

SICOM3024PT

Industrial Ethernet Switch

Hardware Installation Manual

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1. Packing List

SICOM3024PT Industrial Ethernet Switch	1
Software Operation Manual (CD)	1
Hardware Installation Manual	1
RJ45-to-DB9 CONSOLE port cable (2m)	1
One-slot screwdriver (orange-6*100)	1
Certificate of Quality (including Warranty Card)	1

Note: After unpacking, please check the accessories and the appearance of the equipment, if anything is missing or damaged, please contact us.

2. Product Overview

SICOM3024PT is a modular managed Gigabit industrial Ethernet switch which can be applied extensively in power, transportation, coal mining, etc industries and is compliant with IEEE1588v2 (PTP) protocol.

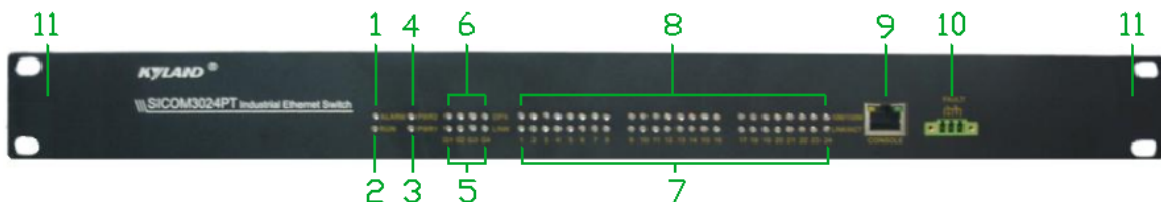
SICOM3024PT industrial Ethernet switch provides two models of chassis: SICOM3024PT-18 and SICOM3024PT-28.

SICOM3024PT-18 supports 19 inch 1U installation. It is equipped with 2 10/100Base-TX RJ45 ports and 4 100M interface expansion slots.

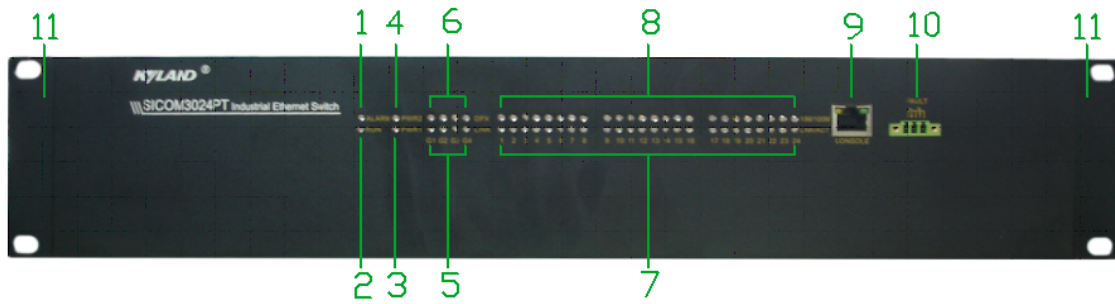
SICOM3024PT-28 supports 19 inch 2U mounting. It provides 1 Gigabit interface expansion slot and 6 100M interface expansion slots.

3. Structure and Interface

◆ Front Panel



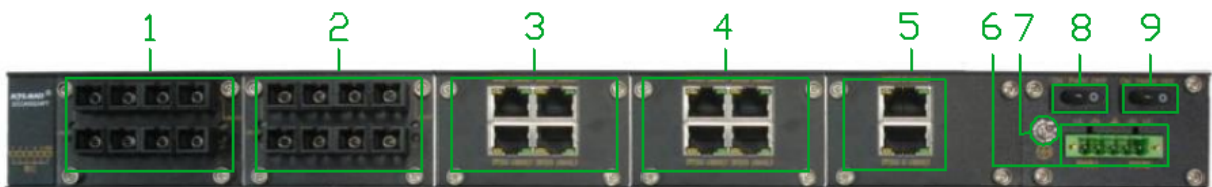
SICOM3024PT-18 front panel



SICOM3024PT-28 front panel

- 1: ALARM- Alarm LED
- 2: RUN- System operation LED
- 3: PWR1- Power LED
- 4: PWR2- Power LED
- 5: G1-G4- LINK LEDs for Gigabit ports
- 6: G1-G4- DPX LEDs for Gigabit ports
- 7: 1-24: 10/100M speed LEDs for 100M ports
- 8: 1-24: LINK/ACT LEDs for 100M ports
- 9: CONSOLE port
- 10: Relay alarm output port
- 11: Installation flange

