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FIRE ALARM CONTROL EQUIPMENT,
BATTERIES & ACCESSORIES

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UL, ULC, CSFM Listed;
FM, NYC Fire Dept Approved*

4010ES Fire Control Panels

Addressable Fire Detection and Control
Basic Panel Modules and Accessories

Features

Basic system includes:

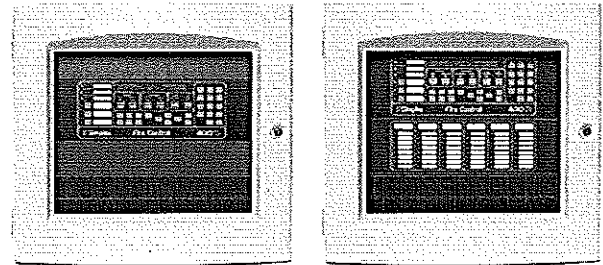
- Capacity for up to 248 addressable devices, up to 127 VESDA SLI points, up to 2000 points of Annunciation and up to 20 internal and external card addresses
- Color-coded operator interface with membrane keypad includes 2 x 40 Super-twist LCD display, 3 programmable control keys and 6 programmable LEDs
- CPU assembly includes dedicated compact flash memory for on-site system information storage and convenient Ethernet service port access
- 8 A power supply with up to 2 A of Auxiliary power and battery charger capacity for up to 110 Ah batteries (UL) or up to 50 Ah batteries (ULC) (33 Ah max in control panel cabinet)
- 4 on-board Class A or B, 3 A NACs and one programmable auxiliary relay output rated for 2 A @ 32 VDC
- Class A or B Two-loop Isolated IDNet Communications (IDNet+) supports up to 248 addressable and analog sensing devices on non-twisted, non-shielded wiring
- Remote annunciator module support via RUI (Remote Unit Interface) communications port, supports either Class B (Style 4) or X (Style 7) Pathway operation
- 48 LED panel mount annunciation provides 40 Red and 8 Yellow pluggable LEDs (select models, meets ULC requirements), optional LED kits are available for custom LED configurations

Optional Main System Supply and door mounted modules include:

- City Connect (with or without disconnect switches)
- Alarm Relay Module
- TrueInsight Remote Gateway

Optional block space modules include:

- Fire Alarm Network Interface Card for 4120/4100 Peer-to-Peer network communications, supports either Class B or X (Style 7) Pathway operation
- Ethernet connectivity options include Building Network Interface Module (BNIC), SafeLINC Internet Interface, and BACpac Ethernet Portal
- Dual RS-232 Module (for printer, PC annunciator or third party interface)
- VESDA Air Aspiration High Level Interface
- Serial DACT
- 8 Zone IDC Modules Class A or B
- 4 Point Auxiliary Relay Module
- Physical Bridge Network Modules



4010ES Fire Alarm Control Panels are available standard (left) or with LED Annunciation (right)

Compatible with Simplex® remotely located:

- 4098-9757 QuickConnect 2 and legacy 4098-9710 QuickConnect TrueAlarm smoke sensors
- 4003EC Small Voice Panels
- 4009 IDNet NAC Extenders (4009A)
- TrueAlert Addressable Controllers (4009T) and Remote TrueAlert Power Supplies (4009 TPS)
- 4081 Series, 110Ah Battery Chargers
- 4100-7400 Series Graphic Annunciators
- 4190 Series PC Annunciator
- 4190 Series Fiber Modems and Physical Bridges
- 4606-9102 Remote LCD Annunciator, 4100-9400 Series Remote InfoAlarm Command Centers, and 4602 Series Status Command Units (SCU) and Remote Command Units (RCU) Annunciators
- IP communicator compatibility

4010ES Agency listings:

- UL Std. 864, Fire Detection and Control (UOJZ), and Smoke Control Service (UUKL), and Releasing Service (SYZV)
- UL Std. 2017, Process Management Equipment (QVAX)
- UL Std. 1076, Proprietary Alarm Units-Burglar (APOU)
- UL Std. 1730, Smoke Detector Monitor (UULH)
- ULC Std. S527-99, Fire Detection and Control (UOJZC)
- ULC Std. S559-04, Supervising Station (DAYRC)

* See pages 5 and 6 for additional listing information. 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 7165-0026-0369 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. NYC Fire Dept COA #6095. 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.

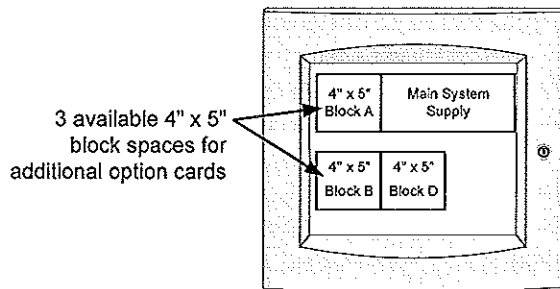
Introduction

4010ES Series Fire Detection and Control Panels provide leading edge installation, operator, and service features for customer applications in the mid-range addressable fire alarm systems market. An on-board Ethernet port provides fast external system communications to expedite installation and service activity. Dedicated compact flash memory archiving provides secure on-site system information storage of electronic job configuration files to meet NFPA 72 (*National Fire Alarm and Signaling Code*) requirements.

Modular design. A variety of functional modules are available to meet specific system requirements. Selections allow panels to be configured for either Stand-Alone or Networked fire control operation.

Panel Hardware

The Master Controller and Main System Supply are mounted in the upper section of the 4100ES cabinet.



Panel Hardware (Continued)

4010ES Block Space Option Cards mount to the left of the 4010ES Main System Supply. There are 3 available 4" x 5" blocks for mounting 4010ES hardware options.

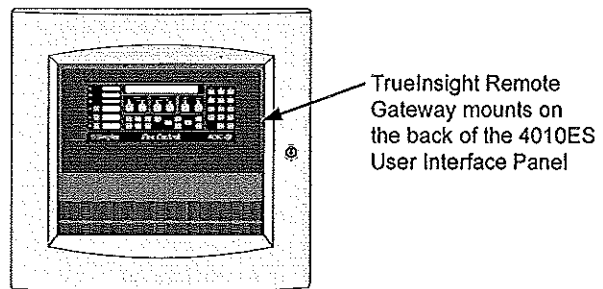
Other 4010ES Options: The 4010ES City Connect module or the optional Alarm Relay module mount directly to the Main System Supply. These options are mutually exclusive.

Network Media modules mount directly to the 4010ES Network Interface Card.

The TrueInsight Remote Gateway mounts on the back side of the 4010ES User Interface Panel.

The **Battery Compartment** located in the bottom of the 4010ES cabinet accepts two batteries, up to 33 Ah, without interfering with expansion module space.

The illustrations below identify mounting locations available for optional 4010ES modules.



Mounting Locations for Optional Modules

Mechanical Description

- Mounting box provides convenient stud markers for drywall thickness and nail-hole knockouts for quicker mounting
- Smooth box surfaces are provided for locally cutting conduit entrance holes exactly where required
- The hinged User Interface panel easily opens for internal access
- Modules are power-limited (except as noted, such as relay modules)
- Doors include tempered glass inserts, boxes and doors are available in platinum or red
- Box and door/retainer assemblies are included with Basic Panel assemblies

Software Feature Summary

- TrueAlarm individual analog sensing with front panel information and selection access
- "Dirty" TrueAlarm sensor maintenance alerts, service and status reports including "almost dirty"
- TrueAlarm magnet test indication appears as distinct "test abnormal" message on display when in test mode
- TrueAlarm sensor peak value performance report
- "Install Mode" allows grouping of multiple troubles for uninstalled modules and devices into a single trouble condition (typical with future phased expansion); with future equipment and devices grouped into a single trouble, operators can more clearly identify events from the commissioned and occupied areas
- Module level ground fault searching assists installation and service by locating and isolating modules with grounded wiring
- "Recurring Trouble Filtering" allows the panel to recognize, process, and log recurring intermittent troubles (such as external wiring ground faults), but only sends a single outbound system trouble to avoid nuisance communications
- WALKTEST silent or audible system test performs an automatic self-resetting test cycle

