

FireWatch-4000 Fire Alarm Control System

Features

- UL Listed, File #S405, Standard #864
- Operates on 120 Vac at 50/60 Hz or 240 Vac at 50/60 Hz
- (4) Class "B" / Style "B" Conventional IDC Circuits expandable to (12) IDC Circuits
- (2) Class "B" / Style "Y" Conventional NAC Circuits, expandable to (6) Circuits
- NAC terminals rated up to #12 Awg
- (4) Amp Power Supply with 2.75 Amps of signal power
- (4) System Relays - Optional IDC Alarm Relays
- Field programmable without special tools
- Keyed Operator Switch Access Control
- Serial Drive Annunciator Port
- Digital Communicator Port
- Battery Reversal Protection
- Event History, Lamp Test, Drill Test, Alarm Silence, Selectable City Tie
- Optional Class "A" Adapter Board
- Made in USA, ISO 9001 Quality Crafted

Description

The Faraday **FireWatch-4000** is a conventional, modular fire alarm panel. Its base configuration is 4 Class "B" (Style "B") Initiating Device Circuits (IDCs), with 2 Class "B" (Style "Y") Notification Appliance Circuits (NACs). Expansion modules allow expansion to 12 initiating device circuits and 6 notification appliance circuits.

Except for Lamp Test and History Recall, operator functions are enabled by a key switch on the front of the panel. Without the key for this switch, the panel provides indications, but none of the push-button functions operate.

Panel Settings for:

- 24-hour re-sound on silenced trouble conditions
- Manual alarm silence with 0, 1, 3, or 6 minute inhibit
- Auto-silence selectable for each NAC (10, 20, or 30 minute, or none)
- "Quick Test" by IDC(s) or the entire panel
- Silent or audible Quick Test
- Local energy, shunt or polarity-reversal city tie signaling



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Expansions and Options:

- Relay board providing a form "C", 1.0A at 30VDC, alarm contact from each initiating device circuit
- Circuits convertible from Class B (Style B/Y) to Class A (Style D/Z)
- Optional auxiliary power supply with integral battery and charger for additional notification appliance power

Minimum Panel Configuration

The minimum **FireWatch-4000** configuration consists of the following components:

- Main logic board
- Main termination board
- Transformer
- Surface Enclosure
- Cables and hardware

The basic panel includes 4 Class B, Style B, initiating device circuits. All are adaptable to accept smoke detectors, manual stations, or waterflow switches and supervisory contacts. All may be programmed for standard alarm verification with contact closure discrimination for instant alarm on manual pull station operation. Zone alarms suppress zone trouble indications, and each zone may be individually disabled.

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The minimum panel configuration also includes 2 Class B, Style Y, notification appliance circuits. Each is rated at 1.5A, 24VDC maximum, with a total of 3.0A, 24VDC available. Output pattern selectable by circuit to be continuous or coded as march time (60 or 120 BPM) or a three-pulse temporal code (one code selection per panel). Auto-silence is selectable for each circuit for 10 minute, 20 minute, 30 minute or no auto-silence. As standard features, the minimum configuration panel includes the following:

- General alarm operation
- Drill operation
- Last alarm, last supervisory and last trouble indication
- Manual alarm silence with 0, 1, 3, or 6 minute inhibit function
- 24-hour re-sound of silenced trouble indications
- Reset, Alarm Silence, Trouble Silence, General Alarm, History Recall, Lamp Test and Drill Test switches
- Drivers for a DACT and remote annunciators
- Complete city tie circuit selectable for reverse polarity output (alarm/trouble signaling), local energy or shunt
- One resettable power output
- Two non-resettable power outputs for auxiliary devices, (maximum .75 amps for resettable and non-resettable outputs combined)
- Four form C, status relays for system alarm, system trouble, system supervisory and power fault

Options

Operation of the base FireWatch-4000 (P/N 12400) panel is expandable as follows

Zone Expansion Board - ZEB (P/N 12405)

In the expanded mode, up to two zone expansion boards extend the main logic/display PCB., and an expansion termination board must be added to the rear of the box for additional field connection.

The zone expansion board also mounts on the panel door. Up to two zone expansion boards can be used, bringing the total number of IDC's to 12 and NAC's to 6.

The expansion enable board mounts in the rear of the enclosure and provides the termination point for the field circuits associated with the zone expansion board(s).

The expansion enable board provides connection for up to 4 notification appliance circuits and 8 initiating device circuits that are provided by one or two zone expansion board(s). An expansion board is only required when a zone expansion board is used.

Remote LED Annunciator - RLC1 (P/N 12406)

The FireWatch-4000 panel provides a drive for a remote annunciator. While the remote interface is via individual drive circuits, the physical connection between the panel and the annunciator uses multiplexed serial data and draws all power from the panel. The annunciator provides indication of the alarm and trouble status of each zone and provides remote silence, drill, and reset capability. The connection is supervised.

