RSN: 1688189
Permit # 2022-2275333-CT
Sheet 1 of 14

THE MEDICAL CENTER OF AURORA - SOUTH
3RD FLOOR - EAST TOWER B - SMOKE ADDITION
MODIFICATION TO EXISTING FIRE ALARM SYSTEM

Johnson Controls

DRAWING INDEX

Sheet List Table

Sheet Number	Sheet Title
General Information (FA-000 Series)	
FA-001	COVER SHEET
Floorplans (FA-100 Series)	
FA-101	3RD FLOOR PARTIAL DEVICE PLACEMENT PLAN
Risers (FA-200 Series)	
FA-201	3RD FLOOR PARTIAL RISER DIAGRAM
Calculations & Typical Details (FA-600 Series)	
FA-601	NODE-1 TRANSPONDER-1 CALCS AND SCHEDULES & TYPICAL DEVICE WIRING

COA Adopted Codes for this project:
ICC-2015 - NEC-2020
NFPA 13-2013 - NFPA 72-2013
COA Amendments 22 & 66

Provide a full size set of legible approved construction documents
PRINTED IN COLOR
for review by the Field Inspector.

City of Aurora Building Division
Counter Permit intake by: RET
Date: *Feb 01, 2023*
RSN: *1688189*
Permit: *2023 2275333 CT*
2015 INTERNATIONAL CODES & 2020 NEC Scope of permit to be field verified.

BUILDING/FIRE DEPT PLAN REVIEW #:

AURORA BUILDING CODES DIVISION
15151 EAST ALAMEDA PARKWAY, 2ND FLOOR PERMIT CENTER
AURORA, COLORADO 80012
(303) 739-7420

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 JOHNSON CONTROLS IN A TIMELY MANNER SO AS NOT TO IMPAIR THE CONSTRUCTION SCHEDULE.
3. CONTRACTOR IS RESPONSIBLE FOR MAKING AND OBTAINING APPROVAL FOR ALL NECESSARY ADJUSTMENTS IN CIRCUITING AS REQUIRED TO ACCOMMODATE THE RELOCATION OF EQUIPMENT AND/OR DEVICES WHICH ARE AFFECTED BY ANY AUTHORIZED CHANGE. ALL CHANGES SHALL BE CLEARLY INDICATED ON THE RECORD DRAWINGS.
4. A STAMPED SET OF APPROVED FIRE ALARM DRAWINGS SHALL BE AT THE JOB SITE AND SHALL BE USED FOR INSTALLATION.
5. THE POWER CIRCUIT TO THE FACP AND TO THE FIRE ALARM POWER SUPPLIES SHALL BE ON A DEDICATED 120V, 20A BRANCH CIRCUIT BREAKER, AND SHALL HAVE A RED MARKING, LOCK-ON PROVISION AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL." THE LOCATION OF THE CIRCUIT DISCONNECT MEANS (CIRCUIT BREAKER) SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT.
6. UPDATE THE AS-BUILT DRAWING SET DAILY WITH JOB PROGRESS. RETURN THE AS-BUILT DRAWING SET TO JOHNSON CONTROLS 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 JOHNSON CONTROLS 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. JOHNSON CONTROLS MAKES NO STATEMENTS WRITTEN OR VERBAL AS TO THE CONDITION OF EXISTING CONDUITS.

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LEGENDS

Parent Fire Alarm installation under the 2015 I-Codes and 2013 NFPA 72

FIRE ALARM SYMBOL LEGEND

QTY	SYMBOL	DESCRIPTION	BRAND	MODEL	BACKBOX	WIRE TYPE
INITIATING DEVICES						
13N	(2)	ADDRESSABLE PHOTOELECTRIC SMOKE SENSOR W/ STANDARD BASE	SIMPLEX	4098-9714 HEAD 4098-9792 BASE	4" OCT, 1-1/2" D	Mm
1N	(1)ROR	ADDRESSABLE STANDARD HEAT SENSOR W/ STANDARD BASE ROR = RATE OF RISE, 135 = TEMP SETTING FAHRENHEIT	SIMPLEX	4098-9733 HEAD 4098-9792 BASE	4" OCT, 1-1/2" D	Mm

GENERAL NOTES:

1. THE INFORMATION OR SYMBOLS SHOWN IN BOLD LINETYPE ARE NEW OR RELOCATED.
2. THE INFORMATION OR SYMBOLS SHOWN IN LIGHT LINETYPE ARE EXISTING TO REMAIN.

