KOM300F Fiber Media Converter
Hardware Installation Manual

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KYLAND

KOM300F Fiber 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

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

KOM300F includes a series of green low-consumption industrial fiber media converters applicable to wind power, distribution network automation, subway PIS, power SCADA, sewage treatment, metallurgy, intelligent transportation, rail transit, and many other industries. KOM300F supports DC and AC power input with wide voltage range and conforms to industrial EMC Level-4 requirements.

KOM300F integrated device supports DIN-rail mounting, while a bare board can be installed in another device. They provide one 100Base-FX Ethernet port and two 10/100Base-T(X) Ethernet ports, as listed in the following table.

Table 1 KOM300F Models

Model	Port		Remarks	Power Supply
	100Base-FX Ethernet port	10/100Base-T(X) Ethernet port		
KOM300F-1S/M-2T	1	2	Integrated device	220AC/DC, 110DC, 48DC, 24DC (single power supply)
KOM300F-EM-C-1S/M-2T	1	2	Bare board, conformal coating	

Note:
We reserve the right to amend the product information listed in this table 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 device performance.

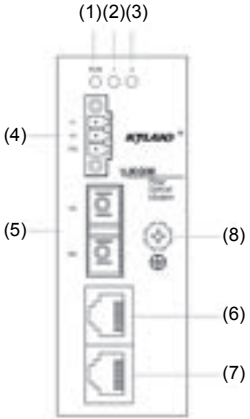

Figure 1 Front Panel of KOM300F-1S/M-2T

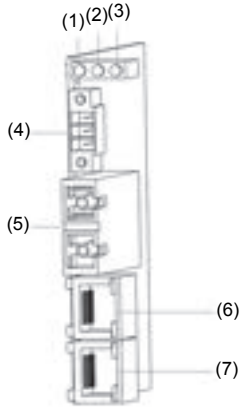

Figure 2 KOM300F-EM-C-1S/M-2T (bare board)

Table 2 Description

No.	Description
(1)	Running LED
(2)	Connection status LED for 10/100Base-T(X) Ethernet port 1
(3)	Connection status LED for 10/100Base-T(X) Ethernet port 2
(4)	Power terminal block
(5)	100Base-FX Ethernet port
(6)	10/100Base-T(X) Ethernet port 1
(7)	10/100Base-T(X) Ethernet port 2
(8)	Grounding screw

3 Mounting

3.1 Dimension Drawing

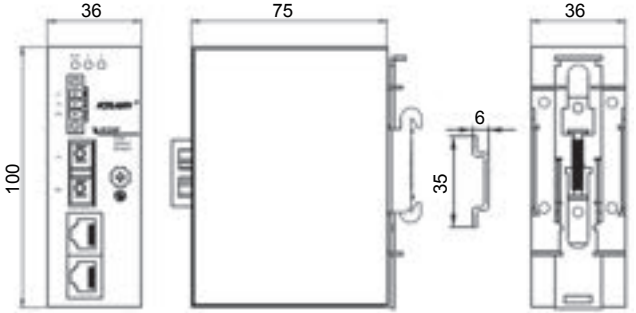

Figure 3 Dimensions for DIN-Rail Mounting (unit: mm)

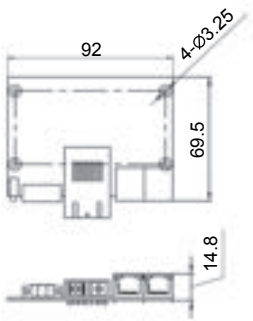

Figure 4 Dimensions of Bare Board (unit: mm)

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 manual are only for reference.

3.2 Mounting Modes and Steps

The integrated device models support DIN-rail mounting while bare board models can be embedded in other devices for integration. Before installation, make sure that the following requirements are met.

1) Environment: temperature (-40°C to 85°C), 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 (dimensions: 36mm×100mm×75mm).

