KOM300A Industrial Media Converter

Hardware Installation Manual

KYLAND

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KOM300A Industrial Media Converter

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

This product performs reliably as long as it is used according to the guidance. Artificial damage or destruction of the equipment should be avoided.

- Read this manual carefully and keep it for future reference;
- Do not place the equipment near water sources or damp areas;
- Do not place anything on power cable or put the cable in unreachable places;
- Do not tie or wrap the cable, which may cause a fire risk;
- Power connectors and other equipment connectors should be firmly interconnected and checked frequently;
- Do not repair the equipment by yourself, unless it is clearly specified in the manual;
- Please keep the equipment clean; if necessary, wipe the equipment with soft cotton cloth.

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

KOM300A is a series of green DIN-rail industrial media converters with low power consumption and IP40 protection class. They can be applied extensively in wind power, distribution network automation, subway PIS, power SCADA, wastewater treatment, metallurgy, intelligent transportation, rail transit, and many other industries.

KOM300A supports both DIN rail and panel mounting. It provides one 100Base-FX port and two 10/100Base-T(X) Ethernet ports on the front panel.

2 Structure and Interface

2.1 Front Panel

Based on the voltage input range and redundancy support, KOM300A adopts either of the following front panels:

- Front Panel 1 (24DCW and 12DCW, redundant power supply)

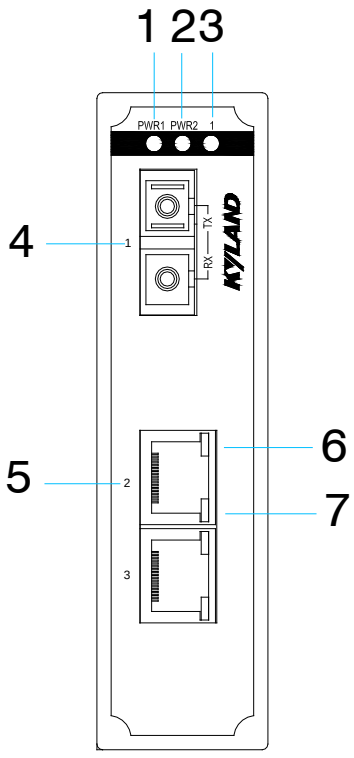


Figure 1 Front Panel 1

Table 1 Description of Front Panel 1

No.	Identifier	Description
1	PWR1	Power 1 LED
2	PWR2	Power 2 LED
3	1	100Base-FX port LED
4	1	100Base-FX port, SM/MM (FC/ST/SC connector)
5	2, 3	10/100Base-T(X) port (RJ45 connector)
6	--	RJ45 port Speed LED
7	--	RJ45 port Link/ACT LED

- Front Panel 2 (220AC/DCW, single power supply)

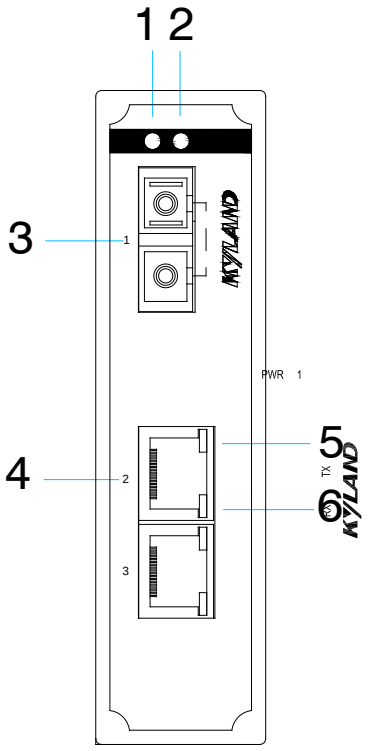


Figure 2 Front Panel 2

Table 2 Description of Front Panel 2

No.	Identifier	Description
1	PWR	Power LED
2	1	100Base-FX port LED
3	1	100Base-FX port, SM/MM (FC/ST/SC connector)
4	2, 3	10/100Base-T(X) port (RJ45 connector)

5	--	RJ45 port Speed LED
6	--	RJ45 port Link/ACT LED

2.2 Top Panel

Based on the voltage input range and redundancy support, KOM300A adopts either of the following top panels:

- Top Panel 1 (24DCW, 12DCW, redundant power supply)

