KOM200 Data Media Converter

Hardware Installation Manual

RUN 1 2
KYLAND
KOM
Fiber Optical Modem
TX
RX

Kyland Technology Co., LTD.

Publication Date: Date: Sep. 2012

Version: V4.1

Customer Service Hotline: (+8610) 88796676

FAX: (+8610) 88796678

Website: http://www.kyland.cn

E-mail: support@kyland.biz

No.: 1.12.02.2002-1

KOM200 Data 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.

All rights reserved.
No part of this documentation may be excerpted, reproduced, translated, annotated or duplicated, in any form or by any means without the prior written permission of KYLAND Corporation.

Copyright © 2012 KYLAND Technology CO., LTD.

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 4
2 Structure and Interface 5
2.1 Front Panel...5
3 Mounting..6
3.1 Dimension Drawing 6
3.2 Mounting and Dismounting Steps..6
4 Cable Connection 7
4.1 Fiber Port..7
4.2 Data Port 8
4.3 Grounding...10
4.4 Power 11
5 LEDs..12
6 Product Configuration Information 13
7 Basic Features and Specifications..13

1 Product Overview

KOM200 data media converters realize optical-electrical conversion of RS232, RS485, and RS422 signals. Capable of working properly in rugged industrial environment, even in harsh temperatures, KOM200 series provide sound reliability for industrial control networks. These series media converters are especially suitable for banks, electric power sectors, factories, and departments and systems that have special requirements on electromagnetic interference (EMI) environment.

KOM200 media converters feature completely transparent communication and plug-and-play, without requiring commissioning. The integrated optical transceiver outputs stable and reliable optical power. Both transmission ends are perfectly insulated, immune to EMI, ground loop interference, and lightning damage.

KOM200 series can be installed on a DIN rail. The media converter provides one fiber port and one data port (integrated three-line serial ports).

2 Structure and Interface

2.1 Front Panel

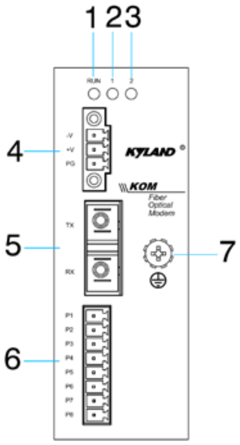
1
2
3
RUN
1
2
4
-V
+V
PG
KYLAND
KOM
Fiber Optical Modem
5
TX
RX
7
6
P1
P2
P3
P4
P5
P6
P7
P8

Figure 1 Front Panel

Table 1 Description of Front Panel

No.	Identifier	Description
1	RUN	Running LED
2	1	Data receiving LED
3	2	Data sending LED
4	-v +v PG	Power terminal block, 3-pin 3.81mm-spacing plug-in terminal block
5	TX RX	Fiber port
6	P1 P2 P3 P4 P5 P6 P7 P8	Data port (3 serial ports), 8-pin 3.81mm-spacing plug-in terminal block

3 Mounting

3.1 Dimension Drawing

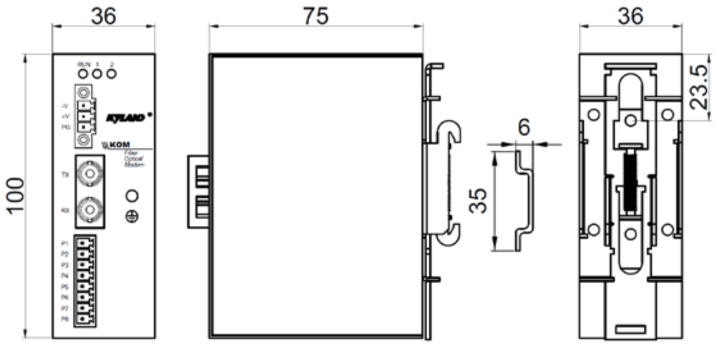
36
75
36
100
6
35
23.5

Figure 2 Dimensions for DIN-Rail Mounting (Unit: mm)

3.2 Mounting and Dismounting Steps

- **Mounting**

Step 1: Select the mounting position for the device and guarantee adequate space and heat dissipation for it.

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.

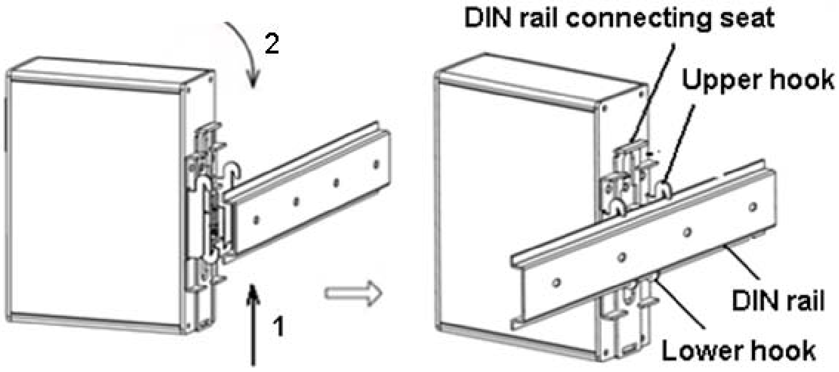
2
1
DIN rail connecting seat
Upper hook
DIN rail
Lower hook

Figure 3 DIN-Rail 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 detached from the connecting seat completely.