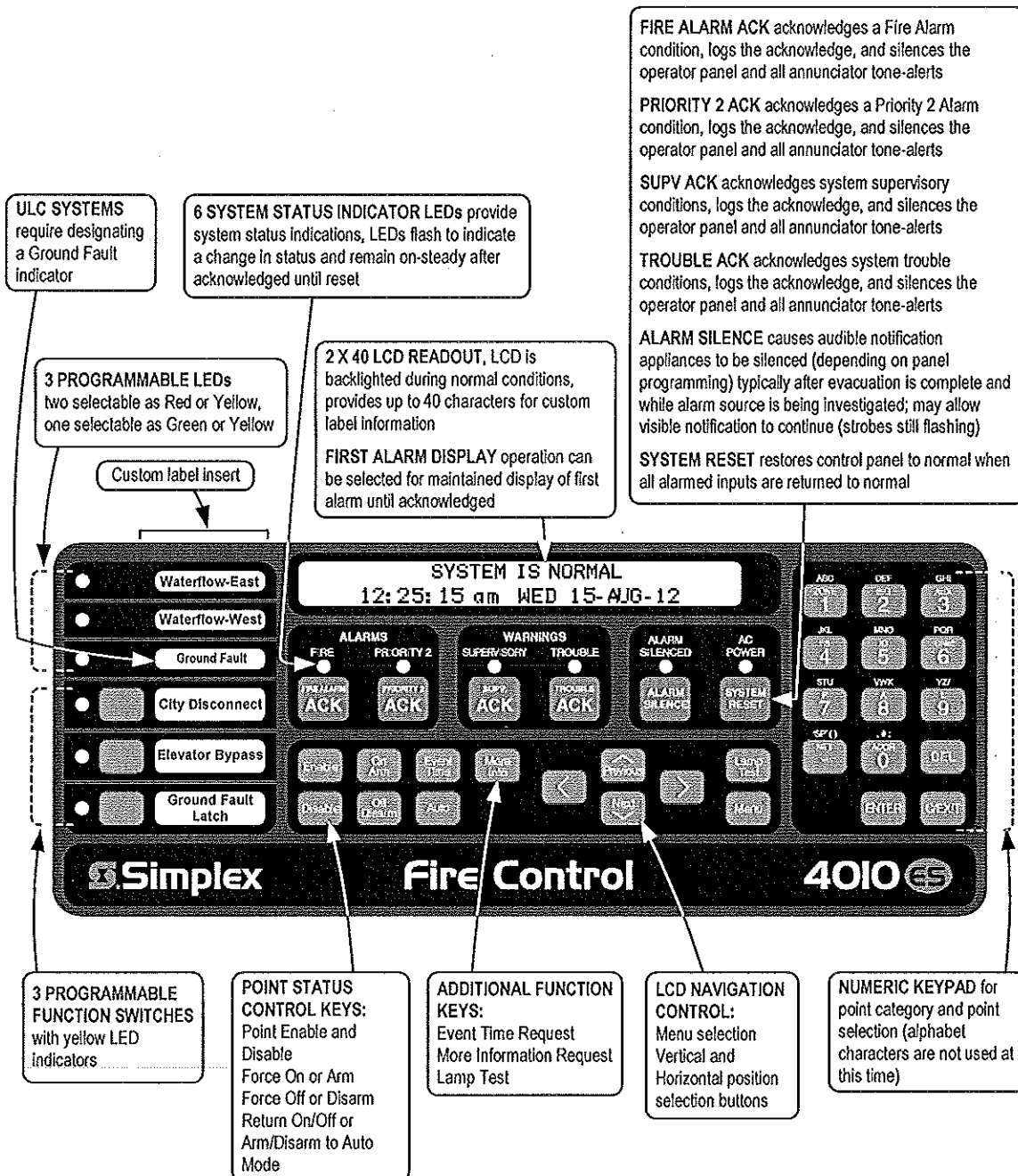
Operator Interface Features

- Convenient and extensive operator information is provided using a logical, menu-driven display
- Multiple automatic and manual diagnostics for maintenance reduction
- Convenient PC programmer label editing
- Password access control
- Alarm and Trouble History Logs (up to 2000 total events) are available for viewing from the LCD, or capable of being printed to a connected printer, or downloaded to a service computer

Convenient Status Information. With the locking door closed, the glass window allows viewing of the display, status LEDs, and available operator switches. Features include a two-line by 40-character, wide viewing angle (super-twist) LCD with status LEDs and switches as shown in the illustration below.

LED indicators describe the general category of activity being displayed with the LCD providing more detail. For the authorized user, unlocking the door provides access to the control switches and allows further inquiry by scrolling the display for additional detail.

The following illustration identifies the primary functions of the operator interface.



Compatible Peripheral Devices

The 4010ES is compatible with an extensive list of remote peripheral devices including printers, PC Annunciators and both conventional and addressable devices including TrueAlarm analog sensors.

Addressable Device Control

Overview. The 4010ES provides standard addressable device communications for IDNet compatible devices. Using a two wire communications circuit, individual devices such as manual fire alarm stations, TrueAlarm sensors, conventional IDC zones, and sprinkler waterflow switches can be interfaced to the addressable controller to communicate their identity and status.

Addressability allows the location and condition of the connected device to be displayed on the operator interface LCD and on remote system annunciators. Additionally, control circuits (fans, dampers, etc.) may be individually controlled and monitored with addressable devices.

Addressable Operation. Each addressable device on the communication channel is continuously interrogated for status condition such as: normal, off-normal, alarm, supervisory, or trouble. Both Class B and Class A pathway operation are available. Sophisticated poll and response communication techniques ensure supervision integrity and allow for "T-tapping" of the circuit for Class B operation. Devices with LEDs pulse the LED to indicate receipt of a communications poll and can be turned on steady from the panel.

IDNet+ Channel Capacity. The Main System Supply provides an IDNet+ signaling line circuit (SLC) that supports up to 248 addressable monitor and control devices intermixed on the same pair of wires.

IDNet+ Communications wiring specifications. IDNet+ circuits may be run on NEC 760 untwisted pair, twisted pair, or shielded twisted pair conductors.

IDNet+ Wiring Specifications

Size	18 AWG (0.82 mm ²)
Type	NEC 760 Wire (untwisted, twisted, or shielded twisted pair)
Farthest Distance from Control Panel	126-248 Up to 2500 feet (762 m)
per Device load	up to 125 Up to 4000 ft (1219 m)
Total Wire Length Allowed Class A or Class B, including "T-taps" for Class B wiring (total for both isolated circuits combined)	Up to 12,500 ft (3.8 km) Note: The sum of line-to-line capacitance plus the capacitance of either line-to-shield (if shield is present) = 0.6 μ F maximum (total for both isolated circuits combined)

* Other circuits may require shielded wiring. Review your system with your local Simplex product supplier.

TrueAlarm System Operation

Addressable device communications include operation of TrueAlarm smoke and temperature sensors. Smoke sensors transmit an output value based on their smoke chamber condition and the CPU maintains a current value, peak value, and an average value for each sensor.

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 of each sensor can be selected at the control panel for different levels of smoke obscuration (shown directly in percent) or for specific heat detection levels. 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.

CO sensor bases combine an electrolytic CO sensing module with a TrueAlarm analog sensor to provide a single multiple sensing assembly using one system address. The CO sensor can be enabled/disabled, used in LED/Switch modes and custom control, and can be made public for communication across a fire alarm Network. (refer to data sheet S4098-0041 for details)

TrueAlarm heat sensors can be selected for fixed temperature detection, with or without rate-of-rise detection. Utility temperature sensing is also available, typically to provide freeze warnings or alert to HVAC system problems. Readings can be selected as either Fahrenheit or Celsius.

TrueSense Early Fire Detection. Multi-sensor 4098-9754 provides photoelectric and heat sensor data using a single 4010ES IDNet address. The panel evaluates smoke activity, heat activity, *and their combination*, to provide TrueSense early detection. For more details on this operation, refer to data sheet S4098-0024.

Diagnostics and Default Device Type

Sensor Status. TrueAlarm operation allows the control panel to automatically indicate when a sensor is almost dirty, dirty, and excessively dirty. The NFPA 72 requirement for a test of the sensitivity range of the sensors is fulfilled by the ability of TrueAlarm operation to maintain the sensitivity level of each sensor. CO Sensors track their 5 year active life status providing indicators to assist with service planning. Indicators occur at: 1 year, 6 months, and when end of life is reached.

