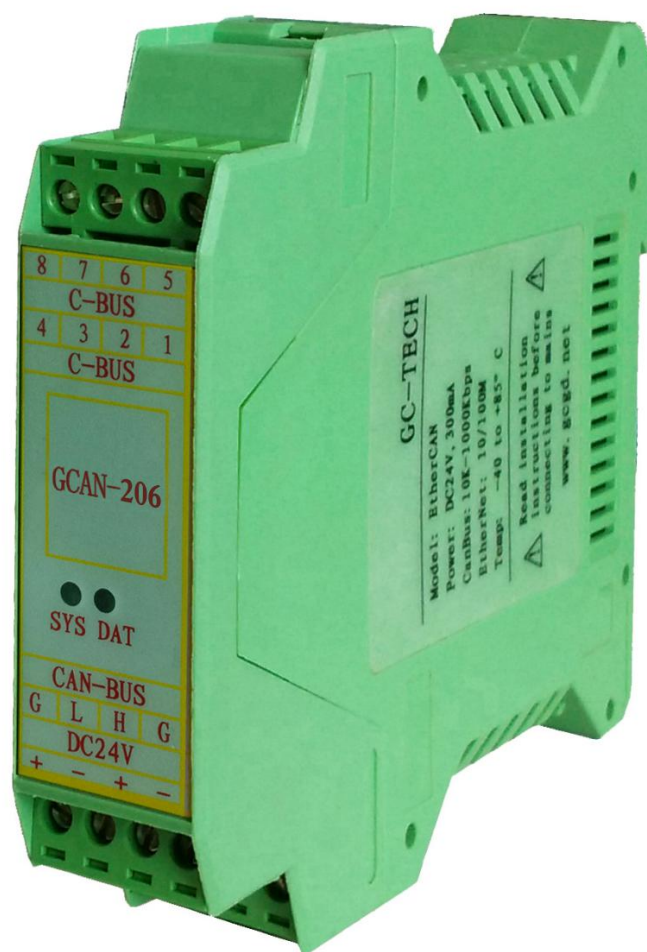

GCAN-206

CAN-Bus relay converter

User Manual



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1. Introduction

1.1 Functional overview

GCAN-206 is a high-performance CAN-Bus communication relay module with two CAN-Bus channel. GCAN-206 can transmit the same or different CAN bus data to each other. There are several typical applications.

(1)GCAN-206 can increase the distance of can nodes to extend CAN-Bus communication.

(2)The baud rate for each channel can be configured, different baud rate CAN-Bus network can be interconnected.

(3)It has ID filtering and data forwarding capability, achieve the goal of removing interference data and differentiating different devices.

(4)It has strong anti-interference ability, when the CAN-Bus equipment is affected by strong interference.

The direction of the data flow is clearly visible.

1.2 Properties at a glance

- With two CAN-Bus channel
- CAN-Bus supports CAN2.0A and CAN2.0B frame format, conform to ISO/DIS 11898 standards
- CAN baud rates: 5Kbps ~ 1Mbps
- Power supply: 24VDC (20mA)
- CAN-Bus isolation module insulation voltage: DC 1500V
- Device driver and software support Windows XP/7/10
- Working temperature range from -40 to 85 °C
- Size: (L)113mm * (W)100mm * (H)21mm

2. Installation

2.1 Driver and software installation

2.1.1 Install driver and software

ECAN Tools has been integrated hardware driver installation program, users can directly install ECAN Tools.

If you only need to install the driver, please enter the “driver” folder, select the installation file that corresponds to the system type. (“DriverSetup.exe” for 32-bit. “DriverSetup64.exe” for 64-bit)

2.1.2 Uninstall driver and software

Users can run the DriverSetup.exe/ DriverSetup64.exe and click "Uninstall" button to uninstall the installed device driver.

2.2 Connect to PC

The converter can be connected directly to a PC using a USB cable, if the USB power supply is insufficient, you need to use external power supply.

2.3 Fixation of converter

The installation method of the GCAN-206 converter is shown in figure 2.1.

Use a screwdriver to help install the module to the DIN guide.

