

FireWarden-100-2C

Intelligent Addressable FACP



Addressable Fire Alarm Control Panel

General

The Notifier FireWarden-100-2C Rev 3 (NFW2-100C) with Version 5.0 firmware is a combination FACP (Fire Alarm Control Panel) and DACT (Digital Alarm Communicator/Transmitter) all on one circuit board. This compact intelligent addressable control panel has an extensive list of powerful features.

The DCL (Digital Communications Loop) of the FireWarden-100-2C operates using a Rapid Group Polling communication protocol technology that polls multiple devices simultaneously for a quicker device response time. This patented technology allows a fully-loaded panel with up to 198 devices to report an incident and activate the notification circuits in under 10 seconds. With this improved polling, devices can be wired on standard twisted, unshielded wire up to a distance of 3,000 meters.

The FireWarden-100-2C's quick-remove chassis protects the electronics during construction. The backbox can be installed allowing field wiring to be pulled. When construction is completed, the electronics can be quickly installed with just two bolts.

Features include removable terminal blocks, improved transient protection, additional secondary ANN-BUS, increased resettable power, and remote sync output.

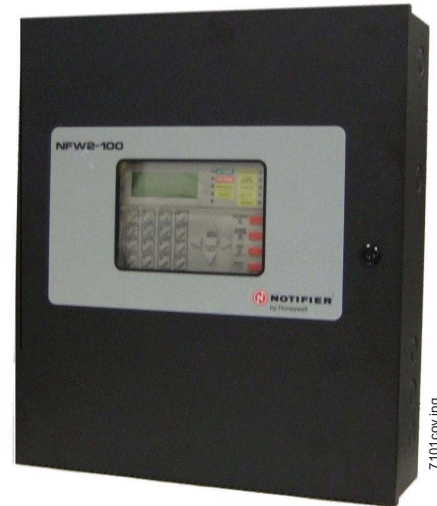
Available accessories include ANN-BUS devices as well as ACS LED, graphic and LCD annunciators, and reverse polarity/city box transmitter.

The integral DACT transmits system status (alarms, supervisorys, troubles, AC loss, etc.) to a Central Station via the public switched telephone network. It also allows remote and local programming of the control panel using the PS-Tools Upload/Download utility. In addition, the control panel may be programmed or interrogated off-site via the public switched telephone network. Any personal computer with Windows® XP or greater, a compatible modem, and PS-Tools, the Upload/Download software kit, may serve as a Service Terminal. This allows download of the entire program or upload of the entire program, history file, walktest data, current status and system voltages. The panel can also be programmed through the FACP's keypad or via a standard PS-2 computer keyboard, which can be plugged directly into the printed circuit board. This permits easy typing of address labels and other programming information.

Version 5.0 firmware supports the following: ANN-bus devices, NP-A100, USB port, and NAC circuit diagnostics. A new report has been added to the walk-test that lists untested devices, Photo Supervisory and auto-resettable Drill (non-latching).

Features

- ULC Listed.
- On-board DACT.
- Remote site or local USB port upload/download, using PS-Tools.
- Four Style Y (Class B) NAC circuits, which can be converted to four Style Z (Class A) circuits with optional ZNAC-92 converter module. (Up to 6.0 amps total NAC power when using optional XRM-24B.)
- Selectable strobe synchronization for System Sensor, and Wheelock.
- Primary and secondary ANN-BUS for connection to following optional modules (cannot be used if ACS annunciators are used):
 - N-ANN-80C Remote LCD Annunciator



