July 17, 2000 DN-3341 • A-102

AFP1010

Intelligent Fire Detection and Alarm System

Section: Intelligent Fire Alarm Control Panels

GENERAL

The AFP1010 is an intelligent, addressable, fire alarm control panel with the capacity for 792 individually identifiable and controllable detection/control points. The modular hardware design and easy-to-define system operation software allows the user to easily configure the AFP1010 in the field.

The AFP1010 is UL Listed under the following Standards: UL 864 Control Units for Fire Protective Signaling Systems; UL 1076 Proprietary Burglar Alarm Units; and UL 1610 Central Station Burglar Alarm Units. The AFP1010 also meets the requirements of NFPA Local, Auxiliary, Remote Station, Proprietary, and Emergency Voice/Alarm Fire Systems.

Addressable/intelligent detectors help fire-fighting personnel quickly locate a fire during its early stages.

LISTED S635 S5511

CS118 CS733

* FM Approved *(also approved for automatic release and pre-action deluge)

* MEA 289-91-E

Lloyd's Register 93/60140 (E1)

U.S. Coast Guard 161.002/27/1

California * State Fire Marshal 7165-0028:141 7170-0028:153

SIGNAL LISTED

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The AFP1010 (shown in CAB-A3 cabinet)

FEATURES

- Completely field-programmable and configurable, no computer programming skills required. System continues to provide fire protection while program is being edited.
- System capacity: 396 intelligent detectors plus 396 monitor/control modules (792 total points) and 240 software zones, plus 2,048 annunciator/control points.
- Intelligent (Analog) Detectors: Ionization, Photoelectric, Thermal (with or without Rate-of-Rise feature), and Multisensor (ion, photo, and heat in same head).
- Intelligent photoelectric duct detectors.
- Addressable initiating modules to monitor normally open or normally closed contacts.
- **NOTI•FIRE•NET™** interface provides a peer-to-peer high speed network *(see data sheet DN-4644)*.
- Upload/download of all program information to a PC compatible computer.
- VeriFire™ software utility – create, edit, check, simulate by association, and compare panel databases (Windows® 95/98 compatible).
- SCS-8 smoke control option (NFPA 90A, 92A & B listed dedicated or non-dedicated systems).
- Automatic drift compensation of intelligent smoke detectors (UL Listed).
- Automatic system test activates and verifies (17 cycles in a 24-hour period) every detector in the system. Meets the calibrated test requirements of NFPA 72 (UL Listed).
- Detector sensitivity adjust: manual or automatic (day/night).
- Maintenance Alert function automatically warns of contaminated detectors.
- Walk test with counters per point and identification of two detectors set to same address. Automatic abort timer.
- Alarm verification, with verification tally counter, per intelligent detector. Also included is a programmable detector verification limit check.
- Addressable dry-contact relay modules and supervised Notification Appliance circuit modules.
- Modular hardware design with plug-in terminal blocks.
- Multiple microprocessors with degraded operation mode in the event of a CPU failure.
- 20-character custom alpha/numeric descriptive labels for each system point and software zone.

NOTIFIER One Fire-Lite Place, Northford, Connecticut 06472

- Powerful control-by-event function:
  - — Point and/or zone.
  - — AND/OR/NOT function.
  - — Time equations.
  - — Tracking/latching selections.
  - — Pulse timers.
- Non-Alarm points (lower priority) for security, energy management, or lighting functions.
- Control-by-time functions for time and date actuation of outputs. Programmable time delays and pulse functions.
- User-selectable sensitivity settings per detector.
- 400-event history log stored in nonvolatile memory with display, scroll, and print features.
- Real-time nonvolatile clock for time and date stamp of all events.
- Optional multiple assignable passwords.
- Disable/Enable per addressable device or software zone.
- Status report (several types of reports) for all devices in system, including detector sensitivity and verification tally.
- UZC-256 universal zone coder (positive non-interfering successive) module *(see UZC-256 data sheet)*.
- ACM-8R remote relay module extends AFP1010 point capacity *(see ACM-8R data sheet)*.
- Software timers for silence inhibit, alarm cutout, and alarm verification.
- High-speed EIA-485 annunciator/control interface.
- 80-character alphanumeric Supertwist LCD display with built-in backlighting.
- Remote alphanumeric annunciator option (LCD-80).
- 30-key tactile keypad with full alphabetic capability.
- Remote CRT terminal option with alarm and trouble counter.
- Multiple remote 40-column and 80-column printer options.
- Block acknowledge of troubles and auto trouble restoration.
- Trouble reminder option (programmable).
- XP or XP5 transponders for large multiplex systems *(see XP or XP5 data sheet)*.
- ACS serial remote annunciator control systems *(see ACS data sheet)*.
- LDM modules for custom annunciators and control relays.
- Extensive transient protection.
- Rapid polling algorithm for manual station response in under five seconds (first 20 addresses).
- Pre-Alarm option (programmable) for advanced warning of false alarm conditions.
- Marine agency approved.
- UDACT Universal Digital Alarm Communicator Transmitter. Transmits up to 2048 points to a central station *(see UDACT data sheet)*.

