DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

This is to certify that LIMITED LIABILITY JACKRABBIT

Located At 144 FORE

Job ID: 2010-12-80-FAFS

CBL: 019 - - A - 008 - 001 - - - - -

has permission to Fire Alarm

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be procured prior to occupancy.

Fire Prevention Officer

Code Enforcement Officer / Plan Reviewer

PERMIT ISSUED

JAN 2 6 2011

CITY OF PORTLAND

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

1.

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCU0PIED.

PERMIT ISSUED

JAN 2 6 2011

CITY OF PORTLAND

Director of Planning and Urban Development
Penny St. Louis Littell

Job ID: 2010-12-80-FAFS **Located At** 144 FORE **CBL**019 - - A - 008 - 001 - - - - -

Conditions of Approval:

2010-12-50 FAFS

City of Portland, Maine - Building or Use Permit Application
389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Permit No:FIRE ALARM-248	Issue Date:	CBL:019 - - A - 008 - 001 - - - -

Location of Construction:	Owner Name:LIMITED LIABILITY JACKRABBIT	Owner Address:	Phone:
144 FORE –		44 OAK ST PORTLAND, ME - MAINE 04101	
Business Name:	**Contractor Name:INC, B H MILLIKEN**	**Contractor Address:175 ANDERSON ST PORTLAND ME 04101 PORTLANDMAINE04101**	**Phone:**
Lessee/Buyer's Name:	**Phone:**	**Permit Type:**	**Zone:** B-6
Past Use: √A Medical Clinic	**Proposed Use:** √A Medical Clinic	**Permit Fee:**	**Cost of Work:** / **CEO District:**

- approved. Zoning 12/17/10

Proposed Project Description:

Permit Taken By:	Date Applied For: 12/16/10

Fire Alarm Permit

If you or the property owner owes real estate or property taxes or user charges on any property within the city, payment arrangements must be made before permits of any kind are accepted.

Installation address: 144 FORE ST CBL: 19-A-8.

Exact location: (within structure) _____

Type of occupancy(s) (NFPA & ICC): NEW BUSINESS OCCUPANCY

Building owner: JACK RABBIT LLC

System Designer (point of contact): KEN LOURDE (Must be)

Designer phone: 207-842-6440 E-mail: KLOURDE@SIMPLEXGRINNELL.COM

Installing contractor: BH MILLIKEN INC. Certificate of Fitness No: T-1016

Contractor phone: 207-879-1877 E-mail: _____

This is a new application: YES ⊗ NO ○ New AES Master Box: YES ○ NO ⊗
(Include Master Box approval form)

Amendment to an existing permit: YES ○ NO ⊗ Permit no: _____

The following documents shall be provided with this application:

- [x] Floor plans
- [x] Wiring diagram
- [x] Annunciator details
- [x] Input/ Output Matrix
- [x] Equipment data sheets
- [ ] Electrical Permit Pulled (check alarm/com)
- [x] Scope of Work
- [x] 11 ½ x 17s
- [ ] pdf copy (may be e-mailed)
- [x] Designer qualifications
- [x] Battery/ voltage drop calcs

Master box approval only: YES ○ NO ○
(If yes check *New AES Master Box* above)

COST OF WORK: $12,000.00

PERMIT FEE: $140.00
($10 PER $1,000 + $30 FOR THE FIRST $1,000)

RECEIVED
DEC 16 2010
Dept of Building Inspections
City of Portland Maine

The designer shall be the responsible party for this application. Download a new copy of this application at www.portlandmaine.gov/fire for every submittal. Submit all plans in electronic PDF in addition to readable 11 ½ x 17s to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.

Prior to acceptance of any fire alarm system, a complete commissioning and acceptance test must be coordinated with all fire system contractors and the Fire Department, and proper documentation of such test(s) provided.

All installation(s) must comply with the *City of Portland Technical Standard for Signaling Systems for the Protection of Life and Property*, available at www.portlandmaine.gov/fire .

Applicant signature: Ken Lourde Date: 12/13/10

✓ No floor plans included.

I am not sure if this is an ambulatory health care occupancy or business use?

✓ Sprinkler system needs to be supervised.

NOT FOR CONSTRUCTION

B.H.Milliken
ELECTRICAL CONTRACTORS
175 ANDERSON STREET
PORTLAND, MAINE 04101
PHONE 879-1277
FAX: 774-1482

VETERANS ADMINISTRATION
MEDICAL CLINIC
FORE STREET
PORTLAND, MAINE

TITLE
POWER

SCALE: 3/16"=1'
DATE: 8-8-19
SHEET
E400

Patient RR # 102 needs a strobe

PROJECT

Veteran's Administration Medical Clinic
144 Fore Street
Portland, ME

Fire Alarm System

CONTRACTOR

B.H. Milliken
Electrical Contractors
175 Anderson Street
Portland, ME

PRESENTED BY:

tyco
Fire &
Security

SimplexGrinnell

20 THOMAS DRIVE
WESTBROOK, ME 04092
(207) 842-6440

tyco
Fire &
Security

SimplexGrinnell

SimplexGrinnell LP
20 Thomas Drive
Westbrook, ME 04092-3824

TEL: (207) 842 6440
FAX: (207) 842 6439
www.simplexgrinnell.com

DATE: November 19, 2010

TO: Rick Gardiner

FROM: Sam Martin

PROJECT: **Veterans Administration Medical Clinic, Portland, ME**

Thank you for your recent order with SimplexGrinnell. We truly appreciate the opportunity to provide the Simplex equipment for your project.

The SimplexGrinnell Technical Installer Support (TIS) program requires a pre-installation visit and a final inspection by our Technical Representative. It is strongly suggested that you make use of the pre-installation visit to help prevent wiring and/or device errors. Please call our Operations Manager, Paul Doughty at (207) 842-6440, Monday through Friday from 8:00 a.m. - 5:00 p.m. to request this service. For scheduling purposes, SimplexGrinnell typically requires two weeks notice prior to the date you require the on-site visit.

During a pre-installation visit, SimplexGrinnell will perform the following, where appropriate:

A. Review riser diagram prints or plan drawings.
B. Review specifications.
C. Supply information on specialty device wiring.
D. Supply end line of resistors.
E. Request nomenclature for annuciator and control panel labeling.
F. Set up an appointment for a future visit or final inspection.

In addition, SimplexGrinnell will execute one complete functional test of the system as follows:

A. Electrically check system wiring.
B. Test Simplex supplied peripheral devices for alarm, supervision, and operation.
C. Check out complete operation of control panel(s).
D. Field certify the operation of the system(s).
E. Provide warranty information.
F. Instruct personnel on the operation of Simplex equipment.

Please be aware that SimplexGrinnell service representatives are not electricians; therefore, they are not permitted to field wire or terminate. *All wire termination must be completed, and ALL circuits must be free of shorts and grounds prior to our arrival for the complete functional test of the system.*

Thank you, once again for allowing SimplexGrinnell to satisfy your project needs.

TECHNICAL INSTALLER SUPPORT (TIS)

Introduction

Technical Installer Support (TIS) is provided as part of the cost of the equipment and is designed to provide the expertise of a Simplex Technician to be available at key scheduled times during the project. This service is available during normal Simplex working hours, if scheduled five working days in advance.

TIS Activities

TIS includes the following activities by a Simplex factory-trained technician, when determined by Simplex to be appropriate:

- pre-construction review of submittals and drawings with the installer
- technical advice during initial start-up of control panels before installer wiring is connected
- review of panel wiring, and preparation of a list of any items to be corrected by the installer
- check-out of Factory Program
- program editing to correct minor errors and omissions
- system check in preparation for functional test
- assistance with one complete, functional test of the system
- one training session for the owner's representative (2-4 hrs. per control panel)

Additional support may be purchased. See other side for more information.

Installer's Responsibility

TIS contributes significantly to the installation of Simplex equipment but does not alleviate the installer's responsibility to:

- provide skilled labor and supervision to complete the project
- review and understand Simplex instructions for installing and testing Simplex equipment
- ensure that all wiring provided and installed meets equipment specification requirements, UL, code compliance and is free of grounds and faults

How to Avoid Potential Problems

Potential problems can be avoided by following these recommendations:

- Do not initially power-up the system, except in the presence of a Simplex Technician. Simplex assumes no liability for damaged equipment, and warranty may be voided if this procedure is not followed.
- Do not install smoke detectors (unless protected by plastic bags) until final construction clean-up has occurred. This prevents damage caused by dust, dirt and paint. Detectors installed prior to clean-up may require disassembly, cleaning or replacement, which is not covered by warranty.
- Care must be taken to protect equipment during the installation and warranty period. Failures due to external causes (power surges, construction dust, water damage, etc.) will be repaired by Simplex only upon receipt of a valid written Purchase Order.

- TIS includes one complete system test, which is coordinated by the installer. To avoid additional charges, the installer should schedule this test so that all appropriate parties such as the owner's representative and any local Authority Having Jurisdiction (AHJ) are present.

Technical Labor Product (TLP)

Technical Labor Product is designed to make available the expertise of a Simplex Technician for any support requirements outside of the services provided by TIS. This service is available from Simplex at an extra cost.

TLP includes, but is not limited to, the following activities that are performed by a Simplex factory-trained technician when determined by Simplex to be appropriate. Technical Labor Product is identified when a Simplex Technician:

- performs or assists in additional system tests beyond the one complete test provided by TIS, including tests done with AHJ
- performs or assists in the system test provided by TIS after Simplex normal working hours
- assists in troubleshooting or repairing installer wiring problems such as grounds, shorts, opens, etc.
- participates in the electrical installation or connects wiring to control panels, transponders or peripheral devices
- interconnects an existing system with new Simplex control panels and/or transponders by installing wiring harness modules, programming, etc.
- completes the interface between the Simplex system and another supplier's equipment or panel
- provides customer training, as required by specification or customer, that goes beyond the training provided under TIS
- works on or interfaces to any existing network communication system
- changes or adds to an existing program and, when appropriate, performs a field reburn
- performs an audit/survey of a new or existing system and reports the results in accordance with a customer's request or specifications
- performs work on a system that is determined by Simplex to be outside the definition of TIS

All TLP labor that is required with the project shall be priced and offered as additional installation support.

BUILDING SYSTEMS GENERAL TERMS AND CONDITIONS OF SALE

For good and valuable consideration, the parties agree that the terms and conditions contained herein are the sole terms and conditions of sale and/or for service and represent the sole and complete Agreement between the parties and supersede all prior oral and/or written representations, understandings, proposals, agreements, and communications regarding the subject matter hereof. The parties agree that no additional terms will be binding upon Simplex even if they appear on Purchaser's formal purchase order, acceptance form, or any other of Purchaser's documents unless signed by an authorized representative of Simplex at its headquarters in Westminster, Massachusetts.

1. VALIDITY PERIOD: The price quotes provided are valid for 30 days unless otherwise specified in writing by Simplex.

2. PAYMENT TERMS:

   A. GENERAL PAYMENT TERMS are net thirty (30) days from date of invoice where satisfactory open account credit is established and maintained. Simplex reserves the right to revoke or modify Purchaser's credit at its sole discretion. A mobilization payment up to fifty percent (50%) will be invoiced upon acceptance of customer's order. Progress payments to one hundred percent (100%) of order value will be invoiced monthly based upon equipment delivered or stored and work performed. At Simplex's sole option, Purchaser shall pay cash in advance, or upon delivery, or as otherwise specified by Simplex. In the event that Purchaser defaults on its obligation to pay each invoice when due, then, in addition to all other rights and remedies available to it, Simplex shall have the option to withhold any further shipments of materials and/or the provision of services, if any, until Purchaser's account is fully paid. Further, in the event payment is not received according to Terms, Simplex may, at its discretion, assess interest at the maximum rate allowed by law or at the rate of 1.5% per month, whichever is less. Purchaser also agrees to pay all costs incurred by Simplex in pursuit of payment which is past due including, but not limited to, collection agency commissions and attorneys fees.

   B. CUSTOM SOFTWARE PAYMENT TERMS are as provided in section A. above with the following exceptions. A non-refundable twenty percent (20%) initial payment will be invoiced upon acceptance of Purchaser's order. A non-refundable progress payment of forty percent (40%) of order value will be invoiced upon Purchaser's approval of a Custom Software Development Specification. The final forty percent (40%) payment will be invoiced upon delivery by Simplex of Custom Software.

   C. SECURITY SYSTEM / ACCESS CONTROL SYSTEM PAYMENT TERMS are as provided in Section A. above with the following exceptions. A non-refundable 20% down payment is required with Purchaser's order. Progress Payments will be invoiced based upon shipments to Purchaser.

   D. CANCELLATION: Any cancellation must be made in writing. Recognizing that Simplex's damages arising from cancellation will be difficult to estimate or determine, the following charges shall be construed as liquidated damages representing an approximation of the administrative, engineering, and other costs Simplex will actually incur in reliance upon this Agreement, and not as a penalty: If, prior to shipment, Purchaser cancels this Agreement or any portion thereof, for any reason not attributable to Simplex, Purchaser agrees to pay Simplex an amount equal to 20% of the price of the products canceled if the cancellation occurs more than 21 days after Simplex receives Purchaser's order or Purchaser accepts this Agreement. If Purchaser cancels after shipment, Purchaser agrees to pay the above 20% of the price of the products canceled, return the products already shipped, and to pay Simplex an additional amount equal to 20% of the value of the returned products to cover the estimated costs of transportation and restocking.

3. SIMPLEX SERVICES: Purchaser further agrees that Simplex offers various levels of services and that the Purchaser, after reviewing the same, has contracted with Simplex to perform only the services described in writing in this Agreement. Simplex denies liability for materials, supplies or work provided by other persons. Unless specifically contracted for, Simplex denies any supervisory role and this Agreement shall not commit Simplex to any supervisory role, including, but not limited to, the placement or routing of any wires or other Product.

   If this Agreement includes a quote for Monitoring Services to be supplied by Simplex, Purchaser agrees for himself, and any assignees to this Agreement, that Simplex shall have no duty to perform such Monitoring Services until and unless the Purchaser, and any assignee including but not limited to the end-user, agree to and sign a Simplex Monitoring Agreement approved and signed by an authorized representative of Simplex.

   If this Agreement includes a quote for Maintenance Services to be supplied by Simplex, Purchaser agrees for himself, and any assignees to this Agreement, that Simplex shall have no duty to perform such Maintenance Services until and unless the Purchaser and any assignee, including but not limited to the end-user, agree to and sign a Simplex Maintenance Service Agreement approved and signed by an authorized representative of Simplex.

4. SHIPMENT: All Equipment is shipped F.O.B. shipping point.

5. SECURITY INTEREST: The Purchaser grants to Simplex, and Simplex retains, a security interest in all Product, Software, and proceeds thereof shipped pursuant to this Agreement until the Purchaser shall have made full payment for the Product. Such interest is intended to be effective as a purchase money security interest. Purchaser agrees that Simplex may file this Agreement as a financing statement. In the event of failure to make payment on the due date in accordance with terms designated, the entire balance shall become due and payable at once. In case of default of payment, and to the extent permitted by law, Simplex shall have the right to take possession of the Product or Software immediately, wherever it may be found, and remove it with or without process of law and may retain all money paid hereunder as liquidated damages and rental for said Product or Software. For the purpose of assisting Simplex in perfecting its security interests in any Simplex Product or Software delivered to the Purchaser, Purchaser agrees to inform Simplex immediately if any other entity has or may have any security interest, perfected or otherwise, in the Simplex Product or Software described on the face of this Agreement and shipped to Purchaser. The Purchaser agrees to pay Simplex's costs of collection, including without limitation reasonable attorneys fees and legal expenses, and that the same are secured by the security interest granted herein. The Purchaser shall not sell, prior to payment, (except in the ordinary course of business), mortgage, pledge, or lease said Product or Software without prior written permission of Simplex.

6. LIMITATION OF WARRANTY: Purchaser understands that Simplex is not an insurer. Subject to the limitations below, Simplex warrants that the Product (as distinguished from Software) be free from defects in material and workmanship under normal use for a period of one year from the date of first beneficial use of all or any part of the Product or 18 months after Product shipment whichever is earlier, provided, however, that Simplex's sole liability, and purchaser's sole remedy, under said warranty, shall be limited to the repair or replacement of any Product, or part thereof, which Simplex determines to be defective, at Simplex's sole option and subject to the availability of service personnel and parts, as determined by Simplex. Simplex warrants expendable items including, but not limited to, video and print heads, television camera tubes, video monitor display tubes, batteries and certain other products in accordance with the applicable manufacturer's warranty. Simplex does not warrant devices designed to fail in protecting a system such as, but not limited to, fuses and circuit breakers.
   Simplex warrants that any Simplex Software described in this Agreement, as well as that Software contained in or sold as part of any Product described in this Agreement, will reasonably conform to its published specifications in effect at the time of delivery and for ninety (90) days after delivery. However, Purchaser agrees and acknowledges that the Software may have inherent defects because of its complexity. Simplex's sole obligation with respect to Software, and purchaser's sole remedy, shall be to make available published modifications, designed to correct inherent defects, which become available during the warranty period.

   THIS WARRANTY DOES NOT APPLY TO ANY PRODUCT OR SOFTWARE WHICH HAS BEEN SUBJECTED TO ABUSE, MISHANDLING, OR IMPROPER USE AS DETERMINED BY SIMPLEX AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

   Warranty service will be performed at no charge between the hours of 8:00 am to 5:00 PM local time, Monday through Friday exclusive of Simplex's holidays. Warranty service requested to be performed at other than during Simplex's normal work hours shall be chargeable at Simplex's standard overtime rates. All repairs or adjustments that are or may become necessary under the warranty provisions of this Agreement shall be performed only by an authorized representative of Simplex. Any repairs, adjustments, or interconnections performed by the Purchaser or anyone other than an authorized Simplex representative shall void all warranties.

7. LIMITATION OF LIABILITY: SIMPLEX SHALL NOT BE LIABLE FOR ANY INDIRECT, INCIDENTAL, ECONOMIC, OR CONSEQUENTIAL LOSS OR DAMAGE TO THE PURCHASER OR USER OF THIS PRODUCT AND/OR SOFTWARE ARISING OUT OF, AMONG OTHER THINGS, THE OPERATION OR FAILURE OF THE PRODUCT AND/OR SOFTWARE TO OPERATE, THIS AGREEMENT, THE INSTALLATION, USE, DESIGN OR FUNCTION OF ANY SIMPLEX PRODUCT AND/OR SOFTWARE.

8. LIMITATION OF REMEDY: It is understood and agreed that since it is impractical and extremely difficult to fix actual damages, if any, or ascertain what, if any, portion of any loss or injury would be proximately caused by the failure of Simplex's Product and/or Software to operate, or to operate properly, or Simplex to perform any of its obligations or services described herein, UNDER NO CIRCUMSTANCES WILL SIMPLEX'S LIABILITY FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO THOSE ARISING IN ANY WAY OUT OF THE INSTALLATION, USE, DESIGN OR FUNCTION OR FAILURE TO FUNCTION OF ANY PRODUCT AND SOFTWARE SOLD BY SIMPLEX, BE IN EXCESS OF THE PURCHASE PRICE PAID FOR THE PRODUCT, SOFTWARE AND/OR SERVICES. THIS SUM SHALL BE THE PURCHASER'S SOLE, COMPLETE AND EXCLUSIVE REMEDY AND SHALL BE PAID AND RECEIVED AS LIQUIDATED DAMAGES OR A LIMITATION OF LIABILITY AMOUNT AGREED ON BY THE PARTIES AND NOT AS A PENALTY. IN NO CIRCUMSTANCES WILL SIMPLEX BE HELD LIABLE FOR ANY CLAIMS, LOSSES, DAMAGES OR INJURIES ARISING FROM OR CAUSED BY, THE PURCHASER'S OR ANY OTHER PARTY'S MATERIAL, EQUIPMENT, ACTIONS, OR OMISSIONS. If Purchaser wishes Simplex to increase the amount of the above limitation of liability or liquidated damages amount stated in this Agreement, Purchaser may inquire about obtaining an increase to this amount in exchange for an increased purchase or contract price. Under no circumstances will an increase in the purchase or contract price be construed to mean that Simplex is an insurer or that the obligations of obtaining and maintaining insurance are not with the Purchaser.

9. INSURANCE OBLIGATIONS: It is understood and agreed by the Purchaser that Simplex is not an insurer and that it is the Purchaser's obligation to obtain and maintain any insurance covering any losses to property or personal injury or any other damage which may occur at the premises where the Simplex Product, Software or Services, which form the basis of this Agreement, are delivered, assembled, installed, used, or performed. The Purchaser agrees to list Simplex as an additional insured on all such policies and to provide Simplex a copy of the Certificate of Insurance upon request. Purchaser further agrees that the Certificate of Insurance shall contain a provision that coverage afforded under the policies will not be canceled or materially altered until at least thirty (30) days after written notice is given to Simplex.

10. WAIVER OF SUBROGATION: Purchaser does hereby for itself and all other parties claiming under it release and discharge Simplex from and against all hazards covered by Purchaser's insurance, it being expressly agreed and understood that no insurance company, insurer, or any other third party will have any right of subrogation against Simplex.

11. LIMITATION ON ACTIONS: The Purchaser hereby agrees that no claim, suit or action of any kind shall be brought against Simplex, its agents, employees, and/or officers more than one year after the claim arises, whether known or unknown when the claim arises, provided however, that if there is a claim, suit, or cause of action arising under the Warranty, it must be brought, if at all, within six months of expiration of the Warranty period stated above. This clause is in no way to be interpreted as an extension of the Express Warranty stated in paragraph 4 above.

12. DRAWINGS: All drawings and wire diagrams provided by Simplex in connection with this Agreement are protected under United States Copyright Laws and intended solely for the use of the installing contractor as a general guide for the installation of the System. These drawings and wire diagrams are prepared in accordance with the project plans and specifications available to Simplex at the time of the bid and are NOT intended to be System design or approval documents. Simplex is not a design professional. Under no circumstances is any clause in this Agreement or any actions taken by Simplex to be construed in such a way as to impose upon Simplex the duties or liabilities of a design professional.

13. CHANGE ORDERS: This Agreement can be modified, amended or altered only by an Agreement in writing, signed by both parties or their duly authorized representatives.

14. SOFTWARE LICENSE AND USE: Software Products provided by Simplex are licensed, not sold, to the Customer. Customer has only a non-exclusive, non-transferable license to use the Software ("License"). Simplex retains all right, title and interest to the Software. In some cases, Simplex may have a right to relicense the Software. "Software" shall mean any part of Software provided by Simplex in machine readable form indicated on this Agreement or contained in any Simplex Product indicated on this Agreement or ordered subsequently, any modified versions and all related documentation. Customer shall use the Software only on the Product and at the Product Site listed herein. Any Software received by Customer at any time is subject to this Agreement. The License term begins upon delivery of the Software and continues until the last use of the Software with the Product, unless terminated. Simplex may terminate this License if Customer: (1) fails to perform any obligation under the Agreement; (2) ceases to do business as a going concern; or (3) has its assets assigned or attached by law. Within five (5) days after the License terminates, Customer shall, at its expense, return the Software to Simplex and destroy all copies of the Software, including memory or storage copies.

15. PROTECTION AND NON-DISCLOSURE: Customer shall maintain the Software in strict confidence and shall disclose it only to its employees requiring access. Customer shall implement adequate procedures controlling access to and use of the Software consistent with the protection of Simplex's rights. Customer may duplicate Software only for internal use on the Product according to Simplex instructions. The Simplex legend restricting Software use must appear on any copies of the Software. Customer shall not reverse compile the Software.

16. TITLE: The Software and any relevant Product as described in this Agreement shall remain the personal property of Simplex, even if attached to realty or other property. Customer shall not sell, assign, encumber or remove the Product or Software without the prior written consent of Simplex. Customer shall perform all necessary acts to preserve and protect the right, title and interest of Simplex in the Product and Software including but not limited to signing any financing statements or other documents requested by Simplex or its agents. Simplex may inspect the Product and Software during normal business hours and may affix labels or notices of ownership on the Product and Software.

17. FORCE MAJEURE: Simplex shall not be liable for any loss or damage of any kind resulting from delay , inability to deliver, or install, or to perform any other work under this Agreement on account of fire, flood, labor problems, access to premises, accidents, acts of civil or military authorities, acts of God, or from any other causes beyond Simplex's control.

18. TAXES, LICENSES AND PERMITS: The Purchaser is responsible for obtaining all licenses, and permits and for paying all applicable taxes and fees unless otherwise agreed to in writing.

19. INSTALLATION: The installation of any Product is NOT INCLUDED unless specifically provided for in this Agreement.

20. DRUG FREE WORKPLACE POLICY: Simplex has a written drug free workplace policy available for review by written request.

21. EXPORT COMPLIANCE: All sales hereunder shall at all times be subject to the export control laws and regulations of the Government of the United States. Purchaser agrees that it shall not make any disposition, by way of trans-shipment, re-export, diversion, or otherwise, except as said laws and regulations may expressly provide. Purchaser expressly agrees, to the fullest extent permitted by law, to indemnify Simplex for any and all damage arising from the violation of any export law or regulation with respect to any goods delivered to Purchaser or at Purchaser's direction. Said damages include, but are not limited to, legal fees, court costs, expert fees, and any and all other resulting costs and expenses.

22. EVENTS OF DEFAULT: Purchaser shall be in default of this Agreement upon the occurrence of, but not limited to, any of the following:

A. The Purchaser's failure to make due and punctual payment of any payment due pursuant to this Agreement;

B. The Purchaser's failure to perform any obligation under this Agreement;

C. An order, judgment or decree entered, with the approval or consent of Simplex, by any court of competent jurisdiction, approving a petition seeking reorganization of the Purchaser or appointing a receiver, trustee, or liquidator (or other officer having power, under applicable law, similar to those of a receiver, trustee, or liquidator) of the Purchaser or of all or a major portion of its assets, and such order, judgment, or decree shall continue unstayed and in effect for any period of sixty (60) consecutive days;

D. The Purchaser fails to provide Simplex with adequate assurances of due performance under the Agreement, after receiving a written request for same from Simplex;

E. The Purchaser's financial position materially deteriorates; or

F. The Purchaser shall cease to do business as a going concern.

23. GENERAL: Any provision of this Agreement which is prohibited by the law of any state shall, as to such state, be ineffective to the extent of such provision without invalidating the remaining provisions of the Agreement. This Agreement shall be construed under the laws of the Commonwealth of Massachusetts.

tyco

Fire & Security

SimplexGrinnell

Veterans Administration Medical Clinic
- Fire Alarm System -

Item #	Product ID	Description
1	4010-9102	Fire Alarm Control Panel - Addressable 250PT
2	4010-9813	Expansion Power Supply
3	2081-9287	FACP Battery (25AH)
4	4099-9003	Manual Pull Station - Dual Action
5	4098-9714	Photoelectric Smoke Sensor
6	4098-9792	Sensor Base
7	4090-9001	Individual Addressable Module (IAM)
8	4090-9810	Bracket, IAM
9	4090-9806	Cover-Addressable Module Flush
10	4906-9127	Horn Strobe Multi-Candela Red Wall Mount
11	4906-9101	Strobe Multi-Candela Red Wall Mount
12	SSU00674	DBXAA As Built Drawing Cabinet
13	3201	Knox Box Surface Mount Black
14	4098-9756	Duct Sensor Housing - 4 Wire
15	2098-9806	Remote Test Station
16	2098-9798	Sampling Tube 73"

Simplex

TrueAlarm® Fire Alarm Controls

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

Model 4010 Fire Alarm Control Panel for TrueAlarm Analog Sensors and IDNet™ Addressable Devices

Features

Standard features include:

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

Installation convenience features:

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

Setup, programming, and maintenance features:

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

Supports the following IDNet devices:

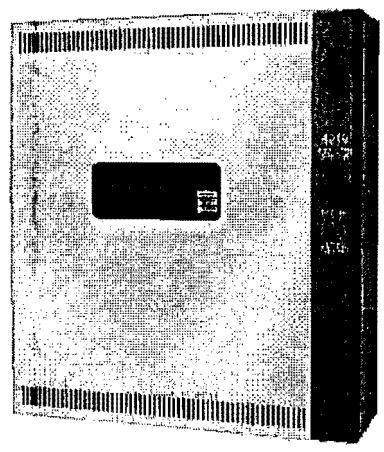
- Addressable manual stations; TrueAlarm sensor bases, duct housings, and isolator bases
- Quad-state zone adapter modules (ZAMs) for initiating device monitoring
- Quad-state line powered individual addressable modules (IAMs) for initiating device monitoring and relay control
- 4009 IDNet NAC Extenders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

Available option modules include:

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

Compatible with Simplex® auxiliary panels:

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



4010 Fire Alarm Control Panel (with standard door)

Description

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

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

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

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

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

* Refer to page 6 for listing details. This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7170-0026:226 for allowable values and/or conditions concerning material presented in this document. 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.

** TrueAlarm analog smoke detection and IDNet addressable devices are protected by one or more of the following U.S. Patents: 5,155,468; 5,173,683; 5,543,777; 5,400,014; 5,552,765; 5,552,763; DES. 377,460; 4,796,025; 5,966,002; and 6,034,601.

† WALKTEST system test is protected under U.S. patent # 4,725,818.

S4010-0001-12 8/2009

4010 Operator Control Summary

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

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

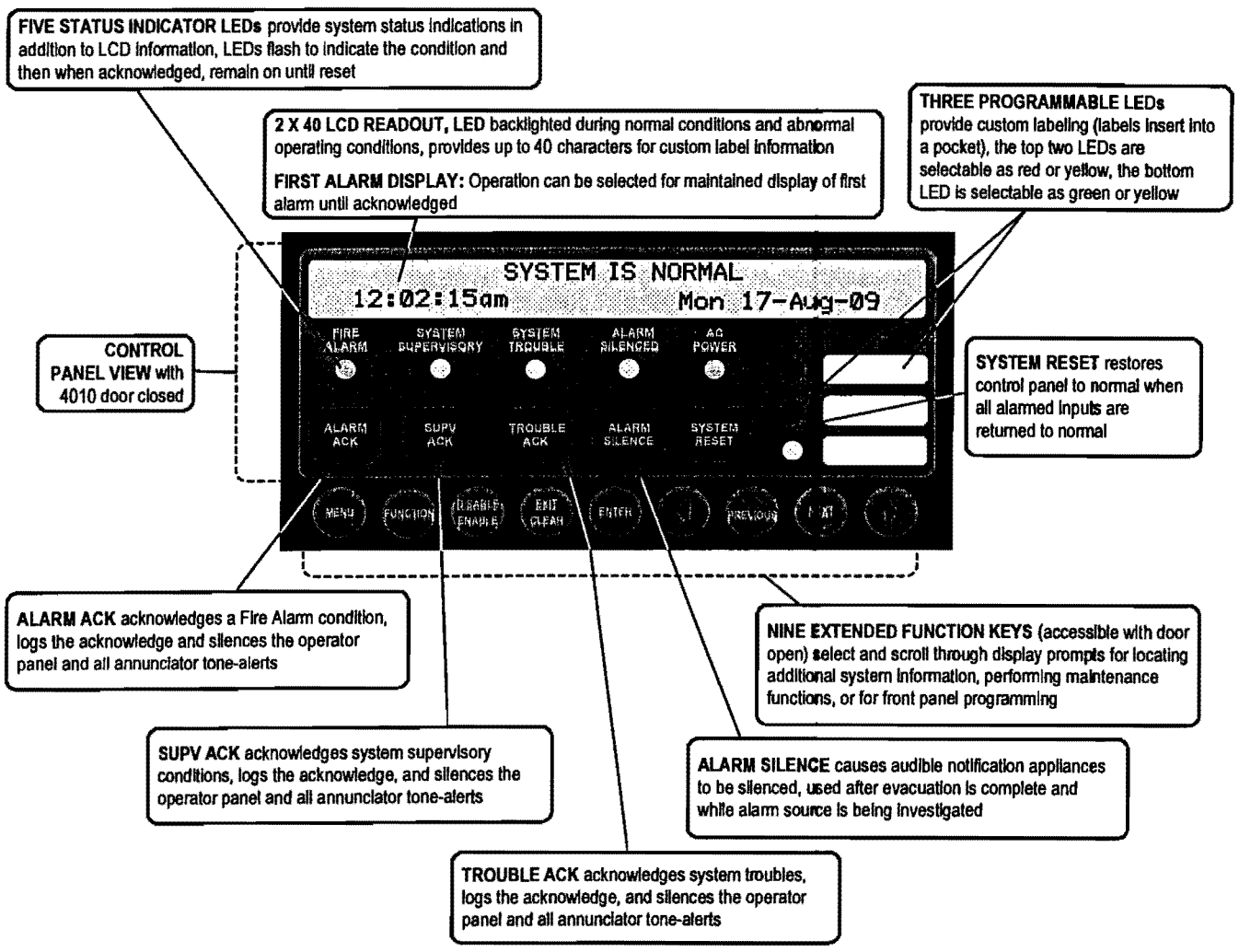
4010 Display Panel and Diagnostic Mode

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

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

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

Extended Operator Control Panel Functions



IDNet Addressable Interface

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

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

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

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

Wiring Specifications

Size		18 AWG (0.82 mm²)
Wire	Preferred	Shielded twisted pair (STP)
	Acceptable	Unshielded twisted pair (UTP)
Farthest Distance from Control Panel to Device		Up to 2500 feet (762 m)
Total Wire Length Allowed With "T" Taps for Class B Wiring		Up to 10,000 ft (3 km).

