Simplex

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

Datasheet

4007ES Fire Control Units

4007ES Hybrid, Fire Detection and Control Unit with Addressable and/or Conventional Initiation

Features

Compatible with Simplex ES Net and 4120 fire alarm networks

Satisfies a variety of new and retrofit applications

4.3 in. (109 mm) diagonal color touchscreen display:

- Provides detailed system status and point information
- Supports dual language selection, including unicode character languages
- A custom background display appears when operation is normal

Eight point zone/relay module:

- Each point is selectable as an IDC input or Relay output, Class A IDCs require two points (one out and one return); one module is standard and you can field install up to three additional modules for a total of four 8 point zone/relay modules for each system
- You can configure each point on the IDC/Relay module as a control relay rated 2 A at 30 VDC (resistive) as either normally open or normally closed
- Power comes directly from the power supply or through the optional 25 VDC Regulator Module
- You can select the IDC end-of-line (EOL) resistor value from a wide range of resistance values for retrofit convenience

Electrically isolated IDNet 2 addressable initiating device SLC:

- Provides built-in short circuit isolation for monitoring and control of TrueAlarm analog sensors and IDNet communications monitoring and control devices; for use with either shielded or unshielded, twisted or untwisted single pair wiring; outputs are Class A or Class B
- Standard panel signaling line circuit (SLC) provides up to 100 addressable points; optional additional loop expansion modules provide an additional isolated loop with short circuit isolation for the IDNet 2 channel; each loop expansion module also provides an additional 75 addressable points

Power supply:

- Four notification appliance circuits (NACs) selectable as Class A or Class B with 6 A total available current
- You can select the NAC EOL resistor value from a wide range of resistance values for retrofit convenience
- Additional notification power capacity is available using the 4009 IDNet NAC Extender
- Battery backup charging of up to 33 Ah; up to 18 Ah for cabinet-mounted batteries and up to 33 Ah for batteries mounted close-nippled remote battery cabinet

General mechanical:

- Red or platinum cabinet; rated NEMA 1 and IP30

4007ES Listings reference:

- UL 864 - Control Units, System (UOJZ); Control Unit Accessories, System, Fire Alarm (UOXX); Control Units, Releasing Device Service (SYZV)
- UL 2017 - Emergency Alarm System Control Units (CO detection), (FSZI)
- ULC-S559 - Central Station Fire Alarm System Units (DAYRC)
- ULC-S527 - Control Units, System, Fire Alarm (UOJZC); Control Unit Accessories, System, Fire Alarm (UOXXC); Control Units, Releasing Device Service (SYZVC)

Figure 1: 4007ES Hybrid Unit front view

Software feature summary:

- Current and previous panel configuration maintained in on-board memory
- An internal Ethernet service port is available for service computer connections to perform configuration updates, downloads and uploads; report downloads, and update system software
- Internal USB interface allows a memory stick to store job revisions, update revised jobs and panel software, and save detailed system reports from the panel

Optional modules and connections include:

- Fire alarm network interface card (NIC) for ES Net or 4120 network
- Peer-to-Peer network communications, supports either Class B or Class X operation
- Point or Event DACT assembly for IP Communicators
- Up to two additional IDNet 2 addressable device output loop connections with short circuit fault protection and with 75 additional point capacity each
- Front mounted 48 LED annunciator with custom label inserts; LEDs are programmable for up to 24 IDC zones of alarm and trouble annunciation or other custom annunciation requirements
- Remote LED annunciator support through remote user interface (RUI) communications port for use with UTP wiring
- Dual RS-232 ports for printer, PC annunciator or third party interface
- TrueInsight Remote Gateway
- Alarm relays and auxiliary relays
- City connections, with or without disconnect switch
- 4009 IDNet NAC Extenders to extend NAC capability for power and distance
- Battery brackets for seismic area protection; see Mechanical description for more 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 7165-0026:0378 for allowable values and/or conditions concerning material presented in this document. NYC Fire Dept COA #6191A. At the time of publication only UL and ULC listings are applicable to ES Net network products. Additional listings may be applicable; contact your local product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

Introduction

4007ES Series Fire Detection and Control Units provide extensive installation, operator, and service features with point and module capacities suitable for a wide range of system applications. Panels can be configured for stand-alone or networked fire control operation. The convenient and intuitive color touchscreen provides easy access for typical system response actions and for detailed system review or configuration updates with password control to limit user access.

Standard conventional IDCs and addressable IDNet 2 communications provide flexibility for both new and retrofit systems. IDC and NAC EOL resistor values are selectable to match a wide range of existing initiating device circuits and notification appliance circuits.

ES panel compatibility with ES Net

Simplex ES Network (ES Net) is a next generation IP-based fire network that uses industry standard network technology and infrastructure, and allows for simplified network upgrades, easy terminal connectivity and IP file transfer between nodes, and advanced network diagnostics.

You can upgrade ES fire alarm control units (FACUs) to operate on an ES network by adding an ES Net NIC to the panel.

To upgrade an existing 4120 network to ES Net, you must replace all of the 4120 NIC cards on the network loop with ES Net NICs.

Note: ES NICs and 4120 NICs cannot be mixed on the same network loop.

For more detailed information on ES Net, refer to data sheet *S4100-0076*, and talk to your local Simplex product supplier.

Operator interface

Convenient status information

With the locking door closed, the glass window allows viewing of the display status LEDs. The user interface is a 4.3 in. (109 mm) diagonal color touchscreen LCD with separate status LEDs, see Figure 2.

LED indicators describe the general category of activity being displayed and the LCD provides more detail. Authorized user can unlock the door to gain access to the control functions and scroll through the display for additional detail.

Operator interface and software features

- Convenient and detailed operator information is easily accessible using a logical, menu-driven touchscreen display with password access control
- Multiple automatic and manual diagnostics for maintenance reduction
- Alarm and Trouble History Logs (up to 1000 entries for each, 2000 total events) are available for viewing from the display or for printing to a connected printer, or downloaded to a service computer
- Module level ground fault searching assists installation and service by locating and isolating modules with grounded wiring
- WALKTEST silent or audible system test performs an automatic self-resetting test cycle and supports up to eight WALKTEST groups
- 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

Touchscreen display with LED status indicators

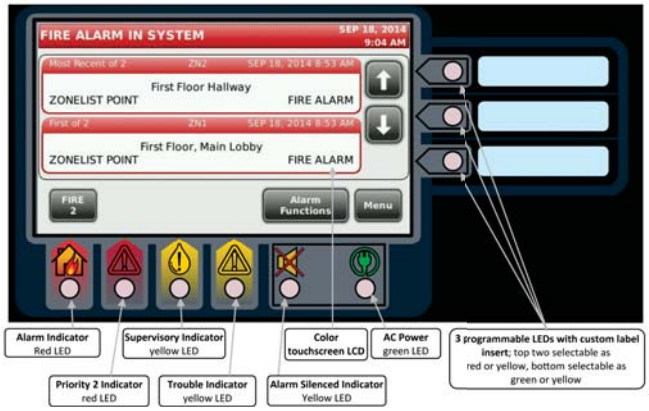


Figure 2: Touchscreen display with LED status indicators

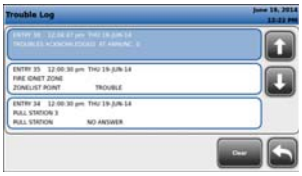
Operator screen reference

Main Menu screen provides easy navigation to the function required. Buttons A, B, and C have programmable functions.

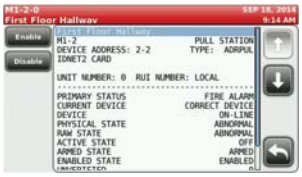
System Alarm screen identifies active alarms with custom labels displayed. Use the arrows to allow navigation through the list.

System Trouble screen identifies active troubles with custom labels displayed, arrows allow navigation through the list.

Trouble Log screen allows review of past troubles with time stamp and point details shown.



Point Information screen allows review of point details, arrows allow navigation through the information.



User Access Login screen controls access to panel operations as determined per panel.

Mechanical description

- Locking door with polycarbonate window
- Latching front panel assembly swings forward for convenient internal access
- Smooth box surfaces are provided for locally cutting conduit entrance holes exactly where required
- Modules are power-limited except as noted, such as relay modules
- Battery compartment (bottom) accepts two batteries, up to 18 Ah, to be mounted within the cabinet without interfering with module space;

charger capacity is up to 33 Ah; for information about batteries greater than 18 Ah and external battery cabinets, see Module and accessories selection information

- Cabinet assembly design has been seismic tested and is certified to IBC and CBC standards as well as to ASCE 7 categories A through F, requires battery brackets, refer to data sheet ***S2081-0019*** for more information

IDNet 2 addressable device control

The 4007ES Hybrid provides an IDNet 2 addressable initiating device signaling line circuit (SLC) that supervises wiring connections and the individual device communications status on the SLC. With 2-wire IDNet 2 SLCs, initiation, monitoring, and control devices such as manual fire alarm stations, TrueAlarm sensors, control relays, and sprinkler waterflow switches can communicate their identity and status and receive fire alarm system control. Additional addressable interface modules include circuit isolators, conventional IDC zone adapters, and interface to other system circuits such as fans, dampers, and elevator controls.

IDNet 2 addressable device operation

Each addressable device on the IDNet 2 communication channel is continuously interrogated for status condition such as: normal, off-normal, alarm, supervisory, or trouble. Both Class B and Class A operation is available. Sophisticated poll and response communication techniques ensure supervision integrity and allow for T-tapping of the circuits 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. With addressable devices, the location and status of the connected device is monitored, logged, and displayed on the operator interface LCD with each device having its own 40-character custom label for precise identification.

TrueAlarm addressable sensor operation

Addressable initiating 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.

Figure 3: TrueAlarm Photo Sensor with base

Figure 4: TrueAlarm Photo/ Heat Sensor in CO base

Programmable sensitivity

Programmable sensitivity of each sensor is selectable 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 or downloaded as a report and compared to the alarm threshold directly in percent.

CO sensor bases

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. You can enable and disable the CO sensor, and you can use it in LED/Switch modes and custom control. Refer to data sheet ***S4098-0052*** for more details.

TrueAlarm heat sensors

You can select TrueAlarm heat sensors 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 are selectable as either Fahrenheit or Celsius.

TrueSense early fire detection

Multi-sensor 4098-9754 provides photoelectric and heat sensor data using a single 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 FACU 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 10 year active life status providing indicators to assist with service planning. Indicators occur at: 1 year, 6 months, and end of life.

Modular TrueAlarm sensors

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 disable, heat sensors may be installed without reprogramming the FACU. The FACU 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.

IDNet 2 addressable channel capacity

The 4007ES Hybrid provides an isolated output IDNet 2 SLC that supports up to 250 addressable monitor and control points intermixed on the same pair of wires. 250 total requires two 4007-9803 IDNet 2 loop expansion modules.

Table 1: IDNet 2 SLC wiring specifications

Specification		Rating
Maximum distance from control panel for each device load	0 to 125	4000 ft (1219 m); 50 ohms
	126 to 250	2500 ft (762 m); 35 ohms
Total wire length allowed with T-taps for Class B wiring		Up to 12,500 ft (3.8 km); 0.60 µF
Maximum capacitance between IDNet 2 channels		1 µF
Loading for each device		0.8 mA supv., 1 mA alarm; 2 mA for each activated device LED
Wire type and connections		Shielded or unshielded, twisted or untwisted wire, see note.
Connections		Terminal blocks for 18 AWG to 12 AWG
Compatibility includes: IDNet communicating devices and TrueAlarm sensors including QuickConnect and QuickConnect2 sensors; see data sheet ***S4090-0011*** for additional reference. **Note:** Some applications may require shielded wiring. Review your system with your local Simplex product supplier.		

Power supply output and zone/relay module details

Power supply output details

- RUI Communications controls up to 10 remote devices at up to 2500 ft (762 m) for single run, or 10,000 ft (3048 m) total if wiring is Class B and T-tapped; selectable as Class B or Class A
- Compatible RUI remote equipment includes: 4606-9202 and 4606-9205 Color Touchscreen Annunciators (up to 6 total), 4100 Series 24 I/O and LED/Switch modules, 4602 Series LED/Switch and I/O Annunciator modules, including 4602-9101 Status Command Units (SCU), and 4602-9102 Remote Command Units (RCU)
- IDNet 2 SLC output provides electrically isolated Class B or Class A communication; standard capacity is up to 100 addressable points with expansion for up to 250 points using up to two 4007-9803 IDNet 2 Loop Expansion Modules; as described in IDNet 2 addressable channel capacity
- 6 A output rating, including current for: special application notification appliances; IDNet devices; module currents; and auxiliary output current (battery charging, CPU, and power supply current does not subtract from the 6 A); when NACs are controlling Regulated 24 DC Appliances, total NAC current available is 3 A
- Four on-board Class B/Class A NACs, rated 3 A each for Special Application appliances; selectable for SmartSync horn and strobe control, or strobe synchronization; rated 2 A each for Regulated 24 DC appliances
- NAC EOL resistor values are selectable as: 10 kohms, 3.9 kohms, 4.7 kohms, 5.1 kohms, 5.6 kohms, or 15 kohms
- Battery charger is dual rate, temperature compensated, and charges up to 18 Ah sealed lead-acid batteries mounted in the battery compartment, and charges up to 33 Ah batteries mounted in an external cabinet
- Battery and Charger Monitoring includes battery charger status and low or depleted battery conditions; status information provided to the master controller includes analog values for: battery voltage, charger voltage and current, actual system voltage and current, and NAC current
- Low Battery Voltage Cutout is selectable when required (required for ULC Listing applications)
- 2 A Auxiliary Output (AUX/SNAC) can be selected either as resettable auxiliary power of 2 A @ 24 VDC, or selected to be a simple NAC (SNAC) for sounder base power, four-wire detector power, or door holder power

Zone/relay module details

- Select as IDC or Relay; configure up to eight Class B IDCs, or up to four Class A IDCs; or up to eight Relay outputs rated 2 A resistive @ 30 VDC (N.O. or N.C.); or combinations of IDCs and Relays; each zone is separately configurable as an IDC or Relay output
- IDC Support. Each IDC supports up to 30, two-wire devices
- IDC EOL resistor values are selectable as: 3.3 kohms, 2 kohms, 2.2 kohms, 3.4 kohms, 3.9 kohms, 4.7 kohms, 5.1 kohms, 5.6 kohms, 6.34/6.8 kohms, and 3.6 kohms + 1.1 kohms; see instructions for more details

4007ES mounting and module location reference

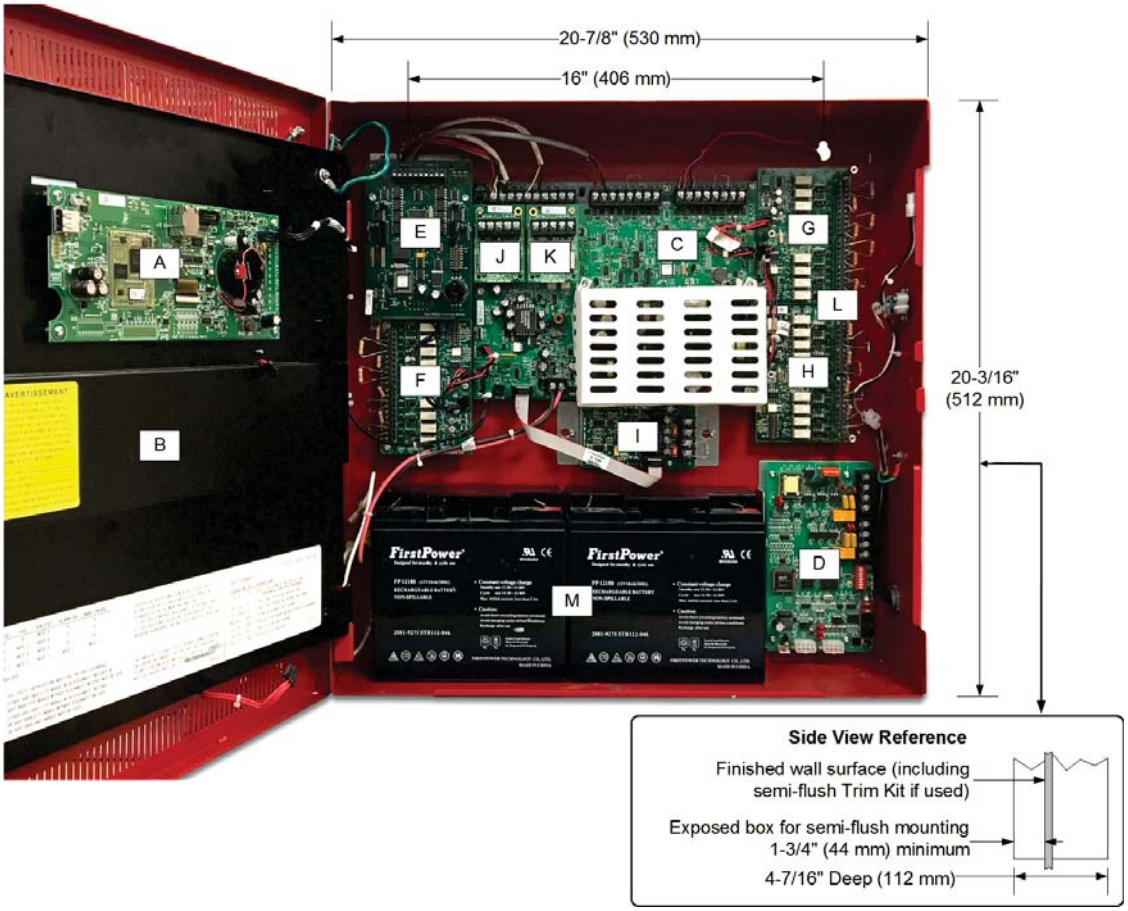


Figure 5: 4007ES mounting and module location reference

Table 2: Module locations

Key	Description
A	CPU and user interface assembly.
B	Location for optional 4007-9805 LED module.
C	Power Supply Assembly.
D	4007-9806 SDACT location. **Note:** The SDACT includes a 650-1838 flat mounting bracket (available separately). Some pre-existing systems with an angled SDACT bracket will need to be replaced with the flat mounting bracket when an NIC is installed.
E	Location for 4007-9801 Zone/Relay Module, 4007-9812 Dual RS-232 Interface, 4007-9804 Dual Class A IDNAC Isolator (DCAI), or (as shown) 4007-9802 25 V Regulator Module
F	Primary location for 4007-9801 Zone/Relay Module, or 4190-6106 TrueInsight Remote Service Gateway.
G	Location for additional 4007-9801 Zone/Relay Module.
H	Location for additional 4007-9801 Zone/Relay Module.
I	4007-9807 or 4007-9808 City Circuit Module, or 4007-9809 Relay Module.
J	4007-9803 IDNet 2 Loop Expansion Modules, maximum of two (two are shown).
K	4007-9803 IDNet 2 Loop Expansion Modules, maximum of two (two are shown).
L	Block L is an additional block that sits on spacers above block G and H. You can mount the 4007-9810 or 4007-9817 NIC in block L with or without modules mounted below it in blocks G and H. When you use fiber media cards and an SDACT is present, the SDACT requires a 650-1838 flat mounting bracket, ordered separately.
M	Battery location for up to 18 Ah batteries. **Note:** No conduit entry or wiring in this area, 14 7/8 in. (378 mm) wide.

