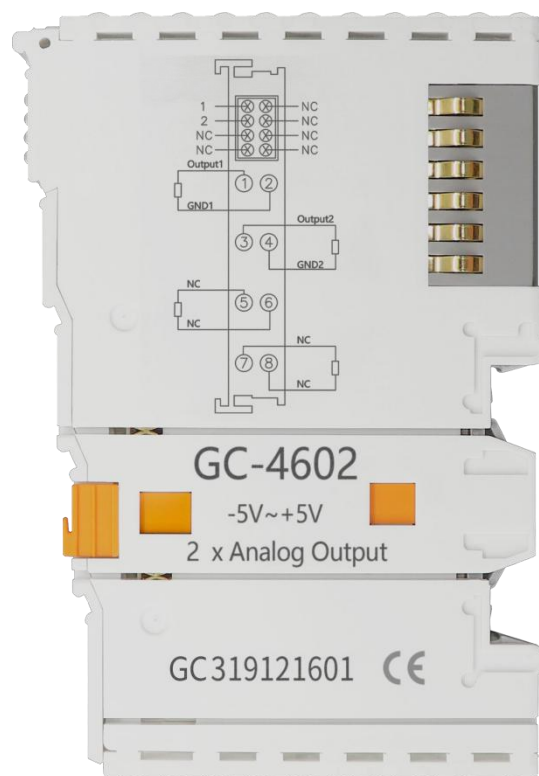


GC-4602

2-channel analog output module (-5V~+5V)

User manual



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1. Functional introduction

1.1 Functional Overview

GC-4602 (2-channel analog output module,-5V~+5V) can be used to output signals within the range of-5V~+5V. The terminal module can provide an electrical isolation signal with a resolution of 16 bits for the processing layer. The GC-4602 module has two two-wire outputs, which are particularly suitable for installation in the control cabinet to save space. The GC-4602 module has a common ground potential and the power contacts are connected together. The reference ground of the output is 0V power contact.

1.2 Performance characteristics

- The number of output points is 2;
- The signal voltage is from -5V to 5V;
- It is powered by GC-bus;
- The load is more than 5k Ω (short circuit protection);
- The measurement error is less than $\pm 0.1\%$ (full range);
- The measurement resolution is 16 bits;
- The conversion time is about 4ms;
- The electrical isolation is 1500 Vrms (GC-bus/ signal voltage);
- The current consumption of GC-bus is 150mA;
- The bit width output in the resume process image is 2x 2 bytes;
- The configuration has no address setting and is configured through a bus coupler or controller;
- This is suitable for all GCAN-PLC-400 series and GCAN-8000 series bus terminal modules;
- Working temperature range: -40 $^{\circ}\text{C}$ ~ + 85 $^{\circ}\text{C}$;
- Size: long 100mm * wide 69mm * high 12mm.

1.3 Typical application

- The standard analog signal can be output according to the instruction;
- It can be used to adjust the opening of valves, gates and other control equipment.
- Connect to the bus coupler or controller to realize the transmission of analog signals.

2. Installation and use of equipment

This chapter will explain in detail the installation method of the GC-4602 module, the wiring method, the meaning of the indicator light and the meaning of the interface.

2.1 Module fixed

The installation method of GC-4602 module is shown in Figure 2.1. You need to use a flat-blade screwdriver to assist in installation.