FIRE ALARM WIRE LEGEND

CIRCUIT DESCRIPTION		CONSTRUCTION	GAUGE	CIRCUIT PROPERTIES	ACCEPTABLE CABLE TYPES: FPLR	FPLP	THHN	TFFN	OUTDOOR **	C.L.
Mm	MAPNET	STP SOLID	16 AWG	0.60µF MAX TOTAL LINE CAPACITANCE	X	X				

CONDUIT SIZE	MAX CONDUCTOR AREA	CONDUIT SIZE	MAX CONDUCTOR AREA
1/2"	0.122 SQ. INCH*	1-1/4"	0.598 SQ INCH*
3/4"	0.213 SQ INCH*	1-1/2"	0.814 SQ INCH*
1"	0.346 SQ INCH*	2"	1.342 SQ INCH*

* 40% CONDUIT FILL PER N.E.C.
UTP = UNSHIELDED TWISTED PAIR
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.

BUILDING/FIRE DEPT GENERAL 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 REQUIRED DUE TO THE RELOCATION OR SPACING ADJUSTMENT OF DETECTORS, AS A RESULT).
- 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 1 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 CODES DIVISION DOES NOT GRANT APPROVAL FOR ANY VIOLATIONS OF ADOPTED FIRE CODE. CODE VIOLATIONS UNCOVERED DURING FIELD INSPECTIONS MUST BE CORRECTED.
- PER THE IFC AND THE NEC THE INSTALLER MUST REQUEST A ROUGH WIRING INSPECTION IN 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 CODES 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 1 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 DETECTOR'S ALARM INDICATOR IS NOT READILY VISIBLE TO RESPONDING PERSONNEL SHALL BE PROVIDED WITH A REMOTE INDICATOR(S), REMOTE TEST STATION AND PLACARDING.
- ALL NEW OR EXISTING FIRE ALARM SYSTEMS MUST BE CONNECTED ANY EXTERIOR HORN AND STROBE APPLIANCE. 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 IFC AND THE ANSI A117.1 STANDARD.
- PROVIDE A PRIMARY AND SECONDARY POWER SUPPLY FOR THE FIRE ALARM SYSTEM PER THE IFC, SECTION 907 AND THE NFPA 72.
- FIELD INSPECTION CONSULTATION IS AVAILABLE UPON REQUEST. CALL 303-739-7420 TO REQUEST CONSULTATION.
- THE FIRE ALARM CONTRACTOR MUST COMPLETE THE NFPA 72 "RECORD OF COMPLETION" PRIOR TO SCHEDULING THE AHJ ACCEPTANCE TEST.
- 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. IFC SECTION 907.

APPLICABLE CODES & STANDARDS

JURISDICTIONS WITHIN THE STATE MAY HAVE AMENDMENTS TO THE STATE ADOPTED CODE. CHECK WITH THE LOCAL JURISDICTION AUTHORITY FOR MORE DETAILS.

International Building Code (IBC), 2021 Edition

International Fire Code (IFC), 2021 Edition

National Electric Code (NFPA 70), 2020 Edition

National Fire Alarm and Signaling Code (NFPA 72), 2019 Edition

Life Safety Code (NFPA 101), 2021 Edition

ICC A117.1 Accessible and Usable Buildings and Facilities, 2009 Edition

ADA Standards for Accessible Design, 2010 Edition

Colorado Department of Health and Environment - Hospital Licensing Rules, 2012 Edition

OCCUPANCY TYPE(S):
I-2 INSTITUTIONAL GROUP

SPRINKLER PROTECTION:
BUILDING IS FULLY SPRINKLERED

AREA:
TOTAL: APPROX. 450,396 SQ. FT.
SCOPE: SPECIFIED ROOMS WITHIN 18,000 SQ. FT

STORIES:
TOTAL: 6 STORIES + BASEMENT
SCOPE: PARTIAL 3RD FLOOR

JOHNSON CONTROLS CONTACTS

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NICET II #151588, EXP. 12/01/2025

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NICET IV #93727, EXP 03/01/2024

SCOPE OF WORK

MODIFY EXISTING FIRE ALARM SYSTEM: PROVIDE NEW DEVICES AS SHOWN ON DRAWINGS.

