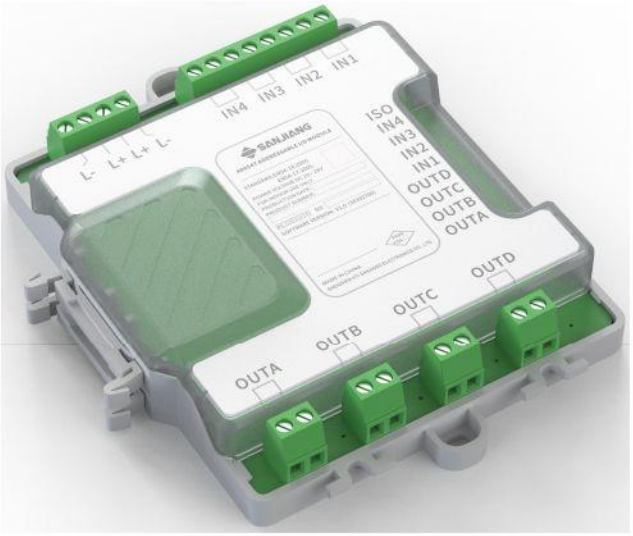
Please read this Manual carefully before installing and using the product .

A9054T Addressable I /O Module

1 Product Overview

1.1 The A9054T Addressable I/O Module (referred to as A9054T) is designed for use with FACP. It primarily provides output control for fire protection linkage equipment (such as smoke exhaust dampers, supply air dampers, and fire dampers) and receives feedback signals from such equipment to determine its operational status. The A9054T features four independent inputs and four independent outputs. The inputs comprise four passive detection contact interfaces that utilize terminal resistors for open-circuit and short-circuit monitoring. These inputs can be independently configured via the fire control panel for status input or a hazard input. The four outputs are equipped with passive relay contacts for fire control. The module occupies a total of 4 consecutive addresses.



2 Product Features

2.1 Transparent housing design ensures clear visibility of indicator lights.
2.2 Snap-in installation for convenience.
2.3 Multiple mounting options available.
2.4 Features four independent inputs and four independent outputs.
2.5 Fully electronically coded, field-rewritable via encoder.
2.6 Two-wire connection for easy installation and maintenance.
2.7 Built-in isolation function.

3 Technical Parameters

3.1

Item	parameter
Executive standard	EN 54-17 ,EN 54-18
Operating voltage	DC20~28V
Operational current	Monitoring status <3mA, alarm status <6mA ,short circuit status < 15mA.
Output capacity	Dry contact output, 2A@30VDC
Input mode	Mode 1: normally open input Mode 2: normally closed input Mode 3: Equipment fire alarm and fault input
Heavy weight	About 139g
Outline dimension	103mm×136mm×23mm
Operational environment	Indoor, temperature-10°C ~+55°C, relative humidity ⩽ 95% (no condensation at 40°C±2°C).
Coded system	The encoder can be used for field coding, and the address coding is optional from 1 to 321, and one module occupies 4 addresses.
Work instruction	Green indicator light: it blinks every 12S during inspection, and the relay output is always on; Red indicator light: it flashes quickly when the fault state is input, and the active state is always on; Yellow indicator light: Bus short circuit fault is always on.
Connecting wire diameter	$0.2mm^2$ ~$2.5mm^2$

3.2 Isolation Parameters:

Maximum operating voltage (V_{max})	28V
Rated voltage (V_{NOM})	24V
Minimum operating voltage (V_{min})	20V
Maximum voltage for isolation ($V_{SO\ max}$)	14V
Minimum voltage for isolation ($V_{SO\ min}$)	7V
Maximum recovery voltage ($V_{SC\ max}$)	17V
Minimum recovery voltage ($V_{SC\ min}$)	1.4V
Rated current ($I_{C\ max}$)	1A
Maximum operating current ($I_{S\ max}$)	3A
Maximum leakage current (isolated condition) ($I_{L\ max}$)	8.5mA
Maximum internal resistance (normal condition) ($Z_{C\ max}$)	0.1Ω

