CAN-232G

RS232 Light-isolated ultra-long-range driver

Now RS232 interfaces is still used in the communication between a lot of devices, its' single-ended signal transmission determines the distance of communication can only reach about 30 m, and has shortcomings such as low rate, poor anti-interference capabilities, not easy to facilitate networking and so on. The adoption of the popular "RS232 long-term transceiver (serial pump)" can extend the communication distance to 2 km (9600bps), but the communication rate is not satisfactory and it only applies to point-to-point communications, not network. The CAN-232G light-isolated ultra-long-range driver witch is developed by Fourstar completely solve the problems above. We use the CAN (Controller Aera Network) bus technology witch does not change the RS232 commuunication protocol to extend the

RS232 communication distance to 10 km, and solve the power need of using repeater in field. And the use of RS232 interface network is high-speed and convenient.   can ensure it suits for all the RS232/RS485 software without changing the original software.

Technical details:

1, optical isolated voltage: 1000 VDC (up to 3000 VDC, a statement is   required when ordering)

2, Power: external 5 V, 1W DC power supply

3, communication distance: 10 km (4800bps), 5km (9600bps), 2km (38400bps), 600m (115200bps)

4, communication rate: a maximum 230 kbps, the rate is automatically adaptive without setting

5, communication protocol: Using half-duplex CAN bus without change the original RS232 protocol (software)

6, the network nodes: can compose the multi-machine communication network with 110 nodes

7, transmission lines: twisted pair witch is 0.75 mm2 above, the cross-sectional area of twisted pair should be more than 1.5 mm^2 and the capacitance between line should be less than 60 pf / m when the length of lines are more than 1km

8, interface protection:

CAN port: Anti-lightning and anti-surge protection, repeatability surge capacity: Ipp = 100A (10/700us, 4KV)

standards: ITU-TK20/21, VDE 0433.

RS232 port: surge protection.

Power port: 500W TVS anti-lightning protection, anti-polarity of power protection.

9, Dimensions: $85 \times 55 \times 25$

10, installation: installation of 35 mm standard rail and bolt hole

11, Weight: 100g

12, the working temperature: -20 ~ 75 ℃

13, the humidity: 0 to 90%

How it works:

As shown, the RS232 signal of the equipment convert into TTL level through RS232 interface circuit., the equipment will not receive the signal witch is sent by its own and the CAN signal witch is output by CAN bus driver after photoelectric isolation. The working power of this product can be provided by the equipment or obtained separately from external. Isolated power modules are used in the internal of the product, the signal and power is isolated to ensure the safety of anti-jamming performance of the system.
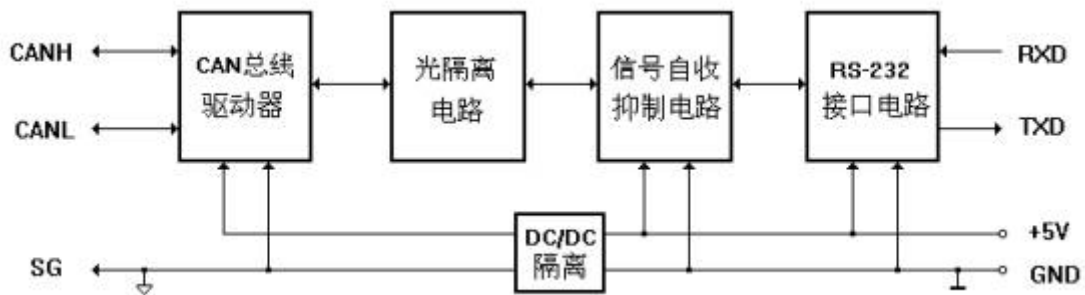
Products' shape and definition of terminal signals:
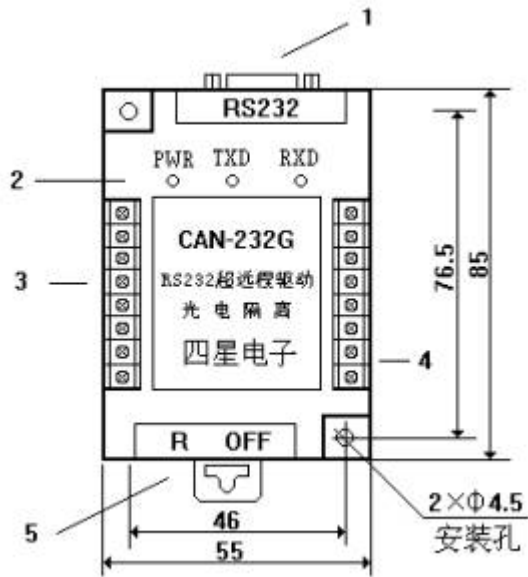
1、RS232插座，DB9M，DTE接口

