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CATH LAB AND MECHANICAL ROOM
MEDICAL CENTER OF AURORA
FIRE ALARM SYSTEM

City of Aurora Building Division
Project: *Medical Center of Aurora*
Address: *1501 S POTOMAC ST*
Occupancy Group: *IBC I-2*
Construction Type: *IBC Type IA-SPK*
RSN: *1172029*
Permit: *2016-1223188-LT*
City of Aurora Building Division
Reviewed for Code Compliance
By: *Ted Caviness*
Date: *December 28, 2016*
2015 INTERNATIONAL CODES & 2014 NEC

Items determined to be in violation of code during inspection are required to be corrected; this review does not grant approval of code violations.

COA Adopted Codes for this project:
ICC-2015 - NEC-2014
NFPA 13-2013 - NFPA 72-2013
COA Amendments 22 & 66

Field Inspection consultation is available upon request; call (303) 739-7420 to schedule a consultation.

Audible/Visual occupant notification device spacing shall be field verified for compliance in Public Use/Common Use Areas. Exam rooms and shared offices are examples of Public Use/ Common Use Areas. 2015 IFC 907.5

Deviation from reviewed plans may result in an hourly fee to review the field changes for code compliance.

DRAWING INDEX

Sheet Number	Sheet Title
General Information (FA-000 Series)	
FA-000	COVER SHEET
Floorplans (FA-100 Series)	
FA-101	PARTIAL 1ST AND 2ND FLOOR - DEVICE PLACEMENT PLAN
Risers (FA-200 Series)	
FA-201	1ST AND 2ND FLOOR - PARTIAL RISER DIAGRAM
Calculations (FA-600 Series)	
FA-601	NODE 2 FACP - CALCULATIONS
FA-602	NAC2 - CALCULATIONS
Typical Details (FA-700 Series)	
FA-701	TYPICAL DETAILS
Graphic Maps (FA-800 Series)	
FA-801	GRAPHIC MAP AT ANNUNCIATOR

CITY OF AURORA CODE NOTES

- FIRE ALARM SYSTEMS CANNOT BE COMBINED WITH BURGLAR ALARM SYSTEMS.
- THE INSTALLER IS REQUIRED TO COORDINATE WITH THE MECHANICAL CONTRACTOR TO DETERMINE INSTALLATION OF SMOKE DETECTORS OR SENSORS (I.E., NOT CLOSER THAN 3 FEET FROM ANY SUPPLY/RETURN DIFFUSER AND THAT ADDITIONAL DETECTION MAY BE
- FIRE ALARM DEVICES MUST BE PLACED IN PROTECTED AREAS WITH AMBIENT TEMPERATURE RANGING FROM 32 DEGREES TO 120 DEGREES F.
- DO NOT PLACE SMOKE DETECTORS WITHIN 3 FEET OF AIR SUPPLY REGISTERS AND DIFFUSERS.
- FIRE ALARM SYSTEM SHALL BE MONITORED BY A CLASS I CENTRAL STATION.
- FIRE ALARM CONTROL PANEL WILL BE PLACED IN THE LOCATION SPECIFIED WITHIN THE PLAN SUBMITTAL UNLESS APPROVED BY THE LIFE SAFETY FIELD INSPECTOR.
- CITY OF AURORA BUILDING DIVISION DOES NOT GRANT APPROVAL FOR ANY VIOLATIONS OF ADOPTED FIRE CODE. CODE VIOLATIONS UNCOVERED DURING FIELD INSPECTIONS MUST BE CORRECTED.
- PER THE 2009 IFC AND THE 2011 NEC THE INSTALLER MUST REQUEST A ROUGH WIRING INSPECTION ON THE FIRE ALARM SYSTEM PRIOR TO REQUESTING A FIRE ALARM FINAL INSPECTION.
- THE CONTRACTOR SHALL CONDUCT A "PRE-TEST" OF THE PROJECT AREA PRIOR TO SCHEDULING AN ACCEPTANCE TEST WITH THE BUILDING DIVISION.
- REMOTE ALARM INDICATORS SHALL BE PROVIDED FOR ANY AUTOMATIC FIRE ALARM DETECTOR LOCATED IN A CONCEALED LOCATION WITH A NORMALLY LOCKED DOOR.
- AT THE TIME OF FINAL FIRE ALARM INSPECTION, THE SYSTEM MUST BE SUPERVISED/MONITORED BY A CLASS I CENTRAL MONITORING AGENCY.
- THE INSTALLING CONTRACTOR (OR DESIGNEE) MUST PROVIDE ALL NECESSARY TESTING EQUIPMENT AND PERFORM ALL TESTING REQUIRED BY THE LIFE SAFETY FIELD INSPECTOR.
- IN-DUCT SMOKE DETECTORS INSTALLED IN CONCEALED LOCATIONS OR, WHERE THE DETECTORS ALARM INDICATOR IS NOT READILY VISIBLE TO RESPONDING PERSONNEL SHALL BE PROVIDED WITH A REMOTE INDICATOR(S). REMOTE TEST STATION AND PERMENANT PLACARDING.
- ALL NEW OR EXISTING FIRE ALARM SYSTEMS MUST BE CONNECTED TO ANY EXTERIOR HORN AND STROBE DEVICE. IF THE BUILDING IS FIRE SPRINKLED, A GENERAL ALARM ACTIVATION AT THE FIRE ALARM CONTROL PANEL WILL ACTIVATE THE EXTERIOR HORN AND STROBE. SILENCING THE PANEL MUST ALLOW THE VISUAL DEVICE TO CONTINUE UNTIL THE PANEL IS RESET.
- FIRE ALARM SYSTEMS SHALL INCLUDE BOTH AUDIBLE AND VISUAL ALARMS. VISUAL ALARMS WILL BE REQUIRED IN ALL ACCESSIBLE PUBLIC AND COMMON-USE AREAS PER THE 2009 IFC AND THE 2003 ANSI A117.1 STANDARD.
- PROVIDE A PRIMARY AND SECONDARY POWER SUPPLY FOR THE FIRE ALARM SYSTEM PER THE 2009 IFC AND THE 2007 NFPA 72.
- THE FIRE ALARM INSTALLATION CONTRACTOR MUST COMPLETE THE NFPA 72 "RECORD OF COMPLETION" PRIOR TO SCHEDULING THE AHJ ACCEPTANCE TEST.
- FIELD INSPECTION CONSULTATION IS AVAILABLE UPON REQUEST. CALL 303-739-7420 TO REQUEST CONSULTATION.
- AUDIBLE ALARM SIGNALING DEVICES SHALL EXCEED THE PREVAILING SOUND LEVEL IN A ROOM OR SPACE BY 15 DBA. SOUND LEVELS FOR ALARM SIGNALS SHALL BE 120 DBA MAXIMUM. 2009 IFC SECTION 907.10.2.

MONITORING SERVICE

CENTRAL STATION MONITORING SERVICE:

SIMPLEXGRINNELL
50 TECHNOLOGY DRIVE
WESTMINSTER, MA 01441
1 (888) 746-7539

NICET CERTIFICATION

NICET CERTIFICATION

TECHNICAL AREA 00303: LEVEL 3
CERTIFICATE #: 92061
VALID THROUGH: 11/01/17

THIS DRAWING SET WAS PREPARED UNDER THE SUPERVISION OF A NICET III PROFESSIONAL. THE DRAWINGS WERE REVIEWED FOR THE INFORMATION CONTAINED UNDER THE SCOPE OF WORK. ALL EQUIPMENT HAS BEEN VERIFIED TO BE COMPATIBLE AND WILL OPERATE AS REQUIRED PER NFPA GUIDELINES.

Brian South
BRIAN SOUTH — 12/20/2016 DATE

GENERAL NOTES

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

LEGENDS

FIRE ALARM SYMBOL LEGEND

SYMBOL	DESCRIPTION	BRAND	MODEL	BOX CODE	WIRE TYPE
ANN	EXISTING SERIAL LCD ANNUCIATOR	SIMPLEX	4603-9101	6D	B P
S	PHOTOELECTRIC SMOKE SENSOR WITH STANDARD BASE	SIMPLEX	4098-9714 HEAD 4098-9792 BASE	4A 4K	M
H	HEAT SENSOR WITH STANDARD BASE	SIMPLEX	4098-9733 HEAD 4098-9792 BASE	4A 1B	M
AIM	INDIVIDUAL ADDRESSABLE MODULE	SIMPLEX	4090-9001	1F	M Z
S	ADDRESSABLE DUCT SMOKE DETECTOR W / RELAY OUTPUT AND REMOTE TEST STATION	SIMPLEX	4098-9756 2098-9806	MDW	M P
F	EXISTING SINGLE ACTION MANUAL PULL STATION	SIMPLEX	4099-9004	4G 1E	M
	STROBE, WALL MOUNT, WHITE, FIRE, CLEAR LENS	SIMPLEX	4906-9103	4A 1B	H V
	EXISTING HORN/STROBE, WALL MOUNT, FIRE, CLEAR LENS	SYSTEM SENSOR	P2RK	4A 4A	H V
	MULTI-CANDELA SPEAKER/STROBE, WALL MOUNT, WHITE, FIRE *TAP AT 25 VOLT*	SIMPLEX	4906-9153	4C 4L	S V
WF	WATERFLOW SWITCH	BY OTHERS		FBO	Z
VS	TAMPER SWITCH	BY OTHERS		FBO	Z

CODE	BOX SPECIFICATIONS	CODE	BOX SPECIFICATIONS
4A	4" SQ. BOX 1 1/2" DEEP	1F	SINGLE GANG BOX 2 1/2" DEEP W/COVER
4B	4" SQ. BOX 1 1/2" DEEP W/ COVER	1G	SINGLE GANG BOX 2 3/4" DEEP
4C	4" SQ. BOX 1 1/2" DEEP W/ 1 1/2" EXT. RING	1H	SINGLE GANG BOX 3 1/2" DEEP
4D	4" SQ. BOX 2 1/8" DEEP	2A	DOUBLE GANG BOX 2" DEEP
4E	4" SQ. BOX 2 1/8" DEEP W/ COVER	2B	TWO GANG BOX 2 1/2" DEEP
4F	4" SQ. BOX 2 1/8" DEEP W/ 1 1/2" EXT. RING	2C	TWO GANG BOX 2 3/4" DEEP
4G	4" SQ. BOX 2 1/8" DEEP W/ SINGLE GANG COVER	HB	HANDY BOX 1 1/2" DEEP
4H	4" SQ. BOX 2 1/8" DEEP W/ TWO GANG COVER	6A	6 SINGLE GANG BOXES 3 1/2" DEEP
4J	4" SQ. BOX 2 1/2" DEEP	6B	6 GANG BOX
4K	4" OCT. BOX 1 1/2" DEEP	6C	6 GANG BOX 2 1/2" DEEP
4L	4" OCT. BOX 1 1/2" DEEP W/ 1 1/2" EXT. RING	6D	6 GANG BOX 3 1/2" DEEP
4M	4 11/16" SQ. BOX 2 1/8" DEEP	FBO	FURNISHED BY OTHERS
4N	4 11/16" SQ. BOX 1 1/2" DEEP W/ 1 1/2" EXT. RING	MFG	SUPPLIED BY MANUFACTURER
4P	4 11/16" SQ. BOX 2 1/8" DEEP W/ 1 1/2" EXT. RING	MDW	MOUNTS TO DUCTWORK
1A	SINGLE GANG BOX 1 1/2" DEEP	MBD	MOUNTS IN BOX BEHIND DETECTOR
1B	SINGLE GANG BOX 2" DEEP	WM	WALL MOUNT
1C	SINGLE GANG BOX 2 1/8" DEEP	DT	DESK TOP MOUNT
1D	SINGLE GANG BOX 2 1/8" DEEP W/COVER	NR	NO BACKBOX REQUIRED
1E	SINGLE GANG BOX 2 1/2" DEEP	TRM	3.5" WIDE SNAP TRACK W/MOUNTING SCREWS

FOR ADDITIONAL BACK BOX OPTIONS, REFER TO THE XX-700 SERIES DRAWINGS OR PRODUCT DATA SHEETS AND INSTALLATION INSTRUCTIONS.

FIRE ALARM WIRE LIST

CIRCUIT DESCRIPTION		CONSTRUCTION	GAUGE	CIRCUIT PROPERTIES	ACCEPTABLE CABLE TYPES FPLR	THHN / TFFN	FPLP	OUTDOOR
V	VISUAL SIGNAL	2 COND. SOLID	14 AWG		X	X	X	
K	REMOTE TEST SWITCH/LED	(2) 2 COND. SOLID	14 AWG		X	X	X	
M	IDNET	UTP, SHIELDED	18 AWG	FIELD VERIFY AND MATCH EXISTING	X		X	
P	POWER	2 COND. SOLID	14 AWG		X	X	X	
R	RELAY	2 COND. SOLID	14 AWG		X	X	X	
S	AUDIO	TSP STRANDED, SHIELDED	16 AWG	30pf/ft. MAX CAPACITANCE RECOMMENDED	X		X	
Z	ZONE (IDC)	2 COND. SOLID	16 AWG		X	X	X	

CONDUIT SIZE	MAX CONDUCTOR AREA	CONDUIT SIZE	MAX CONDUCTOR AREA	NOTES
1/2"	0.12 SQ INCH *	1-1/4"	0.60 SQ INCH *	*40% FILL PER N.E.C.
3/4"	0.21 SQ INCH *	1-1/2"	0.82 SQ INCH *	SUBSCRIPT "s": UNSHIELDED CABLES MIXED WITH SHIELDED
1"	0.34 SQ INCH *	2"	1.34 SQ INCH *	CABLES OF SAME CIRCUIT DESIGNATION.

**OUTDOOR AERIAL CABLE REQUIRES MESSENGER

ITEMS SUCH AS CAPACITANCE BETWEEN CONDUCTORS AND WIRE GAUGE CAN BE CRUCIAL TO THE CIRCUIT DESIGN OF THIS SYSTEM INSTALLATION. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR SELECTING AND INSTALLING CABLE MANUFACTURER AND MODEL THAT MEETS OR EXCEEDS THE ABOVE REQUIREMENTS. RECOMMENDED CABLE MANUFACTURERS AND MODEL NUMBERS ARE AVAILABLE UPON REQUEST.

PROJECT DIRECTORY

Site
MEDICAL CENTER OF AURORA
1501 S. POTOMAC ST.
AURORA, CO 80012

Tyco SimplexGrinnell District - 419
14200 E. EXPOSITION AVE
AURORA, CO 80012
PHONE: 303-355-0500
FAX: 303-355-0615
SERVICE: 303-355-0500

Engineer Of Record
PATH 21 ARCHITECTS
2245 CURTIS STREET STE. 100
DENVER, CO 80205

Installer
MC2 ELECTRICAL
88 LIPAN ST.
DENVER, CO 80223

Installer
MC2 ELECTRICAL
88 LIPAN ST.
DENVER, CO 80223

Owner
MEDICAL CENTER OF AURORA
1501 S. POTOMAC ST.
AURORA, CO 80012

SCOPE OF WORK

EXISTING FIRE ALARM SYSTEM WILL BE MODIFIED AS SHOWN ON THESE DRAWINGS FOR THE PARTIAL 1ST FLOOR AND PARTIAL 2ND FLOOR CATH LAB RENOVATION PROJECT. EXISTING SMOKE SENSORS WILL BE REPLACED AND REFRESHED WITH NEW IDNET STYLE DEVICES. TEMPORARY HEAT DETECTORS WILL BE PROVIDED TO REPLACE SMOKE SENSORS FOR INTERIM LIFE SAFETY DURING CONSTRUCTION. THESE DETECTORS WILL BE TEMPORARILY REPROGRAMMED ON THE SYSTEM SO AS NOT TO CAUSE A TROUBLE ALARM.

A NEW SPRINKLER ALARM VALVE AND TAMPER SWITCH IS ANTICIPATED FOR THE 2ND FLOOR MECHANICAL PENTHOUSE. ADDRESSABLE MODULES HAVE BEEN INCLUDED FOR MONITORING OF THE NEW WATERFLOW AND TAMPER SWITCHES PROVIDED BY THE FIRE PROTECTION CONTRACTOR. NOTIFICATION APPLIANCES IN THE PENTHOUSE WILL BE TRIGGERED FROM EITHER THE MOB FA SYSTEM (HORN/STROBE) OR THE HOSPITAL FA SYSTEM (SPEAKER/STROBE) WITH SEPARATE DEVICES WIRED TO EACH SYSTEM.

SOME EXISTING NOTIFICATION APPLIANCE CIRCUIT REWORK IS EXPECTED AND THE INSTALLING CONTRACTOR SHALL REWIRE EXISTING CIRCUITS AS NEEDED FOR A CONTINUOUS CIRCUIT FREE OF SPLICES BETWEEN DEVICES.

THE EXISTING GRAPHIC MAP SHALL BE UPDATED FOR THE NEW ARCHITECTURE AND INITIATING DEVICES.
THE EXISTING FIRE ALARM SEQUENCE OF OPERATION SHALL REMAIN UNCHANGED.

ALL NEW WIRING TO BE CLASS B.
THE EXISTING FIRE ALARM SYSTEM SHALL NOT BE DISCONNECTED OR TAKEN OUT OF SERVICE WITHOUT WRITTEN PERMISSION FROM THE OWNER. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH THE OWNER THE TIMING OF ANY EXISTING FIRE ALARM SYSTEM DEMOLITION WORK.

ABBREVIATIONS LEGEND

AC	= ABOVE CEILING	HT	= HEIGHT
C	= CEILING MOUNTED	HVAC	= HEATING, VENTILATION, & AIR CONDITIONING
E	= EXISTING TO REMAIN	IMS	= INFORMATION MANAGEMENT SYSTEM
RC	= EXISTING TO REMOVE AND COVER	MAX	= MAXIMUM
RD	= EXISTING DEVICE TO BE RELOCATED	MIN	= MINIMUM
RL	= RELOCATED DEVICE	N/A	= NOT APPLICABLE
RR	= REMOVE EXISTING AND REPLACE W/NEW	NAC	= NOTIFICATION APPLIANCE CIRCUIT EXTENDER
WP	= WEATHERPROOF	NDU	= NETWORK DISPLAY UNIT
XP	= EXPLOSION PROOF	NEC	= NATIONAL ELECTRICAL CODE
H	= HIGH HUMIDITY	NFPA	= NATIONAL FIRE PROTECTION ASSOCIATION
AFF	= ABOVE FINISHED FLOOR	NIC	= NOT IN CONTRACT
AHJ	= AUTHORITY HAVING JURISDICTION	NPU	= NETWORK PROCESSING UNIT
ALM	= ALARM	NTS	= NOT TO SCALE
ANN	= ANNUNCIATOR	PAP	= PRE-ACTION PANEL
BMS	= BUILDING MANAGEMENT SYSTEM	SCC	= STATUS COMMAND CENTER
CBC	= CALIFORNIA BUILDING CODE	SLC	= SIGNALING LINE CIRCUIT
CD	= (eg. 15CD) CANDELA	SMK	= SMOKE
CSFM	= CALIFORNIA STATE FIRE MARSHAL	SUPV	= SUPERVISORY
DET	= DETECTOR	TAC	= TRUEALERT ADDRESSABLE CONTROLLER
DGP	= DATA GATHERING PANEL	TBBL	= TROUBLE
EOL	= END OF LINE	TS	= TAMPER SWITCH
EPO	= EMERGENCY POWER OFF	TYP	= TYPICAL
FACP	= FIRE ALARM CONTROL PANEL	UON	= UNLESS OTHERWISE NOTED
FATC	= FIRE ALARM TERMINAL CABINET	VCC	= VOICE COMMAND CENTER
FBO	= FURNISHED BY OTHERS	VT	= VALVE TAMPER
FCC	= FIRE COMMAND CENTER	WF	= WATER FLOW
FAA	= FIRE ALARM ANNUNCIATOR	W	= (eg. 1/2W) WATT
FTR	= FIRE ALARM TRANSPONDER	W/	= WITH
FSD	= FIRE SMOKE DAMPER	W/O	= WITH OUT

SYSTEM SEQUENCE OF OPERATIONS

SYSTEM INPUTS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	REMARKS
1 SMOKE SENSOR/DETECTOR	•	•					•	•	•		•	•			•								•	•	•										•	•							1
2 MANUAL PULL STATION	•	•					•	•	•		•	•			•									•											•	•							2
3 HEAT SENSOR/DETECTOR	•	•					•	•	•		•	•			•									•											•	•							3
4 DUCT SENSOR/DETECTOR			•	•			•				•		•								•	•		•											•								4
5 MAIN FLR. ELEV. LOBBY SMOKE DETECTOR	•	•					•	•	•		•	•			•	•			•					•											•	•							5
6 ELEVATOR LOBBY SMOKE DETECTORS (EXC. MAIN FLR.)	•	•					•	•	•		•	•			•	•		•						•											•	•							6
7 ELEVATOR MECH. ROOM HEAT DETECTOR	•	•					•	•	•		•	•			•	•								•											•	•							7
8 ELEVATOR MECH. ROOM SMOKE DETECTOR	•	•					•	•	•		•	•			•	•		•						•											•	•							8
9 ELEVATOR SHAFT HEAT DETECTOR	•	•					•	•	•		•	•			•		•							•											•	•							9
10 WATERFLOW SWITCH	•	•					•	•	•	•	•	•			•									•											•	•							10
11 TAMPER SWITCH			•	•							•			•										•																			11
12 POST INDICATOR VALVE SWITCH			•	•			•				•			•										•																			12
13 FIRE ALARM AC POWER FAILURE					•	•					•	•				•	•	•						•																			13
14 FIRE ALARM SYSTEM LOW BATTERY					•	•					•	•				•								•																			14
15 OPEN CIRCUIT OR GROUND FAULT					•	•					•	•				•								•																			15
16 CLASS B NOTIFICATION CIRCUIT (NAC) – SHORT					•	•					•	•				•								•																			16
17 SIGNAL SILENCE																																											17
18 SMOKE SENSOR/DETECTOR M10–42,43	•	•					•	•	•		•	•			•									•	•	•										•	•	•						18
19 OR 9 SMOKE SENSOR/DETECTOR M10–52, 53	•	•					•	•	•		•	•			•									•	•	•										•	•	•	•					19
20 OR 10 SMOKE SENSOR/DETECTOR M10–50, 51	•	•					•	•	•		•	•			•									•	•	•										•	•	•	•					20
21 SMOKE SENSOR/DETECTOR M10–86,87,94,95	•	•					•	•	•		•	•			•									•			•	•	•						•	•	•	•					21
22 OR 8 SMOKE SENSOR/DETECTOR M10–84,85	•	•					•	•	•		•	•			•									•			•	•							•	•	•	•					22
23 OR 7 SMOKE SENSOR/DETECTOR M10–89,89	•	•					•	•	•		•	•			•									•			•	•							•	•	•	•					23
24 SMOKE SENSOR/DETECTOR M11–62,63	•	•					•	•	•		•	•			•									•					•	•					•	•	•	•					24
25 OR 5 SMOKE SENSOR/DETECTOR M10–113,114	•	•					•	•	•		•	•			•									•					•	•					•	•	•	•					25
26 OR 6 SMOKE SENSOR/DETECTOR M10–118,119	•	•					•	•	•		•	•			•									•					•	•					•	•	•	•					26
27 SMOKE SENSOR/DETECTOR M11–63,64,65	•	•					•	•	•		•	•			•									•							•	•	•	•	•	•	•	•					27
28 OR 1 SMOKE SENSOR/DETECTOR M1:11–45,46		•					•	•	•		•	•			•									•							•	•	•	•	•	•	•	•					28
29 OR 2 SMOKE SENSOR/DETECTOR M11–48,49		•					•	•	•		•	•			•									•							•	•	•	•	•	•	•	•					29
30 OR 3 SMOKE SENSOR/DETECTOR M11–51,52		•					•	•	•		•	•			•									•							•	•	•	•	•	•	•	•					30
31 DUCT SENSOR/DETECTOR AT EXH FSD			•	•			•				•		•											•															•	•			31
32 DUCT SENSOR/DETECTOR AT SUP FSD			•	•			•				•		•											•															•	•			32
33 DUCT SENSOR/DETECTOR AT RET FSD			•	•			•				•		•											•															•	•			33
34 DUCT SENSOR/DETECTOR AT FAN SUPPLY			•	•			•				•		•											•															•	•			34
35 DUCT SENSOR/DETECTOR AT FAN RETURN			•	•			•				•		•											•															•	•			35
36 DUCT SENSOR/DETECTOR AT FAN OUTSIDE AIR			•	•			•				•		•											•															•	•			36
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	

