

E.S. Boulos Company

Integrated Power and Building Technologies

Corporate Office

45 Bradley Drive
Westbrook, ME 04092
Tele: (207)464-3706
Fax: (207)464-1833

Utility/Industrial Office

70 Commercial Street
Lewiston, ME 04240
Tele: (207)784-0906
Fax: (207)784-9426

Letter of Transmittal

To: Paul Doughty (Simplex Grinnell)

Transmittal #: 147

Date: 12/29/2010

Job: TCPJ10-101 Portland Jetport Expansion

Subject: Submittal

WE ARE SENDING YOU

- | | | | |
|---|--|---|---|
| <input type="checkbox"/> Attached | <input type="checkbox"/> Under separate cover via the following items: | | |
| <input type="checkbox"/> Shop drawings | <input type="checkbox"/> Prints | <input type="checkbox"/> Plans | <input type="checkbox"/> Samples |
| <input type="checkbox"/> Copy of letter | <input type="checkbox"/> Change order | <input type="checkbox"/> Specifications | <input checked="" type="checkbox"/> Submittal |

Document Type	Copies	Date	No.	Description
Submittal	1		283100-2 Rev 0	FIRE ALARM PRODUCT DATA SHEETS Status: Approved as noted

THESE ARE TRANSMITTED as checked below:

- | | | |
|---|---|---|
| <input type="checkbox"/> For approval | <input checked="" type="checkbox"/> Approved as submitted | <input type="checkbox"/> Resubmit ___ copies for approval |
| <input type="checkbox"/> For your use | <input checked="" type="checkbox"/> Approved as noted | <input type="checkbox"/> Submit ___ copies for distribution |
| <input type="checkbox"/> As requested | <input type="checkbox"/> Returned for corrections | <input type="checkbox"/> Return ___ corrected prints |
| <input type="checkbox"/> For review and comment | <input type="checkbox"/> Other | |
| <input type="checkbox"/> FOR BIDS DUE | <input type="checkbox"/> PRINTS RETURNED AFTER LOAN TO US | |

Remarks: Paul, everything looks good here so please go ahead and release your materials.
Please call with any questions.

Copy To: File, Joseph Bradley (E. S. Boulos Company)

From: Jesse Klimaytis (E. S. Boulos Company)

Signature: _____

Jesse Klimaytis

Digitally signed by Jesse Klimaytis
DN: cn=Jesse Klimaytis, o=E.S.Boulos Company,
ou, email=jklimaytis@esboulos.com, c=US
Date: 2010.12.29 13:18:00 -05'00'



Portland International Jetport Terminal Expansion

Project # 1670000

1001 Westbrook Street,
Portland, ME 04102

Telephone:

Fax:

Submittal Transmittal with Action
[For Subcontractor]

December 17, 2010

Date: 12/17/2010

Transmittal No: 1238

Transmitted To: Jesse Klimaytis
E. S. Boulos Company
45 Bradley Drive
Westbrook, ME 04092
Tel: 207-464-3706
Fax: 207-464-1833

Transmitted By: Jim Liddick
Turner Construction Company
Two Seaport Lane
Boston, MA 02210-2063
Tel: 617-247-6400
Fax:

Submittal Package No	Description	Package Action	Due Date
0002 - 28 31 00 - 0	Fire Alarm System Product Data Sheets	Approved as Noted	

Items	Qty	Spec	Item #	Rev	Type	Description	Notes	Item Action
001	1	283100	03020	0	Product Data / Cut Sheet	Fire Alarm System Product Data Sheets		Approved as Noted

Cc:	Company Name	Contact Name	Copies	Fax Number	Notes
Remarks					

REVIEWED

By James E. Liddick at 8:40 am, Dec 17, 2010

Signature

Signed Date

Project	Portland International Jetport PWM	Project No.	09.6395.000
Contractor	Turner Construction Company	Facsimile No.	212-492-1472
Submittal No.	0002-283100-0	Date	12/16/2010
Substitution Previously Approved	<input type="checkbox"/>	Substitution Approval Date:	

COMMENTS, NOTES, EXCEPTIONS

Description:

Fire Alarm System Product Data Sheets

Comments:

See engineer's comments.

SUBMITTAL REVIEW

- A **NO EXCEPTION TAKEN**
No further review of Submittal required.
- B **MAKE CORRECTIONS AS NOTED**
Incorporate corrections in work: resubmittal is not required.
If Contractor cannot comply with corrections as noted, revise to respond to exceptions and resubmit.
- C **REVISE AND RESUBMIT**
Revise as noted, and resubmit for further review.
- D **RESUBMIT PROPERLY**
Submittal not reviewed because it does not contain Contractor's signature indicating its review and approval, and/or is not in proper condition for review. Resubmit.
- E **NOT REVIEWED**
Submittal is not required by Contract Documents.

Gensler ("Architect") has reviewed this Submittal, but only for the limited purpose of checking for general conformance with the visual and aesthetic design concept as expressed in the Contract Documents. Architect's action on a specific item shall not indicate approval of an assembly of which the item is a component, nor of an item as delivered and installed if it does not conform to the Contract Documents.

Contractor, not Architect, is responsible for checking for any deviations between this Submittal and differing information or conditions in the Contract Documents and field conditions; for determining or substantiating the accuracy and completeness of other details such as confirming dimensions and quantities; for substantiating instructions for installation or performance of equipment or systems designed by Contractor; for construction means, methods, techniques, schedules, sequences procedures and fabrication processes; for errors and omissions in Submittals; for coordination of the Work of the trades and for safety precautions and performing the work in a safe and satisfactory manner and in conformance with all requirements of the Contract Documents.

Notwithstanding any claim of authorship and/or ownership by Contractor or others in this Submittal, Contractor's preparation of this Submittal and/or Architect's action on this Submittal in no way divests Architect or others of any rights, including but not limited to, ownership and copyrights embodied in the Submittal.

No Submittal shall be used as a substitute for requests or approvals of changes or substitutions, or of other procedures required by the Contract Documents. Contractor shall notify Architect immediately of any intent to make any claim based on this Submittal or notations thereon. If more than one submittal review stamp appears on the Submittal, the most stringent action and notations thereon shall apply. Signature on a submittal review stamp by the Architect or a consultant does not imply that it has reviewed work not within its professional discipline or scope of services.

GENSLER

By Cliff Takara Date 12/16/2010
Project No. 09.6395.000 Sub # 0002-283100-0

X



Arora Engineers, Inc.
 61 Wilmington - West Chester Pike
 Suite #100
 Chadds Ford, PA 19317
T: (610) 459-7900
F: (610) 459-7950
 www.aroraengineers.com

Arora Engineers, Inc.

LETTER OF TRANSMITTAL

Date: 12/14/2010

Job: 62808.001

Attention: Cliff Takara

Re: Portland Jetport Expansion

Gensler
 Rockefeller Center
 1230 Avenue of the Americas
 Suite 1500

To: New York NY 10020

WE ARE SENDING YOU Attached Under separate cover via the following items:
 Shop drawings Prints Plans Samples Specifications
 Copy of letter Change order

COPIES	DATE	DESCRIPTION
1	12/1/2010	Fire Alarm Data Sheet Submittal 0002-283100-0

WE ARE SENDING YOU

For approval Approved as submitted Resubmit copies for approval
 For your use Approved as noted Resubmit copies for distribution
 As requested Returned for corrections Return corrected prints
 For review and comment FOR BIDS DUE 20
 PRINTS RETURNED AFTER LOAN TO US

Branch Offices
 1601 Walnut Street
 Suite #512
 Philadelphia, PA 19102

T: (215) 564-4677
F: (215) 564-4678

One Gateway Center
 Suite # 1020
 Newark, NJ 07102

T: (973) 645-1880
F: (973) 645-1882

REMARKS:

COPY: Lacey Fogg, Jim Stanislaski

SIGNED: Steven R Blatz

File Name: Portland Jetport Expansion

If any enclosures are missing, kindly notify us at once. Thank you.

CONFIDENTIALITY NOTICE

This message and its attachments (if any) may contain confidential, proprietary or legally privileged information and it is intended only for the use of the addressee named above. No confidentiality or privilege is waived or lost by any mistransmission. If you are not the intended recipient of this message you are hereby notified that you must not use, disseminate, copy it in any form or take any action in reliance on it. If you have received this message in error, please, delete it (and any copies of it) and kindly inform the sender, of this facsimile transmittal, by replying or go to www.aroraengineers.com and click on "contact us".



Arora Engineers, Inc.
61 Wilmington - West Chester Pike
Suite #100
Chadds Ford, PA 19317
T: (610) 459-7900
F: (610) 459-7950
www.aroraengineers.com

Arora Engineers, Inc.

LETTER OF TRANSMITTAL

SUBMITTAL REVIEW

- APPROVED
MAKE CORRECTIONS AS NOTED
REVISE AND RESUBMIT
NOT REVIEWED

Date: 10/19/2010 Signature/Title: Steven R Blatz

ARORA ENGINEERS, INC.
Suite 100
61 Wilmington-West Chester Pike
Chadds Ford, PA 19317

- Contractor is responsible for verifying all quantities.
Contractor is responsible for field verifying all measurements.
Contractor must ensure that all materials meet the requirements of the specifications and drawings.
Arora has reviewed this Submittal, but only for the limited purpose of checking for general conformance with the design concept as expressed in the Contract Documents.

Comments:

- Data Sheets as submitted are approved.
Upon receipt of further Bulletins, provide further datasheets as required for equipment required as a result of the posted bulletin.

Branch Offices
1601 Walnut Street
Suite #512
Philadelphia, PA 19102
T: (215) 564-4677
F: (215) 564-4678
One Gateway Center
Suite # 1020
Newark, NJ 07102
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Portland International Jetport Terminal Expansion
Project # 1670000

1001 Westbrook Street,
Portland, ME 04102

Telephone:

Fax:

Submittal Transmittal with Action
[For Reviewer]

November 30, 2010

Date: 11/30/10

Transmittal No: 1073

Transmitted To:	Jim Stanislaski Gensler Architecture, Design & Planning World One Beacon Street 3rd Floor Boston, MA 02108 Tel: 617-619-5767 Fax: 617.619.5701	Transmitted By:	Jim Liddick Turner Construction Company Two Seaport Lane Boston, MA 02210-2063 Tel: 617-247-6400 Fax:
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Submittal Package No	Description	Package Action	Due Date
0002 - 28 31 00 - 0	Fire Alarm System Product Data Sheets	Approval	12/14/10

Items	Qty	Spec	Sub Sectio	Item #	Rev	Type	Description	Notes	Item Action			
									AP	AN	RR	RJ
001	1	283100		03020	0	Product Data / Cut Sheet	Fire Alarm System Product Data Sheets		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

AP=Approved
AN=Approved as noted
RR=Revise and resubmit
RJ=Rejected

Cc:	Company Name	Contact Name	Fax Number	Copies	Notes
	Arora Engineers, Inc.	Rajeev Arora	973-645-1882	1	
	Arora Engineers, Inc.	Steve Baltz	973-645-1882	1	
	Fire Risk Management, Inc.	Jeff DeMaine	508-405-4405	1	
	Gensler Architecture, Design & Planning Worldwide	Cliff Takara	212 468 1472	1	
	OEST Associates, Inc.	Bruce Goodwin	207-774-1246	1	
	OEST Associates, Inc.	Joseph Hennessey	207 774 1246	1	
	OEST Associates, Inc.	Lacey Fogg	207 774 1246	1	
	Portland International JetPort	Cuyler Feagles	207-774-7740	1	
	Portland International JetPort	Roy Williams, P.E.	207-774-7740	1	
	Turner Construction Company	Dan Lasher	617-242-4885	1	
	Turner Construction Company	Emily Winner	617-254-0684	1	
	Turner Construction Company	Liz O'Toole	617-247-5686	1	
	Turner Construction Company	Michael Fusco	617-722-4370	1	
	Turner Construction Company	Phil Coleman	617-254-0686	1	
	Turner Construction Company	Ryan Dixon	617-722-4370	1	
	Turner Construction Company	Shaun Winner	617-254-0686	1	

Remarks

REVIEWED

By James E. Liddick at 3:35 pm, Nov 30, 2010

Signature

Signed Date

E.S. Boulos Company

Integrated Power and Building Technologies

Corporate Office

45 Bradley Drive
Westbrook, ME 04092
Tele: (207)464-3706
Fax: (207)464-1833

Utility/Industrial Office

70 Commercial Street
Lewiston, ME 04240
Tele: (207)784-0906
Fax: (207)784-9426

Letter of Transmittal

To: Jim Liddick
Turner (USE TURN7660)
Two Seaport Lane
2nd Floor
Boston, MA 02210
Ph: (617)247-6400 Fax: (617)247-5436

Transmittal #: 111

Date: 11/10/2010

Job: TCPJ10-101 Portland Jetport Expansion

Subject: Submittal

WE ARE SENDING YOU

- | | | | |
|---|--|---|---|
| <input type="checkbox"/> Attached | <input type="checkbox"/> Under separate cover via the following items: | | |
| <input type="checkbox"/> Shop drawings | <input type="checkbox"/> Prints | <input type="checkbox"/> Plans | <input type="checkbox"/> Samples |
| <input type="checkbox"/> Copy of letter | <input type="checkbox"/> Change order | <input type="checkbox"/> Specifications | <input checked="" type="checkbox"/> Submittal |

Document Type	Copies	Date	No.	Description
Submittal	1		283100-2 Rev 0	FIRE ALARM PRODUCT DATA SHEETS

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> For approval | <input type="checkbox"/> Approved as submitted | <input type="checkbox"/> Resubmit ___ copies for approval |
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| <input type="checkbox"/> For review and comment | <input type="checkbox"/> Other | |
| <input type="checkbox"/> FOR BIDS DUE | <input type="checkbox"/> PRINTS RETURNED AFTER LOAN TO US | |

Remarks: Jim, please find enclosed all Fire Alarm System product data sheets (including fire alarm cabling schedule). Also included are all cutsheets per the requested changes by the Portland Fire Department from our previous meetings.

Please call with any questions.

Copy To: File, Joseph Bradley (E. S. Boulos Company)

From: Jesse Klimaytis (E. S. Boulos Company)

Signature: _____

E.S. Boulos Company

Integrated Power and Building Technologies

Corporate Office

45 Bradley Drive
Westbrook, ME 04092
Tele: (207)464-3706
Fax: (207)464-1833

Utility/Industrial Office

70 Commercial Street
Lewiston, ME 04240
Tele: (207)784-0906
Fax: (207)784-9426

Submittal

Job: TCPJ10-101

Portland Jetport Expansion
Portland Jetport
Portland, ME

Spec Section No: 283100

Submittal No: 2

Revision No: 0

Sent Date: 11/10/2010

Submittal Title: FIRE ALARM PRODUCT DATA SHEETS

Turner Construction Company
Jim Liddick
Two Seaport Lane
2nd Floor
Boston, MA 02210
Ph: (617)247-6400

Turner Construction Company

Reviewed for General Acceptance only. This review does not relieve the Subcontractor of the responsibility for making the work conform to the requirements of the contract. The Subcontractor is responsible for all dimensions, correct fabrication and accurate fit with work of other trades

Subject to Architect approval

Signed: **JEL** Date: **11/30/10**

Submittal No.: **0002-283100-0**

Architect

Gensler Architecture
Jim Stanislaski
One Beacon Street
3rd Floor
Boston, MA 02108
Ph: (617)619-5767

Architect's Stamp

Engineer

OEST Associates (AMEC)
Charles Ryan
343 Gorham Road
South Portland, ME 04106-2317
Ph: (207)761-1770

Engineer's Stamp

Portland International Jetport Fire Alarm System Upgrade

Portland, ME

Fire Alarm System
Submittal
10/22/2010

SimplexGrinnell BE SAFE.

A Tyco International Company

20 THOMAS DRIVE
WESTBROOK, ME 04092

**Project: Portland International JetPort
1001 Westbrook Street
Portland, Maine 04102**

**Customer: Arora Engineers, INC.
61 Wilmington-West Chester Pike
Suite 100
Chadds Ford, PA 19317**

**Date: 10/22/10
Sales Representative: Steven Baker**

FIRE ALARM SYSTEM EQUIPMENT SUBMITTAL

Please contact the SimplexGrinnell Service Department **TWO WEEKS IN ADVANCE** to schedule a technician for checkout.

SimplexGrinnell District Contact Information:

Management: Matt Bresnahan, District Manager

Service: Thomas O'Toole

SimplexGrinnell
20 Thomas Drive
Westbrook, ME 04092

Sales: 207-842-6440
Service: 207-842-6440
Fax: 207-842-6439

Prepared by:

SimplexGrinnell
Engineering Support Services
50 Technology Drive
Westminster, MA 01441

Project Engineer: Al Prentiss
978-731-7246
NICET #90823

Submittal Approval:

Approved By: _____

Date: _____

Please return one copy of the approved submittals to the above SimplexGrinnell office.

PORTLAND JETPORT FIRE ALARM SYSTEM DATA SUBMITTAL

TABLE OF CONTENTS

REV 2 10/22/10

Insert 1 Project Bill of Materials (BOM)

Insert 2 Fire Alarm Control Panel & Accessories

Simplex 4100U Fire Control Panels Data Sheet (S4100-0031)
Simplex 4100U Miniplex Transponder Data Sheet (S4100-0035)
Simplex 4100U Emergency Voice/Alarm Communications Equipment Data Sheet (S4100-0034)
Simplex 4100U InfoAlarm Command Center Data Sheet (S4100-0045)
Simplex 4100U Fire Control Panels Cabinet Reference Data Sheet (S4100-0037)
Simplex System Batteries Data Sheet (S2081-0006)
PowerSonic 75 AH Battery Data Sheet (408 1M)
Simplex TrueSite Workstation Data Sheet (S4190-0016)
Simplex Remote Printer Data Sheet (S4190-0011)
Digitize DET-6B Master Box Data Sheet (750152-0001)
AES\IntelliNet RF Subscriber Unit Data Sheet (7744F/7788F)
Space Age Graphic Annunciator Data Sheet (LT10310)
Model 3270 Knox Box Mounting Instructions

Insert 3 Initiating/Addressable Devices, Accessories & Relays

Simplex Addressable Manual Stations Data Sheet (S4099-0001)
Simplex Addressable Smoke/Heat Sensors & Bases Data Sheet (S4098-0019)
Simplex Individual Addressable Module (IAM) Data Sheet (S4090-0001)
Simplex Relay IAM Data Sheet (S4090-0002)
Simplex Relay IAM with T-Sense Input Data Sheet (S4090-0007)
Simplex Addressable Duct Sensor with Relay Output Data Sheet (S4098-0030)
Simplex Weatherproof Duct Housing Enclosure Data Sheet (S4098-0032)
Air Products PAM-1 Data Sheet (S2088-0010)
Simplex Remote Emergency Telephone Equipment Data Sheet (S2084-0001)

Insert 4 Notification Appliances & Accessories

Simplex Addressable Visible Notification Appliances Data Sheet (S4906-0004)
Simplex Addressable Speaker/Visible Notification Appliances Data Sheet (S4906-0006)
Simplex Speaker Data Sheet (S4902-0003)
Edwards AdaptaBeacon Rotating Light Data Sheet
Edwards AdaptaBeacon Accessories (Wall Bracket) Data Sheet
System Accessories 4081 EOL Data Sheet (S4081-0003)

INSERT 1

Project Bill of Materials

**BILL OF MATERIAL
 PORTLAND INTERNATIONAL JETPORT
 FIRE ALARM EQUIPMENT SUBMITTAL
 10/22/10**

TAB	QTY	MODEL	DESCRIPTION
NODE 1 UPGRADED FIRE ALARM CONTROL PANEL			
2	1	4100-9111	4100U CONFIG. DOMESTIC 120V
2	2	4100-3102	MAPNET MODULE, UP TO 127 PTS
2	2	4100-3204	4 RELAYS - 2 AMP
2	2	4100-5005	ZONE MODULE, 8 IDC, CLASS B
2	4	4100-5101	EXPANSION PWR SUPPLY (XPS) - 120VAC 60HZ
2	1	4100-1291	REMOTE UNIT INTERFACE
2	1	4100-6014	NETWORK IF CARD, WIRED
2	2	4100-6057	NETWORK MEDIA CARD FIBER OPTIC
2	1	4100-6031	CITY MODULE W/DISCONNECT
2	1	4100-6052	EVENT REPORTING DACT
2	16	4100-1279	2" BLANK DISPLAY MODULE
2	2	4100-0634	POWER DISTRIBUTION MODULE 120V
2	1	4100-0636	BOX TO BOX HARNESS KIT
2	1	4100-0638	ADDITIONAL 24V HARNESS
2	4	4100-2300	EXPANSION BAY (PHASE 10 ONLY)
2	2	4100-5128	EXTERNAL BATTERY POWER
2	1	4100-2153	INDICATOR ONLY 3 BAY GLASS DOOR
2	1	4100-2163	INDICATOR ONLY 3 BAY SOLID DOOR
2	1	2975-9423	3 BAY BB/GLASS DOOR/DRESS PANEL, RED
2	1	2975-9429	3 BAY BB AND SOLID DOOR, RED
2	2	PW-PS1275OU	BATTERY, SYSTEM, 12 VOLT, SEALED, LEAD ACID 75Ah
2	1	2081-9280	BATTERY CABINET, EXTERNAL BATTERIES
2	1	4100-3206	8 RELAYS - 3 AMP
NODE 1 TRANSPONDER 1 UPGRADED TRANSPONDER PANEL			
2	1	4100-9600	BASIC TRANSPONDER
2	2	4100-5005	ZONE MODULE, 8 IDC, CLASS B
2	1	4100-5101	EXPANSION PWR SUPPLY (XPS) - 120VAC 60HZ
2	1	4100-5111	SYSTEM POWER SUPPLY (SPS) - 120VAC 60HZ
2	1	4100-3102	MAPNET MODULE, UP TO 127 PTS
2	1	4100-3206	8 RELAYS - 3 AMP
2	1	4100-0634	POWER DISTRIBUTION MODULE 120V
2	2	4100-0638	ADDITIONAL 24V HARNESS
2	1	4100-2300	EXPANSION BAY (PHASE 10 ONLY)
2	1	4100-2163	INDICATOR ONLY 3 BAY SOLID DOOR
2	1	2975-9429	3 BAY BB AND SOLID DOOR, RED
2	2	2081-9296	BATTERY, SYSTEM, 12VOLT, SEALED, LEAD ACID 50Ah
2	1	4100-0650	BATTERY SHELF - REQUIRED FOR 50AH BATTERIES

**BILL OF MATERIAL
PORTLAND INTERNATIONAL JETPORT
FIRE ALARM EQUIPMENT SUBMITTAL
10/22/10**

TAB	QTY	MODEL	DESCRIPTION
NODE 2 UPGRADED FIRE ALARM CONTROL PANEL			
2	1	4100-9111	4100U CONFIG. DOMESTIC 120V
2	1	4100-3102	MAPNET MODULE, UP TO 127 PTS
2	2	4100-3206	8 RELAYS - 3 AMP
2	1	4100-5101	EXPANSION PWR SUPPLY (XPS) - 120VAC 60HZ
2	1	4100-5115	EXPANSION NAC MODULE - 3 NACS
2	1	4100-6014	NETWORK IF CARD, WIRED
2	2	4100-6057	NETWORK MEDIA CARD FIBER OPTIC
2	1	4100-6052	EVENT REPORTING DACT
2	1	4100-2153	INDICATOR ONLY 3 BAY GLASS DOOR
2	8	4100-1279	2" BLANK DISPLAY MODULE
2	1	4100-0634	POWER DISTRIBUTION MODULE 120V
2	1	4100-0638	ADDITIONAL 24V HARNESS
2	1	4100-2300	EXPANSION BAY (PHASE 10 ONLY)
2	1	4100-2302	8 SLOT EXPANSION BAY FILLER PANEL
2	1	2975-9423	3 BAY BB/GLASS DOOR/DRESS PANEL, RED
2	2	2081-9296	BATTERY, SYSTEM, 12VOLT, SEALED, LEAD ACID 50Ah
2	1	4100-0650	BATTERY SHELF - REQUIRED FOR 50AH BATTERIES
NODE 3 FIRE ALARM CONTROL PANEL			
2	1	4100-9114	4100U MASTER CONTROLLER, INFO-ALARM DISPLAY
2	2	4100-0634	POWER DISTRIBUTION MODULE 120V
2	1	4100-0636	BOX TO BOX HARNESS KIT
2	1	4100-0637	AUDIO BOX TO BOX HARNESS KIT
2	1	4100-0638	ADDITIONAL 24V HARNESS
2	1	4100-1242	MESSAGE EXPANSION BOARD - 32 MINUTES
2	1	4100-1270	MASTER TELEPHONE, PHONE CONTROL
2	3	4100-1272	EXPANSION PHONE CONTROLLER
2	2	4100-1249	100 WATT CLASS A ADAPTER
2	7	4100-1279	2" BLANK DISPLAY MODULE
2	3	4100-1280	8 SWITCH, 8 RED LED MODULE
2	2	4100-1286	HOA MODULE WITH 24 SWITCHES AND 24 RED LEDS
2	2	4100-1288	64/64 LED/SWITCH CONTROLLER
2	1	4100-1294	LED/SWITCH SLIDE-IN LABEL KIT
2	1	4100-1311	AUDIO CONTROL BOARD - DIGITAL
2	2	4100-1329	DIGITAL 100W AMP,6NAC,120VAC,70V
2	1	4100-1335	BACKUP DIGITAL 100W AMP,120VAC,70V
2	5	4100-2300	EXPANSION BAY (PHASE 10 ONLY)
2	2	4100-2320	AUDIO EXPANSION BAY KIT
2	2	4100-3103	MAPNET ISOLATOR MODULE
2	1	4100-3206	8 RELAYS - 3 AMP
2	5	4100-5120	TRUEALERT POWER SUPPLY, 3 CHANNELS, 120V
2	5	4100-5124	TRUEALERT POWER SUPPLY, CLASS A ADAPTER
2	3	4100-5128	EXTERNAL BATTERY POWER
2	1	4100-6014	NETWORK IF CARD, WIRED
2	1	4100-6038	DUAL RS-232 IF CARD
2	1	4100-6052	EVENT REPORTING DACT
2	2	4100-6057	NETWORK MEDIA CARD FIBER OPTIC
2	1	4100-1240	AUXILIARY AUDIO INPUT BOARD
2	1	4100-2153	INDICATOR ONLY 3 BAY GLASS DOOR
2	2	4100-2163	INDICATOR ONLY 3 BAY SOLID DOOR

**BILL OF MATERIAL
PORTLAND INTERNATIONAL JETPORT
FIRE ALARM EQUIPMENT SUBMITTAL
10/22/10**

TAB	QTY	MODEL	DESCRIPTION
2	1	2975-9423	3 BAY BB/GLASS DOOR/DRESS PANEL, RED
2	2	2975-9429	3 BAY BB AND SOLID DOOR, RED
2	2	PW-PS1275OU	BATTERY, SYSTEM, 12 VOLT, SEALED, LEAD ACID 75Ah
2	1	2081-9280	BATTERY CABINET, EXTERNAL BATTERIES
NODE 3 TRANSPONDER 1 TRANSPONDER PANEL			
2	1	4100-9601	LOCAL MODE TRANSPONDER
2	1	4100-0622	DIGITAL AUDIO RISER MODULE
2	1	4100-1249	100 WATT CLASS A ADAPTER
2	2	4100-0634	POWER DISTRIBUTION MODULE 120V
2	1	4100-0636	BOX TO BOX HARNESS KIT
2	1	4100-0637	AUDIO BOX TO BOX HARNESS KIT
2	1	4100-0638	ADDITIONAL 24V HARNESS
2	1	4100-1329	DIGITAL 100W AMP,6NAC,120VAC,70V
2	1	4100-1335	BACKUP DIGITAL 100W AMP,120VAC,70V
2	4	4100-2300	EXPANSION BAY (PHASE 10 ONLY)
2	1	4100-2320	AUDIO EXPANSION BAY KIT
2	1	4100-3103	MAPNET ISOLATOR MODULE
2	1	4100-3206	8 RELAYS - 3 AMP
2	1	4100-5111	SYSTEM POWER SUPPLY (SPS) - 120VAC 60HZ
2	3	4100-5120	TRUEALERT POWER SUPPLY, 3 CHANNELS, 120V
2	3	4100-5124	TRUEALERT POWER SUPPLY, CLASS A ADAPTER
2	2	4100-5128	EXTERNAL BATTERY POWER
2	2	4100-2163	INDICATOR ONLY 3 BAY SOLID DOOR
2	2	2975-9429	3 BAY BB AND SOLID DOOR, RED
2	2	2081-9276	BATTERY, SYSTEM, 12VOLT, SEALED, LEAD ACID 33Ah
NODE 3 TRANSPONDER 2 TRANSPONDER PANEL			
2	1	4100-9601	LOCAL MODE TRANSPONDER
2	1	4100-0622	DIGITAL AUDIO RISER MODULE
2	2	4100-0634	POWER DISTRIBUTION MODULE 120V
2	1	4100-0636	BOX TO BOX HARNESS KIT
2	1	4100-0637	AUDIO BOX TO BOX HARNESS KIT
2	1	4100-0638	ADDITIONAL 24V HARNESS
2	1	4100-3103	MAPNET ISOLATOR MODULE
2	1	4100-1329	DIGITAL 100W AMP,6NAC,120VAC,70V
2	1	4100-1335	BACKUP DIGITAL 100W AMP,120VAC,70V
2	4	4100-2300	EXPANSION BAY (PHASE 10 ONLY)
2	1	4100-2320	AUDIO EXPANSION BAY KIT
2	1	4100-3206	8 RELAYS - 3 AMP
2	1	4100-5111	SYSTEM POWER SUPPLY (SPS) - 120VAC 60HZ
2	3	4100-5120	TRUEALERT POWER SUPPLY, 3 CHANNELS, 120V
2	3	4100-5124	TRUEALERT POWER SUPPLY, CLASS A ADAPTER
2	2	4100-5128	EXTERNAL BATTERY POWER
2	2	4100-2163	INDICATOR ONLY 3 BAY SOLID DOOR
2	2	2975-9429	3 BAY BB AND SOLID DOOR, RED
2	1	4100-1249	100 WATT CLASS A ADAPTER
2	2	2081-9276	BATTERY, SYSTEM, 12VOLT, SEALED, LEAD ACID 33Ah

**BILL OF MATERIAL
PORTLAND INTERNATIONAL JETPORT
FIRE ALARM EQUIPMENT SUBMITTAL
10/22/10**

TAB	QTY	MODEL	DESCRIPTION
NODE 3 REMOTE FIRE COMMAND CENTER PANEL - MAIN TICKET LOBBY			
2	1	4100-9607	REMOTE ANNUNCIATOR W/ INFO-ALARM DISPLAY PANEL
2	1	4100-0634	POWER DISTRIBUTION MODULE 120V
2	1	4100-0640	INFOALARM MEMORY EXPANSION MODULE
2	1	4100-1244	REMOTE MICROPHONE
2	1	4100-1255	3-8 CHANNEL AUDIO OPERATOR INTERFACE
2	1	4100-1271	REMOTE MASTER TELEPHONE, PHONE CONTROLLER AND 3
2	5	4100-1279	2" BLANK DISPLAY MODULE
2	4	4100-1280	8 SWITCH, 8 RED LED MODULE
2	1	4100-1286	HOA MODULE WITH 24 SWITCHES AND 24 RED LEDS
2	2	4100-1288	64/64 LED/SWITCH CONTROLLER
2	1	4100-1294	LED/SWITCH SLIDE-IN LABEL KIT
2	2	4100-2300	EXPANSION BAY (PHASE 10 ONLY)
2	1	4100-2320	AUDIO EXPANSION BAY KIT
2	1	4100-5125	REMOTE POWER SUPPLY W/CHARGER - 120VAC
2	1	4100-2153	INDICATOR ONLY 3 BAY GLASS DOOR
2	1	2975-9423	3 BAY BB/GLASS DOOR/DRESS PANEL, RED
2	2	2081-9275	BATTERY, SYSTEM, 12VOLT, SEALED, LEAD ACID 18Ah
NODE 3 REMOTE ANNUNCIATOR PANEL - LEVEL 2 ZONE 2			
2	1	4100-9607	REMOTE ANNUNCIATOR W/ INFO-ALARM DISPLAY PANEL
2	1	4100-0634	POWER DISTRIBUTION MODULE 120V
2	1	4100-0640	INFOALARM MEMORY EXPANSION MODULE
2	1	4100-1244	REMOTE MICROPHONE
2	1	4100-1252	1 CHANNEL AUDIO OPERATOR INTERFACE
2	1	4100-1271	REMOTE MASTER TELEPHONE, PHONE CONTROLLER AND 3
2	3	4100-1280	8 SWITCH, 8 RED LED MODULE
2	1	4100-1288	64/64 LED/SWITCH CONTROLLER
2	1	4100-1294	LED/SWITCH SLIDE-IN LABEL KIT
2	2	4100-2300	EXPANSION BAY (PHASE 10 ONLY)
2	1	4100-2320	AUDIO EXPANSION BAY KIT
2	1	4100-5125	REMOTE POWER SUPPLY W/CHARGER - 120VAC
2	1	4100-2152	INDICATOR ONLY 2 BAY GLASS DOOR
2	1	2975-9422	2 BAY BB/GLASS DOOR/DRESS PANEL, RED
2	2	2081-9275	BATTERY, SYSTEM, 12VOLT, SEALED, LEAD ACID 18Ah
TRUESITE WORKSTATION			
2	1	4190-8401	TRUESITE WORKSTATION
2	1	4190-7126	19" LCD DESK MONITOR BLACK
2	1	4190-7009	CORE 2 DUO 2.1 GHZ DESK PC
2	1	4190-5050	TSW SOFTWARE
2	2	4190-6033	PCI MODULAR NETWORK INTERFACE CARD
2	1	4190-6037	PCI FIBER MEDIA CARD
2	1	4190-8122	TSW PROGRAMMING
2	12	4190-4006	QUANTITY OF TSW A-CAD DXF/DWG FILES
2	4	4190-4008	25 TSW CUSTOM ACTION MESSAGES
2	4	4190-4009	25 TSW TRAVEL KEYS
2	4	4190-4010	25 TSW STATUS ICONS
2	4	4190-4011	25 TSW CONTROL FUNCTION KEYS
2	4	4190-4013	QUANTITY OF TSW COVERAGE ZONES
2	1	4190-9013	24 PIN DOT MATRIX PRINTER

**BILL OF MATERIAL
PORTLAND INTERNATIONAL JETPORT
FIRE ALARM EQUIPMENT SUBMITTAL
10/22/10**

TAB	QTY	MODEL	DESCRIPTION
RF SUBSCRIBER, MASTER BOX, KNOX BOX			
2	2	TXC-86-515-S	PIEZO
2	2	30-1640 30-1640 PW	SUPPLY COVER
2	2	1640 UL TRNSFR	TRANSFORMER FOR 7788-F SUBSCRIBER
2	2	7788-F 8 ZONE RED	AES INTELLINET RF SUBSCRIBER UNIT 8 ZONE
2	2	CV-12V	7.2 AH BATTERY
2	2	450247-0000	DIGITIZE DET-6B, 6 ZONE, MASTER BOX
2	2	900435-0001	DIGITIZE LIGHTNING PROTECTION BOARD
2	2	450404-0001	MASTER TRIP PC BOARD
2	2	3270	KNOX BOX
INITIATING/ADDRESSABLE DEVICES, ACCESSORIES,RELAYS,TELEPHONES			
3	29	4099-9001	IDNET SINGLE ACTION PULL STATION
3	75	4098-9714	TRUEALARM PHOTO SMOKE SENSOR
3	7	4098-9733	TRUEALARM HEAT SENSOR
3	82	4098-9792	TRUEALARM SENSOR BASE
3	38	4090-9002	IDNET RELAY IAM
3	40	4090-9001	IDNET SUPERVISED IAM
3	15	4090-9118	RLY IDNET 2 IAM W/T SENSE
3	4	4098-9756	TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT
3	4	2098-9799	SAMPLING TUBE 97"
3	4	2098-9806	REMOTE TEST STATION W/ LED AND KEY SWITCH
3	4	4098-9845	DUCT WEATHERPROOF ENCLOSURE
3	16	2084-9023	REMOTE PHONE JACK W/LED
3	6	2084-9024	PTT PLUGGABLE TELEPHONE
3	1	2084-9026	EMERGENCY PHONE CABINET DBA-10
3	13	2088-9021	ENCAPSULATED RELAY PAM-1
3	1	4603-9101	SERIAL LCD ANNUNCIATOR
NOTIFICATION APPLIANCES			
4	26	4906-9201	MULTI CD TRUEALERT ADDRESSABLE VO WALL RED
4	156	4906-9251	MULTI CD TRUEALERT ADDRESSABLE SV WALL RED
4	7	4906-9254	MULTI CD TRUEALERT ADDRESSABLE SV CEILING RED
4	18	4905-9998	S/V WIREGUARD, RED, TRUEALERT
4	9	4906-9227	MULTI CD TRUEALERT AV WALL RED
4	13	4902-9716	SPEAKER 25V/70VRMS RED
4	2	4906-9109	HI CD VO MC NON-ADDRESSABLE STROBE, WALL, RED
4	2	WBR	EDWARDS ADAPTABEAON WALL MOUNT BRACKET
4	2	53DR-GW	EDWARDS ADAPTABEAON ROTATING LIGHT RED
4	25	4081-9005	END-OF-LINE RESISTOR 1.8K (EOL)
4	25	4081-9003	END-OF-LINE RESISTOR 4.7K (EOL)
4	20	4081-9004	END-OF-LINE RESISTOR 6.8K (EOL)
4	10	4081-9008	END-OF-LINE RESISTOR 10K (EOL)

INSERT 2

Fire Alarm Control Panel & Accessories

Features

Master Controller (top) bay:

- Master controller with color-coded operator interface including raised switches for high confidence feedback
- Dual configuration program CPU, convenient service port access, and capacity for up to 2000 addressable points**
- CPU assembly includes dedicated archive memory for on-board system information storage
- System power supply (SPS) and charger (9 A total) with on-board: NACs, IDNet™ addressable device interface, programmable auxiliary output and alarm relay
- Module level ground fault search locates and isolates faults to assist installation and service
- Available with InfoAlarm™ Command Center expanded content user interface (see data sheet S4100-0045)
- Available with redundant CPU (requires two bays)
- Upgrade kits are available for existing control panels

Standard addressable interfaces include:

- IDNet addressable device interface with 250 points that support TrueAlarm® analog sensing and operate with either shielded or unshielded twisted pair wiring
- Remote annunciator module support via RUI (remote unit interface) communications port

Optional modules include:

- MAPNET II® or additional IDNet output modules and IDNet/MAPNET II quad isolator modules
- IDNet+ output module with built-in quad isolator and enhanced operation for better retrofit to existing wiring (see data sheet S4100-0046)
- TrueAlert® addressable notification appliance power supplies with three, 3 A SLC outputs on-board
- DACT, City Connect, Network Interfaces, and RS-232 output ports for printers or maintenance terminals
- Alarm relays, auxiliary relays, additional power supplies, IDC modules, and NAC expansion modules
- Service modems, VESDA® Air Aspiration Systems interface, and coded manual station interface
- LED/switch modules and panel mount printers
- Audio amplifiers, firefighter master phones, and control modules (see page 7 for additional data sheet reference)

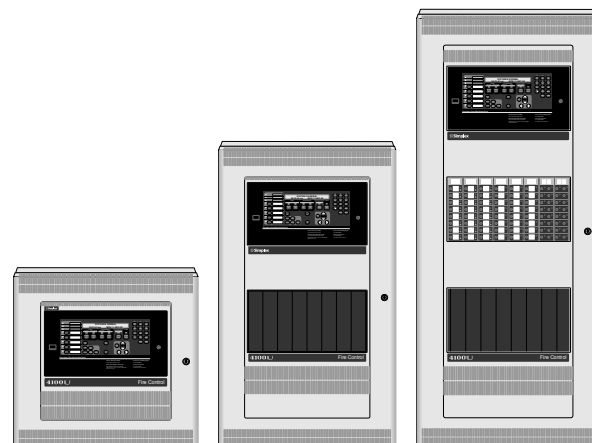
Compatible with Simplex® remotely located:

- 4009 IDNet NAC Extenders
- TrueAlert Addressable Controllers

4100U and upgrade kits are UL Listed to:

- UL Std. 864, Fire Detection and Control (UOJZ), and Smoke Control Service (UUKL)
- UL Std. 2017, Process Management Equipment (QVAX)
- UL Std. 1076, Proprietary Alarm Units-Burglar (APOU)
- UL Std. 1730, Smoke Detector Monitor (UULK)
- ULC Std. S527-99

** Simplex fire alarm technology is protected by the following U.S. Patent Numbers:
TrueAlarm analog detection: 5,155,468; 5,173,683 and 5,543,777. IDNet/MAPNET II addressable communications: 4,796,025, 5,966,002; and 6,034,601. TrueAlert addressable notification: 6,313,744; 6,426,697; and 6,693,532 B2. SmartSync control: 6,281,789.



4100U Cabinets are Available with
One, Two or Three Bays

Software Feature Summary

CPU provides two on-board configuration programs:

- Two programs allow for reduced service programming time with one active program and one reserve
- Downtime is reduced because the system stays running during download

PC based programmer features:

- Convenient front panel accessed Ethernet port for quick and easy **download** of site-specific programming
- Modifications can be **uploaded** as well as downloaded for greater service flexibility
- **AND**, firmware enhancements are made via software downloads to the EPROM – service personnel are not required to exchange board level components

Introduction

4100U Series Fire Detection and Control Panels provide extensive installation, operator, and service features with point and module capacities suitable for a wide range of system applications. An on-board Ethernet port provides fast external system communications to expedite installation and service activity. Dedicated archive memory allows on-board system information storage.

Modular design. System specific application requirements are determined by selecting from a wide variety of functional modules. Selections allow panels to be configured for either Stand-Alone or Networked fire control operation.

(Additional features not covered in this document are found in documents referenced on page 7.)

* See pages 5 and 6 for product that is UL or ULC listed and additional listing information. This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7165-0026:251 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.

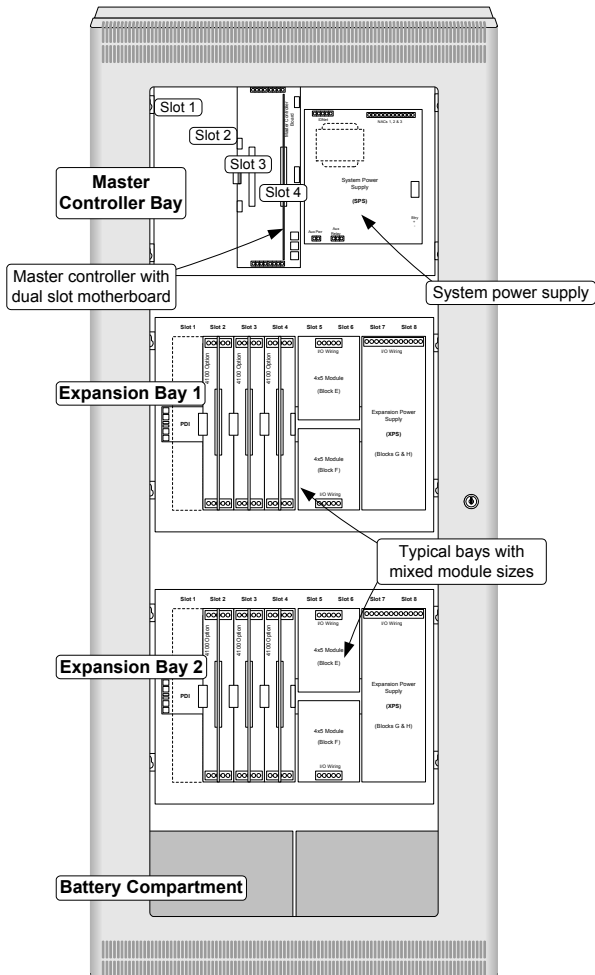
Module Bay Description

The Master Controller Bay (top) includes a standard multi-featured system power supply, the master controller board, and operator interface equipment.

The Expansion Bays include a Power Distribution Interface (PDI) for new 4" x 5" flat design option modules and also accommodate 4100-style modules.

The Battery Compartment (bottom) accepts two batteries, up to 50 Ah, to be mounted within the cabinet without interfering with module space.

The following illustration identifies bay locations using a three bay cabinet for reference.



4100U Module Bay Reference

Mechanical Description

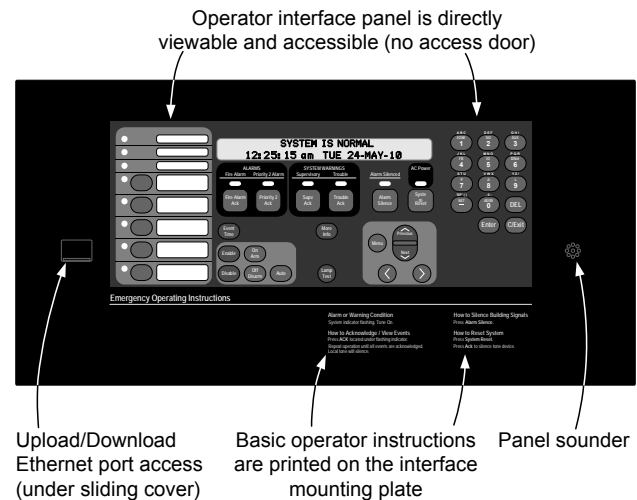
- Optional modules are easily and quickly installed and programmed
- New design modules are mechanically secured in place and then electrically plugged into the PDI module reducing the need for wiring harnesses
- Boxes can be close-nipped; each box provides convenient stud markers for drywall thickness and nail-hole knockouts for quicker mounting
- Smooth box surfaces are provided for locally cutting conduit entrance holes exactly where required

Mechanical Description (Continued)

- The latching dress panel (retainer) assembly easily lifts off for internal access
- NACs are mounted directly on power supply assemblies providing minimized wiring loss, compact size, and readily accessible terminations
- Packaging supports traditional 4100-style motherboard with daughter cards
- Modules are power-limited (except as noted, such as relay modules)
- The NEMA 1 box is ordered separately and available for early installation
- Boxes, doors, and dress panels are available in beige or red (ordered separately)
- Doors are available with tempered glass inserts or solid, in beige or red
- Refer to data sheet S4100-0037 for enclosure details

Operator Interface Detail Reference

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



Software Feature Summary

- TrueAlarm individual analog sensing with front panel information and selection access
- “Dirty” TrueAlarm sensor maintenance alerts, service and status reports including “almost dirty”
- TrueAlarm magnet test indication appears as distinct “test abnormal” message on display when in test mode
- TrueAlarm sensor peak value performance report
- Selectable service override allows authorized operators to clear alarm conditions during System Reset even if status has gone to trouble before reset occurred
- Module level ground fault searching assists installation and service by locating and isolating modules with grounded wiring
- WALKTEST™ silent or audible system test performs an automatic self-resetting test cycle (WALKTEST operation is protected under U.S. patent No. 4,725,818)
- **NOTE:** If new features require software revisions, updates will be performed on-site by the authorized Simplex product representative.

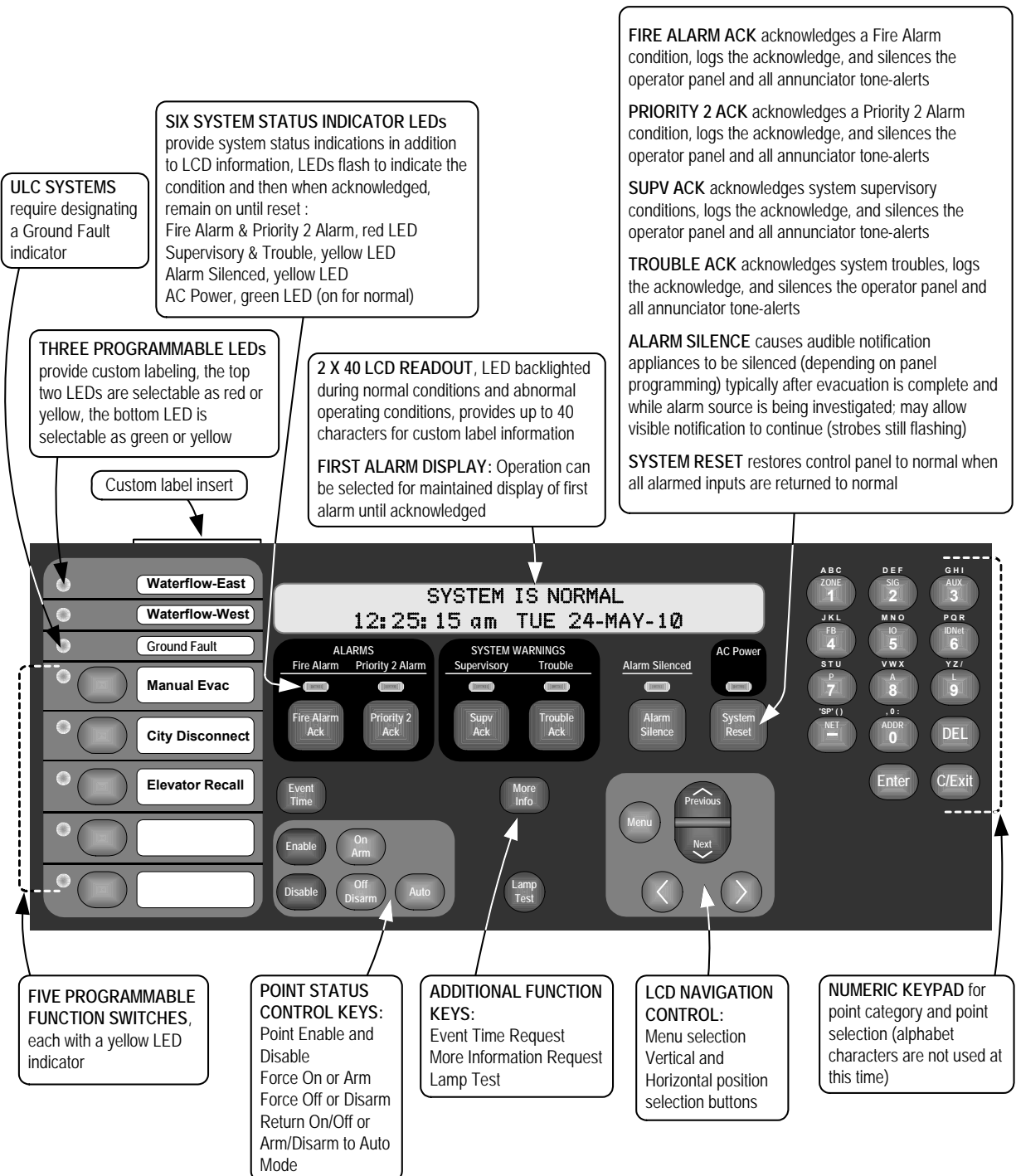
Operator Interface

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

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

Operator Interface Features

- Convenient and extensive operator information is provided using a logical, menu-driven display
- Multiple automatic and manual diagnostics for maintenance reduction
- Alarm and Trouble History Logs (up to 1300 total events) are available for viewing from the LCD, or capable of being printed to a connected printer, or downloaded to a service computer
- Convenient PC programmer label editing
- Password access control



Compatible Peripheral Devices

The 4100U is compatible with an extensive list of remote peripheral devices including printers, CRT/keyboards (up to five total), and both conventional and addressable devices including TrueAlarm analog sensors.

Addressable Device Control

Overview. The 4100U provides standard addressable device communications for IDNet compatible devices and accepts optional modules for communications with MAPNET II compatible devices. Using a two wire communications circuit, individual devices such as manual fire alarm stations, TrueAlarm sensors, conventional IDC zones, and sprinkler waterflow switches can be interfaced to the addressable controller to communicate their identity and status.

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

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

IDNet Channel Capacity. The CPU bay system power supply (SPS) provides an IDNet signaling line circuit (SLC) that supports up to 250 addressable monitor and control points intermixed on the same pair of wires. Additional IDNet circuit modules are available for 64, 127, or 250 addressable devices.

MAPNET II Channel Capacity. A total of 127 addressable monitor and control points may be intermixed on the same pair of wires supporting a single MAPNET II signaling line circuit (SLC).

Wiring Requirements for IDNet or MAPNET II Communications. Refer to the specifications chart below. Distances are for shielded or unshielded wire. Shielded wire may provide protection from unexpected sources of interference.

Wiring Specifications

Size		18 AWG (0.82 mm ²)
Type	Preferred	Shielded twisted pair (STP)
	Acceptable*	Unshielded twisted pair (UTP)
Farthest Distance from Control Panel per Device load	126-250	Up to 2500 feet (762 m)
	up to 125	Up to 4000 ft (1219 m)
Total Wire Length Allowed With "T" Taps for Class B Wiring		Up to 10,000 ft (3 km); 0.58 μ F

* Some applications may require shielded wiring. Review system with your local Simplex product supplier.

TrueAlert Addressable Notification

The 4100U can be equipped with a TrueAlert Power Supply that provides three 3 A Signaling Line Circuits (SLCs) for both controlling and powering addressable notification appliances. With addressable appliances, Class B wiring can be "T-tapped" for both easier wiring and reduced wire run lengths. Extensive details concerning TrueAlert addressable notification are found on data sheet S4009-0003. Appliances are documented separately and include horns, strobes, and combination units.

TrueAlarm System Operation

Addressable device communications include operation of TrueAlarm smoke and temperature sensors. Smoke sensors transmit an output value based on their smoke chamber condition and the CPU maintains a current value, peak value, and an average value for each sensor. Status is determined by comparing the current sensor value to its average value. Tracking this average value as a continuously shifting reference point filters out environmental factors that cause shifts in sensitivity.

Programmable sensitivity of each sensor can be field selected at the control panel for different levels of smoke obscuration (shown directly 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 heat sensors can be selected for a fixed temperature detection, with or without rate-of-rise detection. Utility temperature sensing is also available, typically to provide freeze warnings or alert to HVAC system problems. The temperature readings can be programmed to be read in either Fahrenheit or Celsius.

TrueSense[®] Early Fire Detection. Multi-sensor 4098-9754 provides photoelectric and heat sensor data using a single 4100U IDNet address. The panel evaluates smoke activity, heat activity, *and their combination*, to provide TrueSense early detection. For more details on this patented operation, refer to data sheet S4098-0024.

Diagnostics and Default Device Type

Sensor Status. TrueAlarm operation allows the control panel to automatically indicate when a sensor is almost dirty, dirty, and excessively dirty. The NFPA 72[®] (*National Fire Alarm Code*[®]) requirement for a test of the sensitivity range of the sensors is fulfilled by the ability of TrueAlarm operation to maintain the sensitivity level of each sensor.

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

CPU Bay Module Details

Master Controller and Motherboard:

- Mounts in Slot 4 of a two slot motherboard (Slots 3 and 4 of the Master Controller Bay) and provides one Style 4 or Style 7, RUI communications channel, available at Slot 4
- RUI communications controls up to 31 devices per master controller (on one or multiple RUI channels); devices include: MINIPLEX® transponders, 4603-9101 LCD Annunciators, 4602-9101 Status Command Units (SCU), 4602-9102 Remote Command Units (RCU), 4602 Series LED Annunciator Panels, 4100 Series 24 I/O and LED/Switch modules, and remote mount 4009 TPS units
- Up to four RUI channels are supported; use up to three 4100-1291 RUI expansion modules as required
- Optional Service Modem 4100-6030 mounts onto the master controller board with its own on-board connections
- Slot 3 of the motherboard is primarily used for the 4100-6014 Network Interface Board with media modules, and secondarily can accommodate the 4100-6038 Dual RS-232 Board

System Power Supply: (see page 7 for more detail)

- Rating is 9 A total with “Special Application” appliances; 4 A total for “Regulated 24 DC” appliance power
- Outputs are power-limited, except for the battery charger
- Provides system power, battery charging, auxiliary power, auxiliary relay, earth detection, on-board IDNet communications channel for 250 points, three on-board NACs, and provisions for either an optional City Connect Module or an optional Alarm Relay Module
- IDNet SLC Output** provides Class B or Class A communications for up to 250 addressable devices (as described on page 4)

System Power Supply (Continued):

- Three, 3 A On-Board NACs**, conventional reverse polarity operation; rated 3 A for Special Application appliances and 2 A for Regulated 24 DC power, with electronic control and overcurrent protection; selectable as Class B or Class A, and for synchronized strobe or SmartSync™ horn/strobe operation over two wires
- NACs can be selected** as auxiliary power outputs derated to 2 A for continuous duty; the total auxiliary power output per SPS is limited to 5 A
- Battery Charger** is dual rate, temperature compensated, and charges up to 50 Ah sealed lead-acid batteries mounted in the battery compartment (33 Ah for single bay cabinets); also is UL listed for charging up to 110 Ah batteries mounted in an external cabinet (see data sheet S2081-0012 for details)
- Battery and Charger Monitoring** includes battery charger status and low or depleted battery conditions; status information provided to the master controller includes analog values for: battery voltage, charger voltage and current, actual system voltage and current, and individual NAC currents
- 2 A Auxiliary Power Output** is selectable for detector reset, door holder, or coded output operation
- Auxiliary Relay** is selectable as N.O. or N.C., rated 2 A @ 32 VDC, and is programmable as a trouble relay, either normally energized or normally de-energized, or as an auxiliary control
- Optional City Connect Module** (4100-6031, with disconnect switches, or 4100-6032, without disconnect switches) can be selected for conventional dual circuit city connections
- Optional Alarm Relay Module** (4100-6033) provides three Form C relays that are used for Alarm, Trouble, and Supervisory, rated 2 A resistive @ 32 VDC

Master Controller Selection Information

Master Controller and Expansion Bay Selection* (Canadian models have low battery cutout)

Model	Model Type/Listing		Description	Supv.	Alarm
4100-9111	120 VAC Input		4100U Master Controller Assembly with LCD and operator interface , 9 A system power supply/battery charger (SPS), 250 point IDNet interface, 3 NACs, auxiliary relay, and external RUI communications interface	373 mA	470 mA
4100-9112	English	120 VAC, Canadian			
4100-9113	French				
4100-9211	220-240 VAC Input				
4100-9131	120 VAC Input		4100U Master Controller Assembly, no display, no operator interface , 9 A system power supply/battery charger (SPS), 250 point IDNet interface, 3 NACs, auxiliary relay, and external RUI communications interface	363 mA	425 mA
4100-9132	English	120 VAC, Canadian			
4100-9133	French				
4100-9230	220-240 VAC Input				
4100-9121 (not ULC listed)	Redundant Master Controller, two bay assembly; top bay contains LCD and operator interface, CPU card assembly, and 4100U, 9 A system power supply/battery charger (SPS); second bay contains CPU card in Slot 2, and LCD and operator interface; 120 VAC, 60 Hz input; NOTE: RUI connections require use of 4100-1291 RUI expansion modules			718 mA	937 mA
4100-2300	Expansion Bay Assembly; order for each required expansion bay (not required for 4100-9121)				

Master Controller Upgrades for Existing 4100 Series Fire Alarm Control Panels*

Model	Panel Type	Includes
4100-7150	1000 pt 4100 (4100+)	New Master Controller and 4100U user interface door assembly with Ethernet connection
4100-7152	512 pt 4100	Same as 4190-7150 plus includes a legacy (gold wing) power supply
4100-7158	1000 pt 4100 (4100+) or 4100U	New Master Controller with Ethernet Connection Upgrade Kit; for 4100+ systems without user interface; or for earlier 4100U systems using the existing 4100U user interface
4100-2301	Expansion Bay Upgrade Kit for mounting 4100U style (4" x 5" modules) in existing 4100 style panels	

Master Controller Upgrades for Existing 4020 Series Fire Alarm Control Panel

Model	Description
4100-9833	4020 Master Controller Upgrade with LCD & operator interface assembly; mounts as an adjunct panel; single bay size with locking glass door and retainer; cabinet dimensions are 24" W x 22" H x 8-3/8" D (610 mm x 559 mm x 213 mm)

* For InfoAlarm Command Center expanded content display products, refer to data sheet S4100-0045.