◆ **Rear Panel**

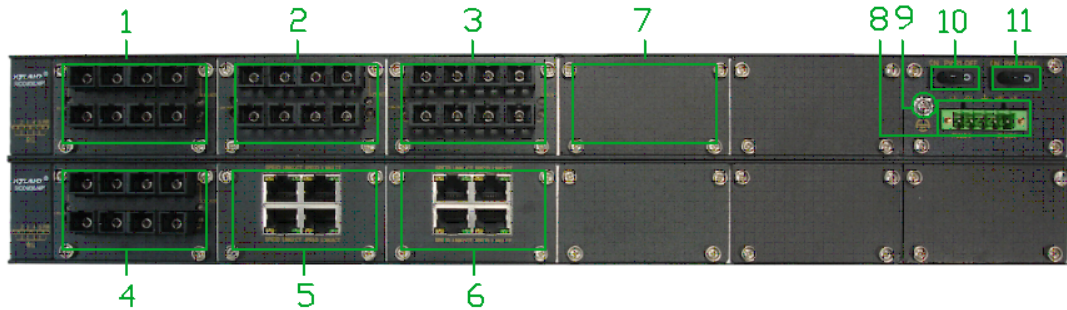


SICOM3024PT-18 rear panel

- 1-4: 100M interface slots
- 5: 2 10/100Base-TX RJ45 ports
- 6: Terminal block for power input
- 7: Grounding screw