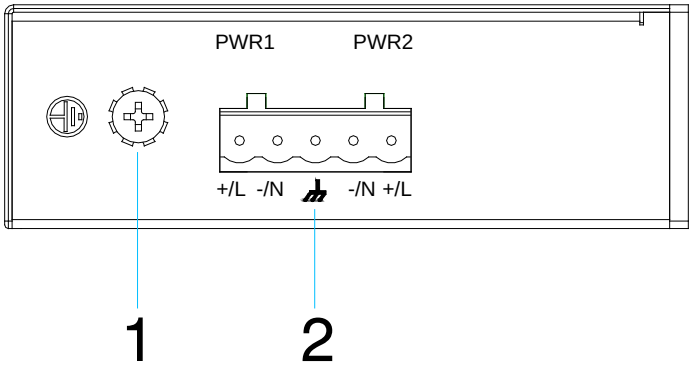


Figure 3 Top Panel 1

Table 3 Description of Top Panel 1

No.	**Identifier**	**Description**
1		Grounding screw
2	PWR1 PWR2 +/L -/N -/N +/L	Power terminal block (5-pin 5.08mm-spacing plug-in terminal block)

- Top Panel 2 (220AC/DCW, single power supply)

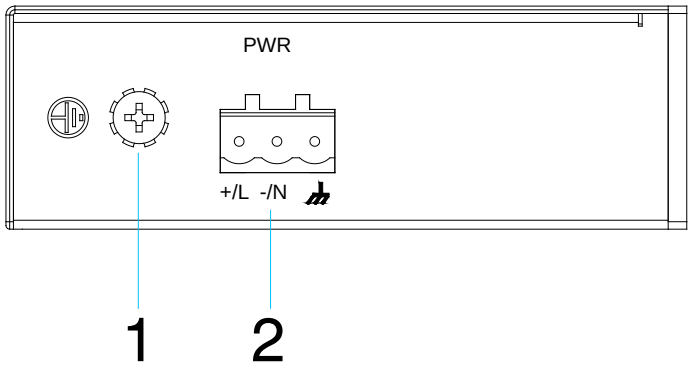


Figure 4 Top Panel 2

Table 4 Description of Top Panel 2

No.	Identifier	Description
1		Grounding screw
2	PWR +/L -/N 	Power terminal block (3-pin 5.08mm-spacing plug-in terminal block)

3 Mounting

3.1 Dimension Drawing

- Dimensions for DIN-Rail Mounting (unit: mm)

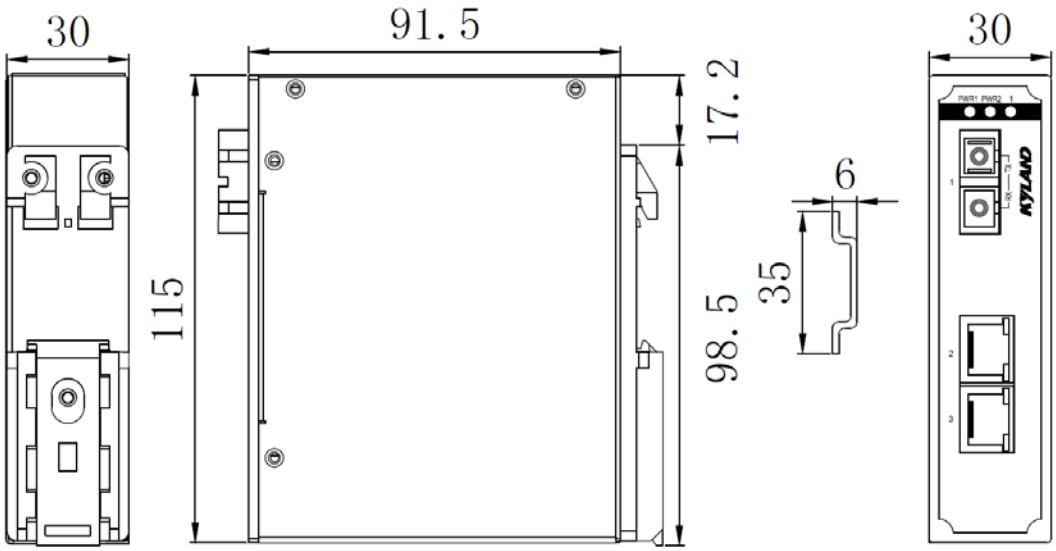


Figure 5 Dimensions for DIN-Rail Mounting

- Dimensions for Panel Mounting (unit: mm)

