ADDRESSABLE CO DETECTOR

INSTALLATION AND OPERATION MANUAL

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1. Introduction

1.1. Overview

The NFA-T01CD Detector is designed for continuous monitoring of carbon monoxide concentration in the surrounding environment. When the gas concentration reaches the preset alarm threshold, the Detector triggers audible and visual alarms, activates its output function, and transmits a signal to the combustible gas early warning control system. This proactive response helps to effectively mitigate the risk of serious incidents caused by carbon monoxide leaks. The Detector is well-suited for use in residential homes, hotels, apartments, underground parking areas, and similar settings.

NFA-T01CD
Addressable CO Detector

1.2. Feature and Benefits

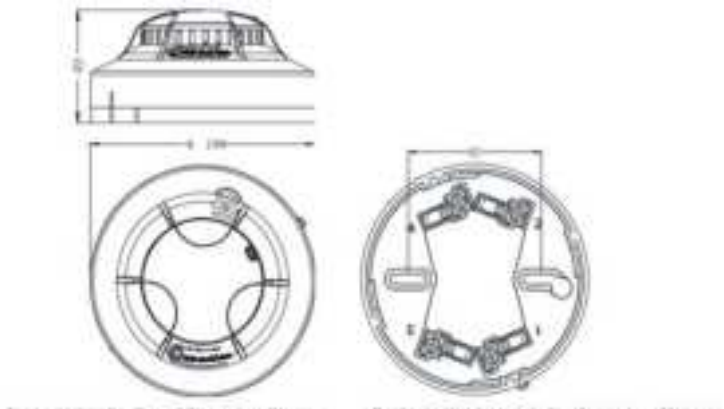
- Two-wire bus, non-polarised, no dedicated power supply required
- Provided with sensors featuring high sensitivity and long service life
- Automatic detection of sensor service life
- Supported by high and low temperature compensation algorithm to minimise false alarms caused by temperature variations
- Equipped with electronic coding functionality
- Ceiling mounting offers easy installation

1.3. Technical Specifications

Input voltage	24V DC (15V~28V pulse voltage)
Current consumption	Stand by 1.5mA. Alarm 15mA
Output method	Active output, output current < 5mA.
Target gas	carbon monoxide (CO)
Measurement/Sensor Range	0~240×10^-6 ppm
Alarm Set Value	150×10^-6 ppm
Sensor Lifetime	5 years
LED Indicator	Normal monitoring state: The green light flashes and the buzzer does not sound. Alarm state: The red light remains constantly illuminated and the buzzer sounds. Fault state: The yellow light remains constantly illuminated and the buzzer sounds intermittently. Sensor service life expiry: The yellow light flashes and the buzzer sounds intermittently.
Operating Temperature:	-10℃~+55℃.
Humidity	0 to 95% Relative Humidity, non-condensing
Colour	beige
Weight	96g
Dimension/Height	Diameter 100mm/49mm

2. Structural Features and Operational Principles

2.1. The overall dimensions and installation dimensions (in mm) of the Detector are illustrated in Fig. 1 and 2.



2.2 Operational Principles

This product employs a high-sensitivity electrochemical carbon monoxide sensor with excellent selectivity, allowing for real-time monitoring of carbon monoxide levels in the environment. When the detected concentration exceeds the preset alarm threshold, the detector triggers audible, and visual alarm signals and activates the control output. At the same time, the alarm information is transmitted to the controller via the communication bus for prompt response.

3. Installation and Wiring

Warning: Prior to installing the Detector, ensure that the controller is powered off or the circuit power is disconnected, and verify that all bases are securely installed.

The Detector should be installed in locations where the target gas is likely to occur or accumulate. It is recommended to refer to the suggested positions in Fig. 3 and ensure the device is installed and operated in accordance with the specific requirements of the application environment.

