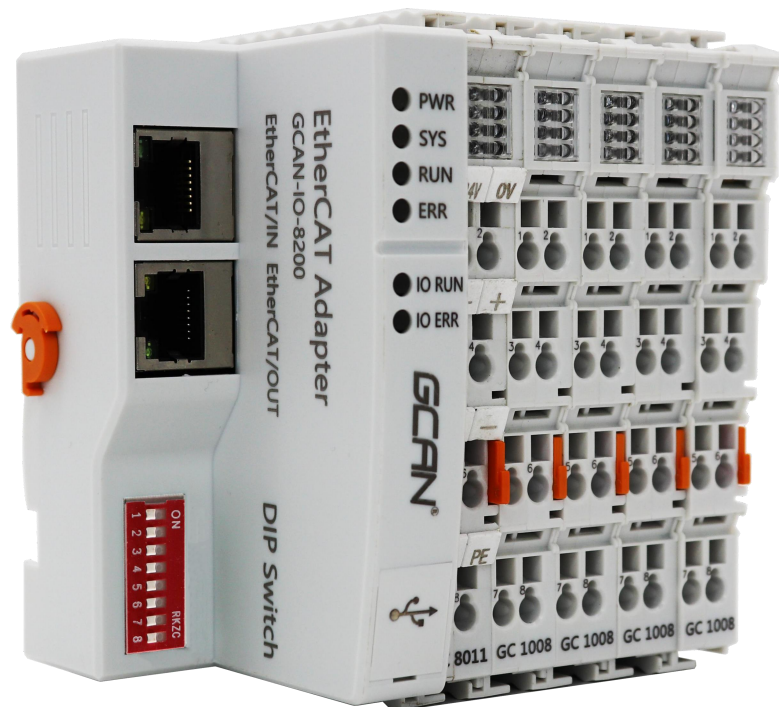


GCAN-IO-8200

EtherCAT I/O coupler

User manual



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1. Introduction

1.1 Overview

GCAN-IO-8200 EtherCAT bus coupler is a high-performance bus general-purpose remote IO module independently developed by our company based on the EtherCAT bus, which saves costs for users, simplifies wiring, and improves system reliability. These IO modules can be modularized way to expand. A complete node consists of a Bus Coupler, any number of 1-32 IO modules and an end terminal module. With the GCAN-IO-8200 EtherCAT bus coupler, the I/O connection can be established very conveniently through the GC-bus expansion technology, and a maximum of 32 input/output IO modules can be connected. This series of IO is especially suitable for centralized control with a large number of on-site points and various types of signals. The GCAN-IO-8200 EtherCAT bus coupler can be used as the EtherCAT slave station of Siemens 200SMART, 1200, 1500, 300 series PLCs.

The GCAN-IO-8200 Bus Coupler can connect all bus terminals. As far as the user is concerned, analog input/output signals are processed in the same way as other types of signals. Information in the process image of the controller is displayed in byte array format. GCAN-IO-8200 bus coupler supports automatic configuration, you don't need to set parameters on PC.

1.2 Performance

- 2 EtherCAT bus interfaces, EtherCAT/IN and EtherCAT/OUT (RJ45)
- Bus transmission rate: 100Mbps;
- Bus transmission distance (distance between stations): 100m;
- The maximum number of bus terminals module is 32
- The configuration method is configured according to the sequence of IO inserts
- Power supply: 24V DC (-15%/+20%)
- Current consumption about 360mA
- The maximum current for subsequent IO power supply is about 740mA
- Electrical isolation is 1500 Vrms;
- Working temperature: -40.00°C~85.00°C
- Dimensions: 100mm(L) * 69mm(W) * 48mm(H)

1.3 Typical application

- Connect with the distributed bus terminal module to form a complete control node
- Perform data acquisition and data transfer with EtherCAT protocol

2. Installation and usage

This chapter introduces the method installation and wiring, the meaning of the indicator and the interface.

2.1 Module Appearance

The appearance of GCAN-IO-8200 is shown in Figure 2.1. GCAN-IO-8200 EtherCAT bus coupler includes 2 EtherCAT communication interfaces, 1 USB interface, 1 coupler power interface, 2 I/O power interfaces, and 2 shielded wire interfaces. The USB interface can be used to upgrade the firmware.



