NUMENS

Professional Safety Products

4003 Non-addressable 2, 4, 8 Zone Fire Alarm Control and Indicating Equipment

Revision 1.3 Firmware

USER MANUAL

Contents

4003 non-addressable control and indicating equipment forms the central part of a fire detection and alarm system. Available with 2, 4 or 8 alarm zone circuits, 4003 control and indicating equipment are easy to install and commission. A central microprocessor delivers reliable operation and requires minimum maintenance.

4003 control and indicating equipment are compatible with Numens non-addressable detectors and devices, such as manual call points. They are suitable for small and medium-sized buildings.

This Manual provides installers with instructions for use of the 4003 control and indicating equipment using revision 1.3 operating firmware.

Website

For more information, including product datasheets and other support material, please view our website at www.numens.com

Building Name _____

Building Address _____

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Installation Company _____

Installation Company Contact _____

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Date Installed _____

Service Company _____

Service Company Contact _____

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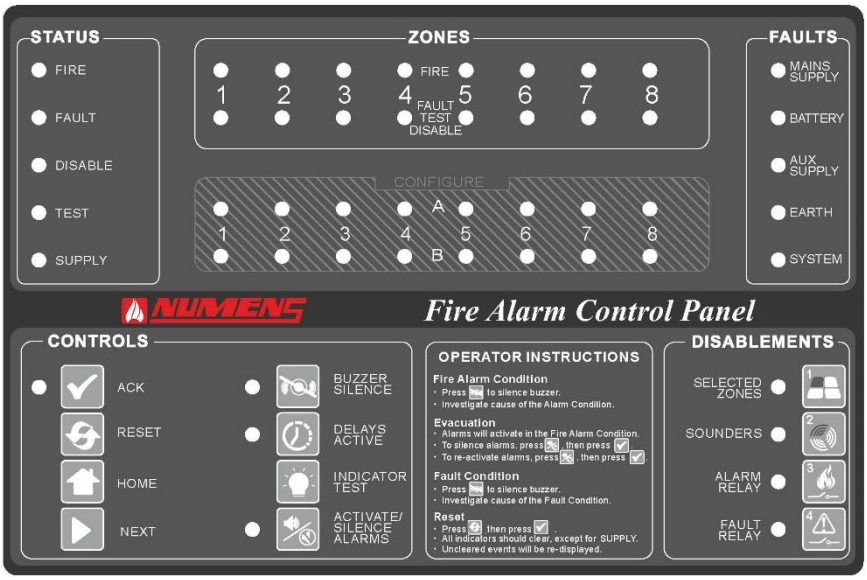
1. CONTROLS AND INDICATORS



STATUS

FIRE Indicates the Alarm Condition. Alarm zone information will also be displayed on the ZONE indicators.

FAULT Indicates the Fault Condition. Fault information will be displayed on the ZONES indicators or in the FAULTS area of the control and indicating equipment, depending on the source of the fault.

DISABLED Indicates at least one function (eg detection or Auxiliary Outputs) is disabled.

TEST Indicates the Test Condition.

SUPPLY Indicates the control and indicating equipment is active.

ZONES

FIRE Indicates the Alarm Condition within a specific detection zone.

TEST FAULT DISABLED Indicates when a zone is in the Test Condition, the Fault Condition or the Disabled Condition.

CONFIGURE

A 1 ~ 8 Indicates a function during configuration at Access Level 3.

B 1 ~ 8 Indicates the zone(s) related to the configuration function at Access Level 3.

FAULTS

MAINS SUPPLY Indicates the mains supply is unavailable or less than the minimum required voltage.

BATTERY Indicates the secondary (battery) supply or battery charger is faulty.

AUX SUPPLY Indicates a fault in the auxiliary DC output.

EARTH Indicates an earth fault is detected in the fire detection and alarm system transmission path wiring.

SYSTEM Indicates faults in the control and indicating equipment (including a firmware checksum error and watchdog timer).