CONTROL UNIT ANNUNCIATION | NOTIFICATION | FIRE SAFETY CONTROL | NEW SURGERY RENOVATIONS

SYSTEM OUTPUTS:
ACTUATE COMMON ALARM SIGNAL INDICATOR AT NODE 1 FACP
ACTUATE AUDIBLE ALARM SIGNAL AT NODE 1 FACP
ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR AT NODE 1 FACP
ACTUATE AUDIBLE SUPERVISORY SIGNAL INDICATOR AT NODE 1 FACP
ACTUATE COMMON TROUBLE SIGNAL INDICATOR AT NODE 1 FACP
ACTUATE AUDIBLE TROUBLE SIGNAL INDICATOR AT NODE 1 FACP
ACTUATE ALL NOTIFICATION APPLIANCE CIRCUITS (NAC)
ACTUATE ALL SPRINKLER FLOW SIGNAL TO SUPERVISING STATION
ACTUATE ALL SPRINKLER TAMPER SIGNAL TO SUPERVISING STATION
ACTUATE ALL SPRINKLER SUPERVISORY SIGNAL TO SUPERVISING STATION
DISPLAY ZONE OF STATUS CHANGE AT ANNUNCIATOR
TRANSMIT ALARM SIGNAL TO SUPERVISING STATION
TRANSMIT SUPV. SIGNAL TO SUPERVISING STATION
TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION
RELEASE MAGNETIC DOOR HOLDERS
RELEASE ELEVATOR DOOR HOLDERS
MAIN FLOOR ELEVATOR RECALL
GRID FLOOR ELEVATOR RECALL
CLOSE ASSOCIATED FSD
REMOTELY DISPLAY ACTIVE STATUS
ACTUATE ASSOCIATED FSD & EMERG SIGNAL W1:13-21,2-10 (1)
ACTUATE ASSOCIATED FSD & EMERG SIGNAL W1:13-21,2-9 (1)
ACTUATE ASSOCIATED FSD & EMERG SIGNAL W1:13-21,2-8 (1)
ACTUATE ASSOCIATED FSD & EMERG SIGNAL W1:13-21,2-7 (1)
ACTUATE ASSOCIATED FSD & EMERG SIGNAL W1:13-21,2-6 (1)
ACTUATE ASSOCIATED FSD & EMERG SIGNAL W1:13-21,2-5 (1)
ACTUATE ASSOCIATED FSD & EMERG SIGNAL W1:13-21,2-4 (1)
ACTUATE ASSOCIATED FSD & EMERG SIGNAL W1:13-21,2-3 (1)
ACTUATE ASSOCIATED FSD & EMERG SIGNAL W1:13-21,2-2 (1)
ACTUATE ASSOCIATED FSD & EMERG SIGNAL W1:13-21,2-1 (1)
RELEASE NEW AUTOMATIC DOOR OPERATORS
RELE

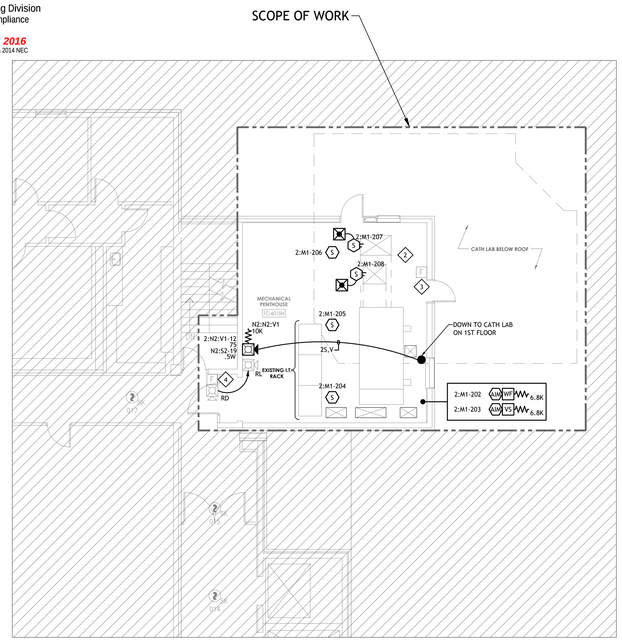
City of Aurora Building Division
Project: *Medical Center of Aurora*
Address: *1501 S POTOMAC ST*
Occupancy Group: *IBC I-2*
Construction Type: *IBC Type IA-SPK*
RSN: *1172029*
Permit: *2016-1223188-LT*
City of Aurora Building Division
Reviewed for Code Compliance
By: *Ted Caviness*
Date: *December 28, 2016*
2015 INTERNATIONAL CODES & 2014 NEC

GENERAL NOTES:

1. ALL CEILINGS ARE ASSUMED TO BE 10' A.F.F., SMOOTH CONSTRUCTION UNLESS NOTED OTHERWISE.
2. TAP ALL SPEAKERS AT 0.5W UNLESS NOTED OTHERWISE.
3. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 25V SETTING.
4. ALL NOTIFICATION APPLIANCE CANDELA INTENSITY PLUGS SHALL RETAIN THEIR FACTORY SETTING OF 15CD UNLESS OTHERWISE SHOWN.

KEYNOTES:

1. PROVIDE TEMPORARY HEAT DETECTION AS SHOW FOR INTERIM LIFE SAFETY. REPLACE HEAT DETECTION WITH SMOKE DETECTORS UPON COMPLETION OF CONSTRUCTION.
2. DELETE TOTAL OF (3) EXISTING CONVENTIONAL DUCT DETECTORS. AHU-21 AND AHU-22 ARE BEING REMOVED.
3. DELETE EXISTING CONVENTIONAL PULL STATION. NO LONGER REQUIRED.
4. DELETE EXISTING CONVENTIONAL PULL STATION. RELOCATE EXISTING HORN/STROBE TO NEW LOCATION IN MECHANICAL ROOM AND EXTEND EXISTING CIRCUIT TO NEW LOCATION.

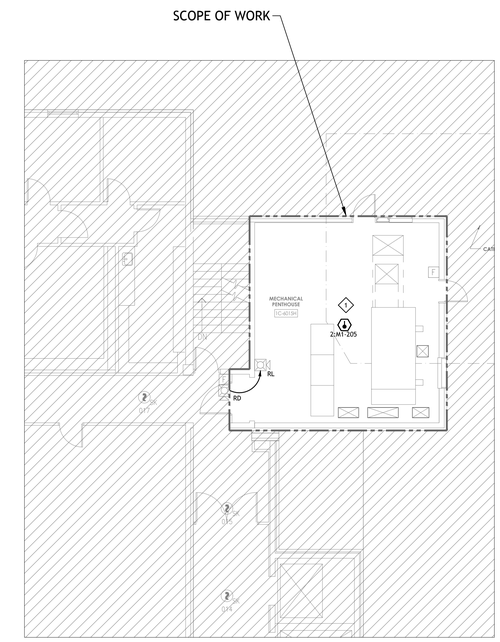


NORTH

PARTIAL 2ND FLOOR MECHANICAL ROOM - DEVICE PLACEMENT PLAN

SCALE: 1/8" = 1'-0"

0 4 8 16 (IN FEET)



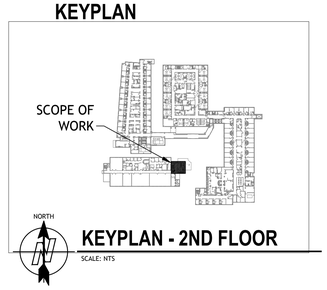
NORTH

PARTIAL 2ND FLOOR MECHANICAL ROOM INTERIM LIFE SAFETY - DEVICE PLACEMENT PLAN

SCALE: 1/8" = 1'-0"

0 4 8 16 (IN FEET)

KEYPLAN



NORTH

KEYPLAN - 2ND FLOOR

SCALE: NTS

FIRE ALARM SYMBOL LEGEND

SYMBOL	DESCRIPTION	BRAND	MODEL	BOX CODE	WIRE TYPE
ANN	EXISTING SERIAL LCD ANNUCIATOR	SIMPLEX	4603-9101	6D	B P
S	PHOTOELECTRIC SMOKE SENSOR WITH STANDARD BASE	SIMPLEX	4098-9714 HEAD 4098-9792 BASE	4A 4K	M
H	HEAT SENSOR WITH STANDARD BASE	SIMPLEX	4098-9733 HEAD 4098-9792 BASE	4A 1B	M
AIM	INDIVIDUAL ADDRESSABLE MODULE	SIMPLEX	4090-9001	1F	M Z
S + X	ADDRESSABLE DUCT SMOKE DETECTOR W / RELAY OUTPUT AND REMOTE TEST STATION	SIMPLEX	4098-9756 2098-9806	MDW	M P
F	EXISTING SINGLE ACTION MANUAL PULL STATION	SIMPLEX	4099-9004	4G 1E	M
	STROBE, WALL MOUNT, WHITE, FIRE, CLEAR LENS	SIMPLEX	4906-9103	1A 4A	V
	EXISTING HORN/STROBE, WALL MOUNT, FIRE, CLEAR LENS	SYSTEM SENSOR	P2RK	4A 1B	H V
	MULTI-CANDELA SPEAKER/STROBE, WALL MOUNT, WHITE, FIRE *TAP AT 25 VOLT*	SIMPLEX	4906-9153	4C 4L	S V
WF	WATERFLOW SWITCH	BY OTHERS	BY OTHERS	FBO	Z
VS	TAMPER SWITCH	BY OTHERS	BY OTHERS	FBO	Z

CODE	BOX SPECIFICATIONS	CODE	BOX SPECIFICATIONS
4A	4" SQ. BOX 1 1/2" DEEP	1F	SINGLE GANG BOX 2 1/2" DEEP W/COVER
4B	4" SQ. BOX 1 1/2" DEEP W/ COVER	1G	SINGLE GANG BOX 2 3/4" DEEP
4C	4" SQ. BOX 1 1/2" DEEP W/ 1 1/2" EXT. RING	1H	SINGLE GANG BOX 3 1/2" DEEP
4D	4" SQ. BOX 2 1/8" DEEP	2A	DOUBLE GANG BOX 2" DEEP
4E	4" SQ. BOX 2 1/8" DEEP W/ COVER	2B	TWO GANG BOX 2 1/2" DEEP
4F	4" SQ. BOX 2 1/8" DEEP W/ 1 1/2" EXT. RING	2C	TWO GANG BOX 2 3/4" DEEP
4G	4" SQ. BOX 2 1/8" DEEP W/ SINGLE GANG COVER	HB	HANDY BOX 1 1/2" DEEP
4H	4" SQ. BOX 2 1/8" DEEP W/ TWO GANG COVER	6A	6 SINGLE GANG BOXES 3 1/2" DEEP
4J	4" SQ. BOX 2 1/2" DEEP	6B	6 GANG BOX
4K	4" OCT. BOX 1 1/2" DEEP	6C	6 GANG BOX 2 1/2" DEEP
4L	4" OCT. BOX 1 1/2" DEEP W/ 1 1/2" EXT. RING	6D	6 GANG BOX 3 1/2" DEEP
4M	4 11/16" SQ. BOX 2 1/8" DEEP	FBO	FURNISHED BY OTHERS
4N	4 11/16" SQ. BOX 1 1/2" DEEP W/ 1 1/2" EXT. RING	MFG	SUPPLIED BY MANUFACTURER
4P	4 11/16" SQ. BOX 2 1/8" DEEP W/ 1 1/2" EXT. RING	MDW	MOUNTS TO DUCTWORK
1A	SINGLE GANG BOX 1 1/2" DEEP	MBD	MOUNTS IN BOX BEHIND DETECTOR
1B	SINGLE GANG BOX 2" DEEP	WM	WALL MOUNT
1C	SINGLE GANG BOX 2 1/8" DEEP	DT	DESK TOP MOUNT
1D	SINGLE GANG BOX 2 1/8" DEEP W/COVER	NR	NO BACKBOX REQUIRED
1E	SINGLE GANG BOX 2 1/2" DEEP	TRM	3.5" WIDE SNAP TRACK W/MOUNTING SCREWS

FOR ADDITIONAL BACK BOX OPTIONS, REFER TO THE XX-700 SERIES DRAWINGS OR PRODUCT DATA SHEETS AND INSTALLATION INSTRUCTIONS.

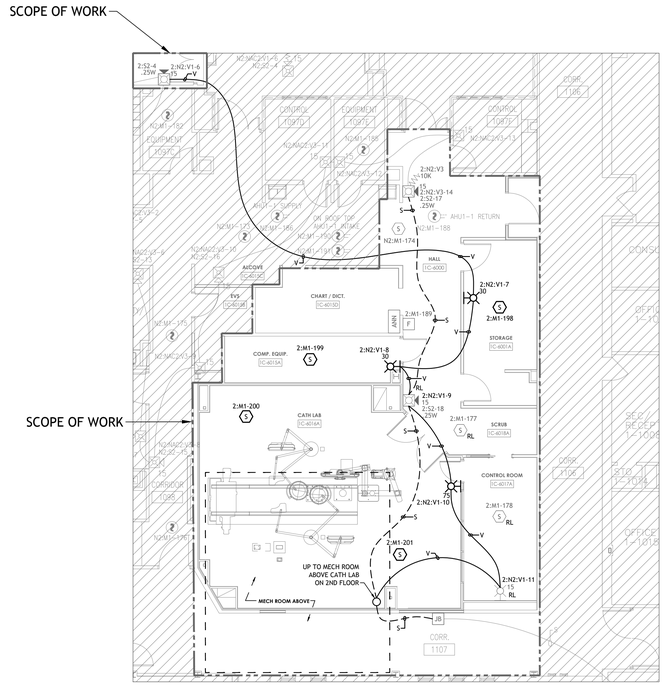
FIRE ALARM WIRE LIST

	CIRCUIT DESCRIPTION	CONSTRUCTION	GAUGE	CIRCUIT PROPERTIES	ACCEPTABLE CABLE TYPES FPLR	THHN / TFFN	FPLP	OUTDOOR
V	VISUAL SIGNAL	2 COND. SOLID	14 AWG		X	X	X	
K	REMOTE TEST SWITCH/LED	(2) 2 COND. SOLID	14 AWG		X	X	X	
M	IDNET	UTP, SHIELDED	18 AWG	FIELD VERIFY AND MATCH EXISTING	X		X	
P	POWER	2 COND. SOLID	14 AWG		X	X	X	
R	RELAY	2 COND. SOLID	14 AWG		X	X	X	
S	AUDIO	TSP STRANDED, SHIELDED	16 AWG	30pf/ft. MAX CAPACITANCE RECOMMENDED	X		X	
Z	ZONE (IDC)	2 COND. SOLID	16 AWG		X	X	X	

CONDUIT SIZE	MAX CONDUCTOR AREA	CONDUIT SIZE	MAX CONDUCTOR AREA	NOTES
1/2"	0.12 SQ INCH *	1-1/4"	0.60 SQ INCH *	*40% FILL PER N.E.C.
3/4"	0.21 SQ INCH *	1-1/2"	0.82 SQ INCH *	SUBSCRIPT "x": UNSHIELDED CABLES MIXED WITH SHIELDED
1"	0.34 SQ INCH *	2"	1. 34 SQ INCH *	CABLES OF SAME CIRCUIT DESIGNATION.

**OUTDOOR AERIAL CABLE REQUIRES MESSENGER

ITEMS SUCH AS CAPACITANCE BETWEEN CONDUCTORS AND WIRE GAUGE CAN BE CRUCIAL TO THE CIRCUIT DESIGN OF THIS SYSTEM INSTALLATION. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR SELECTING AND INSTALLING CABLE MANUFACTURER AND MODEL THAT MEETS OR EXCEEDS THE ABOVE REQUIREMENTS. RECOMMENDED CABLE MANUFACTURERS AND MODEL NUMBERS ARE AVAILABLE UPON REQUEST.

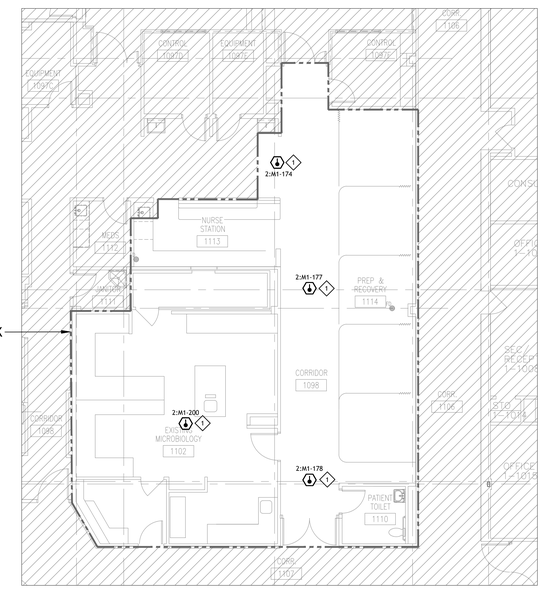


NORTH

PARTIAL 1ST FLOOR CATH LAB - DEVICE PLACEMENT PLAN

SCALE: 1/8" = 1'-0"

0 4 8 16 (IN FEET)



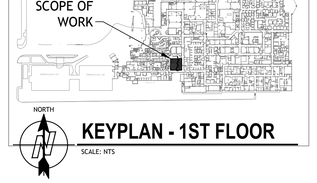
NORTH

PARTIAL 1ST FLOOR CATH LAB INTERIM LIFE SAFETY - DEVICE PLACEMENT PLAN

SCALE: 1/8" = 1'-0"

0 4 8 16 (IN FEET)

KEYPLAN



NORTH

KEYPLAN - 1ST FLOOR

SCALE: NTS

NICET CERTIFICATION

TECHNICAL AREA 00303: LEVEL 3
CERTIFICATE #: 92061
VALID THROUGH: 11/01/17

Brian South — 12/20/2016
BRIAN SOUTH — DATE

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10065 E. EXPOSITION AVE
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CATH LAB AND MECHANICAL ROOM
MEDICAL CENTER OF AURORA

MEDICAL CENTER OF AURORA
1501 S. POTOMAC ST.
AURORA, CO 80012

Revisions shown with ▲ symbol			
ISSUE LOG:	DATE	CAD	DESCRIPTION
WORK:			

DRAWN BY:	C. MADDEN
CHECKED BY:	B. SOUTH
ISSUE DATE:	11/30/16
JOB #:	16-003
PROJECT #:	419:991184502

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SYSTEM: FIRE ALARM SYSTEM

SHEET: PARTIAL 1ST AND 2ND FLOOR - DEVICE PLACEMENT PLAN

FA-101

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LAST SAVED BY: CMADDEN
LAST PRINTED: 12/20/2016 4:56:05 PM
30" x 42" - Arch E1 Size

RISER NOTES:

1. RISER IS A DIAGRAMMATICAL REPRESENTATION OF THE SYSTEM ARCHITECTURE IN BUILDING CROSS SECTION. IT IS NOT INTENDED TO REPRESENT ACTUAL WIRE RUNS, PANEL CONFIGURATIONS OR PENETRATIONS. REFER TO FLOOR PLANS AND PANEL DETAILS FOR CIRCUIT ROUTING AND CONFIGURATION INFORMATION.
2. ALL WIRING SHALL COMPLY WITH APPLICABLE ELECTRICAL CODES. REFER TO APPLICABLE CODES & STANDARDS' ON SHEET FA-000 FOR SPECIFIC CODE REFERENCES.