Figure 2.1 Appearance of GCAN-IO-8200 EtherCAT bus coupler

2.2 Module installation

The installation method of GCAN-8200 EtherCAT bus Coupler is shown in Figure 2.2, You will need a flathead screwdriver to assist with installation

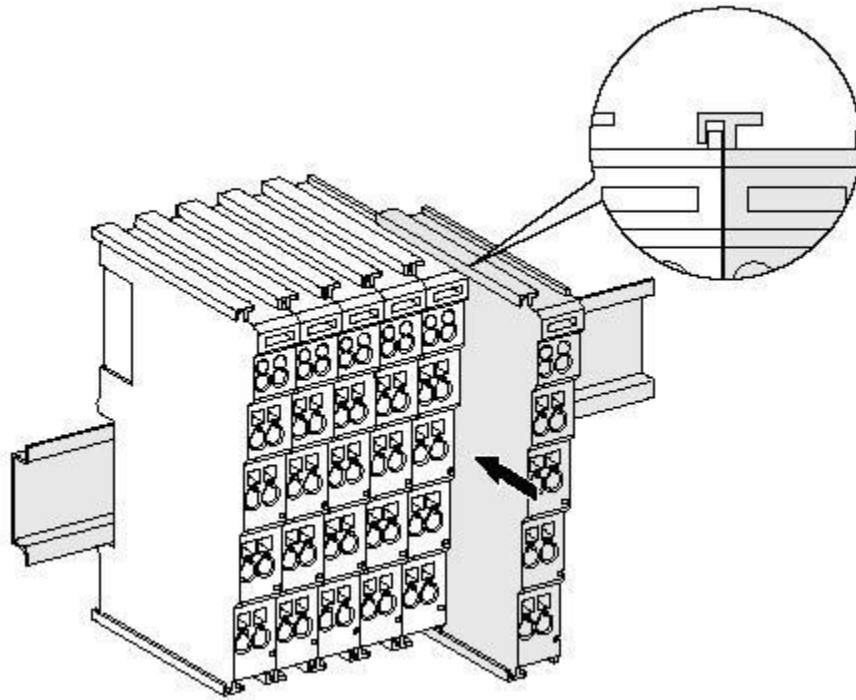


Figure 2.2 GCAN-8200 module installation

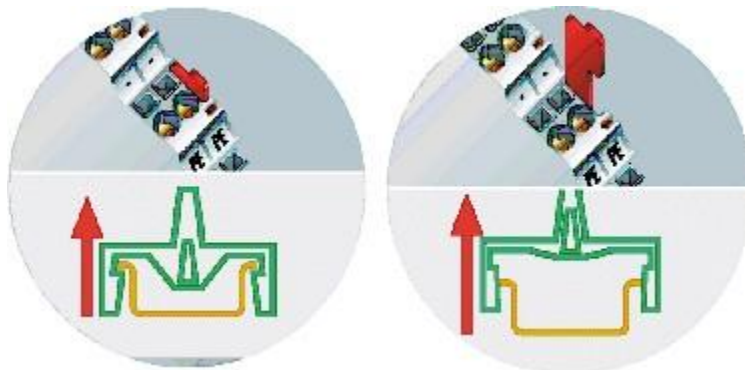


Figure 2.3 GCAN-8200 module self-locking mechanism

Please install the GCAN-IO-8200 EtherCAT bus coupler on the guide rail as shown in Figure 2.3 until the lock is locked and there is a "click" sound. GCAN-IO-8200 EtherCAT bus coupler has a self-locking mechanism, which can effectively prevent the device from falling. You can release the self-locking mechanism by pulling the orange tab as shown in Figure 2.3.

GCAN-IO-8200 EtherCAT bus coupler can connect up to 32 distributed bus terminal modules. When inserting bus terminal module, be sure to insert it along the groove on the right side of the existing module sequentially until the lock is stuck. At the right end of the entire node, you need to install terminal module. The terminal will guarantee the data transmission and power supply of the GC-Bus.

When you assemble the nodes correctly, there is no obvious gap between the terminal modules. If the modules are not assembled correctly, the entire

node will not operate normally.

2.3 Wiring method

The power wiring as shown in figure 2.4. First, use a flat-blade screwdriver to insert into the square hole, hold the top edge of the metal sheet in the square hole, and press toward the hole. Then, insert the wire into the hole. After plugging in, pull out the screwdriver and the wire can be firmly locked in the hole.