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

Master Controller (CPU)

- The 4010ES Master Controller includes dedicated 2GB compact flash Mass Storage memory for on-site system information storage and convenient Ethernet service port access
- Convenient front panel accessed Ethernet port for quick and easy *download* of site-specific programming
- *AND*, firmware enhancements are made via software downloads to the on-board flash memory
- Every downloaded job is automatically stored to Compact flash without overwriting earlier versions providing a means for recovering previous configurations
- Downtime is reduced because the system stays running during download
- Modifications can be *uploaded* as well as downloaded for greater service flexibility
- Mass Storage allows job specific files to be store in the control panel such as test and inspection reports, record drawings, specifications, and more...
- Ethernet connectivity options include Building Network Interface Module (BNIC) and SafeLINC Internet Interface
- RUI (Remote Unit Interface) communications port supports either Class B or X Pathway operation for remote annunciation equipment and for 4009 Series TrueAlert Controllers and TrueAlert Power Supplies

Basic Panel Description

4010ES panels include: an Operator Interface, Master Controller with 2GB Compact Flash, Class A or B Two-loop Isolated IDNet Communications (IDNet+) supporting up to 248 addressable and analog sensing devices, 8 A power supply with up to 2 A of auxiliary power, 110 Ah (UL) / 50 Ah (ULC) battery charger (33 Ah maximum in the control panel cabinet), 4 Class A or Class B NACs rated @ 3 A each for Special Application and 2 A for Regulated 24 DC operation, 1 programmable auxiliary relay rated for 2 A @ 32 VDC, 1 RUI Class B or X communications port for remote annunciation devices, cabinet, and door.

Support is for up to 20 internal and external card addresses. Other standard options may be provided depending on model (see basic panel model selection below for additional details on specific models).

Main System Supply

The Main System Supply provides the power source and the Input/Output connections for the basic 4010ES panel. The main features are listed in the Basic Panel description below.

Basic Panel Model Selection

Note: Supervisory and Alarm current specifications are for determining battery standby requirements. Current specifications include an active RUI channel and alarm currents include 20 IDNet device LEDs activated. Actual IDNet channel device current is not included, refer to page 6 for details. For models with 48 LED Annunciation, alarm also includes 24 LEDs activated.

Model*	Panel Color	Language & Voltage	Listings	Features	Supv. Current	Alarm Current	Available Option Blocks
4010-9401(BA)	Red	English 120 VAC	UL, CSFM, FM, NYC Fire Dept	Basic panel with 2x40 LCD Operator Interface and (1) Two-loop Isolated IDNet+ Channel, Class A or B, with support for up to 248 addressable devices	316 mA	430 mA	3 4"x5" blocks
4010-9402(BA)	Platinum						
4010-9403(BA)	Red	English 120 VAC	UL, ULC, CSFM, FM, NYC Fire Dept	Same features as above with 48 LED annunciation	336 mA	495 mA	
4010-9404(BA)	Platinum						
4010-9405	Red	French 120 VAC	ULC, CSFM, FM				
4010-9406	Platinum						

* Models with (BA) are available as assembled in the USA by adding the suffix "BA".

Addressable Device Load Specifications for Battery Standby

Addressable Channel	Device Load	Supervisory Current	Alarm Current
Main System Supply IDNet+ Channel Output (does not include device LEDs in alarm)	With 248 Devices, Add	199 mA	248 mA
	With 125 Devices, Add	100 mA	125 mA
	With 50 Devices, Add	40 mA	50 mA

Block Space Option Card Selection

Note: Refer to diagram on page 2 for Option Module availability. Supervisory and Alarm current specifications are for determining battery standby requirements.

Single Block Option Modules, Select Three (3) Maximum if No Dual Block Module is Selected;
Select One (1) Maximum if a Dual Block Module or the Module Bracket is Selected

Model	Features	Option Block Usage	Supervisory Current	Alarm Current
→ 4010-9912	Serial DACT	1 Block (must mount in block D under main system supply)	30 mA	40 mA
4010-9908	4 Point Aux Relay Module	1 Block	15 mA	60 mA
4010-9916	Voltage Regulator Module, 22.8 to 26.4 VDC (25 VDC nominal); isolated and resettable output; includes earth detection circuit and trouble relay for status monitoring	1 Block	3 A maximum with 2.5 A load	4.9 A maximum with 4 A load
4010-9918	Dual RS-232 Module	1 Block	60 mA	60 mA
4010-9915	BACpac Ethernet Portal Module; requires 4010-9918 RS-232 Module (no address required)	1 Block	123 mA	123 mA
4010-9901	VESDA HLI	1 Block	60 mA	60 mA

Dual Vertical Block (Flat) Modules, Select One, or Two with 4010-9928 Bracket Kit (except for Media Cards)

Model	Features	Option Block Usage	Supervisory Current	Alarm Current
4010-9928	Dual Vertical Block Card Mounting Kit, allows selecting two, dual Vertical Block (flat) modules from the list below	2 Vertical Blocks	NA	NA
4010-9922	Modular Network Interface Card (requires two media modules, see below)	2 Vertical Blocks	30 mA	30 mA
4010-9818	Network Media Card Wired	N/A (mounts to 4010-9922)	55 mA	55 mA
4010-9819	Network Media Card Fiber Optic		25 mA	25 mA
4010-9914	Building Network Interface Card	2 Vertical Blocks	236 mA	236 mA
4010-9923*	SafeLINC Internet Interface	2 Vertical Blocks	115 mA	115 mA
4010-9924*	Modem Physical Bridge Class B (Style 4)	Requires one of the 2 Vertical Block spaces on the 4010-9928 Mounting Kit	193 mA	193 mA
4010-9925*	Modem Physical Bridge Class X (Style 7)		246 mA	246 mA
4010-9926**	TCP/IP Physical Bridge Class B (Style 4)	3 Block "L" Shape, requires one of the 2 Vertical Block spaces on the 4010-9928 Mounting Kit, plus Block D	196 mA	196 mA
4010-9927**	TCP/IP Physical Bridge Class X (Style 7)		236 mA	236 mA

Dual Vertical Block (Slot) Modules, Select One if no Dual Vertical (Flat) Modules from Above are Selected

Model	Features	Option Block Usage	Supervisory Current	Alarm Current
4010-9920	8 Zone Initiating Device Circuit - Class B	2 Vertical Blocks (mother/daughter card)	75 mA	195 mA
4010-9921	8 Zone Initiating Device Circuit - Class A			

*UL, ULC, and CSFM listed.

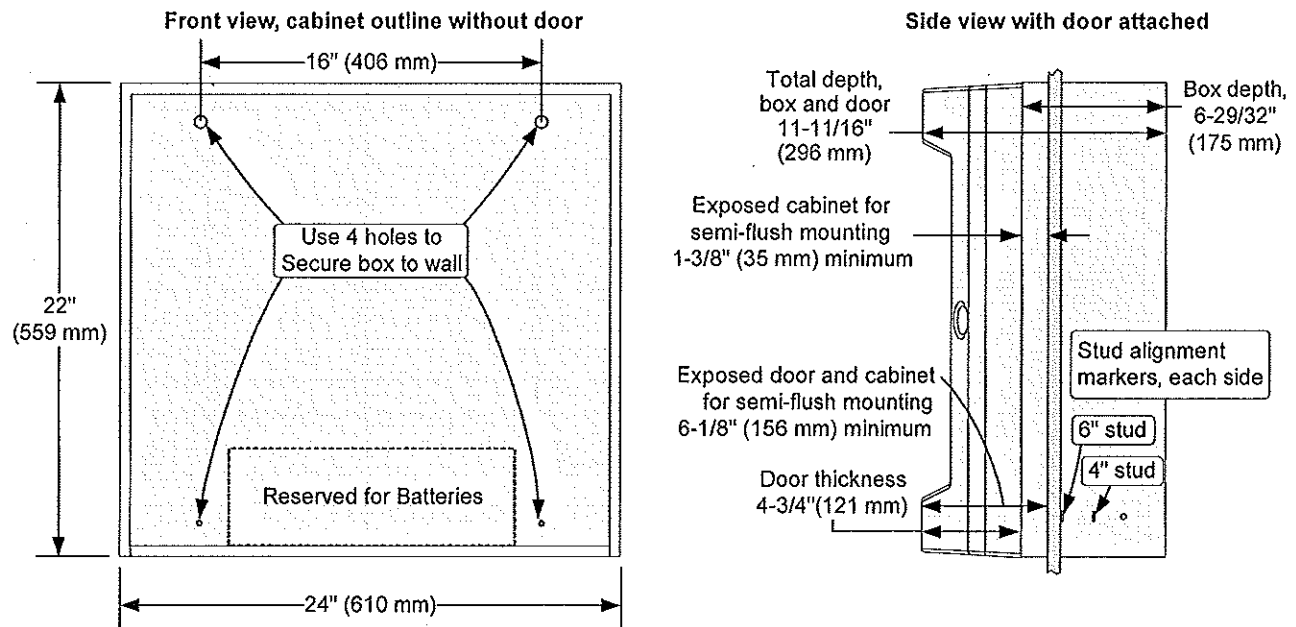
** FM Approved only.

