NFS-320

Intelligent Addressable Fire Alarm System

Intelligent Fire Alarm Control Panels

General

The NFS-320 intelligent Fire Alarm Control Panel is part of the ONYX® Series of Fire Alarm Controls from NOTIFIER.

As a stand-alone small-to-medium system, or as a large network, the ONYX Series of products meets virtually every application requirement.

Designed with modularity and for ease of system planning, the NFS-320 can be configured with just a few devices for small building applications, or for a large campus or high-rise application. Simply add additional peripheral equipment to suit the application.

NOTE: *Unless called out with a version-specific "R" or "E" at the end of the part number, "NFS-320" refers to models NFS-320, NFS-320R, and NFS-320E; similarly, "CPU-320" refers to models CPU-320, and CPU-320E.*

NFS-320

Features

- **Listed to UL Standard 864, 9th edition.**
- One isolated intelligent Signaling Line Circuit (SLC) Style 4, 6 or 7.
- Up to 159 detectors (any mix of ion, photo, thermal, or multi-sensor) and 159 modules (Addressable pull stations, normally open contact devices, two-wire smoke, notification, or relay). 318 devices maximum.
- Standard 80-character display.
- Network option — 103 nodes supported (AFP-200, AFP-300/400, NFS-320, NFS-640, NFS2-640, AFP1010, AM2020, NFS-3030, NFS2-3030, NCA/NCA-2 Network Annunciator, DVC-EM, NCS Network Control Station, or ONYXWorks™ Network Control Station) using wire or fiber-optic connections.
- 6.0 amp power supply with four Class A/B built-in Notification Appliance Circuits (NAC). Selectable System Sensor, Wheelock, or Gentex strobe synchronization.
- Built-in Alarm, Trouble, Security, and Supervisory relays.
- VeriFire® Tools online or offline programming utility. Upload/Download, save, store, check, compare, and simulate panel databases. Upgrade panel firmware.
- Autoprogramming and Walk Test reports.
- Optional universal 318-point DACT.
- 80-character remote annunciators (up to 32).
- EIA-485 annunciators, including custom graphics.
- Printer interface (80-column and 40-column printers).
- History file with 800-event capacity in nonvolatile memory, plus separate 200-event alarm-only file.
- Alarm Verification selection per point, with tally.
- Autoprogramming and Walk Test reports.
- Presignal/Positive Alarm Sequence (PAS).
- Silence inhibit and Auto Silence timer options.
- March time / temporal / California two-stage coding / strobe synchronization.
- Field-programmable on panel or on PC, with VeriFire Tools program check, compare, simulate.
- Full QWERTY keypad.
- Battery charger supports 18 – 200 amp hour batteries
- Non-alarm points for lower priority functions.

- Remote ACK/Signal Silence/System Reset/Drill via monitor modules.
- Automatic time control functions, with holiday exceptions.
- Surface Mount Technology (SMT) electronics.
- Extensive, built-in transient protection.
- Powerful Boolean logic equations.

FLASHSCAN® INTELLIGENT FEATURES:

- Poll 318 devices in less than two seconds.
- Activate up to 159 outputs in less than five seconds.
- Multicolor LEDs blink device address during Walk Test.
- Fully digital, high-precision protocol (U.S. Patent 5,539,389).
- Manual sensitivity adjustment — nine levels.
- Pre-alarm ONYX intelligent sensing — nine levels.
- Day/Night automatic sensitivity adjustment.
- Sensitivity windows:
  - **Ion –** 0.5 to 2.5%/foot obscuration.
  - **Photo –** 0.5 to 2.35%/foot obscuration.
  - **Laser (VIEW®) –** 0.02 to 2.0%/foot obscuration.
  - **Acclimate Plus™ –** 0.5 to 4.0%/foot obscuration.
  - **HARSH™ –** 0.5 to 2.35%/foot obscuration.
  - **IntelliQuad –** 1.0 to 4.0%/foot obscuration.
- Drift compensation (U.S. Patent 5,764,142).
- Degraded mode — in the unlikely event that the CPU-320 microprocessor fails, FlashScan detectors revert to degraded operation and can activate the CPU-320 NAC circuits and alarm relay. Each of the four built-in panel circuits includes a Disable/Enable switch for this feature.
- Multi-detector algorithm involves nearby detectors in alarm decision (U.S. Patent 5,627,515).
- Automatic detector sensitivity testing (NFPA-72 compliant).
- Maintenance alert (two levels).
- Self-optimizing pre-alarm.

