NOTIFIER®
by Honeywell

Addressable Fire Alarm Control Panel
NFW-100X
Manual

Fire Alarm & Emergency Communication System Limitations

While a life safety system may lower insurance rates, it is not a substitute for life and property insurance!

An automatic fire alarm system—typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control panel (FACP) with remote notification capability—can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

An emergency communication system—typically made up of an automatic fire alarm system (as described above) and a life safety communication system that may include an autonomous control unit (ACU), local operating console (LOC), voice communication, and other various interoperable communication methods—can broadcast a mass notification message. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire or life safety event.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premises following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. This document can be found at http://www.systemsensor.com/appguides/. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second-floor detector, for example, may not sense a first-floor or basement fire.

Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls, chimneys, even wet or humid areas may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not reach the ceiling or upper walls where detectors are located.
- Smoke particles may be blown away from detectors by air outlets, such as air conditioning vents.
- Smoke particles may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Rate-of-rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist. Heat detectors are designed to protect property, not life.

IMPORTANT! Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not so located, a developing fire may damage the alarm system, compromising its ability to report a fire.

Audible warning devices such as bells, horns, strobes, speakers and displays may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol, or medication. Please note that:

- An emergency communication system may take priority over a fire alarm system in the event of a life safety emergency.
- Voice messaging systems must be designed to meet intelligibility requirements as defined by NFPA, local codes, and Authorities Having Jurisdiction (AHJ).
- Language and instructional requirements must be clearly disseminated on any local displays.
- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond to or comprehend the meaning of the signal. Audible devices, such as horns and bells, can have different tonal patterns and frequencies. It is the property owner's responsibility to conduct fire drills and other training exercises to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A life safety system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

Equipment used in the system may not be technically compatible with the control panel. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premises to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of life safety system malfunction is inadequate maintenance. To keep the entire life safety system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL and NFPA standards. At a minimum, the requirements of NFPA 72 shall be followed. Environments with large amounts of dust, dirt, or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled as required by National and/or local fire codes and should be performed by authorized professional life safety system installers only. Adequate written records of all inspections should be kept.

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Installation Precautions

Adherence to the following will aid in problem-free installation with long-term reliability:

WARNING - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until manuals are read and understood.

CAUTION - System Re-acceptance Test after Software Changes: To ensure proper system operation, this product must be tested in accordance with NFPA 72 after any programming operation or change in site-specific software. Re-acceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring. All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49º C/ 32-120º F and at a relative humidity . However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15-27º C/60-80º F.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interference, proper grounding will reduce susceptibility. Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes. Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, or printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over-tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

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FCC Warning

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing devices pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when devices are operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his or her own expense.

Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radio-electriques depassant les limites applicables aux appareils numeriques de la classe A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

Section 4: Operating Instructions

4.1 Panel Control Buttons

4.1.1 Acknowledge

The first press of the *Acknowledge* key silences the piezo sounder, changes flashing LEDs to steady, and also changes the status field on the LCD display from capital letters to small letters. When the piezo is silenced, an *acknowledge* message is sent to the printer and the history file. *Acknowledge* also sends a *silence piezo* command to the optional annunciators connected to the FACP.

When more than one event exists, the first press of the Acknowledge key functions as described in the preceding paragraph. Subsequent pressing of the key *steps* through each off-normal active event, with alarm events having a higher priority than trouble and supervisory events.

4.1.2 Alarm Silence

The *Alarm Silence* key performs the same functions as Acknowledge/Step. In addition, if an alarm exists, it turns off all silenceable NACs (Notification Appliance Circuits) and causes the Alarm Silenced LED to turn on. It also sends an 'alarm silenced' message to the printer, history file and optional annunciators. A subsequent new alarm will resound the system NACs. *Note that the Alarm Silenced LED is turned off by pressing the Reset key, the Drill key or subsequent activation of the NACs.*

4.1.3 Drill/Hold 2 Sec

When the *Drill* key is held for a minimum of two seconds (time required to prevent accidental activations), the FACP turns on both main panel NAC outputs and all silenceable circuits such as control modules that are programmed as silenceable, and turns off the Alarm Silenced LED if it was previously on. The *EVAC IN SYSTEM* message is shown on the LCD display. The same message is sent to the printer and history file. The *Alarm Silence* key can be used to turn off all silenceable NAC outputs following activation by the *Drill* key.

4.1.4 Reset

Pressing and releasing the *Reset* key turns off all control modules and NACs, temporarily turns off resettable power to 4-wire detectors, causes a *RESET IN SYSTEM* message to be displayed on the LCD and sends the same message to the printer and history file. It also performs a lamp test by turning on all LEDs (except the Ground LED), piezo sounder and LCD display segments after the *Reset* key is released. Any alarm or trouble that exists after a reset will resound the system.

4.1.5 Function Keys F1-F4

The four function keys are user programmable. These keys can be programmed to allow rapid disable/enable of various fire panel inputs and outputs during scheduled maintenance. Refer to "Function Keys" on page 72 for instructions on programming. Slide-in labels are provided on page 159.

4.2 LED Indicators

The 11 LED indicators, which are located on the front panel, operate as follows:

Fire Alarm

This red LED flashes when one or more alarms occur. It illuminates steady when the *Acknowledge/Step* or *Alarm Silence* key is pressed. The Fire Alarm LED turns off when the *Reset* key is pressed. The LED will remain off if all alarms have been cleared.

CO Alarm

This red LED flashes when one or more alarms occur. It illuminates steady when the *Acknowledge/Step* or *Alarm Silence* key is pressed. The CO Alarm LED turns off when the *Reset* key is pressed. The LED will remain off if all alarms have been cleared.

AC Power

This is a green LED which illuminates if AC power is applied to the FACP. A loss of AC power will turn off this LED

Supervisory

This is a yellow LED that flashes when one or more supervisory conditions occur, such as a sprinkler valve tamper condition. It illuminates steady when the *Acknowledge/Step* or *Alarm Silence* key is pressed. It turns off when the *Reset* key is pressed and remains off if all supervisory alarms have been cleared.

Trouble

This is a yellow LED that flashes when one or more trouble conditions occur. It stays on steady when the *Acknowledge/Step* or *Alarm Silence* key is pressed. The LED turns off when all trouble conditions are cleared. This LED will also illuminate if the microprocessor watchdog circuit is activated.

Ground

This is a yellow LED that flashes to indicate a ground fault condition (zero impedance from the FACP to ground).

Battery

This is a yellow LED that flashes to indicate a low battery voltage condition.

Disabled

This is a yellow LED that flashes to indicate that a zone, NAC, detector or module has been temporarily disabled in programming by the user.

Maintenance

This is a yellow LED that flashes to indicate that a smoke detector requires cleaning or replacement due to an invalid chamber reading or excessive drift.

Communication

This is a yellow LED that flashes to indicate a communication fault, including loss of phone lines, communication failure with either Central Station, or total communication failure.

Alarm Silenced

This is a yellow LED that turns on after the *Alarm Silence* key is pressed while an alarm condition exists. It turns off when the *Drill* or *Reset* key is pressed.