3.3 P.C.B.View

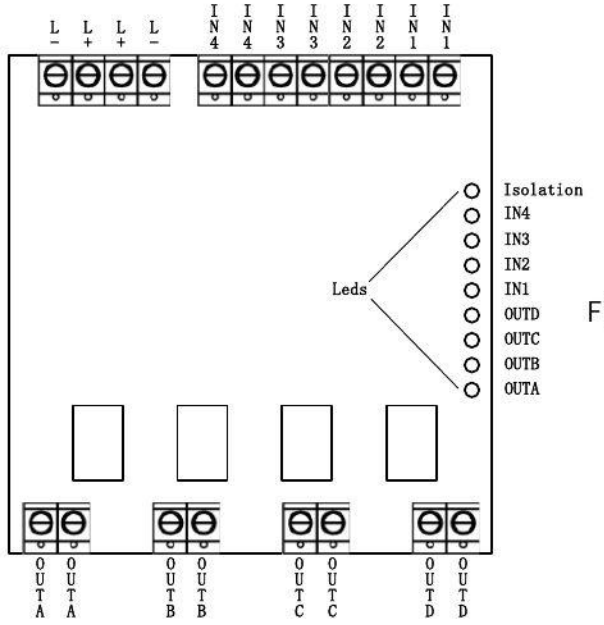


Figure.1 P.C.B.View

4 Appearance and dimensions

4.1

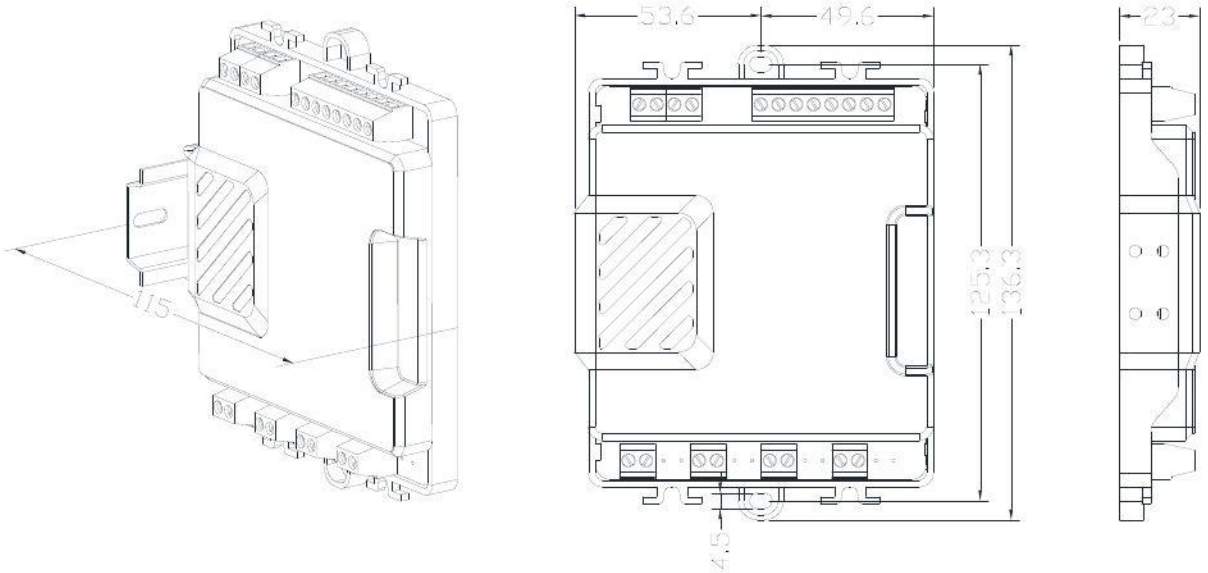


Figure.2 Appearance and dimensions(unit: mm)

5 Input and output functions

5.1 Input

5.1.1 Function

Status can be monitored through input signals, such as whether a door is closed. Each input signal can be configured as a status input or a hazard input via the FACP. Both types support line

monitoring (for "open circuit", "short circuit", or "both open and short circuits").
The activation is triggered based on the contact status:

- Open circuit (for Normally Closed, NC contacts)
- Closed circuit (for Normally Open, NO contacts)

When activated, the hazard input immediately triggers an alarm. The alarm signal can only be cleared after the input status changes and the controller is reset. When activated, the status input immediately triggers a status change.
Input line monitoring covers "open circuit", "short circuit", or "both open and short circuits". To implement this function, a resistor must be connected to the input line. Meanwhile, mode coding must be used to achieve different line monitoring functions; please refer to Section 5.1.2 for details on the monitoring functions enabled by specific modes. If an open circuit or short circuit occurs in an input line, the fault information will be transmitted to the FACP.
The input must be a passive input.