FSC-851 INTELLIQUAD ADVANCED MULTI-CRITERIA DETECTOR

- Detects all four major elements of a fire (smoke, heat, CO, and flame)
- Automatic drift compensation of smoke sensor and CO cell
- High nuisance-alarm immunity
- Six sensitivity levels

VIEW (VERY INTELLIGENT EARLY WARNING) SMOKE DETECTION TECHNOLOGY:

- Revolutionary spot laser design.
- Advanced ONYX intelligent sensing algorithms differentiate between smoke and non-smoke signals (U.S. Patent 5,831,524).
- Addressable operation pinpoints the fire location.
- No moving parts to fail or filters to change.
- Early warning performance comparable to the best aspiration systems at a fraction of the lifetime cost.

ACCLIMATE PLUS LOW-PROFILE INTELLIGENT MULTI-SENSOR:

- Detector automatically adjusts sensitivity levels without operator intervention or programming. Sensitivity increases with heat.
- Microprocessor-based technology; combination photo and thermal technology.
- FlashScan or classic mode compatible.
- Low-temperature warning signal at 40°F ± 5°F (4.44°C ± 2.77°C).

HARSH HOSTILE-AREA SMOKE HEAD:

- Provides early warning of smoke detection in environment where traditional smoke detectors are not practical.
- The detector's filters remove particulates down to 30 microns in size.

- Intake fan draws air into photo chamber, while airborne particles and water mist are removed.
- Requires auxiliary 24 VDC from system or remote power supply.

RELEASING FEATURES:

- Ten independent hazards.
- Sophisticated cross-zone (three options).
- Delay timer and Discharge timers (adjustable).
- Abort (four options).
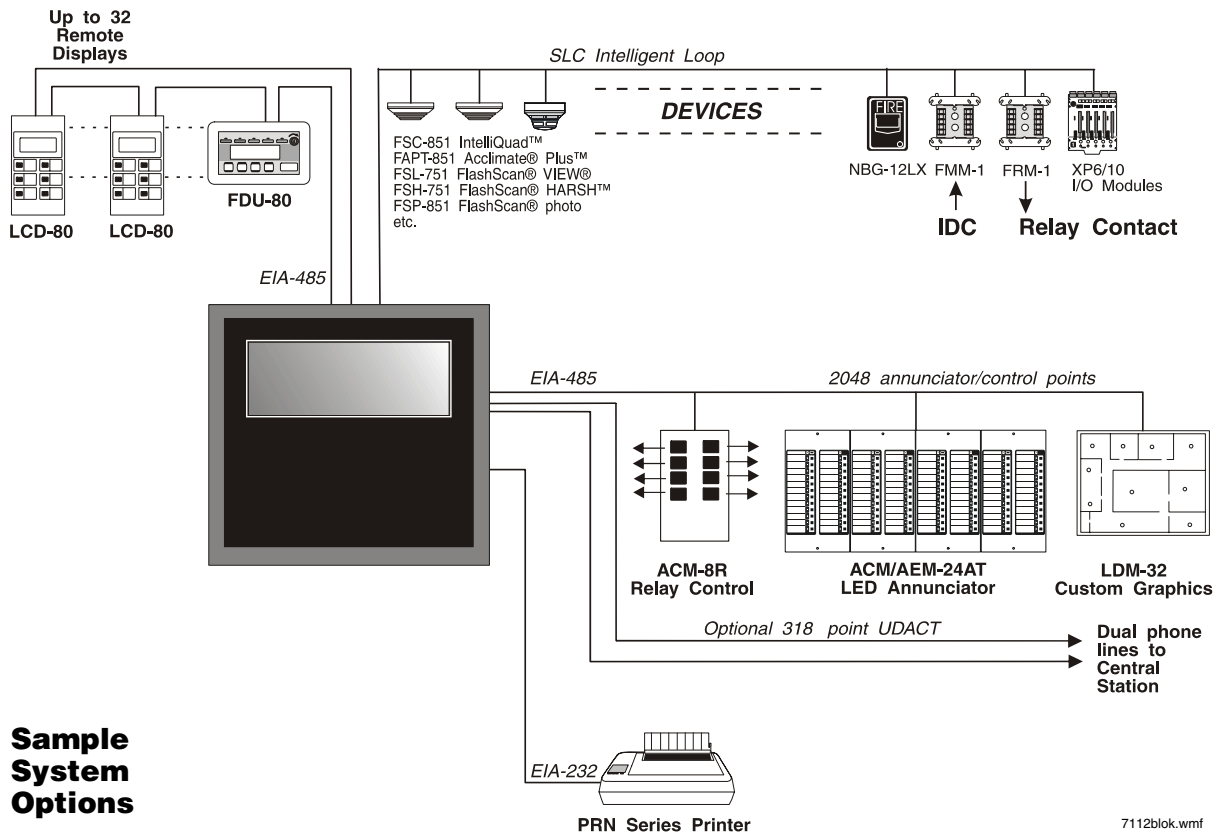- Low-pressure CO_2 listed.