2ND FLOOR
1ST FLOOR

AREA D AND ENGINEERING

MEDICAL OFFICE BUILDING SOUTH FIRE ALARM PANEL AND DEVICES

AREA D AND ENGINEERING

1ST FLOOR

1ST AND 2ND FLOOR - PARTIAL RISER DIAGRAM

SCALE: NTS

City of Aurora Building Division
Project: *Medical Center of Aurora*
Address: *1501 S POTOMAC ST*
Occupancy Group: *IBC I-2*
Construction Type: *IBC Type IA-SPK*
RSN: *1172029*
Permit: *2016-1223188-LT*
City of Aurora Building Division
Reviewed for Code Compliance
By: *Ted Caviness*
Date: *December 28, 2016*
2015 INTERNATIONAL CODES & 2014 NEC

NICET CERTIFICATION

TECHNICAL AREA 00303: LEVEL 3
CERTIFICATE #: 92061
VALID THROUGH: 11/01/17

Brian South
BRIAN SOUTH

12/20/2016
DATE

tyco SimplexGrinnell
Safer. Smarter. Tyco.™

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10065 E. HARVARD AVENUE
AURORA, CO 80012
SERVICE: 303-355-5500
PHONE: 303-355-9000
FAX: 303-355-9015

CATH LAB AND MECHANICAL ROOM
MEDICAL CENTER OF AURORA

MEDICAL CENTER OF AURORA
1501 S. POTOMAC ST.
AURORA, CO 80012

ISSUE LOG:

MARK	DATE	CAD	DRK	DESCRIPTION

Revisions shown with ⚠ symbol

DRAWN BY:	C. MADDEN
CHECKED BY:	B. SOUTH
ISSUE DATE:	11/30/16
JOB #:	16-003
PROJECT #:	419-99118450

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SYSTEM:
FIRE ALARM SYSTEM

SHEET:
1ST AND 2ND FLOOR - PARTIAL RISER DIAGRAM

FA-201

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LAST PRINTED: 12/20/2016, 4:56:09 PM
LAST SAVED BY: CMADDEN
30" x 42" - Arch E1 Size

IDNET CHANNEL N2:M1			#N/A	SWITCH SETTINGS								
Address			Location Description	1	2	3	4	5	6	7	8	9
N2:M1-126	PHOTO	SDUCT	2:M1-126 1ST FL AREA C PBC RM 1039		X	X	X	X	X		ON	
N2:M1-127	RIAM	RELAY	2:M1-127 1ST FL AREA C PBC 1022A	X	X	X	X	X	X		ON	
N2:M1-128	PHOTO	SDUCT	2:M1-128 1ST FL AREA C PBX 1022A							X	ON	
N2:M1-129	RIAM	RELAY	2:M1-129 1ST FL AREAC FAM WAITING1020	X						X	ON	
N2:M1-130	PHOTO	SDUCT	2:M1-130 1ST FL AREAC FAM WAITING1020		X					X	ON	
N2:M1-131			SPARE	X	X					X	ON	
N2:M1-132			SPARE		X					X	ON	
N2:M1-133			SPARE	X	X					X	ON	
N2:M1-134			SPARE		X	X				X	ON	
N2:M1-135	RPHOTO	SDUCT	2:M1-135 1FL AREA A AHU-06-A SUP1133A	X	X	X				X	ON	
N2:M1-136	RPHOTO	SDUCT	2:M1-136 1FL AREA A AHU-06-A RET1133A				X			X	ON	
N2:M1-137	PHOTO	SDUCT	2:M1-137 1ST FL AREA A CORR 1005	X			X			X	ON	
N2:M1-138	RIAM	RELAY	2:M1-138 1ST FL AREA A CORR 1005		X		X			X	ON	
N2:M1-139	PHOTO	SDUCT	2:M1-139 1ST FL AREA A CORR 1005	X	X		X			X	ON	
N2:M1-140	RIAM	RELAY	2:M1-140 1ST FL AREA A CORR 1005			X	X			X	ON	
N2:M1-141	RIAM	RELAY	2:M1-141 1ST FLR AREA A CORR 1007	X		X	X			X	ON	
N2:M1-142	IAM	SO	2:M1-142 1ST FLR AREA A EAST CORR 1140		X	X	X			X	ON	
N2:M1-143	IAM	SO	2:M1-143 1ST FLR AREA A WEST CORR 1140	X	X	X	X			X	ON	
N2:M1-144			SPARE				X			X	ON	
N2:M1-145	PHOTO	SMOKE	2:M1-145 1ST FL AREA A WAITING 1026	X			X			X	ON	
N2:M1-146	PHOTO	SMOKE	2:M1-146 1ST FL AREA A WAITING 1026		X		X			X	ON	
N2:M1-147	PHOTO	SMOKE	2:M1-147 1ST FL AREA A RECEPTION 1025	X	X		X			X	ON	
N2:M1-148	PHOTO	SMOKE	2:M1-148 1ST FL AREA A BY CONSULT 1037		X		X			X	ON	
N2:M1-149	PHOTO	SMOKE	2:M1-149 1ST FL AREA A WAITING 1048	X		X		X		X	ON	
N2:M1-150	PHOTO	SMOKE	2:M1-150 1ST FL AREA A CORR 1057		X	X		X		X	ON	
N2:M1-151	PHOTO	SMOKE	2:M1-151 1ST FL AREA A CORR 1057	X	X	X		X		X	ON	
N2:M1-152	PHOTO	SMOKE	2:M1-152 1ST FL AREA A RECEPTION 1025				X	X		X	ON	
N2:M1-153	IAM	SUPERV	2:M1-153 1STFLAREA A PUMP1133B TMP PRE	X			X	X		X	ON	
N2:M1-154	IAM	SUPERV	2:M1-154 1STFLAREA A PUMP 1133B LOWAIR		X		X	X		X	ON	
N2:M1-155	IAM	SUPERV	2:M1-155 1STFLAREA A PUMP1133B TMP WET	X	X		X	X		X	ON	
N2:M1-156	IAM	SUPERV	2:M1-156 1FL AREA A PUMP 1133B TMP MAIN			X	X	X		X	ON	
N2:M1-157	IAM	SUPERV	2:M1-157 1STFLAREA A PUMP1133B LA DRY	X		X	X	X		X	ON	
N2:M1-158	IAM	WATER	2:M1-158 1STFLAREA A PUMP1133B FLW DRY		X	X	X	X		X	ON	
N2:M1-159	IAM	SUPERV	2:M1-159 1STFLAREA A PUMP 1133B TMP DRY	X	X	X	X	X		X	ON	
N2:M1-160	IAM	SUPERV	2:M1-160 1FL AREA A PUMP 1133B TMP PUMP						X	X	ON	
N2:M1-161	IAM	SUPERV	2:M1-161 1FL AREA A PUMP 1133B TMP PUMP	X					X	X	ON	
N2:M1-162	RELEASE	SUPRELS	2:M1-162 1ST FL PUMP RM PRE ACTION RLSE		X				X	X	ON	
N2:M1-163	IAM	SO	2:M1-163 1ST FLR AREA B WITING AREA 1029	X	X				X	X	ON	
N2:M1-164	ION	SMOKE	2:M1-164 1ST FL AREA C IS RM 1090			X			X	X	ON	
N2:M1-165	TRIAM	UTILITY	2:M1-165 1ST FL AREA C IS RM 1090	X	X				X	X	ON	
N2:M1-166	TRIAM	UTILITY	2:M1-166 1ST FLR SVC ELEV LOBBY		X	X			X	X	ON	
N2:M1-167	TRIAM	UTILITY	2:M1-167 1ST FLR CORR 1062	X	X	X			X	X	ON	
N2:M1-168	RIAM	RRELAY	2:M1-168 1ST LFR AREA B CORR 1105				X	X	X	X	ON	
N2:M1-169	RPHOTO	SDUCT	2:M1-169 1ST FL AREA B CORR 1105	X			X	X	X	X	ON	
N2:M1-170	RPHOTO	SMOKE	2:M1-170 1ST FL AREA B CORR 1105		X		X	X	X	X	ON	
N2:M1-171	PHOTO	SMOKE	2:M1-171 1ST FL AREA B CORR 1105	X	X		X	X	X	X	ON	
N2:M1-172	PHOTO	SMOKE	2:M1-172 1ST FL AREA B CORR 1105				X	X	X	X	ON	
N2:M1-173	PHOTO	SMOKE	2:M1-173 1ST FL AREA B CORR 1105	X		X	X	X	X	X	ON	
N2:M1-174	**PHOTO**	**SMOKE**	**2:M1-174 1ST FL AREA B HALL 1C-6000**		X	X	X		X	X	ON	
N2:M1-175	PHOTO	SMOKE	2:M1-175 1ST FL AREA B CORR 1098 NORTH	X	X	X	X		X	X	ON	
N2:M1-176	PHOTO	SMOKE	2:M1-176 1ST FL AREA B CORR 1098 NORTH					X	X	X	ON	
N2:M1-177	**PHOTO**	**SMOKE**	**2:M1-177 1ST FL AREA B SCRUB 1C-6018A**	X				X	X	X	ON	
N2:M1-178	**PHOTO**	**SMOKE**	**2:M1-178 1FL AREA B CNTRL RM 1C-6017A**		X			X	X	X	ON	
N2:M1-179	PHOTO	SMOKE	2:M1-179 1ST FL AREA B EQUIP STOR 1101	X	X			X	X	X	ON	
N2:M1-180	RPHOTO	SDUCT	2:M1-180 2FL AREA A AHU-06-1SUPP RM2042			X		X	X	X	ON	
N2:M1-181	PHOTO	SMOKE	2:M1-181 1ST FL AREA B UPS 1104	X		X		X	X	X	ON	
N2:M1-182	PHOTO	SMOKE	2:M1-182 1ST FL AREA B EQUIP 1097C			X		X	X	X	ON	
N2:M1-183	PHOTO	SMOKE	2:M1-183 1ST FL AREA B CATH LAB #1	X	X	X		X	X	X	ON	
N2:M1-184	PHOTO	SMOKE	2:M1-184 1ST FL AREA B CATH LAB #2				X	X	X	X	ON	
N2:M1-185	**PHOTO**	**SMOKE**	**2:M1-185 1ST FL AREA B EQUIP 1C-6004A**	X			X	X	X	X	ON	
N2:M1-186	PHOTO	SDUCT	2:M1-186 1ST FL AREA B CATH LAB SUPPLY		X		X	X	X	X	ON	
N2:M1-187	PHOTO	SMOKE	2:M1-187 1ST FL AREA B UPS 1104	X	X		X	X	X	X	ON	
N2:M1-188	PHOTO	SMOKE	2:M1-188 1ST FL AREA B CATH LAB RETURN				X	X	X	X	ON	
N2:M1-189	**ADRPUL**	**PULL**	**2:M1-189 1ST FL AREA B HALL 1C-6000**	X		X	X	X	X	X	ON	
N2:M1-190	PHOTO	SDUCT	2:M1-190 1ST FL AREA B CATH LAB INTAKE		X	X	X	X	X	X	ON	
N2:M1-191	PHOTO	SDUCT	2:M1-191 1ST FL AREA B CATH LAB INTAKE	X	X	X	X	X	X	X	ON	
N2:M1-192	RPHOTO	SDUCT	2:M1-192 1ST FL AREA B CORR 1105						X	X	ON	
N2:M1-193	RPHOTO	SDUCT	2:M1-193 1ST FL AREA B CORR 1105	X					X	X	ON	
N2:M1-194	RPHOTO	SDUCT	2:M1-194 1ST FL AREA B CORR 1105		X				X	X	ON	
N2:M1-195	RPHOTO	SDUCT	2:M1-195 1ST FL AREA B CORR 1105	X	X				X	X	ON	
N2:M1-196	TRIAM	UTILITY	2:M1-196 1ST FL AREA B SMOKE PURGE #1			X			X	X	ON	
N2:M1-197	TRIAM	UTILITY	2:M1-197 1ST FL AREA B SMOKE PURGE #2	X		X			X	X	ON	
N2:M1-198	**PHOTO**	**SMOKE**	**2:M1-198 1FL AREA B STORAGE 1C-6001A**		X	X			X	X	ON	
N2:M1-199	**PHOTO**	**SMOKE**	**2:M1-199 1FL AREA B COMP EQUIP 1C-6051A**	X	X	X			X	X	ON	
N2:M1-200	**PHOTO**	**SMOKE**	**2:M1-200 1FL AREA B CATH LAB 1C-6016A**				X		X	X	ON	
N2:M1-201	**PHOTO**	**SMOKE**	**2:M1-201 1FL AREA B CATH LAB 1C-6016A**	X			X		X	X	ON	
N2:M1-202	**IAM**	**WATER**	**2:M1-202 2FL MECH PH 1C-6015H WATERFLOW**		X		X		X	X	ON	
N2:M1-203	**IAM**	**SO**	**2:M1-203 2FL MECH PH 1C-6015H TAMPER SW**	X	X		X		X	X	ON	
N2:M1-204	**PHOTO**	**SMOKE**	**2:M1-204 2FL MECH PH 1C-6015H**			X	X		X	X	ON	
N2:M1-205	**PHOTO**	**SMOKE**	**2:M1-205 2FL MECH PH 1C-6015H**	X		X	X		X	X	ON	
N2:M1-206	**PHOTO**	**SMOKE**	**2:M1-206 2FL MECH PH 1C-6015H**			X	X		X	X	ON	
N2:M1-207	**RPHOTO**	**SDUCT**	**2:M1-207 2FL MECH PH 1C-6015H**	X	X	X	X		X	X	ON	
N2:M1-208	**RPHOTO**	**SDUCT**	**2:M1-208 2FL MECH PH 1C-6015H**					X	X	X	ON	
N2:M1-209			SPARE	X				X	X	X	ON	
THROUGH					X			X	X	X	ON	
N2:M1-250			SPARE		X		X	X	X	X	ON	

NOTE: THE LABELS SHOWN ABOVE WILL BE USED FOR PROGRAMMING PURPOSES.
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POINTS SHOWN IN ITALIC TEXT REFER TO EXISTING DEVICES.

City of Aurora Building Division
Project: ***Medical Center of Aurora***
Address: ***1501 S POTOMAC ST***
Occupancy Group: ***IBC I-2***
Construction Type: ***IBC Type IA-SPK***
RSN: ***1172029***
Permit: ***2016-1223188-LT***

This sheet of drawings has not been reviewed for code compliance.

IDNET CHANNEL N2:M1			#N/A	SWITCH SETTINGS								
Address	Device Type	Point Type	Location Description	1	2	3	4	5	6	7	8	9
N2:M1-1	ADRPUL	PULL	2:M1-1 1ST FLR AREA A STAIR 1130A	X							ON	
N2:M1-2			SPARE		X						ON	
N2:M1-3	IAM	SO	2:M1-3 1ST FLR AREA A STAIR 1130A TAMP	X	X						ON	
N2:M1-4	PHOTO	SMOKE	2:M1-4 1ST FLR AREA A ELECT RM 1133			X					ON	
N2:M1-5	ION	SMOKE	2:M1-5 1ST FL AREA A ELECT RM 1133 PRE	X		X					ON	
N2:M1-6	4009AB	SIGNAL	2:M1-6 1ST FLR AREA ELECT RM 1133 NAC1		X	X					ON	
N2:M1-7	4009AB	SIGNAL	2:M1-7 1ST FLR AREA ELECT RM 1133 NAC2	X	X	X					ON	
N2:M1-8	ADRPUL	PULL	2:M1-8 1ST FLR AREA ELECT RM 1133			X					ON	
N2:M1-9	ADRPUL	PULL	2:M1-9 1ST FLR AREA A CORR 1140	X		X					ON	
N2:M1-10	PHOTO	SMOKE	2:M1-10 1ST FLR AREA A CORR 1140		X	X					ON	
N2:M1-11	PHOTO	SMOKE	2:M1-11 1ST FLR AREA A CORR 1140	X	X	X					ON	
N2:M1-12	PHOTO	SMOKE	2:M1-12 1ST FLR AREA A ELECT RM 1134			X					ON	
N2:M1-13	ION	SMOKE	2:M1-13 1ST FLR AREA A ELECT RM 1134	X		X					ON	
N2:M1-14	ADRPUL	PULL	2:M1-14 1ST FLR AREA A ELECT RM 1134		X	X					ON	
N2:M1-15	IAM	WATER	2:M1-15 1STFLAREA A PUMP 1133B MAIN FLW	X	X	X					ON	
N2:M1-16	IAM	SO	2:M1-16 1STFLAREA A PUMP 1133B TMP MAIN				X				ON	
N2:M1-17	IAM	SO	2:M1-17 1STFLAREA A PUMP 1133B TMP MAIN	X			X				ON	
N2:M1-18	IAM	SO	2:M1-18 1STFLAREA A PUMP 1133B TMP MAIN		X		X				ON	
N2:M1-19	IAM	WATER	2:M1-19 1STFLAREA A PUMP1133B WAT FLW	X	X		X				ON	
N2:M1-20	IAM	SO	2:M1-20 1STFLAREA A PUMP 1133B TMP MAIN			X	X				ON	
N2:M1-21	IAM	SO	2:M1-21 1STFLAREA A PUMP 1133B TMP MAIN	X		X	X				ON	
N2:M1-22	IAM	SO	2:M1-22 1STFLAREA A PUMP 1133B TMP MAIN		X	X	X				ON	
N2:M1-23	PHOTO	SMOKE	2:M1-23 1ST FL AREA A PUMP RM 1133B	X	X	X	X				ON	
N2:M1-24	ADRPUL	PULL	2:M1-24 1ST FL AREA A PUMP RM 1133B				X	X			ON	
N2:M1-25	IAM	SO	2:M1-25 1STFL PUMP RM 1133B TEST HEADER	X			X	X			ON	
N2:M1-26	IAM	WATER	2:M1-26 1ST FL AREA A PUMP1133B PREACT		X		X	X			ON	
N2:M1-27	PHOTO	SMOKE	2:M1-27 1ST FL AREA A CORR 1146	X	X		X	X			ON	
N2:M1-28	PHOTO	SMOKE	2:M1-28 1ST FL AREA A MECH RM 1133A			X	X	X			ON	
N2:M1-29	PHOTO	SMOKE	2:M1-29 1ST FL AREA A MECH RM 1133A	X		X	X	X			ON	
N2:M1-30	PHOTO	SMOKE	2:M1-30 1ST FL AREA A CORR 1146		X	X	X	X			ON	
N2:M1-31			SPARE	X	X	X	X	X			ON	
N2:M1-32	PHOTO	SMOKE	2:M1-32 1ST FL AREA A CORR 1146						X		ON	
N2:M1-33	ADRPUL	PULL	2:M1-33 1ST FL AREA A CORR 1146	X					X		ON	
N2:M1-34	PHOTO	SMOKE	2:M1-34 1ST FL AREA A CORR 1146		X				X		ON	
N2:M1-35	PHOTO	SMOKE	2:M1-35 1ST FL AREA A RECEPTION 1135	X	X				X		ON	
N2:M1-36	ADRPUL	PULL	2:M1-36 1ST FL AREA A LOBBY 1001		X				X		ON	
N2:M1-37	PHOTO	SMOKE	2:M1-37 1ST FL AREA A CORR 1007	X	X				X		ON	
N2:M1-38	PHOTO	SMOKE	2:M1-38 1ST FL AREA A CORR 1007		X	X			X		ON	
N2:M1-39	ADRPUL	PULL	2:M1-39 1ST FL AREA A DINING 1010	X	X	X			X		ON	
N2:M1-40	ADRPUL	PULL	2:M1-40 1ST FL AREA A LOBBY 1001			X			X		ON	
N2:M1-41	PHOTO	SMOKE	2:M1-41 1ST FL AREA A LOBBY 1001	X		X			X		ON	
N2:M1-42	PHOTO	SMOKE	2:M1-42 1ST FL AREA A LOBBY 1001		X	X			X		ON	
N2:M1-43	PHOTO	SMOKE	2:M1-43 1ST FL AREA A LOBBY 1001	X	X	X			X		ON	
N2:M1-44	ADRPUL	PULL	2:M1-44 1ST FL AREA A LOBBY 1001			X	X		X		ON	
N2:M1-45	PHOTO	SMOKE	2:M1-45 1ST FL AREA A LOBBY 1001	X		X	X		X		ON	
N2:M1-46	PHOTO	SMOKE	2:M1-46 1ST FL AREA A CORR 1058		X	X	X		X		ON	
N2:M1-47	PHOTO	SMOKE	2:M1-47 1ST FL AREA A CORR 1058	X	X	X	X		X		ON	
N2:M1-48	PHOTO	SMOKE	2:M1-48 1ST FL AREA A LOBBY 1001				X		X		ON	
N2:M1-49	PHOTO	SMOKE	2:M1-49 1ST FL AREA A WORK AREA 1035	X			X		X		ON	
N2:M1-50	PHOTO	SMOKE	2:M1-50 1ST FL AREA A CORR 1062		X		X		X		ON	
N2:M1-51	PHOTO	SMOKE	2:M1-51 1ST FL AREA B WORK AREA 1035	X	X		X		X		ON	
N2:M1-52	PHOTO	SMOKE	2:M1-52 1ST FL AREA B BY CONSULT 1042			X	X		X		ON	
N2:M1-53	PHOTO	SMOKE	2:M1-53 1ST FL AREA B CORR 1062	X		X	X		X		ON	
N2:M1-54	PHOTO	SMOKE	2:M1-54 1ST FL AREA A CORR 1062		X	X	X		X		ON	
N2:M1-55	ADRPUL	PULL	2:M1-55 1ST FL AREA C STAIR 1068A	X	X	X	X		X		ON	
N2:M1-56	ADRPUL	PULL	2:M1-56 1ST FL AREA C ELEV LOBBY 1004				X	X	X		ON	
N2:M1-57	HEAT	HEAT	2:M1-57 BTM OF SHAFT PUB ELEV 1004A	X			X	X	X		ON	
N2:M1-58	RIAM	RRELAY	2:M1-58 1ST FL AREA C PUB ELEV DR CNTL		X		X	X	X		ON	
N2:M1-59			SPARE	X	X		X	X	X		ON	
N2:M1-60	HEAT	HEAT	2:M1-60 BTM OF SHAFT SERV ELEV 1061B				X	X	X		ON	
N2:M1-61			SPARE	X			X	X	X		ON	
N2:M1-62	IAM	SO	2:M1-62 1ST FL AREA C STAIR 1068A TAMP		X	X	X	X	X		ON	
N2:M1-63	PHOTO	SMOKE	2:M1-63 1ST FL PUBLIC ELEV LOBBY 1004	X	X	X	X	X	X		ON	
N2:M1-64	PHOTO	SMOKE	2:M1-64 1ST FL AREA C WAITING 1068							X	ON	
N2:M1-65	HEAT	HEAT	2:M1-65 BTM OF SHAFT PUB ELEV 1004B	X						X	ON	
N2:M1-66			SPARE		X					X	ON	
N2:M1-67			SPARE	X	X					X	ON	
N2:M1-68	HEAT	HEAT	2:M1-68 BTM OF SHAFT SERV ELEV 1061A			X				X	ON	
N2:M1-69	ADRPUL	PULL	2:M1-69 1ST FL AREA C ELEV LOBBY 1061	X		X				X	ON	
N2:M1-70	PHOTO	SMOKE	2:M1-70 1ST FL SERV ELEV LOBBY 1061		X	X				X	ON	
N2:M1-71	PHOTO	SMOKE	2:M1-71 1ST FL HALL 1C-5000	X	X	X				X	ON	
N2:M1-72	PHOTO	SMOKE	2:M1-72 1ST FL HALL 1C-5002			X				X	ON	
N2:M1-73	PHOTO	SMOKE	2:M1-73 1ST FL AREA C CORR 1062	X		X				X	ON	
N2:M1-74	PHOTO	SMOKE	2:M1-74 1ST FL HALL 1C-5004		X	X				X	ON	
N2:M1-75	PHOTO	SMOKE	2:M1-75 1ST FL AREA C IS RM 1090	X	X	X				X	ON	
N2:M1-76	PHOTO	SMOKE	2:M1-76 1ST FL AREA B CORR 1062			X				X	ON	
N2:M1-77	PHOTO	SMOKE	2:M1-77 1ST FL HALL 1C-5000	X		X				X	ON	
N2:M1-78	PHOTO	SMOKE	2:M1-78 1ST FL ALCOVE 1C-5005		X	X				X	ON	
N2:M1-79	ADRPUL	PULL	2:M1-79 1ST FL NURSE STA 1C-5006A	X	X	X				X	ON	
N2:M1-80	PHOTO	SMOKE	2:M1-80 1ST FL HALL 1C-5004							X	ON	
N2:M1-81			SPARE	X						X	ON	
N2:M1-82			SPARE		X					X	ON	
N2:M1-83	IAM	SUPERV	2:M1-83 1ST FL AREA A RM 1133B PUMP RUN	X	X					X	ON	
N2:M1-84	IAM	SUPERV	2:M1-84 1ST FL AREA A RM 1133B PMA REV			X				X	ON	
N2:M1-85	IAM	SUPERV	2:M1-85 1ST FL AREA A RM 1133B PWR LOSS	X		X				X	ON	
N2:M1-86	IAM	TROUBLE	2:M1-86 1ST FL AREA A RM 1133B PUMP TBL		X	X				X	ON	
N2:M1-87			SPARE	X	X	X				X	ON	
N2:M1-88			SPARE				X			X	ON	
N2:M1-89			SPARE	X			X			X	ON	
N2:M1-90			SPARE		X		X			X	ON	
N2:M1-91	RIAM	RELAY	2:M1-91 1ST FLR AREA A ELEC RM 1133	X	X		X			X	ON	
N2:M1-92			SPARE			X	X			X	ON	
N2:M1-93	TRIAM	UTILITY	2:M1-93 1ST FLR AREA A PUMP RM 1133B	X		X	X			X	ON	
N2:M1-94	PHOTO	SDUCT	2:M1-94 1ST FLR AREA A PUMP RM 1133B		X	X	X			X	ON	
N2:M1-95	PHOTO	SDUCT	2:M1-95 1ST FLR AREA A MECH RM 1133A	X	X	X	X			X	ON	
N2:M1-96	TRIAM	UTILITY	2:M1-96 1ST FLR AREA A MECH RM 1133A					X	X	X	ON	
N2:M1-97	TRIAM	UTILITY	2:M1-97 1ST FLR AREA RECEPTION 1135	X					X	X	ON	
N2:M1-98			SPARE		X				X	X	ON	
N2:M1-99	RIAM	RELAY	2:M1-99 1ST FLR AREA A DINING 1010	X	X				X	X	ON	
N2:M1-100	PHOTO	SDUCT	2:M1-100 1ST FLR AREA A DINING 1010			X			X	X	ON	
N2:M1-101	RIAM	RELAY	2:M1-101 1ST FL AREA A STRG 1006	X		X			X	X	ON	
N2:M1-102			SPARE		X	X			X	X	ON	
N2:M1-103	RIAM	RELAY	2:M1-103 1ST FLR AREA A STRG 1006	X	X	X			X	X	ON	
N2:M1-104	PHOTO	SMOKE	2:M1-104 1ST FLR AREA A FIRE CAID CNTR				X		X	X	ON	
N2:M1-105			SPARE	X			X		X	X	ON	
N2:M1-106	PHOTO	SDUCT	2:M1-106 1ST FLR AREA B CONSULT 1046		X		X		X	X	ON	
N2:M1-107	PHOTO	SDUCT	2:M1-107 1ST FLR AREA B ELEV LOBBY 1061	X	X		X		X	X	ON	
N2:M1-108	RIAM	RELAY	2:M1-108 1ST FLR AREA B ELEV LOBBY 1061			X	X		X	X	ON	
N2:M1-109	RIAM	RELAY	2:M1-109 1ST FLR AREA B CORR 1062	X		X	X		X	X	ON	
N2:M1-110	PHOTO	SDUCT	2:M1-110 1ST FLR AREA B CORR 1062		X	X	X		X	X	ON	
N2:M1-111	TRIAM	UTILITY	2:M1-111 1ST FLR AREA B STRSS TEST 1091	X	X	X	X		X	X	ON	
N2:M1-112	PHOTO	SDUCT	2:M1-112 1ST FLR AREA B STRSS TEST 1091					X	X	X	ON	
N2:M1-113			SPARE	X				X	X	X	ON	
N2:M1-114			SPARE		X			X	X	X	ON	
N2:M1-115	RIAM	RELAY	2:M1-115 1ST FLR AREA STRSS TEST 1091	X	X			X	X	X	ON	
N2:M1-116	PHOTO	SDUCT	2:M1-116 1ST FLR AREA STRSS TEST 1091			X		X	X	X	ON	
N2:M1-117	RIAM	RELAY	2:M1-117 1ST FLR AREA B I.S. RM 1090	X		X		X	X	X	ON	
N2:M1-118	PHOTO	SDUCT	2:M1-118 1ST FLR AREA B I.S. RM 1090		X	X		X	X	X	ON	
N2:M1-119	RIAM	RELAY	2:M1-119 1ST FLR AREA B LAB 1097	X	X	X		X	X	X	ON	
N2:M1-120			SPARE				X	X	X	X	ON	
N2:M1-121	TRIAM	UTILITY	2:M1-121 1ST FLR AREA B SUPR 1044	X			X	X	X	X	ON	
N2:M1-122	PHOTO	SDUCT	2:M1-122 1ST FLR AREA B SUPR 1044		X		X	X	X	X	ON	
N2:M1-123	TRIAM	UTILITY	2:M1-123 1ST FL AREA C CONSULT1042	X	X		X	X	X	X	ON	
N2:M1-124	PHOTO	SDUCT	2:M1-124 1ST FL AREA C CONSULT1042			X	X	X	X	X	ON	
N2:M1-125	RIAM	RELAY	2:M1-125 1ST FL AREA C PBC RM 1039	X		X	X	X	X	X	ON	