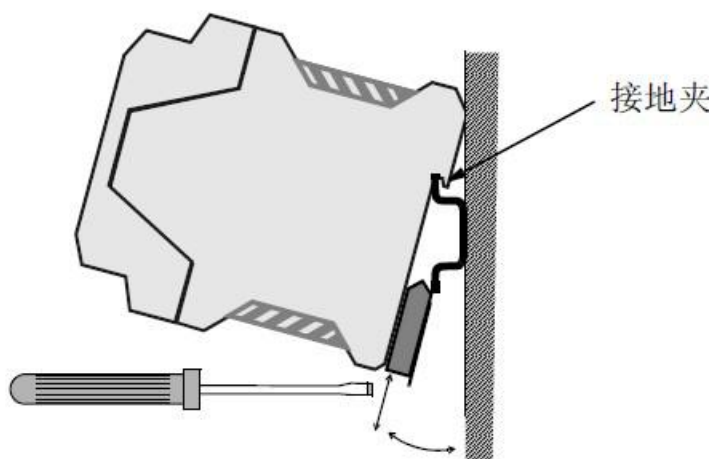


Figure 2.1 installation of GCAN-206 converter

The wiring terminals of the GCAN-206 converter are shown in figure 2.2.

The power terminal interface definition is shown in table 2.1.



Figure 2.2 GCAN-206 module terminal row

DC24V		meaning
1	+	24V DC+
2	-	GND
3	+	24V DC+
4	-	GND

Table 2.1 definition of power interface

2.4 Connect to CAN-Bus

GCAN-206 has two CAN-Bus by two 4 Pin plug type terminal leads, these CAN-Bus channels can connect two CAN-Bus network or devices. Terminal pin definition as Table 2.2 below.

Pin	Prot	Name	Function
C-BUS2	CAN2	CAN2_L	CAN2_L signal line
C-BUS3		CAN2_H	CAN2_H signal line
L	CAN1	CAN1_L	CAN1_L signal line
H		CAN1_H	CAN1_H signal line

Table 2.2 GCAN-206 converter pin definition

Note: In practical use, most of the time just connected the CAN_H to CAN_H and CAN_L connected to CAN_L then communication can be realized

3. converter in use

3.1 Connect to USB

When driver and software have been installed, connect the converter to the USB interface, a new USBCAN device named "GC - Tech USBCAN Device" can be found in the PC Device manager.

3.2 Connect to CAN

GCAN-206 converter connect to CAN-Bus as chapter 2.3, CAN_H to CAN_H, CAN_L to CAN_L.

The CAN bus network adopts topological structure, only the two furthest terminal need to connect 120Ω terminal resistance between CAN_H and CAN_L. For branch connection, its length should not be more than 3m. CAN-bus nodes connection as shown in figure 3.1

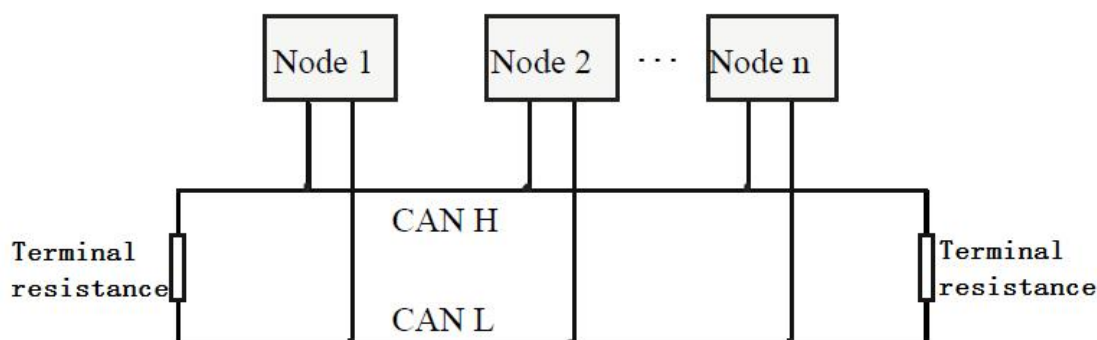


Figure 3.1 CAN-bus network

Note: the CAN-bus cable can use ordinary twisted-pair cable, shielded twisted-pair cable. Theory of the maximum communication distance depends on the bus baud rate, Their relationship as shown in the Table 3.1.

Baud rate	Distance
1 Mbit/s	40m
500 kbit/s	110m
250 kbit/s	240m
125 kbit/s	500m
50 kbit/s	1.3km
20 kbit/s	3.3km

10 kbit/s	6.6km
5 kbit/s	13km

Table 3.1 relationship of baud rate and distance

3.3 CAN-Bus terminal resistance

In order to improving the communication reliability and eliminating CAN-bus terminal reflection, the two furthest terminal need to connect terminal resistance between CAN_H and CAN_L as shown in figure 3.2. Terminal resistance values determined by the characteristic impedance of the cables. Such as, the characteristic impedance is 120Ω.