HIGH-EFFICIENCY OFFLINE SWITCHING 3.0 AMP POWER SUPPLY (6.0 A IN ALARM):

- 120 VAC (NFS-320); 240 VAC (NFS-320E).
- Displays battery current/voltage on panel (with display).

VOICE FEATURES:

- Integrates with FireVoice-25/50 Series *(see DN-7004)*.
- Integrates via serial connection with FireVoice-25/50ZS Series (see DN-7003).

Sample System Options

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FlashScan, Exclusive New World-Leading Detector Protocol

At the heart of the NFS-320 is a set of detection devices and device protocol — FlashScan (U.S. Patent 5,539,389). Flash-Scan is an all-digital protocol that gives superior precision and high noise immunity.

In addition to providing quick identification of an active input device, this new protocol can also activate many output devices in a fraction of the time required by competitive protocols. This high speed also allows the NFS-320 to have the largest device per loop capacity in the industry — 318 points — yet every input and output device is sampled in less than two seconds. The microprocessor-based FlashScan detectors have bicolor LEDs that can be coded to provide diagnostic information, such as device address during Walk Test.

ONYX Intelligent Sensing

Intelligent sensing is a set of software algorithms that provides the NFS-320 with industry-leading smoke detection capability. These complex algorithms require many calculations on each reading of each detector, and are made possible by the high-speed microcomputer used by the NFS-320.

Drift Compensation and Smoothing: Drift compensation allows the detector to retain its original ability to detect actual smoke, and resist false alarms, even as dirt accumulates. It reduces maintenance requirements by allowing the system to automatically perform the periodic sensitivity measurements required by NFPA 72. Smoothing filters are also provided by software to remove transient noise signals, such as those caused by electrical interference.

Maintenance Warnings: When the drift compensation performed for a detector reaches a certain level, the performance of the detector may be compromised, and special warnings are given. There are three warning levels: (1) Low Chamber value; (2) Maintenance Alert, indicative of dust accumulation that is near but below the allowed limit; (3) Maintenance Urgent, indicative of dust accumulation above the allowed limit.

Sensitivity Adjust: Nine sensitivity levels are provided for alarm detection. These levels can be set manually, or can change automatically between day and night. Nine levels of pre-alarm sensitivity can also be selected, based on predetermined levels of alarm. Pre-alarm operation can be latching or self-restoring, and can be used to activate special control functions.

Self-Optimizing Pre-Alarm: Each detector may be set for "Self-Optimizing" pre-alarm. In this special mode, the detector "learns" its normal environment, measuring the peak analog readings over a long period of time, and setting the pre-alarm level just above these normal peaks.

Cooperating Multi-Detector Sensing: A patented feature of ONYX intelligent sensing is the ability of a smoke sensor to consider readings from nearby sensors in making alarm or pre-alarm decisions. Without statistical sacrifice in the ability to resist false alarms, it allows a sensor to increase its sensitivity to actual smoke by a factor of almost two to one.

Field Programming Options

Autoprogram is a timesaving feature of the NFS-320. It is a special software routine that allows the NFS-320 to "learn" what devices are physically connected and automatically load them in the program with default values for all parameters. Requiring less than one minute to run, this routine allows the user to have almost immediate fire protection in a new installation, even if only a portion of the detectors are installed.

Keypad Program Edit (with KDM-R2) The NFS-320, like all NOTIFIER intelligent panels, has the exclusive feature of program creation and editing capability from the front panel keypad, *while continuing to provide fire protection*. The architecture of the NFS-320 software is such that each point entry carries its own program, including control-by-event links to other points. This allows the program to be entered with independent per-point segments, while the NFS-320 simultaneously monitors other (already installed) points for alarm conditions.

