

Features

Standard features include:

- Up to 250 addressable TrueAlarm sensor or addressable device points using IDNet communications that operate with either shielded or unshielded twisted pair wiring
- Four, 2 A notification appliance circuits (NACs) with solid state current protection
- Power supply/battery charger with 4 A available for NACs and auxiliary power
- Internal event reporting DACT module (standard on models 4010-9101, 4010-9102, & 4010-9150)
- UL listed to Standard 864

Installation convenience features:

- Power-limited design provides electronic modules on a one-piece chassis with up-front terminal blocks for wiring access
- Compact NEMA 1 rated cabinet is available in beige or red and can be pre-shipped for early installation

Setup, programming, and maintenance features:

- Device level ground fault search, locate, and isolate
- *Auto Program* for general alarm operation
- TrueAlarm individual analog sensing with front panel information and selection access
- “Dirty” TrueAlarm sensor maintenance alerts, service and status reports including “almost dirty”
- Default TrueAlarm sensor device type operation
- TrueAlarm sensor peak value performance report
- Duplicate address error detection
- Front panel or PC programming
- WALKTEST silent or audible system test
- Software verification simulation mode

Supports the following IDNet devices:

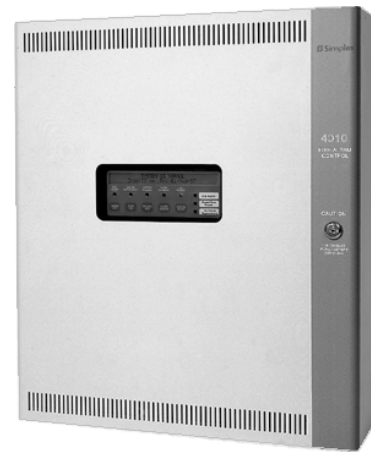
- Addressable manual stations; TrueAlarm sensor bases, duct housings, and isolator bases
- Quad-state zone adapter modules (ZAMs) for initiating device monitoring
- Quad-state line powered individual addressable modules (IAMs) for initiating device monitoring and relay control
- 4009 IDNet NAC Extenders and accessories

Available option modules include:

- Door mounted 24 LED annunciator (std. on ULC models)
- Network connection, or Point Reporting DACT
- Class A, NAC adapter module
- RS-232 ports for printer and maintenance PC
- Expansion power supply; Auxiliary Relay Module or City Interface
- Equipment for Suppression Release Applications (refer to data sheet S4010-0003)

Compatible with Simplex® auxiliary panels:

- 4003 Voice Control Panel
- 4081 Battery Cabinet with charger for 50 Ah batteries



4010 Fire Alarm Control Panel (with standard door)

Description

TrueAlarm fire alarm control panels have the ability to provide location accuracy for monitoring and control. When equipped with TrueAlarm analog sensing for smoke and heat detection, the processing power of the control panel also has the ability to analyze conditions at each location to provide accurate detection with significantly reduced maintenance costs.

The 4010 TrueAlarm Fire Alarm Control Panel has been specifically designed to provide addressable operation and analog detection in a cost-effective package for application sizes that previously were considered only appropriate for conventional zoned monitoring.

Installation and Service Ease. The 4010 mounts on a single chassis for quick installation and removal. Terminal blocks are large and up-front for easy access and inspection. Optional modules are easily and quickly installed, and programmed as required.

The 4010 cabinet provides convenient stud markers for drywall thickness and nail-hole knockouts for quicker mounting. Smooth cabinet surfaces are provided for locally cutting conduit entrance holes exactly where required. 4010 cabinets and electronics can be ordered separately, allowing early cabinet installation.

Ground Fault Assistance. Ground fault problems often occur during installation. The 4010 provides isolating circuitry, control of isolator bases, and software-controlled sequencing to isolate ground faults to specific identified locations. This assistance helps the installer to accurately locate the wiring problem for quicker repair.

* Refer to page 6 for listing details. This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7170-0026:226 for allowable values and/or conditions concerning material presented in this document. Accepted for use – City of New York Department of Buildings – MEA35-93E. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

4010 Operator Control Summary

Extensive Feature List. The 4010 Fire Alarm Control Panel provides access to an extensive feature list that includes:

- Providing easy and powerful operator information with a logical, menu-driven display
- Extensive and automatic diagnostics for maintenance reduction
- History Logs available from the LCD or capable of (optionally) being printed
- Software Verification, allowing detailed logic programming simulation to be conducted without activating connected outputs
- Control Panel (or service PC) label editing
- Password access control
- Auto Program Quick Configuration (Quick-CFIG) of connected modules and IDNet devices for general alarm operation to quickly get the system up and running