Additional Panel Option Selection (block space is not used)

Model	Features	Supervisory Current	Alarm Current	Mounting Requirements
4010-9909	City Connect Module w/ disconnect switches	20 mA	36 mA	Select one maximum, mounts on Main System Supply
4010-9910	City Connect Module	20 mA	36 mA	
4010-9911	Alarm Relay Module	15 mA	37 mA	
4010-9919*	TrueInsight Remote Gateway	62 mA	62 mA	Mounts on Front Door
4100-5128	Battery Distribution Terminal Block, mounts to side of box, required when battery connection leaves the 4010ES box (also used in the 4100ES fire alarm control panel)			

* Refer to data sheet S4100-0063 and contact your local Simplex product representative for more details.

Cabinet Dimension Reference



Miscellaneous Accessories

LED Kits

Model	Description
4100-9843	8 Yellow LED Kit
4100-9844	8 Green LED Kit
4100-9845	8 Red LED Kit
4100-9855	8 Blue LED Kit

End User Programming Tools

Model	Description
4100-8802	End User Programming Unit Software
4100-0292	Custom Label Editing (USB Dongle)
4100-0295	Port Vectoring Setup and Control (USB Dongle)
4100-0296	User Group / Passcode Editing (USB Dongle)
4100-0298	WalkTest Configuration Setup and Control (USB Dongle)

4010ES Factory Programming

Model	Description
4010-8810	4010ES Factory Programming
4010-0831	Custom Label and Panel Programming

4010ES Card Address Allocation

The 4010ES has a maximum Internal and External Card Address Limit of 20 Card Addresses. Use the Table below to calculate 4010ES card address allocation.

INSTRUCTIONS: Below is a list of 4010ES equipment and the quantity of card addresses they consume

1. For the applicable control panel, write in the Card Address Consumption value in the Card Address Allocation column.
(Note: Only select 1 control panel)
2. For the option cards to be installed on the 4010ES, write in the Card Address Consumption value in the Card Address Allocation column.
3. Total the Card Address Allocation column (total must not exceed 20).

Model	Description	Card Address Consumption	Card Address Allocation	Notes
Control Panels (Select One)				
4010-9401 4010-9402	2x40 Display, Single IDNet Channel, Single Bay Box	2		
4010-9403 4010-9404 4010-9405 4010-9406	2x40 Display, Single IDNet Channel, 48 Pluggable LED Module	3		4010-9405 & 4010-9406 are for Canada
Panel Option Cards (Select As Required)				
4010-9901	Flat VESDA HLI Card	1		
4010-9922	Flat Network Card	1		
4010-9908	4 Point Flat Aux Relay Module	1		
4010-9912	Serial DACT	1		
4010-9923	SafeLINC Internet Interface Card	1		
4010-9914	Building Network Interface Card	1		
4010-9918	Dual RS-232 Module	1		
4010-9920	8 Zone Initiating Device Circuit - Class B	1		
4010-9921	8 Zone Initiating Device Circuit - Class A	1		
Remote Power / Notification (Select As Required)				
4009-9401	TrueAlert Addressable Controller (4009T) 120 VAC	1		
4009-9402CA	TrueAlert Addressable Controller (4009T) w/ Low Battery Cutout	1		for Canada
4009-9813	Transponder Interface Card for 4009 TPS	1		
4100-5120	120 VAC Domestic TrueAlert Power Supply for 4009 TPS	1		
4100-5121	120 VAC Canadian TrueAlert Power Supply for 4009 TPS	1		for Canada
Remote Annunciation (Select As Required)				
4100-9401	Remote InfoAlarm Command Center	Red Cabinet, English	2	
4100-9403		Platinum Cabinet, English	2	
4100-9421		Red Cabinet, French	2	for Canada
4100-9423		Platinum Cabinet, French	2	for Canada
4100-9441		Red Cabinet, with blank inserts for key labels	2	
4100-9443		Platinum Cabinet, with blank inserts for key labels	2	
4606-9102	4010ES RUI LCD Annunciator, English	1		
4606-9102BA	4010ES RUI LCD Annunciator, English	1		
4606-9102CF	4010ES RUI LCD Annunciator, French	1		for Canada
4602-9101	Status Command Unit (SCU) LED Annunciator	1		
4602-9102	Remote Command Unit (RCU) LED Annunciator w/control	1		
4602-9150	Graphic I/O RCU/SCU Assembly for custom annunciator panels	1		
4602-7101	Graphic I/O RCU/SCU Assembly for custom annunciator panels	1		
4602-7001	RCU for cabinet mount	1		
4602-6001	SCU for cabinet mount	1		
4100-7401	24 Point I/O Graphic Module for custom annunciator panels	1		
4100-7402	64/64 LED Switch Controller for custom annunciator panels	1		
4100-7403	32 Point LED Driver Module for custom annunciator panels	1		
4100-7404	32 Point Switch Input Module for custom annunciator panels	1		
Total Card Addresses (Not to Exceed 20)		TOTAL		

General Specifications

AC Input Current	4 A maximum, 120 VAC @ 60 Hz nominal		
Power Supply Output Ratings (nominal 28 VDC on AC, 24 VDC on battery backup)	Total Power Supply Output Rating	Including module currents and auxiliary power outputs; 8 A total for "Special Application" appliances; 4 A total for "Regulated 24 DC" power (see below for details)	Output switches to battery backup during mains AC failure or brownout conditions
	Auxiliary Power Tap	2 A maximum, rated 19.1 to 31.1 VDC	
Special Application Appliances, maximum of 70 appliances per NAC	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 Appliances	Power for other UL listed appliances; use associated external synchronization modules where required		
Battery Charger Rating (sealed lead acid batteries)	Battery capacity range	UL listed for battery charging of 6.2 Ah up to 110 Ah; ULC listed for charging up to 50 Ah batteries; batteries above 33 Ah require separate cabinet	
	Charger characteristics and performance	Temperature compensated, dual rate, recharges depleted batteries within 48 hours per UL Standard 864; to 70% capacity in 12 hours per ULC Standard S527	
Environmental	Operating Temperature	32° to 120°F (0° to 49° C)	
	Operating Humidity	Up to 93% RH, non-condensing @ 90° F (32° C) maximum	
Additional Technical Reference	Installation Instructions	579-989	
	Operating Instructions	579-969	

Additional Compatible Equipment and Reference

Subject	Data Sheet	Subject	Data Sheet
4010ES Agent Release Applications and Accessories	S4010-0005	Network Communications	S4100-0056
Agent Release Accessories	S2080-0010	Multi-Signal Fiber Optics	S4100-0049
Building Network Interface	S4100-0061	4602 Series SCU/RCU	S4602-0001
SafeLINC Internet Interface	S4100-0062	PC Annunciator	S4190-0013
Interface to VESDA Air Aspiration Detection Systems	S4100-0026	TrueAlert Addressable Controller (4009T)	S4009-0003
Serial DACT (SDACT)	S2080-0009	4009 IDNet NAC Extender	S4009-0002
Fire Alarm Network Overview	S4100-0055	4003EC Voice Control Panel	S4003-0002
TrueInsight Remote Service	S4100-0063	120 VAC Desktop Remote Printer	S4190-0011
Addressable Device Compatibility, IDNet Communication Sensors and Devices	S4090-0011	4009 TPS (Remote TrueAlert Power Supply) Reference	S4100-0037
4606-9102 Remote LCD Annunciator	S4606-0002	110 Ah Batteries and Cabinets	S2081-0012
Graphic I/O Modules	S4100-0005	Remote 110 Ah Battery Chargers and Cabinets	S4081-0002
Remote InfoAlarm Command Center	S4010-0008	BACpac Ethernet Portal Module	S4100-0051
PC Annunciator	S4190-0013	Network Physical Bridge	S4100-0057
TCP/IP Physical Bridge	S4100-0029		

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UL, ULC, CSFM Listed; FM Approved;
MEA (NYC) Acceptance*

4009 IDNet™ NAC Extender for Control from 4010, 4010ES, 4100ES/4100U IDNet Communications, or Conventional NACs

Features

Provides additional notification appliance circuit (NAC) capacity with flexible operation modes and power-limited design

Four, Class B NACs are standard:

- Rated 2 A each for conventional reverse polarity 24 VDC notification appliances and providing multiple operation modes
- Can be selected to provide synchronization for Simplex® visible notification strobe flashes
- Capable of controlling TrueAlert® non-addressable notification appliances operating with SmartSync™ two-wire control mode**