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TMCA NODE 2 4100es FACP

Module	Qty	Description		Standby Current	Total Standby	Alarm Current	Total Alarm
Panel Equipment							
4100-9111	1	4100 CONFIG, DOMESTIC 120V	*	0.3730	0.3730	0.4700	0.4700
4100-5101	4	EXPANSION PWR SUPPLY (XPS) - 120VAC 60HZ		0.0500	0.2000	0.0500	0.2000
4100-9621	1	BASIC AUDIO WITH MICROPHONE - DIGITAL		0.0750	0.0750	0.0820	0.0820
4100-1326	4	DIGITAL FLEX 50W AMP W/3 NAC'S - 25V		0.0850	0.3400	2.2700	9.0800
4100-1240	1	AUXILIARY AUDIO INPUT BOARD		0.0100	0.0100	0.0100	0.0100
4100-1242	1	MESSAGE EXPANSION BOARD - 32 MINUTES		0.0020	0.0020	0.0170	0.0170
4100-1270	1	MASTER TELEPHONE, PHONE CONTROL		0.0800	0.0800	0.1400	0.1400
4100-1272	3	EXPANSION PHONE CONTROLLER		0.0800	0.2400	0.1400	0.4200
4100-3101	3	IDNET MODULE, UP TO 250 POINTS	*	0.0750	0.2250	0.1150	0.3450
4100-6014	1	NETWORK IF CARD, WIRED		0.0460	0.0460	0.0460	0.0460
4100-6056	2	NETWORK MEDIA CARD WIRED		0.0550	0.1100	0.0550	0.1100
4100-3206	1	8 RELAYS - 3 AMP		0.0150	0.0150	0.1900	0.1900
4100-1254	1	2 CHANNEL AUDIO OPERATOR INTERFACE		0.0000	0.0000	0.0240	0.0240
4100-1282	4	8 SW., 16RED/YEL LED MODULE		0.0000	0.0000	0.0240	0.0960
4100-1284	31	8 SW., 16 RED/GREEN LED MODULE		0.0000	0.0000	0.0240	0.7440
4100-1288	5	64/64 LED/SWITCH CONTROLLER		0.0200	0.1000	0.0200	0.1000
4100-1289	4	EXPANSION 64/64 LED/SW MODULE		0.0200	0.0800	0.0200	0.0800
4009-9601	4	IDNAC REPEATER 120V PLATINUM UL/ULC		0.0700	0.2800	0.0960	0.3840
		Panel Totals			**2.1760**		**12.5380**
IDNet Addressable Devices (SLC)							
4099-9004	16	ADDRESSABLE SINGLE ACTION MANUAL STATION	*				
4090-9001	**30**	**IDNET SUPERVISED IAM**	*				
4090-9002	17	IDNET RELAY IAM	*				
4090-9006	1	SUP RELEASE PERIPH & ENCLOSURE	*				
4090-9118	11	RELAY IDNET 2 IAM W/T SENSE	*				
4098-9714	**70**	**TRUEALARM PHOTO SMOKE SENSOR**					
4098-9717	3	TRUEALARM ION SMOKE SENSOR					
4098-9733	4	TRUEALARM HEAT SENSOR					
4098-9755	20	TRUEALARM DUCT SMOKE SENSOR W/O RELAY OUTPUT	*				
4098-9756	**10**	**TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT**	*				
4098-9792	**76**	**TRUEALARM SENSOR BASE**	*				
4098-9780	1	TRUEALARM 2 WIRE RELAY SENSOR BASE	*				
Miscellaneous Peripheral Devices That Require (Additional) System Power							
4098-9843	10	ENCAPSULATED RELAY PAM-SD		0.0000	0.0000	0.0150	0.1500
4098-9756	10	TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT		0.0030	0.0300	0.0150	0.1500
4098-9860	1	2-WIRE RELAY FOR USE WITH 4098-9780 SENSOR BASE		0.0000	0.0000	0.0000	0.0000
4603-9101	1	SERIAL LCD ANNUNCIATOR		0.0650	0.0650	0.1400	0.1400
		Peripheral Totals			**0.0950**		**0.4400**
		Added Current for EPS Conversion of 24 to 29 Volt IDNac Devices			**0.0000**		**0.0000**
		RUI Totals	1		**0.0035**		**0.0035**
		Address Totals	**182 Addresses**		**0.1456**		**0.1820**
		System Totals*:		**Standby**	**2.4201**	**Alarm**	**13.1635**

Constant current draw of .8mA standby and

MEDICAL CENTER OF AURORA 4100U SPEAKER Db LOSS AND DISTANT CALCULATIONS

SPEAKER CIRCUIT LOAD CALCULATION									MAXIMUM -3 dB DROP PER CIRCUIT		
SPEAKER CIRCUIT DESCRIPTION	AMPLIFIER NUMBER	FLOOR PLAN CIRCUIT NUMBER	WIRE GAUGE (18, 16, 14, 12)	CIRCUIT VOLTAGE (25 OR 70 VRMS)	APPLIANCES QUANTITIES (TAP VALUE) SPEAKER TAP .25 Watt	SPEAKER TAP .5 Watt	TOTAL CIRCUIT LOAD (WATTS)	ESTIMATED CIRCUIT LENGTH (FEET)	ACTUAL WIRE/LOSS (dB)	MAXIMUM ALLOWABLE CKT. LENGTH (FEET)	TOTAL CIRCUIT RESISTANCE (OHMS)
1ST FLR AREA B - 2:S1		*51*	*18*	*25 vrms*	*10*	*0*	*2.5 Watts*	*530 ft.*	*-.26 db*	*7245 ft.*	*7.521 Ohms*
1ST FLR AREA B/C - 2:S2		**52**	**18**	**25 vrms**	**20**	**1**	**5.5 Watts**	**1000 ft.**	**-1.03 db**	**3293 ft.**	**14.285 Ohms**
1ST FLR AREA A/B/C WEST - 2:S3		*53*	*18*	*25 vrms*	*7*	*0*	*1.75 Watts*	*600 ft.*	*-.21 db*	*10350 ft.*	*8.571 Ohms*
1ST FLR AREA A MIDDLE - 2:S4		*54*	*18*	*25 vrms*	*5*	*0*	*1.25 Watts*	*175 ft.*	*-.04 db*	*14491 ft.*	*2.5 Ohms*
1ST FLR AREA A EAST - 2:S5		*55*	*18*	*25 vrms*	*4*	*0*	*1. Watts*	*245 ft.*	*-.05 db*	*18113 ft.*	*3.5 Ohms*
1ST FLR AREA A NORTHEAST - 2:S6		*56*	*18*	*25 vrms*	*10*	*0*	*2.5 Watts*	*445 ft.*	*-.22 db*	*7245 ft.*	*6.357 Ohms*
2ND FLR - 2:S7		*57*	*18*	*25 vrms*	*25*	*2*	*7.25 Watts*	*1620 ft.*	*-2.07 db*	*2498 ft.*	*23.142 Ohms*
3RD FLR - 2:S8		*58*	*18*	*25 vrms*	*27*	*1*	*7.25 Watts*	*1740 ft.*	*-2.2 db*	*2498 ft.*	*24.856 Ohms*
4TH FLR - 2:S9		*59*	*18*	*25 vrms*	*25*	*0*	*6.25 Watts*	*1192 ft.*	*-1.37 db*	*2898 ft.*	*17.028 Ohms*
5TH FLR - 2:S10		*510*	*18*	*25 vrms*	*20*	*0*	*5. Watts*	*801 ft.*	*-.76 db*	*3623 ft.*	*11.442 Ohms*
6TH FLR - 2:S11		*511*	*18*	*25 vrms*	*2*	*2*	*1.5 Watts*	*154 ft.*	*-.05 db*	*12075 ft.*	*2.2 Ohms*
					Appliance Summary		Total Load (Watts)				
					155	6	41.75				

NOTE:
LUMP SUM METHOD WAS USED TO CALCULATE MAXIMUM ALLOWABLE CIRCUIT LENGTH. THIS METHOD ALLOWS FOR A SMALL MARGIN OF SAFETY, TAKING INTO CONSIDERATION THE ACTUAL INSTALLED CIRCUIT ROUTING MAY DIFFER FROM WHAT IS SHOWN ON THE SHOP DRAWINGS. IF THE ACTUAL CIRCUIT LENGTH IS GOING TO EXCEED THE MAXIMUM ALLOWABLE CIRCUIT LENGTH, CONTACT YOUR LOCAL SIMPLEXGRINNELL DISTRICT OFFICE.

City of Aurora Building Division
Project: ***Medical Center of Aurora***
Address: ***1501 S POTOMAC ST***
Occupancy Group: ***IBC I-2***
Construction Type: ***IBC Type IA-SPK***
RSN: ***1172029***
Permit: ***2016-1223188-LT***

This sheet of drawings has not been reviewed for code compliance.

Module	Qty	Description		Standby Current	Total Standby	Alarm Current	Total Alarm
Panel Equipment							
4009-9201	1	4009 IDNET NAC EXTENDER, 120 VAC		0.085	0.085	0.185	0.185
4009-9807	1	NAC CARD, 4PT, IDNET		0.040	0.040	0.040	0.040
				Total Panel Stby	0.125	Total Panel Alarm	0.225
Mult-Candella Strobes							
4906-9103	35	V/O M-C NON-ADDRESS, WHT, WALL	15cd	0.000	0.000	0.055000	1.925
4906-9103	4	V/O M-C NON-ADDRESS, WHT, WALL	30cd	0.000	0.000	0.085000	0.340
4906-9103	1	V/O M-C NON-ADDRESS, WHT, WALL	75cd	0.000	0.000	0.169000	0.169
4906-9103	2	V/O M-C NON-ADDRESS, WHT, WALL	110cd	0.000	0.000	0.226000	0.452
4906-9153	23	S/V M-C NON-ADDRESS, WHT, WALL	15cd	0.000	0.000	0.056000	1.288
4906-9153	3	S/V M-C NON-ADDRESS, WHT, WALL	30cd	0.000	0.000	0.087000	0.261
4906-9153	3	S/V M-C NON-ADDRESS, WHT, WALL	75cd	0.000	0.000	0.172000	0.516
				Total Periph Stby	0.000	Total Periph Alarm	4.951
				Total Standby Amps	0.125	Total Alarm Amps	5.176

Battery Calculations			Standby Current		Alarm Current
Control Panel Card Power			0.125		0.225
Power For External Peripheral Devices			0.000		4.951
			0.125	<-- Totals -->	5.176
Additional Battery Capacity Required		20%	0.025		1.035
Standby Time =	4	Hrs	0.600	Standby Ah	
Alarm Time =	15	Mins.	1.553	Alarm Ah	
		Standby + Alarm =	2.153		
Battery Required	2081-9272 6.2		4.510	Total Ah Required (see note below)	

Note: The total Ah required takes into account any physical and chemical properties of battery discharge rates, high alarm current draw of a battery after a long (standby) low current draw, and reflects the manufacturers discharge rates per their recommendations and UL standards.

NAC SCHEDULE / VOLTAGE DROP CALCULATION 17 % MAXIMUM VOLTAGE DROP FROM A WORSE CASE CIRCUIT OUTPUT VOLTAGE = 19.5 (FOR CALCULATIONS)			V/O 4906-9103 15cd	V/O 4906-9103 30cd	V/O 4906-9103 75cd	V/O 4906-9103 110cd	S/V 4906-9153 15cd	S/V 4906-9153 30cd	S/V 4906-9153 75cd	S/V 4906-9153 110cd	VOLTAGE DROP TOTALS						
CIRCUIT	DESCRIPTION	CIRCUIT TYPE	0.055000	0.085000	0.169000	0.220	0.056000	0.087000	0.172000	0.229000	TOTAL CKT. LOAD (AMPS)	WIRE GAUGE (18, 16, 14, 12)	ESTIMATED CIRCUIT LENGTH	ACTUAL VOLTAGE DROP %	ACTUAL VOLTAGE DROP (VOLTS)	TOTAL CIRCUIT RESISTANCE	MAXIMUM ALLOWABLE CKT. LENGTH
2:N2:V1	**1ST FLR AREA B/C**	**STRB**	**3**	**2**	**1**	**0**	**5**	**0**	**1**	**0**	**0.956**	**14**	**525 ft.**	**15.11%**	**3.082**	**3.2 Ohms**	**596 ft.**
2:N2:V2	*1ST FLR AREA B*	*STRB*	*11*	*1*	*0*	*0*	*4*	*0*	*2*	*0*	*1.258*	*14*	*375 ft.*	*14.20%*	*2.897*	*2.3 Ohms*	*453 ft.*
2:N2:V3	*1ST FLR AREA C*	*STRB*	*5*	*0*	*0*	*0*	*9*	*0*	*0*	*0*	*0.779*	*14*	*600 ft.*	*14.07%*	*2.870*	*3.7 Ohms*	*732 ft.*
2:N2:V4	*1ST FLR AREA C WEST*	*STRB*	*10*	*0*	*0*	*2*	*1*	*2*	*0*	*0*	*1.220*	*14*	*490 ft.*	*17.99%*	*3.670*	*3.0 Ohms*	*467 ft.*
2:N2:V5	*1ST FLR AREA C WEST*	*STRB*	*6*	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0.471*	*14*	*610 ft.*	*8.65%*	*1.764*	*3.7 Ohms*	*1210 ft.*
2:N2:V6	*1ST FLR AREA B/C*	*STRB*	*0*	*0*	*0*	*0*	*3*	*1*	*0*	*0*	*0.255*	*14*	*425 ft.*	*3.26%*	*0.665*	*2.6 Ohms*	*2235 ft.*
2:N2:V7	*SPARE*		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0.000*		*ft.*	*0.00%*	*0.000*	*0.0 Ohms*	*0 ft.*
2:N2:V8	*SPARE*		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0.000*		*ft.*	*0.00%*	*0.000*	*0.0 Ohms*	*0 ft.*
			Appliance Summary								Total Load (AMPS)						
			35	**4**	**1**	**2**	**23**	**3**	**3**	**0**	**4.939**						

METHOD USED TO CALCULATE VOLTAGE DROP:
[(CIRCUIT LENGTH IN FEET X 2) (AMPS) (OHMS / FT)]

Wire Resistance At
75 Degrees Celsius
167 Degrees Fahrenheit

Ohms / ft
10GA = 0.001210
12GA = 0.001930
14GA = 0.003070
16GA = 0.004890
18GA = 0.007770

WIRE RESISTANCE BASED ON TABLE 8 FROM NATIONAL ELECTRICAL CODE (UNCOATED SOLID COPPER WIRE)

NOTE:
LUMP SUM METHOD WAS USED TO CALCULATE ALLOWABLE VOLTAGE DROP. THIS METHOD ALLOWS FOR A SMALL MARGIN OF SAFETY, TAKING INTO CONSIDERATION THE ACTUAL INSTALLED CIRCUIT ROUTING MAY DIFFER FROM WHAT IS SHOWN ON THE SHOP DRAWINGS. IF THE ACTUAL CIRCUIT LENGTH IS GOING TO EXCEED THE MAXIMUM ALLOWABLE CIRCUIT LENGTH, CONTACT YOUR LOCAL SIMPLEXGRINNELL DISTRICT OFFICE.

NICET CERTIFICATION

TECHNICAL AREA 00303: LEVEL 3
CERTIFICATE #: 92061
VALID THROUGH: 11/01/17

Brian South — 12/20/2016
BRIAN SOUTH — DATE

tyco SimplexGrinnell
Safer. Smarter. Tyco.™
DISTRICT 148
10065 E. EXPOSITION AVE
AURORA, CO 80012
PHONE: 303-355-9500
FAX: 303-355-9515

CATH LAB AND MECHANICAL ROOM
MEDICAL CENTER OF AURORA

MEDICAL CENTER OF AURORA
1501 S. POTOMAC ST.
AURORA, CO 80012

ISSUE LOG:

MARK	DATE	CAD	CHK	DESCRIPTION

Revisions shown with △ symbol

DRAWN BY:	C. MADDEN
CHECKED BY:	B. SOUTH
ISSUE DATE:	11/30/16
JOB #:	16-003
PROJECT #:	419:991184502

TYCO SIMPLEXGRINNELL © 2016

SYSTEM: FIRE ALARM SYSTEM

SHEET: NAC2 - CALCULATIONS

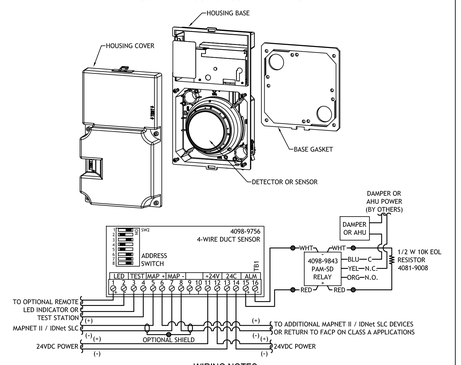
FA-602

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30" x 42" - Arch E1 Size
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4098-9756 DUCT SMOKE DETECTOR

ANALOG 4-WIRE DUCT SENSOR WITH 24VDC RELAY



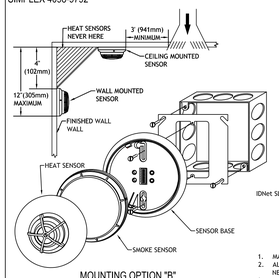
WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS. CLASS B APPLICATIONS ONLY.

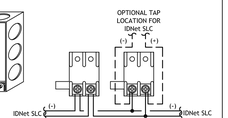
(##)

STANDARD SENSOR BASE

SIMPLEX 4098-9792



MOUNTING OPTION "B"



TERMINATION VIEW: DEVICE REAR
CLASS B WIRING

WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS.

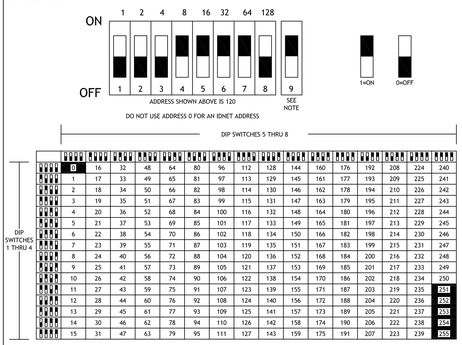
MOUNTING OPTIONS

OPTION[1]	DESCRIPTION	NOTE
A	SINGLE GANG BOX, 2-1/2" (64mm) DEEP	BY OTHERS
B	4" (102mm) SQUARE BOX, 1-1/2" (38mm) DEEP MINIMUM W/ SINGLE ADAPTER BRACKET	BY OTHERS
C	4" (102mm) OCTAGONAL BOX, 1-1/2" (38mm) DEEP, MINIMUM	BY OTHERS
D	ADAPTER PLATE KIT (FOR 4" SQUARE/OCTAGONAL SURFACE MOUNTED ELECTRICAL BOX)	SIMPLEX 4098-9832 ORDERED SEPARATELY

1. FOR ADDITIONAL MOUNTING OPTIONS, DOWNLOAD DATA SHEET 4098-0019 FROM HTTP://WWW.SIMPLEX-FIRE.COM

INITIATING DEVICE DIP SWITCH SETTINGS

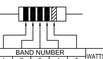
SIMPLEX IDNet



0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	
1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241	
2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242	
3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243	
4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244	
5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245	
6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246	
7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247	
8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	
9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249	
10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250	
11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251	
12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252	
13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253	
14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254	
15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255	

NOTE:
THE 4098-9771 , -9794 , -9795 , -9798 SOUNDER BASES HAVE A 9-POSITION DIP SWITCH. THE FIRST EIGHT DIP SWITCHES SET THE SOUNDER BASE ADDRESS. DIP SWITCH POSITION 9 IS SET TO OFF OR ON DEPENDING UPON THE SOUNDER BASE POWER SOURCE. WHEN THE SOUNDER BASE IS CONNECTED TO A 24 VDC POWER SOURCE, DIP SWITCH POSITION 9 IS SET TO "OFF" AND THE 24 VDC POWER IS SUPERVISED BY THE SOUNDER BASE. WHEN THE SOUNDER BASE IS POWERED BY THE PANEL'S NOTIFICATION APPLIANCE CIRCUIT (NAC), DIP SWITCH POSITION 9 IS SET TO "ON" AND THE POWER IS SUPERVISED BY THE NAC AND NOT THE SOUNDER BASE. THE 4098-9770 AND -9797 BASES HAVE THE SAME LAYOUT, BUT DOESN'T OFFER SOUNDER FUNCTIONALITY. THEY USE AN 8-WAY DIP SWITCH ONLY.