CONTROLS

ACK	Confirms configuration settings.
RESET	Resets the fire detection and alarm system.
HOME	Returns the control and indicating equipment to Access Level 1.
NEXT	Steps through configuration functions and settings.
BUZZER SILENCE	Acknowledges new events and silences the internal sounder.
DELAYS ACTIVE	Disables and enables delays of configured alarm devices. When the indicator is on, the delay is active. Pressing the DELAYS ACTIVE button over-rides the delays and causes immediate actions.
INDICATOR TEST	Illuminates all LEDs and activates the internal sounder.
ACTIVATE/ACTIVATE ALARMS	Activates audio/visual alarm devices. The LED illuminates when the alarm devices are active.

DISABLEMENTS

SELECTED ZONES	Selects specific detection zone(s) for disablement. Used in conjunction with NEXT and ACK buttons. The indicator is active when disablements are active.
SOUNDERS	Disables and enables alarm devices. When the indicator is active, the alarm devices are disabled.
ALARM RELAY	Disables and enables alarm relay output. When the indicator is active, the alarm relay output is disabled.
FAULT RELAY	Disables and enables fault relay output. When the indicator is active, the fault relay output is disabled.

The DISABLEMENTS buttons are numbered 1 ~ 4. These buttons are also used to enter Access Levels 2 and 3.

2. ACCESS LEVELS

Three access levels are used to operate or configure the control and indicating equipment.

2.1. Access Level 1

Access Level 1 provides open access to perform the following functions:

- Acknowledge a new event (and silence the internal sounder).
- Override any active delays in the Alarm Condition.
- Perform the indicator test.
- Place the panel into Access Level 2 or Access Level 3.

2.2. Access Level 2

Access Level 2 provides access to the following functions for authorized users:

- Acknowledge a new event (and silence the internal sounder).
- Override any active delays.
- Perform the indicator test.
- Silence and re-activate alarms (including for a building evacuation).
- Reset the fire detection and alarm system.
- Disable or enable the following:
  - Zones
  - Alarms
  - Auxiliary outputs
- Activate delays (if configured).

2.2.1. Enter Access Level 2

Access Level 2 can only be entered if there are no new events to acknowledge.

To enter the Access Level 2 passcode, take the following actions:

1) Press and hold the ACK button for 3 s. The SUPPLY LED will flash.
2) Enter the Access Level 2 passcode using the DISABLEMENT buttons numbered 1 ~ 4. Each button press will cause the following indicator to light:

First button press	B 1
Second button press	B 2
Third button press	B 3
Fourth button press	B 4

The factory default Access Level 2 passcode is **2244**.

3) Press the ACK button to confirm the passcode.

If the passcode is correct:

- The internal sounder will give a double short beep.
- The SUPPLY LED will flash twice, pause, then repeat.

If the passcode is incorrect:

- The internal sounder will give a single long beep.
- Indicators B 1 ~ B 4 will turn off.
- A new passcode can be entered.

To exit Access Level 2, press HOME then the ACK button to confirm.

2.2.2. Change Access Level 2 Passcode

The Access Level 2 passcode may be changed from the factory default setting. The Access Level 2 passcode cannot be the same as the Access Level 3 passcode.

To change the passcode, take the following actions:

1) Enter Access Level 3.
2) Press and hold the ACK button for 10 s. The A1 LED will flash continuously.
3) Press the SOUNDERS button. The ACK LED and the SOUNDERS LED will both flash.
4) Press ACK button. The ACK LED will be off and the SOUNDERS LED will be on.
5) Enter the new 4-digit Access Level 2 passcode using the DISABLEMENT buttons numbered 1 ~ 4. Each button press will cause the following indicators to light:

First button press	B 1
Second button press	B 2
Third button press	B 3
Fourth button press	B 4

6) Press ACK button to confirm the passcode.
   Note: The ACK LED does not flash during this process until the 4 passcode numbers are entered.
7) Repeat Steps 5 and 6 to confirm the passcode. The internal sounder will give a double short beep. Passcode is now changed.

If the two passcodes entered are different:

- The internal sounder will give a single long beep.
- The Zone indicators will turn off.
- A new passcode can be entered.

2.3. Access Level 3

Access Level 3 is used to configure the control and indicating equipment and allows access to the following functions.

- Configuration of Alarm Dependency (zone coincidence detection)[1].
- Setting delay timer.
- Indicator and device test.
- Setting detection zone delays.
- Configuring non-latching detection zones[2].
- Change Access Level passcodes.