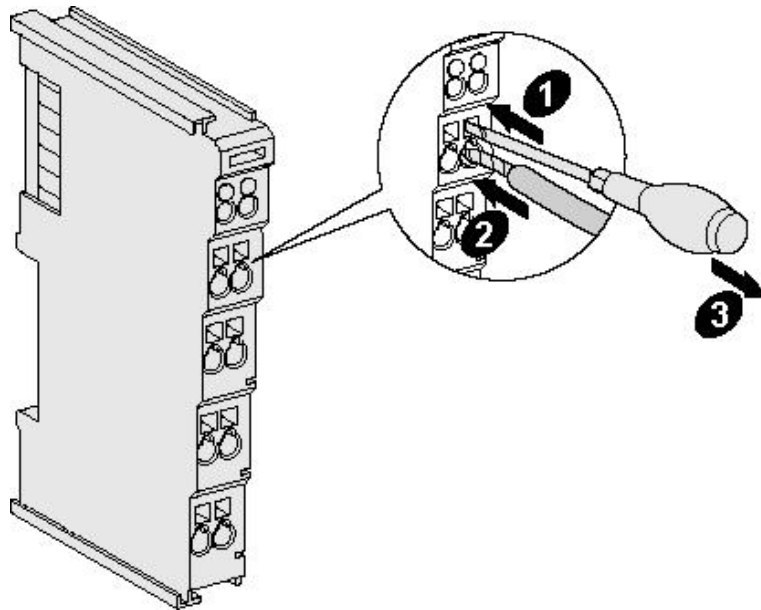


Figure 2.4 GCAN-8200 module installation

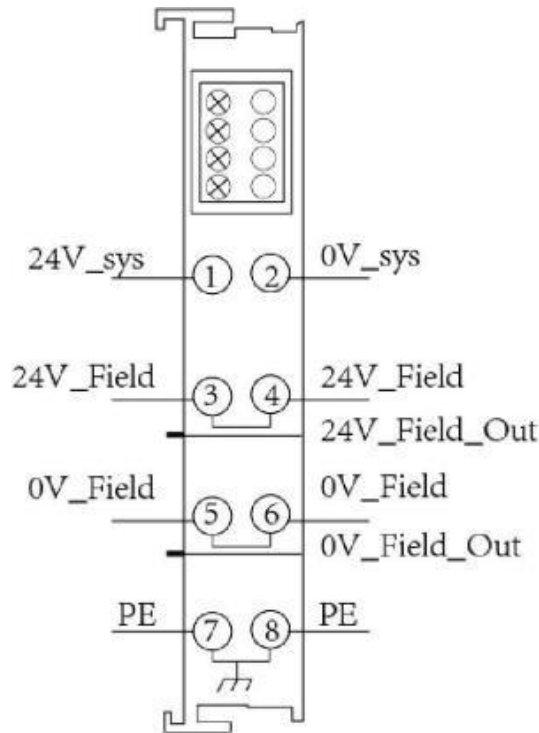


Figure 2.5 GCAN-IO-8200 module wiring terminal block

The wiring terminal block of the GCAN-IO-8200 EtherCAT bus coupler is shown in Figure 2.5, including 8 terminals. The number corresponding to each terminal and its meaning are shown in Table 2.1.

Note: connecting between terminal 3 and terminal 4, terminal 5 and terminal 6, terminal 7 and terminal 8 inside the module.

Terminal	Number	Definition
24V_sys	1	Input 24V power
0V_sys	2	GND power
24V_Field	3	IO positive power
24V_Field	4	IO positive power
0V_Field	5	IO negative power
0V_Field	6	IO negative power
PE	7	shield
PE	8	shield

Table 2.1 GCAN-8200 module, wiring terminal definition

2.4 System status indicator

GCAN-IO-8200 EtherCAT bus coupler has two sets of status indicators, contains 6 circular status indicators in the left area and 2 power indicators in

the right area. The specific indicating function of the indicator is shown in table 2.3. When the indicator lights are in different states, the status of the GCAN-IO-8200 module is shown in Table 2.4

Indicator	Color	Status
PWR	green	Power
SYS	green	System
RUN	green	Run
ERR	Red	Error
IO RUN	green	GC-Bus run
IO ERR	Red	GC-Bus error
NO.1 on the right	green	Power
NO.3 on the right	green	GC-Bus power