AREA TO RECEIVE WORK INCLUDES SPECIFIED ROOMS WITHIN APPROXIMATELY 18,000 SQUARE FEET ENCOMPASSING EXISTING EAST TOWER B ON THE THIRD FLOOR OF THE MEDICAL CENTER OF AURORA - SOUTH AT 1501 SOUTH POTOMAC STREET, AURORA, COLORADO 80012.

NEW SMOKE SENSORS AND HEAT SENSOR INSTALLED IN ADDRESSABLE STANDARD BASES.

ALL DEVICES TO TIE TO EXISTING CIRCUITS IN THE AREA. NEW INITIATION TO TIE TO EXISTING MAPNET 1:M7 CIRCUIT OF THE NODE-1 TRANSPONDER-1 PANEL LOCATED IN STORAGE 2-0349 ON THE SECOND FLOOR.

NEW DEVICES TO FOLLOW EXISTING SEQUENCE OF OPERATIONS; NO FURTHER CHANGES TO OCCUR.

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 CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER THE TIMING OF ANY EXISTING FIRE ALARM SYSTEM DEMOLITION WORK.

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

PROJECT DIRECTORY

Site
THE MEDICAL CENTER OF AURORA
1501 SOUTH POTOMAC STREET
DENVER, COLORADO 80012
PHONE: 303-695-2600

Owner
HEALTH ONE
4900 SOUTH MONACO STREET
DENVER, COLORADO 80237
PHONE: 303-946-5511

Johnson Controls District - 419
14200 E. EXPOSITION AVE
AURORA, CO 80012
PHONE: 303-355-0500
FAX: 303-355-0515
SERVICE: 303-355-0500

Installer
E LIGHT ELECTRIC SERVICES, INC.
361 INVERNES DRIVE, SUITE B
ENGLEWOOD, COLORADO 80112
PHONE: 303-754-0001

ABBREVIATIONS LEGEND

AC = ABOVE CEILING
AFF = ABOVE FINISHED FLOOR
AHJ = AUTHORITY HAVING JURISDICTION
ALM = ALARM
ANN = ANNUNCIATOR
BMS = BUILDING MANAGEMENT SYSTEM
C = CEILING MOUNTED
CD = CANDELA RATING
DET = DETECTOR
DGP = DATA GATHERING PANEL
E = EXISTING TO REMAIN
EOL = END OF LINE
EPO = EMERGENCY POWER OFF
ER = ELEVATOR RECALL
FAA = FIRE ALARM ANNUNCIATOR
FACP = FIRE ALARM CONTROL PANEL
FATC = FIRE ALARM TERMINAL CABINET
FBO = FURNISHED BY OTHERS
FCC = FIRE COMMAND CENTER
FSD = FIRE SMOKE DAMPER
FTR = FIRE ALARM TRANSPONDER
H = HIGH HUMIDITY
HT = HEIGHT
HVAC = HEATING VENTILATION & AIR CONDITIONING
IMS = INFORMATION MANAGEMENT SYSTEM
MAX = MAXIMUM
MIN = MINIMUM
N = NEW DEVICE
NAC = NOTIFICATION APPLIANCE CIRCUIT
NDU = NETWORK DISPLAY UNIT
NEC = NATIONAL ELECTRIC CODE
NFPA = NATIONAL FIRE PROTECTION ASSOCIATION
NIC = NOT IN CONTRACT
NPU = NETWORK PROCESSING UNIT
NTS = NOT TO SCALE
PAP = PRE-ACTION PANEL
RC = EXISTING TO REMOVE AND COVER
RD = EXISTING DEVICE TO BE RELOCATED
RL = RELOCATED DEVICE
RR = REMOVE EXISTING & REPLACE WITH NEW
SCC = STATUS COMMAND CENTER
SLC = SIGNALING LINE CIRCUIT
SMK = SMOKE
SUPV = SUPERVISORY
TAC = TRUEALERT ADDRESSABLE CONTROLLER
TOS = TOP OF SHAFT
TRBL = TROUBLE
TS = TAMPER SWITCH
TYP = TYPICAL
UON = UNLESS OTHERWISE NOTED
VCC = VOICE COMMAND CENTER
VT = VALVE TAMPER
W = WATTAGE
W/ = WITH
W/O = WITHOUT
WF = WATERFLOW
WG = WIRE GUARD
WP = WEATHERPROOF
XP = EXPLOSION PROOF

DEVICE TAG LEGEND

1:T2:A2-1(E1:1)