Note: A system ground must be provided for Earth Detection and transient protection devices. This connection shall be made to an approved, dedicated Earth connection per NFPA 70, Article 250, and NFPA 780.

Product selection

Table 3: 4007ES Hybrid product selection

Model	Color	Description	Supv.	Alarm
4007-9101	Red	4007ES Hybrid with four conventional NACs, 6 A output power supply/battery charger and one IDNet 2 SLC for up to 100 addressable points	145 mA	190 mA
4007-9101BA				
4007-9102	Platinum			
4007-9102BA				
Both models above include:		One 4007-9801 Zone/Relay Card	83 mA	295 mA

Note:

- Models with (BA) are available assembled in the USA.
- The current draw for the 4007ES Hybrid Unit (without included modules) does not subtract from the 6 A of power available for optional modules and external loads. For power supply loading calculations include all modules plus all external loads and exclude the 4007ES Hybrid Unit current. For battery standby calculations include all modules, all external loads, and the base 4007ES Hybrid Unit current.

Module and accessories selection information

Table 4: Factory programming options

Model	Description
4007-8810	Factory Programming (select)
4007-0831	Custom Labels and Programming (requires 4007-8810)

Table 5: Field installed optional modules

Model	Description		Supv.	Alarm
4007-9801	Eight Point Zone/Relay Module, each point is selectable as an IDC input or Relay output, Class A IDCs require two points (one out and one return); one module is included as standard, select up to three additional. Alarm current shown is for eight Class B IDCs using 3.3K EOL resistors with four IDCs in alarm and four IDCs in standby. Supervisory current shown is for all eight IDCs in standby. Detector current is added separately. Refer to ***579-1103 Zone/Relay Module Installation Instructions*** for more information.		83 mA max	295 mA max
4007-9802	25 VDC Regulator Module; 2 A maximum output; use to power Zone/Relay modules connected to initiating devices requiring nominal 25 VDC voltage. Refer to technical publication ***579-832 2-Wire Detector Compatibility Chart*** for application details.	with 1 module	190 mA	445 mA
		with 2 modules	290 mA	801 mA
		with 3 modules	390 mA	1156 mA
4007-9803	IDNet 2 Loop Expansion Module; provides an additional isolated loop with short circuit isolation to the existing IDNet 2 channel, also provides an additional 75 addressable points to the IDNet 2 channel capacity, maximum of two		NA	NA
4007-9805	Panel Mounted 48 LED Status Annunciator Module; provides 24 Yellow LEDs, 20 Red LEDs, and four Red/Green LEDs that are programmable for up to 24 IDC zones of alarm and trouble annunciation, or as required for custom annunciation requirements	no LEDs on	10 mA	10 mA
		with LEDs on	1.75 mA per LED, 105 mA max	
4007-9806	SDACT Module for Point or Event Reporting Order 2080-9047 connection cables as required; see Table 9		30 mA	40 mA
4007-9807	City Circuit Module with disconnect switch		20 mA	36 mA
4007-9808	City Circuit Module without disconnect switch		20 mA	36 mA
4007-9809	Relay Module; relays for Alarm, Supervisory, and Trouble; rated 2 A resistive @ 32 VDC		15 mA	37 mA
4007-9812	Dual RS-232 Interface Module; Compatible with Simplex remote printer, PC annunciator or third party interface (two ports/connections maximum)		60 mA	60 mA

Table 6: Field installed optional network modules

Model	Description		Supv.	Alarm
4190-8001	TrueInsight remote service gateway module and programming selection	Required selection	62 mA	73 mA
4190-6106	TrueInsight remote service gateway module installation kit; includes module and harness; configured for dynamic IP address operation unless ordered with 4190-4016			
4190-4016	TrueInsight remote service gateway module for fixed IP Addressing; optional, select if application will use fixed IP address			

Note: Refer to data sheet ***S4100-0063*** for additional TrueInsight service gateway details

Network interface and network media card product selection

4007ES FACUs are compatible with Simplex ES Net network or 4120 network fire alarm products.

- Refer to data sheet ***S4100-0076*** for additional information on compatible ES Net fire alarm products.
- Refer to data sheet ***S4100-0056*** for additional information on compatible 4120 network fire alarm products.
- Refer to data sheet ***S4100-0061*** for additional information on the Building Network Interface Card (BNIC).

Table 7: Batteries

Model	Capacity	Battery mounting details
2081-9272	6.2 Ah	12 V Batteries for cabinet mounting; select one battery model per system standby requirements; order quantity of two; to be wired in series for 24 VDC
2081-9274	10 Ah	
2081-9288	12.7 Ah	
2081-9275	18 Ah	
2081-9287	25 Ah	Requires 4009-9801 external battery cabinet, see Table 8
2081-9276	33 Ah	

Table 8: Battery cabinets

Model	Color	Capacity	Dimensions (H x W x D)	Description
4009-9801	Beige	For up to 33 Ah batteries, see note	13 1/2 in. x 16 1/4 in. x 5 3/4 in (413 mm x 343 mm x 146 mm)	External battery cabinet without charger for mounting close-nippled to the fire alarm control unit cabinet; includes locking solid door. Use battery harness 734-304 for a NAC power supply and harness 734-303 for an IDNAC power supply; battery harnesses are shipped with the panel.

Note: 33 Ah capacity requires 2081-9276 **square** 33 Ah batteries.

Table 9: Accessories

Model	Description
2080-9047	DACT cable, 14 ft (4.3 m) long, RJ45 plug one end, spade lugs on the other; order one per phone line connection required
2975-9812	Red semi-flush box trim; 1 7/16 in. (37 mm) wide, four corners and trim pieces for top, bottom, and sides
2975-9813	Platinum semi-flush box trim; 1 7/16 in. (37 mm) wide, four corners and trim pieces for top, bottom, and sides
2081-9031	Platinum semi-flush box trim; 1 7/16 in. (37 mm) wide, four corners and trim pieces for top, bottom, and sides
4081-9002	3.3 kohms, 1 W EOL resistor for Class B non-addressable initiating zones
4081-9018	10 kohms, 1 W EOL resistor harness for non-addressable NACs

General specifications

Table 10: General specifications

Specification		Rating	
Input power	120 VAC input	2 A maximum @ 102 VAC to 132 VAC, 50/60 Hz	
	240 VAC input	1 A maximum @ 204 VAC to 264 VAC, 50/60 Hz	
4007ES Hybrid power supply output ratings	Power supply output rating	Including module currents and auxiliary power outputs; 6 A total	Output switches to battery backup during mains AC failure or brownout conditions
	NAC ratings	3 A each for Special Application Appliances	
		2 A each for Regulated 24 DC Appliances	
	Auxiliary power tap	2 A maximum, 24 VDC nominal (19.5 VDC to 31.1 VDC)	
Special application non-addressable appliances		Simplex horns, strobes, and combination horn/strobes and speaker/strobes; contact your Simplex product representative for compatible appliances	
Regulated 24 DC non-addressable appliances		Power for other UL listed appliances; use associated external synchronization modules where required	
Battery charger ratings (sealed lead-acid batteries)	Battery capacity range	UL and ULC listed for battery charging of 6.2 Ah up to 33 Ah; batteries larger than 18 Ah require a remote battery 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	

Table 11: Custom background and environmental details

Item		Description
Custom background display details		Supported file types: JPG, BMP, GIF, and PNG Recommended image type is JPG, recommended image size is 480 x 240, and the file size limit is 100 kb
Environmental	Operating temperature	32°F to 120°F (0°C to 49°C)
	Operating humidity	Up to 93% RH, non-condensing @ 90°F (32°C) maximum

Additional 4007ES and network product reference data sheets

Table 12: Additional 4007ES and network product reference data sheets

Title	Document number
Serial DACT (SDACT) for 4100ES, 4010ES, 4007ES	S2080-0009
Seismic Battery Brackets Reference	S2081-0019
4003EC Voice Control Unit	S4003-0002
4007ES Panels with Addressable Notification	S4007-0002
4007ES Extinguishing Release Applications	S4007-0003
4009 IDNet NAC Extender	S4009-0002
4009 IDNAC Repeater	S4009-0004
External 110 Ah Battery Charger for 4100ES, 4010ES	S4081-0002
Graphic I/O Modules for 4100ES, 4010ES, 4007ES	S4100-0005
Interface to VESDA Air Aspiration Detection Systems	S4100-0026
NDU with SPS Power Supplies for 4120 Network	S4100-0036
InfoAlarm Command Center with SPS Power Supplies	S4100-0045
Multiple Signal Fiber Optic Modems for 4120 Networks	S4100-0049
BACpac Ethernet Module	S4100-0051
4120 Network Products and Specifications	S4100-0056
Building Network Interface Card (BNIC)	S4100-0061
TrueInsight Remote Gateway	S4100-0063
ES Net Network Products and Specifications	S4100-0076
NDU with SPS Power Supplies for ES Net	S4100-0077
InfoAlarm Command Center with EPS Power Supplies	S4100-0101
NDU with EPS Power Supplies for 4120 Network	S4100-0102
NDU with EPS Power Supplies for ES Net	S4100-0104
PC Annunciator	S4190-0013
TrueSite Workstation	S4190-0016
TrueSite Incident Commander	S4190-0020
24-Pin Dot Matrix Fire Alarm System Remote Printer	S4190-0027
SCU/RCU Annunciators	S4602-0001
4606 Series Color Touchscreen LCD Annunciators	S4606-0003

4007ES Hybrid additional reference

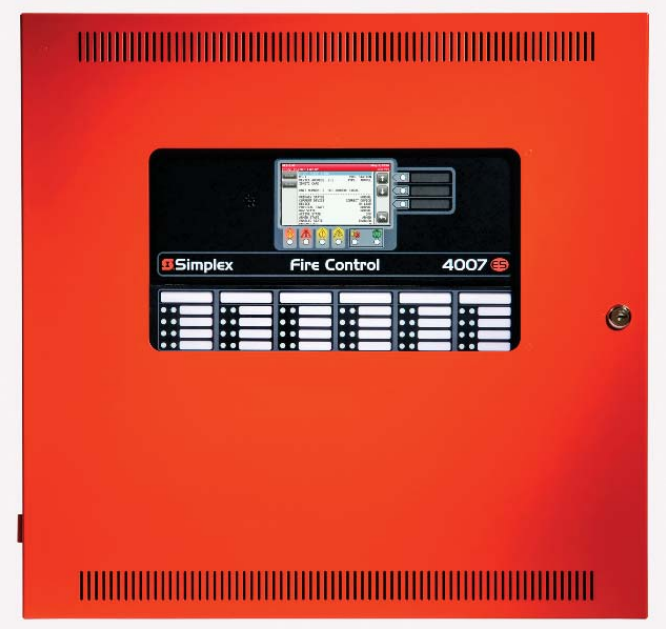


Figure 6: 4007ES Hybrid with optional 48 LED Annunciator Module (4007-9805)

Figure 7: 4606-9205 (Platinum) Color LCD Touchscreen Remote Annunciator

Figure 8: 4606-9202 (Red) Color LCD Touchscreen Remote Annunciator

Simplex®

True*Alarm* Analog Sensing

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

TrueAlarm Analog Sensors – Photoelectric and Heat; Standard Bases and Accessories

Features

TrueAlarm analog sensing provides:

- Digital transmission of analog sensor values via IDNet or MAPNET II two-wire communications

For use with the following Simplex® products:

- 4007ES, 4010, 4010ES, 4100ES, and 4100U Series control panels; and 4008 Series control panels with reduced feature set (refer to data sheet S4008-0001 for details)
- 4020, 4100, and 4120 Series control panels, Universal Transponders, and 2120 TrueAlarm CDTs equipped for MAPNET II operation

Fire alarm control panel provides:

- Peak value logging allowing accurate analysis of each sensor for individual sensitivity selection
- Sensitivity monitoring satisfying NFPA 72 sensitivity testing requirements; automatic individual sensor calibration check verifies sensor integrity
- Automatic environmental compensation, multi-stage alarm operation, and display of sensitivity directly in percent per foot
- Ability to display and print detailed sensor information in plain English language

Photoelectric smoke sensors provide:

- Seven levels of sensitivity from 0.2% to 3.7% (refer to additional information on page 3)

Heat sensors provide:

- Fixed temperature sensing
- Rate-of-rise temperature sensing
- Utility temperature sensing
- Listed to UL 521 and ULC-S530

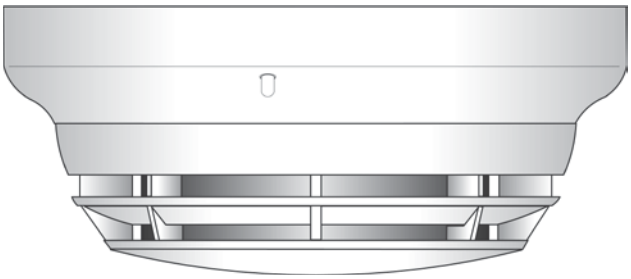
General features:

- Operation is for ceiling or wall mounting
- Listed to UL 268 and ULC-S529
- Louvered smoke sensor design enhances smoke capture by directing flow to chamber; entrance areas are minimally visible when ceiling mounted
- Designed for EMI compatibility
- Magnetic test feature is provided
- Different bases are available to support a supervised or unsupervised output relay, and/or a remote LED alarm indicator

Additional base reference:

- For isolator bases, refer to data sheet S4098-0025
- For sounder bases, refer to data sheet S4098-0028
- For photo/heat sensors, refer to data sheet S4098-0024 (single address) and S4098-0033 (dual address)

* These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listings 7272-0026:218, 7271-0026:231, 7270-0026:216, and 7300-0026:217 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.



4098-9714 TrueAlarm Photoelectric Sensor Mounted in Base

Description

Digital Communication of Analog Sensing. TrueAlarm analog sensors provide an analog measurement digitally communicated to the host control panel using Simplex addressable communications. At the control panel, the data is analyzed and an average value is determined and stored. An alarm or other abnormal condition is determined by comparing the sensor's present value against its average value and time.

Intelligent Data Evaluation. Monitoring each sensor's average value provides a continuously shifting reference point. This software filtering process compensates for environmental factors (dust, dirt, etc.) and component aging, providing an accurate reference for evaluating new activity. With this filtering, there is a significant reduction in the probability of false or nuisance alarms caused by shifts in sensitivity, either up or down.

Control Panel Selection. Peak activity per sensor is stored to assist in evaluating specific locations. The alarm set point for each TrueAlarm sensor is determined at the host control panel, selectable as more or less sensitive as the individual application requires.

Timed/Multi-Stage Selection. Sensor alarm set points can be programmed for timed automatic sensitivity selection (such as more sensitive at night, less sensitive during day). Control panel programming can also provide multi-stage operation per sensor. For example, a 0.2% level may cause a warning to prompt investigation while a 2.5% level may initiate an alarm.

Sensor Alarm and Trouble LED Indication. Each sensor base's LED pulses to indicate communications with the panel. If the control panel determines a sensor is in alarm, or is dirty or has some other type of trouble, the details are annunciated at the control panel and that sensor base's LED will be turned on steadily. During a system alarm, the control panel will control the LEDs such that an LED indicating a trouble will return to pulsing to help identify the alarmed sensors.

True*Alarm* Sensor Bases and Accessories

Sensor Base Features

Base mounted address selection:

- Address remains with its programmed location
- Accessible from front (DIP switch under sensor)

General features:

- Automatic identification provides default sensitivity when substituting sensor types
- Integral red LED for power-on (pulsing), or alarm or trouble (steady on)
- Locking anti-tamper design mounts on standard outlet box
- Magnetically operated functional test

Sensor Bases

4098-9792, Standard Sensor Base

4098-9789, Sensor Base with wired connections for:

- 2098-9808 Remote LED alarm indicator **or** 4098-9822 relay (relay is unsupervised and requires separate 24 VDC)

Supervised Relay Bases (not compatible with 2120 CDT)**:**

- **4098-9791, 4-Wire Sensor Base,** use with remote or locally mounted 2098-9737 relay, requires separate 24 VDC
- **4098-9780, 2-Wire Sensor Base**, use with remote or locally mounted 4098-9860 relay, no separate power required
- Supervised relay operation is programmable and can be manually operated from control panel
- Includes wired connections for remote LED alarm indicator **or** 4098-9822 relay (relay is unsupervised and requires separate 24 VDC)

Sensor Base Options

2098-9737, Remote or local mount supervised relay:

- DPDT contacts for resistive/suppressed loads, power limited rating of 3 A @ 28 VDC; non-power limited rating of 3 A @ 120 VAC (requires external 24 VDC coil power)

4098-9860, Remote or local mount supervised relay:

- SPDT dry contacts, power limited rating of 2 A @ 30 VDC, resistive; non-power limited rating of 0.5 A @ 125 VAC, resistive

4098-9822, LED Annunciation Relay:

- Activates when base LED is on steady, indicating local alarm or trouble
- DPDT contacts for resistive/suppressed loads, power limited rating of 2 A @ 28 VDC; non-power limited rating of 1/2 A @ 120 VAC, (requires external 24 VDC coil power)

4098-9832, Adapter plate:

- Required for surface or semi-flush mounting to 4” square electrical box and for surface mounting to 4” octagonal box
- Can be used for cosmetic retrofitting to existing 6-3/8” diameter base product

2098-9808, Remote red LED Alarm Indicator:

- Mounts on single gang box (shown in illustration to right)

Description

TrueAlarm sensor bases contain integral addressable electronics that constantly monitor the status of the detachable photoelectric or heat sensors. Each sensor’s output is digitized and transmitted to the system fire alarm control panel every four seconds.