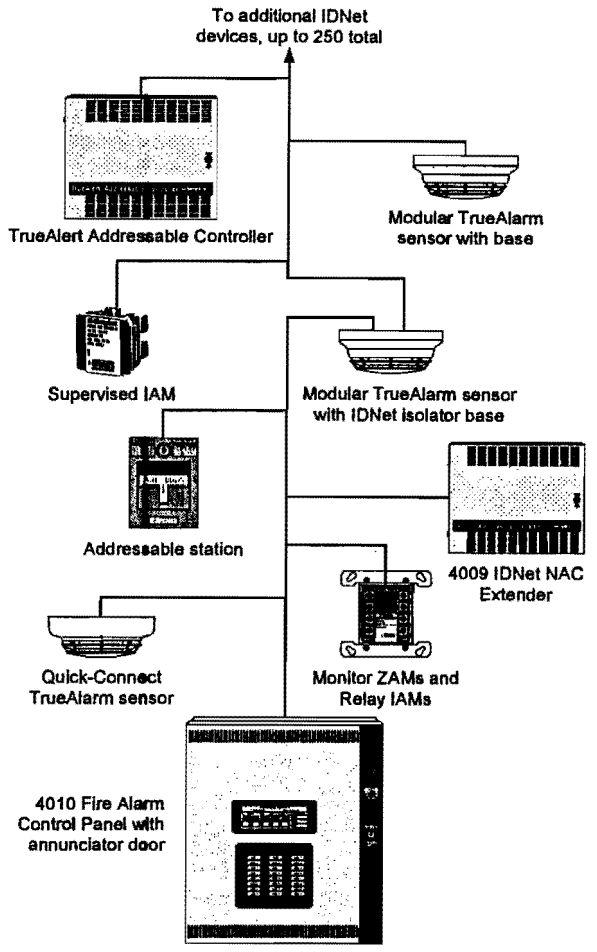
TrueAlarm Analog Sensors

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

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

TrueAlarm Analog Sensors *(Continued)*

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



4010 Control Panel with Typical IDNet Devices

Diagnostics and Default Device Type

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

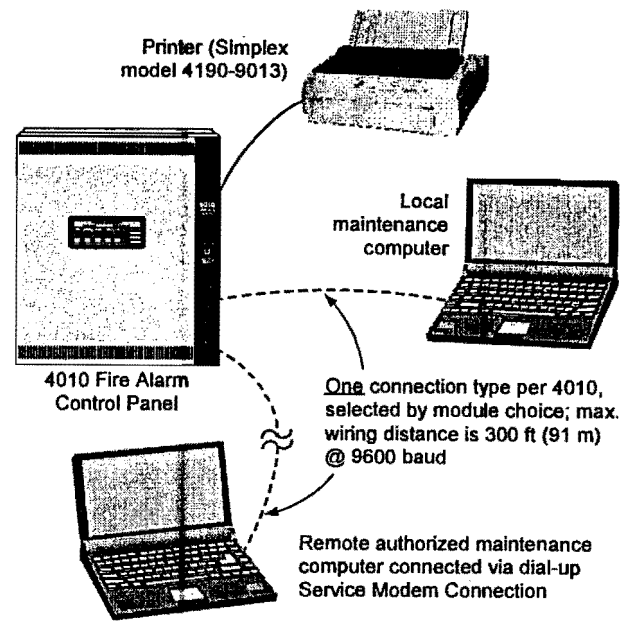
Modular TrueAlarm sensors use the same base and different sensor types (photoelectric smoke sensor, or heat sensor) can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily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

TrueAlarm Information Details

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

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

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



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

TrueAlarm Status and Service Report Samples

```
Simplex 4010 Fire Alarm System                                    Page 1
REPORT 3 : TrueAlarm Status Report                  2:43:03 pm Mon 09-Mar-09


Zone                                                Sensi-                  Almost
Name      Custom Label                              tivity   Device Status  Dirty
M1-1      ANALOG PHOTO      CLEAN ROOM              0.5 %    NORMAL
M1-2      ANALOG ION        CLEAN ROOM              1.3 %    NORMAL
M1-3      ANALOG PHOTO      MAIN LOBBY              2.5 %    NORMAL         *YES*
M1-4      ANALOG PHOTO      CONFERENCE ROOM 1       2.5 %    NORMAL
M1-10     HEAT DETECTOR     GARAGE                  135 F    NORMAL
M1-11     ANALOG PHOTO      KITCHEN                 3.7 %    NORMAL         *YES*

END OF REPORT
```

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

```
Simplex 4010 Fire Alarm System                                    Page 1
REPORT 4 : TrueAlarm Service Report                 2:56:09 pm Mon 09-Mar-09


Dev                                                 Alarm     Avg    Current/    Peak/     State
Num   Custom Label                                  at:       val    % alarm     % alarm
1     ANALOG PHOTO - CLEAN ROOM                     0.5/ 83    67    68/ 1%      72/ 10%    NOR
2     ANALOG ION - CLEAN ROOM                       1.3/209    94    97/ 2%     101/  1%    NOR
3     ANALOG PHOTO - MAIN LOBBY                     2.5/185   117   117/ 0%     125/ 42%    NOR
4     ANALOG PHOTO - CONFERENCE ROOM 1              2.5/161    93    93/ 0%      93/  0%    NOR
10    HEAT DETECTOR - GARAGE                       135F/253   ---    63/-67F     66/ 69F    NOR
11    ANALOG PHOTO - KITCHEN                        3.7/216   116   116/ 1%     110/ 36%    NOR

END OF REPORT
```

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

Standard Panel Features

N2 Communications for Serial Annunciator Control. Control for up to 6 remote Simplex Annunciator products including 24 Point I/O Module, and LCD Annunciator. Includes extensive troubleshooting diagnostics. (See list in next column for compatible devices.)

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

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

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

NAC operation can be selected for "on-until-Silence" or "on-until-Reset," and can be Continuous, Temporal pattern, or March Time pattern. ***(March Time is selectable for 20 bpm or 120 bpm for conventional appliances; or 60 bpm for SmartSync™ appliances.)*** NACs are individually selectable to control Simplex synchronized strobes or for Simplex SmartSync control that provides separate horn and synchronized strobe control using a 2-wire circuit. (SmartSync horn/strobe operation is protected under U.S. Patent No. 6,281,789.)

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

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

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

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

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

Optional Expansion Slot Modules

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

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

Optional Expansion Slot Modules *(Cont'd)*

Network Interface, Fixed Media. Available for wired applications.

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

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

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

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

Optional Chassis Mount Modules

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

Battery Meter Module provides panel mounted ammeter and voltmeter for power supply monitoring.

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

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

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

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

N2 Communications Modules

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

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

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

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

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

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

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

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

Chassis Mounted Expansion Modules (select as required)

Category	Model	Description	
Expansion Power Supply (select one)	4010-9813	120 VAC input	4 A Expansion Power Supply; rated 4 A for "Special Application" appliances; rated 2 A for "Regulated 24 DC" appliance power
	4010-9823	240 VAC input	
Optional Features (select one)	4010-9820	Battery Meter Module (ammeter and voltmeter)	
	4010-9825	24 VDC Expansion Power Distribution Module, provides two additional termination points for an expansion power supply tap or the auxiliary power output	
Optional Features (select as indicated)	4010-9806	Dual Circuit Class A NAC Adapter Module, **two maximum**	
	4010-9809	Dual Circuit City Connect Module	**Select one maximum**
	4010-9829*	Dual Circuit City Connect Module w/o disconnect switches	
	4010-9803	Relay Option Module	

Accessories

Category	Model	Description	
Optional Features	4010-9826	120 VAC Auxiliary Relay Kit, allows **one** auxiliary relay to control up to 0.5 A @120 VAC, select as required; **2 maximum**	
	4010-9830 (CAF)	Suppression Release Appliqué, required for suppression release applications; suffix CAF selects a French appliqué	
	2975-9801	Semi-flush trim, beige, 1-7/16" (37 mm) wide	
	2975-9802	Semi-flush trim, red, 1-7/16" (37 mm) wide	
Batteries (required if batteries are internal; select one size; **two batteries are required**)	2081-9272	6.2 Ah Battery, 12 VDC	
	2081-9274	10.0 Ah Battery, 12 VDC	
	2081-9288	12.7 Ah Battery, 12 VDC	
	2081-9275	18 Ah Battery, 12 VDC; **NOTE: This battery size will not allow bottom entry conduit**	
	2081-9287	25 Ah Battery, 12 VDC	
Cabinets (select one if pre-shipped)	2975-9215	Red Cabinet	Dimensions: 22" H x 18" W x 5-3/8" D (559 mm x 457 mm x 137 mm)
	2975-9214(CF)	Beige Cabinet; CF suffix has French labels	
Doors (select one if pre-shipped or for use with 4010-9150)	4010-9858	Red Door with dress panel	Dimensions: 22" H x 18" W x 5/8" D (559 mm x 457 mm x 16 mm)
	4010-9857(CF)	Beige Door with dress panel; CF has French labels	
	4010-9860*	Beige Door with 24 LED Annunciator and dress panel	Dimensions: 22" H x 18" W x 1-23/32"D (559 mm x 457 mm x 44 mm) [see also S4010-0002]
	4010-9861*	Red Door with 24 LED Annunciator and dress panel	

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

4010 Operating Specifications

Input Power Requirements	Voltage Range	Frequency	Maximum Current
AC Input, 120 VAC base models	102 to 132 VAC	60 Hz	2 A
AC Input, 240 VAC base models	204 to 264 VAC	50/60 Hz	1 A
AC Input with 120 VAC expansion power supply	102 to 132 VAC	60 Hz	4 A
AC Input with 240 VAC expansion power supply	204 to 264 VAC	50/60 Hz	2 A

Environmental	
Operating Temperature Range	32° to 120°F (0° to 49° C)
Operating Humidity Range	up to 93% RH, non-condensing @ 100.4° F (38° C) maximum

Output Ratings		
Standard Power Supply Output		Rated 4 A for "Special Application" appliances and for "Regulated 24 DC" appliance power; Battery charger for up to 25 Ah sealed lead-acid batteries
Notification Appliance Reference	Special Application	Simplex 4901, 4903, 4904, and 4906 Series horns, strobes, and combination horn/strobes and speaker/strobes (contact your Simplex product representative for compatible appliances)
	Regulated 24 DC	Power for other UL listed appliances; use associated external synchronization modules where required
Auxiliary Power Output Tap from Standard Power Supply		Rated 0.5 A maximum @ 19.4 to 32 VDC; subtract current used from standard power supply output
Expansion Power Supply Output		Rated 4 A for "Special Application" appliances and auxiliary power; Rated 2 A for "Regulated 24 DC" appliance power; Two output taps of 2 A each are provided
NAC Ratings		2 A each maximum; up to 33 synchronized strobes maximum per NAC

Current Ratings for Optional Modules and Remote LCD Annunciator

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

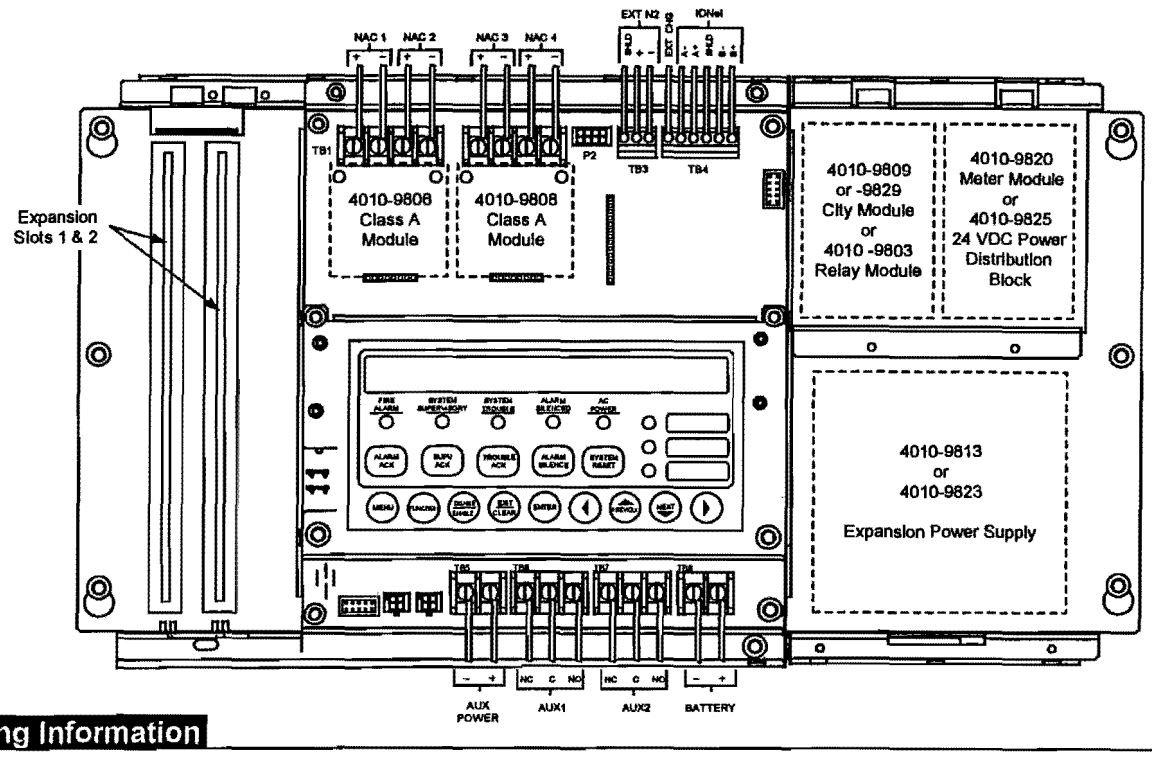
System Current (supplied separate from power supply output)

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

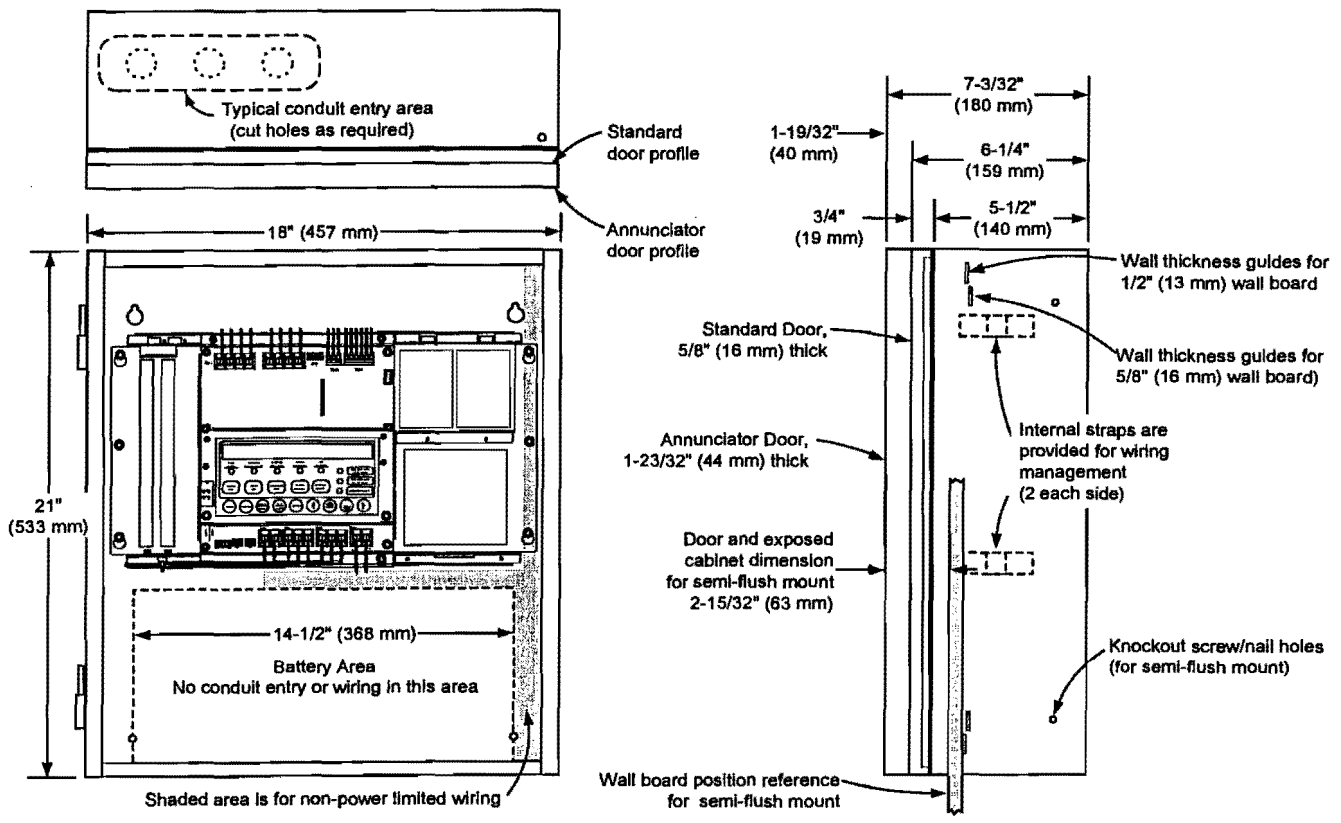
**** Current Calculation Information:**

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

4010 Module Layout Reference



Mounting Information



Simplex

Fire Alarm Control Panel Accessories

*Listings**

System Batteries, Sealed Lead-Acid; with Applications Reference for Battery Cabinets, and Battery Cabinets with Charger

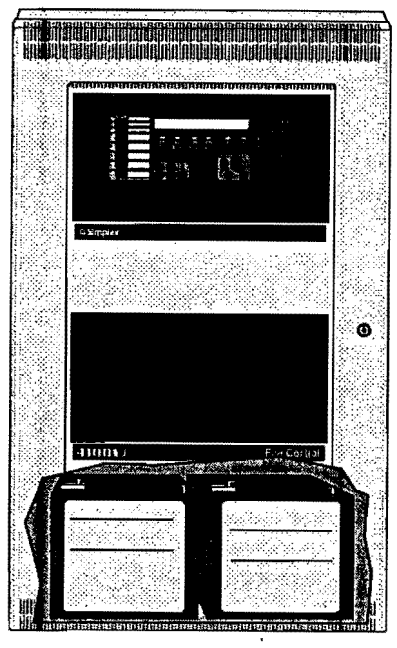
Features

Rechargeable, sealed lead-acid batteries:

- Lead-calcium grid structure with immobilized electrolyte in absorbent separator
- Low maintenance with no need to add water
- Low self-discharge characteristics
- One-piece, high impact polystyrene cell cover with high reliability dual seal construction
- UL 924 recognized pressure relief valves

Available in a variety of capacities:

- Batteries for internal mounting range from 6.2 Ah up to 50 Ah, depending on control panel cabinet size
- Larger batteries, up to 110 Ah, mount in external battery cabinets that are available with internal chargers
- Includes battery chargers with communications compatibility for use with 4010 Series fire alarm control panels and with 4100U Series fire alarm control panels

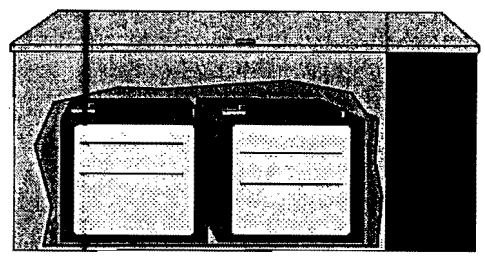


Compatible Sealed Lead-Acid Batteries can be Installed Inside Fire Alarm Control Panel Cabinets

Description

Simplex® rechargeable sealed-lead acid batteries provide reliable and repeatable discharge and recharge characteristics for use in fire alarm and other systems applications. They are designed with immobilized electrolyte in an absorbent separator, allowing them to provide rated capacity on the first cycle.

Because of their sealed construction, packaging is allowed within the system electronics enclosure (see illustration on page 2). When this is applicable, the quantity of system cabinets and the battery wiring distances are both minimized. Where required, external battery cabinets can be close-nippled to the control panel to house larger batteries with battery chargers available in some battery cabinet sizes.



Remote Battery Cabinets are Available for Larger Battery Requirements

Battery Details

Charging. These batteries are intended to be used with compatible Simplex battery chargers.

Series Connections. These batteries are required to be connected in series to produce 24 V system voltage. Battery sets must be of identical voltage, model number, appearance, and approximately the same date of manufacture for proper operation.

Testing. Battery capacity testing is recommended to be performed by using a sealed lead-acid battery tester designed to withdraw a minimum of battery charge. The preferred tester applies a variety of amplitude and duration controlled test pulses that compares terminal voltage against those predicted for the specific battery size. (Testing is available through your local Simplex product supplier.)

Battery Details *(Continued)*

Shipping. Sealed lead-acid batteries are shipped via ground or sea transportation only. They are not shipped via air.

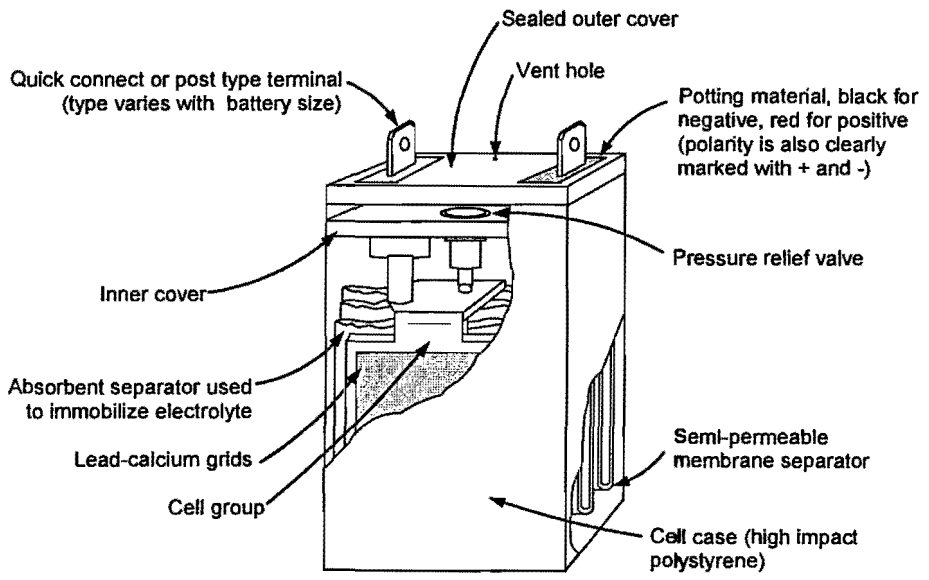
Disposal. Battery chemicals and materials can be recycled. Refer to information shipped with the battery or on its case. Return to the battery manufacturer or to a similarly qualified battery processing facility for proper disposal.

* Refer to details on page 4 and to the referenced individual product data sheets for agency listing status of battery cabinets and chargers. The batteries detailed in this document meet the requirements of UL, ULC, and Factory Mutual for use with respective equipment battery chargers as listed on page 3. Contact your local Simplex product supplier for proper battery selection per system requirements. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Safety Products Westminster.

S2081-0006-19 10/2008

Battery Construction Reference

Actual appearance will vary with battery size.



Battery Size Specifications

Battery Model	Capacity @ 20 Hour Discharge Rate	Width*	Depth*	Height with Terminals	Approximate Weight*
2081-9272	**6.2 Ah**	6-1/8" (156 mm)	2-5/8" (67 mm)	4" (102 mm)	5.75 lbs (2.6 kg)
2081-9274	**10 Ah**	6" (153 mm)	4-1/16" (103 mm)	4" (102 mm)	9.2 lbs (4.2 kg)
2081-9288	**12.7 Ah**	6" (153 mm)	4" (102 mm)	4" (102 mm)	9 lbs (4.1 kg)
2081-9275	**18 Ah**	7-1/4" (184 mm)	3-3/8" (86 mm)	6-5/8" (168 mm)	14.3 lbs (6.5 kg)
2081-9287	**25 Ah**	6-5/8" (168 mm)	5" (127 mm)	7" (178 mm)	19.4 lbs (8.8 kg)
2081-9271 (rectangular case, typically for service)	**33 Ah**	12-1/2" (318 mm)	3-3/8" (86 mm)	7-1/16" (179 mm)	26.6 lbs (12.1 kg)
2081-9276 ("square" case, use for new)	**33 Ah**	7-3/4" (197 mm)	5-1/4" (133 mm)	6-3/4" (171 mm)	26.5 lbs (12 kg)
2081-9296	**50 Ah**	9-1/2" (241 mm)	5-1/2" (140 mm)	8-7/8" (225 mm)	41.8 lbs (19 kg)
2081-9279	**110 Ah**	11-3/16" (284 mm)	10-1/2" (267 mm)	9" (230 mm)	82 Lbs (37 kg)

* Dimensions and weight are per battery and are for reference only. Exact size may vary. Refer to the tables on page 3 mounting compatibility. These batteries are 12 V each and series connected for 24 V system use.

NOTE: When wired in series for 24 V output, these batteries are to be of identical voltage, appearance, model number, and approximately the same date of manufacture.

General Battery Specifications

Nominal Voltage Rating	12 Volts per battery
Discharge Rating	20 Hour Rate
Typical Charge/Discharge Cycles	100 to 150
Preferred Charge Temperature Range	60° F to 90° F (15.6°C to 32.2° C)

Battery Compatibility for Fire Alarm Control Panel Mounting

NOTE: Refer to individual fire alarm control panel product data sheets for additional battery application information

Battery Model	Capacity	Simplex Control Panel Model Series (see legend and notes below)									
		4003	4004	4004R	4005	4006 & 4008	4009 (all models)	4010	4100U	4100 & 4120 (2, 4 or 6-Unit)	4020 (2, 4 or 6-Unit)
2081-9272	6.2 Ah	✓	✓	✓	✓	✓	✓	✓	1, 2, or 3 bay	✓	✓
2081-9274	10 Ah	✓	✓	✓	✓	✓	✓	✓	1, 2, or 3 bay	✓	✓
2081-9288	12.7 Ah	✓	NA	✓	✓	✓	✓	✓	1, 2, or 3 bay	✓	✓
2081-9275	18 Ah	✓	NA	Note 3	✓	Ext	Ext	Note 2	1, 2, or 3 bay	✓	✓
2081-9287	25 Ah	NA	NA	Note 3	Ext	Ext	NA	✓	1, 2, or 3 bay	✓	Ext
2081-9271 (rectangular)	33 Ah	NA	NA	Note 3	Ext	NA	NA	Note 3	1, 2, or 3 bay	Ext	Note 4
2081-9276 ("square")	33 Ah	NA	NA	Note 3	Ext	NA	NA	Note 3	1, 2, or 3 bay	✓	Ext
2081-9296	50 Ah	NA	NA	Note 3	NA	NA	NA	Note 3	2 or 3 bay	Ext	Ext
2081-9279	110 Ah	Requires external battery cabinet									

✓ = Can be placed in the respective equipment cabinet

Ext = External battery cabinet is required, refer to selection chart on page 4

NA = Not applicable/not compatible

NOTES:

1. These batteries meet the requirements of UL, ULC, and Factory Mutual for use with respective equipment battery chargers listed above. Contact your local Simplex product supplier for proper battery selection per system requirements.
2. 4010 Cabinets will accommodate 2081-9275, 18 Ah batteries, but will not allow bottom entry conduit.
3. Use 4081 series companion cabinet and charger, refer to page 4.
4. 4020 Cabinets will accommodate 2081-9271, 33 Ah batteries, but will not allow bottom entry conduit.
5. Some control panel models are listed for battery replacement reference only.

External Battery Cabinet Compatibility Reference

Battery Cabinets without Chargers (connects to charger in panel)

Cabinet	Panel Compatibility	2081-9275 18 Ah*	2081-9287 25 Ah	2081-9271 Rectangular 33 Ah	2081-9276 Square 33 Ah	2081-9296 50 Ah	2081-9279 110 Ah
2081-9270	multiple	✓	✓	✓	✓	✓	NA
2081-9280	4100U/4100+	NA	NA	NA	NA	NA	✓
2081-9281 2081-9282	multiple	✓	✓	✓	✓	✓	NA
4009-9801	multiple	✓	✓**	NA	NA	NA	NA
4009-9802	multiple	✓	NA	✓	NA	NA	NA

Battery Cabinets with Chargers

Cabinet	Panel Compatibility	2081-9275 18 Ah*	2081-9287 25 Ah	2081-9271 Rectangular 33 Ah	2081-9276 Square 33 Ah	2081-9296 50 Ah	2081-9279 110 Ah
4081-9301 4081-9302	4004R and 4010	✓	✓	✓	✓	✓	NA
4081-9306 4081-9308	4100U	NA	NA	NA	NA	✓	✓

* Batteries smaller than those listed are normally mounted in the product cabinet

** 25 Ah capacity was effective as of 7/2005.

✓ = Can be placed in the respective equipment cabinet

NA = Not applicable/not compatible

External Battery Cabinet Specification Reference

Battery Cabinets Without Chargers; Shallow Design with Front Door

Model	Color	Listings	Description		Dimensions
2081-9281	Beige	UL and FM	2-Unit, 4100 style cabinet **without** charger; with locking solid door and battery shelf, primarily for use with 50 Ah batteries		25-3/4" W x 20-3/4" H x 6-3/4" D (654 mm x 527 mm x 171 mm)
2081-9282	Red				
4009-9801*	Beige	UL and FM	For up to 25 Ah batteries*	External battery cabinet **without** charger, with locking solid door and battery harness; for close-nippled mounting to fire alarm control panel cabinet	16-1/4" W x 13-1/2" H x 5-3/4" D (413 mm x 343 mm x 146 mm)*
4009-9802	Beige	UL	For up to 33 Ah batteries		25-3/4" W x 20-3/4" H x 4-1/8" D (654 mm x 527 mm x 105 mm)

* Depth increased for 25 Ah batteries effective 7/2005.

