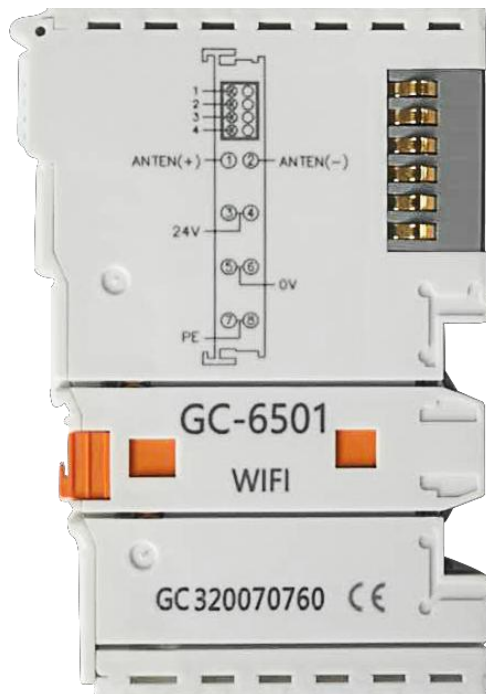


GC-6501

Extended Wifi communication module

User manual



Document version: V2.01 (2020/8/22)

Revise history

Version	Date	Reason
V1.00	2019/09/16	Create document
V2.00	2020/3/22	Correct equipment working parameters
V2.01	2020/8/22	Adjust the document structure

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1. Function introduction

1.1 Functional Overview

The GC-6501 module is an extended communication module that integrates 1 channel Wifi. This module can be used to expand Wifi communication, and can be connected to AP nodes, collect data through TCP and UDP communication, and send the collected values to the GCFAN-PLC-510 series PLC controller through the internal bus, and at the same time expand the serial port function by calling Block programming to achieve complex bus control requirements. This module can be used in conjunction with any other GC series IO module to realize the receiving and sending of data in industrial automation or distributed control systems.

1.2 Performance characteristics

- The form of extended Wifi is Station;
- Support TCP Client and UDP communication form;
- Ethernet parameters are set by function blocks in the program;
- Electrical isolation is 500Vrms;
- Power supply through GCFAN-PLC-510 and external 24V-DC power supply;
- Current consumption is 200mA;
- Configuration without address setting, configuration through bus coupler or controller;
- Operating temperature range: -40 °C ~ +85 °C;
- Dimensions: length 100mm * width 69mm * height 12mm.

1.3 Typical application

- Add Wifi extension function to PLC controller;
- The bus data can be sent and received by calling the extended Wifi function block in the program.

2. Equipment installation and use

This chapter will explain in detail the installation method, wiring method, meaning of indicator lights and interface meaning of GC-6501 module.

2.1 Module fixed

The installation method of GC-6501 module is shown in Figure 2.1, you need to use a flat-blade screwdriver to assist installation.

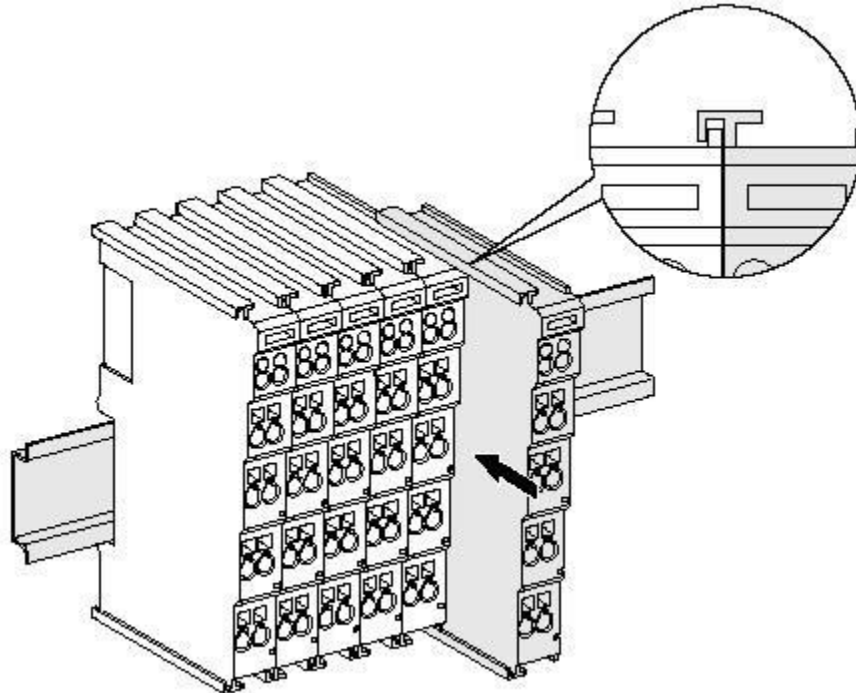


Figure 2.1 GC-6501 Module installation

First, you need to install the fieldbus coupler on the rail, and then attach the GC-6501 module to the right side of the fieldbus coupler or other modules to add this component. Please insert the GC-6501 module inward along the slot as shown in Figure 2.1 until the lock catches and makes a "click" sound.