2、指示灯，PWR：电源，TXD：发送数据，RXD：接收数据

3、CAN总线接线端子

4、电源接线端子

5、终端电阻设置开关K
"R"：接入120欧终端电阻
"OFF"：不接终端电阻

Signal definition of connection terminal

CAN terminal（left）		Power supply terminal（right）	
Signal-name	description	Signal-name	description
CANH	CAN high		Not be used
CANL	CAN low		Not be used
CANH	CAN high		Not be used
CANL	CAN low		Not be used
SG	Signal ground		Not be used
FG	Shield		Not be used

	ground		
	Not be used	+5V	External connect 5V power supply anode
	Not be used	GND	Signal ground

RS232（DB9 pin）socket signal definition

Stitch number	Signal-name	description
1	+5V	External connect 5V power supply anode
2	RXD	RS232 signal receive
3	TXD	RS232 signal send
4	Not be used	Not be used
5	GND	RS232 signal

		ground（power ground）
6	Not be used	Not be used
7	Not be used	Not be used
8	Not be used	Not be used
9	Not be used	Not be used

Description: The two pairs of CANH and CANL terminal is to facilitate the connection with bus in networking. This product has provided two optional external power-input channels. The power terminals and connecting the 1-pin and 5-pin of RS232 socket to 5V Power both work. They are very convenient for some RS232 mouth witch is with 5V power-supply equipment (such as PLC).

The link of CAN-232G and the RS232 mouth of equipment:

In order to connect to the RS232 (DTE interface) such as computers, the user must make a DB9/DB9 cross-cable as the following map:
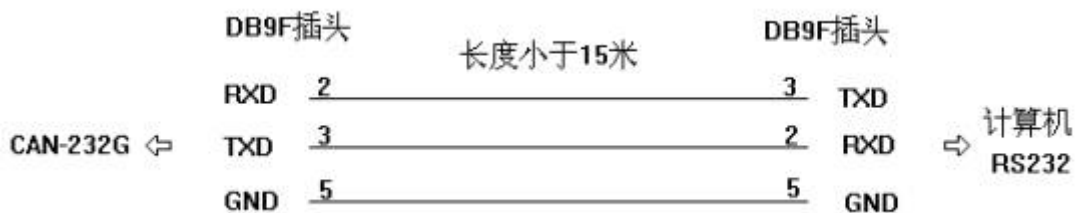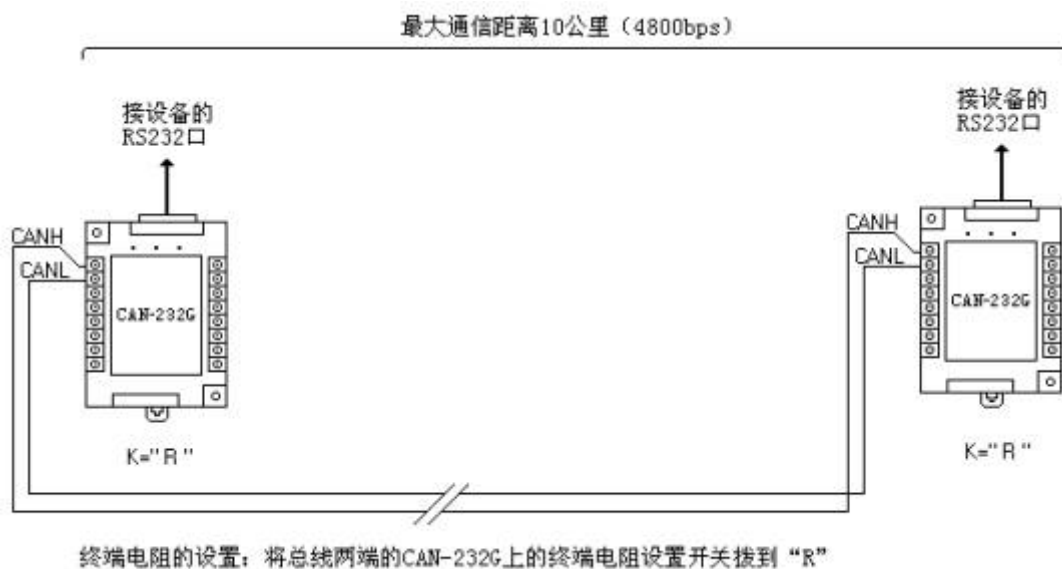