- N-ANN-I/O LED Driver
- N-ANN-S/PG Printer Module
- N-ANN-RLY Relay Module
- N-ANN-LED Annunciator Module
- N-ANN-RLED Annunciator Module alarms only
- ACS & Terminal-mode Annunciators:
 - ACS Annunciators: Up to 32 ACM Series annunciators (ACM-16AT or ACM-32 series). Cannot be used if ANN-BUS devices are used.
 - Terminal-mode Annunciators: Up to 32 FDU-80C annunciators.
- EIA-232 printer/PC interface (variable baud rate) on main circuit board, for use with optional ULC-listed printer PRN-6.
- Integral 80-character LCD display with backlighting.
- Real-time clock/calendar with automatic daylight savings control.
- History file with 1,000-event capacity.
- Maintenance alert warns when smoke detector dust accumulation is excessive.
- Automatic device type-code verification.
- One person audible or silent walk test with walk-test log and printout.
- Point trouble identification.
- Waterflow (nonsilenceable) selection per monitor point.
- System alarm verification selection per detector point.
- PAS (Positive Alarm Sequence) and presignal delay per point.

NOTE: Only detectors may participate in PAS.

DCL LOOP:

- DCL can be configured for NFPA Style 4, 6, or 7 operation.
- DCL supports up to 198 addressable devices per loop (99 detectors and 99 monitor, control, or relay modules).
- DCL loop maximum length 3,000 m.
See *installation manual for wire tables.*

NOTIFICATION APPLIANCE CIRCUITS (NACS):

- Four onboard NACs with additional NAC capability using output control modules (NC-100). The four Class B NACs can be converted to four Class A NACs with optional ZNAC-92 converter module.
- Silence-inhibit and Autosilence timer options.
- Continuous, March Time, Temporal or California code for main circuit board NACs with two-stage capability.
- Selectable strobe synchronization per NAC.
- 2.5 amps maximum per each NAC circuit.

NOTE: Maximum 24VDC system power output is shared among all NAC circuits and 24VDC special-application auxiliary power outputs. Total available output is 3.0 amps. Using the optional XRM-24B transformer increases 24VDC output to 6.0 amps.

PROGRAMMING AND SOFTWARE:

- Autoprogram (learn mode) reduces installation time.
- Custom English labels (per point) may be manually entered or selected from an internal library file.
- Three Form-C relay outputs (two programmable).
- 99 software zones.
- Continuous fire protection during online programming at the front panel.
- Program Check automatically catches common errors not linked to any zone or input point.
- **OFFLINE PROGRAMMING:** Create the entire program in your office using a Windows®-based software package (NFW2-100C requires PS-Tools Programming software, available on VFWARDEN-CD and www.magni-fire.com). Upload/download system programming locally to the panel in less than one minute.
- USB programming with standard Male-A to Male-B cable.

User Interface

LED INDICATORS

- AC Power (green)
- Fire Alarm (red)
- Supervisory (yellow)
- Alarm Silenced (yellow)
- System Trouble (yellow)
- Maintenance/Presignal (yellow)
- Disabled (yellow)
- Battery Fault (yellow)
- Ground Fault (yellow)

KEYPAD CONTROLS

- Acknowledge/Step
- Alarm Silence
- Drill
- System Reset (lamp test)
- 16-key alpha-numeric pad (similar to telephone keypad)
- 4 cursor keys
- Enter

Product Line Information

NFW2-100C: FireWarden-100-2C 198-point addressable Fire Alarm Control Panel, one DCL loop. Includes 80-character LCD display, single printed circuit board mounted on chassis, and cabinet. 120 VAC operation.

4XTM Reverse Polarity Transmitter Module: Provides supervised output for local energy municipal box transmitter, alarm, and trouble.

ZNAC-92: Optional converter module which converts four Style Y (Class B) NAC circuits to four Style Z (Class A) circuits.

VFWARDEN-CD: Contains PS-Tools Programming software for Windows®-based PC computer (cable not included).

DP-9692B: Required dress panel for FireWarden-100-2C.

TR-CE-B: Trim Ring for semi-flush mounting.

BB-26: Battery backbox, holds up to two 26 AH batteries.

NFS-LBB: Battery box, houses two 55 AH batteries.