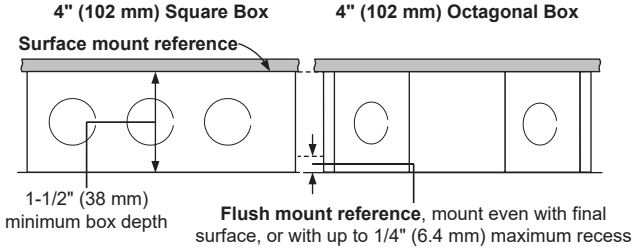
Since TrueAlarm sensors use the same base, different sensor types can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily dusty, instead of covering the smoke sensors (causing 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 providing heat detection for building protection at that location.

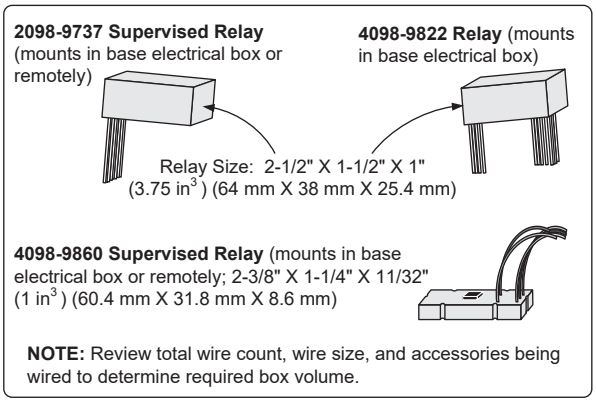
Mounting Reference

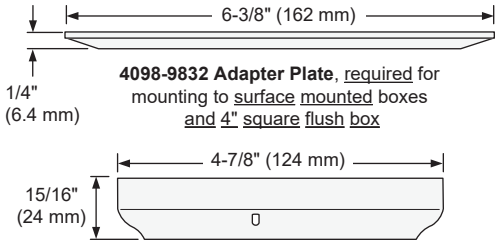
Electrical Box Requirements: (boxes are by others)

Without relay in the box: 4" octagonal or 4" square, 1-1/2" deep; single gang, 2" deep

With relay in the box : 4" octagonal or 4" square, 1-1/2" deep, with 1-1/2" extension ring







TrueAlarm Bases
4098-9780, 4098-9789, 4098-9791, & 4098-9792

True*Alarm* Sensors

Features

Sealed against rear air flow entry

Interchangeable mounting

EMI/RFI shielded electronics

Heat sensors:

- Selectable rate compensated, fixed temperature sensing with or without rate-of-rise operation
- Rated spacing distance between sensors:

Fixed Temp. Setting	UL & ULC Spacing	FM Spacing, Either Fixed Temperature Setting
135° F (57.2° C)	60 ft x 60 ft (18.3 m)	20 ft x 20 ft (6.1 m) for fixed temperature only; **RTI = Quick**
155° F (68° C)	40 ft x 40 ft (12.2 m)	50 ft x 50 ft (15.2 m) for fixed temperature with either rate-of-rise selection; **RTI = Ultra Fast**

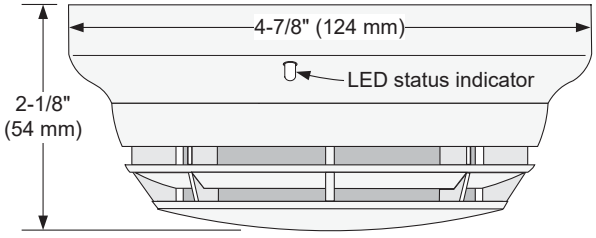
Smoke Sensors:

- Photoelectric technology sensing
- 360° smoke entry for optimum response
- Built-in insect screens

4098-9714 Photoelectric Sensor

TrueAlarm photoelectric sensors use a stable, pulsed infrared LED light source and a silicon photodiode receiver to provide consistent and accurate low power smoke sensing. Seven levels of sensitivity are available for each individual sensor, ranging from 0.2% to 3.7% per foot of smoke obscuration. Sensitivities of 0.2%, 0.5%, and 1% are for special applications in clean areas. Standard sensitivities are 1.5%, 2.0%, 2.5%, 3.0%, and 3.7%. Application type and sensitivity are selected and then monitored at the fire alarm control panel.*

The sensor head design provides 360° smoke entry for optimum response to smoke from any direction. Due to its photoelectric operation, air velocity is not normally a factor, except for impact on area smoke flow.



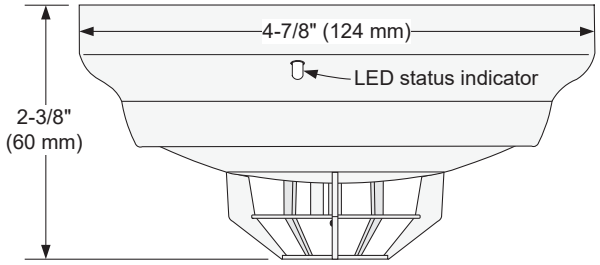
4098-9714 Photoelectric Sensor with Base

4098-9733 Heat Sensor

TrueAlarm heat sensors are self-restoring and provide rate compensated, fixed temperature sensing, selectable with or without rate-of-rise temperature sensing. Due to its small thermal mass, the sensor accurately and quickly measures the local temperature for analysis at the fire alarm control panel.

Rate-of-rise temperature detection is selectable at the control panel for either 15° F (8.3° C) or 20° F (11.1° C) per minute. Fixed temperature sensing is independent of rate-of-rise sensing and programmable to operate at 135° F (57.2° C) or 155° F (68° C). In a slow developing fire, the temperature may not increase rapidly enough to operate the rate-of-rise feature. However, an alarm will be initiated when the temperature reaches its rated fixed temperature setting.

TrueAlarm heat sensors can 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. *Refer to specific panels for availability.*



4098-9733 Heat Sensor with Base

WARNING: In most fires, hazardous levels of smoke and toxic gas can build up before a heat detection device would initiate an alarm. In cases where Life Safety is a factor, the use of smoke detection is highly recommended.

Application Reference

Sensor locations should be determined only after careful consideration of the physical layout and contents of the area to be protected. Refer to NFPA 72, the *National Fire Alarm and Signaling Code*. On smooth ceilings, smoke sensor spacing of 30 ft (9.1 m) may be used as a guide.*

* For detailed application information including sensitivity selection, refer to Installation Instructions 574-709.

TrueAlarm Analog Sensing Product Selection Chart

TrueAlarm Sensor Bases (for use with Sensors 4098-9714 and 4098-9733)

(Refer to Application Manual 574-709 and Installation Instructions 574-707 for additional information)

Model*	Color	Description	Compatibility	Mounting Requirements
4098-9792	White	Standard Sensor Base	No options	4" octagonal or 4" square box, 1-1/2" min. depth; or single gang box, 2" min. depth
4098-9776	Black			
4098-9789	White	Sensor Base with connections for Remote LED Alarm Indicator **or** Unsupervised Relay	2098-9808 Remote Alarm Indicator **or** 4098-9822 Unsupervised Relay	4" octagonal or 4" square box **Note:** Box depth requirements depend on total wire count and wire size, refer to accessories list below for reference. ** **NOTE:** 4098-9791 and 4098-9780 are NOT compatible with the 2120 CDT
4098-9789 IND	White			
4098-9775	Black			
4098-9791**	White	4-Wire Sensor Supervised Relay Base with connections for LED Indicator **or** Unsupervised Relay	2098-9737 Supervised Remote Relay	
			2098-9808 Remote Alarm Indicator **or** 4098-9822 Unsupervised Relay	
4098-9780**	White	2-Wire Sensor Supervised Relay Base with connections for LED Indicator **or** Unsupervised Relay	4098-9860 Supervised Remote Relay	
			2098-9808 Remote Alarm Indicator **or** 4098-9822 Unsupervised Relay	

TrueAlarm Sensors

Model*	Model*	Description	Compatibility	Mounting Requirements
4098-9714	White	Photoelectric Smoke Sensor	Bases 4098-9775, 4098-9776, 4098-9792, 4098-9789, 4098-9791, and 4098-9780	Refer to base requirements
4098-9714 IND				
4098-9774	Black			
4098-9733	White	Heat Sensor		
4098-9778	Black			

TrueAlarm Sensor/Base Accessories

Model	Description	Compatibility	Mounting Requirements
2098-9737	Supervised Relay, mounts remote or in base electrical box	For use with 4098-9791 base	**Remote Mounting** requires 4" octagonal or 4" square box, 1-1/2" minimum depth **Base Mounting** requires 4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
4098-9860	Supervised Relay, mounts remote or in base electrical box	For use with 4098-9780 base	
2098-9808	Remote Red LED Alarm Indicator on single gang stainless steel plate	Bases 4098-9789, 4098-9791, and 4098-9780	Single gang box, 1-1/2" minimum depth
4098-9822	Unsupervised Relay, tracks base LED status; Note: Mounts only in base electrical box	Bases 4098-9789, 4098-9791, and 4098-9780	4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
4098-9832	Adapter Plate	Bases 4098-9792, 4098-9789, 4098-9791, and 4098-9780	**Required** for surface or semi-flush mounted 4" square box and for surface mounted 4" octagonal box

* **Note:** Model numbers ending in IND are assembled in India.

Specifications

General Operating Specifications		
Communications and Sensor Supervisory Power		IDNet or MAPNET II communications, auto-selected, 1 address per base
Communications Connections		Screw terminals for in/out wiring, 18 to 14 AWG (0.82 mm^2 to 2.08 mm^2)
Remote LED Alarm Indicator Current		1 mA typical, no impact to alarm current
Remote LED Alarm Indicator and Relay Connections		Color coded wire leads, 18 AWG (0.82 mm^2)
UL Listed Operating Temperature Range		32° to 100° F (0° to 38° C)
Operating Temperature Range	with 4098-9733 Heat Sensor	32° to 122° F (0° to 50° C)
	with 4098-9714 Smoke Sensor	15° to 122° F (-9° to 50° C)
Storage Temperature Range		0° F to 140° F (-18° C to 60° C)
Humidity Range		10 to 95% RH
4098-9714 Smoke Sensor Air Velocity Rating		0-4000 ft/min (0-1220 m/min)
Housing Color		Frost White or Black
4098-9791 Base With Supervised Remote Relay 2098-9737 (see page 2 for contact ratings)		
Externally Supplied Relay Coil Voltage		18-32 VDC (nominal 24 VDC)
Supervisory Current		270 μA, from 24 VDC supply
Alarm Current with 2098-9737 Relay		28 mA, from 24 VDC supply
4098-9780 Base With Supervised Remote Relay 4098-9860 (see page 2 for contact ratings)		
Power		Supplied from communications
4098-9822 Unsupervised Relay, Requirements for Bases 4098-9789. 4098-9791, and 4098-9780 (see page 2 for contact ratings)		
Externally Supplied Relay Coil Voltage		18-32 VDC (nominal 24 VDC)
Supervisory Current		Supplied from communications
Alarm Current		13 mA from separate 24 VDC supply

Simplex®

Multi-Application Peripherals

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

IDNet™ and MAPNET II® Communicating Devices, Individual Addressable Modules (IAMs)

Features

IDNet or MAPNET II addressable communications supply both data and power over a single wire pair to provide:**

- Supervised Class B monitoring of normally open, dry contacts
- Total wiring distance from IAM to supervision resistor(s) of up to 500 ft (152 m)
- Monitored connection is compatible with Simplex® 2081-9044 Overvoltage Protectors for outdoor wiring or electrically noisy applications
- For use in indoor locations up to 158° F (70° C) such as attic spaces or similar applications

For use with following Simplex control panels:

- Model Series 4008, 4010, 4010ES, 4100U and 4100ES fire alarm control panels for IDNet communications
- Model Series 4100/4100U/4100ES, 4120, 4020, and 2120 Communicating Device Transponders (CDTs) equipped with MAPNET II communications

Model 4090-9001:

- Enclosed design minimizes dust infiltration
- Mounts in standard single gang electrical box
- Screw terminals for wiring connections
- Visible LED flashes to indicate communications
- Optional covers are available to allow LED to be viewed after installation (requires mounting bracket, ordered separately)

Model 4090-9051:

- Encapsulated design for extended exposure to high humidity (LED is not present on this model)
- Color coded 18 AWG leads for wiring

IDNet communications provides current limited monitoring:

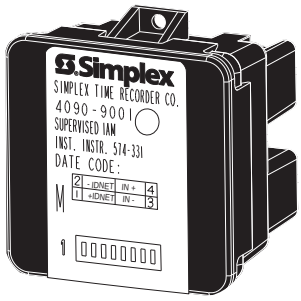
- Provides monitoring of tamper switch (supervisory) and waterflow switch (alarm) on same circuit using one point
- Available with IDNet communications only

Multiple operation modes are available and are selectable at the control panel:

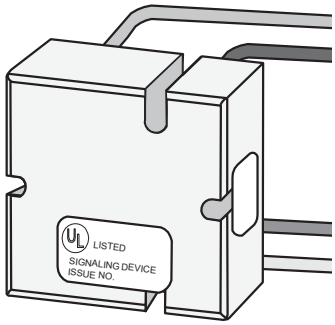
- Contact closure status can be tracked
- Momentary contact closure conditions can be selected at the panel to be latched or tracked (not available with the 2120 CDT)

UL listed to Standard 864

* These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7300-0026:223 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 Tyco Safety Products Westminster.



4090-9001 Supervised IAM
(shown approximately 3/4 size)



4090-9051 Supervised IAM
(shown approximately 3/4 size)

Description

Individual addressable modules (IAMs) receive both power and communications from a two-wire MAPNET II or IDNet circuit. They provide location specific addressability to a single initiating device (such as single station smoke detector alarm contacts or heat detector contacts) or multiple devices at the same location by monitoring normally open dry contacts and the wiring to an end-of-line resistor.

Model 4090-9001 is packaged in a thermoplastic housing and provides screw terminal connections and a status indicating LED.

Model 4090-9051 is an encapsulated package with wire leads. It does not provide a status indicating LED.

Operation

Contact Closure. Closure of the monitored contact(s) initiates an alarm or other response as programmed at the fire alarm control panel. An open in the monitored circuit wiring will cause a trouble to be reported.

Panel Selections. Selections can be made at the control panel to maintain the alarm condition if the initiating device contacts are momentary, such as from a rate-of-rise heat detector, or to track the device contact status (not available with the 2120 CDT).

Current Limited Operation Applications

For use with IDNet communications only, these IAMs can provide quad-state sensing of normal, open circuit, short circuit, and current limited conditions. (Program type is "T-sense.") With the proper end-of-line and current limiting resistors, dual functions such as tamper switch and waterflow switch monitoring can be determined and communicated by a single addressable point.

IAM Product Selection

Model	Description
4090-9001	Supervised IAM, mounted in thermoplastic housing with screw terminals; see applicable options below
4090-9051	Supervised IAM, encapsulated with wire leads

Optional Trim Plates and Mounting Bracket for Model 4090-9001

Model	Description
4090-9806	For semi-flush mounted box — Trim plate with LED viewing window, requires 4090-9810 mounting bracket, includes mounting screws; galvanized steel
4090-9807	For surface mounted box
4090-9810	Mounting bracket, mounts IAM to electrical box and provides screw holes for trim plate, **required for optional trim plates**

End-of-Line Resistor Harnesses (ordered separately as required)

Model	Reference No.	Description
4081-9004	733-886	6.8 kΩ, 1/2 W; Standard end-of-line resistor harness for N.O. contact supervision
4081-9003	733-896	4.7 kΩ, 1/2 W — Use for current limited monitoring applications
4081-9005	733-984	1.8 kΩ, 1/2 W

Specifications

Electrical

Power and Communications		MAPNET II or IDNet, auto selected, 1 address per IAM
Input Requirements		Normally open, dry contacts
Wire Connections	4090-9001	Screw terminals for in/out wiring, 18 to 14 AWG wire (0.82 mm^2 to 2.08 mm^2)
	4090-9051	Color coded wire leads, 18 AWG (0.82 mm^2), 8" long (203 mm)
Reference Documents	Installation Instructions	574-331 for 4090-9001; 579-572 for 4090-9151
	Field Wiring Diagrams	842-073 for IDNet operation; 841-804 for MAPNET II operation

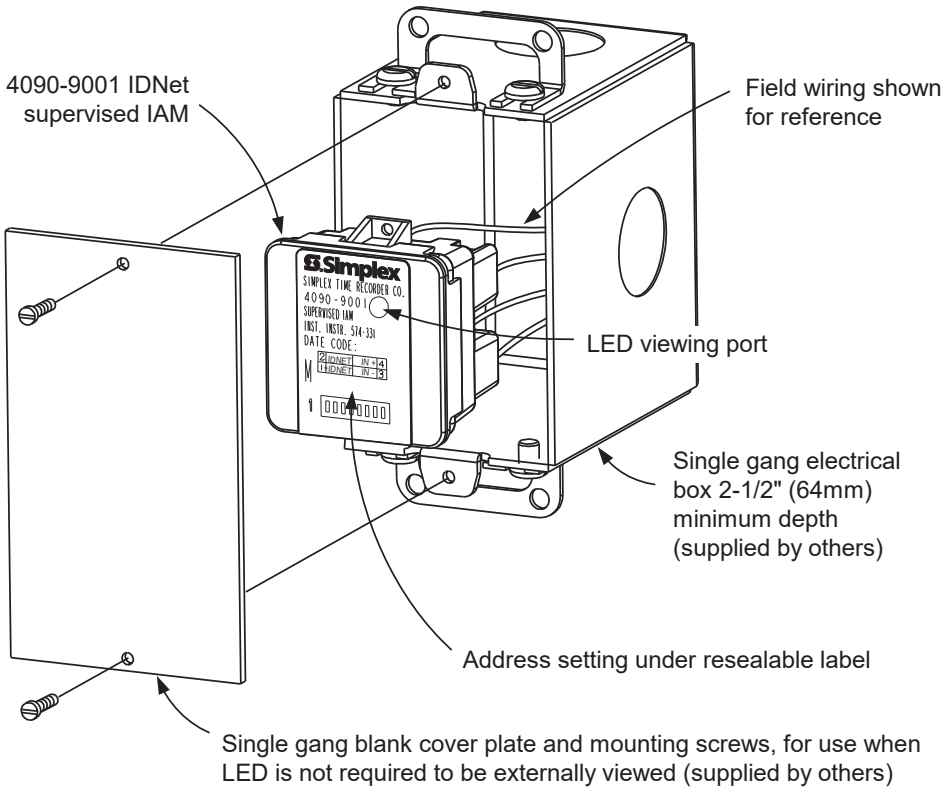
Wiring Distances

Distance from IAM to Contacts	500 ft (152 m) maximum without protectors
	400 ft (122 m) maximum with 2081-9044 Overvoltage Protectors
Wiring Distance Reference per channel, MAPNET II or IDNet Communications	2500 ft (762 m) maximum from fire alarm control panel
	10,000 ft (3048 m) maximum total wiring distance (including T-Taps)

