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Chapter1 Introduction

1.1 Brief

Along with the successful application of optical communication technology in telecommunication field, having combined the communication method in industrial control field, Kyland Telecom Co., Ltd. applies optical communication technology in industrial control field, resulting in a perfect guarantee for the reliability, anti-interference, and security for the industrial communication. Through years of experience in application, Kyland Telecom has ranked its optical telecom technology to be the first choice for industrial communication.

Kyland Telecom Co., Ltd. adopts the most advanced microelectronic technology and software technology to develop the KODT series Optical Data Terminal (ODT) products, which are especially applied for power distribution network automation, water treatment control automation, industrial process control, SCADA system control, and traffic control, etc.

KODT Series ODT provides 1 to 4 pairs of optical interfaces that can be selected as user's will. KODT series can make up various complicated optical networks or as back-up, such as self-healing circle network、link network、tangent circle network、crossing circle network, etc. All these networks are in high reliability.

KODT Series data ODT provides different types of user's platforms for switching-in. Bus data interface (any one of RS232、RS422、RS485); Ethernet data interface and 64K-based synchronous data switch-in interface (such as voice).

In order to meet different demands of the users, KODT series data ODT consists of several types, which respectively provides corresponding quantities of optical interfaces, user's switching-in units and their external forms.

1.2 KODT Series Data ODT Product List

Type	Optical	Interface	Form	Remark
KODT2200	2 pairs	4 ports RS232 2 ports RS422/485	Wall mounting	Network administrator system as selective choice
KODT2200B	2 or 4 pairs	8 ports RS232 4 ports RS422/485	19' 1U racking	

KODT3000	2 pairs	4 ports RS232 2 ports RS485 1 port 10Base-T Ethernet	Wall mounting	Network administrator system as selective choice
KODT3000B	2 or 4 pairs	8 ports RS232 4 ports RS485 2 ports 10Base-T Ethernet	19'1Uracking	
KODT3000BVI	2 or 4 pairs	8 ports RS232 4 ports RS485 2 ports 10Base-T Ethernet 2 ports FXS or 4 ports FXO	19'1Uracking	
KODT3000BVII	2 or 4 pairs	8 ports RS232 4 ports RS485 2 ports 10Base-T Ethernet MAX. 16 ports FXS or 32 ports FXO	19'2Uracking	
KODT3000-SLR		2 ports FXS	Boarding	For KODT3000BVII
KODT3000-SLC		4 ports FXO		

1.3 Features

1、 **High reliability of the system**

To be designed for severe industrial environment:

- a. Adopts components in industrial level.
- b. Higher anti-interference of electromagnetic compatibility than that of standard EN50082-2 for industrial products.
- c. -40°C ~ +75°C wide range working temperature, especially suitable for industrial environment.
- d. Solid and high strength metal case, in IP30 protection level.
- e. Fan-free design increases the lifetime of the product.

Adopts the technology of less than 20ms high-speed dual-fiber redundancy, to enhance the reliability of systematic communication.

The product is equipped with double master stations backup as protection, which solve the communication technology break into dual-fiber self-healing circle network.

2、 **Form complicated and stable communication network and save the investment.**

More selection of point-to-point, one to more, and more to more points as communication.

Provides remote alarm signal output interface for 2 lines optical interface warning.

3、 **Access many data type**

The bus data interface fits the relevant standard of RS232, RS422 and RS485.

The product owns 8 full duplex channels, and 8×8 data crossing connection.

The product provides the function of bus arbitration that can solve the conflict of automatic data dispatching from the slave station.

Ethernet interface fits the standards of IEEE 802.3 10Base-T .

Provides 2 lines FXO or FXS, which can connect with PSTN.

KODT3000 series products are designed with address identification, which provides channels and methods for device automatic configuration as well.

The product is designed with strong network administration system, device interface, Products in series, as per the user's demand, provide different numbers of optical interfaces, access platform and structure form.

Various of power solutions, suits for different machine rooms.

Chapter2 Principle and Hardware

2.1 Working Principle in Charts

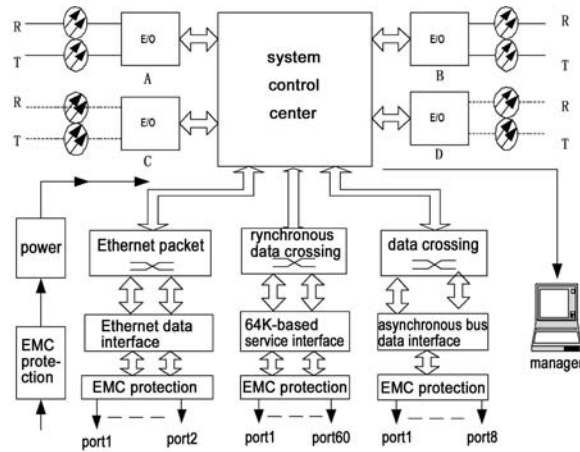


Figure 2-1 Principle for KODT Series Data ODT

In view of function, KODT series optical bus terminal consists of: system control center, circuit control, optical interface, local data crossing, asynchronous bus data interface, 64K-based service interface (inc. voice), Ethernet data interface, all interfaces EMC protection circuit, power interface EMC protection circuit and network administrator interface, etc.

In system design of KODT, A,B are main optical interfaces, C, D are extended interfaces. A, B interfaces are to be utilized when self-healing circle network or link network is formed; and C, D interfaces are to be utilized when a complicated network is formed.