Auxiliary Power Supply Unit - APS1 (P/N 12408)

The auxiliary power supply uses the same basic design as the internal power supply, but it is packaged in a separate enclosure. The electrical parameters (e.g., input voltage, battery charging capability, system voltage and current) are the same as for the main power supply.

Operating Parameters

Initiating Device Circuits

The basic FireWatch-4000 panel provides 4 IDC's for conventional initiating devices (smoke detectors, manual pull stations, waterflow sensors and supervisory switches) IDC's are Class "B" (Style "B") or may be configured for Class "A" (Style "D") in groups of four. When configured for Class "A", the circuit may be wired Class "A" or Class "B". Each IDC has a disable switch accessible to the skilled user. Operation of this switch causes a trouble LED in the associated circuit and prevents an alarm condition on that circuit.

Alarm Verification

Alarm verification is provided and is selectable by IDC. To enable alarm verification on all IDC's, set the verify switch to the "On" position for each IDC (Alarm from any other zone during verification cycle causes an alarm).

The IDC's are Class "B" (Style "B") or may be configured for Class "A" (Style "D") in groups of four. When configured for Class "A", the circuit may be wired Class "A" or Class "B".

Waterflow Alarms

IDC's are convertible to a waterflow zone (i.e., it is not silenceable). The selection of waterflow zone permits the IDC to be wired so that sprinkler supervision is brought in on the same IDC. The IDC's discriminate "short" circuit alarms as waterflow alarms and tamper switches as supervisory alarms.

Sprinkler Supervision

Each of the IDC's is convertible to sprinkler supervisory function, with unique indication. See Waterflow Alarms above.

Digital Alarm Communicator

An interface is provided for a digital dialer. The wiring between the main PCB connector and the digital dialer terminals are not supervised, which means that the digital dialer should be mounted in the 12400 enclosure or in an adjacent box. A plug-in connector is used in the panel. The dialer can be powered by the 24V (nominal) filtered power supply from the panel. There is an off-site signaling disable switch that can disable all digital dialer outputs.

Ground Fault

The 12400 panel provides ground fault detection, both positive and negative. There is a separate ground fault indication LED for each. A ground fault triggers the common fault buzzer and common fault indicator, but does not interfere with the correct operation of the panel.

Quick Test

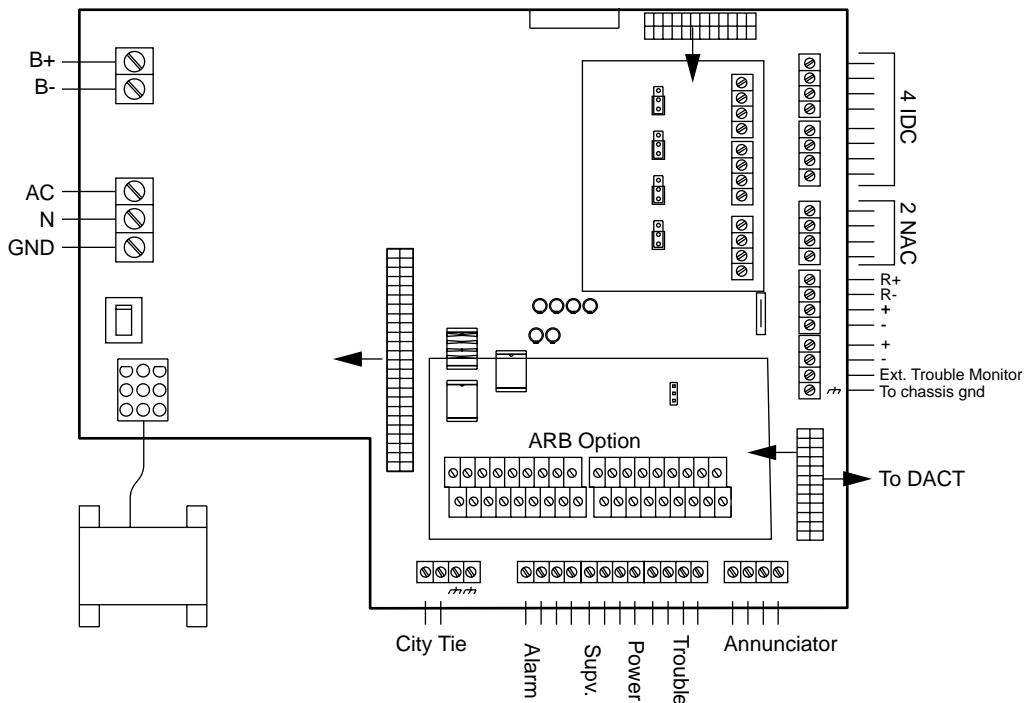
The 12400 provides a "quick test" feature to assist with testing the panel. A quick test is possible in one of two modes and is selectable on a per-zone basis. Any number of zones may be placed into quick test at the same time; but only one mode of quick test operation is possible for the whole panel at one time. In silent mode, all alarm outputs are disabled, and only the front panel indicator and remote annunciator LEDs operate. In the audible mode, all system sounders will sound momentarily as each detector or device is alarmed.

