

ZLAN9163

Serial Port to

Optical Fiber

Converter

RS232/485/422 to Optical Fiber

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Version Information

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1. Summary

ZLAN9163 is RS232/485/422 converting to optical fiber product developed by Shanghai ZLAN. The optical fiber with single-mode single-fiber SC interface can be used to connect two RS485/232 device serial ports together in long distance.

ZLAN9163 work only need to connect optical fiber or RS485/232 cable to it, without more configurations. ZLAN9163 Contains indicator light for fiber connecting and bidirectional data transmission, convenient to on-site debugging.



Figure 1 ZLAN9163 Appearance

The fiber of ZLAN9163 use single-mode single-fiber SC interface, the advantages of single-mode single-fiber are: one fiber transmission can save cost in long distance.

The power input can be plug or 2-line terminal, voltage input is 9~24V wide voltage range.

It has RS232/485/422 interfaces, RS232 is DB9, RS485/422 is in terminal type, easy to install.

When 9163 serial port receive data the ACT indicator light is on, when 9163 serial port send data the LINK light is on.

1.1 ZLAN9163 compared with ZLAN9153

The usage diagram of ZLAN9163 and ZLAN9153 are as below figure 2 and figure 3.

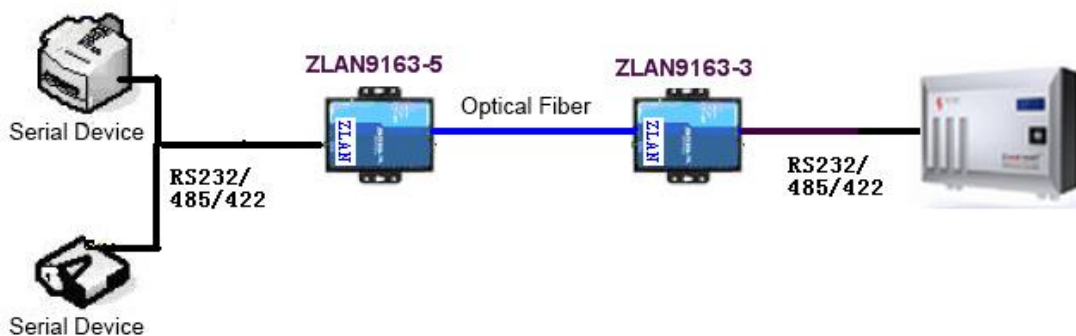


Figure 2 ZLAN9163 Usage Diagram

ZLAN9163 is normally used in optical fiber pairs-connection, can connect two RS485 devices together through fiber, no need to configure any parameters as port baud rate and 9163 IP and so on, can plug and play. In this case, ZLAN9163 can be regarded as a pure communication medium converter for RS485/232 to optical fiber.

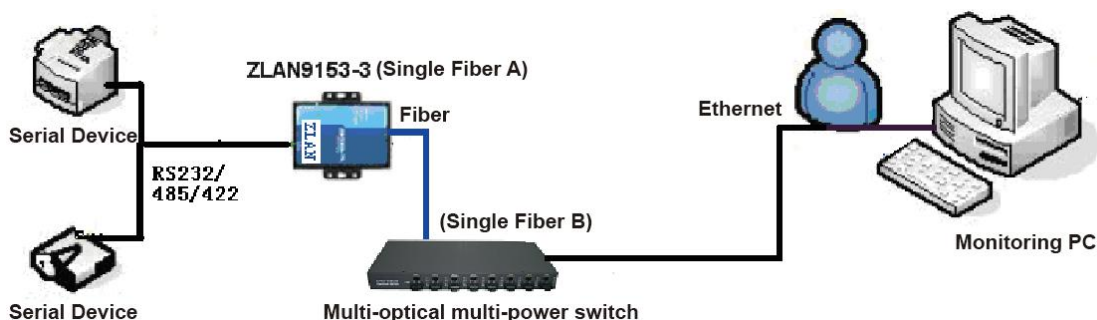


Figure 3 ZLAN9163 Usage Diagram

ZLAN9153 usually is single-used, it can connect with fiber switch, the host monitoring software can directly access ZLAN9153 IP address to get data. ZLAN9163 cannot realize this type. ZLAN9153 actually convert RS232/485 data to TCP format, it's a serial device server but transmitting in fiber.