8: PWR1 power switch

9: PWR2 power switch



SICOM3024PT-28 rear panel

1-6: 100M interface slots

7: Gigabit interface slot

8: Terminal block for power input

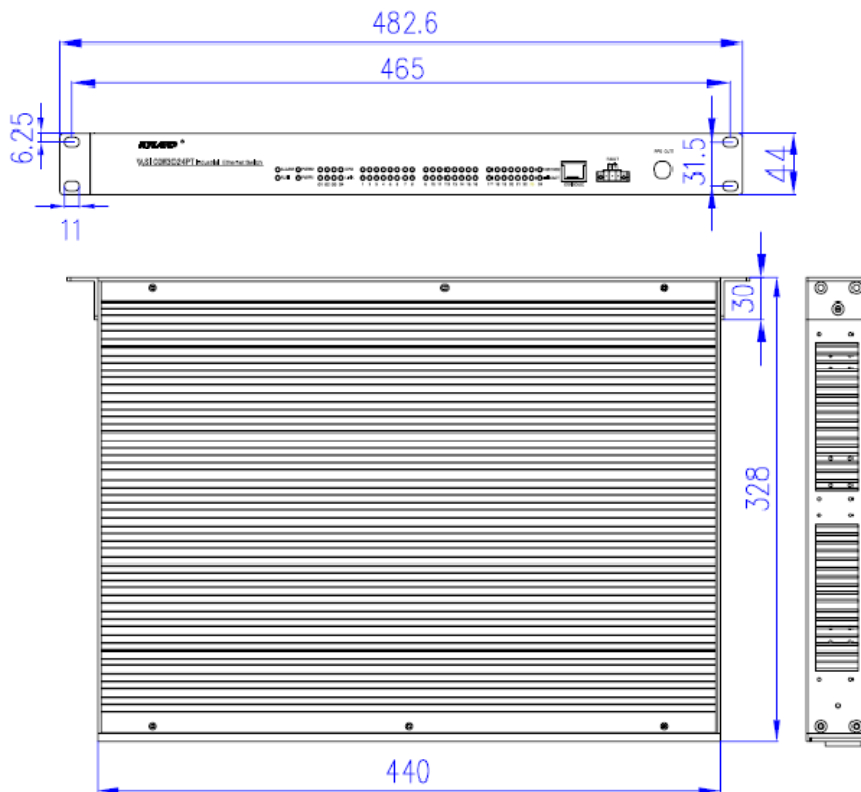
9: Grounding screw

10: PWR1 power switch

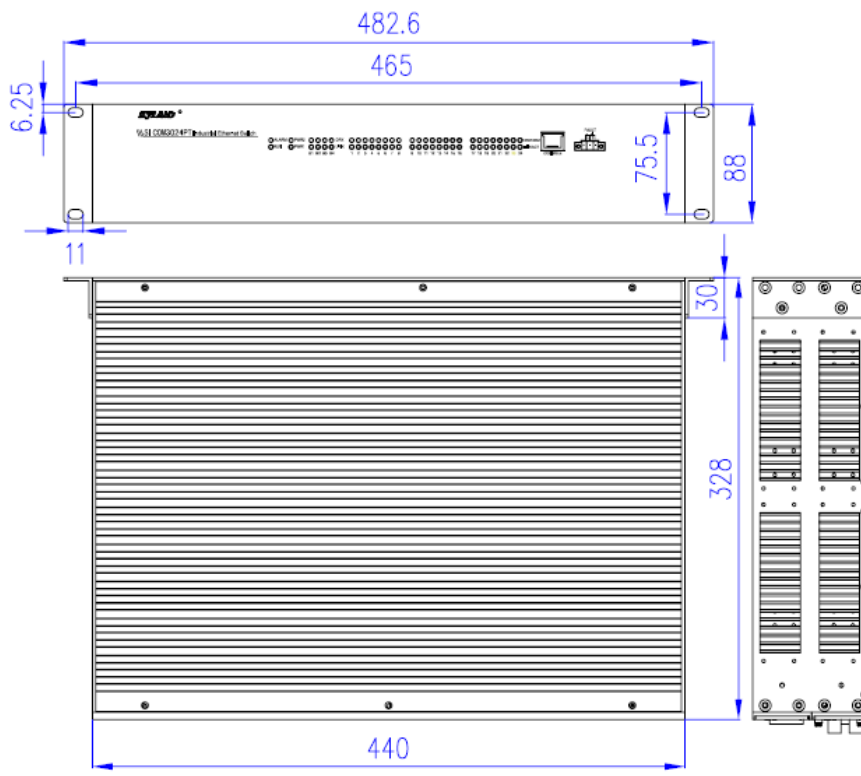
11: PWR2 power switch

4. Installation

◆ Dimension Drawing



SICOM3024PT-18 dimension drawing



SICOM3024PT-28 dimension drawing

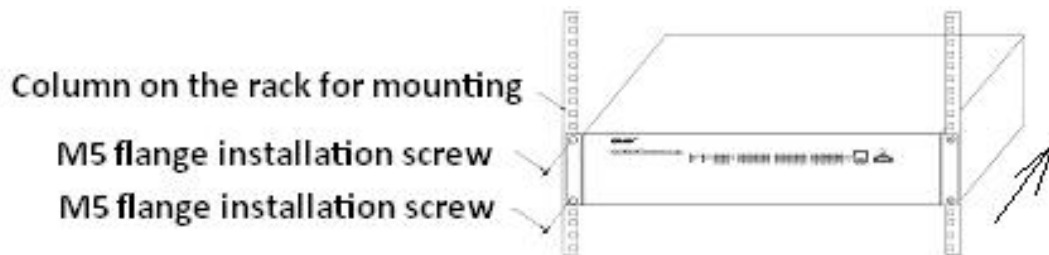
Note: The enclosure of switch is a part of the heat dissipation system, getting hot during working, so never touch the enclosure when the equipment is working.

◆ Installation Steps

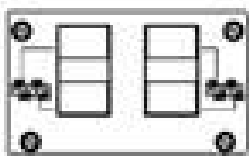
SICOM3024PT supports rack mounting by the front/rear panel. The mounting methods are the same. Here we take the front panel installation as example. The mounting steps are as follows:

Step 1: Select the installation position for SICOM3024PT on the rack and ensure that there is enough space for it.

Step 2: Align the installation holes on the SICOM3024PT installation flange and the selected holes on the rack; use 4 screws (M5 × 14) to fix the device on the rack as below:

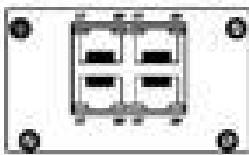


● Gigabit Interface Module



SM3.1-4GX

4 Gigabit SFP slots



SM3.1-4GE

4 10/100/1000Base-TX RJ45 ports

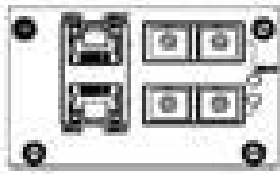
●

● 100M Interface Module



SM3.1-4S(M)

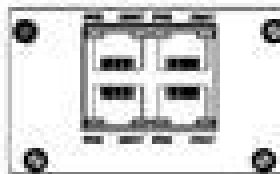
4 100Base-FX SM/MM fiber ports



SM3.1-2S(M)-2T

2 10/100Base-TX RJ45 ports

2 100Base-FX SM/MM fiber ports



SM3.1-4T

4 10/100Base-TX RJ45 ports

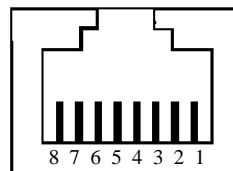
5. Cable Connection

◆ RJ45 Port

● Cable types and requirements of RJ45 port

10/100Base-TX Ethernet RJ45 port can be connected to terminal equipments by straight-through cable, and connected to network devices by cross-over cable. 10/100/1000Base-TX Ethernet RJ45 ports can be connected to terminal equipments and network devices by straight-through or cross-over cable. The cables must have RJ45 connectors on the two ends.

RJ45 connector and pin number:



● Pin distribution of 10/100Base-TX

Pin	MDI-X signal name	MDI signal name
1	Receiving data+ (RD+)	Output data+ (TD+)
2	Receiving data- (RD-)	Output data- (TD-)
3	Output data+ (TD+)	Receiving data+ (RD+)
6	Output data- (TD-)	Receiving data- (RD-)
4, 5, 7, 8	Unused	Unused