5.1.2 Line

Input signals have three modes, implemented via coding (see Section 6.5 for mode coding). Mode 1 enables open-circuit line monitoring, Mode 2 enables short-circuit line monitoring, and Mode 3 enables both open-circuit and short-circuit line monitoring.
Mode 1 (Normally Open Mode):

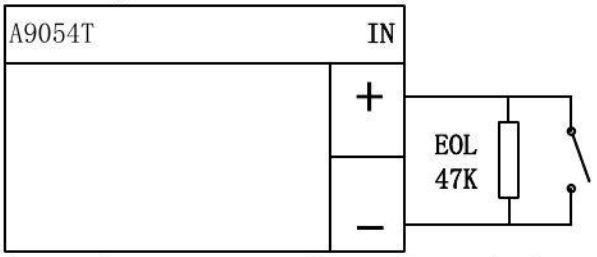


Figure.3

The above diagram shows the input wiring for Mode 1, which monitors open circuit conditions. The input activation condition is switch closure.
Mode 2 (Normally Closed Mode):

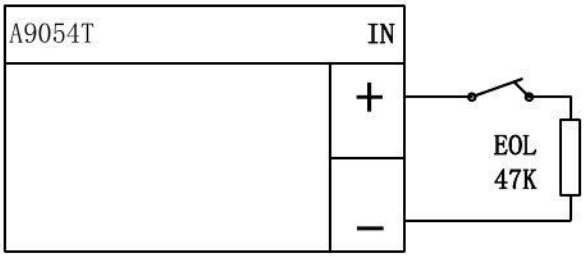


Figure.4

The above diagram shows the input wiring for Mode 2, which monitors short circuit conditions. The input activation condition is switch disconnection.
Mode 3 (Equipment Alarm or Fault Mode):

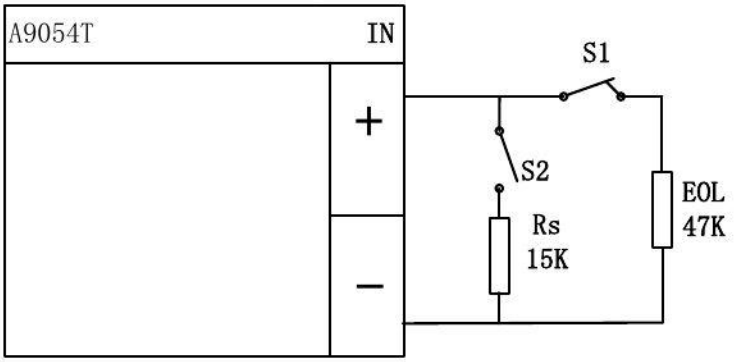


Figure.5

The above Figure.shows the input wiring diagram for Mode 3, which monitors both open-circuit and short-circuit conditions. An open-circuit fault occurs when switch S1 is open. The input activation condition is switch S2 being closed.
Important Notes:
Input circuits must be equipped with resistors.
Resistors must be connected at the end of the circuit.

Only monitoring resistors with a tolerance of 1% may be used.
Module configuration must match the actual circuit configuration.

5.2 Output

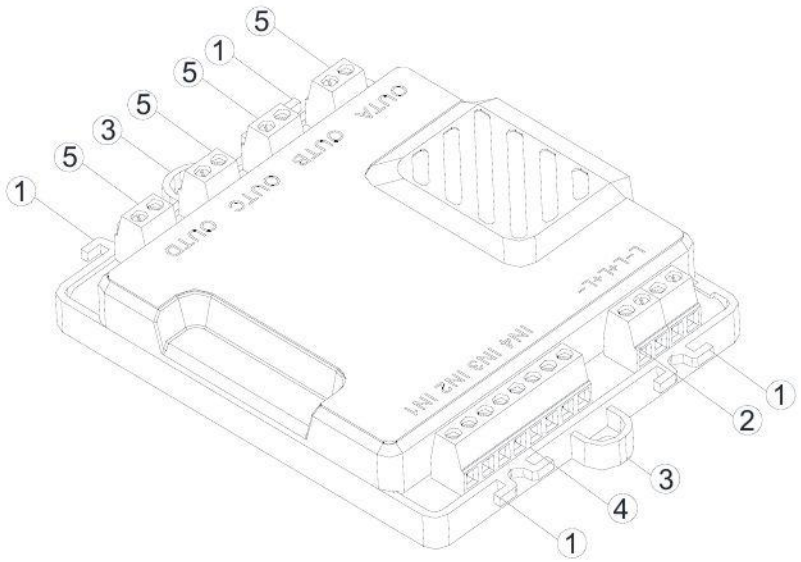
5.2.1 Function

The output is not monitored. Control functions can be executed via the output (e.g., closing a door). The output is a passive relay normally open (NO) contact.
When the contact is activated, its state persists:

- The state remains active until the controller is reset.
- It remains active only for a specific duration. The contact's activation duration is determined by the FACP.

6 Product Usage and Engineering Applications

6.1 Terminal Diagram



1: Cable tie mounting bracket

2: Terminal (bus)

3: Module fixing hole

4: Terminal (Input)

5: Terminal (Output)

L-:Bus port (negative terminal)

L+:Bus port (positive terminal)

IN1~IN4:Passive contact input monitoring interface

OUTA~OUTD:Normally open dry contact output port

Figure.6

6.2 Connection mode 1: When the bus is single-point isolated connection, all terminals on the bus must be equipped with isolation bases or isolation modules, and the modules are connected to a compatible fire alarm control system through a two-wire bus, in which IN1~IN4 are passive input ports, and OUTA~OUTD are passive dry contact normally open output ports, which can be connected with peripheral devices. The connection mode is as follows:

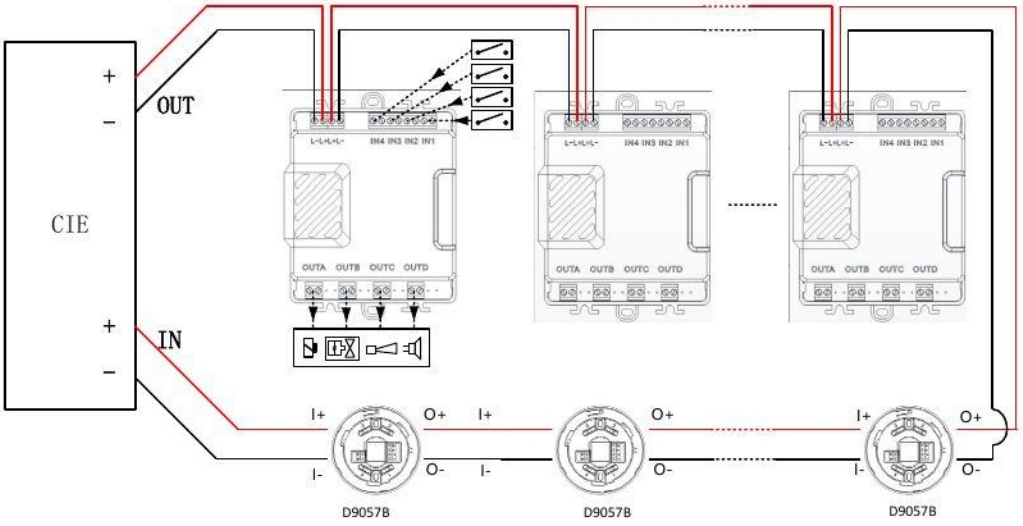


Fig. 7 Single-point isolated connection mode

6.3 Connection mode 2: When the bus connection mode is area isolation, the connection mode is as follows:

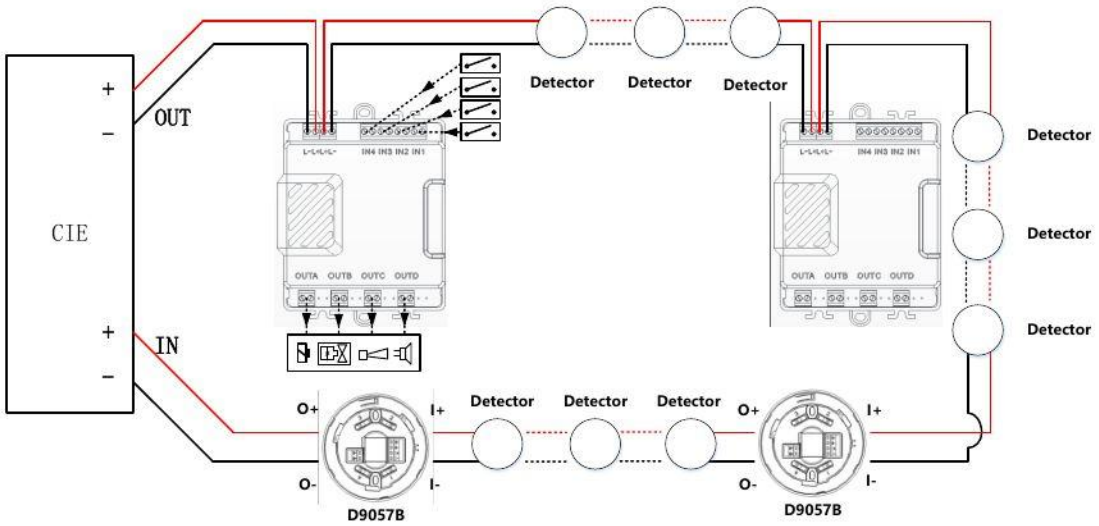


Fig. 8 Area isolation connection mode

note:In this connection mode, the number of access Detector between two A9054T can't exceed 20, and if the access is Sounder Beacon or Sounder Beacon base, it can't exceed 10.