4.3 Normal Operation

With no alarms or troubles in the system, the display message is *System Normal* along with the current time and date as shown below. To set the time and date, refer to the appropriate section in this manual.

```
┌─────────────────────┐
│   SYSTEM NORMAL      │
│   10:00A 072016      │
└─────────────────────┘
```

The NFW-100X performs the following functions at regular intervals while in Normal mode:

- ✓ Monitors AC input voltage and battery voltage
- ✓ Monitors and reports status of SLC loop, option cards, and control panel
- ✓ Polls all devices on the SLC loop and flashes each device LED while checking for valid replies, alarms, troubles, etc.
- ✓ Refreshes LCD display and updates time
- ✓ Scans control panel keypad for key presses
- ✓ Performs autotest for all SLC devices
- ✓ Tests memory
- ✓ Updates and reads all communications busses

4.4 Trouble Operation

With no alarms in the system, the detection of a trouble will cause the following:

- The piezo to pulse 1 second On and 1 second Off
- The system Trouble LED to flash one second On and one second Off
- The trouble relay to activate
- *TROUBL* with device type, noun/adjective, address and trouble description will appear on the LCD display
- The same message, along with the time and date, is sent to the optional printer and the history buffer.
- Communicate the trouble conditions to the Central Station
- Terminate upload or download communications

Note that specific troubles will initiate additional actions; for example, loss of AC power will turn off the AC Power LED, a ground fault will turn on the Ground LED, etc.

Addressable Smoke Detectors, Monitor Modules and Control Modules

For addressable devices connected to the SLC loop, the following is a typical message that could appear on the LCD display for a device trouble:

```
┌─────────────────────┐
│TROUBL SMOKE (PHOTO) │
│    <ADJ> <NOUN>     │
│              INVREP │
│ 10:00A 010816 1D001 │
└─────────────────────┘
```

The information displayed in the above example provides the following information:

- First line in display:
  - ✓ The type of event; in this example *TROUBL* indicating a device trouble
  - ✓ Device type identifier; in this example, *SMOKE (PHOTO)* indicates a Photoelectric smoke detector. Other device type identifiers which can be displayed include *SMOKE (ION)* for Ionization Detector, *HEAT* for Heat Detector, *CONTROL* for Control Module and *MONITOR* for Monitor Module, *PULL STATION* for a manual pull box, etc. Refer to *"Edit Detector" on page 54*, "Edit Module Screen for Monitor Module" on page 60 and "Edit Module Screen for Control Modules" on page 65 for information on additional device types.
- Second line in display:
  - ✓ <ADJ>; refers to the user programmed adjective descriptor from library list resident in the control panel or custom entry via PC.

✓ <NOUN>; refers to the user programmed noun descriptor from library list resident in the control panel or custom entry via PC.
- Third line in display: *INVREP* indicates an invalid reply from the addressable device. Other possible troubles include:
  – *SHORT* - indicating a shorted circuit on an addressable device
  – *OPEN* - indicating an open circuit on an addressable device
  – *DIRTY1* - maintenance alert indicating that a detector is near but below the allowed alarm limit and is in need of maintenance before the performance is compromised
  – *DIRTY2* - maintenance alert indicating that a detector needs immediate maintenance since it has been within 80% of its alarm threshold for 24 hours
  – *INVREP* - maintenance alert indicating a hardware or communication problem in the detector
  – *TEST F* - indicating a detector has failed the automatic test operation which functionally checks its sensing chamber and electronics
  – *INV ID* - indicating that an incorrect device code (Type ID) has been programmed for an installed device (for example, Photo has been programmed but an Ion detector has been installed)
  – *SW TBL* - indicating a module has failed the testing of its Class A switching relay
  – *BLOCK* - indicating that a beam detector's beam is totally blocked
  – *ALIGN* - indicating that a beam detector is in beam alignment mode
- Fourth line in display:
  ✓ Time; the current time in this example is *10:00A* which represents 10:00 AM
  ✓ Date; the current month, day and year in this example is *01* for January, *08* for the 8th day of the month and *16* for the year 2016
  ✓ Device Address; *1D001* in this example *1* represents SLC Loop, *D* represents a detector and *001* represents device address 001

Pressing the *Acknowledge* or *Alarm Silence* key will cause the pulsing piezo to silence and the system Trouble LED to change from flashing to on steady. This block acknowledgment occurs regardless of the number of troubles, alarms and supervisory events active in the system. When the *Acknowledge* key is pressed and at least one new alarm or trouble exists in the system, the 'acknowledge' message is sent to the printer and history file. If the trouble clears, either before or after the *Acknowledge* key is pressed, the 'clear trouble' message is sent to the printer and history file.

If all troubles clear and there are no supervisory or fire conditions active in the system, the system returns to normal mode operation and the *System Normal* message is shown on the LCD display and sent to the history and printer files. The auto-restore feature will restore cleared troubles even if the troubles were never acknowledged. Note that pressing the *Alarm Silence* key when only troubles exist in the system will have the same effect as pressing the *Acknowledge* key except the Alarm Silenced LED will light.

4.5 Alarm Operation

Alarm operation is similar to trouble operation with the following differences:
- The piezo sounder produces a steady output as opposed to a pulsed output
- The Fire Alarm LED flashes 1 second On and 1 second Off
- The LCD displays *Alarm* along with the device name, type, address, adjective/noun, associated zones and time/date
- Communicate the alarm to the Central Station
- Alarms latch and *are not allowed to clear automatically*
- Alarms activate software zones if so programmed
- Timers for Silence Inhibit, Autosilence, and Trouble Reminder are started
- Alarms activate the general alarm relay and general alarm zone Z000
- The trouble relay is not activated
- Store event in history buffer
- Terminate upload or download communications
- Alarms must be Acknowledged before the FACP can be reset

A typical alarm display would be as illustrated below:

```
ALARM  PULL STATION
   <ADJ> <NOUN>
               Z000
10:00A 010816 1M001
```

Note that the device type, which in this example is *PULL STATION*, can be any other programmable alarm type.

The information displayed in the above example provides the following information:
- First line in display:
  ✓ The type of event; in this example *ALARM* indicating an alarm condition
  ✓ Device type identifier; in this example, *PULL STATION* indicates a manual pull box. Other device type identifiers which can be displayed include *SMOKE (ION)* for Ionization Detector, *HEAT* for Heat Detector, *CONTROL* for Control Module and *MONITOR* for Monitor Module, *PULL STATION* for a manual pull box, etc. Refer to *"Edit Detector" on page 54*, "Edit Module Screen for Monitor Module" on page 60 and "Edit Module Screen for Control Modules" on page 65 for information on additional device types.
- Second line in display:
  ✓ <ADJ>; refers to the user programmed adjective descriptor from library list resident in the control panel or custom entry via PC.
  ✓ <NOUN>; refers to the user programmed noun descriptor from library list resident in the control panel or custom entry via PC.

- Third line in display: *Z000* indicates the zone programmed to this device which, in this example, is general alarm Zone 000. Note that a single device can be programmed to five different zones but only the first zone will be displayed.
- Fourth line in display:
    ✓ Time; the current time in this example is *10:00A* which represents 10:00 AM
    ✓ Date; the current month, day and year in this example is *01* for January, *08* for the 8th day of the month and *16* for the year 2016
    ✓ Device Address; *1M001* in this example *1* represents SLC Loop, *M* represents a module and *001* represents device address 001

4.6 CO Alarm Operation

NOTE: When using carbon monoxide detection the system must be monitored by a Supervising Station, meeting the Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment, NFPA 720.

