

Bus Type Gas Alarm Controller

Operating Instruction

(Revised 2021-10-20)

[Two buses], [Four buses]

Version V1.0

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User service guide:

1. Before using this product, please check the accessories, product certificate and user warranty card according to the factory list. If you find that they are not complete, please contact the seller or manufacturer immediately.

2. Within 12 months from the date of sale, if the product quality is lower than the technical indicators and the user complies with the storage, transportation and use requirements, free repair will be enjoyed with the warranty card.

3. Our company will charge for the maintenance of damage caused by violation of operation regulations and requirements, faults caused by non-designated special technical service department of our company or product quality problems caused by irresistible factors.

1. [Two Buses] K3000 Gas Alarm Controller

1.1 [Two Buses] K3000 Appearance Diagram



(K3000-C model with 4.3 inch color screen)



(K3000-B type black and white LCD)

1.2 [Two Buses] K3000 Introduction

Two bus type gas detection and alarm controller, used to detect combustible gas or toxic gas in the air,

The content supports PowerBus two-bus probes and multi-point centralized control. The system uses micro

The processor is the control unit, and the controller is when the concentration of flammable gas in the environment reaches or exceeds the preset value

An acoustic and optical alarm is immediately issued, and the relay can drive exhaust or other peripherals to prevent explosion

To prevent fire accidents and thus protect lives. This system can be widely used in factories, oil depots, liquefied gas stations,

Gas stations, gas filling stations, spray booths and other places requiring fire and explosion prevention shall be monitored and alarmed for safety.

The PowerBus two-wire bus is a low-voltage DC carrier power supply bus that uses full-voltage transmission and current signal

feedback, providing strong communication interference resistance. Compared to the RS-485 four-wire system (two power lines and two signal lines), it integrates power and signal lines into one. Thanks to its non-polarized topology, it can adapt to various on-site wire types and support long-distance communication. The cable can be laid in any configuration, such as bus, tree, or star, greatly facilitating installation and wiring, preventing misconnections, and simplifying construction and maintenance.

1.3 [Two Buses] K3000, Technical Parameters

Display screen:	4.3 inch color screen model /, black and white LCD model
Model of operation:	Key operation
Working voltage:	AC220V±10% 50HZ
Back up power :	24V 1.3AH lead-acid battery (optional)
Switch output:	Four sets of passive relay output, contact capacity 10A/AC220V
Working temperature and humidity:	-10°C—50°C ≤ 95%RH
System power:	Maximum power consumption 10W (no external equipment).
Number of detectors:	4.3-inch color screen model ≤30 (combustible) Black and white LCD models ≤ 10 (flammable)
Detector connection:	PowerBus two-wire connection
Data upload:	RTU-standard Modbus protocol
Reporting point:	Two levels of alarm can be set freely by users
Alarm indication:	Indicator light + LCD display, buzzer alarm sound prompt
Operate mode :	Fixed installation on site, wall hanging

SC :	It can store 2000 alarm record information
Outer dimensions	Size 245*340*90 (mm)
Cablin specifications:	Two wires need to be connected. It is recommended to use at least RVVP2*1.5 national standard shielded wire, the diameter of single core wire is greater than or equal to 1.5mm, and the length of the wire is less than or equal to 1000m.

1.4 [Two Buses] K3000, Operation Panel



(K3000-C model with 4.3 inch color screen)

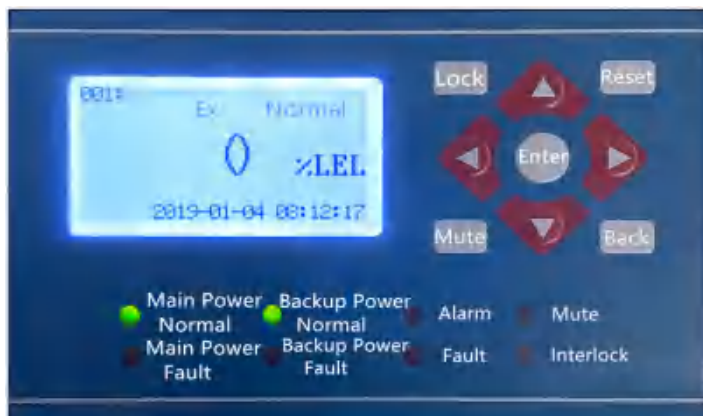
[OK] Key: Enter the menu or OK function

[Up] Key: Select the menu item or change the value

[Down] Key: Select a menu item or change the value

[Exit] key: Return to the previous level of the menu or exit,
and also is the [mute] function.