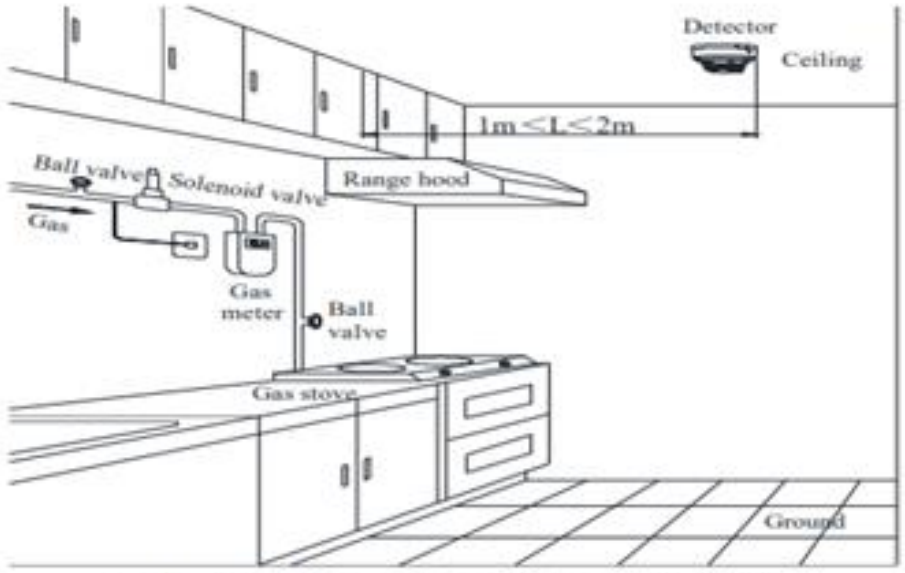


Fig. 3 Installation Location of NFA-T01CD

Installation method: The installation procedure for the Detector is illustrated in Fig. 4

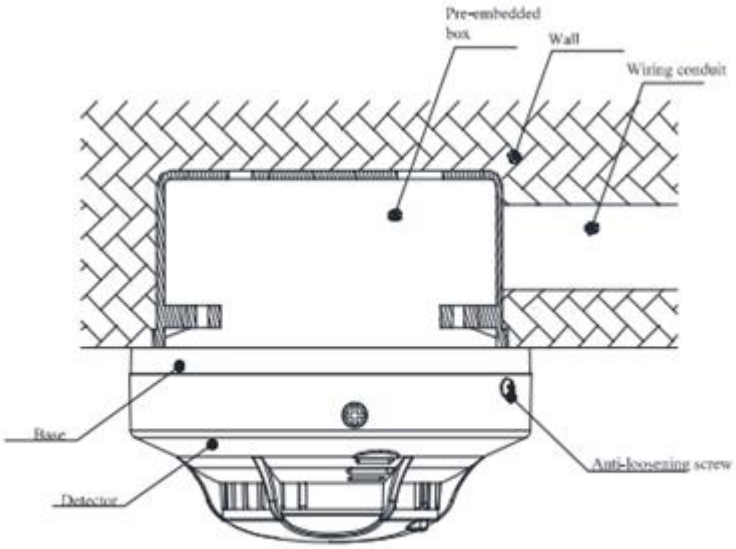


Fig. 4 Installation Diagram of NFA-T01CD

During installation, align the protruding mark on the bottom of the Detector with the corresponding mark on the base, and then rotate clockwise to mount the Detector onto the base, followed by the installation of the anti-loosening screw.

Wiring requirements: The bus connection line should be made of 2×1.0mm^2 or 1.5mm^2 wire; these lines should be laid through metal conduits (cable trays) or flame-retardant PVC conduits.

The wiring method is as illustrated in Fig. 5.

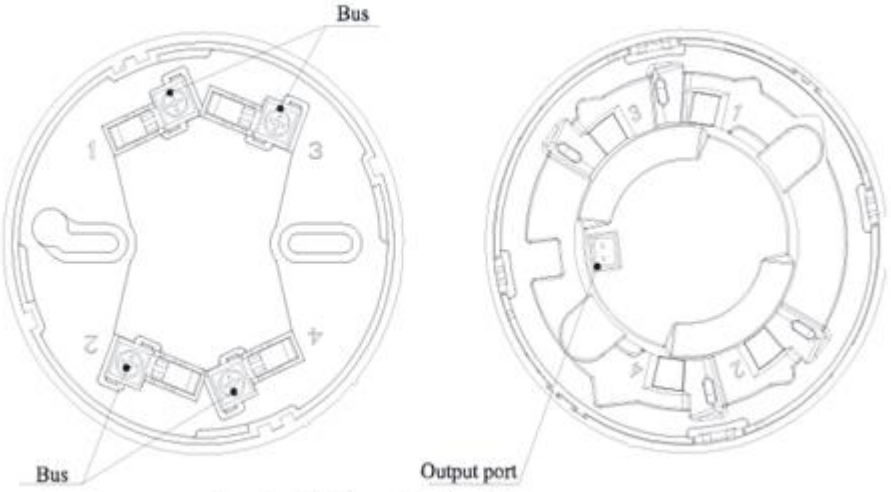


Fig. 5 Wiring Method for NFA-T01CD

4. Detector Configuration

4.1. Self-Check and Muting

Under normal monitoring conditions of the Detector, briefly press the "Self-Check/Mute" button, and the yellow, green, and red lights will flash once each, cycling three times. When the lights are on, the buzzer will sound; when the lights are off, the buzzer will cease. When the Detector is in an alarm/fault state, briefly press the "Self-Check/Mute" button to halt the buzzer and enter the mute state.