When a CO alarm operation occurs:

- The piezo sounder produces a steady Temporal 4 output
- The CO Alarm LED flashes 1 second On and 1 second Off
- The LCD displays *CO Alarm* along with the device name, type, address, adjective/noun, associated zones and time/date
- Communicate the CO alarm to the Central Station
- CO alarms latch and *are not allowed to clear automatically*
- CO alarms activate software zones if so programmed
- Timers for Silence Inhibit, Autosilence, and Alarm Reminder are started
- CO alarms activate the relays programmed for CO alarm
- The trouble relay is not activated
- Store event in history buffer
- Terminate upload or download communications
- CO alarms must be Acknowledged before the FACP can be reset

A typical CO alarm display would be as illustrated below:

```
ALARM CAR MONOXIDE
   <ADJ> <NOUN>
               Z002
10:00A 090816 1M001
```

The information displayed in the above example provides the following information:

- First line in display:
    ✓ The type of event; in this example *ALARM* indicating a CO alarm condition
    ✓ Device type identifier; in this example, *CAR MONOXIDE* indicates a CO detector.
- Second line in display:
    ✓ <ADJ>; refers to the user programmed adjective descriptor from library list resident in the control panel or custom entry via PC.
    ✓ <NOUN>; refers to the user programmed noun descriptor from library list resident in the control panel or custom entry via PC.
- Third line in display: *Z002* indicates the zone programmed to this device which, in this example, is general alarm Zone 002. Note that a single device can be programmed to five different zones but only the first zone will be displayed.
- Fourth line in display:
    ✓ Time; the current time in this example is *10:00A* which represents 10:00 AM
    ✓ Date; the current month, day and year in this example is *09* for September, *08* for the 8th day of the month and *16* for the year 2016
    ✓ Device Address; *1M001* in this example *1* represents SLC Loop, *M* represents a module and *001* represents device address 001

4.7 Supervisory Operation

Supervisory operation is similar to alarm operation but with the following differences:

- The piezo sounder pulses ½ second On and ½ second Off
- The Supervisory LED flashes ½ second On and ½ second Off
- The LCD displays the status label *Active Supervisory* along with the device name, type, address, adjective/noun, associated zones, and time/date
- Communicate the supervisory condition to the Central Station
- The supervisory relay is activated
- The alarm relay is not activated
- Silenced alarms are resounded
- Timers are not started
- Store event in history buffer
- Terminate upload or download communications

A typical Supervisory event would be displayed as illustrated in the following:

```
ACTIVE SUPERVISORY
   <ADJ> <NOUN>
                    Z000
10:00A 012116 1M001
```

Note that, like alarms, supervisory signals latch (except when programmed for supervisory autoresettable) and can be assigned to software zones. Supervisory alarms do not cause resound as do other alarm conditions. Open circuits in supervisory wiring are processed by the control panel the same way as other trouble conditions. Refer to "Alarm Operation" on page 108, for a description of the information displayed on the control panel LCD.

4.8 Process Monitor Operation

Process Monitor operation will initiate the following events:

- The piezo sounder pulses ¼ second On and ¼ second Off
- The LCD displays a process monitor message along with the device name, type, address, adjective/noun, associated zones, and time/date
- Communicate the process monitor condition to the Central Station (if the default event code has been changed from 000 to a reportable event code)
- Relays programmed for process monitoring will be activated
- The alarm relay is <u>not</u> activated
- Fire Alarm NACs will not activate
- SLC NACs (control modules) will activate
- Timers are not started
- Store event in history buffer
- Activate appropriate LED on the N-ANN-LED annunciator (required for this application)
- Each N-ANN-LED can support up to 10 zones.

Note that, like supervisories, process monitor signals latch (except when programmed for process monitor autoresettable) and can be assigned to software zones.

4.9 Hazard/Tornado Condition Operation

Hazard/Tornado operation is intended for Manual activation.

Hazard/Tornado Condition operation will initiate the following events:

- The piezo sounder pulses 1/4 second On, 1/4 second Off
- The LCD displays a hazard message along with the device name, type, address, adjective/noun, associated zones, and time/date
- Communicate the hazard condition to the Central Station (if the default event code has been changed from 000 to a reportable event code)
- Relays programmed for hazard will be activated
- The alarm relay is <u>not</u> activated
- Fire Alarm NACs will not activate
- SLC NACs (control modules) will activate
- Timers are not started
- Store event in history buffer
- Activate appropriate LED on the N-ANN-LED annunciator (required for this application)
- Each N-ANN-LED can support up to 10 zones.

Hazard conditions latch. They can be assigned to software zones.

4.10 Medical Alert Condition Operation

Medical alert operation is:

- not intended for nurse call stations (applications) per UL1069.
- not intended for signaling professional medical staff.
- to be used for summoning security guards or other trained personnel within the facility
- intended for Manual activation.

Medical Alert Condition operation will initiate the following events:

- The piezo sounder 1/4 second On, 1/4 second Off
- The LCD displays a medical alert message along with the device name, type, address, adjective/noun, associated zones, and time/date
- Communicate the medical alert condition to the Central Station
- Relays programmed for medical alert will be activated
- The alarm relay is <u>not</u> activated
- Fire Alarm NACs will not activate
- SLC NACs (control modules) will activate

- Timers are not started
- Store event in history buffer
- Activate appropriate LED on the N-ANN-LED annunciator (required for this application)
- Each N-ANN-LED can support up to 10 zones.

Medical alert conditions latch. They can be assigned to software zones.

4.11 Mass Notification Operation

The FACP may be installed with an NFC-50/100 audio system to provide mass notification operation. The FACP must control the NFC-50/100 via the ANN-BUS. Refer to "Automatic Audio Panel Control" on page 47 for details and wiring information.

Some mass notification installations may require that the activation of the audio system results in an override of an active fire notification at the FACP. This is determined by a risk assessment in accordance with the local AHJ. The FACP provides the flexibility to accommodate override or non-override operation. For override operation, FACP NACs and/or other SLC control modules may be deactivated while the mass notification event is active. No other FACP operation is overridden or interrupted. If override operation has been selected, notification for a fire event will resume upon termination of the mass notification event at the audio system.

When mass notification override is enabled, mass notification alarms will result in a mass notification event being sent to the central station. An event code can also be sent indicating which message is playing on the audio system. Message event code transmission must be enabled in programming.

Refer to page 79 for programming mass notification override at the system level.
Refer to page 68 for programming mass notification override for SLC control modules.
Refer to page 78 for programming mass notification override for onboard NACs.
Refer to page 86 for programming message event code transmission to the central station.

4.12 NAC Operation

There are four programmable NACs (Notification Appliance Circuits) resident on the NFW-100X main circuit board. All NACs may be programmed as silenceable or nonsilenceable and may also be programmed for steady or coded operation. Coded operation provides a choice between March Time, Temporal or California coding.

4.13 Programmed Zone Operation

Each addressable detector and monitor module can be assigned to a maximum of five software alarm zones. A general alarm zone Z000 may be listed for output (control) points, but it is not necessary to list Z000 for input points, since this is the default zone for all alarm input devices. Zone Z000 is not activated by supervisory points.

When an input device alarms and is not disabled, it activates all software zones assigned to it. An output device that is not disabled is turned on when any of the software zones to which it is programmed become active. Only alarms, hazards/tornado alerts can turn on any of the four main NACs.

4.14 Disable/Enable Operation

Input points which are disabled do not cause an alarm or any zone activation. Disabled output points are held in the off state. All disabled points are treated as if they were in trouble, with the exception being the status label that will be displayed is *DISABL*.

4.15 Waterflow Circuits Operation

If an alarm exists from a monitor module point that has a waterflow type code and its mapped NAC control module outputs are programmed for nonsilenceable operation, the Alarm Silence key will not function. Also, any output zone activated by a waterflow device will not be silenceable if the Waterflow Silenceable option is set to NO in system programming.

4.16 Detector Functions

Maintenance Alert

Each addressable detector is monitored by the control panel for its maintenance status. If a detector is near but below the allowed alarm limit, a 'maintenance alert' message will automatically be displayed, signaling that the detector is in need of servicing.

