FIB-P485-S

PROFIBUS RS485 to single-mode fiber converters manual

The distance and speed of optical fiber transmission aren't related. Serial-interface fiber transmission resolves the contradiction of copper transmission's long-distance and high-speed communications because of it's advantages such as high reliability, security and confidentiality and so on. The use of fiber as communication transmission medium completely solves the problems such as electromagnetic interference, ground loop interference and lightning damage. It has been used more and more in industrial automation, distributed data acquisition, intelligent transportation, electricity, water, banking and many other areas and become the preferred option for communications transmission.

FIB-P485-S is an industrial grade PROFIBUS-DP to fiber converter of Fourstar, replacing Siemens OLM fiber converter module. It achieves PROFIBUS-DP signal's transparent transmission on fiber, without changing the original communication protocols and software, plug and play, and directly replace copper conductor transmission. This product is based on binary diqit transparent transmission of data, thus more suitable for the communication protocol whose physical interface is RS485.

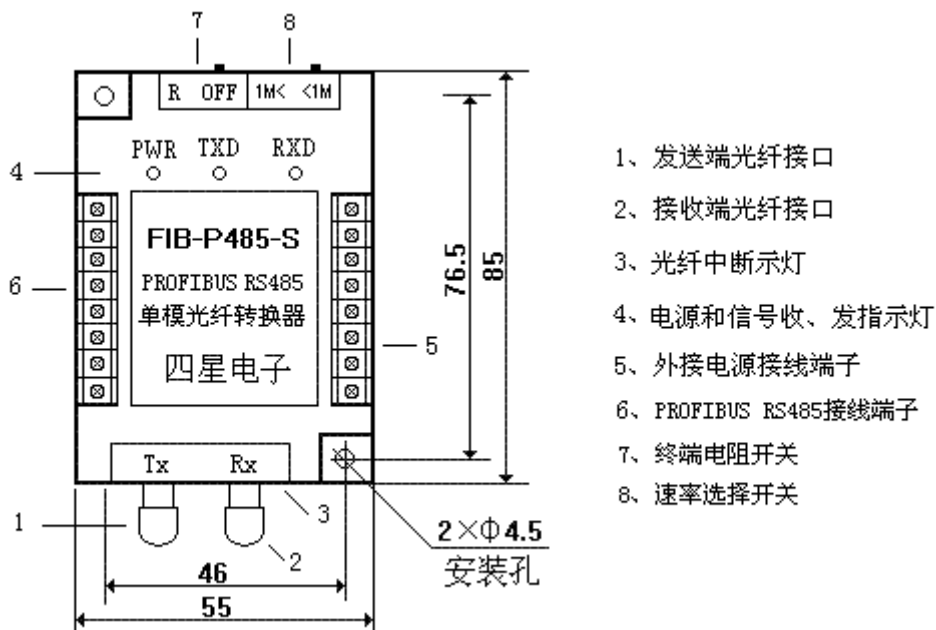**Product characteristics and major technical indicators**

● voltage: 9 ~ 40 VDC wide-voltage power supply or 5 VDC power supply optional, isolate signal interface with external power within the product through DC / DC isolation module. Power consumption: <1 W

● interface: RS485 physical interface, two pairs of A, B wiring-terminal, built-in anti-lightning and anti-surge protection, repeatable capacity of surge: Ipp = 100A (10/700us, 4KV),standards: ITU-TK20/21, VDE 0433. ± 15KV ESD (electrostatic) protection to the resumption of overcurrent protection, RS485 port can endure the sustained over-current caused by 60 V voltage

● communication rate: 0～5Mbps adaptive

● applicable fiber: single-mode 9/125、10/125、8.3/125um

● wavelength: 1310 nm

● power of launched light: -6 dBm

● receiving sensitivity: -22 dBm

● transmission distance: 0 ~ 12km

(Maximum to 60 km or 120 km, 、 a statement is needed, with the standard FC connector)