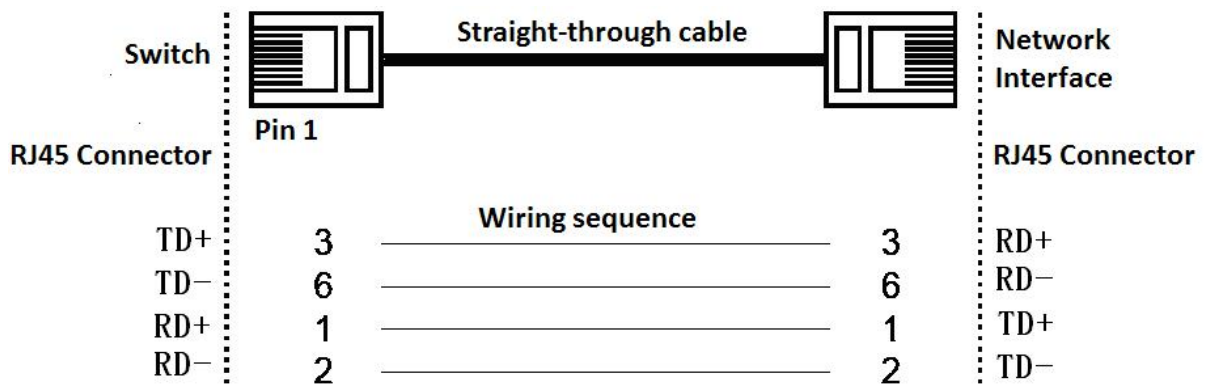
Note: "+" "-" means cable polarity.

● Pin distribution of 10/100/1000Base-TX

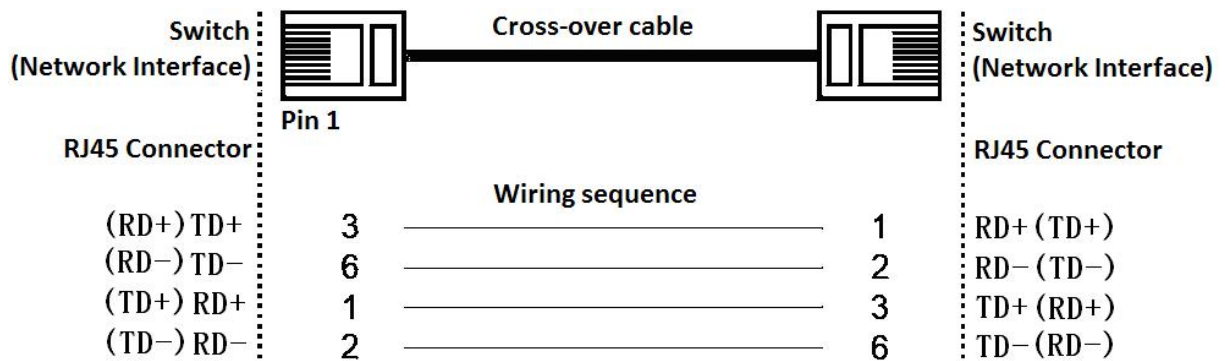
Pin	MDI/MDI-X signal name
1	Output/Receiving data TRD0+

2	Output/Receiving data TRD0-
3	Output/Receiving data TRD1+
4	Output/Receiving data TRD2+
5	Output/Receiving data TRD2-
6	Output/Receiving data TRD1-
7	Output/Receiving data TRD3+
8	Output/Receiving data TRD3-
Note: "+" "-" means cable polarity.	

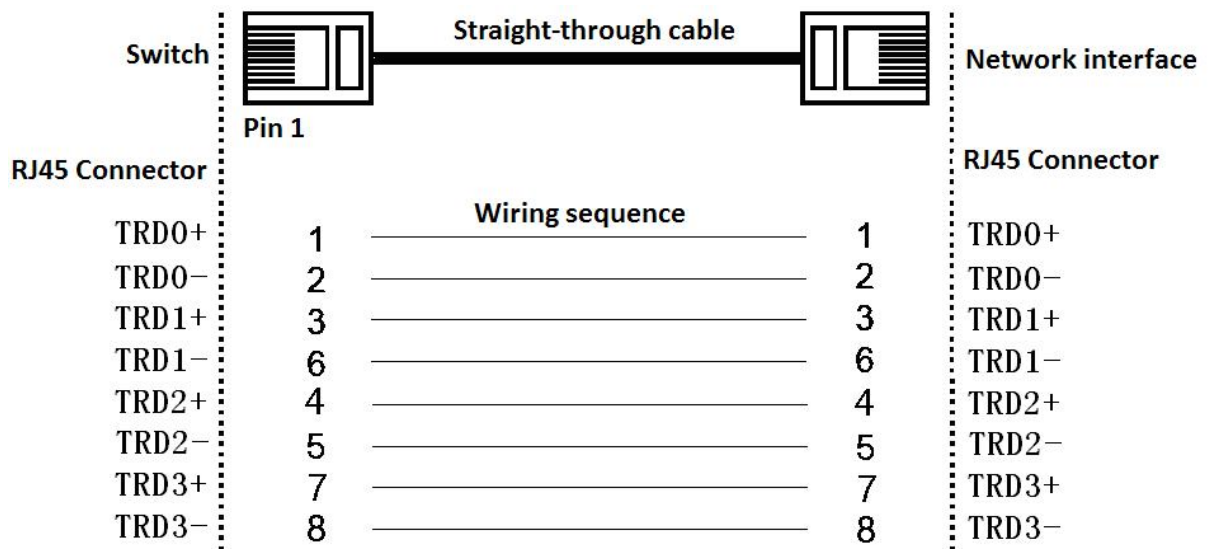
- **100M straight-through cable wiring**



