

TCMK5263 Addressable Single I/O Module Installation and Operation Manual  
Ver.1.1

Please read the manual before installation and operation

# **TCMK5263 Addressable Single I/O Module Installation and Operation Manual**

**Tiancheng Fire Protection Equipment Co., Ltd**

## 1 General Introduction

TCMK5263 single I/O module (short as module), is designed to connect with linkage devices of fire alarm control panel, such as exhaust valve, air valve, fire damper etc., and can receive feedback signal from device.

## 2 Features

- 2.1 Active and passive output.
- 2.2 Line detecting function for input and output.
- 2.3 Input terminal is set as normal open detecting function connected with passive contract.
- 2.4 Electronically coding, pre-coded by hand-held encoder, making construction commission easy and reliable.
- 2.5 Plug-in structure for wire and grounding base makes it reliable and easy for contact and installation.

## 3 Technical Specifications

- 3.1 Operating Voltage:
  - Signal bus wire voltage: loop 24V, voltage range: DC18.5V~DC26V
  - Power supply bus wire voltage: DC24V, voltage range: DC19V~DC28V
- 3.2 Operating Current:
  - Loop polling current $\leq$ 0.2mA, loop starting current $\leq$ 2mA
  - Power supply polling current $\leq$ 2mA, power supply starting current $\leq$ 22mA
- 3.3 Input detecting line: in normal open and open circuit occurs (short circuit as starting signal), the module will send fault signal to the control panel.
- 3.4 Output detecting line: the module will send fault signal to the control panel when short circuit or open circuit occurs to the output line.
- 3.5 Output capacity:
  - Passive output: capacity DC30V/3A. Contact resistance 100K $\Omega$  in normal condition, closed when started, suitable for 12V~48V DC or AC
  - Active output: capacity DC24V/1.5A
- 3.6 Indicator: red (input indicator: flash when polling, illuminates in action, output indicator: illuminates when started).
- 3.7 Coding: electronically coding, occupy one address in the loop ranging 1 to 255.
- 3.8 Wiring: connected with fire alarm control panel through non-polarity signal two bus system, and non-polarity two bus system with power supply line.
- 3.9 Operating environment:
  - Temperature:-10~+55
  - Relative humidity 95%, non-condensing
- 3.10 Dimensions: 86mm\*86mm\*40mm (with base)
- 3.11 Material and color of enclosure: ABS, porcelain white
- 3.12 Weight: about 147g (with base)

3.13 Mounting hole distance: 60mm

3.14 Standard: EN 54-18:2005

## 4 Structure Features and Operating Principle

4.1 Module appearance sketch is shown as Fig. 1.

4.2 Operating principle

Microprocessor built inside enables the module to communicate with fire alarm control panel, detect power down in the power supply loop line, control output, decide logic status of the output signal, detect fault in input and output line and control status indicators. After receiving start order form the control panel, it will actuate relay and light the indicator. It will send the information back to the control panel after receiving feedback form device.

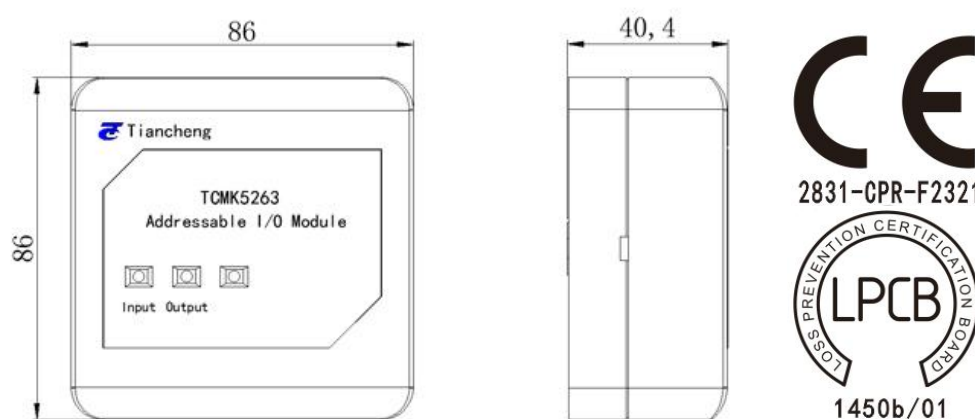


Fig. 1 appearance sketch

## 5 Installation and Cabling

5.1 Waring:

5.1.1 Before installation, cut off circuit power supply, make sure all bases are embedded and connection to the base is correct.

