VC-6623 Conventional Optical Smoke Detector

Installation and Operation Manual V1.06

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VSAIL

Features

✧ Real-time data sampling and process with integrated MCU.

✧ Drift compensation makes it environment adaptable.

✧ Removable optical sensing chamber for cleaning and maintenance.

✧ Indicating lamp visible at 360 degrees.

✧ Designed with output terminals for remote indicators.

✧ Magnetic testing function for on-site alarm testing.

✧ Complies to EN54-7.

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Description

VC-6623 Conventional Optical Smoke Detector (hereinafter referred to as Detector) is a product we developed with integrated MCU and reliable fixed fire judgment program that makes it work stably and reliably. When detecting fire signal, the detector changes its own supply current to transmit the signal to control panel or interface module. The detector lights fire indicator and remote indicator to show the alarm and will hold them until reset.

The detector is developed base on infrared scattering principle and high performance optical sensing chamber. It is excellent in resisting dust contamination and ambient light interference with stable performance and is easy to maintain.

Installation

First fix the generic base with two tapping screws, then align Mark A on the bottom of the detector to Mark B on the base, and then rotate the detector clockwise to Mark C on the base. Figure 1 and 2 show the marks. Figure 3 shows how the detector is to be installed.
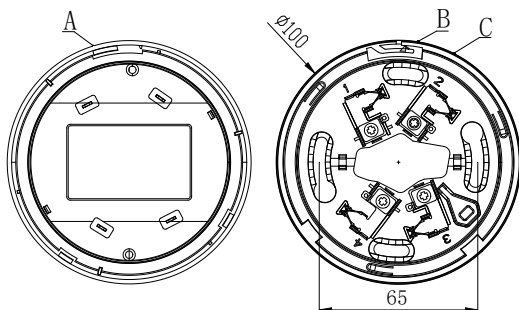

Figure 1 Detector Bottom   Figure 2 Detector Base

There are four terminals with numbers on the generic base. "1" is to be connected to the positive pole of DC supply end of a conventional control panel; "2" is to the positive pole of the supply of the next detector (Terminal No. "1"); "3" to the negative pole of the next detector (Terminal No. "3") and the negative pole of DC supply end of the conventional control panel; "4" should be connected to the negative pole of remote indicator, and "1" or "2" to the positive pole of remote indicator. Figure 2 is a schematic of VB-6611 Generic Base.

Wiring requirement: It's recommended to use fire cables with cross section $\geq 1.0mm^2$ through metal conduit or flame-retardant conduit. Wiring must comply to local installation codes.

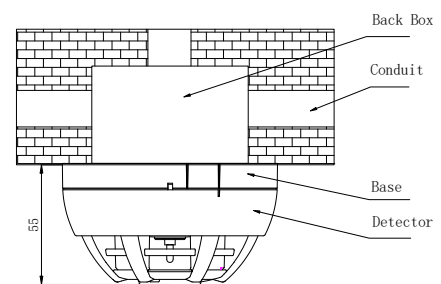Note: It's suggested to use cables of different colors to avoid confusion.

Figure 3 Detector Installation

Application

Warning: The alarm current is dependent on the current limit of the control panel. It's not allowed to use 24VDC supply. The detector without a current limit resistor might be burnt out!

The detector is applicable to hotels, restaurants, office buildings, educational buildings, banks, warehouses, libraries, computer rooms and switch rooms. Conventional Control Panel VC-6831 can have maximum 30 conventional devices per loop. It's able to check broken circuit of output loop and generate loop fault signal.

Position for reed switch testing: The test tool should be put near the indicating lamp of the detector for 3 to 5 seconds.

✧ If the detector is to be connected to conventional control panel VC-6831 in series, a 4.7k resistor should be used at the end of the output loop and directional base VB-6611 be used. Refer to Figure 4.
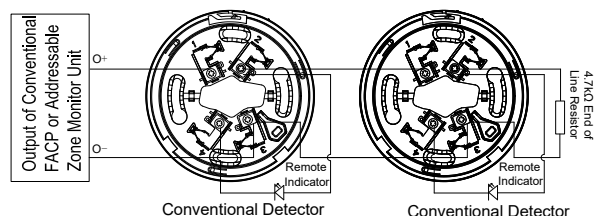
✧ When multiple detectors are to be connected to one remote indicator, terminal "4" of directional base VB-6611 should be connected to a diode (1N5819) in series, and then to the positive pole of remote indicator. Refer to Figure 4.
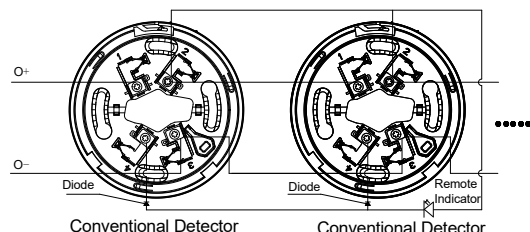

Figure 4　System Connection Diagram

Figure 5　System Connection Diagram

Maintenance

1. The detector should be properly stored against dust, moisture and corrosion and be installed just before commission.
2. The dust cover should not be removed until the system starts to operate. Otherwise it may not give fire alarm properly.
3. The detector should be cleaned at least once a year to ensure normal operation of the system.
4. When false alarm occurs frequently, the optical sensing chamber should be cleaned with the steps below, and, if necessary, replaced.
a) Open the top cover and pull the sensing chamber out. (Figure 6)
b) Clean the inside of sensing chamber with alcohol cotton using tweezers. Make sure no cotton fiber is left. Water and brush can be used alternatively.
c) Put the sensing chamber and top cover back.

5. Please inform governing administrative authorities that the system will be interrupted for maintenance. Disconnect controls to the affected area and system automation to avoid any unwanted action.
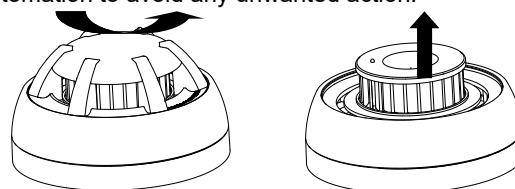

Figure 6 Removing the Sensing Chamber

6. Reinstall the detector after cleaning and test it.
7. The metal contacts on the detector and base should be protected against moisture and non-elastic deformation.
8. Do fire test once every half a year to ensure normal operation of the detector.

Specification

Operating Voltage	9VDC～28VDC
Quiescent Current	≤60µA
Alarm Current	10mA≤I≤50mA
Alarm Indicator	Red. Flashes periodically (2s - 4s) normally; lights steadily in alarm.
Remote Output	To remote indicator (a 10k resistor is connected in series inside. Output voltage is the same as supply voltage. It doesn't normally and flashes in alarm)
Max Ripple Voltage	2V(peak-peak value)
Alarm Reset	Instant power cut(2s Min，1.0VDC Max)
Power-up Time	≤10s
Wiring Method	Polarized two-wire
IP Rating	IP32
Ambient Temperature	-10℃～+55℃
Relative Humidity	≤95%，non-condensing
Material of Enclosure	ABS
Dimensions	Diameter 100mm, height 43mm (without base)
Mounting Hole Spacing	65mm
Weight	About 120g

Accessories & Tools

Model	Name	Note
VB-6611	Base	Order separately