VeriFire Tools is an offline programming and test utility that can greatly reduce installation programming time, and increase confidence in the site-specific software. It is Windows®-based and provides technologically advanced capabilities to aid the installer. The installer may create the entire program for the NFS-320 in the comfort of the office, test it, store a backup file, then bring it to the site and download from a laptop into the panel.
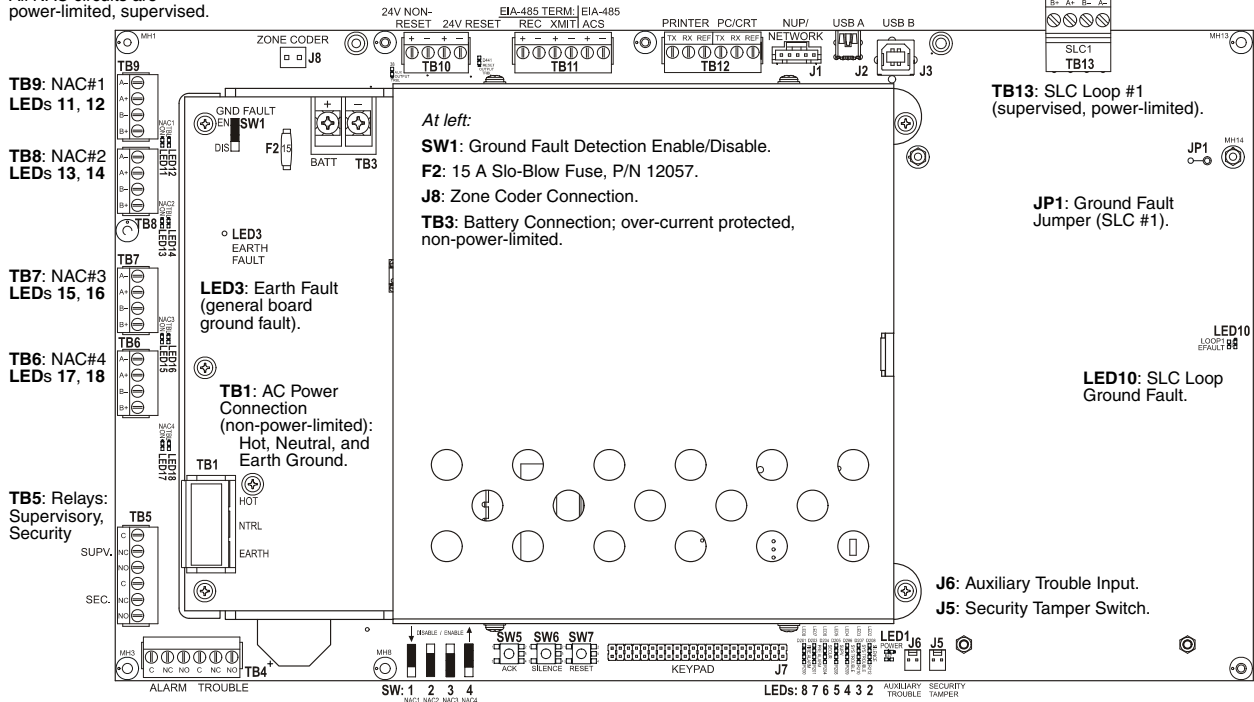
Below: Autoprogram function


```
AUTOPROGRAM   PLEASE WAIT
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```
L1:80 DETS, 15 MODS
BELLS: 04
```


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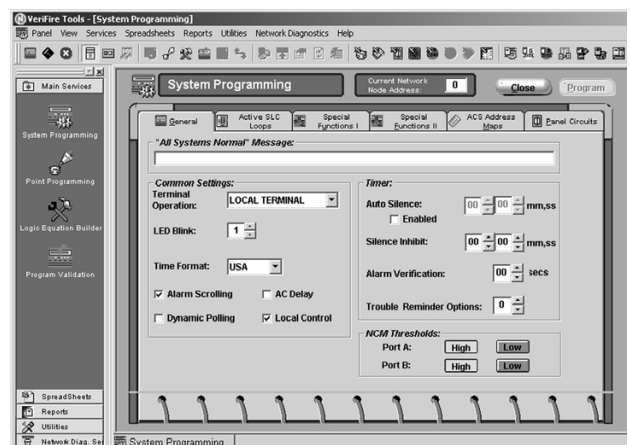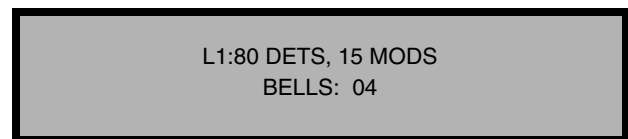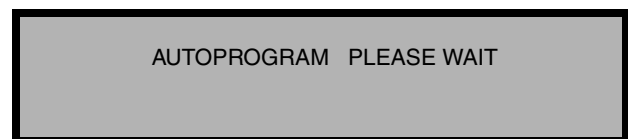
VeriFire Tools System Programming Screen

CPU-320
Board Diagram

TB10: DC Power (24 VDC, power-limited); Non-Resettable, Resettable.
TB11: EIA-485 Connection (supervised); Terminal Mode, ACS Mode.
TB12: EIA-232 Connection; Printer, PC/Terminal (CRT).

J1: Network/Service Connection (NUP), power-limited, supervised.
J2: USB A *VeriFire Tools* Connection.
J3: USB B *VeriFire Tools* Connection.