5.1.2 Feedback input terminal has disconnection detection function, add a 10K terminal resistance at one end, otherwise it will report as product feedback terminal fault. Output line has disconnection and short line detection function, when module does no action, voltage between DC13V to 48V is required at normal open output terminal otherwise it will report as module output line fault.

5.2 Before installation, make sure that the enclosure has no injuries and marks complete.

5.3 Open installation applied for the module. Insert mode for installation between base and module. When installing, pull down the module, lead the wire through wiring hole, connect it with terminal and push the module onto the base. The mounting hole distance is 60mm.

5.4 Module terminal sketch is shown as fig. 2.

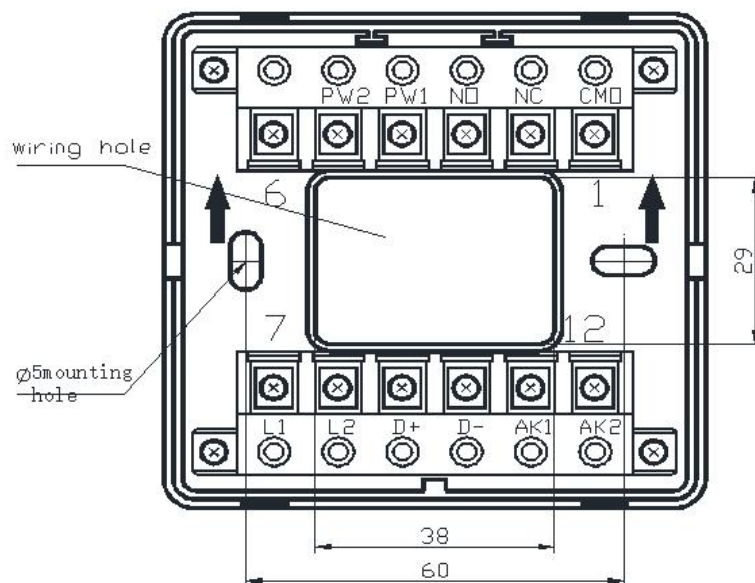


Fig. 2 terminals sketch

#### 5.5 Connections:

L1(7), L2(8): non-polarity signal two bus system input

D1(9), D2(10): non-polarity DC24V power supply loop input

COM(1), NC(2): passive normal close output contact

COM(1), NO(3): passive normal open output contact

AK1(11), AK2(12): connected with controlled device through normal open contact, used for device starting of answer confirmation

PW1(4), PW2(5): polarity DC24V output terminal

#### 5.6 Cabling requirement:

L1 and L2 shall adopt RVS twisted pair which section area  $\geq 1.0\text{mm}^2$ . Single loop resistance for connecting conductor shall be no more than  $20\Omega$ , otherwise enlarger conductor diameter.

Power supply line 24V and GND shall adopt RV wire which section area  $\geq 1.5\text{mm}^2$ . COM, NC, NO, PW1, PW2, AS+ and AS- shall adopt RV wire which section area  $\geq 1.5\text{mm}^2$ .

## 6 Test

- 6.1 Module shall be tested at least once a month.
- 6.2 Before testing the module, inform relevant department and handle the control panel properly to prevent unexpected alarm.
- 6.3 Test: when the module functions after registered and under monitoring, the control panel starts directly or starts field device through linkage which functions well and indicator of module output illuminates. The module will receive correctly if field device actions and output indicator illuminates and sends answer information to the control panel. When the control panel withdraws start order, the output indicator dim out; when field device withdraws action, the input indicator dim out; any of above situation occurs means module functioning well.
- 6.4 After test complete, reset the module through the control panel and inform relevant department to recovery.
- 6.5 During the test, if any module malfunctions, check its connection then test again. If it still cannot pass the test, return it for maintenance.

## 7 Usage and Operation

### 7.1 Coding

Electronically coding for the module makes it easy and convenient. TCBM5023 hand-held encoder made by TC is used for field coding. When coding, connect the encoder with module loop terminal (non-polarity) and write or read the address code.

7.1.1 Coding step: press “2” in the main menu of the encoder to enter into “(2) mode setup” and choose “(1) TC5000” in the sub menu. Press “(5), (6), or (7)” to choose ascending number coding, normal coding or descending number coding. Easy application (default is TC5000, normal coding) and chosen complete, press “erase/roll page” to enter into coding interface and press exit to return to main page. Press “1” for “(1) write address” and connect the encoder with the module loop terminal L1 and L2. At standby status, input module address (1 to 255) and press “write address”. “OK” means write-in success and “fail” means not.