Module Selection Information

Communication Modules

Model	Description	Size	Supv.	Alarm	
4100-6014	For Master Controller; mounts in Slot 3	1 Slot	46 mA	46 mA	
4100-6061	For Redundant Master Controller				
4100-6056	Wired Media Module	N.A.	55 mA	55 mA	
4100-6057	Fiber Optic Media Module	N.A.	25 mA	25 mA	
4100-6055	Network Access Dial-in Service Modem, mounts to 4100-6014 or 4100-6061 Network Interface Card, requires telephone line connection	N.A.	60 mA	60 mA	
4100-1291	Remote Unit Interface Module (RUI); up to three maximum per control panel	1 Slot	85 mA	85 mA	
4100-6030	Service Port Modem, local panel access only, mounts to Master Controller Module, requires telephone line connection, accesses same information as front panel port	N.A.	70 mA	70 mA	
4100-6031	Select one per SPS (fits on SPS)	City Circuit, with disconnect switches	N.A.	20 mA	36 mA
4100-6032		City Circuit, w/o disconnect switches			
4100-6033		Alarm Relay, 3 Form C relays, 2 A @ 32 VDC; for SPS or RPS	N.A.	15 mA	37 mA
4100-6036	Physical Bridge, Class B, includes 1 modem module and 2 wired modules	1 Slot	210 mA	210 mA	
4100-6037	Physical Bridge, Class A, includes 2 modem and 2 wired modules	2 Slots	300 mA	300 mA	
4100-6038	Dual Port RS-232 Interface, mounts in Slot 3 or Slot 2; 3 max. RS-232 type per panel	1 Slot	132 mA	132 mA	
4100-6045	Decoder Module	3 Slots	85 mA	163 mA	
4100-6048	VESDA Aspiration System Interface	1 Slot	132 mA	132 mA	
4100-6052	DACT, Point or Event Reporting; 1 shipped unless 4100-7908 is selected; 2 max. per system; includes 2, 2080-9047 cables, 14 ft (4.3 m) long, RJ45 plug and spade lugs	1 Slot	30 mA	40 mA	

Expansion, System, Remote, and TrueAlert Power Supplies and Accessories

(Canadian models have low battery cutout; XPS and RPS NACs operate like SPS, see page 5 for details)

Model	Description/Listing	Size	Supv.	Alarm
4100-5101	120 VAC	2 Blocks	50 mA	50 mA
4100-5103	120 VAC, Canadian			
4100-5102	220-240 VAC			
4100-5115	NAC Expansion Module, 3 NACs, Class A/B, mounts on XPS only	N.A.	25 mA	25 mA
4100-5111	120 VAC	4 Blocks	175 mA	185 mA
4100-5112	120 VAC, Canadian			
4100-5113	220-240 VAC			
4100-5125	120 VAC	4 Blocks	150 mA	185 mA
4100-5126	120 VAC, Canadian			
4100-5127	220-240 VAC			
4100-5120	120 VAC	4 Blocks	88 mA	100 mA
4100-5121	120 VAC, Canadian			
4100-5122	220-240 VAC			
4100-5124	TrueAlert SLC Class A Adapter for all 3 SLCs, mounts on TPS only	N.A.	10 mA	10 mA
4100-5152	12 VDC Power Option, 2 A maximum	1 Block	1.5 A maximum	
4100-0156	8 VDC Converter, required for multiple Physical Bridge Modules, 3 A maximum	1 Block	included w/loads	
4009-9813	4009 TPS Transponder Interface Card (TIC), mounts in a remote cabinet with TPS; order card, TPS, and batteries separately, and select a 2975-9229 (red) or 2975-9230 (beige) cabinet (field installed); refer to data sheet S4100-0037 for cabinet detail; Supervisory and Alarm current = 87 mA			
4100-0636	Box Interconnection Harness Kit (non-audio); order one for each close-nipped cabinet			
4100-0638	4100 Slot Module Additional 24 VDC Harness; need when 4100 Slot module requirements exceed 2 A from SPS			

8 Zone Initiating Device Circuits*

Expansion Signal Module and Options (1.5 A Class B except as noted)

Model	Type	Supv.	Alarm	Model	Description	Supv.	Alarm
4100-5005	Class B	75 mA	195 mA	4100-5116	Converts 1 NAC in to 3 NACs out; 1 Block size	18 mA	80 mA
4100-5015	Class A	75 mA	195 mA	4100-1266	Expands 3 NACs to 6	select one; mounts on 4100-5116	0.6 mA
* IDC Modules are 1 Slot size				4100-1267	Converts 3 NACs to Class A		0.6 mA

Miscellaneous Accessories

Model	Description
4100-1279	Single blank 2" display cover, order as required (8 are required to fill a bay front)
4100-2210	Appliqué, Canadian French, 4100U Fire Control
4100-9835	Termination and Address Label Kit (for module marking); provides additional labels for field installed modules
4100-6029	Smoke Management Application Guide; required for UUKL listing
4100-6034	Tamper Switch, one per cabinet assembly if required; monitors solid door for panels with solid door; monitors the internal retainer panel for panels with glass door (not the glass door); has a built-in addressable IDNet IAM
2081-9031	Series resistor for WSO, IDCs (N.O. water flow and tamper on same circuit, wires after water flow and before tamper) 470 Ω, 1 W, encapsulated, two 18 AWG leads (0.82 mm ²), 2-1/2" L x 1-3/8" W x 1" H (64 mm x 35 mm x 25 mm)

Continued on next page

Module Selection Information (Continued)

Addressable Interface Modules (refer to location reference on page 8)

Model	Description		Supv.	Alarm
4100-3101	IDNet Module, 250 point capacity	With 250 IDNet devices, add	200 mA	250 mA
4100-3104	IDNet Module, 127 point capacity	With 127 IDNet devices, add	102 mA	127 mA
4100-3105	IDNet Module, 64 point capacity	With 64 IDNet devices, add	51 mA	64 mA
IDNet Modules, Specifications for each capacity;		Module without devices	75 mA	115 mA
Module size = 1 Block		Loading per IDNet device	0.8 mA	1 mA
Model	Description		Supv.	Alarm
4100-3102	MAPNET II Module, 127 point capacity, add devices separately; Module size = 2 Slots; Loading per MAPNET II device = 1.7 mA	Module without devices	255 mA	275 mA
		Fully loaded module, total	471 mA	491 mA
4100-3103	Isolator Module for MAPNET II or IDNet; converts a single connected SLC into four isolated outputs selectable as Class A or Class B; up to two Isolator Modules can be connected to one SLC; Module size = 1 Slot; NOTE: Compatible with MAPNET II Remote Isolators only; for quad isolation with IDNet Remote Isolators, use 4100-3107 IDNet+ Module (see data sheet S4100-0046 for details)		50 mA	50 mA

Relay Modules; Nonpower-limited (for mounting in expansion bay only, refer to location reference on page 8)

Model	Description	Resistive Ratings		Inductive Ratings		Size	Supv.	Alarm
4100-3202	4 DPDT w/feedback	10 A	250 VAC	10 A	250 VAC	2 Slots	15 mA	175 mA
4100-3204	4 DPDT w/feedback	2 A	30 VDC/VAC	1/2 A	30 VDC/120 VAC	1 Block	15 mA	60 mA
4100-3206	8 SPDT	3 A	30 VDC/120 VAC	1-1/2 A	30 VDC/120 VAC	1 Block	15 mA	190 mA

Current Calculation Notes:

- To determine total supervisory current, add currents of modules in panel to base system value **and** all external loads powered by panel power supplies.
- To determine total alarm current, add currents of modules in panel to base system alarm current **and** add all panel NAC loads **and** all external loads powered from panel power supplies.

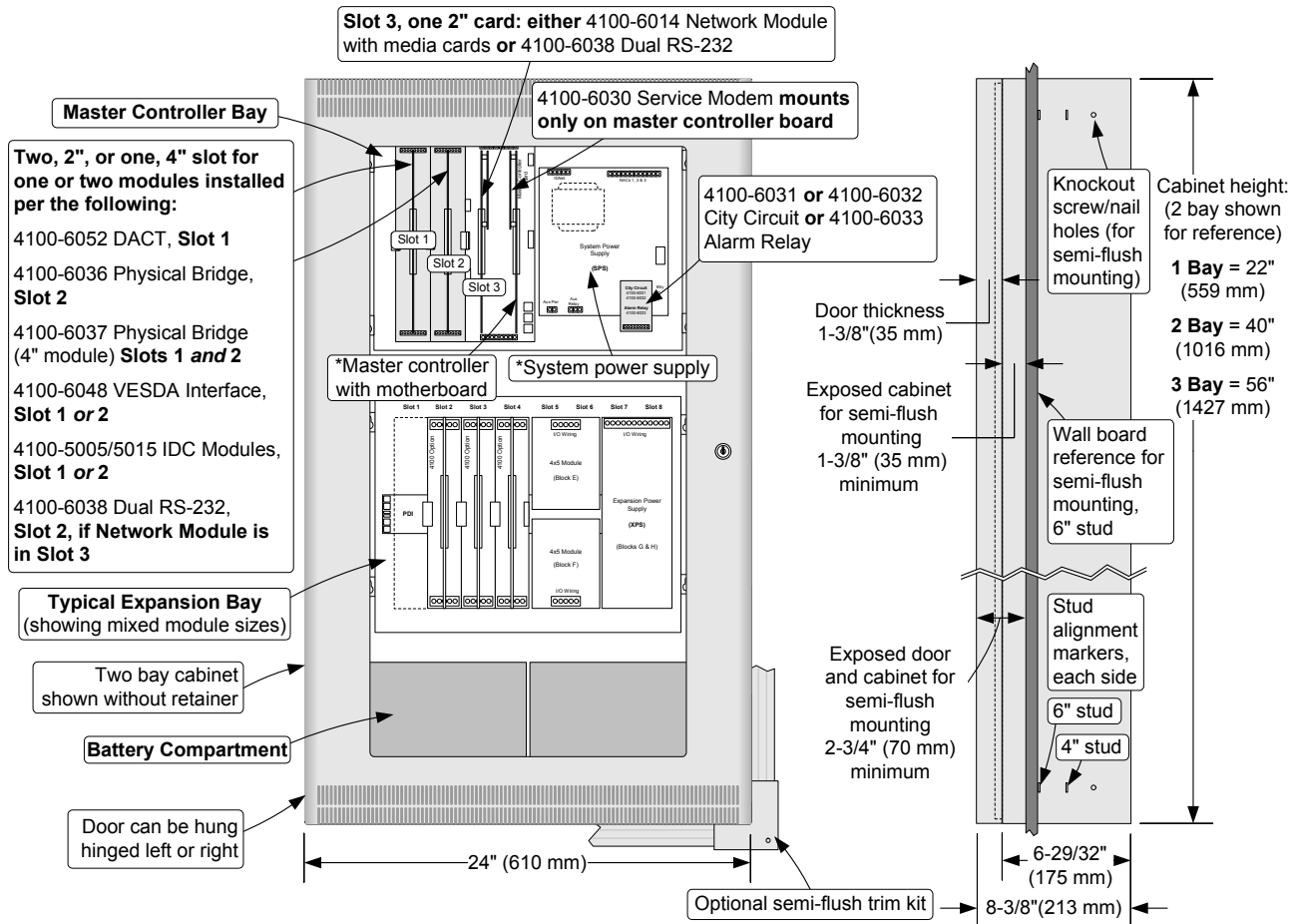
General Specifications

Input Power	System Power Supplies (SPS)	120 VAC Models	4 A maximum @ 102 to 132 VAC, 60 Hz	
	Expansion Power Supplies (XPS) Remote Power Supplies (RPS) TrueAlert Power Supplies (TPS)	220-240 VAC Models	2 A maximum @ 204 to 264 VAC, 50/60 Hz; separate taps for 220/230/240 VAC	
Power Supply Output Ratings for SPS, XPS, and RPS (nominal 28 VDC on AC; 24 VDC on battery backup)	Total Power Supply Output Rating	Including module currents and auxiliary power outputs; 9 A total for "Special Application" appliances; 4 A total for "Regulated 24 DC" power (see below for details)		Output switches to battery backup during mains AC failure or brownout conditions
	Auxiliary Power Tap	2 A maximum		
	NACs Programmed for Auxiliary Power	2 A maximum per NAC; 5 A maximum total		
		Rated 19.1 to 31.1 VDC		
Special Application Appliances	Simplex 4901, 4903, 4904, and 4906 Series horns, strobes, and combination horn/strobes and speaker/strobes (contact your Simplex product representative for compatible appliances)			
Regulated 24 DC Appliances	Power for other UL listed appliances; use associated external synchronization modules where required			
Battery Charger Ratings for SPS, RPS and TPS (sealed lead-acid batteries)	Battery capacity range	UL listed for battery charging of 6.2 Ah up to 110 Ah (110 Ah batteries require a remote battery cabinet); ULC listed for charging up to 50 Ah batteries		
	Charger characteristics and performance	Temperature compensated, dual rate, recharges depleted batteries within 48 hours per UL Standard 864; to 70% capacity in 12 hours per ULC Standard S527		
	Operating Temperature	32° to 120°F (0° to 49° C)		
Environmental	Operating Humidity	Up to 93% RH, non-condensing @ 90° F (32° C) maximum		

Additional 4100U Data Sheet Reference

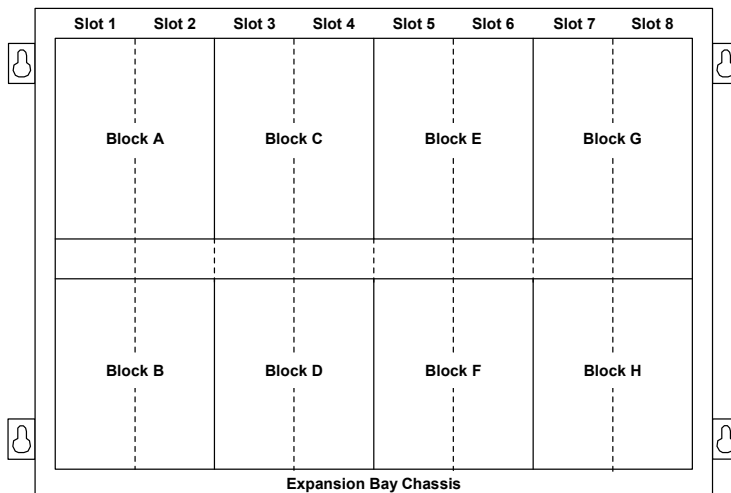
Subject	Data Sheet	Subject	Data Sheet	Subject	Data Sheet
Enclosures	S4100-0037	MINIPLX Transponders	S4100-0035	InfoAlarm Comm. Center	S4100-0045
LED/Switch Modules & Panel Mount Printer	S4100-0032	IDNet+ Module w/Quad Isolator	S4100-0046	Graphic I/O Modules	S4100-0005
4100U Audio/Phone Modules	S4100-0034	Remote Annunciators	S4100-0038	2120 BMUX Module	S4100-0048
TFX Interface Module	S4100-0042	Network Display Unit (NDU)	S4100-0036	SafeLINC Internet Interface	S4100-0028
TrueAlert Addressable Products	S4009-0003	Remote Battery Charger	S4081-0002	Master Clock Interface	S4100-0033
Fire Alarm Network Overview	S4100-0055	Network Communications	S4100-0056	Addr. Device Compatibility	S4090-0011
				Agent Release Applications	S4100-0040

Mounting and CPU Bay Module Reference (* indicates supplied modules)



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

Expansion Bay Module Loading Reference



Size Definitions: Block = 4" W x 5" H (102 mm x 127 mm) card area
Slot = 2" W x 8" H (51 mm x 203 mm) motherboard with daughter card

Description		Mounting
IDNet Modules		1 Block
4, 2 A Relays	NON Power-limited	1 block
4, 10 A Relays		4", 2 slots
8, 3 A Relays		1 block
VESDA Interface		2", 1 Slot
Class B IDC		2", 1 Slot
Class A IDC		2", 1 Slot
MAPNET II Module		4", 2 Slots
MAPNET II/IDNet Isolator		2", 1 Slot
Class B Physical Bridge		2", 1 Slot
Class A Physical Bridge		4", 2 Slots
Decoder Module		6", 3 Slots
System, Remote, or TrueAlert Power Supply		Blocks E, F, G & H ONLY
Expansion Power Supply		Blocks G & H ONLY
NAC Expansion Module		On XPS ONLY

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Features

4100U Series MINIPLEX transponders allow remotely located initiating and notification functions:

- Transponder operation is available as standard or with local mode operation
- Communications with the host fire alarm control panel use the Remote Unit Interface (RUI) format

Initiating functions include:

- Conventional initiating device circuit (IDC) support
- Addressable device support including TrueAlarm® analog sensor compatibility**

Notification functions include:

- Conventional DC notification appliance circuits
- Emergency voice/alarm communications
- TrueAlert® addressable strobe and horn notification

Local mode operation provides:

- Default local initiating and notification operation in the event of a communications loss with the host control panel
- Enabling of an optional Local Mode Controller with a local alarm sounder, LED status indicators, and keyswitch enabled control switches
- Support for IDNet™ addressable devices, conventional and TrueAlert addressable notification appliances, and default output tones from local amplifiers**

Optional modules include:

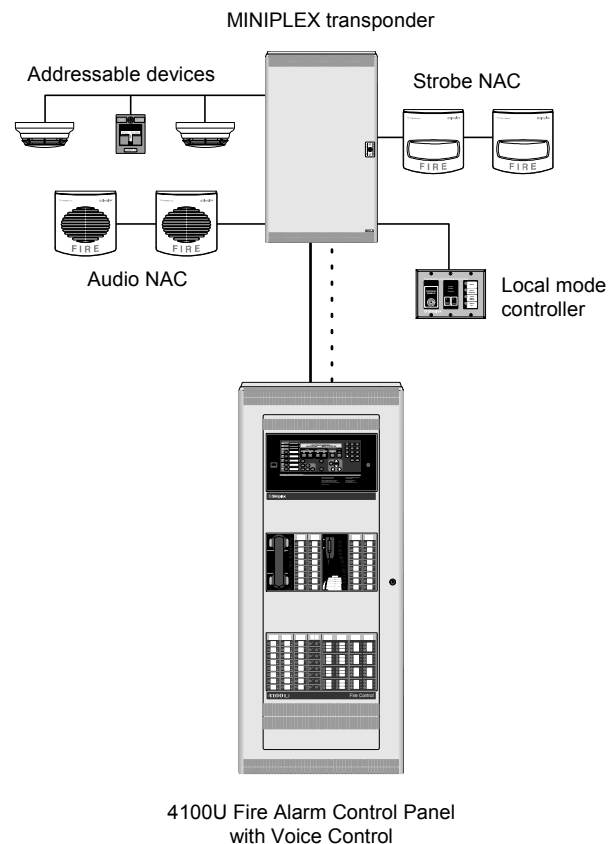
- Digital or Analog audio riser modules for connection to system audio signals
- Digital or analog input audio amplifiers with integral on-board NACs
- Power supplies with or without battery chargers
- City Connect modules and RS-232 ports for printers or maintenance terminals
- Alarm relays, auxiliary relays, additional IDC modules, and NAC expansion modules

Cabinets are equipped with solid doors (beige or red) and in one, two, or three bay sizes

Listed to:

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

* See pages 4 and 5 for product that is listed as UL or ULC. This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7165-0026:251 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.



Typical 4100U MINIPLEX System One-Line Drawing

Introduction

4100U MINIPLEX transponders connect to a host 4100U Fire Alarm Control Panel using Simplex® remote unit interface (RUI) communications. At the transponder, RUI communications are received by the transponder interface module and translated into the same internal communications format that is used in the host control panel.

Remotely located modules. With RUI communications, the transponder can remotely provide the same initiating and notification functions that occur at the host control panel without requiring multiple long distance wiring runs. Connections to the host panel are low current communications and audio wiring with distances up to 2500 ft (762 m).

Software Revisions. Some of the features detailed and products listed in this document may require the latest 4100U System Software Revision and/or hardware updates. Contact your local Simplex® product supplier for details.

** Simplex fire alarm technology is protected by the following U.S. Patent Numbers: TrueAlarm analog smoke detection: 5,155,468; 5,173,683 and 5,543,777. IDNet and MAPNET II addressable communications; 4,796,025. TrueAlert addressable notification; 6,313,744 and 6,426,697. SmartSync horn/strobe control; 6,281,789. Flex-35 and Flex-50 amplifier operation; 6,452,491.

Introduction (Continued)

Please refer to document S4100-0031 and the other documents listed on page 3 for additional information concerning the extensive initiating and notification features of the 4100U fire alarm control panels.

Module Bay Description

Transponder model 4100-9600 includes a bay assembly, a power distribution interface module (PDI), a Basic Transponder Interface Module, and an interconnect harness. Communications with the host fire alarm control panel are via a Remote Unit Interface (RUI) connection that allows for up to 2500 ft (762 m) distance. RUI can communicate with up to a total of 31 remote devices and can be either Style 4 or Style 7 communications.

Transponder model 4100-9601 substitutes a Local Mode Transponder Module for the Basic Transponder Module.

Optional Expansion Bays each include a PDI and accept a variety of optional modules (refer to list starting on page 4).

The Battery Compartment (bottom) accepts two batteries, up to 50 Ah, that can be mounted within the cabinet. Battery mounting does not interfere with available module space. A power supply with battery charger is required for each battery set.

Packaging Availability

- Modules are power-limited (except as noted, such as relay modules)
- Enclosure are available for one, two, or three bay sizes or for cabinet rack mounting
- Boxes and solid doors are available in beige or red (ordered separately)
- Up to eight close-nipped cabinets can be connected at one transponder location (close-nipped is mounted within 20 ft (6 m) and with interconnecting wiring enclosed in conduit)
- Refer to document S4100-0037 for enclosure details

Local Mode Control Operation

Default Stand-Alone Operation. In the event of a communications loss with the host fire alarm control panel, model 4100-9601 MINIPLEX Local Mode Transponders provide fire alarm response default operation for its connected devices and appliances per the following.

Input Operation. During local mode operation, TrueAlarm initiating devices connected to the transponder will cause an alarm at their least sensitive alarm threshold.

- Photoelectric sensors will alarm at 3.7%/ft smoke obscuration
- Ionization sensors will alarm at 1.3%/ft obscuration
- Heat sensors will alarm at a fixed temperature of 135° F (57° C)
- TrueAlarm device LEDs will be activated to indicate a device in alarm

Local Mode Control Operation (Continued)

Notification Operation. Fire alarm conditions reported against a fire alarm point type within a transponder in local mode will cause all notification appliance circuits in that transponder to:

- Sound a general alarm temporal pattern horn tone
- Activate visible notification appliance circuits

Local Mode Module Support. Local mode operation provides support for the following 4100U modules:

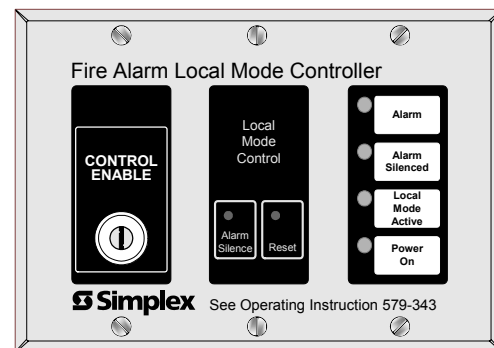
- System Power Supplies (SPS), Expansion Power Supplies (XPS), and Remote Power Supplies (RPS), including on-board notification appliance circuits (NACs) and expansion signal modules, operated at a temporal pattern,
- TrueAlert Power Supplies (TPS) including the on-board signaling line circuits (SLCs)
- IDNet addressable device circuits, including those on-board the SPS, IDNet expansion modules, and the quad isolator when used for IDNet communications
- 4100U amplifiers will provide their on-board horn tones (500 Hz) at a temporal pattern through their on-board amplifier NACs

Local Mode Operation Module Exclusion. Modules not listed above but that are listed as compatible with MINIPLEX transponders per this document, do not interfere with local mode operation but **are not supported** during local mode operation.

Local Mode Controller

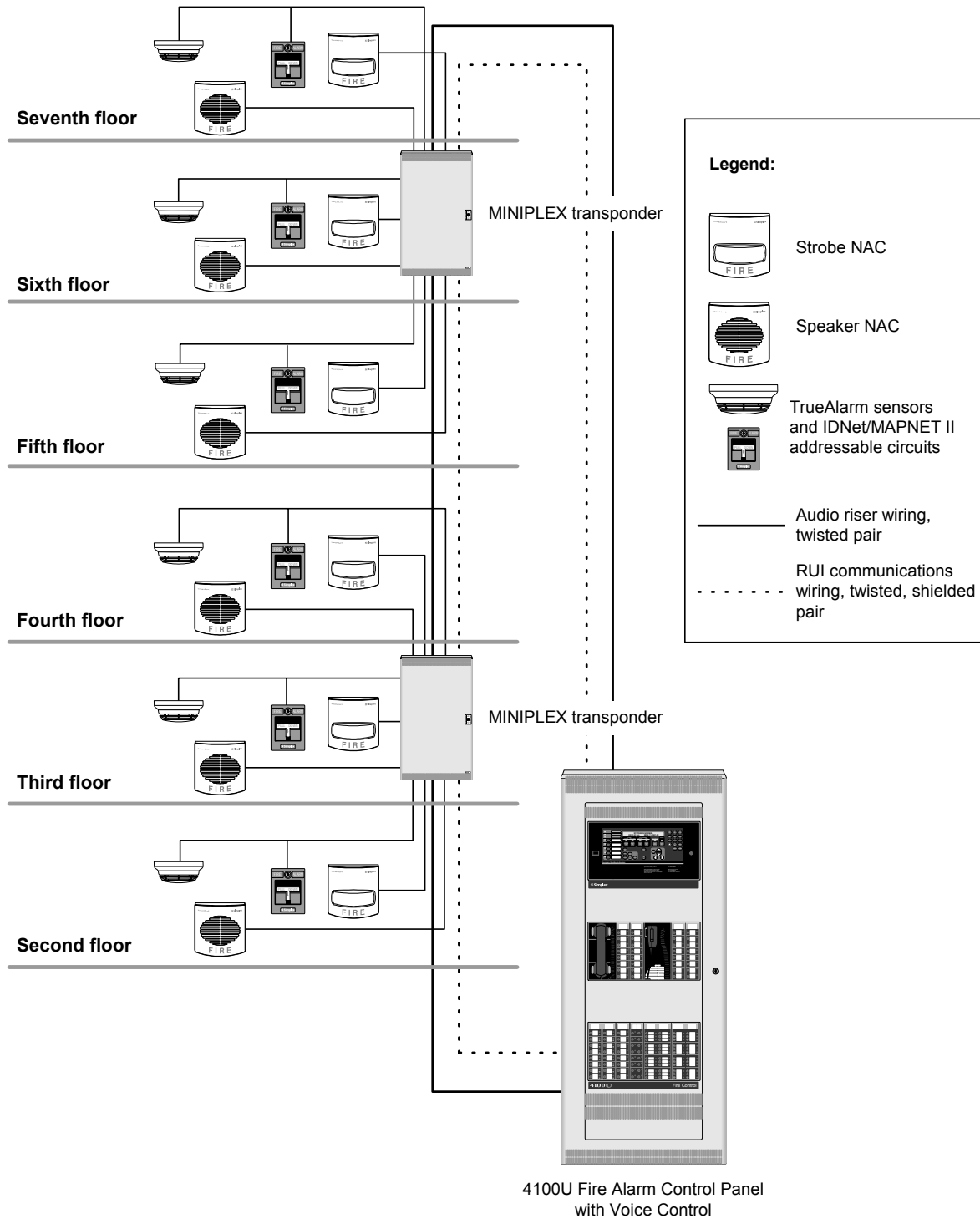
Operation. During local mode operation, an optional Local Mode Controller will indicate status (see illustration below) and can be enabled using a keyswitch to perform local alarm silence or reset. If alarms occurring during local mode are reset using a Local Mode Controller, upon restoration of communications, **those alarms will not be sent to the master controller.** If alarms are still present upon restoration of communications, then the alarm condition will be reported and host fire alarm control panel programmed alarm functions will occur. When communications are re-established, the local mode transponder restores automatically.

Mounting. Local Mode Controllers are mounted on three-gang plates, are available in beige or red, and for either flush or semi-flush mounting. (See page 7 for details).



Local Mode Controller Module

Typical Multi-Floor MINIPLEX Audio System



First floor

Additional 4100U Data Sheet Reference

Subject	Data Sheet	Subject	Data Sheet
Enclosures	S4100-0037	Basic Panel Modules and Accessories	S4100-0031
LED/Switch Modules	S4100-0032	Network Display Unit (NDU)	S4100-0036
4100U Audio/Phone Modules	S4100-0034	Remote Annunciators	S4100-0038
TrueAlert Addressable Products	S4009-0003	Remote Battery Charger	S4081-0002
IDNet+ Module with Quad Isolator	S4100-0046	Addressable Device Compatibility	S4090-0011

MINIPLEX Transponder Product Selection

Transponder Type

Model	Description	Supv.	Alarm
4100-9600	Basic Transponder, includes bay equipment with power distribution interface, and 4100-0620 Basic Transponder Interface Module mounted in Block A	87 mA	87 mA
4100-9601	Local Mode Transponder, includes bay equipment with power distribution interface, and 4100-0625 Local Mode Transponder Interface Module mounted in Block A	normal in local mode	87 mA 112 mA

Local Mode Controller Selection

Model	Description	Supv.	Alarm
4601-9108	Flush mount	normal	12 mA
4601-9109	Surface mount		
4601-9110	Flush mount	in local mode	20 mA
4601-9111	Surface mount		

Communication Modules

Model	Description	Size	Supv.	Alarm			
4100-6031	Select one per SPS	City Circuit, with disconnect switches	For use with SPS only, not RPS	Mounts on SPS or RPS	20 mA	36 mA	
4100-6032					City Circuit, without disconnect switches	20 mA	36 mA
4100-6033					Alarm Relay, 3 Form C relays, 2 A @ 32 VDC; for SPS or RPS	15 mA	37 mA
4100-6038	Dual RS-232 Interface	1 Slot	132 mA	132 mA			
4100-6045	Decoder Module	3 Slots	85 mA	163 mA			
4100-6048	VESDA® Aspiration System Interface	1 Slot	132 mA	132 mA			
4100-9816	Master Clock Interface Module with one standard RS-232 port (see S4100-0033)	1 Slot	132 mA	132 mA			

Expansion, System, Remote, and TrueAlert Power Supplies and Accessories (XPS, SPS, and RPS are rated 9 A for "Special Application" appliances, 3 A/NAC; and 5 A for "Regulated 24 DC" power, 2 A/NAC; TPS is rated per below)

Model	Voltage/Listing	Description	Size	Supv.	Alarm
4100-5101	120 VAC	Expansion Power Supply (XPS); 9 A output; 3 Class A/B NACs; Canadian models have low battery cutout*	2 Blocks	50 mA	50 mA
4100-5103	120 VAC, Canadian				
4100-5102	220-240 VAC				
4100-5115	NAC Expansion Module, 3 NACs, Class A/B, mounts on XPS only		N.A.	25 mA	25 mA
4100-5111	120 VAC	System Power Supply (SPS); 9 A power supply/charger with 250 point IDNet channel; 3 Class A/B NACs; expansion slot for City Circuit or Alarm Relay option; Canadian model has low battery cutout*	4 Blocks	175 mA	185 mA
4100-5112	120 VAC, Canadian				
4100-5113	220-240 VAC				
4100-5125	120 VAC	Remote Power Supply (RPS); 9 A power supply/charger similar to SPS except no IDNet channel or City Circuits; will accept one 4100-6033; Canadian model has low battery cutout*	4 Blocks	150 mA	185 mA
4100-5126	120 VAC, Canadian				
4100-5127	220-240 VAC				
4100-5120	120 VAC	TrueAlert Power Supply (TPS); 3, 3 A Class B SLCs for up to 63 TrueAlert addressable (special application) appliances per SLC, 189 per TPS; built-in battery charger; 2 A aux. power output; Canadian model has low battery cutout	4 Blocks	88 mA	100 mA
4100-5121	120 VAC, Canadian				
4100-5122	220-240 VAC				
4100-5124	TrueAlert SLC Class A Adapter for all 3 SLCs, mounts on TPS only		N.A.	10 mA	10 mA
4100-5152	12 VDC Power Option, 2 A maximum		1 Block	1.5 A maximum	
4100-0636	Box Interconnection Harness Kit (non-audio); order one for each close-nipped cabinet				

Special Application Appliances Simplex 4901, 4903, 4904, and 4906 Series horns, strobes, and combination horn/strobes and speaker/strobes (contact your Simplex product representative for compatible appliances)

Regulated 24 DC Appliances Power for other UL listed appliances; use associated external synchronization modules where required

Miscellaneous Options and Accessories

Model	Description
4100-1290	24 Point I/O Module for external connections, select each point as either a switch input (momentary or maintained) or an output (for lamp/LED/relay); requires 1 Slot (refer to data sheet S4100-0032 for additional information)
4100-0632	Terminal Block Utility Module with 2, 16 position terminal blocks on 4" x 5" single block, for of up to 12 AWG wire (3.31 mm ²)
4100-0633	Door Tamper Switch, connects into Transponder Interface Module, one per cabinet assembly if required
4100-0634	Power Distribution Module (PDM) select per system voltage; one required per box
4100-0635	
4100-9837	Green LED Power-on Indicator Kit, required for ULC listing of MINIPLEX transponder; mounts on solid door knockout
2081-9031	Series resistor for WSO, IDCs (N.O. water flow and tamper on same circuit, wires after water flow and before tamper) 470 Ω, 1 W, encapsulated, two 18 AWG leads (0.82 mm ²), 2-1/2" L x 1-3/8" W x 1" H (64 mm x 35 mm x 25 mm)

* Standard power supply NACs can provide synchronized strobe or SmartSync™, two-wire operation.

Continued on next page

MINIPLEX Transponder Product Selection (Continued)

Audio Riser Modules

Model	Description	Size	Supv.	Alarm
4100-0621	Dual Channel <i>Analog</i> Audio Riser Module; accepts one or two separate audio signals from host control panel; mounts in Block B, is controlled by Transponder Interface Module	1 Block	0 mA	15 mA
4100-0622	3-8 Channel <i>Digital</i> Audio Riser Module; similar to analog module, except receives and decodes a digital input signal with up to eight audio channels; with Non-Alarm Audio input	1 Block	70 mA	70 mA

Analog Emergency Voice/Alarm Communications Equipment, Constant Supervision Compatible*

Model	Description	Details
4100-1361	25 VRMS output	Includes three on-board Class B audio NACs; power is supplied from an XPS, RPS, or SPS
4100-1362	70.07 VRMS output	
4100-1312	25 VRMS output	Flex-50, 50 W Amplifier, constant supervision compatible
4100-1313	70.7 VRMS output	

NAC rating	Speakers
NAC rating = 1.4 A	35 W, or 100 speakers
NAC rating = 0.5 A	
NAC rating = 2 A	50 W, or 100 speakers
NAC rating = 0.707 A	

100 W Analog Amplifiers with Power Supply, Constant Supervision Compatible

Model/Output Voltage		Power Supply Input/Listing		Description	Details
25 VRMS	70.7 VRMS				
4100-1314	4100-1315	120 VAC, 60 Hz	UL	Primary 100 W Amplifier	Includes six, Class B audio NACs; NAC rating = 50 W or 100 speakers maximum; 2 A @ 25 VRMS; 1.4 A @ 70.7 VRMS
4100-1316	4100-1317	120 VAC, 60 Hz	ULC		
4100-1318	4100-1319	220/230/240 VAC, 50/60 Hz	UL		
4100-1320	4100-1321	120 VAC, 60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier
4100-1322	4100-1323	120 VAC, 60 Hz	ULC		
4100-1324	4100-1325	220/230/240 VAC, 50/60 Hz	UL		

ULC models have low battery dropout circuit

Digital Emergency Voice/Alarm Communications Equipment*

Model	Description	Details
4100-1363	25 VRMS output	Includes three on-board Class B audio NACs; power is supplied from an XPS, RPS, or SPS
4100-1364	70.07 VRMS output	
4100-1326	25 VRMS output	Flex-50, 50 W Amplifier, constant supervision compatible
4100-1327	70.7 VRMS output	

NAC rating	Speakers
NAC rating = 1.4 A	35 W, or 100 speakers
NAC rating = 0.5 A	
NAC rating = 2 A	50 W, or 100 speakers
NAC rating = 0.707 A	

100 W Digital Amplifiers with Power Supply, Constant Supervision Compatible

Model/Output Voltage		Power Supply Input/Listing		Description	Details
25 VRMS	70.7 VRMS				
4100-1328	4100-1329	120 VAC, 60 Hz	UL	Primary 100 W Amplifier	Includes six, Class B audio NACs; NAC rating = 50 W or 100 speakers maximum; 2 A @ 25 VRMS; 1.4 A @ 70.7 VRMS
4100-1330	4100-1331	120 VAC, 60 Hz	ULC		
4100-1332	4100-1333	220/230/240 VAC, 50/60 Hz	UL		
4100-1334	4100-1335	120 VAC, 60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier
4100-1336	4100-1337	120 VAC, 60 Hz	ULC		
4100-1338	4100-1339	220/230/240 VAC, 50/60 Hz	UL		

ULC models have low battery dropout circuit

Options for use with either Analog or Digital Amplifiers

Model	Description	Details and Mounting Reference
4100-1245	Flex-35/50 Expansion NAC Module; adds three Class B audio NACs	Mounts on Flex-35/50 assembly; NAC ratings = 1.5 A, 35/50 W, or 100 speakers maximum; <i>Supv</i> = 8 mA, <i>Alarm</i> = 60 mA
4100-1246	Flex-35/50 Class A Adapter Module; converts three on-board NACS to Class A operation	
4100-1248	100 W Amplifier Expansion NAC Module; NAC ratings = 1.5 A, 50 W, or 100 speakers max.	Provides six additional Class B audio NACs, mounts on 100 W amplifier assembly; <i>Supv</i> = 17 mA, <i>Alarm</i> = 60 mA
4100-1249	100 W Class A Adapter Module; NAC ratings = 2 A, 50 W, or 100 speakers max.	
4100-1259	25 VRMS Output; NAC rating = 2 A, 50 W, or 100 speakers max.	Converts three Class B audio NACS to Class A or Class B Constant Supervision NACs; mounts on Flex-35/50 or 100 W amplifier assembly; use two for the six NACs on 100 W amplifiers
4100-1260	70.7 VRMS Output; NAC rating = 0.707 A, 50 W, or 100 speakers max.	

Constant Supervision Adapter for three NACs; select per amplifier output; not compatible with amplifier NAC expansion modules; deactivated when on batteries

Supv = 10 mA on batteries; *Alarm* = 35 mA

Supv = 38 mA on batteries; *Alarm* = 70 mA

Firefighters Telephone Options

Model	Description	Size	Supv.	In Use
4100-1272	Expansion Telephone Control Module with three Class B telephone NACS; required when telephone circuits are mounted in transponder;	1 Block	80 mA	130 mA
4100-1273	Telephone Class A Adapter Module; mounts on 4100-1272; no additional current required			

* Refer to document S4100-0034 for additional audio information.

MINIPLEX Transponder Product Selection (Continued)

Audio Expansion Signal Module and Options

Model	Description	Details and Mounting Reference	
4100-5116	Expansion Signal Module; three, 1.5 A Class B NACs for Audio applications; up to five maximum per amplifier; NAC rating = 1.5 A, 50 W, or 100 speakers maximum	Converts one NAC input to three NAC outputs; selects between two inputs; for Flex-35/50 amplifiers only, two input NACs are required; Single Block module mounts in expansion bay; <i>Supv = 20 mA; Alarm = 80 mA</i>	
4100-1266	Expansion Signal Module NAC Expander; NAC rating = 1.5 A, 50 W, or 100 speakers max.	Expands module capacity to six, Class B NACs; <i>Supv = 0.84 mA; Alarm = 60 mA</i>	These modules mount on the 4100-5116; select one max. per 4100-5116 as required
4100-1267	Expansion Signal Module Class A Adapter; NAC rating = 1.5 A, 50 W, or 100 speakers maximum	Converts 3 Class B, NACs to Class A; <i>Supv = 0 mA; Alarm = 30 mA</i>	
4100-1268	Expansion Signal Module Constant Supervision Adapter; Converts 3 Class B NACs to Constant Supervision Class B or Class A NACs; for 25 VRMS or 70.7 VRMS audio	NAC rating = 1.4 A, 50 W, or 100 speakers max.; <i>Supv = 38 mA on batteries (constant supervision deactivated); Alarm = 70 mA</i>	

General Audio Options

Model	Description
4081-9018	End-of-line resistor harness for 70.7 VRMS NACs; 10 k Ω , 1 W
4100-2320	Audio Bay-to-Bay Interconnection Harness Kit; order one for each audio bay addition
4100-0637	Audio Box Interconnection Harness Kit; order one for each close-nipped audio cabinet

Initiating Device Circuits (IDCs)

Model	Description	Size	Supv.	Alarm
4100-5005	Eight zones, Class B	1 Slot	75 mA	195 mA
4100-5015	Eight zones, Class A	1 Slot	75 mA	195 mA

Addressable Interface Modules

Model	Description	Size	Supv.	Alarm
4100-3101	IDNet Module, 250 point capacity	–	200 mA	250 mA
4100-3104	IDNet Module, 127 point capacity	–	102 mA	127 mA
4100-3105	IDNet Module, 64 point capacity	–	51 mA	64 mA

IDNet Modules, Specifications for each capacity; Module size = 1 Block

Model	Description	Size	Supv.	Alarm	
4100-3102	MAPNET II [®] Module, 127 point capacity, add devices separately; Module size = 2 Slots; Loading per MAPNET II device = 1.7 mA	Module without devices	–	255 mA	275 mA
		Fully loaded module, total	–	471 mA	491 mA
4100-3103	Isolator Module for MAPNET II or IDNet communications; converts one SLC into four isolated Class A or Class B outputs; up to two Modules can be connected to one SLC; NOTE: Compatible with MAPNET II Remote Isolators only; for quad isolation with IDNet Remote Isolators, use 4100-3107 IDNet+ Module (refer to data sheet S4100-0046 for details)	1 Slot	50 mA	50 mA	

Relay Modules; Nonpower-Limited

Model	Description	Resistive Ratings		Inductive Ratings		Size	Supv.	Alarm
4100-3202	4 DPDT w/feedback	10 A	250 VAC	10 A	250 VAC	2 Slots	15 mA	175 mA
4100-3204	4 DPDT w/feedback	2 A	30 VDC/VAC	1/2 A	30 VDC/120 VAC	1 Block	15 mA	60 mA
4100-3206	8 SPDT	3 A	30 VDC/120 VAC	1-1/2 A	30 VDC/120 VAC	1 Block	15 mA	190 mA

Current Calculation Notes:

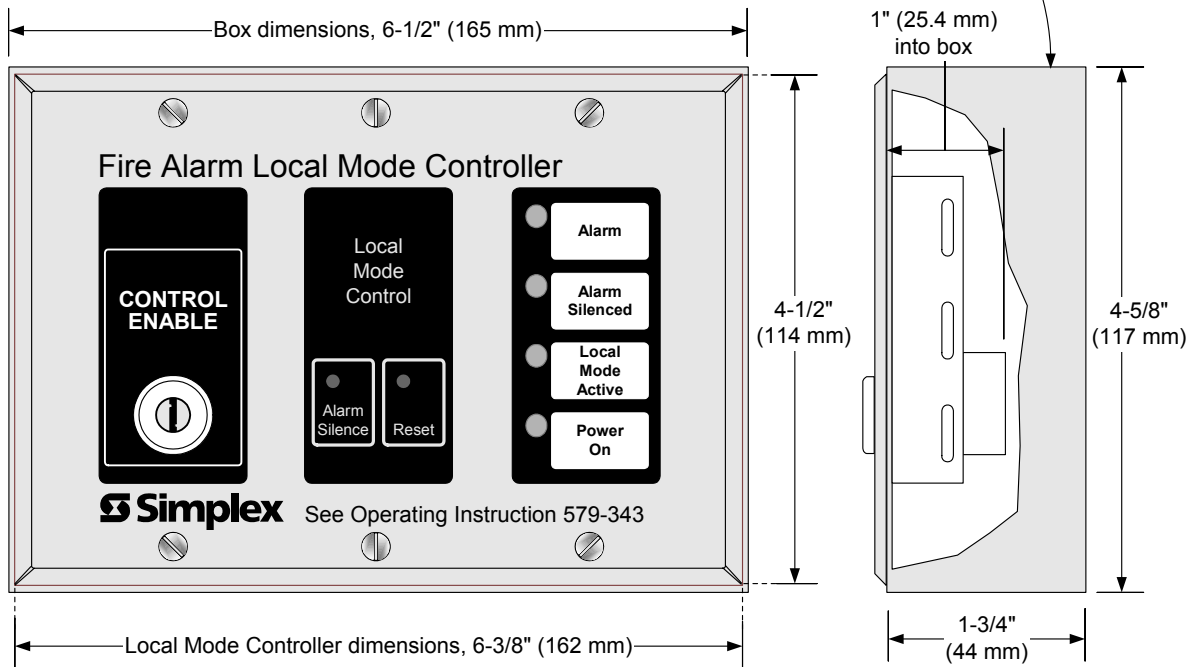
- For total supervisory current, add panel module currents to base system value **and** add all external loads panel-powered loads.
- For total alarm current, add panel module currents to base system alarm current **and** add all panel NAC loads **and** all external loads powered from panel power supplies.

General Specifications

Input Power [System (SPS); Expansion (XPS); Remote (RPS); TrueAlert Power Supplies (TPS); and 100 W amplifiers]	120 VAC Models	4 A maximum @ 102 to 132 VAC, 60 Hz		
	220-240 VAC Models	2 A maximum @ 204 to 264 VAC, 50/60 Hz; separate taps for 220/230/240 VAC		
Power Supply Output Ratings for SPS, XPS, and RPS (nominal 28 VDC on AC; 24 VDC on battery backup)	Total Power Supply Output Rating	Including module currents and auxiliary power outputs; 9 A total for "Special Application" appliances; 4 A total for "Regulated 24 DC" power		Output switches to battery backup during mains AC failure or brownout conditions
	Auxiliary Power Tap	2 A maximum		
	NACs Programmed for Auxiliary Power	2 A maximum per NAC; 5 A maximum total		
Battery Charger Ratings for SPS, RPS, SPS, and TPS (sealed lead-acid batteries)	Battery capacity range	UL listed for battery charging of 6.2 Ah up to 110 Ah (110 Ah batteries require a remote battery cabinet); ULC listed for charging up to 50 Ah batteries		
	Charger characteristics and performance	Temperature compensated, dual rate, recharges depleted batteries within 48 hours per UL Standard 864, to 70% capacity in 12 hours per ULC Standard S527		
Environmental	Operating Temp. Range	32° to 120°F (0° to 49° C)		
	Operating Humidity Range	Up to 93% RH, non-condensing @ 90° F (32° C) maximum		

Local Mode Controller Detail

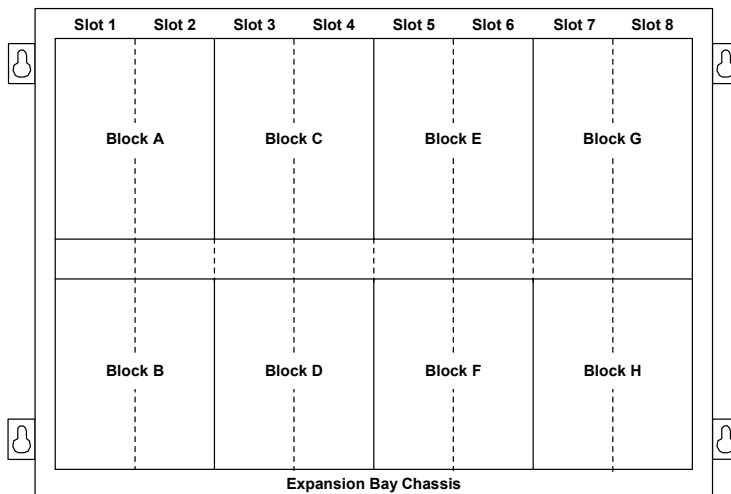
Matching box is supplied with surface mount models 4601-9109 (red) and 4601-9111 (beige); for semi-flush models 4601-9108 (red) and 4601-9110 (beige), use a 1-1/2" (38 mm) minimum depth, 3-gang box



Local Mode Controller to Transponder Wiring:

1. Wire close-nippled to transponder, maximum distance = 20 ft (6.1 m).
2. Nine wires required: 24 VDC (2), one per LED indicator (4), and one per switch (3).
3. Wire size, 18 AWG (0.82 mm²).

Expansion Bay Module Loading Reference

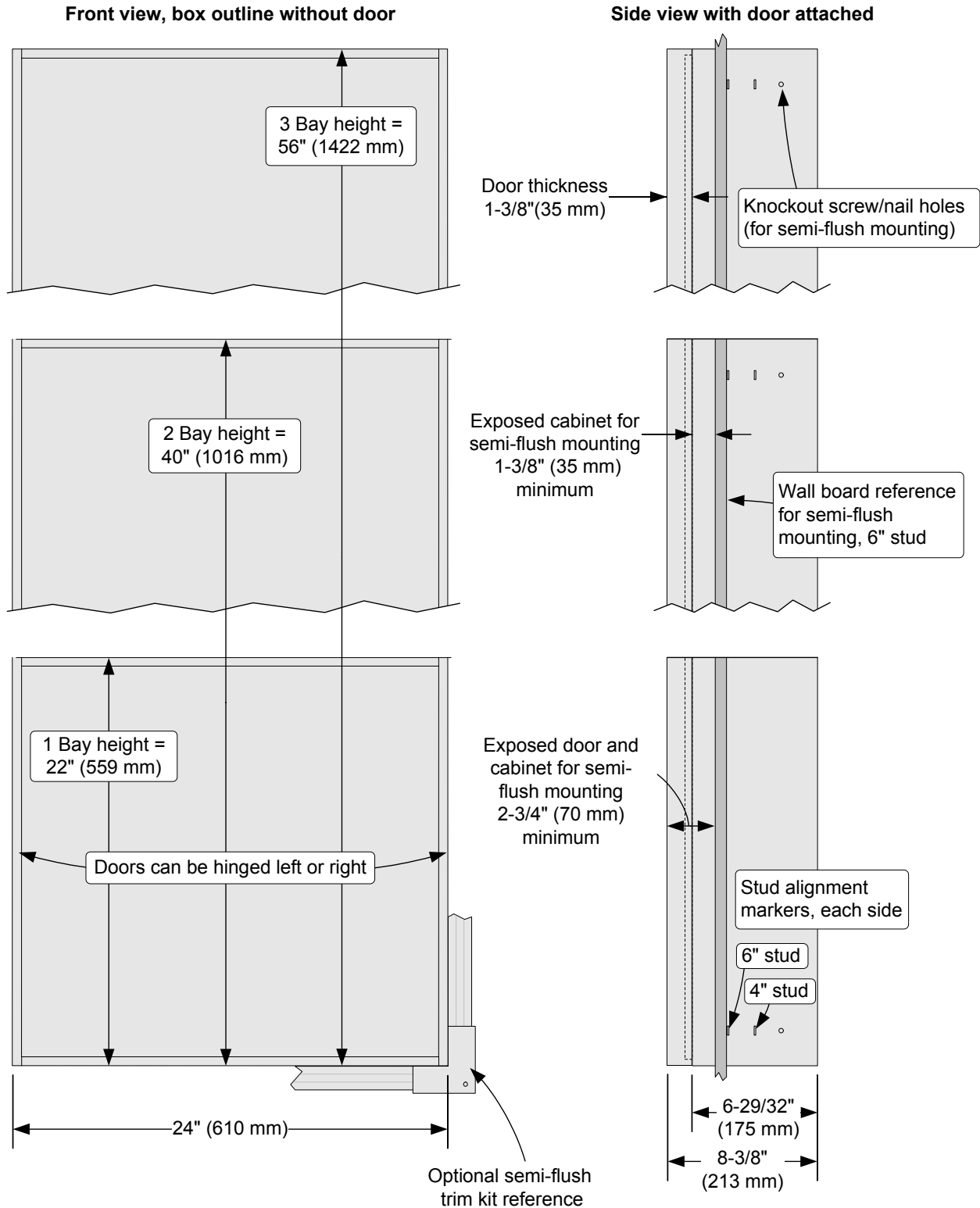


Size Definitions: Block = 4" W x 5" H (102 mm x 127 mm) card area
Slot = 2" W x 8" H (51 mm x 203 mm) motherboard with daughter card

Description	Mounting	
Transponder Interface Modules	Block A	
Audio Riser Modules	Block B	
Terminal Block Module	1 Block	
IDNet Modules	1 Block	
4, 2 A Relays	NON Power-limited	
4, 10 A Relays		4", 2 Slots
8, 3 A Relays		1 Block
VESDA Interface	2", 1 Slot	
Class B IDC	2", 1 Slot	
Class A IDC	2", 1 Slot	
MAPNET II Module	4", 2 Slots	
MAPNET II/IDNet Isolator	2", 1 Slot	
Decoder Module	6", 3 Slots	
System, Remote, or TrueAlert Power Supply	Blocks E, F, G & H ONLY	
Expansion Power Supply	Blocks G & H ONLY	
NAC Expansion Module	On XPS ONLY	
Flex-35 Amplifiers, 2 max /bay*	Blocks E & F; C & D; or A & B	
Flex-50 Amplifiers, 2 max/bay*	Blocks E & F or C & D	
100 W Amplifiers, 1 max/bay	Blocks E, F, G & H	
100 W Backup Amplifiers, 1 max. per bay with primary amplifier	Blocks A, B, C & D	
Telephone Expansion Module	1 Block	
Expansion Signal Module	1 Block	

* **NOTE:** When mounting dual Flex amplifiers on an expansion bay, special mounting rules apply.

Enclosure Installation Reference



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

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Features

Emergency voice/alarm communications provide:

- Alarm/evacuation signal generation with multiple built-in tones
- Standard or customized digital message storage and message generation
- Automatic or manual operation
- Mass Notification operation

Multiple channels are available:

- Analog audio systems provide dual channel operation
- Digital audio systems provide up to eight channels over a single wire pair

Communications features:

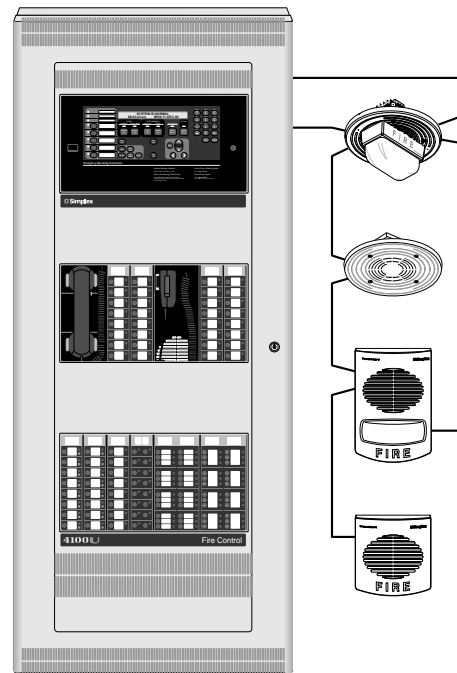
- Up to five supervised remote microphone inputs
- Spoken voice coding from the digital message player
- Multiple digitally recorded human voice messages
- Spoken WALKTEST™ system testing**
- Separate evacuation, drill, and optional “All Clear” voice messages and tones
- Ready-to-talk microphone indicator on front panel audio control module
- Local panel speaker for tone/message broadcast verification
- MINIPLEX® Voice Transponders are available for distributed audio

Amplifiers are available with analog or digital input:

- Flex-35 (35 W) and Flex-50 (50 W) amplifiers provide a dual channel design with configurable operation modes**
- 100 W primary and backup, single channel amplifiers include a built-in power supply
- Amplifiers are available for 25 VRMS or 70.7 VRMS output with on-board, power-limited NACs (only one voltage choice per system)
- Built-in Temporal Pattern horn tone provides default backup signal operation
- Optional modules provide power-limited NAC expansion, convert Class B NACs to Class A operation, and provide Constant Supervision Operation for Non-Alarm Audio (NAA) applications (NAA requires additional hardware, and software revision 11.08 or higher)

Firefighter telephone systems:

- Master telephone can simultaneously talk with up to 6 remote telephones and can be connected as an audio input for broadcast messages
- Ring signal on remote firefighter telephone indicates that a call request is initiated and a hold signal indicates that a connected line has been deselected
- Telephone circuits are supervised for open and short circuits, too many telephones connected, and the master telephone is supervised for cord integrity
- Degraded mode allows remote telephones to remain connected to each other in the event of a communications loss



4100U Fire Alarm Control Panel with
Voice and Firefighter Telephone Options

Listed to:

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

Description

4100U Audio Systems provide voice communication, alarm tones, and/or digitally prerecorded voice messages to alert occupants of fire or other emergency situations. Evacuation signaling may be automatically generated via alarm initiated event programs or by firefighting personnel using the operator controls.

Software Revisions. Some of the features detailed and products listed in this document may require the latest 4100U System Software Revision and/or hardware updates. Contact your local Simplex® product supplier for details.

* See page 5 for product that is listed as UL or ULC and additional product 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 7165-0026:251 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

** WALKTEST system test is protected under US Patent No. 4,725,818. Flex-35 and Flex-50 amplifier operation is protected under U.S. Patent No. 6,452,491.

Audio Controller Module Description

The **Audio Controller Module** provides digitized alarm tones and digitally recorded voice messages and message construction, and manages both microphone inputs and other auxiliary inputs connected to the optional Auxiliary Audio Input Module. Tones and voice messages are digitally recorded and stored in the audio control module's message memory.

Two versions are available: **Analog** and **Digital**. Systems must be either analog or digital, not intermixed. One audio control module controls the entire audio system.

