

# FPD-7024 Fire alarm control panels

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Invented for life



- ▶ Four initiating zones (expandable to eight) with up to 20 two-wire smoke detectors per zone
- ▶ Programmable through keypads or remote programming software (RPS) through a Conettix interface module or over the public switched telephone network (PSTN)
- ▶ Two notification appliance circuits (NACs) on board with a shared internal regulated 24 VFWR, 4 A NAC power supply
- ▶ Easily converts to addressable with the addition of a MUX expansion module
- ▶ Reports to two phone numbers, two IP addresses, or a phone number and an IP address

The FPD-7024 Family FACPs can be used in commercial, retail, and public building applications. They are listed by UL for central station, local, auxiliary, and remote station systems.

The FACPs support four on-board initiating zones that can be expanded to eight using the FPC-7034 Four-point expander. Each initiating zone supports two-wire and four-wire detectors configurable as Class A or Class B loops. Each zone can support up to 20 two-wire detectors, or any number of four-wire detectors depending on available power. Each FACP has a built-in digital fire alarm communicator transmitter (DACT).

Enhance the FPD-7024 conventional system features by adding an FPE-7039 or D7039 MUX expansion module. Adding a MUX expansion module to the FACP turns the conventional FACP into an addressable FACP. The MUX expansion module adds up to 247 addressable points to the base system. It also adds an additional 400 events to the history buffer for a total of 499 events. The module increases the number of programmable relay outputs from 19 to 59 and expands system users to 100. The FPE-7039 allows

you to use FPE-7024-ISO MUX bus isolator modules. The isolator modules prevent failure of the entire bus when there is a short on the bus.

## Functions

### Notification Appliance Circuits

Two Class A or Class B NACs provide regulated power to operate notification appliances. Each NAC can be programmed to provide synchronized output for Wheelock, Gentex, or System Sensor notification appliances. The available outputs are:

- Temporal Code 3
- California March
- Steady
- Pulsed

### User Interface

A viewing port shows the status light-emitting diodes (LEDs) and liquid-crystal display (LCD) while maintaining system keypad security. For multi-language applications, the status LEDs and keypad buttons are labeled with symbols. The display

can be in US English, Latin-American Spanish, or Brazilian Portuguese. Unlocking the enclosure door provides access to the system controls for:

- Silencing off-normal conditions
- Bypassing zones
- Resetting detectors
- Testing
- Programming
- Other fire functions

Two additional keypads (FMR-7033 LCD keypad and FMR-7036 Fire annunciator keypad) mimic the panel's built-in keypad. Wherever the FMR-7033 is connected to the system, it makes all the functions of the built-in keypad available. The FMR-7036 provides the status LEDs and display (in any of the three available languages). The key-locked buttons provide access only to reset, scroll, and silence functions.

### Organized Event Display

The software sorts alarm, trouble, and supervisory events into categories and allows scrolling through specific events.

### History Buffer

The system stores events in a 99-event history buffer.



#### Notice

A MUX expansion module increases the number of events that can be stored in the history buffer to 499.

### Central Station Reporting

The FPD-7024 FACPs uses account numbers up to 10 digits to send reports. It can send reports with full single, double, and backup reporting. It can send reports to two telephone numbers, one telephone number and one IP address, or two IP addresses.



#### Notice

IP use requires a Conettix interface module at the panel and an appropriate Conettix receiver at the central station.

The panel supports communication in BFSK, SIA, Contact ID, Modem IIIa<sup>2</sup>, and 4/2 or 3/1 Tone Burst formats.

### Dirty Detector Monitoring

All on-board zones and FPC-7034 zones are continuously monitored for smoke detectors signaling a dirty condition. The Chamber Check feature signals a dirty smoke chamber using the LED on the detector head. If the calibration is out of range, the detector's LED flashes once every 4 seconds. This indicates that the detector must be cleaned following the instructions provided with the detector.

Also, the control panel annunciates that there is a dirty detector on the loop or the address. For detectors on a two-wire loop, if the detector's smoke chamber is

dirty, the detector sends a CleanMe signal. For detectors on an addressable loop, the detector sends a dirty detector signal.

### Accessories

The FPD-7024 enclosure (P/N: F01U068852) has a viewport for keypad messages while the enclosure door is locked. It also has space for additional accessory modules and two 18 Ah batteries. The BATB-40 or BATB-80 Battery box/enclosures accommodate larger batteries or additional batteries.