> Changes made at Access Level 3 affect the factory default settings and the operation of the system. Changes should only be made by qualified personnel who are fully aware of their effects.

[1] Alarm Dependency (zone coincidence detection) does not comply with EN 54-2.
[2] Non-latching detection zones do not comply with EN 54-2.

2.3.1. Enter Access Level 3

Access Level 3 can only be entered if there are no new events to acknowledge.

To enter the Access Level 3 passcode, take the following actions:

1) Press and hold the ACK button for 3 s. The A1 LED will flash rapidly.
2) Enter the Access Level 3 passcode using the DISABLEMENT buttons numbered 1 ~ 4. Each button press will cause the following indicator to light:

The factory default Access Level 3 passcode is **4321**.

First button press	B 1
Second button press	B 2
Third button press	B 3
Fourth button press	B 4

3) Press ACK button to confirm the passcode.

If the passcode is correct:

- The internal sounder will give a double short beep.
- The SUPPLY LED will flash three times, pause, then repeat.

If the passcode is incorrect:

- The internal sounder will give a single long beep.
- The Zone indicators will turn off.
- A new passcode can be entered.

To exit Access Level 3, press HOME, then the ACK button to confirm.

2.3.2. Change Access Level 3 Passcode

The Access Level 3 passcode may be changed from the factory default setting. The Access Level 3 passcode cannot be the same as the Access Level 2 passcode.

To change the passcode, take the following actions:

1) Enter Access Level 3.
2) Press and hold the ACK button for 10 s. The A1 LED will flash rapidly.
3) Press the ALARM RELAY button. The ACK LED and the ALARM RELAY LED will both flash.
4) Press ACK button. The ACK LED will be off and the ALARM RELAY LED will illuminate.
5) Enter the new 4-digit Access Level 3 passcode using the DISABLEMENT buttons numbered 1 ~ 4. The Access Level 3 passcode must be different to the Access Level 2 passcode. Each button press will cause the following indicators to light:

First button press	B 1
Second button press	B 2
Third button press	B 3
Fourth button press	B 4

6) Press ACK button to confirm the passcode.
   Note: The ACK LED does not flash during this process until the 4 passcode numbers are entered.
7) Repeat Steps 5 and 6 to confirm the passcode. The internal sounder will give a double short beep. Passcode is now changed.

If the two passcodes entered are different:

- The internal sounder will give a single long beep.
- The Zone indicators will turn off.
- A new passcode can be entered.