PANEL DESIGNATOR
- FA: = FACP (NON-NETWORK)
- #: = NODE NUMBER
- T#: = TRANSPONDER NUMBER
- #:T# = NODE:TRANSPONDER NUMBER
- N#: = NAC EXTENDER NUMBER

CIRCUIT DESIGNATOR
- A#: = IDNAC* CIRCUIT NUMBER
- D#: = DOOR HOLDER CIRCUIT NUMBER
- F#: = FIRE PHONE CIRCUIT
- H#: = AUDIBLE (HORN) CIRCUIT NUMBER
- M#: = IDNET LOOP NUMBER
- P#: = POWER CIRCUIT NUMBER
- S#: = SPEAKER CIRCUIT NUMBER
- V#: = VISUAL CIRCUIT NUMBER
- Z#: = ZONE NUMBER

DEVICE NUMBER

BRANCH / ISOLATED LOOP DESIGNATOR:
- (L#) = IDNET ISOLATED LOOP NUMBER
- (#) = IDNAC BRANCH NUMBER
- (E#:#) = EPR* NUMBER:BRANCH NUMBER

1. IDNAC = ADDRESSABLE NOTIFICATION CIRCUIT
2. EPR = ENHANCED POWER REPEATER

SYSTEM SEQUENCE OF OPERATIONS

M.C.O.A. SOUTH TOWER	SYSTEM OUTPUTS: FACP Annunciation					Notification					Required Controls								Supplementary			
SEQUENCE OF OPERATIONS	ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE COMMON TROUBLE SIGNAL	ACTUATE EVACUATION SIGNALS (SPEAKERS/STROBES)	ACTUATE SPRINKLER BELL	DISPLAY CHANGE OF STATUS AT REMOTE ANNUNCIATOR	TRANSMIT FIRE ALARM SIGNAL TO OFF-SITE REPORTING	TRANSMIT SUPERVISORY SIGNAL TO OFF-SITE REPORTING	TRANSMIT TROUBLE SIGNAL TO OFF-SITE REPORTING	NOTIFY HOSPITAL PBX	FAN SHUT DOWN	DAMPER SHUT DOWN	RELEASE CORRIDOR FIRE DOORS	RELEASE ASSOCIATED ROLL-UP DOOR	ELEVATOR SHUT DOWN (*)	ELEVATOR RECALL - MAIN FLOOR	ELEVATOR RECALL - ALTERNATE FLOOR	ELEVATOR HAT FLASH	OVERRIDE MUSIC SYSTEM	SILENCE AUDIBLE SIGNAL (EXCLUDING EXTERIOR HNS)	ACTUATE OUTSIDE HORN/STROBE	RESET PANEL TO "NORMAL" CONDITION	
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	
1 SMOKE DETECTOR	X	X					X		X	X				X	X	X						X		X		1
2 SMOKE DETECTOR AT 2ND, 4TH & 5TH FLR CLERK DESK	X	X					X		X	X						X	X					X		X		2
3 SMOKE DETECTOR AT SMOKE PARTITION	X	X					X		X	X						X						X		X		3
4 MANUAL PULL STATION	X	X					X		X	X						X						X		X		4
5 HEAT DETECTOR	X	X					X		X	X						X						X		X		5
6 DUCT DETECTOR			X	X			X		X		X			X	X											6
7 DUCT DETECTOR AT F/S DAMPER			X	X			X		X		X			X	X											7
8 MAIN FLR. ELEV. LOBBY SMOKE DETECTOR	X	X					X		X	X				X	X	X	X		X			X		X		8
9 ELEV. LOBBY SMOKE DETECTORS (EXCL. MAIN FLR.)	X	X					X		X	X								X				X		X		9
10 ELEV. MECH. ROOM SMOKE DETECTOR	X	X					X		X	X												X	X	X		10
11 ELEV. SHAFT HEAT DETECTOR	X	X					X		X	X									X	X		X	X	X		11
12 ELEV. MECH. ROOM HEAT DETECTOR	X	X					X		X	X									X	X		X	X	X		12
13 WATERFLOW SWITCH	X	X					X	X	X	X												X		X		13
14 TAMPER SWITCH			X	X			X		X																	14
15 POST INDICATOR VALVE SWITCH			X	X			X		X																	15
16 FACP AC POWER FAILURE					X	X					X															16
17 FACP LOW BATTERY					X	X					X															17
18 OPEN CIRCUIT					X	X					X															18
19 GROUND FAULT					X	X					X															19
20 NOTIFICATION APPLIANCE CIRCUIT SHORT					X	X					X															20
21 ALARM SIGNAL SILENCE																							X			21
22 SYSTEM RESET																									X	22
23 CATH LAB BUILDING ALARM	X	X						X				X														23
	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	

