 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.

- Pins of the 10/100Base-T(X) Ethernet port

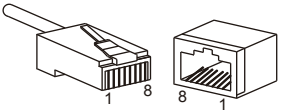


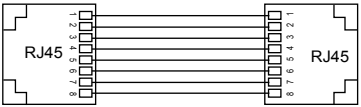
Figure 7 RJ45 Port

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

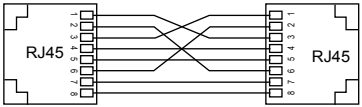


Figure 8 Connection Using Straight-through/Cross-over Cable

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 Port

100Base-FX port is equipped with ST/SC/FC connector, and each port consists of TX (transmit) port and RX (receive) port, as shown in Figure 9.

Figure 9 shows 100Base-FX port wiring. (The following uses the SC port as an example; ST/FC wiring method is the same with SC.) To enable data transmission between Switch A and Switch B, connect the TX (transmit) port of Switch A to the RX (receive) port of Switch B, and the RX (receive) port of Switch A to the TX (transmit) port of Switch B.

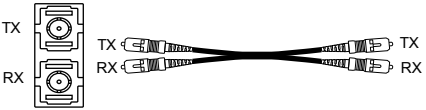


Figure 9 Cable Connection of 100Base-FX Port

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 switch is powered on.

4.3 100Base-X SFP Slot

100Base-X SFP slot: You can enable data transmission only after inserting an SFP optical module into the slot and connecting cable properly. The following table lists the SFP optical modules (optional) supported by the switch.

Table 5 SFP Optical Modules for 100Base-X SFP slot

Model	Interface	MM/SM	Connector	Center Wavelength (CWL)	Transmission Distance
IFSFP-M-LX -LC-1310-2	100Base-FX port	MM	LC	1310nm	2km
IFSFP-S-LH -LC-1310-40	100Base-FX port	SM	LC	1310nm	40km

For how to connect the SFP optical module, please see 4.5.1Gigabit SFP Optical Module.

4.4 10/100/1000Base-T(X) Ethernet Port

10/100/1000Base-T(X) Ethernet port is equipped with RJ45 connector. The port is self-adaptive. It can automatically configure itself to work in 10M, 100M, or 1000M 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

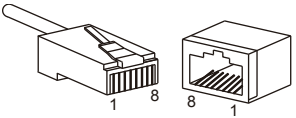


Figure 10 RJ45 Port

Table 6 Pin Definitions of 10/100/1000Base-T(X) RJ45 Port

Pin	MDI-X Signal	MDI Signal
1	Transmit/Receive Data (TRD1+)	Transmit/Receive Data (TRD0+)
2	Transmit/Receive Data (TRD1-)	Transmit/Receive Data (TRD0-)
3	Transmit/Receive Data (TRD0+)	Transmit/Receive Data (TRD1+)
4	Transmit/Receive Data (TRD3+)	Transmit/Receive Data (TRD2+)
5	Transmit/Receive Data (TRD3-)	Transmit/Receive Data (TRD2-)
6	Transmit/Receive Data (TRD0-)	Transmit/Receive Data (TRD1-)
7	Transmit/Receive Data (TRD2+)	Transmit/Receive Data (TRD3+)
8	Transmit/Receive Data (TRD2-)	Transmit/Receive Data (TRD3-)
Note: "+" and "-" indicate level polarities.		

- Wiring Sequence

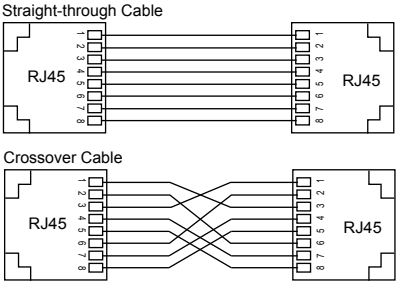


Figure 11 Connection Using Straight-through/Cross-over Cable

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.