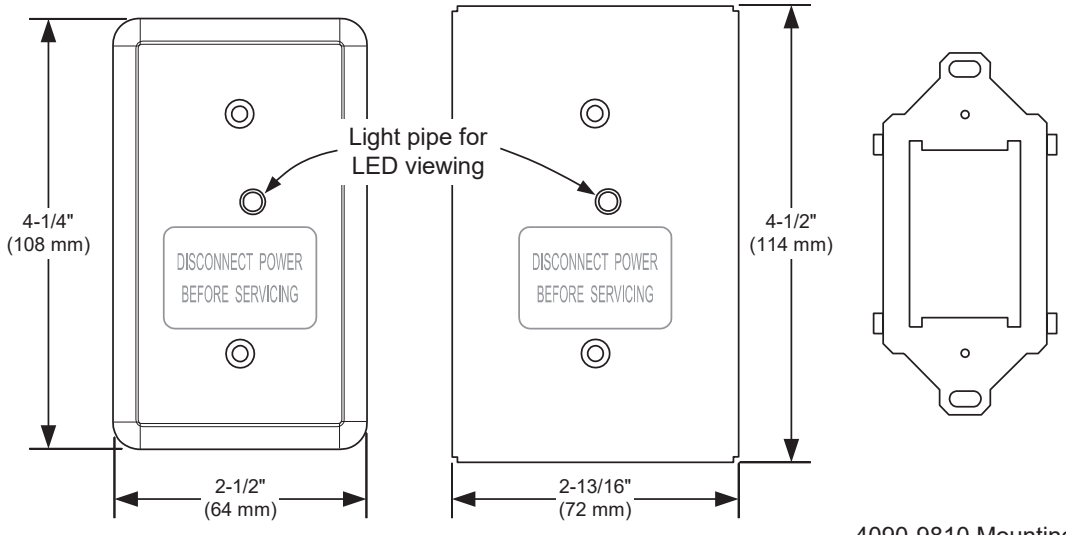
Mechanical

Dimensions	4090-9001	1-9/16" W x 1-3/4" H x 1-1/4" D (40 mm x 44 mm x 32 mm)
	4090-9051	1-9/16" W x 1-9/16" H x 9/16" D (40 mm x 40 mm x 14 mm)
Housing Material, 4090-9001		Black thermoplastic
Encapsulation Material, 4090-9051		Epoxy, beige
Temperature Range		32° to 158° F (0° to 70° C); intended for indoor operation
Humidity Range		Up to 93% RH at 100° F (38° C)

Mounting Information



Mounting Reference, Single Gang Blank Cover Plate



4090-9806, Trim plate for semi-flush mounted box

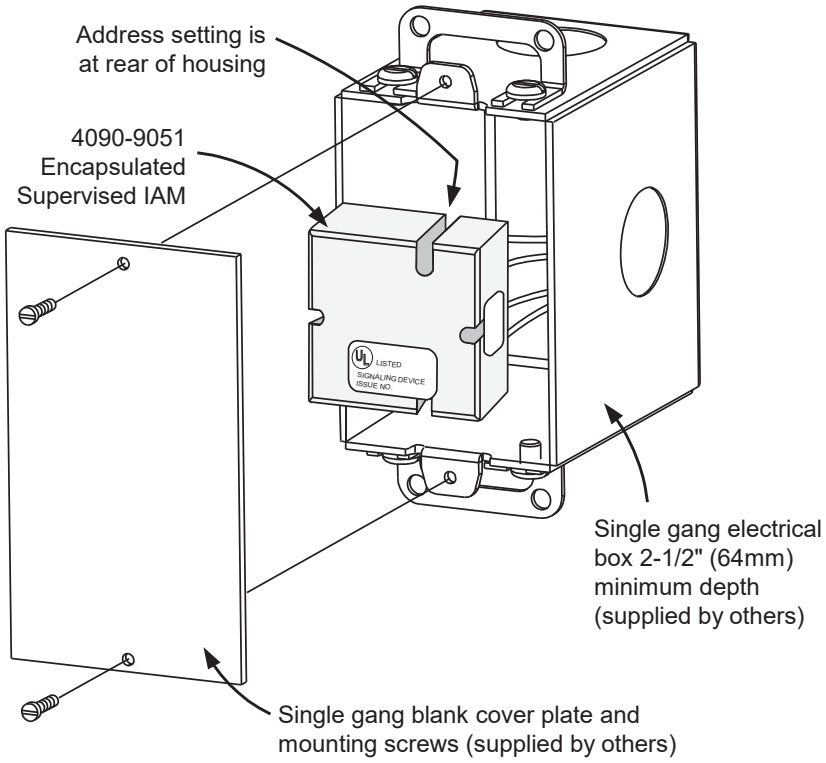
4090-9807, Trim plate for surface mounted box

4090-9810 Mounting bracket, ordered separately

NOTE: These mounting plates require mounting bracket 4090-9810.

Optional Trim Plates and Mounting Bracket for Visible LED

4090-9051 Mounting Information



Simplex®

Multi-Application Peripherals

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

IDNet Communicating Devices
Model 4090-9002 Relay IAM

Features

Individual Addressable Relay Module (Relay IAM):

- IDNet addressable control for use with Simplex® fire alarm control panel models 4007ES, 4008, 4010, 4010ES, 4100ES, and 4100U
- A single addressable point provides control and status tracking of a Form "C" contact
- Low power latching relay design allows IDNet communications to supply both data and module power
- Relay is set to OFF on initial power up and upon loss of IDNet communications

Compact, sealed construction:

- Enclosed design minimizes dust infiltration
- Mounts in standard 4" (102 mm) square electrical box, optional adapter bracket is available to mount in a 4 $^{11}/_{16}$" (119 mm) square electrical box
- Screw terminals for wiring connections
- Visible LED flashes to indicate communications
- Optional covers are available to allow LED to be viewed after installation

UL listed to Standard 864

Description

IDNet Relay IAMs allow fire alarm control panels to control a remotely located Form "C" contact using IDNet addressable communications for both data and module power. Typical applications would be for switching local power for control functions such as elevator capture, or control of HVAC components, pressurization fans, dampers, etc. Relay status is also communicated requiring only one device address.

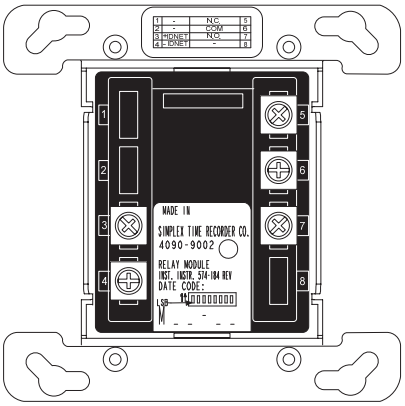
Product Selection

Model	Description
4090-9002	Relay IAM

Optional Adapter and Trim Plates

Model	Description	
4090-9813	Adapter plate to fit 4 $^{11}/_{16}$" (119 mm) square electrical box	
4090-9801	For semi-flush mounted box	Trim Plate, galvanized steel, with LED viewing window; includes mounting screws
4090-9802	For surface mounted box	

* 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 7300-0026:223 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.

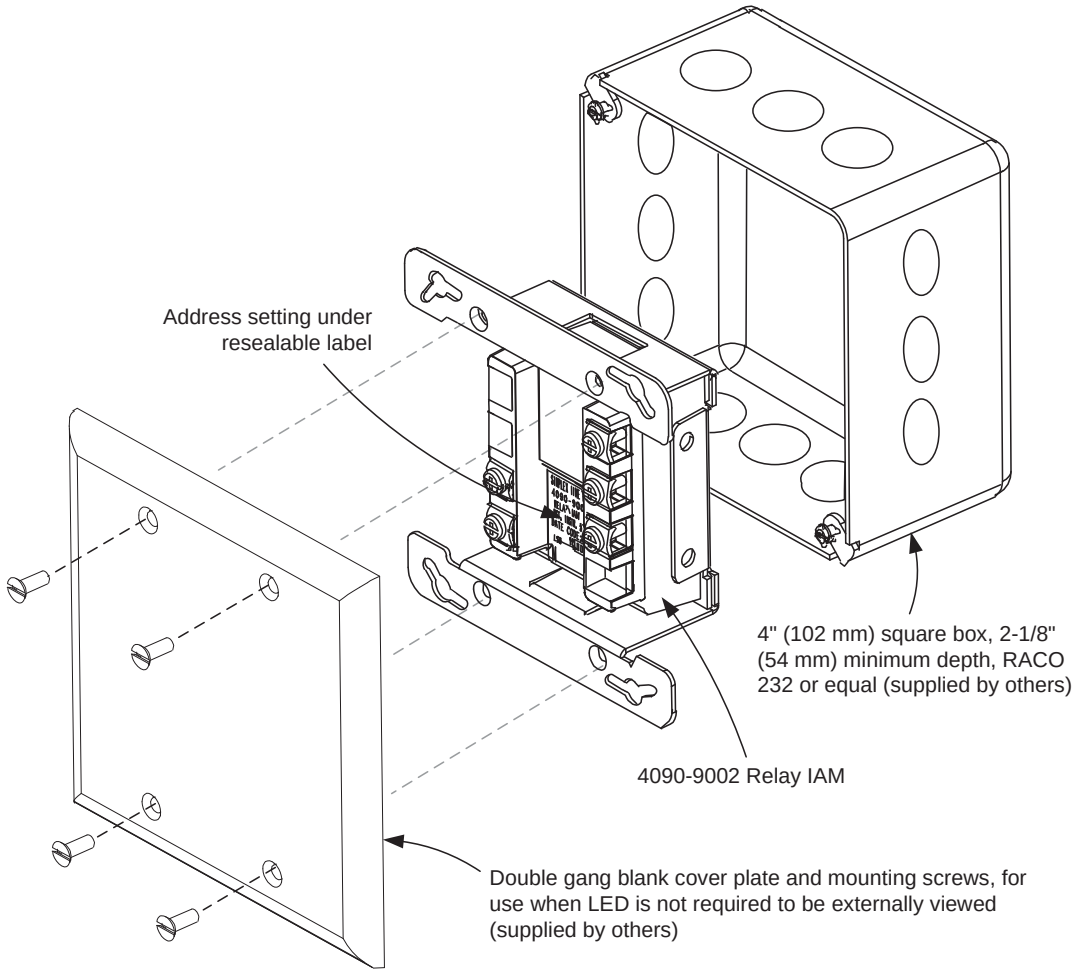


4090-9002 IDNet Relay IAM Package
(shown approximately 1/2 size)

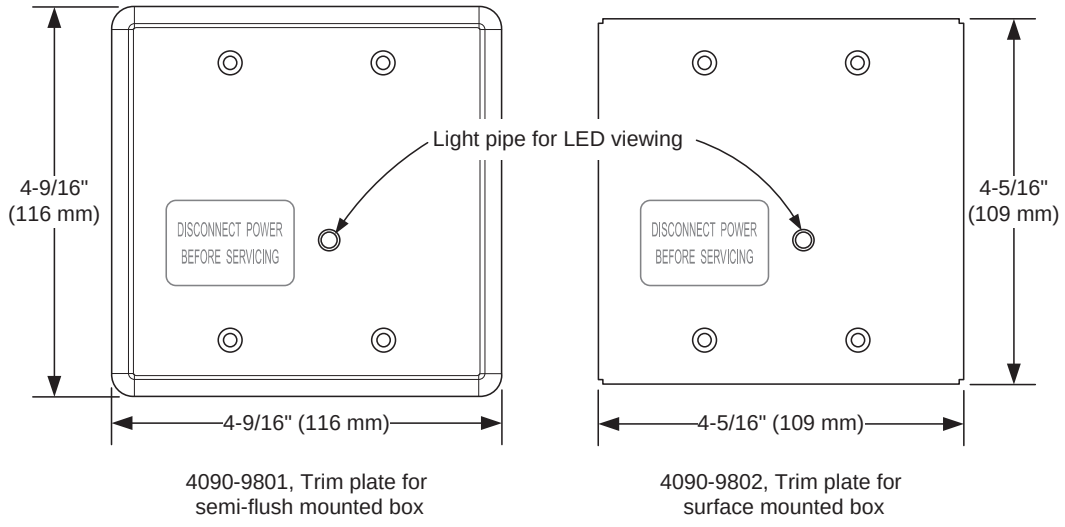
Specifications

Communications	IDNet communications, 1 address per device	
Relay IAM Power	Supplied by IDNet communications	
Contact Ratings* (not rated for incandescent switching)		
Type	Form C, SPDT	
Power-Limited	2 A @ 24 VDC, resistive	from listed fire alarm supply
	1 A @ 24 VDC, inductive	
Nonpower-Limited	0.5 A @ 120 VAC, resistive	
* Provide circuit fusing and transient suppression as required per application. DC inductive loads can typically be diode suppressed; 120 VAC loads may require RC networks or varistors, depending on device type. Refer to the installation instructions for additional information.		
Wire Connections	Screw terminals for in/out wiring, 18 to 14 AWG wire (0.82 to 2.08 mm^2)	
IDNet Communications Wiring Reference	Up to 2500 ft (762 m) from control panel	
	Up to 10,000 ft (3048 m) total wiring distance (including T-Taps)	
	Compatible with Simplex 2081-9044 Overvoltage Protectors	
Dimensions	4 ⅛" H x 4 ⅛" W x 1 ⅜" D (105 mm x 105 mm x 35 mm)	
Housing Material	Black thermoplastic	
Mounting Plate	Sheet metal, galvanized	
Temperature Range	32° to 120° F (0° to 49° C), intended for indoor operation	
Humidity Range	Up to 93% RH at 100° F (38° C)	
Installation Instructions	574-184	

Relay IAM Mounting Information



Mounting Reference, Double Gang Blank Cover Plate



Optional Trim Plates for Visible LED

*UL, ULC, CSFM Listed; FM Approved **

Multi-Application Peripherals

IDNet or MAPNET II Communicating Devices Addressable Manual Stations

Features

Individually addressable manual fire alarm stations with:

- Power and data supplied by IDNet or MAPNET II addressable communications using a single wire pair
- Operation that complies with ADA requirements
- Visible LED indicator that flashes during communications and is on steady when the station has been activated
- The NO GRIP Single Action Station and Retrofit Kit are available with a more easily operated pull lever for applications where anticipated users may find the standard station lever difficult to activate
- Pull lever that protrudes when alarmed
- Break-rod supplied (use is optional)
- Models are available with single or double action (breakglass or push) operation
- UL listed to Standard 38
- NEMA 1 rated. See Addressable manual station product selection for more information.

Compatible with the following Simplex control panels:

- Model Series 4007ES, 4008, 4010, 4010ES, 4100ES, 4100U, 4020, 4100, and 4120 fire alarm control panels equipped with either IDNet or MAPNET II communications
- Model Series 2120 Communicating Device Transponders (CDTs) equipped with MAPNET II communications

Compact construction:

- Electronics module enclosure minimizes dust infiltration
- Allows mounting in standard electrical boxes
- Screw terminals for wiring connections

Tamper resistant reset key lock, keyed same as Simplex fire alarm cabinets.

Multiple mounting options:

- Surface or semi-flush with standard boxes or matching Simplex boxes
- Flush mount adapter kit
- Adapters are available for retrofitting to commonly available existing boxes

Description

The Simplex addressable manual station combines the familiar Simplex manual station housing with a compact communication module that is easily installed to satisfy demanding applications. Its integral individual addressable module (IAM) constantly monitors status and communicates changes to the connected control panel through IDNet or MAPNET II communications wiring.

Operation

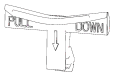
Activation of the 4099-9004 single action manual station requires a firm downward pull to activate the alarm switch. Completing the action breaks an internal plastic break-rod which is visible below the pull lever, use is optional. The use of a break-rod can be a deterrent to vandalism without interfering with the minimum pull requirements needed for easy activation. The pull lever latches into the alarm position and remains extended out of the housing to provide a visible indication.

Single Action NO GRIP Station 4099-9021. For applications such as California Building Code, Title 24, which requires "Controls and operating mechanisms shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist" the model 4099-9021 station provides a more easily operated pull lever compared to standard stations. Retrofit of existing stations is available using the 4099-9805 Retrofit kit.

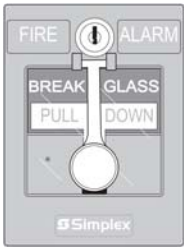
Double Action Stations (Breakglass) require the operator to strike the front mounted hammer to break the glass and expose the recessed pull lever. The pull lever then operates as a single action station.

4099-9002
Single action

4099-9021 NO
GRIP Single action



4099-9805 NO
GRIP Retrofit kit



4099-9005 Breakglass

4099-9006 Push

With 2099-9828
Institutional Cover kit

Double Action Stations (Push Type) require that a spring loaded interference plate, marked PUSH, be pushed back to access the pull lever of the single action station.

Station reset requires the use of a key to reset the manual station lever and deactivate the alarm switch. If you use the break-rod, you must replace it.

Station testing is performed by physical activation of the pull lever. You can also perform electrical testing by unlocking the station housing to activate the alarm switch.

Specifications

Refer to *4099 MAPNET II/ IDNet Addressable Manual Pull Station with LED Installation Instructions 579-1135* for additional information.