CHG-120: Remote battery charging system for lead-acid batteries with a rating of 55 to 120 AH. Requires additional NFS-LBB for mounting.

NOTE: CHG-120 required for batteries larger than 18AH.

BAT Series: Batteries, see data sheet DN-6933.

XRM-24B: Optional transformer. Increases system power output to 6.0 amps.

PRT/PK-CABLE: Cable printer/personal computer interface cable; required for printer or for local upload/download programming.

PRN-6: ULC-listed compatible event printer. Uses tractor-fed paper.

COMPATIBLE ANNUNCIATORS

N-ANN-80C: Remote LCD indicator that mimics the information displayed on the FACP LCD display. Recommended wire type is un-shielded. (Basic model is black; order -W version for white; see DN-7114.)

N-ANN-LED: Annunciator Module provides three LEDs for each zone: Alarm, Trouble and Supervisory. Ships with red or black enclosure (see DN-60242).

N-ANN-RLED: Provides alarm (red) indicators for up to 30 input zones or addressable points. (See DN-60242).

N-ANN-RLY: Relay Module, which can be mounted inside the cabinet, provides 10 programmable Form-C relays. (See DN-7107.)

ANN-S/PG: Serial/Parallel Printer Gateway module provides a connection for a serial or parallel printer. (See DN-7103.)

N-ANN-I/O: LED Driver Module provides connections to a user supplied graphic annunciator. (See DN-7105.)

ACM-8R: Relay module provides 8 Form-C 5.0 amp relays.

ACM Annunciator Series: LED-type fire annunciators capable of providing up to 99 software zones of annunciation. Available in increments of 16 or 32 points to meet a variety of applications.

LDM Graphic Series: Lamp Driver Module series for use with custom graphic annunciators.

FDU-80C (Liquid Crystal Display) point annunciator: 80-character, backlit LCD-type fire annunciators capable of displaying English-language text.

COMPATIBLE ADDRESSABLE DEVICES

All feature a polling LED and rotary switches for addressing.

NI-100A: Addressable low-profile ionization smoke detector.

NP-100A: Addressable low-profile photoelectric smoke detector.

NP-100TA: Addressable low-profile photoelectric smoke detector with thermal sensor.

NH-100A: Fast-response, low-profile heat detector.

NH-100RA: Fast-response, low-profile heat detector with rate-of-rise option.

NH-100HA: Fixed high-temperature detector that activates at 190F/88C.

NP-A100A: Addressable low-profile multi-sensor detector.

ND-100A: Photoelectric low-flow duct smoke detector.

DNRA: Innovair Flex low-flow non-relay duct-detector housing. (Order NP-100A separately.)

NMM-100A: Addressable Monitor Module for one zone of normally-open dry-contact initiating devices. Mounts in standard 10.16 cm box. Includes plastic cover plate and end-of-line resis-

tor. Module may be configured for either a Style B (Class B) or Style D (Class A) IDC.

NDM-100A: Dual Monitor Module. Same as NMM-100A except it provides two Style B (Class B) only IDCs.

NMM-100PA: Miniature version of NMM-100A. Excludes LED and Style D option. Connects with wire pigtailed. May mount in device backbox.

NZM-100A: Similar to NMM-100A, but may monitor up to 20 conventional two-wire detectors. Requires resettable 24 VDC power. Consult factory for compatible smoke detectors.

NC-100A: Addressable Control Module for one Style Y/Z (Class B/A) zone of supervised polarized Notification Appliances. Mounts directly to a 10.16 cm electrical box. Notification Appliance Circuit option requires external 24 VDC to power notification appliances.

NC-100RA: Addressable relay module containing two isolated sets of Form-C contacts, which operate as a DPDT switch. Mounts directly to a 10.16 cm box, surface mount using the SMB500.

NOT-BG12LX: Addressable manual pull station with interface module mounted inside.

NFW-MPS Series: Manual pull stations, addressable and conventional. For use in Canada only with FireWarden panels.