Indicators: low report, high report, fault, power supply.



(K3000-B type black and white LCD)

[Confirm] key: to enter the menu or confirm function

[Up] key: to select a menu item or change the value

[Down] key: select a menu item or change the value

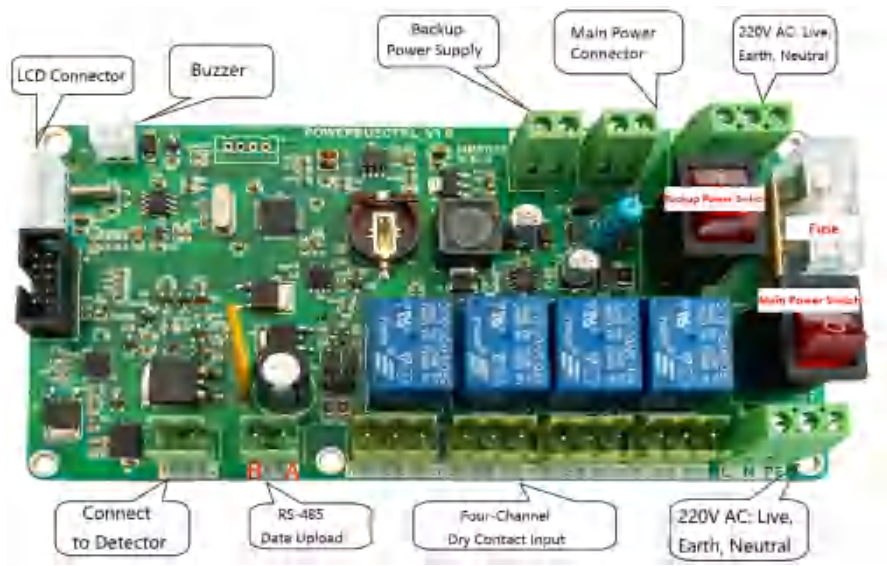
[Lock screen] key: Lock the current screen display status,
no more circular display

[Reset] key: reset the alarm, restart running

[Mute] Key: Turn off the sound alarm function

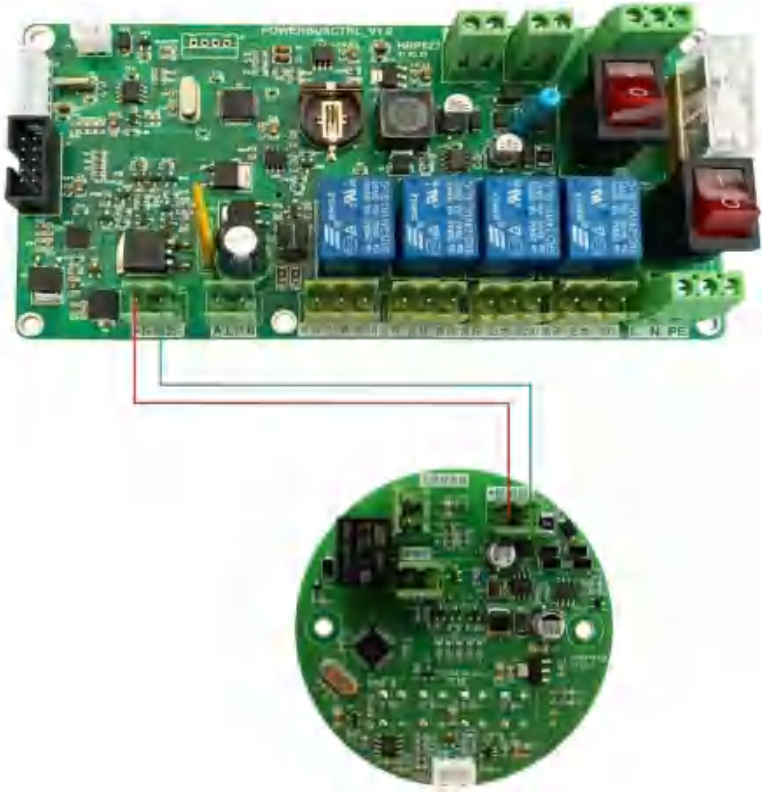
Indicator lights: main power normal light, main power fault light, standby power normal light, standby powerfault alarm status light, silencing status light, fault light,interlock light (relay action)