Table 1: Specifications

Specification	Rating
Power and communications	IDNet or MAPNET II communications, 1 address for each station
Address means	DIP switch, 8 position
Wire connections	Screw terminal for in/out wiring, for 18 AWG to 14 AWG wire (0.82 mm^2 to 2.08 mm^2)
UL listed temperature range	32°F to 120°F (0°C to 49°C) intended for indoor operation
Humidity range	Up to 93% RH at 100°F (38°C)
Housing color	Red with white raised lettering
Material	Housing and pull lever are Lexan polycarbonate or equal
Pull lever color	White with red raised lettering
Housing dimensions	5 in. H x 3 3/4 in. W x 1 in. D (127 mm x 95 mm x 25 mm)

Addressable manual station semi-flush mounting

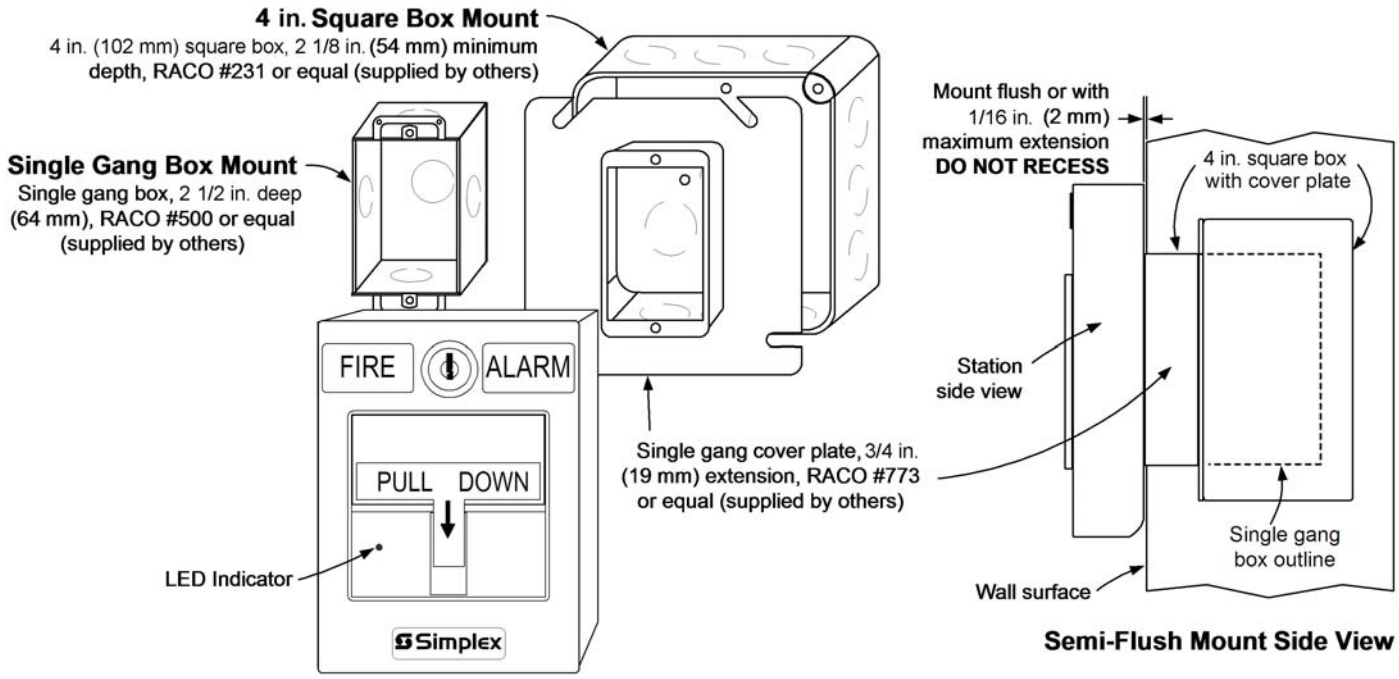


Figure 1: Addressable manual station semi-flush mounting

Addressable manual stations surface mounting

Preferred mounting. For surface mounting of these addressable manual stations, the preferred electrical boxes are shown in Figure 2.

Additional mounting reference. See Addressable manual station, additional mounting information for Wiremold box mounting compatibility.

Figure 2 shows the 2975-9178 box and the 2975-9022 cast box.

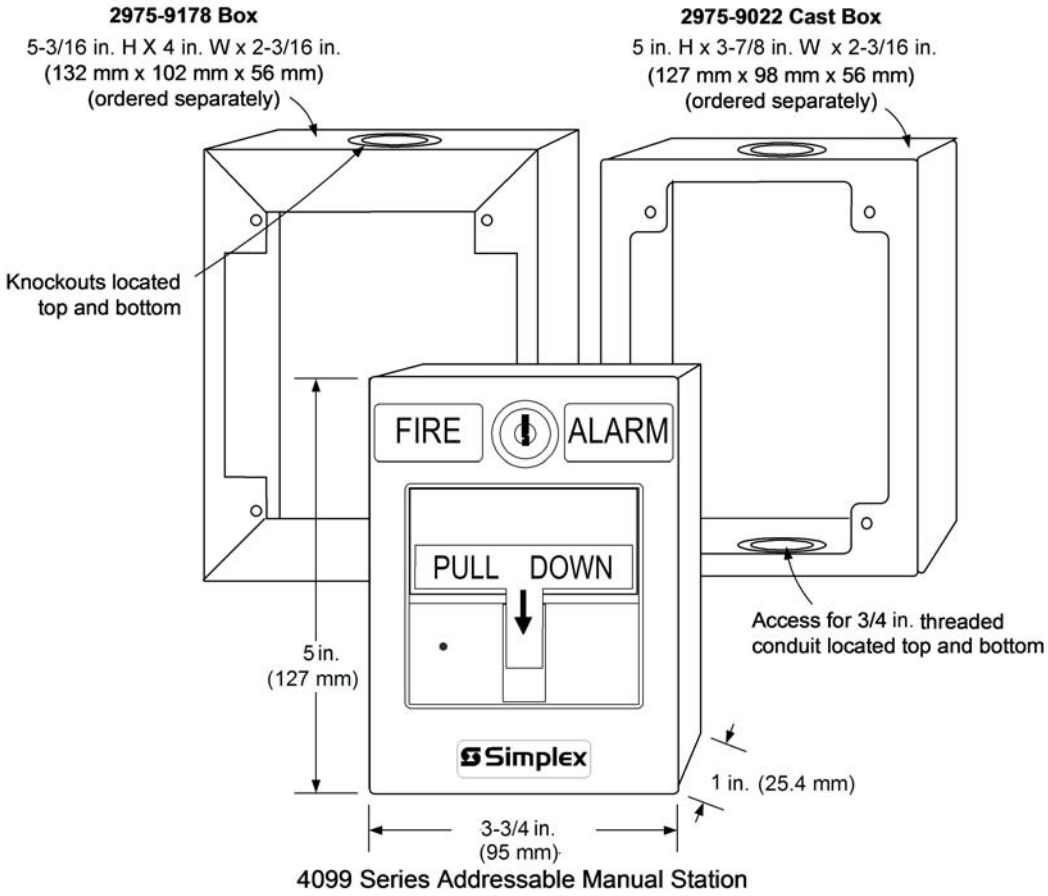


Figure 2: 4099 Series addressable manual station

Surface mount side view with internal detail

Figure 3 shows the 2975-9178 box.

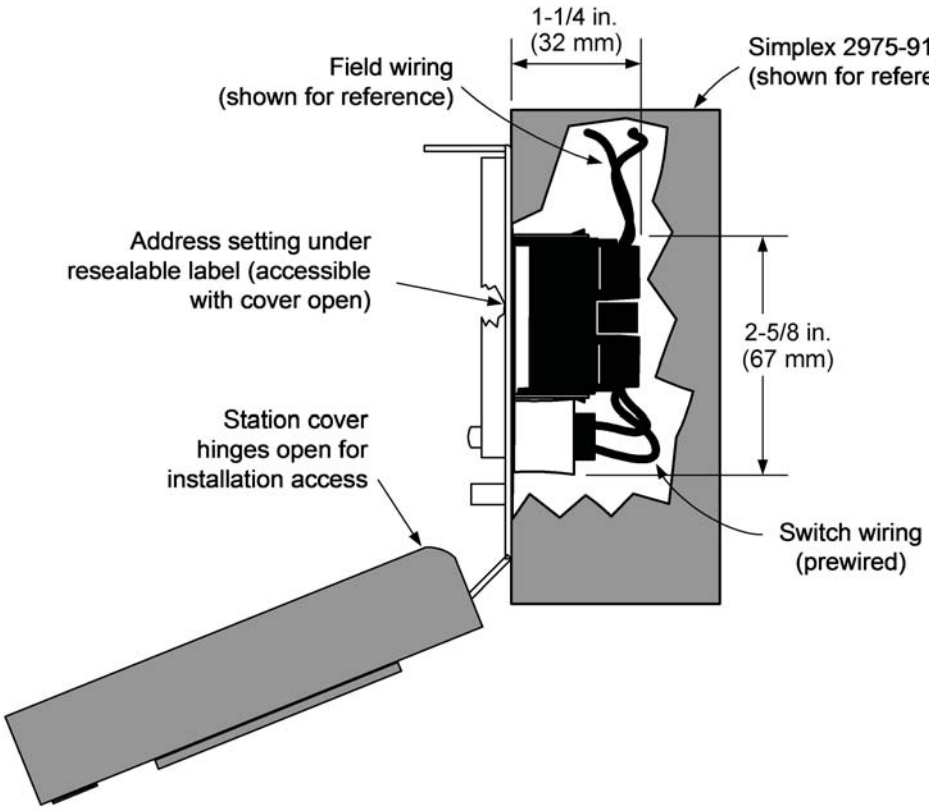


Figure 3: Surface mount side view with internal detail

Application reference

Refer to NFPA 72, the ***National Fire Alarm and Signaling Code***, and all applicable local codes for complete requirements for manual stations. The following summarizes the basic requirements:

1. Stations shall be located in the normal path of exit and distributed in the protected area such that they are unobstructed and readily accessible.
2. Mounting shall be with the operable part not less than 42 in. (1.07 m) and not more than 48 in. (1.22 m) above floor level.
3. At least one station shall be provided on each floor. Additional stations shall be provided to obtain a travel distance not more than 200 ft (61 m) to the nearest station from any point in the building.
4. When manual station coverage appears limited in any way, additional stations should be installed.

Addressable manual station, additional mounting information

For retrofit and new installations, additional compatible mounting boxes and the required adapter plates are shown in Figure 4. Figure 4 shows the 2099-9814 surface trim for Wiremold boxes and the 2099-9813 semi-flush trim for 2 gang switch boxes.

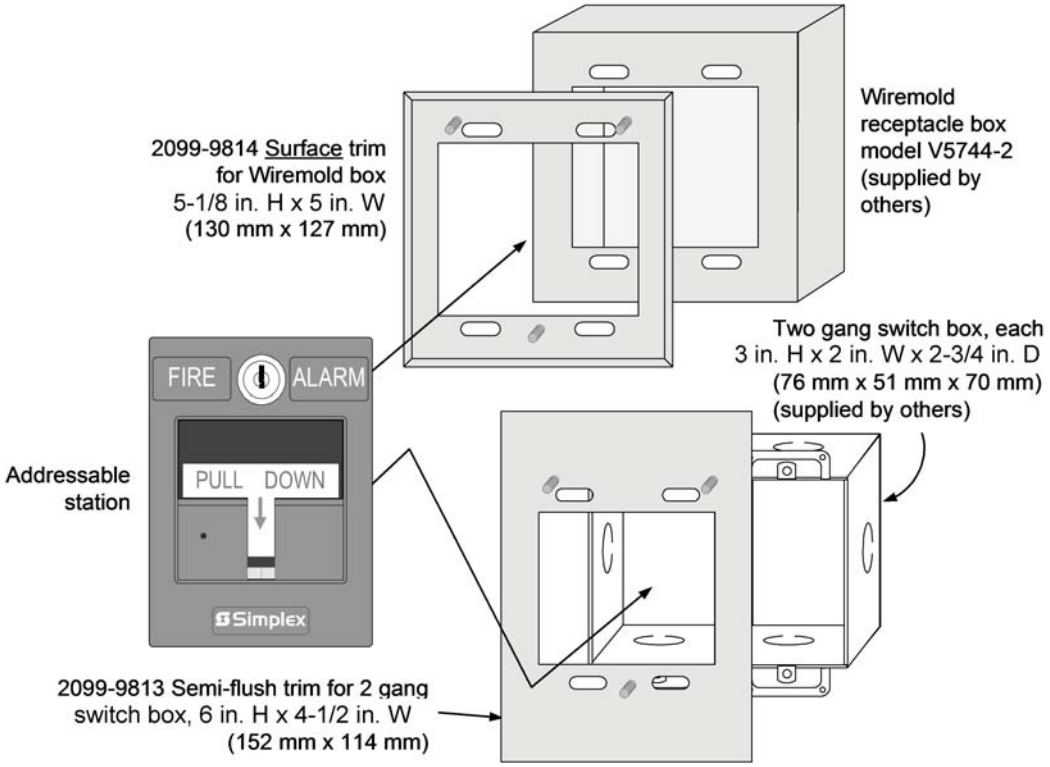


Figure 4: Addressable manual station, additional mounting information

Addressable manual station, flush mounting information

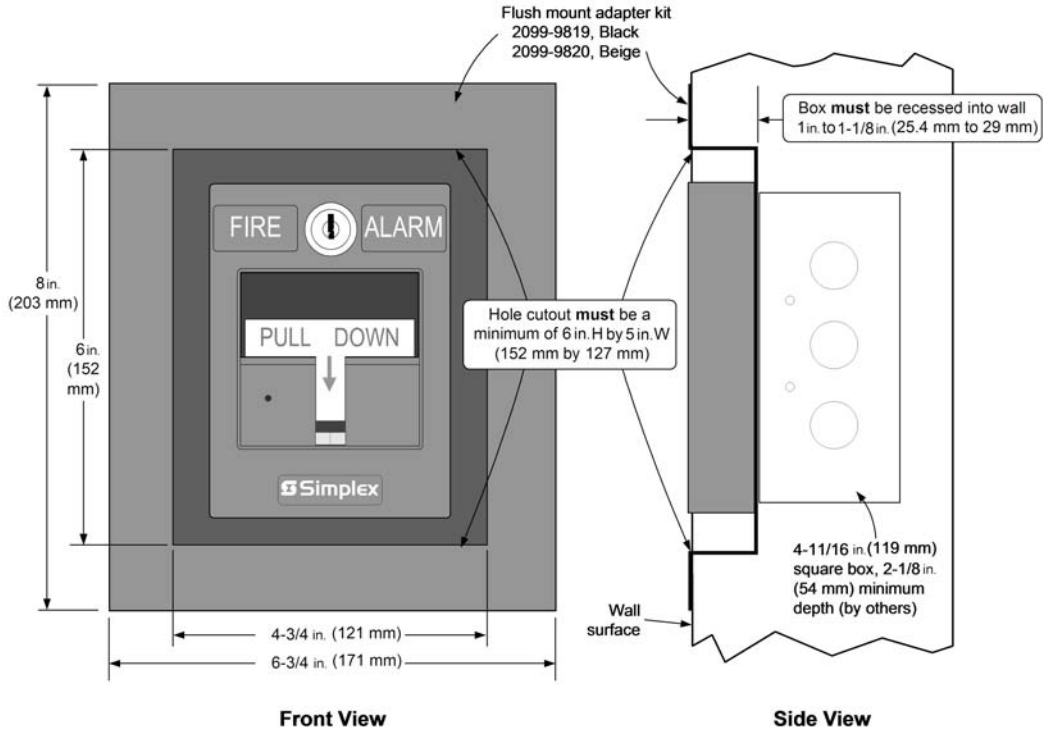


Figure 5: Addressable manual station, flush mounting information

The flush mount adapter kit is available in beige (2099-9820) or black (2099-9819).

Addressable manual station product selection

Table 2: Addressable manual station product selection red housing with white letters and white pull lever

Model	Description	Housing	Pull lever	Listings
4099-9004, see note	Single Action, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM
4099-9004CB, see note	Single Action, Bilingual English and French	FEU FIRE	TIREZ PULL	ULC
4099-9004CF, see note	Single Action, French	ALARME FEU	ABAISSEZ	
4099-9004PO, see note	Single Action, Portuguese	FOGO ALARME	PUXE	UL, FM
4099-9004SP, see note	Single Action, Spanish	ALARMA FUEGO	JALE	
4099-9005, see note	Double Action, Breakglass operation, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM
4099-9005PO, see note	Double Action, Breakglass operation, Portuguese	FOGO ALARME	PUXE	UL, FM
4099-9005SP, see note	Double Action, Breakglass operation, Spanish	ALARMA FUEGO	JALE	
4099-9006, see note	Double Action, Push operation, English	FIRE ALARM	PUSH PULL DOWN	UL, ULC, FM, CSFM
4099-9006PO, see note	Double Action, Push operation, Portuguese	FOGO ALARME	EMPURRE PUXE	UL, FM
4099-9006SP, see note	Double Action, Push operation, Spanish	ALARMA FUEGO	EMPUJE JALE	
4099-9021, see note	Single Action NO GRIP operation, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM

Note: NEMA 1 rated when used with 2975-9178 back box.

Table 3: Accessories

Model	Description
2975-9022	Cast aluminum surface mount box, red
2975-9178	Surface mount steel box, red
2099-9813	Semi-flush trim plate for double gang switch box, red
2099-9819	Flush mount adapter kit, black
2099-9820	Flush mount adapter kit, beige
4099-9805	Retrofit Kit for field conversion of a single action station to a NO GRIP station; refer to the ***NO GRIP Actuator (4099-9805) Installation Instructions 579-1007*** for details
2099-9803	Replacement breakglass
2099-9804	Replacement break-rod
2099-9828	Institutional cover kit for field installation on 4099-9004; **Note:** Covers LED indicator
2099-9814	Surface trim plate for Wiremold box V5744-2, red
2099-9822	Replacement retaining clip for breakglass
252-019	B key for manual station reset.

True*Alert* Multi-Candela Notification Appliances

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

SmartSync Operation Audible/Visible Notification with Horn and Synchronized Flash, Non-Addressable

Features

Audible/visible (A/V) notification appliances with efficient electronic horn and high output xenon strobe, available for wall or ceiling mount

- Operation is compatible with ADA requirements (refer to important installation information on page 3)
- Rugged, high impact, flame retardant thermoplastic housings are available in red or white with clear lens

Operates over a two-wire SmartSync circuit to provide:

- Horns that are controlled separately from strobes on the same two-wire circuit
- "On-until-silenced" and "on-until-reset" operation on the same two-wire pair
- SmartSync horn activation of Temporal pattern, March Time pattern (at 60 BPM), or on continuously
- Strobe appliances on the same circuit operating at a synchronized 1 Hz flash rate
- Class B operation requires connection to a compatible SmartSync NAC or to SmartSync Control Module (SCM) 4905-9938
- Class A operation when connected to the 4905-9938 SCM or with 4100U series fire alarm control panel NACs

Wall mount A/Vs features:

- Wiring terminals are accessible from the front of the housing providing easy access for installation, inspection, and testing
- Covers are available separately to convert housing color
- Available UL listed sound damper for locations requiring attenuation of 5 to 6 dBA (stairwells, small rooms, highly reverberant areas, etc.)

