

FIB-CAN-S

CAN bus to single-mode fiber converters manual

The CAN fiber optic converter 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 its 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-CAN-S is an industrial grade CAN to fiber converter of Fourstar. It achieves CAN 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 digital transparent transmission of data, thus more suitable for the communication protocol whose physical interface is CAN.

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: CAN physical interface, two pairs of CANH, CANL wiring-terminal, built-in anti-lightning and anti-surge protection, repeatability

Surge capacity: $I_{pp} = 100A$ (10/700us, 4KV), standards: ITU-TK20/21, VDE 0433.

$\pm 15KV$ ESD (electrostatic) protection

- communication rate: normal mode: 0~1Mbps adaptive; enhanced mode: 0~50Kbps adaptive

- the unique enhanced-drive circuit, the voltage can be doubled when outputting signals, CAN can be used for long-distance transmission of smaller communications lines

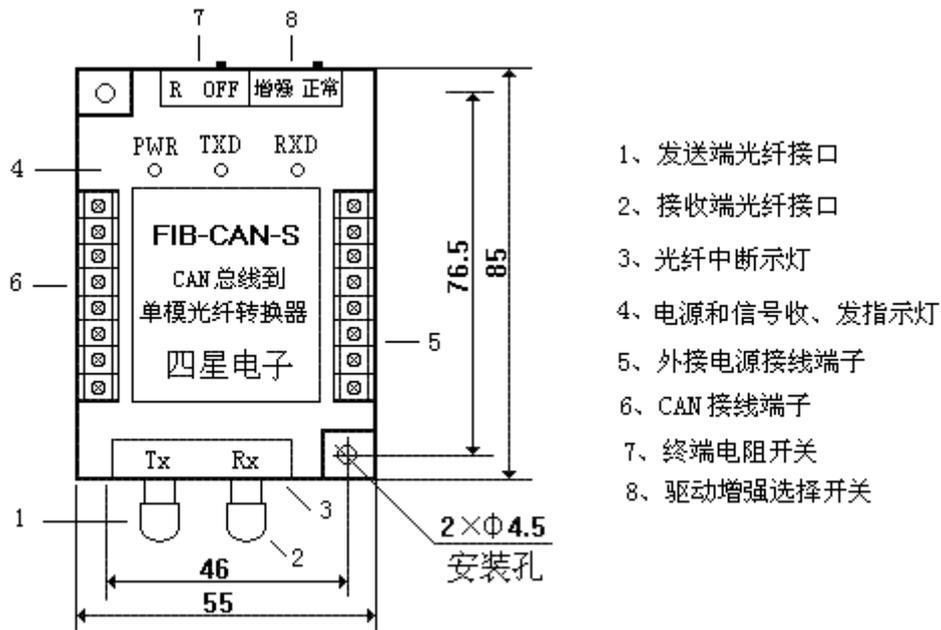
- applicable fiber: single-mode 9/125、10/125、8.3/125um

- wavelength: 1310 nm
- power of launched light: -6 dBm
- receiving sensitivity: -22 dBm
- transmission distance: 0 ~ 20km

(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 °C
- 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:



The signal rank of CAN connection terminal

Terminal signal-name	description
CANH	CAN signal is high, the inside connect with other terminal CANH
CANL	CAN signal is low, the inside connect with other terminal CANH
CANH	CAN signal is high, the inside connect with other terminal CANH
CANL	CAN signal is low, the inside connect with other terminal CANH
SG	CAN signal ground
FG	Shielding ground (chassis)

Indicator light:

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	break off	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 turn 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 120 Ohm terminal resistance.

Enhanced-Drive selection switch: enhancing ---when CAN sent signal, voltage is doubled; the normal --- standard CAN level when CAN sending signals

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 CAN 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 CAN signal, and generate the safety of equipment.

Connection of CAN signal

position, at this time the relay output double-voltage signal, but will cause greater signal reflection and waveform distortion too. So thicker twisted pair is better for long-distance communications (cross-sectional area is no less than 2 mm²). Setting the switch in the "normal" working method

When fiber converter is in the CAN 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.