Note If the panel is left in quick test over one hour without a panel restart, the panel resets and disregards the quick test operation until a restart of the panel.

History Recall

The last alarm, last supervisory and last trouble received can be recalled to the display by operating a front panel push-button.

Wiring Diagram



Specifications

Environmental

Operating temperature
 Normal: 68-77°F (20-25°C)
 Extreme: 32-120°F (0-49°C) up to 3 hrs.
 Relative humidity
 Extreme: 85% @ 86°F up to 24 hours

Primary Input Voltage

Primary Input Voltage
 12400-120: 88 to 132VAC (50/60 hz)
 12400-240: 178 to 264VAC (50/60 hz)
 Maximum primary input current
 12400-120: 3.0A at 120VAC
 12400-240: 1.5A at 240VAC

Initiating Device Circuits

Power Limited
 Four Class B, Style B zones minimum, expandable in groups of four to 12 maximum. Convertible to Class A, Style D, by the addition of adapters (4 IDC's, 2 NAC's each)

Characteristics:
 Standby voltage range: 23-29 VDC
 Maximum standby current: 5.5mA
 Maximum standby detector current: 2.5mA
 Maximum alarm current: 53 mA
 Maximum ripple: 1V
 Maximum wire loop resistance: 100 ohms

Notification Appliance Circuits

Alarm voltage range: 19-29 VDC
 Maximum standby current: 3.2mA
 Maximum alarm current: 1.5A
 Maximum ripple: 1V
 Maximum loop drop voltage: 1.0 VDC

Secondary and Trouble Power Supply

24 volt sealed lead-acid battery set
 Maximum charge voltage: 29VDC
 Maximum charge current: 1.3A
 Maximum input current: 4A
 Battery capacity: 10-30 A.H. (over 10 A.H. requires separate enclosure)

Resettable Smoke Detector Power

Power limited
 Voltage: 24VDC nominal
 *Current: 0.75 amp maximum
 Ripple: 1V p-p maximum

Non-Resettable Auxiliary Power

Power limited
 Voltage: 24VDC nominal
 *Current: .75 amp maximum
 Ripple: 1V p-p maximum
 *Total combined resettable & non-resettable current is 0.75amp

Alarm Zone Relays

Maximum contact current: 1 A resistive
 Maximum contact voltage: 30 VDC/AC

Remote Annunciator Circuit

Standby voltage range: 19-29 VDC
 Maximum current: .9A

City Tie

Reverse Polarity
 Voltage: 24VDC nominal
 Current: .075 amp maximum
 Ripple: 1V p-p maximum

Local Energy
 Voltage: 24VDC nominal
 Current: .075 amp maximum
 Ripple: 1V p-p maximum

Shunt
 Maximum contact current: 3A resistive
 Maximum contact voltage: 30VDC/AC

Dimensions

Door: 22-9/32" (H) x 14-3/4" (W) x 3/4" (D)
Box: 22" (H) x 14-3/8" (W) x 5-1/4" (D)
Semi-Flush Trim: 25-1/8" (H) x 17-1/2" (W)

Ordering Information

FireWatch-4000 Control Panel (4 to 12 Zones)

Order No.	Cat No.	Data Sht.	Description
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12400-0-14-120	FW-4000		Base unit in surface cabinet, red, 4 IDCs (B/B) & 2 NACs (Y/B) 120Vac
12400-0-14-240	FW-4000		Base unit in surface cabinet, red, 4 IDCs (B/B) & 2 NACs (Y/B) 240Vac

Options for FireWatch-4000

12401	CAA1		Style D/Z class A card adapts each 4 IDC & 2 NAC group
12402	ARB		Zone Alarm Relay Card 12 form "C" @ 1 Amp
12404	EEB1		Expansion termination board allows up to (2) ZEB cards
12405	ZEB		Zone & Sig. Expansion Card 4 IDCs (B/B) & 2 NACs (Y/B)
12406	RLC1		Remote 12 Zone LED Annunciator
12407	SFT1		Semi-Flush trim 1-Piece trim kit for FireWatch-4000
12410	DCC1		Interconnect cable required for DC-100 to FireWatch-4000
12408-0-14-120	APS1		Adder Sig. Pwr. Unit 3.0A exp. NAC power in surface cab., red
12408-0-14-240	APS1		Adder Signal Power Unit 3.0A exp. NAC power in surface cab., red
12409	SFT2		Semi-Flush trim 1-piece trim kit for APS1



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