NFS-320C

Intelligent Addressable Fire Alarm System

NOTIFIER®
by Honeywell

Intelligent Fire Alarm Control Panels

General

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

In stand-alone or network configurations, ONYX Series products meet virtually every application requirement.

The NFS-320C's modular design makes system planning easier. The panel can be configured with just a few devices for small building applications, or networked with many devices to protect a large campus or a high-rise office block. Simply add additional peripheral equipment to suit the application. For example, certain geographic regions such as Canada have specific LED annunciation requirements. To provide up to 48 zones/points in the same cabinet, add an optional ACM Series annunciator (sold separately).

Features

- Listed to Standard ULC-S527-11.
- Certified for seismic applications when used with the appropriate seismic mounting kit.
- Approved for Marine applications when used with listed compatible equipment. *See DN-60688.*
- One isolated intelligent Digital Communications Loop (DCL) Style 4, 6 or 7.
- Up to 159 detectors and 159 modules per SLC; 318 devices maximum.
    - Detectors can be any mix of ion, photo, thermal, or multi-sensor.
    - Modules include addressable pull stations, normally open contact devices, two-wire smoke detectors, notification, or relay.
- Standard 80-character display.
- Network options:
    - High-speed network for up to 200 nodes (NFS2-3030, NFS2-640, NFS-320(C), NFS-320SYS, NCA-2, DVC-EM, ONYXWorks, NFS-3030, NFS-640, and NCA).
    - Standard network for up to 103 nodes (NFS2-3030, NFS2-640, NFS-320(C), NFS-320SYS, NCA-2, DVC-EM, ONYX-Works, NCS, NFS-3030, NFS-640, NCA, AFP-200, AFP-300/400, AFP-1010, and AM2020). Up to 54 nodes when DVC-EM is used in network paging.
- 6.0 A power supply with four Class A/B built-in Notification Appliance Circuits (NAC). Selectable System Sensor, S, 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 automatic counter.
- Presignal/Positive Alarm Sequence (PAS).
- Silence inhibit and Auto Silence timer options.

NFS-320C

- March time / temporal / Canadian two-stage coding, 20 ppm and temporal / strobe synchronization.
- Field-programmable on panel or on PC, with VeriFire Tools program check, compare, simulate.
- Full QWERTY keypad.
- Battery charger supports 18 – 200 AH 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

- Polls up to 318 devices in less than two seconds.
- Activates 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 — up to nine levels (see individual device information for available settings).
- Pre-alarm ONYX intelligent sensing — up to 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.
    - **IntelliQuad** – 1.0 to 4.0%/foot obscuration.
    - **IntelliQuad™ PLUS** – 1.0 to 4.0%/foot obscuration
- Drift compensation (U.S. Patent 5,764,142).
- Degraded mode: In the unlikely event that the FACP's microprocessor fails, FlashScan detectors revert to degraded operation and can activate the 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.

FSL-751A VIEW (VERY INTELLIGENT EARLY WARNING) SMOKE DETECTION TECHNOLOGY

- Advanced ONYX intelligent sensing algorithms differentiate between smoke and non-smoke signals (U.S. Patent 5,831,524).
- Addressable operation pinpoints the fire location.
- Early warning performance comparable to the best aspiration systems at a fraction of the lifetime cost.

FAPT-851A 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.
- Low-temperature warning signal at 40°F ± 5°F (4.44°C ± 2.77°C).

FSC-851A 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.