Common audio control board features:

- On-board digital message memory provides up to 2 minutes at normal or 1 minute at high resolution
- Connects to optional 4-input audio input modules (two maximum) for a total of up to 6 microphones and 11 distinct audio inputs
- Memory expansion is available to provide up to 8 minutes or 32 minutes at normal resolution (4 minutes or 16 minutes at high resolution)
- Connections for a Master Microphone and one Remote Microphone, compatible with standard or noise-canceling microphones
- Master telephone to audio interface connection uses the audio bay's Power Distribution Interface Module (PDI)
- Local panel speaker output with on-board volume control
- On-board download port for message loading
- The microphone ready-to-talk LED is located on the front panel audio control module (see p. 4) and requires connection to a 64 LED/64 switch controller
- Audio risers, either digital or analog, may be directly connected to 31 remote nodes; for applications requiring audio risers to more than 31 remote nodes, alternate connection methods are available, contact your Simplex product representative for details

Analog Audio Controller Modules

Analog audio control modules are for systems that require one or two simultaneous channels of audio information per the following feature summary.

- Built-in 10 VRMS riser output eliminates the need for separate riser amplifiers available as Class B or Class A
- Messages can play on one or both risers simultaneously, with the same or a different message
- Analog audio controllers are for connection to analog input audio amplifiers and audio risers only
- On-board status LEDs assist with setup and troubleshooting

Digital Audio Controller Modules

Digital audio control modules are for systems that require more than two simultaneous channels of audio information per the following feature summary.

- Up to 8 channels of information at normal resolution are available (4 channels at high resolution) on one twisted wire pair
- Primary 1 Digital Audio Riser (DAR) output can be either wired Style 4 or Style 7; Primary 2 DAR is an identical, separate output for Style 4 connections, typically to local MINIPLEX voice transponders
- Digital audio controllers are for connection to digital input audio amplifiers and digital audio risers only

Audio Tone List

The **Temporal Pattern** is available for compatible tones (1/2 sec on, 1/2 sec off, 1/2 sec on, 1/2 sec on, 1-1/2 sec off) to indicate evacuation. The following is a list of the standard audio tones.

- **Horn**, continuous 500 Hz tone, primarily used for coded systems or general temporal pattern signaling
- **Chime**, a digitally recorded mechanical chime tone, normally used free-running or for coded operation
- **Bell**, a digitally recorded mechanical bell sound, normally used free-running, for coded systems, or general temporal pattern signaling
- **Fast Whoop**, a quickly ascending tone
- **Slow Whoop**, a slowly ascending tone
- **High/Low**, with high frequency of 750 Hz for 100 ms and low frequency of 500 Hz for 400 ms
- **Beep**, 500 Hz tone of 0.7 s on, 0.7 s off
- **Stutter**, 500 Hz tone with on and off times of 100 ms
- **Wail**, ascends, then descends between 600 to 940 Hz
- **GSA Tone**, continuous 2000 Hz tone

Audio Controller Message Description

Zone Coded Signaling is available using tones or spoken numbers. Spoken coded messages can be used in place of conventional pulse tone coding to eliminate counting and interpretation of the zone coded location. For example, a fire alarm zone such as First Floor East, Smoke Detector Room 23 will be Code 1123.

Two possible transmission schemes are:

1. Conventional Zone Coded Signaling where
T = Tone: **T...T...TT...TTT...T...T...TT...TTT...**
2. Spoken Coded Signaling:
Code, one..one..two..three; Code, one..one..two..three

The Audio Controller has the ability to precede spoken codes with phrases and alert tones. As an alternative, the previous example could have been preceded with a chime tone. The word "code" could be replaced with the phrase "Doctor Firestone, please dial...".

Preprogrammed Special Messages can be ordered. Up to 32 minutes of special phrases and messages are available to meet specific applications. The standard Evacuation Message is: "Attention... Attention... Attention...An emergency has been reported.... All occupants walk to the nearest stairway exit and walk down to your assigned re-entry floor or main lobby... Do not use the elevator... Walk to the nearest stairway.... Do not use the elevator.... Walk to the nearest stairway."

Custom Message Ordering is summarized below:

Model	Description
4100-8804	Select when Custom Messages are required , choose message types from below as required (minimum quantity of one)
4100-0822	Custom Messages from Tape
4100-0823	Custom Messages from Transcript; NOTE: Send transcript in advance to Applications Engineering to verify phrase quantity
4100-0824	Custom Messages from Archive

Audio Amplifiers General Description

4100U audio amplifiers are available as dual channel models rated for 35 W (Flex-35) or 50 W (Flex-50) and as single channel 100 W models with on-board NACs (notification appliance circuits) for convenient field wiring. Common features are summarized as follows:

- *Analog* input amplifier models are for single or dual channel system operation
- *Digital* input amplifier models are for multi-channel system operation providing up to eight channels over a single twisted wire pair
- Amplifiers are power-limited with models available providing 25 VRMS, or 70.7 VRMS output
- When Non-Alarm Audio (NAA) applications (such as for background music, paging, or for Mass Notification) are required, optional Constant Supervision modules provide continued speaker zone supervision during the page or while background music is playing; due to the NAA supervision requirements, amplifiers used for paging or playing background music are derated to 70% of alarm output rating (24.5 W, 35 W, and 70 W)
- Linear power output stages are traditional Class B designs for low distortion and low EMI
- An on-board 500 Hz temporal pattern horn tone on each amplifier provides a default backup tone
- Supervision actively monitors amplifier gain in real time, comparing output level to input level
- On-board test switches can be activated to test and observe amplifier backup
- On-board overcurrent protection protects against overloads and short circuits
- Each amplifier communicates to the host CPU and allows voltage and current values to be accessed from the fire alarm control panel operator interface

Flex-35 and Flex-50 Amplifiers, General

Flex-35 and Flex-50 amplifiers are a *self-backup dual channel design* that provides a total of 35 W or 50 W of audio power with the following common feature summary:

- Self-backup feature allows NACs connected to a disabled amplifier channel to be routed to the remaining channel with the full 35 W or 50 W providing the single channel as selected by the fire alarm control panel programming; *external backup amplifiers are not required*
- Three standard on-board audio NACs are each rated for 2 A maximum and are capable of being routed to either desired amplifier channel
- Compatible power supplies include the: Expansion Power Supply (XPS), Remote Power Supply (RPS), or System Power Supply (SPS); power supplies with single amplifiers can provide power for other compatible applications within their rated output
- *Digital models* of the Flex-35 and Flex-50 have a digital decoder module that selects one or two of the input channels as desired
- Selectable reduced output levels of -12 dB or -6 dB are available for non-emergency audio output, selectable per channel

Flex-35 Amplifiers

- Each Flex-35 channel is capable of up to 35 W output with a total of 35 W
- Channels can be divided as 0 W and 35 W; 17.5 W and 17.5 W; 10 W and 25 W; or any combination that totals 35 W or less

Flex-50 Amplifiers

- Each Flex-50 channel is capable of up to 50 W output with a total output of 50 W
- Channels can be divided as 0 W and 50 W; 25 W and 25 W; 10 W and 40 W; or any combination that totals 50 W or less

Dual Flex-35 or Flex-50 Connections

- *Two* Flex-35 amplifiers, or *two* Flex-50 amplifiers can connect to a *single* Expansion Power Supply (XPS) in the same audio expansion bay (amplifiers must be the same model number); XPS output is dedicated to amplifier power
- Mounting for dual Flex-35 or Flex-50 amplifiers is Blocks A & B for amplifier 1, Blocks C & D for the XPS, blocks E & F are not used, and Blocks G & H are for amplifier 2 (see page 7 for mounting reference)

100 W Audio Amplifiers

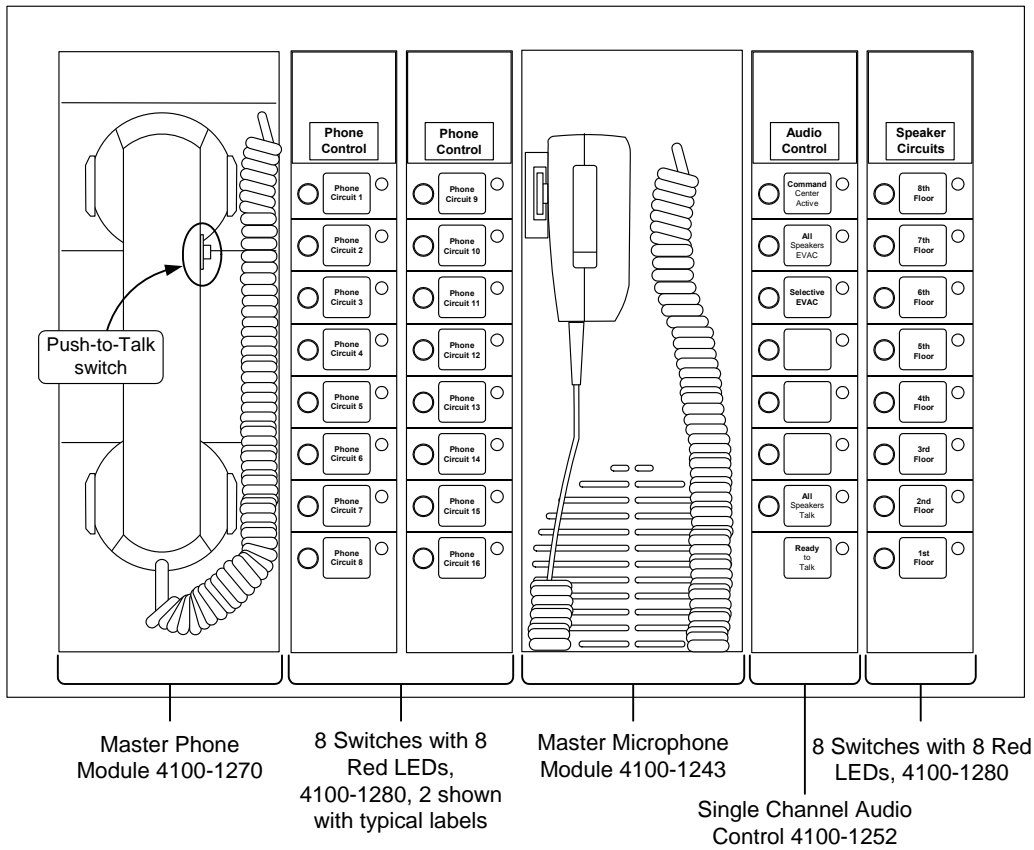
100 W amplifiers provide single channel operation per the following feature summary:

- Six standard on-board Class B audio NACs are each rated for 2 A maximum
- 100 W amplifiers include a built-in power supply and use system battery backup
- Amplifier and power supply size requires four continuous blocks of expansion bay size
- A *single* 100W primary amplifier *or* both a primary and a backup amplifier can be located on a single expansion bay (refer to page 7 for bay loading)
- Redundant (backup) amplifiers interconnect directly to minimize wiring connections and their power is routed through the NACs of the primary amplifier
- Redundant amplifier operation can be configured as one-for-one or one-for-many depending on specific requirements
- Digital models of these amplifiers have a digital decoder module that selects the desired input channel per system requirements
- Selectable reduced output levels of -12 dB or -6 dB are available for non-emergency audio output

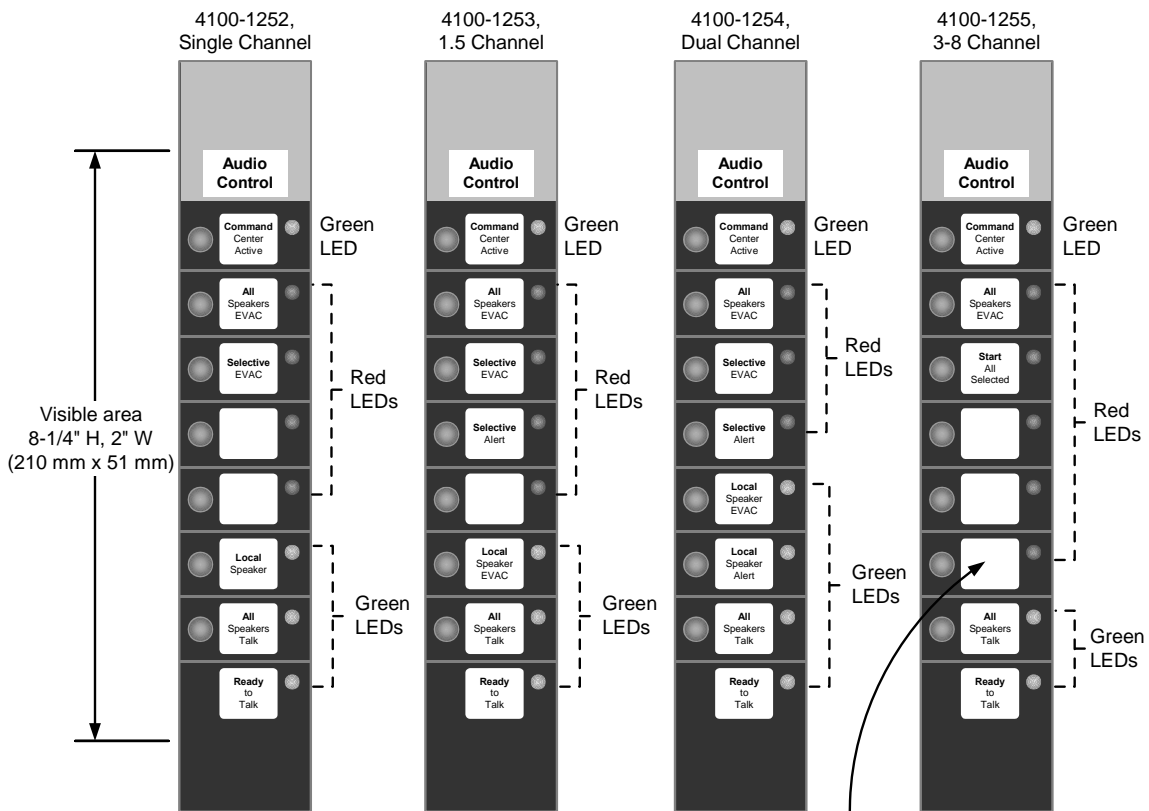
Audio NAC Expansion Modules

- For applications requiring additional NACs, modules are available for on-board expansion and further expansion is available with the chassis mounted 4100-5116 Expansion Signal Module
- 100 W Amplifiers support optional modules that convert the six audio NACs to Class A or to increase the Class B audio NACs to twelve
- **NOTE:** Adding NAC expansion modules does not increase amplifier power beyond the stated ratings

Audio Bay Reference with Single Channel Audio Control and Firefighter Telephone Modules



Audio Control Modules



Emergency Voice/Alarm Communications Equipment Product Selection

NOTE: Select systems as *either* analog or digital (refer to pg. 7 for mounting reference and pg. 8 for additional specifications)

Analog Emergency Voice/Alarm Communications Equipment, Constant Supervision Compatible

Model	Description	Details
4100-9620	Basic Analog Audio Operation with microphone, requires dedicated expansion bay	Includes: Expansion Bay, 4100-1210 Analog Controller Board, Microphone Module, and Audio Expansion Bay Kit
4100-1210	Analog Controller Board only; order expansion bay and audio expansion bay kit separately	Controller board mounts in Blocks A and B
4100-1361	25 VRMS output Flex-35, 35 W Amplifier, constant supervision compatible	NAC rating = 1.4 A 35 W, or 100 speakers max.
4100-1362	70.07 VRMS output Flex-35, 35 W Amplifier, constant supervision compatible	NAC rating = 0.5 A 35 W, or 100 speakers max.
4100-1312	25 VRMS output Flex-50, 50 W Amplifier, constant supervision compatible	NAC rating = 2 A 50 W, or 100 speakers max.
4100-1313	70.7 VRMS output Flex-50, 50 W Amplifier, constant supervision compatible	NAC rating = 0.707 A 50 W, or 100 speakers max.

100 W Analog Amplifiers with Power Supply, Constant Supervision Compatible

Model/Output Voltage		Power Supply Input/Listing		Description	Details
25 VRMS	70.7 VRMS				
4100-1314	4100-1315	120 VAC, 60 Hz	UL	Primary 100 W Amplifier	Includes six, Class B audio NACs; NAC rating = 100 speakers maximum; 2 A @ 25 VRMS (50 W); 1.414 A @ 70.7 VRMS (100 W)
4100-1316	4100-1317	120 VAC, 60 Hz	ULC		
4100-1318	4100-1319	220/230/240 VAC, 50/60 Hz	UL		
4100-1320	4100-1321	120 VAC, 60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier
4100-1322	4100-1323	120 VAC, 60 Hz	ULC		
4100-1324	4100-1325	220/230/240 VAC, 50/60 Hz	UL		

Digital Emergency Voice/Alarm Communications Equipment, Constant Supervision Compatible

Model	Description	Details
4100-9621	Basic Digital Audio Operation with microphone, requires dedicated expansion bay	Includes: Expansion Bay, 4100-1311 Digital Controller Board, Microphone Module, and Audio Expansion Bay Kit
4100-1311	Eight Channel Digital Controller Board only; order expansion bay and audio expansion bay kit separately	Controller board mounts in Blocks A and B
4100-1363	25 VRMS output Flex-35, 35 W Amplifier, constant supervision compatible	NAC rating = 1.4 A 35 W, or 100 speakers max.
4100-1364	70.07 VRMS output Flex-35, 35 W Amplifier, constant supervision compatible	NAC rating = 0.5 A 35 W, or 100 speakers max.
4100-1326	25 VRMS output Flex-50, 50 W Amplifier, constant supervision compatible	NAC rating = 2 A 50 W, or 100 speakers max.
4100-1327	70.7 VRMS output Flex-50, 50 W Amplifier, constant supervision compatible	NAC rating = 0.707 A 50 W, or 100 speakers max.

100 W Digital Amplifiers with Power Supply, Constant Supervision Compatible

Model/Output Voltage		Power Supply Input/Listing		Description	Details
25 VRMS	70.7 VRMS				
4100-1328	4100-1329	120 VAC, 60 Hz	UL	Primary 100 W Amplifier	Includes six, Class B audio NACs; NAC rating = 100 speakers maximum; 2 A @ 25 VRMS (50 W); 1.414 A @ 70.7 VRMS (100 W)
4100-1330	4100-1331	120 VAC, 60 Hz	ULC		
4100-1332	4100-1333	220/230/240 VAC, 50/60 Hz	UL		
4100-1334	4100-1335	120 VAC, 60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier
4100-1336	4100-1337	120 VAC, 60 Hz	ULC		
4100-1338	4100-1339	220/230/240 VAC, 50/60 Hz	UL		

Audio Options for use with *either* Analog or Digital Systems (see page 2 for custom message ordering)

Amplifier and Related Audio Options

Model	Description	Details and Mounting Reference
4100-1245	Flex-35/50 Expansion NAC Module; adds three Class B audio NACs	Mounts on Flex-35/50 assembly; NAC ratings = 1.5 A, 35/50 W, or 100 speakers maximum; <i>Supv.</i> = 8.4 mA, <i>Alarm</i> = 60 mA
4100-1246	Flex-35/50 Class A Adapter Module; converts three on-board NACs to Class A operation	Mounts on Flex-35/50 assembly; NAC ratings = 2 A, 50 W, or 100 speakers maximum; <i>Supv.</i> = 1 mA, <i>Alarm</i> = 30 mA
4100-1248	100 W Amplifier Expansion NAC Module; NAC ratings = 1.5 A, 50 W, or 100 speakers max.	Provides six additional Class B audio NACs, mounts on 100 W amplifier assembly; <i>Supv.</i> = 17 mA, <i>Alarm</i> = 60 mA
4100-1249	100 W Class A Adapter Module; NAC ratings = 2 A, 50 W, or 100 speakers maximum	Converts six on-board NACs to Class A operation, mounts on 100 W amplifier assembly; <i>Supv.</i> = 1 mA, <i>Alarm</i> = 60 mA
4100-1259	25 VRMS Output; NAC rating = 2 A, 50 W, or 100 speakers maximum	<i>Supv.</i> = 10 mA on batteries; <i>Alarm</i> = 35 mA
4100-1260	70.7 VRMS Output; NAC rating = 0.707 A, 50 W, or 100 speakers maximum	<i>Supv.</i> = 38 mA <i>Alarm</i> = 70 mA

* Refer to data sheet S4100-0031 for power supply details.

(continued on next page)

Emergency Voice/Alarm Communications Equipment Product Selection (Continued)

Amplifier and Related Audio Options (Continued)

Model	Description	Details and Mounting Reference	
4100-5116	Expansion Signal Module; three, 1.5 A Class B NACs; up to five maximum per amplifier; NAC rating = 1.5 A, 50 W, or 100 speakers maximum	Converts one NAC input to three NAC outputs; selects between two inputs; for Flex-35/50 amplifiers only, two input NACs are required; Single Block module mounts in expansion bay; <i>Supv. = 20 mA; Alarm = 80 mA</i>	
4100-1266	Expansion Signal Module NAC Expander; NAC rating = 1.5 A, 50 W, or 100 speakers maximum	Expands module capacity to six, Class B NACs; <i>Supv. = 0.84 mA; Alarm = 60 mA</i>	These modules mount on the 4100-5116; select one max. per 4100-5116 as required
4100-1267	Expansion Signal Module Class A Adapter; NAC rating = 1.5 A, 50 W, or 100 speakers maximum	Converts 3 Class B, NACs to Class A; <i>Supv. = 1 mA; Alarm = 30 mA</i>	
4100-1268	Expansion Signal Module Constant Supervision Adapter for 25 VRMS or 70.7 VRMS; NAC rating = 1.4 A, 50 W, or 100 speakers maximum	Converts 3 Class B NACs to Class B or Class A Constant Supervision NACs; <i>Supv. = 38 mA on batteries (constant supervision deactivated); Alarm = 70 mA</i>	
4081-9018	End-of-line resistor harness for 70.7 VRMS NACs; 10 kΩ, 1 W		
4100-2300	Expansion Bay Hardware; order one for each expansion bay		
4100-2320	Audio Bay-to-Bay Interconnection Harness Kit; order one for each audio bay addition		
4100-0637	Audio Box Interconnection Harness Kit; order one for each close-nippled audio cabinet		

Audio Input and Controller Options (see page 2 for custom message ordering)

Model	Description	Details and Mounting Reference	
4100-1240	Auxiliary Audio Input Module; four additional (unsupervised) inputs per module; 2 maximum	Inputs for 10 VRMS, 25 VRMS, 70.7 VRMS, line level (0.707 VRMS), or microphone; 1 Block; <i>Supv. current = 10 mA, Alarm Current = 50 mA</i>	
4100-1241	8 Minute Message Expansion Module	Provides 8 minutes at normal resolution or 4 minutes at high resolution; <i>Supv. = 2 mA; Active = 17 mA</i>	Mounts to audio controller module
4100-1242	32 Minute Message Expansion Module	Provides 32 minutes at normal resolution or 16 minutes at high resolution; <i>Supv. = 2 mA; Active = 17 mA</i>	

Operator Interface and Related Options

Model	Description	Details and Mounting Reference	
4100-1243	Microphone Module (mike); for Fire Alarm Control Panels	One maximum per audio system; front panel module that requires 2 Slots (4"), locate on expansion bay only; space behind for 4100U flat modules only	
4100-1244	Remote Microphone Module; for Remote Annunciator Panels	Front panel module that requires 2 Slots (4"), locate on expansion bay only; space behind for 4100U flat modules only; distance limited to 4000 ft (1219 m)	
4100-1252	1 Channel (audio or mike)	Operator Interface LED/Switch Modules	Single Slot LED/switch modules; connects to a 4100-1288 or 4100-1289 LED/switch controller in the same bay; space behind controller accepts 4100U flat modules only (see drawings on p. 4); <i>Current = 24 mA</i> ; Additional adjacent LED/switch modules, as shown on p. 4, are used as required for specific speaker circuit selection (refer to data sheet S4100-0032 for LED/switch module availability)
4100-1253	1.5 Channel (audio + mike)		
4100-1254	2 Channel (full audio)		
4100-1255	3-8 Channel (8 channel normal res. messages, 4 channels of high res. messages)		
4100-1288	64 LED/64 Switch Controller Module with mounting plate	Refer to data sheet S4100-0032 for details	Mounts behind the LED/switch modules; has provisions for one 4100-1289 Controller Module
4100-1289	64 LED/64 Switch Controller Module without mounting plate		Mounts on extra space of 4100-1288; controls additional 64 LEDs and 64 switches
			LED/switch controllers and their connected modules must be in the same bay

Firefighter Telephone System Products

Model	Description	Details and Mounting Reference	
4100-1270	Master Telephone with Control Module and three Class B telephone NACs, one maximum per audio system; for use in Fire Alarm Control Panels only; includes one 4100-1272 Module	Front panel module; space behind for 4100U flat modules only; phone control module included, mounted on bay module mounting plate; for individual telephone circuit control, use LED/switch modules; <i>Supv. = 80 mA; in use = 140 mA + remote phones (see table on page 7)</i>	
4100-1271	Remote Master Telephone	Mounts in Remote Annunciator Panel only (see S4100-0038)	
4100-1272	Expansion Telephone Control Module with three Class B telephone NACs	Expansion module for additional telephone circuits in main control or transponders; <i>Supv. = 80 mA; in use = 140 mA + remote phones</i>	
4100-1273	Telephone NAC Class A Adapter Module	Mounts to 4100-1270 or -1272; no additional current required	

Network and MINIPLEX Transponder Audio Connection Options

Model	Description	Details	
4100-0623	Network Audio Riser Controller Module for control of either an analog or digital riser module	Typically for Network nodes without an audio controller, used for NAA applications; mounts in Block A; <i>current = 35 mA</i>	
4100-0621	Dual Channel <i>Analog</i> Audio Riser Module	Select one, mounts in Block B	Accepts two separate audio signals from host; controlled by Transponder Interface Module; <i>current = 25 mA when active</i>
4100-0622	3-8 Channel <i>Digital</i> Audio Riser Module; with NAA input		Receives and decodes digital inputs; up to eight audio channels; <i>current = 70 mA</i> ; NAA input for 25, 70.7, or 0.707 VRMS
4100-1341	MCC (Multiple Command Center) Digital Audio Riser Interface		Selects a single digital audio channel and converts it to an analog line level for input to an analog 4100U or 4100 Legacy voice panel; <i>current = 70 mA</i>
4100-9854	4100/4100+ Legacy bay mounting kit	Use to mount 4100-1341 MCC Digital Audio Riser Interface in legacy panel	
4100-1258	NPU to 4100U Audio Interconnect Module; mounts in 4100U Audio cabinet	Dual terminal block module with harnesses for connecting to the Audio Controller and Telephone Control module (requires 1 Block)	

Firefighter Telephone System Description

Firefighter telephone systems provide two-way communications for facilities where radio communications may not be available or are unreliable. They are typically used during active firefighting conditions, during a fire alarm investigation, or during fire alarm system inspection and test.

System Operation. Connections are made using a common talk line (party line) that includes a Master Telephone and up to six remote telephones. Remote telephones call into the Master by either being taken off-hook or by being plugged into a telephone jack. The Master Telephone location receives a ring-in tone with a visible LED indicator for each telephone circuit. When the call is received, the operator selects the calling telephone circuit using the assigned switch control. The operator at the master location can place the original telephone circuit on hold and connect to additional telephone circuits or add them to the talk line.

Master Telephone Operation. The Master Telephone connects directly into a telephone interface module. A Push-to-Talk (PTT) switch provides the operator with voice input control. Each master telephone uses local LED/switch modules to select telephone circuits and to silence any subsequent call-ins until selected.

Telephone Circuit Control. A call request causes the local call-in tone sounder and assigned telephone circuit LED to pulse quickly. Pushing the calling circuit's switch silences the local sounder and connects that circuit to the talk line. Activating the switch again places that circuit on hold with a hold tone being heard at the remote telephones and causing that circuit's LED to pulse slowly. Subsequent pushes toggles from active to hold. Activating a telephone circuit switch when no call is incoming places a request to pickup on remote telephones equipped with local LEDs. Master telephones can be also be connected as an input to an audio controller module to allow audio system message broadcasting without using a microphone.

Remote Master Telephones mount in Remote Annunciator Cabinets and are wired as the only connection to a telephone circuit. By adding local LED/switch modules, operation is that of the Master Telephone.

Remote telephones are available cabinet mounted or for plugging into a dedicated telephone jack. Each hears a ring tone when a call-in is selected and a hold tone when placed on hold. When on hold, the remote telephones are each separated from the talk line.

The Telephone Interface Module provides three Class B (Class A option is available) telephone circuits, connection for a master telephone, and a telephone riser input. One module is supplied when selecting a Master Telephone. Additional telephone interface modules can be added as required. Telephone circuit outputs can be programmed as remote telephones, as a Remote Master, or for telephone riser operation. Telephone circuits are supervised for opens, shorts, and overload conditions. The Master Telephone is supervised for broken cord or off-hook.

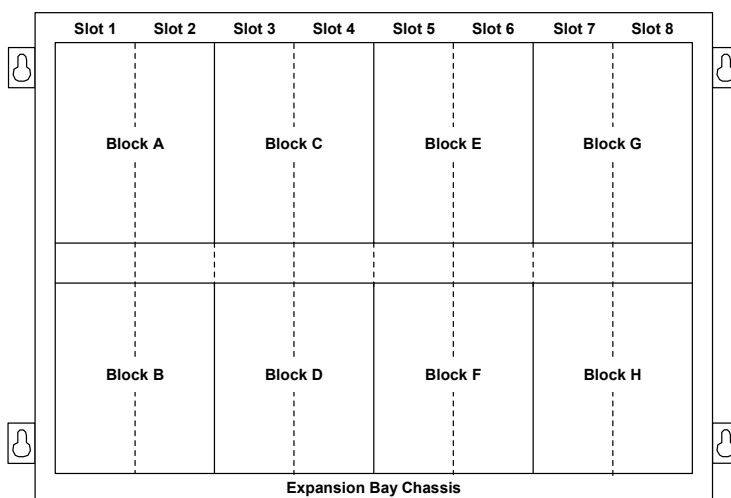
Telephone riser operation can be programmed to provide a telephone riser output that is used to interconnect telephone interface modules in different locations. This output type has ring and hold tones disabled.

Degraded Mode. If the telephone interface module loses communications with the host fire alarm control panel, telephone circuits off-hook are automatically connected to the talk line allowing any telephone to talk to another simply by being picked up (or plugged in).

Master Telephone Control Current with Remote Telephones. The following table lists Master Telephone Control current with the addition of remote firefighter telephones.

Remote Phones	0	1	2	3	4	5	6
Current (mA)	140	180	220	250	276	304	329

Expansion Bay Module Loading Reference



Size Definitions: Block = 4" W x 5" H (102 mm x 127 mm) card area
Slot = 2" W x 8" H (51 mm x 203 mm) motherboard with daughter card

Description	Mounting
Audio Controller Modules	Blocks A & B
Network Riser Controller Module	Block A
Audio Riser Modules	Block B
System or Remote Power Supply	Blocks E, F, G & H ONLY
Expansion Power Supply	Blocks G & H ONLY*
Flex-35 Amplifiers, 2 max /bay*	Blocks E & F; C & D; or A & B
Flex-50 Amplifiers, 2 max/bay*	Blocks E & F or C & D
100 W Amplifiers, 1 max/bay	Blocks E, F, G & H
100 W Backup Amplifiers, 1 max. per bay with primary amplifier	Blocks A, B, C & D
Master or Remote Phone Module	Blocks A & B
Master or Remote Microphone Module	Two vertical Blocks, any location (except next to telephone)
Telephone Module	1 Block
Expansion Signal Module	1 Block
Operator LED/Switch Modules	1 Slot
NPU to 4100U Audio Interconnect Module	1 Block

* **NOTE:** When mounting dual Flex amplifiers on an expansion bay, special mounting rules apply.

General Specifications

Input Power

Power Supplies; SPS, XPS, and RPS	120 VAC Models; 4 A maximum @ 102 to 132 VAC, 60 Hz
	220-240 VAC Models; 2 A maximum @ 204 to 264 VAC, 50/60 Hz; with taps for 220/230/240 VAC
100 W Amplifier Power Supplies	120 VAC Models; 4 A maximum @ 102 to 132 VAC, 60 Hz
	220-240 VAC Models; 2 A maximum @ 204 to 264 VAC, 50/60 Hz; with taps for 220/230/240 VAC

Amplifier Ratings

Built-in Tones	500 Hz horn tone operated at temporal pattern, provided when amplifiers are separated from audio controller		
Flex-35 Amplifiers: 4100-1361 4100-1362 4100-1363 4100-1364	Input Voltage	19 to 35 VDC from adjacent power supply	
	Supervisory Current	425 mA with power stage supervised	
		85 mA in low power mode	
	Alarm Current @ full output power	5.5 A with continuous horn tone	<i>Use this value for power supply loading</i>
1.64 A average, with temporal pattern horn		<i>Use this value for battery backup reference</i>	
Flex-50 Amplifiers: 4100-1312 4100-1313 4100-1326 4100-1327	Input Voltage	19 to 35 VDC from adjacent power supply	
	Supervisory Current	425 mA with power stage supervised	
		85 mA in low power mode	
	Alarm Current @ full output power	5.55 A with continuous horn tone	<i>Use this value for power supply loading</i>
2.27 A average, with temporal pattern horn		<i>Use this value for battery backup reference</i>	
100 W Amplifiers and Backup Amplifiers: 4100-1314, 4100-1316, 4100-1318, 4100-1320, 4100-1322, 4100-1324, 4100-1328, 4100-1330, 4100-1332, 4100-1334, 4100-1336, 4100-1338	Supervisory Current	400 mA (<i>analog</i>); 220 mA (digital) with power stage supervised	
		85 mA in low power mode	
	Alarm Current @ full output power	9.6 A with continuous horn tone	
		3.8 A average, with temporal pattern horn	<i>Use this value for battery backup reference</i>
Total Amplifier Power per Cabinet	300 W maximum		

Audio Controller Ratings

Current Requirements	4100-9620, 4100-1210	Analog = 225 mA supervisory	Add for local speaker in alarm: 75 mA <i>min. volume</i> ; 190 mA <i>half volume</i> ; 333 mA <i>full volume</i> ; Add microphone current separately; <i>Supv.</i> = 2.4 mA; <i>Active</i> = 30 mA
	4100-9621, 4100-1311	Digital = 85 mA supervisory	
Analog Riser Distance	Up to 10,000 ft (3048m) total with 18 AWG (0.82 mm ²) shielded twisted pair (STP)		
Digital Riser Distance; 18 AWG unshielded, twisted pair (UTP) required, except as noted (refer to Installation Instructions 574-844)*	Up to 2500 ft (762 m) from 4100-1311 Digital Controller to 4100-0622 Digital Audio Riser or 4100-1341 MCC Digital Riser Interface; up to 2500 ft (762 m) between 4100-0622 Digital Audio Riser Modules or 4100-1341 MCC Digital Riser Interfaces (signal is reformatted and repeated); wire runs over 100 ft (30 m) require UTP wire		
	* NOTE: Wire runs of 100 ft (30 m) or less require shielded twisted pair wire (STP)		

Firefighter Telephone Distance Ratings

Distance	7500 ft (2286 m) distance to farthest phone, 18 AWG shielded twisted pair (STP)
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Battery Charger, System and Remote Power Supply (sealed lead-acid batteries)

Battery capacity range	UL listed for battery charging of 6.2 Ah up to 110 Ah (110 Ah batteries require a remote battery cabinet); ULC listed for charging up to 50 Ah batteries
Charger characteristics and performance	Temperature compensated, dual rate, recharges depleted batteries within 48 hours per UL Standard 864, to 70% capacity in 12 hours per ULC Standard S527

Environmental

Operating Temperature Range	32° to 120°F (0° to 49° C)
Operating Humidity Range	Up to 93% RH, non-condensing @ 90° F (32° C) maximum

Additional 4100U Data Sheet Reference

Subject	Data Sheet	Subject	Data Sheet	Subject	Data Sheet
Basic Panel Modules	S4100-0031	Network Display Unit (NDU)	S4100-0036	InfoAlarm™ Comm. Center	S4100-0045
LED/Switch Modules	S4100-0032	Enclosures	S4100-0037	Remote Battery Charger	S4081-0002
MINIPIX Transponders	S4100-0035	Remote Annunciators	S4100-0038	Remote Firefighter Phones	S2084-0001

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Features

Multi-line expanded content display interface for Simplex® 4100U Series fire alarm control panels, available with the following products:

- Fire alarm control panels (stand-alone or networked) including Redundant CPU options (Software Revision 12 or higher is required)
- Network Display Units (NDU) supports up to 12,000 points
- Remote Annunciator panels and models that mount in a dedicated cabinet (4100U control panels support Remote InfoAlarm Command Centers independent of host panel display type)
- Upgrade kits are available for legacy 4100 (1000 pt, 4100+ systems) and 4100U control panels
- UL listed to Standard 864

InfoAlarm Command Centers provide customized operating convenience:

- “Activity in System” primary display choices include: First and Most Recent, First 5 and Most Recent, First 8, Site Plan with activity status icons, General Alarm, or Direct to List; selectable individually by event type
- System reports are easily viewed; logs can be read with minimal scrolling required
- Up to six “softkeys” per screen provide functions that vary with the particular screen information aiding operators to determine how to proceed
- Up to two languages are available per system, easily selected by programmable key press (systems with IMS/GCC/NPU or 2 x 40 LCD panels or annunciators require one language to be the default font)
- International models allow customized language legends for operator keys and status LEDs

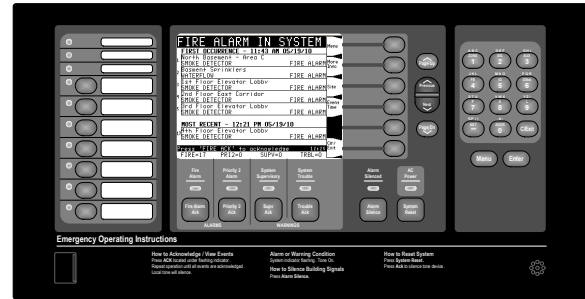
Display properties:

- 320 x 240 dot matrix (QVGA) display provides an active area of 4.53” W x 3.4” H (115 mm x 86 mm) displaying up to 854 characters using standard ASCII character font
- Bright white LED backlighting provides efficient and long lasting illumination; operation is selectable as continuous or off with power fail or with no key presses

Introduction

Displaying more information. 4100U Controls using the InfoAlarm Command Center provide an expanded content, multi-line LCD interface that requires minimal key presses to access detailed information. Because it is system-powered, its detailed information is provided without requiring separate supplementary equipment.

InfoAlarm Command Center Control Panel. By using a larger area format instead of an individual text line display, the LCD provides text information for Alarm, Supervisory, or Trouble. The format is flexible and able to be customized per application allowing additional information to be presented to suit the specific application.



InfoAlarm Command Center for Control Panel Mounting



InfoAlarm Command Center in Remote Cabinet

Description

InfoAlarm Command Centers for 4100U fire alarm systems provide a large display with extended information content, dual language support including 2 byte character languages, and an intuitive control key interface per the following:

- Up to 10 InfoAlarm Command Centers are supported per 4100U control panel; able to allow one InfoAlarm Command Center to take-control and to designate access levels for interfaces not in-control; LEDs can be programmed for in-control status indications
- Menu-driven format conveniently prompts operators for the next action required
- Key controls are provided to select the highlighted entry, load next screen of information, or jump to top or bottom of activity lists
- Direct point callup displays individual points alphabetically and then homes in on the logical choice as more point information is entered
- A Site Plan bitmap can be displayed for reference; icons can be added to indicate system status
- Up to 50 custom point detail messages can be generated
- Date formats are either MM/DD/YY or DD/MM/YY
- Time formats are either 24 hour or 12 hour with AM/PM
- System Normal screen supports a gray scale bitmap (watermark) for location name, company logo, or site plan

* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7165-0026:251 (non-high rise) and 7170-0026:250 (high rise) 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.

Control Panel Operation Reference

NOTE: Refer to page 7 for international control panel reference information. Detailed operator instructions are on document 579-685.

THREE PROGRAMMABLE LEDs provide custom labeling, the top two LEDs are selectable as red or yellow, the third LED is selectable as red or green

ULC SYSTEMS require designating a Ground Fault indicator

Custom label insert (typical choices shown for reference)

320 x 240 DOT MATRIX DISPLAY, White LED backlighting provides easy viewing; operation is programmable for key inactivity timeout and/or AC power fail

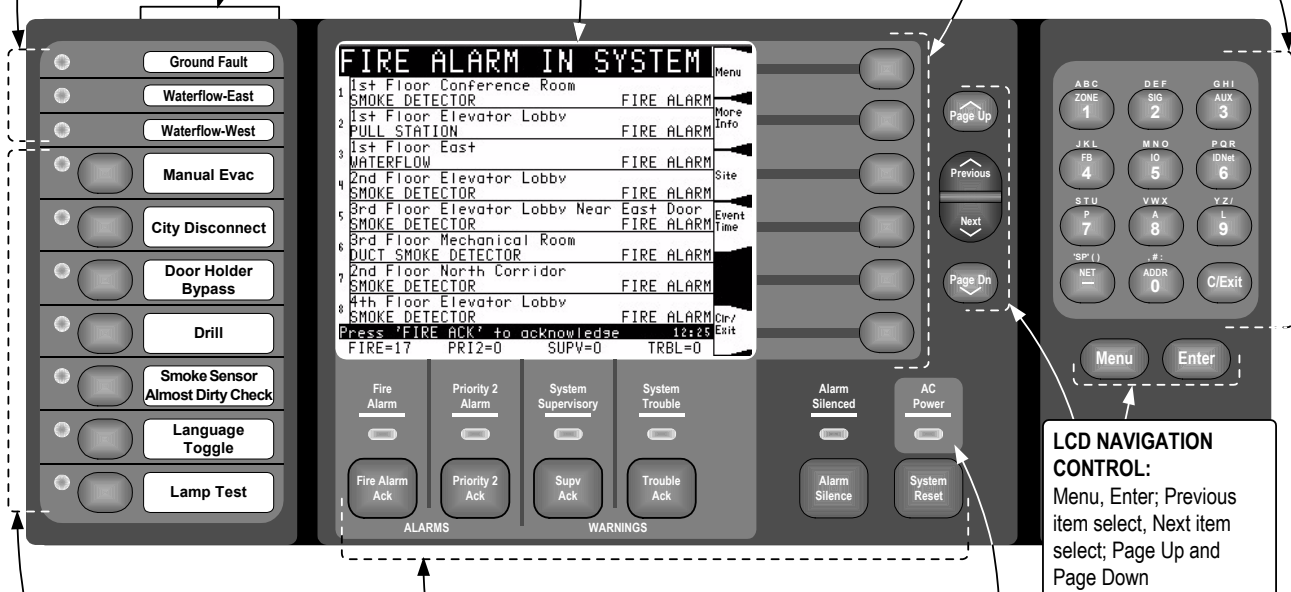
PRIMARY "ACTIVITY IN SYSTEM" DISPLAY OPTIONS: Choices include "First 8" (shown below for "Fire Alarm in System"), "First and Most Recent," "First 5 and Most Recent," "Site Plan," "General Alarm," or "Direct to List." After the event is acknowledged, screen reverts to the sequential event list until Ctr/Exit softkey is selected or after timeout (~ 30 seconds); applicable to Fire Alarm, Priority 2 Alarm, System Supervisory, and System Trouble, each category is independently selectable for primary display mode

SIX SOFT KEYS are available when required. This sample provides **Menu** to call up the available operations; **More Info** to call up specific point details, **Site** to call up the Site Plan Graphic Screen, **Event Time** (while pressed) displays time and date for all displayed events, and **Ctr/Exit**; the following are other typical soft keys:

- Point Enable and Disable
- Force On or Arm
- Force Off or Disarm
- Return On/Off or Arm/Disarm to Auto Mode
- Event Time Request
- More Information Request

NUMERIC KEYPAD for point category and point selection (alphabet characters are not used at this time)

C/Exit Key duplicates the Ctr/Exit softkey when present



SEVEN PROGRAMMABLE FUNCTION SWITCHES, each equipped with dual color LED indicators; the top six LEDs are selectable as either red or yellow, the bottom LED is selectable as either red or green; **NOTE: Program the bottom switch as "Lamp Test" for UL listed systems**

FIRE ALARM ACK acknowledges a Fire Alarm condition, logs the acknowledge, silences the operator panel and all annunciator tone-alerts, and displays sequential alarm list

PRIORITY 2 ACK acknowledges a Priority 2 Alarm condition, logs the acknowledge, silences the operator panel and all annunciator tone-alerts, and displays sequential Priority 2 alarm list

SUPV ACK acknowledges system supervisory conditions, logs the acknowledge, silences the operator panel and all annunciator tone-alerts, and displays sequential supervisory condition list

TROUBLE ACK acknowledges system troubles, logs the acknowledge, silences the operator panel and all annunciator tone-alerts, and displays sequential trouble list

ALARM SILENCE causes notification appliances to be deactivated, typically after evacuation is complete and while alarm source is being investigated. May be programmed to silence audible notification and allow visible notification to continue (strobes still flashing).

SYSTEM RESET restores control panel to normal when all alarmed inputs are returned to normal

SIX SYSTEM STATUS INDICATOR LEDs provide system status indications in addition to LCD information, LEDs flash to indicate the condition and then when acknowledged, remain on until reset :
 Fire Alarm & Priority 2 Alarm, red LED
 Supervisory & Trouble, yellow LED
 Alarm Silenced, yellow LED
 AC Power, green LED (on for normal)

LCD NAVIGATION CONTROL:
 Menu, Enter; Previous item select, Next item select; Page Up and Page Down

Display Feature Reference (shown actual size)

FIRST OCCURRENCES (UP TO 5) AND MOST RECENT OCCURRENCE, ACTIVITY IN SYSTEM DISPLAY ("Fire Alarm in System" screen shown for reference, see page 2 for a First 8 Events display)
FIRST OCCURRENCE advises of the time, date, device type, and custom label of the first occurrence of the event type displayed; the numerical count identifies the sequence of occurrence; when selected as the primary display screen, display of first occurrence and most recent occurrence is maintained until events are acknowledged which brings up the event list (similar to the First 8 display); the display reverts back to "First and Most Recent" when the Clr/Exit softkey is selected or after a time delay

FONT ATTRIBUTES include:
 Normal, **Bold**, Underline, **Double**, Dim, **Reverse**, Flash On/Off, Flash On/Dim, and commands for Vertical and Horizontal Placement

SOFT KEYS in this column correspond to the panel pushbutton switches; programming allows the soft keys to appear only when the functions are enabled

DISPLAY SIZE:
 4.53" W x 3.4" H
 (115 mm x 86 mm)

The screenshot shows a monochrome display with the following content:

- Header:** FIRE ALARM IN SYSTEM
- Section 1:** FIRST OCCURRENCE - 11:43 AM 05/19/10
- Event List 1:**
 - 1 North Basement - Area C SMOKE DETECTOR FIRE ALARM
 - 2 Basment Sprinklers WATERFLOW FIRE ALARM
 - 3 1st Floor Elevator Lobby SMOKE DETECTOR FIRE ALARM
 - 4 2nd Floor East Corridor SMOKE DETECTOR FIRE ALARM
 - 5 3rd Floor Elevator Lobby SMOKE DETECTOR FIRE ALARM
- Section 2:** MOST RECENT - 12:21 PM 05/19/10
- Event List 2:**
 - 17 4th Floor Elevator Lobby SMOKE DETECTOR FIRE ALARM
- Footer:** Press 'FIRE ACK' to acknowledge 12:25
- Tally Counts:** FIRE=17 PRI2=0 SUPV=0 TRBL=0

On the right side, there are soft key labels: Menu, More Info, Site, Event Time, and Clr/Exit.

TALLY COUNTS list the number of activities per category of Fire Alarm (FIRE), Primary 2 Alarm (PRI2), Supervisory (SUPV), and Trouble (TRBL)

COMMAND PROMPT advises the operator of the action required and displays local panel time

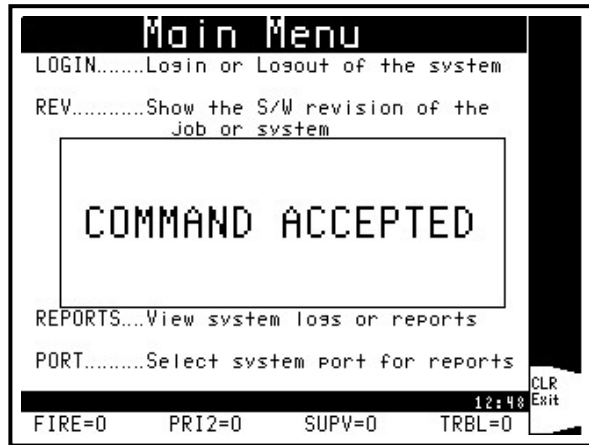
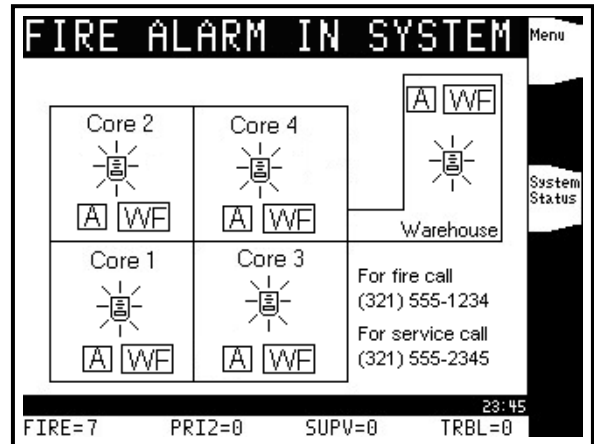
MOST RECENT advises of the time, date, device type, and custom label of the most recent occurrence of the list shown, in this case, the Fire Alarm list

Site Plan with Event Icons

Site Plan Bitmap. The InfoAlarm Command Center supports a site plan monochrome bitmap image (size is 281 pixels wide by 192 pixels high) that can also display icons indicating activity and location. Shown to the right is a sample site plan with icons shown in each building area. For this example, each area is showing an “A” for an initiating device in alarm, a “WF” for waterflow occurring, and an icon indicating notification appliances in alarm. (Icons can be created for site specific symbology, these are for example only.)

Site Plan Selection and Detail. If desired, the site plan can be the primary display screen for system activity or can be for reference, available by selecting the “Site” softkey. Depending on the facility layout, the site plan can also be a convenient location for common reference information such as primary call phone numbers, street address, etc. to assist operators in their assigned response.

System Normal Screen. The site plan (or another bitmap image) can be displayed on the System Normal screen as a grey image watermark behind the screen text. (Size and type are the same as that for a site plan bitmap). This can be used to identify the specific location of the 4100U or can display a site-specific logo or other information. (A sample is shown on page 6.)



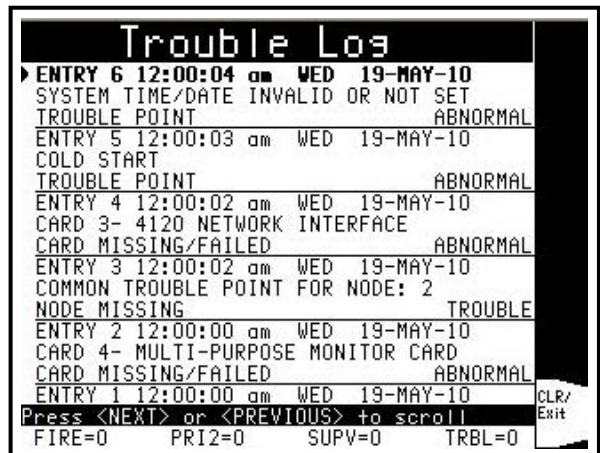
Customized Emphasis

The Main Menu screen illustration to the left demonstrates how print/display statements appear for status information or for prompting of user input. Other examples of this format occur when setting time and date, entering a password, or identification of a status change such as point enabling or disabling. Use of this feature allows the display to clearly focus the user on required information or actions.

Information Review

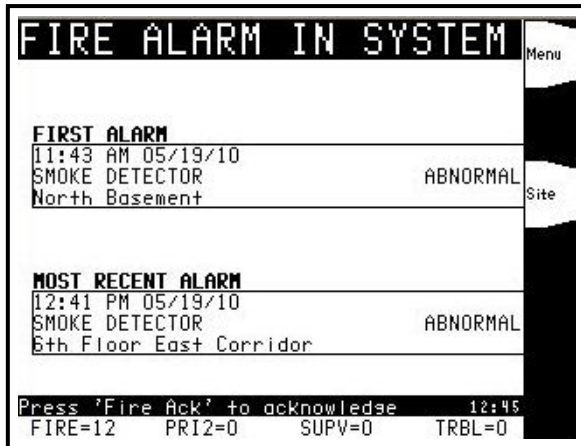
The Trouble Log History screen shown to the right identifies the ability to view multiple event entries with minimal scrolling. For specific information access, pressing “Next” or “Previous” on the keypad highlights the selected next or previous item in the list as indicated by the arrow and the bolded first line of Entry 6.

For access to the next or previous full screen of information, use the Page Dn or Page Up keys located to the right of the soft keys, each to the right of the display.



Additional Primary Display Screens

Below are samples of a First and Most Recent primary display and of a General Alarm display.