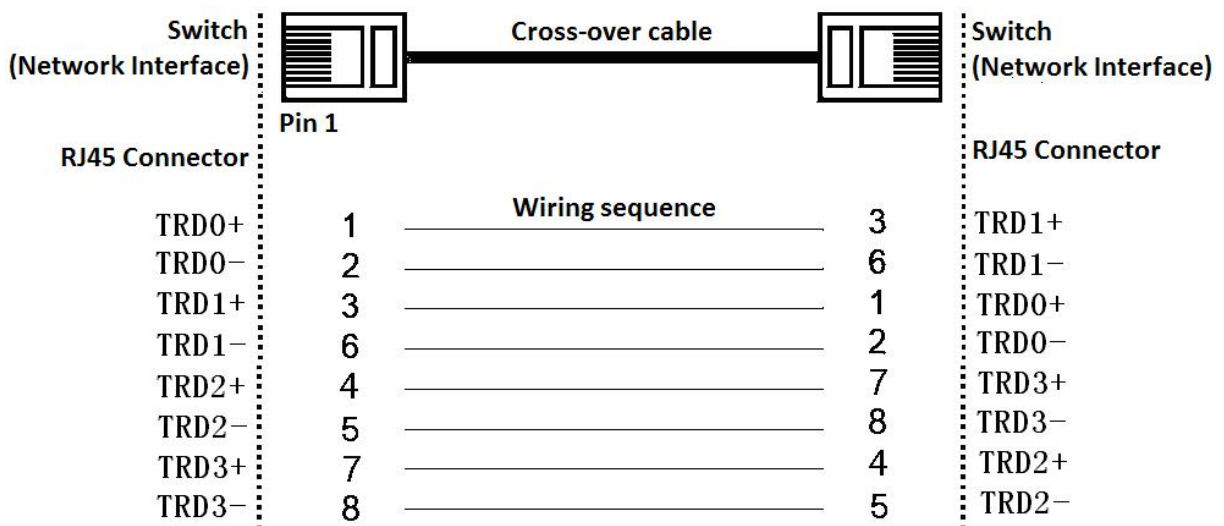
- **100M cross-over cable wiring**



- **1000M straight-through cable wiring**



● **1000M cross-over cable wiring**



◆ **Fiber Ports**

Gigabit SFP (1.25Gbit/s) Parameter Table

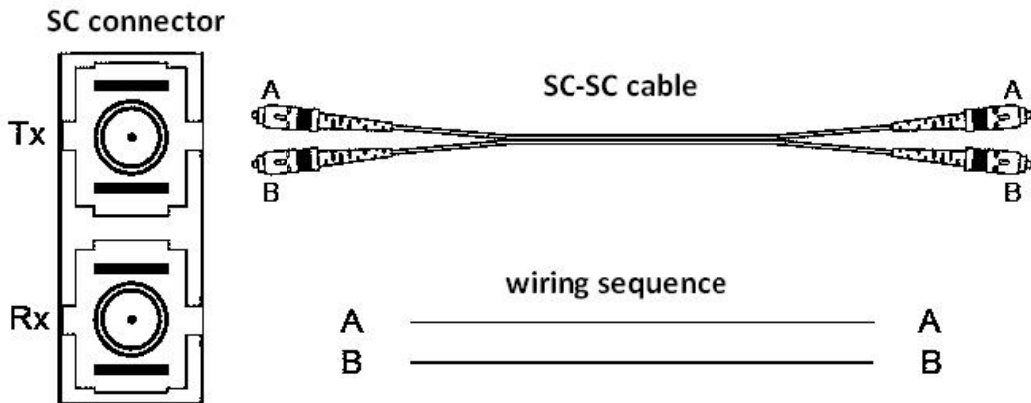
Attribute	SX	LX	LH	ZX
Type	Multimode (M)	Single mode (S)	Single mode (S)	Single mode (S)
Center wavelength(nm)	850	1310	1310	1550
Transmission distance(Km)	0.55	10	40	80

Application range(Km)		0~0.55	0~10	12~40	27~80
Transmitting optical power	Minimum(dBm)	-11	-10	-4	-2
	Max(dBm)	-2	-3	3	5
Receiving sensitivity(dBm)		-18	-21	-23	-25
Overload optical power(dBm)		0	-3	-3	-3

100M FX (125Mbit/s) Parameter Table

Attribute		FX (FC/SC/ST)				
Type		Multimode (M)	Single mode (S)	Single mode (S)	Single mode (S)	Single mode (S)
Center wavelength(nm)		1310	1310	1310	1550	1550
Transmission distance(Km)		2	5	40	60	80
Application range(Km)		0~2	0~5	0~40	6~60	10~80
Transmitting optical power	Minimum(dBm)	-19	-12	-8	-8	-8
	Max(dBm)	-11	-4	0	-2	0
Receiving sensitivity(dBm)		-31	-34	-34	-34	-34
Overload optical power(dBm)		-3	-3	-3	-3	-3

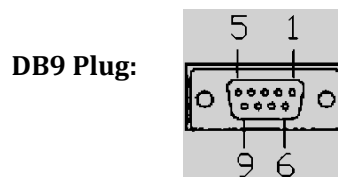
- **100M fiber port wiring (Take SC connector as example; ST/FC wiring method is the same with SC)**



Note: Laser is used to transmit signals in fiber cables. Laser meets the requirements of level 1 laser products. Routine operation does not harm to eyes, but do not directly look at the fiber port when the switch is powered on.