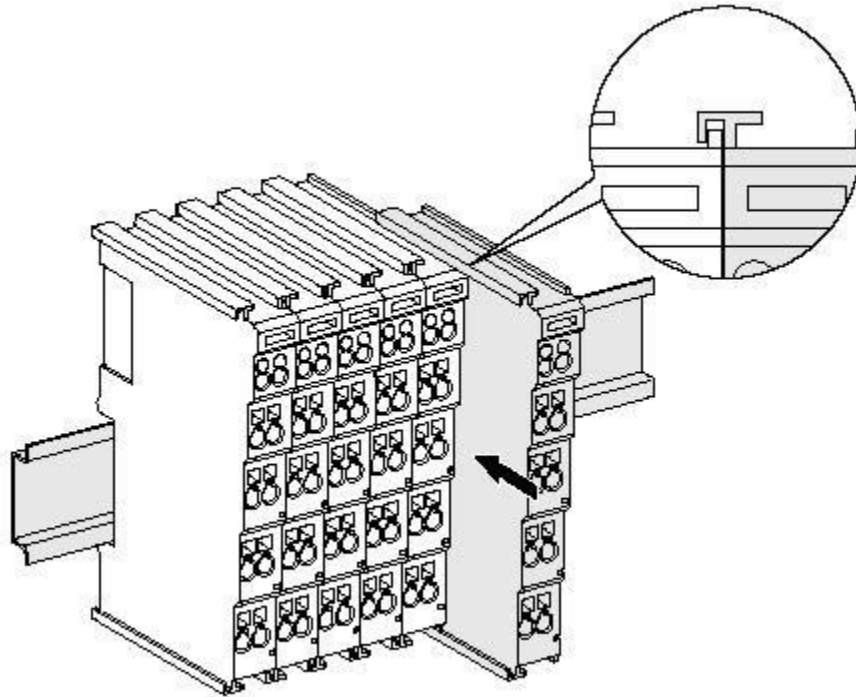


Figure 2.1 GC-4602 Module installation

First you need to install the fieldbus coupler on the rail, then attach the GC-4602 module to the right of the fieldbus coupler or other module to add the component. Insert the GC-4602 module inward along the slot as shown in figure 2.1 until the latch is stuck.

The GC-4602 module is powered by GC-bus without additional power supply. You only need to connect the power to the bus coupler and connect the GC-4602 to the module composed of the bus coupler to realize the power supply of the GC-4602.

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.