6.4 Connection mode 3: When connecting with the isolation module A9057T, the connection mode is as follows:

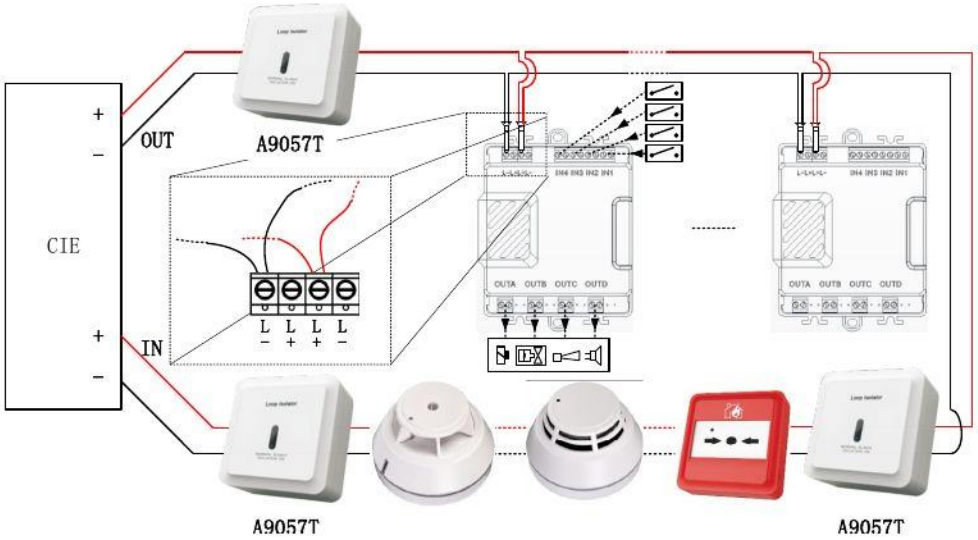


Fig. 9 Connection mode with A9057T isolation module

note:When using the above connection mode, only two terminals can be used to connect the bus port of A9054T.Under this wiring method, the isolation function of A9054T will not work.

6.5 Address coding: Please connect the encoder correctly according to the wiring mode shown in Figure.10, and pay attention to the bus polarity. Set the encoder to the encoding function, compile the correct address code, and press the \OK\ key to complete the address encoding setting. If the address is 1#, the actual address of the module is 1#~4#, IN1 and OUTA are 1# addresses, and so on, IN4 and OUTD are 4# addresses. The programmed address cannot be greater than 321, otherwise an error will be reported. (Note: Please refer to the encoder manual for detailed operation)

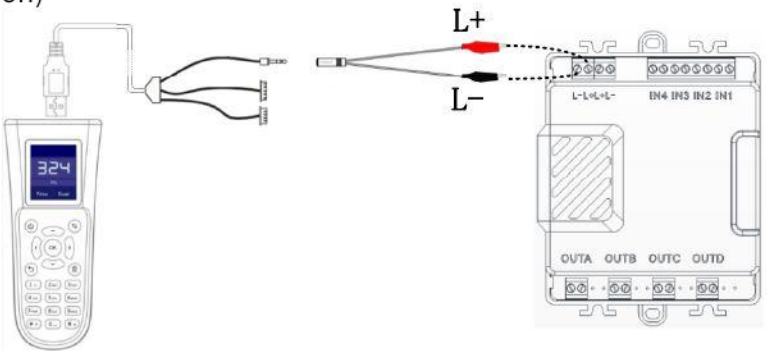


Fig. 10 coding mode

6.6 Mode Encoding Method: All module modes are set via the encoder. There are two mode encoding methods: one uses the same mode for all four inputs, and the other encodes individual address modes. Wiring is shown in Figure.10.