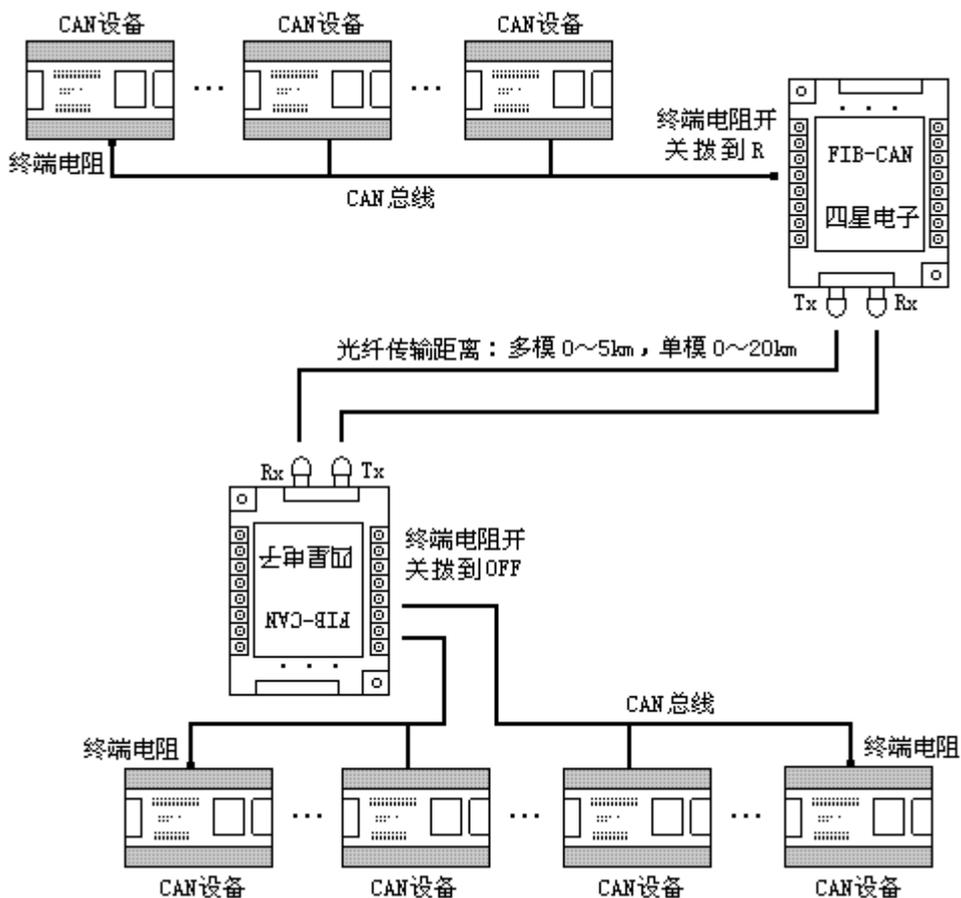
Use fiber to link the two fiber converters. Connect Tx to the other one's Rx, Rx to the other one's Tx. The bend radius when laying the fiber can't be less than the allowed one, or the core is easily broken.

Please pay attention to maintaining the clean of fiber's interface socket. Please