4.2. Preparation

The NFA-T01PT programming tool is used to configure CO detectors soft address and parameter. This Programming tool is not included, must be purchased separately. The programming tool is packed with twin 1.5V AA battery and cable, ready for usage once received.

It is mandatory for the commissioning personnel to have programming tool in order to adjust the detector conferring to the site situation and environmental requirements.

Program a unique address number for each device according to the project layout before placing from the Terminal Base.

Warning: Disconnect the loop connection whilst connecting to the programming tool.

4.3. Write: Addressing

- Connect the programming cable to 1 and 6 terminals (Figure 6). Press “Power” to switch on the unit.
- Switch-on the programming tool, then press button “Write” or number “2” to enter Write Address mode (Figure 7).
- Input the desire device address value from 1 to 254, and then press “Write” to save the new address (Figure 8).

Note: If display “Success”, means the entered address is confirmed. If display “Fail”, means failure to program the address (Figure 9).

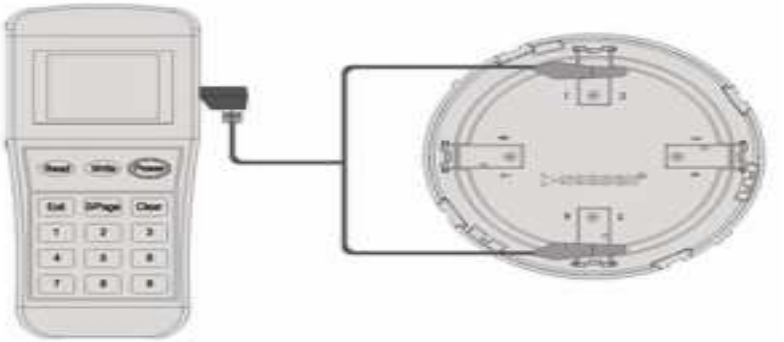


Fig.6

Fig.7

Fig.8

Fig.9

- Press “Exit” key to go back Main Menu. Press “Power” key to switch-off the programming tool.

5. Handling and Storage

When transporting, handling, and storing the Detector, it must be in the packaged state. During loading and unloading, handle with care to prevent damage from impact, dropping, or compression. The storage environment should be well-ventilated and dry, and the product must not be stored in the open air.

6. Precautions

- Prior to installation and wiring, it is imperative to disconnect the power supply to mitigate the risk of electric shock.
- A reliable and stable operating power supply must be provided for the Detector.
- Avoid installing the Detector near air vents, exhaust fans, doors, or other areas with significant airflow, as well as directly above heat sources or steam.

- Avoid prolonged or frequent exposure of the Detector to high-concentration gas samples, as this may reduce sensor sensitivity, shorten sensor service life, or even directly damage the sensor.
- This product is not explosion-proof and must not be installed in locations where explosion protection is required.
- Any faulty sensor should be promptly repaired or replaced.
- In the event of a malfunction that cannot be resolved on your own, please contact the agent or manufacturer for guidance. Do not attempt to disassemble the product without authorization.

7. General Maintenance

- Upon activation of the alarm, the Detector must be reset via the controller when the gas concentration falls below the alarm threshold.
- To ensure the long-term stability and accuracy of the Detector, the alarm function should be tested regularly, with intervals preferably not exceeding one year.
- If the Detector's yellow light flashes to indicate sensor service life expiry, the Detector should be replaced as soon as possible.
- The air inlet must not be obstructed or contaminated by dust, grease, etc., to ensure smooth air intake so that the sensor can promptly detect any gas leaks.

Appendix 1

Limitation of CO Detectors

The CO detector cannot last forever. To keep the detector working in good condition, please maintain the equipment continuously according to recommendations from manufacturers and relative nation codes and laws. Take specific maintenance measures on the basis of different environments.

The CO detector contains electronic parts. Even though it is made to last for a long period of time, any of these parts could fail at any time. Therefore, test your CO detector at least every half-year according to national codes or laws. Any CO detectors, fire alarm devices or any other components of the system must be repaired and/or replaced immediately if they fail.

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