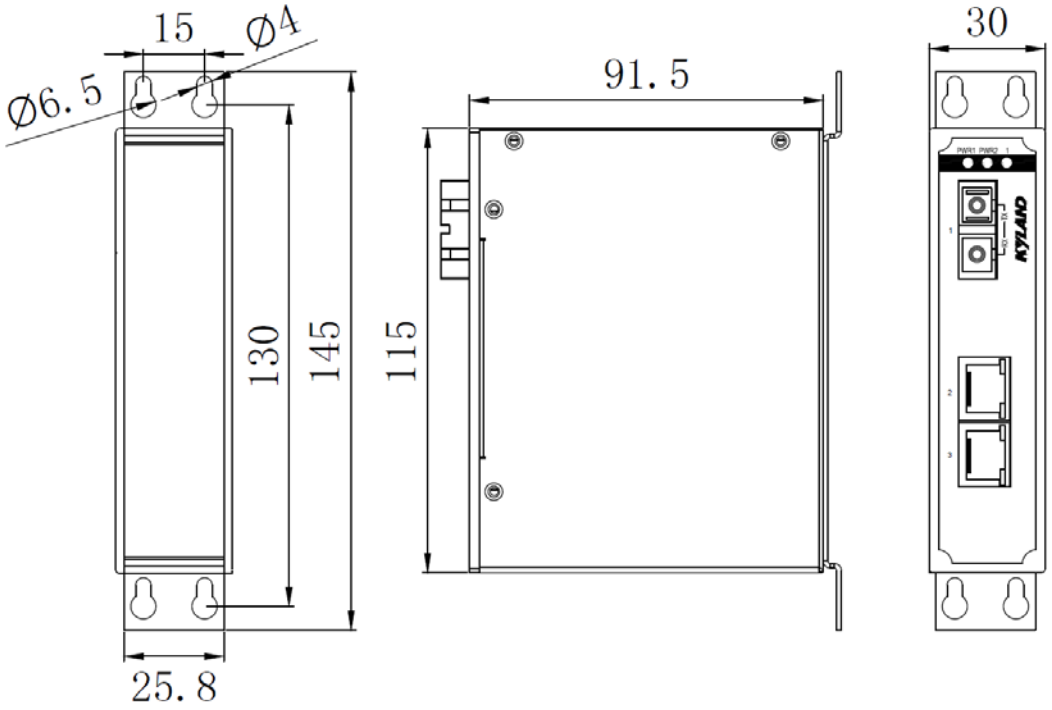


Figure 6 Dimensions for Panel Mounting

3.2 Mounting Modes and Steps

- DIN-Rail Mounting

Detailed steps are as follows:

Step 1: Select the mounting position for KOM300A and guarantee adequate space for it.

Step 2: Insert the upper connecting seat of KOM300A into 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, as shown in the left of Figure 7. Make sure that KOM300A is firmly installed on the DIN rail, as shown in the right of Figure 7.

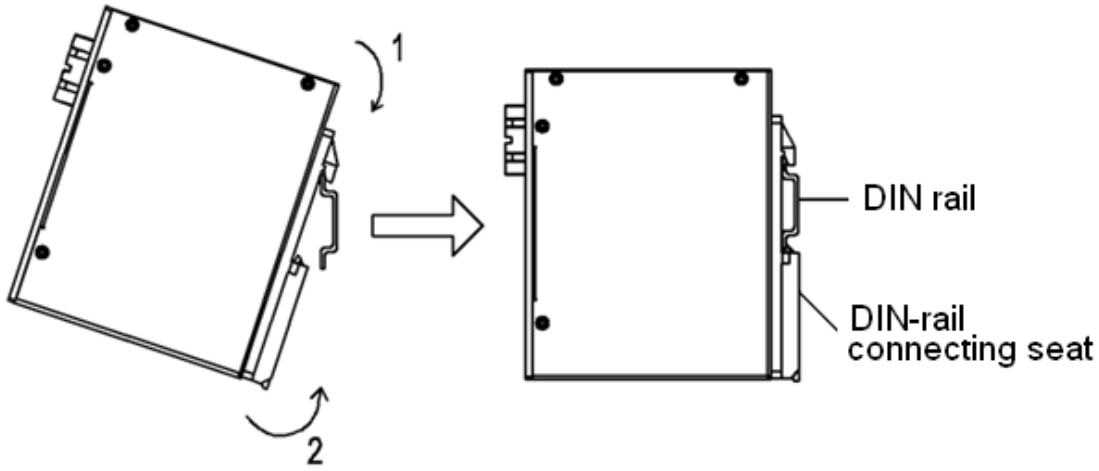


Figure 7 DIN Rail Mounting

- DIN Rail Dismounting

Detailed steps are as follows:

Step 1: Open the spring locking piece of the connecting seat with a screw driver, as shown in the left of Figure 8.

Step 2: Move KOM300A in the direction of arrow 2 and the bottom of KOM300A outward in the direction of arrow 3. In this way, you can remove KOM300A from DIN rail.