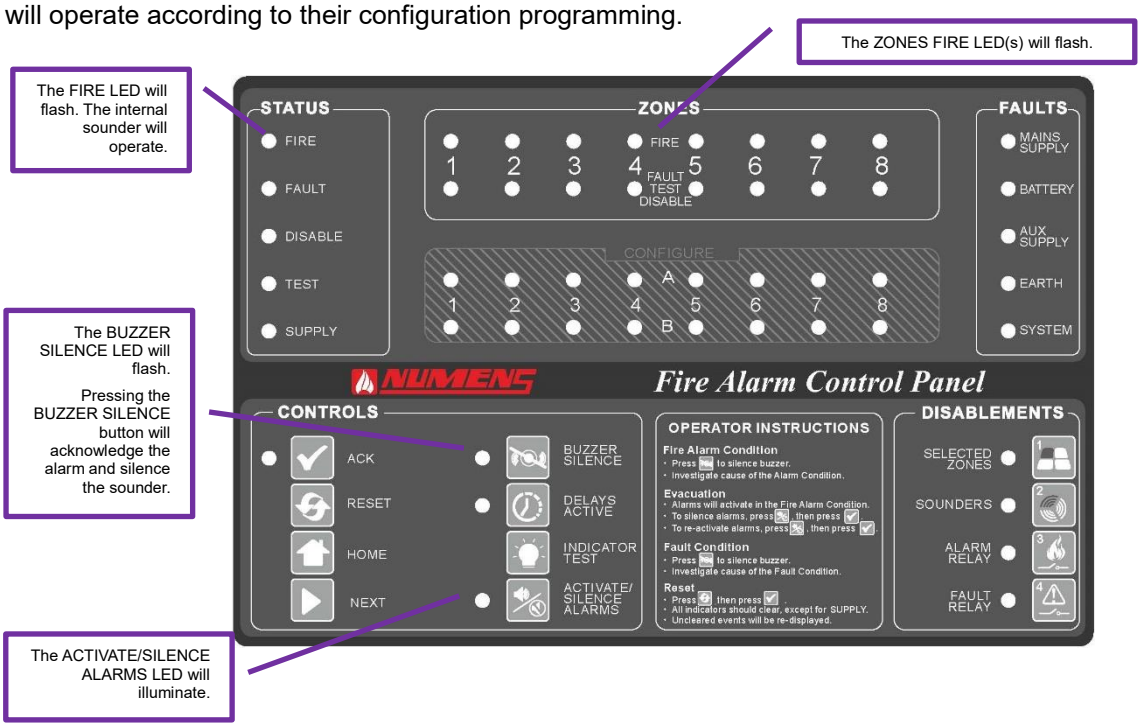
3. CONDITIONS

3.1. Quiescent Condition

The Quiescent Condition is the normal condition for the control and indicating equipment. In the Quiescent Condition, only the SUPPLY LED is on.

3.2. Alarm Condition

When the control and indicating equipment enters the Alarm Condition, the alarm sounders and output modules will operate according to their configuration programming.



INVESTIGATE THE SOURCE OF THE ALARM CONDITION.
IF A FIRE EXISTS INITIATE YOUR BUILDING EVACUATION PLAN.

3.3. Actions During the Alarm Condition

3.3.1. Fire Investigation

After the control and indicating equipment enters the Alarm Condition, take the following actions.

1) Press the BUZZER SILENCE button to acknowledge the Alarm and silence the internal sounder. The FIRE and relevant detection zone LEDs will be on.
2) Investigate the source of the Alarm condition.
3) If the building or area needs to be evacuated, once the area(s) is cleared, silence the alarm devices by pressing the ACTIVATE/SILENCE ALARMS button. Alarm devices can be re-started by pressing the button a second time.

DO NOT RESET THE CONTROL AND INDICATING EQUIPMENT UNTIL THE SOURCE OF THE ALARM HAS BEEN DETERMINED.

4) If the cause of the Alarm Condition was not a fire, enter Access Level 2 and press the RESET button to

reset the fire detection and alarm system.

5) If the cause of the Alarm Condition has not cleared, the control and indicating equipment will re-enter the Alarm condition. If this occurrence repeats, disable the zone and contact the service company.

3.3.2. Alarm Device Silence/Activation

The audio/visual alarm devices will activate during the Alarm Condition. If all occupants have evacuated the building, or the cause of the Alarm Condition was not a fire, then the alarm devices (both audible and visual) can be silenced. To silence alarm devices, take the following actions:

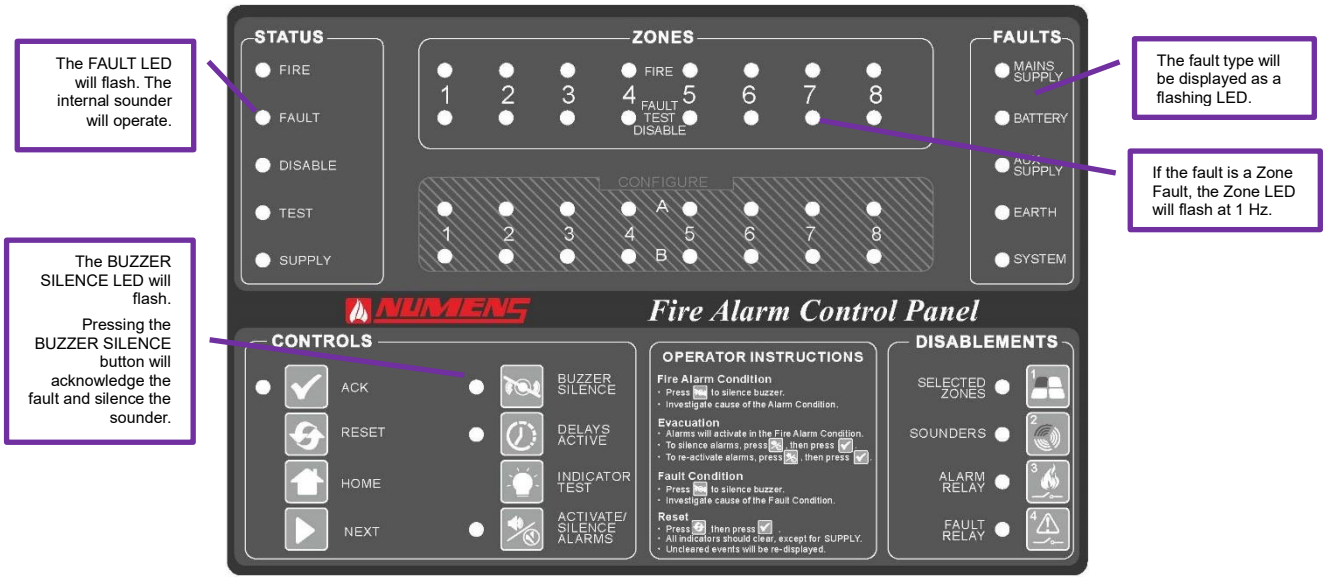
1) Enter Access Level 2.
2) Press ACTIVATE/SILENCE ALARMS button. The ACTIVATE/SILENCE ALARMS LED and the ACK LED will flash.
3) Press the ACK button to confirm. The ACK LED and the alarm devices will be off.
4) To exit to Access Level 2, press RESET. The ACK LED will flash.
5) Press the ACK button to confirm. Check that the ACK LED is off.

To reactivate the alarm devices, take the following actions:

1) Enter Access Level 2.
2) Press ACTIVATE/SILENCE ALARMS button. The ACTIVATE/SILENCE ALARMS LED and the ACK LED will flash.
3) Press the ACK button to confirm. The ACK LED will be off. The alarm devices will operate and the ACTIVATE/SILENCE ALARMS LED will be on.
4) To exit to Access Level 2, press RESET. The ACK LED will flash.
5) Press the ACK button to confirm. Check that the ACK LED is off.

3.4. Fault Condition

When a fault occurs with a device or within the control and indicating equipment, the control and indicating equipment will enter the Fault Condition. In the Fault Condition, the internal sounder will operate.



3.5. Actions During the Fault Condition

After the control and indicating equipment enters the Fault Condition, take the following actions:

1) Press the BUZZER SILENCE button to acknowledge the Fault and silence the internal sounder. The FAULT LED will be on.
2) Consider any known activities that may be current in the building that is a possible cause of the Fault condition.
3) Try to reset the fire detection and alarm system by entering Access Level 2 and pressing the RESET button.
4) If the cause of the Fault Condition has not cleared, the control and indicating equipment will re-enter the Fault Condition. If the occurrence repeats, contact the service company to investigate the source of the Fault Condition.

3.6. Disabled Condition

A function may be disabled. The Disabled Condition is used to inhibit:

- Events from within the Zone (eg a detector alarm) being actioned by the control and indicating equipment.
- Actions initiated by the control and indicating equipment from occurring within the Zone (eg activation of an alarm device)
- Signals being sent to auxiliary outputs.

3.6.1. Detection Zone Disablement

To disable a detection zone, take the following actions:

1) Enter Access Level 2.
2) Press the SELECTED ZONES button. The SELECTED ZONES LED will flash and the ACK LED will flash.
3) Press the ACK button to confirm. SELECTED ZONES LED will be on and the ACK LED will flash.
4) Press the NEXT button to scroll through the detection zones 1 ~ 8. The selected Zone will be displayed on indicators B 1 ~ B 8.
5) Once the desired Zone LED indicator is on, confirm the selection by pressing the ACK button. The FAULT TEST DISABLE LED in the selected Zone will be on steady, and the DISABLE status LED will be on. The NEXT button can be used to select additional Zones for disablement.
6) To exit the disablement selection, press the SELECTED ZONES button. The control and indicating equipment will remain in Access Level 2.