◆ **CONSOLE port (Management port)**

Use a serial cable with one end bearing RJ45 plug and the other end DB9 plug (Its communication standard is 3-wire RS232) to connect the CONSOLE port with the 9-pin serial port in the control computer. Operate WINDOWS hyper terminal in the control computer to configure, maintain and manage SICOM3024PT by the switch management software.

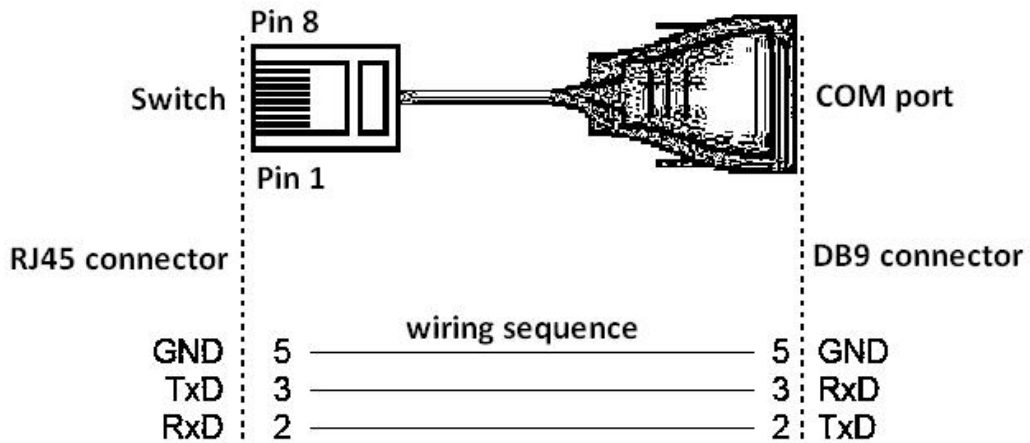


● **DB9 Pin definition**

DB9 serial port pin	Definition
2	TXD
3	RXD
5	GND

1, 4, 6, 7, 8, 9	Unused
------------------	--------

- **Console port wiring**



- ◆ **Power**

According to the power input instruction on product label, use a 5.08mm-spacing terminal block to connect power cable.

Note: The section area of power cable is required to be greater than 0.7mm² and less than 2.5mm². The grounding resistance requirement: <5Ω.

5.08mm power terminal block:



- **Power definition**

Port number	DC wiring definition	AC wiring definition
1	PWR1: +	PWR1: L
2	PWR1: -	PWR1: N-
3	PGND (Protection Ground)	PGND (Protection Ground)

4	PWR2: -	PWR2: L
5	PWR2: +	PWR2: N

- **Wiring and installation**

Step 1: Take the power terminal block off SICOM3024PT

Step 2: Insert the power cable into the terminal block in accordance with the polarity requirements on the label; use the screwdriver to tighten the screw to fix the power cable

Step 3: Put the terminal block back to where it was with the connected cable; use the screwdriver to tighten up the screw to fix the terminal block.

- ◆ **Grounding**

SICOM3024PT switch has a grounding screw hole in the rear panel. After crimping one end of grounding cable with the cold-pressing terminal, fix it to the grounding hole with grounding screw. The other end of grounding cable reliably connects to the ground.

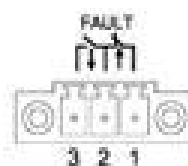
Note: The section area of grounding cable should not be less than 2.5mm². The grounding resistance requirement: <5Ω

- ◆ **Alarm Port**

It is for power loss alarm. When the power is supplied smoothly, the normally-open contact of the alarm relay is connected and the normally-closed contact is disconnected; when the power supply is cut off, the normally-open contact is disconnected and the normally-closed contact is connected.

Note: Pin 1 and Pin 2 are normally-closed contacts; Pin 2 and Pin 3 are normally-open contacts. The relay alarm is outputted through a green three-pin 3.81mm-spacing terminal block.

3.81mm alarm terminal block



- **Wiring and installation**

Step 1: Take the alarm terminal block off SICOM3024PT

Step 2: Insert three required cables into the alarm terminal block in sequence; use the screwdriver to tighten the screw to fix the cable

Step 3: Put the alarm terminal block back to where it was with the connected cable; use the screwdriver to tighten up the screw to fix the terminal block.