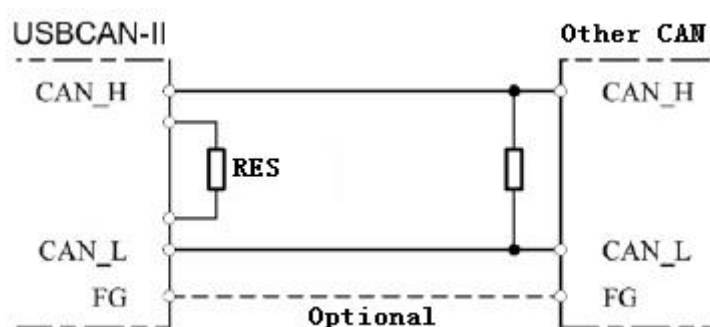


Figure 3.2 GCAN-206 connect to other CAN devices

NOTE: GCAN-206 doesn't have integrated 120 Ω terminal resistance, and need the customer to add it.

3.4 System LED

GCAN-206 converter with one SYS indicator to indicate the converter status. One DAT indicator to indicate data transmission. More functions are shown in table 3.2 and 3.3.

Indicator	Colour	State
SYS	Green	System indicator
DAT	Green	Data transmission

Table 3.2 GCAN-206 converter indicator LED

When GCAN-206 converter power on, SYS light, indicates the converter has power supply, the system is initialized. Otherwise, a system power failure or system errors has exist.

When CAN-Bus1 or CAN-Bus2 data transceiver, DAT will blinking.

Indicator	State	Meaning
SYS	ON	System is initialized
	OFF	System is not initialized
DAT	ON	Data transmission
	OFF	No data transmission

Table 3.3 GCAN-206 converter LED state

4. Relay function

4.1 Start

1. If ECAN Tools has been installed, users can directly run it on the desktop.
2. Choose the device type and click "open device", one converter will shown in the below. See figure 4.1.



Figure 4.1 Software interface

3. And Click “确定”.
4. Click“工作模式”——“普通中继模式”——“写设置”——Close the software and poewr on again. See figure 4.2.

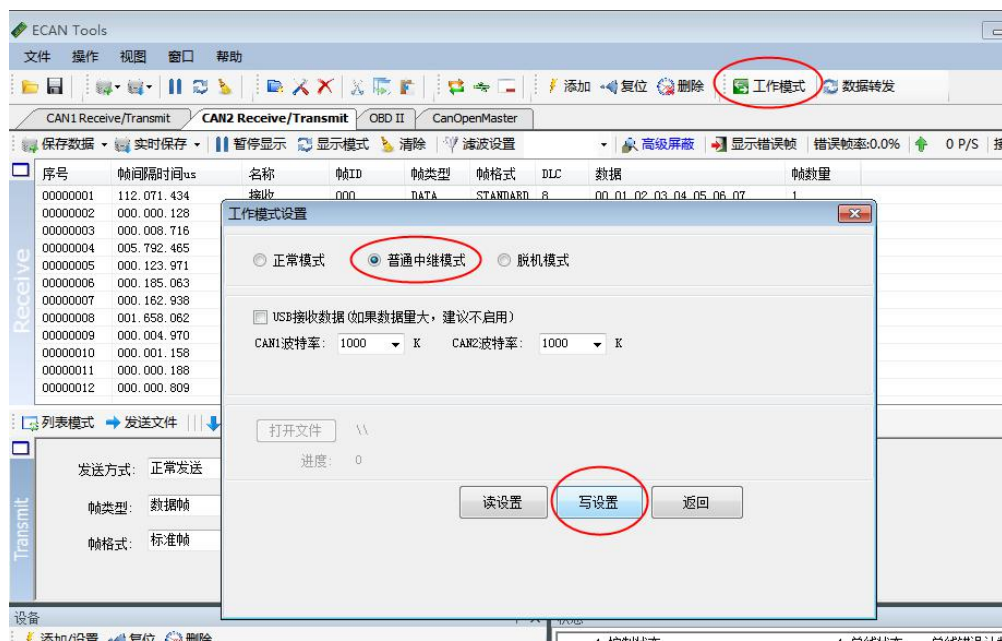


Figure 4.2 Software interface

The baud rate of two channels only can be modified in “工作模式”.