1.5 [Two Buses] K3000 Motherboard Interface Definition



Port name	Port description
+ prober -	The secondary circuit connection detector can be connected without distinguishing between positive and negative
B upload A	RTU Modbus upload port
Alert 1-4	4 The group of passive switches is normally open, common and normally closed
L N PE	Live wire, neutral wire, ground wire

1.6 [Two Buses] K3000 Wiring Diagram



The alarm host and detector are connected by two-wire system, with the diameter of single-core wire being greater than or equal to 1.5 mm² and the length of wire being less than or equal to 1000m.

The two-wire connection does not distinguish between positive and negative poles, and can be laid in any way such as bus type, tree type and star type.

1.7 [Two Buses] K3000, Menu Description



Take the color screen model as an example, after pressing [Confirm], enter the menu shown in the figure above, select the corresponding menu through [Up] and [Down] keys, press [Confirm] to enter and adjust the relevant parameters. The menu is shown in the following table:

Menu item	Menu instructions
Alarm record	Check high and low alarm records
Low alarm settings	Low alarm setting (based on detector low alarm)
High alarm Settings	High alarm setting (based on detector high alarm)
Zero point translation	The detector zero point translation operation can be set individually or all at once
System parameter	Adjust system time and other parameters

Probe search	Probe search function
Output Settings	The detector output function corresponding to the relay can be set individually or all at once
Communication Settings	Set parameters such as upload address and baud rate

2. [Four Bus] K9000 Gas Alarm Controller

2.1 [Four Buses] K9000 Appearance Diagram



(K9000-X type 4.3 inch color screen touch model)



(K9000-D type 7 inch color screen touch model)

2.2 Introduction of the Four Bus K9000

The four-bus gas detection alarm controller is used to detect the content of flammable gas or toxic gas in the air. It supports four-bus detectors and can centrally control multiple points at the same time.

This system uses a microprocessor as a control unit. When the concentration of flammable gas in the environment reaches or exceeds the preset value, the controller immediately issues an audible and visual alarm, and can drive exhaust or other peripherals through relays to prevent explosions and fire accidents, thereby protecting lives.

This system can be widely used in factories, oil depots, liquefied gas stations, gas stations, paint spraying rooms and other places that require fire and explosion prevention for safety monitoring and alarm.

2.3 [Four Buses] Technical Parameters of K9000

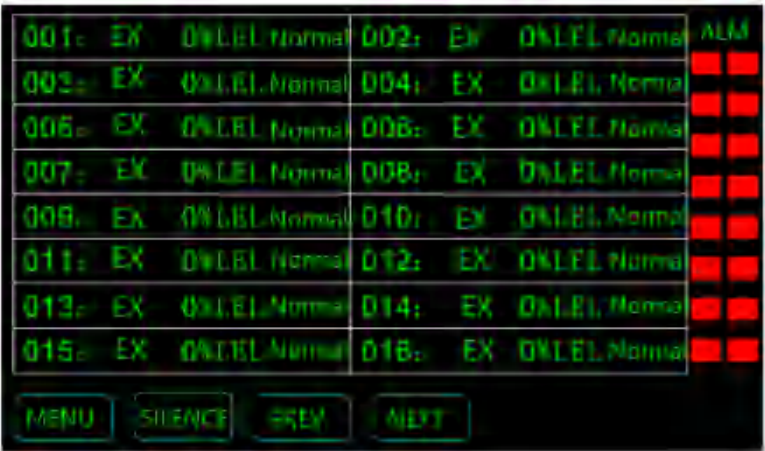
Display screen:	4.3 inch color screen model / 7 inch color screen model
Mode of operation:	Touch screen operation
Working voltage:	AC220V±10% 50HZ
Back up power :	24V 1.3AH lead-acid battery (optional)
Switch output:	Six sets of passive relay output, contact capacity 10A/AC220V
Working temperature and humidity:	-10°C—50°C ≤ 95%RH
System power:	Maximum power consumption 10W (no external equipment).
Network capacity:	≤250 (more than 30 require an external power supply)
Detector connection	Four bus connections
Data upload:	RTU-standard Modbus protocol
Alarm point:	Two levels of alarm can be set freely by users
Alarm indication:	Indicator light + LCD display, buzzer alarm sound
Operate mode :	Fixed installation on site, wall hanging