● fiber interface: standard ST connector, SC and FC connector optional

● temperature: -40 ~ +85 ℃

● Relative Humidity: 0 to 95 percent (not condensed)

● Dimensions: 85 × 55 × 25 (L × W × H), the standard rails installation with bolts hole

● Weight: 100 g

The structure and shape of products:

1、发送端光纤接口

2、接收端光纤接口

3、光纤中断示灯

4、电源和信号收、发指示灯

5、外接电源接线端子

6、PROFIBUS RS485接线端子

7、终端电阻开关

8、速率选择开关

The signal rank of PROFIBUS RS485 connection terminal

Signal-name of terminal	description
A	RS485 signal is negative，connect with other terminal A
B	RS485 signal is positive，connect with other terminal B
A	RS485 signal is negative，connect with other terminal A
B	RS485 signal is positive，connect with other terminal B
SG	RS485 signal ground
FG	Shielding ground（chassis）

PWR power   red always shine

TXD data sending yellow twinkle when sending data to fiber

RXD data receiving green twinkle when receiving data from fiber

FIB red be lighten when the fiber is broken

There is a LED indicator FIB besides the fiber connector Rx. When the fiber is broken, the fiber is not connected or the opposite party's fiber converters is off, FIB will be lit by receiving the matt signal, witch is very convenient to judge where the fault is.
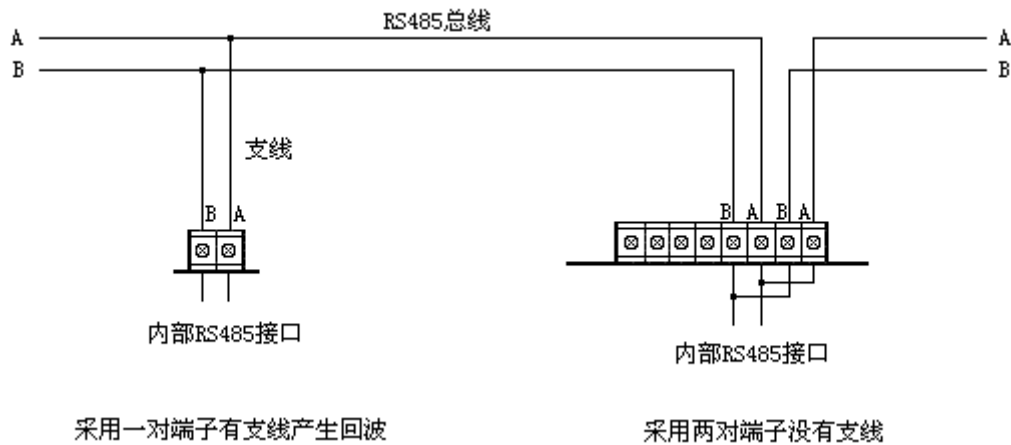
Terminal resistance switch: OFF ---- no termination resistor, R ---- with 220 Ohm terminal resistance and 390 Ohm biasing resistor.

Rate selection switch: 1M <---turn to this location when rate is greater than 1 Mbps, <1 M --- turn to this location when rate is less than 1 Mbps

External power: the right terminal is a two-group external power terminal, one is 9 ~ 40 VDC wide-voltage, and the other is 5 VDC fixed voltage. Any one of them is ok. You needn't to worry about the power fluctuations. Isolating PROFIBUS RS485 signal with external power within the product through DC / DC isolation module. Thus the power supply can be taken from any power terminals of equipment or powers of different equipments, to avoid the ground loop interference caused by the 共地 of external power and PROFIBUS RS485 signal， and generate the safety of equipment.