Optional adapters and wire guards:

- Wall mount A/V adapters are available to cover surface mounted electrical boxes and to adapt to Simplex® 2975-9145 boxes
- UL listed red wire guards are available for wall or ceiling mount A/Vs

Visible notification appliance (strobe):

- 24 VDC xenon strobe; intensity is selectable as 15, 30, 75, or 110 candela with visible selection jumper secured behind strobe housing
- UL listed to Standard 1971
- Regulated circuit design ensures consistent flash output and provides controlled inrush current

Audible notification appliance (horn):

- Low current, 24 VDC electronic horn with harmonically rich sound output suitable for either steady or coded operation (Temporal or 60 BPM March Time pattern)
- UL listed to Standard 464

Wall and Ceiling Mount A/Vs

Description

Multi-Candela TrueAlert A/Vs with horn and synchronized strobe provide convenient installation to standard electrical boxes. The enclosure designs are both impact and vandal resistant and provide a convenient strobe intensity selection. Since each model can be selected for strobe intensity output, on-site model inventory is minimized and changes encountered during construction can be easily accommodated.

Wall mount A/V housings are a one-piece assembly (including lens) that mounts to a single or double gang, or 4" square standard electrical box. The cover can be quickly removed (a tool is required) and covers are available separately for color conversion.

Ceiling mount A/Vs install using standard 4" electrical boxes. Color choice is determined by model number.

Strobe Intensity Selection

During installation, a selection plug at the back of the housing determines the desired strobe intensity. An attached flag with black letters on a highly visible yellow background allows the selected intensity to be seen at the side of the strobe lens.

* 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 7125-0026:317 for allowable values and/or conditions concerning material presented in this document. Accepted for use – City of New York Department of Buildings – MEA35-93E. Refer to page 2 for listing status of wire guards. 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.

Strobe Application Selection

Proper selection of visible notification is dependent on occupancy, location, local codes, and proper applications of: the *National Fire Alarm Code* (NFPA 72), ANSI A117.1; the appropriate model building code: BOCA, ICBO, or SBCCI; and the application guidelines of the Americans with Disabilities Act (ADA).

Synchronized Strobes

Multiple Strobes. When multiple strobes and their reflections can be seen from one location, synchronized flashes reduce the probability of photo-sensitive reactions as well as the annoyance and possible distraction of random flashing. The multi-candela strobes of these A/Vs are synchronized by the controlling SmartSync operation NAC.

SmartSync Two-Wire Control

SmartSync operation mode allows a two-wire circuit to provide the ability to activate both the horn and strobe on the same NAC and then allow the horn to be silenced while the strobe remains flashing. The horn operates as "on-until-silenced" while the strobe operation is "on-until-reset."

SmartSync Control Sources

- **4006, 4007ES Hybrid, 4008, 4010, 4010ES, 4100ES, and 4100U Fire Alarm Control Panels** (refer to individual product data sheets for more information)
- **4009 IDNet NAC Extender** (refer to data sheet S4009-0002)
- **SmartSync Control Module (SCM)** 4905-9938 (refer to data sheet S4905-0003)

Additional SmartSync compatible notification appliances include separate horns and combination horn/strobe notification appliances.

Product Selection

Multi-Candela A/Vs

Model	Mounting	Housing Color	"FIRE" Lettering	Description
4906-9127	Wall	Red	White	Horn with Multi-Candela Strobe; strobe intensity selectable as: 15, 30, 75, or 110 candela; operates with SmartSync two-wire control
4906-9129		White	Red	
4906-9128	Ceiling	Red	White	
4906-9130		White	Red	

Wall Mount A/V Accessories

Model	Description		Dimensions
4905-9937	Red	Surface Mount Adapter Skirt; use to cover 1-1/2" (38 mm) deep surface mounted boxes	5-3/8" H x 5-1/4" W x 1-5/8" D (136 mm x 133 mm x 41 mm) depth with strobe = 4-3/8" (111 mm)
4905-9940	White		
4905-9931	Red Adapter Plate for mounting to Simplex 2975-9145 box (typically for retrofit, may be mounted vertical or horizontal)		8-5/16" x 5-3/4" x 0.060" Thick (211 mm x 146 mm x 1.5 mm)
2975-9145	Red Mounting Box, requires Adapter Plate 4905-9931		7-7/8" x 5-1/8" x 2-3/4" D (200 mm x 130 mm x 70 mm)
4905-9838	Optional Sound Damper; package of 20; field installed adhesive backed horn output attenuator; reduces output 5 to 6 dBA **NOTE:** After Sound Damper installation, measure sound level to ensure compliance with applicable code requirements		1-3/4" Diameter (44.5 mm) with 0.31" (8 mm) sound opening

SmartSync Control Module

Model	Description	Dimensions
4905-9938	SmartSync Control Module with Class B or Class A output; mounts in 4" (102 mm) square box; refer to data sheet S4905-0003 for details	4" x 4-1/8" x 1-1/4" D (102 mm x 105 mm x 32 mm)

Replacement Covers for Wall Mount A/Vs

Model	Description	Dimensions
4905-9994	Red cover with white "FIRE" lettering	5-1/8" H x 5" W x 1-1/2" D (130 mm x 127 mm x 38 mm)
4905-9995	White cover with red "FIRE" lettering	

Wire Guards and Ceiling Mount A/V Adapter

Model	Description			Dimensions
4905-9961*	Wall mount red wire guard with mounting plate, compatible with semi-flush or surface mounted boxes			6-1/16" H x 6-1/16" W x 3-1/8" D (154 mm x 154 mm x 79 mm)
4905-9927*	Ceiling Mount	Red Wire Guard for mounting to flush mounted electrical box		8-1/2" x 6-1/8" x 3" (216 mm x 156 mm x 76 mm)
4905-9928*		Red Adapter Plate, required to mount guard to surface mounted electrical box		9" x 7" (229 mm x 178 mm)
4905-9915		White	Surface Mount Adapter Box Extension, use to cover 1-1/2" deep surface mounted boxes	4-3/4" x 6-7/8" x 1-1/2" deep, (121 mm x 175 mm x 38 mm)
4905-9916		Red		

* UL listed by Space Age Electronics Inc.

A/V Specifications

Wall Mount or Ceiling Mount, Common Specifications

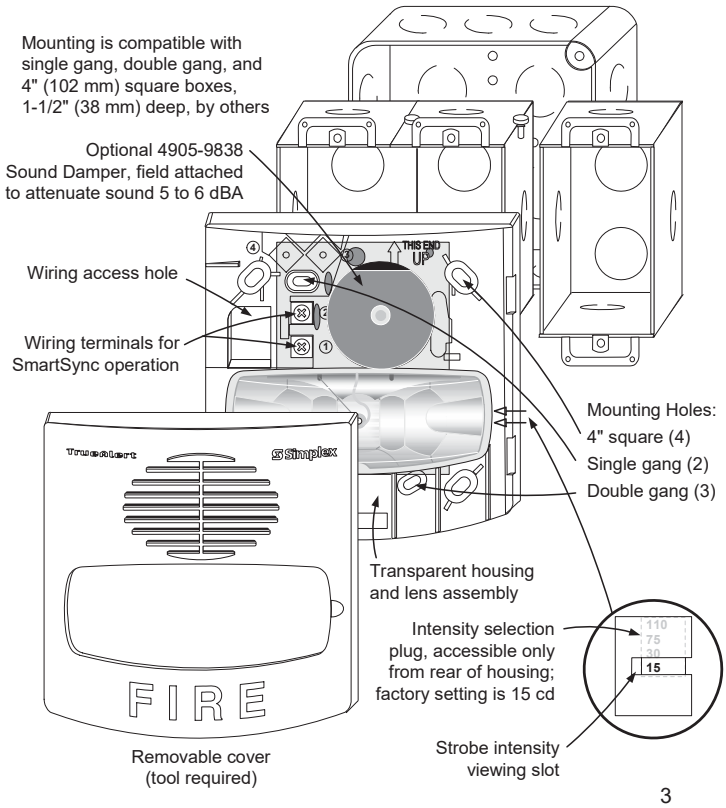
Rated Voltage Range	UL Listed Rating	Regulated 24 DC; see Note 1 below						
	ULC Listed Rating	20 VDC to 30 VDC per ULC S526-M878						
Flash Rate and Synchronized NAC Loading		1 Hz; with up to 35 synchronized strobes maximum per NAC						
Environmental; Temperature and Humidity		32° to 122° F (0° to 50° C); 10% to 93%, non-condensing at 100° F (38° C)						
Connections		Terminal blocks for 18 AWG to 12 AWG (0.82 mm^2 to 3.31 mm^2); two wires per terminal for in/out wiring						
Horn Output Characteristics		2400 to 3700 Hz sweep, modulated at 120 Hz rate						
Horn Output Ratings @ 10 ft (3 m) (see Note 2)	Voltage	**16 VDC**		**24 VDC**		**33 VDC**		
	Sound Type (see Note 2)	**Steady**	**Coded**	**Steady**	**Coded**	**Steady**	**Coded**	
	UL 464 Reverberant Chamber	86 dBA	82 dBA	88 dBA	84 dBA	90 dBA	86 dBA	
	Anechoic Chamber	92 dBA	91 dBA	94 dBA	95 dBA	96 dBA	96 dBA	

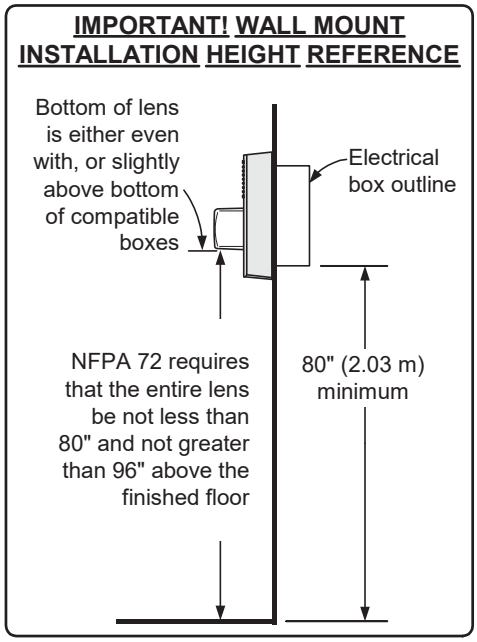
Wall Mount	Housing Dimensions (with lens)	5-1/8" H x 5" W x 2-3/4" D (130 mm x 127 mm x 70 mm)				
	Maximum RMS Current Rating per Strobe Setting (see Note 3 below)	**15 cd**	**30 cd**	**75 cd**	**110 cd**	
		75 mA	**116 mA**	**221 mA**	**285 mA**	
	Reference RMS Currents at other voltages 18 VDC	67 mA	103 mA	196 mA	253 mA	
	Reference RMS Currents at other voltages 24 VDC	50 mA	77 mA	147 mA	190 mA	
Ceiling Mount	Housing Dimensions (with lens)	4-3/4 L" x 6-7/8" W x 2-5/8" D (121 mm x 175 mm x 67 mm)				
	Maximum RMS Current Rating per Strobe Setting (see Note 3 below)	**15 cd**	**30 cd**	**75 cd**	**110 cd**	
		86 mA	**132 mA**	**250 mA**	**320 mA**	
	Reference RMS Currents at other voltages 18 VDC	76 mA	117 mA	222 mA	284 mA	
	Reference RMS Currents at other voltages 24 VDC	57 mA	88 mA	167 mA	213 mA	

NOTES:

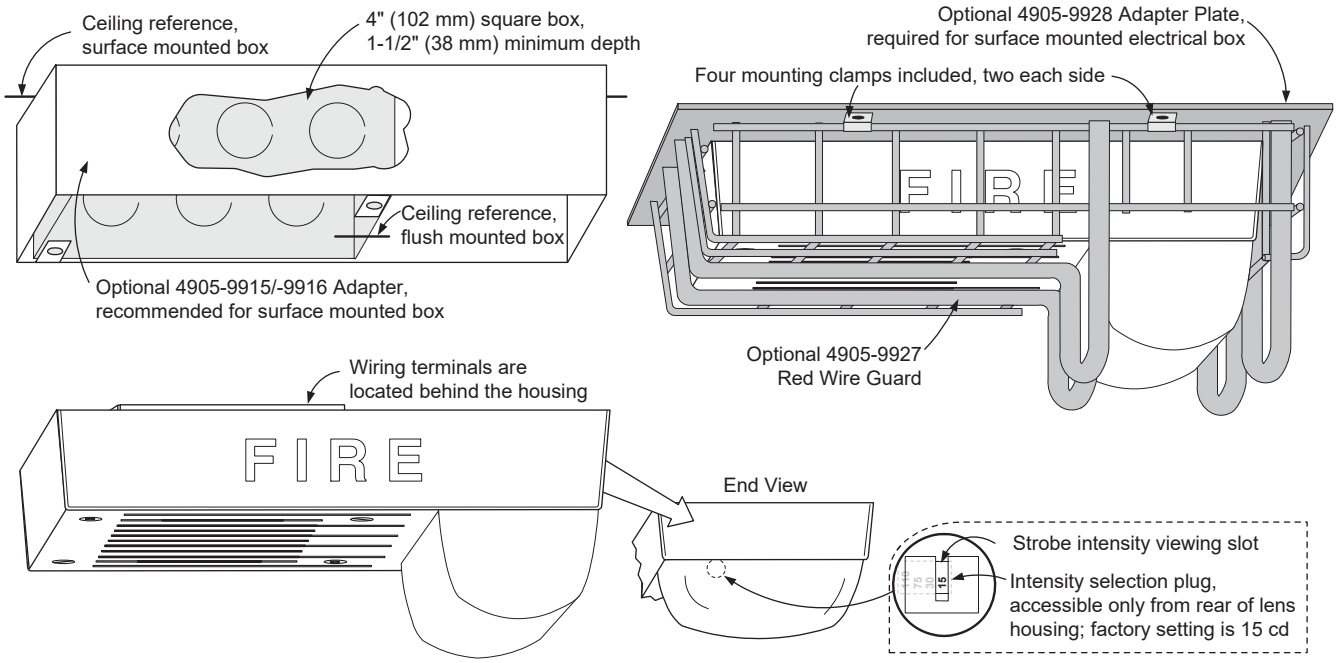
1. "Regulated 24 DC" refers to the voltage range of 16 to 33 VDC per UL Standard 1971, *Signaling Devices for the Hearing Impaired*. This voltage range is the absolute operating range. Operation outside of this range may cause permanent damage to the appliance. Please note that 16 VDC is the lowest operating voltage that is allowed at the last appliance on the NAC under worst case conditions.
2. Coded values are typical of the output measured with a Temporal coded or a March Time coded pulse and with a sound level meter reading on a "fast" setting. Under the same test conditions, coded horn output "peak" sound level readings are typically 4 dBA higher. Anechoic horn output ratings are typically more representative of actual installed sound output.
3. Currents are with horn on steady. The maximum RMS current listed is the device nameplate rating. Strobe designs are constant wattage and the maximum RMS current rating occurs at the lowest allowable operating voltage. (RMS is root mean square and refers to the effective value of a varying current waveform.)

Installation Reference, Surface or Semi-Flush Mounting

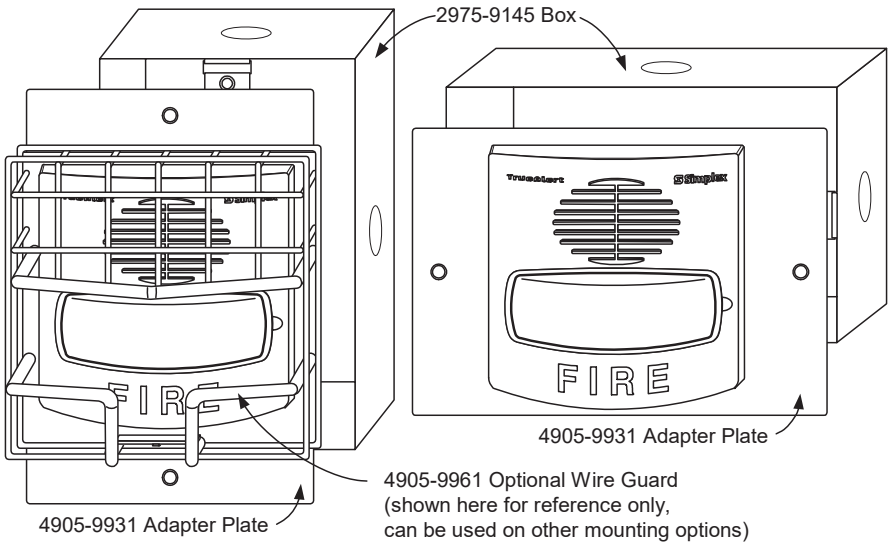




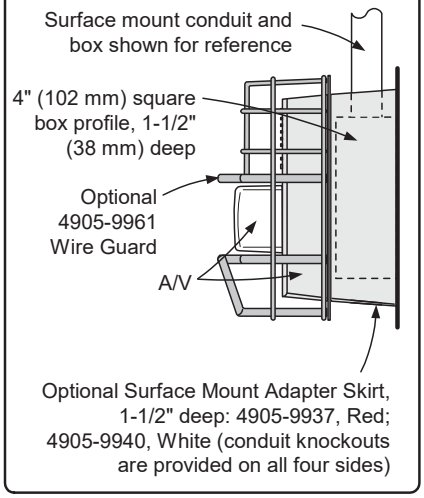
Ceiling Mount A/V and Guard Installation Reference



Wall Mount Installation Reference; Adapter Plate, Guard, and Adapter Skirt



Surface Mounting Reference with Optional Adapter Skirt and Optional Wire Guard



*UL, ULC, CSFM Listed; FM Approved**

TrueAlert Multi-Candela Notification Appliances

Weatherproof Notification Appliances (non-addressable) Wall Mount Visible Only (V/O) and Audible/Visible (A/V)

Features

Weatherproof 24 VDC notification appliances for extended temperature and extended humidity operation:

- NEMA 3R rated enclosure with ratings for indoor or outdoor applications.
- Rugged, high impact, flame retardant thermoplastic housings are available in red or white, with a clear lens.
- Red housings are for indoor or outdoor applications and provide UV light stable color.
- White housings are for indoor applications with limited UV light exposure.
- Mounting is to matching weatherproof boxes (required), ordered separately.
- Wiring terminals are accessible from the front of the housing providing easy access for installation, inspection, and testing.