Battery Cabinet Without Charger; Deep Design with Hinged Lid

Model	Color	Listings	Description	Dimensions
2081-9270	Red	Not listed	Battery cabinet **without** charger; cabinet has vented front, and hinged lid with support rod and lock on top	26-1/2" W x 12" H x 12" D (673 mm x 305 mm x 305 mm)

Chargers for use with 4010 Fire Alarm Control Panels and 4004R Suppression Release Systems

(refer to data sheet S4081-0001)

Model	Color	Input Voltage	Description	Dimensions
4081-9301	Beige	120 VAC	Battery cabinet **with** charger for the 4010 and 4004R fire alarm control panel; **for up to 50 Ah batteries**; with front door *Listings include: UL, ULC, FM, CSFM, and MEA (NYC), see data sheet for details*	22-1/2" W x16-3/4" H x 8-3/8" D (572 mm x 425 mm x 213 mm)
4081-9302	Red			

Battery Cabinet Without Charger for 110 Ah Batteries; for use with compatible panel mounted chargers

(refer to data sheet S2081-0012)

Model & Listings	Color	Cabinet Description	Compatible Chargers	Charger Description	Dimensions
2081-9280 *Listings include: UL and CSFM*	Red	Battery cabinet for 2081-9279, 110 Ah batteries; includes 80 A battery fuse, terminals and battery connection cables; see data sheet for details	4100-9xxx Series	4100U System Power Supplies (SPS)	26-1/2" W x 12" H x 12" D (673 mm x 305 mm x 305 mm)
			4100-5111 4100-5112 4100-5113	4100U Additional SPS	
			4100-5125 4100-5126 4100-5127	4100U Remote Power Supply (RPS)	
			4100-5120 4100-5121 4100-5122	4100U TrueAlert Addressable Power Supply (TPS)	
			4100-0104 4100-0114 4100-0124	4100 Legacy power supplies	

4100U Compatible Battery Cabinet With Charger for 110 Ah Batteries (for ULC listed systems and for other applications unable to use panel mounted power supply charger; *refer to data sheet S4081-0002*)

Model	Color	Input Voltage	Description	Dimensions
4081-9306	Red	120 VAC	Battery cabinet with charger for up to 110 Ah batteries; **NOTE:** Required for ULC listed charging of 110 Ah batteries; *Listings include: UL, ULC, FM, CSFM, and MEA (NYC), see data sheet for details*	27-7/8" W x 13-1/2" H x 14-5/8" D (708 mm x 343 mm x 371 mm)
4081-9308	Red	220/230/240 VAC, multi-tapped		
4100-9837	Green LED Power-on Indicator Kit, **required for ULC listing,** mounts above access panel using knockout provided			

Simplex

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

Multi-Application Peripherals

IDNet™ or MAPNET II® Communicating Devices
Addressable Manual Stations

Features

Individually addressable manual fire alarm stations with:

- Power and data supplied via IDNet or MAPNET II addressable communications using a single wire pair**
- Operation that complies with ADA requirements
- 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

Compatible with the following Simplex® control panels:

- Model Series 4008, 4010, 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)

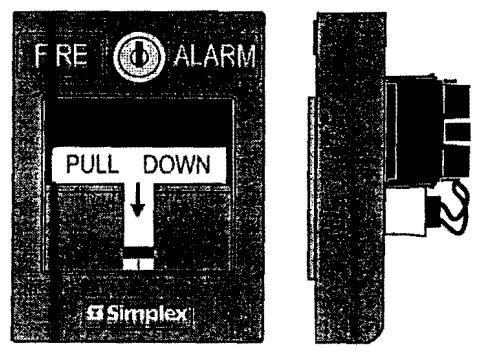
Multiple mounting options:

- 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

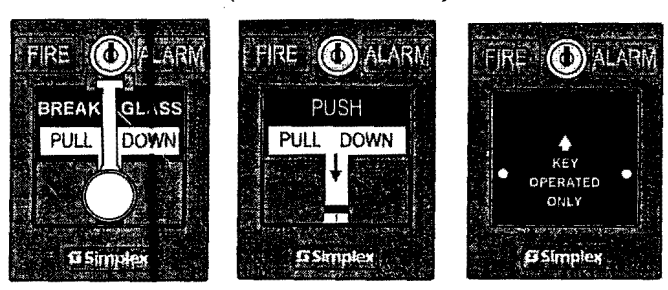
Description

The Simplex model 4099-9001 addressable 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 via IDNet or MAPNET II communications wiring.

* Refer to page 2 for specific model listings. 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 7150-0026:224 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.



4099-9001 Addressable Manual Station
(front and side view)



4099-9002 Breakglass	4099-9003 Push	With 2099-9828 Institutional Cover kit

Operation

Activation of the Simplex 4099-9001 single manual station requires a firm downward pull to activate the alarm switch. Completing the action breaks an internal plastic break-rod (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.

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.

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 the break-rod is used, it must be replaced.)

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

** IDNet and MAPNET II addressable communications designs are protected by U.S. Patent No. 4,796,025; 5,966,002; and 6,034,601.

Addressable Manual Station Product Selection

Addressable Manual Stations, Red Housing with White Letters and White Pull Lever

Model	Description	Housing	Pull Lever	Listings
4099-9001	Single action, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM, MEA
4099-9001CB	Single action, Bilingual English and French	FEU FIRE	TIREZ PULL	ULC, FM
4099-9001CF	Single action, French	ALARME FEU	ABAISSEZ	
4099-9002	Double action, Breakglass operation, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM, MEA
4099-9003	Double action, Push operation, English			

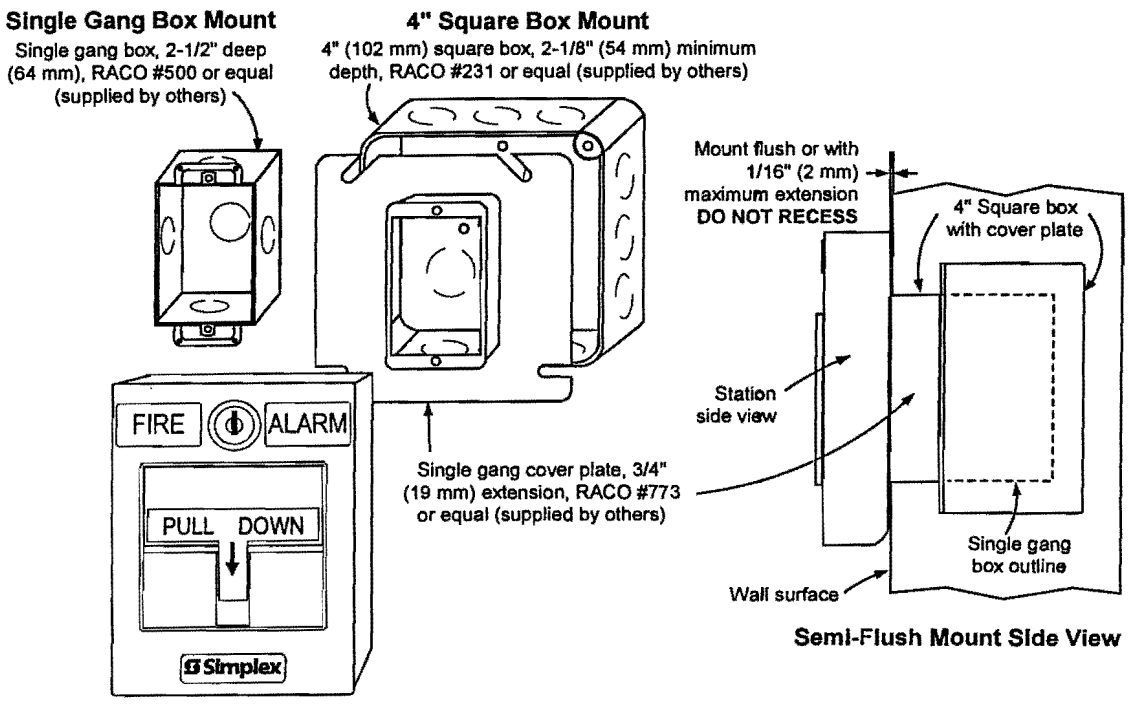
Accessories

Model	Description	
2975-9178	Surface mount steel box, red	Refer to page 3 for dimensions
2975-9022	Cast aluminum surface mount box, red	
2099-9813	Semi-flush trim plate for double gang switch box, red	Typically for retrofit, refer to page 4
2099-9814	Surface trim plate for Wiremold box V5744-2, red	
2099-9819	Flush mount adapter kit, black	Refer to page 4 for details
2099-9820	Flush mount adapter kit, beige	
2099-9803	Replacement breakglass	
2099-9804	Replacement break-rod	
2099-9828	Institutional cover kit for field installation on 4099-9001	

Specifications

Power and Communications	IDNet or MAPNET II communications, 1 address per station
Address Means	Dipswitch, 8 position
Wire Connections	Screw terminal for in/out wiring, for 18 to 14 AWG wire
UL Listed Temperature Range	32° to 120° F (0° to 49° C) intended for indoor operation
Humidity Range	Up to 93% RH at 100° F (38° F)
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" H x 3-3/4" W x 1" D (127 mm x 95 mm x 25 mm)

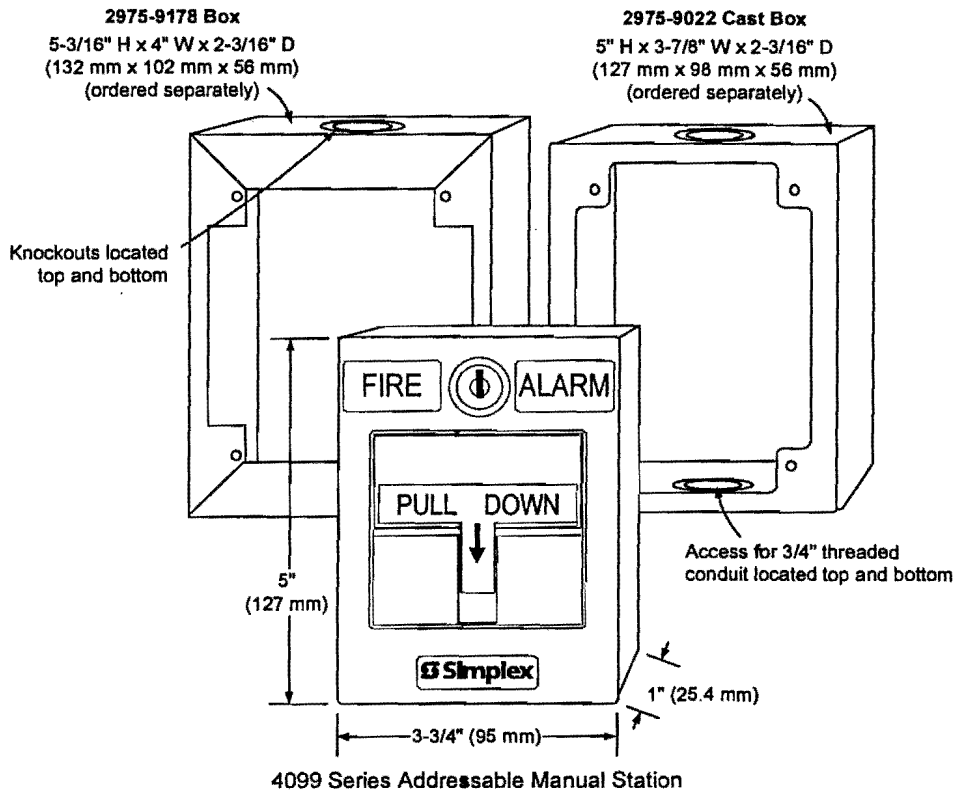
Addressable Manual Station Semi-Flush Mounting



Addressable Manual Stations Surface Mounting

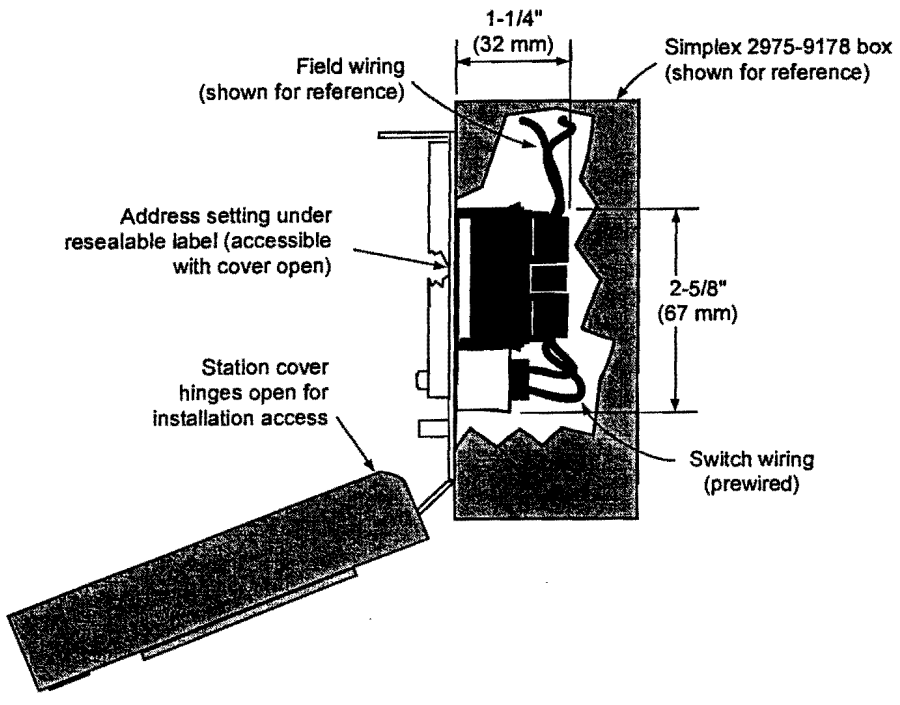
Preferred Mounting. For surface mounting of these addressable manual stations, the preferred electrical boxes are shown in the illustration to the right.

Additional Mounting Reference. Refer to page 4 for Wiremold box mounting compatibility.



4099 Series Addressable Manual Station

Surface Mount Side View with Internal Detail



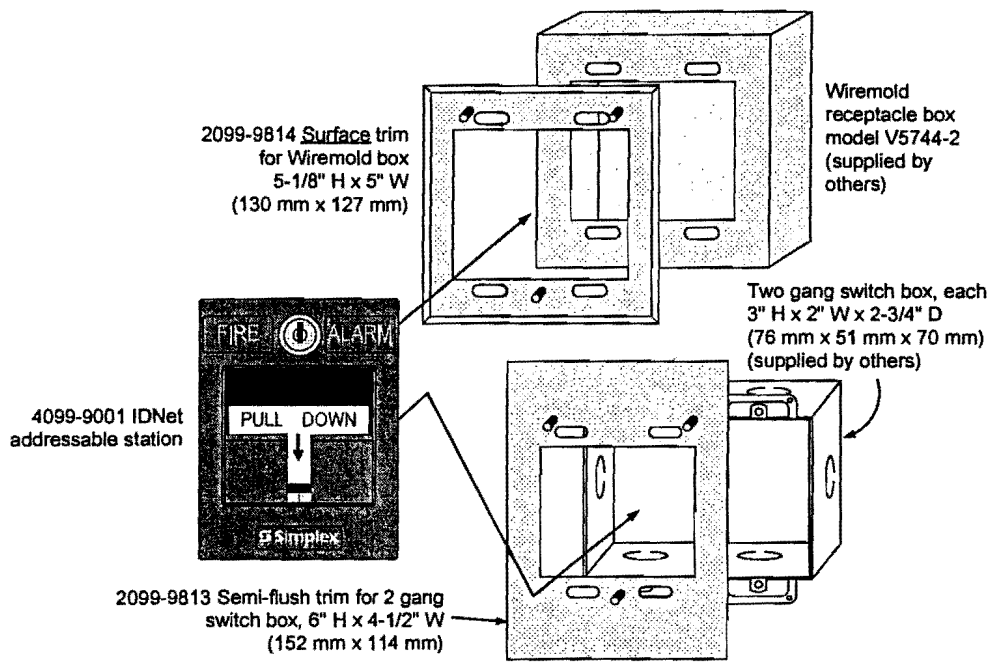
Application Reference

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

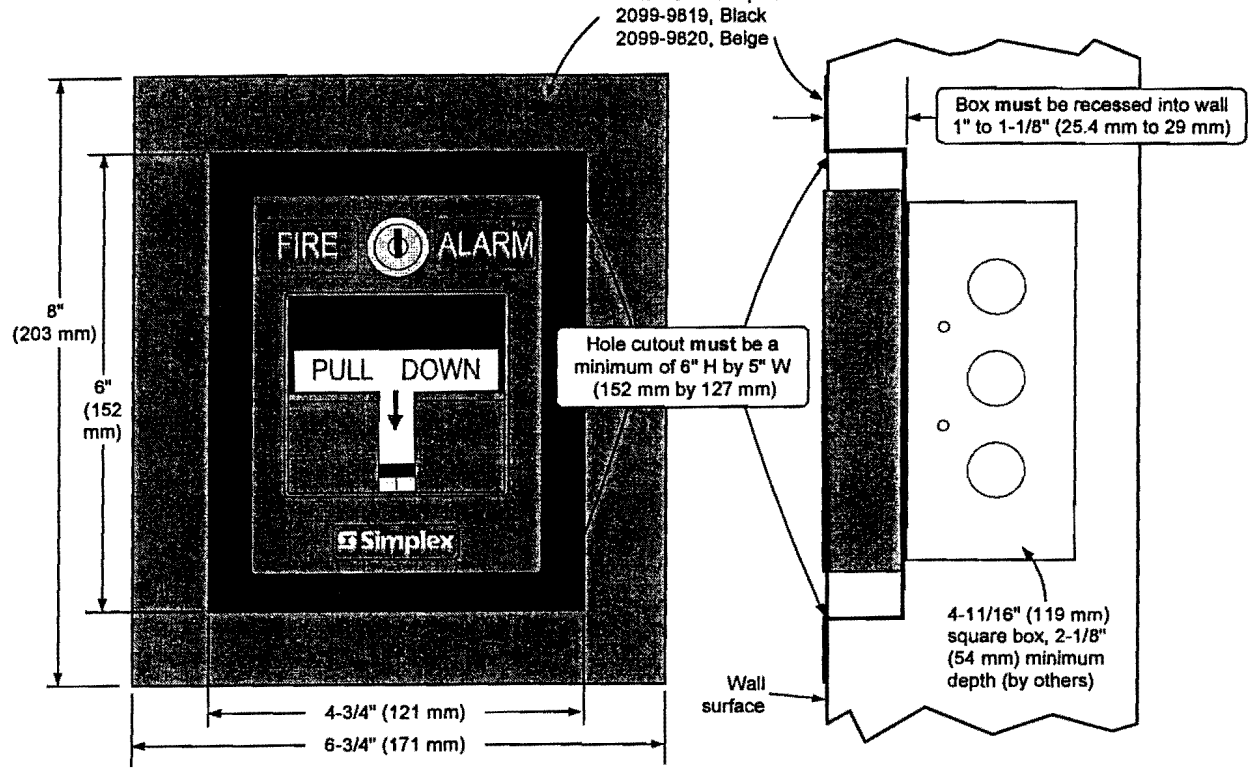
1. Stations shall be located in the normal path of exit and distributed in the protected area such that they are unobstructed and readily accessible.
2. Mounting shall be with the operable part not less than 3-1/2 ft (1.1 m) and not more than 4-1/2 ft (1.37 m) above floor level.
3. At least one station 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 the illustration to the right.



Addressable Manual Station. Flush Mounting Information



Simplex

TrueAlarm® Analog Sensing

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

TrueAlarm Analog Sensors – Photoelectric, Ionization, 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:

- 4010 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%

Heat sensors provide:

- Fixed temperature sensing
- Rate-of-rise temperature sensing
- Utility temperature sensing

Ionization smoke sensors provide:

- Three levels of sensitivity; 0.5%, 0.9%, and 1.3%

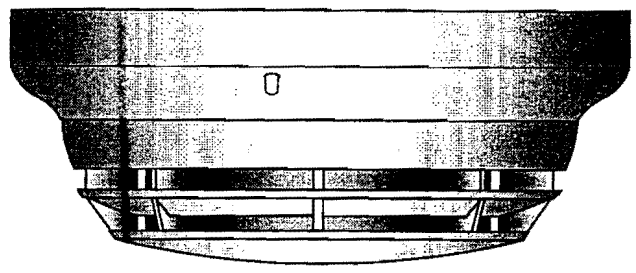
General features:

- UL listed to Standard 268
- 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
- Optional accessories include remote LED alarm indicator and output relays

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. 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.



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.

** TrueAlarm analog sensors are protected by one or more of the following U.S. Patents: 5,155,468; 5,173,683; 5,400,014; 5,543,777; 5,710,541; D383,407; D388,352; D392,573. MAPNET II and IDNet addressable communications designs are protected by U.S. Patent No. 4,796,025.

S4098-0019-12 8/2008

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 (unsupervised)

4098-9791, Sensor base with supervised relay driver output (not compatible with 2120 CDT):

- Relay operation is programmable and can be manually operated from control panel
- Use with remote mount 2098-9737 relay
- Also includes wired connections for remote LED alarm indicator **or** 4098-9822 relay

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)

4098-9822, LED Annunciation Relay:

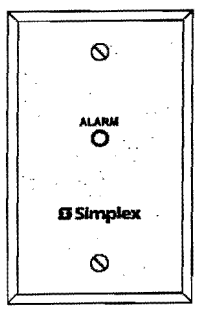
- Activates when base LED is on steady, indicating local alarm or trouble
- DPDT contacts for resistive/suppressed loads, power limited rating of 2 A @ 28 VDC; non-power limited rating of 1/2 A @ 120 VAC, (requires external 24 VDC coil power)

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, ionization, or heat sensors. Each sensor's output is digitized and transmitted to the system fire alarm control panel every four seconds.

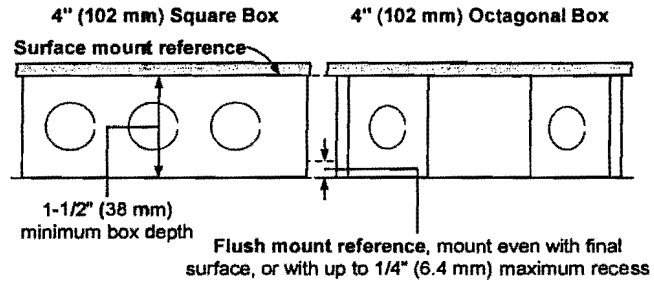
Since TrueAlarm sensors use the same base, different sensor types can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily dusty, instead of covering the smoke sensors (causing 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: 4" octagonal or 4" square, 1-1/2" deep; single gang, 2" deep

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

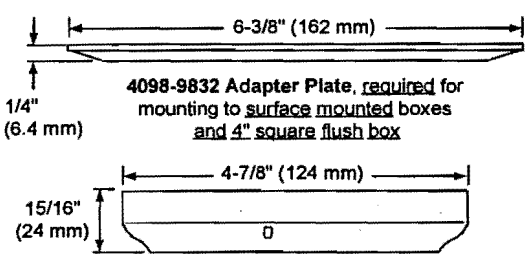


2098-9737 Relay (mounts in base electrical box or remotely)

4098-9822 Relay (mounts in base electrical box)

Relay Size: 2-1/2" X 1-1/2" X 1" (3.75 cubic inches)
(64 mm X 38 mm X 25.4 mm)

NOTE: Review total wire count, wire size, and accessories being wired to determine required box volume.



TrueAlarm Bases
4098-9789, -9791, & -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:

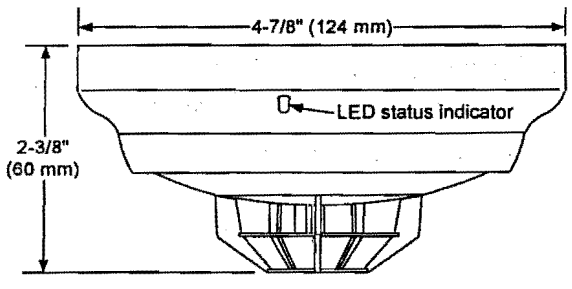
- Photoelectric or ionization technology sensing
- 360° smoke entry for optimum response
- Built-in insect screens

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.*



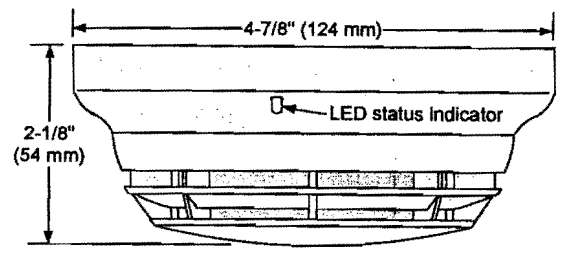
4098-9733 Heat Sensor with Base

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.

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. Sensitivity is selected and 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.

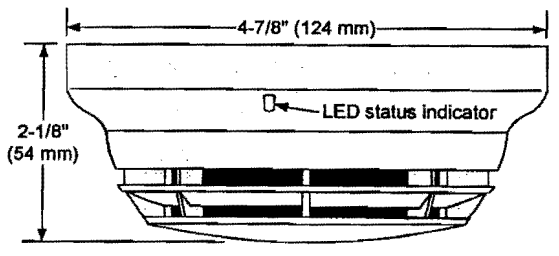


4098-9714 Photoelectric Sensor with Base

4098-9717 Ionization Sensor

TrueAlarm Ionization sensors use a single radioactive source with an outer sampling ionization chamber and an inner reference ionization chamber to provide stable operation under fluctuations in environmental conditions such as temperature and humidity. Smoke and invisible combustion gases can freely penetrate the outer chamber. With both chambers ionized by a small radioactive source [Am 241 (Americium)], a very small current flows in the circuit. The presence of particles of combustion will cause a change in the voltage ratio between chambers. This difference is measured by the electronics in the sensor base and digitally transmitted back to the control panel for processing.

Three levels of sensitivity are available for each ionization sensor: 0.5, 0.9, and 1.3% per foot of smoke obscuration.



4098-9717 Ionization Sensor with Base

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 Code®*. On smooth ceilings, smoke sensor spacing of 30 ft (9.1 m) may be used as a guide. For detailed application information, refer to *4098 Detectors, Sensors, and Bases Application Manual* (574-709).

TrueAlarm Analog Sensing Product Selection Chart

TrueAlarm Sensor Bases*

Model	Description	Compatibility	Mounting Requirements
4098-9792	Standard Sensor Base, no options	Sensors 4098-9714, -9733, & -9717	4" octagonal or 4" square box, 1-1/2" min. depth; or single gang box, 2" min. depth
4098-9789	Sensor Base with connections for Remote LED Alarm Indicator or Unsupervised Relay	Sensors 4098-9714, -9733, & -9717 2098-9808 remote LED alarm indicator or 4098-9822 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.
4098-9791	Sensor Base with connections for **Supervised** Remote Relay and connections for Remote Alarm Indicator or Unsupervised Relay	Sensors 4098-9714, -9733, & -9717 2098-9737 remote relay (supervised) 2098-9808 remote alarm indicator or 4098-9822 relay (unsupervised)	

TrueAlarm Sensors

Model	Description	Compatibility	Mounting Requirements
4098-9714	Photoelectric Smoke Sensor	Bases 4098-9792, 4098-9789, and 4098-9791	Refer to base requirements
4098-9717	Ionization Smoke Sensor		
4098-9733	Heat Sensor		

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
2098-9808	Remote Red LED Alarm Indicator on single gang stainless steel plate	Bases 4098-9789 and 4098-9791	Single gang box, 1-1/2" minimum depth
4098-9822	Relay, tracks base LED status (unsupervised, mounts only in base electrical box)		4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
4098-9832	Adapter Plate	Bases 4098-9792, -9789, & -9791	**Required** for surface or semi-flush mounted 4" square box and for surface mounted 4" octagonal box

* Refer to Installation Instructions 574-707 and Application Manual 574-709 for additional information.

Specifications

General Operating Specifications		
Communications and Sensor Supervisory Power		MAPNET II or IDNet, auto-select, 24-40 VDC w/data, 400 µA typical, 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 Temperature Range		32° to 100° F (0° to 38° C)
Operating Temperature Range	with 4098-9717 or 4098 -9733	32° to 122° F (0° to 50° C)
	with 4098-9714	15° to 122° F (-9° to 50° C)
Humidity Range		10 to 95% RH
Smoke Sensor Ambient Ratings	4098-9714, Photoelectric Sensor	Air velocity = 0-2000 ft/min (0-610 m/min)
	4098-9717, Ionization Sensor	Air velocity = 0-200 ft/min (0-61 m/min); Altitude is up to 8000 ft (2.4 km)
Housing Color		Frost White
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
4098-9822 Unsupervised Relay, Requirements for Bases 4098-9789 and 4098-9791 (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

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

Multi-Application Peripherals

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 with following Simplex control panels:

- Model Series 4008, 4010, and 4100U fire alarm control panels for IDNet communications
- Model Series 4100/4100U, 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

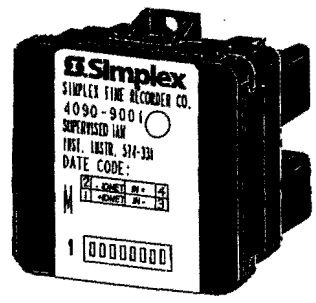
IDNet communications provides current limited monitoring:

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

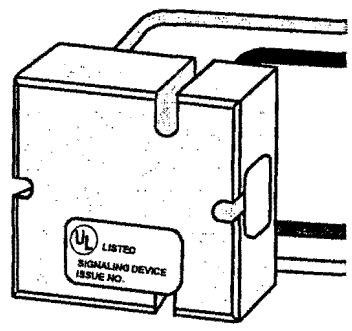
Multiple operation modes are available and are selectable at the control panel:

- 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



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.

* 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.

** IDNet and MAPNET II addressable communications are protected under U.S. Patent Nos. 4,796,025; 5,966,002; and 6,034,601..