2.2 Local Data Crossing

KODT2200 local data crossing matrix is able to make 8×8 data crossing, KODT3000 local data crossing matrix is able to make 9×9 data crossing, according

to demands of user, configuration is done through network manager system, to cross simultaneously several lines of data onto any link circuit and realize the concentration of HUB. The following sample:

Sample : cross data from interface 1~8 simultaneously onto channel 8

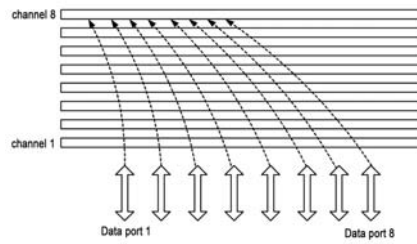


Figure 2-2 sample 1 of channel crossing

2.3 Asynchronous Bus Data Interface

KODT series data ODT is equipped with multi RS232, RS422/RS485 data interfaces, which make it possible for the user to switch in flexibly as per the condition of facilities.

KODT series data ODT provides the function of bus arbitration, (the RS232 data interface adopts RTS/CTS hand-in-hand system) during the process of data transmission; the associated facilities (such as RTU, FTU etc.) can acquire channels through RTS signal. In case the channel is idle, KODT will inform its next facility of the channel idleness for data dispatching; in case the channel is occupied, the RTS signal of KODT will be suspended, and inform at the same time its next facility of the channel occupation until the channel is idle again. This system avoids effectively the collision of data in channels and ensures the effectiveness of data transmission.

Because of the bus arbitration, when it is utilized in nowadays automatic data transmission network of power-distributing, the remote RTU/FTU can automatically report for data assembly, which breaks the limitation of scale for polling network.

2.4 64K-Based Service Interface

Adopts KODT3000BVI multi service ODT, the voice interface can provide 2 lines telephone interface on user's side or 4 lines voice interface on switch side.

Adopts KODT3000BVII multi service ODT, the voice interface can provide 16

port telephone interface on user's side or 32 port voice interface on switch side.

2.5 Ethernet Interface

KODT3000 series can provide 1 or 2 port of 10Base-T Ethernet interface, which is suggested to be used in less data system, such as the power distributing network automation in industrial process control field. KODT3000 series Ethernet data forms 16M channel for Ethernet circuit, KODT3000 can form link network, dual fiber circle network, tangent circle network, tree network, etc.

2.6 Dual Fiber Self-healing

KODT series data ODT is designed with rapid dual-fiber circle network redundancies, to realize the dual fiber self-healing. That is, in the dual-fiber network, a closed circle is formed between the remote branch devices and master devices of data center. In time of error on one device, or fibers got broken by other reasons, on the broken point, the self-healing of KODT dual-fiber network is able to make the data circling automatically, ensuring the stable communication, saving data and enhancing the reliability and security of the network.

2.7 Dual Master Stations Backup

KODT series data ODT can be configured to be in 3 terminals: master terminal, remote terminal and back-up master terminal. In a network, one master terminal is a must be live, as well a back-up master terminal is a possibility. In case of troubles in network to cause the master terminal fails, the back-up master terminal will upgrade automatically within 0.2 second as a master terminal to make the normal running of the network; after the trouble is shoot, the former master terminal resumes to work, the back-up master terminal will go back to the status of back-up master terminal.

2.8 Network Administrator Interface

KODT series data ODT provides a maintenance interface for network administrator, which can be connected with the network administrator system or super terminal, to realize the management and maintenance for the entire optical fiber network.

KODT3000 series Ethernet data ODT is designed with the function of automatic

addressable identification. To make it convenient for users, on local device, through the network manager software, the entire network can be identified automatically, and the configuration of standing points can be made automatically. KODT3000 also offers channels and methods for device auto configuration for the users.

Chapter3 KODT2200 Series Products

3.1 Description

KODT2200 series data ODT consists 2 modes: KODT2200、KODT2200B, for providing different structure and numbers of optical interfaces to satisfy different demands . KODT2200 series ODT is mainly utilized in bus data transmission, with the outstanding characters: strong function, diversified network forming, and network manager for management.

KODT2200 provides 2 pairs of optical interfaces, KODT2200B provides 2 or 4 pairs of optical interfaces. Different selections can make up different complicated optical fiber network, such as mono-fiber circle network, dual fiber link network, dual fiber self-healing circle network, tangent circle network, crossing circle network, etc. Dual fiber network is self-healed.

This products provides various types of bus data interfaces, RS232、RS422 and RS485, and owns 8 lines full duplex data channel for 8×8 data crossing connection. The data interface provides bus arbitration, transparent transmission for RS422、RS485.

KODT2200 series ODT mainly adopts of our KODT2200 network manager system for management and maintenance for optical fiber network.

KODT2200 series ODT provides dual master stations backup. Each station has three status master terminals, remote terminals and backup master terminals. Through the network manager software, in time of troubles, the back-up master terminals can be promoted automatically to be the master terminals for keeping the network unblocked and the data secured.

3.2 KODT2200 Structure Description

3.2.1 Panel structure and indicator implication

Indicator implication:

RUN: Keep lighting—center terminal; Flash pre second—remote terminal;
Flash pre 4 seconds—backup center terminal

ORDA: Status of AR: Keep lighting—optical loss; Flashing—frame loss; No lighting—normal

ORDB: Status of BR: Keep lighting--optical loss; Flashing—frame loss; No lighting--normal

RXD1: Data 1 (RS232) data receiving: flashing—data transmitting

RXD2: Data 2 (RS232) data receiving: flashing—in data transmitting

RXD3: Data 3 (RS422/485 1) data receiving: flashing— data transmitting

RXD4: Data 4 (RS422/485 2) data receiving: flashing— data transmitting

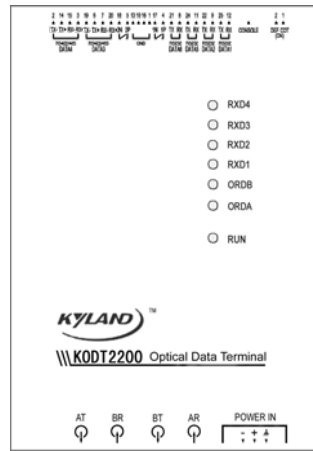


Figure 3-1 KODT2200 panel

3. 2 Side panel

Side panel 1

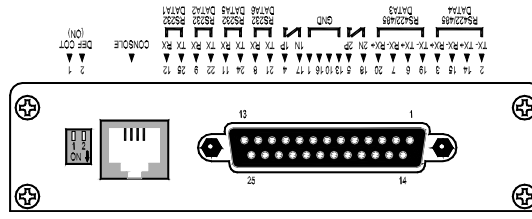


Figure 3-2 KODT2200 side panel 1

Connect implication and wires layout:

1(COT): ON/OFF switch, if it is ON, then make this KODT2200 is center of terminal. OFF is to set through management software.