INTELLIGENT FAAST® DETECTORS FSA-5000A, FSA-8000A, FSA-20000A AND FSA-20000P

- Connects directly to the SLC loop of compatible ONYX series panels.
- Provides five event thresholds that can be individually programmed with descriptive labels for control-by-event programming; uses five detector addresses.
- Uses patented particle separator and field-replaceable filter to remove contaminants.
- Advanced algorithms reject common nuisance conditions
- FSA-5000A covers 5,000 square feet through one pipe.
- FSA-8000A covers 8,000 square feet through one pipe.
- FSA-20000A covers 28,800 square feet through one to four pipes.
- FSA-20000P covers 28,800 square feet through one to four addressable pipes. Supports addressable pipes to pinpoint location of alarm events.
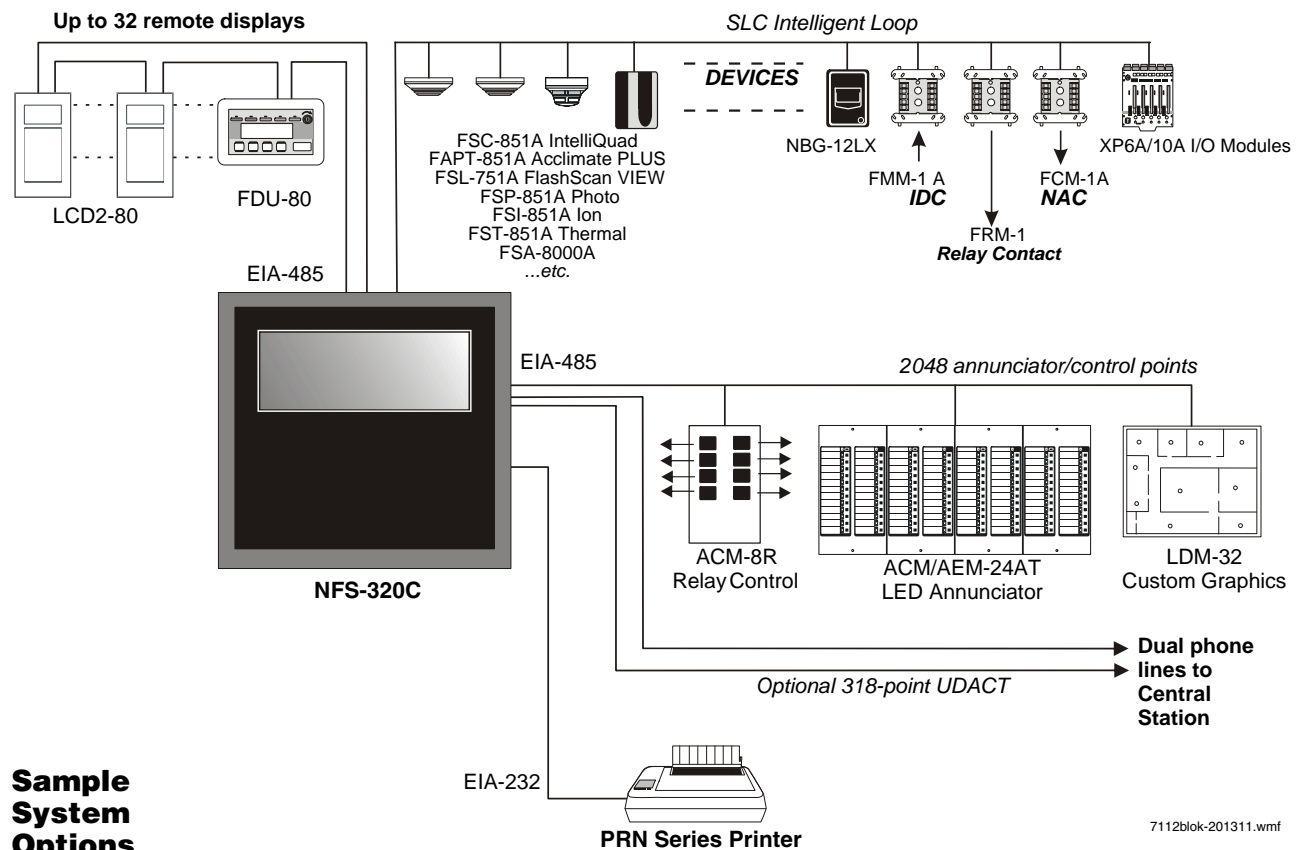
FCO-851A INTELLIQUAD™ PLUS
ADVANCED MULTI-CRITERIA FIRE/CO DETECTOR

- Detects all four major elements of a fire.
- Separate signal for life-safety CO detection.
- Optional addressable sounder base for Temp-3 (fire) or Temp-4(CO) tone.
- Automatic drift compensation of smoke sensor and CO cell.
- High nuisance-alarm immunity.

RELEASING FEATURES

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

Up to 32 remote displays

SLC Intelligent Loop

DEVICES

FSC-851A IntelliQuad
FAPT-851A Acclimate PLUS
FSL-751A FlashScan VIEW
FSP-851A Photo
FSI-851A Ion
FST-851A Thermal
FSA-8000A
...etc.

NBG-12LX

FMM-1 A
IDC

FCM-1A
NAC

XP6A/10A I/O Modules

FRM-1
Relay Contact

LCD2-80

FDU-80

EIA-485

NFS-320C

EIA-485

2048 annunciator/control points

ACM-8R
Relay Control

ACM/AEM-24AT
LED Annunciator

LDM-32
Custom Graphics

Dual phone lines to Central Station

Optional 318-point UDACT

Sample System Options

EIA-232

PRN Series Printer

7112blok-201311.wmf

- Integrates with FirstCommand Series. *See DN-60772. Note: Only NFC-50/100 and NFC-LOC are approved for Canadian applications.*

HIGH-EFFICIENCY OFFLINE SWITCHING

3.0 A *POWER SUPPLY* (**6.0 A** *IN ALARM*)

- 120 VAC.
- Displays battery current/voltage on panel (with display).