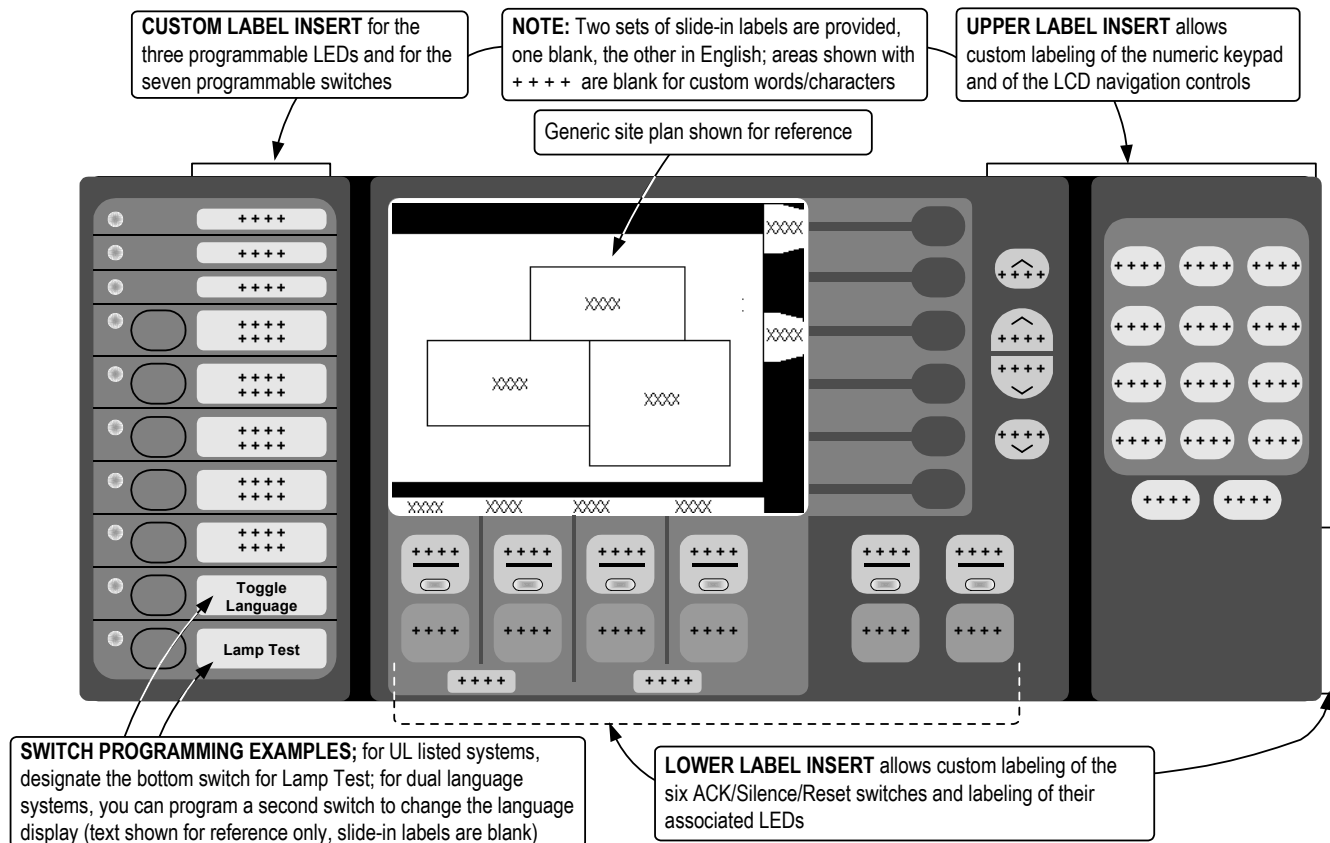


First and Most Recent Primary Display Option



General Alarm Primary Display Option

International Display Details



Additional 4100U Data Sheet Reference

Data Sheet	Subject	Data Sheet	Subject	Data Sheet	Subject
S4100-0031	Standard Panel Reference	S4100-0035	MINIPLEX® Transponders	S4100-0034	Audio/Phone Modules
S4100-0036	Network Display Unit	S4081-0002	Remote Battery Charger	S4100-0032	LED/Switch Modules
S4100-0038	Remote Annunciators	S4100-0046	IDNet+ Module w/Quad Isolator	S4100-0037	Enclosure Options

Product Selection

4100U Master Controller with InfoAlarm Command Center (see data sheet S4100-0031 for descriptions of the 4100U Basic Control Panel details, standard product features, options, and reference for related fire alarm control panel products)

Model	Model Type	UL	ULC	Voltage	InfoAlarm Command Center Type	Master Controller Features
4100-9114	English	✓	—	120 VAC, 60 Hz	Master Controller Assembly ; raised keys with fixed labels	9 A system power supply/battery charger (SPS), 250 point IDNet interface, 3 NACs, auxiliary relay, and external RUI communications interface
4100-9115	English	—	✓			
4100-9116	French	—	✓			
4100-9213	International	✓	—	120 VAC, 60 Hz	Master Controller Assembly ; flat keys with inserts for custom key labels	One Command Center, two CPU cards, and an SPS in a two bay assembly; NOTE: For external RUI, use 4100-1291 RUI Expansion module(s)
4100-9212	International	✓	—	220/240 VAC, 50/60 Hz		
4100-9122	English	✓	—	120 VAC, 60 Hz	Redundant CPU (Master Controller) ; raised keys with fixed labels	One Command Center, two CPU cards, and an SPS in a two bay assembly; NOTE: For external RUI, use 4100-1291 RUI Expansion module(s)
4100-9222	International	✓	—	220/240 VAC, 50/60 Hz	Redundant CPU (Master Controller) ; flat keys with inserts for custom key labels	

Upgrade Kits (see NOTE for NDU upgrades; Upgrade kit are UL and ULC listed)

Model	Model Type	Description	NOTE
4100-7153	English	Upgrade Kit for existing 4100U Series Fire Alarm Control Panels ; includes complete bay front assembly with InfoAlarm Command Center providing raised keys with fixed labels; uses existing power supply and Master Controller Board (CPU card)	NDU upgrades require 4100-0640 Display Memory Expansion , see below for details
4100-7154	English	Upgrade Kit for existing 4100 (Legacy 1000 pt, 4100+ systems) Series Fire Alarm Control Panels (non-4100U) ; includes complete bay front assembly with InfoAlarm Command Center; raised keys with fixed labels, and replacement Master Controller Board; uses existing power supply	
4100-7155	International	Upgrade Kit for existing 4100U Series Fire Alarm Control Panels ; includes complete bay front assembly with InfoAlarm Command Center providing flat keys with inserts for custom key labels; use for non-English language applications including French for Canada; uses existing power supply and Master Controller Board (CPU card)	
4100-7156	International	Upgrade Kit for existing 4100 (Legacy 1000 pt, 4100+ systems) Series Fire Alarm Control Panels (non-4100U) ; includes complete bay front assembly with InfoAlarm Command Center; flat keys with inserts for custom key labels, and replacement Master Controller Board; use for Canadian French applications; uses existing power supply	

Network Display Unit (NDU) Master Controller with InfoAlarm Command Center

(NOTE: See data sheet S4100-0036 for NDU feature details and for details on SPS NAC ratings for NDU with VCC)

Model	Model Type	UL	ULC	Voltage	NDU Type	Master Controller Features
4100-9151	English	✓	—	120 VAC, 60 Hz	NDU (Standard, Non-Voice) ; raised keys with fixed labels	Includes: 4100-0640 InfoAlarm Memory Expansion, Network Interface Module (select media cards separately), 9 A SPS power supply/batt. charger, and external RUI; (NOTE: SPS IDNet™ channel and NACs are disabled)
4100-9153	English	—	✓			
4100-9154	French	—	✓			
4100-9245	International	✓	—	120 VAC, 60 Hz	NDU (Standard, Non-Voice) ; flat keys with inserts for custom key labels	Includes above features and adds: VCC Bay with Standard CPU Module, Network Interface Module (select media cards separately), 9 A SPS with 250 Point IDNet Interface, (3) 3 A NACs, and ext. RUI comm. interface
4100-9243	International	✓	—	220/240 VAC, 50/60 Hz		
4100-9152	English	✓	—	120 VAC, 60 Hz	NDU with Voice Interface and Control ; raised keys with fixed labels	Includes above features and adds: VCC Bay with Standard CPU Module, Network Interface Module (select media cards separately), 9 A SPS with 250 Point IDNet Interface, (3) 3 A NACs, and ext. RUI comm. interface
4100-9155	English	—	✓			
4100-9156	French	—	✓			
4100-9246	International	✓	—	120 VAC, 60 Hz	NDU with Voice Interface and Control ; flat keys with inserts for custom key labels	Includes above features and adds: VCC Bay with Standard CPU Module, Network Interface Module (select media cards separately), 9 A SPS with 250 Point IDNet Interface, (3) 3 A NACs, and ext. RUI comm. interface
4100-9244	International	✓	—	220/240 VAC, 50/60 Hz		

Remote Annunciator with InfoAlarm Command Center (see data sheet S4100-0038 for Remote Annunciator features)

Model	Model Type	UL	ULC	InfoAlarm Command Center Type	Master Controller Features	
4100-9612	English	✓	✓	With raised keys and fixed labels	Basic Remote Annunciator	Includes Expansion Bay with PDI, Remote TIC module; power is supplied from host control panel
4100-9613	French	—	✓			
4100-9614	International	✓	—	With flat keys & inserts for custom key labels	Remote Annunciator	Includes Expansion Bay with PDI, Remote TIC module; power supply is specified separately when configured
4100-9607	English	✓	✓	With raised keys and fixed labels		
4100-9608	French	—	✓	With raised keys and fixed labels		
4100-9609	International	✓	—	With flat keys & inserts for custom key labels		

InfoAlarm Command Center Memory Option (may be required to be ordered separately, see description details)

Model	Description
4100-0640	Display Memory Expansion Module ; included with NDU systems; required for all InfoAlarm Command Centers connected to a panel if any are using 2 byte character fonts ; 6 Meg module mounts on rear of display board

(continued on next page)

Product Selection (Continued)

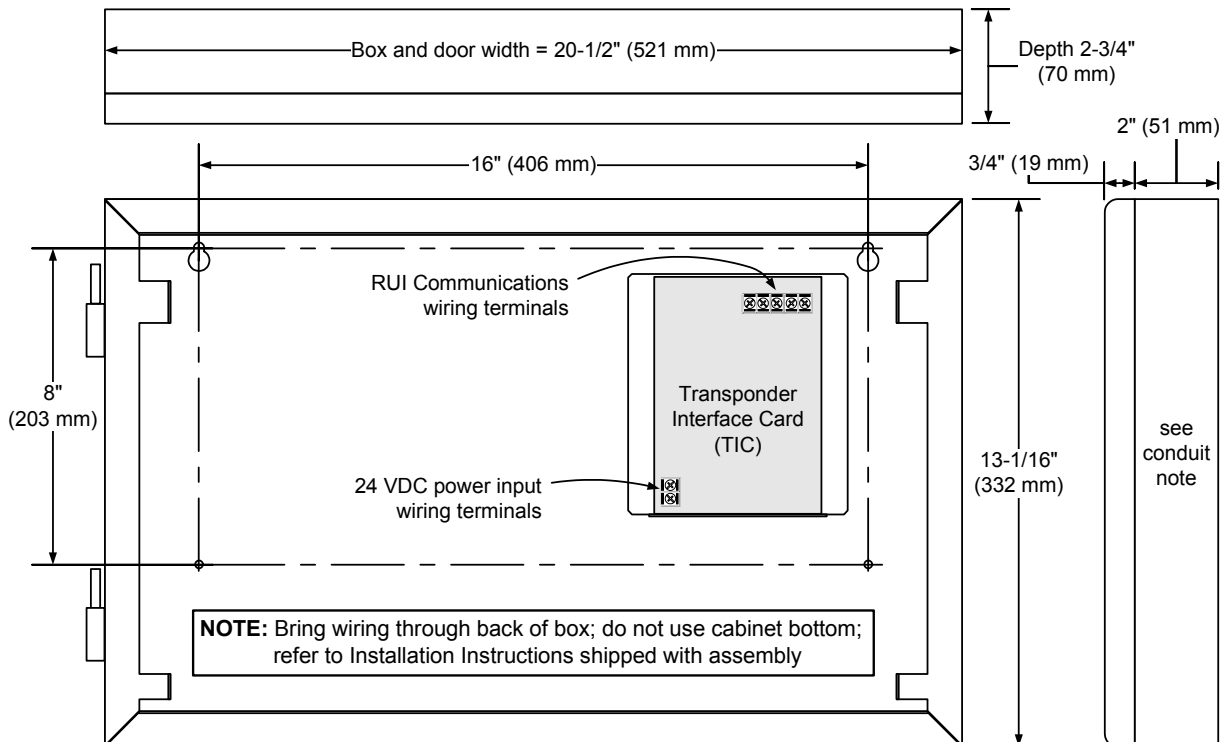
Remote InfoAlarm Command Center Control Assembly with Cabinet for Surface Mounting

Model Number/Cabinet Color		Application Type	Listing	Description
Red	Beige			
4100-9401	4100-9402	English	UL & ULC	Remote InfoAlarm Command Center with cabinet; for surface mounting; includes mounting box and door assembly with glass insert; uses RUI communications; requires external 24 VDC system voltage; see illustrations below and Installation Instructions 579-687 for details
4100-9421	4100-9422	French/Canada	ULC	
4100-9441	4100-9442	International	UL	

Remote InfoAlarm Command Center Front View



Remote InfoAlarm Command Center Mounting Reference



Specifications

General Display Specifications

Size Reference	Dot Matrix Size	320 x 240
	Active Display Area	4.53" W x 3.4" H (115 mm x 86 mm), includes header, footer, and softkey area; 5.66" diagonal measurement (144 mm)
	Characters	Up to 854 characters total using standard ASCII character font
	Designation	QVGA; one quarter of standard VGA (Video Graphics Array) display
Display Polarizer Type		Transflective with rear backlight
Display Adjustment		Contrast adjustment is located on the controller module
Backlight		White LEDs with intensity adjustment and selectable AC power fail operation; intensity adjustment is located on the controller module
Backlighting Operation Options		On continuously; Off with AC power fail until a switch is pushed; selectable timeout without switch activity

Control Panel Mounted InfoAlarm Command Center Current Requirements

Master Controllers (4100-9114, -9115, -9116, -9212, -9213, -9222)	Supervisory	447 mA @ 24 VDC	Panel currents only are shown, add external device loading per system requirements
	Alarm	542 mA @ 24 VDC; backlight and tone-alert on	
Redundant CPUs (4100-9122, -9222)	Supervisory	782 mA @ 24 VDC	
	Alarm	964 mA @ 24 VDC; backlight and tone-alert on	
Network Display Units, Non-Voice (4100-9151, -9153, -9154, -9243, -9245)	Supervisory	492 mA @ 24 VDC	
	Alarm	547 mA @ 24 VDC; backlight and tone-alert on	
Network Display Units, Voice (4100-9152, -9155, -9156, -9244, -9246)	Supervisory	912 mA @ 24 VDC	
	Alarm	989 mA @ 24 VDC; backlight and tone-alert on	
Upgrade Kits	4100-7153 & -7155 for 4100U	add 82 mA supervisory; add 127 mA for alarm	
	4100-7154 & -7156 for Legacy 4100+	add 235 mA supervisory; add 280 mA for alarm	

Remote Annunciators with InfoAlarm Command Center, Powered from Control Panel

Voltage		19 to 33 VDC (24 VDC nominal), system supplied; requires separate wiring
Current	Supervisory	186 mA @ 24 VDC
	Alarm	214 mA @ 24 VDC; backlight and tone-alert on
Mounting Details; Stand-Alone Cabinet Models		See page 6 for reference illustration
4100U Capacity, RUI Output	Type	RUI (Remote Unit Interface) external annunciator communications line SLC (signaling line circuit)
	Capacity	Up to 31 total remote RUI devices, including up to 10 InfoAlarm Command Center devices
	RUI Device Reference List	4100U: InfoAlarm Command Center, Remote Annunciators, MINIPLEX Transponders; 4603-9101 LCD Annunciator, 4602-9101 Status Command Unit (SCU), and 4602-9102 Remote Command Unit (RCU); refer to data sheet S4100-0031 for additional 4100U RUI information
Wiring Requirements	Data	Single twisted, shielded pair, 18 AWG (0.82 mm ²)
	Power	18 to 12 AWG (0.82 mm ² to 3.31 mm ²) wires for 24 VDC system power
	Earth	A dedicated earth ground connection to the electrical box is required for proper ESD and EMI protection; wire in accordance with NFPA 70 (<i>National Electrical Code</i> [®]) Article 250

Custom Point Detail Messages

Message Location Details		Select "more info" softkey when investigating point detail and scroll to the bottom of the information; typical messages might include contact details (phone numbers, pager numbers, etc.) and other contact or reference information
Number of Messages		Up to 50
Message Size	Character Details	120 characters; visible characters = 116; (lines 1 and 2 require one carriage return character and one line feed character)
	Line Details	3 lines total; 40 characters maximum per line; line 3 may be limited to 36 visible characters depending on characters in lines 1 and 2
Environmental	Operating Temperature	32° to 120°F (0° to 49° C)
	Operating Humidity	Up to 93% RH, non-condensing @ 90° F (32° C) maximum

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S4100-0045-5 5/2010

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

Cabinet Reference; Boxes, Doors, Retainers, Rack Mounting, and Accessories

Features

4100U Box and door options:

- Boxes are available sized for one, two, or three equipment bays, each with a battery bay located at the bottom
- Colors include beige or red
- Doors styles are glass with retainer or solid
- Models are available with box and door combined for single package shipping, or packaged separately
- Enclosures are NEMA 1 rated
- Refer to individual 4100U data sheets for product application listings (see list on page 2)

Door type selection is coordinated with cabinet function:

- Glass doors with retainers provide visibility of annunciation and interface modules for Control Panels, Network Display Units (NDU), and Remote Annunciators
- Solid doors are for MINIPLEX® Transponders and utility function cabinets where module visibility is not required

4100U Enclosure details:

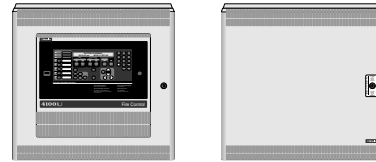
- Latching retainers (dress panels) easily lift off for internal access
- Smooth box surfaces are provided for locally cutting conduit entrance holes exactly where required
- Alignment markers are provided at the top and bottom of each box side for 6" (152 mm) or 4" (102 mm) wall studs
- Knockout screw/nail holes are supplied for semi-flush mounting

Upright cabinet rack packaging reference:

- For use with Bud Industries Inc. special cabinet rack model number 45964
- Refer to page 2 for cabinet rack listing

4009 TPS (TrueAlert® Addressable Power Supply) cabinet assemblies:

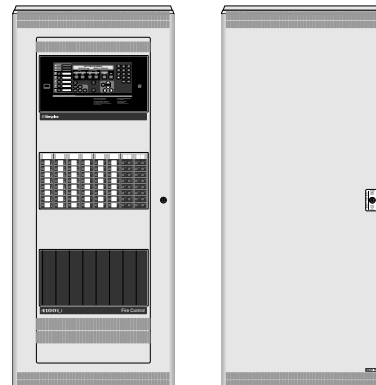
- Cabinet assemblies are available for remote mounting of the TrueAlert addressable power supply (TPS)
- Refer to page 2 for listings information



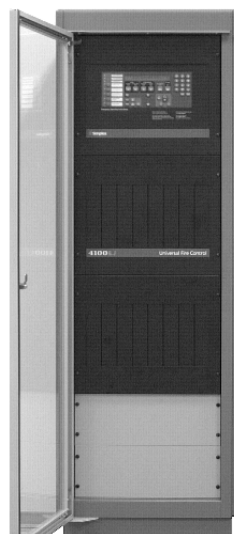
4100U One Bay Cabinets



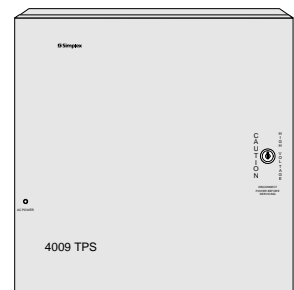
4100U Two Bay Cabinets



4100U Three Bay Cabinets



Cabinet Rack Enclosure (shown with door open)



4009 TPS Cabinet Assembly (not to scale)

* For 4100U one, two, and three bay cabinets with associated equipment: Products are listed by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7165-0026:251 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.

Enclosure Selection Chart (refer to pages 3 and 4 for dimensions)

Combined Box and Door Selection (select if box and door are to be shipped together)

Description	Beige 1 Bay	Beige 2 Bay	Beige 3 Bay	Red 1 Bay	Red 2 Bay	Red 3 Bay
Box with Glass Door and Dress Panel	2975-9424	2975-9425	2975-9426	2975-9421	2975-9422	2975-9423
Box with Solid Door	2975-9430	2975-9431	2975-9432	2975-9427	2975-9428	2975-9429

Model	Color	Description	Details	Listings
2975-9230	Beige	4009 TPS Cabinet Assembly for remote TrueAlert Power Supply (TPS) mounting	Includes box with door and mounting plate, input terminal block, and wiring harnesses; <i>Separately Order</i> : 4100 Series TPS (4100-5120 for US, 4100-5121 for Canada, 4100-5122, 240 VAC for international use), 4009-9813 Interface Card, and batteries (12.7 Ah maximum for cabinet mounting); refer to page 3, to data sheets S4100-0031 and S4009-0003, and instructions 579-875 for additional details	ETL Listed to: UL 864 and ULC S527 (not CSFM listed or FM approved)
2975-9229	Red			

Separate Box and Door Selection (select if boxes and doors are required to be shipped separately)

Description	Beige 1 Bay	Beige 2 Bay	Beige 3 Bay	Red 1 Bay	Red 2 Bay	Red 3 Bay
Box	2975-9410	2975-9411	2975-9412	2975-9407	2975-9408	2975-9409
Glass Door and Dress Panel	4100-2101	4100-2102	4100-2103	4100-2121	4100-2122	4100-2123
Solid Door	4100-2111	4100-2112	4100-2113	4100-2131	4100-2132	4100-2133

Cabinet Rack Mounting (refer to page 4 for additional details)

Model	Description	#45964 Listings
#45964, from Bud Industries Inc.	Special upright cabinet rack for 4100U; 19" (483 mm) E.I.A.; gray texture; includes front polycarbonate door and rear louvered door, both keyed with Simplex "B" keys	UL and ULC listed only as of document revision date; cabinets are listed with the Simplex 4100U product line
4100-2140	Master Controller Rack Mount Kit, one required per master controller	Master Controller and Option Bays each require 9 Rack Units; 15.75" height (400 mm)
4100-2145	Option Bay Rack Mounting Kit, one required per expansion bay	
4100-2144	Power Distribution Module (PDM) Rack Mount Kit, order PDM separately per system voltage, one required per cabinet rack	

Power Distribution Modules (Not required for 4009 TPS Cabinets 2975-9229 and 2975-9230)

Model	Voltage	Description
4100-0634	120 VAC	Power Distribution Module (PDM); select per system voltage; one required per 4100U box or cabinet rack
4100-0635	220/230/240 VAC	

Miscellaneous Accessories

Model	Description	
4100-2210	Appliqué, Canadian French, 4100U Fire Control	
4100-9835	Termination and Address Label Kit, for module marking	NOTE: One kit is supplied for each cabinet; order this if required for additional field module installation
4100-9837	Green LED Power-on Indicator Kit, required for ULC listing of MINIPLEX transponder	Mounts using knockout provided in solid door
2975-9811	Beige semi-flush box trim	1-7/16" (37 mm) wide, four corners and trim pieces for top, bottom, and sides
2975-9812	Red semi-flush box trim	

Battery Reference

Model	Capacity	Model	Capacity	Battery Notes
2081-9272	6.2 Ah	2081-9287	25 Ah	1. Sealed lead-acid batteries, 12 VDC each; two required per battery location. 2. Battery selection is required if batteries are internal. 3. Select one size per battery set 4. Refer to data sheet S2081-0006 for battery details.
2081-9274	10 Ah	2081-9276	33 Ah	
2081-9288	12.7 Ah	2081-9296	50 Ah	
2081-9275	18 Ah			

Battery Accessories

Model	Description
4100-0650	Battery Shelf, required for 50 Ah batteries
4100-5128	Battery Distribution Terminal Block, mounts to side of box, required for all close-nipped cabinets unless cabinet receives all power from power supplies and batteries located in the adjacent cabinet

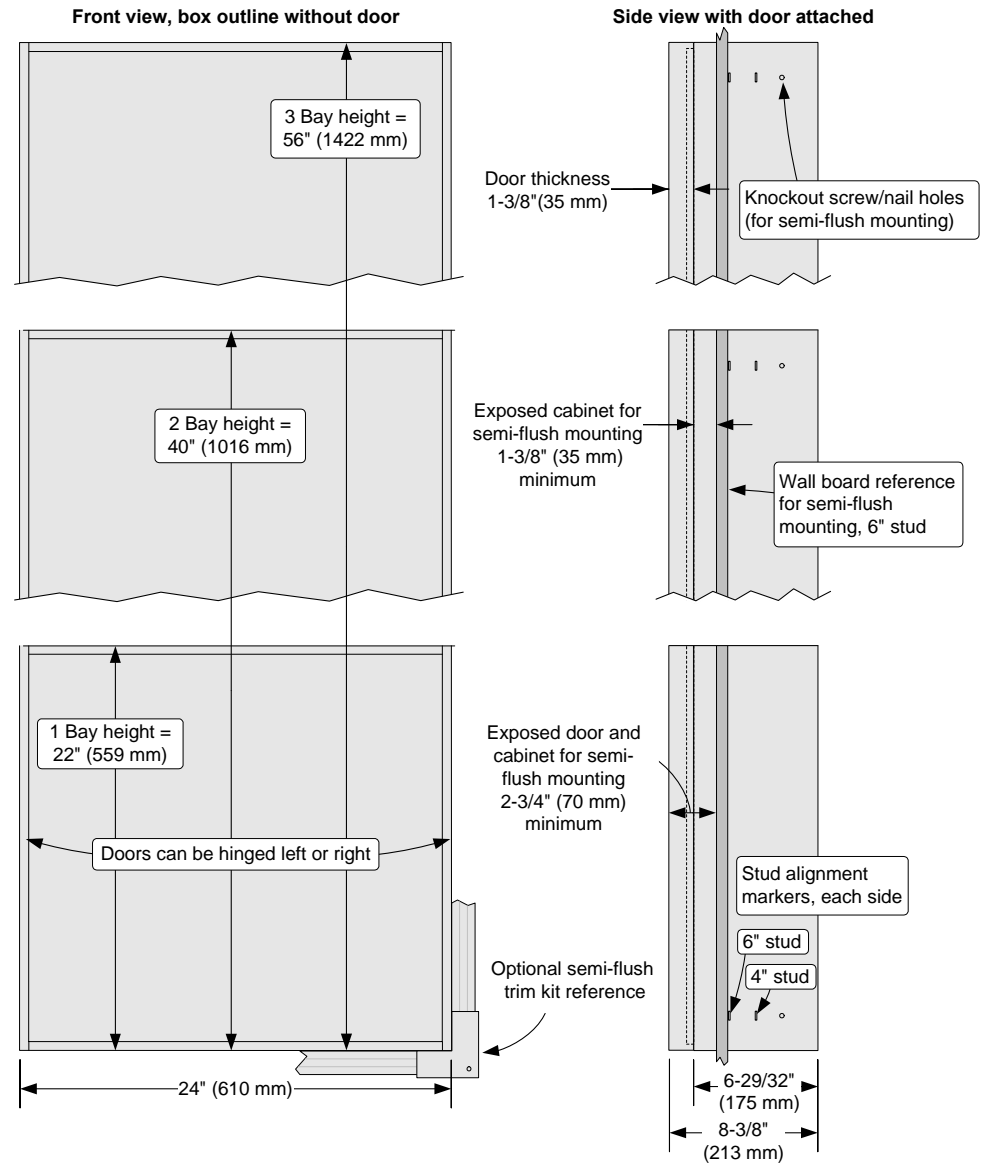
Additional Data Sheet Reference

Subject	Data Sheet	Subject	Data Sheet
4100U Basic Panel Modules and Accessories	S4100-0031	Network Display Unit (NDU)	S4100-0036
LED/Switch Modules	S4100-0032	Remote Annunciators	S4100-0038
4100U Audio/Phone Modules	S4100-0034	InfoAlarm [®] Command Center	S4100-0045
MINIPLEX Transponders	S4100-0035	Remote Battery Charger	S4081-0002

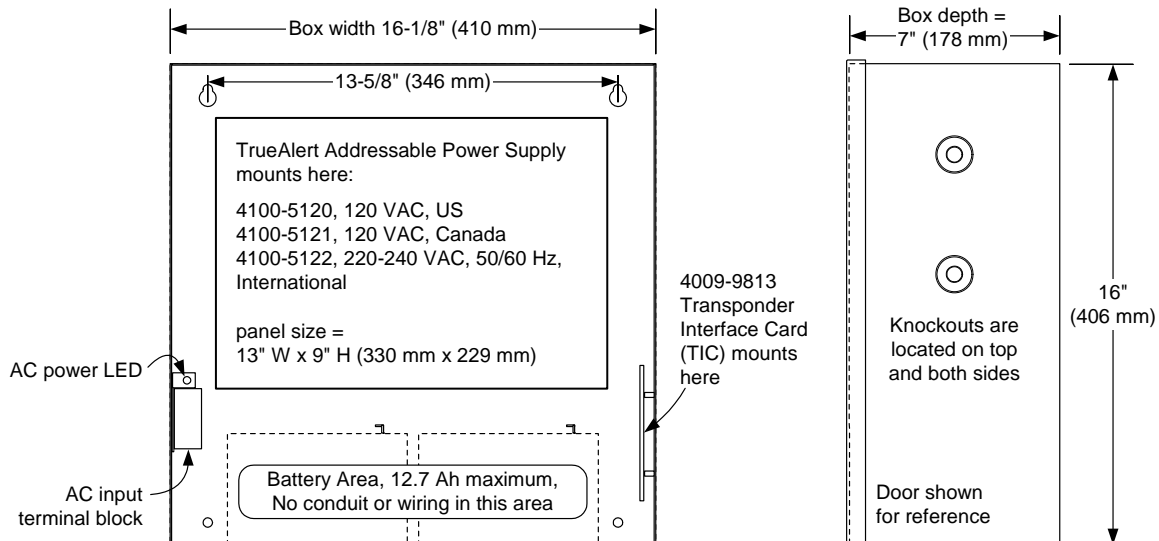
Wall Mounted Enclosure Installation Reference

NOTE:

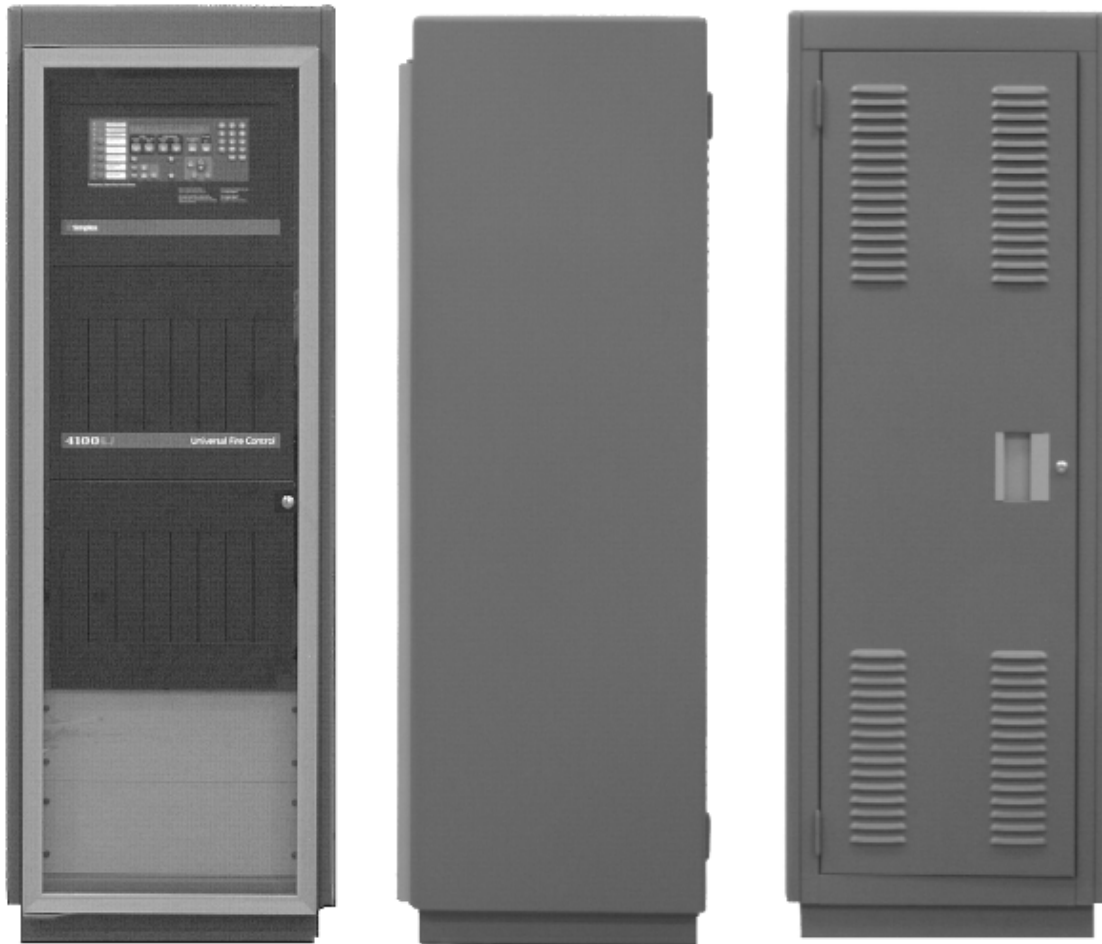
A system ground must be provided for Earth Detection and transient protection devices. This connection shall be made to an approved, dedicated Earth connection per NFPA 70, Article 250, and NFPA 780.



4009 TPS Cabinet Installation Reference



Console Package Reference



Front View

Side View

Rear View

Cabinet Rack Specifications

Type	Upright cabinet rack for exclusive use with Simplex 4100U Fire Alarm Products	
Supplier	Order from Bud Industries Inc. (www.budind.com)	
Model Number	45964	
Outside Dimensions	Height	69-7/8" (1775 mm)
	Width	24-1/16" (611 mm)
	Depth	22" (559 mm)
Color	Gray texture	
Panel Space Width	19" E.I.A. (483 mm)	
Front Door	Surface mount with 1/8" thick (3.18 mm) smoke gray polycarbonate, locked with Simplex "B" key, hinged on left of cabinet	
Rear Door	Ventilated top and bottom, locked with Simplex "B" key	
Sides	Side panels are removable from the inside for rack-to-rack mounting	
Bottom	Pan attached for battery mounting	
Levelers	Includes 4 stem levelers on bottom	

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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

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.

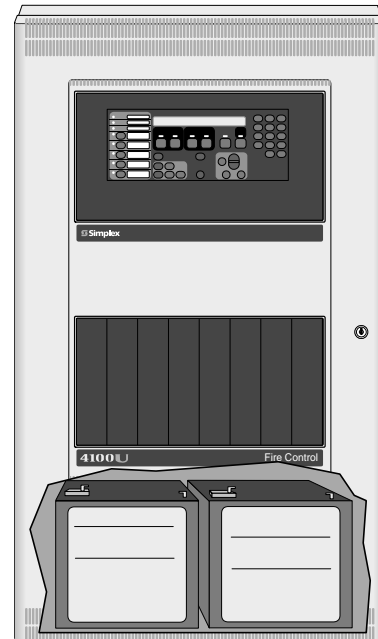
Because of their sealed construction, packaging is allowed within the system electronics enclosure (see illustration on page 2). When this is applicable, the quantity of system cabinets and the battery wiring distances are both minimized. Where required, external battery cabinets can be close-nipped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

Battery Details

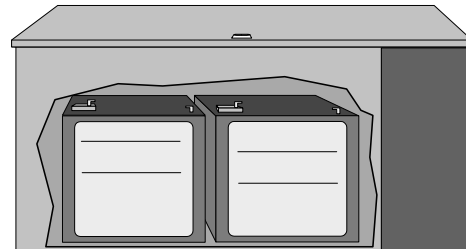
Charging. These batteries are intended to be used with compatible Simplex battery chargers.

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.)



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



Remote Battery Cabinets are Available for Larger Battery Requirements

Battery Details (Continued)

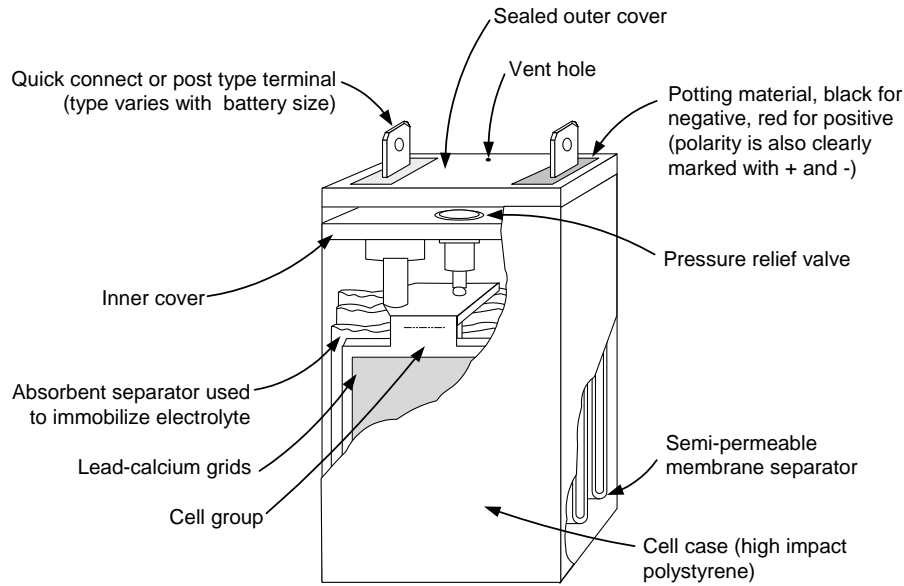
Shipping. Sealed lead-acid batteries are shipped via ground or sea transportation only. They are not shipped via air.

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.

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:

- 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.
- 4010 Cabinets will accommodate 2081-9275, 18 Ah batteries, but will not allow bottom entry conduit.
- Use 4081 series companion cabinet and charger, refer to page 4.
- 4020 Cabinets will accommodate 2081-9271, 33 Ah batteries, but will not allow bottom entry conduit.
- 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-nipped 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

* 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 <i>Listings include: UL, ULC, FM, CSFM, and MEA (NYC), see data sheet for details</i>	22-1/2" W x 16-3/4" 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 <i>Listings include: UL and CSFM</i>	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;	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	NOTE: Required for ULC listed charging of 110 Ah batteries; <i>Listings include: UL, ULC, FM, CSFM, and MEA (NYC), see data sheet for details</i>	
4100-9837	Green LED Power-on Indicator Kit, required for ULC listing , mounts above access panel using knockout provided			

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PS-12750 12 Volt 75.0 AH

Rechargeable Sealed Lead Acid Battery



We've Got The Power.™



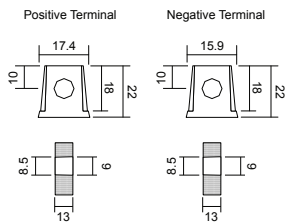
Features

- Absorbent Glass Mat (AGM) technology for superior performance
- Valve regulated, spill proof construction allows safe operation in any position
- Power/volume ratio yielding unrivaled energy density
- Rugged impact resistant ABS case and cover (UL94-HB)
- Integrated ABS carrying handles for ease of movement
- Approved for transport by air. D.O.T., I.A.T.A., F.A.A. and C.A.B. certified
- U.L. recognized under file number MH 20845

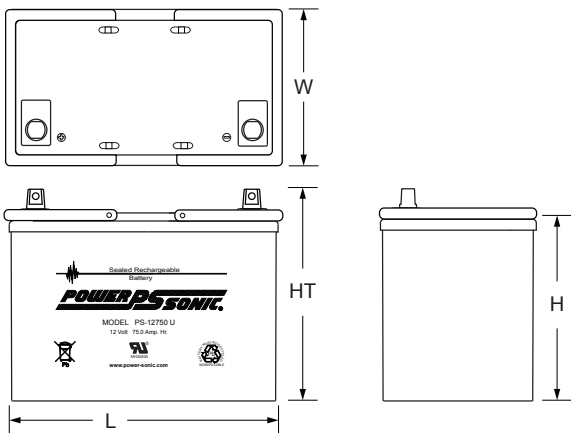
Terminals

(mm)

- U: Universal terminals: Heavy-duty posts with 'nut & bolt' fasteners



Physical Dimensions: in (mm)



L: 10.25 (260) W: 6.60 (168) H: 8.15 (207) HT: 8.98 (228)

Tolerances are +/- 0.04 in. (+/- 1mm) and +/- 0.08 in. (+/- 2mm) for height dimensions. All data subject to change without notice.

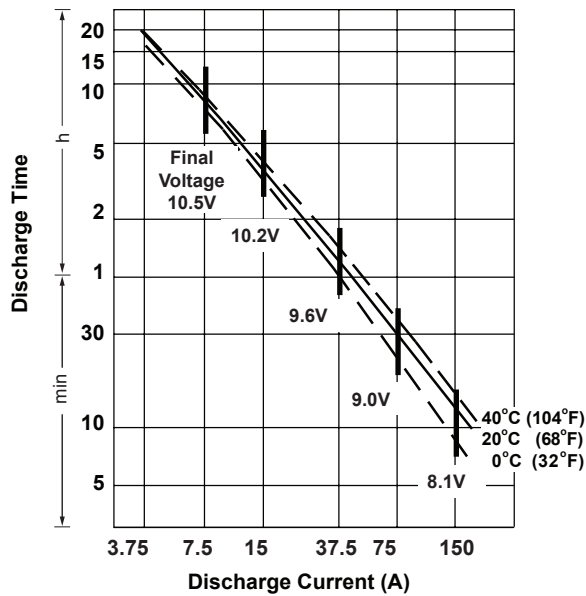
Performance Specifications

Nominal Voltage	12 volts (6 cells)
Nominal Capacity	
20-hr. (3.75A to 10.50 volts)	75.0 AH
10-hr. (7.2A to 10.50 volts)	72.0 AH
5-hr. (13.6A to 10.20 volts)	68.0 AH
1-hr. (47A to 9.00 volts)	47.0 AH
15-min. (160A to 9.00 volts)	40.0 AH
Approximate Weight	50.60 lbs. (22.95 kg)
Energy Density (20-hr. rate)	1.63 W-h/in ³ (99.61 W-h/l)
Specific Energy (20-hr. rate)	17.79 W-h/lb (39.21 W-h/kg)
Internal Resistance (approx.)	6 milliohms
Max Discharge Current (7 Min.)	225.0 amperes
Max Short-Duration Discharge Current (7 Sec.)	560.0 amperes
Shelf Life (% of nominal capacity at 68°F (20°C))	
1 Month	97%
3 Months	91%
6 Months	83%
Operating Temperature Range	
Charge	-4°F (-20°C) to 122°F (50°C)
Discharge	-40°F (-40°C) to 140°F (60°C)
Case	ABS Plastic
Power-Sonic Chargers	PSC-1210000A-C

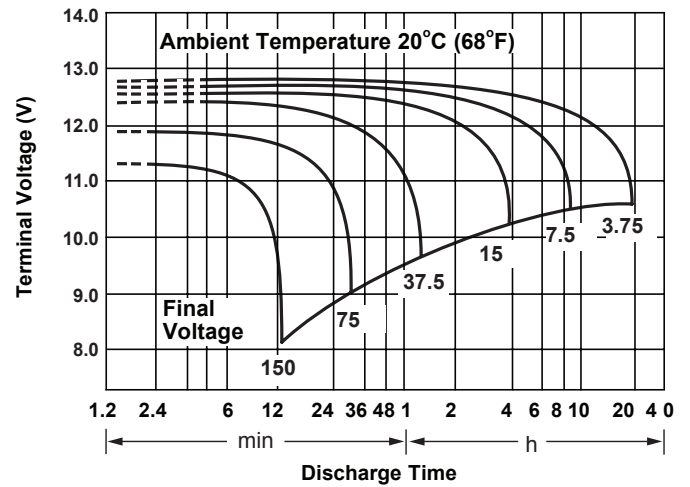
Constant Power Discharge Ratings

MODEL	FINAL VOLTAGE	WATTS PER CELL @ 25° C						
		5 MIN	10 MIN	15 MIN	20 MIN	30 MIN	45 MIN	60 MIN
PS-12750	1.75	480	339	270	220	168	126	102
	1.70	509	356	278	231	171	128	103
	1.67	518	360	282	233	173	130	106

Discharge Time vs. Discharge Current



Discharge Characteristics



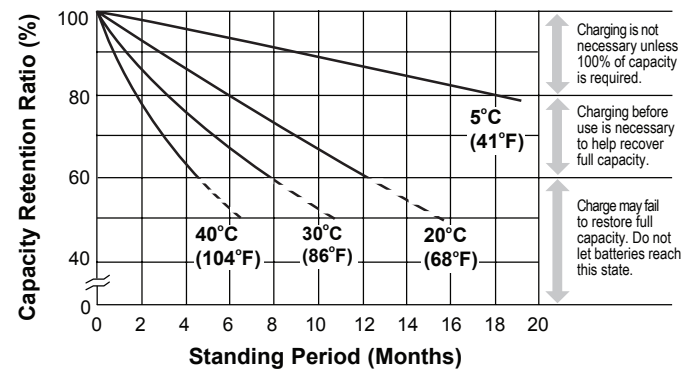
Charging

Cycle Applications: Limit initial current to 22.5A. Charge until battery voltage (under charge) reaches 14.4 to 14.7 volts at 68°F (20°C). Hold at 14.4 to 14.7 volts until current drops to under 750mA. Battery is fully charged under these conditions, and charger should be disconnected or switched to “float” voltage.

“Float” or “Stand-By” Service: Hold battery across constant voltage source of 13.5 to 13.8 volts continuously. When held at this voltage, the battery will seek its own current level and maintain itself in a fully charged condition.

Note: Due to the self-discharge characteristics of this type of battery, it is imperative that they be charged within 6 months of storage, otherwise permanent loss of capacity might occur as a result of sulfation.

Shelf Life & Storage



Chargers

Power-Sonic offers a wide range of chargers suitable for batteries up to 100AH. Please refer to the Charger Selection Guide in our specification sheets for “C-Series Switch Mode Chargers” and “Transformer Type A and F Series”. Please contact our Technical department for advice if you have difficulty in locating suitable models.

Further Information

Please refer to our website www.power-sonic.com for a complete range of useful downloads, such as product catalogs, material safety data sheets (MSDS), ISO certification, etc..

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 Fax: +1-650-366-3662
battery@power-sonic.com

Features

TrueSite Workstation fire alarm network functions:

- Supports standard fire service annunciation icons to provide firefighter and first responders with critical fire response information
- Custom alarm and system messages can intuitively guide emergency responders; important information (HAZMAT locations, contact information, etc.) can be quickly presented
- Color graphical annunciation and control capacity for up to 50,000 points or point groups
- Extensive historical logging; up to 500,000 events with operator notations; information is compatible with spreadsheet and database programs for report customization
- Optional interface to Digital Alarm Communicating Receiver (DACR) integrates multiple systems onto a single workstation*
- Multiple password controlled operator levels with selectable feature access
- Available optional connections for printers or other compatible systems
- Agency listed systems are supplied with Windows® Vista® Business operating system (operation is also compatible with Windows XP Pro operating system)

Available TCP/IP, LAN/WAN connections:

- Connecting remote clients allows communication with the server for multiple remote users
- Dedicated, listed Fire Alarm LAN equipment allows listed remote clients to have control access
- Up to 10 remote clients can be on-line simultaneously
- Available with revision 2.01 and above

Graphic screens details:

- Over 30,000 custom field generated and edited graphic screen capacity is available
- Multiple import and export formats are supported (refer to page 3 for details)

Enhanced operator interface features:

- **Floatable and dockable windows** allows windows to either be fixed (docked) or floatable; floatable windows and dual monitors allow the Alarm List Window to be on one monitor and the Graphics Window on the other
- **Pan-and-zoom graphic controls** features allow precise dynamic navigation within a screen for rapid and convenient selection of the area of interest
- **Configurable icon touch size** coordinates zoom level with the need to accurately select the icon of interest
- **User defined coverage zones** allow user defined areas or zones within a graphics screen to be highlighted to indicate the area of activity without zooming into the point of interest
- **Configurable zoom levels** provide an automatic zoom level when the point of interest is selected



TrueSite Workstations can Optionally Support Dual Monitors (shown as expanded desktop mode)

Features (Continued)

Enhanced operator features (Continued):

- **Enhanced auto-jump** allows the screen view to be selected to automatically jump to a graphic at a predetermined zoom level with the active device centered on the screen; alternately, the system can be selected to auto-jump to the Alarm List window
- **Non-Captive operation** allows other Windows applications to function (word processing, spreadsheet, etc.); however, workstation activity takes precedence
- **Captive operation** dedicates the screen to the TrueSite Workstation; other applications are unavailable

Simplex® Fire Alarm Network capabilities:

- Multiple workstations can be nodes on the same fire alarm network to provide redundant operations for improved survivability
- Connect to up to seven (7) separate network loops
- Graphical diagnostic tools identify network node and loop status
- Set-host service functions allow access to remote network node data including individual TrueAlarm® analog sensors
- Provides event printing (with compatible printer), view or print of status and service report information, and print graphic screens (see page 7 for printing details)
- Compatible with IMS (Information Management Systems) and GCC (Graphic Command Center) on the same fire alarm network
- 2120 Multiplex Serial Line Interface (SLI) allows connection to up to eight, 2120 Multiplex systems

Agency listings*:

- UL 864 & ULC-S527 as Control Unit Annunciator
- UL 864 for Fire Proprietary Supervising Station
- UL 1076 & ULC-C1076 for Proprietary Security
- UL 1610 & ULC-S559 for Central Station Security

(feature summary is continued on next page)

* Refer to page 6 for specific product 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 7300-0026:323 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 (does not include model 4190-8403). 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.

Features (Continued)

Selectable packaging:

- Computer is available as desktop or rack mount with mouse operation and/or touchscreen operation providing convenient user interface
- High resolution (1280 x 1024) LCD monitors:
 - 19 inch diagonal standard desktop
 - 17 or 19 inch diagonal desktop with touchscreen
 - 19 inch diagonal rack mount with touchscreen
- Standard computer supports dual monitors providing either expanded desktop (dualview) or duplicate screen (clone) operation; one monitor is connected via SVGA and the other via DVI connection; an optional video card is available if the second monitor is not DVI compatible

Description

Network Annunciation. TrueSite Workstations provide annunciation, status display, and control for Simplex Fire Alarm Networks using a personal computer based graphical interface with a high resolution, color display. Response buttons with realistic icons provide control switches specific to the operation being performed.

Remote Clients. For remote viewing of TrueSite Workstation Server information, remote clients are available and connected using TCP/IP LAN/WAN Ethernet communications. As detailed on pages 6 and 8, Remote Clients can be annunciation only, or capable of system control when configured with agency listed hardware.

DACR Compatible. For systems requiring information from remote control panels via DACTs (Digital Alarm Communicating Transmitters), workstations can be equipped to communicate directly with a compatible DACR; refer to page 5 for details.

Multiple Workstations can be installed on the same Fire Alarm network for redundancy to provide improved survivability/hot standby operations.

TrueSite Workstation Operation

Operation. When fire alarm network status changes occur, the screen displays the type and location of the alarm (or other activity) and the appropriate header buttons appear. In the example shown below in Figure 1, Fire, Priority 2, Supervisory, and Trouble are shown.

Sample Screens. Figure 1 (below) is representative of a list view screen. Figure 2 (on page 3) is representative of a system graphic screen with icons representing the devices of interest. Screen choices can be configured per system preference, however, when using an optional second monitor, both screen types can be visible for operator convenience.

Ease of Operation. With touchscreen monitors, the operator touches the screen area in alarm (or uses the mouse control) to access a more detailed view of the alarmed zone or device. With the proper password access, the operator has the ability to acknowledge alarm conditions, activate signal silence, and perform system reset directly from the workstation screens.

Programmable Activity Timeout allows an unattended monitor to revert to the login screen when the configured time period expires.

Individual User Preferences appear when the user logs in. Options include: Font Size (default or large); Toolbar Size (small or large); Interface Theme (MS Office 2003 or System); Floating Window Options (select whether to show Menu bar or show Toolbar).

Historical Log and List Details. Figure 1 below shows historical log details. The display format is similar to the display for active list items such as the alarm list. Displayed information can be sorted on-screen by each category shown (number, time, date, point name, etc.). List information can be reviewed on the screen, printed at a local or remote system printer, or can be written to an electronic file for compatibility with spreadsheet and database programs.

Number	Time	Date	Point Name	Description	Point Type	Status	Operator
80	03:26:45 PM	SAT 17-APR-10	2:SIG12	FLEX 50 OCT 1 SPK 12	SPEAKER CIRCUIT	OFF	
81	03:26:45 PM	SAT 17-APR-10	2:SIG13	FLEX 50 OCT 2 SPK 13	SPEAKER CIRCUIT	OFF	
82	03:26:45 PM	SAT 17-APR-10	2:SIG14	FLEX 50 OCT 3 SPK 14	SPEAKER CIRCUIT	OFF	
83	03:26:45 PM	SAT 17-APR-10	2:P116	ALL SPEAKERS CHANNEL 1 LED	UTILITY POINT	OFF	
84	03:26:49 PM	SAT 17-APR-10		NO FIRE ALARMS PRESENT, SYSTEM RESET COMPLETE			
85	03:26:49 PM	SAT 17-APR-10	2:M1-1-0	ADDRESSABLE PULL STATION	PULL STATION	NORMAL ACKED AT NODE 1	
86	03:27:28 PM	SAT 17-APR-10	P95	SYSTEM PRIORITY 2 RESET REQUEST	UTILITY POINT	ON	
87	03:27:28 PM	SAT 17-APR-10		PRIORITY 2 ALARM SYSTEM RESET REQUESTED			
88	03:27:28 PM	SAT 17-APR-10		PRIORITY 2 ALARM SYSTEM RESET IN PROGRESS			
89	03:27:28 PM	SAT 17-APR-10	P95	SYSTEM PRIORITY 2 RESET REQUEST	UTILITY POINT	OFF	
90	03:27:28 PM	SAT 17-APR-10	2:P220	NETWORK PRIORITY 2 RESET	UTILITY POINT	ON	
91	03:27:28 PM	SAT 17-APR-10	2:P220	NETWORK PRIORITY 2 RESET	UTILITY POINT	OFF	
92	03:27:28 PM	SAT 17-APR-10	2:M1-2-0	SECURITY PULL STATION	SECURITY MONITOR	NORMAL	
93	03:27:35 PM	SAT 17-APR-10	2:M1-2-0	SECURITY PULL STATION	SECURITY MONITOR	NORMAL ACKED AT NODE 1	
94	03:27:58 PM	SAT 17-APR-10		NO PRIORITY 2 ALARMS PRESENT, SYSTEM RESET COMPLETE			
95	03:33:23 PM	SAT 17-APR-10		LOGOUT AT NODE 1 AT LEVEL 5			OPERATOR # 005
96	03:33:23 PM	SAT 17-APR-10		AUTOMATIC SYSTEM SHUTDOWN PERFORMED			
97	03:33:51 PM	SAT 17-APR-10	P361	DACR PORT 1 COMMUNICATIONS LOSS	TROUBLE POINT	ABNORMAL	
98	03:33:51 PM	SAT 17-APR-10	P92	SYSTEM COLD START	TROUBLE POINT	ABNORMAL	
99	03:33:54 PM	SAT 17-APR-10	A6	SYSTEM BASE YEAR	COUNTER	ON	
100	03:33:54 PM	SAT 17-APR-10	A47	ENABLE OPERATION COUNTER SETPOINT	ANALOG VALUE	ON	
101	03:33:54 PM	SAT 17-APR-10	A48	PC SPEAKER SHUT OFF TIMER SETPOINT	ANALOG VALUE	ON	
102	03:33:54 PM	SAT 17-APR-10	A39	NUMBER OF CONFIGURED NETWORK LOOPS	COUNTER	ON	
103	03:33:54 PM	SAT 17-APR-10	A46	INACTIVITY TIMEOUT DELAY SETPOINT	ANALOG VALUE	ON	
104	03:33:54 PM	SAT 17-APR-10	A58	REMOTE ACCESS LEVEL CONTROL	ANALOG VALUE	ON	
105	03:33:54 PM	SAT 17-APR-10	A58	REMOTE MAX ACCESS LEVEL CHANGE FROM NODE 1	LEVEL 0 TO 7	CURRENT OPERATOR NOT AFFECTED	
106	03:34:01 PM	SAT 17-APR-10	P131	UL CARD SOFTWARE WATCHDOG DISABLE	TROUBLE POINT	ABNORMAL	
107	03:34:01 PM	SAT 17-APR-10	P131	UL CARD SOFTWARE WATCHDOG DISABLE	TROUBLE POINT	NORMAL	
108	03:34:08 PM	SAT 17-APR-10		CONFIGURED USB PRINTER IS NOT MATCHED			

Figure 1. TrueSite Workstation Sample Historical Log Screen

TrueSite Workstation Operation (Continued)

Customized Response. Custom alarm and trouble messages can be added and field edited to provide operator response assistance. Point specific information, such as hazardous material storage and lists of people to notify, can be automatically or selectively displayed.

Password Control

Multiple Access Levels. Operator access level is determined during log-in. Select functional access to match the training and responsibility of the operator. Operators with additional TrueSite Workstation and fire alarm network training may be qualified for access to sensitive areas. For operators who are primarily concerned with immediate facility security, a lower level access will provide the information necessary for proper response but will not allow access to key parameters that determine overall system/network operation.

Graphics Screens

Site and Floor Plan Details. Graphics screens can provide easily recognizable site plan and floor plan information. The level of detail can be customized for the specific facility to easily and accurately direct the operator to the immediate area of interest.

Graphic Screen Controls. The graphic screen below was set to float and was moved to the right side monitor. Icons can be added to identify the location and type of the device of interest and the graphics control toolbar (located at the top of the graphic) can be used to pan and zoom for more precise detail. Programmable view buttons can be added with selectable area and zoom level. A fixed area site plan (key plan) with action buttons and screen locator can be added as shown below. Pan and zoom are tracked by a green rectangle in the key plan.

Graphics Screens (Continued)

Custom Banner and Main Screen Background. The banner area shown with a Simplex logo in Figure 1 can be customized (bitmap area is 1750 x 68 pixels). The main screen background (viewable prior to login) can be customized with a bitmap of up to 1000 x 525 pixels.

Action Messages. In addition to screen text or graphic information, the operator can be presented with specific action messages that provide emergency response information and directions. These action messages are easily field edited for local requirements. The appropriate action message in the screen below would be found in an Acknowledge dialog box.

Auto-Jump to Graphics or Alarm List. Select whether activity should cause a jump to a list format or to the associated graphic screen.

Supported Graphics Formats:

- DWG Import Formats: AutoCAD® R9, 10, 11-12, 13, 14, 2000-2002, 2004-2006, and 2007
- DXF Import Formats: AutoCAD R14 and 2000
- Export Formats: AutoCAD 2000 DWG/DXF format (allows editing in AutoCAD 2000 or later)
- Import drawing files: DWG, WGS, IMS/GCC DOC files, WMF, BMP, GIF, and JPG

Individual Point Service Access

Qualified Operator Detail Access. The workstation operator's interface provides service level access to network information that is not normally "public." Network "private" point information can be accessed using the Set-Host feature, and logging into the database of the network and node of interest. With this operation, individual point information can be accessed and controlled as required by qualified service personnel with proper password access.

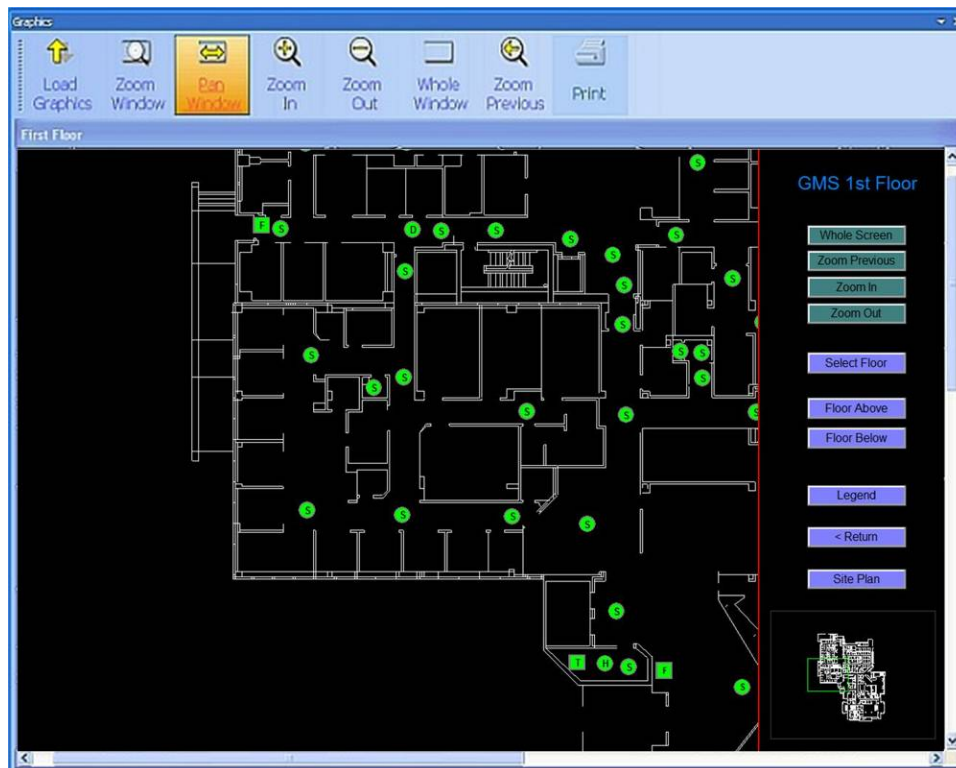


Figure 2. TrueSite Workstation Sample Graphic Screen

Network Diagnostics

Graphical Network Status Views. Automatic, built-in diagnostics are available to provide graphical views of Network topology and Network status. Missing communications links due to wiring breaks or shorts as well as inactive network nodes are indicated clearly to guide in returning the system to normal. Information screens are available to provide detail about each specific network node. Network level functions such as timekeeper node and monitor node are indicated as well as identification of the node being used for the diagnostic.

Multiple Network Connections

When extensive network expansion or interconnection of existing, separate networks is required, up to seven (7) network loops may be interfaced using the TrueSite Workstation.

Each network loop is connected to its own network interface module allowing the workstation to appear as a node in each individual loop. With the workstation as a network loop interface, information from one loop can be passed along to another loop.

With a multi-loop network connection, the TrueSite Workstation is a node member of each network loop with up to 98 additional nodes per loop. This allows up to 686 total nodes and the TrueSite Workstation Server (687 total) to be interconnected.