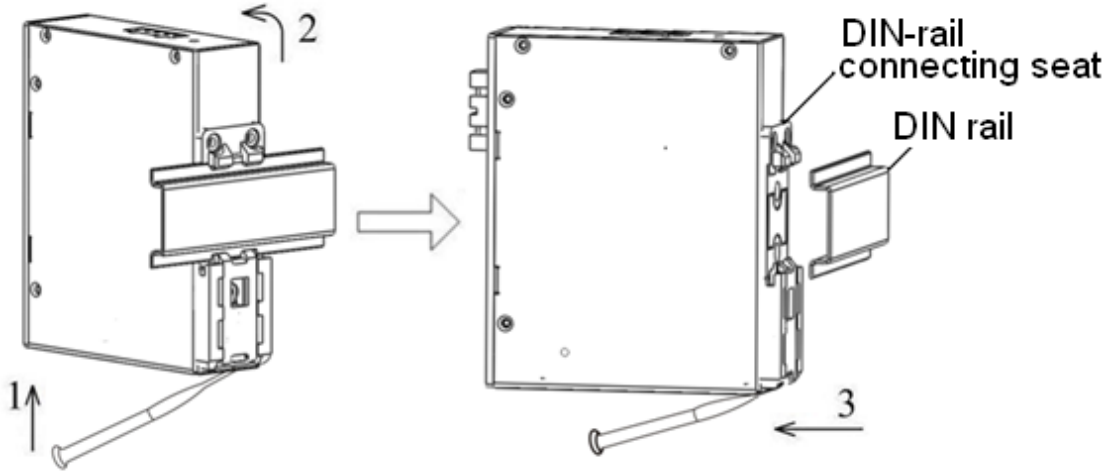


Figure 8 DIN Rail Dismounting

- Panel Mounting

Detailed steps are as follows:

Step 1: Select the mounting position on a wall or an inner wall of a cabinet for KOM300A and guarantee adequate space for it.

Step 2: Punch four holes in the selected position according to the panel mounting dimensions of KOM300A. Insert four M3×10 screws into the four holes respectively, and turn the screws with a Philips screwdriver until about a 5mm distance is left between each screw head and the wall.

Step 3: 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 KOM300A in direction 2 until the four screws are in the Φ4 positions. Then tighten the screws. In this way, KOM300A is firmly mounted to the wall or inner wall of a cabinet.

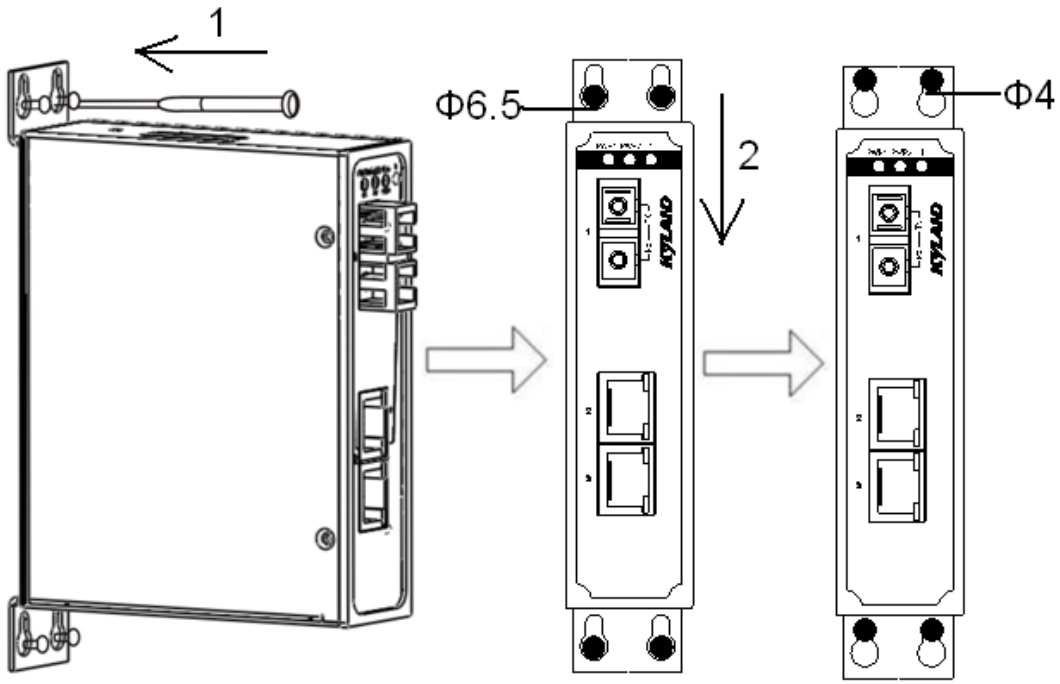


Figure 9 Panel Mounting

- Panel Dismounting

Detailed steps are as follows:

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. In so doing, you have completed

dismounting the device.