PRODUCT LINE INFORMATION

BE-1010N: Base equipment for AFP-1010. Includes CPU-2, DIA-1010, ICA-4L, manuals, cables, and miscellaneous hardware.

CPU-2: The Central Processing Unit is the director of all system communications and operations. The CPU-2 stores all of the system's operational parameters (which are programmed in the field) in nonvolatile memory. The CPU-2 also provides a Form-C alarm contact and a Form-C trouble contact. Communications with LIB, SIB, and DIB boards are over a high-speed serial interface. Removal, disconnection, or failure of any control panel board is detected and reported by the CPU-2. This module contains and executes all control-by-event programs for specific action in response to an alarm condition.

Control-by-event programs are held in the nonvolatile programmable memory.

DIA-1010: The Display Interface Assembly consists of a hinged door; a 30-key keypad; an 80-character liquid crystal display (backlit); and a Display Interface Board (DIB).

The keypad has controls for ACKNOWLEDGE/STEP; SIGNAL SILENCE; SYSTEM RESET; SYSTEM TEST; LAMP TEST; READ STATUS; ALTER STATUS; PROGRAM; SPECIAL FUNCTION; BACK SPACE; ENTER; numeric keys 0

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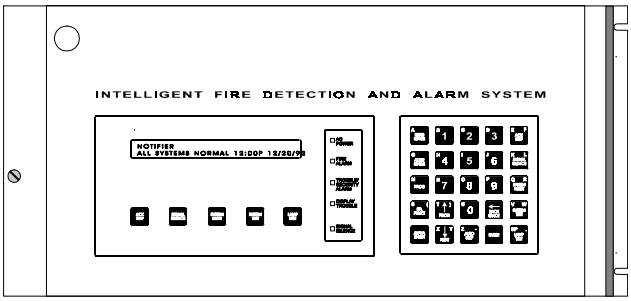

- 9; plus alpha enter and alpha keys A - Z. PRIOR, NEXT, and AUTOSTEP keys speed readout of status information. It has LED display for System Alarm; System Trouble; Display Trouble; AC Power; and Signals Silenced. The LCD display has 80 characters in two lines of 40 characters each. It is capable of displaying all status information, including: Type of Event (6 characters); Type of Device (12 characters); Custom Point Label (20 characters); Custom Zone Label (20 characters); Time and Date (14 characters); and Point Number (3 characters).

The DIB includes nonvolatile memory for all custom labels and passwords. The DIB provides integral status and programming functions using interactive menu displays on either the LCD display or the CRT terminal. All program editing may be achieved without special equipment and without interrupting AFP1010 alarm monitoring.

The DIA-1010 includes an RS232 interface for a printer and an EIA-485 interface for the LCD-80 (terminal mode). Up to 32 LCD-80 displays may be installed, each with ACK, SILENCE, and RESET switches.

LIB-400: The Loop Interface Board communicates with up to 198 intelligent detectors and 198 addressable modules over two Signaling Line Circuits (SLCs). *LIB-400 pictured at right.* See *Common LIB Features* below.

LIB-200A: The Loop Interface Board communicates with up to 99 intelligent detectors and 99 addressable modules over a Signaling Line Circuit (SLC).