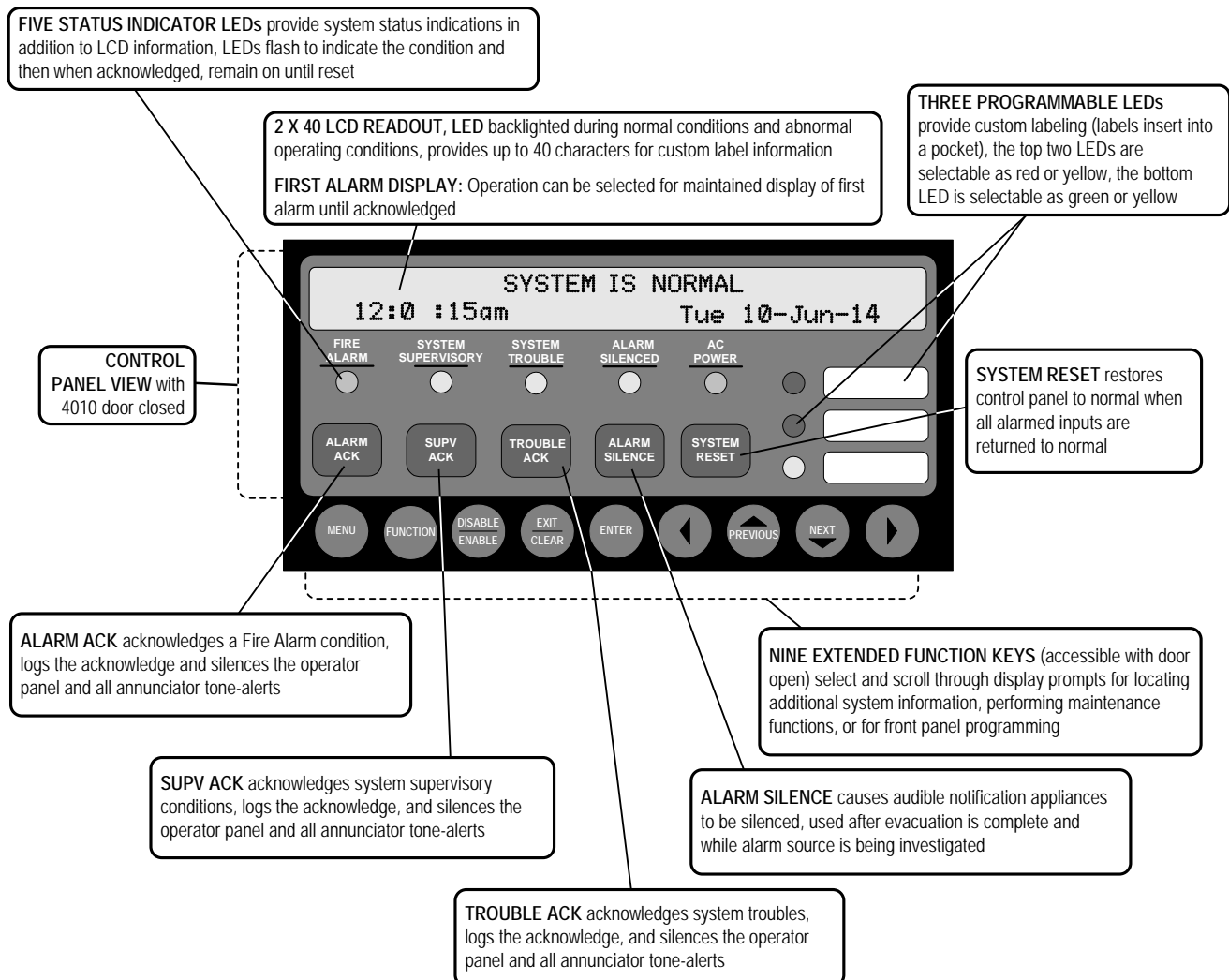
4010 Display Panel and Diagnostic Mode

Convenient Status Information. With the locking door closed, a window allows viewing of the status display. The 4010 status panel provides a two line by 40 character, super-twist LCD information display and eight status LED indicators as shown in the illustration below.

From this display, the LED indicators will describe the general category of activity being displayed with the LCD providing more detail. For the authorized user, unlocking the door will provide access to the control switches and allow further inquiry by scrolling the display for additional detail. (Refer to control panel functional illustration below.)

WALKTEST Diagnostic Operation Mode. The WALKTEST process allows a single person to perform system test. The system records test inputs such as intentional alarms or trouble and either logs the response (silent WALKTEST operation) or outputs a brief, recognizable audible notification signal (audible WALKTEST operation).