SC :	It can store 20,000 alarm records
Outer dimensions :	Size 245*340*90 (mm) 290*420*120 (mm)
Cabling specifications:	If you need to connect 4 wires, it is recommended to use at least RVVP4*1.5 national standard shielded wire, the diameter of single core wire is more than 1.5mm, and the length of the wire is less than 1000m.

2.4 [Four Buses] K9000 Operation Panel

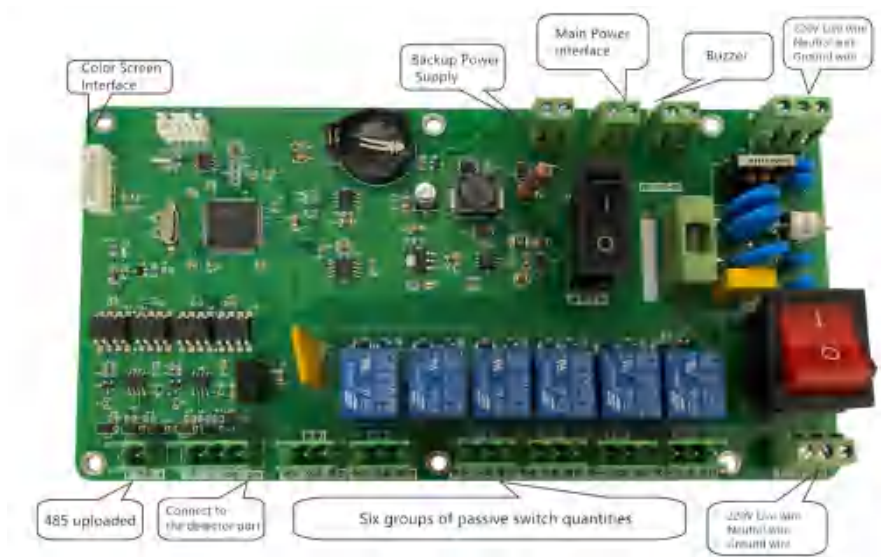


4.3 inch color screen:Four detector information is displayed on each screen of the home page, and the number of alarm detectors is displayed on the right



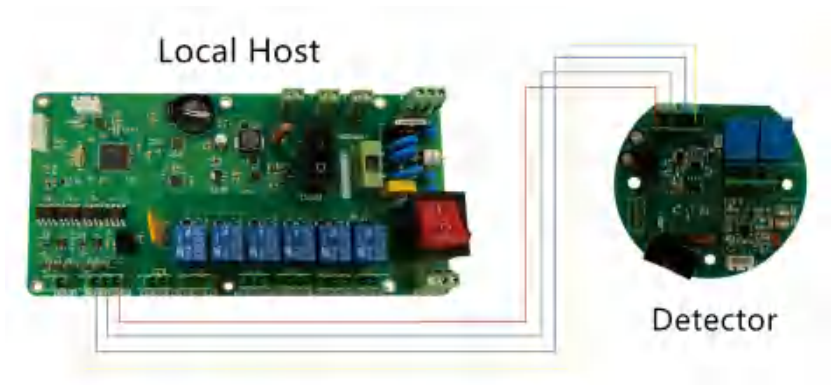
7 Color screen model:Each screen of the home page displays information about 16 detectors, and the number of alarm detectors is displayed on the right