Step 2: Insert the lower edge of the DIN rail into the bend of the lower hooks of the DIN rail connecting seat. Pull the device upward and move the device in direction 2 to insert the upper edge of the DIN rail into the bend of the upper hooks of the connecting seat. In this way, the device is mounted on the DIN rail, as shown in the following figure.

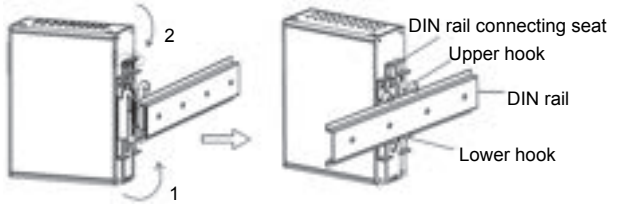

Figure 5 Mounting

- Dismounting

Step 1: As shown in the following figure, pull the device upward and move it in direction 2 until the upper edge of the DIN rail is detached from the upper hooks of the connecting seat.

Step 2: Push the device downward until the DIN rail is removed from the connecting seat completely.

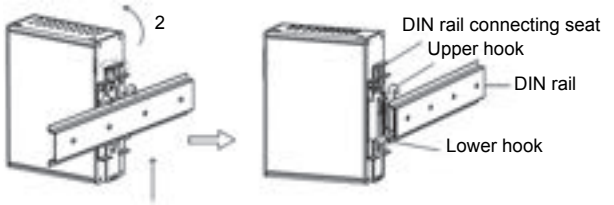

Figure 6 Dismounting

Caution:
If you find it difficult to pull the device upward during mounting or dismounting, you can push the part circled in the preceding figure with your finger or screwdriver.

4 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

The following figure shows the pin numbers of the RJ45 port.

Figure 7 RJ45 Port

The following table lists the pin definitions of the 10/100Base-T(X) RJ45 port.

Table 3 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

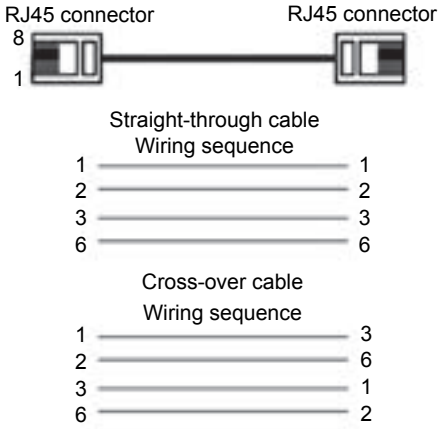

Figure 8 Connection Using Straight-through/Cross-over Cable

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 Ethernet Port

100Base-FX Ethernet port is equipped with FC/ST/SC connector, and each port consists of TX (transmit) port and RX (receive) port. To enable data transmission between Device A and Device B, connect the TX port of Device A to the RX port of Device B, and the RX port of Device A to the TX port of Device B. The following uses an SC port as an example. The wiring sequence of an ST/FC port is the same with that of the SC port.

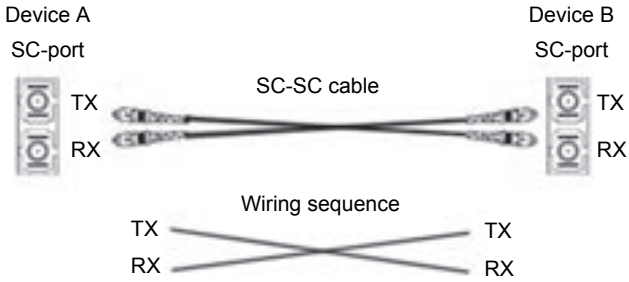

Figure 9 Connection of 100Base-FX Ethernet Port

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.

4.3 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.

The device provides a grounding screw on the front panel for chassis grounding. After crimping one end of the grounding cable to a cold pressed terminal, secure the end to the grounding screw and connect the other end to the earth firmly.

The device provides a power supply grounding terminal (PG), which also needs to be grounded. For details about how to ground the terminal, see step 2-5 of "Wiring and Mounting" in section 4.4.