Extended Operator Control Panel Functions



IDNet Addressable Interface

Overview. The 4010 provides IDNet addressable device communications. Using a two-wire circuit, individual devices such as manual fire alarm stations, TrueAlarm sensors, and sprinkler waterflow switches can be directly connected (or interfaced) to the IDNet controller to communicate their identity and status. This addressability allows the location and condition of the connected device to be displayed on the 4010 panel LCD and on system annunciators. Additionally, control circuits (fans, dampers, etc.) may be individually controlled by using a relay IAM (individual addressable module). The 4009 IDNet NAC Extender can be controlled for local or remote notification appliance expansion. (Refer to compatible device lists on document S4090-0011 and to individual device documentation for further details.)

Capacity. A total of 250 addressable monitor and control points may be intermixed on the same pair of wires. By using Zone Adaptor Modules (ZAMs) or Individual Addressable Modules (IAMs), conventional initiating devices can be connected to the IDNet circuit.

IDNet Addressable Operation. The IDNet controller continuously interrogates each addressable device on the communication channel for status condition such as: normal, off-normal, alarm, supervisory, or trouble. Sophisticated poll and response communication techniques ensure supervision integrity and allow for "T-tapping" of the circuit for Class B operation.

Wiring Requirements. Refer to the specifications chart below. Distances are for shielded or unshielded wire. Shielded wire may provide protection from unexpected sources of interference and may be required for some applications.

Wiring Specifications

Size		18 AWG (0.82 mm ²)
Wire	Preferred	Shielded twisted pair (STP)
	Acceptable	Unshielded twisted pair (UTP)
Farthest Distance from Control Panel to Device		Up to 2500 feet (762 m)
Total Wire Length Allowed With "T" Taps for Class B Wiring		Up to 10,000 ft (3 km).

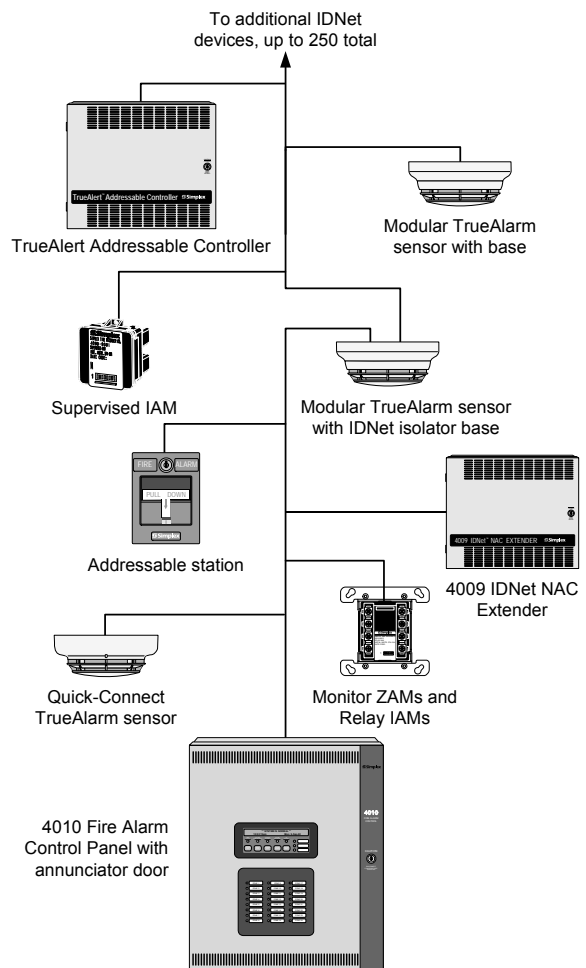
TrueAlarm Analog Sensors

TrueAlarm System Operation. IDNet communications are used for TrueAlarm smoke and temperature sensors. Every four seconds, smoke sensors transmit an output value based on their smoke chamber condition. The 4010 CPU maintains a current value, peak value, and an average value of each sensor's output. Status is determined by comparing the current sensor value to its average value. Tracking this average value as a continuously shifting reference point filters out environmental factors that cause shifts in sensitivity.

Programmable Sensitivity. The sensitivity of each sensor can be field programmed at the 4010 Control Panel for different levels of smoke obscuration (in percent) or for specific heat detection levels. In order to evaluate whether the sensitivity should be revised, the peak value is stored in memory and can be easily read and compared to the alarm threshold directly in percent.

TrueAlarm Analog Sensors (Continued)

TrueAlarm heat sensors can be selected for rate-of-rise detection as either 15° F (8.3° C) or 20° F (11.1° C) per minute with an independent fixed limit of 135° F (57° C) or 155° F (68° C). TrueAlarm heat sensors can also be programmed as a utility device to monitor for temperature extremes in the range from 32° F to 155° F (0° C to 68° C). This feature can provide freeze warnings or alert to HVAC system problems.



4010 Control Panel with Typical IDNet Devices

Diagnostics and Default Device Type

TrueAlarm operation gives the 4010 system the ability to automatically indicate when a sensor is almost dirty, dirty, and excessively dirty. The NFPA 72 (*National Fire Alarm and Signaling Code*) requirement for a test of the sensitivity range of the sensors is fulfilled by the TrueAlarm ability to maintain the sensitivity level of each sensor.