2.5 [Four Buses] K9000 Motherboard Interface Definition



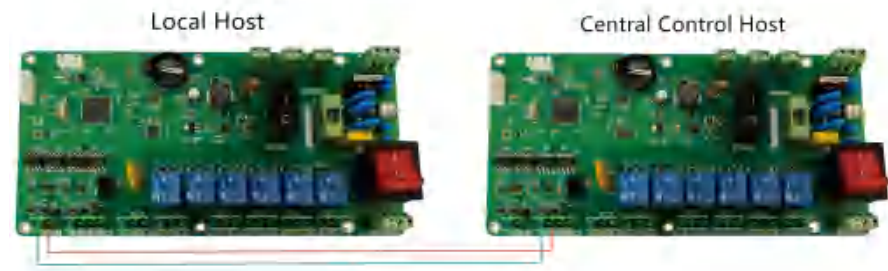
Port name	Port description
B A GND 24V	Connect the four bus detectors
B upload A	RTU Modbus upload port
Alarm 1-6	6 groups of passive switches : normally open, common and normally closed
L N PE	Live wire, neutral wire, ground wire

2.6 [Four Buses] K9000, Wiring Diagram



24V-----Power + A-----A
GND-----Power supply B-----B

The local host and detectors are connected using a four-wire system, with single-core wires having a diameter of at least 1.5 mm² and a maximum length of 1000m. It is recommended to use the hand-in-hand bus connection method for connecting the probes. When the number of probes exceeds 30 (for flammable materials), an external switch power supply must be added to power the detectors, and it should not be connected in parallel with the main unit's switch power supply.



Connect the [B Upload A] terminal of the field host to the [B A GND 24V] terminal of the central control host to upload the field host data to the central control host. In addition, you need to change the

host protocol to [Internal Protocol] (default Modbus protocol) in the [Communication Settings] menu of the field host.

2.7 [Four Bus] K9000 Menu Description



Take the color screen model as an example, click [Menu] on the main page to enter the menu shown in the figure above. According to the user's needs, enter the corresponding menu and adjust the relevant parameters.

menu item	Menu instructions
Call logs	Check high and low alarm records
Underreporting Settings	Low report setting (the detector low report is the standard)
High reporting Settings	High alarm setting (based on detector high alarm)
Zero point translation	The detector zero point translation operation can be set individually or all at once
system parameter	Adjust system time and other parameters
Probe search	Probe search function
Output Settings	The detector output function corresponding to the relay can be set individually or all at once
Communication Settings	Set parameters such as upload address and baud rate

[Output Settings]

Channel Port: 001

Low Alarm Setting: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

High Alarm Setting: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

Save Current Channel Save All Channel

Output Settings Return

Click "Channel number" to modify the current channel, and check the low and high alarm settings of the alarm switch quantity 1 -6 corresponding to the current channel (default: all checked). Click "Save current channel" to save only the current channel; click "Save all channels" to apply the current Settings to all channels.

[Communication Settings]

Host Address:1 Probe Speed:4800

Upload Speed:9600 Probe Delayed: 100

Host Protocol: MODBUS Probe Timeout: 200

Save Settings Probe Protocol: Internal Protocol

Communication Settings Return

Click "Host Address" to change the host address number, click "Upload Speed" to change the upload baud rate, and click "Host Protocol" to change the upload mode. Finally, click "Save Settings" to take effect.

System Maintenance

1. The personnel on duty should operate the main engine correctly in strict accordance with the instruction manual;
2. Do not open the chassis door at will, and do not change the internal structure of the chassis;
3. Test the controller every two months to ensure that the controller can alarm normally;
4. When performing system maintenance, all power supplies (main and backup) must be turned off;
5. When the host fails, the on-duty personnel should observe the host fault display and make a fault record

Then deal with the fault according to "Common Fault and Handling Method". If the fault still cannot be solved, please make a good record

And immediately notify the dealer;

Common Faults

fault phenomenon	Possible cause of failure	processing method
The probe channel is displayed	The probe is faulty or not connected to the probe	Check the detector, if the corresponding channel does not need to be closed then the channel
Not displayed	Switch or fuse failure	Check whether the switch is on and whether the fuse is blown
Channel concentration cannot be displayed cyclically	Whether to alarm	If there is an alarm, handle the alarm and contact the reset button
The host has leakage	unearthed	Check that the safety ground is connected
A relay does not work	The relay is set incorrectly	Check whether the relay configuration is the desired setting and change it to the desired setting item

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