Multi-Loop Operation Features

Improved survivability:

- Individual network loops operate independently
- In the event of loss of one or more loops, remaining loops continue to operate

Loop independence:

- Loops can operate at different data rates to satisfy individual conditions (9600 or 57,600 bps, selectable per loop)
- New loops can be added without impacting existing loops

Assists with phased-in system expansion:

- Each loop can be installed as a stand-alone network allowing local node programming to evolve as required
- When construction or renovation reaches completion, loops can be combined for coordinated facility protection

TrueSite Workstation hardware requirements:

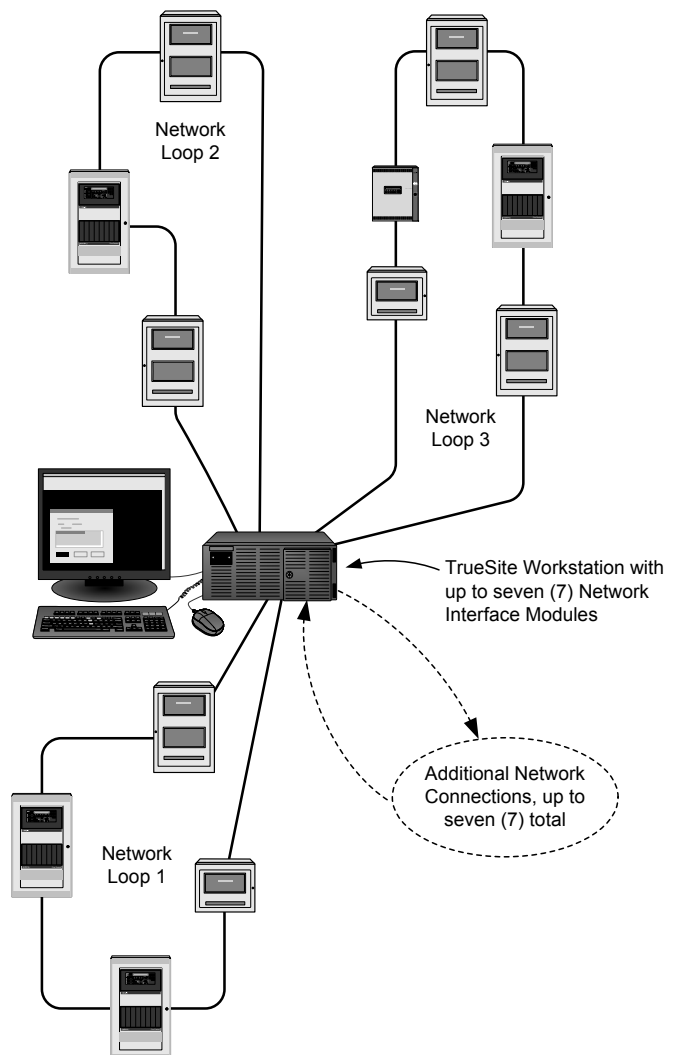
- Each loop requires a dedicated Network Interface Card with two media modules
- A maximum of 7 Network Interface Cards are allowed per workstation

Revision Compatibility

Compatibility with TrueSite Workstations requires the following software versions.

Fire Alarm Network Interface (4120)	
4190 GCC/IMS/NPU	Master Version 2.07 (or later)
4100U	Master Version 11.03 (or later)
4100	Master Version 9.02 (or later)
4020	Master Version 9.02 (or later)
4010	Master Version 3.01 (or later)
4002	Network Firmware Version 3.20.92 (or later)

2120 (SLI) Interface	
2120	Master Version 5.44 (or later) Network Interface Version 3.02 (or later)



Typical Interface of Multiple Network Loops Using a TrueSite Workstation Server

DACR Interface

DACR Support. For control panels that are not network compatible or may be too remote for a network connection, the TrueSite Workstation can communicate to a compatible DACR (Digital Alarm Communicating Receiver) via an RS-232 port (requires application software option 4190-5051, see compatibility list below). Remote control panels equipped with DACTs communicate their local event status (or individual point status if capable) to the DACR using dial-up telephone and optional TCP/IP connections. The DACR forwards the individual panel status to the workstation for information processing and history logging.

Compatible DACRs. Compatibility includes:

- Bosch Model D6600*
- Sur-Gard™ Model System III
- AES Intellinet 7705i Wireless-to-Internet receiver
- Sur-Gard Model MLR2-DG (legacy product)

* Note: For UL 864 listed Fire Proprietary Supervising Station Operation that uses a DACR, select the Bosch D6600 with CID format and 4190-8403 (see page 6).

DACR Events. The TrueSite Workstation handles DACR points as though they were network points. Graphics can be displayed and point status changes can be easily acknowledged. Point acknowledgement occurs locally on the workstation since communications between the DACT and DACR are from DACT to DACR only. Remote panels need to be Acknowledged, Silenced, or Reset at the individual panel. Point events are entered into the workstation history log as part of its 500,000 event storage capacity.

Supported DACR/DACT Formats. Compatible DACRs support standard reporting formats including: ADEMCO CID (Contact ID® format), SIA Level 1, BFSK; and 3/1 and 4/2. A CID account can be configured on the TrueSite Workstation to be either panel event reporting or with individual point reporting. The other formats provide panel event reporting only.

TrueSite Workstation Points for DACR Accounts.

Workstation points are associated with a DACR account number. Standard event points have up to a 19 character label for each point. CID point reporting has up to a 40 character label. DACR event categories include: **Fire Alarm, Priority 2 Alarm, Supervisory Alarm, Trouble, Utility Status, and Unknown Point** (CID format only). An occurrence of any of these events will be prefixed with the 19 character account label.

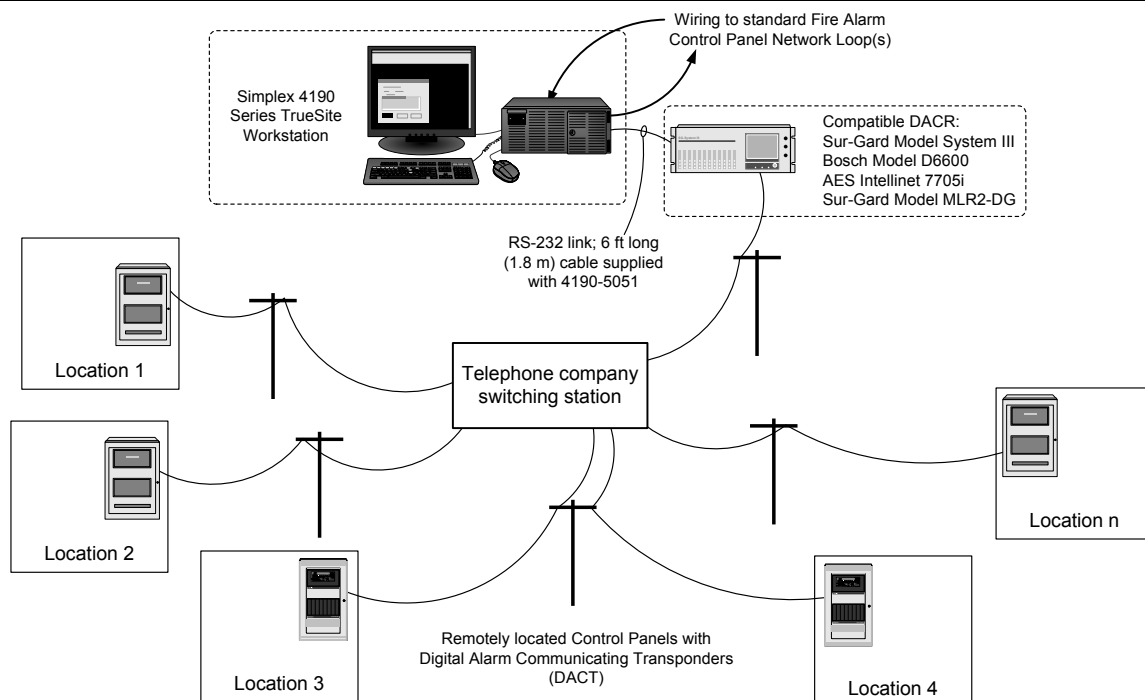
Public Points. The Workstation can be selected to make DACR associated points public to the fire alarm network for monitoring by other network nodes if required.

DACR Status Tracking. The DACR connection to the workstation is supervised with the following trouble conditions tracked by the workstation: **Communications Loss**, (between DACR and workstation), **Initialization Failed** (the workstation to DACR connection did not successfully establish), **Unknown DACR Message**, (the DACR sent a message that was not understood by the workstation), and **Unknown DACR Account** (the account information received does not correlate to a workstation point).

Supervision of DACTs. The workstation is programmed to expect and log periodic supervisory transmissions from the DACTs via the DACR. Failure to receive a supervisory transmission will cause a trouble event on the TrueSite Workstation.

Event Restoration. When the workstation receives an event restoration from the DACR, it restores that point's status record to normal. The workstation has the ability to manually restore a point to normal in the event that a restoration occurred that was not forwarded to the workstation.

DACR Interface Reference Diagram



Product Selection

Category	Model	Description	
Hardware Systems* (select as required) Each includes: Windows Vista Business CD and license	4190-8401	TrueSite Workstation ; requires selection of computer, monitor, & software Listings: UL 864 & ULC-S527, Control Unit Annunciator; UL 1076, Proprietary Burglar Alarm Annunciator; UL 1610 & ULC-S559, Central Station Annunciator	
	4190-8403	TrueSite Workstation ; includes UL/IO card and bracket for securing AC input wiring; requires selection of computer, monitor, and software Listings: UL 864 as Fire Proprietary Supervising Station, requires direct wired AC Power and UPS Secondary Power source per applicable local code, if using a DACR, select the Bosch D6600 with CID format; UL 1076, Proprietary Burglar Alarm Multiplex Receiving Unit; UL 1610, Central Station Control Unit, with listed DACR (see page 5 for compatibility); ULC-S559, Central Station Receiving Station; ULC-C1076, Proprietary Burglar Alarm Central Station Control Unit	
	4190-8410	TrueSite Workstation Remote Client ; requires selection of computer, monitor, and software Listings: UL 864 & ULC-S527, Control Unit Annunciator	
* Note: Ethernet Switch Products for dedicated Server/Remote Client applications are detailed on data sheet S4190-0018, but can be combined with TrueSite Workstation Equipment orders. Refer to page 8 for an application reference diagram.			
Software Only and Aftermarket Additions	4190-8603	TrueSite Workstation Software Only package, refer to page 7 for computer specifications reference (listings and approvals are not applicable)	
	4190-8901	Aftermarket hardware addition	
	4190-8605	Aftermarket software addition	
Computer Type (select one as required)	4190-7009	Desktop	Computer with Core 2 Duo 2.1 GHz CPU, keyboard, and mouse; black/charcoal grey housing
	4190-7010	Rack Mount	
LCD Color Monitor Monitor Only Monitor with Touchscreen	4190-7126	19" (483 mm)	Select one minimum, two maximum, per computer choice where required; connect as SVGA or DVI, both cables are included; touchscreen models include separate serial controller cable
	4190-7225	17" (432 mm)	
	4190-7226	19" (483 mm)	
	4190-7228	19" (483 mm)	
Applications Software (select one per application)	4190-5050	TrueSite Workstation Server Software, includes: License, Security Dongle, Documentation; requires 4190-8401, 4190-8403, or 4190-8603	
	4190-5053	TrueSite Remote Client Installation CD, no operating system; requires 4190-8410 or 4190-8605	
	4190-5054	Truesite Workstation software upgrade to revision 2.01; requires 4190-8605	
Software Features (select as required)	4190-5060	Feature code for Truesite Workstation Server with DACR interface	
	4190-5061	Feature code for Remote Client with restricted features (reduced feature set)	
	4190-5062	Feature code for Remote Client with password protected feature access	
Internal Hardware Options (select as required)	4190-6006	UL I/O Card; ISA Slot card; order for aftermarket; monitors TrueSite Workstation program status, CPU, and PC fan; reports troubles or initiates CPU reboot if appropriate	
	4190-6034	Quad RS-232 Serial Port Card, select when more than two serial ports are required; may be needed for 2120 SLI connections; PCI Slot card with pluggable terminal block output; up to 2 maximum; one 4190-6026 suppressor is required per connection (see below)	
	4190-6038	Video Card, PCI Slot; <i>required for dual monitor support if second monitor has no DVI port</i>	
Serial Port Connectors (select as required)	4190-6002	Transient Protected Connector, select one per connection to standard serial port	
	4190-6026	Transient Protected Connector for Quad Serial Port Card; one required per connection	
	4190-6010	Transient Suppressor for LAN/WAN Connection; <i>required for agency listing for each TrueSite Workstation Server LAN connection</i>	
Upgrade to DACR	4190-9807	Upgrade standard TrueSite Workstation (<i>with revision 1.x software</i>) or Information Management System (IMS), to add DACR capability; includes USB style Security Dongle (requires an available USB port); (Note: Use 4190-5060 for revision 2.0x systems)	
Network Interface Modules (seven (7) maximum)	Configured	Aftermarket	Description
	4190-6032	4190-9820	
Media Modules for Modular Network Interface (as required)	4190-6033	4190-9821	Modular Network Interface for Media Modules (select Media Modules separately, listed below); PCI Slot card
	4190-6036	4190-9822	Wired Media
System Upgrades (select as required)	4190-9812	2.8 GHz IMS PC Memory Upgrade, for computer identification 51-TSP02-969 only; required to upgrade 512 MB PC to 1 GB for operation with Windows XP	
	4190-9814	Hardware upgrade to migrate from Windows XP to Windows Vista operation for computer identification 51-TSP12-969 only; includes 1 GB RAM, cable, reset switch, and mounting bracket (mounting bracket replaces existing floppy disc drive cover plate)	

Please note that equipment and specifications may vary due to equipment design changes.

(continued on next page)

Product Selection (Continued)

Programming (select)	4190-8122	TrueSite Workstation Programming; select Programming Items below
Programming Items (select items per system requirements; select quantity of items as required) requires selection of 4190-8122	4190-4006	AutoCAD DXF or DWG file, one floor plan (multiple floor plans require dedicated files)
	4190-4008	25 Custom Action Messages
	4190-4009	25 Travel Screen Keys (selective zooming)
	4190-4010	25 Status Icons
	4190-4011	25 Control Functions; On/Off, Bypass, etc.
	4190-4012	Convert one (1) Existing IMS Screens to TrueSite Workstation Screen
	4190-4013	10 Coverage Zones; order quantity as required
	4190-4014	One (1) Emergency Communications/Mass Notification Control Screen (see screen on p. 9)

TrueSite Workstation Equipment Specifications

Computers and Accessories (Please note that equipment and specifications may vary due to equipment design changes)

Model	Description	Dimensions	Power Ratings
4190-7009*	Desktop Computer	16-7/8" W x 7" H x 17-5/8" D (429 mm x 178 mm x 448 mm)	95-132 VAC; 180-264 VAC, auto-range; 47 to 63 Hz; 2 A @ 120 VAC (240 W)
4190-7010*	Rack Mount Computer	19" W x 7" H x 17-5/8" D (483 mm x 178 mm x 448 mm)	
NA	Rack Mount Keyboard Tray (included with computer)	19" W x 1-3/4" H x 12-3/4" D (483 mm x 44 mm x 324 mm)	NA

LCD Monitors (Please note that equipment and specifications may vary due to equipment design changes)

Model	Description	Dimensions	Power Ratings
4190-7225*	17" Desktop with Touchscreen	14-1/2" W x 15" H x 8" D (368 mm x 381 mm x 203 mm)	100-264 VAC, 50/60 Hz, auto-select 0.23 A @ 120 VAC (32 W)
4190-7126*	19" Desktop	see diagram on page 9	100-264 VAC, 50/60 Hz, auto-select; 0.33 A @ 120 VAC (33 W)
4190-7226*	19" Desktop with Touchscreen		
4190-7228*	19" Rack Mount with Touchscreen	19" W x 17-1/2" H x 2-7/16" D (483 mm x 445 mm x 71 mm)	

* Computers and monitors are shipped with 120 VAC cord; NEMA 5-15P plug to IEC-320 C-13 connector. For use with other voltages, locally obtain a cord in compliance with local safety standards.

Computer Minimum Specifications Reference**

Server Enclosure**	Passive backplane with: 7 PCI slots, 2 ISA slots, and 1 CPU slot; security features: key lock reset switch; fan monitor card; locked door protecting access to the CD/DVD R/W drives and two front mounted USB ports
Server Computer**	Compatible with Microsoft Windows Vista Business, or Windows XP Pro; 2.8 GHz CPU with 2 GB RAM (or Core 2 Duo 2.1 GHz CPU with 4 GB RAM), 2 Serial ports, 1 Parallel port, 4 USB ports, dual Gigabit LAN, 1 PS/2 mouse port, 1 PS2 mouse & keyboard adapter cable; SVGA video output with 16 MB VRAM, CD/DVD R/W, 101 key keyboard, 40 GB minimum hard drive; two button PS/2 mouse with scroll wheel
Remote Client	Remote Client specifications are similar to server except: Compatible with Microsoft Windows Vista Home Basic or Windows XP Pro; Pentium® 4 CPU minimum, 512 MB RAM for XP Pro or Vista Home Basic, 1 GB RAM if using Vista Home Premium or Business; 1 Serial port, 1 Parallel port, USB ports are optional, CD drives are optional, single Gigabit LAN, 20 GB hard drive, 4 MB VRAM

** **PLEASE NOTE:** Simplex 4190 Series computers are Agency listed for use with TrueSite Workstation software. For applications where Agency listings are not required, TrueSite Workstation software should be compatible with most computers meeting the stated minimum specifications. However, due to computer manufacturers potentially using unique and/or proprietary drivers, hardware, or other software not tested with TrueSite Workstation software, there may be incompatibilities. If other computers are used, proper operation with TrueSite Workstation software may require technical adjustments by a qualified computer technician and would be the sole responsibility of the computer supplier and computer manufacturer.

Computer Port Reference (4190-7009 and 4190-7010)

RS-232 Serial Ports	Two standard, up to 10 total with optional 4190-9824 Quad Serial Port Card
USB Serial Ports	4 total; 2 in the rear (one is used for Server Security Dongle), and 2 in the front behind the locked door
Parallel Port	One available
Ethernet Ports	Two available
Printer Compatibility	UL 864 listed printer model 4190-9013 is recommended (see data sheet S4190-0011); other serial or parallel port printers per Microsoft Windows Vista operating system compatibility
Printable Information	Event printing; requires dedicated and supervised listed printer connected to Server for listings
	Auto-print of auto-jump graphics; prints to Windows default printer
	Reports: Historical logs, System Activity, TrueAlarm Status, TrueAlarm Service, Analog Monitor ZAM Calibration, and Active List; displayed reports can print to a LAN connected (unsupervised) printer
	Screen captures (configurable as negative images to reverse black backgrounds)

Environmental Specifications

Operating Temperature = 32° to 120° F (0° to 49° C)	Operating Humidity = up to 93% RH, non-condensing, at 90° F (32° C)
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Server/Client Operation

TrueSite Workstation Computer. The TrueSite Workstation computer provides the functions of the Server, the Local Client, and the system configuration tools. To access the desired features, a system/job specific security service dongle is supplied and is required. For systems not using Remote Clients, the setup of the TrueSite Workstation PC is similar.

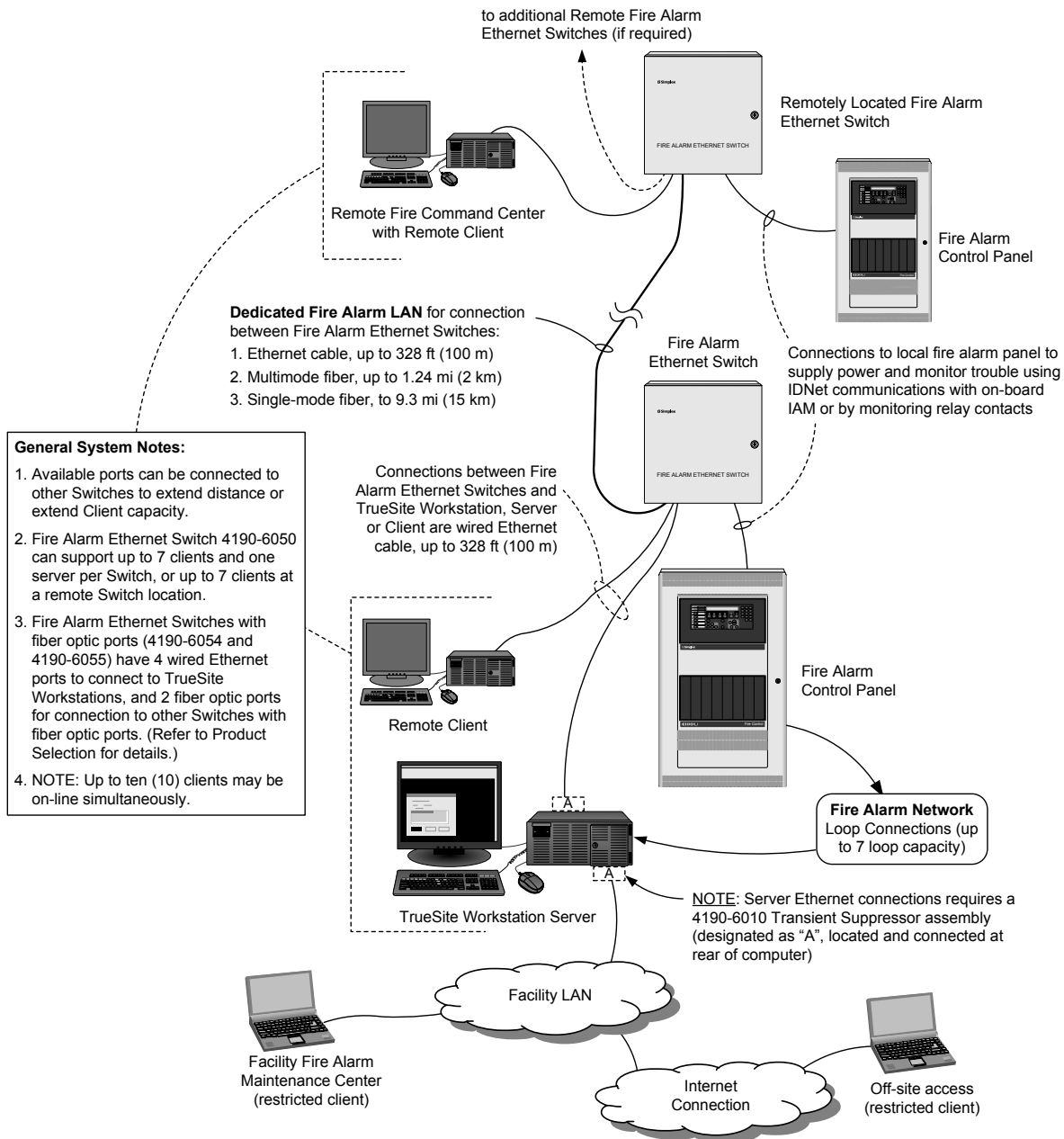
Remote Client. For access to TrueSite Workstation information at a remote location, a compatible computer, connected via a Local Area Network (LAN) is equipped with Remote Client software. There are two types of Remote Clients, those with a restricted feature set (not capable of control); and those with a password protected feature set (capable of control). Refer to the interconnection reference diagram below and refer to data sheet S4190-0018 for additional information.

Supervised or Unsupervised Remote Clients.

Remote Clients can be designated as Supervised or Unsupervised. When Supervised, the connection is monitored by the TrueSite Workstation and a loss of connection is audibly reported at both ends along with a dialog screen. When unsupervised, only the client end displays a trouble dialog indicating disconnection from the Server. Remote clients may be laptop computers or other computers used for other functions and are periodically connected to query system status or create reports.

(Server/Client Operation is continued next page)

Server/Client Interconnection Reference



Server/Client Operation (Continued)

Remote Client Connections. Up to five (5) Supervised Remote Clients and five (5) Unsupervised Remote Clients can be connected. Up to ten (10) total Remote Clients can be active at the same time. Additional Remote Clients may be available for use, but attempted connections beyond 10 will receive a notice that system capacity has been reached.

TCP/IP Networks. The minimum recommended connection speed for TrueSite Workstation Server or Remote Client to a TCP/IP local area network is 3 Mbps.

Anti-Virus Software. When either the TrueSite Workstation Server or Remote Client computer is connected to a TCP/IP network other than a dedicated Fire Alarm network, it is highly recommended that regularly updated anti-virus software protection be installed on each connected computer. The TrueSite Workstation has been verified as compatible with Symantec™ Antivirus Corporate Edition 10.2 and McAfee® Enterprise 8.5.0i.

System Listings Reference

The following functions are agency listed with the computers and monitors identified under Product Selection on page 6:

- TrueSite workstation PCs, whether stand-alone or functioning as a server to local and remote clients
- Supervised Remote Clients with protected features that are connected to the server using a dedicated Fire Alarm Network as described on page 8
- Refer to data sheet S4190-0018 for details about Fire Alarm Network Ethernet Switches

Additional agency listings reference:

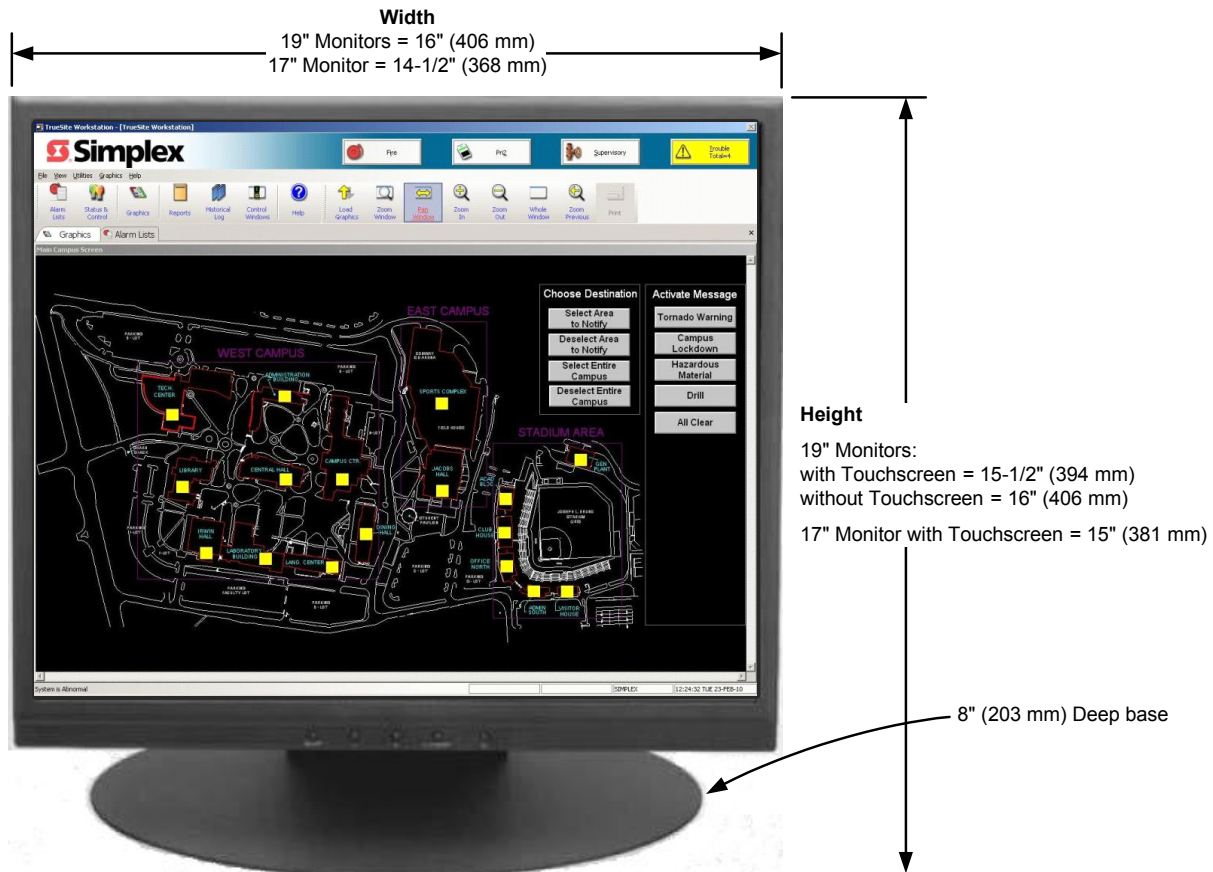
- Restricted feature Remote Clients software on compatible computers (listed for standard office use) provide annunciation features only and can be connected using a facility LAN without system listing impact

Additional Reference

Description	Document
Installation and Checkout Instructions	579-834
Operation and Application instructions	579-835
Software Upgrade Instructions	579-838
Quick Reference Operator Instructions	579-878

Desktop Monitor Appearance and Dimension Reference

Note: Screen shown below is a sample Emergency Communications Control Screen (4190-4014)



Serial Line Interface (SLI)

Serial Line Interface (SLI) connections to the TrueSite Workstation allow existing 2120 Multiplex systems to interface with network products. The operator conveniences of the TrueSite Workstation are available for monitoring the status of the 2120 Multiplex systems as well as allowing system expansion with networked fire alarm control panels.

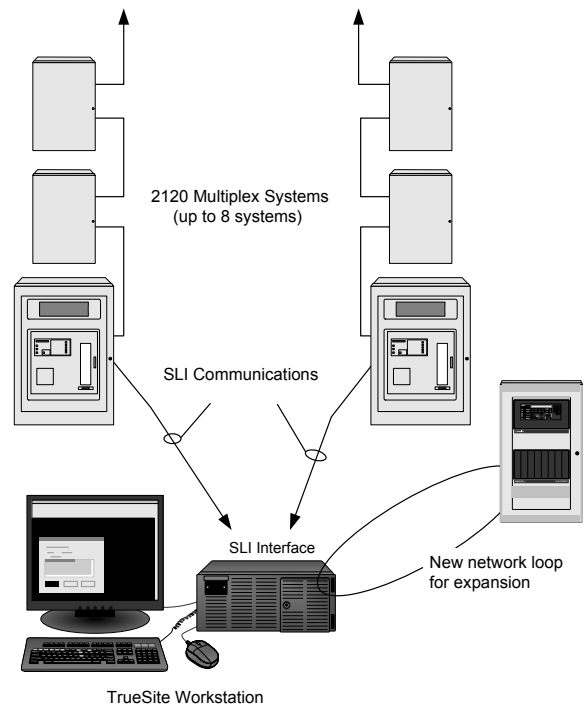
Hardware Requirements:

1. Each 2120 requires a dedicated RS-232 port in its CPU, configured for "Computer" interface, to be connected to a TrueSite Workstation serial port. Multiple 2120 connections may require the 4190-6034 Quad Serial Port Card, refer to information on page 6.
2. Disk copy of SLI "dump" file for each 2120 Multiplex System's existing point data must be downloaded using service software.
3. Each 2120 connection requires transient protection, refer to details on page 6.

Software Requirements:

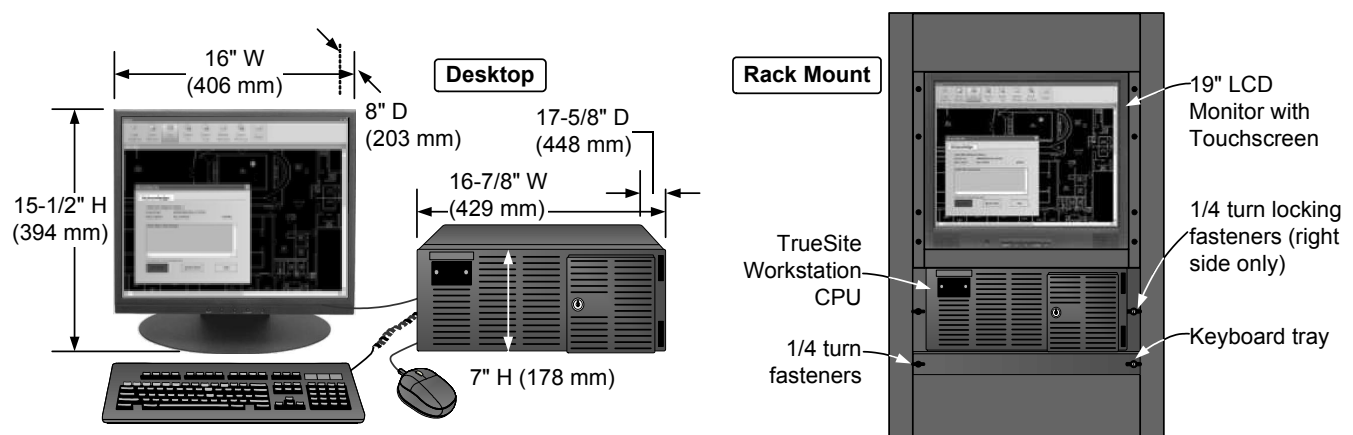
1. All connected 4100/4120 network nodes require revision 8.03 or higher software.
2. 2120 CPU software must be revision 5.44 or higher.
3. Network Interface firmware must be 3.02 or higher.

2120 BMUX (CPU) Upgrade Equipment. Please refer to data sheet S4100-0048 for information on the 4100-6065 Transponder Interface Module that upgrades 2120 Transponders for direct communication with 4100U panels.



Serial Line Interface Connections

Hardware Reference with 19" Monitor



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Features

High resolution, 24-pin, dot matrix bi-directional printer for use with Simplex® model:

- 4010, 4100, and 4100U Series Fire Alarm Control Panels
- 4190 Series Network Annunciator Products
- Other new and legacy Simplex fire alarm control panels with serial printer support (contact your local Simplex product representative for compatibility)

Provides hard copy records of:

- System events with alarm conditions automatically printed **bold**
- TrueAlarm® analog sensor information**
- WALKTEST™ system testing**
- History files

Serial RS-232, USB, or parallel communications interface

RS-232 communications and AC input are transient protected

UL listed to Standard 864

Description

Model 4190-9013 is a high resolution 24-pin printer for use with Simplex fire alarm control panels and related systems. It is listed for supplemental fire protective signaling system operation under UL Standard 864.

Transient suppression is included for both RS-232 communications and 120 VAC power. Product burn-in testing is performed to ensure proper operation with compatible UL listed fire alarm control equipment.

Typical printer operations would include: recording of fire alarm system activity for fire response documentation, documenting non-fire alarm activity such as security monitoring of door openings and WALKTEST system test results, and documenting other related activity (such as AC power failure and restoration) as directed by the connected panel. Additionally, diagnostic information may be printed such as TrueAlarm analog sensor status and service reports for analysis of smoke detection sensitivity (refer to sample printouts on page 2).

Refer to Installation Instructions 579-233 for additional information.



4190-9013 Fire Alarm System Printer

Specifications

Voltage	120 VAC, 60 Hz	
Idle Current	130 mA @ 120 VAC	
Print Current @ 120 VAC	1.1 A typical, 2.6 A maximum, depending on character type	
Print Power @ 120 VAC	Approximately 42 W per ISO/IEC 10561 letter pattern	
Print Speed (characters per second, cps)	High Speed Draft Mode	440 cps @ 10 cpi
	Draft Mode	330 cps @ 10 cpi
	Letter Quality	110 cps @ 10 cpi
Column Width	80 Columns @ 10 cpi	
Buffer Size	128 kB	
Paper Specifications	Fan Fold	4" to 10" wide (101 to 254 mm)
	Cut Sheet	5-13/16" to 10-1/8" wide (148 to 257 mm)
	Copies	Original and up to 4 copies, carbon-less only
Dimensions	16-5/16" W x 13-13/16" D x 6-5/8" H (414 mm x 350 mm x 168 mm)	
Weight	15.9 lbs (7.2 kg)	
Operating Temperature	32° to 120° F (0° to 49° C)	
Humidity	10 to 85% RH, non-condensing	
Replacement Ribbon	Order as vended item in Job Design, Bushnell Ribbon 837-0100	
System Designation	PRT80S, Supervised PRT80U, Unsupervised	

Please note that the printer specifications supplied under this model number may vary slightly due to product availability.

** TrueAlarm analog sensing is protected by U.S. Patent No. 5,155,468 and 5,173,683.
WALKTEST system test is protected under U.S. Patent No. 4,725, 818.

* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7300-0026:320 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. This product was not approved by MEA (NYC) as of document revision date. 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.

Sample Event Printouts

Alarm Condition:	12:42:44 pm	WED 27 JAN 10 CAFETERIA STORAGE ROOM	
		FIRE MONITOR ZONE	ALARM
Supervisory Service:	12:43:08 pm	WED 27 JAN 10 OFFICE AREA BUILDING 23	
		SPRINKLER MONITOR	ABNORMAL
Trouble Condition:	12:43:41 pm	NURSES STATION EXAMINING ROOM	
		FIRE MONITOR ZONE	DISABLE TROUBLE

Sample TrueAlarm Status & Service Reports

Simplex 4100 FIRE ALARM SYSTEM			Page 1	
Report 3 : TrueAlarm Status Report		9:25:22 am	WED 27 JAN 10	
Channel 1 (M1)				
Zone Name	Custom Label	Sensitivity	Device Status	Almost Dirty
M1-1	ANALOG PHOTO - CLEAN ROOM	0.5	NORMAL	
M1-2	ANALOG ION - CLEAN ROOM	1.3	NORMAL	
M1-3	ANALOG PHOTO - MAIN LOBBY	2.5	NORMAL	*YES*
M1-4	ANALOG PHOTO - CONFERENCE ROOM 1	2.5	NORMAL	
M1-10	HEAT DETECTOR - GARAGE	135F	NORMAL	
M1-11	ANALOG PHOTO - KITCHEN	3.7	NORMAL	*YES*

Alarm sensitivity in % obscuration

Retains highest value sensed

Simplex 4100 FIRE ALARM SYSTEM			Page 1			
Report 4 : TrueAlarm Service Report		10:05:53 am	WED 27 JAN 10			
Channel 1 (M1)						
Dev Num	Custom Label	Alarm at:	Avg val	Current/ % alarm	Peak/ % alarm	State
1	CLEAN ROOM DEV 1	0.5/82	67	68/ 7%	72/ 33%	NOR
2	CLEAN ROOM ION DET DEV 2	1.3/174	94	97/ 4%	101/ 9%	NOR
3	MAIN LOBBY DEV 3	2.5/185	117	117/ 0%	125/ 12%	NOR
4	CONFERENCE ROOM 1 DEV 4	2.5/161	93	93/ 0%	93/ 0%	NOR
10	GARAGE DEV 10 HEAT DETECTOR	135F/187		63/ 67F	66/ 69F	NOR
11	KITCHEN DEV 11	3.7/216	116	117/ 1%	152/ 36%	NOR

Current status

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S4190-0011-4 2/2010

www.tycosafetyproducts-usa-wm.com

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DET 6B/12B

SPECIFICATIONS

DIMENSIONS:

DET6B - 12.0 in. x 3.5 in. x 11.5 in.
DET12B - 15.0 in. x 4.0 in. x 13.5 in.

POWER:

115 VAC, 50/60 Hertz
16-24 VAC 50/60 Hertz with no step down transformer
24 VDC or 12 VDC (separate terminals)
120 MA standby, 170 MA operating

INPUT RESISTANCE:

Up to 7,000 Ohms based on EOL value selected (see Table 1)

INPUT CHANNEL ACTIVATION:

6 or 12 Channels EOL resistor (5.6K)
Low Battery Detection

OPERATING CONTROL:

None - All functions are set in EPROM

VISIBLE LED INDICATORS:

Main Power: Green
Trouble: Yellow
Watchdog: Red
On-line: Red (transmitting)

OUTPUT:

1 - 10 Telegraph Codes, program each zone
Open or Ground Telegraph Line on Failure (or local failure)
Form C Trouble Relay

NFPA-72 Compliant



SYSTEM DESCRIPTION

The DET-6B is an indoor, mounted six-zone solid-state telegraph transmitter that employs a unique code for each zone. It includes a CAM lock, AC transformer, standby battery and built-in charger. The unit is housed in a steel enclosure suitable for indoor mounting.

Telegraph codes unique to each of the six zones for Trouble, Alarm and Secure, and

Low Battery are transmitted over a 100- milliamperere circuit using positive non-interfering successive (PNIS) line current detection to avoid clashes between more than one transmitting box. Automatic ground return, a watchdog timer, and a jumper-selected internal trouble buzzer assure continued main system operation and operator notification in the event of box failure. A built-in trouble relay output (Form C) and the ground and code relay (grounding, opening, or no effect on the 100 MA line) are activated by the watchdog timer ensuring reliable failure detection in the event of malfunction.

Transmission speed is adjustable to match that of mechanical boxes. Unit can be programmed to send any number of rounds (or no rounds) on alarm, trouble, secure and low battery.

Automatic switchover to battery power is performed upon AC power loss with a low battery code transmitted if power is not returned in approximately 50 hours. After transmitting a low battery code, the unit bypasses all input circuits to avoid spurious transmission of false alarms.

The DET-6B is field-programmable with an optional EPROM programmer and PC software. The DET-12B, a dual six-zone version (total of 12 zones), in a larger enclosure is also available.

Use of Lightning Protection is recommended on both DET-6B and DET-12B.

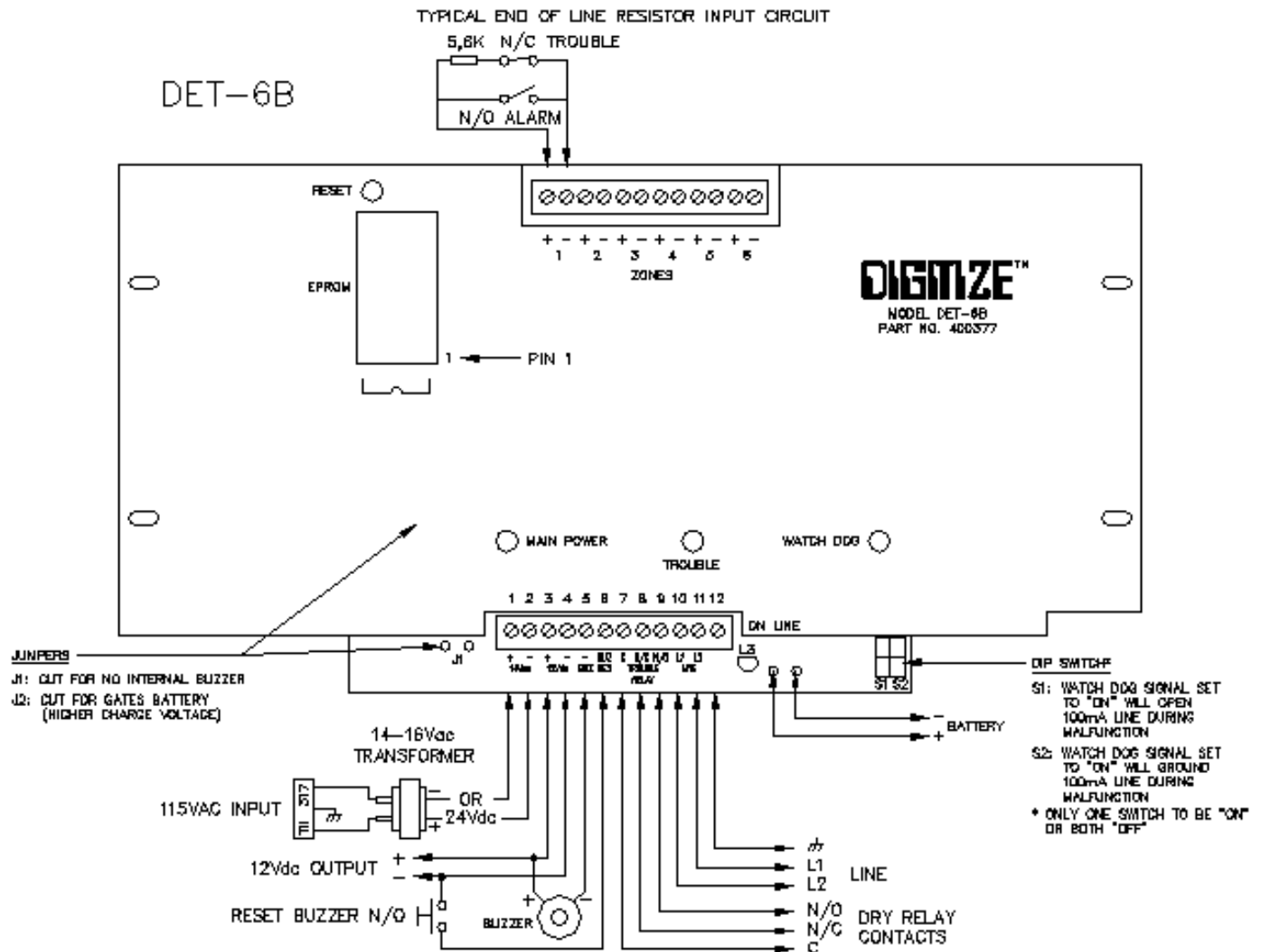
ORDERING INFORMATION:

- 450247-0000 - DET-6B, 6-Zone
- 425106-0000 - DET-6B, Dual Line, 6-Zone
- 425173-0001 - DET-12B, 12 Zone
- 900435-0001 - Lightning Protection Board, (recommended)
- 450404-0001 - Master Trip PC Board
- 450423-0003 - Factory Programmed Chip for DET-6B
- 010001-0021 - DET-PROG, PC Software with Programmer



Larger Unit Not Shown

Specified TYPICAL HOOKUP



Requested by PFD

7744F/7788F

UL Listed



RF Subscriber Unit

UL Fire, AA Burglary and NFPA-72 Compliant

UL Listed

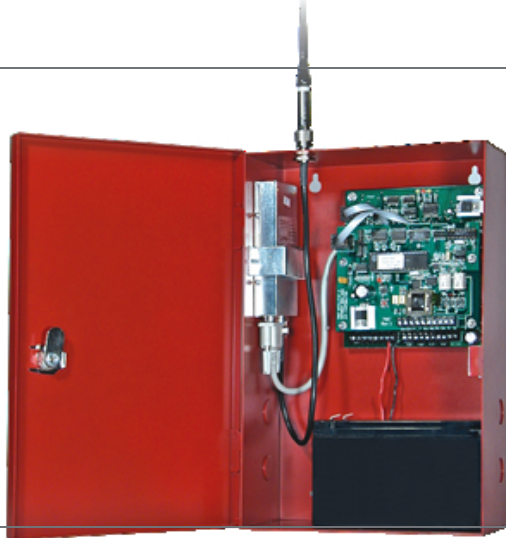
UL Listed Central Station

Remote Station

864 Ed. 9, 827, 1610, 365, 681

CSFM

NFPA RF Section 8.6.3.5



- Options for Full Data for Fire and Burglary
- Available in 7744F & 7788F Zone Configurations
- Built-in Power Supply and Battery Charger
- Local Annunciation Options on Board

Advanced Wireless Alarm Monitoring

The 7744F/7788F smart subscriber unit links an alarm panel to an alarm monitoring central station. This 2-way transceiver and repeater in one is housed in a full size locking steel cabinet for superior performance. The 7744F/7788F supports a wide range of inputs such as NO/NC/EOL and direct voltage. It automatically senses wire and antenna cuts, and monitors battery and AC power status. Advanced status reporting, self-diagnostics and a built-in power supply make the 7744F/7788F the first choice for all wireless alarm communication needs.

Full Data for Fire and Burglary

Use with the optional Firetap for full fire data or the IntelliTap for full fire and burglary data.

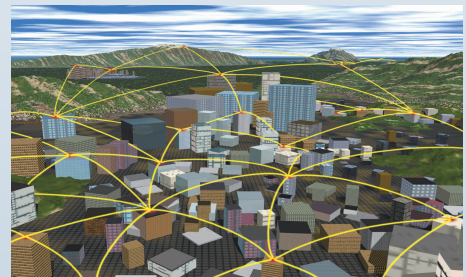
Available Configurations

7744F – 4 reversing polarity inputs plus 4 programmable EOL inputs

7788F – Programmable EOL inputs with 8 zones

Available Options

- FireTap 7770
- IntelliTap 7067
- NEMA 4 Enclosure
- High Gain Antenna
- Additional Back Up Battery
- Available in Burglary Beige or Fire Red



Wireless mesh networking is an innovative technology adopted by many industries with applications that need to communicate data over a large geographic area with a high level of reliability at a low total cost of ownership.

The advanced design and 2-way communications capability provides easy installation, expansion, and management when compared to alternative communication methods, both wired and wireless.

Requested by PFD

7744F/7788F RF Subscriber Unit

Technical Specifications

Radio

Standard CSAA frequency ranges:
450-470 MHz and 130-174 MHz, VHF
and UHF. Others available

Standard Output Power

2 watts (requires FCC license)

Power Input

16.5 VAC, 40VA UL listed
Class II transformer required

Voltage

12 VDC nominal

Current

175mA standby; 800mA transmit

Alarm Signal Inputs

- 4 individually programmable Zones:
NO/NC/EOL, trouble restore
- RS-232
- Reversing voltage (7744F only) 12
or 24 VDC

Operating Temperature Range

0° to 50°C, 32° to 122°F

Storage Temperature Range

-10° to 60°C, 14° to 140°F

Relative Humidity Range

0-85% RHC non-condensing

Back up Battery

12V, 7.5 Ahr

Low Battery Reporting

22.5-minute test cycle

AC Status

Reports to central station after
approximately 60 minutes without AC
power, reports power restored after
approximately 60 minutes of restored
power. programmable from 60 to 180
minutes

Antenna Cut (local reporting)

Form 'C' Contact 1 AMP

Size

13.25"H x 8.5"W x 4.3"D
34cm x 21.5cm x 11cm

Weight

6.4 lbs, 2.9 Kilograms
(excluding battery)

Colors

Available in standard
Burglary Beige or Fire Red
Please specify when ordering

Available Options

- 7788F RF subscriber unit
with 8 EOL inputs
 - 7744F RF subscriber unit with 4
EOL inputs and 4 reverse polarity
inputs
 - 7770 - FireTap
 - 7067 - IntelliTap
 - NEMA 4 Enclosure
- Please specify when ordering

Available configurations

- 7788F, 8 EOL inputs
- 7744F, 4 EOL inputs w/4
reverse polarity inputs

AES-IntelliNet™ is the industry leader in delivering high quality wireless mesh networks to the fire and security industry in commercial, corporate, government, and educational applications with its broad line of products and advanced network management tools. Users of AES-IntelliNet networks have gained significant revenue, communications, and cost advantages while meeting the high standards of reliability required for the fire and security industry. AES-IntelliNet alarm monitoring systems are deployed at hundreds of thousands of locations in over 130 countries.



For more information

Call 800-AES-NETS (800-237-6387)

AES Corporation | 285 Newbury Street | Peabody, MA 01960 USA
Tel. +1 978-535-7310 | Fax +1 978-535-7313 | Email info@aes-intellinet.com
Web www.aes-intellinet.com

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AES-IntelliNet is a registered trademark of AES Corporation

7744F/7788F/08/09

NO EXCUSES!

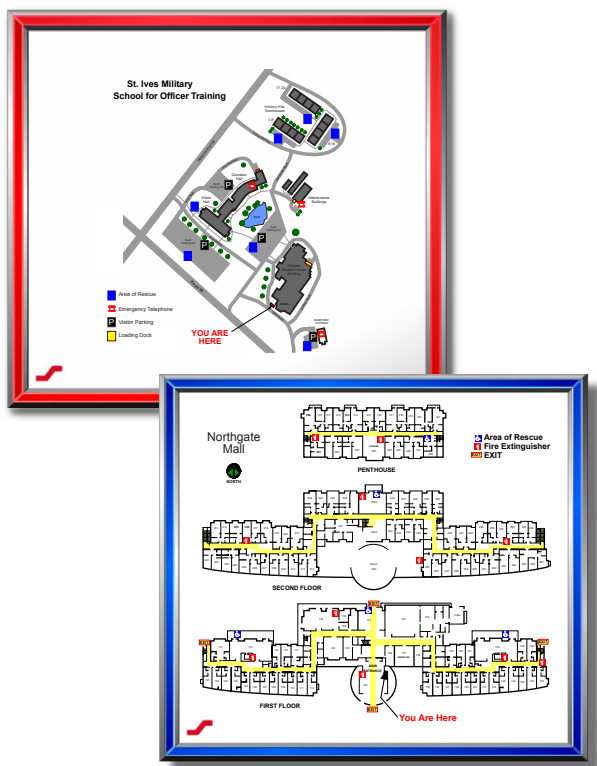
Prepared using fade resistant, UV-enduring inks, a durable glare-free finish and our quality aluminum display frame.

GD8

DI Graphic Display Frame

The GD8 DI Graphic Display Frame is designed to assist in the effective preparation of a proactive Emergency Operation Plan (EOP). With changing requirements from NFPA it provides the means and support as a year round training tool in the aid of fire drills and meeting emergency evacuation training requirements. The GD8 Graphic display provides a clear static layout of a building or campus and aids in requirements for public awareness of the building layout and evacuation egress routes.

The GD8 DI graphic display frame is the state of the art method for displaying messages. Utilizing UV durable inks that resist fading and harmful effects from light exposure, the GD8 DI boasts long lasting vibrant images, and offers the broadest selection of colors available. The graphic image is computer generated and plotted directly onto the back side of a clear .012 thick polycarbonate film which is permanently laminated to a rigid back plate. The film's surface texture diffuses light and cuts glare to a minimum. The graphic is plotted onto the back side of the film, eliminating the concerns of damage to the image from cleaning and wear and also protecting from water or environmental effects.



Standard Features:

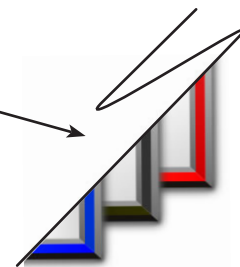
- Full color image printed on the reverse side of a .012 mil thick polycarbonate film, fire rated class A ASTM E84, matte finish
- Standard white background with colored image line work
- Graphic produced with UV rated inks and permanently laminated to resist environmental weather damage
- Rigid 1/8" ABS back plate
- Architecturally designed low profile aluminum frame with natural aluminum matte finish
- Continuous 1/2" inlay accent trim (reflective red, reflective blue, reflective black, beige or custom color)
- Assembly and mounting hardware supplied
- Concealed hardware, eliminating tampering
- Available in 3 standard sizes, custom sizes up to 34" x 44"

Special Reflective Inlay

Different colors offer easy identification of the purpose and meaning of the graphic in the frame (RED for FIRE, BLUE for SECURITY, etc...) Special colors available on special order basis.



Made In U.S.A.



ISO 9001 REGISTERED COMPANY

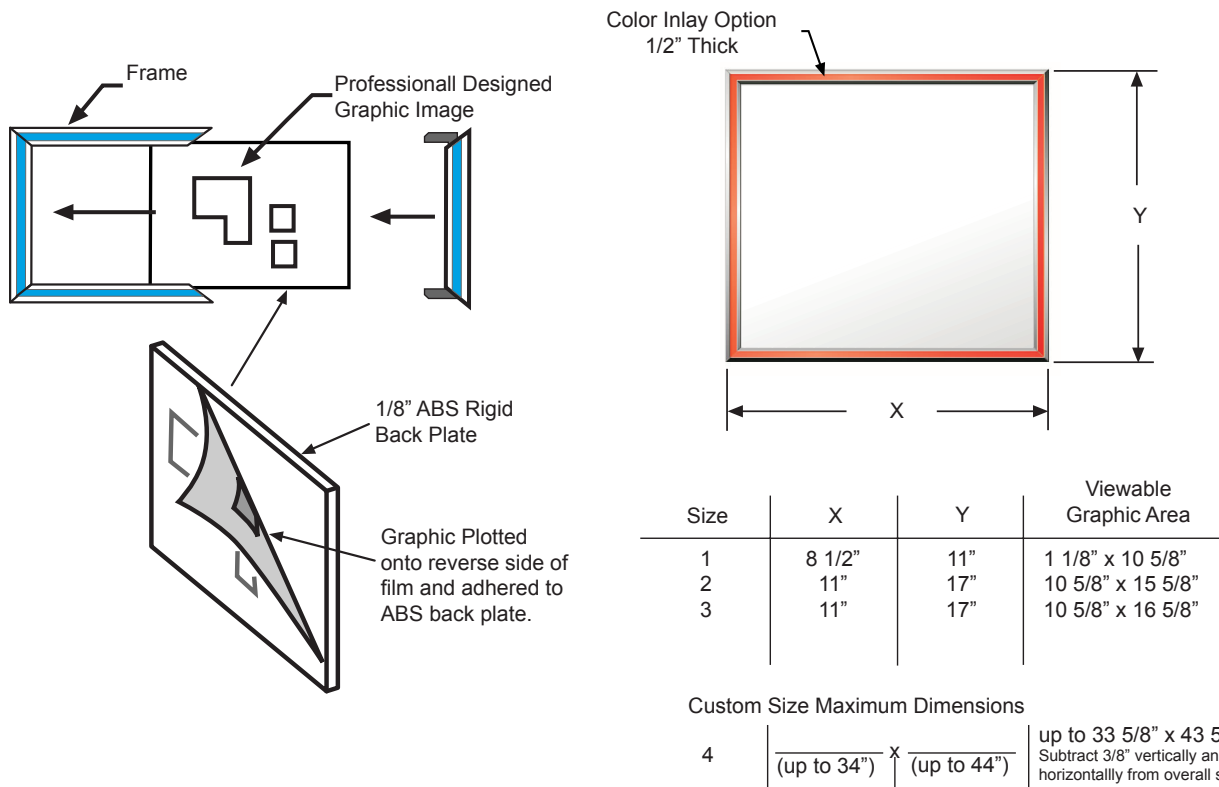
Specifications:

The GD8 DI Graphic Display Frame will be constructed of a 1/8" thick aluminum extruded frame. The finish will be an architectural soap matte finish all over, assembled with 45 degree mitered corners and concealed hardware for assembly. The GD8 frame will have a continuous 1/2" light reflective trim all around the graphic/text image, in specified color (red, blue or black). The GD8 will be securely mounted to a wall. The mounting hardware will be concealed for security to prevent any unauthorized removal or alteration.

With supplied graphic information established, a professionally designed and laminated building Emergency Operation Plan (EOP), map, instructions, and/or other pertinent information will be incorporated into the DI assembly. The final layout will be professionally prepared for proper identification of egress and exit routes, along with other specific and important information clearly displayed to initiate immediate action when required.

DI Assembly Graphic:

The GD8 DI assembly frame will incorporate a professionally designed graphic, plotted onto the back of .012 mil piece of (DMBPC12) polycarbonate backprint film. The film's surface texture diffuses light and cuts glare to a minimum. The film will be permanently adhered to a solid piece of 1/8" ABS rigid back plate for strength and durability. The polycarbonate film is rated class A according to ASTM E84 tunnel test for surface burning characteristics of building materials (fire test). UV-durable inks will be used to resist fading and harmful effects from light exposure producing long lasting images.



Ordering Information:

Part #	Description
SSU52000	Size 1 (8 1/2" x 11") Display Frame
SSU52001	Size 2 (11" x 17") Display Frame
SSU52002	Size 3 (17" x 17") Display Frame
SSU52003	Size 4 Custom Sized Display Frame up to 34" x 44"
SSU52004	GD8 DI Graphic Display custom artwork
SSU52006	Graphic design layout service CAD/ENG additional time/proc

PANELVU

Space Age Electronics, inc.
www.ISAE.com
800.486.1723 Toll Free
508.485.0966 Local
508.485.4740 Fax

No Excuses, Just Solutions!

This document is subject to change without notice, see doc # ED0479 for legal disclaimer

GD8 DI Preliminary Quote

Ordering:

Follow these 3 steps for Space Age Electronics to generate a preliminary quote for your Graphic/Map or try our free on-line Product Quote Pages at www.1SAE.com

1 QUANTITY (total number of displays needed)

Determine the quantity of maps that are needed for your facility(s). This assumes all maps needed will be of the same size (see Step 2 for available sizes) and similar in level of difficulty (see Step 3 for examples of Level of difficulty). If you are in need of different size maps, you will need separate quotes for an accurate determination of your product needs.

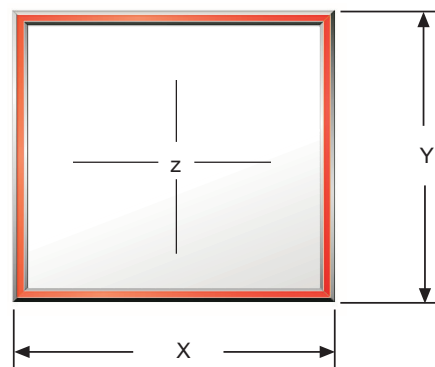
For same size and similar layout needs: count the number of floors per building, or if required, all entrances/exits for the building that are required to have a visual evacuation/map display.