#### Notice

The panel can handle batteries up to 40 Ah. When selecting batteries, ensure that the batteries can handle an initial charge current of at least 1.7 A.

## Certifications and approvals

Region	Regulatory compliance/quality marks	
USA	UL	ANSI/UL 864, Control Units and Accessories for Fire Alarm Systems (10th edition)
	FM	see the FM Approval Guide
	CSFM	see <a href="http://www.boschsecurity.com">www.boschsecurity.com</a> (the Bosch website)
	FCC	ESVAL04B7024
	FDNY-CoA	6285

## Installation/configuration notes



### WARNING

This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to: [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### Compatible Products

For two wire detector compatibility, see the *FPD-7024 Smoke Detector Compatibility List*. For NAC device compatibility, see the *FPD-7024/FPP-RNAC-8A-4C NAC Compatibility List*.

## Technical specifications

### Electrical

Line impedance for ground fault detection (Option Bus, conventional input, NAC, secondary power circuit, MUX Bus, AUX power, SMK power)	10 kΩ or less
Power (non-resettable Input)	120 V 60 Hz 1.4 A or 230/240 V 50 Hz, 0.7 A
Power (non-resettable Auxiliary)	17 to 31 VRMS, unfiltered, 1.0 A

Power (resettable Smoke) <sup>1</sup>	20.4 to 28.2 VDC nominal, filtered, 1.0 A.
Power (Option Bus)	12 VDC nominal, 500 mA
Power (Notification Appliance Circuit [NAC]) <sup>2</sup>	Each NAC has 24 VRMS nominal, unfiltered power with up to 2.5 A capacity (but limited by the panel's overall 4.0 A capacity)
Power (Optional Standby Batteries)	Two 12 V (in series), 7 Ah to 40 Ah
NACs Line Impedance (voltage loss)	1.5 V
Recommended battery manufacturers <sup>3</sup>	Power Sonic: PS-1270, PS-12170, PS-12180 YUASA: NP7-12, NPG18-12

<sup>1</sup> For compatible smoke detection devices, see also the *FPD-7024 Smoke Detector Compatibility List*.

<sup>2</sup> For compatible NAC devices, see also the *FPD-7024/FPP-RNAC-8A-4C NAC Compatibility List*

<sup>3</sup> If other manufacturers or battery types are used, ensure that the battery or batteries can handle an initial charge current of at least 1.7 A.

### Environmental

Temperature (operating and storage)	+32°F to +120°F (0°C to +49°C)
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### Relays

Local (on-board)	The main control panel includes Three Form C relays. The relay contacts are rated at 5 A, 28 VDC. No over current limiting is performed on the contacts of the relays. The default selection for the relays is to indicate general alarm (relay 1), general system trouble (relay 2), and supervisory (relay 3). By using point or zone mapping, they can be programmed to activate in a wide variety of conditions.
Remote <sup>4</sup>	Eight Form C relay outputs are provided by a D7035 Remote Relay Module. The module connects to the FACP through the option bus. The outputs are fully programmable, exactly as the local relays are programmed. Each output operates independently of the other seven to provide complete flexibility. Communication with the D7035 is supervised. Contact Rating: 5 A at 28 VDC Number of Modules: two modules maximum.

<sup>4</sup> For wiring requirements, see Option bus wiring requirements in the *FPD-7024 Family installation and operation guide*.

### Notification Appliance Circuits

Wiring	Class B or Class A
Notification patterns	Configurable for steady, pulsing, California March, Temporal (ANSI) code 3, synchronized Wheelock, synchronized Gentex, and synchronized System Sensor.

### Trademarks

All hardware/software product names used in this document are likely to be registered trademarks and must be treated accordingly.