1(DEF): ON/OFF switch, if it is ON, then take this KODT2200 to default state. OFF is to retain current status.

CONSOL: manager interface, wires connect show in figure 3-13

DATA: Data interface connect in DB25, In this connect, including 4 ports RS232 and 2 ports RS422/RS485, the layout of wire is as following:

NOTE:

SIGNAL1P & SIGNAL1N of relay output CLOSE when AR optical loss or AR Frame loss
 SIGNAL2P & SIGNAL2P of relay output CLOSE when BR optical loss or BR Frame loss

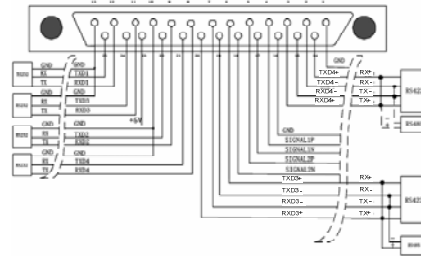


Figure 3-3 KODT2200 data interface wiring

Side panel 2

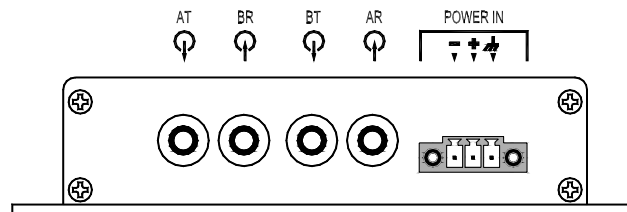


Figure 3-4 KODT2200 side panel 2

Connect implication and wires layout:

AT: Fiber optical transmitter A, Fiber optical connect as show figure 4-20

BR: Fiber optical receiver B, Fiber optical connect as show figure 4-20

BT: Fiber optical transmitter B, Fiber optical connect as show figure 4-20

AR: Fiber optical receiver A, Fiber optical connect as show figure 4-20

+, -: Power connector

: Protection ground, so connect to ground carefully

3.3 KODT2200B Structure Description

3.3.1 Front panel structure and indicator implication:



Figure 3-5 KODT2200B front panel view

Indicator implication:

RUN: Keep lighting—center terminal; Flash pre second—remote terminal; Flash pre 4 seconds— backup center terminal

ORDA: Status of AR: Keep lighting—optical loss; Flashing—frame loss; No lighting—normal

ORDB: Status of BR: Keep lighting— optical loss; Flashing—frame loss; No lighting—normal

ORDC: Status of CR: Keep lighting—optical loss; Flashing—frame loss; No lighting—normal

ORDD: Status of DR: Keep lighting— optical loss; Flashing—frame loss; No lighting—normal

TX(1-8): data (1-8) data transmission: flashing — in data transmitting

RX(1-8): data (1-8) data receiving: flashing— in receiving data

CONSOLE: manager interface, wires connect show in figure 3-9

3.3.2 Back Panel



Figure 3-6 KODT2200B rear panel view

Connect implication and wires layout:

AT: Fiber optical transmitter A, Fiber optical connect as show in figure 4-20

BR: Fiber optical receiver B, Fiber optical connect as show in figure 4-20

BT: Fiber optical transmitter B, Fiber optical connect as show in figure 4-20

AR: Fiber optical receiver A, Fiber optical connect as show in figure 4-20

CT: Fiber optical transmitter C, Fiber optical connect same as Fiber optical transmitter A at COT station as show figure 4 - 20

DR: Fiber optical receiver D, Fiber optical connect same as Fiber optical receiver B at COT station as show figure 4 - 20

DT: Fiber optical transmitter D, Fiber optical connect same as Fiber optical transmitter B at COT station as show figure 4 - 20

CR: Fiber optical receiver C, Fiber optical connect as same as Fiber optical receiver A at COT station as show figure 4 - 20

+, -: Power connector

: Protection ground, so connect to ground carefully

AC220V: power AC220V connect socket

POWER: switch for power AC220V

DATA1: Data interface connect in DB25-hole including 4 ports RS232 and 2 ports RS422/RS485, the layout of wiring is as following:

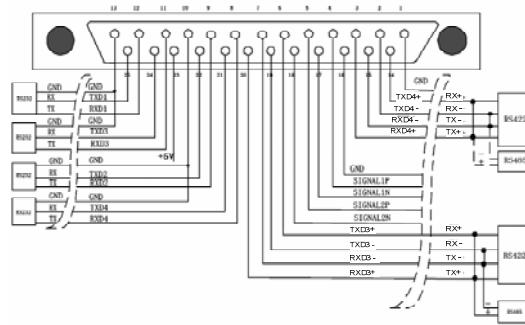


Figure 3-7 KODT2200B DATA1 wiring

DATA2: Data interface connect in DB25-hole including 4 ports RS232 and 2 ports RS422/RS485, the layout of wiring is as following:

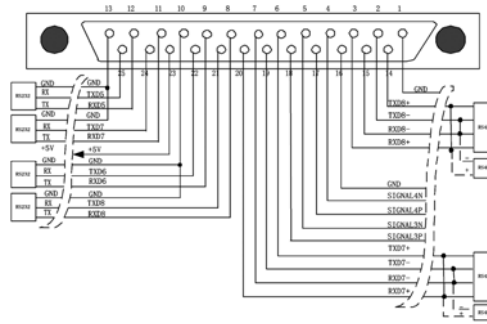


Figure 3-8 KODT2200B DATA2 wiring

3.4 Connection Between Data Interface and User’s Serial Interface

The RS232 bus interface of KODT2200 is in 3 lines: signal receiving, signal transmitting, and ground, when it is connected with the serial interface of user’s device, the wiring should be as the following:

- KODT2200 data interface——user’s device serial interface
- TXD——signal receiving line of user’s device
- RXD——signal transmitting line of user’s device
- GND——ground line of user’s device

The RS422 bus interface of KODT2200 is in 4 lines: positive or negative lines of signal receiving or transmitting, when it is connected with the RS422 interface of user’s device, the wiring should be as the following:

- KODT2200 data interface——user’s device RS422 serial interface
- Signal TXD+ —— signal+ receiving line of user’s device
- Signal TXD- —— signal- receiving line of user’s device
- Signal RXD+ —— signal+ dispatching line of user’s device
- Signal RXD- —— signal- dispatching line of user’s device

The RS485 bus interface of KODT2200 is in 2 lines: the wiring should be as the following:

- KODT2200 data interface——user’s device RS485 serial interface
- Signal+ —— signal+ line of user’s device
- Signal- —— signal- line of user’s device

3.5 Connection of Manager Interface

The manager interface of KODT2200 series ODT is 3 lines RS232 interface the connection between the manager interface and PC is done. The wiring of the cables is as the following:

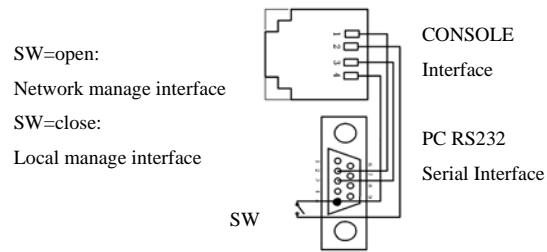


Figure 3-9 KODT2200 wiring of network manager

3.6 Technical Parameters

3.6.1 Fiber Optical

Min TX Output	-13dbm(Single), -20dbm(Multi)
Max TX Output	-3dbm(Single), -12dbm(Multi)
Sensitivity	<-28dbm(Single), <-34dbm(Multi)
Line Rate	32Mbps
Port Type	FC/ST/SC(any)

3.6.2 Data Interface

Bit Error Rate	$<10^{-10}$
Baud Rate	0—115.2kbps(self-adapting)
Standards	V.24, RS232, RS422, RS485
Physical Interface	DB15F

3.6.3 Alarm Contact

Interface	Two groups of electronic relay output in DATA1 connect
Current	120mA MAX
Voltage	DC350V or AC250V

3. 6. 4 Manager Interface

Physical Interface	RJ11
Standards	RS232
Baud	9600bps,8,n,1

3. 6. 5 Other Parameter

Max. stations	200
Working temp.	-40°C ~ +75°C
Storage temp.	-45°C ~ +85°C
Input Voltage	DC+12V,DC +24V,DC±48V,AC220V
Dimension	158×129×28mm ³ (KODT2200)
	482.6×140×44mm ³ (KODT2200B)

Chapter4 KODT3000 Series Products

4.1 Description

KODT3000 series data ODT consists 4 models: KODT3000, KODT3000B, KODT3000BVI, KODT3000BVII. Provide different external structure and numbers of optical interfaces. KODT3000 series data ODT provides 2 or 4 pairs of optical interfaces. Different selection forms different complicated optical fiber network, mainly as dual fiber link network, dual fiber self-healing circle network, tree network, etc.

KODT3000 series ODT provides not only various types of bus data interfaces, but also Ethernet interface and FXS or FXO unit based on 64K channel. These will greatly satisfy the demands of users.

The bus data interface includes RS232 and RS485 etc, and provides bus arbitration, transparent transmission for RS485. KODT3000 owns 9 lines full duplex data channel for 9×9 data crossing connection.

KODT3000 series ODT is able to do the dual fiber self-healing, which includes the dual fiber network connected respectively by bus data interface: RS232, RS485, FXS, FXO, and Ethernet interface.

KODT3000 series ODT mainly adopts our KODT3000 network manager system for management and maintenance for optical fiber network. As one of the character of our products, the network manager interface is able to make the automatic address identification.

Through the manager software, it can do the automatic network identification and automatic station configuration to simply the user's job. And, KODT 3000 also provides the channels and methods for automatic device configuration.

KODT3000 series ODT provides dual master stations backup. Each station has three statuses: center terminals, remote terminals and backup center terminals. Through the network manager software, in time of troubles, the backup center terminals can be promoted automatically to be the center terminals for keeping the network unblocked and the data secured.

4.2 KODT3000 Structure Description

4.2.1 Panel Structure and Indicator Implication

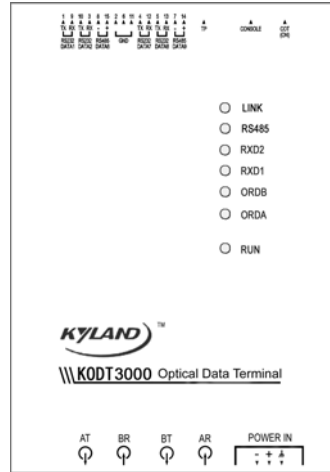


Figure 4-1 KODT3000 panel view

Indicator implication

RUN: Keep lighting—center terminal; Flash pre second—remote terminal; Flash pre 4 seconds — backup center terminal, Flash pre 0.2 seconds— system error

ORDA: Status of AR: Keep lighting—optical loss; Flashing—frame loss; No lighting—normal

ORDB: Status of BR: Keep lighting— optical loss; Flashing—frame loss; No lighting—normal

RXD1: Data 1 (RS232) data receiving: flashing—data transmitting

RXD2: Data 2 (RS232) data receiving: flashing—in data transmitting

RS485: Data 9 (RS485) data receiving: flashing— data transmitting

LINK: status of Ethernet 10Base-T, lighting—link active, flashing—data in transmitting.