2 Determine what **SIZE** GD8 Display Frame is needed for your display or would best fit your application. This assumes all maps are similar in information/level of difficulty (see Step 3 to determine level of difficulty)

Space Age offers 4 sizes (one size selectable per quote)

Check only one:

Size	X	Y	Z
<input type="checkbox"/> 1	8 1/2"	11"	1 1/8" x 10 5/8"
<input type="checkbox"/> 2	11"	17"	10 5/8" x 15 5/8"
<input type="checkbox"/> 3	11"	17"	10 5/8" x 16 5/8"
Custom Size Maximum Dimensions			
<input type="checkbox"/> 4	(up to 34")	(up to 44")	up to 33 5/8" x 43 5/8" Subtract 3/8" vertically and horizontally from overall size.



3 Determine Graphic/Map **LEVEL OF DIFFICULTY**. Compare your drawings to the following levels of complexity.

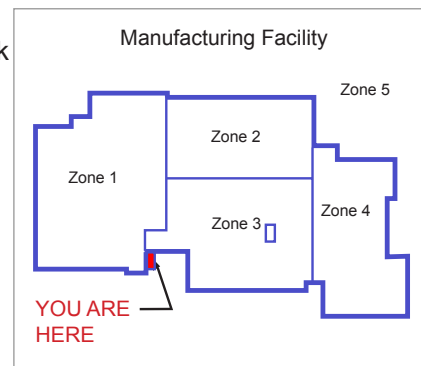
Check only one:

Simple

Less than 20 rooms, with vertical and horizontal line work and basic building outlines. Standard artwork is black linework and lettering on a white background.

(check additional that may apply)

- Additional graphic colors required: # _____
- Each room numbered or titled
- Graphic display has a title
- 'You Are Here'
- Title and north arrow



Additional pertinent details: _____

(Quoting details continued on next page...)

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 508.485.0966 Local
 508.485.4740 Fax

No Excuses, Just Solutions!

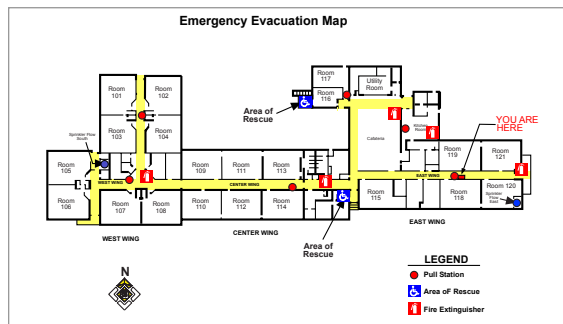


Medium 20-50 rooms with vertical and horizontal line work. Hallways, stairwells and elevators depicted. Standard artwork is black linework and lettering on a white background.

(check all that may apply)

- Additional graphic colors required: # _____
- All rooms titled and/or numbered
- Icons used for identification with legend
- Labeled exits
- Major egress escape routes
- 'You Are Here'
- Legend for icons
- Device icons
- Area of Rescue

Additional pertinent details: _____

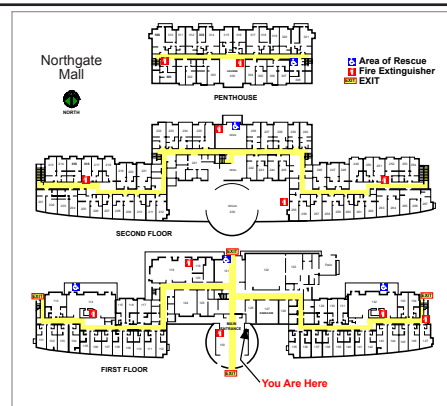


Difficult 50 rooms or more, building outline may have curves and angles. Standard artwork is black linework and lettering on a white background.

(check all that may apply)

- Additional graphic colors required: # _____
- Building outline has curves and angles
- Hallways, stairwells and/or elevator details
- Entrances labeled including loading docks, etc.
- All rooms are titled and/or numbered
- 'You Are Here'
- Leader lines to depict details or special instructions
- Multiple icons and details on display legend
- Device icons
- Address location for devices (ie: pull station, smoke detector, etc.)
- Major Egress escape routes

Additional pertinent details: _____

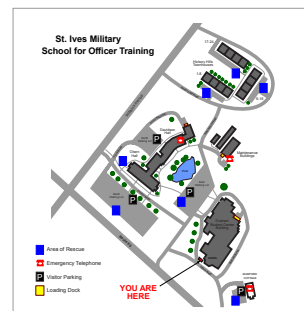


Campus Type Complex This is a facility/site/campus complex that shows multiple buildings, parking lots, roads, walkways etc. Standard artwork is black linework and lettering on a white background.

(check all that may apply)

- Additional graphic colors required: # _____
- Graphic title
- Building labels, road names and other similar details
- Buildings and roads have curved lines or angles
- Trees, shrubbery
- 'You Are Here'

Additional pertinent details: _____



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Include your contact information and fax to Space Age for a quote.

Name: _____
Company: _____
Phone #: _____
e-mail: _____

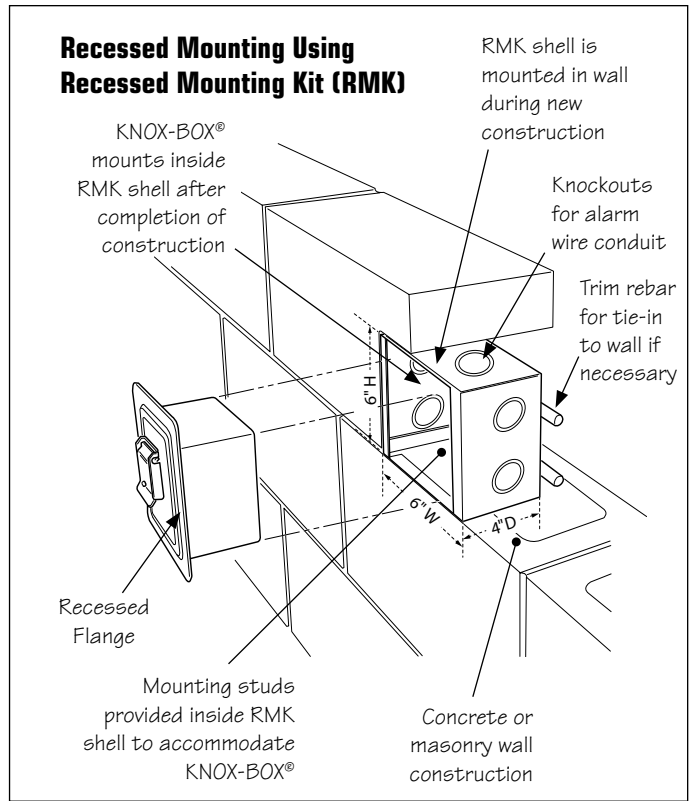
Recessed Mounting Kit (RMK)

The optional Recessed Mounting Kit is for use in new concrete or masonry construction only. The kit includes a shell housing and mounting hardware to be cast-in-place. The KNOX-BOX is mounted into the shell housing after construction is completed.

Rough-in Dimensions: 6-1/2"H x 6-1/2"W x 5"D

Installation: Mounting kit may be fastened to inside wall of a concrete form or set in place during masonry wall construction. Wiring conduit may be connected through knock-out hole(s) in the shell housing.

IMPORTANT: Take care to make sure that the front of the shell housing, including the cover plate and screw heads, are flush with the finish wall. Leave cover and screws in place until the KNOX-BOX is ready for mounting inside. The four (4) mounting studs may be replaced with Grade 5 or Grade 8 bolts or longer studs if required. Two (2) long sheet metal screws are provided for attachment of shell housing to the inside of a concrete form. With the housing held firmly in place, drill two (2) 1/8" holes through the form wall and the housing front cover. Insert screws and pull housing tight against form wall. Remove screws before removing form.



NOTE:
MODEL 3270 IS TO BE SUBMITTED PER PORTLAND FIRE DEPARTMENT REQUIREMENTS



Knox® Rapid Entry System

The Knox Company manufactures a complete line of high security products including Knox-Box® key boxes, key vaults, armored cabinets, key switches, padlocks and electronic master key retention devices.

For information and technical assistance, call:

800-552-5669

MOUNTING INSTRUCTIONS
KNOX-BOX® 3200 Series

Lift-Off Door Models

Surface and Recess Mounted

Issue Date: July 2006

Serving Fire Departments Since 1975

1601 W. Deer Valley Road, Phoenix, AZ 85027
 800-552-5669 • Fax 623-687-2299
 E-mail: info@knoxbox.com

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MOUNTING INSTRUCTIONS

KNOX-BOX® 3200 Series

Lift-Off Door Models



Series 3200 Recessed

Series 3200 Surface

Read instructions carefully before mounting.

The 3200 Series KNOX-BOX® is a heavy-duty, high-security key box that stores keys, access cards and other small items. Each key box is coated with the Knox-Coat® proprietary finishing process* and includes a 1/8" thick stainless steel dust cover to protect the lock. For maximum security, mount the unit properly in an area sheltered from excessive moisture. All keys stored in the unit must be hung on the key hooks supplied inside.

All 3200 Series Knox-Boxes are fully tested and listed by Underwriters Laboratories as anti-theft devices. Alarm tamper switches are UL listed as Central Station Alarm Units. UL Electrical Range: Max Voltage of 24 VDC at 50 mA.

Surface Mounted Models

Surface models are designed for mounting on a flat wall. Do not mount face down from ceiling or overhang area. When the surface mounted KNOX-BOX includes tamper switches, install the tamper switch assembly after the box is mounted and check to see that the "box to wall" plunger is properly depressed. A qualified alarm installer should perform alarm wiring, testing and adjusting.

Recess Mounted Models

Recess models are designed for flush mounting. Do not mount face down from ceiling or overhang area. Units can be adapted to fit a variety of solid walls cored to a 6" diameter approximately 3 1/2" deep. A Recessed Mounting Kit (RMK) is recommended for new concrete or masonry walls under construction. Do not over tighten mounting bolts as this will distort the flange.

When the recess mounted KNOX-BOX includes a door tamper switch, install the tamper switch assembly after the box is mounted. Pull wiring tight so that any attempts to force the box out of the wall will break the wire or pull the terminals loose. A qualified alarm installer should perform alarm wiring and testing.

If installing the box on a thin or hollow wall, use a solid backing (like 3/8" steel plate fastened to solid studs on both sides) for secure mounting. Mounting to solid beams or steel support is best. Use of a professional installer is highly recommended.

General Mounting Instructions

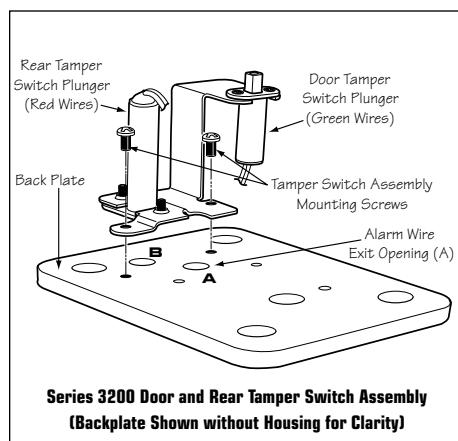
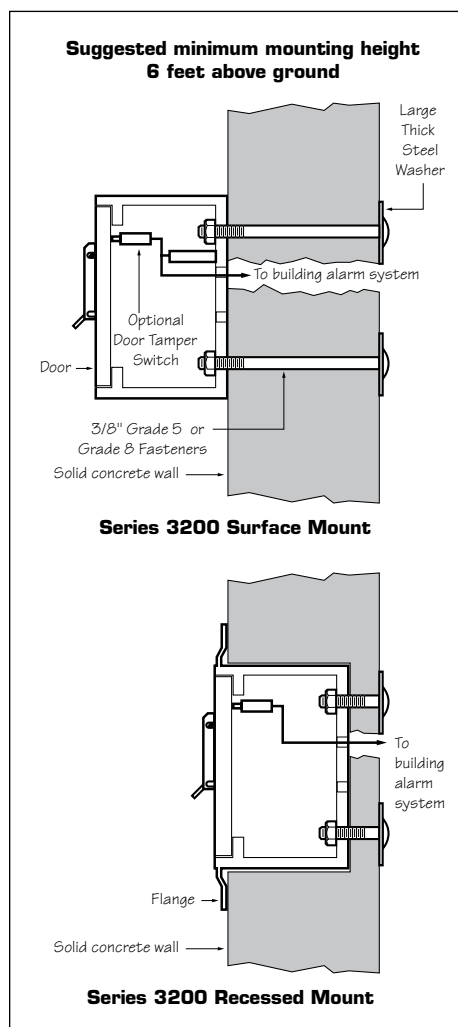
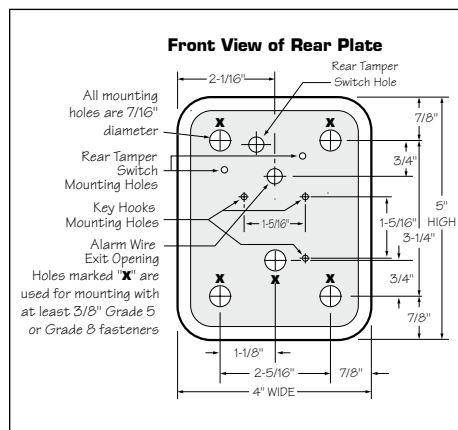
1. Remove door assembly from shipping box and set aside.
2. For units with tamper switches, remove the tamper switch assembly and set aside for installation after the box is mounted.
3. Always mount your KNOX-BOX to a secure, solid wall, beam or post. A six foot height level is recommended to resist vandalism.
4. Use a small level to plumb the box square.
5. Mount the KNOX-BOX with the green mounting markers pointed up so the small moisture drain hole is on the bottom. Remove green markers after installation.
6. Use at least four (4) Grade 5 or Grade 8 fasteners (carriage bolts, etc.) of 3/8" diameter. Units may also be welded into place. Mounting to solid studs or steel supports is required. Mounting face down from ceiling or overhang area may cause contents to jam lock.
7. For proper weatherproofing, caulk the back of box across top and down each side. Leave the bottom open for drainage.
8. Use of a professional locksmith or alarm products installer is highly recommended.

Securing the Door

1. Attach the retaining chain through the hole in the chain tab on the back side of the door and close the link with pliers.
2. Insert key into lock and turn to the left to unlock the door.
3. Insert door, bottom side first, so that the tail piece fits over the bottom of the door frame. The top of the door will now swing shut.
4. Lock the door and remove the key.

IMPORTANT: When your KNOX-BOX is for fire department use, put the door in a secure location until requested by the fire department. When mounting of the KNOX-BOX is complete, contact your local fire department to inform them the box is ready for lock up. They have the only key.

For private, industrial or commercial use: keys will be sent separately to address requested.



* Knox-Coat is a proprietary finishing process that protects Knox products up to four times better than standard powder coat.



INSERT 3

Initiating/Addressable Devices & Accessories

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)

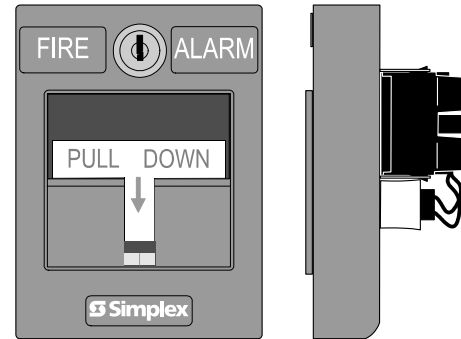
Multiple mounting options:

- 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

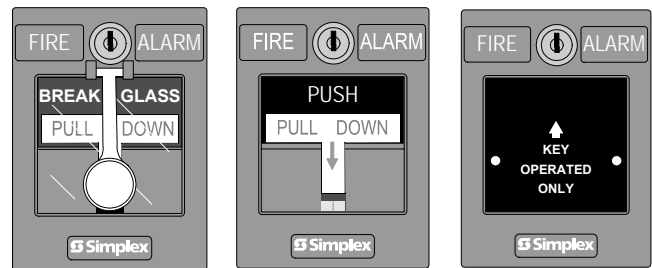
Description

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	ABAISSÉZ	
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)

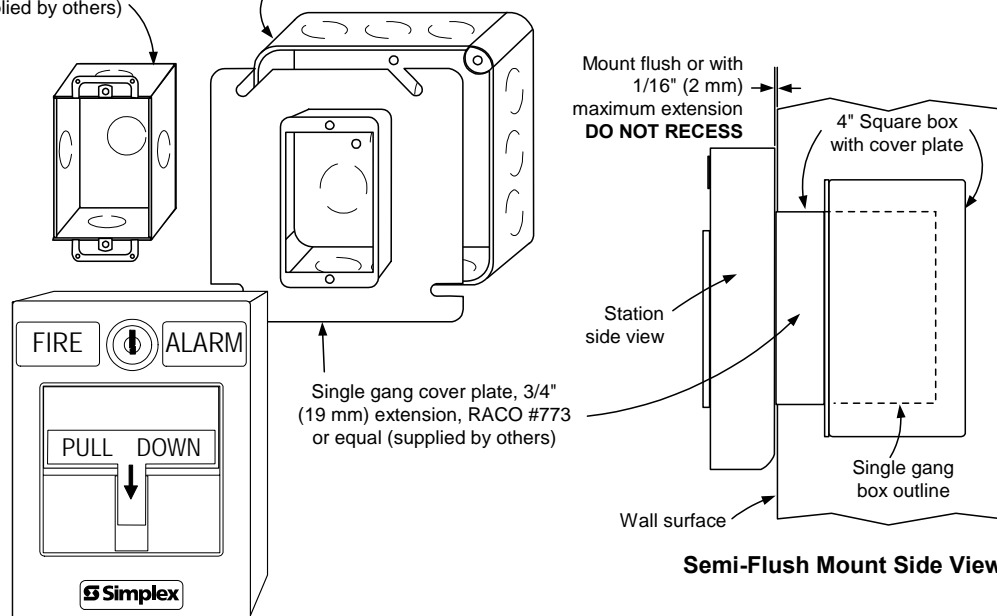
Addressable Manual Station Semi-Flush Mounting

Single Gang Box Mount

Single gang box, 2-1/2" deep (64 mm), RACO #500 or equal (supplied by others)

4" Square Box Mount

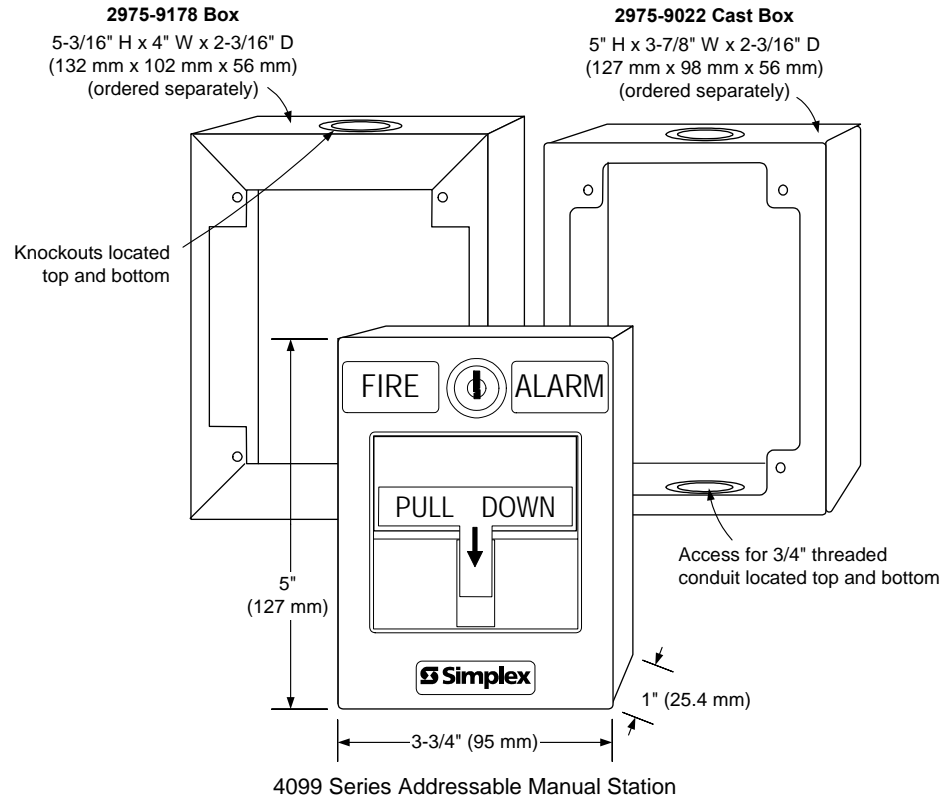
4" (102 mm) square box, 2-1/8" (54 mm) minimum depth, RACO #231 or equal (supplied by others)



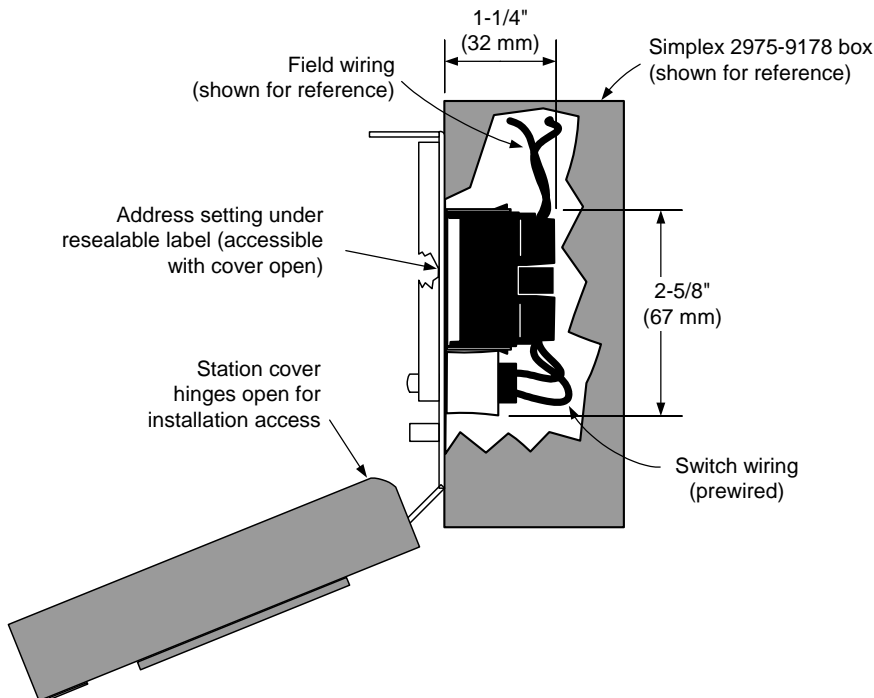
Addressable Manual Stations Surface Mounting

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.



Surface Mount Side View with Internal Detail



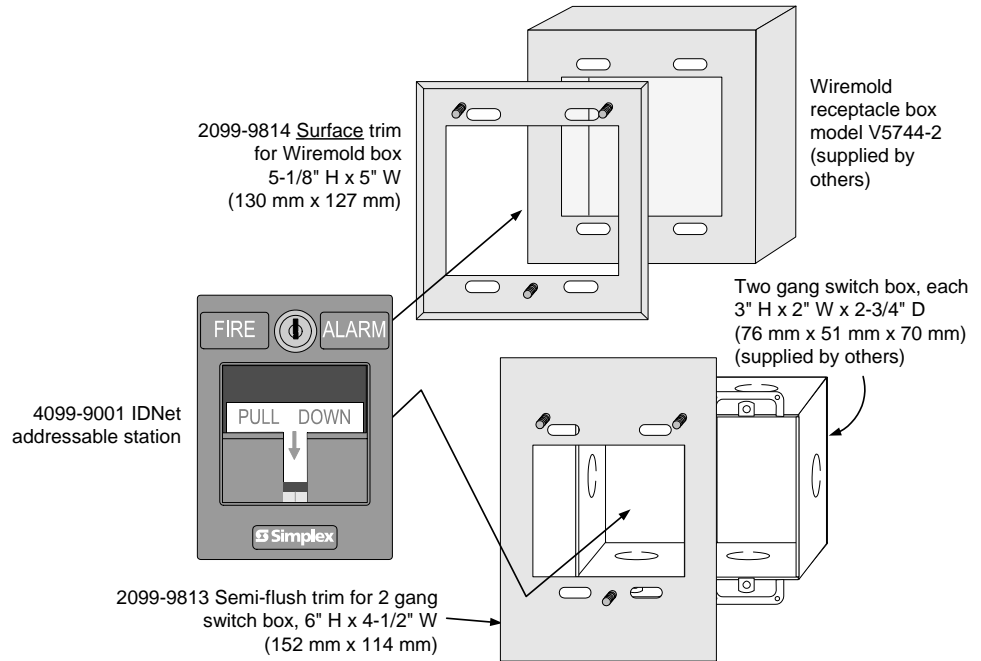
Application Reference

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.

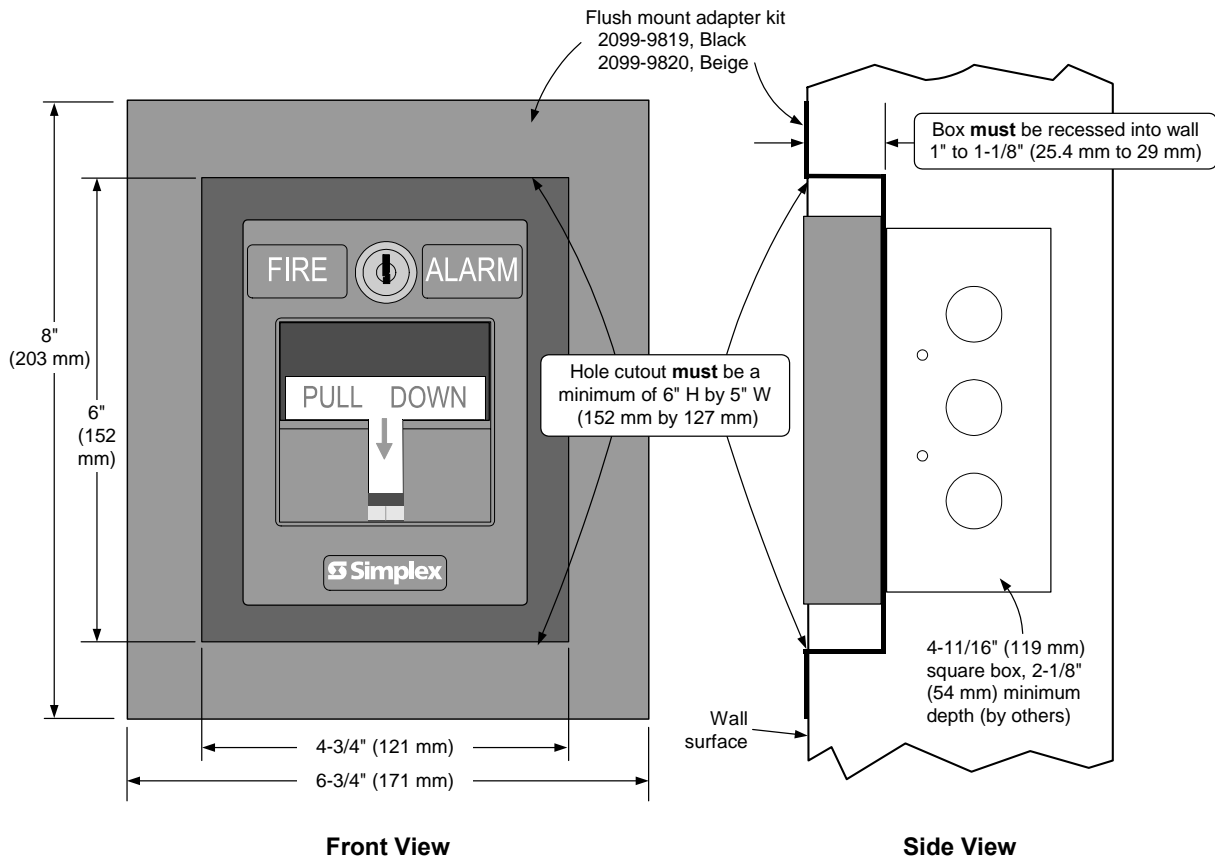
1. Stations shall be located in the normal path of exit and distributed in the protected area such that they are unobstructed and readily accessible.
2. Mounting shall be with the operable part not less than 3-1/2 ft (1.1 m) and not more than 4-1/2 ft (1.37 m) above floor level.
3. At least one station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



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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%

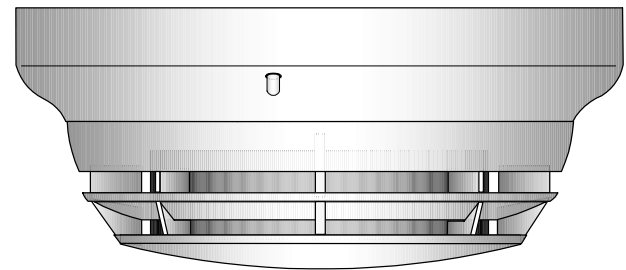
General features:

- 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; D388,407; D388,352; D392,573. MAPNET II and IDNet addressable communications designs are protected by U.S. Patent No. 4,796,025.

TrueAlarm 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.

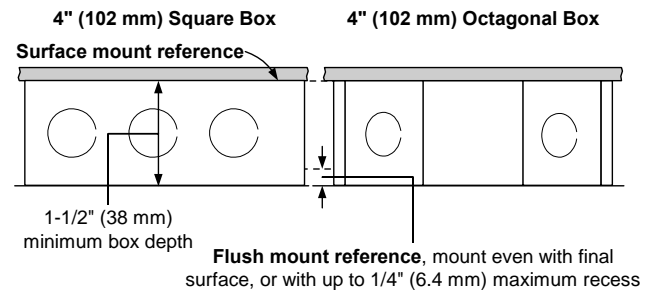
Since TrueAlarm sensors use the same base, different sensor types can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily dusty, instead of covering the smoke sensors (causing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

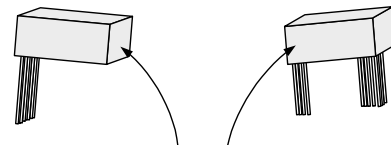
Electrical Box Requirements: (boxes are by others)

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

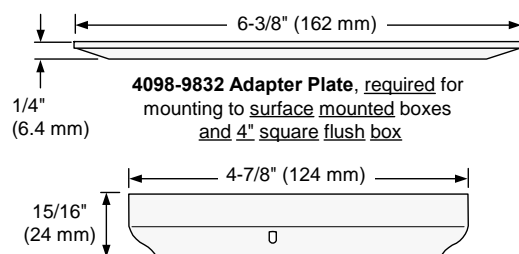


2098-9737 Relay (mounts in base electrical box or remotely) **4098-9822 Relay** (mounts in base electrical box)



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

TrueAlarm 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:

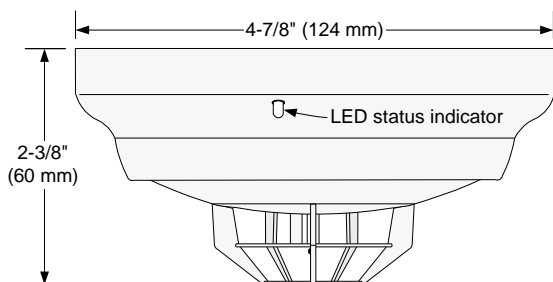
- Photoelectric or ionization technology sensing
- 360° smoke entry for optimum response
- Built-in insect screens

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.



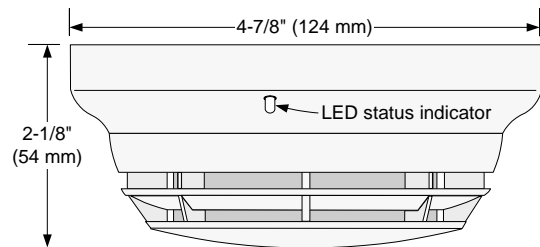
4098-9733 Heat Sensor with Base

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.

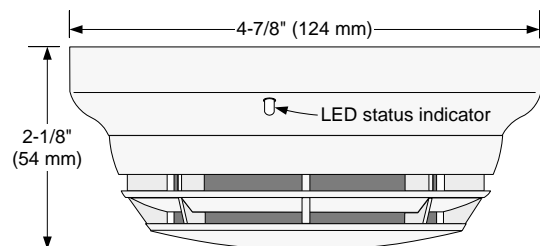


4098-9714 Photoelectric Sensor with Base

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 μ A 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
	with 4098-9714
Humidity Range	10 to 95% RH
Smoke Sensor Ambient Ratings	4098-9714, Photoelectric Sensor
	4098-9717, Ionization Sensor
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 μ A, 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

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S4098-0019-12 8/2008

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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

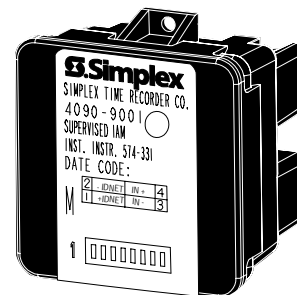
IDNet communications provides current limited monitoring:

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

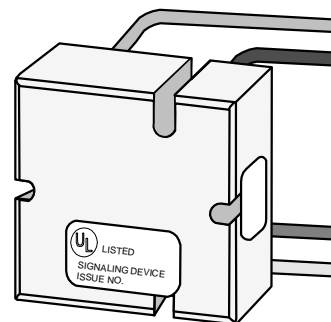
Multiple operation modes are available and are selectable at the control panel:

- 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
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

Trim plate with LED viewing window, requires 4090-9810 mounting bracket, includes mounting screws; galvanized steel

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

Model	Reference No.	Description
4081-9004	733-886	6.8 k Ω , 1/2 W; Standard end-of-line resistor harness for N.O. contact supervision
4081-9003	733-896	4.7 k Ω , 1/2 W
4081-9005	733-984	1.8 k Ω , 1/2 W

Use for current limited monitoring applications

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

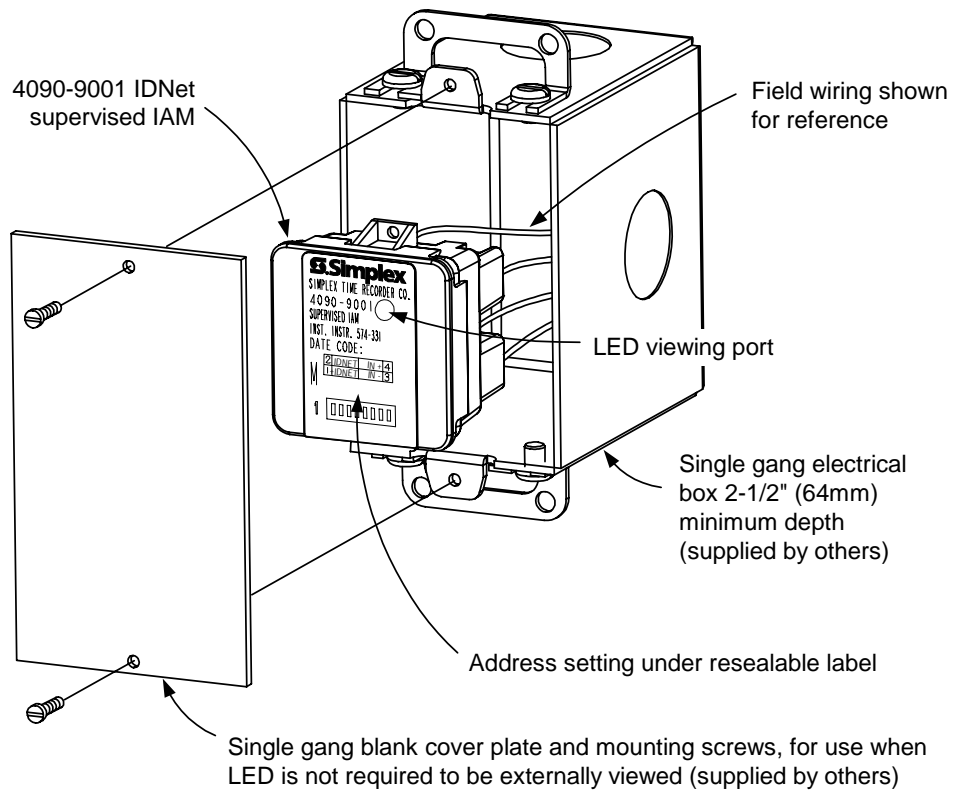
Wiring Distances

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)

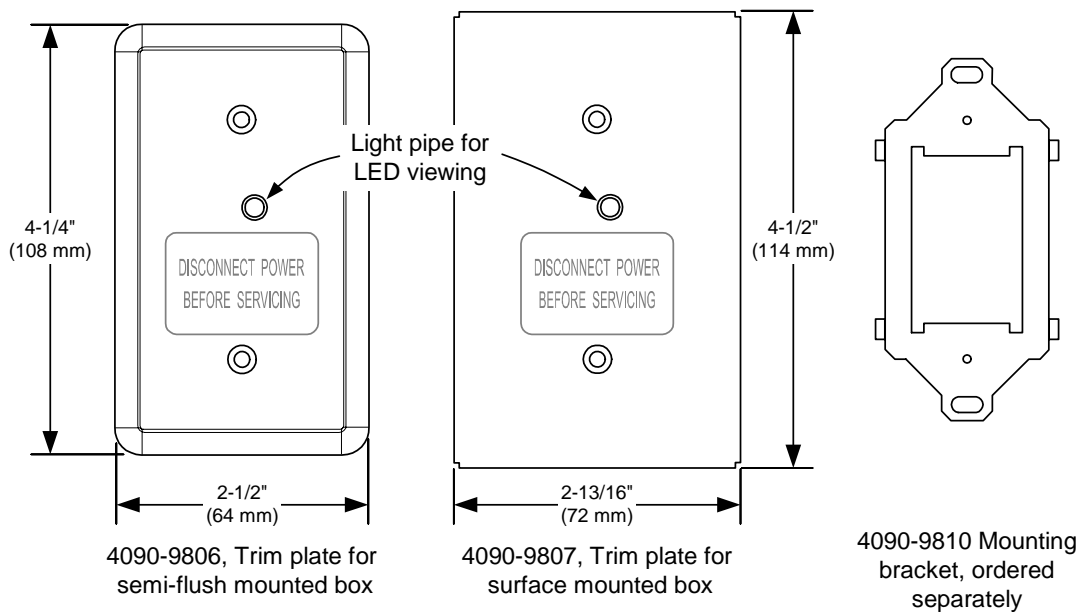
Mechanical

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 Information



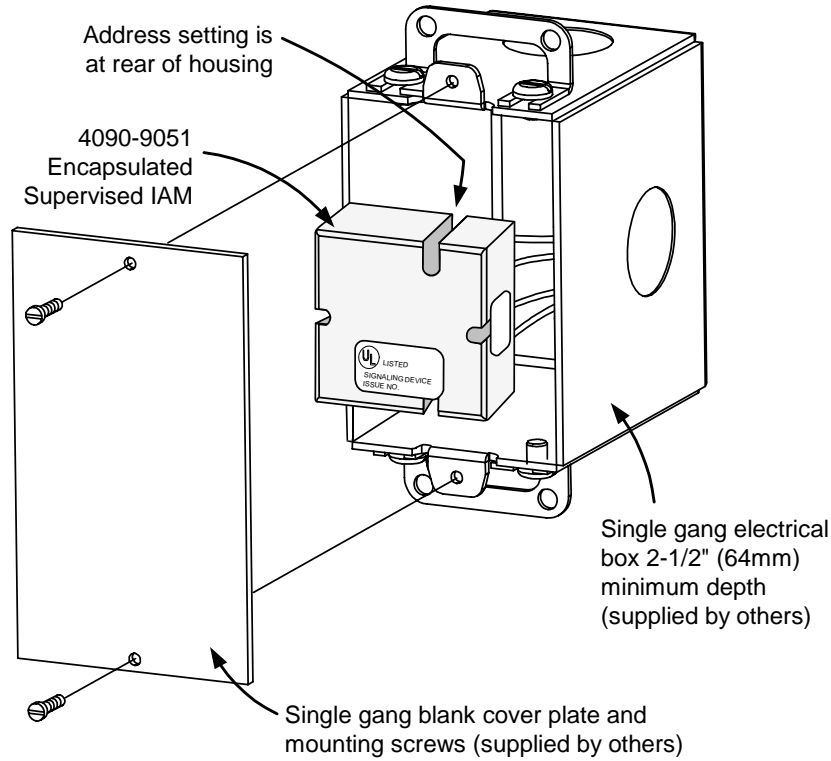
Mounting Reference, Single Gang Blank Cover Plate



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

Optional Trim Plates and Mounting Bracket for Visible LED

4090-9051 Mounting Information



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S4090-0001-8 2/2006

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Features

IDNet addressable interface modules for use with Simplex® models 4010 and 4100U fire alarm control panels**

4090-9002, Individual Addressable Relay Module (Relay IAM):

- A single addressable point provides control and status tracking of a Form “C” contact
- Low power latching relay design allows IDNet communications to supply both data and module power

Compact, sealed construction:

- Enclosed design minimizes dust infiltration
- Mounts in standard 4” square electrical box
- Screw terminals for wiring connections
- Visible LED flashes to indicate communications
- Optional covers are available to allow LED to be viewed after installation

UL listed to Standard 864

Description

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

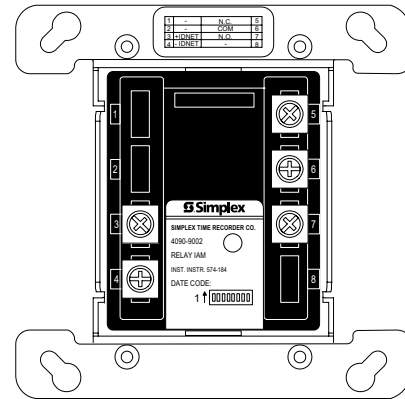
Product Selection

Model	Description
4090-9002	Relay IAM

Optional Trim Plates

Model	Description	
4090-9801	Trim plate with LED viewing window, includes mounting screws;	For semi-flush mounted box
4090-9802	galvanized steel	For surface mounted box

* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7300-0026:223 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. Accepted for use – City of New York Department of Buildings – MEA35-93E. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Safety Products Westminster.



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

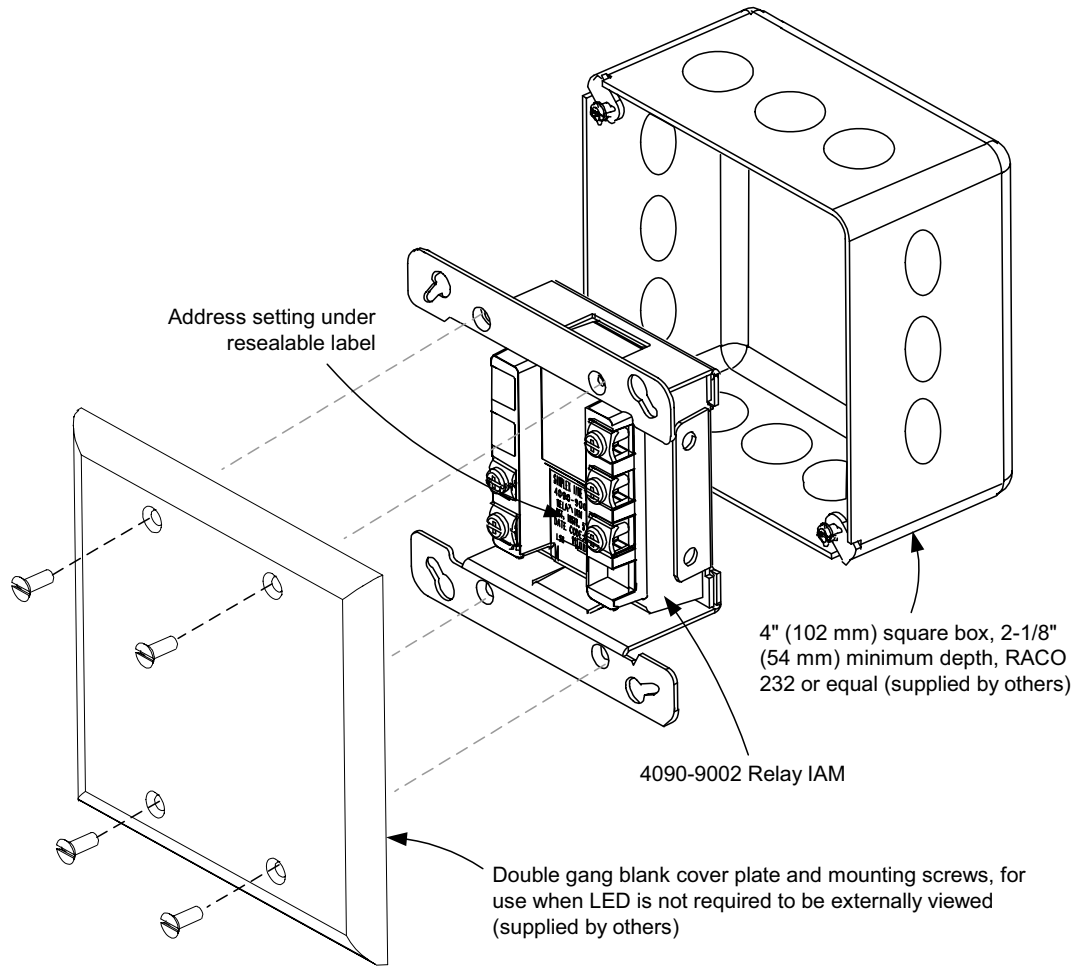
Specifications

(Refer to Installation Instructions 574-184 for additional information.)

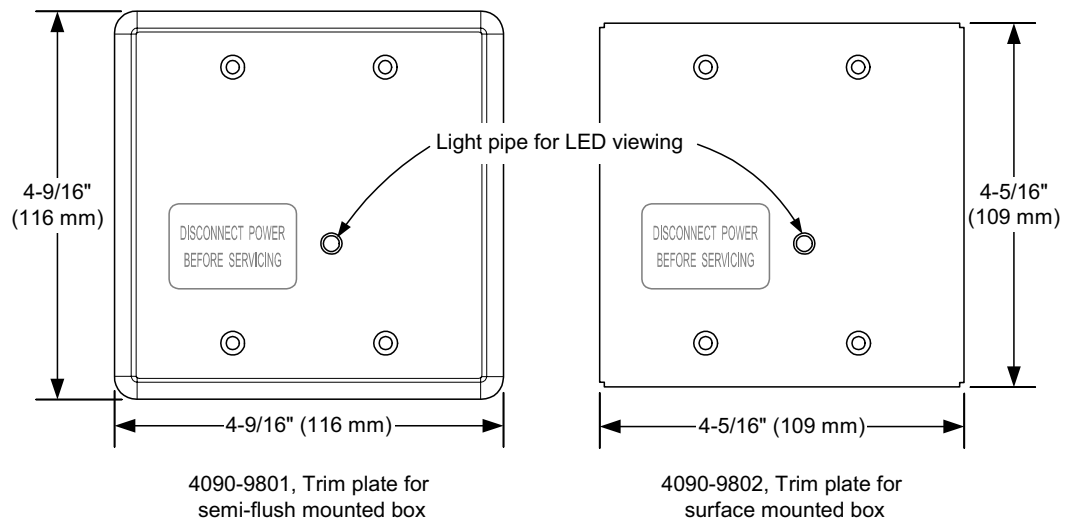
Communications	4010 or 4100U IDNet, 1 address per device
Relay IAM Power	Supplied by IDNet communications
Contact Ratings	Type Form C, SPDT
	Power-Limited 2 A @ 24 VDC, for transient suppressed loads
	Nonpower-Limited 1 A @ 24 VDC for inductive loads
Wire Connections	1/2 A @ 120 VAC, for transient suppressed loads
	Screw terminals for in/out wiring, 18 to 14 AWG wire (0.82 to 2.08 mm ²)
IDNet Wiring Reference	Up to 2500 ft (762 m) from fire alarm control panel
	Up to 10,000 ft (3048 m) total wiring distance (including T-Taps) Compatible with Simplex 2081-9044 Overvoltage Protectors
Dimensions	4-1/8" H x 4-1/8" W x 1-3/8" D (105 mm x 105 mm x 35 mm)
Housing Material	Black thermoplastic
Mounting Plate Material	Sheet metal, galvanized
Temperature Range	32° to 120° F (0° to 49° C), intended for indoor operation
Humidity Range	Up to 93% RH at 100° F (38° C)

** IDNet addressable communications are protected by U.S. Patent No. 4,796,025.

Relay IAM Mounting Information



Mounting Reference, Double Gang Blank Cover Plate



Optional Trim Plates for Visible LED

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S4090-0002-6 2/2004

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Features

Dual point operation provides a supervised multi-state input and a relay output in a single package using only one address:

- Typical applications are for damper motor control with dual damper position feedback monitoring (open and closed)
- For use with Simplex® 4100U Fire Alarm Control Panels operating with software revision 11 or higher and providing IDNet™ communications**

Input/Output details:

- Input operation is “T-Sense” and provides supervised monitoring of normally open, dry contacts
- Status conditions are Normal, Open Circuit (trouble condition), Current Limited (position input 1), and Short (position input 2)
- Total wiring distance to supervised contacts is up to 500 ft (152 m); for indoor wiring applications
- Both data and power are provided by the IDNet communications link over a single wire pair
- Form C relay output is rated 2 A @ 30 VDC, and 1/2 A @ 120 VAC (resistive ratings)

Compact, sealed construction:

- Enclosed design minimizes dust infiltration
- Mounts in standard 4” square electrical box
- Visible LED flashes to indicate communications
- Screw terminals for wiring connections
- Optional covers are available to allow LED to be viewed after installation

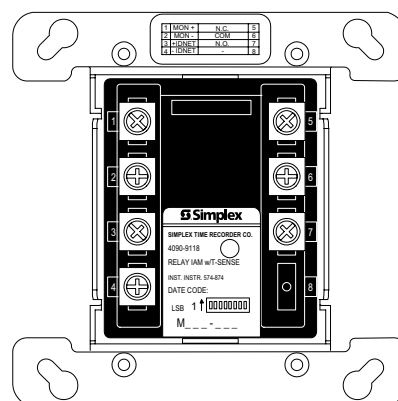
UL Listed to Standard 864

Description

Single Address Dual Point Module. The 4090-9118 Relay IAM with T-Sense allows a Simplex 4100U IDNet communication channel to monitor two input contact closures with one point and control an output relay with the other point, both from a compact module requiring a single address. Module power is supplied from the IDNet communications channel eliminating the need for separate power wiring.

Multi-Point Device Description. The input circuit and relay operation are controlled independently and may be disabled separately. Point association is determined at the 4100U host panel. At the 4100U host display, the device address is designated as a single hardware location (such as 1-1). The individual points are considered “sub-points” and are layered underneath (such as 1-1-1 and 1-1-2).

** IDNet addressable communications designs are protected by U.S. Patent No. 4,796,025.



4090-9118 Relay IAM with T-Sense Input
(shown approximately 1/2 size)

T-Sensing Operation

Supervised Input. The 4090-9118 Relay IAM with T-Sense has a supervised input that monitors for continuity to an end-of-line resistor and can differentiate between a short circuit contact closure and a current limited contact closure.

Four State Operation. **Normal** is when all contacts are open and there is continuity to the end-of-line resistor; **Open** is when continuity does not exist to the end-of-line resistor, causing a Trouble condition; **Short**, indicates that a contact has closed that is directly connected to the input circuit; and **Current Limited** indicates that a contact has closed beyond a series connected current limiting resistor. This operation allows differentiation between two different contact types due to their wiring location, and reporting as a single IDNet addressable point to a 4100U fire alarm control panel.

Typical Applications

Efficient Package. For smoke control applications, this module provides an efficient package for fan damper control with position feedback. The monitor point can be connected to two separate status indicator switches allowing the host panel to track the fan damper status with respect to the requested fan control operation.

General Applications. The monitor and control points can be applied for a variety of associated or independent operations. Flexible programming abilities at the host panel can provide the association logic required for a wide variety of fire or utility operations.

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Product Selection

Model	Description	
4090-9118	Relay IAM with T-Sense	
4090-9801	Optional trim plate with LED viewing window, includes mounting screws; galvanized steel	For semi-flush mounted box
4090-9802		For surface mounted box

T-Sense Input Operating Modes

Common Circuit Status Modes

Circuit Status	Device Status	Panel Display
Normal	Switches open	Normal
Open circuit	Wiring discontinuity	Trouble

Damper Position Monitoring Status Modes

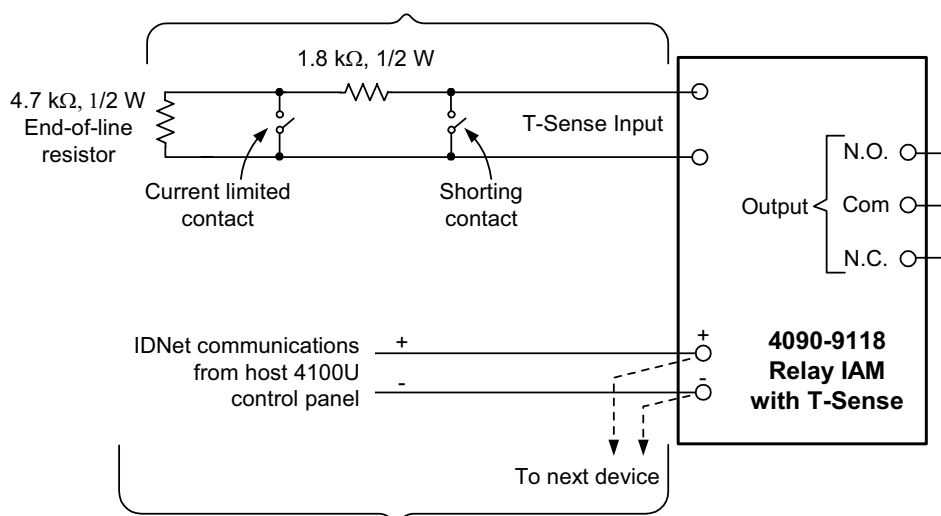
Circuit Status	Device Status	Typical Panel Display
Short	Switch A closed	Damper Closed
Current Limited	Switch B closed	Damper Open

Waterflow and Tamper Switch Monitoring Status Modes

Circuit Status	Device Status	Panel Display
Short	Waterflow switch closed	Fire Alarm
Current Limited	Tamper switch closed	Supervisory

Wiring Reference

Maximum distance to contacts is 500 ft (152 m) (input is for indoor wiring only)



For Fire Alarm applications, locate loads within 3 ft (1 m) of contacts

Power Limited Contact Ratings:

2 A @ 30 VDC, resistive loads
1 A @ 30 VDC, inductive loads

Non-Power Limited Contact Ratings:

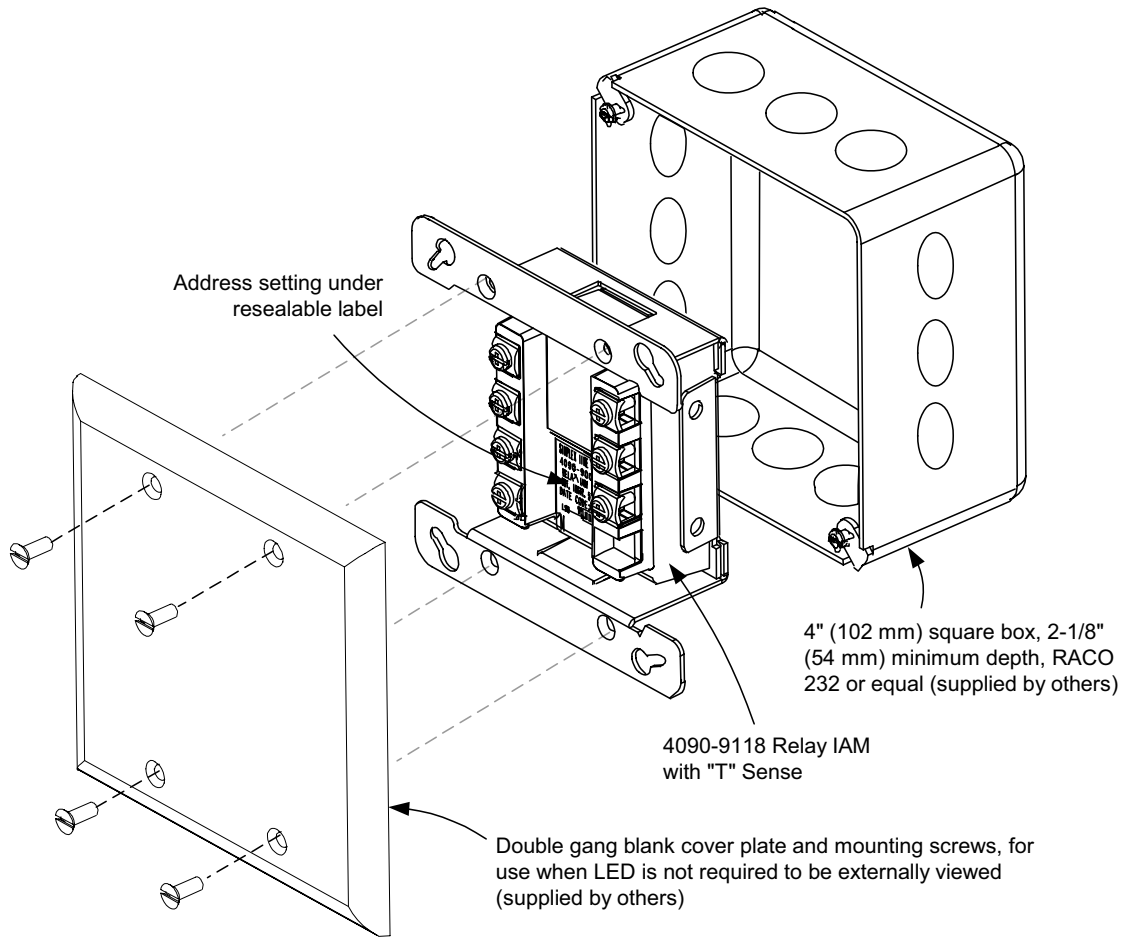
1/2 A @ 120 VAC, resistive loads
1/4 A @ 120 VAC, inductive loads

IDNet Wiring Distances:

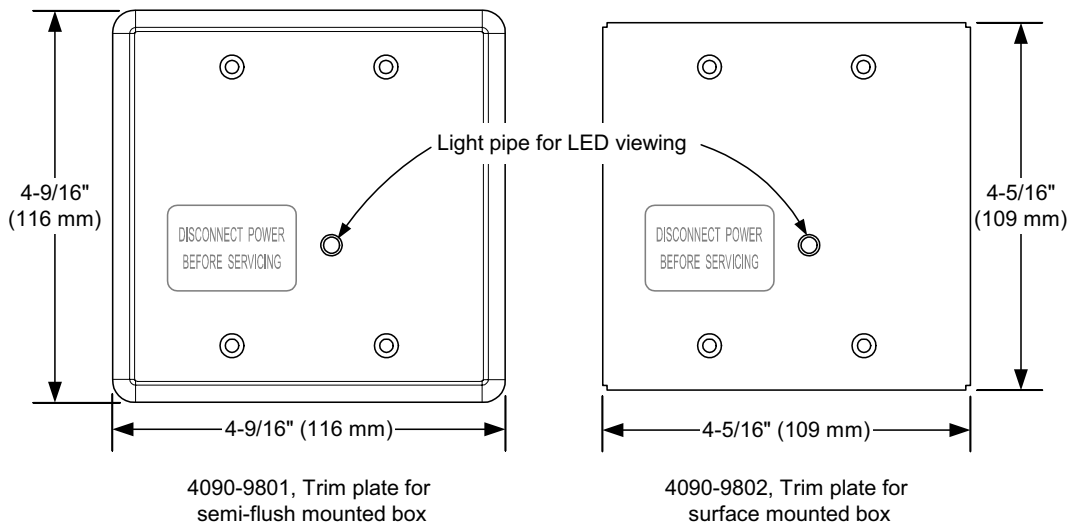
- Up to 2500 ft (762 m) from host control panel.
- Up to 10,000 ft (3048 m) total wiring distance, including "T" taps.