Agency listings reference:

- UL listed to Standard 1638 for outdoor applications with strobe rated at 75 cd (WP75).
- UL listed to Standard 1971 for indoor applications with strobe intensity selectable as 15, 60, or 75 candela; indoor applications are compatible with ADA requirements (refer to important installation information on page 4).
- Separate models are ULC listed to Standard S526 (strobes) and S525 (horns) for outdoor applications with strobe intensity selectable as 5, 20, or 30 candela (available in red only).

Operation details:

- A visible intensity selection jumper is secured behind the strobe housing.
- Polarized input allows connection to compatible reverse polarity, supervised notification appliance circuit (NAC).
- Regulated circuit design ensures consistent flash output and provides controlled inrush current.
- A/V appliances have an efficient electronic horn.

Synchronized strobe compatibility:

- Simplex® fire alarm control panels and NAC Extenders when selected to provide strobe synchronization or SmartSync two-wire control.
- Separate strobe Synchronization Modules or SmartSync Control Modules (SCMs) that convert conventional NAC inputs to a SmartSync output.

SmartSync two-wire operation provides:

- Horns controlled separately from strobes on the same two-wire circuit, activated as Temporal pattern, March Time pattern (at 60 BPM), or on continuously.

Figure 1: Weatherproof A/V (top) and strobe (middle), side view of A/V on weatherproof mounting boxes (bottom)

Description

Weatherproof multi-candela TrueAlert appliances provide VO and A/V SmartSync operation for indoor and outdoor, extended temperature and extended humidity applications. The enclosures are impact and vandal resistant and provide a convenient strobe intensity selection. Because each model can be selected for intensity output, on-site model inventory is minimized and changes encountered during construction are easily accommodated.

Strobe intensity selection

During installation, use the selection plug at the back of the housing to determine the strobe intensity. Use the attached flag with black letters on a yellow background to see the selected intensity at the side of the strobe lens.

* 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 7125-0026:331 for allowable values and/or conditions concerning material presented in this document. 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.

Strobe application reference

Correct selection of weatherproof notification is dependent on occupancy, location, local codes, and correct applications of: the National Fire Alarm and Signaling Code (NFPA 72), ANSI A117.1; the appropriate model building code: BOCA, ICBO, or SBCCI; and the application guidelines of the Americans with Disabilities Act (ADA). Requirements may differ from indoor appliance applications, contact your local authority having jurisdiction (AHJ) to assist in determining requirements.

SmartSync two-wire control

SmartSync operation mode means that a two-wire circuit can activate both the horn and strobe on the same NAC, then the horn can be silenced while the strobe remains flashing. The horn operates as "on-until-silenced" while the strobe operation is "on-until-reset."

SmartSync control sources

SmartSync two-wire control is available from:

- 4006, 4007ES Hybrid, 4008, 4010, 4010ES, 4100ES, and 4100U Fire Alarm Control Panels, refer to individual product data sheets for more information.
- 4009 IDNet NAC Extenders, *refer to data sheet S4009-0002*.
- SmartSync Control Module (SCM) Model 4905-9938, *refer to data sheet S4905-0003*.
- Additional SmartSync compatible notification appliances include separate horns and combination horn/strobe notification appliances.

Product selection

Table 1: UL Listed TrueAlert Weatherproof Multi-Candela Notification Appliances

Model	Type	Housing	FIRE lettering	Description	UL 1971	UL 1638 intensity rating
4906-9105	Strobe (VO)	Red	White	UL listed weatherproof appliance with multi-candela strobe; requires weatherproof box below	15 cd, 60 cd, or 75 cd	75 cd (setting WP75)
4906-9106		White	Red			
4906-9131	Horn/Strobe (A/V)	Red	White			
4906-9132		White	Red			

Table 2: ULC Listed TrueAlert Weatherproof Multi-Candela Notification Appliances

Model	Type	Housing	FIRE lettering	Description	ULC intensity ratings
4906-9113	Strobe (V/O)	Red	White	ULC listed weatherproof appliance with multi-candela strobe; requires weatherproof box below	5 cd, 20 cd, or 30 cd
4906-9143	Horn/Strobe (A/V)				

Table 3: Wall mount weatherproof boxes, required

SKU	Description		Dimensions
49WPBB-AVVOWR	Red	Surface mount weatherproof mounting boxes	5 1/2 in. H x 6 1/8 in. W x 1 5/8 in. D (140 mm x 156 mm x 41 mm)
49WPBB-AVVOWW	White	Surface mount weatherproof mounting boxes	5 1/2 in. H x 6 1/8 in. W x 1 5/8 in. D (140 mm x 156 mm x 41 mm)

Table 4: Aftermarket red bilingual (French/English) covers, for field installation

Model	Description	
4905-9832	Red strobe (V/O) cover	White "FEU/FIRE" lettering
4905-9833	Red horn/strobe (A/V) cover	

Table 5: Synchronization Module Reference, refer to data sheet *S4905-0003* for additional information

SKU	Description		Dimensions
4905-9914	Class B	Synchronized Flash Module; epoxy encapsulated with in/out 18 AWG (0.82 mm^2) wire leads, rated for 2 A NAC, requires 10 mA for power	1 3/8 in. x 2 7/16 in. x 13/16 in. (35 mm x 62 mm x 20 mm)
4905-9922	Class A		
4905-9938	SmartSync Control Module with Class B or Class A output; mounts in 4 in. (102 mm) square box		4 in. x 4 1/8 in. x 1 1/4 in. D (102 mm x 105 mm x 32 mm)

Specifications

Specifications	
Rated voltage range	Regulated 24 VDC; see Note 1
Flash rate	1 Hz; up to 24 synchronized strobes maximum for each NAC
Temperature range UL 1971 listed rating	32° F to 122° F (0° to 50° C); selectable 15 cd/30 cd/75 cd

Specifications		
	UL 1638 listed rating	-31°F to 150°F (-35° C to 66°C); 75 cd rating
	ULC S526 and S525 listed rating	-40°F to 150°F (-40° C to 66°C); 5 cd/20 cd /30 cd rating
Humidity range	UL 1971 listed rating	10% to 93%, at 100° F (38° C)
	UL 1638, ULC S526, and ULC S525	up to 98%, at 104 °F (40° C)
Wiring connections		Terminal blocks for 18 AWG to 12 AWG (0.82 mm^2 to 3.31 mm^2); two wires for each terminal for in/out wiring

Table 6: Horn output; Models 4906-9131, 4906-9132, and 4906-9143; UL and ULC ratings as noted

Output sound characteristics		2400 Hz to 3700 Hz sweep, modulated at 120 Hz rate					
Horn output ratings @ 10 ft (3 m) (see Note 2)	Voltage	16 VDC		24 VDC		33 VDC	
	Sound type (see Note 2)	Steady	Coded	Steady	Coded	Steady	Coded
	UL 464 reverberant chamber	80 dBA	76 dBA	83 dBA	79 dBA	86 dBA	81 dBA
	ULC S525 anechoic chamber	96 dBA	96 dBA	99 dBA	99 dBA	101 dBA	101 dBA

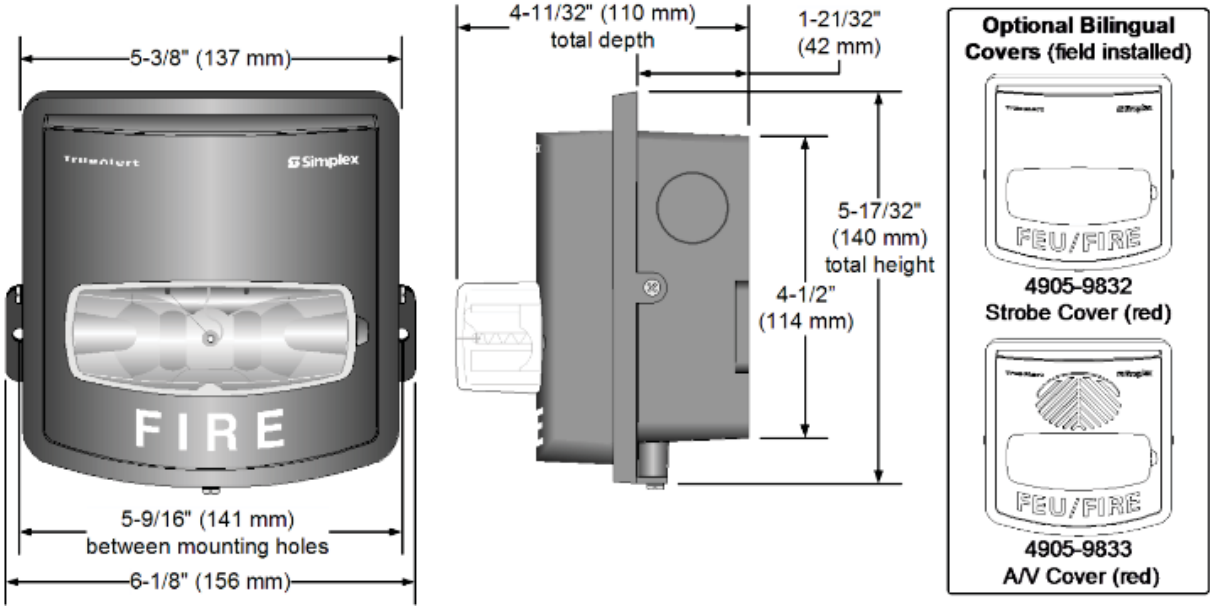
Table 7: Maximum RMS current ratings, see Note 3

		UL 1971 ratings (32° F to 122° F)			UL 1638 ratings 75 cd (WP75)	
SKU	**Intensity selection/temperature**	**15 cd**	**60 cd**	**75 cd**	**32° F to 150°F (0° C to 66°C)**	**-31° F to below 32°F (-35° C to 0° C)**
VO Models 4906-9105 and 4906-9106		77 mA	192 mA	231 mA	189 mA	273 mA
A/V Models 4906-9131 and 4906-9132		91 mA	204 mA	249 mA	205 mA	277 mA
		ULC S526/S525 ratings according to intensity selection				
Model		5 cd		20 cd	30 cd	
VO Model 4906-9113		115 mA		270 mA	295 mA	
A/V Model 4906-9143		125 mA		275 mA	322 mA	

Note:

1. "Regulated 24 VDC" refers to the voltage range of 16 VDC to 33 VDC in accordance with UL 1971 and UL 1638. This voltage range is the absolute operating range. Operation outside of this range may cause permanent damage to the strobe. Please note that 16 VDC is the lowest operating voltage that is allowed at the last appliance on the NAC under worst case conditions.
2. Coded values are typical of the output measured with a Temporal coded or a March Time coded pulse and with a sound level meter reading on a "fast" setting. Under the same test conditions, coded horn output "peak" sound level readings are typically 4 dBA higher. Anechoic horn output ratings are typically more representative of actual installed sound output.
3. Currents of A/Vs are with horn on steady. The maximum RMS current listed is the device nameplate rating. Strobe designs are constant wattage and the maximum RMS current rating occurs at the lowest allowable operating voltage. RMS is root mean square and refers to the effective value of a varying current waveform.

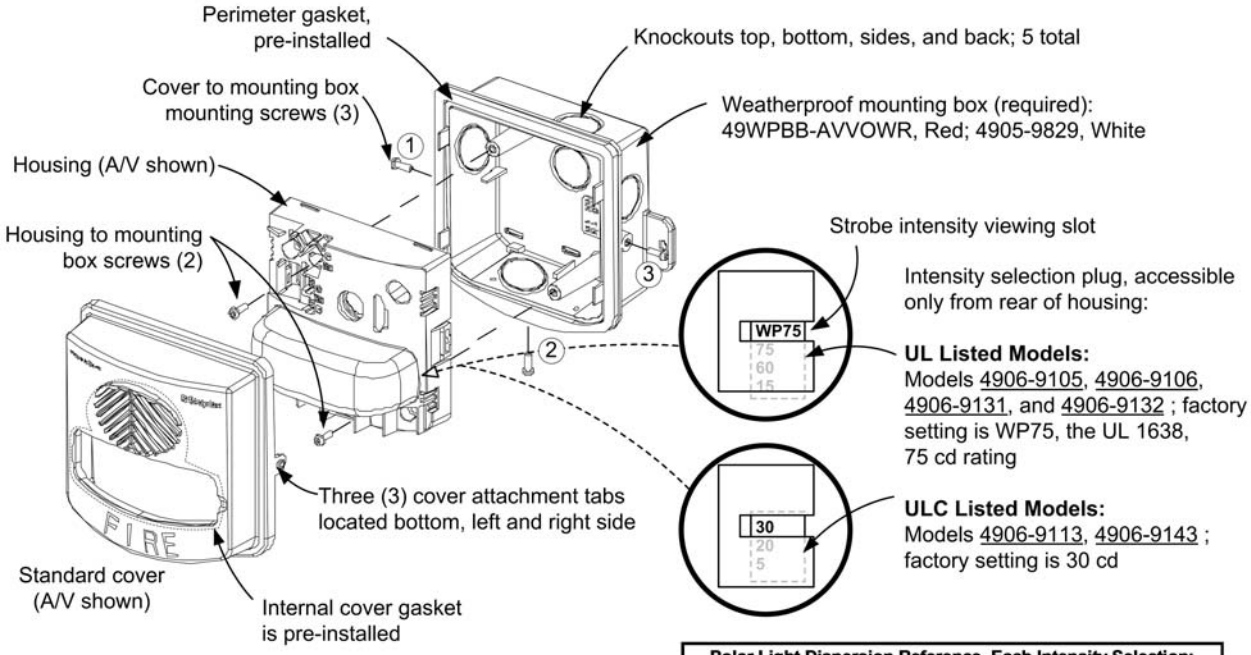
Dimension and optional cover reference

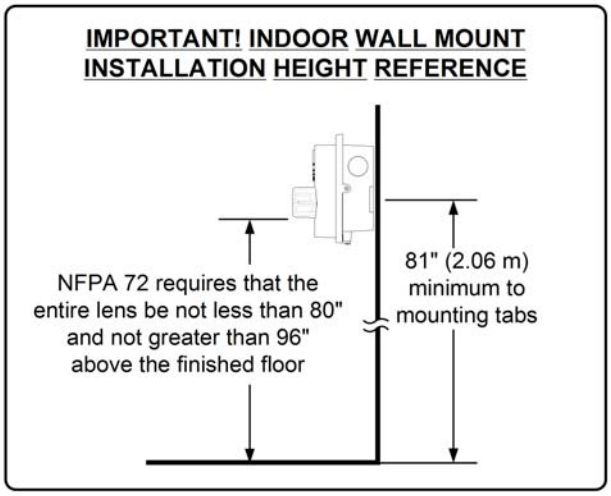


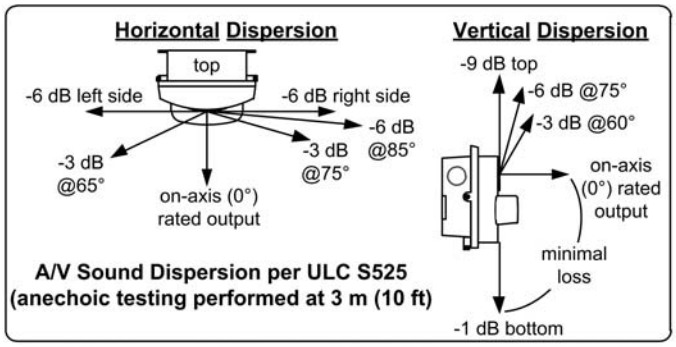
Weatherproof appliance installation reference

Note:

For detailed installation information, refer to Installation Instructions *579-857* for UL listed products, and Installation Instructions *579-885* for ULC listed products.







Polar Light Dispersion Reference, Each Intensity Selection; Percent of Rated Light Output at 77° F (25° C)					
Vertical Dispersion			Horizontal Dispersion		
Angle Below Axis	UL 1971 Minimum	Typical Output	Angle from Axis	UL 1971 Minimum	Typical Output
0	100%	322%	0	100%	320%
5	90%	217%	±5	90%	214%
10	90%	168%	±10	90%	177%
15	90%	179%	±15	90%	175%
20	90%	210%	±20	90%	174%
25	90%	184%	±25	90%	170%
30	90%	149%	±30	75%	169%
35	65%	172%	±35	75%	157%
40	46%	189%	±40	75%	151%
45	34%	203%	±45	75%	138%
50	27%	152%	±50	55%	130%
55	22%	166%	±55	45%	121%
60	18%	166%	±60	40%	117%
65	16%	164%	±65	35%	109%
70	15%	163%	±70	35%	105%
75	13%	159%	±75	30%	98%
80	12%	138%	±80	30%	90%
85	12%	113%	±85	25%	78%
90	12%	88%	±90	25%	67%

WP75 Intensity Selection Light Output Reference					
Angle	On-Axis	Vertical, Below Axis		Horizontal, Left/Right of Axis	
	0°	45°	90°	45°	90°
UL 1638 Minimum Candela Rating (over temperature range)	75	35	10	32	15
Typical Candela at 77° F (25° C)	215	103	24	94	39

Simplex®

Addressable Peripherals

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

4090-9116 Addressable
IDNet Communications Isolator

Features

Dual port, bi-directional communications short circuit isolator:

- Compatible with Simplex® 4007ES, 4008, 4010ES, 4100ES, or 4100U Series fire alarm control panel IDNet Signaling Line Circuits (SLCs) providing: IDNet, IDNet+, IDNet 1+, IDNet 2, or IDNet 2+2 output loops (see additional information on pages 2 and 3)
- Either port can serve as an input or output, ports are automatically separated when a communications short circuit occurs
- Isolation can also be activated from the control panel for system diagnostics
- Mounts in standard 4" (102 mm) square electrical box, optional adapter plate is available to mount in a 4 $^{11}/_{16}$" (119 mm) square electrical box
- LED flashes to indicate communications; optional covers are available to view LED after installation
- TrueAlarm sensor base IDNet Isolators are also available, refer to data sheet S4098-0025 for details
- UL listed to Standard 864

Earth fault isolation reduces time to fix wiring problems:

- Built-in control panel diagnostics assist in locating earth fault conditions – the most common installation wiring problem

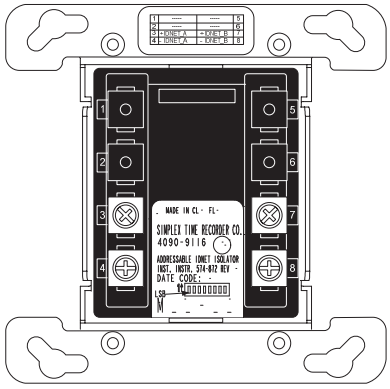
For Class B or Class A wiring:

- Communications are monitored from either port
- Class A wired SLCs can optimize operation by maintaining communications with devices outside of the isolated wiring section

Description

4090-9116 Addressable IDNet Communications Isolators provide IDNet communications isolation to improve installation convenience and increase system integrity. Isolation is automatically activated when an output short circuit is detected and isolation can also be selected manually from the control panel to assist with troubleshooting wiring problems.