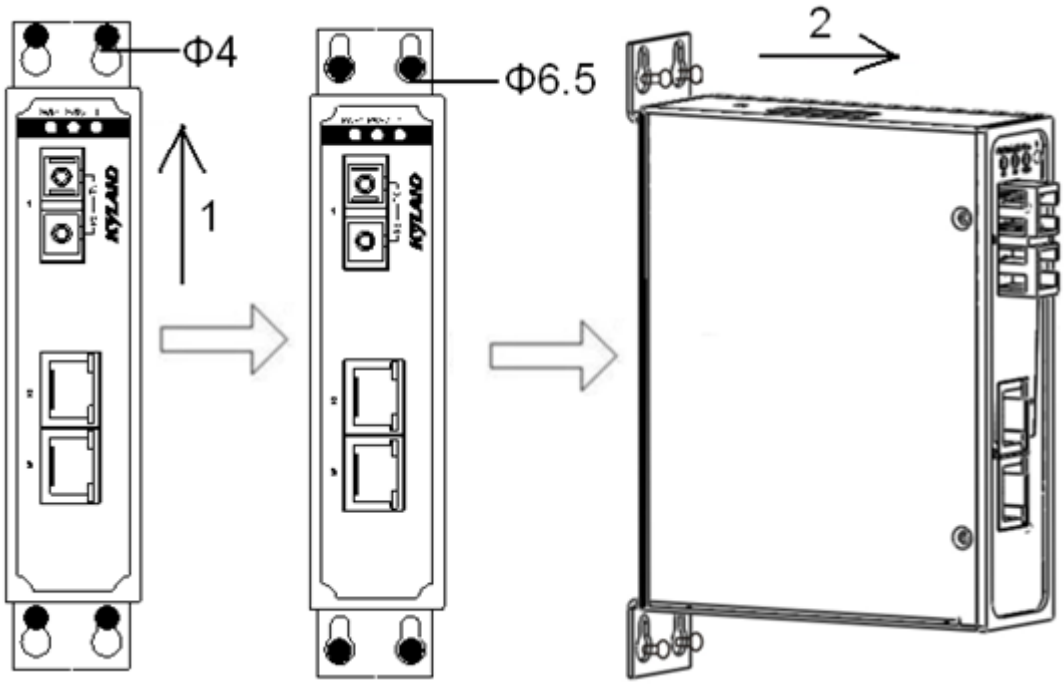


Figure 10 Panel Dismounting

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.

- Pins of the 10/100Base-T(X) RJ45 port

Figure 11 shows the pin numbers of the 10/100Base-T(X) RJ45 port.

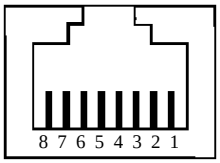


Figure 11 RJ45 Port

Table 5 lists the pin definitions of the 10/100Base-T(X) RJ45 port.