Input control options:

- IDNet addressable communications from a Simplex model 4010, 4010ES, 4100U, or 4100ES Fire Alarm Control Panel**
- Or from one or two conventional 24 VDC NACs with multiple output control options

IDNet communications control benefits:

- Provides status monitoring and individual NAC control using a single address per 4009 IDNet NAC Extender
- Supports IDNet “Device Level” earth fault location

WALKTEST™ operation is available with either input choice

Internal 8 A power supply/battery charger:

- Charges internal batteries up to 12.7 Ah or up to 18 Ah batteries in external cabinet
- Provides status monitoring of battery, input power, and earth faults
- Rated 8 A for “Special Application” appliances; including Simplex 4901, 4903, 4904, and 4906 Series horns, strobes, horn/strobes, and speaker/strobes
- Rated 6 A for “Regulated 24 DC” appliance power

Optional 4009 IDNet NAC Extender modules:

- IDNet Communications Repeater provides Class B or Class A output
- IDNet Communications Fiber Optic Receiver/Repeater, available as Class B or Class X
- Four additional Class B NACs, rated 1.5 A for Special Application appliances; 1 A for Regulated 24 DC appliance power
- Class A, Two Circuit Adapter Module

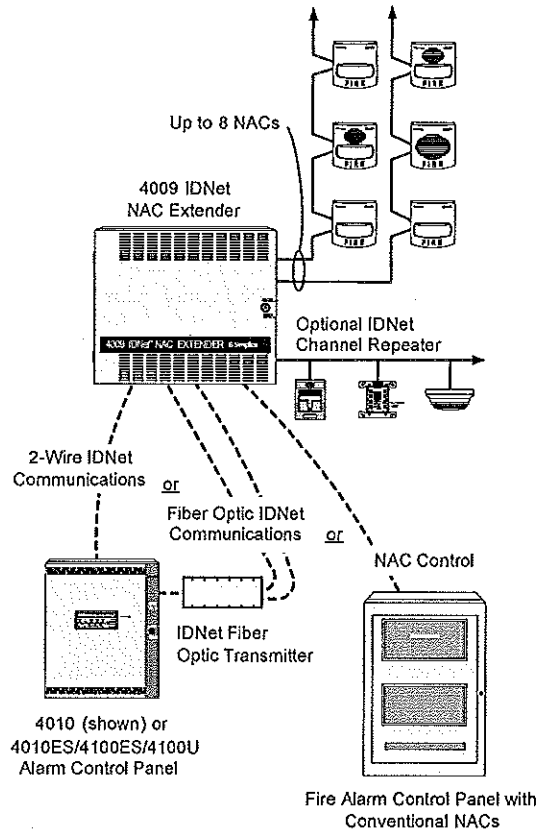
UL Listed to Standard 864

External Accessories

IDNet communication fiber optic transmitters:

- For applications requiring the data integrity available with fiber optic communications
- Available as Class B or Class X
- Mounts in standard six-gang electrical box

External battery cabinet for 18 Ah batteries



4009 IDNet NAC Extender Connection Reference Drawing

Introduction

ADA Compliance. Complying with the notification requirements of ADA (Americans with Disabilities Act) may require more notification appliance power than is available within the fire alarm control panel. When additional power is required, a Simplex 4009 IDNet NAC Extender can provide up to 8 A of NAC power with up to eight, supervised reverse polarity NACs.

Location Flexibility. The 4009 IDNet NAC Extender can be mounted close to a compatible dedicated host panel or can be located remotely for convenient power distribution. Multiple operation modes and multiple connection options further increase location flexibility.

Additional Information. For additional operation detail and application information, refer to Installation Instructions 574-181 and field wiring diagram 842-068.

* ULC listed model is 4009-9202CA. 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 7300-0026:214 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. 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 SimplexGrinnell LP, Westminster.

** 4100U requires revision 11 software or higher for compatibility. 4010 requires revision 2 software or higher for compatibility.

Application and Operation Information

IDNet Addressable Communications Compatible.

Up to ten (10), 4009 IDNet NAC Extenders can be controlled per 4010ES/4100ES/4100U IDNet communications channel; up to five (5) can be controlled on the 4010 IDNet communications channel. Each output NAC can be individually controlled for general alarm or selective area notification requiring only one point address per Extender. Individual Extender NACs can also be manually controlled from the host panel. IDNet controlled extenders will inform the host panel of troubles via IDNet communications. 4010ES/4100ES/4100U control panels control using multi-point rules, refer to data sheet S4090-0011 for details.

Optional IDNet Repeaters. IDNet communications can be repeated with the optional IDNet Repeater Module or with the optional Fiber Optic Receiver Module. Up to 100 of the IDNet channel points can be repeated once (refer to pages 3 and 5 for details). Repeated IDNet communications also support the "device level" earth fault location utility of the host panel.

Hardwire Control Applications. For applications where an existing (or new) conventional NAC needs additional power, the 4009 IDNet NAC Extender can be controlled directly from the NAC. Either one or two NACs, from either the same, or from different host fire alarm control panels, can be connected to control the 4009 IDNet NAC Extender output NACs. Multiple control selections provide flexible operation. (Refer to page 4 for more detail.) Alarms from the host panel will activate the four, 4009 IDNet NAC Extender NACs (or optionally, eight NACs) to extend the alarm.

The 4009 IDNet Extender monitors itself and each of its output NACs for trouble conditions, including earth faults. Extenders wired to conventional NACs will indicate a trouble by opening the path to the NAC's end-of-line resistor, but retaining the ability to respond to alarms. Individual troubles are also annunciated by LEDs located on the 4009 IDNet NAC Extender main circuit board. (Refer to page 7 for more diagnostic information.)

Product Selection

Standard Models

Model	Description	
4009-9201	120 VAC input	4009 IDNet NAC Extender with 4, Class B NACs and 8 A power supply
4009-9202CA*		
4009-9301	240 VAC input	

* ULC listed model

Optional Modules (for on-site installation)

Model	Description	Comments	
4009-9807	Additional four point NAC module, rated 1.5 A Special Application appliances; 1 A for Regulated 24 DC appliance power, Class B	One maximum	
4009-9808	Dual Class A adapter (for two NAC outputs)	Select as required (4 maximum)	
4009-9809	IDNet Repeater, output is Class A or Class B	Select either an IDNet Repeater or a Fiber Optic Receiver as required	
4009-9810	Fiber Optic Receiver		Class B
4009-9811			Class A (IDNet), Class X (fiber)
4009-9805	Red Appliqué for door	Select if required	
2975-9801	Semi-Flush Trim Kit	Beige trim	1-7/16" wide (78 mm), use if required for semi-flush installations
2975-9802		Red trim	

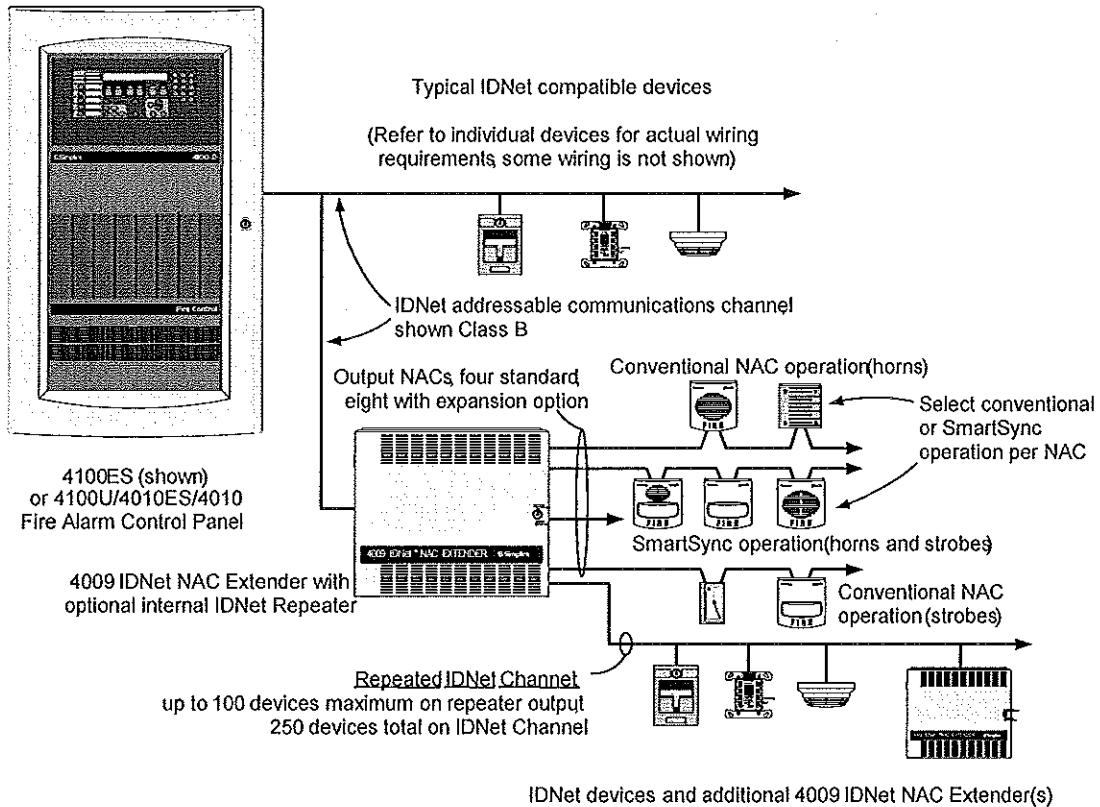
Battery Selection (select battery size per system requirements)