1、Encoding Four Inputs to the Same Mode:

Follow these steps:

A. Correctly encode addresses per Section 6.5.
B. On the main screen, select "Coder" → "ModuleSet".
C. Enter the desired mode value. Refer to the third column of Table 1 for the numerical equivalents of each mode;
D. Press the "Write" key to program the mode.

2、Programming Mode for a Single Input:

Follow these steps:

A. Program the address correctly per Section 6.5;
B. On the main interface, select "Coder" → "ModeSetting". The interface appears as shown below:



Figure.11

C. When the cursor is on ModeSetting, press the ↓ key to change to Module;
D. Press the TAB key to move the cursor to Addr. Enter the corresponding address number. For example, if the programmed address is 1# and you need to modify the mode for address 1#, enter "1" in the Addr field;
E. Press the TAB key to move the cursor to Mode. Press the OK key, then use the ↑ or ↓ keys to select the desired mode value as shown in Table 1.
F. After selecting the corresponding module function and mode value, press the TAB key to move the cursor to Write to write the currently set mode value (or press the "#" key directly). When the cursor is on Read, you can read the mode value of the currently selected mode (or press the "*" key directly).

(Note: The address must be correctly programmed before performing mode coding. Refer to the encoder manual for detailed coding procedures. All modules default to Mode 1 at factory settings.)

Table 1

Function Selection	Mode	Module Set Value	Default Mode
Input Mode	Normally Open	1	Normally Open
	Normally Closed	2	
	Fire NO/Fault NC	3	

7 Product Installation and Commissioning

7.1 Follow these steps for installation:

1. When mounting the module on a flat surface, secure it with two M4 screws (see Figure.12). For DIN rail mounting, use the two included mounting feet (see Fig. 13/Fig. 14). The cover plate is transparent to ensure LED visibility at all times. Select an installation location where LEDs remain visible during operation.