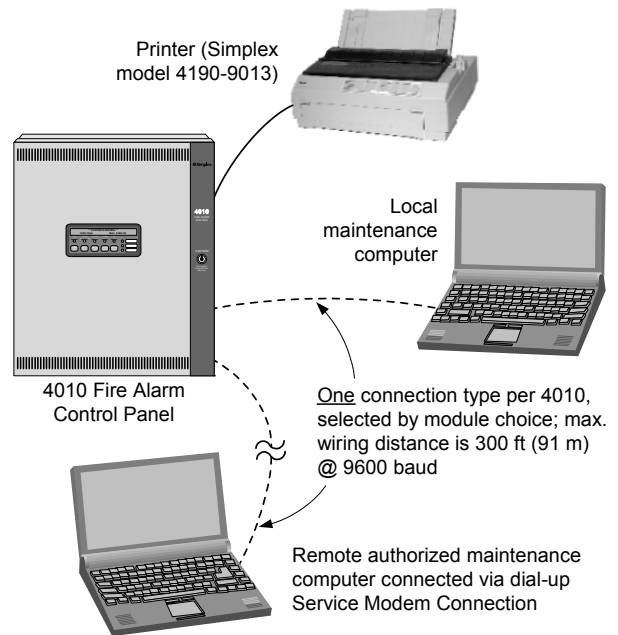
Modular TrueAlarm sensors use the same base and different sensor types (photoelectric smoke sensor, or heat sensor) can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily dusty, instead of covering the smoke sensors (causing them to be disabled), heat sensors may be installed without reprogramming the control panel. Although the control panel will indicate an incorrect sensor type, the heat sensor will operate at a default sensitivity to provide heat detection for building protection at that location.

TrueAlarm Information Details

True Alarm sensor data can be displayed on the system LCD, on a remote maintenance PC, or printed on a remote printer. With the proper operator access, a TrueAlarm Service Report can be generated to list the specific details of each TrueAlarm device. This report, as well as the Status Report can either be displayed on the remote maintenance PC or captured permanently by using a remote 80 character printer.

Status and Service Reports. The report samples below illustrate the format provided on either the remote maintenance PC or a printer. This information is available at the system LCD by identifying the specific point of interest and reading one point at a time.

Compatible Printer. Model 4190-9013 is a UL Standard 864 listed 80 column, 24 pin dot matrix printer (refer to data sheet S4190-0011).



RS-232 Connection Options
(refer to module selection on page 6)

TrueAlarm Status and Service Report Samples

Simplex 4010 Fire Alarm System				Page 1	
REPORT 3 : TrueAlarm Status Report				2:43:03 pm Tue 10-Jun-14	
Zone Name	Custom Label	Sensitivity	Device Status	Almost Dirty	
M1-1	ANALOG PHOTO CLEAN ROOM	0.5 %	NORMAL		
M1-2	ANALOG ION CLEAN ROOM	1.3 %	NORMAL		
M1-3	ANALOG PHOTO MAIN LOBBY	2.5 %	NORMAL	*YES*	
M1-4	ANALOG PHOTO CONFERENCE ROOM 1	2.5 %	NORMAL		
M1-10	HEAT DETECTOR GARAGE	135 F	NORMAL		
M1-11	ANALOG PHOTO KITCHEN	3.7 %	NORMAL	*YES*	
END OF REPORT					

Typical TrueAlarm Status Report Information Printout and/or Maintenance PC Screen

Simplex 4010 Fire Alarm System				Page 1		
REPORT 4 : TrueAlarm Service Report				2:56:09 pm Tue 10-Jun-14		
Dev Num	Custom Label	Alarm at:	Avg val	Current/ % alarm	Peak/ % alarm	State
1	ANALOG PHOTO - CLEAN ROOM	0.5/ 83	67	68/ 1%	72/ 10%	NOR
2	ANALOG ION - CLEAN ROOM	1.3/209	94	97/ 2%	101/ 1%	NOR
3	ANALOG PHOTO - MAIN LOBBY	2.5/185	117	117/ 0%	125/ 42%	NOR
4	ANALOG PHOTO - CONFERENCE ROOM 1	2.5/161	93	93/ 0%	93/ 0%	NOR
10	HEAT DETECTOR - GARAGE	135F/253	---	63/-67F	66/ 69F	NOR
11	ANALOG PHOTO - KITCHEN	3.7/216	116	116/ 1%	110/ 36%	NOR
END OF REPORT						

Typical TrueAlarm Service Report Information Printout and/or Maintenance PC Screen

Standard Panel Features

N2 Communications for Serial Annunciator Control.