Model	Description	Comments
2081-9272	6.2 Ah Battery, 12 VDC	Two batteries are required, 24 VDC operation
2081-9274	10 Ah Battery, 12 VDC	
2081-9288	12.7 Ah Battery, 12 VDC	
2081-9275	18 Ah Battery, 12 VDC	Requires external battery cabinet, two batteries are required, 24 VDC operation

External Accessories (select per system requirements)

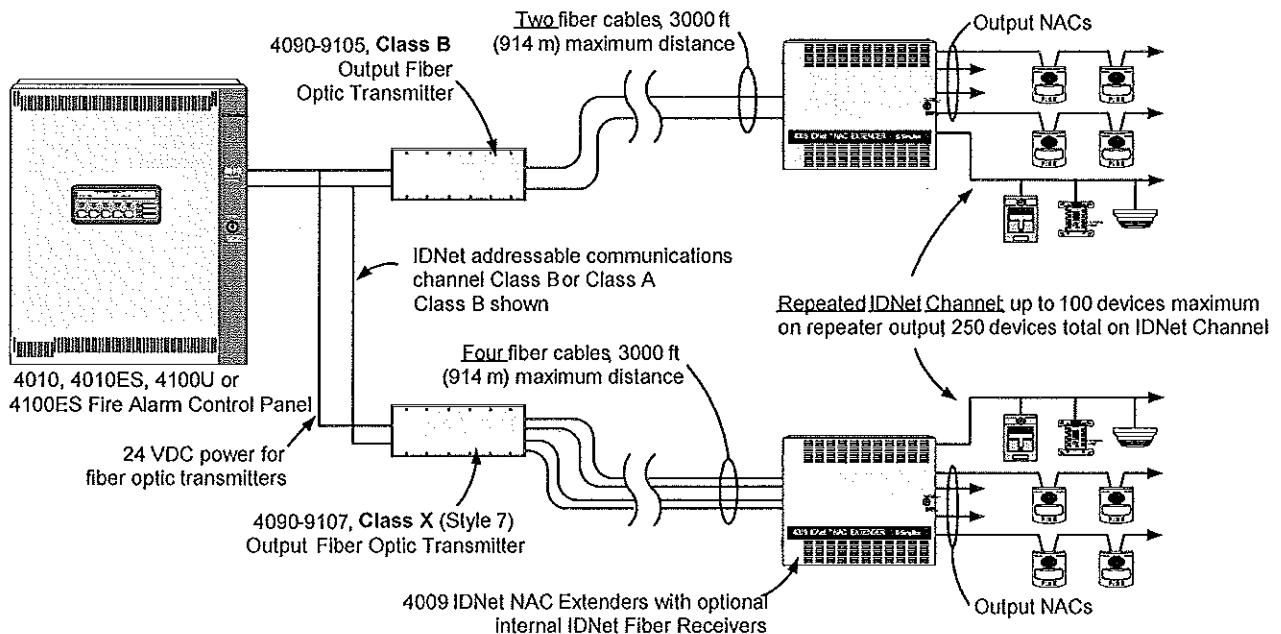
Model	Description	Comments	
4090-9105	IDNet Fiber Optic Transmitter	Class B operation	Mounts in six-gang electrical box, refer to page 4 for mounting details
4090-9107		Class X operation	
4009-9801	External battery cabinet for up to 18 Ah batteries, beige	16-1/4" W x 13-1/2" H x 5-3/4" D (413 mm x 343 mm x 146 mm)	
4081 Series	End-of-Line Resistor Harnesses; see data sheet S4081-0003 for details		

Typical IDNet Connection Example



NOTE: Up to ten (10) 4009 IDNet NAC Extenders may be connected per 4010ES, 4100ES or 4100U IDNet channel, up to five (5) on the 4010 IDNet channel. IDNet communications can be repeated only once (can pass through only one series connected repeater or one fiber optic receiver).

Typical Fiber Optic System Connections



NOTE: Up to ten (10) 4009 IDNet NAC Extenders may be connected per 4010ES, 4100ES or 4100U IDNet channel, up to five (5) on the 4010 IDNet channel. IDNet communications can be repeated only once (can pass through only one series connected repeater or one fiber optic receiver). Fiber optic transmitters connect to only one 4009 IDNet NAC Extender.

Hardware Control Connection Information

NAC Input Selections. The 4009 IDNet NAC Extender can be selected to:

- Track input NAC operation or to provide a locally generated code, selectable per NAC input
- If selected for local coding, NAC outputs can be either **Temporal Coded** or **60 Beats/min March Time Coded**, one code selection per extender (input NACs must be on continuous with Alarm)
- Additionally, NAC outputs can be selected to provide the Simplex strobe synchronization signal. This signal will synchronize the flashes of synchronized strobes but will be ignored by free-run strobes and audible devices. (Strobes are for operation by noncoded NACs.)

NAC input to NAC output control can be selected for standard and optional NACs per the following table:

Conventional NAC Output Operation Options

Input	A	B	C
NAC 1	NACs 1 & 2, 5 & 6	NACs 1-4	NACs 1-8
NAC 2	NACs 3 & 4, 7 & 8	NACs 5-8	None

SmartSync NAC Output Operation

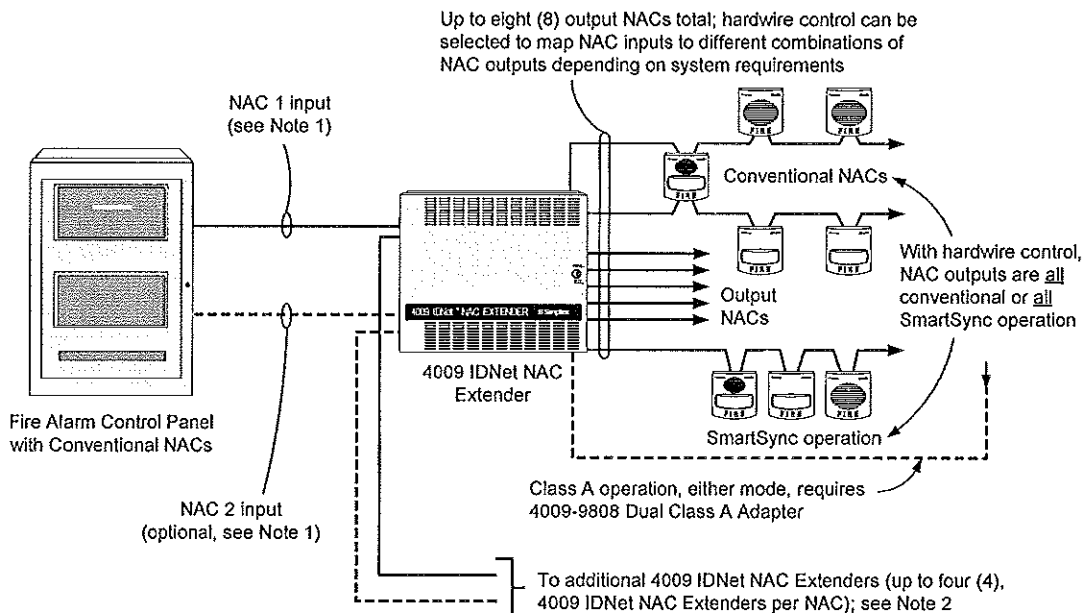
Input	NAC Control Function	
NAC 1	Strobe Control	All NAC outputs (1-8)
NAC 2	Horn Control	

