

Cautions



ELECTRICAL HAZARD: Disconnect power from equipment prior to making any internal adjustments. Service should only be performed by qualified personnel.

FRAGILE: Inspect the equipment prior to installation. Do not install the equipment if damage is apparent. Do not attempt to disassemble this equipment. If damaged, return to the supplier.

ELECTROSTATIC HAZARD: This is sensitive electronic equipment. Apply safe ant-static practices when handling this equipment.

CIRCUIT LIMITATIONS: The maximum number of detectors connected to a single detection zone is limited by the control and indicating equipment, and may be limited by local regulations.

Introduction

The 401 non-addressable ultra-violet flame detectors are suitable for connection to 2-wire and 4-wire non-addressable fire detection control and indicating equipment, or to addressable fire detection control and indicating equipment that can accept non-addressable type detectors¹.

These instructions provide trained installation personnel with details to install and commission 401 flame detectors for optimum performance.

Preparation

Before commencing installation, ensure all equipment (base and detector) and tools to mount and connect the equipment are available, such as drills, mounting screws, cables and ladders.

401 flame detectors can be installed with the following bases and accessories.

Description	Part number	Datasheet
5-terminal 102 mm low profile base	CN3023	31-0035
9-terminal 102 mm low profile base	CN3043	31-0037
Remote indicator ^a	681-001	31-0034
Detector monitor module	620-001	31-0027

^a Requires 9-terminal base.

Installation

Base

The base can be mounted directly onto an electrical junction box such as an octagonal (75 mm, 90 mm or 100 mm), a round (75 mm), or a square (100 mm) box without using any type of mechanical adaptor.

1. Feed the conductors through the middle of the base for termination to the base contacts.
2. Mount the base on the junction box or directly onto a flat surface.
3. Mount the base to the surface using fixing screws that are suitable to securely fix the base to the surface.

Wiring

The terminals of the base will accept (0.4 ~ 2.5) mm² conductors.

1. Strip the conductor insulation to expose 5 mm of the conductor.
2. Connect the conductors to the base terminals.
 - a. See Fig. 1 for detectors using 2-wire bases.
 - b. See Fig. 2 for detectors using 4-wire bases.

WARNING: Take care to ensure the insulation does not get clamped by the terminal contact.

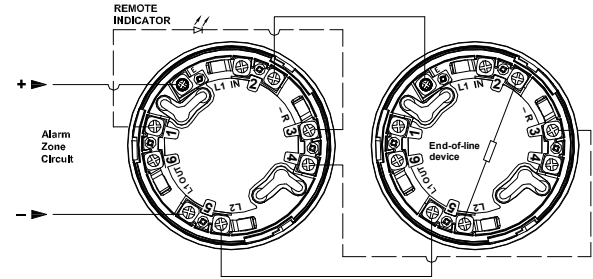


Fig. 1: 2-wire base wiring connections

Note 1: 9-terminal base required if a remote indicator is installed.

Note 2: If a remote indicator is not installed, the polarity of the zone wiring may be reversed.

WARNING: Do not short-circuit terminals 2 and 5.

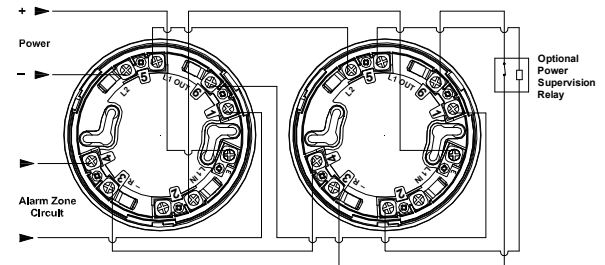


Fig. 2: 4-wire base wiring connections

WARNING: Do not short-circuit terminals 2 and 5.

3. After all the bases are installed and wired, fit the end-of-line resistor.

Note: The value of the end-of-line resistor depends on the control and indicating equipment to which the detectors are installed.

4. Check the wiring for continuity, short circuits and earth faults.

Output Relay (where fitted)

The output relay is a voltage-free normally-open contact that closes in alarm. No setting adjustment is required.

Detector

WARNING: Do not install the detector head until the area is thoroughly cleaned of construction debris, dust, etc.

1. Align the detector alignment mark with the short alignment mark in the base, as shown in Fig. 3.
2. Mate the detector head onto the base and rotate it clockwise to secure it. The long alignment marks should be aligned.

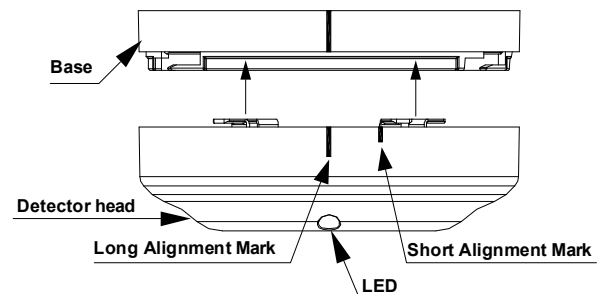


Fig. 3: Fitting the detector to the base

¹ May be used with the 620-001 detector monitor module.

Commissioning



Equipment

WARNING: Tests may be conducted using a cigarette lighter or a portable flame detector tester. Extreme care is required to ensure the flame does not ignite adjacent material.

Flame Detector

1. Ensure all the alarm signal services, releasing devices and extinguisher systems are disabled during the commissioning period.
2. Connect power to the detector for approximately 30 s and check that the red LEDs flash every 5 s. If the LEDs fail to flash, it indicates the detector is not operating. Check the wiring for the correct voltage and earth leakage. Replace the detector if necessary.
3. Place the flame source 10 cm from the front of the detector sensor, for at least 30 s.
4. Monitor the detector for the alarm signal. The red LEDs will light continuously and alarm will be reported at the control and indicating equipment.
5. Upon alarm, immediately extinguish the cigarette lighter.
6. Reset the alarm at the control and indicating equipment.

Output Relay (where fitted)

1. Follow Flame Detector procedure steps 1 ~ 5.
2. Monitor the output relay for activation.
3. Reset the detector at the control and indicating equipment.
4. Monitor the output relay for reset to its quiescent setting.

Auto Reset (where fitted)

1. Follow Flame Detector procedure steps 1 ~ 5.
2. Check the detector to resets within 30 s. The red LED will change from steady on to flashing.
3. If the alarm signal is latched at the control and indicating equipment, reset the control and indicating equipment.

Final Conditions

Ensure all the alarm signal services, releasing devices and extinguisher systems disabled for the commissioning are returned to their previous condition.

References

Document	Description
31-0013	401 non-addressable flame detector datasheet

View the complete range of products at www.numens.com