Control for up to 6 remote Simplex Annunciator products including 24 Point I/O Module, and LCD Annunciator. Includes extensive troubleshooting diagnostics. (See list in next column for compatible devices.)

Access Port. RS-232 service port for connecting PC tools for service diagnostics and for programming the CPU Flash EPROM memory.

IDNet Addressable Communications Channel.

Addressable channel provides communications for up to 250 remote addressable devices, including TrueAlarm analog sensors and isolator bases (see details on page 3).

Four NACs. Class B output is standard, rated for 2 A @ 24 VDC nominal, with solid state current protection. Class A operation is optional with the addition of an adapter module.

NAC operation can be selected for “on-until-Silence” or “on-until-Reset,” and can be Continuous, Temporal pattern, or March Time pattern. (*March Time is selectable for 20 bpm or 120 bpm for conventional appliances; or 60 bpm for SmartSync appliances.*) NACs are individually selectable to control Simplex synchronized strobes or for Simplex SmartSync control that provides separate horn and synchronized strobe control using a 2-wire circuit.

Two Auxiliary Output Circuits. Operation is programmable for trouble, alarm, supervisory, or other fire response functions. Output is one Form “C” dry contact each, rated 2 A @ 24 VDC. An optional relay kit is available for switching up to 0.5 A at 120 VAC.

Standard Power Supply. Output is rated 4 A for “Special Application” appliances and for “Regulated 24 DC” appliance power. (*Special Application appliances include Simplex 4901, 4903, 4904, and 4906 Series horns, strobes, horn/strobes, and speaker/strobes. See page 7 for additional information.*) Internal system power is provided separately, allowing the 4 A to be available for NAC and auxiliary power tap functions. Over-current protection is solid state and self-resetting.

Auxiliary Power Tap. Provides up to 0.5 A of the standard power supply voltage, over-current protected. Compatible uses include power for: remote LCD annunciators, 24 Point I/O modules, sensor bases and duct housings that require external power, and addressable devices requiring external power.

Battery Charger. Capable of charging up to 25 Ah sealed lead-acid batteries (4010 cabinet mounted). A recharge time of 24 hours is typical with stable 120 VAC input. For applications requiring larger batteries, external charger/cabinet assemblies are available.

A depleted battery cutout feature is programmable to advise and/or to reduce current when battery voltage is low.

Optional Expansion Slot Modules

(The 4010 is available with a Simplex Network Interface. 4010 points can be declared “public.”)

Network Interface, Modular Media. Available for wired connections or fiber optic. Require separate media modules. May be both wired, both fiber optic, or one of each.

Optional Expansion Slot Modules (Cont'd)

Network Interface, Fixed Media. Available for wired applications.

DACT, Point Reporting Module. Provides serial output information that can send location details to a remote receiving station.

DACT, Event Reporting Module. For applications where simple event status information is required (Alarm, Trouble, Supervisory, and AC power failure).

Dual RS-232 Module. Available for interfacing to a printer and a maintenance PC.

Single RS-232 Module with Service Modem Connection. Provides one port dedicated for connection to a printer, and a second port dedicated for dial-in from a service computer, typically located off-site. With an off-site computer, programming changes and system diagnostics can be performed remotely, reducing service time for repair or reprogram. Security is maintained by password protection.

Optional Chassis Mount Modules

4 A Expansion Power Supply provides two taps of 2 A each, 28 VDC, filtered, non-regulated. Output rating is 4 A for auxiliary power, 4 A for “Special Application” appliances and 2 A for “Regulated 24 DC” appliance power.

Dual Circuit Class A NAC Adapter Module mounts on the main 4010 printed circuit assembly and provides the additional circuitry needed for Class A operation.

Dual Circuit City Connect Module provides the interface required for direct wired reporting to conventional city connection circuits. (Available with or without disconnect switches.)

Expansion Power Distribution Module provides two additional termination points for the 0.5 A auxiliary power output, or for one tap of the expansion power supply.

Relay Option Module provides three relays, one each for Alarm, Supervisory, and Trouble. Relay contacts are selectable for normally open or normally closed and are rated 2 A @ 32 VDC maximum.

N2 Communications Modules

Up to six of the following modules may be connected to the Simplex N2 serial communications bus.

4606-9101 LCD Annunciators provide remote acknowledge, reset, and alphanumeric status display. First Alarm display will work same as for the panel when selected (see page 2). (Refer to data sheet S4606-0001.)

24 LED Annunciator Doors are standard on ULC listed models and are available as door-only assemblies for electronics only packages or other aftermarket applications. This option uses the 24 Point I/O module with all points pre-assembled as LED outputs, with individual labels and each LED is selectable as red or yellow.

4605 Series 24 Point I/O Modules are available for remote mounting and provide 24 points that can be programmed as either general purpose switch inputs or system controlled outputs. Typical applications are for remote annunciators and monitoring and control of other related processes. (Refer to data sheet S4010-0002.)