Connection of PROFIBUS RS485 signal

Two pairs of A,B wiring-terminal are designed for this product's **PROFIBUS RS485** port, witch can be used to eliminate the extension problems of **PROFIBUS RS485** and avoid the waveform distortion caused by the signal echo on extension

采用一对端子有支线产生回波   采用两对端子没有支线

The allowed greatest cable length of PROFIBUS RS485 at different baud rates: 2km（9.6Kbps）、1.5km（19.2Kbps）、800m（187.5Kbps）、200m（500Kbps）、100m（1.5Mbps、3Mbps）

When fiber converter is in the *PROFIBUS RS485* bus terminal, terminal resistance switch should be transferred to R location. In other locations of the bus, the terminal resistance switch should be transferred to OFF position

Use fiber to link the two fiber converters. Connect Tx to the other one's Rx, Rx to the other one's Tx. The bend radius when laying the fiber can't be less than the allowed one, or the core is easily broken.

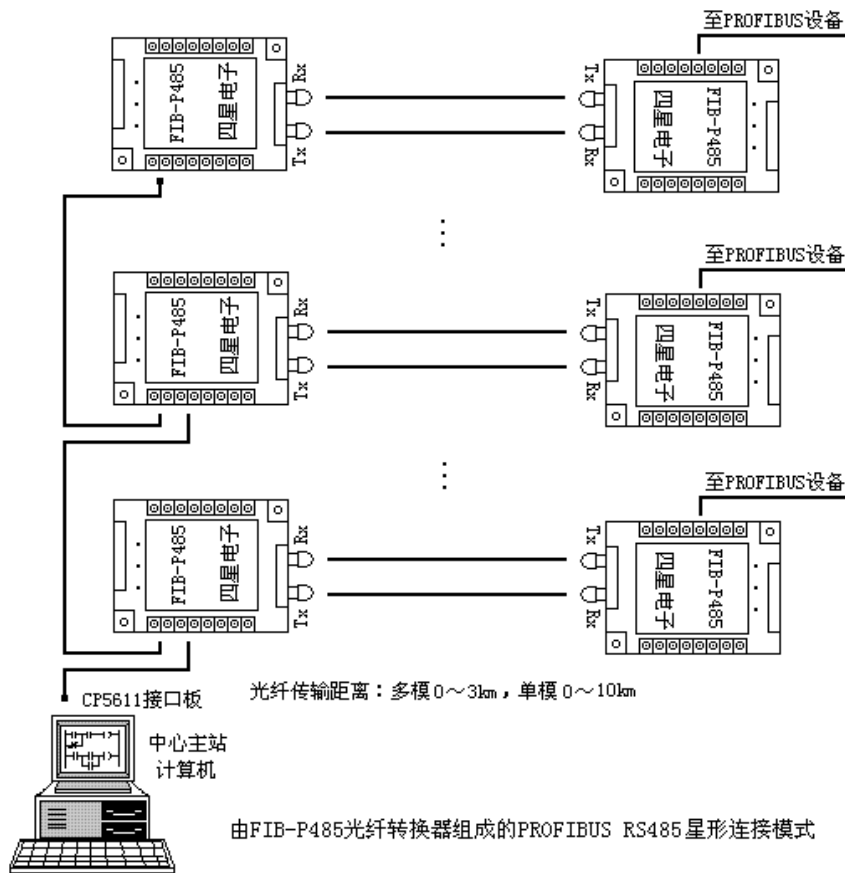Please pay attention to maintaining the clean of fiber's interface socket. Please use the configured rubber to cover it when it isn't connected.
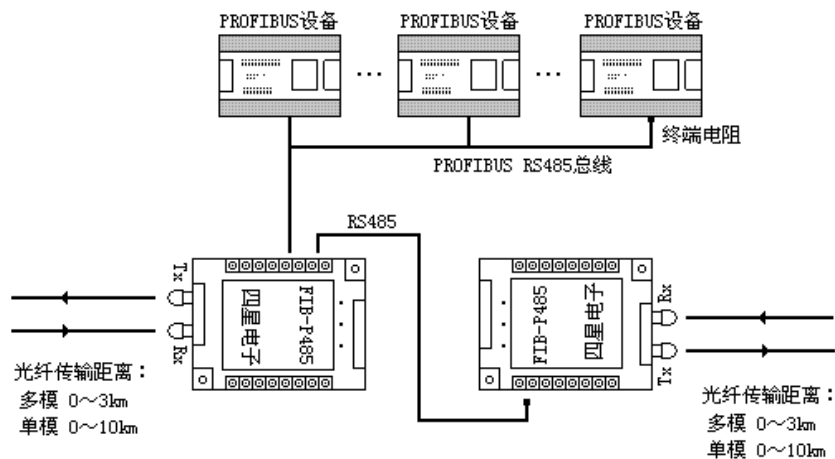
Typical applications map