Table 2.3 GCAN-8200 module, indicators

Indicator	Status	Meaning
PWR	bright	Power supply normally
	not bright	Power supply abnormally
SYS	Blinking	Working status
	not bright	Initialization error
RUN	Blinking	Run normal
	not bright	stop
ERR	bright	System error
	not bright	System normal
IO RUN	Blinking	GC-Bus run normally
	not bright	GC-Bus stop
IO ERR	bright	GC-Bus error
	not bright	GC-Bus normal
Terminal module		
NO.1 on the right	bright	Power supply normally
	not bright	Power supply abnormally
NO.3 on the right	bright	Internal power supply normally
	not bright	Internal Power supply abnormally

Table 2.4 GCAN-8200 module, indicators status

3. Communication Connection

GCAN-IO-8200 EtherCAT bus coupler uses Ethernet CAT5 cable (five types of twisted pair) to connect with EtherCAT master station and other slave devices. GCAN-IO-8200 EtherCAT bus coupler is equipped with 2 RJ45 interfaces, It is convenient for users to connect the GCAN-IO-8200 EtherCAT bus coupler into the EtherCAT bus.

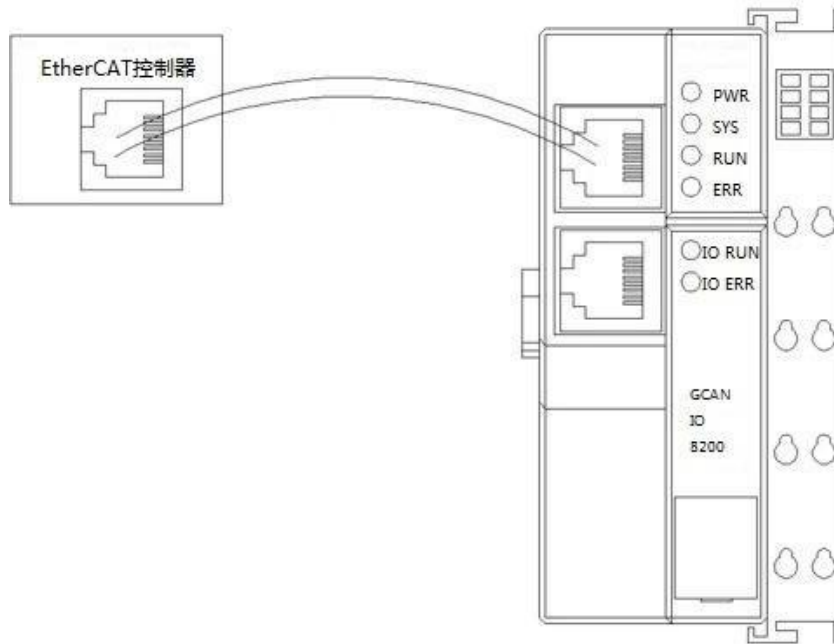


Figure 3.1 GCAN-IO-8200 EtherCAT bus coupler connected with EtherCAT controller

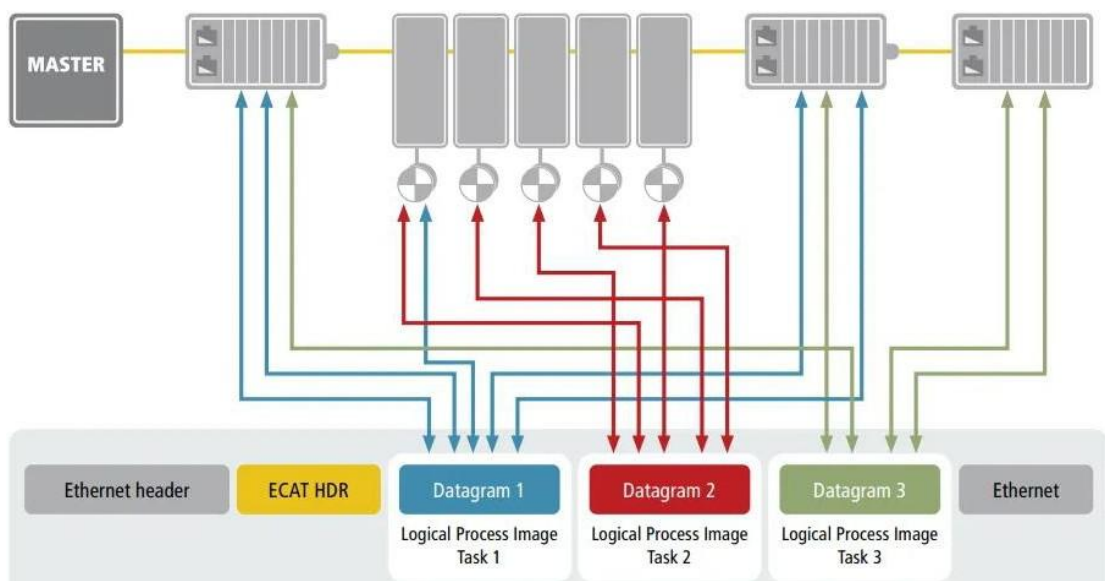


Figure 3.2 GCAN-IO-8200 EtherCAT bus coupler access bus data flow

4. Module selection table

GSCAN-IO-8200 does not perform complete control functions by itself. A complete control system consists of a bus module controller, several GC series terminals and a terminal terminal (GC-0001). Among them, GC series terminal modules need to be purchased separately from our company, and terminal terminal modules are attached with GSCAN-IO-8200.

GC series programmable controller expansion modules currently include four categories: digital input expansion modules, digital output expansion modules, analog input expansion modules, and analog output expansion modules. The specific selection table is shown in the table below.

I/O	Type	Characteristic	Signal	Channel
Digital input	GC-1008	Digital input (PNP)	24V DC	8-channel
	GC-1018	Digital input (NPN)	24V DC	8-channel
	GC-1502	Counter (200kHz max)	-	2-channel