4010 Fire Alarm Control Selection Chart and Module Location Rules (refer to diagrams on page 8)

Category	Model	Description	Voltage	Color	
Control Panel Assembly (select one)	4010-9101	UL Listed 4010 Fire Alarm Control Panel with: door, cabinet, power supply/battery charger, IDNet interface, 4 NACs, 2 programmable auxiliary relays, and external N2 communications interface; 4010-9101 and 4010-9102 include internal common event reporting DACT	120 VAC	Beige	
	4010-9102			Red	
	4010-9201		240 VAC	Beige	
	4010-9202			Red	
	4010-9101C	English	ULC Listed 4010 Fire Alarm Control Panel; same as above except: with 24 LED Annunciator door; and without DACT	120 VAC	Beige
	4010-9101CF	French			
	4010-9150	UL Listed	4010 Fire Alarm Control Panel, Electronics Only; for pre-shipped cabinets, requires door and cabinet ordered separately; 120 VAC input; 4010-9150 has event reporting DACT; C & CF suffix models delete DACT		
	4010-9150C	ULC			
4010-9150CF	Listed	French			

Optional Expansion Slot Features (two slots are available, select modules as required)

Category	Model	Description
Reporting and Network Modules (select one)	4010-9810	DACT Module (Common Event Reporting) Includes two, 7 ft (2.1 m) long RJ45 cables
	4010-9816	DACT Module (Point Reporting)
	4010-9821	Network Interface Module with fixed, wired connections
	4010-9817	Network Interface Module, Modular; requires 2 (In/Out) media modules (see below)
Media Modules	4010-9818	Network Wired Media Module Media modules mount on the 4010-9817 module
	4010-9819	Network Fiber Optic Media Module without impact to slot allocation space.
RS-232 Communications (select one)	4010-9811	Dual RS-232 Interface Module
	4010-9812	Single RS-232 Interface Module with Service Modem connection

Chassis Mounted Expansion Modules (select as required)

Category	Model	Description
Expansion Power Supply (select one)	4010-9813	120 VAC input 4 A Expansion Power Supply; rated 4 A for "Special Application" appliances;
	4010-9823	240 VAC input rated 2 A for "Regulated 24 DC" appliance power
Optional Features (select as indicated)	4010-9825	24 VDC Expansion Power Distribution Module, provides two additional termination points for an expansion power supply tap or the auxiliary power output
	4010-9806	Dual Circuit Class A NAC Adapter Module, two maximum
	4010-9809	Dual Circuit City Connect Module
	4010-9829*	Dual Circuit City Connect Module w/o disconnect switches
	4010-9803	Relay Option Module
		Select one maximum

Accessories

Category	Model	Description
Optional Features	4010-9826	120 VAC Auxiliary Relay Kit, allows one auxiliary relay to control up to 0.5 A @120 VAC, select as required; 2 maximum
	4010-9830 (CAF)	Suppression Release Appliqué, required for suppression release applications; suffix CAF selects a French appliqué
	2975-9801	Semi-flush trim, beige, 1 7/16" (37 mm) wide
	2975-9802	Semi-flush trim, red, 1 7/16" (37 mm) wide
Batteries (required if batteries are internal; select one size; two batteries are required)	2081-9272	6.2 Ah Battery, 12 VDC
	2081-9274	10.0 Ah Battery, 12 VDC
	2081-9288	12.7 Ah Battery, 12 VDC
	2081-9275	18 Ah Battery, 12 VDC; NOTE: This battery size will not allow bottom entry conduit
	2081-9287	25 Ah Battery, 12 VDC
Cabinets (select one if pre-shipped)	2975-9215	Red Cabinet
	2975-9214(CF)	Beige Cabinet; CF suffix has French labels
Doors (select one if pre-shipped or for use with 4010-9150)	4010-9858	Red Door with dress panel
	4010-9857(CF)	Beige Door with dress panel; CF has French labels
	4010-9860*	Beige Door with 24 LED Annunciator and dress panel
	4010-9861*	Red Door with 24 LED Annunciator and dress panel
		Dimensions: 22" H x 18" W x 5 5/8" D (559 mm x 457 mm x 137 mm)
		Dimensions: 22" H x 18" W x 5 5/8" D (559 mm x 457 mm x 16 mm)
		Dimensions: 22" H x 18" W x 1 23/32" D (559 mm x 457 mm x 44 mm) [see also S4010-0002]

* As of document revision date: 4010-9829 is not ULC listed; 4010-9860 and 4010-9861 are listed by UL, ULC, and CSFM; and FM approved;