Connect two different zones' PROFIBUS RS485 buses by FIB-P485 fiber converters
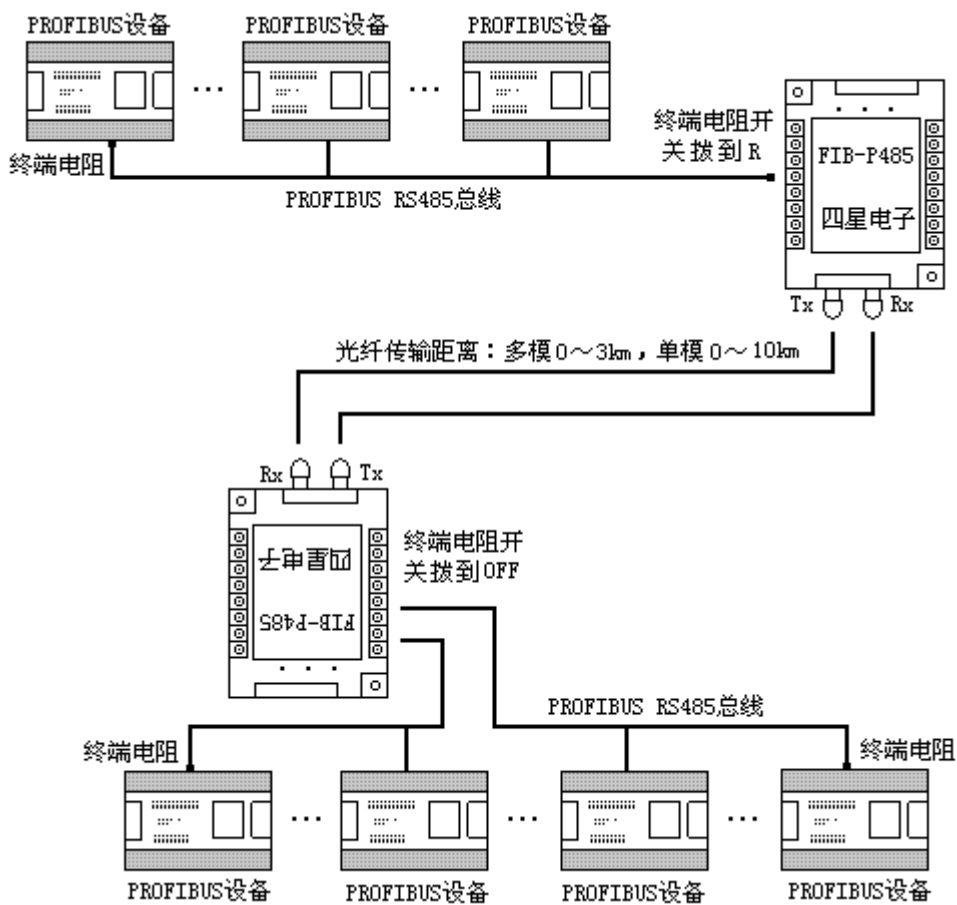
PROFIBUS RS485 star network (fiber HUB) composed by FIB-P485 fiber converters