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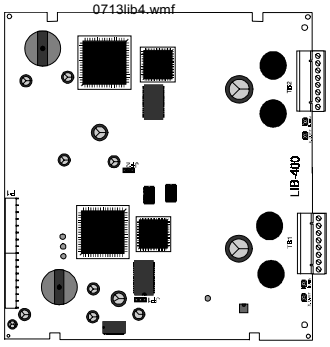
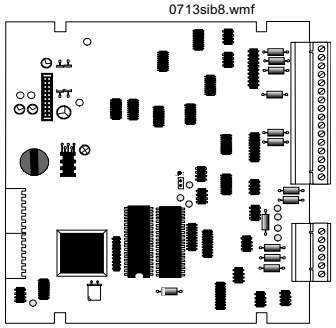


Common LIB Features: All operating power, as well as high-speed two-way data communication, are made through a pair of

wires called the SLC loop. This SLC loop may be wired to function like a Style 4, or Style 6 circuit. The SLC loop may be up to 12,500 feet (3,810 meters) in length if 12 AWG (3.25 mm²) wire is used (smaller gauge for shorter distances). If the ISO-X module is used between each zone of devices, the LIB/SLC can function like a Style 7 circuit. The LIB is normally controlled by the CPU, but includes Local Mode software that will provide degraded operation in the unlikely event of CPU failure. A general alarm bus between LIBs functions in the event of a CPU failure. This bus allows all programmed local mode points to operate as a common alarm when programmed.

All wiring from the Loop Interface Board is power limited per UL requirements, and connected with plug-in terminal blocks. All connections may be made to these terminal blocks, allowing for the identification and corrections of any field wiring faults prior to the final connection of the terminal blocks to the Loop Interface Board.

SIB-2048A: Serial Interface Board provides the following interfaces:



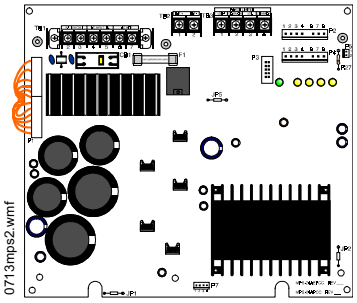
- Dual EIA-232 terminal ports (2400 baud, ASCII) for CRT, and other EDP-listed devices.
- Dual EIA-232 printer port for PRN Printer, VGAS, and other EDP-listed devices.
- EIA-485 annunciation ports (20 K baud, ASCII) for ACS annunciators, AMG, and Network Interface Board.

The SIB-2048A has full optical isolation on the EIA-232 interfaces to avoid ground-fault problems with EDP-listed devices. All terminal blocks plug-in to simplify installation and service.

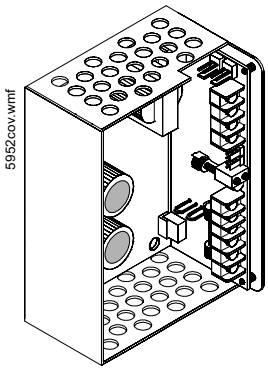
SIB-NET: Network interface board for **NOTI•FIRE•NET** *(see separate data sheet)*.

MPS-24A: The Main Power Supply mounts in the lower left of the cabinet, and provides the following capabilities:

- Electrically regulated system power supply (24 VDC and 5 VDC).
- Resettable electrically regulated power for four-wire detectors.
- Non-resettable electrically regulated power for indicating appliances and/or ACS annunciators (3.0 amps).
- Dual-rate battery charger for gell-cell batteries (up to 55 AH) and NiCad cells up to 32 amp hours (NiCads mount external).
- Ground (earth) fault detection, with LED display.
- AC fail/brownout detect and battery switchover, with LED indicator.
- 120 VAC and 240 VAC (MPS-24AE) options with circuit breaker and transient protection.
- PTC power limiting and overload protection on all outputs.
- Switched regulation for high efficiency and low power dissipation.

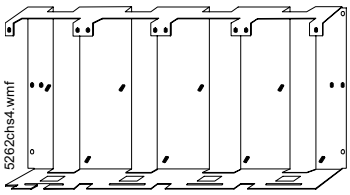


- True battery supervision.
- Power-saver charger shutdown in alarm.
- Compatible with CHG-120 external 120 amp-hour battery cabinet and charger.
- Deep battery discharge prevention.



APS-6R: *(pictured at right)* Auxiliary Power Supply (expander). Provides up to 6.0 amperes of regulated power for compatible notification appliance circuits. Includes battery input and transfer relay, and overcurrent protection. Mounts on one of four positions on a CHS-4L or CHS-4 chassis.