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

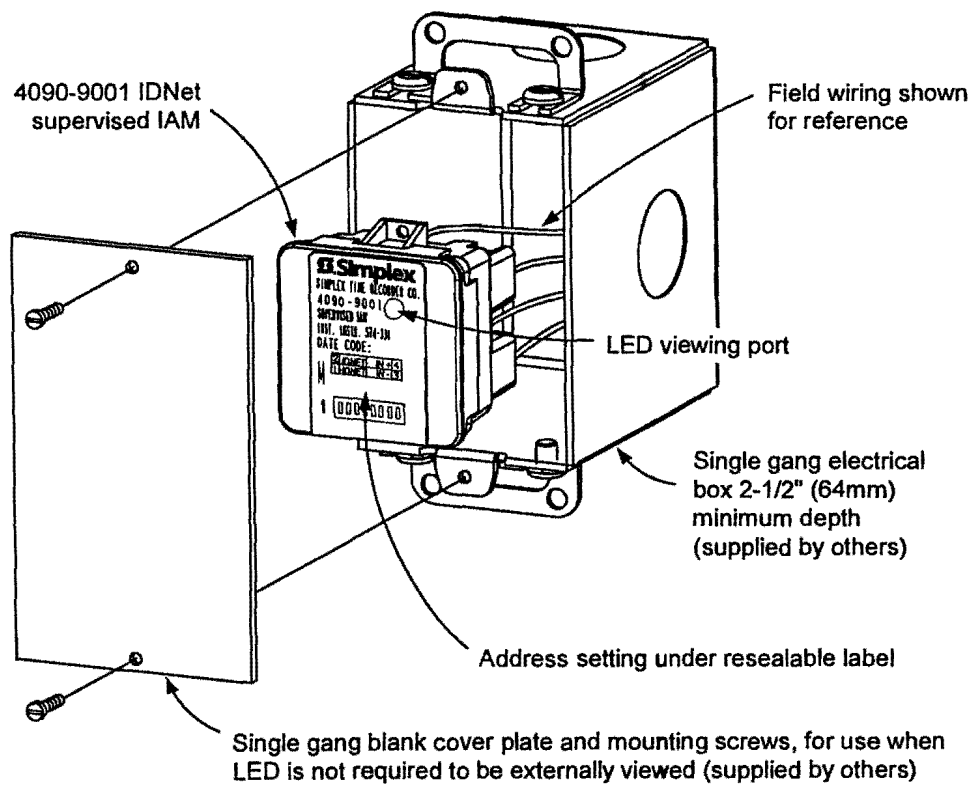
Model	Description
4090-9806	For semi-flush mounted box — Trim plate with LED viewing window, requires 4090-9810 mounting bracket, includes mounting screws; galvanized steel
4090-9807	For surface mounted box
4090-9810	Mounting bracket, mounts IAM to electrical box and provides screw holes for trim plate,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

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

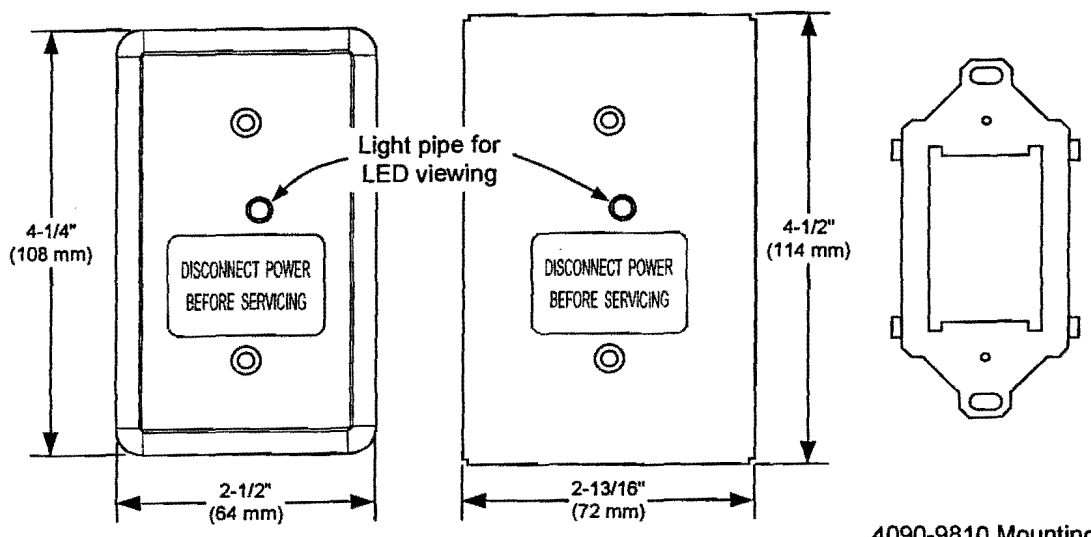
Model	Reference No.	Description
4081-9004	733-886	6.8 kΩ, 1/2 W; Standard end-of-line resistor harness for N.O. contact supervision
4081-9003	733-896	4.7 kΩ, 1/2 W — Use for current limited monitoring applications
4081-9005	733-984	1.8 kΩ, 1/2 W

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 120° F (0° to 49° C) intended for indoor operation
Humidity Range		Up to 93% RH at 100° F (38° C)



Mounting Reference, Single Gang Blank Cover Plate



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

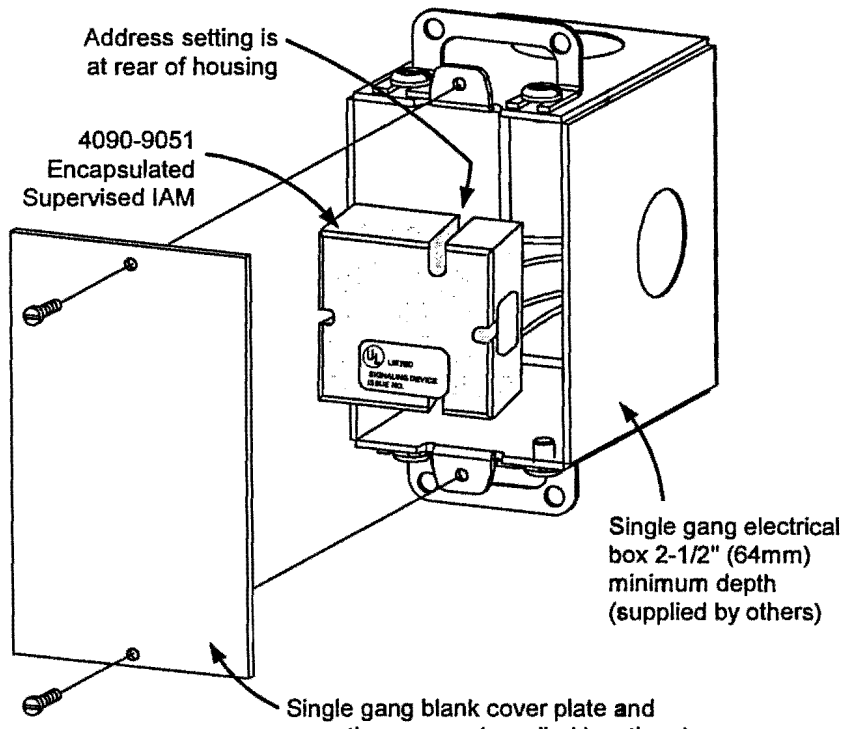
4090-9807, Trim plate for surface mounted box

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

Tyco Safety Products Westminster • Westminster, MA • 01441-0001 • USA

S4090-0001-8 2/2006

www.tycosafetyproducts-usa-wm.com

Simplex

TrueAlert® 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
- Operation requires connection to a compatible SmartSync operation NAC or to SmartSync Control Module (SCM) 4905-9938

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
- Optional UL/ULC listed sound damper for locations requiring attenuation of 5 to 6 dBA (stairwells, small rooms, highly reverberant areas, etc.)

Optional adapters and wire guards:

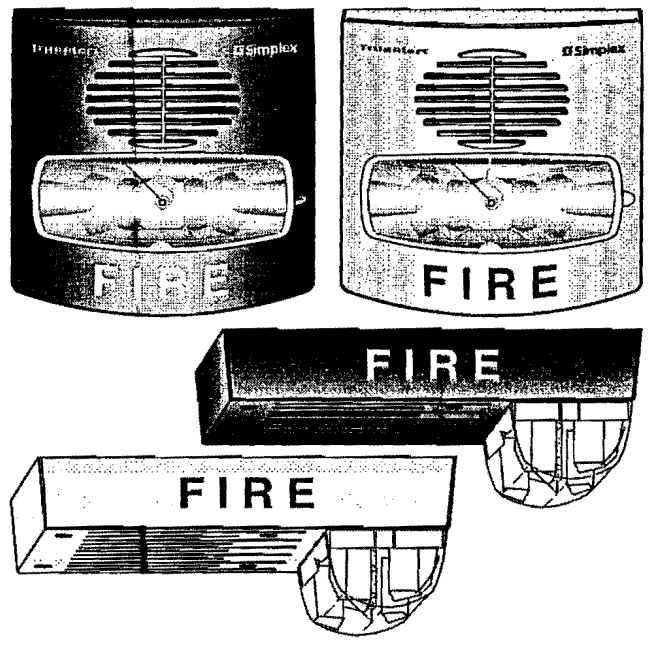
- Wall mount A/V adapters are available to cover surface mounted electrical boxes and to adapt to Simplex® 2975-9145 boxes
- UL listed red wire guards are available for wall or ceiling mount A/Vs*

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
- Regulated circuit design ensures consistent flash output and provides controlled inrush current
- Listed to UL 1971 and ULC S526

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)
- Listed to UL 464 and ULC S525



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.

* Refer to page 2 for guard listing. 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. It is subject to re-examination, revision, and possible cancellation. 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 Safety Products Westminster.

** Simplex multi-candela SmartSync two-wire horn/strobe appliance operation is protected under one or more of the following U.S. Patent Numbers: 5,559,492; 5,622,427; 5,865,527; 5,886,620; 6,281,789; 6,954,137; 7,005,971; and 7,006,003.

S4906-0002-5 9/2009

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, 4008, 4100U, and 4010 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

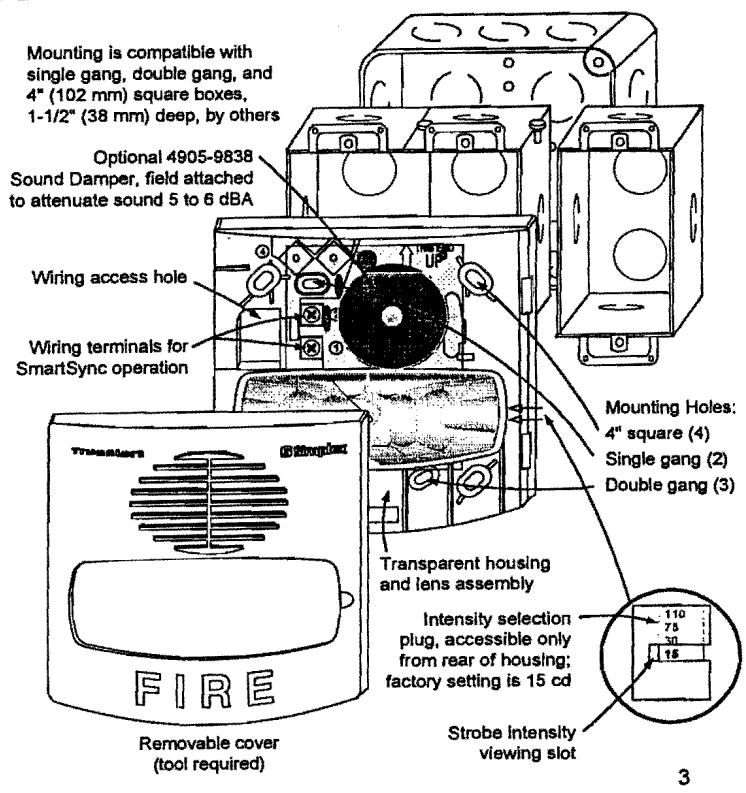
Rated Voltage Range		Regulated 24 DC; see Note 1 below			
Flash Rate and Synchronized NAC Loading		1 Hz; with up to 35 synchronized strobes maximum per NAC			
Environmental; Temperature and Humidity		32° to 122° F (0° to 50° C); 10% to 93%, non-condensing at 100° F (38° C)			
Connections		Terminal blocks 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 (see Note 2 for polar dispersion reference)	Model Type	Wall Mount		Ceiling Mount	
	Sound Type (see Note 2)	Steady	Coded	Steady	Coded
	Reverberant Chamber Test, per UL 464 @ 10 ft (~3 m)	86 dBA	82 dBA	87 dBA	83 dBA
	Anechoic Chamber Test, per ULC S525 @ 3 m (~10 ft)	88 dBA	94 dBA	90 dBA	98 dBA

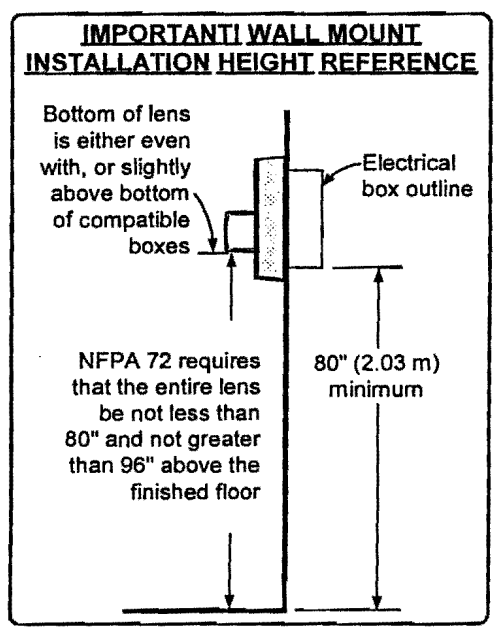
Wall Mount	Housing Dimensions (with lens)		5-1/8" H x 5" W x 2-3/4" D (130 mm x 127 mm x 70 mm)			
	Maximum RMS Current Rating per Strobe Setting (see Note 3 below)		15 cd	30 cd	75 cd	110 cd
			75 mA	116 mA	221 mA	285 mA
	Reference RMS Currents at other voltages	18 VDC	67 mA	103 mA	196 mA	253 mA
		24 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
		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*, changes effective May 1, 2004. 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. Polar dispersion per ULC S525 testing = -3 dBA at +/-40° off-axis; -6 dBA at +/- 50° off-axis.
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.)

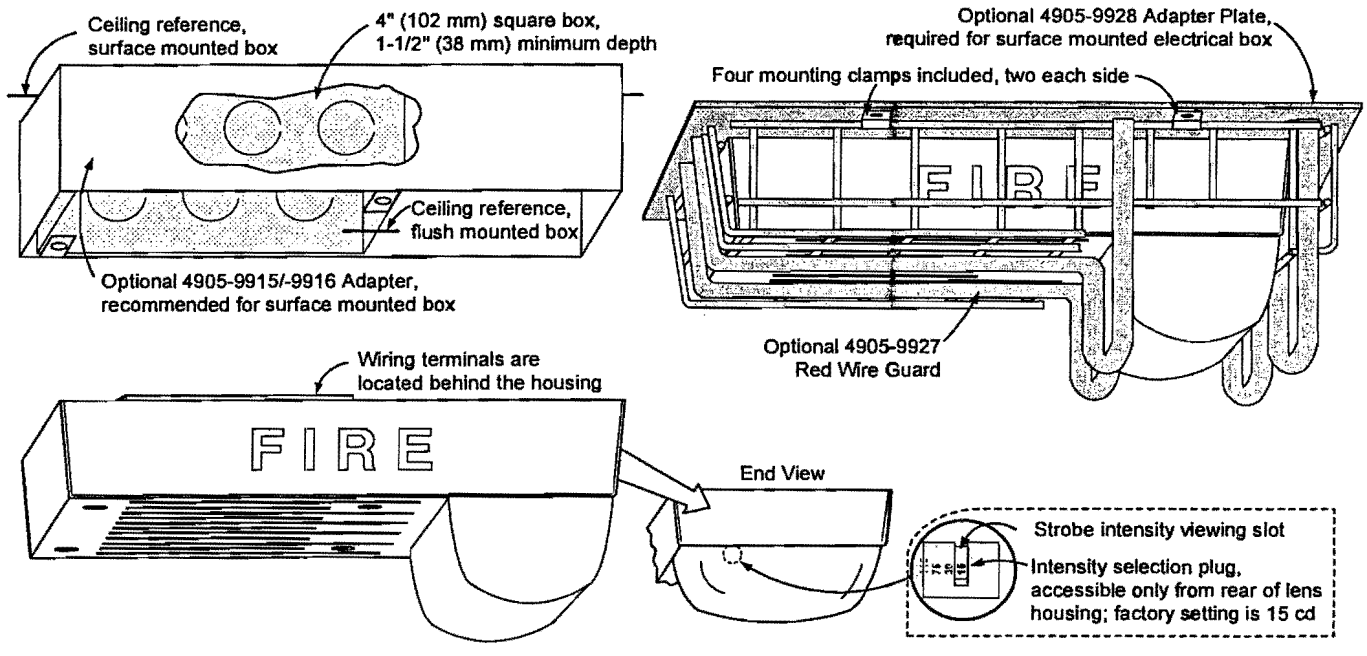
Installation Reference, Surface or Semi-Flush Mounting



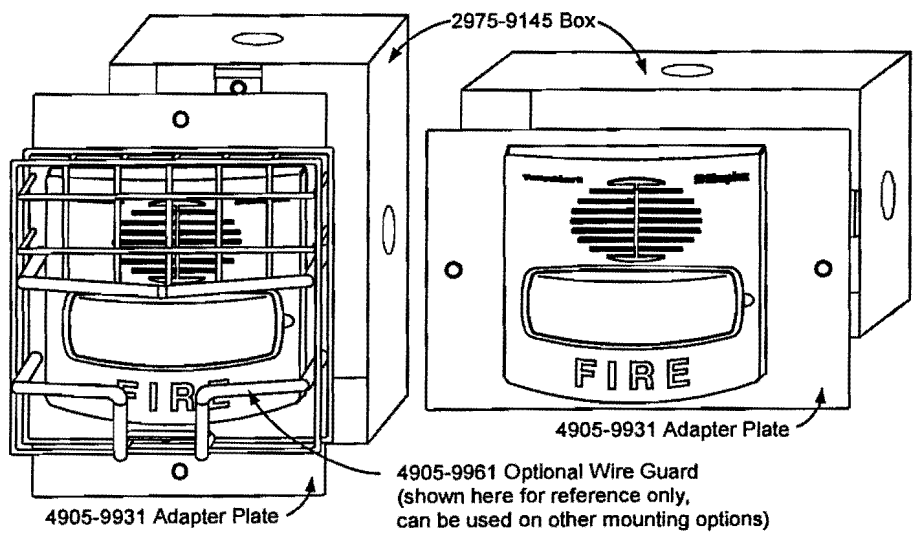


S4906-0002-5 9/2009

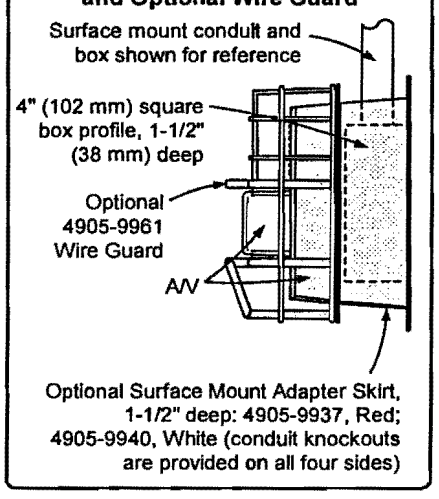
Ceiling Mount A/V and Guard Installation Reference



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



Surface Mounting Reference with Optional Adapter Skirt and Optional Wire Guard



Simplex

Tyco Safety Products Westminster • Westminster, MA • 01441-0001 • USA
www.tycosafetyproducts-usa-wm.com

S4906-0002-5 9/2009

Simplex

TrueAlert® Multi-Candela Notification Appliances

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

Visible Notification Appliances with Synchronized Flash; Non-Addressable, SmartSync™ Operation Compatible

Features

Visible only (V/O) 24 VDC notification appliances with high output xenon strobe, available for wall or ceiling mount:

- Intensity is selectable as 15, 30, 75, or 110 candela with visible selection jumper secured behind strobe housing
- Operation is compatible with ADA requirements (refer to important installation information on page 3)
- 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
- Rugged, high impact, flame retardant thermoplastic housings are available in red or white with clear lens
- Listed to UL 1971 and ULC S526

Strobes provide synchronized flash for use with:

- 4006, 4008, 4010, and 4100U Series fire alarm control panels with NACs selected to provide strobe synchronization or SmartSync two-wire control**
- 4009 IDNet™ NAC Extenders
- Separate strobe Synchronization Modules that are available for Class B or Class A operation
- Separate SmartSync Control Modules (SCMs) that provide Class B or Class A output from conventional NAC inputs

Strobe housings provides flexible, easy, and convenient semi-flush or surface wall mounting:

- Rear of housing does not extend into box
- Wall mount strobes easily mount to single gang, double gang, or 4-inch square outlet box
- Ceiling mount strobes mount to single gang boxes

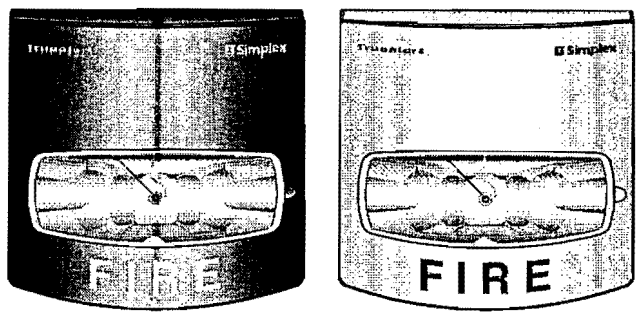
Wall mount strobe features:

- 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

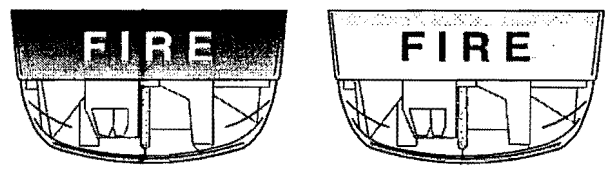
Optional adapters and wire guards:

- Wall mount strobe 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 strobes*

* Refer to page 2 for guard listing. 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 7125-0026:316 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. 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 Safety Products Westminster.



Wall Mount Strobes



Ceiling Mount Strobes

Description

Multi-Candela TrueAlert synchronized strobes 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 intensity output, on-site model inventory is minimized and changes encountered during construction can be easily accommodated.

Wall mount strobe 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 strobes install using standard single gang 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.

Strobe Application Reference

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).

** Simplex multi-candela SmartSync two-wire horn/strobe appliance operation is protected under one or more of the following U.S. Patent Numbers: 5,559,492; 5,622,427; 5,865,527; 5,886,620; 6,281,789; 6,954,137; 7,005,971; and 7,006,003.

S4906-0001-4 9/2009

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. These multi-candela strobes are synchronized over a two-wire circuit when connected to compatible NACs, to compatible Synchronized Flash Modules, or to SmartSync Control Modules.

SmartSync Two-Wire Control

Some applications desire the audible notification appliances to be capable of being silenced before the alarm condition is reset (on-until-silenced) while the visible notification appliances are kept activated until the alarm condition is reset (on-until-reset). SmartSync operation mode provides this function using a single circuit (two-wire operation).

SmartSync Control Sources

SmartSync two-wire control is available from:

- 4006, 4008, 4100U, and 4010 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

Multi-Candela Visible Notification Appliances (Strobes)

Model	Mounting	Housing Color	"FIRE" Lettering	Description
4906-9101	Wall	Red	White	Multi-candela strobe with intensity selectable as: 15, 30, 75, or 110 candela; synchronized flash rate; SmartSync two-wire control compatible
4906-9103		White	Red	
4906-9102	Ceiling	Red	White	
4906-9104		White	Red	

Wall Mount Strobe Adapters

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) Total 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)

Ceiling Mount Strobe Adapter

Model	Description	Dimensions
4905-9910	Surface Mount Adapter Plate; zinc plated; **required for mounting to handy box; not needed when using 4905-9926 guard**	4-7/8" x 3-1/8" x 0.060" D (124 mm x 79 mm x 1.5)

Synchronization Modules (refer to data sheet S4905-0003 for additional information)

Model	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 5 mA for power	1-3/8" x 2-7/16" x 13/16" (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" (102 mm) square box		4" x 4-1/8" x 1-1/4" D (102 mm x 105 mm x 32 mm)

Replacement Covers and Guards

Model	Description		Dimensions
4905-9992	Red cover with white "FIRE" lettering	For Wall mount strobes	5-1/8" H x 5" W x 1-1/2" D (130 mm x 127 mm x 38 mm)
4905-9993	White cover with red "FIRE" lettering		
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)
4905-9926*	Ceiling mount		6-1/8" x 4-3/8" x 2-7/8" deep (156 mm x 111 mm x 73 mm)

* UL listed by Space Age Electronics Inc.

Strobe Specifications

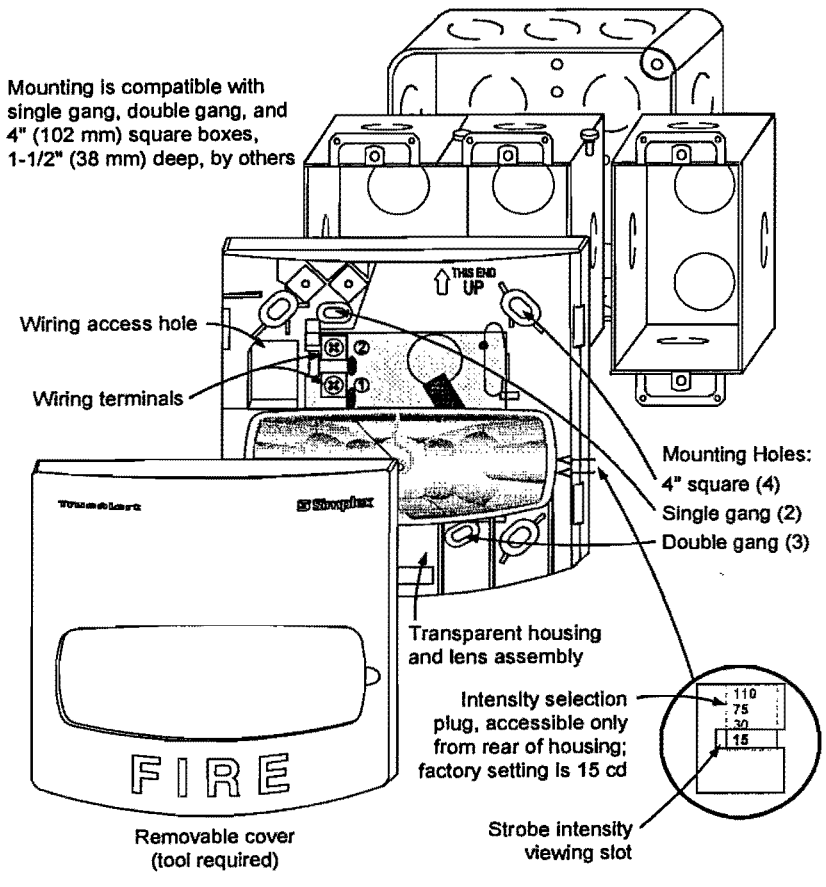
Wall Mount or Ceiling Mount, Common Specifications

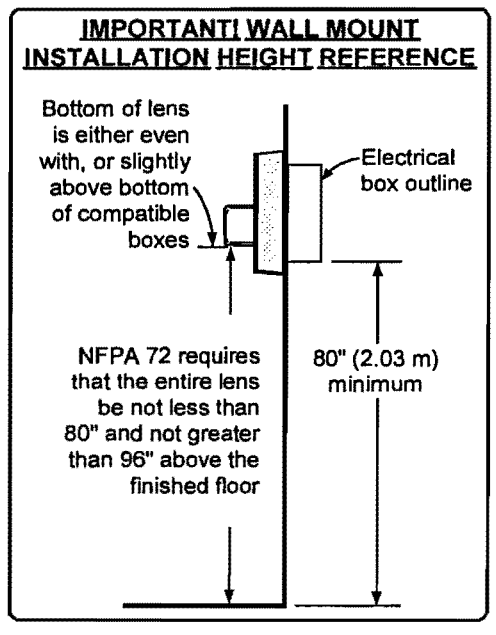
Rated Voltage Range		Regulated 24 VDC; see Note 1 below			
Flash Rate		1 Hz			
Synchronized NAC Loading		Up to 35 synchronized strobes maximum per NAC			
Temperature Range		32° to 122° F (0° to 50° C)			
Humidity Range		10% to 93%, non-condensing at 100° F (38° C)			
Connections		Terminal blocks for 18 AWG to 12 AWG (0.82 mm^2 to 3.31 mm^2); two wires per terminal for in/out wiring			
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 2 below)	**15 cd**	**30 cd**	**75 cd**	**110 cd**
		60 mA	**94 mA**	**186 mA**	**252 mA**
	Reference RMS Currents at other voltages 18 VDC	53 mA	84 mA	165 mA	224 mA
	24 VDC	40 mA	63 mA	124 mA	168 mA
Ceiling Mount	Housing Dimensions (with lens)	4-3/4" L x 2-5/16" W x 2-5/8" D (121 mm x 75 mm x 67 mm)			
	Maximum RMS Current Rating per Strobe Setting (see Note 2 below)	**15 cd**	**30 cd**	**75 cd**	**110 cd**
		75 mA	**125 mA**	**233 mA**	**316 mA**
	Reference RMS Currents at other voltages 18 VDC	67 mA	111 mA	207 mA	281 mA
	24 VDC	50 mA	83 mA	155 mA	211 mA

NOTES:

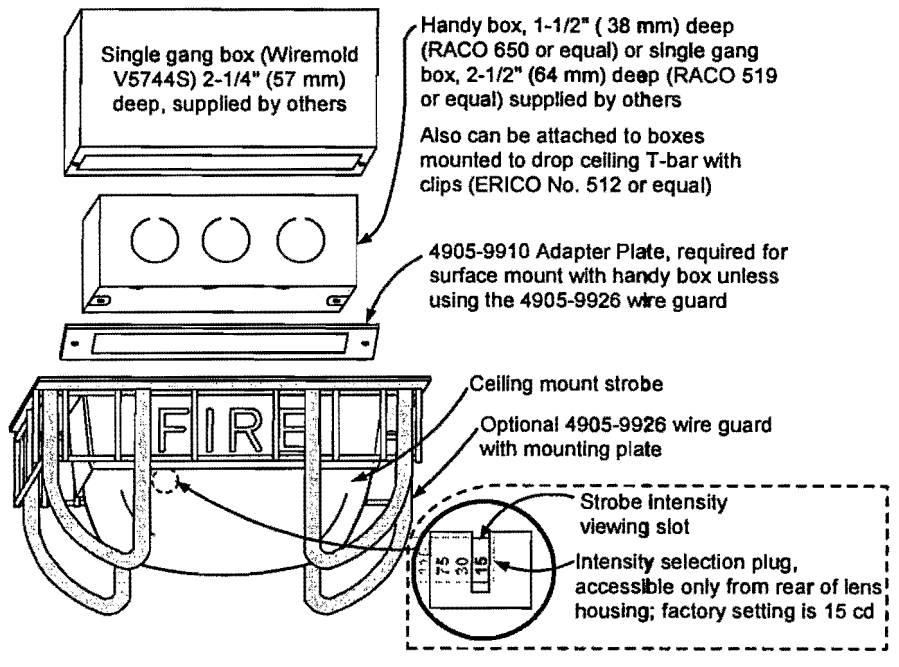
1. "Regulated 24 VDC" refers to the voltage range of 16 to 33 VDC per UL Standard 1971, *Signaling Devices for the Hearing Impaired*, changes effective May 1, 2004. This voltage range is the absolute operating range. Operation outside of this range may cause permanent damage to the strobe. Please note that 16 VDC is the lowest operating voltage that is allowed at the last appliance on the NAC under worst case conditions.
2. 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 Wall Mounting

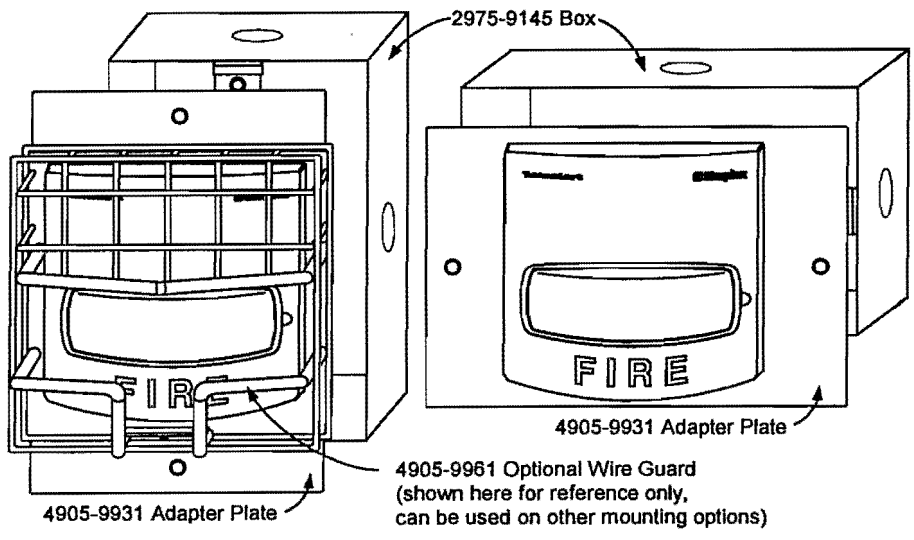




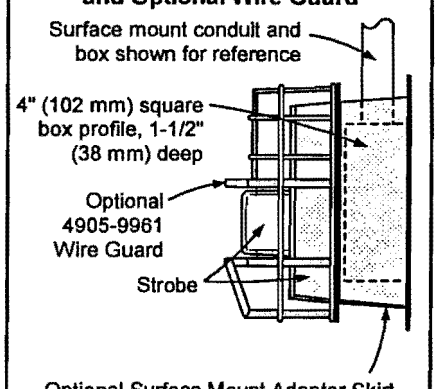
Ceiling Mount Strobe Installation Reference



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



Surface Mounting Reference with Optional Adapter Skirt and Optional Wire Guard



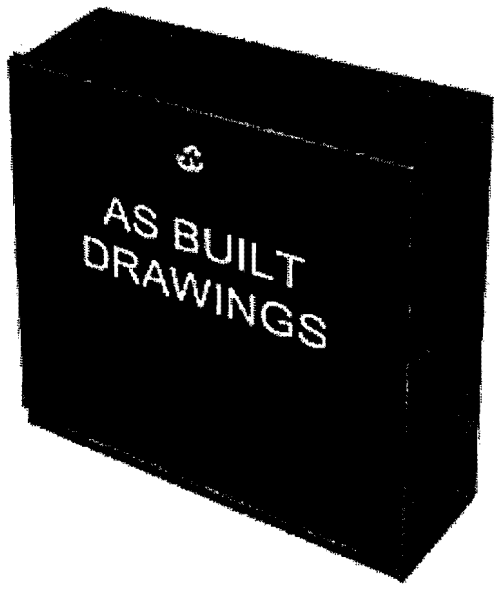
Simplex

Tyco Safety Products Westminster • Westminster, MA • 01441-0001 • USA
www.tycosafetyproducts-usa-wm.com

S4906-0001-4 9/2009

NO EXCUSES!