For other out standard RS232 ：Connect send with receive, receive with sent, ground with ground.
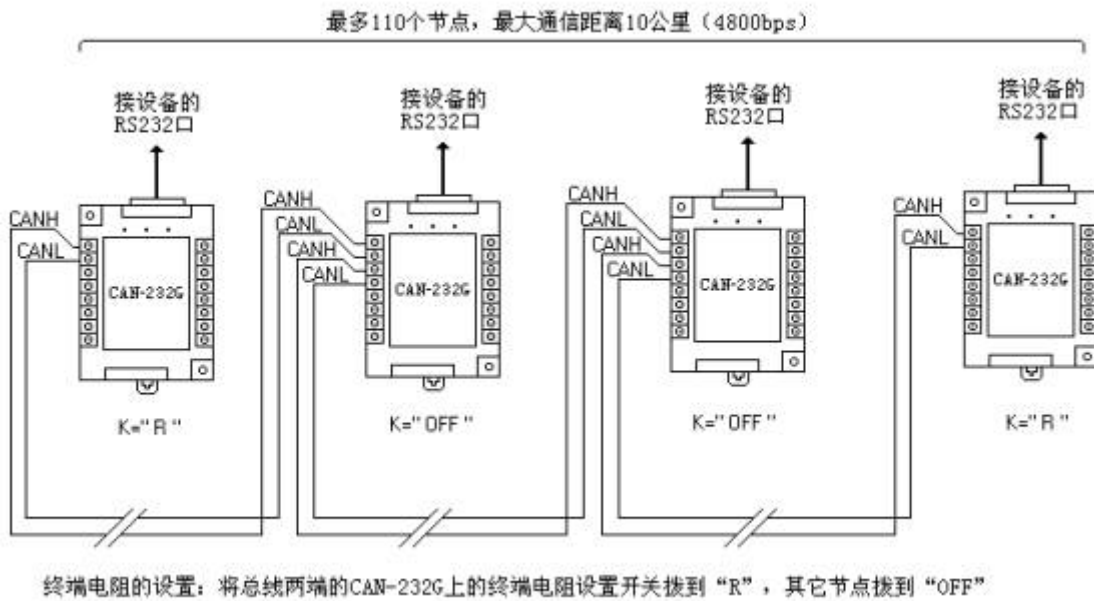
For RS232 of DB25:9—25 transferred connection is needed.

How to use:

1, RS232 point-to-point communication

2, RS232 multi-machine communication

CAN-232G can realize the multi-machine communication network witch is composed of 110 RS232 nodes; the largest communication range is 10 km (4800bps). The address of each node is determined by the procedures in the equipment.

descriptions：

1, The cut-off size of communication lines is often overlooked by the users. Because the CAN receiver's effective level (0.8 V) is higher than the RS485 receiver's (0.2 V), the requirement of communication lines' cross-sectional area is high. And farther the communication distance is, the greater the cross-sectional area should be. The twisted pair best be the one whose impedance is 120 Europe, and the capacitance between line is less than 60 pf / m. The following table is the twisted pair's minimum cross-sectional area of different communication distance:

Communication distance(km)	2	5	10
Cross-sectional area of twisted	1.0	1.5	2.0

pair (mm^2)			

These are the cross-sectional areas of communication lines witch are required by the fourstar's CAN interface product with unique driven-enhanced circuit. The communications lines' cross-sectional area may be doubled from the table values as for other companies' CAN interface products.

2, When use shielded twisted pair, please connect the shield to the "FG" terminal of CAN-232G, and to land finally.

3, The cable's length of CAN-232G to bus(extension) cannot be more than 15 m, otherwise they will have echoes, affecting the normal communication of system. Of course, there will be no extension problem if you use two pairs of CANH, CANL video for connection as the map showing.

4, For the setting of terminal resistance, the role of terminal resistance is to eliminate the waveform distortion caused by the reflection of signal in the communication lines. Please turn the termination resistor setting switch K witch is on the CAN-232G of the communication line's terminal and start to "R" (connect 120 Ohm terminal resistance), the terminal resistance setting switch K of other CAN-232G to "OFF" (terminal resistance is unacceptable).

5, The second-line half-duplex communication way is used in this product, the address of node is determined by the equipment's memory. The programming method is completely same with second-line half-duplex RS485. CAN bus controller agreement is not used.

6, the products provide two external power-supply channels, one is terminals, and the other is 1-foot and

5-feet of RS232 socket (This is very convenient for connecting RS232 interfece witch are with power, such

as PLC). The user may Choose one of them according to the equipment's situations. The external power

can be taken from equipment, such as the computer's USB port. You can also use a separate power supply.