SmartSync Notification Appliance Control

The TrueAlert Notification Appliance product line includes addressable and non-addressable operation. Non-addressable models are available with 2-wire SmartSync operation or conventional 4-wire operation. The following details apply to use with the 4009 IDNet NAC Extender:

- TrueAlert non-addressable models with SmartSync operation allow audible notification to be separately controlled over the same wire pair that controls visible notification
- 4009 IDNet NAC Extenders can be selected to provide SmartSync operation whether controlled by IDNet communications or conventional NACs
- IDNet control allows output NACs to be **individually** selected for conventional or SmartSync operation
- With NAC input control, **all** output NACs are selected for either conventional or SmartSync operation
- Refer to data sheet S4009-0003 for TrueAlert Addressable operation details, contact your local Simplex product supplier for further information on specific TrueAlert notification appliances

Hardware Control NAC Connection One-Line Reference Diagram



Notes:

- For separate audible and visible output NAC control, or SmartSync NAC output operation, two (2) input NACs are required. NAC 1 is "on-until-reset" and NAC 2 is "on-until-silenced."
- To synchronize strobe flash outputs for up to four (4) 4009 IDNet NAC Extenders, use the synchronized strobe output from a Synchronized Flash Module (4905-9914 for Class B operation, 4905-9922 for Class A operation) or, if available, from a NAC selected to provide synchronized strobe flash output. NOTE: DO NOT USE a NAC selected for SmartSync operation for this function.

Refer to Installation Instructions 574-181 for additional information and application guidance

4009 IDNet NAC Extender Specifications

Input Ratings	120 VAC Input (4009-9201)	3A @ 102-132 VAC, 60 Hz
	240 VAC Input (4009-9301)	1.5A @ 204-264 VAC, 50/60 Hz
	Hardwire Control from External NACs, Input Requirements	Conventional reverse polarity operation 5 mA maximum; 16 to 33 VDC
Output Ratings	Total Rating	8 A, Special Application appliances 6 A, Regulated 24 DC appliance power
	Standard NACs	2 A each, Special Application or Regulated 24 DC appliance power
	Optional NACs (requires 4009-9807)	1.5 A each, Special Application appliances 1 A each, Regulated 24 DC appliance power
	Special Application Appliances	Simplex 4901, 4903, 4904, and 4906 Series non-addressable horns, strobes, and combination horn/strobes and speaker/strobes (contact your Simplex product representative for compatible appliances)
	Regulated 24 DC Appliances	Power for other UL listed appliances; use associated external synchronization modules where required
	Strobe Operation	Up to 33 strobes per NAC can be synchronized; output NACs configured for Simplex synchronized strobe operation are synchronized to each other
	Auxiliary Output	500 mA @ 24 VDC nominal

Optional Modules Ratings

IDNet Repeater Module (4009-9809)	Input Power	70 mA @ 24 VDC, system supplied
	IDNet Input, One Address	Maximum distance from IDNet source is 2500 ft (762 m)
	IDNet Output Specifications	Repeated IDNet output for up to 100 devices (total IDNet devices not to exceed 250 per channel)
		Maximum distance to farthest device is 2500 ft (762 m)
		Total distance including "T-taps" is 10,000 ft (3048 m)
	Class A loop maximum distance is 2500 ft (762 m), no "T" taps	

Fiber Optic Receiver Modules

Input Current	4009-9810, Class B, 65 mA @ 24 VDC, system supplied
	4009-9811, Class X, 80 mA @ 24 VDC, system supplied
IDNet Output Specifications	Same as those for Repeater Module (see above)
Fiber Optic Transmission Distance	3000 ft (914 m) maximum

General (LED status indicators are listed on page 7, dimensions and mounting details are on page 6)

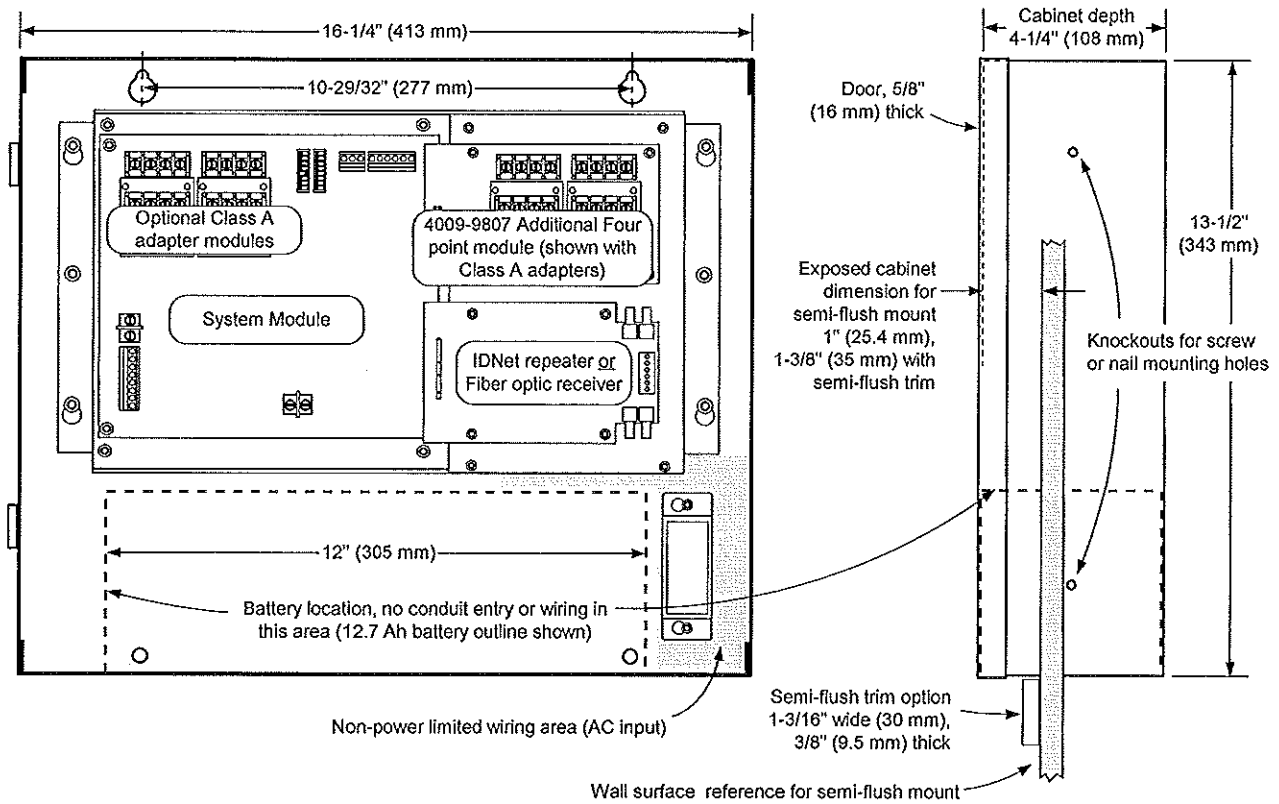
Operating Temperature	32° to 120° F (0° to 49° C)
Operating Humidity Range	10% to 90% RH from 32° F to 104° F (0° C to 40° C)
Wiring Connections*	Terminal blocks for 18 AWG (stranded) to 12 AWG (solid)

Fiber Optic Transmitter Specifications

Input Voltage	18.9-32 VDC from compatible listed fire alarm supply
Input Current	4090-9105, Class B, 30 mA @ 24 VDC
	4090-9107, Class X, 35 mA @ 24 VDC
Fiber Optic Connections and cable requirements	Multimode, graded index, 50/125µm, 62.5/125 µm, 100/40 µm, or 200 µm
	Type ST connectors
	4090-9105, Class B operation, two fiber cables required 4090-9107, Class X operation, four fiber cables required
Module Size (with mounting bracket)	6-13/16" W x 3-3/4" H x 1-1/8" D (173 mm x 95 mm x 29 mm)
On-board Status Indicators	Green LED flashing = transmit
	Red LED flashing = receive
	Separate red LED on 4090-9107 = Class X receive
Communications	Simplex IDNet
Fiber Optic Transmission Distance	3000 ft (914 m) maximum
Wiring Connections*	Terminal blocks for 18 AWG (stranded) to 12 AWG (solid)
Operating Humidity	10% to 90% RH from 32° to 104° F (0° to 40° C)
Operating Temperature	32° F to 120° F (0° to 49° C)