N100-ISOA: Fault Isolator Module. This module isolates the DCL loop from short circuit conditions (required for Style 6 or 7 operation).

SMB500: Used to mount all modules except the NMM-100PA.

NMM-100-10A: Ten-input monitor module. Mount one or two modules in a BB-XP cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-25.

NZM-100-6A: Six-zone interface module for compatible conventional two-wire detectors. Mount one or two modules in a BB-XP cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-25.

ADDRESSABLE DEVICE ACCESSORIES

End-of-Line Resistor Assembly (R-47K and R-3.9K): 47k ohm supervises the NMM-100A, NDM-100A, NMM-100PA, and NC-100A module circuits. 3.9k ohm End-of-Line Resistor assembly supervises the NZM-100A module circuit. These resistors are included with each module.

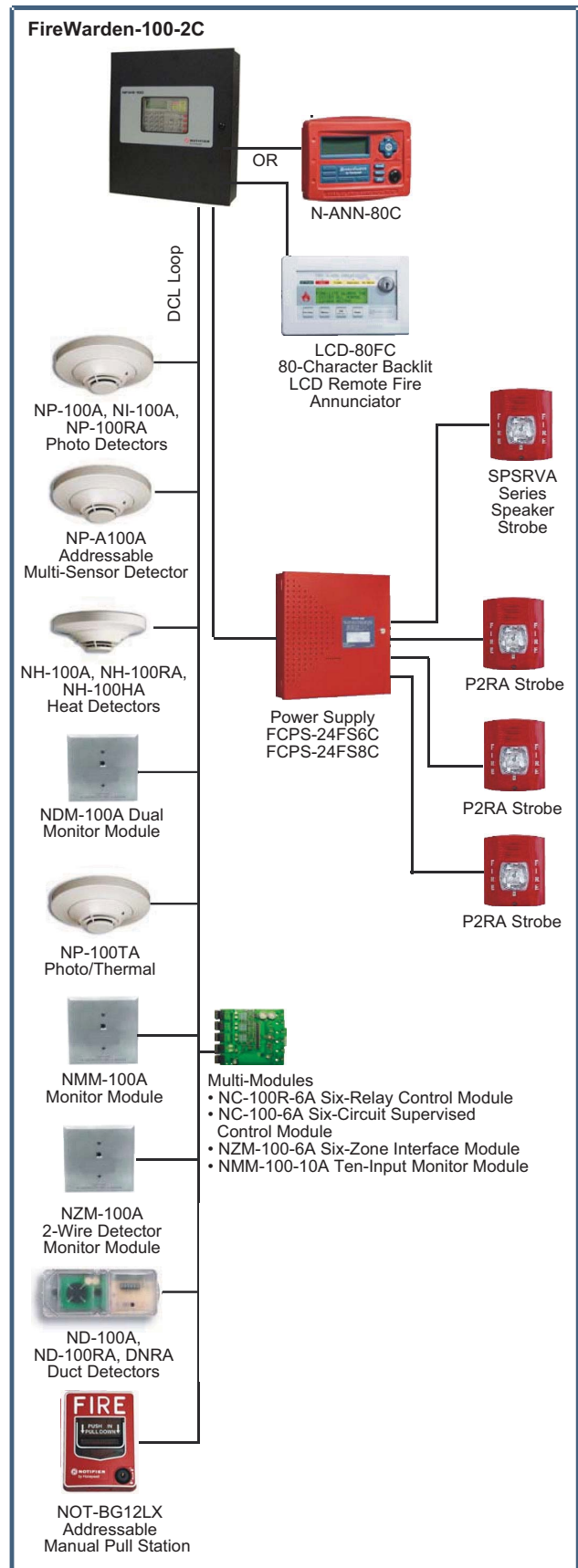
Power Supervision Relay: Supervises the power to 4-wire smoke detectors and notification appliances.