NOTE: Refer to Installation Instructions 574-874 for detailed installation information.

Mounting Information



Mounting Reference, Double Gang Blank Cover Plate



Optional Trim Plates for Visible LED

Specifications

Electrical	
Communications	4100U IDNet, one address
Power	Consumes one unit load, power supplied from 4100U IDNet communications
Input Requirements	Normally open dry contacts
	Up to 500 ft (152 m) total distance from Relay IAM
	For indoor wiring applications only
Input Supervision Resistors	Two required, refer to Installation Instructions 574-874 for additional information and wiring detail
Wire Connections	Screw terminals for input and output wiring, 18 to 14 AWG wire (0.82 mm ² to 2.08 mm ²)
Relay Contact Ratings, Form C (SPDT)	Power-Limited 2 A resistive, 1 A inductive @ 30 VDC
	Nonpower-Limited 1/2 A resistive, 1/4 A inductive @ 120 VAC
IDNet Wiring Distance Reference	Up to 2500 ft (762 m) from the fire alarm control panel
	Up to 10,000 ft (3048 m) total Class B wiring distance including T-Taps
	Compatible with 2081-9044 Overvoltage Protectors
Mechanical	
Dimensions	4-1/8" H x 4-1/8" W x 1-3/8" D (105 mm x 105 mm x 35 mm)
Package	Black thermoplastic housing on metal mounting plate
Temperature	32° to 120° F (0° to 49° C) indoor operation only
Humidity Range	10 to 90% RH at 90° F (32° C)

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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)

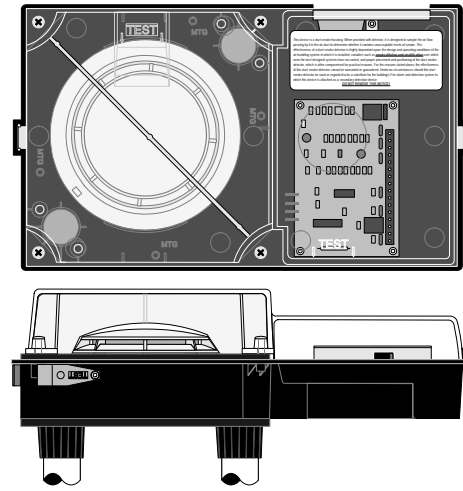
Sampling tubes (ordered separately):

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

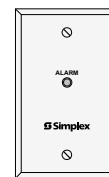
Remote module options (ordered separately):

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

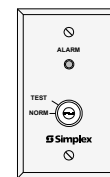
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Duct Sensor Housing, Front and Bottom View



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.

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

Photoelectric Sensing (Continued)

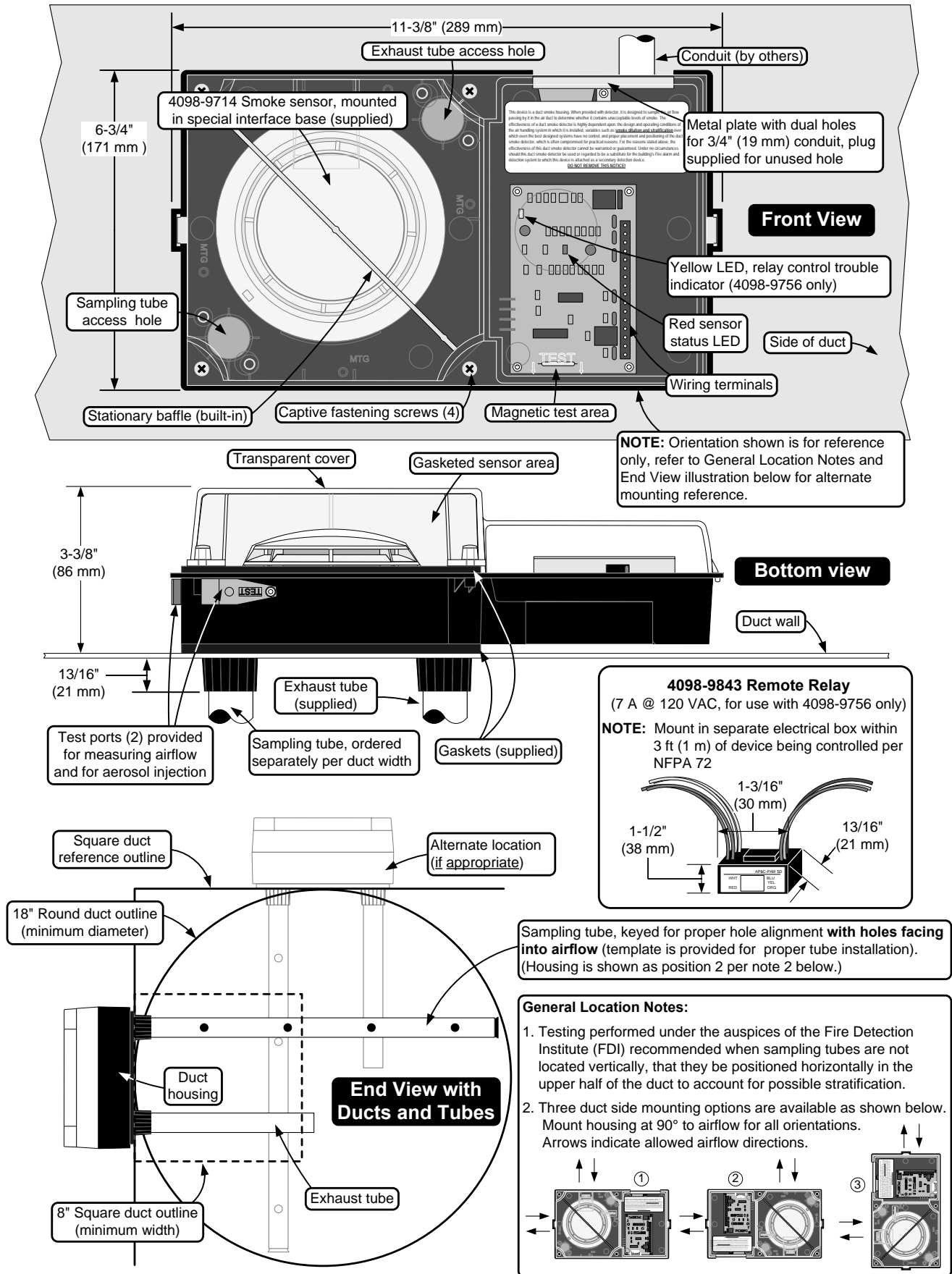
Typically duct sensor applications require less sensitive settings (such as 2.5% per foot obscuration) due to the ducts being a relative dirty environment. However, the standard seven levels of TrueAlarm sensor sensitivity are available for each individual sensor, ranging from 0.2% to 3.7% per foot of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

Fire Alarm Control Panel Features

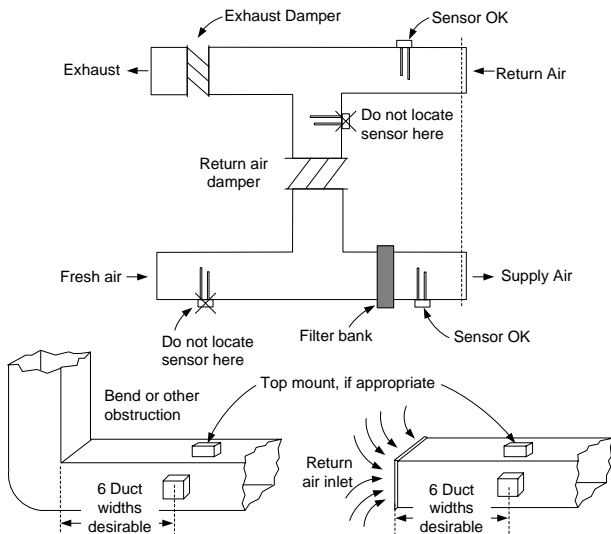
- Individual smoke sensitivity selection
- Sensitivity monitoring that satisfies NFPA 72 sensitivity testing requirements
- Peak value logging allows accurate analysis for sensitivity selection
- Automatic, once per minute individual sensor calibration check verifies sensor integrity
- Automatic environmental 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 Housing Detail Reference

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



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 k Ω , 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 μ A @ 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

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Features

Weatherproof duct housing enclosure for use with the following TrueAlarm addressable duct sensor housings (ordered separately):**

- 4098-9755, Standard Duct Sensor Housing
- 4098-9756, Duct Sensor Housing with Relay Output

Addressable duct sensor housing details:

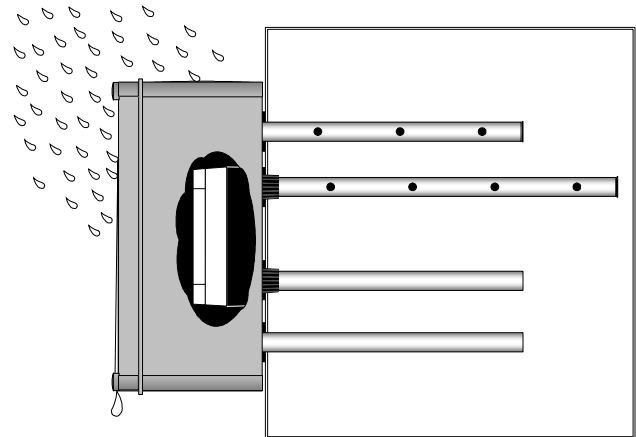
- Photoelectric sensor and exhaust tube are supplied
- Sampling tube is ordered separately per duct size
- Continuous communications actively monitors status of electronic circuits
- Refer to Simplex data sheet S4098-0030 for additional duct sensor housing details

Weatherproof duct housing enclosure features:

- Circulation of conditioned air from the air duct helps maintain the sensor housing at its rated temperature range
- Nonmetallic material does not require painting
- Captive cover screws
- Intake and exhaust tubes for weatherproof duct housing enclosure are supplied
- A full size mounting template and all required gaskets are supplied for installation convenience
- UL listed to Standard 268A
- NEMA 4X rating

Description

Smoke detection system designs that require smoke detection monitoring of an HVAC duct that is exposed to environmental extremes must provide protection against the anticipated temperatures and total weather conditions. The 4098-9845 Weatherproof Duct Housing Enclosure provides for the circulation of conditioned air around the internally mounted addressable duct sensor housing to maintain the sensor housing at its rated temperature range and provide protection from ambient environmental extremes.



Side View of Weatherproof Duct Housing Enclosure 4098-9845 with Duct Tube Detail and Cutaway Showing Sensor Housing (refer to page two for details)

Specifications

4098-9845 Weatherproof Duct Housing Enclosure

Air Velocity Range (linear ft/min)	300 to 4000 ft/min (91 to 1220 m/min)	Refer to graph on page 4 for additional information
UL Listed External Temperature Range	-40° to 158° F (-40° to 70° C)	
UL Listed External Humidity Conditions	Up to 100% RH	
NEMA Enclosure Category	4X	

Construction	Solid body and door, light gray, PBT/PC blended plastic, UL94-5VA flammability rating, UV stabilized	
Dimensions	22 1/8" W x 15" H x 7 1/8" D (562 mm x 381 mm x 181 mm)	

Addressable Duct Sensor Housing 4098-9755/9756

UL Listed Temperature Range	32° to 100° F (0° to 38° C)	
Operating Temperature Range	32° to 122° F (0° to 50° C)	
Storage Temperature Range	0° to 140° F (-18° to 60° C)	
Humidity Range	10% to 90% RH, non-condensing	

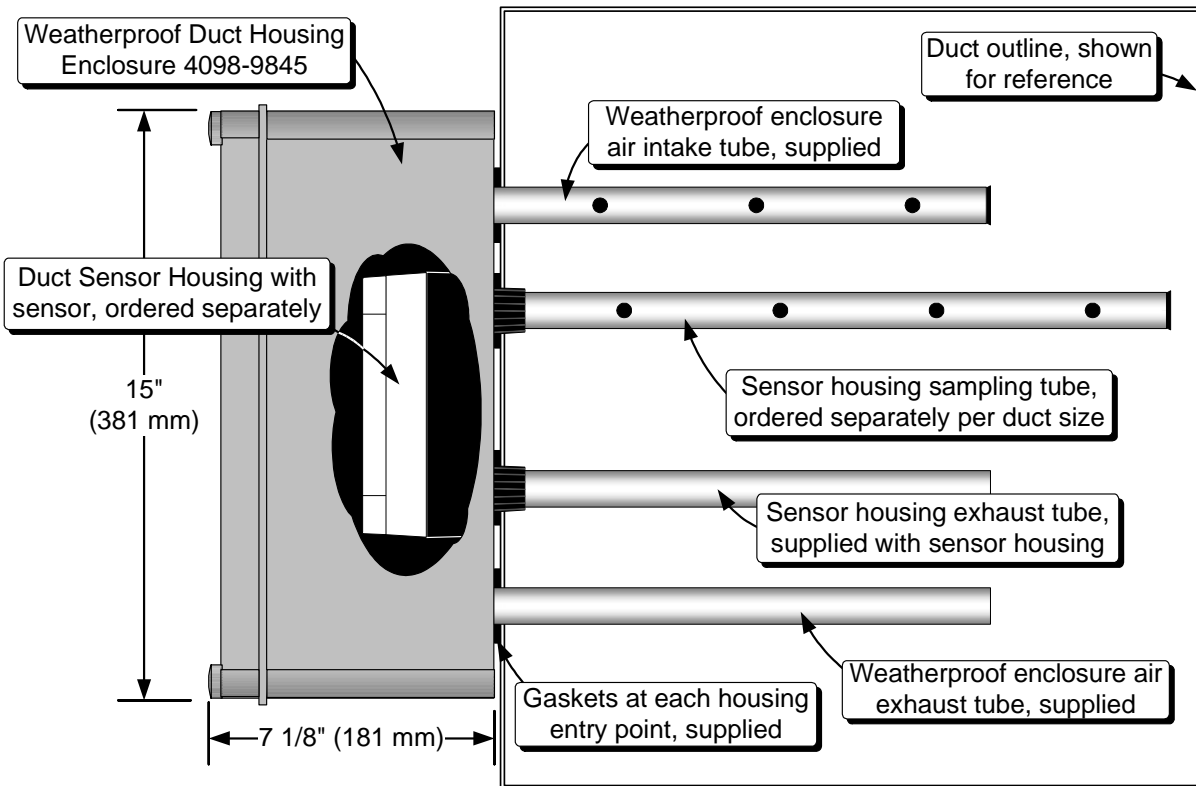
* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7300-0026:245 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. This product was not ULC listed or approved by FM or MEA (NYC) as of document revision date. Additional listings may be applicable, contact Simplex for the latest status.

** TrueAlarm sensor designs and their operation 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; 4,796,025; DES. 377,460.

Location Considerations

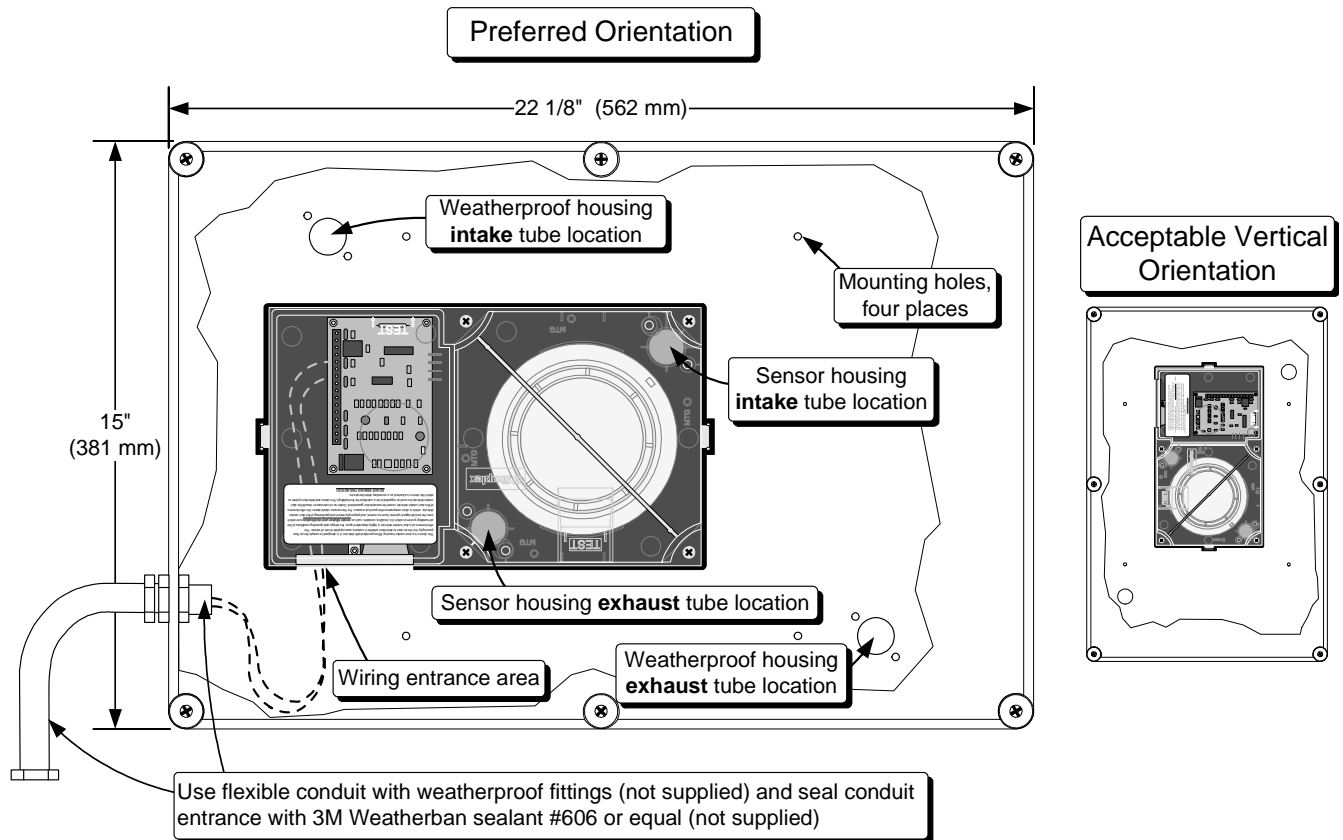
1. **DO NOT** locate the 4098-9845 Weatherproof Duct Housing Enclosure in direct sunlight.
2. Do not locate the 4098-9845 Weatherproof Duct Housing Enclosure on the shaded/sheltered side of an exposed HVAC duct. Where this is not possible or where minimal protection would be provided, use a sheetmetal or equivalent canopy that provides ventilated shelter for the enclosure.
3. Ensure that the final mounting location will provide convenient access to the enclosure for maintenance.
4. Refer to Installation Instructions 574-922 for additional installation information.

Installation Reference, Side View



Installation Reference, Front View Showing Preferred and Alternate Orientations

NOTE: Refer to Installation Instructions 574-922 for additional information.

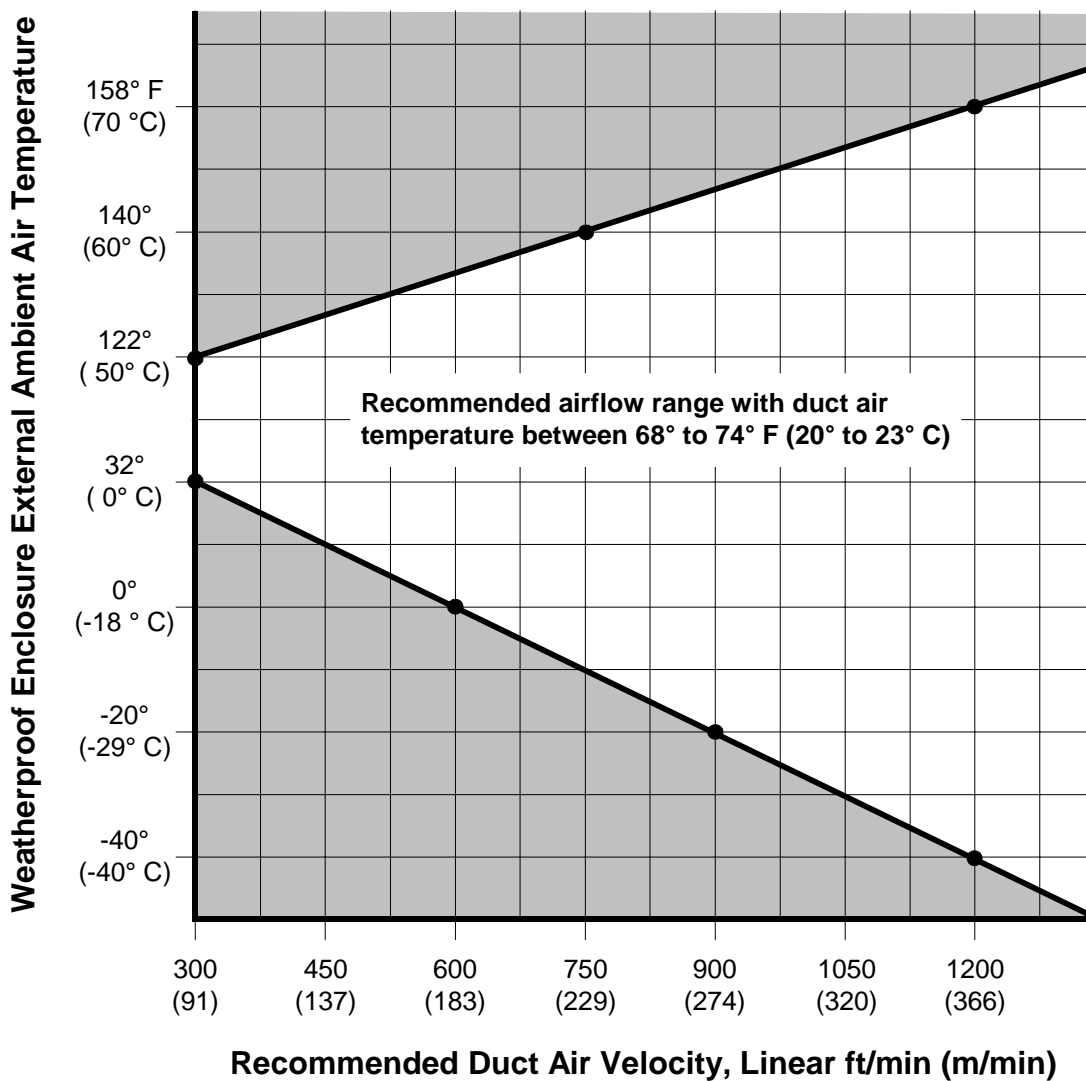


Application Reference, Ambient Temperature vs. Recommended Airflow Graph

The graph shown below presents the results of controlled laboratory testing performed on a typical 4098-9845 Weatherproof Enclosure protecting an internally mounted duct sensor housing. The external ambient air temperature of the 4098-9845 Weatherproof Enclosure was varied throughout its UL listed operating temperature range. Temperatures were recorded within the protected duct sensor housing with varying duct air velocities of air maintained between 68° and 74° F (20° to 23° C).

This graph illustrates how an increase in the test airflow velocity allows the airflow through the weatherproof enclosure to maintain the duct sensor housing at its rated range as the ambient temperature of the weatherproof enclosure is varied throughout temperatures anticipated for exterior air duct locations.

PLEASE NOTE that for typical external air duct applications, heating air would be hotter than 74° F and cooling air would be lower than 68° F, extending the acceptable airflow range accordingly.



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Features

UL listed under Standard 864 as Control Unit Accessory (UOXX)

Track mount package availability:

- Single relay module or four relay module, with or without cover, with SPDT or DPDT contacts
- LED indicates relay module status
- Cover provide status LED viewing ports
- Multiple coil voltage inputs, diode polarized for DC
- Modules are track mounted with snap-apart feature design allowing the four relay module to be separated

Single encapsulated SPDT relay package with color coded 18 AWG wire leads, available in two versions:

- 2088-9021 (PAM-1) Provides diode polarized multiple input voltage ability and LED indication
- 4098-9843 (PAM-SD) Provides a diode polarized 24 VDC coil with in/out wiring

Description

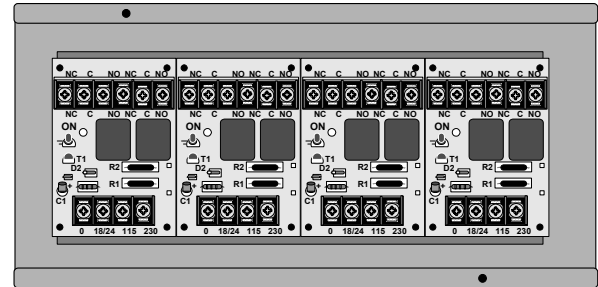
These multi-purpose control relays offer SPDT or DPDT, 10 A (or 7 A) contacts in a variety of mechanical packages. Models are available for coil operation by one of four input voltages allowing a single relay to be energized from a voltage source of 18-35 VDC or VAC, 120 VAC, or 230 VAC (not available with 4098-9843). Voltage selection is made by wiring to the appropriate input terminals or wire leads.

Each relay model (except model 4098-9843) contains a red LED which indicates that the relay is energized.

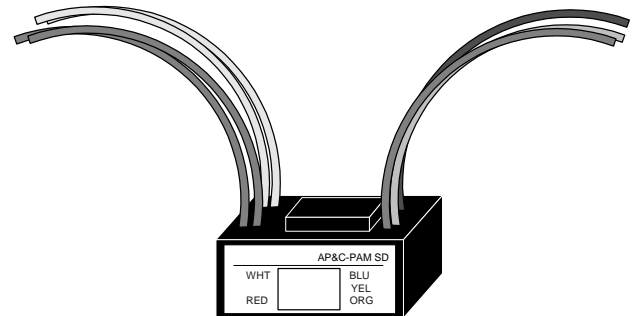
Mounting options are varied for application flexibility. Track mounted relays may be “snapped apart” from a standard four-module assembly and used independently if desired.

Specifications

Track Mount Relays, see page 2 for dimensions	
Coil Voltage	18-35 VAC/VDC, 120, or 230 VAC
Coil Current	SPDT models = 18 mA DPDT models = 40 mA
Terminal Blocks	Up to 14 AWG (2.08 mm ²)
Contact Ratings	10 A @ 120 VAC
	N.O. rated 1/6 HP, N.C. rated 1/8 HP
	7A @ 28 VDC and @ 230 VAC
Temperature Ratings	
UL Listed Range	32° F to 120° F (0° C to 49° C)
Operating Range	-58° F to 185° F (-50° C to 85° C)
Humidity	85% RH Non-condensing



2088-9020, MR204/C, Four DPDT Relay Package with Enclosure (shown with cover removed)



Encapsulated Relay Package (typical of 2088-9021, PAM-1 and 4098-9843, PAM-SD)

Specifications Continued

Encapsulated Relays, see page 2 for dimensions

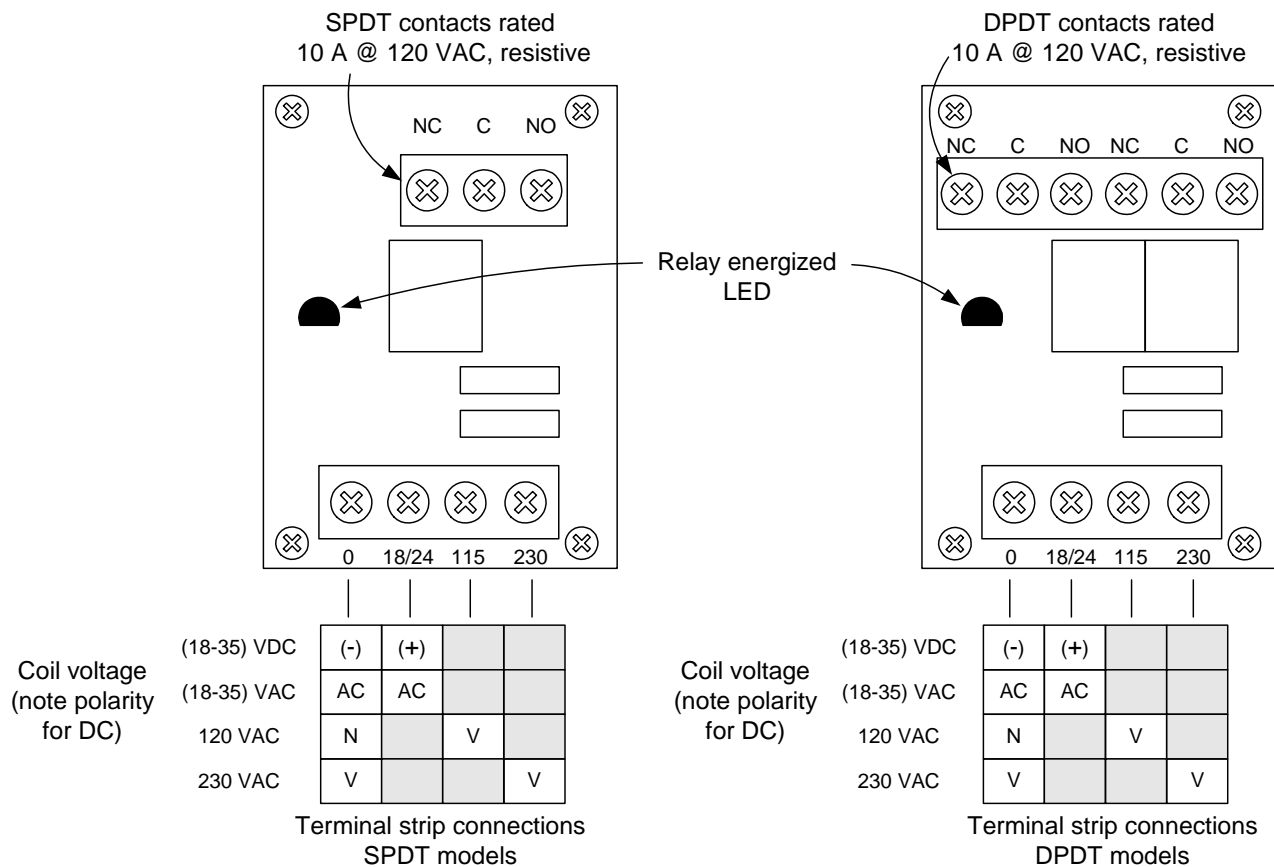
Connections	18 AWG (0.82 mm ²) color-coded wire leads	
Relay 2088-9021		
Contact Ratings	10 A @ 120 VAC, resistive	
Coil Ratings	Voltage	18-35 VAC/VDC, 120, or 240 VAC
	Current	15 mA @ 24 VAC/VDC, & @ 120 or 230 VAC
Relay 4098-9843		
Coil Ratings	18-32 VDC input, polarized, 15 mA @ 24 VDC	
Contact Ratings	7 A at 0.35 p.f @ 28 VDC & 120 VAC	
	250 μ A @ 5 VDC	
Temperature Ratings		
UL Listed Range	32° F to 120° F (0° C to 49° C)	
Operating Range	-58° F to 185° F (-50° C to 85° C)	
Humidity	85% RH Non-condensing	

* Product listings are by Air Products & Controls Inc. (www.ap-c.com) per model numbers shown on page 2. These products are also available through Space Age Electronics Inc. (www.1sae.com) with an SSU- prefix.

Relay Selection Chart

Module Positions	Reference Number	Air Products Model	Relay Type	Packaging	Dimensions
One	2088-9007	MR-101/T	SPDT	Track mount, without cover	3-1/4" H x 2-1/8" W x 1-1/2" D (83 mm x 54 mm x 38 mm)
	2088-9009	MR-201/T	DPDT		
	2088-9008	MR-101/C	SPDT	Track mount with cover	5-1/8" H x 3-1/8" W x 2-1/2" D (131 mm x 79 mm x 64 mm)
	2088-9010	MR-201/C	DPDT		
Four	2088-9017	MR-104/T	SPDT	Track mount, without cover	3-1/4" H x 8-1/2" W x 1-1/2" D (83 mm x 216 mm x 38 mm)
	2088-9019	MR-204/T	DPDT		
	2088-9018	MR-104/C	SPDT	Track mount with cover	5-1/8" H x 9-1/2" W x 2-1/2" D (131 mm x 241 mm x 64 mm)
	2088-9020	MR-204/C	DPDT		
NA	2088-9021	PAM-1	SPDT	Encapsulated, multi-voltage coil, color coded 18 AWG (0.82 mm ²) wire leads, with coil status LED	1-1/2" H x 1" W x 7/8" D (38 mm x 25.4 mm x 22 mm)
	4098-9843	PAM-SD		Encapsulated, 24 VDC coil, color coded 18 AWG (0.82 mm ²) wire leads (no LED)	1-1/2" H x 1-3/16" W x 13/16" D (38 mm x 30 mm x 21 mm)

Track Mount Relay Wiring Reference



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Features

Firefighter telephones provide direct communications with the Firefighter Telephone Control's master phone:

- When remote phones call the master, a call tone is provided to verify that the request is in process (exact performance may vary depending on master phone equipment)
- Two-wire telephone circuits are supervised and power-limited
- Compatible with 4100U Series and legacy 4100/4120 Series Simplex® Firefighter Telephone Controls

Phone assemblies are available for:

- Surface or flush mounting, (NOTE: backbox is ordered separately)
- Or as separate phone sets for plugging into dedicated remote phone jack stations

Available options:

- Break-rod door latch allows access during emergencies
- Armored cable models to minimize vandalism (voice and ear caps are sealed with adhesive)
- Push-to-talk (PTT) phones provide input control at the remote phone
- Magnetic latch models with "Fire Warden Station" marking and LED call indicator
- Additional options are listed on page 3

Available Accessories:

- Replacement break-rod

UL Listed to Standard 864

Description

Firefighter telephone systems provide two-way communications for facilities where radio communications may not be available or are unreliable. They are typically used during active firefighting conditions, during a fire alarm investigation, or during fire alarm system inspection and test.

Operation requires a dedicated two-wire circuit, typically using twisted, shielded pair wiring (TSP) to minimize electrical noise pickup from adjacent wiring. Depending on the master control, up to 6 remote phones and the master can be in simultaneous use. Additional information can be found in Installation Instructions 579-226 and on data sheet S4100-0034 which describes 4100U Master phone control operation.

* ULC listing is applicable to standard remote pluggable phone and phone jack station, refer to page 3 for agency status per model. 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 6912-0026:054 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.

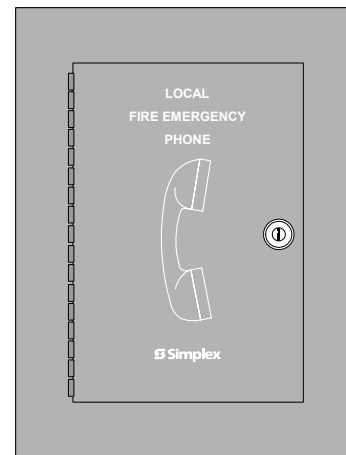


2084-9001

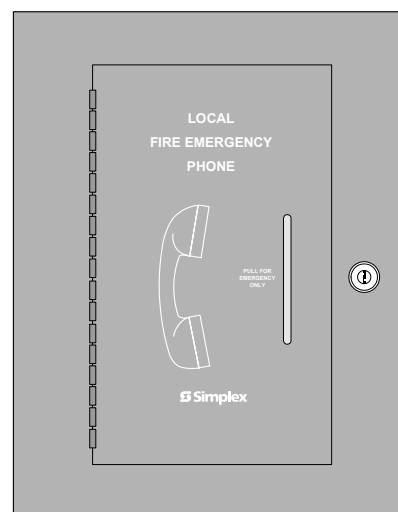


2084-9023

Remote Phone Jack Stations



Door and Trim, Surface Mount



Door and Trim, Flush Mount
with Pull Handle and Break-Rod

Remote Phone Jacks

Details and Mounting. Phone jacks are mounted on a stainless steel single-gang plate for use with pluggable phones. The front is marked with red “FIRE EMERGENCY PHONE” lettering. Mounting requires a single-gang electrical box, 2” (51 mm) minimum depth. In/out wiring is by color-coded 18 AWG (0.82 mm²) wire leads.

Model 2084-9001 is standard. Model 2084-9023 is similar to 2084-9001 but also provides an LED indicator powered from the remote phone wiring. The LED is activated when “Call-Out” is selected at the Master phone, a request for the responding personnel to plug in their phones and communicate with the master.

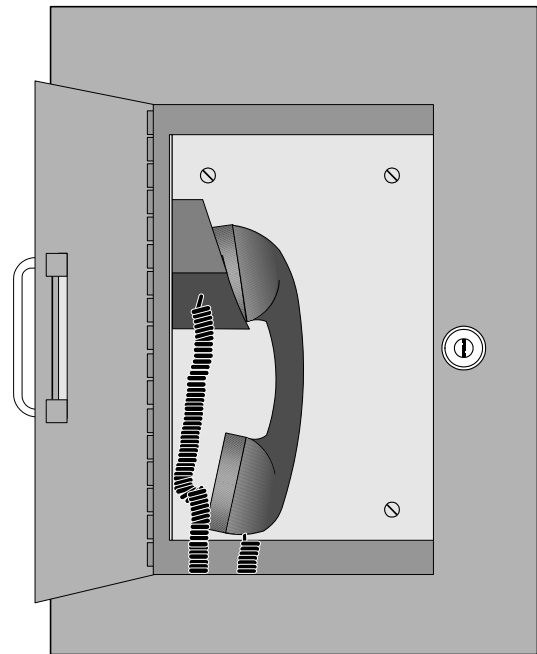
Remote Phones, Cabinet Mounted

General Information. Doors and trim are painted red and available for surface or flush mounting. The doors are silk-screened in white with “LOCAL FIRE EMERGENCY PHONE” or other options as shown on page 3.

Break-Rod Door Option. This mounting type provides a glass break-rod, similar to those used in manual fire alarm stations. The break-rod is positioned inside the door such that pulling the door handle breaks the rod and allows the door to open. A standard lock is also provided to allow authorized entry without breaking the rod.

Phone Options. Armored cable phones include voice and ear caps sealed with adhesive to minimize vandalism. They are also available with “push-to-talk” switches that allow the user to mute the transmitter until talking is required. Phone handsets are constructed of Cyclocac type T, a thermal ABS material.

Remote Fire Warden Station. This mounting type provides an armored cable phone and a door equipped with a magnetic latch instead of a lock. Typical use would be where the phone is located in a controlled access area. The door is silk-screened with “FIRE WARDEN STATION” and a red call-in request LED is mounted on the lower left corner of the door trim.



Interior View of Remote Phone Cabinet
(Shown With Pull Handle and Break-rod)



2084-9014 Pluggable Phone

Pluggable Phones

2084-9014 Red Pluggable Phone. The 2084-9014 emergency telephone is ruggedly constructed of Cyclocac type T, a thermal ABS material. A coiled line cord and jack is attached. Cord length is 5 ft (1.5 m).

These phones are typically stored in a cabinet at the central control panel area where they would be conveniently located for fire fighters or other authorized personnel. (They are compatible with commercially available storage cabinets.)

2084-9024 Red Pluggable Phone, Push-to-Talk. This phone is the same as the 2084-9014, except it is equipped with a large and easily operated push-to-talk switch located on the inside handle between the receiver and transmitter.

Firefighter Phone Backbox and Phone Assemblies for Backbox Mounting

Firefighter Phone Backbox

Model	Description	
2975-9053	Backbox, red; dimensions = 13" H x 9-11/16" W x 3-1/2" D (330 mm x 243 mm x 89 mm)	NOTE: Ordered Separately; one required for each Firefighter Phone Assembly listed below

Firefighter Phone Assemblies for Backbox Mounting (see note below)

Model (Type)	UL	FM	CSFM	MEA (NYC)	Locked Door	Mounting Style	Break-Rod Door	Armored Cable Phone	Push-To-Talk Phone	Door Marking
2084-9002 (4590-B)	✓	✓	✓	✓	✓	Surface	—	—	—	LOCAL FIRE EMERGENCY PHONE
2084-9003 (4590-B)	✓	✓	✓	✓	✓	Flush	—	—	—	
2084-9004 (4590-BX)	✓	—	✓	—	✓	Surface	—	✓	—	
2084-9005 (4590-BX)	✓	—	✓	—	✓	Flush	—	✓	—	
2084-9006 (4590-C)	✓	✓	✓	✓	✓	Surface	✓	—	—	
2084-9007 (4590-C)	✓	✓	✓	✓	✓	Flush	✓	—	—	
2084-9008 (4590-CX)	✓	—	✓	—	✓	Surface	✓	✓	—	
2084-9009 (4590-CX)	✓	—	✓	—	✓	Flush	✓	✓	—	
2084-9017 (4590-CX)	✓	—	✓	✓	✓	Surface	✓	✓	✓	FIREMAN'S TELEPHONE EMERGENCY OR AUTHORIZED USE ONLY
2084-9018 (4590-CX)	✓	—	✓	✓	✓	Flush	✓	✓	✓	
2084-9020 (4590-CX)	✓	—	✓	✓	✓	Flush	✓	✓	—	FIREMAN'S TELEPHONE FIREMAN'S USE ONLY
2084-9021 (4590-CX)						Surface	Magnetic latch door with call-in red LED on door trim and armored cable phone			FIRE WARDEN STATION
2084-9022 (4590-CX)						Flush				

NOTE: Includes phone, mounting plate, and door assembly; some models are agency listed by 4590 Series type number as shown in parenthesis. **These phone assemblies require a 2975-9053 backbox, ordered separately.**

Firefighter Pluggable Phones, Phone Jacks, and Accessories

Pluggable Firefighter Phones

Model	Type	Description	UL	ULC	FM	CSFM	MEA (NYC)
2084-9014	4590-E	Red pluggable phone	✓	✓	✓	✓	✓
2084-9024	NA	Push-to-talk red pluggable phone	✓		✓	✓	✓

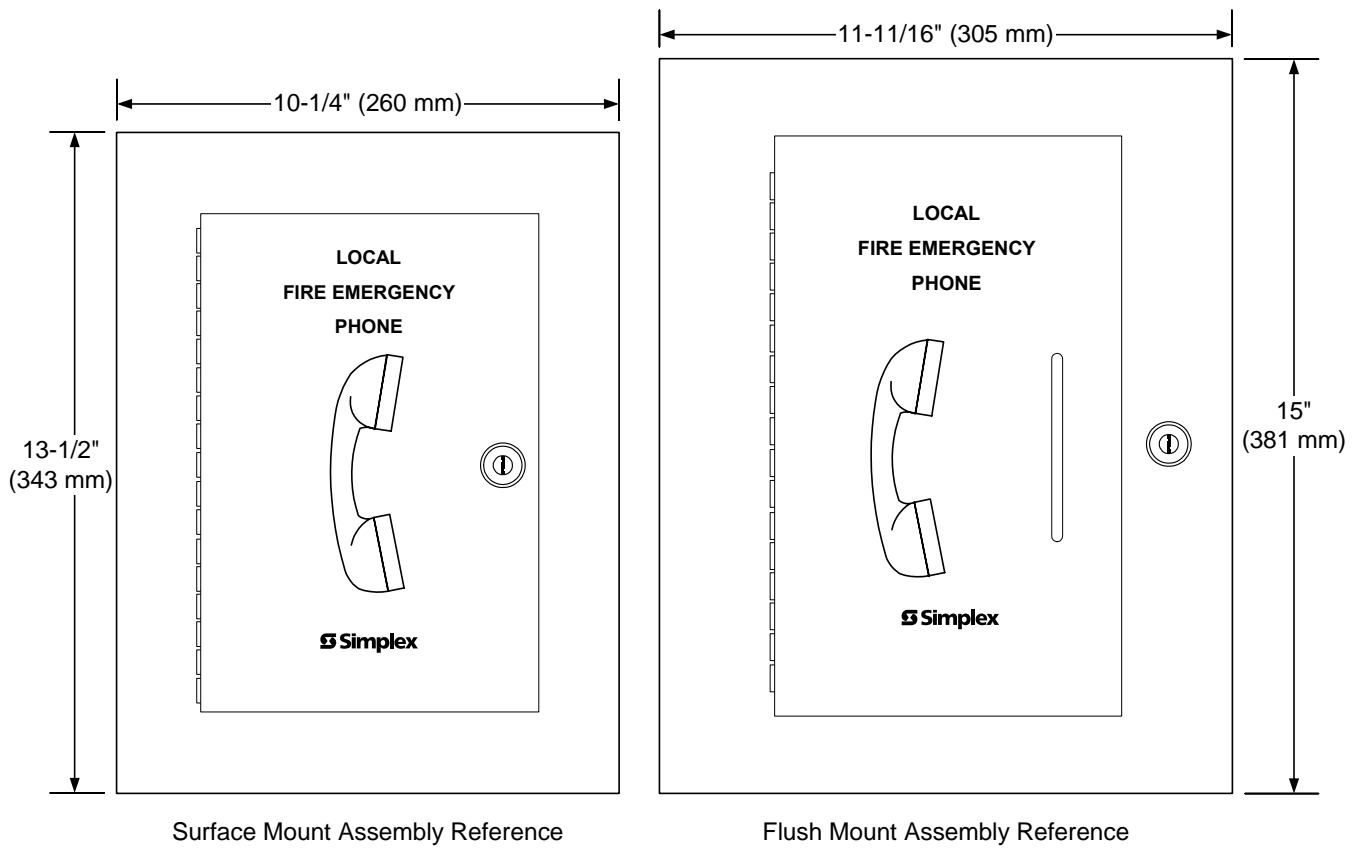
Firefighter Phone Jack Station

Model	Type	Description	UL	ULC	FM	CSFM	MEA (NYC)
2084-9001	4590-A	Standard	✓	✓	✓	✓	✓
2084-9023	NA	With call-in LED	✓			✓	✓

Firefighter Phones Accessories

Model	Description
2099-9804	Replacement break-rod
4081-9008	10 kΩ, 1/2 W, End-of-Line Resistor Harness; (ref. 733-894); one required for each Class B phone circuit

Door Trim Dimension Reference



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S2084-0001-8 5/2006

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INSERT 4

Notification Appliances & Accessories



Features

Individually addressed and controlled multi-candela V/O (visible only) notification appliances provide:

- High intensity multi-candela xenon strobe with intensity *programmable from a Simplex® 4100U fire alarm control panel with TrueAlert Addressable Power Supply (TPS)* or jumper selected as 15, 30, 75, or 110 cd
- Synchronized 1 Hz strobe flash rate
- Wiring supervision to each appliance allowing “T-tapped” connections for Class B circuits to simplify wiring (Class A circuits require in/out wiring)
- Backwards compatibility with fixed candela TrueAlert addressable strobes on same Signaling Line Circuit (SLC) allowing convenient expansion and replacement
- Compatibility with ADA requirements; (refer to important installation information on page 4)
- UL listed to Standard 1971

Compatible TrueAlert Addressable Host Controls:

- *4100U TrueAlert Addressable Power Supply (TPS)* mounted in the control panel or in a remote cabinet
- *TrueAlert Addressable Controller (4009T)* interface panel

With multi-candela appliances and 4100U fire alarm control panels with TPS, TrueNAC™ voltage drop diagnostics provide:

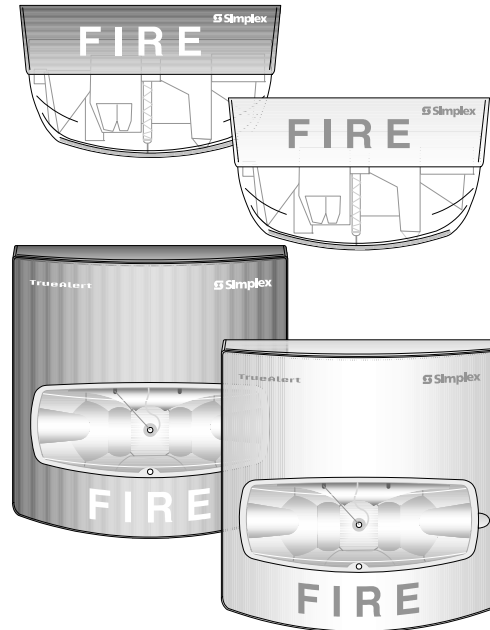
- *Individual appliance voltage drop analysis* using appliance intensity selection, measured appliance voltage, and SLC output voltage and current**
- *Device Reports* that detail type, candela rating, and location of addressable appliances on the SLC (*also available with TrueAlert Addressable Controller connected to 4100U using RUI communications*)
- *Status Reports* that list the diagnostic results per appliance on the SLC (see details on page 2)
- Requires 4100U Software Revision 12.04 or higher and compatible TPS version

LED indicator and magnet test feature:

- Appliance LED can be selected to display each polling cycle to indicate appliance supervision
- In diagnostic mode, the magnet test pulses the LED to indicate appliance address **AND pulses to indicate the intensity selection**; a brief output of the strobe is also selectable to confirm operation

Mechanical design features:

- Rugged, high impact, flame retardant thermoplastic housings are available in red or white for flush or surface, wall or ceiling mount
- Rear of housing does not extend into box and easily mounts to standard electrical boxes
- Access to wall mount in/out wiring terminals (18 AWG to 12 AWG) from front of housing assists installation, inspection, and testing
- Mounting options include electrical box adapters, separate covers to convert color, and red wire guards



Wall and Ceiling Mount Addressable V/Os

Description

TrueAlert Addressable Multi-Candela Strobes are individually addressed and individually controlled with power, supervision, and control supplied from a TrueAlert Addressable SLC.

4100U Additional Features. When controlled from a Simplex 4100U control panel with TPS, additional features are available such as software selection of strobe intensity, detailed reports of actual appliance intensity selection (see sample reports on page 2), TrueNAC voltage drop diagnostics, and additional setup and test diagnostics (further detailed on page 2).

Strobe Intensity Selection

Selectable at Appliance or Remotely Selected.

During installation, a plug at the back of the housing (visible after installation) is inserted to select strobe output as 15, 30, 75, or 110 cd; **or FACP**. *FACP is the factory default setting and allows a 4100U control panel with TPS to program the output intensity.*

FACP Selection Advantages. When intensity is selected in software from a 4100U fire alarm panel, it can be easily changed if renovations or other usage conditions are revised, and intensity selection errors at installation are effectively eliminated.

* See page 3 for wire guard 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 7125-0026:235 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.

** TrueAlert addressable notification is protected under U.S. Patent Nos. 6,313,744; 6,426,697; 6,693,532; 7,006,003; and 7,091,847. TrueNAC diagnostics are protected under U.S. patent No. 7,333,010.

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).

TrueAlert Addressable Advantage

TrueAlert Addressable Operation provides separate audible and visible appliance control functions using a single two-wire circuit that also *confirms connection to the individual notification appliance's electronic circuit*. This operation increases circuit supervision integrity by providing supervision beyond the appliance wiring connections.

Opportunities for Reducing Installation and Testing Time. Separate controls carried on the same two-wire SLC can significantly reduce installation time and expense for both retrofit and new construction. When Class B (Style 4) wiring is used, *wiring can be T-tapped*, allowing savings in distance, wire, junction boxes, and overall installation efficiency. In addition, TrueNAC diagnostics further improve installation efficiency by analyzing individual appliance wiring connections.

Addressable Product Reference

Product	Data Sheet
A/V (horn/strobe)	S4906-0005
S/V (speaker/strobe)	S4906-0006
Amber Lens Strobes (Mass Notification)	S4906-0007
TrueAlert Isolator	S4905-0001
TrueAlert Addressable Horn	S4901-0012
TrueAlert Addressable Controller (4009T)	S4009-0003
4100U Fire Alarm Panels	S4100-0031

TrueAlert Device and Device Status Reports

Service Port		Page 1	
REPORT 5 : TrueAlert Device Report		12:34:56am	WED 2-Jan-08
POINT ID	CUSTOM LABEL	DEVICE TYPE	CANDELA
T14-1-1	Location Label . . . up to 40 characters	V/O	15
T14-1-2	Break Room 5	A/V	110
T14-1-3	Boiler Room	A/V	75
T14-1-4	Elec. Room 7	A/V	30

Service Port		Page 1	
REPORT 6 : TrueNAC Status Report		12:34:56am	WED 2-Jan-08
POINT ID	CUSTOM LABEL	TEST RESULT	
TPS AT ADDRESS 3			
SLC 1			
T14-1-1	Location Label . . . up to 40 characters	PASSED	
T14-1-3	West Hall South End	PASSED	
T14-1-5	Classroom 2	PASSED	
T14-1-6	Classroom 3	FAILED	-0.6
NOMINAL CURRENT (A) :		1.34	
WORST CASE CURRENT (A) :		1.97	
WORST CASE VOLTAGE ABOVE/BELOW THRESHOLD (V) :		-0.6	
SLC HAS NOT PASSED UNLESS ALL DEVICES ARE MARKED AS PASSED			

TrueAlert Addressable Diagnostics

Appliance Type and Intensity Check. The TrueAlert Addressable Host Control is programmed with address, location, device type, and intensity selection. An incorrect appliance replacement or substitution will produce a location specific trouble allowing easy correction.

LED Communications Indicator. The host control can be selected to pulse each appliance's LED when it receives a supervision poll. This feature can be left on continuously, or activated for system testing.

Silent Mode Appliance Magnet Testing. In this test mode, the local magnet test activates the appliance LED to pulse sequentially to indicate the appliance's address *and* to indicate the appliance's strobe intensity selection.

Operational (non-silent mode) Appliance Magnet Test. When this test mode is selected at the host control, after the address and intensity selection is indicated, the strobe will flash once to indicate proper operation.

4100U TrueNAC Diagnostic Operation

Individual Appliance Performance Analysis. With appliances on the SLC activated, each appliance measures its terminal voltage and reports it to the 4100U TPS where its address and appliance type is stored in memory. The 4100U TPS measures its output voltage and current and then iteratively analyzes all of this information against known appliance power requirements to determine equivalent impedance to each appliance. TrueNAC diagnostics then analyze each appliance's wiring connection for performance under worst case conditions and identifies problems by appliance address.

TrueAlert Device Reports detail type, candela rating, and location per appliance (first sample below). Fixed candela appliances will also report, but are not compatible with TrueNAC voltage drop diagnostics.

TrueNAC Status Reports detail the diagnostic results as shown in the second report example below.

Product Selection

Multi-Candela Addressable Strobe

Model	Mounting	Housing Color	"FIRE" Lettering	Dimensions	Description
4906-9201	Wall	Red	White	5-1/8" H x 5" W x 2-3/4" D (130 mm x 127 mm x 70 mm)	Multi-Candela Addressable Strobe; intensity selectable as: 15, 30, 75, or 110 candela
4906-9203		White	Red		
4906-9202	Ceiling	Red	White	4-3/4" x 2-5/16" x 2-5/8" D (121 mm x 75 mm x 67 mm)	
4906-9204		White	Red		

V/O Adapters (see diagram on page 4)

Model	Description	Dimensions
4905-9937	Red Wall Mount, 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 Wall Mount, 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)
4905-9931	Wall Mount, 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	Wall Mount, 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)
4905-9910	Ceiling Mount, Surface Mount Adapter Plate, zinc plated; required for ceiling surface mount	4-7/8" x 3-1/8" (124 mm x 79 mm)

Replacement Covers for Wall Mount Strobes

Model	Description	Dimensions
4905-9992	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)
4905-9993	White cover with red "FIRE" lettering	

Wire Guards (see diagram on page 4)

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)
4905-9926*	Ceiling Mount Red wire guard with mounting plate, compatible with semi-flush or surface mounted boxes	6-1/8" x 4-3/8" x 2-7/8" (156 mm x 111 mm x 73 mm)

* UL listed by Space Age Electronics Inc.

Addressable V/O Specifications

Wall Mount or Ceiling Mount, Common Specifications

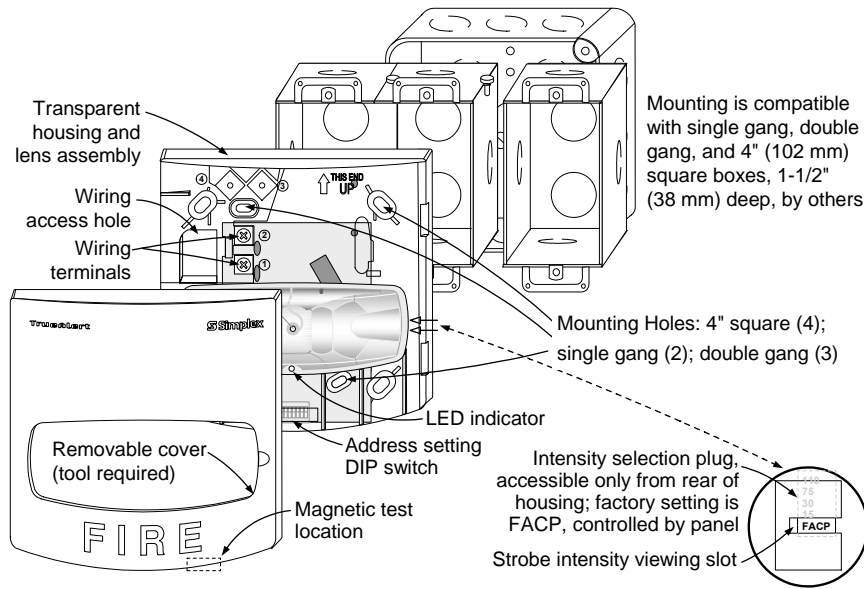
Rated Voltage Range	UL Listed Rating	Special Application, 17 to 31 VRMS, see Note 1 below		
	ULC Listed Rating	21.25 to 28.2 VRMS		
Supervisory Requirements	1 unit load			
Strobe Flash Rate and SLC Loading	1 Hz; with up to 46 synchronized addressable strobes maximum per SLC			
Environmental; Temperature and Humidity	32° to 122° F (0° to 50° C); 10% to 93%, non-condensing at 100° F (38° C)			
Terminal Block Connections	18 AWG to 12 AWG (0.82 mm ² to 3.31 mm ²); 2 wires per terminal for in/out wiring			

Wall Mount Current	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 Intensity (see Note 2)	15 cd	30 cd	75 cd	110 cd
		64 mA	98 mA	187 mA	253 mA
	RMS Currents at other voltages (Reference)	18 VRMS	60 mA	93 mA	177 mA
24 VRMS		45 mA	69 mA	132 mA	179 mA
Ceiling Mount Current	Housing Dimensions (with lens)	4-3/4" x 2-5/16" x 2-5/8" D (121 mm x 75 mm x 67 mm)			
	Maximum RMS Current Rating per Strobe Intensity (see Note 2)	15 cd	30 cd	75 cd	110 cd
		76 mA	128 mA	242 mA	328 mA
	RMS Currents at other voltages (Reference)	18 VRMS	72 mA	121 mA	229 mA
24 VRMS		54 mA	91 mA	171 mA	232 mA

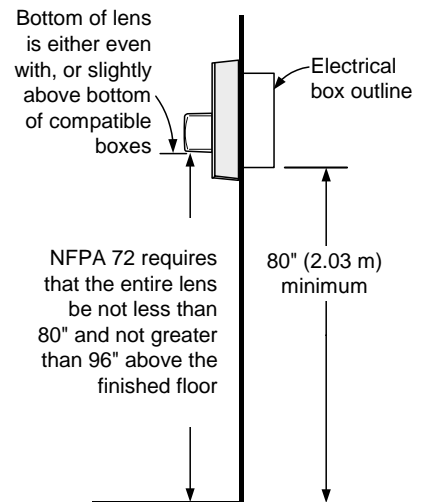
NOTES:

- "Special Application" refers to the operating category under UL Standard 1971, *Signaling Devices for the Hearing Impaired*. The rated voltage range listed is the absolute operating range. Operation outside of this range may cause permanent damage to the appliance. Please note that 17 VRMS is the lowest operating voltage that is allowed at the last appliance on the TrueAlert signaling line circuit under worst case conditions.
- The maximum RMS current listed is the appliance nameplate rating. Strobe designs are constant wattage and the maximum RMS current rating occurs at the lowest allowable operating voltage.