All NAC circuits are power-limited, supervised.

TB9: NAC#1
LEDs **11**, **12**

TB8: NAC#2
LEDs **13**, **14**

TB7: NAC#3
LEDs **15**, **16**

TB6: NAC#4
LEDs **17**, **18**

TB5: Relays: Supervisory, Security

At left:

SW1: Ground Fault Detection Enable/Disable.
F2: 15 A Slo-Blow Fuse, P/N 12057.
J8: Zone Coder Connection.
TB3: Battery Connection; over-current protected, non-power-limited.

LED3: Earth Fault (general board ground fault).

TB1: AC Power Connection (non-power-limited): Hot, Neutral, and Earth Ground.

TB13: SLC Loop #1 (supervised, power-limited).

JP1: Ground Fault Jumper (SLC #1).

LED10: SLC Loop Ground Fault.

J6: Auxiliary Trouble Input.
J5: Security Tamper Switch.

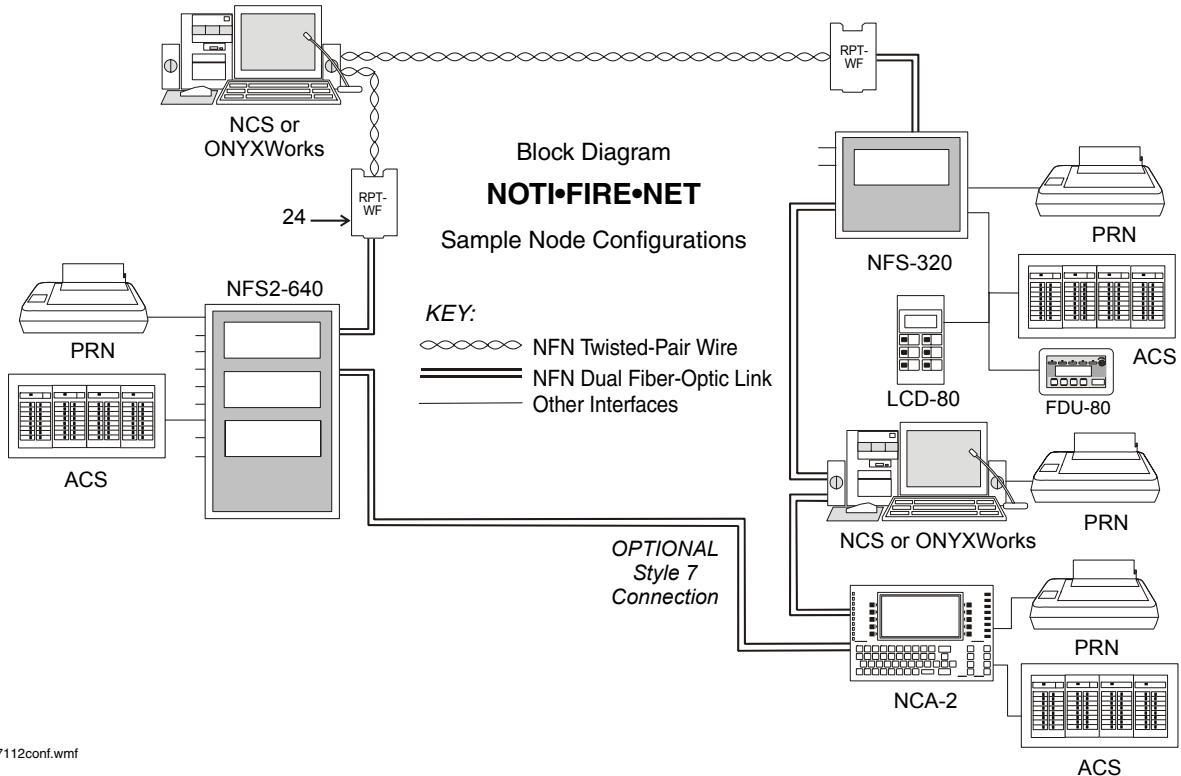**TB4**: Alarm Relay, Trouble Relay. Output relays; power-limited only if connected to a power-limited source.

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SW1, **SW2**, **SW3**, **SW4**: Disable-Enable switches for Backup Alarm, NACs 1 – 4 respectively.