FlashScan, Exclusive World-Leading Detector Protocol

At the heart of the NFS-320C is a set of detection devices and device protocol — FlashScan (U.S. Patent 5,539,389). FlashScan 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 protocol can also activate many output devices in a fraction of the time required by competitive protocols. This high speed also allows the NFS-320C 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-320C 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-320C.

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. The FACP "learns" what devices are physically connected and automatically loads 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-320C, 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-320C 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-320C 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-320C 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.

Placement of Equipment in Chassis and Cabinet

The following guidelines outline the NFS-320C'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/C/E Installation Manual*.

It is critical that all mounting holes of the NFS-320C 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 Network Communication Module or High-Speed Network Communication Module (HS-NCM can support two nodes; see "Networking Options" on page 5). These modules can be installed in any option board position (see manual), and additional option boards can be mounted in front of them.

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.

Product Line Information

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- "Main System Components" on page 4
- "Networking Options" on page 5
- "Auxiliary Power Supplies and Batteries" on page 4
- "Audio Options" on page 4
- "Compatible Devices, EIA-232 Ports" on page 4
- "Compatible Devices, EIA-485 Ports" on page 4
- "Compatible Intelligent Devices" on page 4
- "Enclosures, Chassis, and Dress Plates" on page 5
- "Other Options" on page 5

CONFIGURATION GUIDELINES

The NFS-320C system ships assembled; description and some options follow. See "Enclosures, Chassis, and Dress Plates" on page 5 for information about mounting peripherals.

NOTE: *Stand-alone and network systems require a main display. On stand-alone systems, the panel's keypad provides the required display. On network systems (two or more networked fire panel nodes), at least one NCA-2, NCS, or ONYXWorks annunciation device is required. For NCA-2, see DN-7047.*

MAIN SYSTEM COMPONENTS

NFS-320C: The standard, factory-assembled NFS-320C system includes the following components: one control panel mounted on chassis (120 V operation — ships with grounding cable, battery interconnect cables, and document kit); one integral power supply mounted to the control panel; 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 to the NFS-320 cabinet, with one visible to the left of the display and one inside; additional option boards can be used in remote cabinets. See Canadian applications manual addendum 52747.*

NFS-320C-FR: Same as NFS-320C but in French language.

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

AUXILIARY POWER SUPPLIES AND BATTERIES

ACPS-610: 6.0 A or 10.0 A addressable charging power supply. *See DN-60244.*

FCPS-24S6C/8C: Remote 6 A and 8 A power supplies. See DN-6297. For use only as a NAC expander.

BAT Series: Batteries. NFS-320 uses two 12 volt, 18 to 200 AH batteries. *See DN-6933.*

AUDIO OPTIONS

NFC-50/100: 25 watt, 25 VRMS, emergency Voice Evacuation Control Panel (VECP) with integral commercial microphone, digital message generator, and Class A or Class B speaker circuits. *See DN-60772.*

COMPATIBLE DEVICES, EIA-232 PORTS

PRN-7: 80-column printer. *See DN-60897*

VS4095/5: Keltron printer, 40-column, 24 V. Mounted in external backbox. *See DN-3260.* (Not ULC-listed.)

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.*

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.*

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 DN-3558.*

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

FDU-80: Terminal mode. 80-character, backlit LCD display. Mounts up to 6,000 ft. (1828.8 m) from panel. Up to 32 per FACP. Not for use as a primary display in Canada. *See FDU-80 (DN-6820).*

LCD2-80: Terminal and ACS mode. 80-character, backlit LCD display. Mounts up to 6,000 ft. (1828.8 m) from panel. Up to 32 per FACP. Not for use as primary display in Canadian applications. *See DN-60548.*

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

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

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

UDACT-2: Universal Digital Alarm Communicator Transmitter, 636 channel. *See DN-60686.*

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). Mounts in BB-UZC or other compatible chassis (purchased separately). *See DN-3404.*

COMPATIBLE INTELLIGENT DEVICES

FSA-5000A: Intelligent FAAST® XS Fire Alarm Aspiration Sensing Technology. Intelligent aspirating smoke detector for applications up to 5,000 sq.ft., with ULC listing.