6. LED Indicators

SICOM3024PT LED indicators

LED	State	Description
System status LEDs		
RUN	Blinking 1Hz	Switch operates normally
	OFF	Switch does not operate
Alarm status LEDs		
ALARM	ON	Alarm status
	OFF	Operates normally.
Power indicators		
POW1, POW2	ON	Operates normally.
	OFF	Operates abnormally.
Gigabit port status LEDs (G1, G2, G3, G4)		
DPX	ON	Full duplex connection
	OFF	Half duplex connection
LINK	On	Effective network connection in the port
	Blinking	Network activities in the port
	Off	No effective network connection in the port
100M fiber ports, Ethernet RJ45 port LEDs		
Each Ethernet RJ45 port has two indicators, a yellow one and a green one. The yellow one indicates port speed, and the green one indicates port connection state.		
10M/100M (Yellow)	On	100M working state (i.e. 100Base-TX)
	Off	10M working state (i.e. 10Base-T)
LINK/ACT (Green)	On	Effective network connection in the port
	Blinking	Network activities in the port
	Off	No effective network connection in the port

7. Self inspection

After the switch is powered on, PWR indicator keeps ON. After 2 seconds, all port LEDs in the front panel will blink one time. After 30 seconds, RUN indicator blink and the device start-up complete.

8. CLI Management

There are two methods to login CLI: CONSOLE port and Telnet.

◆ CONSOLE Port

Step 1: Use the RJ45-to DB9-Console port cable to connect the SICOM3024PT CONSOLE port with the PC serial port.

Step 2: On the Windows desktop, click “Start” → “All Programs” → “Accessories” → “Communication” → “HyperTerminal”.

Setting the parameters of PC serial port with the following form:

Baud Rate (bits/second)	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

Step 3: Open the hyper terminal and power on the switch. During the device start-up process, type the device information on the window of hyper terminal. When the start-up complete, click “Enter”, you will see the prompt. At default state, the prompt is “SWITCH>”.

Step 4: When you see the command line prompt, type “enable” to enter Command line operation mode and the prompt will be changed to “SWITCH#”

```
SWITCH>enable
```

```
/General user configuration mode
```

```
SWITCH#config erminal
```

```
/ Privileged user configuration mode
```

```
SWITCH(config)#
```

```
/ Global configuration mode
```

```
SWITCH(config)#ip address <ip-address> mask <mask>
```

/IP address configuration

```
SWITCH(config)#ip gate <ip-address>
```

/ Gateway address configuration

```
SWITCH#show interface
```

/IP address query

```
SWITCH#reboot
```

/Device restart

```
SWITCH#load default
```

/Restore default setting

Step 5: For more detail, please refer to CLI configuration manual

◆ Telnet

Step 1: Use a cross-over cable or a straight-through cable to connect an Ethernet port in the switch with the management PC network card by Ethernet.

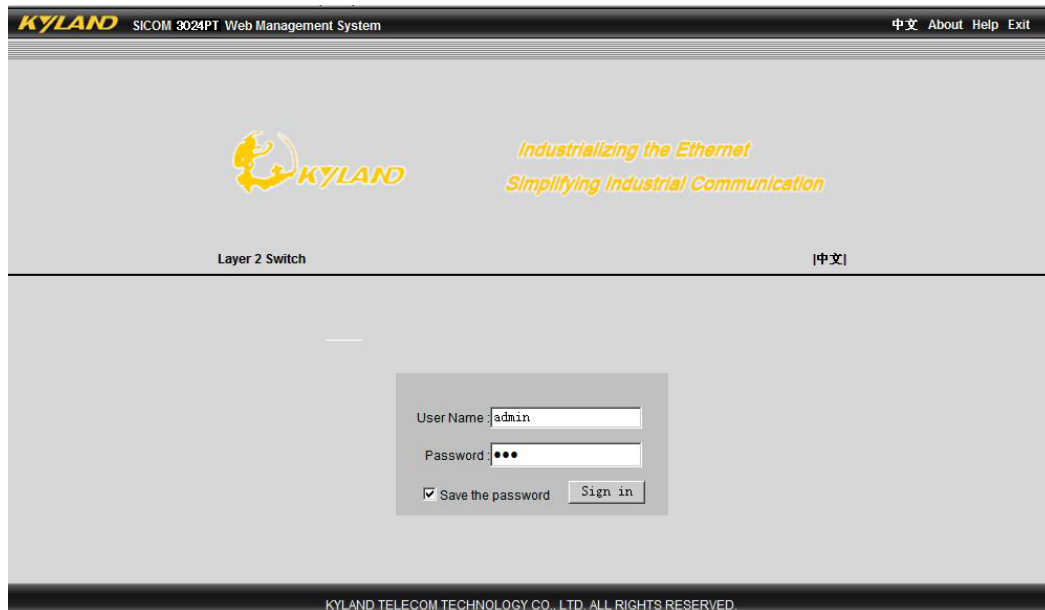
Step 2: In the window of “Operate” in Windows system, or follow the MS-DOS command line prompt, enter “telnet 192.168.0.2”, click “Enter”

Step 3: When the switch start-up finished, click “Enter”. The default prompt is “SWITCH>”.