GC-6501 module needs to be used with GCAN-PLC-510 coupler.

2.2 Wiring method

As shown in Figure 2.2, first insert a flat-blade screwdriver into the square hole and hold the screw in the square hole. Then insert the cable into the circular hole. After plugging it in, pull out the screwdriver and the cable can be firmly locked in the circular hole.

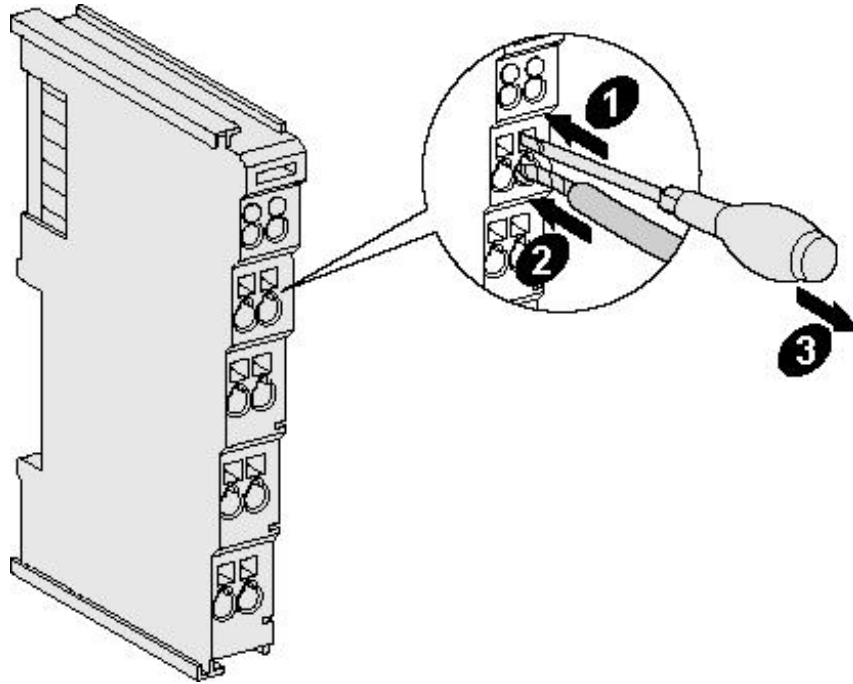


Figure 2.2 GC-6501 module installation

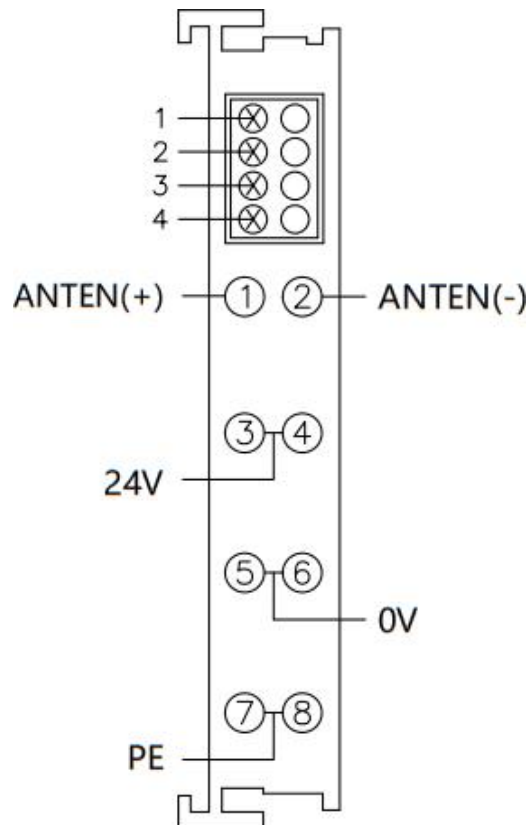


Figure 2.3 GC-6501 module wiring terminal block

The wiring terminal block of the GC-6501 module is shown in Figure 2.3. GC-6501 includes 1 Wifi extension function. The serial number corresponding to each terminal and its meaning are shown in Table 2.1.

Terminal	Serial number	Meaning
ANTEN(+)	1	Antenna positive
ANTEN(-)	2	Antenna shield
24V	3	Power positive
24V	4	Power positive
0V	5	Power negative
0V	6	Power negative
NC	7	Occupancy
NC	8	Occupancy

Table 2.1 GC-6501 Module indicator

2.3 System status indicator

The GC-6501 module has 4 indicator lights to indicate the operating status of the device. The specific indication function of the indicator light is shown in Table 2.2. When the indicator light is on, the GC-6501 module status is shown in Table 2.3.