Table 5 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

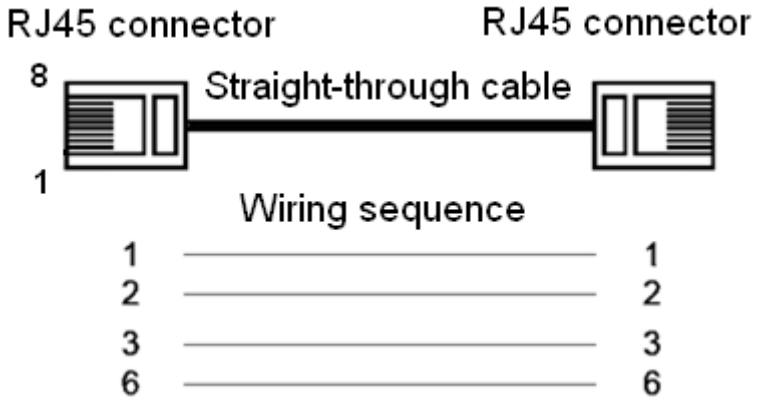


Figure 12 Connection Using Straight-through Cable

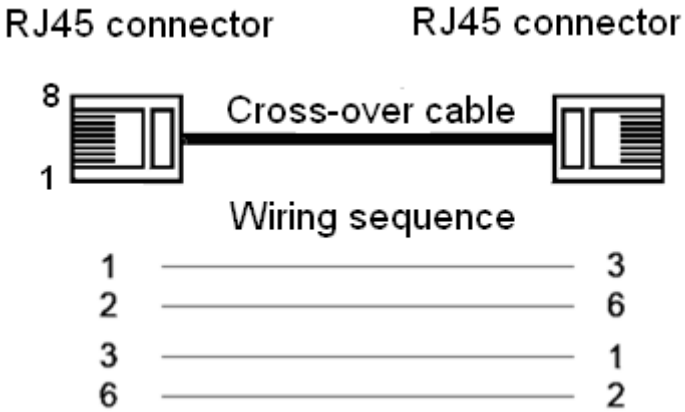


Figure 13 Connection Using Cross-over Cable

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 FC/SC/ST connector, and each port consists of TX (transmit) port and RX (receive) port, as shown in Figure 14.

Figure 14 shows the wiring of the 100Base-FX port. (The following uses the SC port as example; ST/FC wiring method is the same with SC.) To enable data transmission 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 port of Device A to the TX port of Device B.

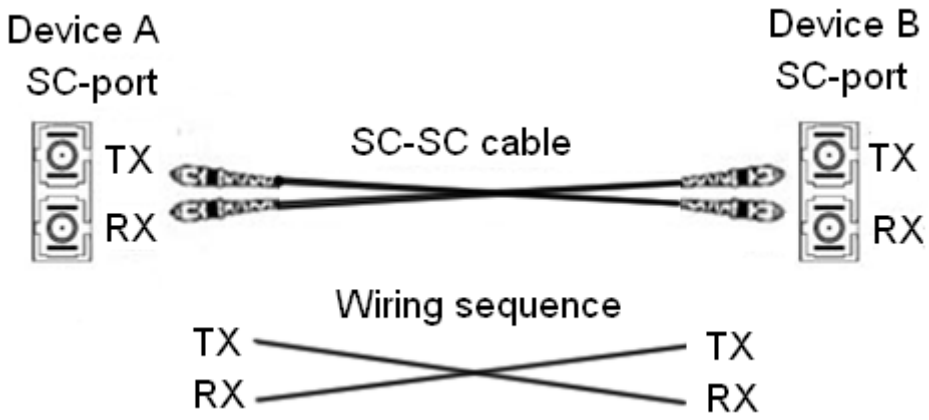


Figure 14 Wiring Sequence of 100Base-FX Port

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 fiber port.

4.3 Grounding

Grounding protects the device from lightning and interference. Therefore, you must ground the device properly.

As shown in Figure 15 (the top panel with 5-pin terminal block is used as an example; the grounding methods are the same for the two types of top panels), there is a grounding screw on the top panel of KOM300A. The screw is for chassis grounding. The grounding position of the 5.08mm power terminal block is PGND. Use an 18#AWG yellow-green wire to connect the GND to the

PGND. Connect one end of the grounding cable to the grounding screw and the other end to the earth firmly (cross-sectional area of the chassis grounding cable>2.5mm^2; grounding resistance<5Ω).