4.5 1000Base-X, 10/100/1000Base-T(X) SFP Slot

1000Base-X, 10/100/1000Base-T(X) SFP slot (Gigabit SFP slot): You can enable data transmission only after inserting an SFP optical/electrical module into the slot and connecting cable properly. The following table lists the Gigabit SFP optical/electrical modules (optional) supported by the series switches.

Table 7 Gigabit SFP Optical/Electrical Modules for 1000Base-X, 10/100/1000 Base-T(X) SFP slot

Model	Interface	MM/SM	Connector	Center Wavelength (CWL)	Transmission Distance
IGSFP-M-SX -LC-850-0.55	1000Base -X port	MM	LC	850nm	0.55km
IGSFP-S-LX -LC-1310-10	1000Base -X port	SM	LC	1310nm	10km
IGSFP-S-LH -LC-1310-40	1000Base -X port	SM	LC	1310nm	40km
IGSFP-S-ZX -LC-1550-80	1000Base -X port	SM	LC	1550nm	80km
IG-FSFP-M-LX-LC-1310-2	100Base -FX port	MM	LC	1310nm	2km
IG-FSFP-S-LX -LC-1310-10	100Base -FX port	SM	LC	1310nm	10km
IGSFP-10/100/1000BASE-T-RJ45	10/100/1000 Base-T(X) port (self-adaptive)	--	RJ45 connector	--	--

4.5.1 Gigabit SFP Optical Module

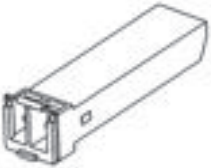


Figure 12 Gigabit SFP Optical Module

Gigabit SFP optical module is equipped with LC connector, and each port consists of a TX (transmit) port and an 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 Gigabit SFP optical module.

Figure 13 Cable Connection of Gigabit SFP Optical Module

● How to Connect the SFP Optical Module

Insert the SFP optical module into the SFP slot in the switch, and then plug the optical fiber into the TX port and RX port of the SFP module.

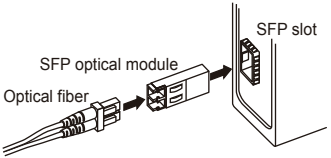


Figure 14 Connecting the Gigabit SFP Optical Module

How to Determine the RX Port and TX Port of Gigabit SFP Optical Module

1. Insert the two connectors in one end of optical fiber into the gigabit SFP module, and those in the other end of the optical fiber into the SFP module of another switch.
2. View the corresponding port connection status LED in the front panel: If the LED blinks, the link is connected. If the LED is off, the link is not connected. This may be caused by incorrect connection of the TX and RX ports. In this case, swop the two connectors in the one end of the optical fiber.

Caution:

- The device uses laser to transmit signals in fibers. 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 fiber port when the device is powered on.
- If the defined transmission distance of an SFP module is longer than 60km, do not use a short fiber (<20km) for connection. If such a short fiber is used, the module will be burned.

4.5.2 Gigabit SFP Electrical Module

Figure 15 Gigabit SFP Electrical Module

- How to Connect the Gigabit SFP Electrical Module

Insert the SFP electrical module into the SFP slot in the switch, and then plug the RJ45 connector of the twisted pair into the SFP module.

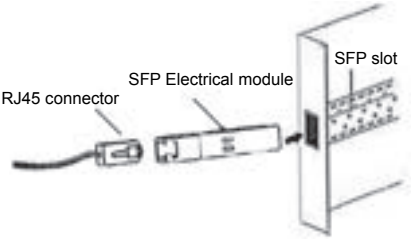
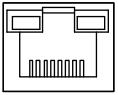


Figure 16 Connecting the Gigabit SFP Electrical Module

4.6 Console Port

There is a Console port on the frontpanel of the switch, as shown in Figure 17. Connect the 9-pin serial port of a PC to the console port of the switch with a DB9-RJ45 console cable. You can configure, maintain, and manage the switch by running Hyper Terminal in the Windows OS of a computer.