END OF LINE RESISTOR CODES



NOTE: REFER TO PANEL/MODULE AND DEVICE INSTALLATION INSTRUCTIONS FOR PROPER TERMINATIONS.

MODEL	REFERENCE NUMBER	OHMS	BAND NUMBER 1	2	3	4	5	WATTS	CIRCUIT TYPE	FIRE ALARM PANEL/MODULE
4081-9001	733-892	2.2K	RED	RED	RED	GLD	N/A	1/2	ANNUNCIATOR (4300)	4004, 4010 (TROUBLE)
4081-9002	733-893	3.3K	ORG	ORG	RED	GLD	N/A	1	N.O. INITIATING PULL, SMOKE, HEAT, WATERFLOW, TAMPER, ETC.	4004*, 4004R, 4005*, 4006, 4100, 4120, 4100U, ZAMs
									24 PT. I/O SWITCH SUPV.	4605-7401, 4100 SERIES
4081-9003	733-896	4.7K	YEL	VLT	RED	GLD	N/A	1/2	CURRENT LIMITED N.O. INIT.	4090-9001 IDNET IAM (EOLR)
4081-9004	733-886	6.8K	BLU	GRY	RED	GLD	N/A	1/2	NOTIFICATION (DACT)	2080-9024
									N.O. INITIATING PULL, SMOKE, HEAT, WATERFLOW, TAMPER, ETC.	4004, 4005, 4090-9001 IDNET IAM 2190-9173 MAPNET II PT I/O
									4-20MA ZAM (TROUBLE)	4-20MA ZAM
4081-9005	733-984	1.8K	BRN	GRY	RED	GLD	N/A	1/2	CURRENT LIMITED N.O. INITIATING (IN LINE)	4090-9001 IDNET IAM
4081-9006	733-890	560 Ω	GRN	BLU	BRN	GLD	N/A	1	N.C. INITIATING (EOLR)	4005*, 4090-9001 IDNET IAM 4100, 4100U
4081-9007	733-891	1.2K	BRN	RED	RED	GLD	N/A	1	N.C. INITIATING (EOLR)	4005
4081-9008	733-894	10K	BRN	BLK	ORG	GLD	N/A	1/2	NOTIFICATION	4004, 4005, 4006, 4008, 4009, 4010, 4100, 4100U
4081-9009	733-912	20 Ω	RED	BLK	BLK	GLD	N/A	1	TO MR-101 RELAY COIL	4005 8 POINT I/O
4081-9010	733-973	1K	BRN	BLK	RED	GLD	N/A	1	N.C. INIT. (ACROSS CONTACTS)	4005*, 4090-9001 IDNET IAM
									24 PT. I/O (ACROSS CONTACTS)	4605-7401, 4100 SERIES
									CURRENT LIMITED N.O. INIT. (IN SERIES WITH CONTACT)	4090-9001 IDNET IAM
4081-9011	733-974	100 Ω	BRN	BLK	BRN	GLD	N/A	1/2	ANNUNCIATOR (N2)	4006, 4008, 4010
4081-9012	733-985	8.2K	GRAY	RED	RED	GLD	N/A	1/2	SPEAKER CIRCUIT	4003
4081-9013	734-086	4.99K	YEL	WHT	WHT	BRN	BRN	1/2		
4081-9014	734-092	2.4K	RED	YEL	RED	GLD	N/A	1/2	N.C. INITIATING (SECURITY MONITORING EOLR)	4090-9001 IDNET IAM
4081-9015	734-093	1.5K	BRN	GRN	RED	GLD	N/A	1/2	CURRENT LIMITED N.O. INIT. (SECURITY MONITORING EOLR)	4090-9001 IDNET IAM
4081-9016	734-149	150K	BRN	GRN	YEL	GLD	N/A	1/2		
4081-9017	734-171	3.9K	ORG	WHT	RED	GLD	N/A	1		
4081-9018	734-168	10K	BRN	BLK	ORG	GLD	N/A	1	70VRMS CONSTANT SUPV. NACS	4100-1260
	378-090	8.2K	GRAY	RED	RED	GLD	N/A	1/2	SECURITY MONITORING (EOLR)	4100, 4100U
	378-046	5.6K	GRN	BLU	RED	GLD	N/A	1/2	N.O. SECURITY MON. (SERIES)	4100, 4100U
	378-069	12K	BRN	RED	ORG	GLD	N/A	1/2	N.C. SECURITY MON. (SHUNT)	4100, 4100U

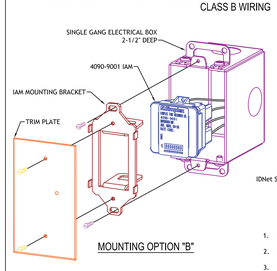
* USE WITH RETROFIT OR HIGH CURRENT MODULE

City of Aurora Building Division
Project: *Medical Center of Aurora*
Address: *1501 S POTOMAC ST*
Occupancy Group: *IBC I-2*
Construction Type: *IBC Type IA-SPK*
RSN: *1172029*
Permit: *2016-1223188-LT*

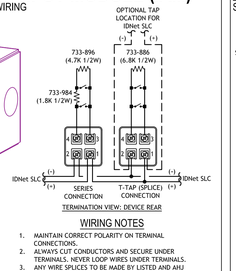
This sheet of drawings has not been reviewed for code compliance.

4090-9001 ADDRESSABLE INPUT MODULE (IAM)

CLASS B WIRING



MOUNTING OPTION "B"



TERMINATION VIEW: DEVICE REAR

WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS.

MOUNTING OPTIONS

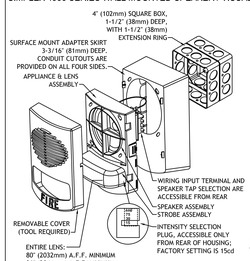
OPTION[1]	DESCRIPTION	NOTE
A	SINGLE GANG BOX, 2-1/2" (64mm) DEEP WITH SINGLE GANG COVER PLATE	BY OTHERS
B	SINGLE GANG BOX, 2-1/2" (64mm) DEEP WITH SIMPLEX 4090-9810 IAM MOUNTING BRACKET AND SIMPLEX 4090-9806 TRIM PLATE FOR SEMI-FLUSH MOUNTED BOX	BOX BY OTHERS, PLATES ORDERED SEPARATELY
C	SINGLE GANG BOX, 2-1/2" (64mm) DEEP WITH SIMPLEX 4090-9810 IAM MOUNTING BRACKET AND SIMPLEX 4090-9807 TRIM PLATE FOR SURFACE MOUNTED BOX	BOX BY OTHERS, PLATES ORDERED SEPARATELY

1. FOR ADDITIONAL MOUNTING OPTIONS, DOWNLOAD DATA SHEET 4090-0001 FROM HTTP://WWW.SIMPLEX-FIRE.COM
2. OR EQUIVALENT EQUIPMENT

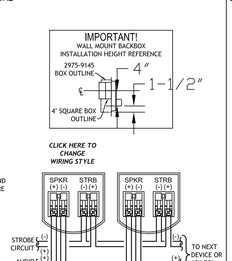
(##)

True*Alert* CONVENTIONAL APPLIANCES

SIMPLEX 4906 SERIES WALL MOUNTED SPEAKER / VISUAL



MOUNTING OPTION "C"



TERMINATION VIEW: DEVICE MOUNTING PLATE
CLASS B WIRING

WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS.

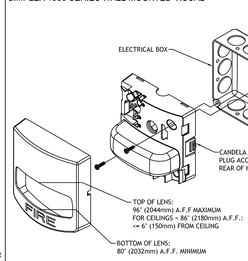
MOUNTING OPTIONS

OPTION[1]	DESCRIPTION	NOTE
A	4" (102mm) SQUARE BOX, 1-1/2" (38mm) DEEP, WITH 1-1/2" (38mm) EXTENSION RING - FLUSH MOUNTING	BY OTHERS
B	SIMPLEX 2975-9145 SURFACE MOUNT BOX WITH SIMPLEX 4905-9903 ADAPTER PLATE	ORDERED SEPARATELY
C	4" (102mm) SQUARE BOX, 1-1/2" (38mm) DEEP, WITH 1-1/2" (38mm) EXTENSION RING - SURFACE MOUNTING	SIMPLEX ADAPTER SKIRT REQUIRED

1. FOR ADDITIONAL MOUNTING OPTIONS, DOWNLOAD DATA SHEET 4906-0003 FROM HTTP://WWW.SIMPLEX-FIRE.COM

True*Alert* NON-ADDRESSABLE APPLIANCES

SIMPLEX 4906 SERIES WALL MOUNTED VISUAL



MOUNTING OPTION "B"

TERMINATION VIEW: REAR OF DEVICE
CLASS B WIRING

WIRING NOTES

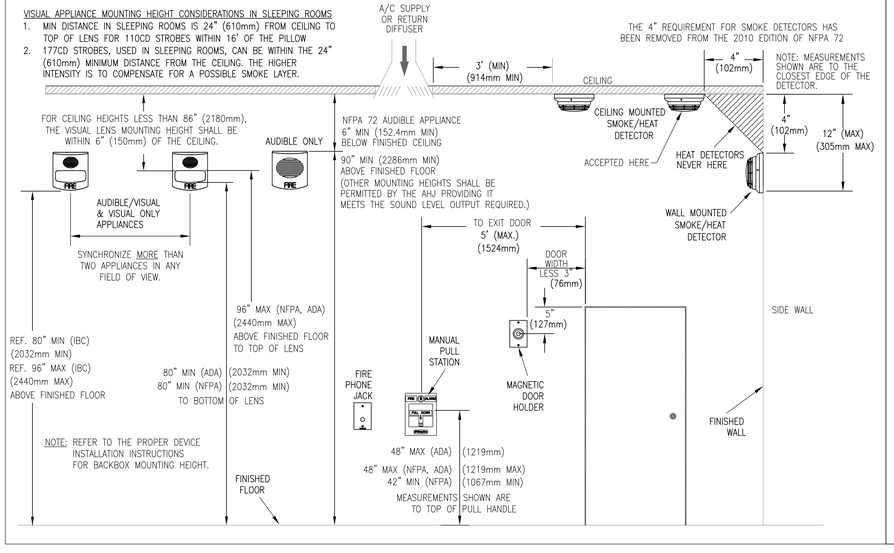
1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS.

MOUNTING OPTIONS

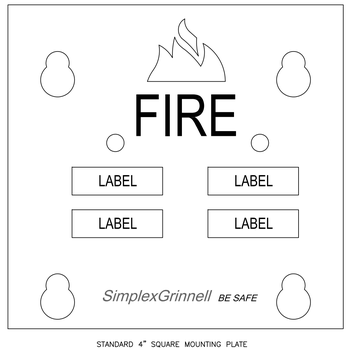
OPTION[1]	DESCRIPTION	NOTE
A	SINGLE GANG BOX, 1-1/2" (64mm) DEEP	BY OTHERS. WHEN SURFACE MOUNTING USE 4905-9937 (RED) OR 4906-9940 (WHITE) SKIRT
B	4" (102mm) SQUARE BOX, 1-1/2" (38mm) DEEP, MINIMUM	
D	2 GANG BOX, 1-1/2" (38mm) DEEP	
C	SIMPLEX 2975-9145, 7-7/8"H x 5-1/8"W x 2-3/4"D (127mm x 98mm x 56mm) REQUIRES 4905-9931 PLATE	ORDERED SEPARATELY

1. FOR ADDITIONAL MOUNTING OPTIONS, DOWNLOAD DATA SHEET 4906-0002 FROM HTTP://WWW.SIMPLEX-FIRE.COM

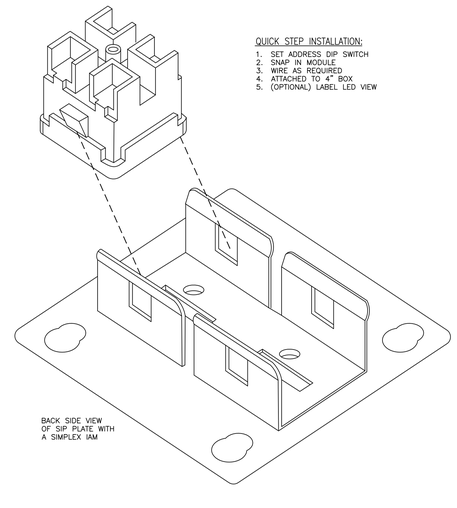
DEVICE MOUNTING HEIGHT REFERENCE (PER NFPA 72)



YJ1263 – BRACKET/COVER



STANDARD 4" SQUARE MOUNTING PLATE



NICET CERTIFICATION

TECHNICAL AREA 00303: LEVEL 3
CERTIFICATE #: 92061
VALID THROUGH: 11/01/17

BRIAN SOUTH — 12/20/2016 DATE

tyco SimplexGrinnell
Safer. Smarter. Tyco.™
DISTRICT - 419
14300 E. EXPOSITION AVE
AURORA, CO 80012
SERVICE: 303.355-6500
PHONE: 303.355.6500
FAX: 303.355-0615

CATH LAB AND MECHANICAL ROOM
MEDICAL CENTER OF AURORA

MEDICAL CENTER OF AURORA
1501 S. POTOMAC ST.
AURORA, CO 80012

ISSUE LOG: MARK	DATE	CAD	CHK	DESCRIPTION

Revisions shown with Δ symbol

DRAWN BY:	C. MADDEN
CHECKED BY:	B. SOUTH
ISSUE DATE:	11/30/16
JOB #:	16-003
PROJECT #:	419:991184502

TYCO SIMPLEXGRINNELL © 2016

SYSTEM: FIRE ALARM SYSTEM

SHEET: TYPICAL DETAILS

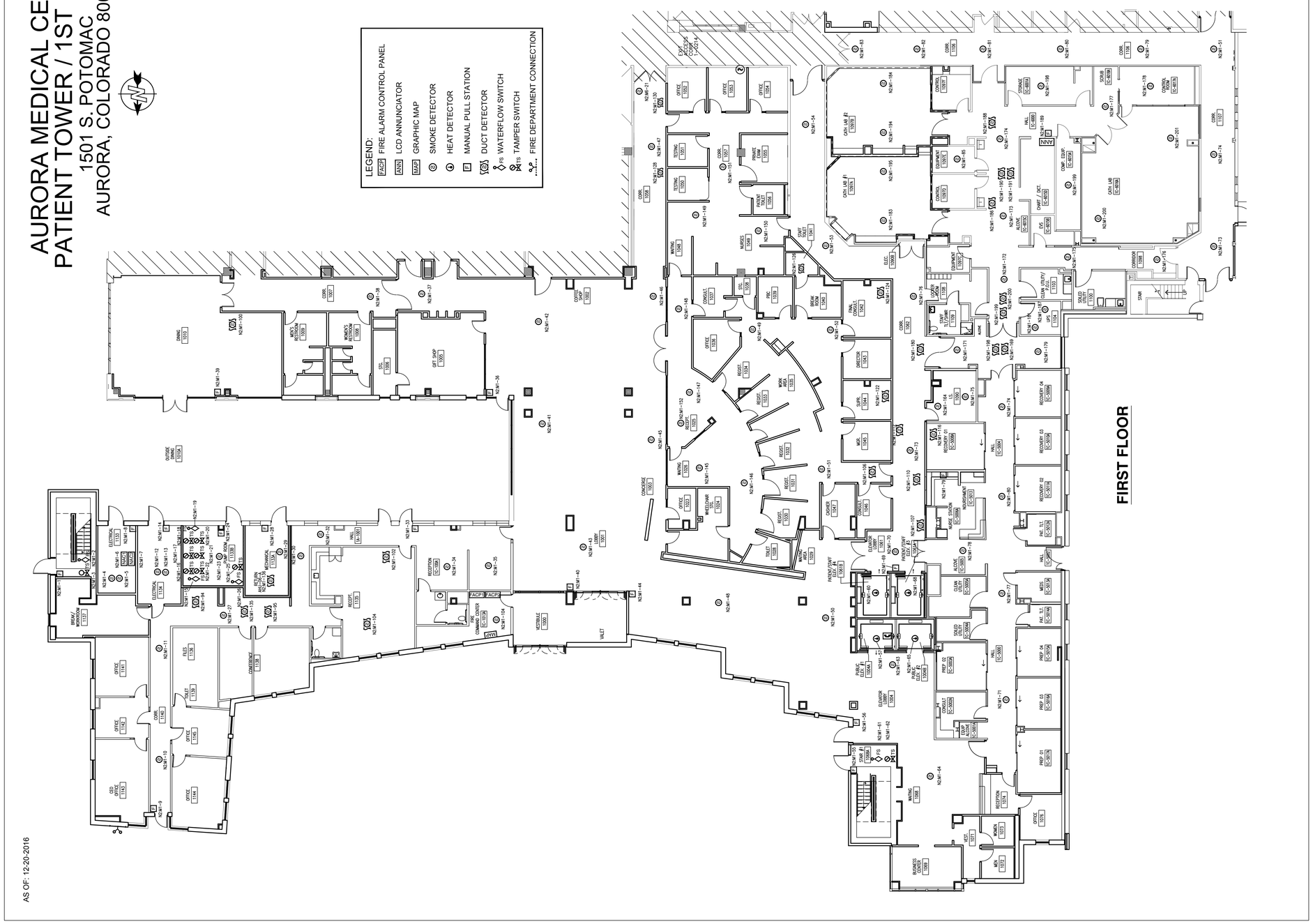
FA-701

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FILE PATH: C:\Users\tsouth\Box Sync\Med Ctr of Aurora\21 - Cath Lab Expansion - 2016 - 991184502\03-Cath Lab and Mech Room-Phase 2\Fire\FA-701.dwg
LAST PRINTED: 12/21/2016 10:41:27 AM
LAST SAVED BY: SOUTH
30" x 42" - Arch E1 Size

AURORA MEDICAL CENTER
PATIENT TOWER / 1ST FLOOR
1501 S. POTOMAC
AURORA, COLORADO 80012

LEGEND:
- FACP FIRE ALARM CONTROL PANEL
- ANN LCD ANNUNCIATOR
- MAP GRAPHIC MAP
- SD SMOKE DETECTOR
- HD HEAT DETECTOR
- MS MANUAL PULL STATION
- DS DUCT DETECTOR
- WS WATERFLOW SWITCH
- TS TAMPER SWITCH
- FD FIRE DEPARTMENT CONNECTION


DINING 1010
MEN'S RESTROOM 1009
WOMEN'S RESTROOM 1008
CORR. 1007
STC. 1006
GIFT SHOP 1005
OUTSIDE DINING 1010A
COFFEE SHOP 1002
EXIT EXPRESS CODE 1-4321-A
OFFICE 1035
OFFICE 1034
OFFICE 1033
CORR. 1056
STORAGE 1055
STORAGE 1054
CORR. 1057
PATIENT PORT. 1053
NURSES 1059
CHART 1061
WAITING 1060
CONSULT 1062
STC. 1038
PSC 1039
OFFICE 1036
RECPT. 1034
RECPT. 1033
WORK AREA 1035
RECEIPTS 1032
WAITING 1026
OFFICE 1027
RECPT. 1031
RECPT. 1030
WORK 1045
SUPR. 1044
DIRECTOR 1043
PNL CONTROL 1042
BOOM ROOM 1040
ELEC. 1066B
CHT LAB #2 1067A
CHT LAB #1 1067A
CORR. 1056
CONFERENCE 1067
EQUIPMENT 1067C
CORR. 1056
STAFF TOILET ROOM 1109
CLEAN UTILITY 1110
SOILED UTILITY 1100
STAIR
STORAGE SC-6003
SCRUB SC-6039
CORR. 1106
CORR. 1106
HALL 1107
HALL SC-3060
CHART / ACCT. SC-6035
CLEAN UTILITY SC-6036
SOILED UTILITY SC-6034
CHT LAB SC-6056
CORR. 1106
HALL SC-3064
RECOVERY 04 SC-3009B
RECOVERY 03 SC-3007B
RECOVERY 02 SC-3013B
RECOVERY 01 SC-3017B
PAT. TLT. SC-3015B
PAT. TLT. SC-3019B
HALL SC-3062
NURSE STATION SC-3005B
NOURISHMENT SC-3003
CLEAN UTILITY SC-3008
SOILED UTILITY SC-3004
HALL SC-3060
MEDS SC-3013A
PAT. TLT. SC-3015A
PAT. TLT. SC-3019A
HALL SC-3062
PREP 04 SC-3005A
PREP 03 SC-3009A
PREP 02 SC-3003A
PREP 01 SC-3007A
CONSULT SC-3005A
CORP. ACCT. SC-3000A
HALL SC-3060
RECEPTION 1071
WOMEN 1073
MEN 1072
OFFICE 1076
VEST. 1077
BUSINESS OFFICE 1069
WAITING 1068
ELEVATOR LOBBY 1004
PUBLIC ELEV. #1 1004A
PUBLIC ELEV. #2 1004B
ELEVATOR LOBBY 1004
PATIENT PORT. ELEV. #4 1004C
PATIENT PORT. ELEV. #3 1004D
ELEVATOR LOBBY 1004
KITCHEN 1037
BREAK ROOM/DEN 1137
ELECTRICAL 1134
ELECTRICAL 1134
ELEC. 1133
MECHANICAL 1135
MECHANICAL 1136
OFFICE 1141
OFFICE 1142
OFFICE 1143
FILES 1139A
VAULT 1139
CONFERENCE 1138
CORR. 1140
OFFICE 1145
OFFICE 1144
RECEPT. 1100
RECEPT. 1135
RECEPTION SC-3082
FACP
ACP
FIRE COMMUNICATION SC-3139
VERIF.
MEDICAL 1080
VALET
1001
CONCOURSE 1003
OFFICE 1053
MEETING/WORK 1054
TOILET 1028
WORK AREA 1029
CORNER 1047
CONSULT 1046
ELEVATOR LOBBY 1048
PATIENT PORT. ELEV. #4 1004C
PATIENT PORT. ELEV. #3 1004D
ELEVATOR LOBBY 1004
PUBLIC ELEV. #1 1004A
PUBLIC ELEV. #2 1004B
ELEVATOR LOBBY 1004
VERIF.
FIRE COMMUNICATION SC-3139
FACP
ACP
WAITING 1068
VEST. 1077
BUSINESS OFFICE 1069
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WOMEN 1073
RECEPTION 1071
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PREP 02 SC-3003A
PREP 03 SC-3009A
PREP 04 SC-3005A
HALL SC-3062
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PAT. TLT. SC-3015A
MEDS SC-3013A
HALL SC-3062
PAT. TLT. SC-3019B
PAT. TLT. SC-3015B
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RECOVERY 02 SC-3013B
RECOVERY 03 SC-3011B
RECOVERY 04 SC-3009B
HALL SC-3064
HALL SC-3060
CLEAN UTILITY SC-6036
SOILED UTILITY SC-6034
CHART / ACCT. SC-6035
STORAGE SC-6003
HALL SC-3060
CLEAN UTILITY 1110
SOILED UTILITY 1100
CHT LAB SC-6056
CHT LAB #1 1067A
CHT LAB #2 1067B
CORR. 1056
CORR. 1056
CORR. 1056

Fire Alarm System Acceptance Inspection

2009 IFC and 2007 NFPA 72

This worksheet is for jurisdictions that permit the use of 2007 NFPA 72 in lieu of IFC's referenced 2002 NFPA 72.