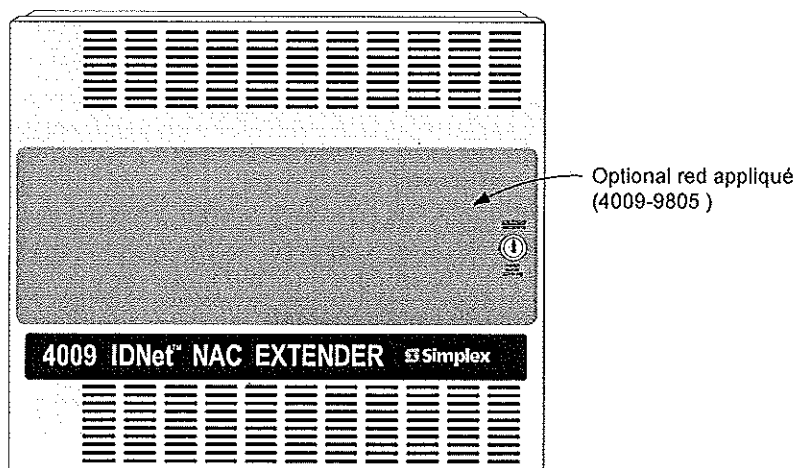
* Metric wire equivalents: 18 AWG = 0.82 mm²; 12 AWG = 3.31 mm²

4009 IDNet NAC Extender Mounting and Module Placement Information

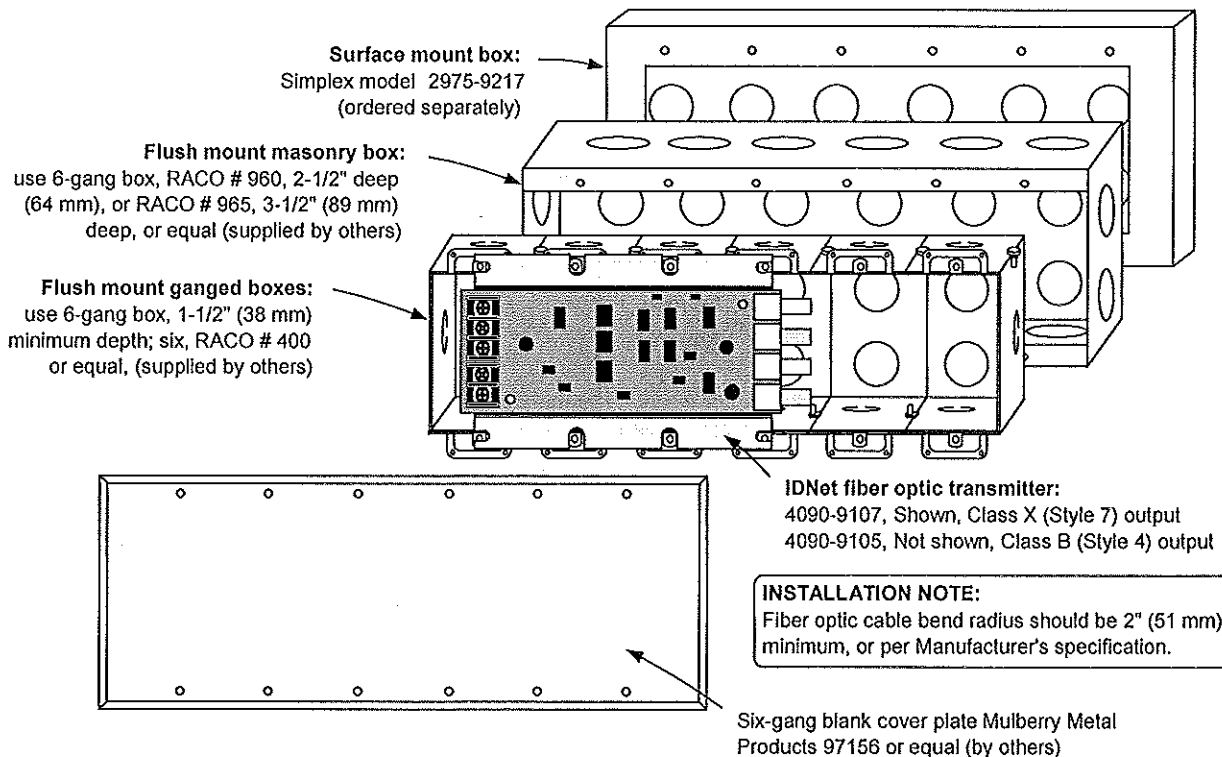


NOTE: Recommended conduit entrance varies with module selection. Refer to general installation instructions 574-181, specific module installation instructions, and to field wiring diagrams 842-068 before locating conduit entrance.

4009 IDNet NAC Extender Cabinet with Door Detail



4090-9105/9107 IDNet Fiber Optic Transmitter Mounting Information



Service Diagnostic Features

Power-up Self-Diagnostics. Upon power-up, the 4009 IDNet NAC Extender tests each module and performs earth fault diagnostics. Trouble conditions are communicated to the host control panel and are also displayed on diagnostic status LEDs in the 4009 IDNet NAC Extender. When connected via IDNet communications, detailed status information is available at the host. When controlled with conventional NAC inputs, common troubles are signaled by providing a polarized open circuit that disconnects the NAC wiring from its end-of-line resistor but still allows a reversed polarity alarm to be received.

Door Mounted Reference Label. The 4009 IDNet NAC Extender has a detailed programming and diagnostic label inside the front door that provides a quick reference for both installation and checkout.

LED Status Indicators are provided for the following:

- **Each NAC** (standard and optional) has a dedicated yellow LED that:
 - During supervision provides a slow flash to indicate a short circuit condition and a fast flash to indicate an open circuit
 - During an alarm, the LED follows the NAC output (on steady or flashing with coded output)
- **Four, general status yellow LEDs** provide nine separate indications listed in priority of urgency. As a trouble is eliminated, any remaining trouble(s) will then be indicated until the 4009 IDNet NAC Extender is returned to normal operation.
- **AC power status** is indicated by a green LED that is on when AC is normal. During low AC (brownout) conditions or with no AC, the LED is off. Additional power and battery status is indicated by the general status LEDs.

4009 IDNet NAC Extender Current Chart

Panel Module Selection (shaded model numbers are optional modules)

Model	Description	Supervisory Current	Actual Supervisory	Alarm Current	Actual Alarm
4009-9201	120 VAC input	85 mA	85 mA	185 mA	185 mA
4009-9301	240 VAC input				
4009-9807	Additional Four Point NAC	40 mA	+	+ NAC loads (add below)	+ NAC loads (add below)
4009-9808	Dual Class A Adapter (current included in basic panel value)	-	-	-	-
4009-9809*	IDNet Repeater	70 mA	+	70 mA	+
4009-9810*†	Fiber Optic Receiver, Class B	65 mA		65 mA	
4009-9811*†	Fiber Optic Receiver, Class X	80 mA		80 mA	
IDNet Devices, 0.7 mA each, maximum of 100 (see note 5)		Total devices x 0.7 mA each	+	Total devices x 0.7 mA each	(A1) +
Auxiliary Power Output, calculate per total device requirements (see note 5)		500 mA maximum	+	500 mA maximum	(A2) +
Total Supervisory Current =			(A) +		
				Total 4009 IDNet NAC Extender Panel Alarm Current =	(B1)

* Only one of these three modules can be chosen for a single 4009 IDNet NAC Extender.

† NOTE: IDNet Fiber Optic Transmitter current is supplied from the host fire alarm control panel.

NAC Loads

NAC Type	NAC Circuit #	NAC Alarm Current
Standard Panel NACS, 2 A maximum per NAC (see note 5)	Circuit 1	+
	Circuit 2	+
	Circuit 3	+
	Circuit 4	+
Optional Four Point NAC Module, 1.5 A maximum per NAC (see note 5)	Circuit 5	+
	Circuit 6	+
	Circuit 7	+
	Circuit 8	+
Total NAC Loads Alarm Current =		(C)
Total 4009 IDNet NAC Extender Panel Alarm Current (enter B1 from above) =		(B2) +
Total Alarm Current =		(D)

Procedure:

- Calculate total panel supervisory current (A).
- Calculate total panel alarm current (B1) [convert mA to A, example: 350 mA = 0.35 A]. Copy (B1) into block (B2).
- Calculate total NAC loads alarm current from notification appliance ratings (C).
- Add (C) + (B2) to determine total alarm current (D).
- Total of IDNet Device Current (A1) + Auxiliary Power Output Current (A2) + NAC Loads Alarm Current (C) is 8 A maximum.
- Refer to Simplex battery selection document 900-012 for recommended battery size for specific standby requirements (i.e. 24 hours supervisory, 5 minutes of alarm). Internal cabinet space is provided for batteries up to 12.7 Ah.

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