Automatic Test Operation

An automatic test of an addressable detector is performed each minute, resulting in a complete SLC loop test in approximately 5 hours (if the loop has the maximum number of devices installed). The detector's sensing chamber and electronics are functionally tested for normal, safe operation. A trouble message is displayed upon failure of this test. A System Reset will clear this trouble.

Type Code Supervision

The FACP monitors addressable hardware device codes at slow intervals. Mismatch of any type code, compared to the system program, will cause a device trouble.

System Alarm Verification

The control panel may be programmed to perform alarm verification to help eliminate the nuisance of false alarms. Alarm verification applies to smoke detectors only.

Smoke Detector Data

Smoke detector data is monitored by the FACP, eliminating the need to test the sensitivity of each detector at its location. A printout of each detector's data can be retrieved from the FACP using an optional printer or Windows® HyperTerminal. Detector sensing ability can decrease with age and should be monitored as part of a system's routine maintenance.

4.17 Time Functions: Real-Time Clock

The NFW-100X includes a crystal-based clock that provides time of day, date and day of week. Time is displayed as 12 or 24 hour time with month/day/year and is stored in RAM. Daylight savings time change-over is programmable and automatic. If both AC and battery are lost, the time must be reset.

4.18 Synchronized NAC Operation

Synchronization is a panel feature that controls the activation of notification appliances in such a way that all devices will turn on and off at exactly the same time. This is particularly critical when activating strobes which must be synchronized to avoid random activation and a potential hazard or confusion. The FACP can be programmed to operate with a variety of manufacturer's devices. NAC synchronization can only be supported properly by the Remote Power Supply Sync Terminal, which follows NAC 1 programming.

Important: When a Notification Appliance Circuit with a mix of audible and visual devices is programmed for silenceable and the synchronization feature is selected, only the audible devices will be turned off if the Silence key is pressed. The visual devices (strobes, etc.) will continue to operate.

4.19 Coded Operation

The NAC circuits resident on the control panel main circuit board can be programmed for coded operation. The available pulse rates which can be programmed for coded operation are as follows:

- Continuous: Steady output with no pulsing
- March Time: Pulses at 120 ppm (pulses per minute)
- Temporal 3 Code: Pulses at 1/2 second On, 1/2 second Off, 1/2 second On, 1/2 second Off, 1/2 second On, 1-1/2 second Off
- Temporal 4 Code: Pulses at 1/2 second On, 1/2 second Off, 1/2 second On, 1/2 second Off, 1/2 second On, 1/2 second On, 1/2 second Off, 1-1/2 second Off
- California Code: 10 seconds On, 5 seconds Off
- Two-Stage   Pulses at 20 ppm (pulses per minute) for 3 or 5 minutes (depending on programming) and then changes to Temporal

4.20 Presignal

Presignal option programs an initiating device to delay the activation of NACs and/or control modules while allowing visual verification by a person. Once a detector or monitor module triggers an alarm, the onboard piezo sounds immediately, but the NACs are not activated for a user programmed time duration of up to three minutes. Note that the alarm relay and communicator will respond to the initial alarm immediately. In addition, Zone 098 will activate. This zone can be programmed to a control module which may be used to activate a sounder or indicator which the installer designates as a Presignal indication. *Do not assign Zone 098 to a Notification Appliance Circuit when using this zone to indicate a Pre-signal condition.*

After the programmed delay, the NACs will activate if the source of the alarm is not cleared. Note that if a second alarm occurs during the programmed time delay, the alarm will be processed immediately, causing activation of the appropriate output zones. The events which occur upon Presignal activation are as follows:

- ✓ onboard piezo sounds immediately
- ✓ control panel LCD display will indicate a presignal event and the active point
- ✓ control points programmed to Zone 098 will activate
- ✓ annunciators (if enabled) will sound the local piezo, and pulse the alarm LED and zone LED
- ✓ outputs (NACs and control modules) of associated zones will be inhibited from activating for a user programmed time delay of up to three minutes
- ✓ second alarm occurring anytime during the time delay will cause immediate activation of all associated outputs

Presignal does not affect monitor modules programmed as waterflow, supervisory, process monitoring or remote switches. *Presignal operation requires the approval of the local Authority Having Jurisdiction.*

4.21 Positive Alarm Sequence

PAS (Positive Alarm Sequence) option will program a smoke detector to delay panel activation (including alarm relay and communicator) for a period of 15 seconds. Zone 097, however, will activate immediately and may be used to connect a signaling device to indicate PAS activation. *Do not assign Zone 097 to a Notification Appliance Circuit when using this zone to indicate a PAS condition.*

When a detector triggers an alarm, the onboard piezo sounds immediately, but the NACs are prevented from activating for 15 seconds. This inhibit time is factory set and cannot be changed. Pressing the Alarm Silence or Acknowledge/Step key during the 15 second inhibit time will silence the piezo sounder and start a timer which prevents activation of NACs for an additional time duration which can be user programmed for up to three minutes. After the programmed delay, the NACs will activate if the source of the alarm is not cleared. Note that if a second alarm occurs during either time delay, the alarm will be processed immediately, causing activation of the appropriate output zones. The events which occur upon PAS activation are as follows:

- ✓ onboard piezo sounds immediately

✓ control panel LCD display will indicate a presignal event and the active point

✓ control points programmed to Zone 097 will activate

✓ outputs (NACs and control modules) of associated zones will be inhibited from activating for a factory set duration of 15 seconds

✓ pressing the Alarm Silence or Acknowledge/Step key will start a timer which inhibits output activation for additional time delay of up to three minutes which is user programmable

✓ second alarm occurring anytime during either time delay will cause immediate activation of all associated outputs

PAS operation requires the approval of the local Authority Having Jurisdiction.

Note that the *PAS BYPASS* monitor type code, when activated, will inhibit the PAS capability until the *PAS BYPASS* monitor is deactivated. While PAS is inhibited, signaling devices will immediately place the control panel into alarm. This feature may be employed by wiring a normally open device, such as a switch, to a monitor module which has been programmed for *PAS BYPASS*.

4.22 Special System Timers

4.22.1 Silence Inhibit Timer

This option, if selected, prevents the *Alarm Silence* key from functioning for 5 minutes following an alarm. A new alarm during the initial 5 minute period will <u>not</u> cause the timer to restart with a new 5 minutes. *Silence Inhibit operation requires the approval of the local Authority Having Jurisdiction.*

4.22.2 Autosilence Timer

If Autosilence is selected, the notification appliances, programmed as silenceable, will automatically be silenced after a programmable duration of 5 to 30 minutes. Pressing the *Drill* key will restart the timer. *Autosilence operation requires the approval of the local Authority Having Jurisdiction.*

4.22.3 Trouble Reminder

If selected, this feature causes a reminding 'beep' every 15 seconds during an alarm (after the *Alarm Silence* key is pressed) and every two minutes during a trouble condition (after the *Acknowledge/Step* or *Alarm Silence* key is pressed). The 'beeps' from the onboard piezo sounder will occur until the alarm or fault is cleared.

Note that if the trouble is not cleared within 24 hours, the piezo will resound, indicating that the trouble condition still exists.