MBT-1: Municipal Box Trip for NFPA 72 auxiliary applications. Use in conjunction with one CMX module and one A77-716B power supervision relay.



CHS-4: *(at right)* Chassis, four position. Use for APS-6R modules.

DP-1: Blank dress panel. Use to cover unused rows in cabinet, or CHS-4/CHS-4L chassis.

CAP-1: The CAP-1 capacitor is used to filter-out high-frequency AC interference between Earth Ground and System Common within the same cabinet (one per power supply).

CAB-3 Series Cabinets: *(see data sheet DN-3549 for cabinet options)*.

SECURITY EQUIPMENT

RKS-1 Remote Keyswitch

STS-1 Security Tamper Switch

CONSTRUCTION

The basic equipment for the AFP1010 is the BE-1010N, which includes one DIA-1010; one CPU-2, and one ICA-4L. SIB and LIB boards are then plugged into ICA-4L chassis and an MPS Series power supply is installed in the cabinet. The maximum AFP includes 2 LIBs and 1 SIB, and will fit in the CAB-A3 enclosure. Larger enclosures may be ordered if desired for additional power supplies, XP transponders, etc. Each cabinet includes space at bottom for power supply and up to 25 amp hours of batteries. The BB-55 and cabinet may be used for 55 AH batteries.

ELECTRICAL SPECIFICATIONS

- Primary input power: 120 VAC, 50/60 Hz.
- Primary input power: 240 VAC, 50/60 Hz. Add an "E" to end of the model number (example: MPS-24AE).
- Primary AC power supervision with automatic switchover to supervised standby batteries.

AGENCY LISTINGS AND APPROVALS

See the first page of this data sheet for listing agencies and file numbers. These listings and approvals apply to the basic AFP1010 control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be pending. Consult factory for latest listing status.

ARCHITECTURAL/ ENGINEERING SPECIFICATIONS

Specifications are available on CD-ROM with NOTIFIER's Speci•Fire™ software. Contact NOTIFIER for details; **http//www.notifier.com**.

COMPATIBLE INTELLIGENT DETECTORS

FSI-751	Ion detector.
FSP-751	Photo detector.
FSP-751T	Photo detector with fixed thermal element.
FST-751	Thermal detector, fixed.
FST-751R	Thermal detector, fixed and rate-of-rise.
IPX-751	Advanced multi-criteria detector (ion/photo/ thermal).
HPX-751	HARSH™ photo detector *(requires special base)*.
FSD-751P	Duct detector, with housing.
FSD-751RP	Duct detector, with housing and relay.

INTELLIGENT DETECTOR BASES

B710LPBP	Standard flanged base, package of ten.
B510BP	Standard flangeless base, package of ten.
B710HD	Base for HPX-751 (HARSH™) only.
B224RB	Relay base.
B224BI	Isolator base.
B501BH	Sounder base.
B501BHT	Sounder base with temporal sounder.

COMPATIBLE ADDRESSABLE DEVICES

NBG-12LX	Addressable pull station, visible LED.
FMM-1	Monitor module.
FMM-101	Monitor module, miniature.
FDM-1	Monitor module, dual, two independent Class B circuits.
FZM-1	Monitor module, two-wire smoke detectors.
FCM-1	Control module.
FRM-1	Relay module.
XP5-M	Transponder, monitor, five addressable Class B circuits.
XP5-C	Transponder, control/relay, five addressable Class B circuits.
ISO-X	Isolator module.

COMPATIBLE EIA-232 DEVICES

CRT-2	CRT terminal with keyboard.
VS4095/5	40 column, 24 VDC printer.
PRN Series	80-column printer.

COMPATIBLE EIA-485 DEVICES

(see separate data sheets)

ACS Series	Remote serial annunciator/control systems.
LCD-80	Liquid Crystal Display *(connect to terminal mode EIA-485 on DIA-1010).*
LDM Series	Remote custom graphic driver modules.
UZC-256	Universal Zone Coder.
ACM-8R	Remote Relay Module.
RPT-485W	EIA-485 Repeater board. Twisted-pair connection.
RPT-485WF	EIA-485 Repeater board. Allows a twisted-pair in and fiber optics out. RPT-485F's must be used in pairs.
SCS Series	Smoke Control Modules.
UDACT	Universal Digital Alarm Communicator Transmitter.