Operation. Isolators power-up in isolation mode and are directed to connect by the control panel. If the output wiring is acceptable, the isolator will connect to the rest of the circuit. If the output wiring is shorted, the isolator remains isolated.



4090-9116 Addressable IDNet Isolator
(shown approximately 1/2 size)

Description *(Continued)*

Status Tracking. The isolator reports back to the panel when it is in isolation mode and the extent of shorted wiring is reported back to the panel by identifying device addresses that are not communicating. [Isolators are assigned sequentially to low number addresses to expedite SLC power-up.]

Earth Faults. During installation, earth faults frequently occur. Finding these faults normally requires extensive wiring disconnection. With the 4090-9116 Addressable IDNet Isolator, earth faults on the IDNet communications lines can be quickly located to assist in their repair and to restore the system wiring to normal.

Product Selection

Model	Description	
4090-9116	Addressable IDNet Communications Isolator	
4090-9813	Adapter plate to fit 4 $^{11}/_{16}$" (119 mm) square electrical box	
4090-9801	For semi-flush mounted box	Optional trim plate with LED viewing window, includes mounting screws; galvanized steel
4090-9802	For surface mounted box	

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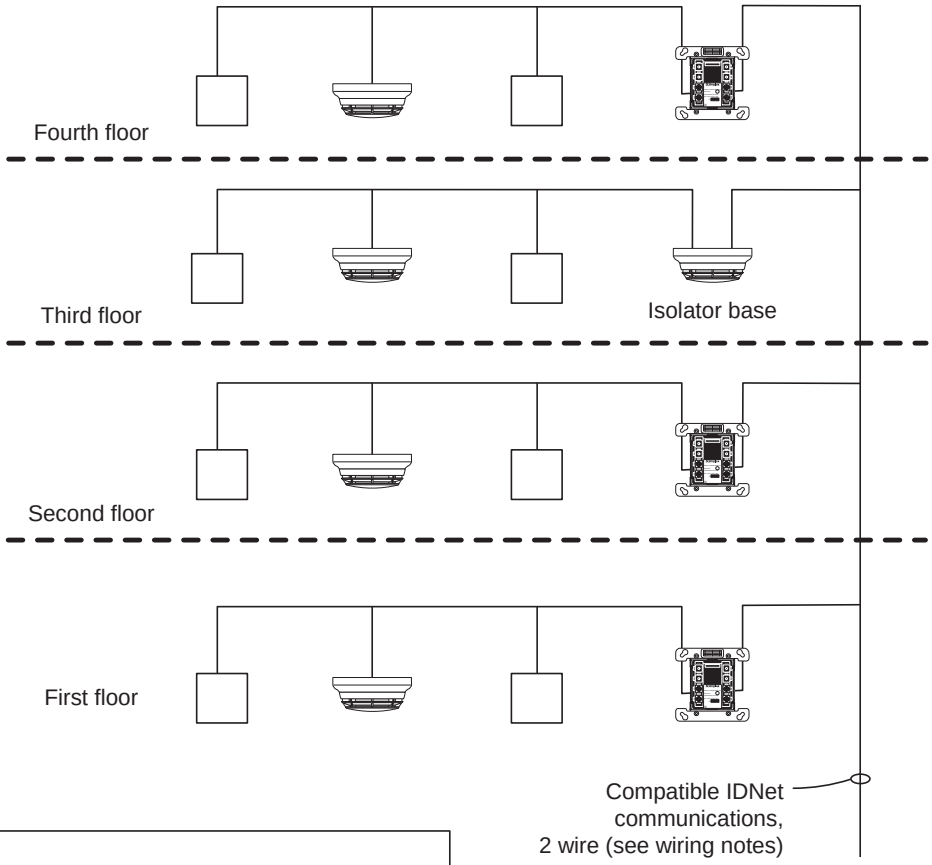
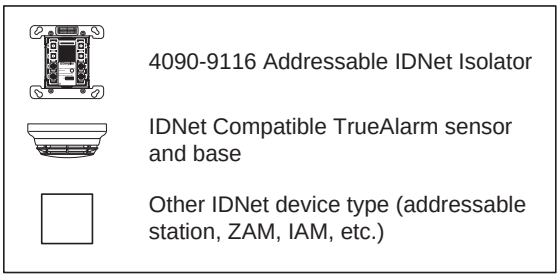
Multi-Floor Isolator Example 1

Short Circuit Isolation. The one-line diagram on this page shows a multiple floor example with Class B IDNet communications for each floor starting at an isolator. (A sensor in the 4098-9793 Isolator Base is shown for reference as an alternate isolating device.) If floor wiring beyond the isolator should experience a short circuit, each floor is automatically separated from the next, preventing the short circuit from disabling the entire IDNet communications wiring.

Earth Fault Isolation. In the event of an earth fault, each floor can be individually isolated using built-in control panel diagnostics. With individual floor control, the earth fault can be isolated to the floor level to narrow the search area. By adding more isolators, the section required to be isolated can be reduced, allowing more devices to remain active.





Simplex 4100ES Series Fire Control Panel (shown for reference)

Wiring Notes:

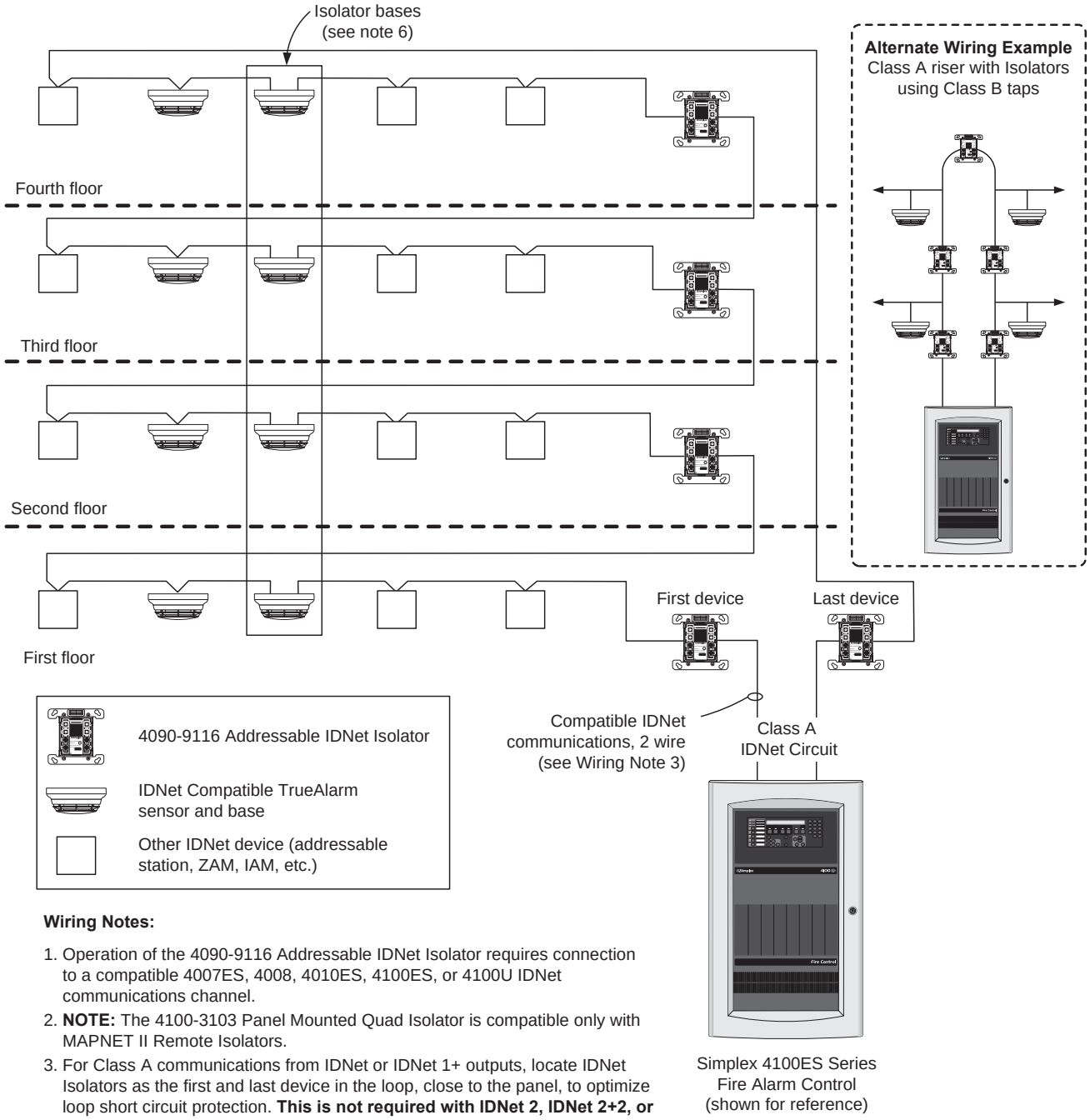
1. Operation of the 4090-9116 Addressable IDNet Isolator requires connection to a compatible 4007ES, 4008, 4010ES, 4100ES, or 4100U IDNet communications channel.
2. **NOTE:** The 4100-3103 Panel Mounted Quad Isolator is compatible only with MAPNET II Remote Isolators.
3. Maximum line resistance between the panel and an isolator, and between two isolators, is 10 Ω or 780 ft (238 m) with 18 AWG wire.
4. This is a one-line drawing showing only IDNet communications wiring.
5. Some IDNet devices require additional wiring for power. Refer to specific devices for details.

Multi-Floor Isolator Example 2

Class A Wiring. The illustration below is a modification of Example 1. Each floor is wired as a Class A connection, and a sensor mounted in a 4098-9793 Isolator Base has been added for reference. This illustrates that with additional isolators (either the 4090-9116 or the Isolator Base), there is a reduction in the number of isolated devices in the event of a short circuit.

Diagnostic Assistance. Communications from an IDNet 2, IDNet 2+2, or IDNet+ output provide individual short circuit isolation and allow individual output control to provide assistance in locating wiring faults.

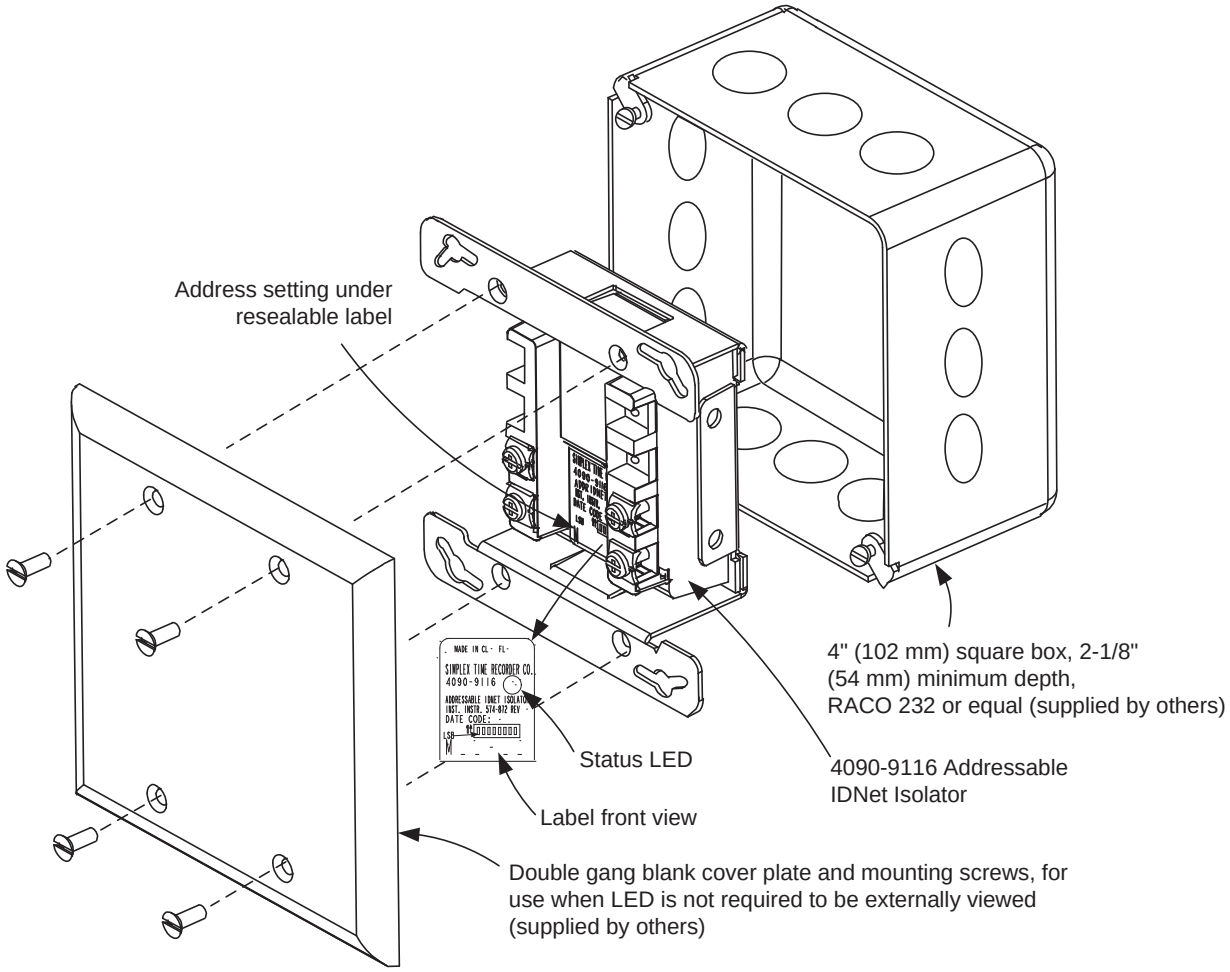
Note: When wiring Class A IDNet communications provided by IDNet or IDNet 1+ outputs, locate isolators as the first and last devices in the loop, close to the panel, to provide loop short circuit isolation operation (as shown below).



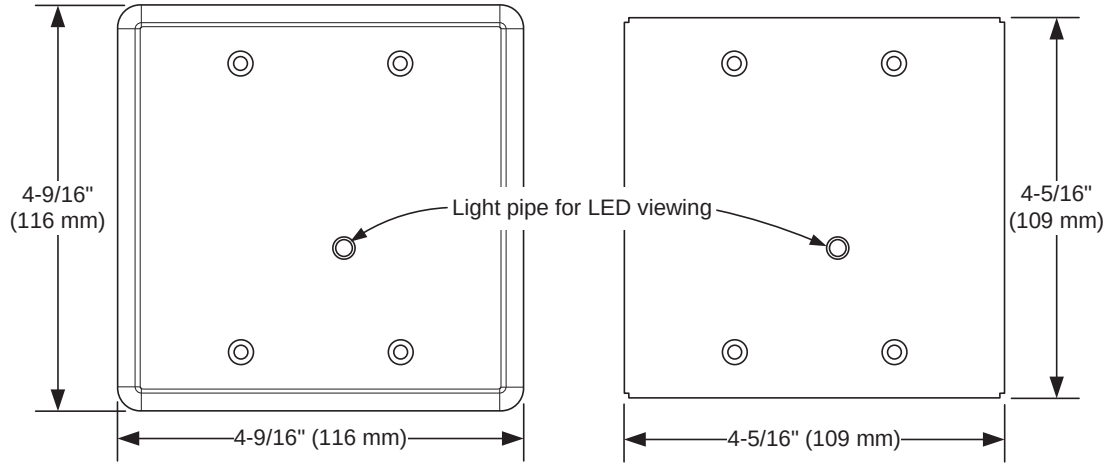
Wiring Notes:

1. Operation of the 4090-9116 Addressable IDNet Isolator requires connection to a compatible 4007ES, 4008, 4010ES, 4100ES, or 4100U IDNet communications channel.
2. **NOTE:** The 4100-3103 Panel Mounted Quad Isolator is compatible only with MAPNET II Remote Isolators.
3. For Class A communications from IDNet or IDNet 1+ outputs, locate IDNet Isolators as the first and last device in the loop, close to the panel, to optimize loop short circuit protection. **This is not required with IDNet 2, IDNet 2+2, or IDNet+ outputs.**
4. Maximum line resistance between the panel and an isolator, and between two isolators, is 10 Ω or 780 ft (238 m) with 18 AWG wire.
5. This is a one-line drawing showing only IDNet communications wiring.
6. Some IDNet devices require additional wiring for power. Refer to specific devices for details.

Mounting Information



Mounting Reference, Double Gang Blank Cover Plate



4090-9801, Trim plate for
semi-flush mounted box

4090-9802, Trim plate for
surface mounted box

Optional Trim Plates for Visible LED

Specifications

Electrical

Communications	IDNet communications, 1 address per device
Compatibility	4007ES, 4008, 4010ES, 4100ES, and 4100U providing: IDNet, IDNet+, IDNet 1+, IDNet 2, or IDNet 2+2 communications output; (not compatible with 4100-3103 Panel Mounted Quad Isolator)
Power	Consumes one unit load, power is supplied from IDNet SLC
Wire Connections	Screw terminals for input and output wiring, 18 to 14 AWG wire (0.82 mm^2 to 2.08 mm^2)

Wiring Distances

IDNet Wiring Reference	Up to 2500 ft (762 m) from fire alarm control panel
	Up to 10,000 ft (3048 m) total wiring distance (including T-Taps)
	Maximum line resistance between panel and isolator, or between isolators is 10 ohms; [18 AWG (0.82 mm^2) = 780 ft (238 m)]
	Compatible with Simplex 2081-9044 Overvoltage Protectors

Mechanical

Dimensions	4 ⅛" H x 4 ⅛" W x 1 ⅜" D (105 mm x 105 mm x 35 mm)
Package	Black thermoplastic housing on metal mounting plate
Temperature	32° to 120° F (0° to 49° C) indoor operation only
Humidity Range	10 to 90% RH at 90° F (32° C)
Installation Instructions	574-872