Console

Figure 17 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.

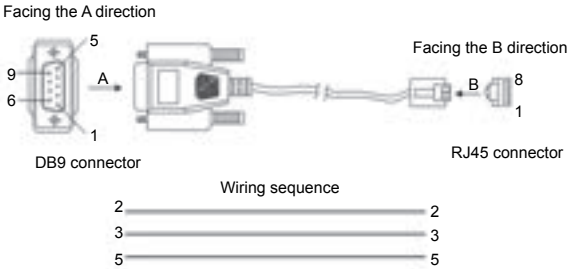


Figure 18 Wiring Sequence of DB9-RJ45 Console Cable

Table 8 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)

4.7 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.

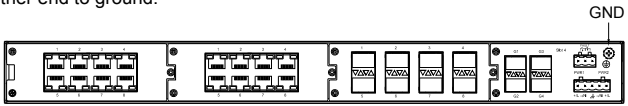


Figure 19 Grounding

Note:

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

4.8 Power Terminal Block

There is a power terminal block on the rear panel of the switch.You need to connect the power cable to the terminal block to provide power for the switch. 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 supply is faulty, the switch 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

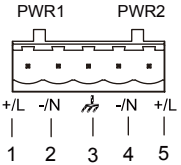


Figure 20 5-Pin 5.08mm-Spacing Plug-in Terminal Block

Table 9 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 switch properly according to section 4.7.
Step 2: Remove the power terminal block from the switch.
Step 3: Insert the power cable into the power terminal block according to Table 9 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 switch turns on, the power supply is connected properly.

Caution:

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.

4.9 Alarm Terminal Block

The alarm terminal block is used for alarm output. When the switch 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, as shown in Figure 21.

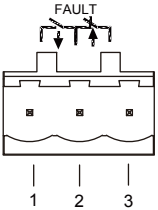


Figure 21 Alarm Terminal Block

Electrical parameters of the relay:
Max Switch Voltage: 250VAC/220VDC
Max Switch Current: 2A
Max Switch Power: 60W
Maximum dielectric voltage withstand: 2KV

Note:

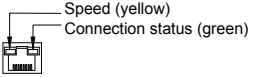
Pin 1 and pin 2 are normally-open contacts; pin 2 and pin 3 are normally-closed contacts. When the switch works properly, pin 1 and pin 2 are closed, pin 2 and pin 3 are open; when an alarm occurs, pin 1 and pin 2 are open; pin 2 and pin 3 are closed.

5 LEDs

Table 10 Front Panel LEDs

LED		State	Description
Running LED		Blinking	The CPU operates properly.
		Off	The CPU does not start up or the CPU operates abnormally or the device is starting up.
Alarm LED		On	An alarm occurs.
		Off	No alarm occurs.
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.
100M Ethernet port speed LEDs(Slot1-Slot3)	10/100Base-T(X) Ethernet port	On	100M working state (100Base-TX)
		Off	10M working state (10Base-T) or no connection
	100Base-FX Ethernet port	On	100M working state (100Base-FX)
		Off	No connection
100M Ethernet port connection status LEDs(Slot1-Slot3)		On	Effective port connection
		Blinking	Ongoing network activities
		Off	No effective port connection
Speed LEDs(Slot4)	10/100Base-T(X) Ethernet port	On	100M working state (100Base-TX)
		Off	10M working state (10Base-T) or no connection
	10/100/1000Base-T(X)Ethernet port	On	1000M working state (1000Base-TX)
		Off	10/100M working state (10/100Base-T(X)) or no connection
	SFP optical module inserted	On	1000M working state (1000Base-X)
		Off	100M working state (100Base-FX) or no connection
	SFP electrical module inserted	On	1000M working state (1000Base-TX)
		Off	10/100M working state (10/100Base-T(X)) or no connection
Connection status LEDs(Slot4)		On	Effective port connection
		Blinking	Ongoing network activities
		Off	No effective port connection