4. 2. 2 Side Panel

Side Panel 1

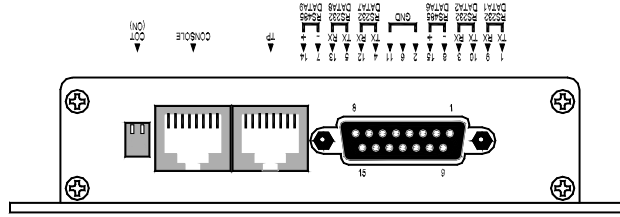


Figure 4-2 KODT3000 side panel one

Connect implication and wires layout:

COT: ON/OFF switch, if it is COT, then make this KODT3000 is center of terminal

CONSOLE: manager interface, wires connect show in figure 4-17

TP: Ethernet 10Base-T connect, wiring is shown in figure 4-18 or figure 4-19

DATA: Data interface connect in DB15, it including 4 ports RS232 and 2 ports RS485, the wiring is as the following:

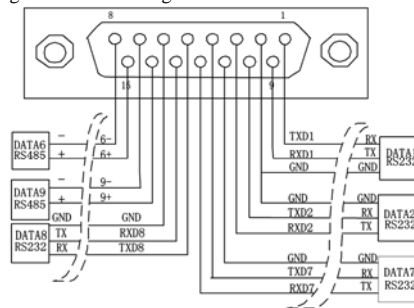


Figure 4-3 KODT3000 wiring of data interface

Side Panel 2

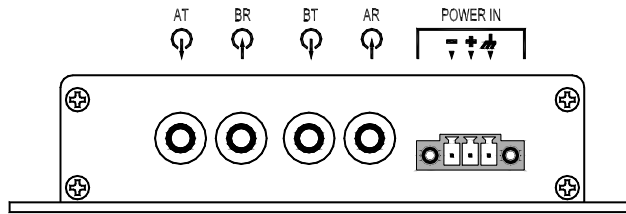


Figure 4-4 KODT3000 side panel two

Connect implication and wires layout:

AT: Fiber optical transmitter A, Fiber optical connect as show in figure 4-20

BR: Fiber optical receiver B, Fiber optical connect as show in figure 4-20

BT: Fiber optical transmitter B, Fiber optical connect as show in figure 4-20

AR: Fiber optical receiver A, Fiber optical connect as show in figure 4-20

+, -: Power connector

: Protection ground, so connect to ground carefully

4. 3 KODT3000B Structure Description

4. 3. 1 Front Panel and Indicator Implication

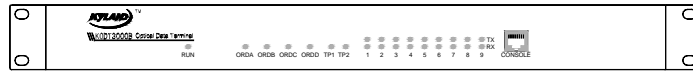


Figure 4-5 KODT3000B front panel

Indicator implication:

RUN: Keep lighting—center terminal; Flash pre second—remote terminal; Flash pre 4 seconds— backup center terminal

ORDA: Status of AR: Keep lighting—optical loss; Flashing—frame loss; No lighting—normal

ORDB: Status of BR: Keep lighting— optical loss; Flashing—frame loss; No lighting—normal

ORDC: Status of CR: Keep lighting— optical loss; Flashing—frame loss; No lighting—normal

ORDD: Status of DR: Keep lighting— optical loss; Flashing—frame loss; No lighting—normal

TP(1-2): status of 10Base-T, lighting—link active, flashing—data in transmitting

TX(1-9): data (1-9) data transmission: flashing — in data transmitting

RX(1-9): data (1-9) data receiving: flashing— in receiving data

CONSOL: manager interface, wires connect show in figure 4-17

4.3.2 Back Panel Structure

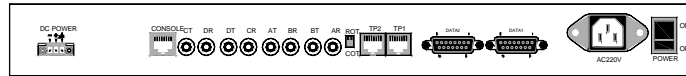


Figure 4-6 KODT3000B back panel

Connect implication and wires layout:

AT: Fiber optical transmitter A, Fiber optical connect as show figure 4-20

BR: Fiber optical receiver B, Fiber optical connect as show figure 4-20

BT: Fiber optical transmitter B, Fiber optical connect as show figure 4-20

AR: Fiber optical receiver A, Fiber optical connect as show figure 4-20

CT: Fiber optical transmitter C, Fiber optical connect same as Fiber optical transmitter A at COT station as show figure 4 - 20

DR: Fiber optical receiver D, Fiber optical connect same as Fiber optical receiver B at COT station as show figure 4 - 20

DT: Fiber optical transmitter D, Fiber optical connect same as Fiber optical transmitter B at COT station as show figure 4 - 20

CR: Fiber optical receiver C, Fiber optical connect as same as Fiber optical receiver A at COT station as show figure 4 - 20

COT/ROT: ON/OFF switch, if it is COT, then make this KODT3000 is center of terminal


CONSOLE: manager interface, wires connection show in figure 4-17

TP(1-2): Ethernet 10Base-T connect, wiring is show in figure 4-18 or figure 4-19

DATA1: Data interface connect DB15, it including 4 ports RS232, 2 ports RS485. Wiring is show in figure 4-11

DATA2: Data interface in DB15, it including 4 ports RS232. Wiring is show in figure 4-12