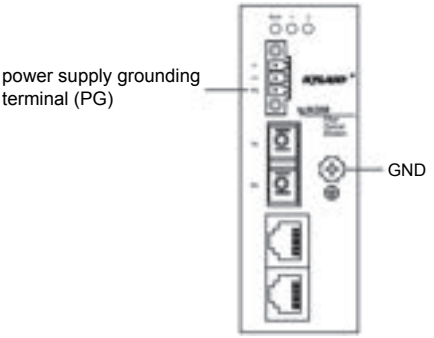

Figure 10 Grounding

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

4.4 Power Terminal Block

There is a power terminal block on the front panel. You need to connect power wires to the terminal block to provide power for the device. The device supports single power supply with a 3-pin 3.81mm-spacing plug-in terminal block.

Note:
0.75mm^2<Cross-sectional area of the power wire<2.5mm^2; grounding resistance<5Ω.

- 3-Pin 3.81mm-Spacing Plug-in Terminal Block

The following figure shows the 3-pin 3.81mm-spacing plug-in terminal block.

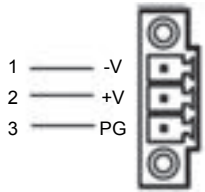

Figure 11 3-Pin 3.81mm-Spacing Plug-in Terminal Block

The following table lists the pin definitions of the 3-pin 3.81mm-spacing plug-in terminal block.

Table 4 Pin Definitions of 3-Pin 3.81mm-Spacing Plug-in Terminal Block

No.	Signal	Definition
1	-V	Negative power supply
2	+V	Positive power supply
3	PG	PGND

- Wiring and Mounting

Step 1: Ground the device properly according to section 4.3.
Step 2: Remove the power terminal block from the device.
Step 3: Insert the power wires into the power terminal block according to Table 4 and secure the wires.
Step 4: Insert the terminal block with the connected wires into the terminal block socket on the device.
Step 5: Connect the other end of the power wires to the external power supply system according to the power supply requirements of the device.

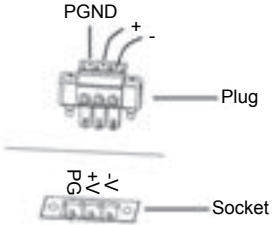

Figure 12 Connection of 3-Pin 3.81mm-Spacing Plug-in Terminal Block

Caution:
The device supports 220AC/DC, 110DC, 48DC, and 24DC 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 damage to humans.
- Do not remove any part or plug in or out any connector when the device is powered on.

5 LEDs

Table 5 Front Panel LEDs

LED	State	Description
RUN LED	Dark light (on)	The device is powered on and no data is being transmitted through the 100Base-FX Ethernet port.
	Strong light (blinking)	Data is being transmitted through the 100Base-FX Ethernet port.
	Off	The device is powered off.
10/100Base-T(X) Ethernet port connection status LED	On	Effective port connection
	Blinking	Ongoing network activities
	Off	No effective port connection

6 Basic Features and Specifications

Power Requirements		
Power Identifier	Rated Voltage Range	Maximum Voltage Range
24DC	24VDC	9-36VDC
48DC	48VDC	36-72VDC
110DC	110VDC	77-154VDC
220AC/DC	100-240VAC, 50/60Hz; 220VDC	85-264VAC/120-300VDC
Terminal block	3-pin 3.81mm-spacing plug-in terminal block	
Rated Power Consumption		
Rated power consumption	3.0W (MAX)	
Physical Characteristics		
Housing	Metal, fanless	
Installation	Integrated device: DIN-rail mounting Bare board: embedded	
Dimensions (W×H×D)	Integrated device: 36mm×100mm×75mm (excluding connectors and DIN rail) Bare board: 14.8mm×92mm×69.5mm (excluding connectors)	
Weight	0.3Kg	
Environmental Limits		
Operating temperature	-40°C~+85°C	
Storage temperature	-40°C~+85°C	
Ambient relative humidity	5%~95% (non-condensing)	
MTBF		
MTBF	462,741hours	
Warranty		
Warranty	5 years	

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