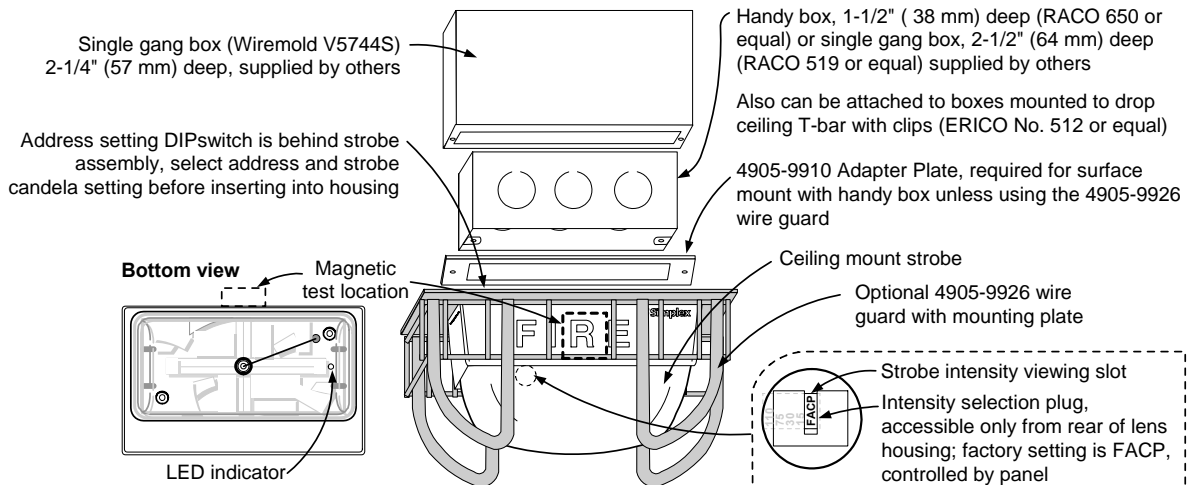
Wall Mount Installation Reference, Surface or Semi-Flush Mounting



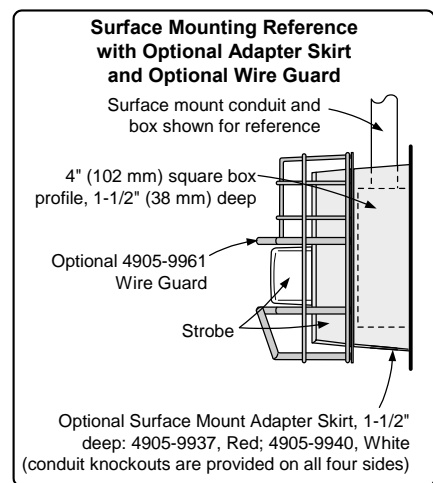
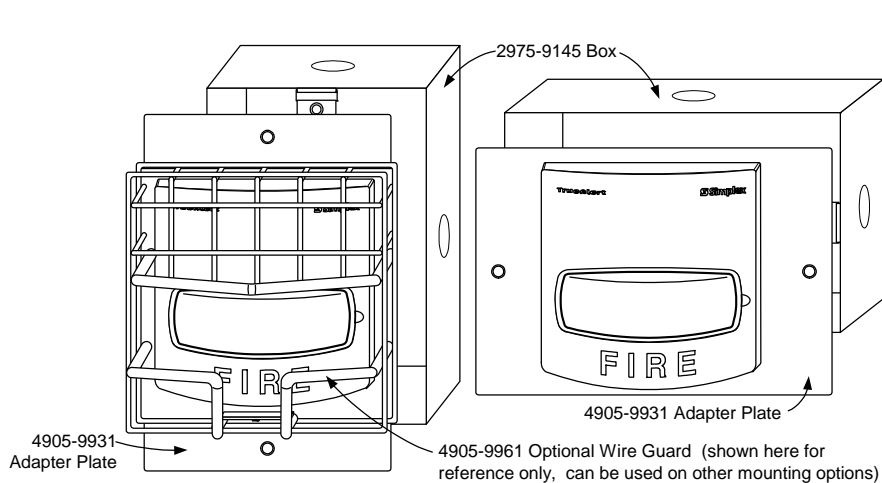
IMPORTANT! WALL MOUNT INSTALLATION HEIGHT REFERENCE



Ceiling Mount V/O and Guard Installation Reference



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



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Features

Individually addressed and controlled multi-candela S/V (speaker/visible) notification appliances provide:

- High intensity multi-candela xenon strobe with intensity *programmable from a Simplex® 4100U fire alarm control panel with TrueAlert Addressable Power Supply (TPS)* or jumper selected as 15, 30, 75, or 110 cd
- Synchronized 1 Hz strobe flash rate
- Wiring supervision to each strobe allowing “T-tapped” connections for Class B circuits to simplify wiring (Class A circuits require in/out wiring)
- Backwards compatibility with fixed candela TrueAlert addressable strobes on same Signaling Line Circuit (SLC) allowing convenient expansion and replacement
- Compatibility with ADA requirements; (refer to important installation information on page 4)
- UL listed to Standard 1971

Compatible TrueAlert Addressable Host Controls:

- *4100U TrueAlert Addressable Power Supply (TPS)* mounted in the control panel or in a remote cabinet
- *TrueAlert Addressable Controller (4009T)* interface panel

With multi-candela appliances and 4100U fire alarm control panels with TPS, TrueNAC™ voltage drop diagnostics provide:

- *Individual appliance voltage drop analysis* using appliance intensity selection, measured appliance voltage, and SLC output voltage and current**
- *Device Reports* that detail type, candela rating, and location of addressable appliances on the SLC (*also available with TrueAlert Addressable Controller connected to 4100U using RUI communications*)
- *Status Reports* that list the diagnostic results per appliance on the SLC (see details on page 2)
- Requires 4100U Software Revision 12.04 or higher and compatible TPS version

LED indicator and magnet test feature:

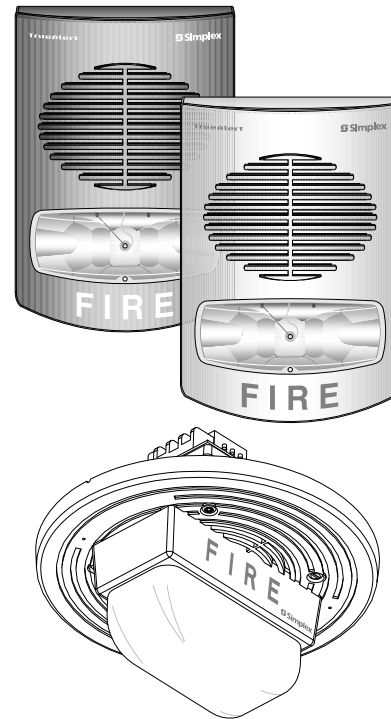
- Appliance LED can be selected to display each polling cycle to indicate appliance supervision
- In diagnostic mode, the magnet test pulses the LED to indicate appliance address **AND pulses to indicate the intensity selection**; a brief output of the strobe is also selectable to confirm operation

Mechanical design features:

- Rugged, high impact, flame retardant thermoplastic housings are available for wall or ceiling mount
- Wall mount housings are available in red or white
- Wall mount options include electrical box adapters, separate covers to convert color, and red wire guards
- Ceiling mount housing is white

Audible notification appliance (speaker):

- High quality voice and tone reproduction with taps for 1/4, 1/2, 1, or 2 W, at 25 or 70.7 VRMS
- Speakers have capacitor input for connection to DC supervised NACs and are wired separately from strobes
- UL listed to Standard 1480



Wall and Ceiling Mount S/Vs with Addressable Strobes

Description

Multi-Candela TrueAlert S/Vs with speaker and addressable strobe provide convenient installation to standard electrical boxes with extensions. The strobe is individually addressed and individually controlled with power, supervision, and control supplied from a TrueAlert Addressable SLC. Speakers are wired separately.

4100U Additional Features. When controlled from a Simplex 4100U control panel with TPS, additional features are available such as software selection of strobe intensity, detailed reports of actual appliance intensity selection (see sample reports on page 2), TrueNAC voltage drop diagnostics, and additional setup and test diagnostics (further detailed on page 2).

Strobe Intensity Selection

Selectable at Appliance or Remotely Selected. During installation, a plug at the back of the housing (visible after installation) is inserted to select strobe output as 15, 30, 75, or 110 cd; **or FACP.** *FACP is the factory default setting and allows a 4100U control panel with TPS to program the output intensity.*

* See page 3 for wire guard 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 7320-0026:322 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.

** TrueAlert addressable notification is protected under U.S. Patent Nos. 6,313,744; 6,426,697; 6,693,532; 7,006,003; and 7,091,847. TrueNAC diagnostics are protected under U.S. patent No. 7,333,010.

Strobe Intensity Selection

FACP Selection Advantages. When intensity is selected in software from a 4100U fire alarm panel, it can be easily changed if renovations or other usage conditions are revised, and intensity selection errors at installation are effectively eliminated.

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).

TrueAlert Addressable Advantage

TrueAlert Addressable Operation provides visible appliance control functions that also *confirms connection to the individual notification appliance's electronic circuit*. This operation increases circuit supervision integrity by providing supervision that extends beyond the appliance wiring connections.

Opportunities for Reducing Installation and Testing Time. When Class B (Style 4) wiring is used, *strobe wiring can be T-tapped*, allowing savings in distance, wire, junction boxes, and overall installation efficiency. In addition, TrueNAC diagnostics further improve installation efficiency by analyzing individual strobe wiring connections.

TrueAlert Addressable Diagnostics

Appliance Type and Intensity Check. The TrueAlert Addressable Host Control is programmed with address, location, device type, and intensity selection. An incorrect

TrueAlert Addressable Diagnostics (Cont'd)

appliance replacement or substitution will produce a location specific trouble allowing easy correction.

LED Communications Indicator. The host control can be selected to pulse each appliance's LED when it receives a supervision poll. This feature can be left on continuously, or activated for system testing.

Silent Mode Appliance Magnet Testing. In this test mode, the local magnet test activates the appliance LED to pulse sequentially to indicate the strobe's address *and* to indicate the strobe's intensity selection.

Operational (non-silent mode) Appliance Magnet Test. When this test mode is selected at the host control, after the address and intensity selection is indicated, the strobe will flash once to indicate proper operation.

4100U TrueNAC Diagnostic Operation

Individual Appliance Performance Analysis. With appliances on the SLC activated, each appliance measures its terminal voltage and reports it to the 4100U TPS where its address and appliance type is stored in memory. The 4100U TPS measures its output voltage and current and then iteratively analyzes all of this information against known appliance power requirements to determine equivalent impedance to each appliance. TrueNAC diagnostics then analyze each appliance's wiring connection for performance under worst case conditions and identifies problems by appliance address.

TrueAlert Device Reports detail type, candela rating, and location per appliance (first sample below). Fixed candela appliances will also report, but are not compatible with TrueNAC voltage drop diagnostics.

TrueNAC Status Reports detail the diagnostic results as shown in the second report example below.

TrueAlert Device and Device Status Reports

Service Port		Page 1	
REPORT 5 : TrueAlert Device Report		12:34:56am	WED 3-Feb-10
POINT ID	CUSTOM LABEL	DEVICE TYPE	CANDELA
T14-1-1	Location Label . . . up to 40 characters	V/O	15
T14-1-2	Break Room 5	S/V	110
T14-1-3	Boiler Room	S/V	75
T14-1-4	Elec. Room 7	S/V	30

Service Port		Page 1	
REPORT 6 : TrueNAC Status Report		12:34:56am	WED 3-Feb-10
TPS AT ADDRESS 3			
SLC 1			
POINT ID	CUSTOM LABEL	TEST RESULT	
T14-1-1	Location Label . . . up to 40 characters	PASSED	
T14-1-3	West Hall South End	PASSED	
T14-1-5	Classroom 2	PASSED	
T14-1-6	Classroom 3	FAILED -0.6	
NOMINAL CURRENT (A) :		1.34	
WORST CASE CURRENT (A) :		1.97	
WORST CASE VOLTAGE ABOVE/BELOW THRESHOLD (V) :		-0.6	
SLC HAS NOT PASSED UNLESS ALL DEVICES ARE MARKED AS PASSED			

Addressable Product Reference

Product	Data Sheet	Product	Data Sheet	Product	Data Sheet
V/O (strobe)	S4906-0004	TrueAlert Addressable Horn	S4901-0012	4100U Fire Alarm Panels	S4100-0031
A/V (speaker/strobe)	S4906-0005	Amber Lens Strobes (Mass Notification)	S4906-0007		
TrueAlert Isolator	S4905-0001	TrueAlert Addressable Controller (4009T)	S4009-0003		

Product Selection

Multi-Candela Addressable S/Vs

Model	Mounting	Housing Color	"FIRE" Lettering	Dimensions	Description
4906-9251	Wall	Red	White	7-1/4" H x 5" W x 2-5/8" D (184 mm x 127 mm x 67 mm)	Multi-Tapped Speaker with Multi-Candela Addressable Strobe; intensity selectable as: 15, 30, 75, or 110 candela
4906-9253		White	Red		
4906-9254	Ceiling	White	Red	7-1/2" (191 mm) diameter speaker housing, 1/2" (13 mm) deep; lens extends 2-5/8" (67 mm) above housing; extension into box = 2-3/4" (70 mm)	

Wall Mount S/V Adapters, Replacement Covers, Wire Guard; Ceiling Mount Tile Bridge

Model	Description	Dimensions
4905-9946	Surface Mount Red Adapter Skirt	7-3/4" H x 5-3/8" W x 3-3/16" D (197 mm x 137 mm x 81 mm) depth with S/V = 5-7/8" (149 mm)
4905-9947	Surface Mount White Adapter Skirt	
4905-9903	Adapter Plate, red, required to mount S/V on 2975-9145 mounting box (typically for retrofit)	8-5/16" H x 5-3/4" W x 0.060" Thick (211 mm x 146 mm x 1.5 mm)
2975-9145	Mounting Box, red, for surface or flush mount, requires adapter plate 4905-9903 (this box may be available for retrofit applications)	7-7/8" H x 5-1/8" W x 2-3/4" D (200 mm x 130 mm x 70 mm)
4905-9996	Red Wall Mount S/V Replacement Cover with white "FIRE" lettering	7-1/4" H x 5" W x 1-3/8" D (184 mm x 127 mm x 35 mm)
4905-9997	White Wall Mount S/V Replacement Cover with red "FIRE" lettering	
4905-9998	Red Wire Guard for Wall Mount S/V; with mounting plate, compatible with surface and semi-flush boxes (UL listed by Space Age Electronics Inc.)	8-3/8" H x 6-1/16" W x 3-1/4" D (213 mm x 154 mm x 79 mm)
2905-9946	Tile Bridge for Ceiling Mount S/Vs	See diagram on page 4

S/V Specifications

Common Specifications	Environmental	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			
Speaker Specifications	Input Voltage	25 or 70.7 VRMS, see Note 1 below			
	Power Taps	1/4, 1/2, 1, and 2 W			
	Frequency Response	Fire Alarm	400 to 4000 Hz		
		General Signaling	125 to 12 kHz		
Speaker Output Ratings @ 10 ft (3 m) (see Note 1 below)	Wattage Tap	1/4 W	1/2 W	1 W	2 W
	Reverberant Chamber, UL 1480Test	76 dBA	79 dBA	82 dBA	85 dBA
		Anechoic Chamber, 1 kHz Input, On-Axis	87 dBA	90 dBA	93 dBA

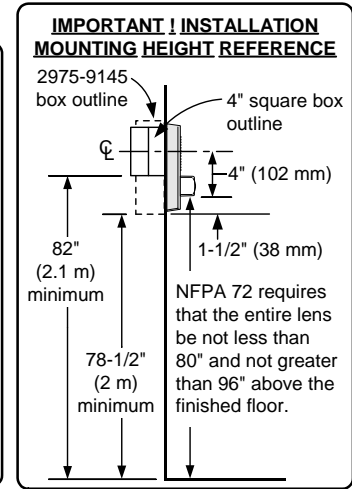
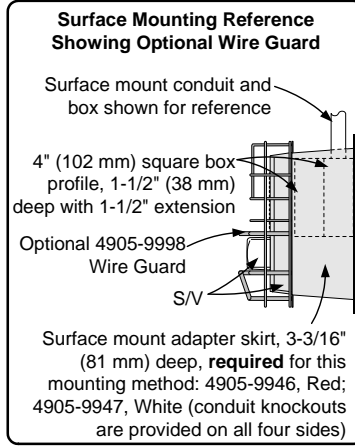
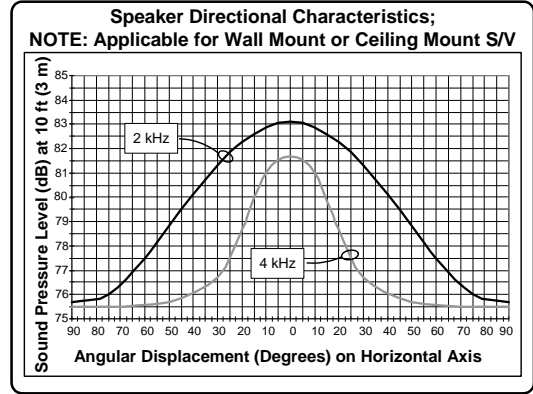
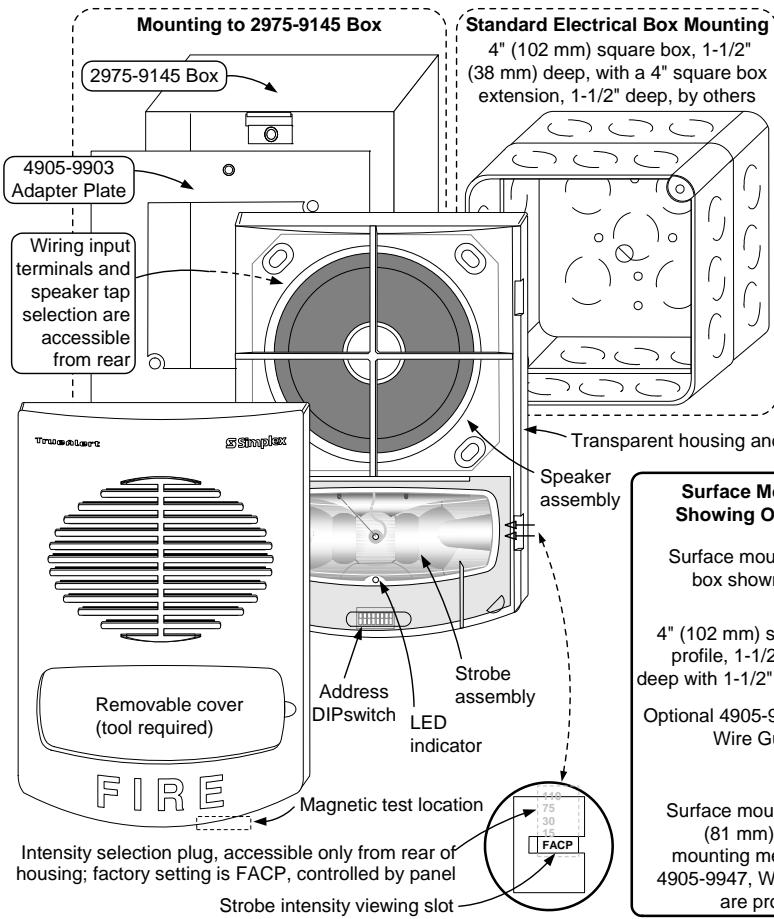
Strobe Specifications

Rated Voltage Range	UL Listed Rating	Special Application, 17 to 31 VRMS, see Note 2 below			
	ULC Listed Rating	21.25 to 28.2 VRMS			
Flash Rate and Synchronized SLC Loading		1 Hz; with up to 46 synchronized strobes maximum per NAC			
Wall Mount Current	Housing Dimensions (with lens)	7-1/4" H x 5" W x 2-5/8" D (184 mm x 127 mm x 67 mm)			
	Maximum RMS Current Rating per Strobe Setting (see Note 3 below)	15 cd	30 cd	75 cd	110 cd
		64 mA	98 mA	187 mA	253 mA
	Reference RMS Currents at other voltages	18 VRMS	60 mA	93 mA	177 mA
24 VRMS		45 mA	69 mA	132 mA	179 mA
Ceiling Mount Current	Housing Dimensions	Speaker housing = 7-1/2" (191 mm) diameter, 1/2" deep (13 mm); lens protrusion above speaker housing = 2-5/8" (67 mm); depth into box = 2-3/4" (70 mm)			
	Maximum RMS Current Rating per Strobe Setting (see Note 3 below)	15 cd	30 cd	75 cd	110 cd
		76 mA	128 mA	242 mA	328 mA
	Reference RMS Currents at other voltages	18 VRMS	72 mA	121 mA	229 mA
24 VRMS		54 mA	91 mA	171 mA	232 mA

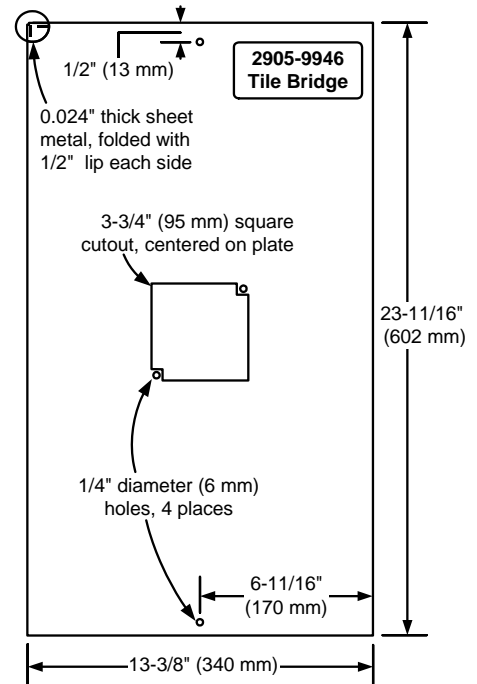
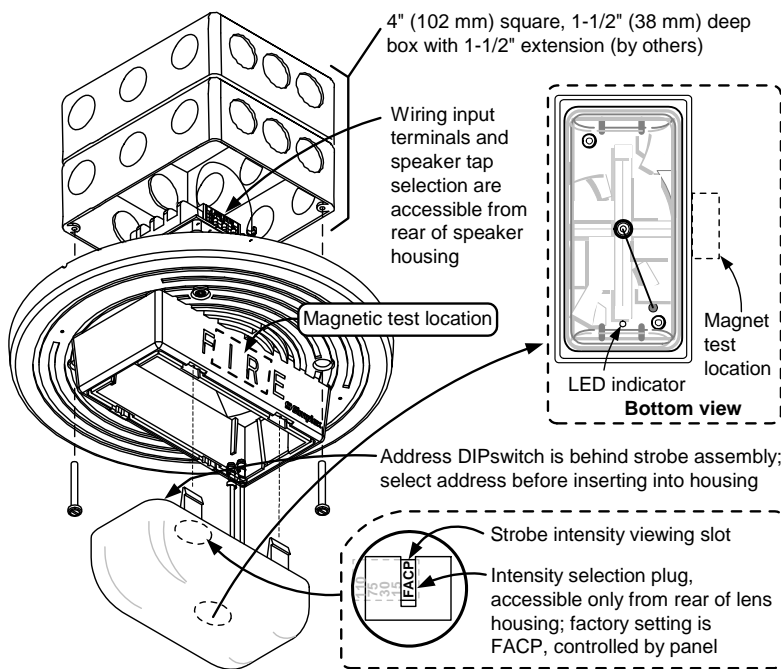
NOTES:

- Speakers are for connection to conventional fire alarm audio circuits. Anechoic speaker output ratings are typically more representative of actual installed sound output.
- "Special Application" refers to the operating category under UL Standard 1971, *Signaling Devices for the Hearing Impaired*. The rated voltage range listed is the absolute operating range. Operation outside of this range may cause permanent damage to the appliance. Please note that 17 VRMS is the lowest operating voltage that is allowed at the last appliance on the TrueAlert signaling line circuit under worst case conditions.
- The maximum RMS strobe 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.

Wall Mount Installation Reference



Ceiling Mount S/V Install Reference and Tile Bridge Dimensions



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Features

Fire alarm speakers with models for ceiling or wall mount:

- Four inch cone (102 mm) provides high quality tone and voice reproduction
- Multi-tapped design provides output power of 1/4, 1/2, 1, or 2 W with either 25 or 70.7 VRMS input
- In/out wiring terminals for 18 AWG to 12 AWG
- Mounts to 4" square outlet box, 1-1/2" deep with 1-1/2" deep box extension
- Capacitor input for connection to supervised notification appliance circuits
- Rugged, high impact, flame retardant thermoplastic housings
- UL listed to Standard 1480
- ULC listed to Standard S541, refer to page 4 for required minimum wattage tap per housing type

Rectangular housing models feature:

- Appearance that complements TrueAlert® strobes and speaker/strobes
- Red or white housings with "FIRE" lettering for surface or semi-flush wall mount
- Optional matching adapter skirts for covering surface mounted electrical boxes*
- Optional red wire guard

Round housing models feature:

- Off-white color (no lettering) for flush mount on ceiling or wall
- Compatible with optional tile bridge 2905-9946

Introduction

Simplex® 4902 Series speakers provide high quality sound for emergency fire alarm use as well as for background music. The moisture-repellent speaker is designed for smooth frequency response with minimal distortion.

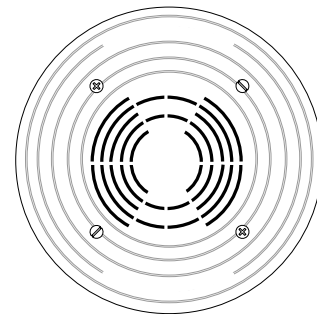
The multi-tapped speaker transformer accommodates either 25 or 70.7 VRMS and provides an output of from 1/4 to 2 W to provide flexibility for satisfying the requirements of the installed conditions.

Rectangular housing models are for surface or semi-flush wall mount applications. Round housing models are typically for ceiling applications but can be wall mounted if desired. The rectangular housing speakers are designed to compliment the TrueAlert family of strobes and speaker/strobes, providing conventional, non-addressable speaker operation.

* Refer to page 2 for guard and adapter skirt 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 7320-0026:242 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. 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.



Rectangular Wall Mount Speakers are Available as Red with White "Fire" Lettering and White with Red "Fire" Lettering



Round Speakers are Available in Off-White (no lettering)

Specifications

Dimensions, Rectangular Wall Mount Housings

Housing Dimensions	5-1/8" H x 5" W x 1-1/2" D (130 mm x 127 mm x 38 mm)
Depth into Box	2-3/4" (70 mm)

Dimensions, Round Housings

Housing Dimensions	7-1/2" Diameter, 1/2" D (191 mm x 13 mm)
Depth into Box	2-3/4" (70 mm)

General Specifications

Input Voltage	25 or 70.7 VRMS	
Power Taps	1/4, 1/2, 1, and 2 W	
Input Terminal Ratings	18 to 12 AWG (0.82 mm ² to 3.31 mm ²)	
Frequency Response	Fire Alarm	400 to 4000 Hz
	General Signaling	125 to 12 kHz
Sound Output	See information on page 4	
Temperature Range	32° to 100° F (0° to 38° C)	
Humidity Range	10% to 95% RH from 32° to 122° F (0° to 50° C)	

Product Selection

Speakers

Model*	Description	Dimensions
4902-9716 (CA)	Rectangular housing, wall mount speaker	5-1/8" H x 5" W x 1-1/2" D (130 mm x 127 mm x 38 mm)
4902-9717 (CA)		
4902-9721 (CA)	Round housing speaker, ceiling or wall mount	Off-white (no lettering)
		7-1/2" Diameter x 1/2" D (191 mm x 13 mm)

* ULC listed model are designated with a CA suffix (4902-9716CA). Refer to Installation Instructions 574-765 for non-suffix model numbers and to Installation Instructions 579-324 for CA suffix model numbers.

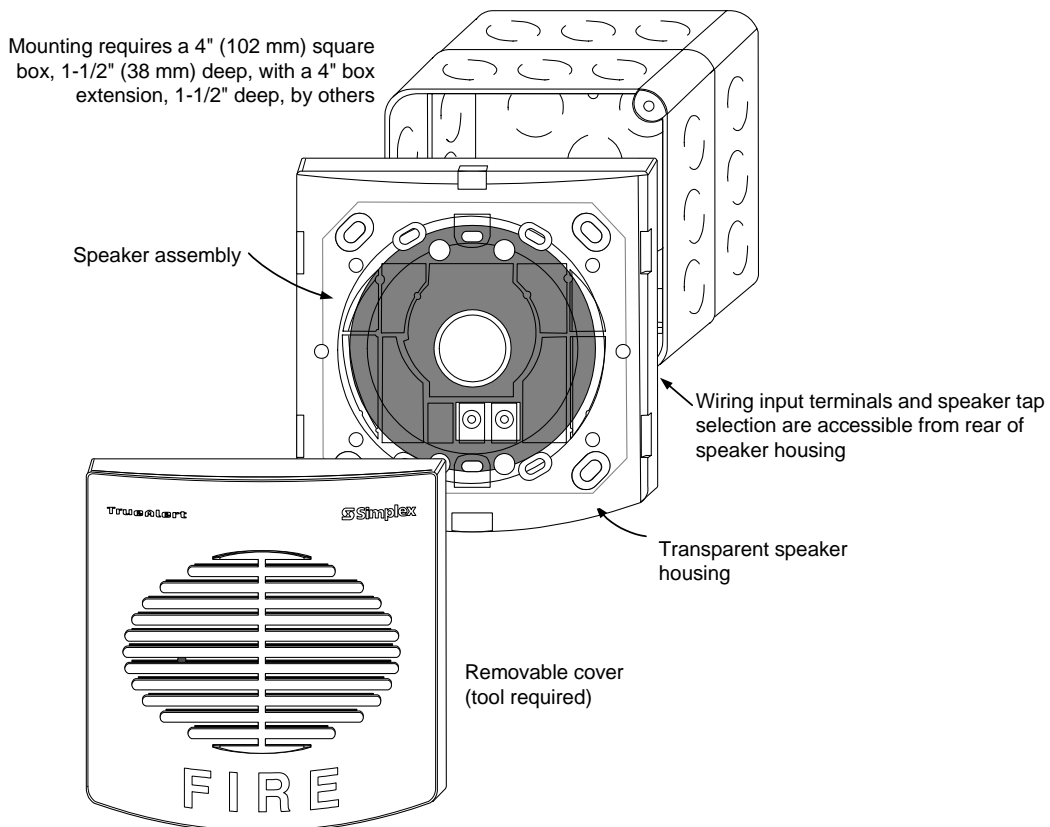
Mounting Adapters

Model	Description	Dimensions
4905-9941	Red Surface mount adapter skirt; (not ULC listed)	Use to cover surface mounted 1-1/2" deep box with 1-1/2" deep extension external to wall (see diagram on page 3)
4905-9942	White	
2905-9946	Tile bridge for 4902-9721 Speaker	See diagram on page 3
4905-9931	Adapter Plate, red, for mounting to 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)

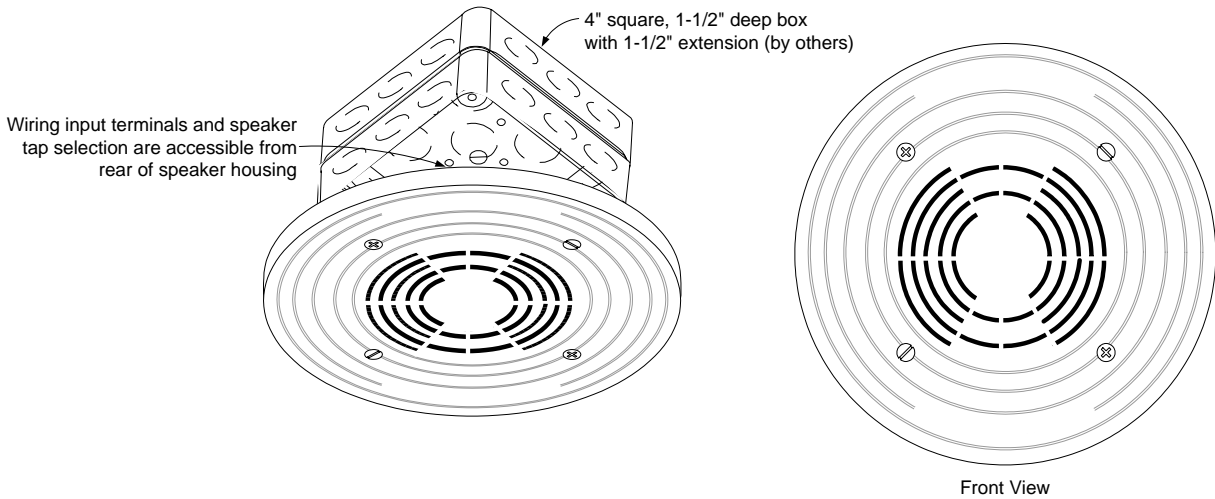
Covers and Guard

Model	Description	Dimensions
4905-9988	Red speaker cover with white "FIRE" lettering	Interchangeable with TrueAlert horns
4905-9989	White speaker cover with red "FIRE" lettering	
4905-9999	Red wire guard with mounting plate; compatible with semi-flush or surface mounted boxes; for use with 4" square electrical box mounting hole patterns only (UL listed by Space Age Electronics Inc.)	6-1/16" H x 6-1/16" W x 3-1/8" D (154 mm x 154 mm x 79 mm)

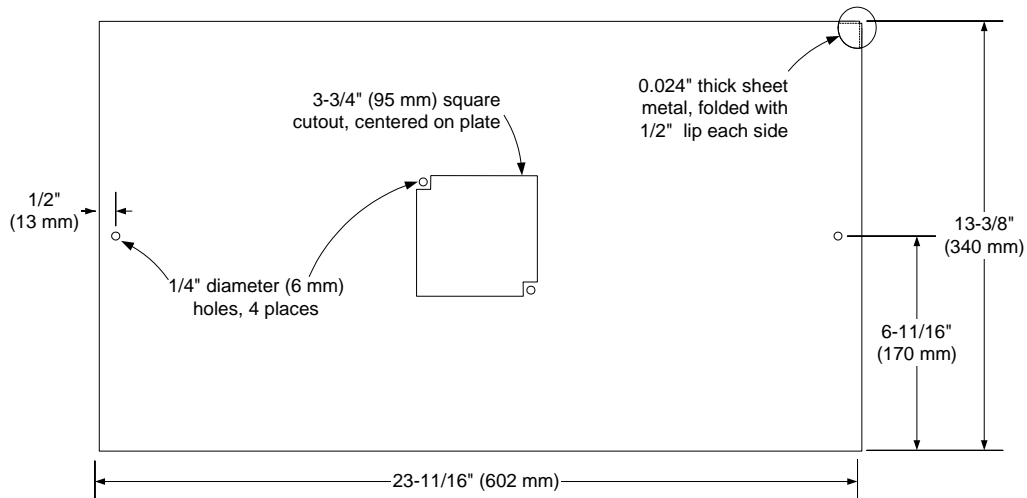
Wall Mount Speakers, Installation Reference



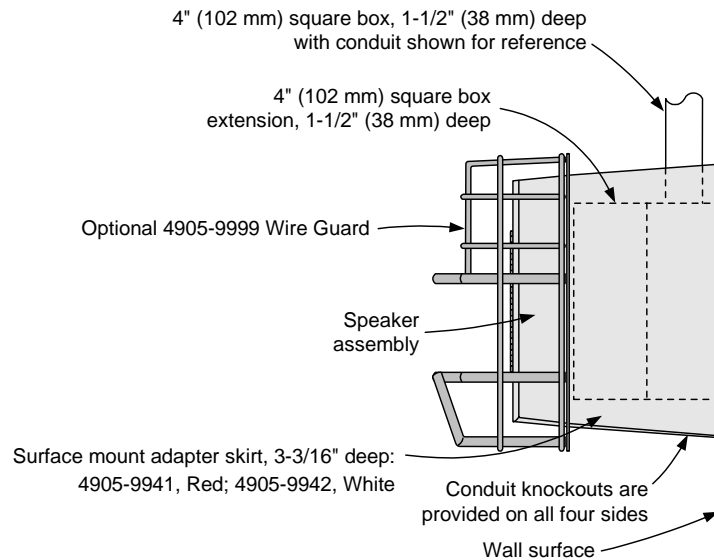
Round Speaker Installation Reference (typically ceiling mount, can be wall mounted)



2905-9946 Tile Bridge Dimensions



Surface Mounted Speaker Reference (Adapter Skirts are *Not ULC listed*)



Speaker Sound Output Specifications

Sound Output Ratings @ 10 ft (~3 m) per UL 1480 Reverberant Chamber Testing

Model	Type	Input Voltage	Selected Tap			
			1/4 W	1/2 W	1 W	2 W
4902-9716 4902-9717	Rectangular Housing	25 VRMS	80 dBA	83 dBA	85 dBA	88 dBA
		70.7 VRMS	79 dBA	82 dBA	85 dBA	88 dBA
4902-9721	Round Housing	25 or 70.7 VRMS	79 dBA	82 dBA	85 dBA	88 dBA

Sound Output Ratings @ 3 m (~10 ft) per ULC S541 Anechoic Chamber Testing

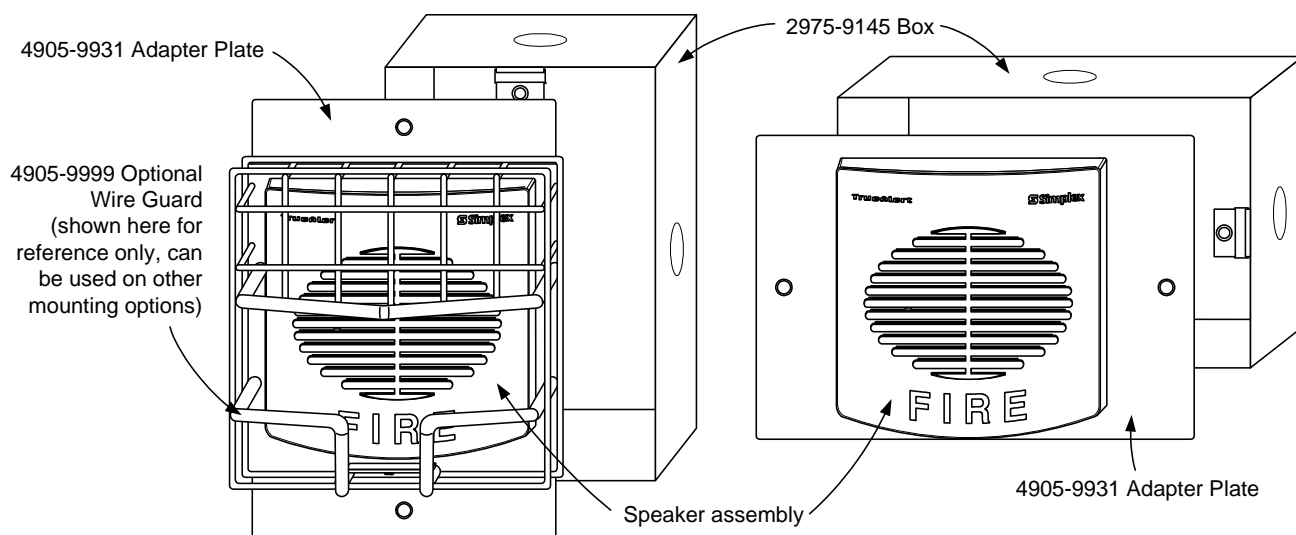
Model	Type	Input Voltage	Selected Tap			
			1/4 W	1/2 W	1 W* (see note)	2 W* (see note)
4902-9716CA 4902-9717CA	Rectangular Housing*	25 VRMS or 70.7 VRMS	77 dBA	80 dBA	83 dBA	86 dBA
4902-9721CA	Round Housing*	25 VRMS or 70.7 VRMS	79 dBA	82 dBA	85 dBA	89 dBA

* NOTE: ULC Fire Alarm applications require use of 1 W or 2 W tap for Round Housing speakers; and 2 W tap for Rectangular Housing speakers.

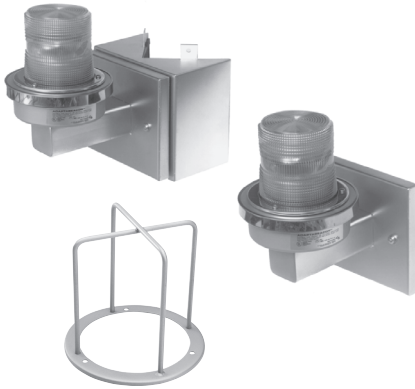
Speaker Polar Dispersion Reference (per ULC S541 Anechoic Chamber Testing)

Attenuation	Angle
-3 dB	30° off-axis
-6 dB	55° off-axis

4905-9931 Adapter Plate Installation Reference



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AdaptaBeacon® Accessories

FEATURES

- > Adds versatility and protection to many AdaptaBeacons
- > Easy to install/attach
- > Mounting brackets for use with any beacon which has either 3/4" or 1/2" conduit opening.

The Edwards Mounting Brackets for walls or corners simply the installation of Edwards AdaptaBeacons. They may be used for mounting beacons that have either a 3/4" (19 mm) or 1/2" (12 mm) conduit opening. Backplates are made of stainless steel and bracket arms are cold rolled steel.

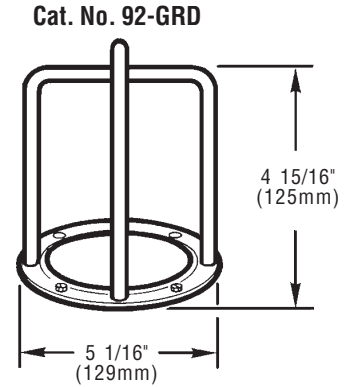
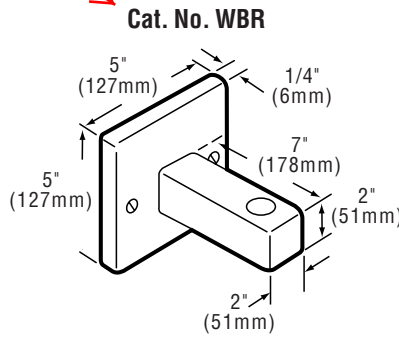
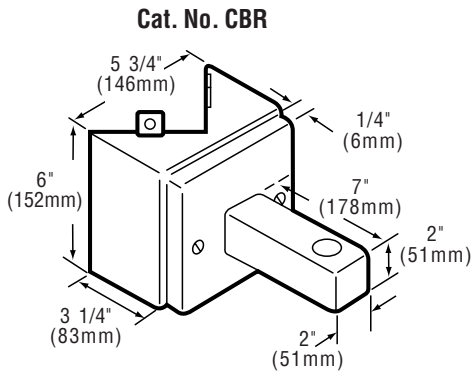
The Corner Mount Bracket, Cat. No. CBR, can be used with surface installed 1/2" (12 mm) or 3/4" (19 mm) conduit mounting.

The Wall Mount Bracket, Cat. No. WBR, can be used with either surface installed 1/2" (12 mm) or 3/4" (19 mm) conduit or concealed wiring. The Wall Mount Bracket mounts to a 4" (102 mm) square or 4" (102 mm) octagon electrical box or a 4" (102 mm) outdoor box.

The Catalog Number 92-GRD Protective Lens Guard is an easily installed guard that provides protection against lens breakage.



TECHNICAL INFORMATION



Cat. Series	Can be used with:		
	WBR	CBR	92-GRD
48 Series	X	X	
49 Series	X	X	
50 Series	X	X	X
50SIN Series	X	X	X
51 Series	X	X	X
51SIN Series	X	X	X
52 Series	X	X	
53 Series	X	X	
53D Series	X	X	
58 Series	X	X	
90 Series	X	X	
91B Series	X	X	
92 Series	X	X	X
93 Series	X	X	
93DF Series	X	X	
95 Series	X	X	X
96B Series	X	X	X
97 Series	X	X	
97DF Series	X	X	
98B Series	X	X	
101 Series	X	X	



AdaptaBeacon® Rotating Lights

*Diode Polarized for
Supervised Circuits*

53D Series

FEATURES

- > Weatherproof
- > Light intensifying reflector
- > Rotation of 75 revolutions per minute
- > Bayonet lamp socket for easy replacement
- > Cast base can be utilized as junction box

Diode polarized rotating signal designed to provide maximum brilliance and long term durability with minimum maintenance. The polycarbonate dome allows for easy cleaning.

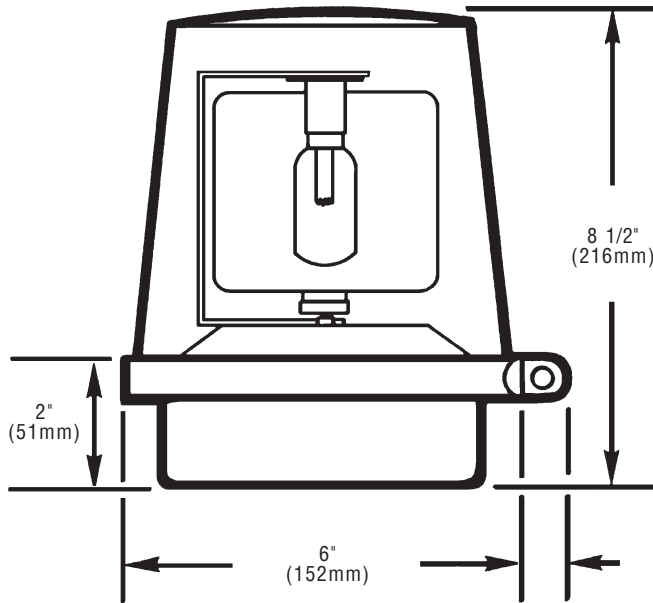
For direct mounting applications, unit is supplied complete with gasket and rubber expansion plugs. For weatherproof installation unit must be mounted vertically with the dome facing up. May be corner mounted using the Cat. No. CBR, corner mount bracket, or wall mounted using the Cat. No. WBR, wall mount bracket. See AdaptaBeacon Accessories, page 3-118.

Designed to attract attention or indicate equipment malfunctions in noisy areas. Used in security or other systems requiring the use of a diode polarized signal to visually show indication of an intrusion or equipment condition. Also used to alert worker of oncoming fork truck traffic in factory and distribution facilities.

D-04



TECHNICAL INFORMATION



Cat. No.	Lens Color	Replacement Lens Cat. No.	Lamp Ratings	Revolution Rate	Electrical Ratings	Replacement Lamp Cat. No.
53DR-GW	Red	52-LR	25 Watts	75 rpm	24 to 28V DC	Industry Trade
53DC-GW	Clear	52-LC	402 lumens* 5049 candlepower 500 hours**		1.0 Amp	No. 1638

*Manufacturer's lumen rating.

**Projected lamp life based on manufacturer's calculated lamp life @ 65 FPM and 50% duty cycle.

Features

For use as Class B end-of-line resistor:

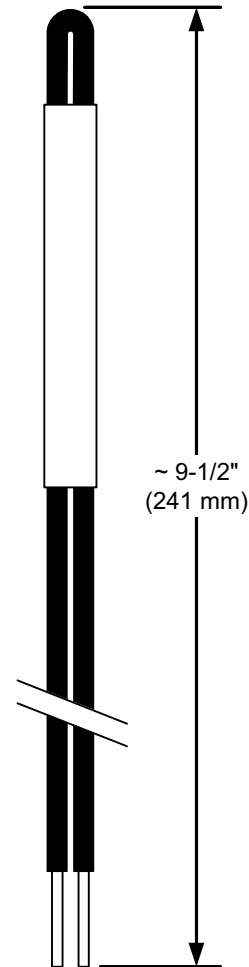
- Connect these resistor harnesses where end-of-line resistors are required at remote locations to monitor wiring continuity
- Refer to specific circuit specifications for end-of-line resistor requirements

UL Listed to Standard 864

Product Selection

Model	Reference Number	Description**
4081-9001	733-892	2.2 kΩ, 1/2 W
4081-9002	733-893	3.3 kΩ, 1 W
→ 4081-9003	733-896	4.7 kΩ, 1/2 W
→ 4081-9004	733-886	6.8 kΩ, 1/2 W
→ 4081-9005	733-984	1.8 kΩ, 1/2 W
4081-9006	733-890	560 Ω, 1 W
4081-9007	733-891	1.2 kΩ, 1 W
→ 4081-9008	733-894	10 kΩ, 1/2 W
4081-9009	733-912	20 Ω, 1 W
4081-9010	733-973	1 kΩ, 1 W
4081-9011	733-974	100 Ω, 1/2 W
4081-9012	733-985	22 kΩ, 1/2 W
4081-9013	734-086	4.99 kΩ, 1/2 W, ± 1%
4081-9014	734-092	2.4 kΩ, 1/2 W
4081-9015	734-093	1.5 kΩ, 1/2 W
4081-9016	734-149	150 kΩ, 1/2 W
4081-9017	734-171	3.9 kΩ, 1 W
4081-9018	734-168	10 kΩ, 1 W

** ± 5% tolerance except as noted.



Typical 4081 Series Resistor Harness Assembly
(full size except for lead length)

Specifications

Overall Length	Approximately 9-1/2" (241 mm)
Wire Length	7" (178 mm) ± 1" (25 mm)
Wire Size	18 AWG (0.82 mm ²)
Insulation	600 V, black
Leads	Stripped 0.5" (13 mm); tinned
Resistor Attachment	Resistor leads are crimped to wires and covered with heat shrink tubing

* This product was not approved by ULC, FM, MEA (NYC), or CSFM as of document revision date. 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.

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FIRE ALARM WIRE LIST (POWER LIMITED)

A	AUXILIARY POWER CIRCUIT - 2 CONDUCTOR 14 AWG SOLID NON-PLENUM RATED: FPLR BELDEN 5120UL AREA=0.0356 SQ. INCH	CONDUIT ONLY: THHN (2) #14 AWG (YELLOW/BLUE) AREA=0.0097 SQ. INCH (EACH)	PLENUM RATED: FPLP BELDEN 6120UL AREA=0.0330 SQ. INCH
B	RUI/N2 COMMUNICATION - 1 PAIR 18 AWG TWISTED OVERALL SHIELD NON-PLENUM RATED: FPL BELDEN 5320FJ AREA=0.0350 SQ. INCH	NON-PLENUM RATED: FPLR BELDEN 5320FL AREA=0.0189 SQ. INCH	PLENUM RATED: FPLP BELDEN 6320FK or equal manufacturer AREA=0.0269 SQ. INCH
C	CITY CONNECT CIRCUIT - 2 CONDUCTOR 18 AWG SOLID NON-PLENUM RATED: FPLR BELDEN 5320UL AREA=0.0179 SQ. INCH		PLENUM RATED: FPLP BELDEN 6320UL or equal manufacturer AREA=0.0179 SQ. INCH
D	DOOR HOLDER CIRCUIT - 2 CONDUCTOR 14 AWG SOLID NON-PLENUM RATED: FPLR BELDEN 5120UL AREA=0.0356 SQ. INCH	CONDUIT ONLY: THHN (2) #14 AWG (YELLOW/BLUE) AREA=0.0097 SQ. INCH (EACH)	PLENUM RATED: FPLP BELDEN 6120UL or equal manufacturer AREA=0.0330 SQ. INCH
E	RS-232 - 1 PAIR 18 AWG TWISTED OVERALL SHIELD NON-PLENUM RATED: FPL BELDEN 5320FJ AREA=0.0350 SQ. INCH	NON-PLENUM RATED: FPLR BELDEN 5320FL AREA=0.0189 SQ. INCH	PLENUM RATED: FPLP BELDEN 6320FK or equal manufacturer AREA=0.0269 SQ. INCH
F	FF TELEPHONE CIRCUITS - 1 PAIR 18 AWG TWISTED OVERALL SHIELD NON-PLENUM RATED: FPL BELDEN 5320FJ AREA=0.0350 SQ. INCH	NON-PLENUM RATED: FPLR BELDEN 5320FL AREA=0.0189 SQ. INCH	PLENUM RATED: FPLP BELDEN 6320FK or equal manufacturer AREA=0.0269 SQ. INCH
G	GROUND WIRE (BOND WIRE) - 1 CONDUCTOR 12 AWG SOLID CONDUIT ONLY: THHN (1) #12 AWG (GREEN) AREA=0.0133 SQ. INCH		
H	AUDIBLE CIRCUIT - 2 CONDUCTOR 14 AWG SOLID NON-PLENUM RATED: FPLR BELDEN 5120UL AREA=0.0356 SQ. INCH ***** REFER TO SIGNAL CIRCUIT DISTANCE CHART *****	CONDUIT ONLY: THHN (2) #14 AWG (RED/BLACK) AREA=0.0097 SQ. INCH (EACH)	PLENUM RATED: FPLP BELDEN 6120UL or equal manufacturer AREA=0.0330 SQ. INCH
K	REMOTE TEST SWITCH/LED CIRCUIT - (2) 2 CONDUCTOR 14 AWG SOLID NON-PLENUM RATED: FPLR BELDEN 5120UL AREA=0.0356 SQ. INCH	CONDUIT ONLY: THHN (2) #14 AWG (PINK/BROWN) (2) #14 AWG (WHITE/ORANGE) AREA=0.0097 SQ. INCH (EACH)	PLENUM RATED: FPLP BELDEN 6120UL or equal manufacturer AREA=0.0330 SQ. INCH
L	REMOTE LED CIRCUIT - 2 CONDUCTOR 14 AWG SOLID NON-PLENUM RATED: FPLR BELDEN 5120UL AREA=0.0356 SQ. INCH	CONDUIT ONLY: THHN (2) #14 AWG (WHITE/ORANGE) AREA=0.0097 SQ. INCH (EACH)	PLENUM RATED: FPLP BELDEN 6120UL or equal manufacturer AREA=0.0330 SQ. INCH
M	MAPNET/IDNET CIRCUIT - 1 PAIR 16 AWG TWISTED OVERALL SHIELD NON-PLENUM RATED: FPL BELDEN 5220FJ AREA=0.0434 SQ. INCH	NON-PLENUM RATED: FPLR BELDEN 5220FL AREA=0.0249 SQ. INCH	PLENUM RATED: FPLP BELDEN 6220FL or equal manufacturer AREA=0.0257 SQ. INCH
N	RS-485 COMMUNICATION TRUNK - 1 PAIR 18 AWG TWISTED OVERALL SHIELD NON-PLENUM RATED: FPL BELDEN 5320FJ AREA=0.0350 SQ. INCH	NON-PLENUM RATED: FPLR BELDEN 5320FL AREA=0.0189 SQ. INCH	PLENUM RATED: FPLP BELDEN 6320FK or equal manufacturer AREA=0.0269 SQ. INCH
R	RELAY CIRCUIT - 2 CONDUCTOR 14 AWG SOLID NON-PLENUM RATED: FPLR BELDEN 5120UL AREA=0.0356 SQ. INCH	CONDUIT ONLY: THHN (2) #14 AWG (YELLOW/BLUE) AREA=0.0097 SQ. INCH (EACH)	PLENUM RATED: FPLP BELDEN 6120UL or equal manufacturer AREA=0.0330 SQ. INCH
S	AUDIO CIRCUIT - 1 PAIR 14 AWG TWISTED OVERALL SHIELD NON-PLENUM RATED: FPL BELDEN 5120FJ AREA=0.0611 SQ. INCH ***** REFER TO PANEL INSTALLATION MANUAL *****	NON-PLENUM RATED: FPLR BELDEN 5120FL AREA=0.0369 SQ. INCH	PLENUM RATED: FPLP BELDEN 6120FL or equal manufacturer AREA=0.0343 SQ. INCH
S _d	DIGITAL AUDIO RISER - 1 PAIR 18 AWG TWISTED NON-SHIELDED NON-PLENUM RATED: FPLR BELDEN 5320UL AREA=0.0179 SQ. INCH ***** REFER TO PANEL INSTALLATION MANUAL *****		PLENUM RATED: BELDEN 6320UL or equal manufacturer AREA=0.0179 SQ. INCH
V	VISUAL/SIGNAL CIRCUIT - 2 CONDUCTOR 12 AWG SOLID NON-PLENUM RATED: FPLR BELDEN 5020UL AREA=0.0479 SQ. INCH ***** REFER TO SIGNAL CIRCUIT DISTANCE CHART *****		PLENUM RATED: FPLP BELDEN 6020UL or equal manufacturer AREA=0.0449 SQ. INCH
Z	ZONE CIRCUIT - 2 CONDUCTOR 16 AWG SOLID NON-PLENUM RATED: FPLR BELDEN 5220UL AREA=0.0238 SQ. INCH	CONDUIT ONLY: TFFN (2) #16 AWG (YELLOW/BLUE) AREA=0.0072 SQ. INCH (EACH)	PLENUM RATED: FPLP BELDEN 6220UL or equal manufacturer AREA=0.0238 SQ. INCH

CONDUIT SIZE	CONDUCTOR AREA	CONDUIT SIZE	CONDUCTOR AREA
1/2"	0.12 SQ INCH *	1-1/4"	0.60 SQ INCH *
3/4"	0.21 SQ INCH *	1-1/2"	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.