+, -: Power connector

: Protection ground, so connect to ground carefully

AC220V: power AC220V connect socket

POWER: switch for power AC220V

4. 4 KODT3000BVI STRUCTURE DESCRIPTION

4. 4. 1 Front Panel and Indicator Implication



Figure 4-7 KODT3000BVI front panel

Indicator implication:

RUN: Keep lighting—center terminal; Flash pre second—remote terminal; Flash pre 4 seconds— backup center terminal

ORDA: Status of AR: Keep lighting—optical loss; Flashing—frame loss; No lighting—normal

ORDB: Status of BR: Keep lighting— optical loss; Flashing—frame loss; No lighting—normal

ORDC: Status of CR: Keep lighting— optical loss; Flashing—frame loss; No lighting—normal

ORDD: Status of DR: Keep lighting— optical loss; Flashing—frame loss; No lighting—normal

TP(1-2): status of 10Base-T, lighting—link active, flashing—data in transmitting

TX(1-9): data (1-9) data transmission: flashing — in data transmitting

RX(1-9): data (1-9) data receiving, flashing— in receiving data

CONSOLE: manager interface, wires connect show in figure 4-17

EXT: lighting—exist of FXS or FXO card: no lighting—NOT exist any card

1-4: lighting—FXS or FXO active, no lighting— FXS or FXO not active or not exist

4. 4. 2 Back Panel Structure

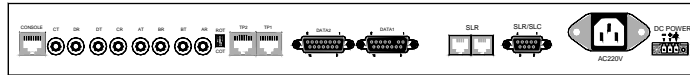


Figure 4-8 KODT3000BVI back panel

Connect implication and wires layout:

CONSOLE: manager interface, wires connection as show in figure 4-17

AT: Fiber optical transmitter A, Fiber optical connection as show in figure 4-20

BR: Fiber optical receiver B, Fiber optical connection as show in figure 4-20

BT: Fiber optical transmitter B, Fiber optical connection as show in figure 4-20

AR: Fiber optical receiver A, Fiber optical connect as show in figure 4-20

CT: Fiber optical transmitter C, Fiber optical connect same as Fiber optical transmitter A at COT station as show figure 4 - 20

DR: Fiber optical receiver D, Fiber optical connect same as Fiber optical receiver B at COT station as show figure 4 - 20

DT: Fiber optical transmitter D, Fiber optical connect same as Fiber optical transmitter B at COT station as show figure 4 - 20

CR: Fiber optical receiver C, Fiber optical connect as same as Fiber optical receiver A at COT station as show figure 4 - 20

COT/ROT: ON/OFF switch, if it is COT, then make this KODT3000 is center of terminal

TP(1-2): Ethernet 10Base-T connect, wiring is show in figure 4-18 or figure 4-19

DATA1: Data interface connect in DB15, it including 4 ports RS232,2 ports RS485,wiring is show in figure 4-11

DATA2: Data interface connect in DB15, it including 4 ports RS232,wiring is show in figure 4-12

SLR: FXS card interface in RJ11 connect, wiring is show in figure 4-16

SLR/SLC: FXS/FXO card interface in DB9-hole connect, wiring is show in figure 4-14

+, -: Power connector



: Protection ground, connect to ground carefully

AC220V: power AC220V connect socket

4.5 KODT3000BVII Structure Description

4.5.1 Front Panel Structure and Indicator Implication

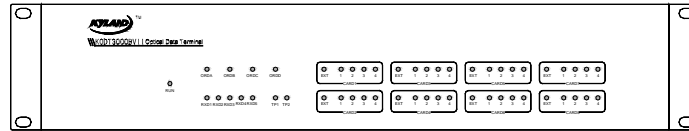


Figure 4-9 KODT3000BVII front panel

Indicator implication:

RUN: Keep lighting—center terminal; Flash pre second—remote terminal; Flash pre 4 seconds—backup center terminal

ORDA: Status of AR: Keep lighting—optical loss; Flashing—frame loss; No lighting—normal

ORDB: Status of BR: Keep lighting— optical loss; Flashing—frame loss; No lighting—normal

ORDC: Status of CR: Keep lighting— optical loss; Flashing—frame loss; No lighting—normal

ORDD: Status of DR: Keep lighting— optical loss; Flashing—frame loss; No lighting—normal

TP(1-2): status of 10Base-T, lighting—link active, flashing—data in transmitting

RXD(1-5): data (1-5) data receiving, flashing— in receiving data

EXT: lighting—FXO card exist, flashing—FXS exist , no lighting—NOT exist any card

1-4: lighting—FXS or FXO active, no lighting— FXS or FXO not active or not exist

4.5.2 Back Panel Structure

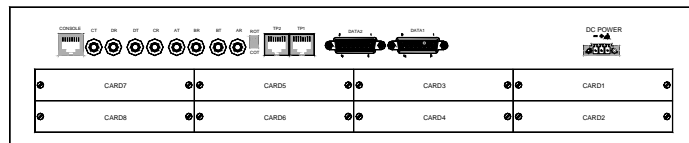


Figure 4-10 KODT3000BVII back panel

Connect implication and wires layout:

CONSOLE: manager interface, wires connection show in figure 4-17

AT: Fiber optical transmitter A, Fiber optical connection as show in figure 4-20

BR: Fiber optical receiver B, Fiber optical connection as show in figure 4-20

BT: Fiber optical transmitter B, Fiber optical connection as show in figure 4-20

AR: Fiber optical receiver A, Fiber optical connection as show in figure 4-20

CT: Fiber optical transmitter C, Fiber optical connect same as Fiber optical transmitter A at COT station as show figure 4 - 20

DR: Fiber optical receiver D, Fiber optical connect same as Fiber optical receiver B at COT station as show figure 4 - 20

DT: Fiber optical transmitter D, Fiber optical connect same as Fiber optical transmitter B at COT station as show figure 4 - 20