DBX



As Built Drawings Cabinet

The DBX "AS BUILT DRAWINGS" Cabinet offers the convenience of having building layouts and alarm documents readily accessible for fire departments and other authorized personnel.

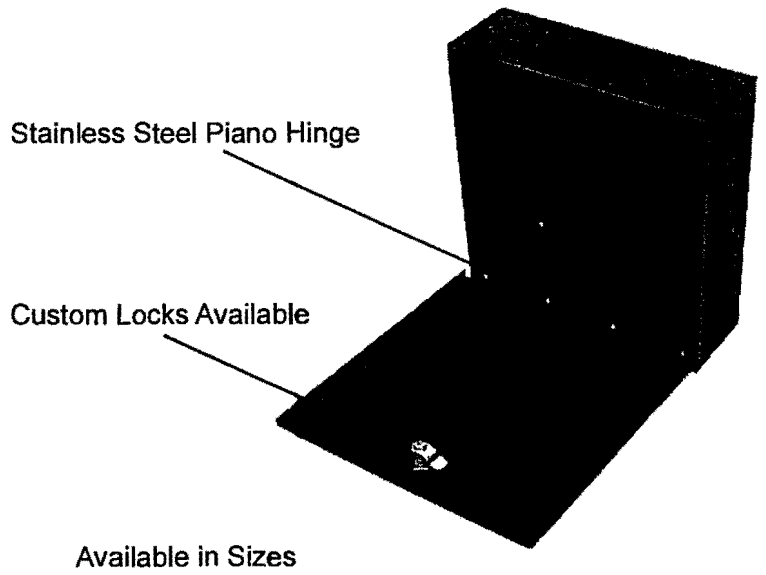
This surface mount cabinet is fabricated from 16 gauge steel with a durable, baked on, red textured powder coat finish, white 1" high lettering and features a stainless steel piano hinge and a high security CAT 30 keyed door lock.

Standard Features:

- 16 gauge steel construction
- Durable red textured finish
- White 1" indelible lettering "AS BUILT DRAWINGS"
- Stainless steel piano hinge with CAT 30 keyed door lock
- Surface mount box
- Wall mounting holes

Options:

- Custom finish
- Custom legend
- Custom lock
- Flush Flange



Available in Sizes
AA, A & D

NFPA

Made In U.S.A.

ISO 9001 REGISTERED COMPANY

ADA

DBX
Space Age Electronics, Inc.
www.1sae.com
800.486.1723 Toll Free
508.485.0966 Local
508.485.4740 Fax

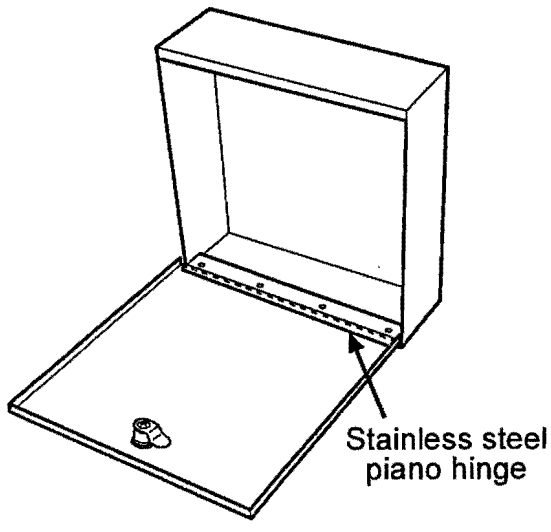
No Excuses, Just Solutions!

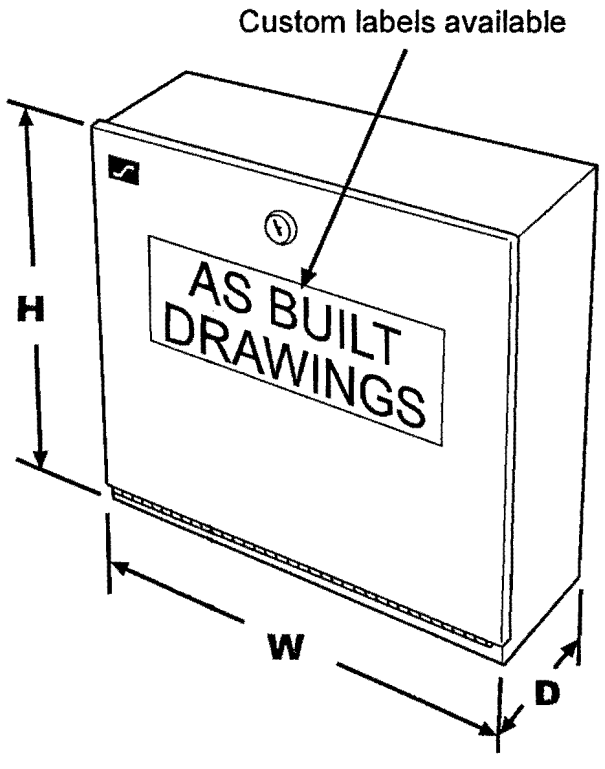
SPACE AGE ELECTRONICS, INC.

Specifications:

The DBX As Built Drawings Cabinet is constructed of 16 gauge (.062 thk.) cold rolled steel and finished with a durable red textured, heat-resistant baked-on enamel finish. The front cover includes a durable label displaying "AS BUILT DRAWINGS" in 1" white indelible lettering, applied to the cover relative to the orientation of the installed back box. The front cover features a high security CAT 30 keyed door lock. Custom finish, legend and lock available. Back box universal surface mount design and wall mounting holes.

Size	Dimensions of Cabinet		
	W	**H**	**D**
AA	12 1/4"	14 1/4"	4"
A	26 1/4"	14 1/4"	4"
D	26 1/4"	23 5/8"	4"





Ordering Information:

Part #	Description
SSU00674	DBXAA As Built Drawings Cabinet, Red
SSU00677	DBXA As Built Drawings Cabinet, Red
SSU00678	DBXD As Built Drawings Cabinet, Red
SSU00680	DBXA Semi Flush Flange, Red
SSU00681	DBXD Semi Flush Flange, Red

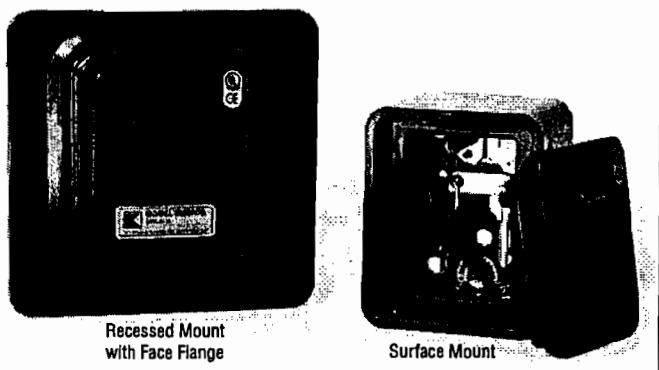
BOX
Space Age Electronics, Inc.
www.1sae.com
800.486.1723 Toll Free
508.485.0966 Local
508.485.4740 Fax

No Excuses, Just Solutions!

KNOX
Serving Fire Departments Since 1975

Knox-Box® 3200 Series
LIFT-OFF DOOR MODEL

High Security Industrial/Government Key Box



Recessed Mount with Face Flange

Surface Mount

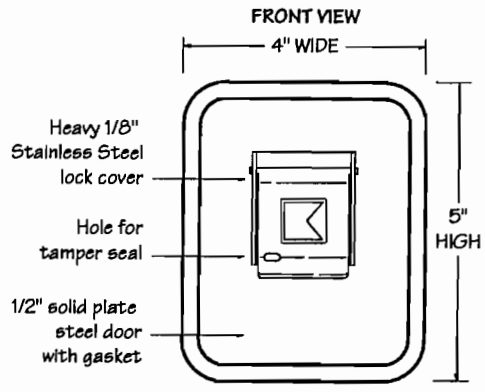
The number one high-security KNOX-BOX® is used for most commercial applications including businesses, schools, government and public buildings, community associations and apartment complexes. The 3200 Series KNOX-BOX with lift-off door holds keys, access cards and other small items necessary for emergency access.

Features and Benefits

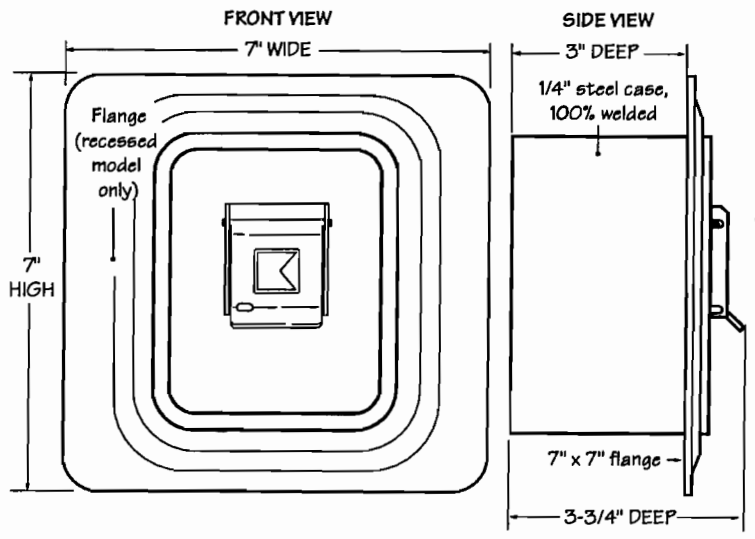
- Holds up to 10 keys and access cards in interior compartment
- Ensures high security. Box and lock are UL® Listed
- Includes a Knox-Coat® proprietary finishing process that protects Knox products up to four times better than standard powder coat
- Resists moist conditions with a weather resistant door gasket
- Colors: Black, Dark Bronze or Aluminum
  Weight: Surface mount - 8 lbs.
  Recessed mount - 9 lbs.

Options

- Alarm tamper switches (UL Listed)
- Recessed Mounting Kit (RMK) for recessed models only
- Inside switch for use on electrical doors, gates and other electrical equipment



3200 Surface Mount



3200 Recessed Mount

Ordering Specifications

To insure procurement and delivery of the 3200 Series KNOX-BOX, it is suggested that the following specification paragraph be used:

KNOX-BOX surface/recessed mount with lift-off door, with/without UL Listed tamper switches. 1/4" plate steel housing, 1/2" thick steel door with interior gasket seal. Box and lock UL Listed. Lock has 1/8" thick stainless steel dust cover with tamper seal mounting capability.

Exterior Dimensions:	Surface mount body - 5"H x 4"W x 3-3/4"D Recessed mount flange- 7"H x 7"W
Lock:	UL Listed. Double-action rotating tumblers and hardened steel pins accessed by a biased cut key.
Finish:	Knox-Coat® proprietary finishing process
Colors:	Black, Dark Bronze or Aluminum
P/N:	3200 Series KNOX-BOX (mfr's cat. ID)
Mfr's Name:	**KNOX COMPANY**

KNOX COMPANY • 1601 W. Deer Valley Road, Phoenix, AZ 85027 • (800) 552-5669 • (623) 687-2300 • Fax (623) 687-2299 • Web: www.knoxbox.com • E-mail: info@knoxbox.com

Simplex

TrueAlarm® Analog Sensing

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

Addressable Duct Sensor Housings with TrueAlarm Photoelectric Sensor; Available with Multiple Relay Control

Features

Compact air duct sensor housing with clear cover to monitor for the presence of smoke**

Includes factory installed TrueAlarm photoelectric smoke sensor and features:

- Individual sensor information processed by the host control panel to determine sensor status
- Digital transmission of analog sensor values via IDNet™ or MAPNET II®, 2-wire communications†
- Programmable sensitivity, consistent accuracy, environmental compensation, status testing, and monitoring of sensor dirt accumulation

Model 4098-9755:

- Basic duct sensor housing (no relay output) powered by IDNet/MAPNET II communications

Model 4098-9756:

- Duct sensor housing with supervised output for multiple remote relays; requires separate 24 VDC; includes one relay
- Relay output is under panel control
- At the panel, relay output can be activated manually or in response to a separate alarm or other input

General features:

- UL listed to Standard 268A
- Clear cover allows visual inspection
- Test ports provide functional smoke testing access with cover in place
- Mounts to rectangular ducts or round ducts; minimum size is 8" (203 mm) square or 18" (457 mm) diameter
- Magnetic test feature for alarm initiation at housing
- Optional weatherproof enclosure is available separately (refer to data sheet S4098-0032)

Diagnostic LEDs (on interface board):

- Red Alarm/Trouble LED for sensor status and communications polling display
- Yellow LED for open or shorted trouble indication of supervised relay control (4098-9756 only)

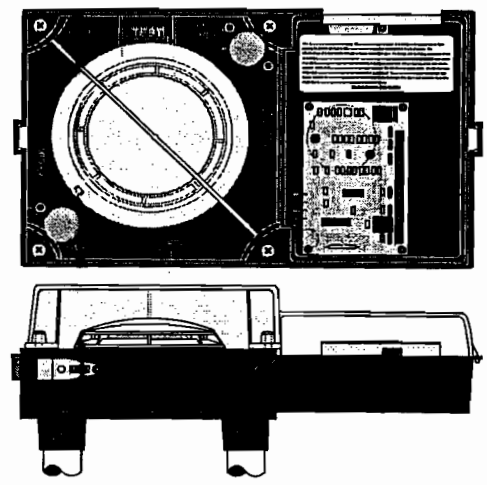
Sampling tubes (ordered separately):

- Available in multiple lengths to match duct size
- Installed and serviced with housing in place

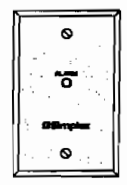
Remote module options (ordered separately):

- Remote red status/alarm LED (2098-9808)
- Remote test station with LED (2098-9806)
- 4098-9843 remote relays (refer to page 2 for details)

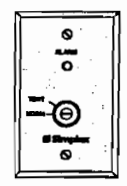
* These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 3240-0026.241 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, 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.



Duct Sensor Housing, Front and Bottom View



2098-9808



2098-9806

Remote Status/Alarm Indicator and Test Station

Introduction

Operation. Simplex® compact air duct smoke sensor housings provide TrueAlarm operation for the detection of smoke in air conditioning or ventilating ducts. Sampling tubes are installed into the duct allowing air to be directed to the smoke sensor mounted in the housing.

TrueAlarm Sensor Operation

Digital Communication of Analog Sensing. Analog information from the sensor is digitally communicated to the control panel where it is analyzed. Sensor input is stored and tracked as an average value with an alarm or abnormal condition being determined by comparing the sensor's present value against its average.

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

** Please note that smoke detection in air ducts is intended to provide notification of the presence of smoke *in the duct*. It is not intended to, and will not, replace smoke detection requirements for open areas or other non-duct applications.

† TrueAlarm sensors and IDNet and MAPNET II communications are protected by one or more of the following U.S. Patents: 5,155,468; 5,173,683; 5,543,777; 5,400,014; 5,543,777; 5,710,541; D383,407; D388,352; D392,573; 4,796,025.

TrueAlarm Sensor Operation *(Continued)*

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

Sensor Status LED. Each sensor housing's red status LED (located on the electrical interface board) pulses to indicate communications with the panel. If the control panel determines that a sensor is in alarm, or that it is dirty or has some other type of trouble, the details are annunciated at the control panel and that sensor housing's status 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 any alarmed sensors. (Remote Status/Alarm LEDs track the operation of the sensor housing LED.)

Photoelectric Sensing

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.

Photoelectric Sensing *(Continued)*

Typically duct sensor applications require less sensitive settings (such as 2.5% per foot obscuration) due to the ducts being a relative dirty environment. However, the standard seven levels of TrueAlarm sensor sensitivity are available for each individual sensor, ranging from 0.2% to 3.7% per foot of smoke obscuration. Sensitivity is selected and monitored at the fire alarm control panel.

Fire Alarm Control Panel Features

- Individual smoke sensitivity selection
- Sensitivity monitoring that satisfies NFPA 72 sensitivity testing requirements
- Peak value logging allows accurate analysis for sensitivity selection
- Automatic, once per minute individual sensor calibration check verifies sensor integrity
- Automatic environmental compensation
- Smoke sensitivity is displayed in percent per foot
- Ability to display and print detailed sensor information in plain English language
- Relays of model 4098-9756 are under panel control for ON, OFF, or override

Duct Sensor Selection Chart

Duct Smoke Sensor Housing with Photoelectric Sensor*

Model	Description	Compatibility
4098-9755	Basic Duct Sensor Housing; operating power is supplied by either IDNet or MAPNET II communications (no relay output)	Simplex fire alarm control panel models 4008, 4010, 4100U, and legacy products 4020, 4100/4100+, and 4120. Also 2120 CDT if configured for MAPNET II, TrueAlarm operation
4098-9756	Duct Sensor Housing with supervised multiple relay output, requires separate 24 VDC fire alarm power and 4081-9008 end-of-line resistor harness; includes one 4098-9843 relay	Same as above except relay operation is not compatible with 2120 CDT; Relay output is for up to 15 total 4098-9843 Relays (additional relays are ordered separately)

Remote LED Indicator and Test Station, Select One if Required

Model	Description	Compatibility	Mounting
2098-9808	Red LED status indicator on single-gang stainless steel plate	4098-9755 4098-9756	Use single gang box, 3" H x 2" W x 2" D (76 mm x 51 mm x 51 mm)
2098-9806	Test Station with keyswitch and red LED status indicator, on single-gang stainless steel plate; (turning switch to "TEST" initiates alarm for system testing)		

Epoxy Encapsulated Remote Relay and End-of-Line Resistor

Model	Description	Compatibility	Location
4098-9843	Relay; single Form C (7 A @ 120 VAC); refer to pages 3 and 4 for additional relay information; one included with 4098-9756; wiring is 18 AWG (0.82 mm^2) color coded wire leads	4098-9756 only; connect up to 15	Locate relays within 3 ft (1 m) of device being controlled per NFPA 72
4081-9008	End-of-Line Resistor Harness; 10 kΩ, 1/2 W; (ref. 733-894); required to supervise remote relay coil connection	4098-9756	At last relay location

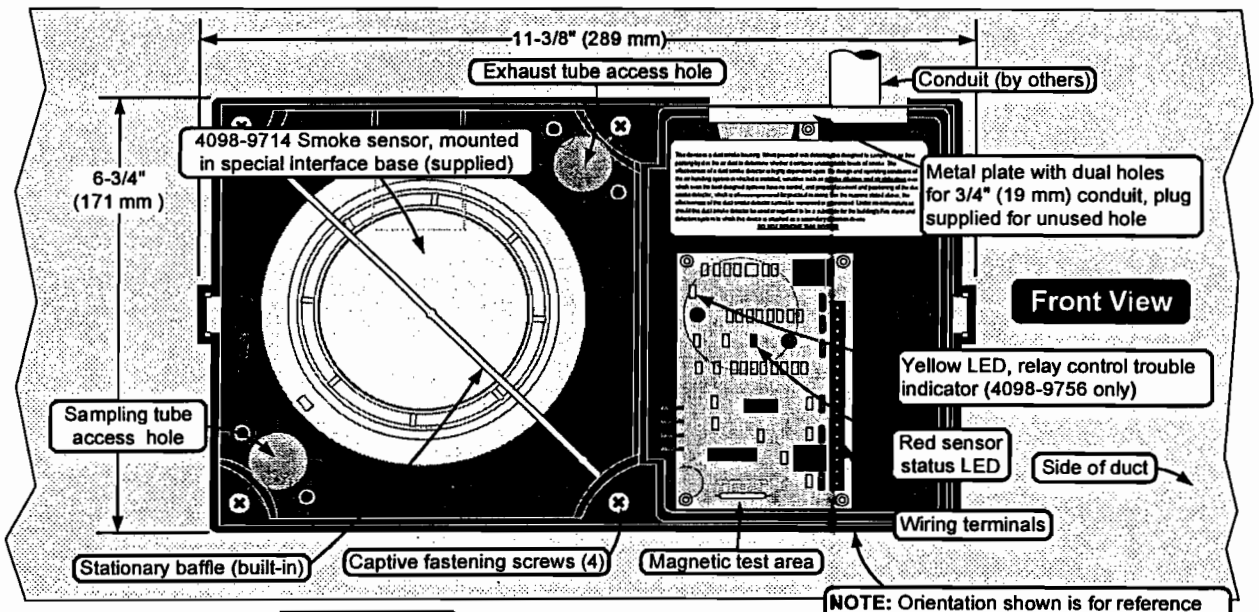
* Each duct housing includes an internally mounted model 4098-9714 TrueAlarm photoelectric sensor and an exhaust tube. A correctly sized sampling tube (ordered per application) is required, refer to chart below.

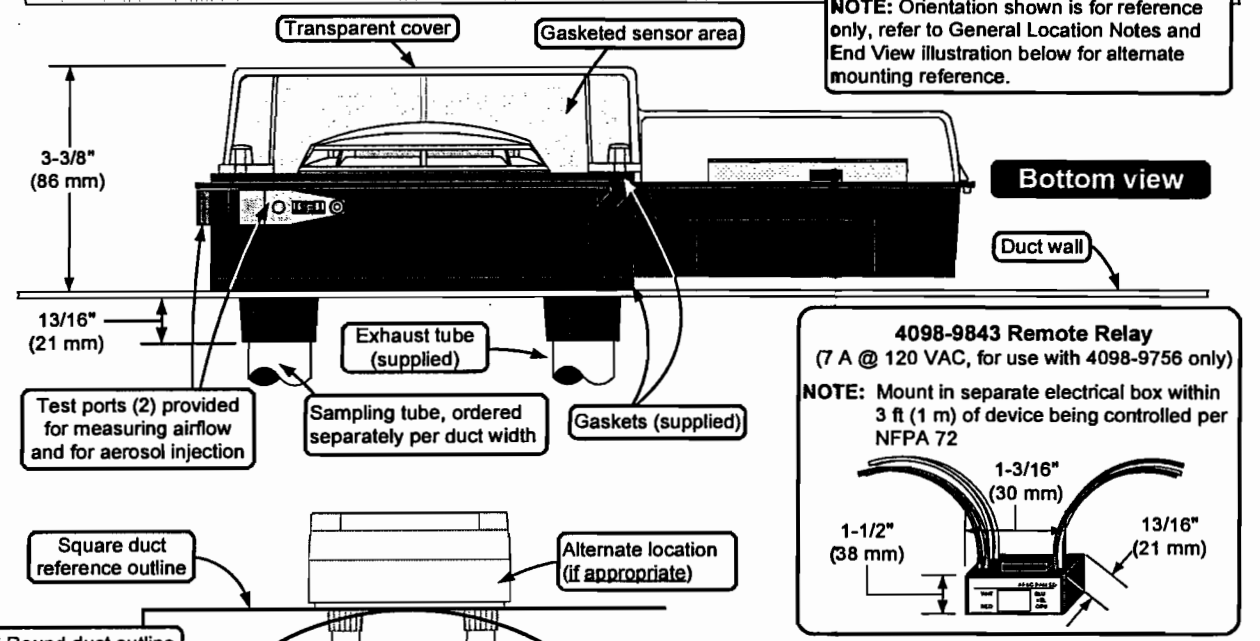
Sampling Tube Selection Chart, Ordered Separately Per Duct Width, Select One

Overall Duct Width	Tube Required	Suggested Cut Length
12" (305 mm)	**2098-9796**	1/2" (12.7 mm) longer than duct width
13" to 23" (330 mm to 584 mm)	**2098-9804**	1/2" (12.7 mm) longer than duct width
24" to 46" (610 mm to 1168 mm)	**2098-9797**	2" (51 mm) longer than duct width
46" to 71" (1168 mm to 1803 mm)	**2098-9798**	2" (51 mm) longer than duct width
71" to 95" (1803 mm to 2413 mm)	**2098-9799**	2" (51 mm) longer than duct width

Duct Sensor Housing Detail Reference

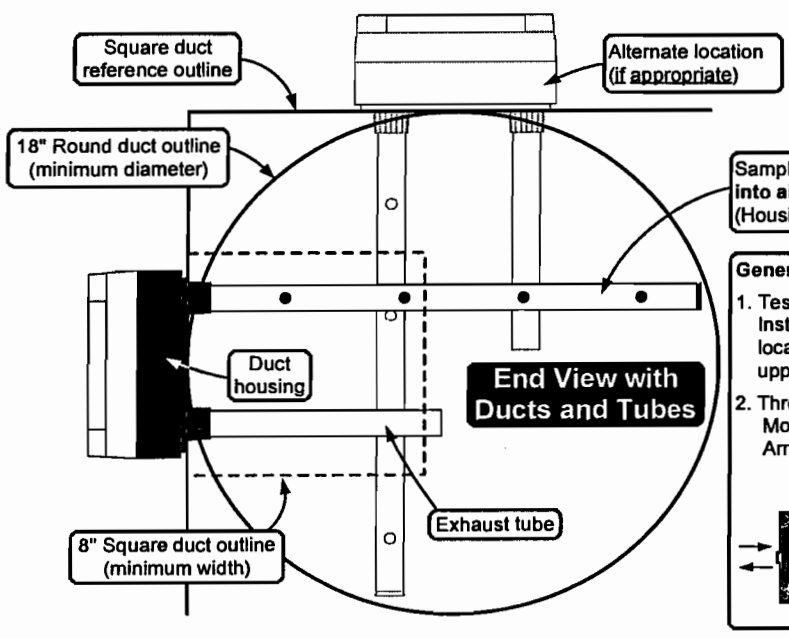
NOTE: Refer to Installation Instructions 574-776 for additional installation detail and maintenance information.





4098-9843 Remote Relay
(7 A @ 120 VAC, for use with 4098-9756 only)

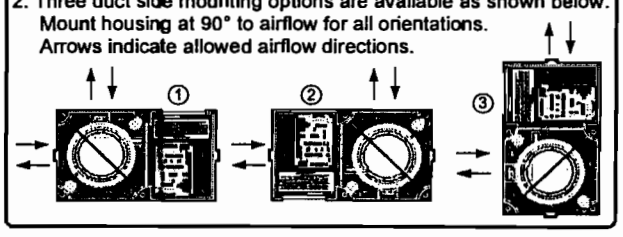
NOTE: Mount in separate electrical box within 3 ft (1 m) of device being controlled per NFPA 72



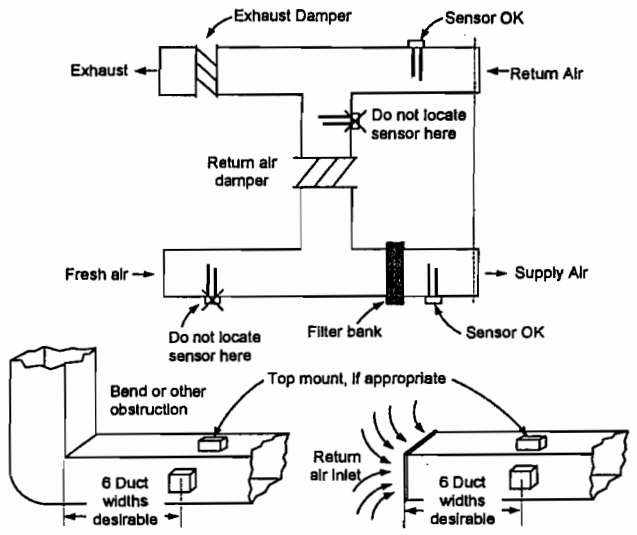
Sampling tube, keyed for proper hole alignment **with holes facing into airflow** (template is provided for proper tube installation). (Housing is shown as position 2 per note 2 below.)

General Location Notes:

1. Testing performed under the auspices of the Fire Detection Institute (FDI) recommended when sampling tubes are not located vertically, that they be positioned horizontally in the upper half of the duct to account for possible stratification.
2. Three duct side mounting options are available as shown below. Mount housing at 90° to airflow for all orientations. Arrows indicate allowed airflow directions.



Duct Sensor Location Reference



Additional Information. Refer to NFPA 90A, *Standard for the Installation of Air Conditioning and Ventilating Systems*; NFPA 72®, the *National Fire Alarm Code*®; and the *NEMA Guide for Proper Use of Smoke Detectors in Duct Applications*, and Installation Instructions 574-776.

Duct Sensor Location Considerations:

1. Proper duct smoke detection location must ensure adequate airflow within the duct housing.
2. Duct air velocity rating is 300 to 4000 ft/min (91 to 1220 m/min). Pressure differential between intake and exhaust tubes is required to be between 0.015 to 1.55 inches of water (0.381 to 39.37 mm).
3. To avoid air turbulence, a location of six duct widths downstream from bends or inlets is desirable. Ensure accessibility for test and service.
4. Proper Locations: downstream side of filters to detect fires in the filters; in return ducts, ahead of mixing areas; upstream of air humidifier and cooling coil.
5. Other locations and orientations may be required for proper duct smoke detection depending on duct access, system design, and duct airflow testing. Contact your local Simplex product supplier for assistance.

Locations to Avoid:

1. Where dampers closed for comfort control would interfere with airflow.
2. Next to outside air inlets (unless the intent is to monitor smoke entry from that area).
3. In return air damper branch ducts and mixing areas where airflow may be restricted.