Step 4: For more detail, please refer to CLI configuration manual

9. Login WEB Page

Step 1: Connect the switch with management PC by Ethernet. Enter the switch IP address in IE browser, such as 192.168.0.2, click “Enter” to enter the page as below. Type default user name “admin” and default password “123”, click “Sign in” to enter the main page of WEB.



a: WEB login page

Note: Password reset (username can't be changed). When the password has been forgotten or are not known, user can login CLI by CONSOLE port or Telnet to enter the following command to reset the password:

```
(config)#web-authentication password <password>
```

<password> can be 1 to 32 digits or letters (case-insensitive)

For example: reset the password to 1234, please enter:

```
web-authentication password 1234
```

Step 2: The WEB main page is shown as below. At the left of the main page, it is a tree management menu which includes the main menus of Device Information, Device Basic Configuration, Device Advanced Configuration, Switch Management, Save Current Running Configuration and Reboot with the Default Configuration.

Click each main menu to enter its sub-menu.

There are two function keys on the tree management menu: "Close up" and "Expand".

Click "Expand" to open all main menus and submenus.

Click "Close up" to close all sub-menus.



b: Main page

A CD for WEB management user manual (PDF format) is enclosed with the device.

10. Product Models

SICOM3024PT industrial Ethernet switch is a modular structure and its detailed configuration and models are shown in below tables:

SICOM3024PT-Chassis models

Model	Description	Power
SICOM3024PT-18-Chassis	2 10/100Base-TX RJ45 ports and 4 100M interface expansion slots	24VDC, 48VDC, 110VDC, 220VAC/DC, Single power supply or dual redundant power supplies (Optional)
SICOM3024PT-28-Chassis	6 100M interface expansion slots and 1 Gigabit interface expansion slot	

SICOM3024PT Module Configuration Table

Model	Description
-------	-------------

SM3.1-4GX	4 Gigabit SFP slots
SM3.1-4GE	4 10/100/1000Base-T(X) RJ45 ports
SM3.1-4S(M)	4 100Base-FX SM/MM fiber ports (FC/SC/ST connector)
SM3.1-2S(M)-2T	2 100Base-FX SM/MM fiber ports (FC/SC/ST Connector), 2 10/100Base-TX RJ45 ports
SM3.1-4T	4 10/100Base-TX RJ45 ports
SM3.1-2T	2 10/100Base-TX RJ45 ports

Note: SM3.1-4GX, SM3.1-4GE interface module is only for SICOM3024PT-28-Chassis;

SM3.1-2T interface module is only for SICOM3024PT-18-Chassis.

11. Basic Features and Specifications

◆ Standard

IEEE 1588V2, G.8261, IEEE 802.3, IEEE 802.3u, IEEE 802.3x, IEEE 802.3z, IEEE 802.3ab,

Store and forward switching mode

◆ EMC

IEC61000-4-2 (ESD): ±8kV contact discharge, ±15kV air discharge

IEC61000-4-3 (RS): 10V/m (80~1000MHz)

IEC61000-4-4 (EFT): power line ±4kV, data line ±2kV

IEC61000-4-5 (Surge): power line ±4kV CM/±2kV DM, data line ±2kV

IEC61000-4-6 (CS): 3V (10kHz~150kHz), 10V (150kHz~80MHz)

IEC61000-4-8 (Power frequency magnetic field): 100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-10 (Damped oscillatory): 30A/m

IEC61000-4-12/18 (Damped oscillatory wave): 2.5kV CM, 1kV DM

IEC61000-4-16 (Common mode conduct): 30V cont. 300V, 1s

◆ **Network**

Ring, tangent ring, star and chain network topology

◆ **Cable**

Twisted Pair: 0~100m (Standard CAT5, CAT5e network cable)

Multi Mode Fiber: 1310nm, 0~5km (100Mbps)

Single Mode Fiber: 1310nm, 0~40km; 1550nm, 0~80km

◆ **Power Requirements**

Power input: 24VDC (18~36VDC), 48VDC (36~72VDC), 110VDC (77~154VDC),
220VAC/DC (85~264VAC/120~370VDC)

Power terminal: 5-pin 5.08mm-spacing plug-in terminal block

Power consumption: <40W (SICOM3024PT-18)

<51W (SICOM3024PT-28)

◆ **Physical Characteristics**

Casing: Ribbed aluminum case (fanless)

Installation: 19 inch 1U rack mounting (SICOM3024PT-18)

19 inch 2U rack mounting (SICOM3024PT-28)

Dimensions (W×H×D): 482.6mm×44mm×328mm (SICOM3024PT-18)

482.6mm×88mm×328mm (SICOM3024PT-28)

Weight: 3.5kg (SICOM3024PT-18)

5kg (SICOM3024PT-28)

◆ **Environment Limits**

Operating Temperature: -40 to 85°C (-40 to 185°F)

Storage Temperature: -40 to 85°C (-40 to 185°F)

Ambient Relative Humidity: 5% to 95% (non-condensing)

◆ **Warranty: 5 years**

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

<http://www.kyland.com.cn/>

<http://www.kyland.cn/>