4.22.4 Waterflow Retard Timer

If selected, this option will delay the activation of a waterflow type alarm for a programmable time duration from 1 to 90 seconds. This delay is in addition to any time delay inherent in the waterflow device. *This feature requires the approval of the local Authority Having Jurisdiction.*

4.22.5 Alarm Verification (None or One Minute)

If alarm verification is selected, an addressable smoke detector's alarm is ignored for a retard time of 13 seconds and the detector's alarm condition is automatically reset. There will be no alarm indication at the FACP during the Retard period. A confirmation period of 60 seconds follows, during which a subsequent alarm from the same detector will cause the panel to immediately activate the appropriate outputs and indicate the alarm condition at the FACP. If a different detector alarms any time during the first detector's verification period, the panel will immediately activate all appropriate outputs and indicate the alarm condition at the FACP. If no additional detector alarms occur within 73 seconds of the first alarm (13 second retard plus 60 second confirmation), the timer resets and the panel is ready to verify any new detector alarms which may occur. The following is a graphic representation of Alarm Verification.
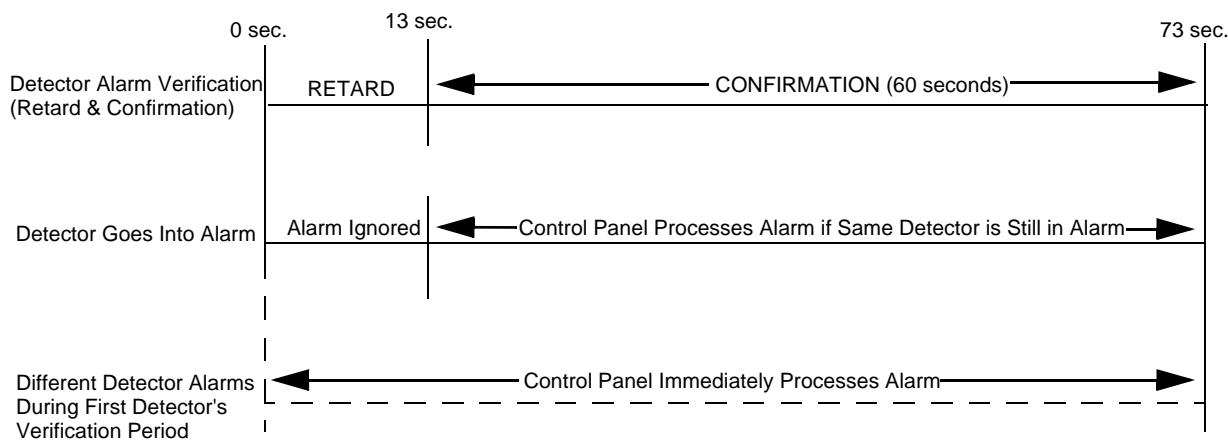
NOTE: Alarm Verification is available only for addressable smoke detectors, not conventional smoke detectors.

4.22.6 Control Module Delay Timer

The control module delay feature, if enabled, will delay activation of a control module after a programmed time of 1-180 seconds after being triggered by an alarm condition. *This feature requires the approval of the local Authority Having Jurisdiction.* See the table on page 49 for allowable settings.

4.23 Walktest

Walktest is a feature which allows one person to test the fire alarm system. An audible walktest will momentarily sound the Notification Appliance Circuits in the building and store the walktest information in a file at the panel. A silent walktest will not sound the NACs but will store the walktest information in a file which can be viewed at the panel. Disabled NAC devices will not activate during walktest.

Alarm/Shorted Condition

When in audible Walktest, the panel responds to each new alarm and activates its programmed control outputs for four seconds, if those outputs have been programmed for silenceable activation. It also stores each alarm in the walktest history file which can be sent to an optional printer. The stored display will be the same as if the device actually activated except the colon (**:**) in the time stamp is replaced with an asterisk (*****).

Note that if the system under test includes one or more enabled monitor modules, the following may apply:

> If the monitor module is used for a supervised, 2-wire smoke zone, alarming any monitor module in the system will result in the activation of programmed control outputs for an additional eight seconds or less. This is caused by the temporary removal of 24 VDC resettable power from the monitor module. The monitor module reports this loss of power as an open condition in addition to the alarm condition.

Open Condition

Addressable devices are monitored for fault conditions during Walktest mode. When a new trouble condition occurs, the FACP will activate all NACs and control modules programmed for Walktest and mapped to the faulty device, then shut them off after eight seconds.

While in Walktest, the trouble relay is activated and the system Trouble LED flashes (as in all of the Program and status change operations). The alarm relay is not activated.

4.24 Read Status

Read Status functions do not require a password. The control panel will continue to provide fire protection while in Read Status mode. This mode can be entered while the control panel is in alarm or trouble. If a new alarm or trouble occurs during these functions, the Read Status is exited to prevent confusion.

Read Status Entry

When the operator presses the control panel **ENTER** key, the LCD will display the following:

```
1=READ STATUS MODE    ⇩
2=PROGRAMMING MODE
3=FSTOOL UP/DOWNLOAD
4=USB UP/DOWNLOAD
```

Pressing *1*, while this screen is being displayed, will cause the control panel to enter the Read Status mode which allows the user to view and print the programmed features and status of the control panel.

The following screens will be displayed:

```
     READ STATUS    ⇩
1=SYSTEM POINT
2=ZONES
```
Read Status Screen #1

```
     READ STATUS    ⇕
1=TROUBLE REMINDER
2=TIMERS
3=NACS
```
Read Status Screen #2

```
     READ STATUS    ⇕
1=RELAYS
2=PROGRAM CHECK
3=HISTORY
```
Read Status Screen #3

```
     READ STATUS    ⇕
1=ANNUNCIATORS
2=COMMUNICATOR
```
Read Status Screen #4

```
     READ STATUS    ⇕
1=FUTURE USE
2=PRINT
3=TIME/DATE
```
Read Status Screen #5

```
     READ STATUS    ⇧
CHARGER ENAB    YES
4XTM SPV ENAB    NO
REM SYNC ENAB   YES
```
Read Status Screen #6

4.24.1 System Point

```
   READ STATUS
1=SYSTEM POINT
2=ZONES
```
Read Status Screen #1

Pressing *1* while viewing Read Status Screen #1 will cause the following screen to be displayed:

```
 READ SYSTEM POINT
    SELECT TYPE
1=DETECTOR
2=MODULE
```
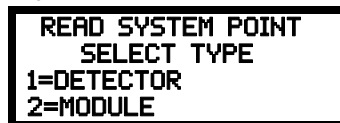
The operator selects the type of device which is to be viewed by pressing *1* for Detector or *2* for Module. If *1* is pressed, the display will change to the following screen:

```
┌─────────────────────────┐
│   READ SYSTEM POINT     │
│   ENTER DETECTOR#       │
│   ***                   │
│                         │
└─────────────────────────┘
```

Entering the three digit detector address will cause the control panel to display the current status of the selected device. For example, if a detector with address *001* on the SLC loop is entered, a display similar to the following will appear:

```
┌─────────────────────────┐
│ NORMAL SMOKE(PHOTO)     │
│     NORTH CLASSROOM     │
│                  Z005   │
│         V    1D001      │
└─────────────────────────┘
```

The information in the preceding display includes:

• *NORMAL* - the present status (could also be ALARM, TROUBL, DISABL, etc.)
• *SMOKE (PHOTO)* - the device type which is a photoelectric smoke detector (could also be ION for ionization smoke detector)
• *NORTH CLASSROOM* - the Adjective/Noun label for this device
• *Z005* - the first of five possible assigned software zones
• *1D001* - *1* = SLC Loop, *D* = Detector, *001* = Address 001
• V - Alarm Verification Enabled (V = Yes, * = No)
• S - Silenceable for control modules (S = Yes, * = No)
• W - Walktestable for control and monitor modules (W = Yes, * = No)