### Ordering information

**FPD-7024 Fire panel, 4-zone 24V, red enclosure**  
4 IDCs (expandable to 8), 20 two-wire smoke detectors per IDC, 2 NACs on board with shared internally-regulated 24 VFWR, 4 A NAC power supply, 2 phone or IP communication circuits  
Order number **FPD-7024**

**FPD-7024-LC Fire panel, 4-zone, 24V, no enclosure**  
Replacement board only, 4 detector zones (expandable to 8) with up to 20 two-wire smoke detectors per zone  
Order number **FPD-7024-LC**

**FPD-7024-LT Fire panel, no transformer, 4-zone, 24V**  
4 detector zones (expandable to 8) with up to 20 two-wire smoke detectors per zone, shipped without transformer, **available only in Latin America**  
Order number **FPD-7024-LT**

**FPD-7024-A Fire panel, 4-zone, 24V, Anatel, red**  
4 IDCs (expandable to 8), 20 two-wire smoke detectors per IDC, 2 NACs on board with shared internally-regulated 24 VFWR, 4 A NAC power supply, 2 phone or IP communication circuits, **Anatel, Brazil only**  
Order number **FPD-7024A**

**D102 Replacement key for D101 lock set**  
The D102 is a replacement key for locks stamped with 1358.  
Order number **D102**

**Accessories**

**BATB-40 Battery box/enclosure, 22x20.75x7.25"**  
22 x 20.75 x 7.25" (56 x 53 x 18.5 cm). Holds two dry or wet cell batteries. Optional BATB-SHELF battery shelf increases number of batteries. Suitable for residential/commercial fire or burglary applications.  
Order number **BATB-40**

**BATB-80 Battery box/enclosure, 14x20.75x7.25"**  
14 x 20.75 x 7.25" (36 x 53 x 18.5 cm). Battery box/enclosure with shelf holds up to four dry or wet cell batteries. Suitable for residential/commercial fire or burglary applications.  
Order number **BATB-80**

**B426 Ethernet Communication Module**  
Supports two-way communications over Ethernet networks for compatible control panels  
Order number **B426**

**B450 Plug-in Communicator Interface**  
Supports two-way IP communications using plug-in cellular communicators for compatible control panels  
Order number **B450**

**D102 Replacement key for D101 lock set**  
The D102 is a replacement key for locks stamped with 1358.  
Order number **D102**

**D126 Battery, 12V 7Ah**  
A rechargeable sealed lead-acid power supply used as a secondary power supply or in auxiliary or ancillary functions.  
Order number **D126**

**D132B Polarity reversing module, 2-/4-wire 24V**  
Reverses polarity on 24 V smoke detector loop during alarm  
Order number **D132B**

**D1218 Battery, 12V 18Ah**  
The D1218 is a 12 V 18 Ah sealed lead-acid battery with two bolt-fastened terminals. It is used for standby and auxiliary power. It connects to a compatible control panel using a D122 or D122L Dual battery harness.  
Order number **D1218**

**D7030X Annunciator, 8 alarm LED**  
Eight zone LEDs indicate alarm conditions.  
Order number **D7030X**

**D7030X-S2 Annunciator, 8 LED (2 supervisory)**  
Two LEDs indicate supervisory conditions, six indicate alarm conditions.  
Order number **D7030X-S2**

**D7030X-S8 Annunciator, 8 LED (8 supervisory)**  
All eight zone LEDs (yellow) indicate supervisory conditions.  
Order number **D7030X-S8**

**D7032 Annunciator expander, 8 LED**  
Use with D7030X Family LED annunciators  
Order number **D7032**

**D7035 Multiplex octal relay module**  
Provide eight Form C relay outputs (w/o enclosure) for the D7024, FPD-7024, or FPA-1000 Fire Alarm Control Panels (FACP)  
Order number **D7035**

**D7035B Multiplex octal relay module + enclosure**  
Provide eight Form C relay outputs (with enclosure) for the D7024, FPD-7024, or FPA-1000 Fire Alarm Control Panels (FACP)  
Order number **D7035B**

**D7039 Multiplex expansion module**  
The D7039 enhances the conventional features of the D7024 or FPD-7024 FACPs by increasing the number of addressable points to 256, the number of relay outputs to 58 on the D7024 or 59 on FPD-7024, the number of events on the history buffer to 499, and the number of users to 100.  
Order number **D7039**

**D7042 Remote module, 8-input class B**  
Board and plastic enclosure with spring tamper  
Order number **D7042**

**D7042B Multiplex module, metal, 8-input**  
Board on mounting plate with metal enclosure  
Order number **D7042B**

**D7044 Multiplex single-input module, 12V**  
The module connects a normally-open (NO) contact to the multiplex bus of an FPD-7024, D7024, or DS9400 FACP. The module draws supervised input power from the FACP for use in a Class B configuration. Rotary switches allow convenient address setting.  
Order number **D7044**