2. Connect cables to corresponding terminals. Except for wiring method 3, connect only one wire per terminal.

3. Secure cables to the module using cable ties.

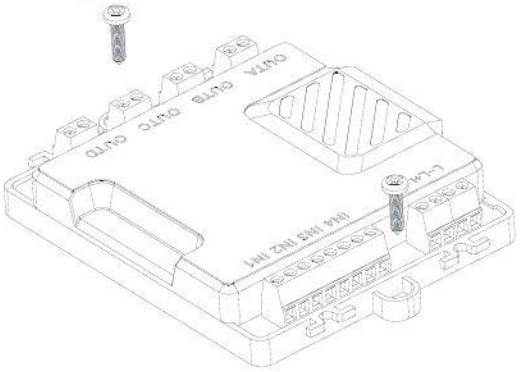


Figure.12

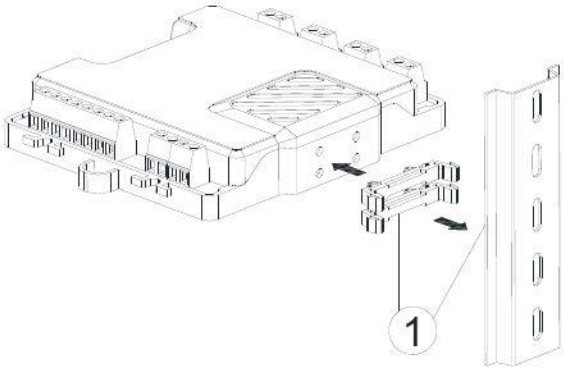


Figure.13

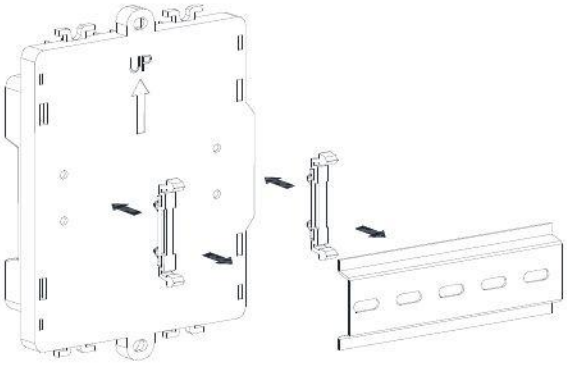


Figure.14

7.2 The commissioning procedure is as follows:

- Ensure the A9054T module matches the model specified in the construction drawings.
- Coding Setup: Use our dedicated encoder to complete address and operating mode configuration (Note: Refer to the encoder manual for detailed instructions).
- Perform correct wiring according to sections 6.2 to 6.4, paying attention to positive and negative polarity connections.
- After installing and inspecting the A9054T module, connect power to the FACP. Upon successful automatic login on the controller, the green indicator light will flash once during the inspection cycle, indicating the A9054T module is functioning normally.
- Debugging after installation. Relay output debugging: the FACP sends a start signal to A9054T module to change the output state of dry contact relay, and the output indicator light of A9054T module is always on. Input interface debugging: according to different modes, the activation signal should be displayed on the FACP and the input indicator light on the module will always be on.
- Module connecting wires shall have a margin of not less than 150 mm, and shall be clearly marked at their ends. During concealed installation, there should be obvious parts display and access port at the installation place.
- Modules in the same alarm area should be installed in metal boxes. Modules (or metal boxes) should be supported or fixed independently and installed firmly, and measures such as moistureproof and corrosion prevention should be taken. Modules are not allowed to be installed in distribution boxes or cabinets.
- After debugging, reset the A9054T module and related equipment.

8 ⚠matters need attention

8.1 In the same bus loop, modules cannot use the same address with other devices to avoid address conflict.

8.2 If the address of this module is programmed continuously, please note that one module occupies four addresses. If the 1# module has been programmed into the 1# address, the next module should be programmed into the 5# address, and so on.

8.3 The module should be powered on before the peripheral device is connected to the output

interface.

9 care and maintenance

9.1 ⚠Warning: Before the module is maintained, the relevant management department should be informed, and the system will be maintained, so the monitoring will be temporarily stopped. At the same time, the logic control function of the area or system to be maintained should be cut off to avoid unnecessary equipment startup. After the test, notify the management department to restore the system to normal. Before the system returns to normal, the fire alarm system should be powered on first, and then the peripheral equipment should be powered on.

9.2 Within the warranty period agreed in the contract, it will be used normally according to the specified requirements. If it fails due to defects in materials or manufacturing processes, the company will be responsible for free maintenance or replacement. If the failure is caused by man-made damage, improper use or self-adjustment, modification and disassembly, it does not belong to the warranty scope, and the company will not be responsible for all the consequences caused by it.

9.3 Our company provides paid repair services for products outside the warranty scope. If you require a repair, please contact us. We would also greatly appreciate receiving key information about the product needing repair, such as the circumstances of the failure and possible causes. This will help us identify the issue promptly and provide valuable insights for future product development and improvements.

10 Troubleshooting Guide

10.1

Fault Symptom	Possible Cause Analysis	Troubleshooting Method	Remarks
Cannot encode	Internal circuit damage	Return to manufacturer for repair	
Cannot log in normally	No address or duplicate address	Reorganize the address	
Cannot program mode	No address programmed or internal circuit damage	Encode address first, then program mode; or return to manufacturer for repair	
Enter activation after logging in	Input interface short circuit or open circuit	Check input interface terminal resistance and wiring	
Start after login	Interlinked terminals reporting fire alarms	Verify if interlinked terminals are reporting fire alarms	
Fails to operate after power-up	Indicator light failure or internal circuit damage	Return to manufacturer for repair	
Yellow indicator light remains on after power-up	Bus wiring polarity reversed	Inspect wiring	

SHENZHEN HTI SANJIANG ELECTRONICS CO., LTD.

Address: 3/F., Guangcai Xintiandi Mansion, Nanshan Road, Nanshan District, Shenzhen, Guangdong, 518054, China

Tel: +86(755)86226969 Fax: +86(755)86223939
https://www.sanjiang-security.com