System switches, "No Keyboard Operation":
SW5 Acknowledge
SW6 Silence
SW7 Reset

J7: KDM-R2 Connection

LED1: Power On (AC or battery)
LED2: Signals Silenced
LED3: Point Disabled
LED4: System Trouble
LED5: Supervisory
LED6: Security
LED7: Pre-Alarm
LED8: Fire Alarm

Network Diagram

Block Diagram
NOTI•FIRE•NET
Sample Node Configurations

KEY:

NFN Twisted-Pair Wire
NFN Dual Fiber-Optic Link
Other Interfaces

NCS or ONYXWorks

RPT-WF

24

NFS2-640

PRN

ACS

NFS-320

PRN

ACS

LCD-80

FDU-80

NCS or ONYXWorks

PRN

OPTIONAL Style 7 Connection

NCA-2

PRN

ACS

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Placement of Equipment in Chassis and Cabinet

The following guidelines outline the NFS-320's flexible system design.

Wiring: When designing the cabinet layout, consider separation of power-limited and non-power-limited wiring as discussed in the NFS-320 Installation Manual.

It is critical that all mounting holes of the NFS-320 are secured with a screw or standoff to ensure continuity of Earth Ground.

Networking: If networking two or more control panels, each unit requires a **NCM-W** (wire) or **NCM-F** (fiber) Network Control Module. The NCM-W/-F can be installed in any option board position (see manual). **Option boards** can be mounted in front of the NCM modules.

KDM-R2 Controls and Indicators

Program Keypad: QWERTY type (keyboard layout).

12 LED Indicators: Power; Fire Alarm; Pre-Alarm; Security; Supervisory; System Trouble; Signals Silenced; Points Disabled; Control Active; Abort; Pre-Discharge; Discharge.

Keypad Switch Controls: Acknowledge/Scroll Display; Signal Silence; Drill; System Reset; Lamp Test.

LCD Display: 80 characters (2 x 40) with long-life LED backlight.

Configuration Guidelines

The NFS-320 *system ships assembled; description and some options follow.*

NFS-320: The standard, factory-assembled NFS-320 system includes the following components: one CPU-320 control panel mounted on chassis (120 V operation — ships with grounding cable, battery interconnect cables, and document kit); includes integral power supply mounted to the CPU-320; one primary display KDM-R2 keypad/display; and one cabinet for surface or semi-flush mounting. *Purchase batteries separately. One or two option boards may be mounted inside the NFS-320 cabinet; additional option boards can be utilized in remote cabinets.*

NFS-320R: Same as NFS-320 above, but in red enclosure.

NOTE: *For information on the ULC-listed version, see DN-60085.*

NFS-320E: Same as NFS-320 above, but with 240 V operation.

TR-320: Trim ring for the NFS-320 cabinet.

Option Modules

FCPS-24S6/-24S8: Remote six-amp and eight-amp power supplies with battery charger. *See FCPS-24S6/-24S8 data sheet, DN-6927.*

COMPATIBLE DEVICES, EIA-232 PORTS

PRN-6: 80-column printer. *See DN-6956.*

VS4095/S2: Printer, 40-column, 24 V. Mounted in external backbox. *See DN-3260.*

COMPATIBLE DEVICES, EIA-485 PORTS

ACM-24AT: ONYX Series ACS annunciator – up to 96 points of annunciation with Alarm or Active LED, Trouble LED, and switch per circuit. Active/Alarm LEDs can be programmed (by powered-up switch selection) by point to be red, green, or yellow; the Trouble LED is always yellow. *See DN-6862.*

AEM-24AT: Same LED and switch capabilities as ACM-24AT, expands the ACM-24AT to 48, 72, or 96 points. *See DN-6862.*

ACM-48A: ONYX Series ACS annunciator – up to 96 points of annunciation with Alarm or Active LED per circuit. Active/Alarm LEDs can be programmed (by powered-up switch selection) in groups of 24 to be red, green, or yellow. Expandable to 96 points with one AEM-48A. *See DN-6862.*

AEM-48A: Same LED capabilities as ACM-48A, expands the ACM-48A to 96 points. *See DN-6862.*

TM-4: Transmitter Module. Includes three reverse-polarity circuits and one municipal box circuit; mount on NFS-320 chassis or remotely. *See DN-6860.*

LCD-80/FDU-80: 80-character, backlit LCD display. Mounts up to 6,000 ft. (1828.8 m) from panel. Up to 32 per FACP. *See LCD-80/-80TM (DN-3198) and FDU-80 (DN-6820).*

LDM: Lamp Driver Modules LDM-32, LDM-E32, and LDM-R32; remote custom driver modules. *See LDM data sheet, DN-0551.*

ACM-8R: Remote Relay Module with eight Form-C contacts. Can be located up to 6,000 ft. (1828.8 m) from panel on four wires. *See ACM-8R data sheet, DN-3558.*

SCS: Smoke control stations SCS-8, SCE-8, with lamp drivers SCS-8L, SCE-8L; eight (expandable to 16) circuits. *See SCS data sheet DN-4818.*