Date of Inspection: _____ Permit Number: _____

Business/Building Name: Medical Center of Aurora Address of Project: 1501 S POTOMAC ST

Contractor: MC2 ELECTRICAL CONTRACTORS Contractor's Phone: (303) 453-0284

Reference numbers following worksheet statements represent an NFPA code section unless otherwise specified.

Pass	Fail	NA	General
			General
			1. Obtained a copy of the fire alarm installation certification and a Record of Completion from installer, 4.5.2.1.
			2. Approved plans are on site.
			3. Fire alarm control unit (FACU) and remote annunciator (RA) are installed consistent with approved plans, 4.4.6.1.1. and 7.10.
			4. A zone and legend map is provided at the RA or an approved location.
			5. Fire alarm zones are properly identified on the FACU and RA panels.
			6. The fire alarm system power supply is a dedicated 120 AC branch circuit, which is labeled, 4.4.1.4.2.2.
			7. Type and gauge of wire or cable(s) for each circuit are consistent with the plans.
			8. Device location and installation are consistent with the plans.
			9. Pull stations are installed at the proper height and location, 42 in. to 48 in. and within the 200 ft. maximum travel distance, 5.13 and IFC 907.5.2.1 and 907.5.2.2.
			10. A Contractor Sound Pressure Level (dBA) Pretest Room Log is provided and verified with the use of a sound meter during a sound pressure test.
			Operational
			11. Fire alarm audible notification devices sound throughout the occupancy providing a sound pressure level at least a minimum of 15 dBA above the average ambient noise level or 5 dBA above the maximum noise level. For bedrooms with closed door provide at least 75 dBA at the pillow, 7.4.4.1, IFC 907.6.2.1.1.
			12. Fire alarm audible devices are a three-pulse temporal pattern unless they were permitted to match existing audible devices, 6.8.6.5.1.
			13. Fire alarm visual notification device intensity (cd) ratings and settings, mounting height (80 in. to 96 in.), and location, are consistent with the plans, 7.5.4.1.
			14. Emergency voice/ alarm communications systems is tested and documentation is provided documenting the verbal statement(s) are distinguishable and understandable, Table 10.4.2.2.15(b).
			15. In sprinklered buildings, the fire alarm notification devices will activate by operation of the sprinkler flow alarm.
			16. HVAC duct detectors are supervised by the fire alarm system, detectors are all tested to verify if they can sample the air stream, fans shut down upon activation and visual and audible status alarm functions, Table 10.4.2.2.14(g).
			17. A central, remote or proprietary monitoring service received various signals during system tests.
			18. Verify that the correct and distinctive signals are received (alarm, trouble, and supervisory alarms), 4.4.3.3, 10.4.1.1
			19. Two monitoring circuits are provided, both circuits send correct signals to monitoring company within 90 seconds, Table 10.4.2.2.16.
			20. Verify proper operation of magnetic door-releasing hardware and/or ventilation shutdown.
			21. Sprinkler tamper switch activation transmits a trouble signal at the annunciator panel.
			22. Fire department communications system, if provided, is operational.
			23. For air sampling and flame detectors, test the device in accordance with the manufacturer's instructions.
			24. Restoreable heat and smoke detectors, and pull stations are tested.
			25. Trouble condition is created for each circuit and the FACU responds appropriately.
			26. Remote annunciator displays the correct zone and device information.

27. ____|____ | ____ Battery load test: the system is switched to battery operation 24 hours before the test and in the presence of the inspector the notification devices are activated and operate for 5 minutes or 15 minutes for emergency voice alarms.
28. ____|____ | ____ Check battery charger, measure load voltage, and open circuit voltage.
29. ____|____ | ____ Test ground-fault monitoring circuit, if provided.
30. ____|____ | ____ Under primary and secondary power, perform these tests:
    - ____|____ | ____ A. power light on and in normal condition, trouble signal when on secondary power.
    - ____|____ | ____ B. supervisory signals: fire pump power loss or phase reversal, water level/temp, pressure switches, control valves, etc.
    - ____|____ | ____ C. silence switch functions.
    - ____|____ | ____ D. a 2nd alarm initiating zone overrides silence switch.
    - ____|____ | ____ E. trouble signals and FACU panel lights operate for each circuit tested; disconnect .wires from devices and primary power supply to simulate trouble conditions.
    - ____|____ | ____ F. on secondary power, measure standby and alarm current demand.
    - ____|____ | ____ G. trouble and alarm reset switches operate.
    - ____|____ | ____ H. emergency voice alarms: the message is clear and distinct.
    - ____|____ | ____ I. initiating devices tested, audible sound pressure levels, and visuals operate.
    - ____|____ | ____ J. panel lamp test switch operates: if provided.
    - ____|____ | ____ K. field zones and device address signals corresponded with panel zones and addresses.
    - ____|____ | ____ L. elevator(s) recall to designated floor and alternate floor in accordance with 6.16.3.
31. ____|____ | ____ Other systems activate fire alarm: kitchen hood suppression system, clean agent, etc.
32. ____|____ | ____ As-builts are required when system installation is not consistent with the plans.
33. ____|____ | ____ Circuit loop resistance is within specifications and a test may be required if the system wiring has changed from the plans.
34. ____|____ | ____ Heat and spot smoke detectors are not within 4 in. of the sidewall, or if on the sidewall, the detector is 4 in. to 12 in. from the ceiling, 5.6.3.1, 5.7.3.2.1.
35. ____|____ | ____ Visual devices in a room or adjacent space with more than 2 devices within the field of view the flash are synchronized, 7.5.4.1.2(3). Devices in a corridor with more than 2 devices within the field of view and a maximum spacing of 100 ft., are synchronized, 7.5.4.2.5 and 7.5.4.2.7.
36. ____|____ | ____ Visual devices are wall mounted 80 in. to 96 in. above the floor level unless otherwise permitted by the approved plans and the fire code official, 7.5.4.1.
37. ____|____ | ____ Supplemental (extra) visual devices are permitted to be mounted less than 80 in. above the floor, 7.7.2.
38. ____|____ | ____ Ceiling-mounted devices are listed for use and spaced in accordance with Table 7.5.4.1.1(b) and the approved plans.

*Note: additional testing criteria is found in NFPA 72: Chapter 10.

Additional Comments:

Inspection Date: _____ Approved or Disapproved FD Inspector: _____

Inspection Date: _____ Approved or Disapproved FD Inspector: _____

Fire Alarm Installation Certification

Permit #: _____ Date: _____

	Property Protected	System Installer	System Supplier
Business Name:			
Address:			
Representative:			
Telephone:			

Location of Plans: _____

Location of Owner's Manual: _____

1. Certification of System Installation: Complete this section after system is installed, but prior to conducting operational acceptance tests. Check wiring for opens, ground faults, and improper branching.

This system installation was inspected and found to comply with the installation requirements of:

_____ NFPA 72
_____ Article 760 of NEC
_____ Manufacturer's Instructions
_____ Other (specify; FM, UL, etc.) _____

Print Name: _____

Signed: _____ Date: _____

Organization: _____

2. Certification of System Operation: All operational features and functions of this system were tested and found to be operating properly in accordance with the requirements of:

_____ NFPA 72
_____ Design Specifications
_____ Manufacturer's Instructions
_____ Other (specify) _____

Print Name: _____

Signed: _____ Date: _____

Organization: _____

RSN: ***1172029***
Permit #: ***2016-1223188-LT***

SIMPLEXGRINNELL
14200 E. Exposition Ave.
Aurora, Colorado 80012

www.simplexgrinnell.com

Tele: (303) 355-0500
Fax: (303) 355-0615

Fire Alarm
Product Data Submittal for:

The Medical Center of Aurora
South Campus - Cath Lab Expansion
1501 S. Potomac Street
Aurora, CO 80012

Prepared for:

MC2 Electrical Contractors
88 Lipan Street
Denver, Colorado 80223

RSN: ***1172029***
Permit #: ***2016-1223188-LT***

TABLE OF CONTENTS

I. SUBMITTAL DATA SHEETS

A. True*Alarm*® Analog Sensors; Compatible Bases and Accessories----------S4098-0019
B. True*Alarm*® Analog Duct Sensor Housing and Accessories ----------S4098-0030
C. IDNet/Mapnet Individual Addressable Modules (IAMs) ----------S4090-0001
D. IAM Mounting Bracket and Cover----------YJ1263
E. 4081 Series End-of-Line Resistor Harness----------S4081-0003
F. True*Alert*® Multi-Candela Notification Appliances----------S4906-0001
G. True*Alert*® Multi-Candela Notification Appliances----------S4906-0003

II. SYSTEM DRAWINGS

A. Cover Sheet ---------- FA-000
B. Device Placement Plan ---------- FA-101
C. Partial Riser Diagram---------- FA-201
D. Calculations---------- FA-601
E. Calculations---------- FA-602
F. Typical Details ---------- FA-701
G. Graphic Map----------FA-801

RSN: ***1172029***
Permit #: ***2016-1223188-LT***

Simplex®

True*Alarm* Analog Sensing

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

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

Features

TrueAlarm analog sensing provides:

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

For use with the following Simplex® products:

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

Fire alarm control panel provides:

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

Photoelectric smoke sensors provide:

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

Heat sensors provide:

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

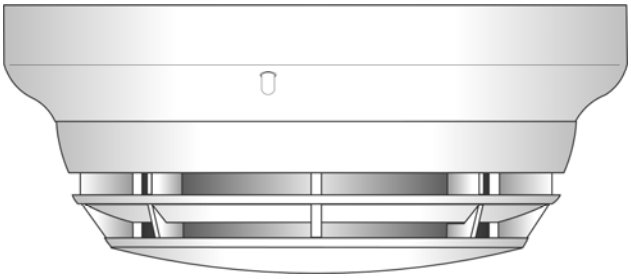
General features:

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

Additional base reference:

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

* These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listings 7272-0026:218, 7271-0026:231, 7270-0026:216, and 7300-0026:217 for allowable values and/or conditions concerning material presented in this document. Accepted for use – City of New York Department of Buildings – MEA35-93E. Additional listings may be applicable, contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.



4098-9714 TrueAlarm Photoelectric Sensor Mounted in Base

Description

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

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

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

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

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

True*Alarm* Sensor Bases and Accessories

Sensor Base Features

Base mounted address selection:

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

General features:

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

Sensor Bases

4098-9792, Standard Sensor Base

4098-9789, Sensor Base with wired connections for:

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

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

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

Sensor Base Options

2098-9737, Remote or local mount supervised relay:

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

4098-9860, Remote or local mount supervised relay:

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

4098-9822, LED Annunciation Relay:

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

4098-9832, Adapter plate:

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

2098-9808, Remote red LED Alarm Indicator:

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



Description

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

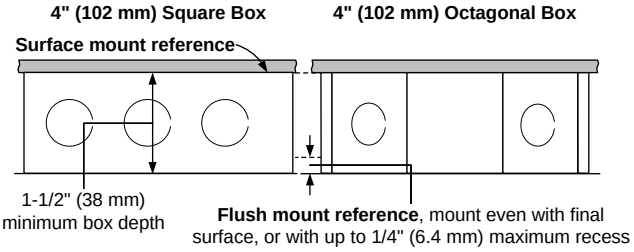
Since TrueAlarm sensors use the same base, different sensor types can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily dusty, instead of covering the smoke sensors (causing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

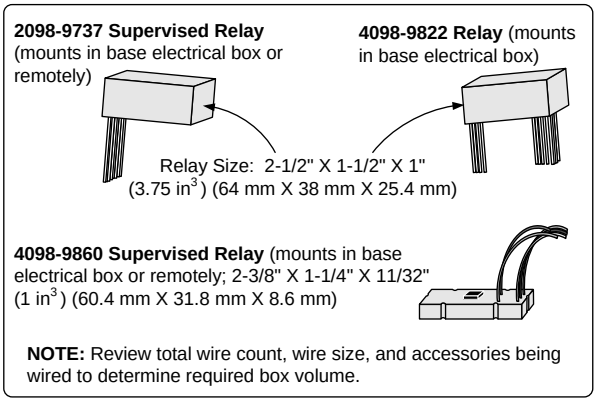
Mounting Reference

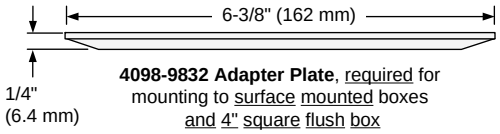
Electrical Box Requirements: (boxes are by others)

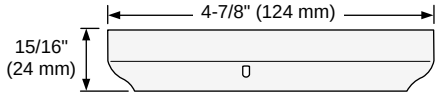
Without relay in the box: 4" octagonal or 4" square, 1-1/2" deep; single gang, 2" deep

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









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

RSN: ***1172029***
Permit #: ***2016-1223188-LT***

True*Alarm* Sensors

Features

Sealed against rear air flow entry

Interchangeable mounting

EMI/RFI shielded electronics

Heat sensors:

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

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

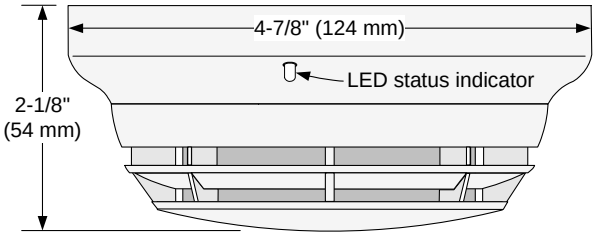
Smoke Sensors:

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

4098-9714 Photoelectric Sensor

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

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



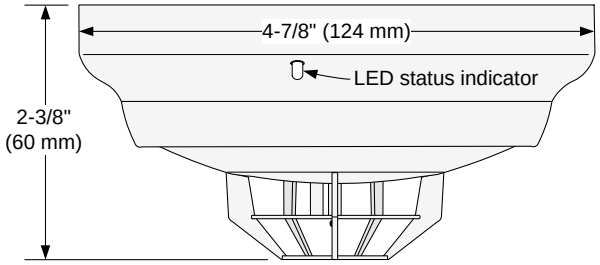
4098-9714 Photoelectric Sensor with Base

4098-9733 Heat Sensor

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

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

TrueAlarm heat sensors can be programmed as a utility device to monitor for temperature extremes in the range from 32° F to 155° F (0° C to 68° C). This feature can provide freeze warnings or alert to HVAC system problems. *Refer to specific panels for availability.*



4098-9733 Heat Sensor with Base

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

Application Reference

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

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

RSN: ***1172029***
Permit #: ***2016-1223188-LT***

TrueAlarm Analog Sensing Product Selection Chart

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

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

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

TrueAlarm Sensors

Model	Description	Compatibility	Mounting Requirements
4098-9714	Photoelectric Smoke Sensor	Bases 4098-9792, 4098-9789, 4098-9791, and 4098-9780	Refer to base requirements
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
4098-9860	Supervised Relay, mounts remote or in base electrical box	For use with 4098-9780 base	
2098-9808	Remote Red LED Alarm Indicator on single gang stainless steel plate	Bases 4098-9789, 4098-9791, and 4098-9780	Single gang box, 1-1/2" minimum depth
4098-9822	Unsupervised Relay, tracks base LED status; Note: Mounts only in base electrical box	Bases 4098-9789, 4098-9791, and 4098-9780	4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
4098-9832	Adapter Plate	Bases 4098-9792, 4098-9789, 4098-9791, and 4098-9780	**Required** for surface or semi-flush mounted 4" square box and for surface mounted 4" octagonal box

Specifications

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

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RSN: ***1172029***
Permit #: ***2016-1223188-LT***

Simplex®

True*Alarm* Analog Sensing

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

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

Features

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

Includes factory installed TrueAlarm photoelectric smoke sensor and features:

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

Model 4098-9755:

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

Model 4098-9756:

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

General features:

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

Diagnostic LEDs (on interface board):

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

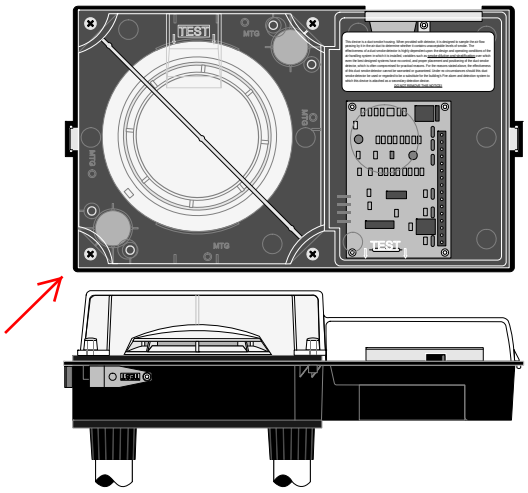
Sampling tubes (ordered separately):

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

Remote module options (ordered separately):

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

* These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 3240-0026.241 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. Accepted for use – City of New York Department of Buildings – MEA35-93E. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.



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.

RSN: *1172029*
Permit #: *2016-1223188-LT*

TrueAlarm Sensor Operation *(Continued)*

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

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

Photoelectric Sensing

TrueAlarm photoelectric sensors use a stable, pulsed infrared LED light source and a silicon photodiode receiver to provide consistent and accurate low power smoke sensing.

Photoelectric Sensing *(Continued)*

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

Fire Alarm Control Panel Features

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

Duct Sensor Selection Chart

Duct Smoke Sensor Housing with Photoelectric Sensor*

Model	Description	Compatibility
4098-9755	Basic Duct Sensor Housing; operating power is supplied by either IDNet or MAPNET II communications (no relay output)	Simplex fire alarm control panel models: 4100ES, 4010ES, 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

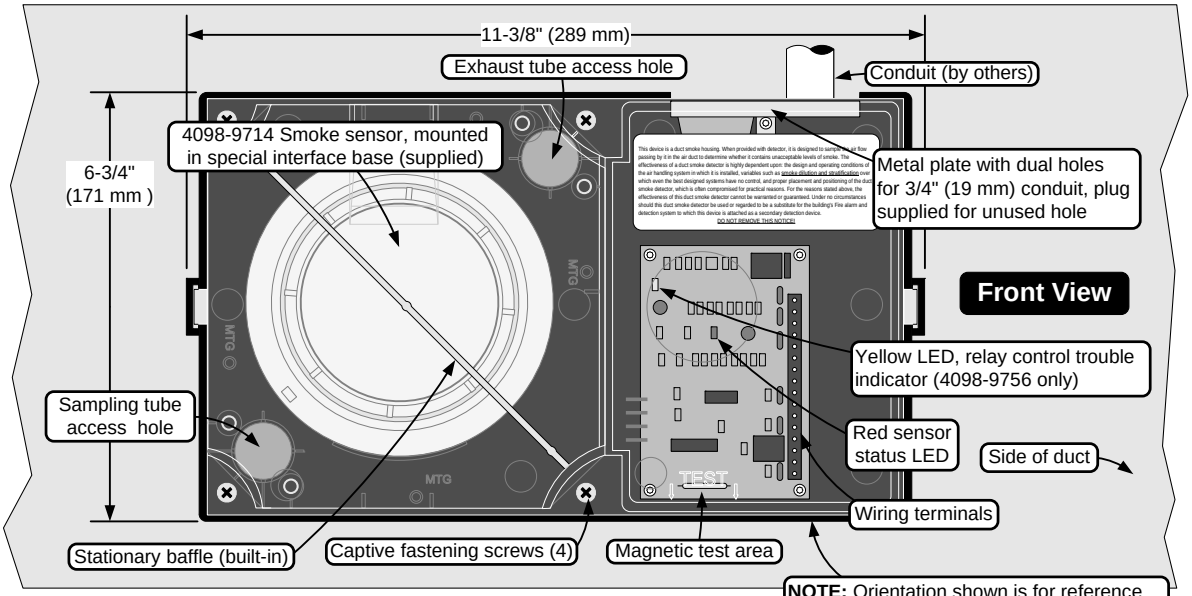
* Each duct housing includes an internally mounted model 4098-9714 TrueAlarm photoelectric sensor and an exhaust tube. A correctly sized sampling tube (ordered per application) is required, refer to chart below.

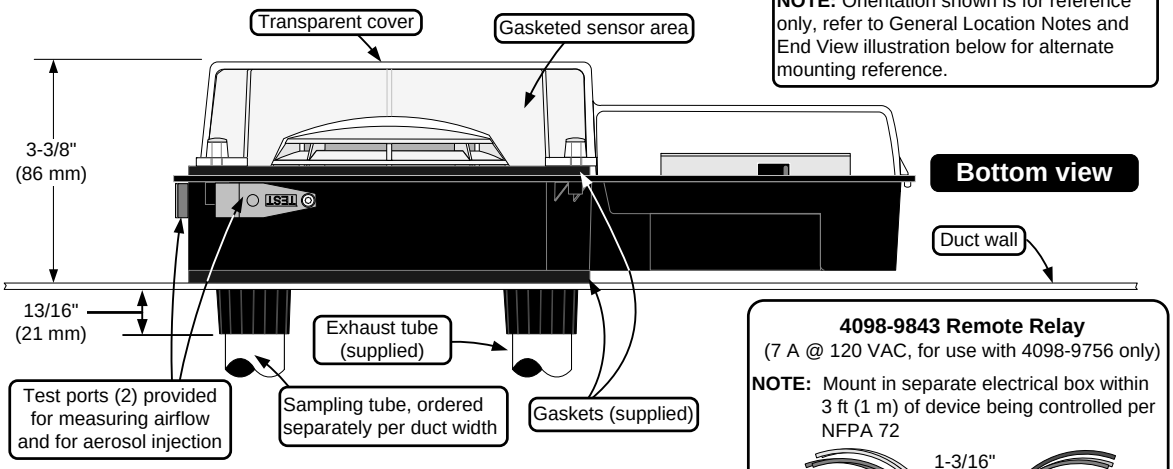
Sampling Tube Selection Chart, Ordered Separately Per Duct Width, Select One

Overall Duct Width	Tube Required	Suggested Cut Length
12" (305 mm)	**4098-9854**	1/2" (12.7 mm) longer than duct width
13" to 23" (330 mm to 584 mm)	**4098-9855**	1/2" (12.7 mm) longer than duct width
24" to 46" (610 mm to 1168 mm)	**4098-9856**	3 in" (76 mm) longer than duct width
46" to 71" (1168 mm to 1803 mm)	**4098-9857**	3 in" (76 mm) longer than duct width
71" to 95" (1803 mm to 2413 mm)	**4098-9858**	3 in" (76 mm) longer than duct width

Duct Sensor Housing Detail Reference

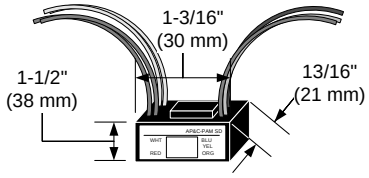
NOTE: Refer to Installation Instructions 574-776 for additional installation detail and maintenance information.

