

# FireWarden-100-2(E)

Intelligent Addressable FACP  
with Built-In Communciator



Addressable

## General

The Notifier FireWarden-100-2 (NFW2-100) 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 SLC (Signaling Line Circuit) of the FireWarden-100-2 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 10,000 feet. (Consult the wire table on page 3 for specific installation instructions.)

The FireWarden-100-2'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.

Available accessories include LED, graphic and LCD annunciators, and reverse polarity/city box transmitter.

The panel is 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.

**NOTE:** Unless otherwise specified, the terms FireWarden-100-2 is used in this document to refer to both the FireWarden-100-2 and the FireWarden-100-2E FACPs (Fire Alarm Control Panels).

## Features

- Listed to UL standard 864, 9th edition.
- On-board DACT.
- Four Style Y (Class B) or two Class A (Style Z) NAC circuits.
- Selectable strobe synchronization for System Sensor, Wheelock, and Gentex devices.
- Remote Acknowledge, Silence, Reset and Drill via addressable monitor modules.
- Up to 32 annunciators or remote annunciators via EIA-485.
- EIA-232 printer/PC interface (variable baud rate) on main circuit board.
- Integral 80-character LCD display with backlighting.
- Real-time clock/calendar with automatic daylight savings control.
- Detector sensitivity test capability (NFPA 72 compliant).
- 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.



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- System alarm verification selection per detector point.
- PAS (Positive Alarm Sequence) and presignal delay per point (NFPA 72 compliant).

**NOTE:** Only detectors may participate in PAS.

### SLC LOOP:

- SLC can be configured for NFPA Style 4, 6, or 7 operation.
- SLC supports up to 198 addressable devices per loop (99 detectors and 99 monitor, control, or relay modules).
- SLC loop maximum length 10,000 ft. (3,000 m.).  
See wire table on page 3.

### NOTIFICATION APPLIANCE CIRCUITS (NACS):

- Four onboard NACs with additional NAC capability using output control modules (NC-100).
- Silence Inhibit and Auto Silence 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 or total 24VDC system power shared between all NAC circuits and auxiliary power outputs is 3.6 amps. (System power increases to 6.6 amps with optional XRM-24 transformer.)

### 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.
- Two programmable Form-C relay outputs.
- 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.

## 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

## Ordering Options

**NFW2-100(E)**: 198-point addressable Fire Alarm Control Panel, one SLC loop. Includes 80-character LCD display, single printed circuit board mounted on chassis, and cabinet.

**NFW2-100R**: Same as NFW2-100, except in a red backbox.

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

**DP-9692B**: Optional dress panel for FireWarden-100-2.

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

**BB-26**: Battery backbox, holds up to two 26 AH batteries and CHG-75.

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

**CHG-75**: Battery charger for lead-acid batteries with a rating of 25 to 75 AH.

**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 or CHG-75 required for batteries larger than 18AH.

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

**XRM-24(E)**: Optional transformer. Increases system power to 6.6 amps. Use XRM-24E with FireWarden-100-2E.

**PRT/PK-CABLE**: Cable printer/personal computer interface cable.

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

### COMPATIBLE ANNUNCIATORS

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

**NOTE**: For more information on Compatible Annunciators for use with the FireWarden-100-2, see the following data sheets (document numbers) ACM-8R (DN-3558), ACS/ACM Series (DN-0524), LDM Series (DN-0551), FDU-80 (DN-6820).

### COMPATIBLE ADDRESSABLE DEVICES

All feature a polling LED and rotary switches for addressing.

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

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

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

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

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

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

**ND-100R**: Photoelectric low-flow duct smoke detector with relay option.

**NMM-100**: Addressable Monitor Module for one zone of normally-open dry-contact initiating devices. Mounts in standard 4.0" (10.16 cm.) box. Includes plastic cover plate and end-of-line resistor. Module may be configured for either a Style B (Class B) or Style D (Class A) IDC.

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

**NMM-100P**: Miniature version of NMM-100. Excludes LED and Style D option. Connects with wire pigtails. May mount in device backbox.

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

**NC-100**: Addressable Control Module for one Style Y/Z (Class B/A) zone of supervised polarized Notification Appliances. Mounts directly to a 4.0" (10.16 cm.) electrical box. Notification Appliance Circuit option requires external 24 VDC to power notification appliances.

**NC-100R**: Addressable relay module containing two isolated sets of Form-C contacts, which operate as a DPDT switch. Mounts directly to a 4.0" (10.16 cm.) box, surface mount using the SMB500.

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

**N100-ISO**: Fault Isolator Module.

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

**NZM-100-6** Six-zone interface module. Mount one or two modules in a BB-2F cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-6F.