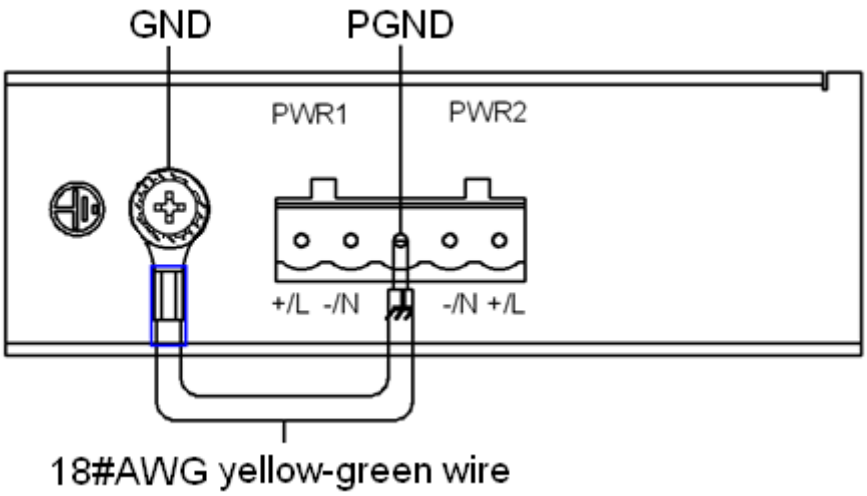


Figure 15 Grounding

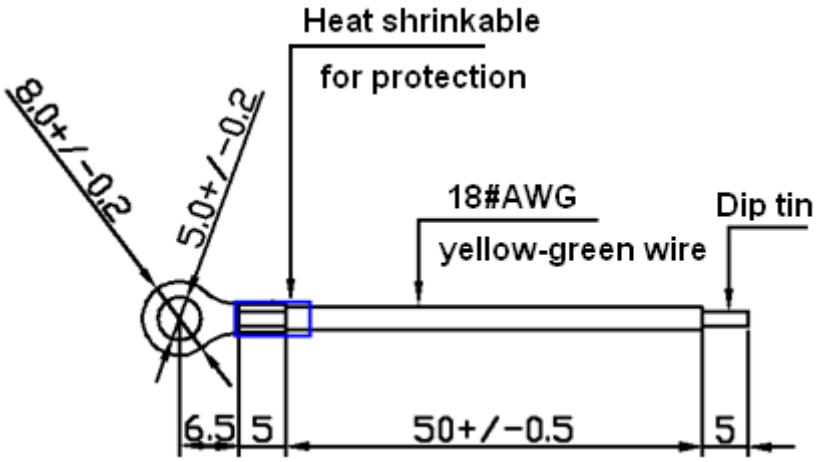
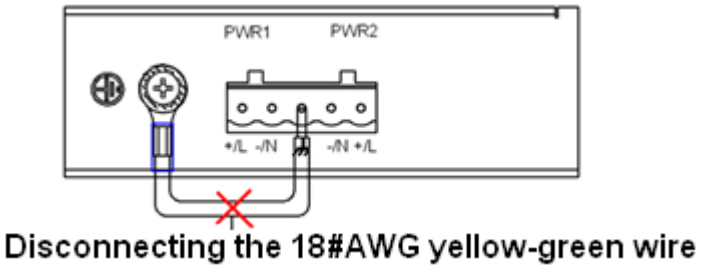


Figure 16 Specifications of 18#AWG Yellow-Green Wire (unit: mm)

Caution:

To perform a dielectric voltage withstand test, you need to disconnect the 18#AWG yellow-green wire, as shown in Figure 17. Otherwise, the test may fail due to current leakage caused by surge circuit.



Disconnecting the 18#AWG yellow-green wire

Figure 17 Disconnecting the 18#AWG Yellow-Green Wire

4.4 Power Terminal Block

Based on the power input range and redundancy support, KOM300A adopts 5-pin or 3-pin 5.08mm-spacing plug-in terminal block on the top panel. You need to connect the power cable to the terminal block to provide power for the device.

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

When the input voltage is 24DCW or 12DCW, the device adopts the 5-pin 5.08mm-spacing plug-in terminal block, as shown in Figure 18.

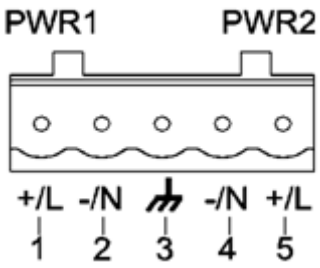


Figure 18 5-Pin 5.08mm-Spacing Plug-in Terminal Block (socket)

Table 6 lists the pin definitions of the 5-pin 5.08mm-spacing plug-in terminal

block.

Table 6 Pin Definitions of 5-Pin 5.08mm-Spacing Plug-in Terminal Block

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

- Wiring and Mounting

Step 1: Ground the device properly according to section 4.3.

Step 2: Remove the power terminal block from KOM300A.

Step 3: Insert the power cable into the power terminal block according to Table 6 to fix the power cable.

Step 4: Insert the terminal with the connected cable into the terminal block on the KOM300A.

Step 5: Check the status of the power LED on the front panel. If the LED is on, the power is connected properly.

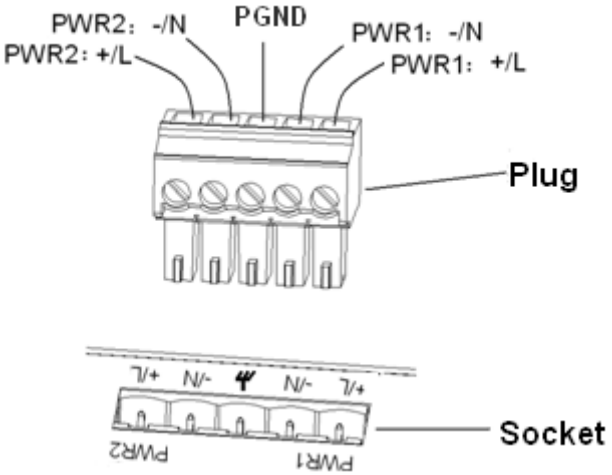


Figure 19 Cable Connection of 5-Pin 5.08mm-Spacing Plug-in Terminal Block

- 3-Pin 5.08mm-Spacing Plug-in Terminal Block

When the input voltage is 220AC/DCW, the device adopts the 3-pin 5.08mm-spacing plug-in terminal block, as shown in Figure 20.