CR: Fiber optical receiver C, Fiber optical connect as same as Fiber optical receiver A at COT station as show figure 4 - 20

COT/ROT: ON/OFF switch, if it is COT, then make this KODT3000 is center of terminal

TP(1-2): Ethernet 10Base-T connect, wiring is show in figure 4-18 or figure 4-19

DATA1: Data interface connect in DB15, it including 4 ports RS232,2 ports RS485,wiring is show in figure 4-11

DATA2: Data interface in DB15, it including 4 ports RS232. Wiring is show in figure 4-12

CARD(1-8): Voice card slot, it can be select FXS—KODT3000-SLR,or FXO—KODT3000-SLC,

+, -: Power connector



: Protection ground, connect to ground carefully

4. 6 Connection of KODT3000 Series Data Interface

4. 6. 1 DATA1 Wiring Figure

DATA1: Data interface connect in DB15, it including 4 ports RS232,2 ports RS485,wiring is show as follow:

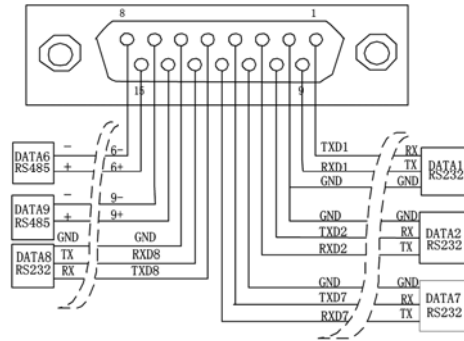


Figure 4-11 KODT3000 Series Products DATA1 wiring

4.6.2 DATA2 Wiring Figure

DATA1: Data interface connect in DB15, it including 4 ports RS232, wiring is show as follow:

NOTE:

+C & -C of relay output CLOSE when CR optical loss or CR Frame loss

+D & -D of relay output CLOSE when DR optical loss or DR Frame loss

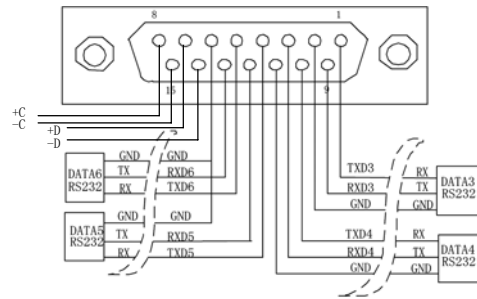


Figure 4-12 KODT3000B Series Products DATA2 wiring

4.7 KODT3000-SLR/SLC Structure of FXO Panel

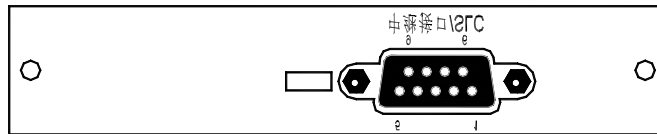


Figure 4-13 KODT3000- SLC Product Panel

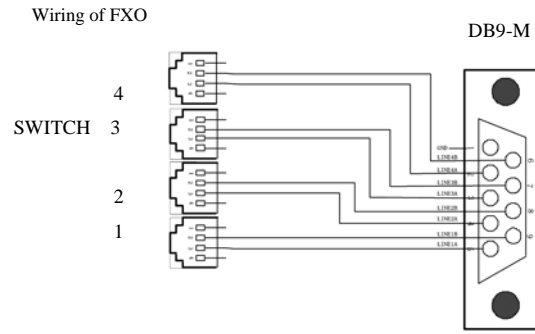


Figure 4-14 KODT3000- SLC/SLR Wiring Figure

4.8 KODT3000-SLR Structure of FXS Panel

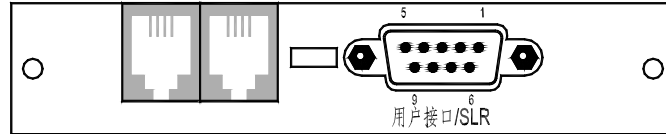


Figure 4-15 KODT3000- SLR Product Panel

Wiring of FXS as show figure 4-14, or Wiring of FXS as follow:

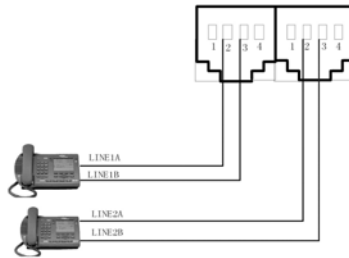


Figure 4-16 KODT3000- SLR Wiring Figure

4.9 Connection of Manager Interface

The manager interfaces for KODT3000 series products are all 3 lines RS232,

NOTE:
+A & -A of relay output

the connection between the manager interface and PC is done by the cables, the principles of the cables are as following:

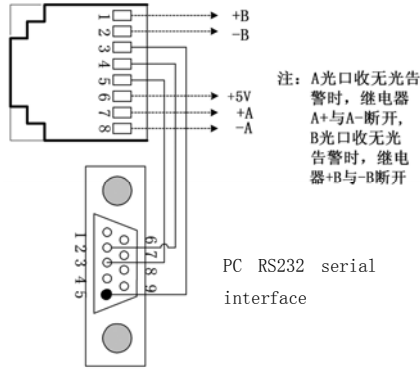


Figure 4-17 KODT3000 wiring of manager cables

4. 10 Wiring of KODT3000 Series Ethernet Interface

4. 10. 1 Connection Between KODT3000 Series Products Ethernet and Ethernet switch