3.6.2. Alarm Zones Disablement

To disable alarm devices, take the following actions:

1) Enter Access Level 2.
2) Press the SOUNDERS button. The SOUNDERS LED will flash and the ACK LED will flash.
3) Press the ACK button to confirm. The ACK LED will be off. The SOUNDERS LED will be on, and the DISABLE status LED will be on. The control and indicating equipment will remain in Access Level 2.

3.6.3. Alarm Relay Output Disablement

To disable the alarm relay output for a selected Zone(s), take the following actions:

1) Enter Access Level 2.
2) Press the ALARM RELAY button. The ALARM RELAY LED will flash and the ACK LED will flash.
3) Pressing the ACK button to confirm. The ACK LED will be off. The ALARM RELAY LED will be on, and the DISABLE status will be on. The control and indicating equipment will remain in Access Level 2.

3.6.4. Fault Relay Output Disablement

To disable the fault relay output, take the following actions:

1) Enter Access Level 2.
2) Press the FAULT RELAY button. The FAULT RELAY LED will flash and the ACK LED will flash.
3) Press the ACK button to confirm. The ACK LED will be off. The FAULT RELAY LED will be on, and the DISABLE status will be on. The control and indicating equipment will remain in Access Level 2.

3.6.5. Enable Functions

To re-enable a disabled function, follow the steps above and note that the relevant disablement LED indicator is off.

3.7. Test Condition

Tests can be conducted by a single person. To enter the Test Condition and undertake tests of the 4003 and connected devices, follow these steps:

3.7.1. Indicator Test

1) Enter Access Level 1 or Access Level 2.
2) Press the INDICATOR TEST button. The internal sounder will operate. All LED indicators on the control and indicating equipment and any connected remote displays will illuminate until the INDICATOR TEST button is released.

3.7.2. Device Test

1) Enter Access Level 3.
2) Press INDICATOR TEST button. The TEST LED and the ACK LED will flash. B 1 LED will be on.
3) Press the NEXT button to select the alarm zone to test. The alarm zone will be indicated on LEDs B 1 ~ B 8.
4) Press the ACK button to confirm. The TEST LED will be on steady and the FAULT TEST DISABLE LED of the selected Zone will flash.
5) Test a device connected to each detection zone. Upon activation of the device:
   - the FIRE LED will illuminate for 5 s;
   - the Detector Zone indicator will illuminate for 5 s;
   - any connected remote display Detection Zone indicator will illuminate for 5 s; and
   - the internal sounder, and alarm devices will operate for 1 s.

   Zones will automatically reset after 10 s.
6) At the completion of the tests and to exit the Test Condition, press the INDICATOR TEST button. The TEST LED will flash and the ACK LED will flash.
7) Press the ACK button to confirm. The ACK LED will be off. The TEST LED in the STATUS section and the TEST FAULT DISABLED LEDs in the ZONES section will be off. The control and indicating equipment will remain in Access Level 3.

3.8. Delays Active/Inactive

To inhibit pre-configured delays to the Alarm Condition, take the following actions:

1) When the Alarm Condition is not present, enter Access Level 2.
2) Press the DELAYS ACTIVE button. The DELAYS ACTIVE LED will flash, and the ACK LED will flash.
3) Confirm the selection by pressing the ACK button. The ACK LED will be off and the DELAYS ACTIVE LED will be off. The control and indicating equipment will remain in Access Level 2.

- In the Alarm Condition, delays can be disabled at Access Level 1.
- If an alarm is waiting to be processed when the delays are disabled, the control and indicating equipment will immediately enter the Alarm Condition.
- For the Delays Active/Inactive function, the zones must first be configured to enable the delay at Access Level 3.
- If the delay function is not set, the DELAYS ACTIVE LED will not light.

3.9. Inactivity Timeouts

Timeouts are set to revert to Access Level 1 if there is not activity, and for system safety in the event that the system is left without restoring it to Access Level 1. The following timeouts apply:

- Enable Access Level passcode: No action for 20 s causes return to Access Level 1.

When in Access Level 2:

- Enter Access Level 2 passcode: No action for 20 s causes return to Access Level 1.
- When performing functions in Access Level 2, no manual input for 20 s causes the process to be cancelled. The control and indicating equipment will return to Access Level 2.
- With no specific function selected, no manual input for 1 h causes return to Access Level 1.