1.2 ZLAN9163 Advantages

When in pairs-connection using, users only need to connect two 9163 by single-mode single-fiber optical fiber line of SC interface, the other two ends connect to two serial devices so can communicate. The baud rate and parameters of serial port can be adaptive without any configuration. Note that one end is ZLAN9163-5 when other end is ZLAN9163-3, the two used in pairs.

Compared with 9153, the 9163 has below advantages:

- 1) Zero delay transmission: As 9163/5163 using serial hard decoding technology, the one in transfer is single bit information instead of waiting 8 bit of one serial port all finishing collection. So that the transmission real-time is very high. Can be applied to the field of training in rotation with high real-time demand.
- 2) The serial port parameters adaptive: users don't need to care the serial device parameters such as baud rate, the device can adapt to all kinds of baud rate, check bits, data bits, stop bits. It's totally plug and play.
- 3) Don't need to configure the network parameters: users don't need to configure parameters such as IP address, port and so on. As these parameters is trivial for users first time using. 9163/5163 can be used just connecting to the optical fiber without parameters configuration.

2. Function and Features

- 1) Three forms interface: RS232/RS485/RS422

- 2) Wide voltage power supply 9~24V, can provide terminal type power supply.
- 3) The serial port transmission is nearly zero delay. Suitable for fields like quick query data or short interval training in rotation.
- 4) The sending and receiving direction of RS485 are auto-controlled.
- 5) Adaptive serial port parameters: without configuring baud rate, check bites, data bits, stop bits.
- 6) No need configure network parameters as IP, port. Plug and play.
- 7) Baud rate can reach highest 115200bps.

3. Technical Parameters

Figure			
Interface:	422: Terminal; 485: Terminal; 232: DB9; 9163: Optical SC pluggable interface; 5163: Ethernet RJ45		
Power Supply:	5.5mm, Inside positive outside negative, standard outlet		
Size:	L x W x H =9.4cm×6.5cm×2.5cm		
Communicate Interface			
Optical Fiber (9163):	Single-mode Single-fiber, double transferring		
Serial:	RS232/485/422×1: RXD, TXD, GND, CTS, RTS		
Serial Parameters			
Baud rate:	<115200bps	Check Bit:	None, Odd, Even, Mark, Space
Data size:	5~9	Flow Control:	None
Optical Fiber Parameters			
Sub-Model:	Emission (TX) Wavelength	Receiving (RX) Wavelength	
ZLAN9163-3 (A-end)	1310nm	1550nm	
ZLAN9163-5 (B-end)	1550nm	1310nm	
Optical Fiber Transmission Distance:	20Km	Optical Communication Interface:	SC
Power			
Power:	9~24V DC, 357mA@9V (9163)		
Environment			
Running temperature:	-40~85℃		

Storage temp:	-45~165℃
Humidity:	5~95%RH

4. Hardware Instruction

The front view of ZLAN5143 serial device server is shown as FIG 4: ZLAN5143 use black anti-radiation SECC board, it's equipped with two "ears" for easy installation. If you want to install to the guide rail, you can choose the guide installation accessories.