Specifications

General Mechanical and Environmental	
Air Velocity Range (linear ft/min)	300 to 4000 ft/min (91 to 1220 m/min)
Sensor Sensitivity Range	0.2% to 3.7% per foot of obscuration, selectable at host control panel
UL Listed Temperature Range	32° F to 100° F (0° C to 38° C)
Operating Temperature Range	32° F to 122° F (0° C to 50° C)
Storage Temperature Range	0° F to 140° F (-18° C to 60° C)
Humidity Range	10% to 95% RH, non-condensing
Wiring Connections	Terminal blocks, 18 to 12 AWG (0.82 mm^2 to 3.31 mm^2)
Housing Color	Black base with clear cover
Remote Status/Alarm LED and Test Station with Remote Status/Alarm LED	
Remote Alarm LED Current	1.2 mA, no impact to 24 VDC alarm current (2098-9808 or 2098-9806)
Test Station Keyswitch Current	3.3 mA, no impact to 24 VDC alarm current (2098-9806)
Remote Alarm LED and Test Station Distance	250 ft (76 m) maximum
Addressable Operation	
Data Communications	IDNet or MAPNET II communications, auto-select, one address per housing; provides operating power to model 4098-9755
Model 4098-9756 with Supervised Multiple Relay Control, Requires Separate Fused 24 VDC from Fire Alarm Power Supply	
Input Voltage	18-32 VDC (24 VDC nominal)
Standby Current	3 mA @ 24 VDC
Alarm Current (one relay activated)	15 mA @ 24 VDC; add 15 mA for each additional remote 4098-9843 relay
Supervised Remote Relay Control Output	For use with 4098-9843 relay only, quantity of 15 maximum; distance of 500 ft (152 m) maximum; requires 4081-9008 (ref. 733-894) 10 kΩ, 1/2 W end-of-line resistor
4098-9843 Relay Output Ratings, Single Form C, use with Model 4098-9756 Only	
Coil Current	15 mA @ 24 VDC, up to 15 maximum per relay control output
Relay Contacts	7 A at 0.35 PF @ 28 VDC & 120 VAC; 250 µA @ 5 VDC
Location Distance	500 ft (152 m) maximum to relay coils; locate relays within 3 ft (1 m) of device being controlled per NFPA 72

Simplex

Tyco Safety Products Westminster • Westminster, MA • 01441-0001 • USA
www.tycosafetyproducts-usa-wm.com

S4098-0030-6 1/2009

VETERANS ADMINISTRATION MEDICAL CLINIC
FIRE ALARM SYSTEM

PROJECT

VETERANS ADMINISTRATION MEDICAL CLINIC
FORE STREET
PORTLAND, MAINE 04101

ELECTRICAL

B H MILLIKEN
175 ANDERSON STREET
PORTLAND, MAINE 04101

DRAWING INDEX	
SHEET	DESCRIPTION
FA-001	COVER SHEET
FA-002	GENERAL INFORMATION
FA-201	RISER DIAGRAM
FA-801	CHARTS AND CALCULATIONS
FA-701	DEVICE WIRING DETAILS
FA-702	DEVICE WIRING DETAILS
FA-703	DEVICE WIRING DETAILS

SimplexGrinnell BE SAFE.

A Tyco International Company

20 THOMAS DR
WESTBROOK, ME 04092

SALES: 207-842-6440
SERVICE: 207-842-6440
FAX: 207-842-6439

NO.	DATE	REVISION DESCRIPTION	CHKD BY

FIRE ALARM SYSTEM
COVER SHEET
VETERANS ADMINISTRATION MEDICAL CLINIC
FORE STREET
PORTLAND, MAINE

DRAWN BY: LAK	DATE: 11-22-10
DESIGNED BY:	DATE:
APPROVED BY: P. DOUGHTY	DATE: 11-22-10
PROJECT NUMBER: 147-418784	
SHEET TITLE: FIRE ALARM SYSTEM COVER SHEET	
SHEET NUMBER: FA-001 FA-001.DWG	

GENERAL NOTES

1. THESE DRAWINGS DEPICT GENERAL LOCATIONS OF LIFE SAFETY EQUIPMENT & FIELD DEVICES. EXACT ROUTING OF CONDUITS TO BE DETERMINED IN THE FIELD BY THE INSTALLING CONTRACTOR TO SUIT CONDITIONS. ALL CHANGES SHALL BE CLEARLY INDICATED ON THE RECORD DRAWINGS.
2. SHOULD ANY CONDITIONS EXIST THAT DIFFER FROM WHAT IS INDICATED ON THESE DRAWINGS WHICH CAUSE MAJOR DEVIATIONS IN THE WORK SHOWN, THE CONTRACTOR SHALL CONTACT SIMPLEXGRINNELL IN A TIMELY MANNER SO AS NOT TO IMPAIR THE CONSTRUCTION SCHEDULE.
3. CONTRACTOR IS RESPONSIBLE FOR MAKING AND OBTAINING APPROVAL FOR ALL NECESSARY ADJUSTMENTS IN CIRCUITING AS REQUIRED TO ACCOMMODATE THE RELOCATION OF EQUIPMENT AND/OR DEVICES WHICH ARE AFFECTED BY ANY AUTHORIZED CHANGE. ALL CHANGES SHALL BE CLEARLY INDICATED ON THE RECORD DRAWINGS.
4. A STAMPED SET OF APPROVED FIRE ALARM DRAWINGS SHALL BE AT THE JOB SITE AND SHALL BE USED FOR INSTALLATION.
5. THE POWER CIRCUIT TO THE FACP AND TO THE FIRE ALARM POWER SUPPLIES SHALL BE ON A DEDICATED 120V, 20A BRANCH CIRCUIT BREAKER, AND SHALL HAVE A RED MARKING, LOCK-ON PROVISION AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL." THE LOCATION OF THE CIRCUIT DISCONNECT MEANS (CIRCUIT BREAKER) SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT.
6. UPDATE THE AS-BUILT DRAWING SET DAILY WITH JOB PROGRESS. RETURN THE AS-BUILT DRAWING SET TO SIMPLEXGRINNELL NO LATER THAN 7 DAYS AFTER FINAL TEST.
7. THE CONTRACTOR WILL MAINTAIN ALL AREAS OF THE BUILDING IN A NEAT AND WORKMAN LIKE MANNER.
8. DO NOT APPLY POWER EXCEPT IN THE PRESENCE OF A FACTORY TRAINED SIMPLEXGRINNELL TECHNICAL REPRESENTATIVE.
9. ANY SMOKE DETECTOR HEAD INSTALLED BEFORE THE BUILDING IS CLEANED AND ACCEPTED SHALL BE COVERED TO PROTECT FROM DUST. ANY FALSE ALARMS DUE TO DIRT CONTAMINATED HEADS SHALL BE THE RESPONSIBILITY OF THE FIRE ALARM INSTALLER.
10. THE FIRE ALARM INSTALLER WILL MAINTAIN THE FIRE RESISTANCE INTEGRITY OF ALL WALL, CEILING, AND ROOF ASSEMBLIES ANY TIME THAT WORK IS NOT ACTIVELY BEING PERFORMED.
11. INSTALLATION OF DEVICES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. POWER LIMITED AND NON-POWER LIMITED FIELD WIRING MUST BE INSTALLED WITHIN THE FACP ENCLOSURE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NEC.
12. ALL WIRING SHALL BE INSTALLED ACCORDING TO NFPA 70 (NEC).
13. FIRE ALARM CIRCUITS SHALL BE IDENTIFIED IN ACCORDANCE WITH APPROPRIATE SECTION OF NEC 760. MARK ALL FIRE ALARM WIRES IN ACCORDANCE WITH NEC 760 SECTIONS FOR POWER LIMITED AND NON-POWER LIMITED WIRE.
14. FIRE ALARM CABLE INSTALLED IN DUCTS, PLENUM, AND OTHER SPACES USED FOR ENVIRONMENTAL AIR SHALL BE TYPE FPLP.
15. FIRE ALARM CABLE INSTALLED IN THE VERTICAL RUNS AND PENETRATE MORE THAN ONE FLOOR OR CABLES INSTALLED IN VERTICAL RUNS IN SHAFTS SHALL BE TYPE FPLR.
16. FIRE ALARM CABLE INSTALLED IN UNDERGROUND CONDUIT OR OTHER WET LOCATIONS SHALL BE UL LISTED FOR WET LOCATIONS.
17. FIRE ALARM CIRCUITS EXTENDING BEYOND ONE BUILDING AND RUN OUTDOOR SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70 ARTICLES 760, 770, 725 AND 800 WHERE APPLICABLE.
18. ALL WIRING, INCLUDING SHIELDS MUST BE DRY AND FREE OF SHORTS AND GROUNDS.
19. ALL SHIELDED WIRE MUST HAVE SHIELD CONTINUITY AT FULL LENGTH OF THE WIRE.
20. ONLY SYSTEM WIRING CAN BE RUN IN THE SAME CONDUIT.
21. 120VAC IS NOT PERMITTED IN THE SAME CONDUIT WITH LOW VOLTAGE WIRING.
22. MAINTAIN 40 PERCENT CONDUIT FILL RATIO AS PER NEC REQUIREMENTS.
23. EXISTING CONDUITS MAY BE USED BY THE INSTALLATION CONTRACTOR AS DEEMED NECESSARY, HOWEVER, ANY EXISTING CONDUIT WILL BE USED ONLY IF CONDUITS MEET CURRENT STANDARDS AND CODES. SIMPLEXGRINNELL MAKES NO STATEMENTS WRITTEN OR VERBAL AS TO THE CONDITION OF EXISTING CONDUITS.

WIRE SCHEDULE

FIRE ALARM WIRE LIST (POWER LIMITED)

K	REMOTE TEST SWITCH/LED CIRCUIT – (2) 2 CONDUCTOR 18 AWG SOLID		
	NON-PLENUM RATED: FPLR	CONDUIT ONLY: TFFN	PLENUM RATED: FPLP
	PAGE 454703ARE	(2) #18 AWG (PINK/BROWN)	PAGE 454709ARE
	AREA=0.0204 SQ. INCH	(2) #18 AWG (WHITE/ORANGE)	AREA=0.0185 SQ. INCH
		AREA=0.0055 SQ. INCH (EACH)	
M	MAPNET/IDNET CIRCUIT – 1 PAIR 18 AWG TWISTED OVERALL SHIELD		
	NON-PLENUM RATED: FPL	NON-PLENUM RATED: FPLR	PLENUM RATED: FPLP
	PAGE 454722AREN	PAGE 454722ARE	PAGE 454717ARE
	AREA=0.0224 SQ. INCH	AREA=0.0204 SQ. INCH	AREA=0.0218 SQ. INCH
P	MAPNET/IDNET POWER CIRCUIT – 2 CONDUCTOR 14 AWG SOLID		
	NON-PLENUM RATED: FPLR	CONDUIT ONLY: THHN	PLENUM RATED: FPLP
	PAGE 454718ARE	PAGE 454314RR	PAGE 454719ARE
	AREA=0.0380 SQ. INCH	#14 AWG TP (BLACK/RED)	AREA=0.0333 SQ. INCH
		AREA=0.0394 SQ. INCH	
R	RELAY CIRCUIT – 2 CONDUCTOR 14 AWG SOLID		
	NON-PLENUM RATED: FPLR	CONDUIT ONLY: THHN	PLENUM RATED: FPLP
	PAGE 454718ARE	PAGE 454314RR	PAGE 454719ARE
	AREA=0.0380 SQ. INCH	#14 AWG TP (BLACK/RED)	AREA=0.0333 SQ. INCH
		AREA=0.0394 SQ. INCH	
V	VISUAL/SIGNAL CIRCUIT – 2 CONDUCTOR 14 AWG SOLID		
	NON-PLENUM RATED: FPLR	CONDUIT ONLY: THHN	PLENUM RATED: FPLP
	PAGE 454718ARE	(2) #14 AWG (RED/BLACK)	PAGE 454719ARE
	AREA=0.0380 SQ. INCH	AREA=0.0097 SQ. INCH (EACH)	AREA=0.0333 SQ. INCH
	REFER TO SIGNAL CIRCUIT DISTANCE CHART		

CONDUIT SIZE	CONDUCTOR AREA	CONDUIT SIZE	CONDUCTOR AREA
½"	0.12 SQ INCH *	1-¼"	0.80 SQ INCH *
¾"	0.21 SQ INCH *	1-½"	0.82 SQ INCH *
1"	0.34 SQ INCH *	2"	1.34 SQ INCH *

* 40% FILL PER N.E.C.

THE CABLES SPECIFIED HERE ARE FOR REFERENCE OF REQUIRED ELECTRICAL CHARACTERISTICS AS WELL AS CODE REQUIREMENTS. ALTERNATE SUPPLIERS MAY BE SUBSTITUTED PROVIDING EQUIVALENT CHARACTERISTICS ARE MAINTAINED. ITEMS SUCH AS CAPACITANCE BETWEEN CONDUCTORS AND WIRE GAUGE CAN BE CRUCIAL TO THE CIRCUIT DESIGN OF THIS SYSTEM INSTALLATION.

SYSTEM DESCRIPTION / SCOPE OF WORK

OCCUPANCY TYPE: I-2 INSTITUTIONAL GROUP

PROVIDE AND INSTALL A NEW AUTOMATIC AND MANUAL FIRE ALARM SYSTEM AS SHOWN ON DRAWINGS.

ALL WIRING TO BE CLASS B.

AUTOMATIC FIRE ALARM SYSTEM SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX OR UUJS UNDERWRITERS LABORATORY OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 3011. SUPERVISION OF SYSTEM AND LEASED TELEPHONE LINES SHALL BE ARRANGED BY THE OWNER.

FIRE ALARM APPLICABLE STATE CODES & STANDARDS

- NFPA 101, 1997
- NATIONAL ELECTRIC CODE 2002 (NFPA 70).
- ELEVATOR CODE ASME A.17.1, 2000 ADDENDA A17.1A, 2002

NOTE: BUILDING CODES ARE ESTABLISHED BY THE LOCAL JURISDICTIONS. CONTACT THE AUTHORITIES HAVING JURISDICTION DIRECTLY FOR APPLICABLE CODE INFORMATION.

ABBREVIATIONS LEGEND

AC = ABOVE CEILING
C = CEILING MOUNTED
E = EXISTING TO REMAIN
RC = EXISTING TO REMOVE AND COVER
RD = EXISTING DEVICE TO BE RELOCATED
RL = RELOCATED DEVICE
RR = REMOVE EXISTING AND REPLACE W/NEW
WP = WEATHERPROOF
XP = EXPLOSION PROOF

AFF = ABOVE FINISHED FLOOR
AHJ = AUTHORITY HAVING JURISDICTION
ALM = ALARM
ANN = ANNUNCIATOR
BMS = BUILDING MANAGEMENT SYSTEM
CBC = CALIFORNIA BUILDING CODE
CD = (eg. 15CD) CANDELA
CSFM = CALIFORNIA STATE FIRE MARSHALL
DET = DETECTOR
DGP = DATA GATHERING PANEL
EOL = END OF LINE
EPO = EMERGENCY POWER OFF
FACP = FIRE ALARM CONTROL PANEL
FATC = FIRE ALARM TERMINAL CABINET
FBO = FURNISHED BY OTHERS
FCC = FIRE COMMAND CENTER
FAA = FIRE ALARM ANNUNCIATOR
FTR = FIRE ALARM TRANSPONDER
FSD = FIRE SMOKE DAMPER

HT = HEIGHT
HVAC = HEATING, VENTILATION, & AIR CONDITIONING
IMS = INFORMATION MANAGEMENT SYSTEM
MAX = MAXIMUM
MIN = MINIMUM
N/A = NOT APPLICABLE
NAC = NOTIFICATION APPLIANCE CIRCUIT EXTENDER
NDU = NETWORK DISPLAY UNIT
NEC = NATIONAL ELECTRICAL CODE
NFPA = NATIONAL FIRE PROTECTION ASSOCIATION
NIC = NOT IN CONTRACT
NPU = NETWORK PROCESSING UNIT
NTS = NOT TO SCALE
PAP = PRE-ACTION PANEL
SCC = STATUS COMMAND CENTER
SLC = SIGNALING LINE CIRCUIT
SMK = SMOKE
SUPV = SUPERVISORY
TAC = TRUEALERT ADDRESSABLE CONTROLLER
TRBL = TROUBLE
TS = TAMPER SWITCH
TYP = TYPICAL
UON = UNLESS OTHERWISE NOTED
VCC = VOICE COMMAND CENTER
VT = VALVE TAMPER
WF = WATER FLOW
W = (eg. 1/2W) WATT
W/ = WITH
W/O = WITH OUT

DEVICE ADDRESSING LEGEND

ADDRESSABLE CARD (IDNET OR MAPNET) ┐ ┌ DEVICE ADDRESS
M2–1

ADDRESSABLE DEVICES NUMBERING

CIRCUIT DESIGNATOR (V=VISUAL OR A/V, H=AUDIBLE ONLY) ┐ ┌ DEVICE DESIGNATOR
V2–1

VISUAL, AUDIBLE OR A/V DEVICE

SYMBOL KEY

FIRE ALARM SYMBOLS LEGEND

SYMBOL	DESCRIPTION	MODEL#	BACKBOX
FACP	FIRE ALARM CONTROL PANEL W / 25AH BATTERY SET	SIMPLEX 4010-9102 SIMPLEX 2081-9267	SUPPLIED BY SIMPLEXGRINNELL 18" WIDE X 21" HIGH X 5 1/2" DEEP (457mm WIDE X 533mm HIGH X 140mm DEEP)
ASBC	AS-BUILT CABINET	SSU00674	INCLUDED
	MANUAL PULL STATION	SIMPLEX 4099-9003	SINGLE GANG BOX 2 1/2" DEEP
	WALL MOUNT MULTI-CANDELA A/V RED # =CANDELA RATING	SIMPLEX 4906-9127	4" SQUARE BOX 1 1/2" DEEP W/4905-9937 ADAPTER SKIRT WHEN SURFACE MOUNTED
	WALL MOUNT MULTI-CANDELA V/O RED # =CANDELA RATING	SIMPLEX 4906-9101	4" SQUARE BOX 1 1/2" DEEP W/4905-9937 ADAPTER SKIRT WHEN SURFACE MOUNTED
	SMOKE SENSOR / BASE	SIMPLEX 4098-9714 SIMPLEX 4098-9792 BASE	4" OCTAGONAL BOX 1 1/2" DEEP
	DUCT SMOKE SENSOR	SIMPLEX 4098-9756	MOUNT TO DUCTWORK
RTS	REMOTE TEST STATION W/ LED AND KEY SWITCH	SIMPLEX 2098-9806	SINGLE GANG BOX 2 1/2" DEEP
	ENCAPSULATED RELAY	AIR PRODUCTS PAM-SD	SINGLE GANG BOX 2 1/8" DEEP W/COVER
	WATERFLOW SWITCH	SUPPLIED BY OTHERS	INSTALLED BY MECHANICAL CONTRACTOR
	TAMPER SWITCH	SUPPLIED BY OTHERS	INSTALLED BY MECHANICAL CONTRACTOR
KB	KNOX BOX	KNOX BOX 3200 SERIES	INCLUDED

SEQUENCE OF OPERATION

SYSTEM INPUTS	SYSTEM OUTPUTS: ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL INDICATOR	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL INDICATOR	ACTUATE PERSONNEL LOCATION SIGNAL INDICATOR	ACTUATE ALL AUDIBLE EVACUATION SIGNALS	ACTUATE ALL VISIBLE EVACUATION SIGNALS	DISPLAY / PRINT CHANGE OF STATUS	TRANSMIT ALARM SIGNAL TO SUPERVISING STATION	TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	FAN SHUT DOWN	DAMPER SHUT DOWN	REMARKS
	CONTROL UNIT ANNUNCIATION				NOTIFICATION		REQUIRED FIRE SAFETY CONTROL		SUPPLEMENTARY						
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	
1 SMOKE SENSOR/DETECTOR	•	•					•	•	•		•	•																			•	•			1
2 MANUAL PULL STATION	•	•					•	•	•		•	•																							2
3 DUCT SENSOR/DETECTOR			•	•			•				•		•																		•	•			3
4 FIRE ALARM AC POWER FAILURE					•	•					•			•																					4
5 FIRE ALARM SYSTEM LOW BATTERY					•	•					•			•																					5
6 OPEN CIRCUIT					•	•					•			•																					6
7 GROUND FAULT					•	•					•			•																					7
8 NOTIFICATION APPLIANCE CIRCUIT – CLASS A/STYLE Z:																																			8
9 WIRE-TO-WIRE SHORT					•	•					•			•																					9
10																																			10
11																																			11
12																																			12
13																																			13
14																																			14
15																																			15
16																																			16
17																																			17
18																																			18
19																																			19
20																																			20
21																																			21
22																																			22
23																																			23
24																																			24
25																																			25
26																																			26
27																																			27
28																																			28
29																																			29
30																																			30
31																																			31
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	

SimplexGrinnell BE SAFE.
A Tyco International Company
20 THOMAS DR.
WESTBROOK, ME 04092
SALES: 207-842-8440
SERVICE: 207-842-8440
FAX: 207-842-8439

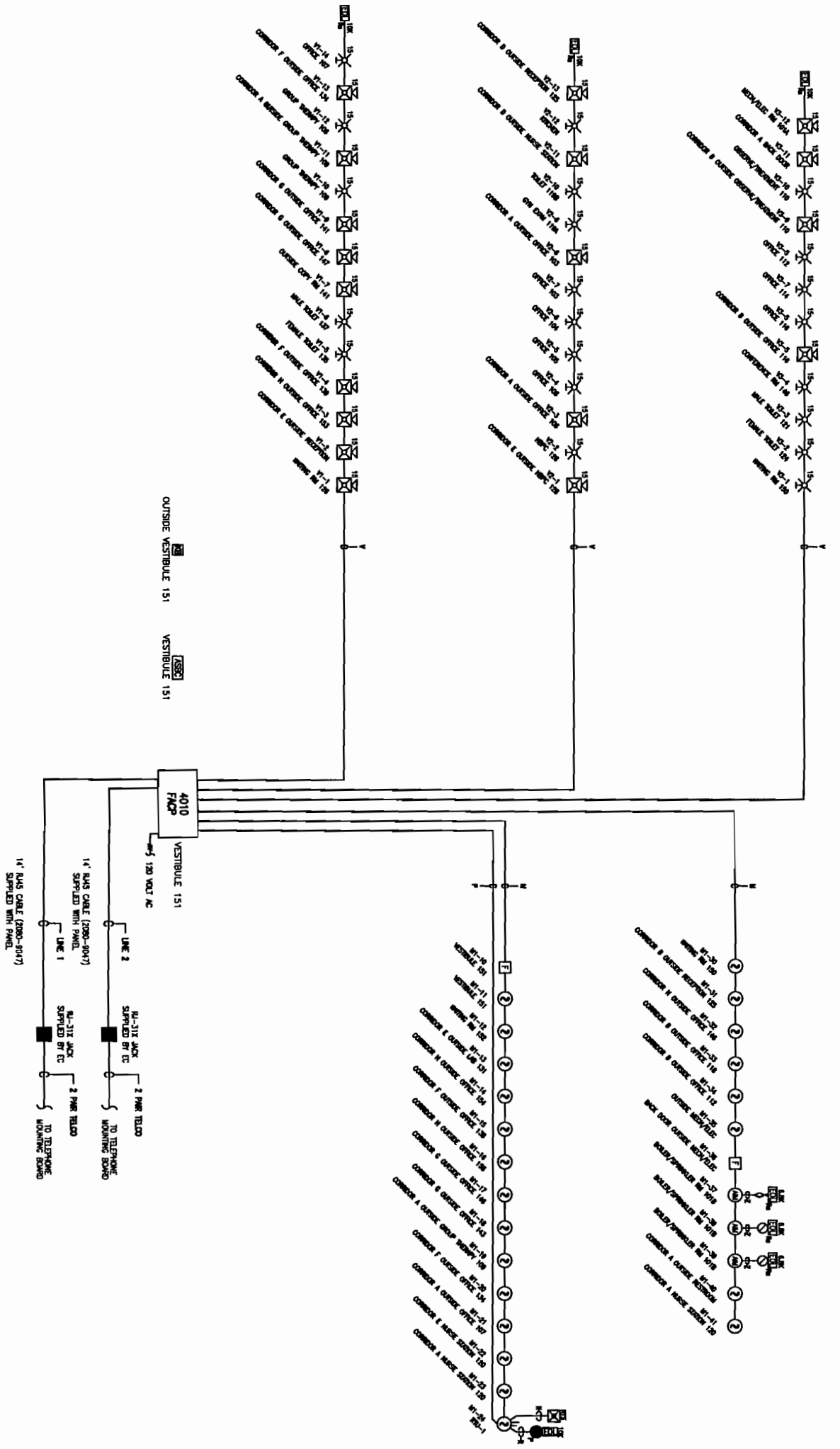
NO	DATE	REVISION DESCRIPTION	CHKD BY

FIRE ALARM SYSTEM
GENERAL INFORMATION

VETERANS ADMINISTRATION MEDICAL CLINIC
FORE STREET
PORTLAND, MAINE

DRAWN BY: LAK	DATE: 11-22-10
DESIGNED BY:	DATE:
APPROVED BY: P. DOUGHTY	DATE: 11-22-10
PROJECT NUMBER: 147-418784	
SHEET TITLE: FIRE ALARM SYSTEM GENERAL INFORMATION	
SHEET NUMBER: FA–002 FA–002.DWG	

GROUND FLOOR



GROUND FLOOR

SHEET NUMBER: FA-201 FA-201.DWG	DESIGNED BY:	DRAWN BY: LAK	FIRE ALARM SYSTEM RISER DIAGRAM	NO.	DATE / REVISION DESCRIPTION / CHKD BY
SHEET TITLE: FIRE ALARM SYSTEM RISER DIAGRAM		DATE: 11-22-10	VETERANS ADMINISTRATION MEDICAL CLINIC		
PROJECT NUMBER: 147-418784	APPROVED BY: P. DOUGHTY		FORE STREET PORTLAND, MAINE		
	DATE: 11-22-10				

SimplexGrinnell BE SAFE.
A Tyco International Company
20 THOMAS DR
WESTBROOK, ME 04092
SALES: 207-842-6440
SERVICE: 207-842-6440
FAX: 207-842-6439

24" x 36"   LAST PRINTED: 11/22/2010 4:24:55 PM LAST SAVED BY: LOKRILL   FILE PATH: P:\2010\147\VA Medical Clinic\CAD\FA-601.dwg

[illegible]

NO.	DATE	REVISION DESCRIPTION	CHKD BY

FIRE ALARM SYSTEM
CHARTS AND CALCULATIONS

VETERANS ADMINISTRATION MEDICAL CLINIC
FORE STREET
PORTLAND, MAINE

DRAWN BY: LAK — DATE: 11-22-10
DESIGNED BY: — DATE:
APPROVED BY: P. DOUGHTY — DATE: 11-22-10
PROJECT NUMBER: 147-418784
SHEET TITLE: FIRE ALARM SYSTEM CHARTS AND CALCULATIONS
SHEET NUMBER: FA-601
FA-601.DWG

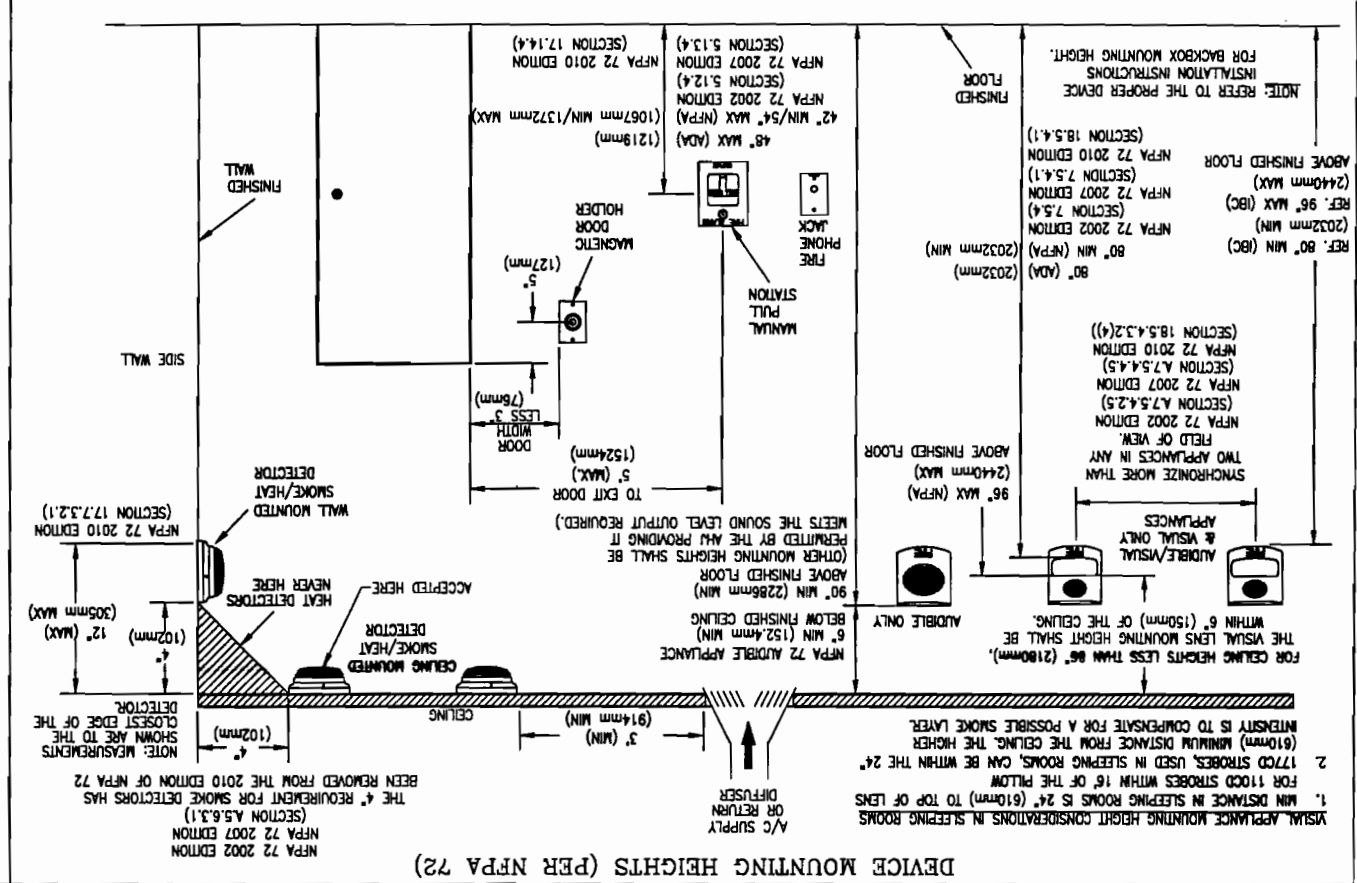
SimplexGrinnell BE SAFE.
A Tyco International Company
20 THOMAS DR
WESTBROOK, ME 04092
SALES: 207-842-6440
SERVICE: 207-842-6440
FAX: 207-842-6439