When in Access Level 3:

- Enter Access Level 3 passcode: No action for 20 s causes return to Access Level 1.
- No activity (eg a button press) for 1 h causes return to Access Level 1.
- When in Device Test mode, no activity for 4 h causes return to Access Level 1.

4. TROUBLE SHOOTING GUIDE

4.1. General Fault Indicator

The FAULT indicator in the STATUS area of the display is always illuminated whenever the control and indicating equipment is in the Fault Condition. The General fault indicator is associated with a specific fault that will be indicated in the ZONES or FAULTS area of the display.

Condition	Description	Actions
Zone Fault	Indicates a fault in the alarm zone transmission path between the control and indicating equipment and connected devices (eg detectors, manual call points, modules, etc). The causes include short- and open-circuit of the wiring.	Check the wiring for damage or disconnection.
Mains Supply Fault	Indicates the unavailability of the mains power.	Check the power supply fuse. Replace the fuse if it is faulty. Check the incoming mains supply voltage.
Battery Fault	Indicates the unavailability of the battery power, or a voltage level less than DC 20V. The battery may be depleted because the mains supply has been unavailable for an extended period of time, or there is a fault in the battery charger that prevents the batteries from being charged.	Check that the battery connections are secure. Measure the battery voltage. If the battery voltage is less than the manufacturer's minimum voltage, replace the batteries. Measure the battery charging voltage to ensure the battery charger is operating correctly. Measure the battery internal resistance to ensure it is less than 0.5 Ω.
System Fault	Indicates a fault with the internal supply voltages used to supply power to the microprocessor, or to the running of the control program.	Contact the service company to replace the main controller.
Earth Fault	Indicates a current leakage from any of the fire detection and alarm system wires to Earth. This may occur if there is damage to a single conductor, and it contacts some conductive equipment connected to Earth.	Isolate each of the transmission paths in turn until the conductor causing the Earth has been identified. Trace the faulty conductor to locate the source of the connection to Earth.

5. GLOSSARY AND REFERENCES

The following terms are associated with the 4003 non-addressable control and indicating equipment.

Term	Description	Reference
Access levels	Hierarchical levels to gain access to specific control and configuration functions.	EN 54-2, *Control and indicating equipment*
Alarm Condition	When an event from an input device (eg detector) is recognized as a fire.	EN 54-2, *Control and indicating equipment*
Control and indicating equipment	This equipment, that monitors devices displays events, initiates alarm devices, and allows control of the fire detection and alarm system.	EN 54-1, *General and definitions*
Disable Condition	When an alarm zone (input devices or outputs) will not report alarm or fault events, nor respond to any event even reported by another zone.	EN 54-2, *Control and indicating equipment*
Fault Condition	When an event (either from an input device, a transmission path, or within the control and indicating equipment) is recognized as a fault.	EN 54-2, *Control and indicating equipment*
Fire detection and alarm system	All detection, control and alarm equipment, including detectors, manual call points, control and indicating equipment, and audio & visual alarm devices.	EN 54-1, *General and definitions*

The following documents are associated with the 4003 non-addressable control and indicating equipment.

Description	Reference
4003 Control and indicating equipment	31-0076 datasheet; 32-0048 installation manual; 33-0023 user manual
6001-03 Network interface card	31-0048 datasheet
6001-04 Remote LED display card, 16 indicators	31-0049 datasheet
6001-07 Detection zone 8-relay output card	31-0052 datasheet

Website

For more information, including product datasheets and other support material, please view our website at www.numens.com

Contact Us

For sales and specific enquiries, please contact our sales office by telephone or email. Enquiries can also be submitted through our website.

Numens
9 Xizhao Road, Innovative Industrial Area
Dong Qian Lake, Ningbo
Zhejiang, China 315121

T: +86 574 8281 7218
F: +86 574 8300 1379
E: sales@numens.com

Please note that China time is UTC (GMT) +8 hours.

NOTES

Website

For more information, including product datasheets and other support material, please view our website at www.numens.com

Contact Us

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Numens
9 Xizhao Road, Innovative Industrial Area
Dong Qian Lake, Ningbo
Zhejiang, China 315121

T: +86 574 8281 7218
F: +86 574 8300 1379
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