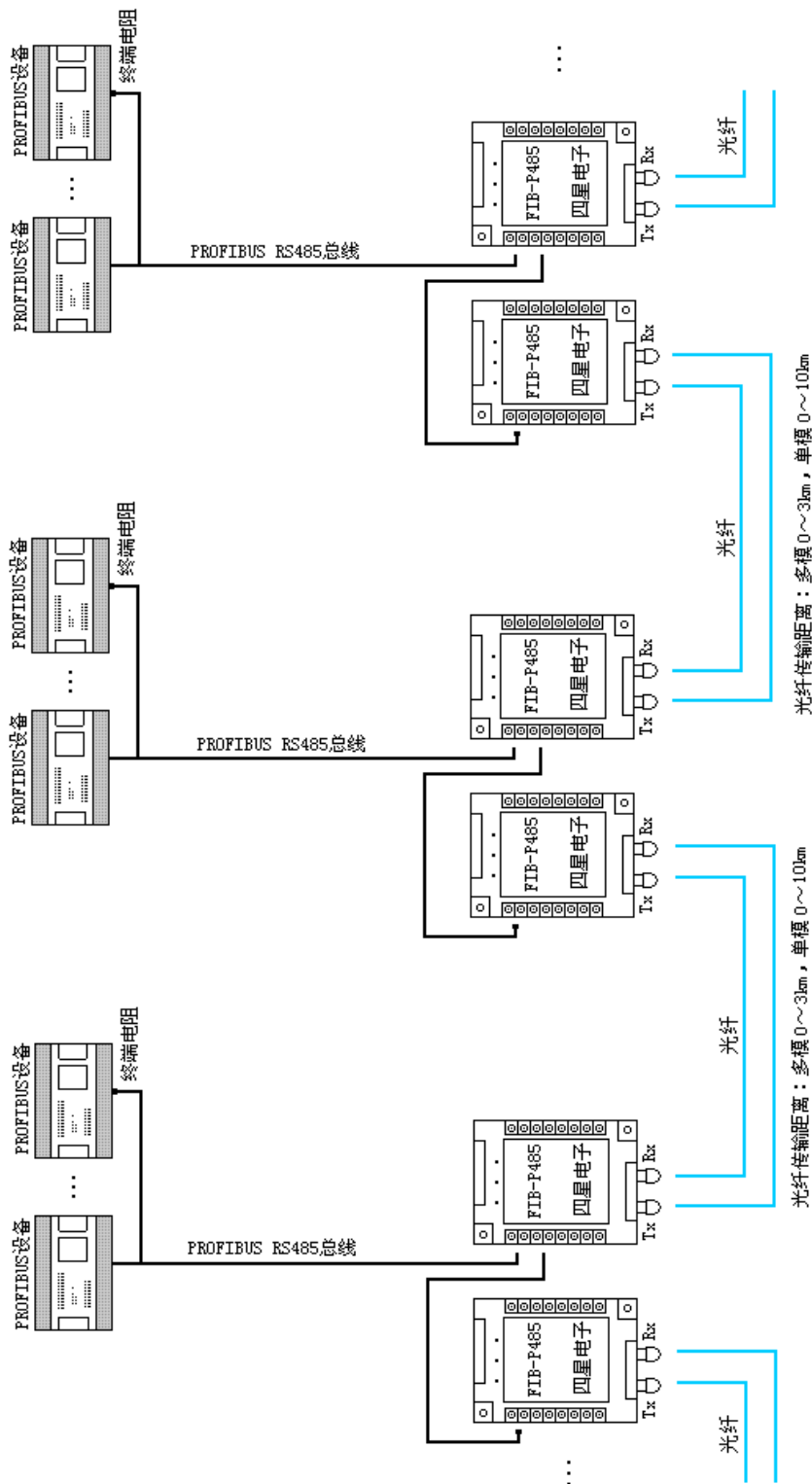
Fiber repeaters and fiber mode converters composed by FIB-P485

由二个背靠背的FIB-P485组成4光口的光纤转换器
从而实现PROFIBUS RS485的光纤多点通信网络