4010 Operating Specifications

Input Power Requirements	Voltage Range	Frequency	Maximum Current
AC Input, 120 VAC base models	102 to 132 VAC	60 Hz	2 A
AC Input, 240 VAC base models	204 to 264 VAC	50/60 Hz	1 A
AC Input with 120 VAC expansion power supply	102 to 132 VAC	60 Hz	4 A
AC Input with 240 VAC expansion power supply	204 to 264 VAC	50/60 Hz	2 A
Environmental			
Operating Temperature Range	32° to 120°F (0° to 49° C)		
Operating Humidity Range	up to 93% RH, non-condensing @ 100.4° F (38° C) maximum		
Output Ratings			
Standard Power Supply Output	Rated 4 A for "Special Application" appliances and for "Regulated 24 DC" appliance power; Battery charger for up to 25 Ah sealed lead-acid batteries		
Notification Appliance Reference	Special Application	Simplex 4901, 4903, 4904, and 4906 Series horns, strobes, and combination horn/strobes and speaker/strobes (contact your Simplex product representative for compatible appliances)	
	Regulated 24 DC	Power for other UL listed appliances; use associated external synchronization modules where required	
Auxiliary Power Output Tap from Standard Power Supply	Rated 0.5 A maximum @ 19.4 to 32 VDC; subtract current used from standard power supply output		
Expansion Power Supply Output	Rated 4 A for "Special Application" appliances and auxiliary power; Rated 2 A for "Regulated 24 DC" appliance power; Two output taps of 2 A each are provided		
NAC Ratings	2 A each maximum; up to 33 synchronized strobes maximum per NAC		

Current Ratings for Optional Modules and Remote LCD Annunciator

Model	Module	Supervisory Current	Alarm Current
4010-9810	DACT (Common Event Reporting)	40 mA	40 mA
4010-9816	DACT (Point Reporting)	40 mA	40 mA
4010-9821	Network, wired communications	125 mA	125 mA
4010-9817	Network Modular, add media cards separately	24 mA	24 mA
4010-9818	Network Wired Media	47 mA	47 mA
4010-9819	Network Fiber Optic Media	36 mA	36 mA
4010-9811	Dual RS-232	75 mA	75 mA
4010-9812	Single RS-232 with Service Modem	100 mA	100 mA
4010-9806	Dual Class A NAC Adapter	0 mA	0 mA
4010-9809	Dual Circuit City Connect	20 mA	36 mA
4010-9829	Dual Circuit City Connect w/o disconnect switches	20 mA	36 mA
4010-9803	Relay Option Module	10 mA	37 mA
4010-9860 4010-9861 & ULC 4010s	24 LED Annunciator door	60 mA	83 mA (all LEDs on)
4606-9101	Remote LCD Annunciator (refer to data sheet S4606-0001)	65 mA	140 mA

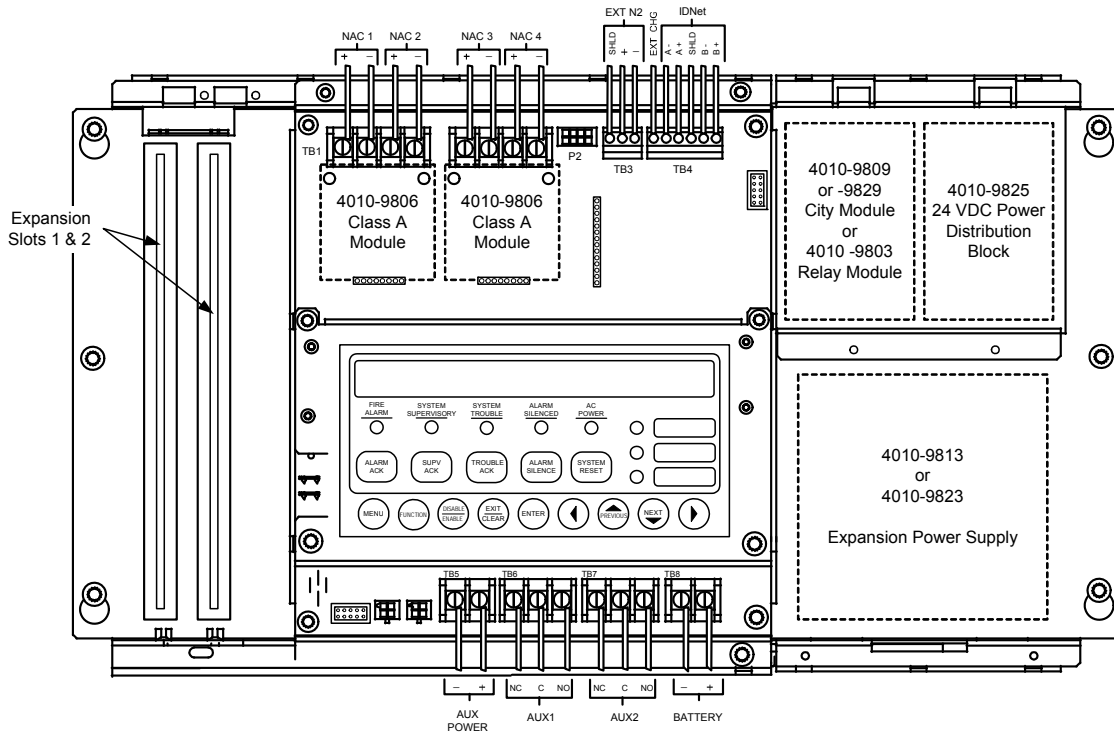
System Current (supplied separate from power supply output)