7.2 Input setup parameter: press “3” in the main menu of the encoder to enter into “(3) write and read module setup” and choose “(3) RC”. There lies two options: one is “test” mode and press “5” for “(5) yes”. This refers to detecting output fault (as default). Press “6” for “(6) no” for nor detecting output fault. The other one is “pulse” and press “7” for “(7) yes” referring to starting pulse (starting stops after starting 3s). Press “8” for “(8) no” referring to normal start (as default). Press WRITE key to write in I/O module or READ key to read module configuration.

## 8 Application

- 8.1 Sketch for controlling high-voltage and mass-power device with module: fig. 3:
- 8.2 Sketch for controlling low-voltage and low-power including fire damper, exhaust valve, electrical fire monitoring devices: fig. 4:

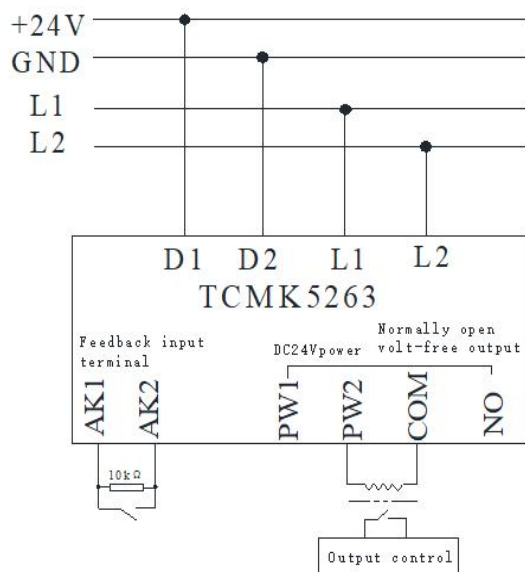


Fig.3

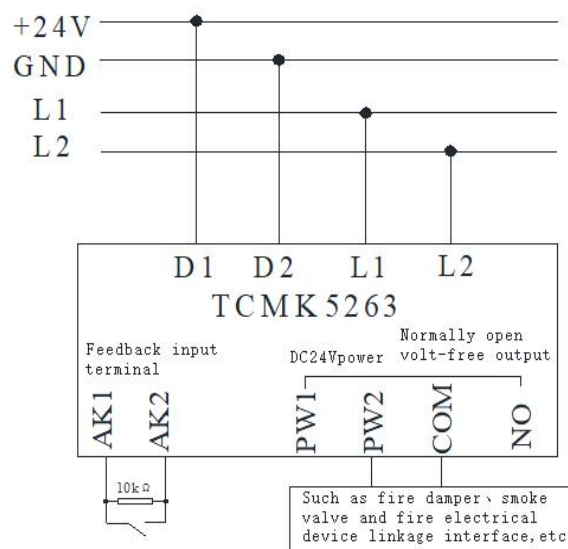


Fig.4

Fig. 3 sketch for controlling high-voltage and mass-power device

Fig. 4 sketch for controlling low-voltage and low-power device

### WEEE Information



**2012/19/EU (WEEE directive):**

**Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points.**

## 9 Trouble-shooting

Troubles	Resolutions
Cannot register normally.	1 No terminal resistance connected. 2 No DC24V connected. 3 Open circuit or short circuit on the relay output.
Input indicator illuminates when no inputting.	1 Detect if short circuit on passive contact signal input terminal. 2 Detect if short circuit on terminal resistance.

## 10 Notice

10.1 Do not connect module contact to any loop with more than AC48V to prevent high AC interference that damage module or controlled device.

10.2 This module cannot control any gas fire-extinguishing equipment.

## **11 Document and maintenance**

11.1 Packaging document:

Packaging list: one

Accessories: one 10K resistance per module

## **12 Limited Warranty**

12.1 Tiancheng warrants that the product will be free of charge for repairing or replacing from defects in design, materials and workmanship during the warranty period. This warranty shall not apply to any product that is found to have been improperly installed or used in any way not in accordance with the instructions supplied with the product. Anybody, including the agents, distributors or employees, is not in the position to amend the contents of this warranty. Please contact your local distributor for products not covered by this warranty.

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