5. After the power on again, the software is shown in figure 4.3.

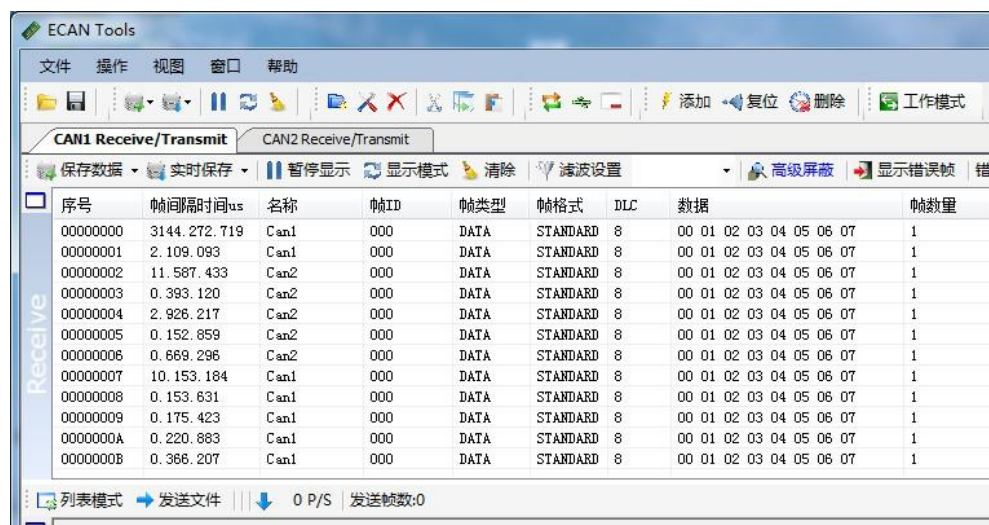


Figure 4.3 Software interface

5. Technical Specifications

Connection	
CAN	OPEN4
Interface	
CAN	ISO 11898 standard, support CAN2.0A/B
CAN baud rate	1000K、500K、250K、200K、125K、100K、50K、20K
Isolation	1500V, DC-DC
CAN terminal resister	None
Power	
Voltage	+24V DC
Current	20mA
Environment	
Temperature	-40℃~+85℃
Humidness	15%~90%RH, without condensation
EMC test	EN 55024:2011-09 EN 55022:2011-12
IP grade	IP 20
Basic	
Dimension	113mm *100mm *21mm
Weight	120g

Appendix: CAN2.0B frame format

CAN2.0B standard frame

CAN standard frame format is 11 bytes, including two parts: information and data. The first 3 bytes for information.

Bit Byte	7	6	5	4	3	2	1	0
1	FF	RTR	×	×	DLC			
2	(Message identifier)				ID.10—ID.3			
3	ID.2—ID.0			×	×	×	×	×
4	data 1							
5	data 2							
6	data 3							
7	data 4							
8	data 5							
9	data 6							
10	data 7							
11	data 8							

Byte 1 for the frame information. Seventh (FF) means the frame format, in the standard frame, FF = 0; Sixth (RTR) means the type of frame, RTR = 0 means for the data frame, RTR = 1 for remote frame; DLC means the length of the data.

Byte 2, 3 for the message identifier.

Bytes 4~11 for the data of the data frame, remote frame is invalid.

CAN2.0B extended frame

CAN extended frame format is 13 bytes, including two parts: information and data. The first 5 bytes for information.

Bit Byte	7	6	5	4	3	2	1	0
1	FF	RTR	×	×	DLC			
2	(Message identifier)				ID.28—ID.21			
3	ID.20—ID.13							
2	ID.12—ID.5							
3	ID.4—ID.0				×	×	×	
4	data 1							
5	data 2							
6	data 3							
7	data 4							
8	data 5							
9	data 6							
10	data 7							
11	data 8							

Byte 1 for the frame information. Seventh (FF) means the frame format, in the standard frame, FF = 0; Sixth (RTR) means the type of frame, RTR = 0 means for the data frame, RTR = 1 for remote frame; DLC means the length of the data.

Byte 2~5 for the message identifier.

Bytes 4~11 for the data of the data frame, remote frame is invalid.

Sales and service

Shenyang Guangcheng Technology Co., Ltd.

Address: Industrial Design Center, No. 42 Chongshan

Middle Road, Huanggu District, Shenyang

City, Liaoning Province.

QQ: 2881884588

E-mail: 2881884588@qq.com

Tel: +86-024-31230060

Website: www.gcgd.net

Sales and service Tel: +86-18309815706

After - sales service telephone Number: +86-13840170070

WeChat Number: 13840170070