EOL-CR, EOL-CW: Single End-of-Line resistor plate (required). EOL-CR is red; EOL-CW white.

NOTE: For more information on compatible equipment, see the following data sheets (document numbers): ACM-8R (DN-3558), ACS/ACM Series (DN-0524), LDM Series (DN-0551), FDU-80C (DN-6820), N100-ISO (DN-6994), NP-100 series (DN-6995), NI-100 (DN-6996), NH-100 series (DN-6997), ND-100 series (DN-7006), NP-A100 (DN-6998), NMM-100/NMM-100P/NDM-100/NZM-100 (DN-6999), NC-100/NC-100R (DN-7000), NOT-BG12LX (DN-7001), NMM-100-10 (DN-6990), and NZM-100-6 (DN-60150).

Wiring Requirements

While shielded wire is not required, it is recommended that all DCL wiring be twisted-pair to minimize the effects of electrical interference. Wire size should be no smaller than 18 AWG (0.78 mm²) and no larger than 12 AWG (3.1 mm²). The wire size depends on the length of the DCL circuit. Refer to the panel manual for wiring details.



SYSTEM SPECIFICATIONS

System Capacity

- Intelligent Digital Communication Loops 1
- Addressable device capacity 198
- Programmable software zones 99
- ACS Annunciators 32
- ANN-bus devices 16

Electrical Specifications

AC Power: FireWarden-100-2C Rev 3 120 VAC, 60 Hz, 3.0 amps. Wire size: minimum 14 AWG (2.00 mm²) with 600 V insulation.

Minimum Battery Size: 7 AH batteries.

Battery charger capacity: Up to two 18 AH batteries can be housed in the FACP cabinet. Larger batteries require separate battery box such as the BB-26 or BB-55.

DCL Communication Loop: Supervised and power-limited.

Notification Appliance Circuits: Each terminal block provides connections for two Style Y (Class B) for a total of four Style Y (Class B) or four Style Z (Class A) NACs *with the use of the optional ZNAC-92 converter module*. Maximum signaling current per circuit: 2.5 amps. End-of-Line Resistor: 4.7K ohm, 1/2 watt (P/N 71252 UL listed) for Style Y (Class B) NAC. Refer to panel documentation and *Notifier Device Compatibility Document* for listed compatible devices.

Two Programmable Relays and One Fixed Trouble Relay:

Contact rating: 2.0 amps @ 30 VDC (resistive), 0.5 amps @ 30 VAC (resistive). Form-C relays.

Special Application Power (24 VDC Nominal): Jumper selectable (JP4) for conversion to resettable power output. Up to 1.0 amp total DC current available from each output. Power-limited.

Four-Wire Resettable Special Application Smoke Detector Power (24 VDC nominal): Up to 1.0 amp for powering four-wire smoke detectors. Power-limited. Refer to the *Notifier Device Compatibility Document* for listed compatible devices.

Remote Sync Output: Remote power supply synchronization output. Nominal special application power: 24 VDC. Maximum current: 300 mA. End-of-Line Resistor: 4.7K ohm. Output linked to NAC 1 control. Supervised and power-limited.

Telephone Interface: Requires dedicated business telephone number with a minimum of 5 volts DC (off-hook voltage). Obtain dedicated phone line directly from your local phone company. Do not use shared phone lines or PBX (digital) type phone line extensions.

Cabinet Specifications

Door: 48.92 cm high x 42.73 cm wide x .30 cm deep. **Backbox:** 48.26 cm high x 42.29 cm wide x 13.34 cm deep. **Trim Ring (TR-CE-B):** 55.88 cm high x 49.91 cm wide.

Shipping Specifications

Weight: 12.20 kg **Dimensions:** 50.80 cm high x 57.15 cm wide x 21.59 cm deep.

Temperature and Humidity Ranges

This system operates 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 FireWarden-100-2C 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.

- **ULC:** S635

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