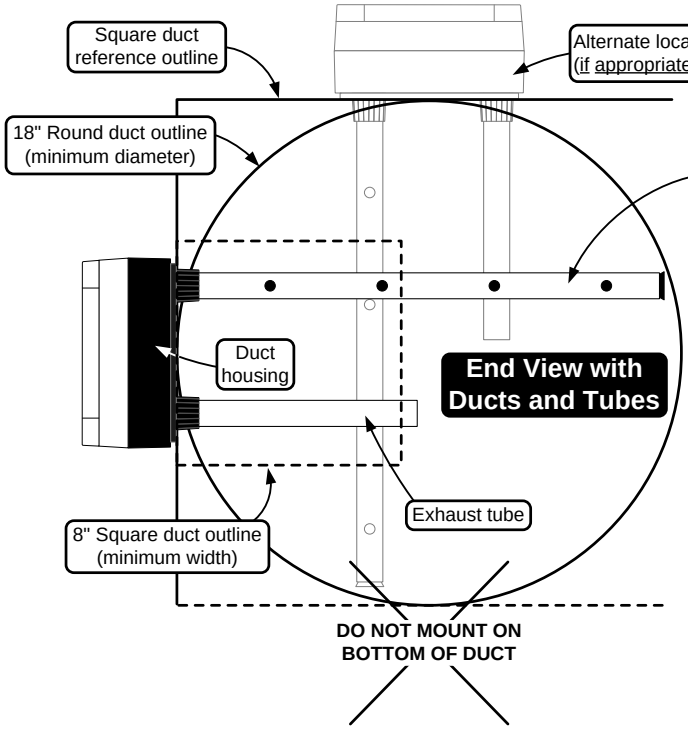




4098-9843 Remote Relay
(7 A @ 120 VAC, for use with 4098-9756 only)

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

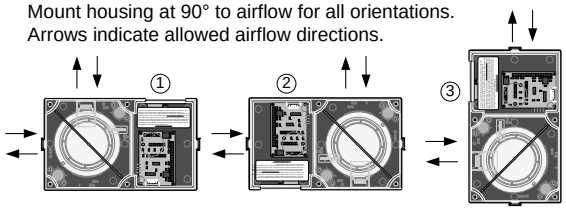




Sampling tube, keyed for proper hole alignment **with holes facing into airflow** (template is provided for proper tube installation). (Housing is shown as position 2 per note 2 below.)

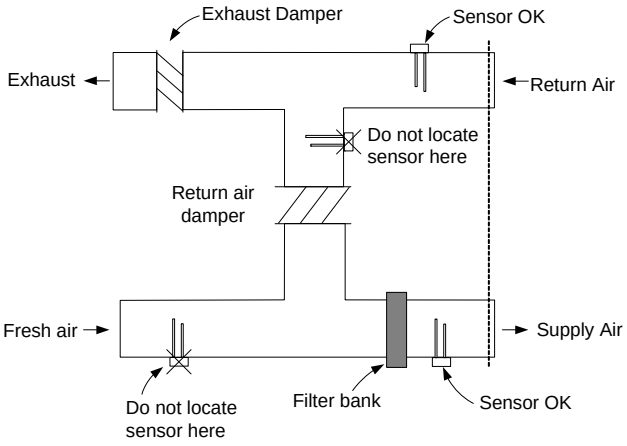
General Location Notes:

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



RSN: ***1172029***
Permit #: ***2016-1223188-LT***

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 and Signaling 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. 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	15 mA @ 24 VDC; add 15 mA for each 4098-9843 relay
Supervised Remote Relay Control Output	For use with 4098-9843 relay only, quantity of 15 maximum; distance of 500 ft (152 m) maximum; requires 4081-9008 (ref. 733-894) 10 kΩ, 1/2 W end-of-line resistor
4098-9843 Relay Output Ratings, Single Form C, use with Model 4098-9756 Only	
Coil Current	15 mA @ 24 VDC, up to 15 maximum per relay control output
Relay Contacts	7 A at 0.35 PF @ 28 VDC & 120 VAC; 250 μA @ 5 VDC
Location Distance	500 ft (152 m) maximum to relay coils; locate relays within 3 ft (1 m) of device being controlled per NFPA 72

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RSN: ***1172029***
Permit #: ***2016-1223188-LT***

Simplex®

Multi-Application Peripherals

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

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

Features

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

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

For use with following Simplex control panels:

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

Model 4090-9001:

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

Model 4090-9051:

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

IDNet communications provides current limited monitoring:

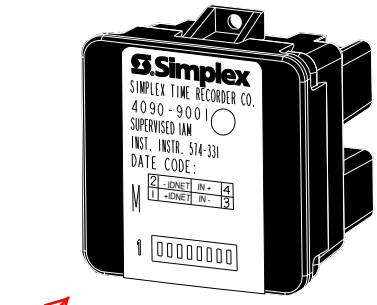
- Provides monitoring of tamper switch (supervisory) and waterflow switch (alarm) on same circuit using one point
- Available with IDNet communications only

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

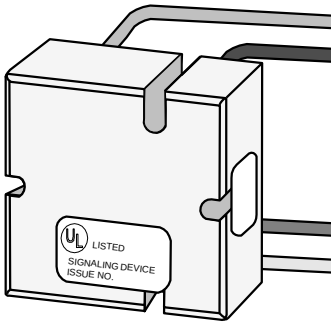
- Contact closure status can be tracked
- Momentary contact closure conditions can be selected at the panel to be latched or tracked (not available with the 2120 CDT)

UL listed to Standard 864

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



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



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

Description

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

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

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

Operation

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

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

Current Limited Operation Applications

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

IAM Product Selection

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

Optional Trim Plates and Mounting Bracket for Model 4090-9001

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

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

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

Specifications

Electrical

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

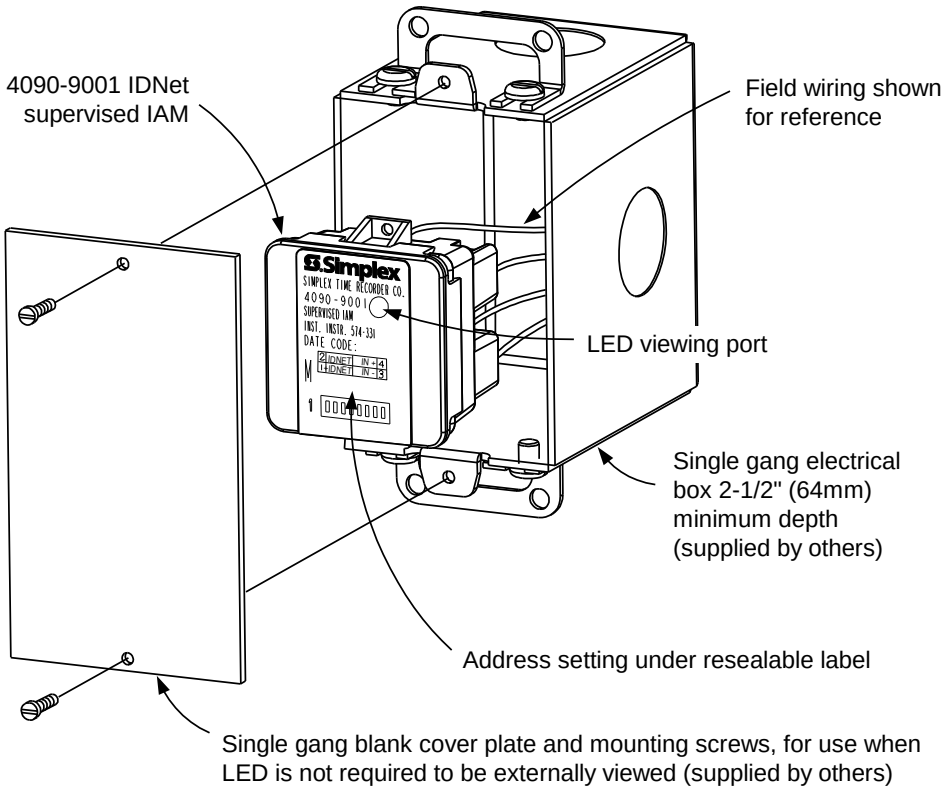
Wiring Distances

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

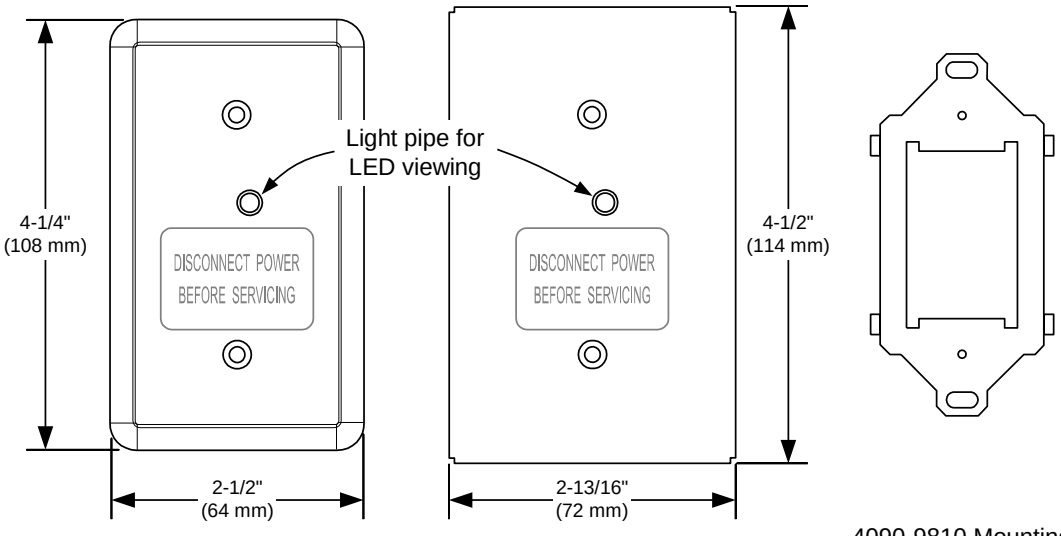
Mechanical

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

Mounting Information



Mounting Reference, Single Gang Blank Cover Plate



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

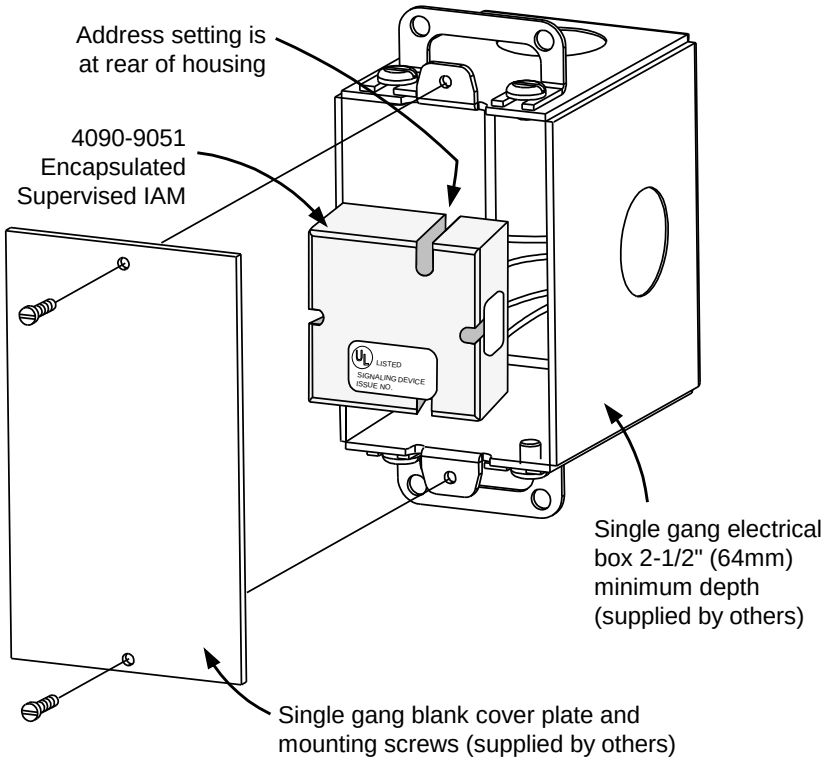
4090-9807, Trim plate for surface mounted box

4090-9810 Mounting bracket, ordered separately

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

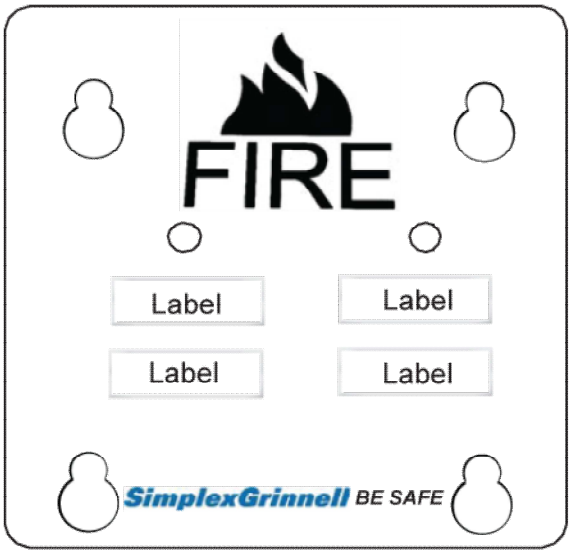
Optional Trim Plates and Mounting Bracket for Visible LED

4090-9051 Mounting Information

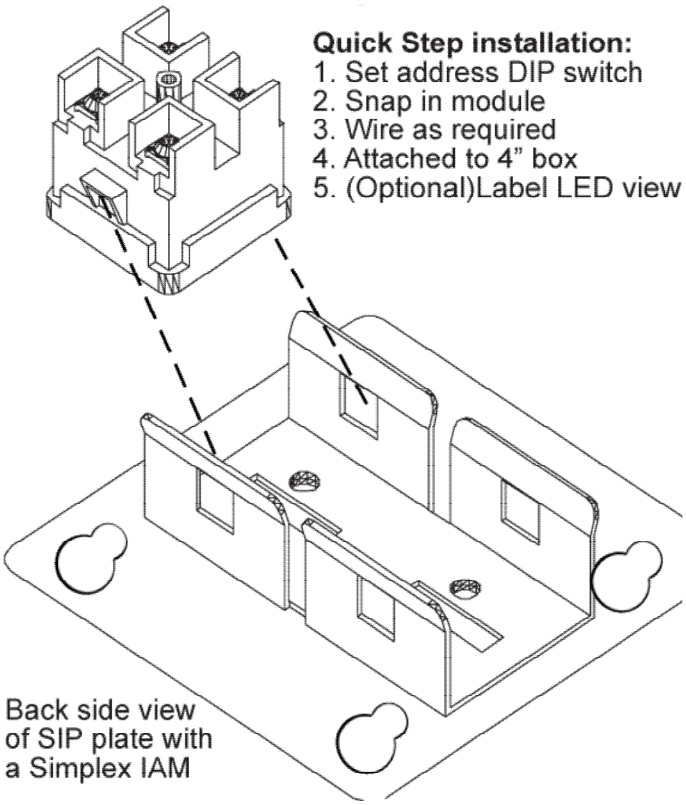


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Standard 4" square mounting plate



YJ1263

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Simplex®

*UL Listed**

System Accessories

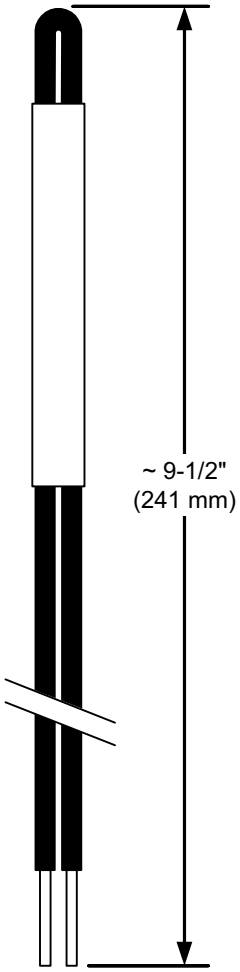
4081 Series End-of-Line Resistor Harnesses

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



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

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.

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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Permit #: ***2016-1223188-LT***

Simplex® TrueAlert® Multi-Candela Notification Appliances

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

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

Features

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

- Intensity is selectable as 15, 30, 75, or 110 candela with visible selection jumper secured behind strobe housing
- Operation is compatible with ADA requirements (refer to important installation information on page 3)
- Polarized input allows connection to compatible reverse polarity, supervised notification appliance circuit (NAC)
- Regulated circuit design ensures consistent flash output and provides controlled inrush current
- Rugged, high impact, flame retardant thermoplastic housings are available in red or white with clear lens
- Listed to UL 1971 and ULC S526

Strobes provide synchronized flash for use with:

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

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

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

Wall mount strobe features:

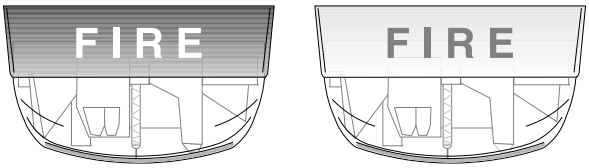
- Wiring terminals are accessible from the front of the housing providing easy access for installation, inspection, and testing
- Covers are available separately to convert housing color

Optional adapters and wire guards:

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



Wall Mount Strobes



Ceiling Mount Strobes

Description

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

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

Ceiling mount strobes install using standard single gang electrical boxes. Color choice is determined by model number.

Strobe Intensity Selection

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

Strobe Application Reference

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

* Refer to page 2 for guard listing. This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7125-0026:316 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. Refer to page 2 for listing status of wire guards. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Safety Products Westminster.

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

RSN: ***1172029***
Permit #: ***2016-1223188-LT***

Synchronized Strobes

Multiple Strobes. When multiple strobes and their reflections can be seen from one location, synchronized flashes reduce the probability of photo-sensitive reactions as well as the annoyance and possible distraction of random flashing. These multi-candela strobes are synchronized over a two-wire circuit when connected to compatible NACs, to compatible Synchronized Flash Modules, or to SmartSync Control Modules.

SmartSync Two-Wire Control

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

SmartSync Control Sources

SmartSync two-wire control is available from:

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

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

Product Selection

Multi-Candela Visible Notification Appliances (Strobes)

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

Wall Mount Strobe Adapters

Model	Description		Dimensions
4905-9937	Red	Surface Mount Adapter Skirt; use to cover 1-1/2" (38 mm) deep surface mounted boxes	5-3/8" H x 5-1/4" W x 1-5/8" D (136 mm x 133 mm x 41 mm) Total depth with strobe = 4-3/8" (111 mm)
4905-9940	White		
4905-9931	Red Adapter Plate for mounting to Simplex 2975-9145 box (typically for retrofit, may be mounted vertical or horizontal)		8-5/16" x 5-3/4" x 0.060" Thick (211 mm x 146 mm x 1.5 mm)
2975-9145	Red Mounting Box, requires Adapter Plate 4905-9931		7-7/8" x 5-1/8" x 2-3/4" D (200 mm x 130 mm x 70 mm)

Ceiling Mount Strobe Adapter

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

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

Model	Description		Dimensions
4905-9914	Class B	Synchronized Flash Module; epoxy encapsulated with in/out 18 AWG (0.82 mm^2) wire leads, rated for 2 A NAC, requires 5 mA for power	1-3/8" x 2-7/16" x 13/16" (35 mm x 62 mm x 20 mm)
4905-9922	Class A		
4905-9938	SmartSync Control Module with Class B or Class A output; mounts in 4" (102 mm) square box		4" x 4-1/8" x 1-1/4" D (102 mm x 105 mm x 32 mm)

Replacement Covers and Guards

Model	Description		Dimensions
4905-9992	Red cover with white "FIRE" lettering	For Wall mount strobes	5-1/8" H x 5" W x 1-1/2" D (130 mm x 127 mm x 38 mm)
4905-9993	White cover with red "FIRE" lettering		
4905-9961*	Wall mount	Red wire guard with mounting plate, compatible with semi-flush or surface mounted boxes	6-1/16" H x 6-1/16" W x 3-1/8" D (154 mm x 154 mm x 79 mm)
4905-9926*	Ceiling mount		6-1/8" x 4-3/8" x 2-7/8" deep (156 mm x 111 mm x 73 mm)

* UL listed by Space Age Electronics Inc.

RSN: ***1172029***
Permit #: ***2016-1223188-LT***

Strobe Specifications

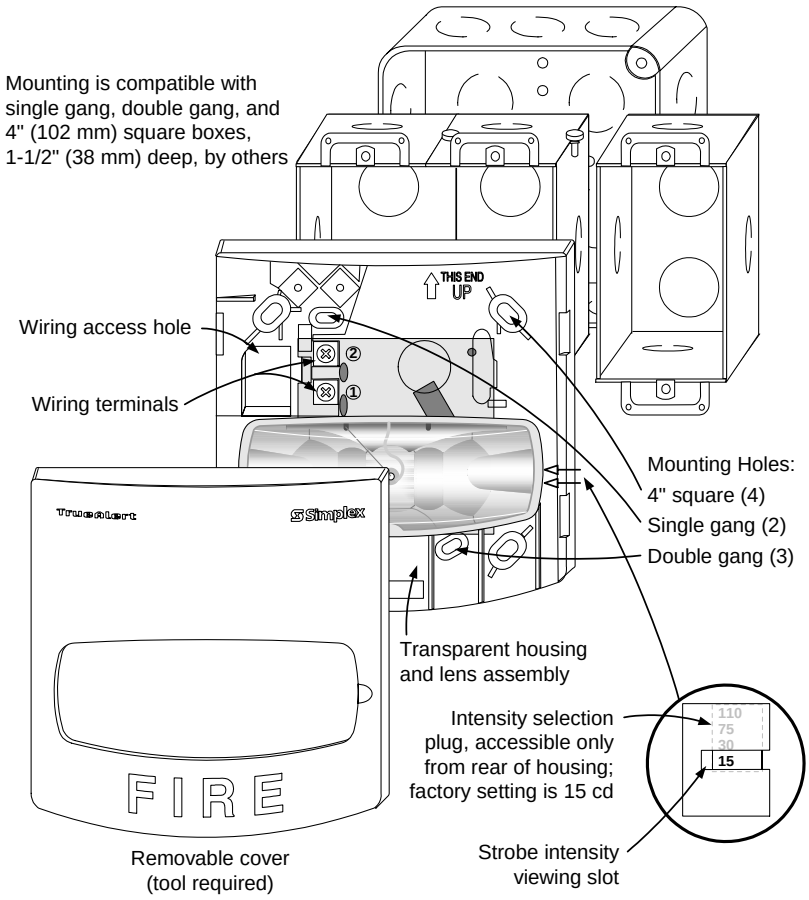
Wall Mount or Ceiling Mount, Common Specifications

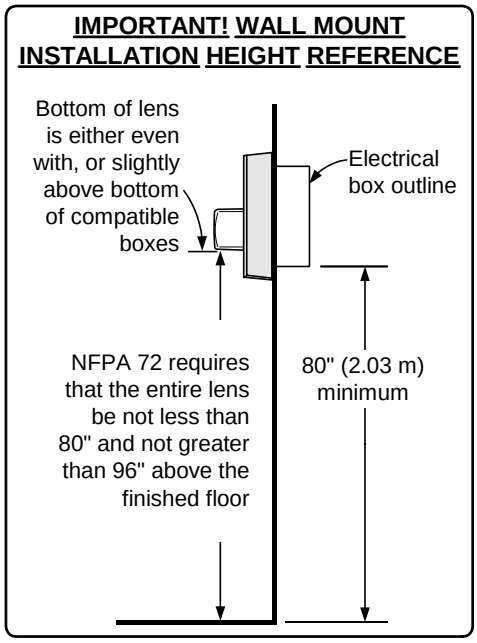
Rated Voltage Range			Regulated 24 VDC; see Note 1 below			
Flash Rate			1 Hz			
Synchronized NAC Loading			Up to 35 synchronized strobes maximum per NAC			
Temperature Range			32° to 122° F (0° to 50° C)			
Humidity Range			10% to 93%, non-condensing at 100° F (38° C)			
Connections			Terminal blocks for 18 AWG to 12 AWG (0.82 mm^2 to 3.31 mm^2); two wires per terminal for in/out wiring			
Wall Mount	Housing Dimensions (with lens)		5-1/8" H x 5" W x 2-3/4" D (130 mm x 127 mm x 70 mm)			
	Maximum RMS Current Rating per Strobe Setting (see Note 2 below)		**15 cd**	**30 cd**	**75 cd**	**110 cd**
			60 mA	**94 mA**	**186 mA**	**252 mA**
	Reference RMS Currents at other voltages	18 VDC	53 mA	84 mA	165 mA	224 mA
		24 VDC	40 mA	63 mA	124 mA	168 mA
Ceiling Mount	Housing Dimensions (with lens)		4-3/4" L x 2-5/16" W x 2-5/8" D (121 mm x 75 mm x 67 mm)			
	Maximum RMS Current Rating per Strobe Setting (see Note 2 below)		**15 cd**	**30 cd**	**75 cd**	**110 cd**
			75 mA	**125 mA**	**233 mA**	**316 mA**
	Reference RMS Currents at other voltages	18 VDC	67 mA	111 mA	207 mA	281 mA
		24 VDC	50 mA	83 mA	155 mA	211 mA

NOTES:

1. "Regulated 24 VDC" refers to the voltage range of 16 to 33 VDC per UL Standard 1971, *Signaling Devices for the Hearing Impaired*, changes effective May 1, 2004. This voltage range is the absolute operating range. Operation outside of this range may cause permanent damage to the strobe. Please note that 16 VDC is the lowest operating voltage that is allowed at the last appliance on the NAC under worst case conditions.
2. The maximum RMS current listed is the device nameplate rating. Strobe designs are constant wattage and the maximum RMS current rating occurs at the lowest allowable operating voltage. (RMS is root mean square and refers to the effective value of a varying current waveform.)