**D7044M Multiplex mini single-input module, 12V**  
Connects a normally-open (NO) contact to the multiplex bus of an FPD-7024, D7024, or DS9400M FACPs.  
Order number **D7044M**

**D7048 Octal driver module, 12V**  
Provides eight open-collector transistor outputs (current sinks) to FPA-1000, FPD-7024, or D7024 FACPs through the control panel's option bus.  
Order number **D7048**

**D7050 Multiplex smoke head**  
The symmetry of the D7050's optical chamber allows 360° uniform smoke entry, but minimizes external light entry. Within the chamber, large smoke particles scatter infrared light which is detected by a gated, high-speed, photodiode sensor.  
Order number **D7050**

**D7050TH Multiplex detector head, fixed heat**

The D7050TH has an optical smoke chamber and a 35°F (57°C) fixed-temperature sensor. Use it in confined areas where a fire increases air temperature slowly but substantially before the fire breaks confinement.

Order number **D7050TH**

**D7050-B6 Multiplex base, 2-wire**

Required base for the D7050 and D7050TH MUX smoke heads

Order number **D7050-B6**

**D7052 Multiplex dual-input module, 12V**

Connects normally-open (NO) contacts to the multiplex bus of an FPD-7024, D7024, or DS9400M FACP

Order number **D7052**

**D7053 Multiplex input/output module, 12V**

Connects normally-open (NO) contacts to the multiplex bus of an FPD-7024, D7024, or DS9400M FACP in configures as either Class A or Class B configuration

Order number **D7053**

**DX4010V2 USB/serial interface module**

Provides a local connection between compatible control panels and approved applications.

Order number **DX4010V2**

**FLM-7024-ISO MUX BUS ISOLATOR MODULE**

This module connects to the FPE-7039 MUX expansion module on the FPD-7024 FACP without using a MUX bus address. It isolates a shorted section on the SLC from the rest of the system to minimize communication loss.

Order number **FLM-7024-ISO**

**FMM-7045 Multiplex manual station, single, red**

The single-action manual station is UL listed and meets Americans with Disabilities Act (ADA) requirements. An address on the polling circuit is easily set with rotary switches. The pull-down handle locks in the activated position. It is reset by opening the unit with a key and then relocking it.

Order number **FMM-7045**

**FMM-7045-D Multiplex manual station, double, red**

The double-action manual station is UL listed and meets Americans with Disabilities Act (ADA) requirements. An address on the polling circuit is

easily set with rotary switches. The pull-down handle locks in the activated position. It is reset by opening the unit with a key and then relocking it.

Order number **FMM-7045-D**

**FMR-7033 LCD annunciator and control keypad**

Combines remote annunciator and controller functions for fire alarm systems controlled by an FPD-7024 Fire Alarm Control Panel

Order number **FMR-7033**

**FMR-7036 LCD annunciator keypad**

Four-wire LCD annunciator keypad used with the FPD-7024 Fire Alarm Control Panel to establish the location of a fire alarm

Order number **FMR-7036**

**FPC-7034 IDC expander, 4-point**

The FPC-7034 adds four Class B or two Class A initiating circuits to the FPD-7024 FACP. This plug-in module is automatically recognized by the control panel's firmware when power is restored to the system.

Order number **FPC-7034**

**FPE-7039 Multiplex expansion module for FPD-7024**

It enhances the features of the FACPs. It increases the number of addressable points to 247. It increases the number of relay outputs to 58 on the D7024/DS9400 or 59 on the FPD-7024. It increases number of events on the history buffer to 499.

Order number **FPE-7039**

**FPP-RNAC-8A-4C Power supply, RNAC 8A 24V**

When connected to a panel's option bus, the FPP-RNAC-8A-4C adds four additional NFPA 72, Class B or Class A NACs. When connected directly to the NAC output, it is also a NAC power supply for fire-protective signaling systems.

Order number **FPP-RNAC-8A-4C**

**ITS-DX4020-G GPRS/GSM integrated communicator**

Digital cellular communicator used for two-way IP or dialed communications over GPRS/GSM networks.

Order number **ITS-DX4020-G**

**PAM-4 Relay module, form C, 10A 12/24V**

One set of 10.0 A, Form C contacts that can be energized across a range from 9 VDC to 40 VDC

Order number **PAM-4**

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