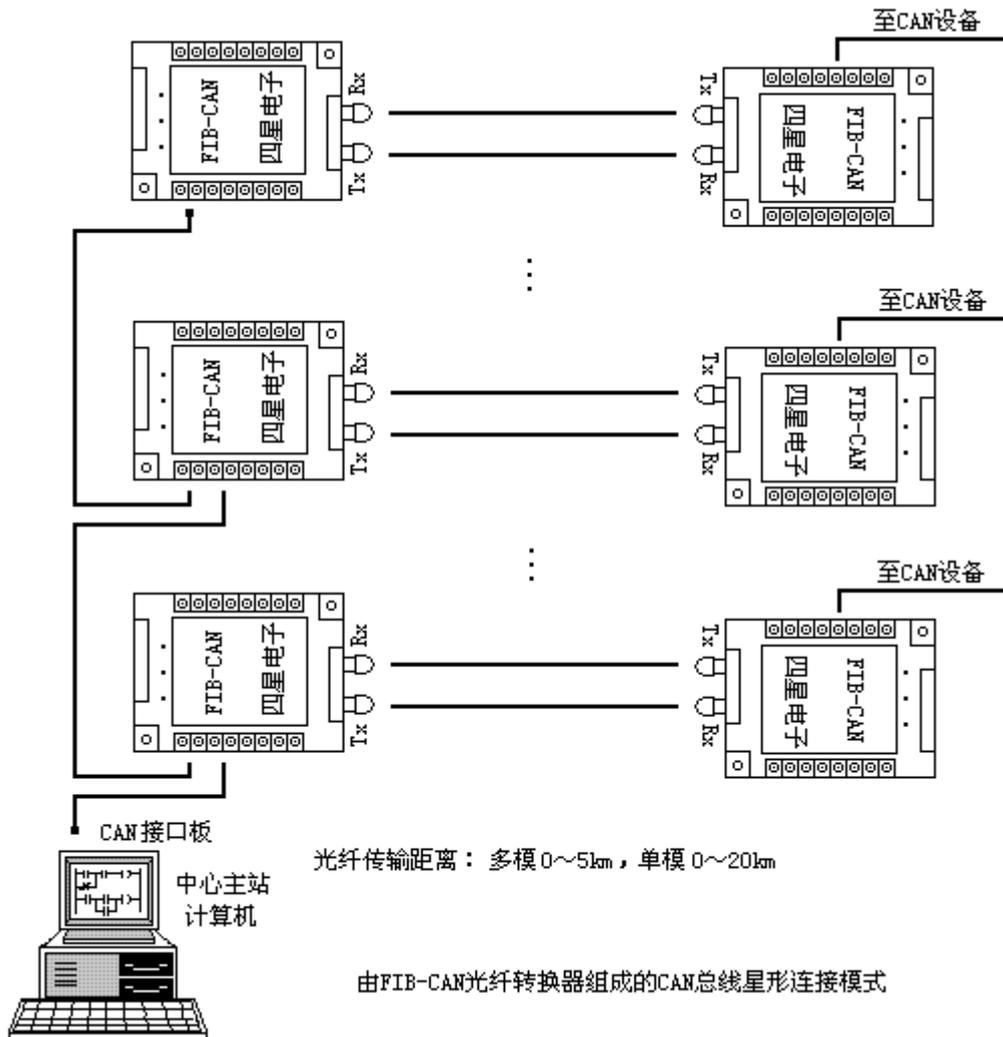
use the configured rubber to cover it when it isn't connected.

Typical applications map

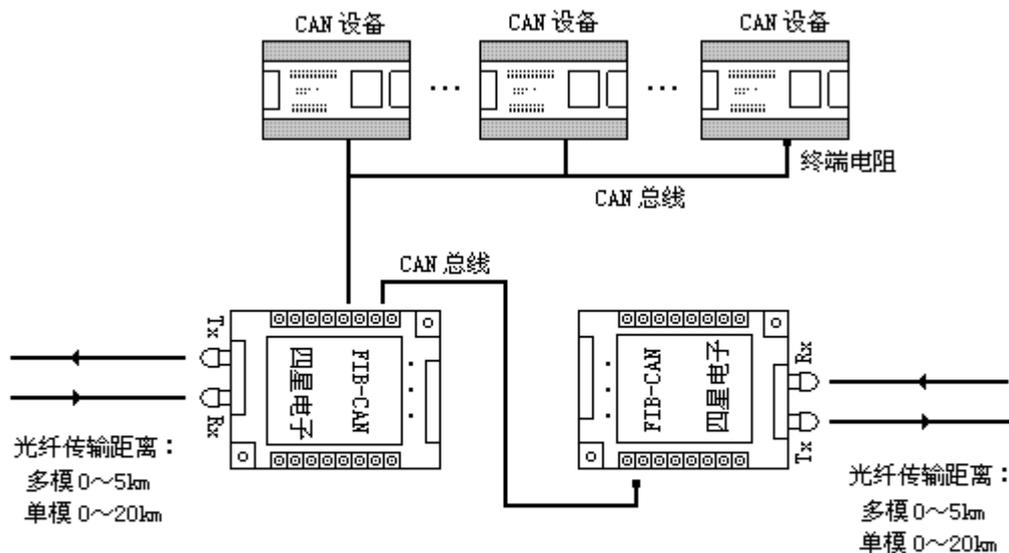
Connect two different zones' CAN buses by FIB-CAN fiber converters



CAN star network (fiber HUB) composed by FIB-CAN fiber converters



Fiber repeaters and fiber mode converters composed by FIB-CAN



用两个背靠背的 FIB-CAN 可组成光纤中继器，光纤传输距离延长一倍

用一个单模 FIB-CAN-S 和一个多模 FIB-CAN-M 背靠背的连接可组成多模—单模光纤的相互转换