FIRE ALARM SYSTEM
DEVICE WIRING DETAILS
VETERANS ADMINISTRATION MEDICAL CLINIC

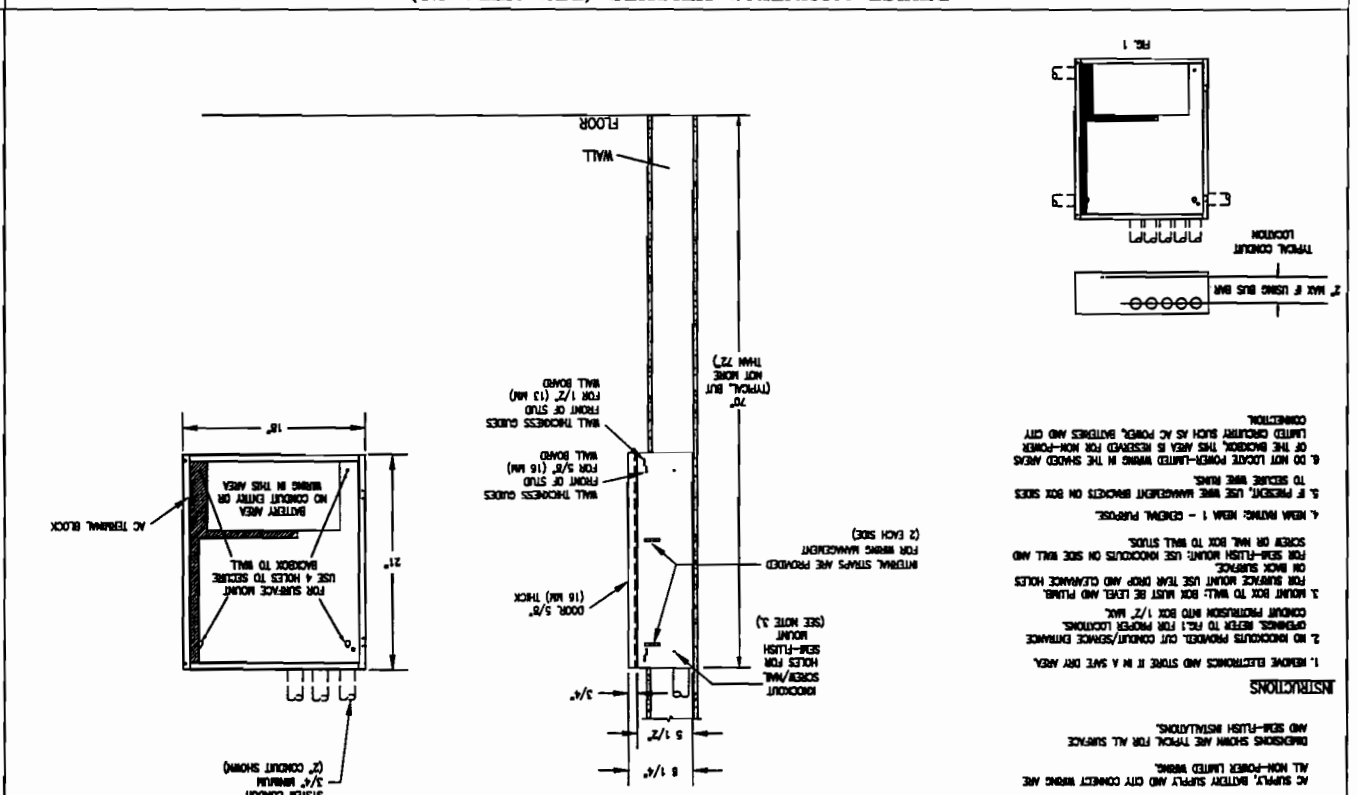
FORE STREET
PORTLAND, MAINE

DRAWN BY: LAK	DATE: 11-22-10
DESIGNED BY:	DATE:
APPROVED BY: P. DOUCETTE	DATE: 11-22-10
PROJECT NUMBER: 147-11B764	
SHEET TITLE: FIRE ALARM SYSTEM DEVICE WIRING DETAILS	
SHEET NUMBER: FA-701	
FA-701.DWG	

DEVICE MOUNTING HEIGHTS (PER NFPA 72)



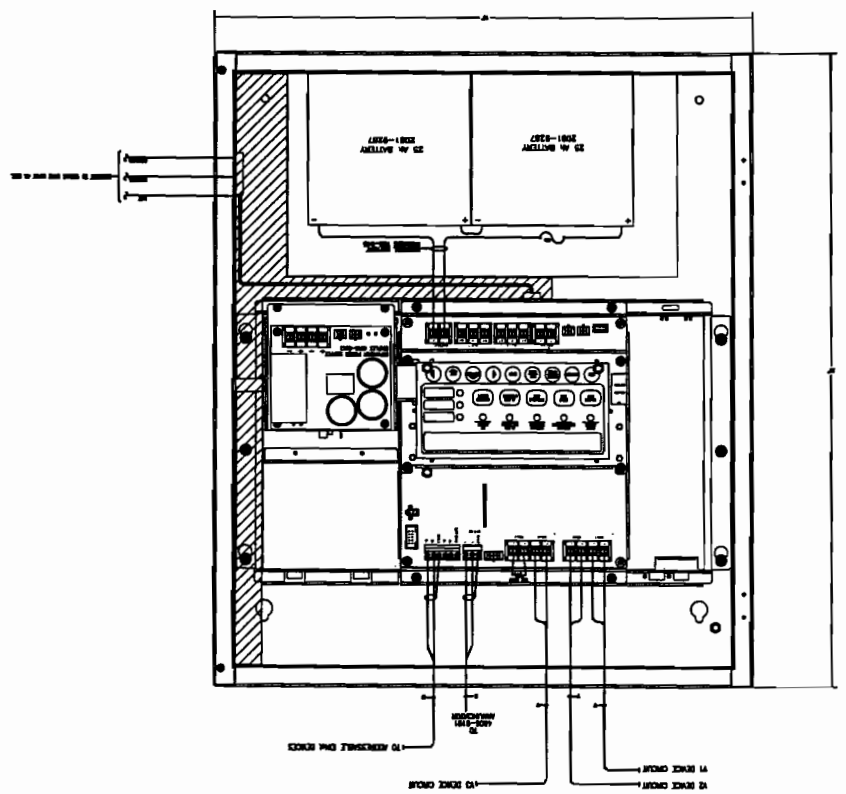
4010 BACKBOX INSTALLATION



END-OF-LINE RESISTOR CODES

MODEL	REFERENCE NUMBER	OHMS	1ST BAND	2ND BAND	3RD BAND	4TH BAND	5TH BAND	WATTS	CIRCUIT TYPE	
4081-9001	733-892	2.2K	RED	RED	RED	GOLD	N/A	1/2	ANNUNCIATOR (4300)	4004, 4010 (TROUBLE)
4081-9002	733-893	3.3K	ORANGE	ORANGE	ORANGE	RED	GOLD	N/A	1	N.O. INITIATING PULL, SMOKE, HEAT, WATERFLOW, TAMPER, ETC. 24 PT. I/O SWITCH SUPV.
4081-9003	733-894	4.7K	YELLOW	VIOLET	RED	GOLD	N/A	1/2	NOTIFICATION (DACT)	4605-7401, 4100 SERIES 2080-9024
									CURRENT LIMITED N.O. INITIATING	4090-9001 IDNET AA (COLR)
4081-9004	733-895	6.8K	BLUE	GREY	RED	GOLD	N/A	1/2	N.O. INITIATING PULL, SMOKE, HEAT, WATERFLOW, TAMPER, ETC.	4004, 4005, 4090-9001 IDNET AA 2190-9173 WAPANEL 2 PT I/O 4-20MA ZAA (TROUBLE)
4081-9005	733-896	1.8K	BROWN	GREY	RED	GOLD	N/A	1/2	CURRENT LIMITED N.O. INITIATING (IN LINE)	4090-9001 IDNET AA
4081-9006	733-897	560 Ω	GREEN	BLUE	BROWN	GOLD	N/A	1	N.C. INITIATING (COLR)	4005*, 4090-9001 IDNET AA 4100, 4100U
4081-9007	733-898	1.2K	BROWN	RED	RED	GOLD	N/A	1	N.C. INITIATING (COLR)	4005
4081-9008	733-899	10K	BROWN	BLACK	ORANGE	GOLD	N/A	1/2	NOTIFICATION	4004, 4005, 4006, 4008, 4009, 4010, 4100, 4100U
4081-9009	733-900	20 Ω	RED	BLACK	BLACK	GOLD	N/A	1	TO MR-101 RELAY COIL	4005 B POINT I/O
									N.C. INITIATING (ACROSS CONTACTS)	4005*, 4090-9001 IDNET AA
4081-9010	733-973	1K	BROWN	BLACK	RED	GOLD	N/A	1	24 PT. I/O (ACROSS CONTACTS)	4605-7401, 4100 SERIES
									CURRENT LIMITED N.O. INITIATING (IN SERIES WITH CONTACT)	4090-9001 IDNET AA
4081-9011	733-974	100 Ω	BROWN	BLACK	BROWN	GOLD	N/A	1/2	ANNUNCIATOR (NZ)	4006, 4008, 4010
4081-9012	733-985	22K	RED	RED	ORANGE	GOLD	N/A	1/2	SPEAKER CIRCUIT	4003
4081-9013	734-086	4.99K	YELLOW	WHITE	WHITE	BROWN	BROWN	1/2		
4081-9014	734-092	2.4K	RED	YELLOW	RED	GOLD	N/A	1/2	N.C. INITIATING (SECURITY MONITORING EOLR)	4090-9001 IDNET AA
4081-9015	734-093	1.5K	BROWN	GREEN	RED	GOLD	N/A	1/2	CURRENT LIMITED N.O. INITIATING (SECURITY MONITORING EOLR)	4090-9001 IDNET AA
4081-9016	734-149	150K	BROWN	GREEN	YELLOW	GOLD	N/A	1/2		
4081-9017	734-171	3.9K	ORANGE	WHITE	RED	GOLD	N/A	1	70WMS CONSTANT SUPV. NACS	4100-1260
4081-9018	734-188	10K	BROWN	BLACK	ORANGE	GOLD	N/A	1	SECURITY MONITORING (EOLR)	4100, 4100U
	738-090	8.2K	GRAY	RED	RED	GOLD	N/A	1/2		
	738-046	5.6K	GREEN	BLUE	RED	GOLD	N/A	1/2	N.O. SECURITY MON. (SERIES)	4100, 4100U
	738-069	12K	BROWN	RED	ORANGE	GOLD	N/A	1/2	N.C. SECURITY MON. (SHUNT)	4100, 4100U

NOTE: REFER TO PANEL/MODULE AND DEVICE INSTALLATION INSTRUCTIONS FOR PROPER TERMINATIONS.
• USE WITH RETROFIT OR HIGH CURRENT MODULE



SimplexGrinnell BE SAFE.
A Tyco International Company
20 THOMAS DR.
WESTBROOK, ME 04092
SALES: 207-842-5440
SERVICE: 207-842-5440
FAX: 207-842-5439

NO.	DATE	REVISION DESCRIPTION	CHKD BY

4099-9003 IDNet DOUBLE ACTION PUSH STATION

PRODUCT INFORMATION

FEATURES:
- UL LISTED
- DOUBLE ACTION (PUSH/PULL), IDNET ADDRESSABLE
- PULL LEVEL PROTRUDES WHEN ALARMED
- TAMPER RESISTANT RESET KEY LOCK
- MOUNTING: SEMI-FLUSH, SURFACE
- OPERATING TEMPERATURE RANGE: 32 – 120° F
- OPERATING HUMIDITY RANGE: 0 – 93% RH
- ADAPTER PLATES 2099-9813 OR 2099-9814 CAN BE USE FOR RETROFIT APPLICATIONS.
- 3" HIGH X 3 3/4" WIDE X 1" DEEP
- SCREW TERMINALS FOR 18 TO 14 AWG WIRE
- ADDRESSED BY MEANS OF AN 8 POSITION DIP SWITCH
- COMPATIBLE WITH IDNet/MAPNET

OPERATION:
ACTIVATION:
4099-9003 DOUBLE ACTION STATION REQUIRES A FIRM DOWNWARD PULL TO ACTIVATE THE ALARM SWITCH. COMPLETING THIS ACTION BREAKS AN INTERNAL PLASTIC BREAK-ROD THAT IS VISIBLE BELOW THE PULL LEVER (USE OF PLASTIC ROD IS OPTIONAL). THE PULL LEVEL LATCHES INTO THE ALARM POSITION AND REMAINS EXTENDED OUT OF THE HOUSING TO PROVIDE A VISIBLE INDICATION.

RESETTING
4099-9003 DOUBLE ACTION STATION REQUIRES A KEY TO RESET THE ACTIVATION LEVER AND DEACTIVATE THE ALARM SWITCH. (IF OPTIONAL PLASTIC BREAK ROD WAS USED IT MUST BE REPLACED)

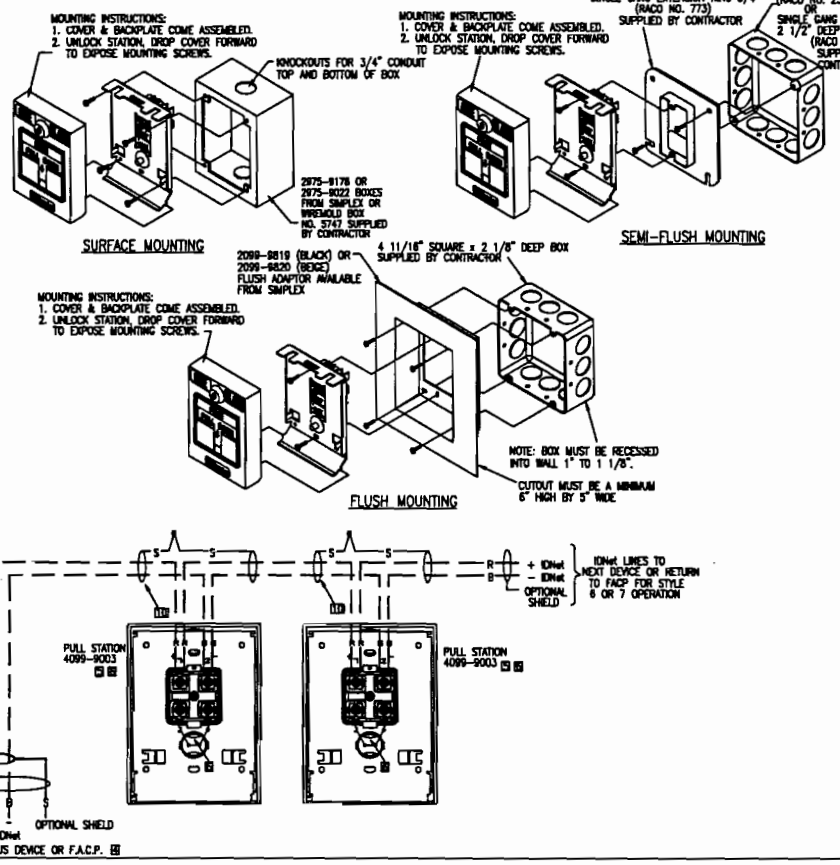
CONSTRUCTION:
STATION HOUSING AND PULL LEVER ARE CONSTRUCTED OF CHIP RESISTANT AND DIRT RESISTANT, HIGH IMPACT LEXAN. HOUSING IS RED WITH RAISED WHITE LETTERING AND PULL LEVER IS WHITE WITH RED RAISED LETTERING.
* LEXAN IS A REGISTERED TRADEMARK OF THE GENERAL ELECTRIC CO.

APPLICATION:
PULL STATIONS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72 AND ADA GUIDE LINES.

INTRODUCTION:
THE 4099-9003 ADDRESSABLE PULL STATION PROVIDES TWO-STATE STATUS INFORMATION (NORMAL AND SHORT) TO THE IDNET COMPATIBLE FIRE ALARM CONTROL PANEL (FACP) VIA THE IDNET CHANNEL. THE IDNET CHANNEL PROVIDES THE COMMUNICATION LINK BETWEEN PULL STATION AND THE FACP AND POWERS THE ENTIRE CIRCUITRY.

WIRING:
1. ALL WIRING TO COMPLY WITH LOCAL CODE.
2. CONDUCTORS MUST TEST FREE OF ALL GROUNDS.
3. MAINTAIN CORRECT POLARITY
4. IDNET LINES ARE TO BE 18 AWG TWISTED SHIELDED PAIR
5. MAXIMUM LINE RUN FROM PANEL TO FARTHEST DEVICE NOT TO EXCEED 2500 FEET.
6. MAXIMUM TOTAL WIRE (INCLUDING ALL T-TAPS) FROM PANEL NOT TO EXCEED 10,000 FEET.
7. MAXIMUM QUANTITY OF DEVICES PER CIRCUIT: 250
8. TERMINALS 1 AND 2 FOR FIELD WIRING. TERMINALS 3 AND 4 ARE FACTORY WIRING.
9. WIRE NUT, SPLICE, OR SOLDER THE SHIELD WIRES.
10. IF SHIELD IS PRESENT, IT SHOULD BE CONNECTED TO THE OUTGOING IDNET SHIELD TO PROVIDE A CONTINUOUS SHIELD OVER THE LENGTH OF THE IDNET CHANNEL. SHIELD SHOULD BE INSULATED FROM THE ELECTRICAL BOX.
11. SEE INSTALLATION INSTRUCTIONS 574-332

WIRE LEGEND: R=RED, B=BLACK, S=SHIELD

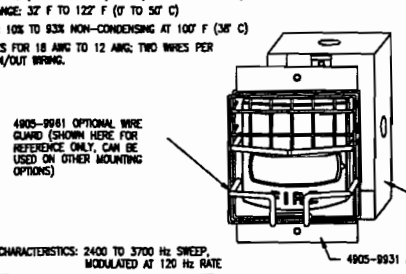


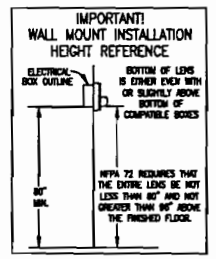
TrueAlert™ NON-ADDRESSABLE MULTI-CANDELA AUDIBLE/VISIBLE NOTIFICATION APPLIANCE (ELECTRONIC HORN W/STROBE)

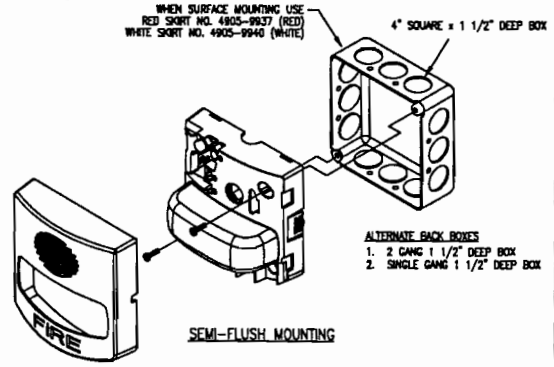
PRODUCT INFORMATION

FEATURES:
- CLASS B (STYLE Y) OPERATION REQUIRES CONNECTION TO A COMPATIBLE SMARTSYNC NAC OR TO SMARTSYNC CONTROL MODULE (SCM) 4905-9938
- CLASS A (STYLE Z) OPERATION WHEN CONNECTED TO THE 4905-9938 SCM OR 4100U SERIES FIRE ALARM CONTROL PANEL NAC'S

SPECIFICATIONS:
- HOUSING DIMENSIONS (INCLUDING LENS) : 5 1/8"H X 5" W X 2 3/4"D
- TEMPERATURE RANGE: 32° F TO 122° F (0° TO 50° C)
- HUMIDITY RANGE: 10% TO 93% NON-CONDENSING AT 100° F (38° C)
- TERMINAL BLOCKS FOR 18 AWG TO 12 AWG; TWO WIRES PER TERMINAL FOR IN/OUT WIRING.







HORN
- SOUND OUTPUT CHARACTERISTICS: 2400 TO 3700 Hz SWEEP, MODULATED AT 120 Hz RATE

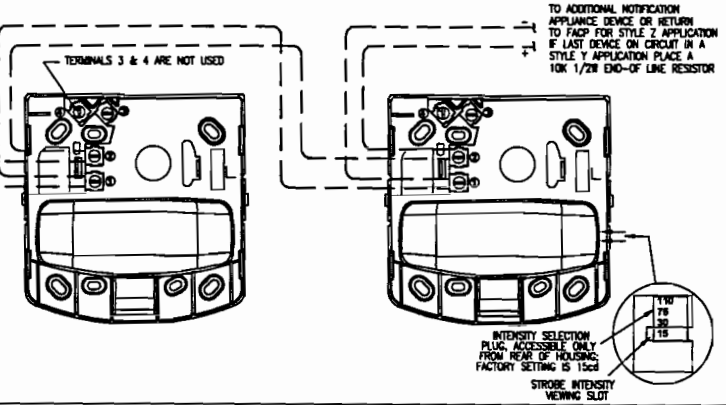
HORN SOUND OUTPUT RATINGS @ 10 FT. (3m)						
VOLTAGE	16 VDC		24 VDC		33 VDC	
SOUND TYPE *	STEADY	CODED	STEADY	CODED	STEADY	CODED
REVERBERATE CHAMBER UL 464 TEST	86 dBA	82 dBA	89 dBA	84 dBA	90 dBA	86 dBA
ANECHOIC CHAMBER	92 dBA	91 dBA	94 dBA	95 dBA	96 dBA	95 dBA

* 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.

STROBE
- RATED VOLTAGE RANGE: UL: REGULATED 24VDC PER UL 1971; ULC: 20VDC TO 30VDC PER ULC S526-M878
- FLASH RATE: 1Hz
- SYNCHRONIZED MODE NAC LOADING: MAXIMUM OF 35 SYNCHRONIZED STROBES PER NAC CIRCUIT.

*CURRENT DRAWS REFLECT STROBE FLASHING AND HORN ON.

MODEL NUMBER	HOUSING COLOR	LETTERING COLOR	STROBE RATING	RMS CURRENT @ 16 VDC	18 VDC	24 VDC
4906-9127	RED	WHITE	15cd	75 mA	67 mA	50 mA
			30cd	116 mA	103 mA	77 mA
			75cd	221 mA	196 mA	147 mA
			110cd	283 mA	253 mA	190 mA
4906-9129	WHITE	RED	15cd	72 mA	67 mA	50 mA
			30cd	118 mA	104 mA	77 mA
			75cd	221 mA	198 mA	147 mA
			110cd	285 mA	253 mA	190 mA



TrueAlert™ NON-ADDRESSABLE MULTI-CANDELA VISIBLE NOTIFICATION APPLIANCE (WALL MOUNT)

PRODUCT INFORMATION

FEATURES:
- UL LISTED TO STANDARD 1971
- ADA COMPATIBLE

SYNCHRONIZATION FLASH RATE MODE FOR USE WITH:
- SEPARATE STROBE SYNCHRONIZATION MODULES THAT ARE AVAILABLE FOR CLASS B OR CLASS A OPERATION
- SEPARATE SMARTSYNC CONTROL MODULES (SCMs) THAT PROVIDE CLASS B OR CLASS A OUTPUT FROM CONVENTIONAL NAC INPUTS

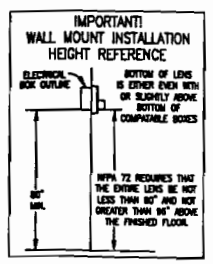
SPECIFICATIONS:
- HOUSING DIMENSIONS: 5-1/8" H X 5" W X 2-3/4" D (130mm X 127mm X 70mm)
- TEMPERATURE RANGE: 32°F TO 122°F (0 TO 50°C)
- HUMIDITY RANGE: 10% TO 93% NON-CONDENSING AT 100°F (38°C)
- TERMINAL BLOCKS FOR 18AWG TO 12AWG; TWO WIRES PER TERMINAL FOR IN/OUT WIRING.

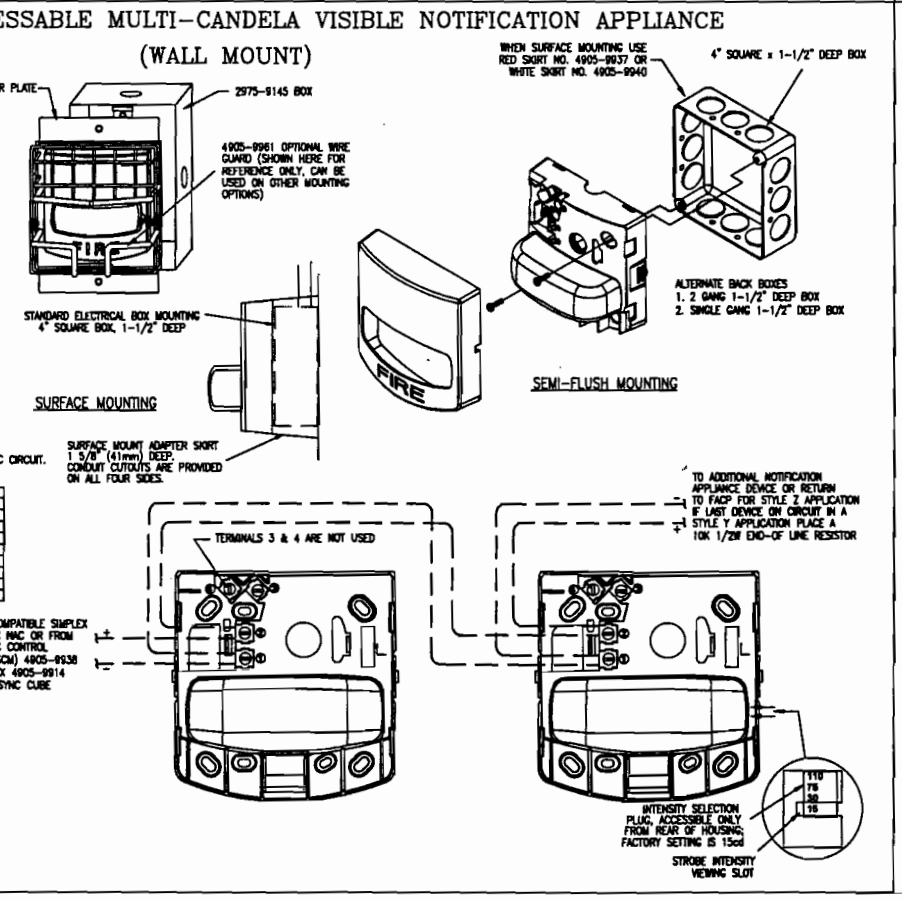
WIRING:
1. NOTIFICATION APPLIANCES ARE RATED PER INDIVIDUAL NAMEPLATE LABEL.
2. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS. DO NOT LOOP WIRES UNDER TERMINALS.
3. ALL NAC WIRING CONNECTIONS ARE SUPERVISED AND POWER-LIMITED.
4. SEE INSTALLATION INSTRUCTIONS (579-548) FOR ADDITIONAL INFORMATION.

STROBE:
- RATED VOLTAGE RANGE: UL LISTED: 16 VDC TO 33 VDC PER UL 1971; ULC LISTED: 20 VDC TO 30 VDC PER ULC S526-M878
- FLASH RATE: 1Hz
- SYNCHRONIZED MODE NAC LOADING: MAXIMUM OF 35 SYNCHRONIZED STROBES PER NAC CIRCUIT.

*CURRENT DRAWS REFLECT STROBE FLASHING

MODEL NUMBER	HOUSING COLOR	LETTERING COLOR	STROBE RATING	RMS CURRENT @ 16 VDC	18 VDC	24 VDC
4906-9101	RED	WHITE	15cd	60 mA	53 mA	40 mA
			30cd	94 mA	84 mA	63 mA
			75cd	186 mA	165 mA	122 mA
			110cd	257 mA	224 mA	168 mA
4906-9103	WHITE	RED	15cd	60 mA	53 mA	40 mA
			30cd	95 mA	84 mA	63 mA
			75cd	186 mA	165 mA	124 mA
			110cd	252 mA	224 mA	168 mA





4098-9792 STANDARD SENSOR BASE

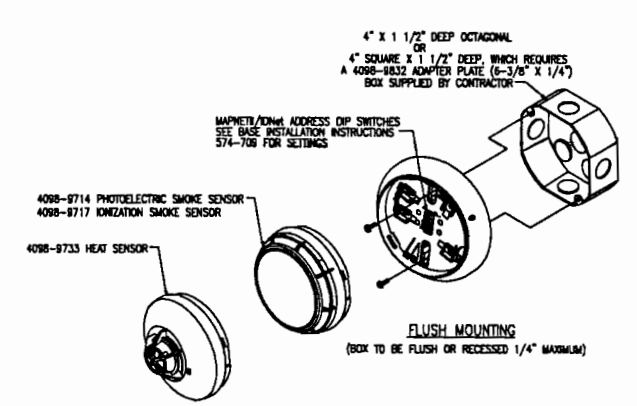
PRODUCT INFORMATION

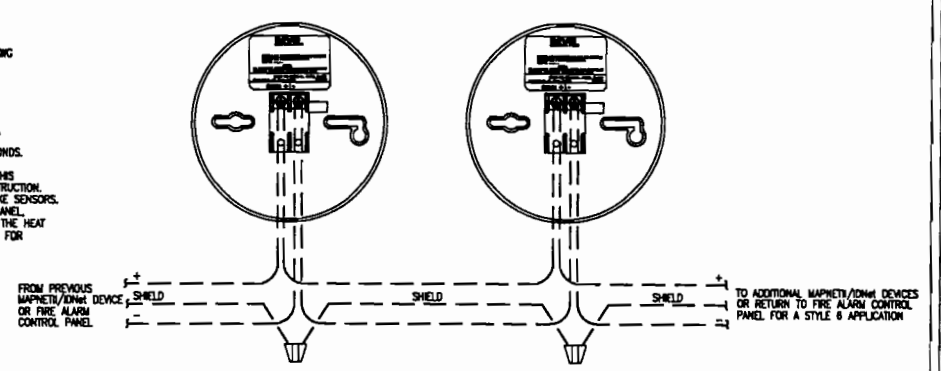
FEATURES:
- UL LISTED, FM APPROVED
- TRUEALARM ANALOG SENSING PROVIDES DIGITAL TRANSMISSION OF ANALOG SENSOR VALUES VIA MAPNET II, OR IDNet TWO WIRE COMMUNICATIONS
- FIRE ALARM CONTROL PANEL PROVIDES:
  - –INDIVIDUAL SENSITIVITY SELECTION FOR EACH SENSOR
  - –PEAK VALUE LOGGING ALLOWING ACCURATE ANALYSIS FOR SENSITIVITY SELECTION
  - –AUTOMATIC ENVIRONMENTAL COMPENSATION
  - –DISPLAY OF SENSITIVITY IN PERCENT PER FOOT
  - –MULTISTAGE ALARM OPERATION
  - –ABILITY TO DISPLAY AND PRINT DETAILED SENSOR INFORMATION IN PLAIN ENGLISH LANGUAGE
- PHOTOELECTRIC SMOKE SENSOR 4098-9714: SEVEN LEVELS OF SENSITIVITY FROM 0.2% TO 3.7%
- IONIZATION SMOKE SENSOR 4098-9717: FOUR LEVELS OF SENSITIVITY FROM 0.5% TO 1.7%
- HEAT SENSOR 4098-9733:
  - –RATE-OF-RISE TEMPERATURE DETECTION IS SELECTABLE AT THE CONTROL PANEL FOR EITHER 15° OR 20° PER MINUTE
  - –FIXED TEMPERATURE SENSING IS INDEPENDENT OF RATE-OF-RISE AND PROGRAMMABLE TO OPERATE AT 135° OR 155°F
  - –TRUEALARM HEAT SENSORS CAN BE PROGRAMMED AS A UTILITY DEVICE TO MONITOR FOR TEMPERATURE EXTREMES IN THE RANGE FROM 32° F TO 120° F.
- UL STANDARD SPACING:
  - –60 FT SPACING FOR 135° F
  - –40 FT SPACING FOR 155° F
- INTEGRAL RED LED FOR POWER-ON (PULSING), OR ALARM OR TROUBLE (STEADY ON)
- BASE MOUNTED ADDRESS SELECTION:
  - –ACCESSIBLE FROM FRONT (DIP SWITCH UNDER SENSOR)
  - –ADDRESS REMAINS WITH ITS PROGRAMMED LOCATION
- FOR USE WITH SIMPLEX 4010, 4100, 4020, AND 4120 SERIES CONTROL PANELS.
- MAXIMUM QUANTITY OF DEVICES:
  - –127 FOR 4020, 4100, 4120
  - –250 FOR 4010, 4100U
- MOUNTING: CEILING OR WALL
- COLOR : FROST WHITE
- BASE DIMENSIONS: 15/16" X 4-7/8"

SPECIFICATIONS:
- UL LISTED TEMPERATURE RANGE: 32°F TO 100°F
- OPERATING TEMPERATURE RANGE: 32°F TO 120°F
- HUMIDITY RANGE: 10% TO 93% RH
- PHOTOELECTRIC SENSOR AIR VELOCITY RANGE: 0–2000 FT/MIN
- IONIZATION SENSOR AIR VELOCITY RANGE: 0–300 FT/MIN
- WIRING CONNECTIONS: SCREW TERMINALS FOR IN/OUT WIRING, #18 TO #14 AWG
- COMMUNICATIONS MAPNET II/IDNet : 1 ADDRESS PER BASE
- VOLTAGE (MAPNET II/IDNet): 24-40VDC
- CURRENT: 400uA TYPICAL

DESCRIPTION:
TRUEALARM SENSOR BASES CONTAIN INTEGRAL ADDRESSABLE ELECTRONICS THAT CONSTANTLY MONITOR THE STATUS OF THE DETACHABLE PHOTOELECTRIC, IONIZATION, 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 ALLOWS INTENTIONAL SENSOR SUBSTITUTION DURING BUILDING CONSTRUCTION. WHEN CONDITIONS ARE TEMPORARILY DUSTY, INSTEAD OF COVERING THE SMOKE SENSORS, 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 AS A DEFAULT SENSITIVITY PROVIDING HEAT DETECTION FOR BUILDING PROTECTION AT THAT LOCATION.