Pressing the down arrow key, while viewing the screen shown above, will allow the operator to view additional programming information about the selected device, such as:

• Enable/Disable Status
• Device Type
• Alarm Verification On/Off (for detectors)
• Walktest Yes/No
• PAS (Positive Alarm Sequence) Yes/No (for detectors only)
• Pre-Signal Yes/No (for detectors and monitor modules)
• Zone Assignments (five maximum)
• Chamber Value
• Adjective/Noun descriptor
• Silenceable Yes/No (for control modules)
• MNS Override Enabled/Disabled (for control modules)
• Wireless Yes/No (for detectors only)
• Sounder Base Yes/No (for detectors only)
• Sounder Base Values and Zone Assignments (for detectors only)

4.24.2 Zones

```
┌─────────────────────────┐
│   READ STATUS           │
│   1=SYSTEM POINT        │
│   2=ZONES               │
│                         │
└─────────────────────────┘
```
Read Status Screen #1

Pressing *2* while viewing Read Status Screen #1 will cause the following screens to be displayed:

```
┌─────────────────────────┐
│      ZONES         ⇩    │
│ 1=ZONES INSTALLED       │
│ 2=ZONES ENABLED         │
│ 3=ZONES DISABLED        │
└─────────────────────────┘
```
Zones Screen #1

```
┌─────────────────────────┐
│      ZONES         ⇧    │
│ 1=SPECIAL PURPOSE       │
│ 2=ZONE TYPE             │
│ 3=ZONE MESSAGE          │
└─────────────────────────┘
```
Zones Screen #2

From the preceding screens, the control panel operator can view:

• *Zones Installed* - all software zones programmed into the system (99 maximum)
• *Zones Enabled* - all software zones that are enabled
• *Zones Disabled* - all software zones that have been disabled
• *Special Purpose* - on or off programming for Special Purpose Zones 97 reserved for PAS, 98 reserved for Pre-signal, 99 reserved for Two Stage, and 96 for Local Alarm
• *Zone Type* - the Type assigned to each installed zone (default is Alarm)
• *Zone Message* - the Message assigned to each installed zone

4.24.3 Trouble Reminder
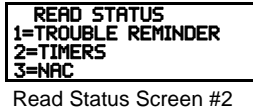
```
   READ STATUS
1=TROUBLE REMINDER
2=TIMERS
3=NAC
```
Read Status Screen #2

Pressing *1* while viewing Read Status Screen #2 will display the following screen:

```
    TROUBLE REMINDER
TROUBLE REM     24HR
```

The screen indicates whether the Trouble Reminder feature is set to sound every 4 or 24 hours.

4.24.4 Timers

Pressing *2* while viewing Read Status Screen #2 will cause the following Timer screens to be displayed:

```
       TIMERS
PAS DELAY       000
PRE SIGNAL      000
WATERFLOW       000
```

```
       TIMERS
AC LOSS DELAY     2
CON MOD DLY     000
```

These screens will indicate the delay time, in seconds, for each of the first three and last possible delay options. The AC Loss Delay time is displayed in hours.

4.24.5 NACs

Each NAC can be programmed individually with unique settings with the exception of Canadian Mode. When the Canadian Option is selected in programming (see "Canadian Option" on page 79), all NAC settings are changed to that of NAC 1. While in Canadian Mode, if any NAC is setting is changed, all other NACs will get those same settings. Pressing 3 while viewing Read Status Screen #2 will display the following screen:

```
          NAC
1=NAC 1       3=NAC 3
2=NAC 2       4=NAC 4
```
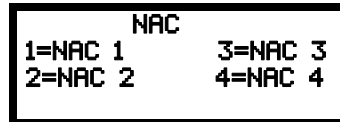
The operator can press *1* to view the programmed options for NAC 1, *2* to view the programmed options for NAC 2, *3* to view the programmed options for NAC 3, or *4* to view the programmed options for NAC 4. The resulting screens will display the following information:

- Enable/Disable Status
- Circuit Type (Bell, Strobe, etc.)
- Silenceable/Nonsilenceable
- Auto Silence Enable/Disable and time delay (in minutes)
- Coding Selection (Temporal, Steady, etc.)
- Zone Assignments
- Silence Inhibit Enabled/Disabled
- Synchronization Type (System Sensor, Wheelock, or Gentex)
- MNS Override Enabled/Disabled
- MNS Active Yes/No

4.24.6 Relays
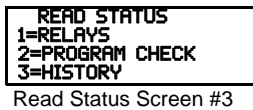
```
   READ STATUS
1=RELAYS
2=PROGRAM CHECK
3=HISTORY
```
Read Status Screen #3

Pressing *1* while viewing Read Status Screen #3 will display the following screen:

```
         RELAY
1=RELAY 1
2=RELAY 2
3=RELAY 3
```

The operator can view the programmed option for each relay by pressing the corresponding number key.

4.24.7 Program Check

Pressing *2* while viewing Read Status Screen #3 will cause a screen similar to the following to be displayed:
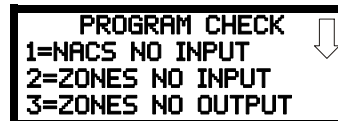
```
   PROGRAM CHECK    ⇩
1=NACS NO INPUT
2=ZONES NO INPUT
3=ZONES NO OUTPUT
```
Program Check Screen #1

Pressing *1* while viewing Program Check screen #1 will display a screen which will indicate if any input zones have not been programmed to one of the Notification Appliance Circuits. Use the up and down arrow keys to view all NACs.

Pressing *2* while viewing the Program Check screen #1 will display a screen which will indicate if any output zones have not been programmed to at least one input zone. Use the up and down arrow keys to view all zones.

Pressing *3* while viewing the Program Check screen #1 will display a screen which will indicate if any input zones have not been programmed to at least one output zone. Use the up and down arrow keys to view all zones.

4.24.8 History

Pressing *3* while viewing Read Status Screen #3 will display the following screen:

```
          HISTORY
1=VIEW ALL
2=VIEW ALARMS
3=VIEW OTHER EVENTS
```

The operator can view all events which have been stored in the history file, only alarms or other events, such as troubles or supervisories, by pressing the corresponding number key.

4.24.9 Annunciators
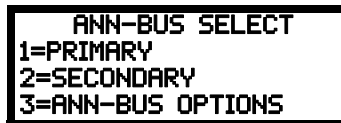
```
    READ STATUS
1=ANNUNCIATORS
2=COMMUNICATOR
```
Read Status Screen #4

Pressing *1* while viewing Read Status Screen #4 will display the following screens:

```
     ANN-BUS SELECT
1=PRIMARY
2=SECONDARY
3=ANN-BUS OPTIONS
```
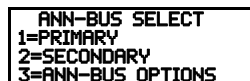**Annunciator Screen**

Pressing *1* or *2* for *ANN-BUS* while viewing the Annunciator Screen allows the operator to view the settings and devices for each ANN-BUS. Press *1* for the *Primary ANN-BUS* and *2* for the *Secondary ANN-BUS*.

```
         ANN-BUS
 ENABLED         NO
2=MODULES INSTALLED
 CLASS A         NO
```
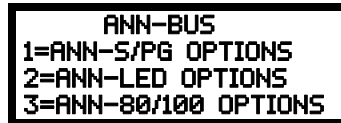**ANN-BUS Screen #1**

The ANN-BUS Screen #1 indicates if the ANN-BUS has been enabled *Yes* or disabled *No*.