Indicator light	Color	Indicating status
RUN	Green	Operation instructions
SYS	Green	System instructions

Table 2.2 GC-6501 Module indicator

GC-6501 After the module is initialized normally, the running indicator will light up.

Indicator light	Status	Indicating status
RUN	Flashing	Wifi Function start
	Not bright	No error
SYS	Flashing	Module initialized successfully
	Not bright	Open circuit

Table 2.3 GC-6501 Module indicator status

2.4 Instructions

GC-6501 module can directly refer to the routines shipped with PLC, the specific routines are as follows.

VAR

```
inst0_EXT_WIFI_INIT:EXT_WIFI_INIT;
```

```
mEn:bool; mError:usint; wifiInit:bool:=false; rec:string(250); reclen:int;
```

```
inst2_EXT_WIFI_READ_STR:EXT_WIFI_READ_STR;
```

```
inst4_EXT_WIFI_WRITE_STR:EXT_WIFI_WRITE_STR;
```

```
inst6_EXT_WIFI_READ_BIN:EXT_WIFI_READ_BIN;
```

```
inst7_EXT_WIFI_WRITE_BIN:EXT_WIFI_WRITE_BIN;
```

```
recd :array[0..200] of byte; pt_rec:pointer;
```

```
END_VAR;
```

```
if    wifiInit=falsethen
```

```
inst0_EXT_WIFI_INIT(EN_IN :=1 , NUMBER :=1 ,
```

```
MODE :='TCP' ,// Two working modes of TCP and UDP can be selected
```

```
AP_SSID := '*****' ;// The name of the router to be connected
```

```
AP_PASSWORD :='*****' ,// The password of the router that  
needs to be connected
```

```
SERVER_IP_ADDR :='192.168.0.100' , // Target host IP address
```

```
SERVER_PORT := '8001', // Target host port number LOCAL_PORT :=  
'8000'// Local port number
```

```
| mEn:=EN_OUT,  mError:= ERROR); if mEn=true and mError=0then
```



```
wifiInit:=true; end_if;
else
pt_rec:=&recd;
inst6_EXT_WIFI_READ_BIN(EN_IN :=1 , NUMBER := 1,
PTR_RXDATA :=pt_rec ,MAXLENGTH:=200| mEn:=EN_OUT, reclen:=
RXLENGTH, mError:=ERROR);
if reclen>0 then
inst7_EXT_WIFI_WRITE_BIN(EN_IN :=1 , NUMBER :=1 ,
PTR_TXDATA := pt_rec, TXLENGTH:=reclen | mEn:= EN_OUT,
mError:=ERROR);
else
inst7_EXT_WIFI_WRITE_BIN(EN_IN :=0 , NUMBER :=1 ,
PTR_TXDATA := pt_rec, TXLENGTH :=reclen| mEn :=
EN_OUT, mError:=ERROR);
end_if; end_if;
```

3. Technical specifications

Connection method	
Wiring form	2-wire system
Interface characteristics	
Communication signal	1 channel
Communication type	TCP Client and UDP
Electrical isolation	500 Vrms (GC-bus/ Signal voltage)
Power supply	Power supply via GCAN-PLC-510 coupler
Configuration method	Automatic configuration in order
Environmental test	
Operating temperature	-40℃~+85℃
Working humidity	95%RH, No condensation
EMC test	EN 55024:2011-09 EN 55022:2011-12
Vibration/shock resistance	EN 60068-2-6/EN 60068-2-27/29
Anti-electromagnetic interference/anti-electromagnetic radiation performance	EN 61000-6-2 /EN 61000-6-4
Protection level	IP 20
Basic Information	
Dimensions	100mm *69mm *12mm
Weight	50g

4. Disclaimer

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5. Module selection table

GCAN-PLC-400 series products consist of a programmable main control module, several GC series IO modules and a terminal resistance module.

GC series IO modules currently include five categories: digital input, digital output, analog input, analog output, and communication extension. The specific selection table is shown in Table 5.1.

I/O	Type	Characteristic	Signal	Channel
PLC Control module	GCAN-PLC-400	CPU:168M	-	-
	GCAN-PLC-510	CPU:400M	-	-
	GCAN-PLC-511	CPU:400M (2CAN)	-	-
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
	GC-2302	PWM (20Hz~200kHz)	-	2-channel
Analog input	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
	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-3844/3854/3864	K type / S type / T type thermocouple	Thermocouple	4-channel
Analog output	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
	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
Special module	GC-6101	RS232/RS485 extension	-	-
	GC-6201	GPRS extension	-	-
	GC-6221	4G extension	-	-
	GC-6501	WiFi extension	-	-

Table 5.1 Selection table

Sales and service



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