WIRING:
1. ALL WIRING TO COMPLY WITH LOCAL CODE.
2. CONDUCTORS MUST TEST FREE OF ALL GROUNDS.
3. MAINTAIN CORRECT POLARITY
4. MAPNET II/IDNet WIRING TO BE #18 AWG TWISTED SHIELDED PAIR
5. IF SHIELD IS USED, TWIST SHIELD WIRES TOGETHER AND CAP WITH WIRE NUT. SHIELD SHOULD BE INSULATED FROM ELECTRICAL BOX.
6. REFER TO INSTALLATION INSTRUCTIONS (574-707)
7. REFER TO APPLICATION MANUAL (574-709)





SimplexGrinnell BE SAFE.
A Tyco International Company
20 THOMAS DR
WESTBROOK, ME 04092
SALES: 207-842-8440
SERVICE: 207-842-8440
FAX: 207-842-8439

NO.	DATE	REVISION DESCRIPTION	CHKD BY

FIRE ALARM SYSTEM
DEVICE WIRING DETAILS

VETERANS ADMINISTRATION MEDICAL CLINIC
FORE STREET
PORTLAND, MAINE

DRAWN BY: LAK	DATE: 11-22-10
DESIGNED BY:	DATE:
APPROVED BY: P. DOUGHTY	DATE: 11-22-10
PROJECT NUMBER: 147-618784	
SHEET TITLE: FIRE ALARM SYSTEM DEVICE WIRING DETAILS	
SHEET NUMBER: FA-702 FA-702.DWG	

4098-9756 ADDRESSABLE 4-WIRE DUCT SENSOR MAPNET II/IDNet WITH 24VDC RELAY

PRODUCT INFORMATION

FEATURES:

COMPACT AIR DUCT SENSOR HOUSING WITH CLEAR COVER TO MONITOR FOR THE PRESENCE OF SMOKE. INCLUDES FACTORY INSTALL TRUEALARM PHOTOELECTRIC SMOKE DETECTOR AND FEATURES:

- NONEQUAL SENSOR DISCRIMINATION PROCESSED BY THE HOST CONTROL PANEL TO DETERMINE SENSOR STATUS
- DIGITAL TRANSMISSION OF ANALOG SENSOR VALUES VIA MAPNET II OR IDNet 2-WIRE COMMUNICATIONS
- PROGRAMMABLE SENSITIVITY, CONSISTENT ACCURACY, ENVIRONMENTAL COMPENSATION, STATUS TESTING, AND MONITORING OF SENSOR DIRT ACCUMULATION

MODEL 4098-9756:

- DUCT SENSOR HOUSING WITH SUPERVISED OUTPUT FOR MULTIPLE REMOTE RELAYS, REQUIRES SEPARATE 24 VDC (RELAYS ARE UNDER PANEL CONTROL AND CAN BE OPERATED MANUALLY OR BY A SEPARATE ALARM/INPUT)

GENERAL FEATURES:

- UL LISTED TO STANDARD 268A
- CLEAR COVER ALLOWS VISUAL INSPECTION
- TEST DOOR PROVIDES FUNCTIONAL SMOKE TESTING ACCESS WITH COVER IN PLACE
- MOUNTS TO RECTANGULAR DUCTS OR ROUND DUCTS (MINIMUM SIZE 6" SQUARE OR 18" DIAMETER)
- MAGNETIC TEST FEATURE FOR ALARM INITIATION AT HOUSING
- OPTIONAL WEATHERPROOF ENCLOSURE IS AVAILABLE SEPARATELY (REFER TO DATA SHEET 54098-0033Z)

DIAGNOSTIC LEDS (ON INTERFACE BOARD):

- RED ALARM/TROUBLE LED FOR SENSOR STATUS AND COMMUNICATIONS POLLING DISPLAY
- YELLOW LED FOR OPEN OR SHORTED TROUBLE INDICATION OF SUPERVISED RELAY CONTROL

SAMPLING TUBES (ORDERED SEPARATELY):

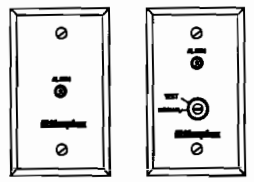
- AVAILABLE IN MULTIPLE LENGTHS TO MATCH DUCT SIZE
- INSTALLED AND SERVICED WITH HOUSING IN PLACE

REMOTE MODULE OPTIONS (ORDERED SEPARATELY):

- RED STATUS/ALARM LED (2098-9808)
- TEST STATION WITH LED (2098-9806)
- RELAYS USED (4098-9843)

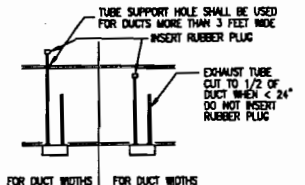
DUCT DETECTOR SELECTION CHART

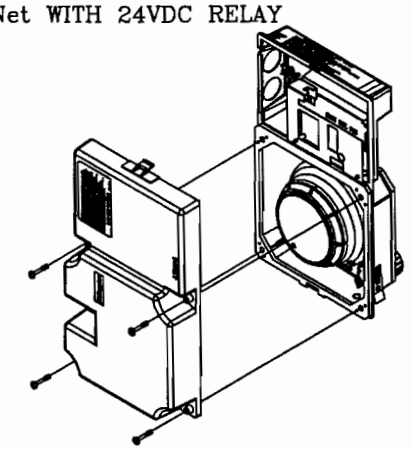
DUCT SMOKE SENSOR HOUSING WITH PHOTOELECTRIC SENSOR		
MODEL	DESCRIPTION	COMPATIBILITY
4098-9756	DUCT HOUSING WITH SUPERVISED MULTIPLE RELAY CONTROL FOR UP TO 10 4098-9843 RELAYS PROVIDED SEPARATELY, REQUIRES SEPARATE 24 VDC FIRE ALARM POWER AND RELAY END-OF-LINE RESISTOR	SIMPLEX FIRE ALARM CONTROL MODELS 4010, 4020, 4100, AND 4120.
REMOTE LED INDICATOR AND TEST STATION, SELECT ONE IF REQUIRED		
MODEL	DESCRIPTION	MOUNTING
2098-9808	RED LED STATUS INDICATOR	USE SINGLE GANG BOX, 3" H X 2" W X 2" D (76 mm X 51 mm X 51 mm)
2098-9806	TEST STATION WITH INDICATION AND RED LED STATUS (TURNING SWITCH TO TEST INITIATES ALARM FOR SYSTEM TESTING)	



2098-9808 REMOTE STATUS/ALARM INDICATOR

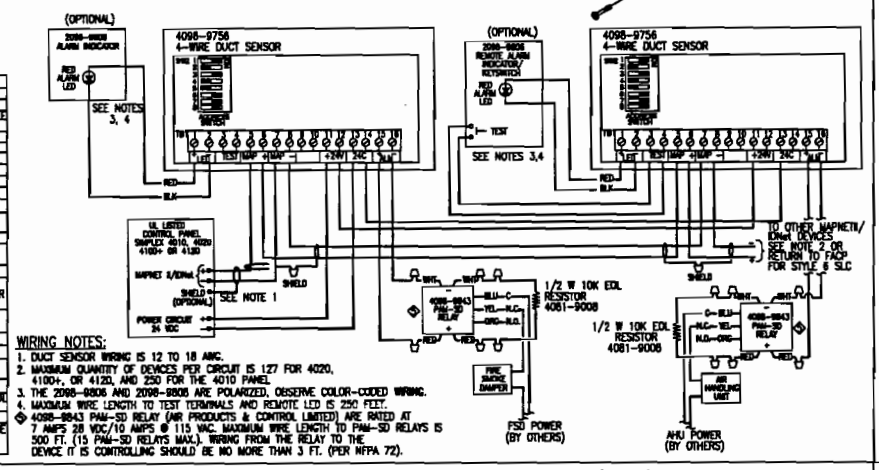
2098-9806 TEST STATION





SPECIFICATIONS:

GENERAL SPECIFICATIONS	
AIR VELOCITY RANGE (LINEAR FT/MIN)	300 TO 4000 FT/min (91 TO 1220 m/min)
ALTITUDE	UP TO 10000 FT. (3.4 km)
SENSOR SENSITIVITY RANGE	0.2% TO 3.7% PER FOOT OF OBSCURATION, SELECTABLE AT HOST CONTROL PANEL
UL LISTED TEMPERATURE RANGE	32° F TO 120° F (0° C TO 49° C)
OPERATING TEMPERATURE RANGE	32° F TO 120° F (0° C TO 49° C)
STORAGE TEMPERATURE RANGE	0° F TO 140° F (-18° C TO 60° C)
HUMIDITY RANGE	10% TO 93% RH, NON-CONDENSING
HOUSING COLOR	BLACK BASE WITH CLEAR COVER
WIRING CONNECTIONS	TERMINAL BLOCKS, 18 TO 12 AWG
REMOTE STATUS/ALARM LED AND TEST STATION WITH REMOTE STATUS/ALARM LED	
REMOTE ALARM LED CURRENT	1.7 mA, NO IMPACT TO ALARM CURRENT (2098-9808 OR 2098-9806)
TEST STATION PC BOARD CURRENT	3.1 mA, NO IMPACT TO ALARM CURRENT (2098-9806)
REMOTE ALARM LED AND TEST STATION DISTANCE	250 FT. (76m) MAXIMUM
ADDRESSABLE OPERATION	
DATA COMMUNICATIONS	MAPNET II OR IDNet COMMUNICATION, AUTO-SELECT ADDRESS PER HOUSING, PROVIDES OPERATING POWER TO MODEL 4098-9756
MODEL 4098-9756 WITH SUPERVISED MULTIPLE RELAY CONTROL, REQUIRES SEPARATE FUSED 24 VDC FIRE ALARM POWER SUPPLY	
INPUT VOLTAGE	18-32 VDC (24 VDC NOMINAL)
STANDBY CURRENT	3 mA @ 24 VDC
ALARM CURRENT	15 mA @ 24 VDC, ADD 15 mA ADDITIONAL FOR EACH 4098-9843 RELAY
4098-9843 RELAY OUTPUT RATINGS, SINGLE FORM C	
COIL CURRENT	15 mA @ 24 VDC UP TO 15 MAX. PER RELAY CONTROL
RELAY CONTACTS, RESISTIVE RATINGS	7 A @ 28 VDC, 10 A @ 120 VAC, 250 µA @ 5 VDC
LOCATION DISTANCE	500 FT. (152m) MAX. TO RELAY COILS, RELAY MUST BE WITHIN 3 FT. (1m) OF DEVICE BEING CONTROLLED PER NFPA 72, SECTION 3-8.2.1



WIRING NOTES:

1. DUCT SENSOR WIRING IS 12 TO 18 AWG.
2. MAXIMUM QUANTITY OF DEVICES PER CIRCUIT IS 127 FOR 4020, 4100*, OR 4120, AND 250 FOR THE 4010 PANEL.
3. THE 2098-9806 AND 2098-9808 ARE POLARIZED, OBSERVE COLOR-CODED WIRING.
4. MAXIMUM WIRE LENGTH TO TEST TERMINALS AND REMOTE LED IS 250 FEET.
5. ◆ 4098-9843 PAM-SD RELAY (AIR PRODUCTS & CONTROL LIMITED) ARE RATED AT 7 AMPS 28 VDC/10 AMPS @ 115 VAC. MAXIMUM WIRE LENGTH TO PAM-SD RELAYS IS 500 FT. (15 PAM-SD RELAYS MAX.). WIRING FROM THE RELAY TO THE DEVICE IT IS CONTROLLING SHOULD BE NO MORE THAN 3 FT. (PER NFPA 72).

2098-9806 REMOTE ALARM INDICATOR/KEY SWITCH

PRODUCT INFORMATION

FEATURES:

- UL LISTED
- CALIFORNIA STATE FIRE MARSHAL LISTING NUMBERS: 2905-9808 ALARM INDICATOR 7300-0026:150
- MOUNTING: FLUSH
- FINISH: CHROME OR STAINLESS STEEL

SPECIFICATIONS:

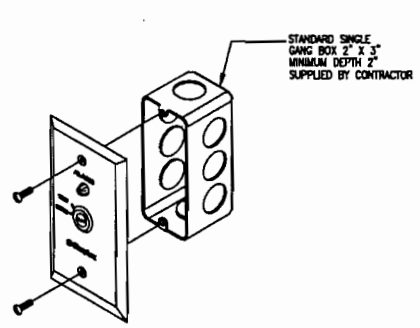
- ALARM CURRENT: 2.8 mA
- DIMENSIONS OF BOX: 2 "W x 3"H x 2"D

DESCRIPTION:

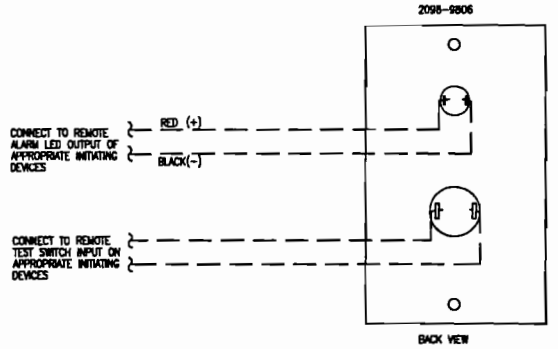
2098-9808 REMOTE TEST STATION, PROVIDES A REMOTE RED ALARM LED STATUS INDICATOR AND A REMOTE TEST KEY ACTIVATED SWITCH MOUNTED ON A SINGLE GANG STAINLESS STEEL PLATE. THE LED WILL PULSE TO INDICATE NORMAL OPERATION OF THE DUCT DETECTOR AND WILL ENERGIZE CONTINUOUS WHEN IN ALARM OR IN TROUBLE (THE EXACT STATUS OF THE SENSOR WILL BE DISPLAYED AT THE FIRE ALARM CONTROL PANEL.) TURNING THE TEST SWITCH TO "TEST" WILL INITIATE AN ALARM AND ALLOW THE RESULTING SYSTEM RESPONSES TO BE VERIFIED.

WIRING:

- MINIMUM 18 AWG OR TO LOCAL CODE.
- CONDUCTORS MUST TEST FREE OF ALL GROUNDS.
- REMOTE ALARM LED IS POLARIZED, OBSERVE COLOR CODED WIRING.
- ONE INDICATOR MAY BE INSTALLED PER DETECTOR.



FLUSH MOUNTING



4090-9001 IDNET, SUPERVISED INDIVIDUAL ADDRESSABLE MODULE (1AM)

PRODUCT INFORMATION

FEATURES:

- UL LISTED
- ADDRESSABLE COMMUNICATIONS SUPPLY BOTH DATA AND POWER TO PROVIDE:
  - SUPERVISED STYLE B MONITORING OF NORMALLY OPEN DRY CONTACTS.
  - COMMUNICATIONS WIRING USING ONE TWISTED, SHIELDED WIRE PAIR.
- COMPATIBLE WITH SIMPLEX ADDRESSABLE FIRE ALARM CONTROL PANELS.
- COMPACT, SEALED CONSTRUCTION:
  - ALLOWS MOUNTING IN A SINGLE GANG BOX
  - REDUCES DUST INFILTRATION
- PROVIDES CURRENT LIMITED MONITORING
  - TO MONITOR TAMPER SWITCH (SUPERVISORY) AND WATER FLOW SWITCH (ALARM) ON SAME CIRCUIT
  - REQUIRES ONLY ONE ADDRESSABLE POINT
- SELECTABLE LATCHING OPERATION
  - [illegible] MOMENTARY CONTACT CLOSURES SUCH AS RATE-OF RISE HEAT DETECTORS

SPECIFICATIONS:

- WIRE CONNECTIONS: SCREW TERMINALS FOR IN/OUT WIRING FOR WIRE FROM #18 TO #14 AWG.
- DIMENSIONS: 1 9/16" X 1 3/4" X 1 1/4"
- TEMPERATURE RANGE: 32° F TO 158° F (0° C TO 70° C)
- HUMIDITY: UP TO 93% RH AT 100° F
- SUPERVISION RESISTOR: 6.8kΩ 1/2W, (SUPPLIED) SIMPLEX PART NO. 733-886
- RESISTOR FOR CURRENT LIMITED OPERATION: 4.7kΩ 1/2W, WITH A 1.8kΩ 1/2W
- INPUT REQUIREMENTS: NORMALLY OPEN, DRY CONTACTS
- HOUSING MATERIAL: BLACK THERMOPLASTIC

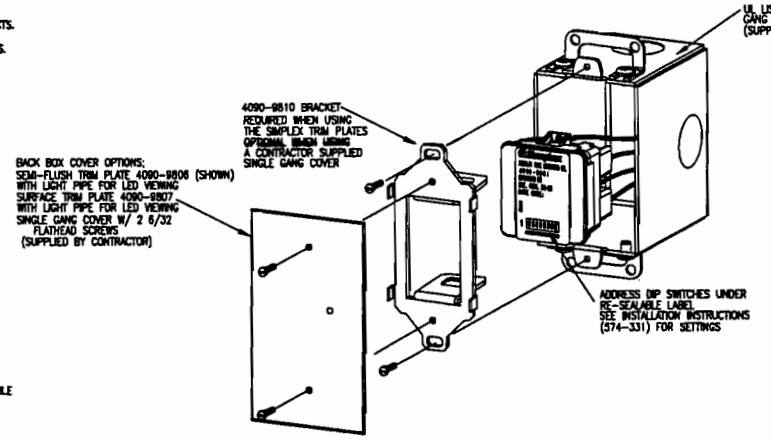
DESCRIPTION:

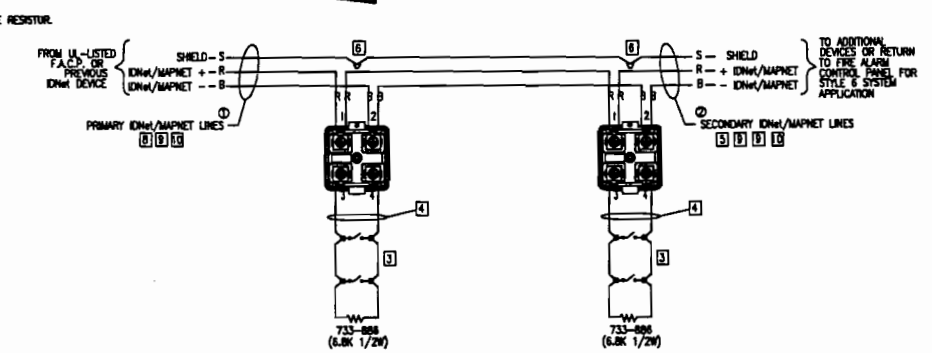
THE 4090-9001 IS AN INDIVIDUAL ADDRESSABLE MODULE (1AM) WITH POWER AND COMMUNICATIONS SUPPLIED BY A TWO WIRE ADDRESSABLE CIRCUIT. IT PROVIDES LOCATION SPECIFIC ADDRESSABILITY TO A SINGLE INITIATING DEVICE (SUCH AS SINGLE STATION SMOKE DETECTOR ALARM CONTACTS OR HEAT DETECTOR CONTACTS) OR MULTIPLE DEVICES AT THE SAME LOCATION BY MONITORING NORMALLY OPEN, DRY CONTACTS AND THE WIRING TO AN END-OF-LINE RESISTOR. CLOSURE OF THE MONITORED CONTACTS 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.

IF THE INITIATING DEVICE CONTACTS ARE MOMENTARY, SUCH AS FROM A RATE-OF-RISE HEAT DETECTOR, ENABLING THE LATCH FEATURE WILL MAINTAIN THE ALARM CONDITION UNTIL THE SYSTEM IS RESET. FOR APPLICATIONS WHERE THE CONTACT CLOSURE LATCHES, OR IF ITS CONDITION NEEDS TO BE TRACKED AT THE CONTROL PANEL, NON-LATCHING OPERATION MAY BE ENABLED.

WIRING NOTES:

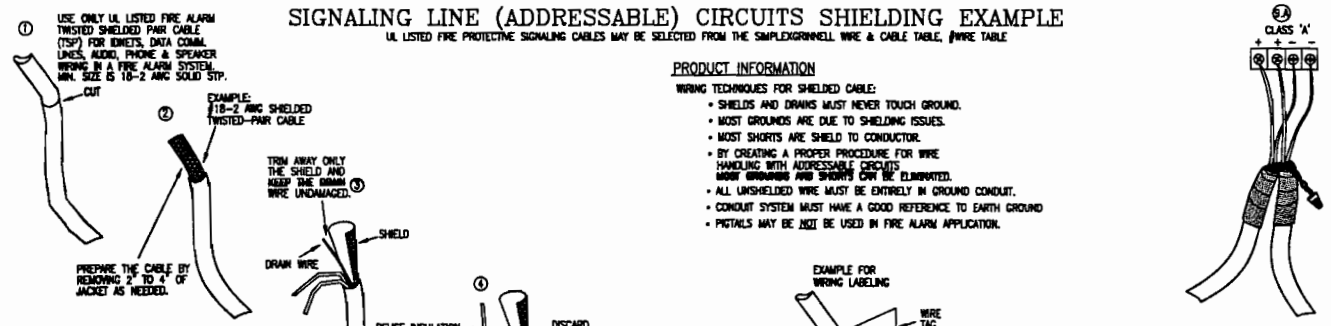
1. ALL WIRING TO COMPLY WITH LOCAL CODE.
2. CONDUCTORS MUST TEST FREE OF ALL GROUNDS.
3. ONLY N.O. DRY CONTACTS ARE ALLOWED.
4. MAXIMUM WIRE LENGTH (NO. 18 AWG) IS 400 FT. @ 2081-9044 OVER VOLTAGE PROTECTORS OR 400 FT. W/O PROTECTORS.
5. A MAXIMUM QUANTITY OF DEVICES PER CIRCUIT: CONTROL PANEL MODULE DEPENDENT
6. WIRE NUT, SPLICE, OR SOLDER THE SHIELD WIRES. (TAPE EXPOSED SHIELD WIRE).
7. REFER TO INSTALLATION INSTRUCTIONS 574-331.
8. MAXIMUM ALLOWABLE LINE RUN FROM THE F.A.C.P. TO THE FARTHEST DEVICE, NOT TO EXCEED 2500 FEET.
9. MAXIMUM TOTAL WIRE (INCLUDING ALL T-TAPS) FROM THE FIRE ALARM CONTROL PANEL.
10. FOR STYLE 6 CIRCUIT WIRING IT IS RECOMMENDED THAT THE PRIMARY ① AND THE BACK-UP ② LINES BE IN SEPARATE WIRE RUNS AND IN COMPLIANCE WITH LOCAL REQUIREMENTS.
11. REFER TO FIELD WIRING DIAGRAM 842-073





SIGNALING LINE (ADDRESSABLE) CIRCUITS SHIELDING EXAMPLE

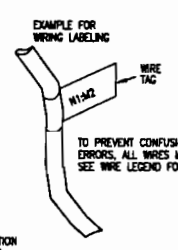
UL LISTED FIRE PROTECTIVE SIGNALING CABLES MAY BE SELECTED FROM THE SIMPLEXGRINNELL WIRE & CABLE TABLE, #WIRE TABLE



PRODUCT INFORMATION

WIRING TECHNIQUES FOR SHIELDED CABLE:

- SHIELDS AND DRAINS MUST NEVER TOUCH GROUND.
- MOST GROUNDS ARE DUE TO SHIELDING ISSUES.
- MOST SHORTS ARE SHIELD TO CONDUCTOR.
- BY CREATING A PROPER PROCEDURE FOR WIRE HANDLING WITH ADDRESSABLE CIRCUITS MOST GROUNDS AND SHORTS CAN BE ELIMINATED.
- ALL UNSHIELDED WIRE MUST BE ENTIRELY IN GROUND CONDUIT.
- CONDUIT SYSTEM MUST HAVE A GOOD REFERENCE TO EARTH GROUND
- PIGTAILS MAY BE NOT BE USED IN FIRE ALARM APPLICATION.



GENERAL WIRING GUIDELINES

1. ALL WIRING IS TO BE COPPER CONDUCTOR. ALL EQUIPMENT MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE SPECIFICATIONS AND STANDARDS OF THE AUTHORITY HAVING JURISDICTION. THE INSTALLATION OF ALL WIRING, CABLE AND EQUIPMENT MUST BE IN ACCORDANCE WITH NFPA 70, (NATIONAL ELECTRICAL CODE NEC), AND SPECIFICALLY WITH ARTICLE 760, FIRE ALARM PROTECTIVE SIGNALING SYSTEMS; ARTICLE 800, COMMUNICATION CIRCUITS, WHERE APPLICABLE.
2. IF SHIELDED WIRE IS USED, THE FOLLOWING MUST BE OBSERVED:
   A. METALLIC CONTINUITY OF THE SHIELD MUST BE MAINTAINED AND INSULATED THROUGHOUT THE ENTIRE LENGTH OF THE CABLE.
   B. SHIELDS SHALL ONLY BE CONNECTED AT THE CONTROL UNIT. SHIELD MUST NOT BE CONNECTED TO, OR TOUCH CONDUIT, ELECTRICAL BOXES, OR ASSOCIATED HARDWARE AT ANY POINT.
   C. THE ENTIRE LENGTH OF THE CABLE MUST HAVE A RESISTANCE GREATER THAN 1 MEGOHM TO EARTH.
   D. ALL CONDUCTORS ARE TO BE FREE OF SHORTS AND GROUNDS.
3. UNDERGROUND WIRING MUST BE LISTED FOR APPLICATION AND FREE OF ALL WATER.
4. WIRING OTHER THAN THAT CONNECTED TO ELEVATOR CABS MUST NOT BE RUN IN ELEVATOR SHAFTS (REF.NFPA 70, ARTICLE 620).
5. WIRING IN DUCTS, PLENUMS AND OTHER AIR HANDLING SPACES MUST BE LISTED FOR PLENUM USE AND INSTALLED IN ACCORDANCE WITH NFPA 70, ARTICLE 300.
6. SPLICING IS PERMITTED IN ACCORDANCE WITH NFPA 70. ALL JUNCTIONS MUST BE INSULATED AS SOUNDLY AS THE ORIGINAL JACKET. CONTINUITY OF ANY SHIELD (WHERE USED) MUST BE MAINTAINED.
7. ONLY SYSTEM WIRING CAN BE RUN IN THE SAME CONDUIT.
8. THE COMMUNICATION CIRCUIT MEETS THE OPERATIONAL CHARACTERISTICS DEFINED FOR A STYLE 4 AND STYLE 6 SIGNALING LINE CIRCUIT. MAXIMUM WIRE RUN NOT TO EXCEED 2500 FT.
9. ALL CIRCUITS ARE SUPERVISED AND POWER-LIMITED UNLESS OTHERWISE INDICATED. SHIELD WIRES ARE NOT SUPERVISED.
10. OPERATING POWER, FOR IDNet DEVICES, MUST ORIGINATE FROM A POWER-LIMITED POWER SUPPLY LISTED FOR FIRE PROTECTIVE SIGNALING USE OR, FROM THE F.A. CONTROL PANEL POWER SUPPLIES INDICATED IN THE APPROPRIATE DIAGRAM. MAXIMUM WIRE NOT TO EXCEED 1Ω (327Ω FT).
11. WHEN COMMUNICATION WIRING OR OPERATING WIRING LEAVES THE BUILDING, OVERVOLTAGE PROTECTORS ARE REQUIRED; USE 2081-9044, INSTALL ONE WHERE IT LEAVES THE BUILDING AND ONE WHERE IT ENTERS THE NEXT BUILDING.
12. TO PREVENT CONFUSION AND POSSIBLE ERRORS, TAG ALL CONDUCTORS, CODE AT INSTALLATION, TO IDENTIFY CIRCUIT ASSIGNMENT, POLARITY AND IN OR OUT DIRECTION OF THE WIRING. LOG ON AS-BUILTS.
13. LEAVE ADEQUATE SLACK IN THE WIRING TO ALLOW FOR TROUBLE SHOOTING. SIMPLEXGRINNELL IS NOT RESPONSIBLE FOR ELECTRICAL CONTRACTOR'S WIRE CONDITIONS.
14. IDNet COMMUNICATION LINE SPECS.:
    MAX. 36 VDC @ .5A
    3333 BAUD
    33Ω MAX. LINE RESISTANCE
    15. IDNET MAXIMUM NUMBER OF DEVICES:
    NON-CODED 250
    CODED PIEZO BASES 43 MAX.
    217 ADDRESSES STILL AVAILABLE FOR OTHER DEVICES.

SimplexGrinnell BE SAFE.

A Tyco International Company

20 THOMAS DR.
WESTBROOK, ME 04092

SALES: 207-842-8440
SERVICE: 207-842-8440
FAX: 207-842-8439

NO.	DATE	REVISION DESCRIPTION	CHKD BY

FIRE ALARM SYSTEM
DEVICE WIRING DETAILS

VETERANS ADMINISTRATION MEDICAL CLINIC
FORE STREET
PORTLAND, MAINE

DRAWN BY: LAK	DATE: 11-22-10
DESIGNED BY:	DATE:
APPROVED BY: P. DOUGHTY	DATE: 11-22-10
PROJECT NUMBER: 147-418784	
SHEET TITLE: FIRE ALARM SYSTEM DEVICE WIRING DETAILS	
SHEET NUMBER: FA-703	
FA-703.DWG	

CITY OF PORTLAND, MAINE
Department of Building Inspections

Original Receipt

12. 20 10

Received from Jennifer Dow

Location of Work 174 Fore St

Cost of Construction $_____ Building Fee: _____

Permit Fee $_____ Site Fee: _____

Certificate of Occupancy Fee: _____

Total: 170

Building (IL) ___ Plumbing (I5) ___ Electrical (I2) ___ Site Plan (U2) ___

Other _____

CBL: 19A3

Check #: CC **Total Collected** $ 170

No work is to be started until permit issued.
Please keep original receipt for your records.

Taken by: [signature]

WHITE - Applicant's Copy
YELLOW - Office Copy
PINK - Permit Copy