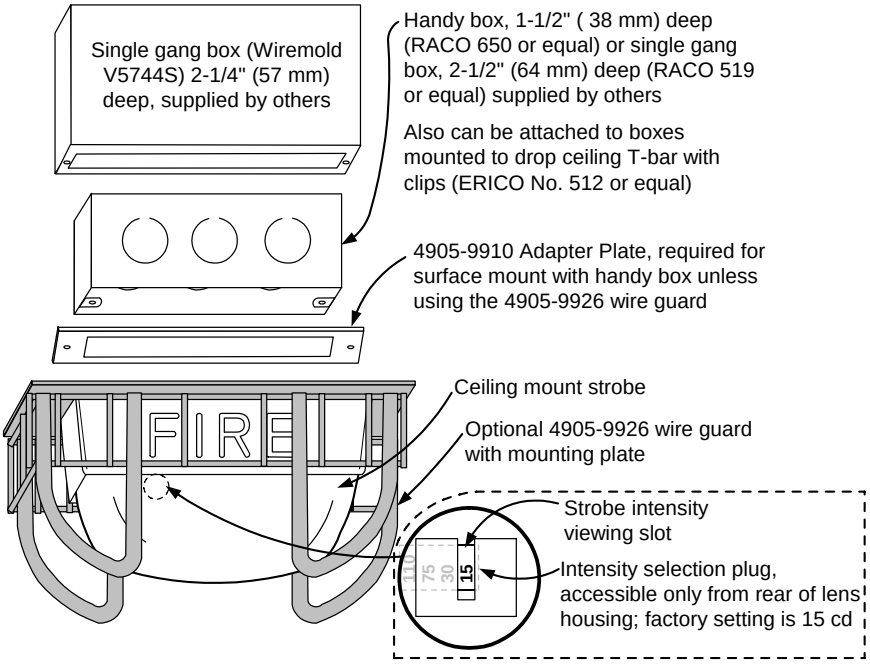
Installation Reference, Surface or Semi-Flush Wall Mounting



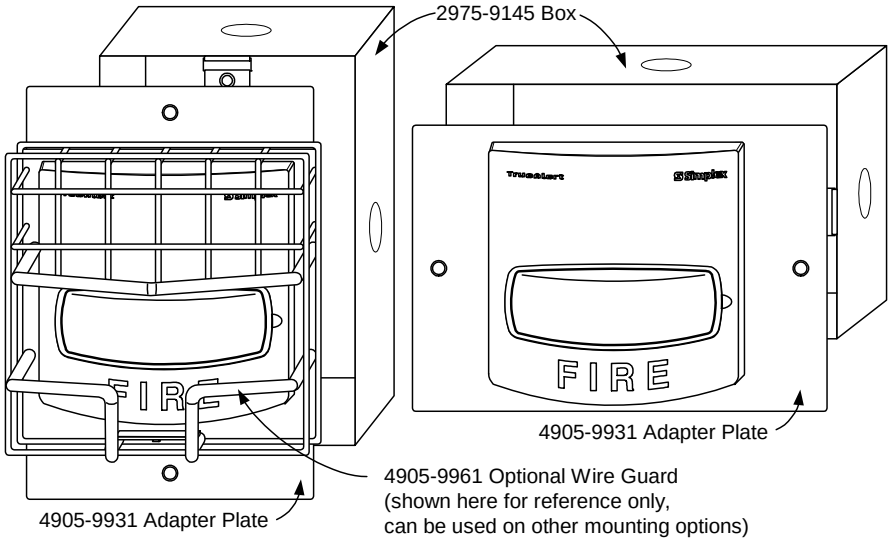


RSN: ***1172029***
Permit #: ***2016-1223188-LT***

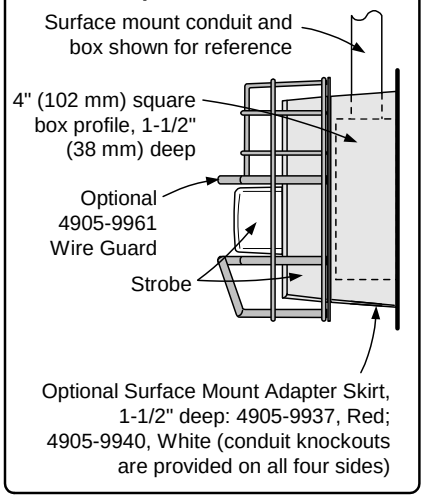
Ceiling Mount Strobe Installation Reference



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



Surface Mounting Reference with Optional Adapter Skirt and Optional Wire Guard



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Permit #: *2016-1223188-LT*

Simplex

True*Alert*® Multi-Candela Notification Appliances

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

Visible Notification Appliances with Speaker and Multi-Candela Strobe; Non-Addressable

Features

Speaker/visible (S/V) notification appliances with multi-tapped speaker and multi-tapped high intensity xenon strobe with synchronized flash:

- Rugged, high impact, flame retardant thermoplastic housings are available for wall or ceiling mount
- Operation is compatible with ADA requirements (refer to important wall mount installation information on page 4)

Wall mount S/V features:

- Housings are available in red or white with clear lens with contrasting white or red "FIRE" lettering
- Covers are available separately to convert housing color

Ceiling mount S/V features:

- Housing is white with clear lens
- Red "FIRE" lettering is printed on two sides

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
- Capacitor input for connection to supervised notification appliance circuits
- Speakers are wired separately from strobe wiring
- UL listed to Standard 1480

Visible notification appliance (strobe):

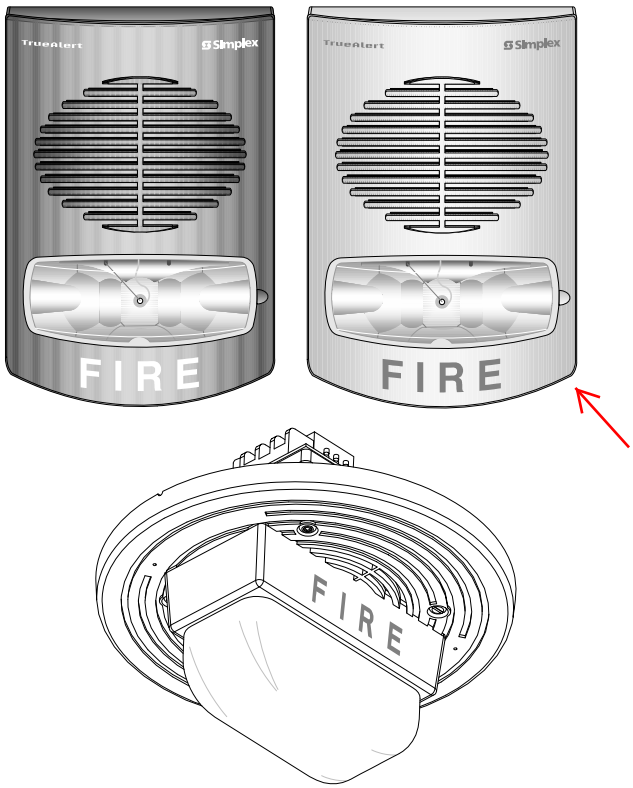
- 24 VDC xenon strobe; intensity is selectable as 15, 30, 75, or 110 candela with visible selection jumper secured behind strobe housing
- Strobes are activated from NACs selected to provide Simplex® strobe synchronization signals or from separate strobe Synchronization Modules that are available for Class B or Class A operation**
- Regulated circuit design ensures consistent flash output and provides controlled inrush current
- UL listed to Standard 1971

Options for wall mounted S/Vs:

- Red or white adapters to cover surface mounted electrical boxes
- Red adapter for mounting to Simplex 2975-9145 boxes
- Red wire guard

* Refer to page 2 for listing status of wire guards. 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 7320-0026:247 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.

** Simplex two-wire strobe synchronization operation is protected by U.S. patent Nos. 5,559,492; 5,886,620; 6,741,164; and 6,954,137.



Wall and Ceiling Mount S/Vs

Description

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

Wall mount S/V housings are a one-piece assembly (including lens) that mounts to a 4" square electrical box with extension (see details on page 4). The cover can be quickly removed (a tool is required) and covers are available separately for color conversion.

Ceiling mount S/Vs also install using 4" electrical boxes with an extension (see details on page 4).

Strobe Intensity Selection

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

Synchronized Strobes

Multiple Strobes. When multiple strobes and their reflections can be seen from one location, synchronized flashes reduce the probability of photo-sensitive reactions as well as the annoyance and possible distraction of random flashing. The multi-candela strobes of these S/Vs are activated by NACs that provide the Simplex synchronization format. For additional information, refer to data sheet S4905-0003.

Strobe Application Selection

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

Product Selection

Wall Mount Multi-Candela S/Vs

Model	Housing Color	"FIRE" Lettering	Description	Housing Dimensions with Lens
4906-9151	Red	White	Multi-tapped Speaker with Multi-Candela Synchronized Strobe; strobe intensity selectable as: 15, 30, 75, or 110 candela	7-1/4" H x 5" W x 2-5/8" D (184 mm x 127 mm x 67 mm)
4906-9153	White	Red		

Ceiling Mount Multi-Candela S/V

Model	Housing Color	"FIRE" Lettering	Description	Dimensions
4906-9154	White	Red	Multi-tapped Speaker with Multi-Candela Synchronized Strobe; strobe intensity selectable as: 15, 30, 75, or 110 candela	Housing = 7-1/2" (191 mm) diameter, 1/2" (13 mm) deep Strobe lens protrusion = 2-5/8" (67 mm) above speaker housing Depth into box = 2-3/4" (70 mm)

Wall Mount S/V Adapters

Model	Description		Dimensions
4905-9946	Surface mount red adapter skirt	Required when mounting to surface mounted electrical box, 4" square, 1-1/2" deep with 1-1/2" deep extension	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		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)

Wall Mount S/V Replacement Covers

Model	Description	Dimensions
4905-9996	Red S/V 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 S/V cover with red "FIRE" lettering	

Synchronized Flash Control Modules

Model	Description		Dimensions
4905-9914*	Synchronized Flash Module, Class B (Style Y) operation	Epoxy encapsulated with in/out 18 AWG (0.82 mm2) wire leads, rated for 2 A NAC, requires 5 mA for power	1-3/8" W x 2-7/16" L x 13/16" H (35 mm x 62 mm x 20 mm)
4905-9922*	Synchronized Flash Module, Class A (Style Z) operation		

Wall Mount S/V Wire Guard

Model	Description	Dimensions
4905-9998	Wire guard with mounting plate, red, 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)

Ceiling Mount Tile Bridge

Model	Description	Dimensions
2905-9946	Tile Bridge	See diagram on page 4

* Refer to data sheet S4905-0003 for additional flash control module information

RSN: ***1172029***
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S/V Specifications

Common Specifications

Environmental; Temperature and Humidity	32° to 122° F (0° to 50° C); 10% to 93%, non-condensing at 100° F (38° C)
Connections	Terminal blocks for 18 AWG to 12 AWG (0.82 mm^2 to 3.31 mm^2); two wires per terminal for in/out wiring

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	96 dBA

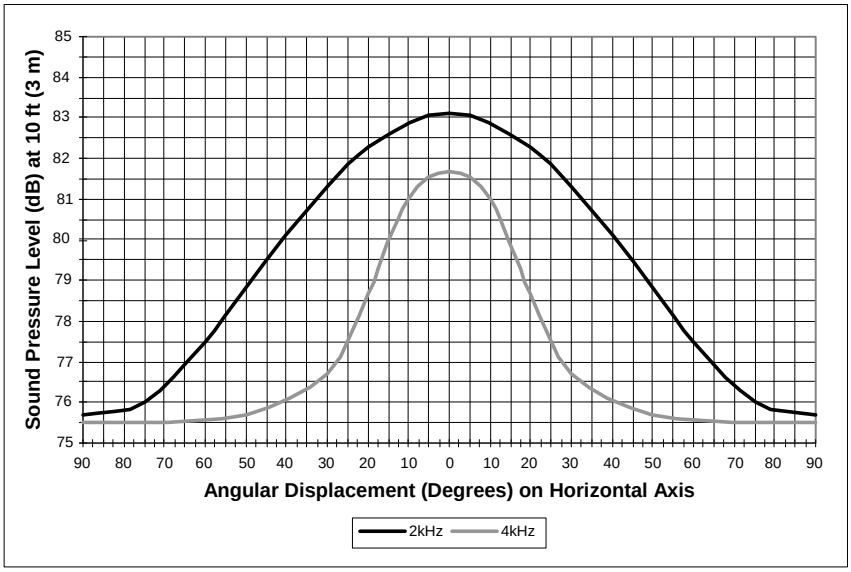
Strobe Specifications

Rated Voltage Range	UL Listed Rating	Regulated 24 VDC; see Note 2 below				
	ULC Listed Rating	20 VDC to 30 VDC per ULC S526-M878				
Flash Rate and Synchronized NAC Loading		1 Hz; with up to 35 synchronized strobes maximum per NAC				
Wall Mount	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**	
		60 mA	**94 mA**	**186 mA**	**252 mA**	
	Reference RMS Currents at other voltages 18 VDC	53 mA	84 mA	165 mA	224 mA	
	24 VDC	40 mA	63 mA	124 mA	168 mA	
Ceiling Mount	Housing Dimensions	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**	
		75 mA	**125 mA**	**233 mA**	**316 mA**	
	Reference RMS Currents at other voltages 18 VDC	67 mA	111 mA	207 mA	281 mA	
	24 VDC	50 mA	83 mA	155 mA	211 mA	

NOTES:

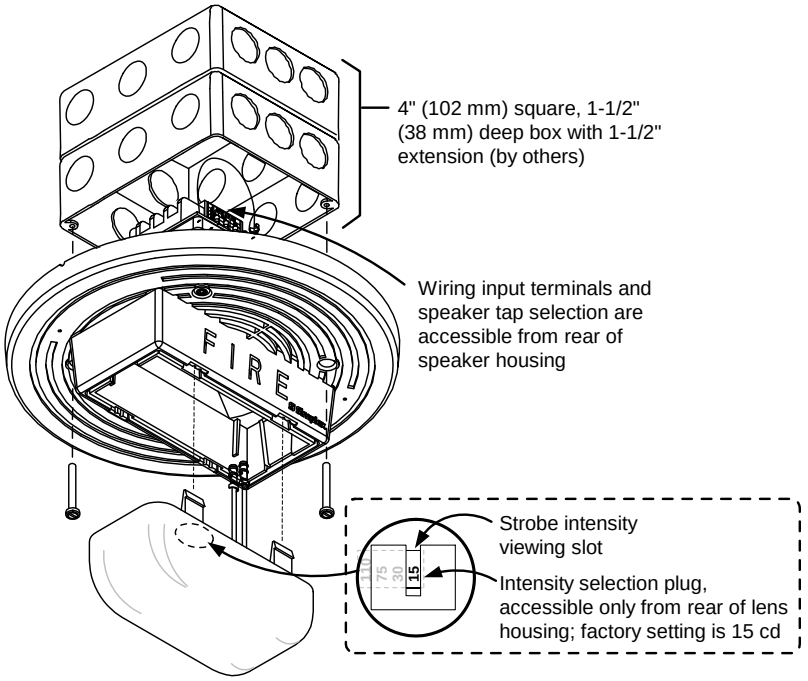
1. Speakers are for connection to conventional fire alarm audio circuits. Anechoic speaker output ratings are typically more representative of actual installed sound output.
2. "Regulated 24 VDC" refers to the voltage range of 16 to 33 VDC per UL Standard 1971, *Signaling Devices for the Hearing Impaired*, changes effective May 1, 2004. This voltage range is the absolute operating range. Operation outside of this range may cause permanent damage to the appliance. Please note that 16 VDC is the lowest operating voltage that is allowed at the last appliance on the NAC under worst case conditions.
3. 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. (RMS is root mean square and refers to the effective value of a varying current waveform.)

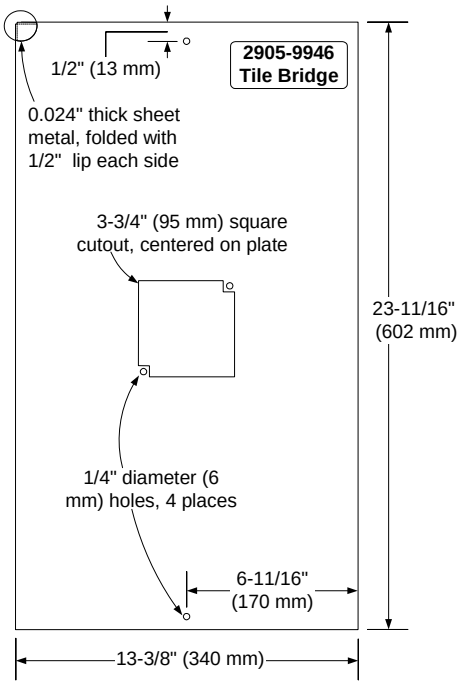
Speaker Directional Characteristics



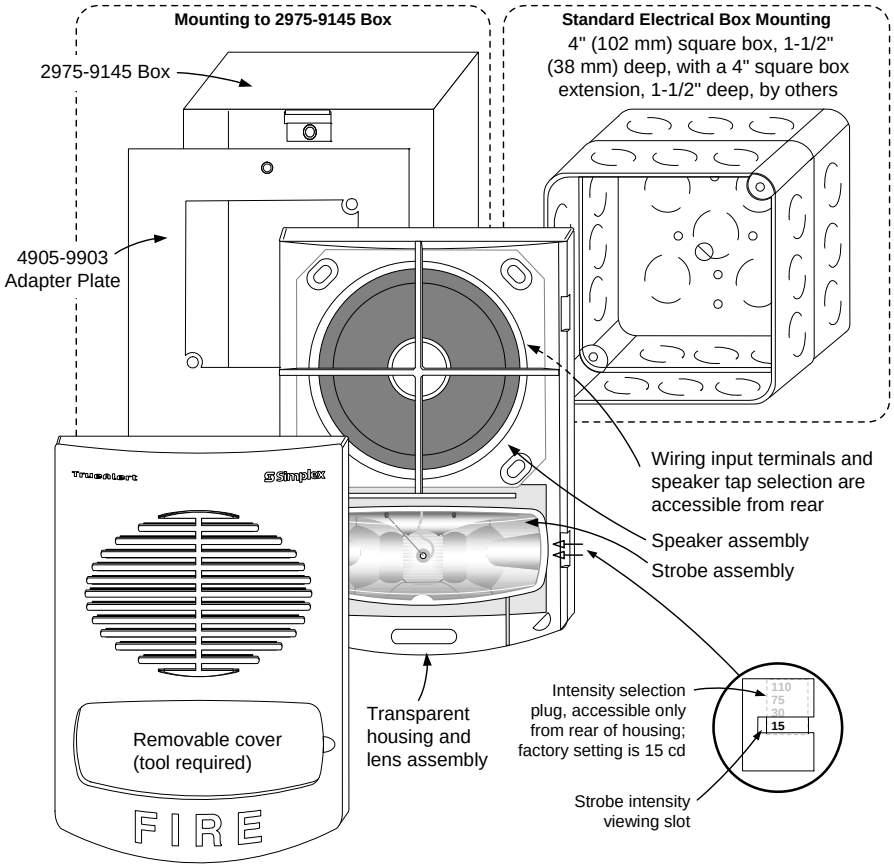
RSN: ***1172029***
Permit #: ***2016-1223188-LT***

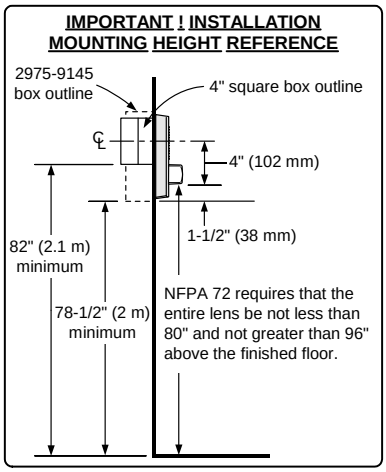
Ceiling Mount S/V Installation Reference and Tile Bridge Dimensions

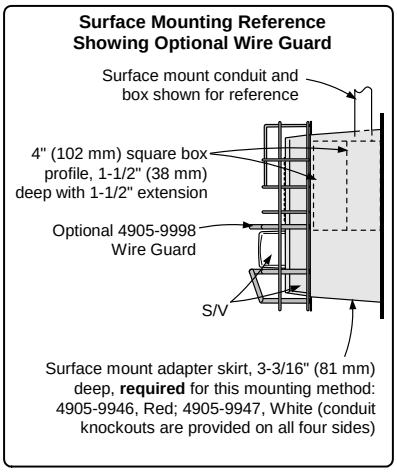




Wall Mount Installation Reference







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