FSA-8000A: Intelligent FAAST® XM Fire Alarm Aspiration Sensing Technology. Intelligent aspirating smoke detector for applications up to 8,000 sq.ft., with ULC listing. *See DN-60792.*

FSA-20000A: Intelligent FAAST® XT Fire Alarm Aspiration Sensing Technology. Intelligent aspirating smoke detector for applications up to 28,800 sq.ft., with ULC listing. *See DN-60849.*

FSA-20000P FAAST® XT PRO Intelligent Aspiration Detector For applications up to 28,800 sq. ft. (2601 sq. m.) through one to four addressable pipes. See DN-60792

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

FSB-200SA: Intelligent beam smoke detector with integral sensitivity test. *See DN-6895.*

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

FCO-851A: FlashScan IntelliQuad PLUS Advanced Multi-Criteria Fire/CO Detector. *See DN-60689.*

FSI-851A: Low-profile FlashScan ionization detector. *See DN-6934.*

FSP-851A: Low-profile FlashScan photoelectric detector. *See DN-6935.*

FSP-851TA: Low-profile FlashScan photoelectric detector with 135°F (57°C) thermal. *See DN-6935.*

FSP-851RA: Remote-test capable photoelectric detector for use with DNR(W) duct detector housings. *See DN-6935.*

FST-851A: FlashScan thermal detector 135°F (57°C). *See DN-6936.*

FST-851RA: FlashScan thermal detector 135°F (57°C) with rate-of-rise. *See DN-6936.*

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

FAPT-851A: FlashScan Acclimate Plus low-profile multi-sensor detector. *See DN-6937.*

FSL-751A: FlashScan VIEW laser photo detector. *See DN-6886.*

DNRA: InnovairFlex low-flow non-relay duct-detector housing (order FSP-851A/FSP-851RA separately). Replaces FSD-751PL/FSD-751RPL. *See DN-60429.*

DNRWA: Same as above with NEMA-4 rating, watertight. *See DN-60429.*

B224RBA: Low-profile relay base. See DN-60054.

B224BIA: Isolator base for low-profile detectors. See DN-60054.

B210LPA: Low-profile base. Standard U.S. style. Replaces B710LPA. See DN-60054.

B501A: European-style, 4" (10.16 cm) base. See DN-60054.

B200SA: Intelligent programmable sounder base, capable of producing a variety of tone patterns including ANSI Temporal 3. Compatible with sychronization protocol. *See DN-60054.*

B200SCOA: Based on B200SA, with added CO detector markings in English/French.

B200SRA: Sounder base, Temporal 3 or Continuous tone. See DN-60054.

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

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

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

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

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

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

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

FDRM-1A: FlashScan dual monitor/dual relay module. *See DN-60709.*

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

N-MPS series: Manual pull stations, addressable and conventional. For use in Canada only. *See DN-5497.*

FM-955: Addressable pull station with two FMM-101A modules.

FM-9551: Addressable pull station with one FMM-101A module.

FM-955-20C: Addressable pull station with two open contacts.

FM-9551S20C: Addressable pull station with one open and one closed extra contacts.

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

ISO-6A: Six Fault isolator module. *See* DN-60844.

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

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

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

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

SLC-IM: SLC integration module, for VESDAnet detectors. *See DN-60755*

NETWORKING OPTIONS

NCM-W, NCM-F: Standard Network Communications Modules. Wire and multi-mode fiber versions available. *See DN-6861.*

HS-NCM-W/MF/SF/WMF/WSF/MFSF: High-speed Network Communications Modules that can connect to two nodes. Wire, single-mode fiber, multi-mode fiber, and media conversion models are available. *See DN-60454.*

RPT-W, RPT-F, RPT-WF: Standard-network repeater board with wire connection (RPT-W), multi-mode fiber connection (RPT-F), or allowing a change in media type between wire and fiber (RPT-WF). Not used with high-speed networks. *See DN-6971.*

ONYXWorks: UL-listed graphics PC workstation, software, and computer hardware. *See DN-7048 for specific part numbers.*

NFN-GW-EM-3: NFN Gateway, embedded. *See DN-60499.*

NWS-3: "NOTI•FIRE•NET™ Web Server. *See DN-6928.*

CAP-GW: Common Alerting Protocol Gateway. *See DN-60756.*

VESDA-HLI-GW: VESDAnet high-level interface gateway. *See DN-60753.*

LEDSIGN-GW: UL-listed sign gateway. Interfaces with classic and high-speed NOTI•FIRE•NET networks through the NFN Gateway. *See DN-60679.*

OAX2-24V: UL-listed LED sign, used with LEDSIGN-GW. *See DN-60679.*

ENCLOSURES, CHASSIS, AND DRESS PLATES

CAB-BM Marine System: Protects equipment in shipboard and waterfront applications. Also order **BB-MB** for systems using 100 AH batteries. For a full list of required and optional equipment, see *DN-60688.*

NFS-LBB: Battery Box (required for batteries over 26 AH).