**NOTE**: For more information on Compatible Addressable Devices for use with the FireWarden-100-2, see the following data sheets (document numbers): N100-ISO (DN-6994), NP-100/NP-100T (DN-6995), NI-100 (DN-6996), NH-100/NH-100R (DN-6997), ND-100/ND-100R (DN-7006), NMM-100/NMM-100P/NDM-100/NZM-100 (DN-6999), NC-100/NC-100R (DN-7000), NOT-BG12LX (DN-7001), and NZM-100-6 (DN-60150).

## Wiring Requirements

While shielded wire is not required, it is recommended that all SLC wiring be twisted-pair to minimize the effects of electrical interference. Wire size should be no smaller than 18 AWG (0.78 mm<sup>2</sup>) and no larger than 12 AWG (3.1 mm<sup>2</sup>). The wire size depends on the length of the SLC circuit. Use the table below to determine the specific wiring requirements for the SLC.

SLC Wire Requirements	Distance in Feet (m)	Wire Size	Wire Type
Twisted-pair, unshielded	10,000 feet (3,048 m)	12 AWG (3.31 mm <sup>2</sup> )	<i>Non-Plenum (FPLR):</i> Genesis 4315, Belden 5020UL
			<i>Plenum (FPLP):</i> Genesis 4515, Belden 6020UL
Twisted-pair, unshielded	8,000 feet (2,438 m)	14 AWG (2.08 mm <sup>2</sup> )	<i>Non-Plenum (FPLR):</i> Genesis 4313, Belden 5120UL
			<i>Plenum (FPLP):</i> Genesis 4513, Belden 6120UL
Twisted-pair, unshielded	4,875 feet (1,486 m)	16 AWG (1.31 mm <sup>2</sup> )	<i>Non-Plenum (FPLR):</i> Genesis 4311, Belden 5220UL
			<i>Plenum (FPLP):</i> Genesis 4511, Belden 6220UL
Twisted-pair, unshielded	3,225 feet (983 m)	18 AWG (0.821 mm <sup>2</sup> )	<i>Non-Plenum (FPLR):</i> Genesis 4306, Belden 5320UL
			<i>Plenum (FPLP):</i> Genesis 4506, Belden 6320UL

### FireWarden-100-2 Wire Requirements

# SYSTEM SPECIFICATIONS

## System Capacity

- Intelligent Signalling Line Circuits..... 1
- Addressable device capacity ..... 198
- Programmable software zones ..... 99
- Annunciators ..... 32

## Electrical Specifications

**AC Power:** FireWarden-100-2: 120 VAC, 60 Hz, 3.0 amps. FireWarden-100-2(E): 240 VAC, 50 Hz, 1.5 amps. Wire size: minimum 14 AWG (2.00 mm<sup>2</sup>) with 600 V insulation.

**Battery:** Two 12 V 18AH lead-acid batteries. Battery charger capacity: 7 – 18 AH. FireWarden-100-2 cabinet holds maximum of two 18 AH batteries.

**Communication Loop:** Supervised and power-limited.

**Notification Appliance Circuits:** Each terminal block provides connections for two Style Y (Class B) or one Style Z (Class A) for a total of four Style Y (Class B) or two Style Z (Class A) NACs. 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 0.5 amps total DC current available from each output. Power-limited.

**Four-Wire Resettable Special Application Smoke Detector Power (24 VDC nominal):** Up to 0.5 amps for powering four-wire smoke detectors. Power-limited. Refer to *Notifier Device Compatibility Document* for listed compatible devices.

**Remote Sync Output:** Remote power supply synchronization output. Nominal special application power: 24 VDC. Maximum current: 40 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 7 volts DC. 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:** 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.12" (.30 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x

16.65" (42.29 cm.) wide x 5.20" (13.34 cm.) deep. **Trim Ring (TR-CE-B):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

## Shipping Specifications

**Weight:** 26.9 lbs. (12.20 kg.) **Dimensions:** 20.00" (50.80 cm.) high x 22.5" (57.15 cm.) wide x 8.5" (21.59 cm.) deep.

## 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 (noncondensing) 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.

## NFPA Standards

The FireWarden-100-2 complies with the following NFPA 72 Fire Alarm Systems requirements:

- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires 4XTM).
- **REMOTE STATION** (Automatic, Manual and Waterflow) (Where a DACT is not accepted, the alarm, trouble and supervisory relays may be connected to UL 864 listed transmitters. For reverse polarity signaling of alarm and trouble, 4XTM is required.)
- **PROPRIETARY** (Automatic, Manual and Waterflow).
- **CENTRAL STATION** (Automatic, Manual and Waterflow, and Sprinkler Supervised).
- **AUTO DETECTOR SELF TEST**

## Agency Listings and Approvals

The listings and approvals below apply to the basic FireWarden-100-2 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:** S635
- **FM approved**
- **CSFM:** 7165-0028:235
- **MEA:** 120-06-E, Volume 2

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