Figure 4 Optical fiber interface and RS232

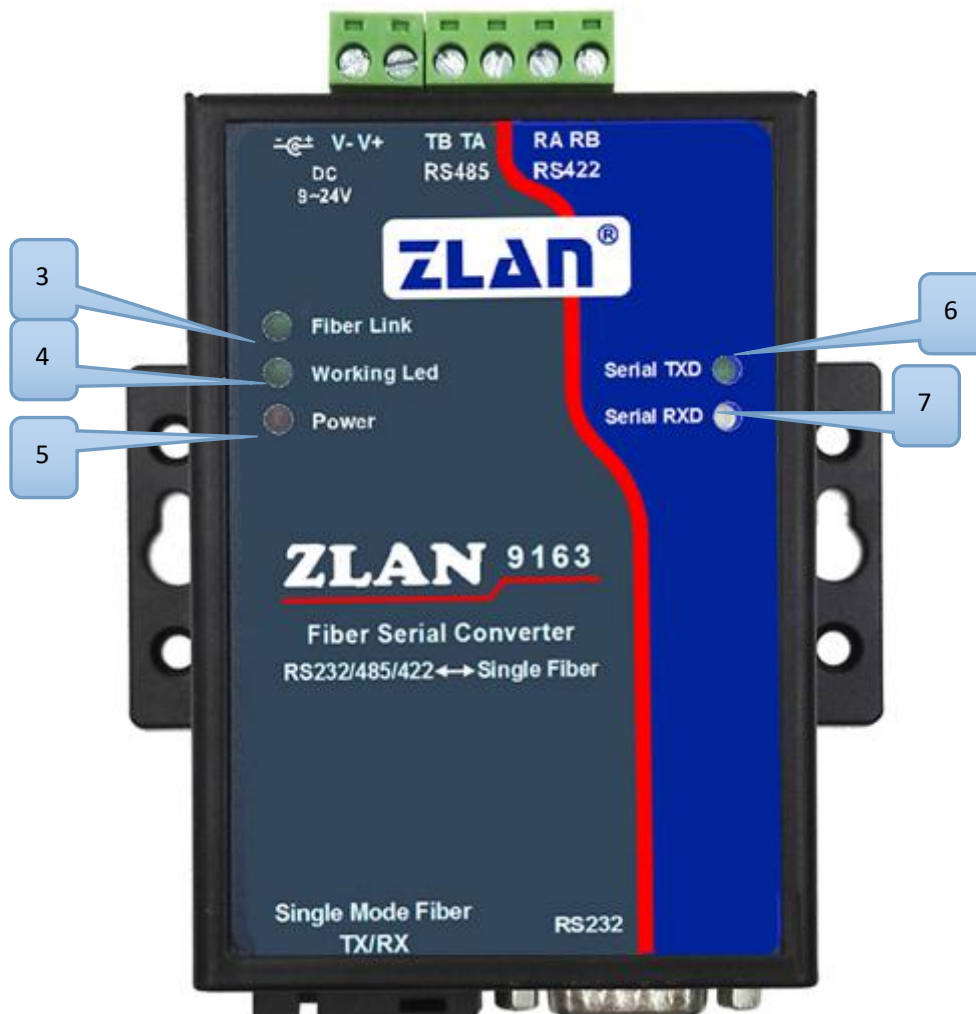


Figure 5 Front View

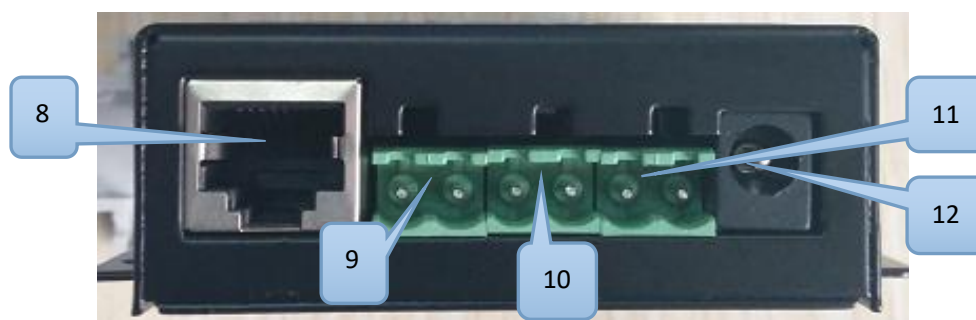


Figure 6 Power and RS485/RS422

Table: Interface No. and Description

Item	Name	Instruction
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1	SC fiber optical interface	fiber optical interface
2	RS232 port	RS232 port DB9
3	RS232 port	DB9
4	Fiber Link Indicator	Optical fiber interface link/status indicator; The light indicates that there is optical fiber access; light off indicates that no optical fiber access.
5	Power Indicator	Power on
6	TCP Link Indicator	Serial port sent data.
7	Active Indicator	Serial port received data.
8	RJ45	Reserved for later use.
9	RS422 Terminal	Combined with RS485 port to RS422 port
10	RS485 Terminal	RS485 port
11	DC Plug	Power interface; OD 5.5mm, ID 2.1mm
12	DC Terminal	Power interface; 5.08mm terminal

The serial port use standard DB9 male head, the line sequence shows as the following table:

Item	Name	Instruction
2	RXD	receiving pin of the serial device server
3	TXD	sending pin of the serial device server
5	GND	Ground wire
7	RTS	After the flow control in using, the serial device server will

		accept the data of the serial device when the pin is 0.
8	CTS	After the flow control in using, the serial device server will send the data to the serial device when the pin is 0.

5. After-service

Shanghai ZLAN Information Technology Co., Ltd.

Address: 12 floor, D building, No. 80 CaoBao road, Xuhui District, Shanghai, China

Phone: 021-64325189

Fax: 021-64325200

Web: <http://www.zlmcu.com>

Email: support@zlmcu.com