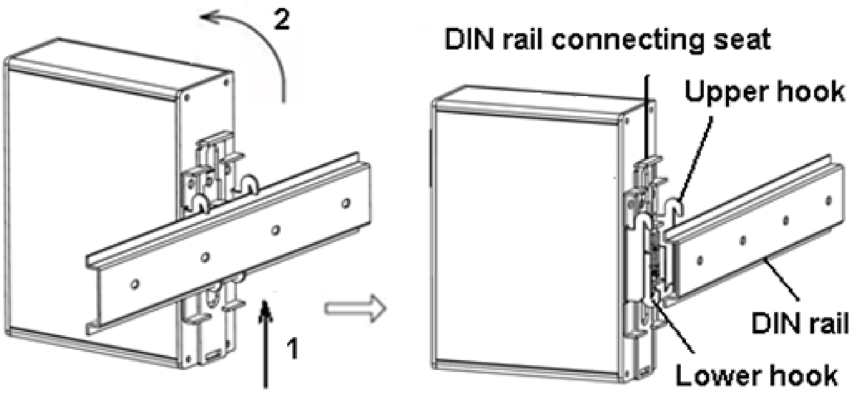

Figure 4 Removing KOM200 from DIN Rail

4 Cable Connection

4.1 Fiber Port

The fiber port adopts FC/SC/ST connector. Each fiber port includes one TX port and one RX port, as shown in Figure 5.The fiber port supports 54Mbps transmission rate. For P2P communication, three-line RS232, RS485, and RS422 can be transmitted.

Figure 5 shows fiber port wiring. (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.

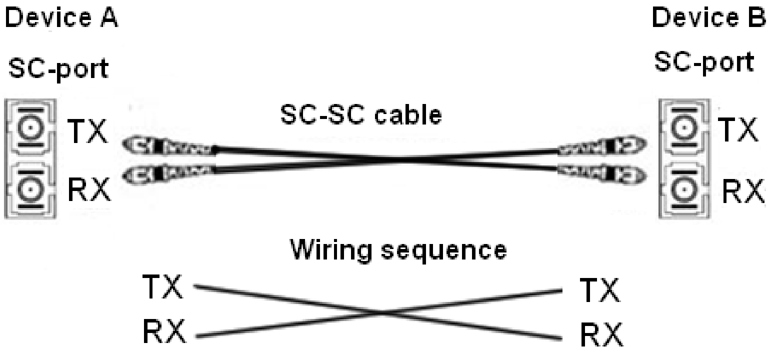
Device A
SC-port
TX
RX
SC-SC cable
Device B
SC-port
TX
RX
Wiring sequence
TX
RX
TX
RX

Figure 5 Wiring of Fiber 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.

4.2 Data Port

KOM200 communicates with other devices through the 8-pin 3.81mm-spacing plug-in terminal block, as shown in Figure 6. The terminal block supports three-line serial port communication.

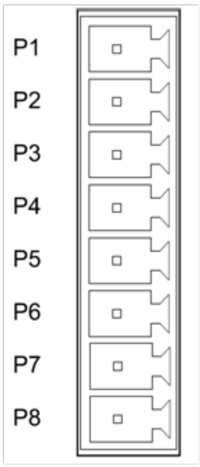
P1
P2
P3
P4
P5
P6
P7
P8

Figure 6 Data Port

The pin definitions of data port vary with product models.

- Table 2 shows the pin definitions of KOM200-232/422 data port.

Table 2 Pin Definition of KOM200-232/422 Data Port

Pin	**Definition**
P1	Not used
P2	GND
P3	Transmit Data (TXD) of line-2 RS232 serial port
P4	Receive Data (RXD) of line-2 RS232 serial port
P5	Receive Data+ (RS422R+) of line-1 RS422 serial port
P6	Receive Data- (RS422R-) of line-1 RS422 serial port
P7	Transmit Data- (RS422T-) of line-1 RS422 serial port
P8	Transmit Data+ (RS422T+) of line-1 RS422 serial port

- Table 3 shows the pin definitions of KOM200-485/232 data port.

Table 3 Pin Definition of KOM200-485/232 Data Port

Pin	**Definition**
P1	Not used
P2	GND
P3	Negative terminal (RS485-) of Line-3 RS485 serial port
P4	Positive terminal (RS485+) of Line-3 RS485 serial port
P5	Receive Data (RXD1) of line-2 RS232 serial port
P6	Transmit Data (TXD1) of line-2 RS232 serial port
P7	Receive Data (RXD0) of line-1 RS232 serial port
P8	Transmit Data (TXD0) of line-1 RS232 serial port

- Table 4 shows the pin definitions of KOM200-485/232A data port.