UDACT: Universal Digital Alarm Communicator Transmitter, 636 channel. *See DN-4867.*

UZC-256: Programmable Universal Zone Coder provides positive non-interfering successive zone coding. Microprocessor-controlled, field-programmable from IBM®-compatible PCs (requires optional programming kit). *See DN-3404.*

COMPATIBLE INTELLIGENT DEVICES

BEAMHK: Heating kit for transmitter/receiver unit of FSB-200(S) below. *See DN-6985.*

BEAMHRK: Heating kit for use with the reflector of FSB-200(S) below. *See DN-6985.*

BEAMLRK: Long-range accessory kit, FSB-200(S) below. *See DN-6985.*

BEAMMRK: Multi-mount kit, FSB-200(S) below. *See DN-6985.*

BEAMSMK: Surface-mount kit, FSB-200(S) below. *See DN-6985.*

FSB-200: Intelligent beam smoke detector. *See DN-6985.*

FSB-200S: Intelligent beam smoke detector with integral sensitivity test. *See DN-6985.*

FSC-851: FlashScan IntelliQuad Advanced Multi-Criteria Detector. *See DN-60412.*

FSI-851: Low-profile FlashScan ionization detector, replaces FSI-751. *See DN-6934.*

FSP-851: Low-profile FlashScan photoelectric detector, will replace FSP-751. *See DN-6935.*

FSP-851T: Low-profile FlashScan photoelectric detector with 135°F (57°C) thermal, will replace FSP-751T. *See DN-6935.*

FST-851: FlashScan thermal detector 135°F (57°C), will replace FST-751. *See DN-6936.*

FST-851R: FlashScan thermal detector 135°F (57°C) with rate-of-rise, will replace FST-751R FlashScan thermal detector 135°F (57°C) with rate-of-rise. *See DN-6936.*

FST-851H: FlashScan 190°F (88°C) high-temperature thermal detector. *See DN-6936.*

FSD-751PL: Low-flow FlashScan photo duct detector with housing, will replace FSD-751P. *See DN-6955.* .

FSD-751RPL: Low-flow FlashScan photo duct detector with relay and housing, will replace FSD-751RP. *See DN-6955.* .

FAPT-851: FlashScan Acclimate Plus low-profile multi-sensor detector, will replace FAPT-751. *See DN-6937.*

FSH-751: FlashScan HARSH Hostile Area Smoke Head. *See DN-6875.*

FSL-751: FlashScan VIEW laser photo detector, will replace LPX-751. *See DN-6886.*

B224RB: Low-profile relay base. See DN-60054.

B224BI: Isolator base for low-profile detectors. See DN-60054.

B710LP: Low-profile base. Standard U.S. style. See DN-60054.

B501: European-style, 4" (10.16 cm) base. See DN-60054.

B501BH-2: Standard sounder base. See DN-60054.

B501BHT-2: Temporal tone sounder base. See DN-60054.

FMM-1: FlashScan monitor module. *See DN-6720.*

FDM-1: FlashScan dual monitor module. *See DN-6720.*

FZM-1: FlashScan two-wire detector monitor module. *See DN-6720.*

FMM-101: FlashScan miniature monitor module. *See DN-6720.*

FCM-1-REL: FlashScan releasing control module. *See DN-60390.*

FCM-1: FlashScan NAC control module. *See DN-6724.*

FRM-1: FlashScan relay module. *See DN-6724.*

NBG-12LX: Manual fire alarm station, addressable. *See DN-6726.*

ISO-X: Isolator module. *See DN-2243.*

XP6-C: FlashScan six-circuit supervised control module. *See DN-6924.*

XP6-MA: FlashScan six-zone interface module; connects intelligent alarm system to two-wire conventional detection zone. *See DN-6925.*

XP6-R: FlashScan six-relay (Form-C) control module. *See DN-6926.*

XP10-M: FlashScan ten-input monitor module. *See DN-6923.*

OTHER OPTIONS

DPI-232: Direct Panel Interface, specialized modem for extending serial data links to remotely located FACPs and/or peripherals; mount on NFS-320 chassis. *See DN-6870.*

NCM-W: Network Communications Module, Wire. Order one NCM per network node (NFS-320 or NCA-2). *See DN-6861.*

NCM-F: Network Communications Module, Fiber. Order one NCM per network node ((NFS-320 or NCA-2). *See DN-6861.*

RPT-W, RPT-F, RPT-WF: Repeater board with wire connection (RPT-W), fiber connection (RPT-F), or allowing a change in media type between wire and fiber (RPT-WF). *See DN-6971.*