Pressing *2* for *Modules Installed* while viewing ANN-BUS Screen #1 will display screens for ANN-BUS Addresses 1 -8 and the devices installed at each address. A subscreen will display the options that have been programmed for each device.

```
    ANN-BUS SELECT
1=PRIMARY
2=SECONDARY
3=ANN-BUS OPTIONS
```
Annunciator Screen

Pressing *3* for *ANN-BUS Options* while viewing the Annunciator Screen allows the operator to view the settings for any N-ANN-S/PG, N-ANN-LED, N-ANN-80, and N-ANN-100 installed in the system.

```
         ANN-BUS
1=ANN-S/PG OPTIONS
2=ANN-LED OPTIONS
3=ANN-80/100 OPTIONS
```
ANN-BUS Screen #2

Pressing *1* for *ANN-S/PG Options* while viewing ANN-BUS Screen #2 will display the options selected for the installed N-ANN-S/PG annunciators.

Pressing *2* for *ANN-LED Options* while viewing ANN-BUS Screen #2 will display the options selected for the installed N-ANN-LED annunciators.

Pressing *3* for *ANN-80/100 Options* while viewing ANN-BUS Screen #2 will display the options selected for the installed N-ANN-80 or N-ANN-100 annunciators.

4.24.10 Communicator

```
    READ STATUS
1=ANNUNCIATORS
2=COMMUNICATOR
```
Read Status Screen #4

Pressing *2* while viewing Read Status Screen #4 will display the following screens:

```
    COMMUNICATOR     ⇩
INSTALLED      YES
2=POTS SETTINGS
3=IP SETTINGS
```
Communicator Screen #1

```
    COMMUNICATOR     ⇕
1=PRI COMM PATH
2=SEC COMM PATH
TBL REPORT LIMIT   0
```
Communicator Screen #2

```
    COMMUNICATOR     ⇕
1=EVENT CODES
TEST TIME INT     24
24HR TEST TIME  0100
```
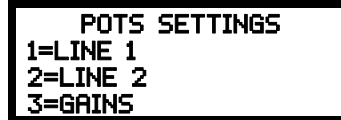**Communicator Screen #3**

```
    COMMUNICATOR     ⇧
REPORT STYLE   POINT
```
Communicator Screen #4

The Communicator Screen #1 indicates if an IPOTS-COM has been installed *Yes* or *No*.

Pressing *2* for *POTS Settings* while viewing Communicator Screen #1 will display settings for the telephone portion of the Communicator.

```
┌─────────────────────────┐
│      POTS SETTINGS      │
│ 1=LINE 1                │
│ 2=LINE 2                │
│ 3=GAINS                 │
└─────────────────────────┘
```

Pressing *1* or *2* will display whether each phone line is enabled *Yes* or disabled *No*, whether the phone type is *touchtone* or *rotary*, and whether the phone line is being supervised *Yes* or *No*.

Pressing *3* will display the phone lines' Gains setting. The value for the Dialing Gains and Reporting Gains is shown as *High, Normal,* or *Low*.

```
┌─────────────────────────┐
│     READ STATUS         │
│ INSTALLED        YES    │
│ 2=POTS SETTINGS         │
│ 3=IP SETTINGS           │
└─────────────────────────┘
    Communicator Screen #1
```

Pressing *3* for *IP Settings* while viewing Communicator Screen #1 will display settings for the Ethernet portion of the Communicator. The screen will indicate if DHCP has been enabled *Yes* or disabled *No*. If the DHCP has not been enabled, the Static Settings will be displayed.

```
┌─────────────────────────┐
│      COMMUNICATOR       │
│ 1=PRI COMM PATH         │
│ 2=SEC COMM PATH         │
│ TBL REPORT LIMIT    0   │
└─────────────────────────┘
    Communicator Screen #2
```

Communicator Screen #2 allows the programmer to press *1* to view the *Primary Communication Path* settings or *2* to view the *Secondary (backup) Communication Path* settings for the Communicator and indicates the Call Limit for Communicator trouble calls within a 24 hour period.

Pressing *1* while viewing Communicator screen #2 will cause the following screen to be displayed:

```
┌─────────────────────────┐
│      COMMUNICATOR       │
│ 1=POTS                  │
│ 2=ETHERNET              │
│ 3=CELLULAR              │
└─────────────────────────┘
```

Pressing 1 for *POTS* indicates whether the receiver has been enabled or disabled. It also provides information on the receiver such as:

• Account Code
• Phone Number Prefix
• Phone Number
• Communication Format

Pressing *2* for *Ethernet* indicates whether the receiver has been enabled or disabled. It also provides information on the receiver such as CS account info.

Pressing *3* for *Cellular* indicates whether the receiver has been enabled or disabled. It also provides information on the receiver such as the CS account.

```
┌─────────────────────────┐
│      COMMUNICATOR       │
│ 1=EVENT CODES           │
│ TEST TIME INT     24    │
│ 24HR TEST TIME   0100   │
└─────────────────────────┘
    Communicator Screen #3
```

Communicator Screen #3 allows the user to view the Event Codes for the chosen communication format as well as the Test Time Interval and 24 Hour Test Time.

```
┌─────────────────────────┐
│      COMMUNICATOR       │
│ REPORT STYLE   POINT    │
│                         │
│                         │
└─────────────────────────┘
    Communicator Screen #4
```

Communicator Screen #4 allows the user to view whether the reporting style is by *Point* or *Zone*.

4.24.11 Print

```
┌─────────────────────────┐
│     READ STATUS         │
│ 1=FUTURE USE            │
│ 2=PRINT                 │
│ 3=TIME/DATE             │
└─────────────────────────┘
    Read Status Screen #5
```

To print program data or control panel status, press *2* while viewing Read Status Screen #5. The following screens will be displayed:

```
┌─────────────────────────┐          ┌─────────────────────────┐
│      PRINT        ⇩     │          │      PRINT        ⇧     │
│ 1=HISTORY               │          │ 1=DETECTOR DATA         │
│ 2=WALKTEST LOG          │          │ 2=COMM SETTINGS         │
│ 3=WALKTEST SUMMARY      │          │ 3=EXIT PRINTING         │
└─────────────────────────┘          └─────────────────────────┘
      Print Screen #1                        Print Screen #2
```

Pressing *1* while viewing Print Screen #1 allows the user to print the History file which will detail all of the system activities since the file was last cleared from memory.

Pressing *2* while viewing Print Screen #1 allows the user to print the Walktest log which will detail all of the system activations during walktest since the log was last cleared.

Pressing 3 while viewing Print Screen #1 allows the user to print the Walktest summary which will list the total of each type of input activation.

Pressing *1* while viewing Print Screen #2 allows the user to print the detector data for each addressable smoke detector connected to the system. A printout, similar to the following example, will be generated if an optional printer is connected to the FACP.

DEVICE #	DEVICE TYPE	% DRIFT COMP	CHAMBER	TIME/DATE
1D001	SMOKE (PHOTO)	20	1281	12:01 AM 01-08-2016
1D002	SMOKE (PHOTO)	20	1281	12:01 AM 01-08-2016
1D003	SMOKE (PHOTO)	21	1259	12:01 AM 01-08-2016
1D004	SMOKE (PHOTO)	20	1309	12:02 AM 01-08-2016
1D005	SMOKE (PHOTO)	21	1281	12:02 AM 01-08-2016
1D006	SMOKE (PHOTO)	20	1322	12:02 AM 01-08-2016
1D007	SMOKE (PHOTO)	20	1280	12:02 AM 01-08-2016
1D008	SMOKE (PHOTO)	20	1215	12:02 AM 01-08-2016
1D009	SMOKE (PHOTO)	20	1310	12:02 AM 01-08-2016

Chamber Value

The Chamber value should be within the indicated range for the following smoke detectors:

* NP-100(R), NP-200(R), FSP-851(T/R), FSP-951(T/R), ND-100(R), and FSD-751(R)PL Addressable Photoelectric Smoke Detectors: **405 - 2100** (obscuration of 1.00%/ft to 3.66%/ft.)
* FSI-851 and NI-100 Addressable Ionization Smoke Detectors: **750 - 2100** (obscuration of 0.50%/ft. to 1.44%/ft.)