Base System with:	Supervisory Current**	Alarm Current**
no IDNet devices	195 mA	295 mA
50 IDNet devices	230 mA	330 mA
100 IDNet devices	265 mA	365 mA
150 IDNet devices	300 mA	400 mA
200 IDNet devices	335 mA	435 mA
250 IDNet devices	370 mA	470 mA

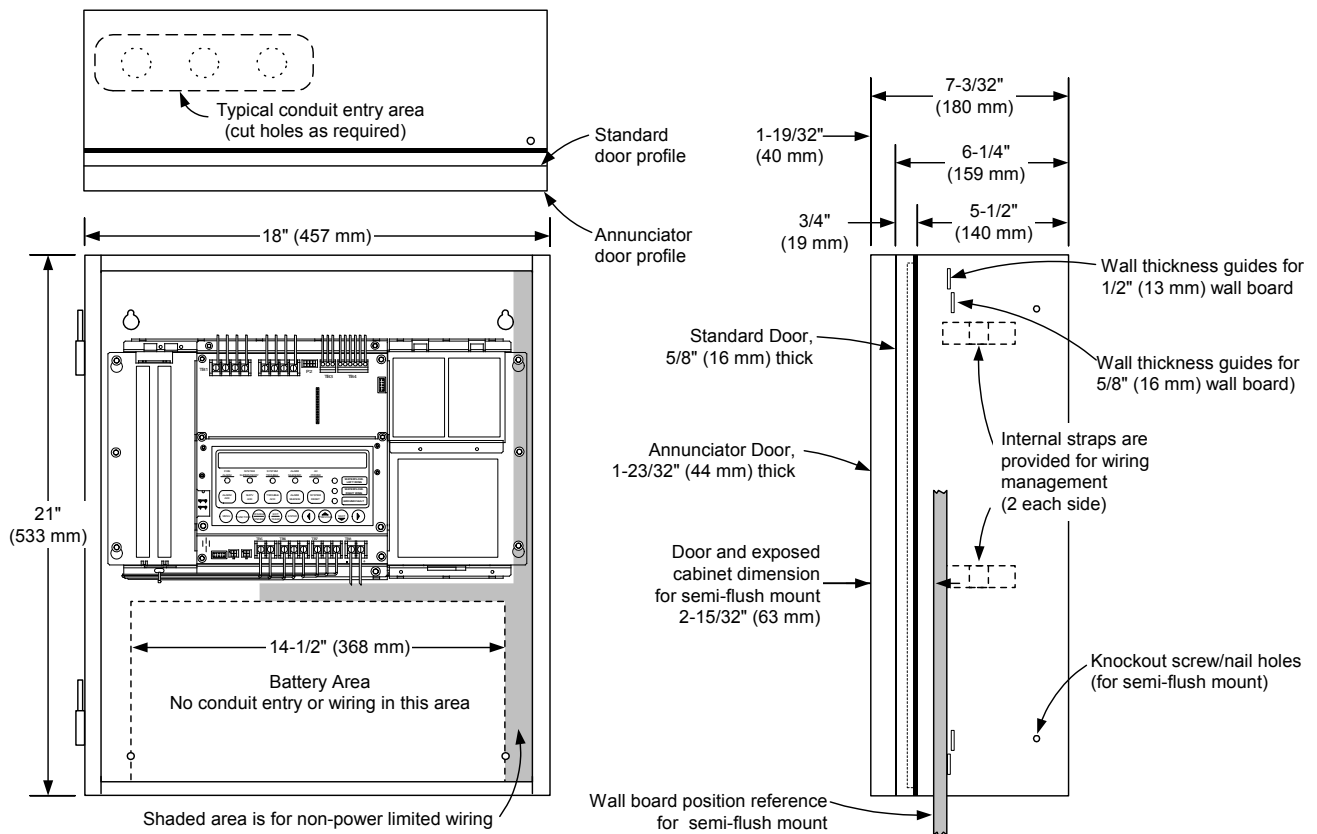
** Current Calculation Information:

- To determine total supervisory current, add currents of modules in panel to base system value **and** all auxiliary loads.
- To determine total alarm current, add currents of modules in panel to base system alarm current **and** add all panel NAC loads **and** all auxiliary loads.

4010 Module Layout Reference



Mounting Information



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