NFS-LBBR: Same as above, but red.

SEISKIT-320/B26: Seismic mounting kit. Required for seismic-certified applications with NFS-320C and BB-26. Includes battery bracket for two 26 AH batteries.

SEISKIT-LBB: Seismic kit for the NFS-LBB. Includes battery bracket for two 55 AH batteries.

BACKBOXES

NOTE: "C" suffix indicates ULC-Listed model.

ABF-1DBC Annunciator Flush Box with Door.

ABF-2DBC Annunciator Flush Box with Door

ABS-1TBC Annunciator Surface Box

ABS-1BC Annunciator Surface Box

ABS-2DC Annunciator Surface Box

ABS-4DC Annunciator Surface Box

BB-UZC: Backbox for housing the UZC-256. Required for NFS-320 applications, black. For red, order BB-UZC-R.

OTHER OPTIONS

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

IPGSM-4GC: Internet and Digital Cellular Fire Alarm Communicator. Provides selectable configurable paths: cellular only, IP only, or IP primary with cellular backup. Connects to the primary and secondary ports of a DACT. *See DH-60769.*

NFS-320-RB: Replacement board with central processing unit *NOTE: Keypad must be removed before shipping old unit out for repair.*

NFS-320-RBC-FR: Replacement board with central processing unit, Canadian French. *NOTE: Keypad must be removed before shipping old unit out for repair.*

NOTE: *For other options including compatibility with retrofit equipment, refer to the panel's installation manual, the SLC manual (for intelligent DCL equipment), and the Device Compatibility Document.*

System Specifications

SYSTEM CAPACITY

- Intelligent Digital Communications Loop (DCL) 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 FACP 32
- ACS annunciators per FACP .... 32 addresses x 64 points

SPECIFICATIONS

- Primary input power: 120 VAC, 50/60 Hz, 5.0 A.
- Current draw (standby/alarm):
  - NFS-320C board: 0.250 A. Add 0.035 A for each NAC in use.
  - KDM-R2 (Backlight on): 0.100 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.
- Resettable regulated 24V power: 1.25 A.
- Two non-resettable regulated 24V power outputs. One at 1.25 A and the other at 0.50 A.
- Non-resettable 5V power: 0.15 A.
- Battery charger range: 18 AH – 200 AH. Use separate cabinet for batteries over 26 AH.
- Float rate: 27.6 V.

CABINET SPECIFICATIONS

- NFS-320C cabinet dimensions:
  - Backbox: 18.12 in. (46.025 cm) width; 18.12 in. (46.025 cm) height; 5.81 in. (14.76 cm) depth.
  - Door: 18.187 in. (46.195 cm) width; 18.40 in. (46.736 cm) height; 0.75 in. (1.905 cm) depth.

When using trim ring TR-320, mount backbox with at least 1 inch (2.54 cm) between wall surface and front of backbox, to allow door to open fully past the trim ring. The TR-320 molding width is 0.905 in. (2.299 cm).

SHIPPING WEIGHT

- NFS-320C: 37 lb (16.78 kg) *without batteries.*

TEMPERATURE AND HUMIDITY RANGES

This system meets NFPA requirements for operation at 0 – 49°C and at a relative humidity 93% ± 2% RH (noncondensing) at 32°C ± 2°C. 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.

AGENCY LISTINGS AND APPROVALS

The listings and approvals below apply to the basic NFS-320C 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/ULC Listed:** S635 (UOJC).
- **ULC Listed:** S527-11
- **FM Approved.**
- **CSFM:** 7165-0028:0243.
- **Fire Dept. of New York:** COA #6212.

Marine Applications: Marine approved systems must be configured using components itemized in this document. (See Main System Components, in "Product Line Information.) Specific connections and requirements for those components are described in the installation document, PN 54756. When these requirements are followed, systems are approved by the following agencies:

- **US Coast Guard:** 161.002/50/0, 161.002/55/0 (Standard 46 CFR and 161.002).
- **Lloyd's Register:** 11/600013 (ENV 3 category).
- **American Bureau of Shipping.**

NOTE: *For information on marine applications, see DN-60688.*

STANDARDS

The NFS-320C complies with the following ULC Standards and NFPA 72, International Building Code (IBC), and California Building Code (CBC) Fire Alarm Systems requirements:

- **ULC-S527-99.**
- **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 DACT).
- **EMERGENCY VOICE/ALARM**.
- **IBC 2012, IBC 2009, IBC 2006, IBC 2003, IBC 2000** (Seismic).
- **CBC 2007** (Seismic).