If the addressable smoke detector's Chamber reading is not within the acceptable range, clean the detector and check the Chamber value again. If the reading is still not within the acceptable range, immediately replace the detector.

Drift Compensation

Drift compensation uses software algorithms that identify and compensate for long-term changes in the data readings from each addressable smoke detector. These long-term changes in detector data readings are typically caused by dirt and dust accumulation inside the smoke chamber. Drift compensation performs the following functions:

* Samples photoelectric smoke detectors every 6 seconds and ionization smoke detectors every 3 seconds
* Allows a smoke detector to retain its original ability to detect actual smoke and resist false alarms, even as dirt and dust accumulate
* Reduces maintenance requirements by allowing the control panel to automatically perform the periodic sensitivity measurements required by NFPA Standard 72

The FACP software also provides filters to remove transient noise signals, usually caused by electrical interference.

Maintenance Alert

The software determines when the drift compensation for a detector reaches an unacceptable level that can compromise detector performance. When a detector reaches an unacceptable level, the control panel indicates a maintenance alert. Table 4.1 summarizes the three levels of maintenance alert:

Maintenance Level:	FACP Status Displays:	Indicates:
Low Chamber Value	`INVREP`	A hardware problem in the detector
Maintenance Alert	`DIRTY1`	Dust accumulation that is near but below the allowed limit. *DIRTY 1* indicates the need for maintenance before the performance of the detector is compromised
Maintenance Urgent	`DIRTY2`	Dust accumulation above the allowed limit.

Table 4.1 Maintenance Alert Levels

Figure 4.1 illustrates a graphic representation of the maintenance levels:
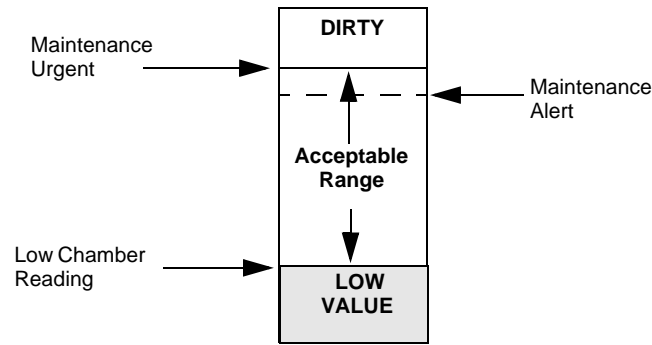

Figure 4.1 Diagram of Maintenance Levels

```
        PRINT
1=DETECTOR DATA
2=COMM SETTINGS
3=EXIT PRINTING
```
Print Screen #2

Pressing *2* while viewing Print Screen #2 allows the user to print the Communicator's settings. Refer to "Communicator" on page 81 for additional information on the display.

Pressing *3* while viewing Print Screen #2 exits the user from the print menu.

4.24.12 Time-Date

```
   READ STATUS
1=FUTURE USE
2=PRINT
3=TIME/DATE
```
Read Status Screen #5

The operator can view the daylight savings time and the month and week when daylight savings time will begin and end. Pressing *2* while viewing Read Status Screen #5 will display the following screens:

```
 DAYLIGHT SAVINGS  ⬇
ENABLED       YES
START MONTH   MAR
START WEEK   WEEK-2
```

```
 DAYLIGHT SAVINGS  ⬆
END MONTH     NOV
END WEEK     WEEK-1
```

4.24.13 Battery Charger

```
   READ STATUS
CHARGER ENAB    YES
4XTM SPV ENAB    NO
REM SYNC ENAB   YES
```
Read Status Screen #6

Read Status Screen #6 indicates whether the onboard battery charger is enabled or disabled.

4.24.14 4XTM Supervision

Read Status Screen #6 indicates whether 4XTMF Supervision is enabled or disabled.

4.24.15 Remote Sync

Read Status Screen #6 indicates whether remote synchronization is enabled or disabled.

NFW-100X Series Fire Alarm Control Panel
Operating Instructions

NORMAL - Only *AC POWER* is illuminated green. All other indicators are off. LCD display will read SYSTEM ALL NORMAL.

PANEL KEY - The key to open the panel can be found at the following location:

_____

WHEN AUDIBLE DEVICES ARE SOUNDING -

FOR AN ALARM

1. Evacuate the protected area

2. Notify the monitoring service and/or the Fire Department immediately. Tell them briefly what happened and what your current status is.

   Phones: _____ _____

   Fire Department   Monitoring Service

3. If the Fire Department is responding, be prepared to provide directions to arriving firefighters.

FOR TROUBLE, SUPERVISORY, AND EMERGENCY ALARMS

1. Notify the monitoring service and/or applicable first responders if this panel is connected to either one, and tell them what is happening.

2. Silence audible devices by unlocking and opening the panel and pressing the ACKNOWLEDGE/STEP button. The applicable indicator will remain illuminated. Contact authorized service personnel immediately! (See Below).

WARNING!
DO NOT ALLOW TROUBLE CONDITIONS TO REMAIN LOGGED IN THE SYSTEM. THE PROTECTION THE SYSTEM OFFERS HAS BEEN COMPROMISED OR ELIMINATED, WHEN A TROUBLE CONDITION EXISTS.

To return to normal after an alarm
1. Do not enter the protected area until safe to do so.
2. Clear all initiating devices. Smoke detectors will not reset if there is still smoke in the area.
3. Reset the control panel (PRESS the RESET button).

Power failure or brownout
If AC power drops too low or fails, *AC POWER* indicator will extinguish, the system *TROUBLE* indicator will turn on yellow, and the panel buzzer and any other audible trouble devices will sound. Contact authorized service personnel immediately. See below.

Manual activation (Fire Drill or otherwise)
Notification Appliance Circuits (NACs) can be activated by pressing and holding the DRILL button for at least two seconds.
> *NOTE*: You may want to disconnect the municipal box by sliding the DISCONNECT switch, located on the 4XTM module, to its disconnect position (to the right). If a DACT is connected, notify the monitoring service before conducting any fire drills or tests.

Alarm Silencing
Notification Appliance Circuits may be silenced by pressing the ALARM SILENCE button. *ALARM SILENCED* will turn on yellow. Subsequent alarms will reactivate circuits. Press the RESET button to clear the "silenced" condition.
> *NOTE:* Notification Appliance Circuits may be programmed as nonsilenceable. Also, Signal Silence Inhibit, if enabled, will prevent silencing of NACs for five minutes after an alarm (see manual).

To test the indicators, LCD display and piezo
Press and release the RESET button and check all indicators/LEDs. Every indicator/LED should be on, LCD shows all pixels on, piezo sounder beeps.

For more information, refer to the NFW-100X Series Manual, Document #LS10131-001NF-E. It is kept in the following location:

_____

THIS SHEET SHALL BE FRAMED ADJACENT TO THE CONTROL PANEL

(N) NOTIFIER®
by Honeywell

In the event of trouble, contact the
local Notifier Service Representative

Name: _____

Company: _____

Address: _____

Telephone Number: _____