Table 4 Pin Definition of KOM200-485/232A Data Port

Pin	Definition
P1	Not used
P2	GND
P3	Negative terminal (RS485-) of Line-2 RS485 serial port
P4	Positive terminal (RS485+) of Line-2 RS485 serial port
P5	Receive Data (RXD1) of line-2 RS232 serial port
P6	Transmit Data (TXD1) of line-2 RS232 serial port
P7	Receive Data (RXD0) of line-1 RS232 serial port
P8	Transmit Data (TXD0) of line-1 RS232 serial port

Note: For KOM200-485/232A, line-1 RS232 serial port is used independently, while line-2 RS232 and line-2 RS485 data serial ports are multiplexed; that is, either line-2 RS232 or line-2 RS485 data serial port can be used at one time.

4.3 Grounding

Proper grounding protects the media converter from lightning and interference. Therefore, you must ground the media converter properly.

There is a grounding screw on the front panel of the device. The screw is for chassis grounding. 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).

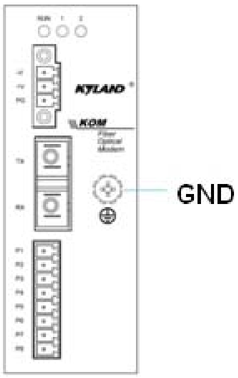

Figure 7 GND

4.4 Power

According to power input requirements, connect the power cable with the 3-pin 3.81mm-spacing plug-in terminal block.

Note: 0.75mm^2<Cross-sectional area of the power cable<2.5mm^2;

Grounding resistance: <5Ω

- 3-pin 3.81mm-spacing power terminal block

Figure 8 lists the pin number of 3-pin 3.81mm-spacing power terminal block.

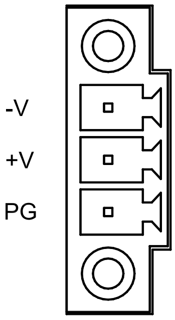

Figure 8 3-Pin 3.81mm-Spacing Plug-in Terminal Block (socket)

Table 5 lists the definitions of 3-pin 3.81mm power terminal block.

Table 5 Description of 3-Pin 3.81mm-Spacing Plug-in Terminal Block

Identifier	Description
-V	Negative power supply

+V	Positive power supply
PG	Protection ground

- Wiring and mounting

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

Step 2: Insert the power cable into the power terminal block according to Table 5 lists the definitions of 3-pin 3.81mm power terminal block.

to fix the power cable.

Step 3: Insert the terminal with the connected cable into the terminal block on the device.

5 LEDs

Table 6 lists the descriptions of the front panel LEDs.

Table 6 Front Panel LEDs

LED	State	Description
Running LED		
RUN	Blinking (1Hz)	The fiber port is connected correctly and transmitting data.
	Rapid blinking	The device works properly. The fiber port is disconnected.
	Off	The device is not started.
Data receiving LED		
1	Blinking	Data transmission.
	Off	No data transmission.
Data sending LED		
2	Blinking	Data transmission.

	Off	No data transmission.

6 Product Configuration Information

Table 7 lists the models supported by KOM200.

Table 7 KOM200 Configuration

Model	**Interface**	**Power**
KOM200-1S/M-232/422	One fiber port SM (MM) FC/ST/SC connector, one-line RS232 serial port, one-line RS422 serial port	12DCW 48 DC 110DC 220AC/DC
KOM200-1S/M-485/232	One fiber port SM (MM) FC/ST/SC connector, two-line RS232 serial port, one-line RS485 serial port	
KOM200-1S/M-485/232A	One fiber port SM (MM) FC/ST/SC connector, two-line RS232 serial port, one-line RS485 serial port (line-2 RS232 and line-2 RS485 data serial ports are multiplexed)	

Table 8 KOM200 Optional Accessories

Model	**Description**
KOMFrm	KOM rack-mounting board-482.6mm×132mm×128.5mm

7 Basic Features and Specifications

- Power Requirements

Power module: 12DCW (9-36VDC)
48DC (36-72VDC)
110DC (72-144VDC)

220AC/DC (120-300VDC/85-264VAC, 50/60Hz)

Power terminal: 3-pin 3.81mm-spacing plug-in terminal block

- Physical Characteristics

Housing: Metal, fanless

Installation: DIN-rail mounting

Dimensions (W×H×D): 36mm×100mm×75mm

Weight: 0.3kg

- Power consumption:

<3W

- Environmental Limits

Operating temperature: -40℃ to +85℃

Storage temperature: -40℃ to +85℃

Ambient relative humidity: 5% to 95% (non-condensing)

- Warranty

5 years

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