Table 11 Rear Panel LEDs

LED		State	Description
 LED 1 and LED 2 indicate the status of the lower gigabit SFP slot, while LED 3 and LED 4 indicate the status of the upper gigabit SFP slot.			
1000Base-X, 10/100/1000Base-T(X) SFP slot speed ED(yellow)	SFP optical module inserted	On	1000M working state (1000Base-X)
		Off	100M working state (100Base-FX) or no connection
	SFP electrical module inserted	On	1000M working state (1000Base-T)
		Off	10/100M working state (10/100Base-T(X)) or no connection
100Base-X SFP slot speed LED (yellow)	SFP optical module inserted	On	100M working state(100Base-X)
		Off	no connection
100Base-X SFP slot and 1000Base-X, 10/100/1000Base-T(X) SFP slot connection status LED (green)		On	Effective port connection
		Blinking	Ongoing network activities
		Off	No effective port connection
			
10/100Base-T(X) RJ45 Port speed LED (yellow)		On	100M working state (100Base-TX)
		Off	10M working state (10Base-T) or no connection
10/100/1000Base-T(X) RJ45 Port speed LED (yellow)		On	1000M working state (1000Base-TX)
		Off	10/100M working state (10/100Base-T(X)) or no connection
10/100/1000Base-T(X) RJ45 Port and 10/100Base-T(X) RJ45 Port connection status LED (green)		On	Effective port connection
		Blinking	Ongoing network activities
		Off	No effective port connection

6 Switch Access

You can access the switch in any of the following ways:

6.1 Access through Console Port

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

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

Step 3: Create a connection "Switch", as shown in Figure 22.

Figure 22 Creating a Connection

Step 4: Connect the communication port in use, as shown in Figure 23.

Note:
To confirm the communication port in use, right-click [My Computer] and click [Property]→[Hardware]→[Device Manager]→[Port] to view the communication port.

Figure 23 Selecting the Communication Port in Use

Step 5: Set port parameters (Bits per second: 9600, Data bits: 8, Parity: None, Stop bits: 1, and Flow control: None), as shown in Figure 24.

Figure 24 Setting Port Parameters

Step 6: Click OK to enter the switch CLI. Then you can run the following commands to perform operations.

Table 12 CLI Commands

View	Command	Description
User view	SWITCH>enable	Enter the management view.
Management view	SWITCH#show interface	Query the IP address of the switch.
Management view	SWITCH#show version	Query the version of the switch.
Management view	SWITCH#reboot	Restart the switch.
Management view	SWITCH#load default	Restore the factory default settings
Management view	SWITCH#config terminal	Enter the configuration view.

6.2 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, as shown in Figure 25. The default IP address of a Kyland switch is 192.168.0.2.

Figure 25 Access through Telnet

Step 3: Click OK. The Telnet CLI is displayed. Then you can enter commands (as shown in Table 12) to perform operations.

6.3 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 switch in the address box of the browser. The user login interface is displayed. You can log in to the Web UI by default user name "admin" and password "123".

Note:

- IE8.0 or a later version is recommended.
- For details about how to access the switch and other operation, refer to the Web operation manual in the delivered CD.

7 Basic Features and Specifications

Power Requirements		
Power Identifier	Rated Voltage Range	Maximum Voltage Range
L3 (24DC)	24VDC	18-36VDC
L1 (48DC)	48VDC	36-72VDC
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	35W (MAX)	
Physical Characteristics		
Housing	Metal, aluminum, fanless	
Installation	19-inch 1U rack mounting	
Dimensions (W×H×D)	440mm×44mm×322.5mm (excluding the connector and mounting brackets)	
Weight	6.16Kg (excluding package and accessories)	
Environmental Limits		
Operating temperature	-40℃ to +85℃	
Storage temperature	-40℃ to +85℃	
Ambient relative humidity	5% to 95% (non-condensing)	
MTBF		
MTBF	346,889 hours	
Warranty		
Warranty	5 years	

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