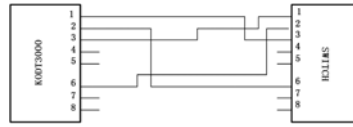


Figure 4-18 KODT3000 wiring for Ethernet 10Base-T

4. 10. 2 Connection Between KODT3000 Series Products Ethernet and PC

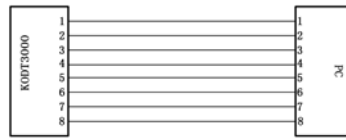


Figure 4-19 KODT3000 wiring for Ethernet 10Base-T

4.11 Wiring of KODT Optical Fibers

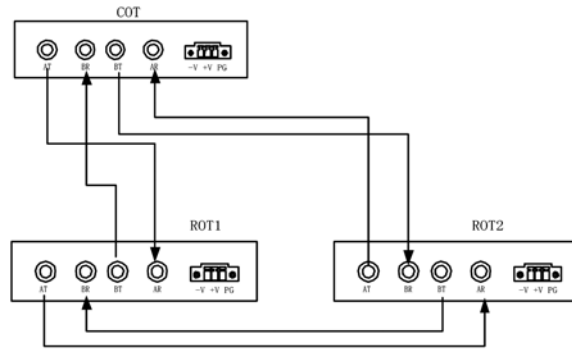


Figure 4-20 KODT Series Products Fiber Optical Connect

4.12 Technical Parameters

4.12.1 Fiber Optical

Min TX Output	-13dbm(Single), -20dbm(Multi)
Max TX Output	-3dbm(Single), -12dbm(Multi)
Sensitivity	<-28dbm(Single) <-34dbm(Multi)
Line Rate	32Mbps
Port Type	FC/ST/SC(any)

4.12.2 Data Interface

Bit Error Rate	$<10^{-10}$
Baud Rate	0—115.2kbps(Auto)
Standards	V.24, RS232, RS422, RS485
Physical Interface	DB15F

4.12.3 Ethernet Interface

Standards	IEEE802.3 10Base-T
Physical interface	RJ-45

4. 12. 4 Alarm Contact

Interface	Two groups of electronic relay output in console connect
Current	120mA MAX
Voltage	DC350V or AC250V

4. 12. 5 Ringing Power

Frequency	25Hz
Voltage	75V sine wave
Distortion	<10%

4. 12. 6 Voice Frequency Channel

Frequency	300~3400Hz
PCM Standards	GB7610
Impedance	600
Voltage	+48V,10%
FXS interface	Loop Resistance 1.8K
Loop current	>18MA
Sensitivity of ringing	<100mVA
EMC character	YDN 065-1997

4. 12. 7 Manager Interface

Physical Interface	RJ11
Standards	RS232
Band	9600bps,8,n,1

4. 12. 8 Other parameters

Working temp.	-40°C--+75°C
Storage temp.	-45°C--+85°C
Power	< 4W(KODT3000) < 6W(KODT3000B) < 10W(KODT3000BVI) < 50W(KODT3000BVII)

Input Voltage	DC12V, DC 24V,DC 48V,AC220V
Dimension	158×129×28mm ³ (KODT3000) 482.6×160×44 mm ³ (KODT3000B) 482.6×160×44 mm ³ (KODT3000BVI) 482.6×176×88 mm ³ (KODT3000BVII)
Weight	1kg(KODT3000) 2kg(KODT3000B) 2.5kg(KODT3000BVI) 10kg(KODT3000BVII)

Chapter5 Physical Dimension

5.1 Wall Mounting Dimension

The structure as show follow figure is available for KODT2200, KODT3000.

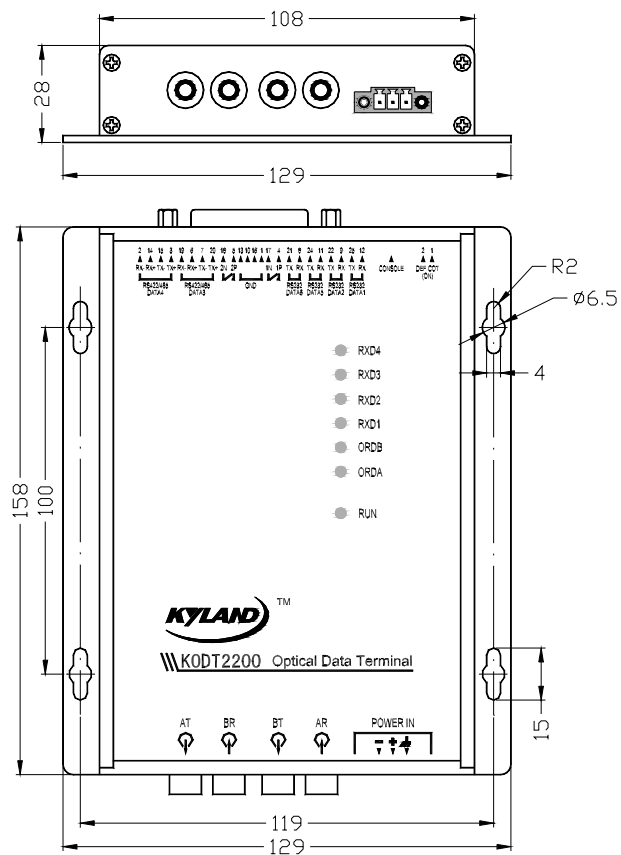


Figure 5-1 wall mounting dimension

5.2 19' Rack Construction Dimension

The structure as show follow figure is available for KODT2200B, KODT3000B, KODT3000BVI.

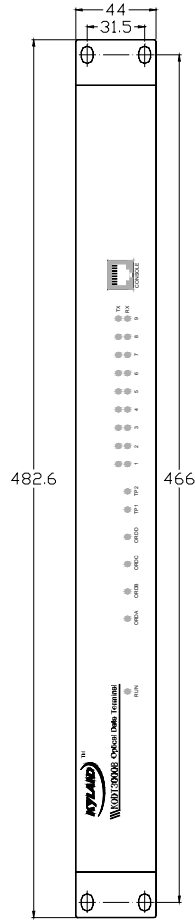


Figure 5-2 19' rack construction dimension

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