Digital output	GC-2008	Digital output (PNP)	24V DC	8-channel
	GC-2018	Digital output (NPN)	24V DC	8-channel
	GC-2204	relay output	-	4-channel
Analog input	GC-2302	PWM (20Hz~200kHz)	-	2-channel
	GC-3604	Voltage input, 16 bits	-5~+5V	4-channel
	GC-3624	Voltage input, 16 bits	10V~+10V	4-channel
	GC-3644	Current input, 16 bits	0-20mA	4-channel
Analog output	GC-3654	Current input, 16 bits	4-20mA	4-channel
	GC-3664	Voltage input, 16 bits	0~+5V	4-channel
	GC-3674	Voltage input, 16 bits	0~+10V	4-channel
	GC-3804	2-wire PT100, 16 bits	Thermal resistance	4-channel
	GC-3822	3-wire PT100, 16 bits	Thermal resistance	2-channel
	GC-3844/3854/3	K type / S type / T type	Thermocouple	4-channel

	864	thermocouple		
	GC-4602	Voltage output, 16 bits	-5V~+5V	2-channel
	GC-4622	Voltage output, 16 bits	-10V~+10V	2-channel
	GC-4642	Current output, 16 bits	0-20mA	2-channel
Special module	GC-4652	Current output, 16 bits	4-20mA	2-channel
	GC-4662	Voltage output, 16 bits	0~5V	2-channel
	GC-4672	Voltage output, 16 bits	0~10V	2-channel
	GC-4674	Voltage output, 12 bits	0~10V	4-channel
	GC-6101	RS232/RS485 extension	-	-
	GC-6201	GPRS extension	-	-
	GC-6221	4G extension	-	-
	GC-6501	WiFi extension	-	-

5. Technical specifications

Interface Features	
connection method	2*RJ45
data transmission medium	Ethernet CAT5 Cable
Transmission distance	The distance between stations is 100m
Transmission rate	100Mb/s
Technical specifications	
Number of Bus Terminals	32
Maximum number of bytes for the fieldbus	256 bytes input and 256 bytes output
Configuration method	automatic configuration
power input	24V DC (-15%/+20%)
current consumption	About 360mA
Power supply for subsequent IO	About 740mA
Environmental testing	
Working temperature	-40℃~+85℃
Working humidness	95%RH, without condensation
EMC test	EN 55024:2011-09 EN 55022:2011-12
Anti-vibration / impact resistance performance	EN 60068-2-6/EN 60068-2-27/29
Anti-electromagnetic interference/radiation performance	EN 61000-6-2 /EN 61000-6-4
IP grade	IP 20
Basic information	
Dimension	100mm *69mm *44mm
Weight	100g

Sales and service



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