NCS5-W-ONYX: Network Control Station, Wire. UL-Listed graphics PC with mouse, 19" color flat-screen LCD monitor. Order as necessary for network systems. Each NCS consumes one of 103 network addresses. *See ONYX DN-6869.*

NCS5-F-ONYX: Network Control Station, Fiber. UL-Listed graphics PC with mouse, 19" color flat-screen LCD monitor. Order as necessary for network systems. Each NCS consumes one of 103 network addresses. *See ONYX DN-6869.*

ONYXWORKS-NW: Workstation with NFN wire PC card. ONYXWorks workstation GUI software and hardware package for NOTI•FIRE•NET. Includes NFN Gateway (NFN-GW-PC-W) wire version. (See DN-7048.)

ONYXWORKS-NF: Workstation with NFN fiber PC card. ONYXWorks workstation GUI software and hardware package for NOTI•FIRE•NET. Includes NFN Gateway (NFN-GW-PC-F) fiber version. (See DN-7048.)

NFN-GW-EM: NFN Gateway, embedded.

VeriFire-TCD: VeriFire Tools CD-ROM. Contains programming software for the ONYX Series. Includes local panel connection cable. *See DN-6871.*

BAT Series: Batteries. NFS-320 utilizes two 12 volt, 18 to 200 AH batteries. This series of products replaces the previous PS Series. *See DN-6933.*

NFS-LBB: Battery Box (required for batteries larger than 25 AH).

NFS-LBBR: Same as above, but red.

411: Slave Digital Alarm Communicator. *See DN-6619.*

411UDAC: Digital Alarm Communicator. *See DN-6746.*

SYSTEM SPECIFICATIONS

System Capacity

- Intelligent Signaling Line Circuits 1
- Intelligent detectors 159
- Addressable monitor/control modules 159
- Programmable internal hardware and output circuits 4
- Programmable software zones 99
- Special programming zones 14
- LCD annunciators per CPU-320/-320E 32
- ACS annunciators
  per CPU-320/-320E .... 32 addresses x 64 points

Specifications

- Primary input power, **CPU-320 board:** 120 VAC, 50/60 Hz, 3.0 A. **CPU-320E board:** 220/240 VAC, 50/60 Hz, 1.5 A.
- Total output 24 V power: 6.0 A in alarm.

NOTE: The power supply has a total of 6.0 A of available power. This is shared by all internal circuits.

- Standard notification circuits (4): 1.5 A each.
- Four-wire detector power: 1.25 A.
- Non-resettable regulated power outputs: 1.25 A each.
- Battery charger range: 18 AH – 200 AH. Use separate cabinet for batteries over 25 AH.
- Optional high-capacity (25 – 120 AH) battery charger: CHG-120 *(see CHG-120 data sheet, DN-6040).*
- Float rate: 27.6 V.

Cabinet Specifications

NFS-320 cabinet dimensions: *BACKBOX, OUTSIDE:* 18.240" (46.33 cm) height, 5.77" (14.656 cm) deep. *WITH DOOR:* 18.870" (47.93 cm) wide x 18.469" (46.911 cm) high x 5.817" (14.775 cm) deep. *BACKBOX, INSIDE:* 18.120" (46.025 cm) inner width, 5.175" (13.145 cm) inner depth.

Temperature and Humidity Ranges

This system meets NFPA requirements for operation at 0 – 49°C/32 – 120°F and at a relative humidity 93% ± 2% RH (non-condensing) at 32°C ± 2°C (90°F ± 3°F). 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 – 27°C/60 – 80°F.

Agency Listings and Approvals

The listings and approvals below apply to the basic NFS-320 control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL** Listed: file S635
- **CSFM:** 7170-0028:244; 7165-0028:243
- **FM Approved**
- **MEA:** 128-07-E , **NYFD** Certificate #6007
- **City of Chicago**

Standards

The NFS-320 complies with the following UL Standards and NFPA 72 Fire Alarm Systems requirements:

- **UL 864** (Fire).
- **UL 1076** (Burglary).
- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires TM-4).
- **REMOTE STATION** (Automatic, Manual, Waterflow and Sprinkler Supervisory) (requires TM-4).
- **PROPRIETARY** (Automatic, Manual, Waterflow and Sprinkler Supervisory). *Not applicable for FM.*
- **CENTRAL STATION** (Automatic, Manual, Waterflow and Sprinkler Supervisory) (requires UDACT).
- **EMERGENCY VOICE/ALARM**.

ISO 9001 CERTIFIED
ENGINEERING & MANUFACTURING QUALITY SYSTEMS

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We try to keep our product information up-to-date and accurate.
We cannot cover all specific applications or anticipate all requirements.
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