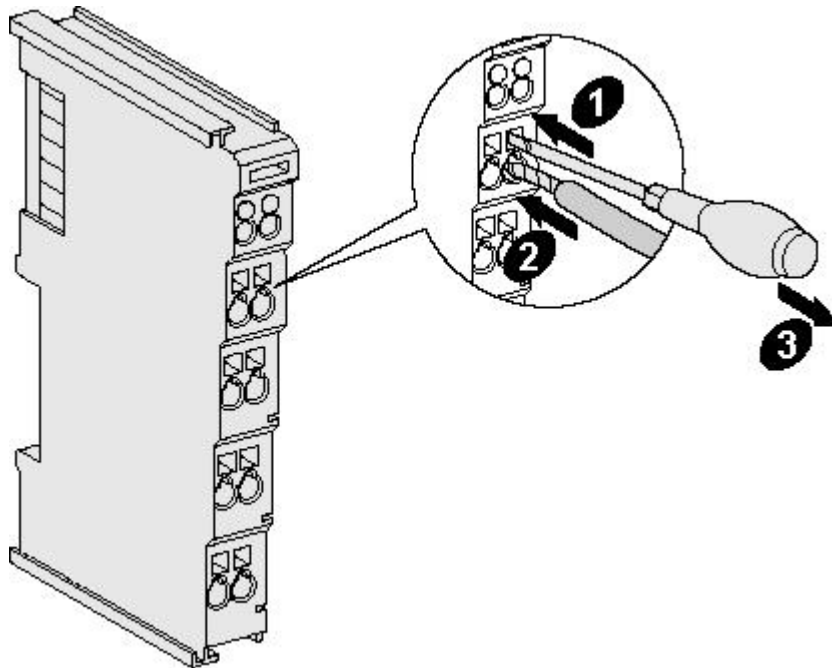


Figure 2.2 GC-4602 Module installation

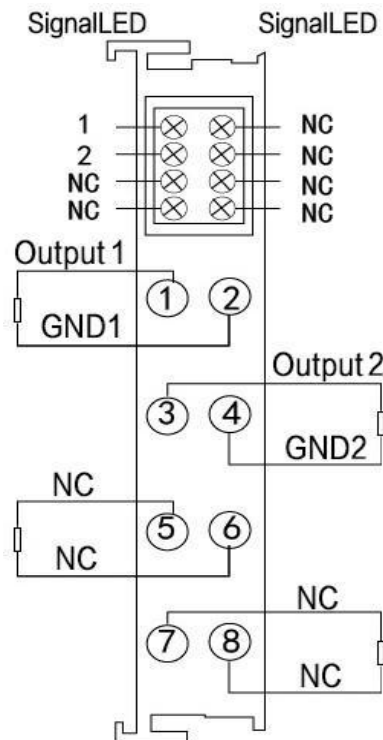


Figure 2.3 GC-4602 Module terminal strip

The wiring terminal block of GC-4602 module is shown in Figure 2.3. GC-4602 contains 2 groups of output points, and can connect to 2 groups of analog signals at most. The serial numbers corresponding to each terminal and their meanings are shown in Table 2.1.

| Terminal | Number | Meaning |
|----------|--------|----------------------------------|
| Output1 | 1 | Group 1 signal voltage output. |
| GND1 | 2 | Group 1 signal reference ground. |
| Output2 | 3 | Group 2 signal voltage output. |
| GND2 | 4 | Group 2 signal reference ground |

Table2.1 GC-4602 Module indicator

2.3 System status indicator

The GC-4602 module has four running lights to indicate the operating status of the device. The specific indication function of the indicator is shown in Table 2.2. When the LED is on, the status of the GC-4602 module is shown in Table 2.3.

| Indicator light | Color | Indicating status |
|-----------------|-------|-----------------------|
| RUN | Green | Operation instruction |

Table 2.2 GC-4602 Module indicator

When the output signal of the GC-4602 module is activated, the running indicator lights up.

| Indicator light | Statu | Indicating status |
|-----------------|---------------|------------------------------------|
| RUN | Always bright | Output signal activation. |
| | Not bright | The output signal is not activated |

Table 2.3 GC-4602 Module LED status

2.4 Use in combination with PLC400/510 series

GSCAN-PLC-400/510 supports programming in five languages. The following uses ST language as an example to introduce how to use GSCAN-PLC-400 to program and write the status of the analog output of the GC-4602 module.

When the GC-4602 module performs ST programming definition, it is necessary to define the variable type, output signal position, start character, separator, etc. For example: "AO AT%Q0.0:INT;", where "0.0" represents the starting address of the first channel, and each channel occupies 2 bytes, -5V~+5V corresponds to -32768~+32767, so the second The starting address of each channel is Q2.0. When the user uses more than one GC-4602 module, the second GC-4602 needs to be defined from "Q4.0", because each 4602 has 2 channels; "%" (percent sign) means direct change write Signed shaping. AT

stands for the address of variable access and the additional attributes of the variable (see page 46 of the e-book for details).

(Note: Input only affects input, output only affects output, output and input do not affect each other. That is, if there is and only an input module in front of the output module, then no matter how many input modules are in front, the address of the first output module is still Q0 .0.)

2.5 Combination with GCAN-IO-8000 series equipment

The status of the analog output is represented by two bytes. For example: GCAN-IO-8000 module node number is 1, if you want channel 1 of the first GC-4602 module to output +5V, and the output of other channels are 0V, Then you need to write the CAN data frame ID to the GCAN-IO-8000 module as 0x201, the data length (DLC) is 8, and the frame data is 0xFF, 0x7F, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00 data.

3. Technical specification

| Interface characteristics | |
|--|--|
| Output quantity | Two |
| Signal voltage | -5V~+5V |
| Load | >5kΩ(short circuit protection) |
| Power supply | By GC-bus |
| Resolution | 16 bit |
| Conversion time | ~4 ms |
| Measurement error | <±0.1% (full range) |
| ESD rating | 7 kV |
| Electrical isolation | 1500 Vrms |
| GC-bus current consumes | 150mA |
| Bit width output in the process image | 2 x2 bytes |
| Configuration | No address setting, configured through bus couplers or controllers. |
| Pluggable wiring | Suitable for all GSCAN-PLC-400 series, GSCAN-8000 series bus terminal modules. |
| Environment test | |
| Working temperature | -40°C~+85°C |
| Working humidity | 95%RH, 95% RH, no condensation |
| EMC test | EN 55024:2011-09 EN 55022:2011-12 |
| Anti-vibration /anti-impact performance | 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 | |
| External 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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