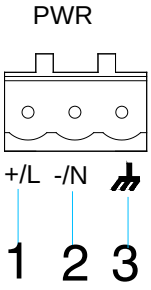


Figure 20 3-Pin 5.08mm-Spacing Plug-in Terminal Block (socket)

Table 7 lists the pin definitions of the 3-pin 5.08mm-spacing plug-in terminal block.

Table 7 Pin Definitions of 3-Pin 5.08mm-Spacing Plug-in Terminal Block

No.	DC Definition	AC Definition
1	PWR: +	PWR: L
2	PWR: -	PWR: N
3	PGND	PGND

Wiring and Mounting

Step 1: Ground the device properly according to section 4.3.

Step 2: Remove the power terminal block from KOM300A.

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 KOM300A.

Step 5: Check the status of the power LED on the front panel. If the LED is on, the power is connected properly.

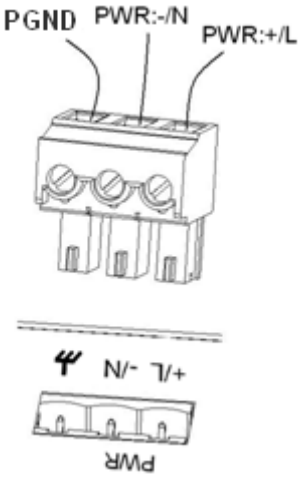


Figure 21 Cable Connection of 3-Pin 5.08mm-Spacing Plug-in Terminal Block

5 LEDs

Table 8 lists the descriptions of the front panel LEDs.

Table 8 Front Panel LEDs

LED	State	Description
Power LEDs		
PWR	On	The power is connected and operates properly.
	Off	The power is not connected or operates abnormally.
PWR1	On	Power 1 is connected and operates properly.
	Off	Power 1 is not connected or operates abnormally.
PWR2	On	Power 2 is connected and operates properly.
	Off	Power 2 is not connected or operates abnormally.
10/100Base-T(X) RJ45 port LEDs		
Each RJ45 port has two LEDs. The yellow one indicates port rate while the green one indicates port connection state.		
Speed (yellow)	On	100M working state
	Off	10M working state or no connection
Link/ACT (green)	On	Effective port connection
	Blinking	Ongoing network activities
	Off	No effective port connection
100Base-FX port LED		

Link/ACT	On	Effective port connection
	Blinking	Ongoing network activities
	Off	No effective port connection

6 Product Configuration Information

Table 9 lists the models supported by KOM300A.

Table 9 KOM300A Configuration

Model	**Interface**	**Power**
KOM300A-1S/M-2T	One 100Base-FX port SM/MM (FC/ST/SC connector), two 10/100Base-T(X) RJ45 ports	24DCW (redundant power supply) 12DCW (redundant power supply) 220AC/DCW (single power supply)

Table 10 lists the optional accessories of KOM300A.

Table 10 Optional Accessories of KOM300A

Model	**Description**
DT-BGAZ-01	Panel mounting plate
DT-FCZ-RJ45-01	RJ45 dustproof shield for a single port

7 Basic Features and Specifications

Power Requirements	
Rated voltage range	12DCW: 12-24VDC 24DCW: 24-48VDC 220AC/DCW: 100-240VAC, 50/60Hz; 110-220VDC
Maximum voltage range	12DCW: 9-36VDC 24DCW: 18-72VDC 220AC/DCW: 85-264VAC/77-300VDC
Power terminal	5-pin 5.08mm-spacing plug-in terminal block 3-pin 5.08mm-spacing plug-in terminal block
Rated Power Consumption	
Rated Power Consumption	2W (MAX)
Physical Characteristics	

Housing	Metal, fanless
Installation	DIN rail or panel mounting
Dimensions (W×H×D)	30mm×115mm×91.5mm
Weight	0.3kg
Environmental Limits	
Operating temperature	-40℃ to +85℃
Storage temperature	-40℃ to +85℃
Ambient relative humidity	5% to 95% (non-condensing)
MTBF	
MTBF	462741 hours
Warranty	
Warranty	5 years

For more information about KYLAND products, please visit our website: http://www.kyland.cn/