NOTE: Audible Evacuation Signal shall be Temporal Pattern per NFPA 72.
- *Disconnect power after a time delay equal to the time it takes for the car to travel from the highest to the lowest level plus 10 seconds. New devices will be added to the existing sequence of operations. No further changes will occur.*

Johnson Controls
DISTRICT - 419
14200 E. EXPOSITION AVE
AURORA, CO 80012
SERVICE: 303-355-0500
PHONE: 303-355-0500
FAX: 303-355-0515

NICET CERTIFICATION INFORMATION
NANCY S. WILTSIE
NICET Fire Alarm, III
Certification #93727
Valid Through: 03/01/24
November 4, 2022

THE MEDICAL CENTER OF AURORA - SOUTH
3RD FLOOR - EAST TOWER B - SMOKE ADDITION
THE MEDICAL CENTER OF AURORA
1501 SOUTH POTOMAC STREET
AURORA, COLORADO 80012

Revisions shown with Δ symbol

ISSUE LOG: MARK	DATE	CAD	CHK	DESCRIPTION

FOR PERMIT

DRAWN BY:	CCD
CHECKED BY:	CBR
ISSUE DATE:	10/28/22
JOB #:	
PROJECT #:	419:650290733
JOHNSON CONTROLS © 2022	

SYSTEM: FIRE ALARM SYSTEM

SHEET: COVER SHEET

FA-001

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FILE PATH: C:\Users\jtaurora\Johnson Controls\Project Electronics - Medical Center of Aurora\1501 S Potomac - Aurora South\South Tower - Node 1\3F Flr Smoke\4x5 - 2022 - 4502907333\FireFA-001.dwg
LAST SAVED BY: JDIXON24
LAST PRINTED: 11/4/2022 9:29:59 AM
36" x 42" Arch E1 Size



3RD FLOOR PARTIAL DEVICE PLACEMENT PLAN
SCALE:1/8" = 1'-0"

SCALE:1/8" = 1'-0" IN FEET 0 4' 8' 16'

GENERAL NOTES:

1. ALL CEILINGS ARE EXISTING AND NOT BEING DEMOLISHED OR CHANGED FOR THE SCOPE.
2. THE DEVICE ADDRESSES INDICATED ON THESE DRAWINGS ARE AN ALPHANUMERIC DESCRIPTION OF WHICH CIRCUIT THE DEVICE IS LOCATED ON. DEVICES MAY BE ASSIGNED A DIFFERENT NUMBER WITHIN THE PANEL PROGRAM. CONSULT WITH A JOHNSON CONTROLS TECHNICIAN BEFORE APPLYING A PHYSICAL LABEL TO ANY DEVICES.
3. THE INFORMATION OR SYMBOLS SHOWN IN BOLD LINETYPE ARE NEW OR RELOCATED.
4. THE INFORMATION OR SYMBOLS SHOWN IN LIGHT LINETYPE ARE EXISTING TO REMAIN.
5. ALL ITEMS THAT ARE HATCHED ARE NOT IN THIS SCOPE OF WORK.

FIRE ALARM SYMBOL LEGEND

QTY	SYMBOL	DESCRIPTION	BRAND	MODEL	BACKBOX	WIRE TYPE
		INITIATING DEVICES				
13N	(smoke)	ADDRESSABLE PHOTOELECTRIC SMOKE SENSOR W/ STANDARD BASE	SIMPLEX	4098-9714 HEAD 4098-9792 BASE	4" OCT, 1-1/2" D	Mm
1N	(heat) ROR	ADDRESSABLE STANDARD HEAT SENSOR W/ STANDARD BASE ROR = RATE OF RISE, 135 = TEMP SETTING FAHRENHEIT	SIMPLEX	4098-9733 HEAD 4098-9792 BASE	4" OCT, 1-1/2" D	Mm

FIRE ALARM WIRE LEGEND

CIRCUIT DESCRIPTION		CONSTRUCTION	GAUGE	CIRCUIT PROPERTIES	FPLR	FPLP	THHN	TFFN	OUTDOOR **	C.I.
Mm	MAPNET	STP SOLID	16 AWG	0.60µF MAX TOTAL LINE CAPACITANCE	X	X				

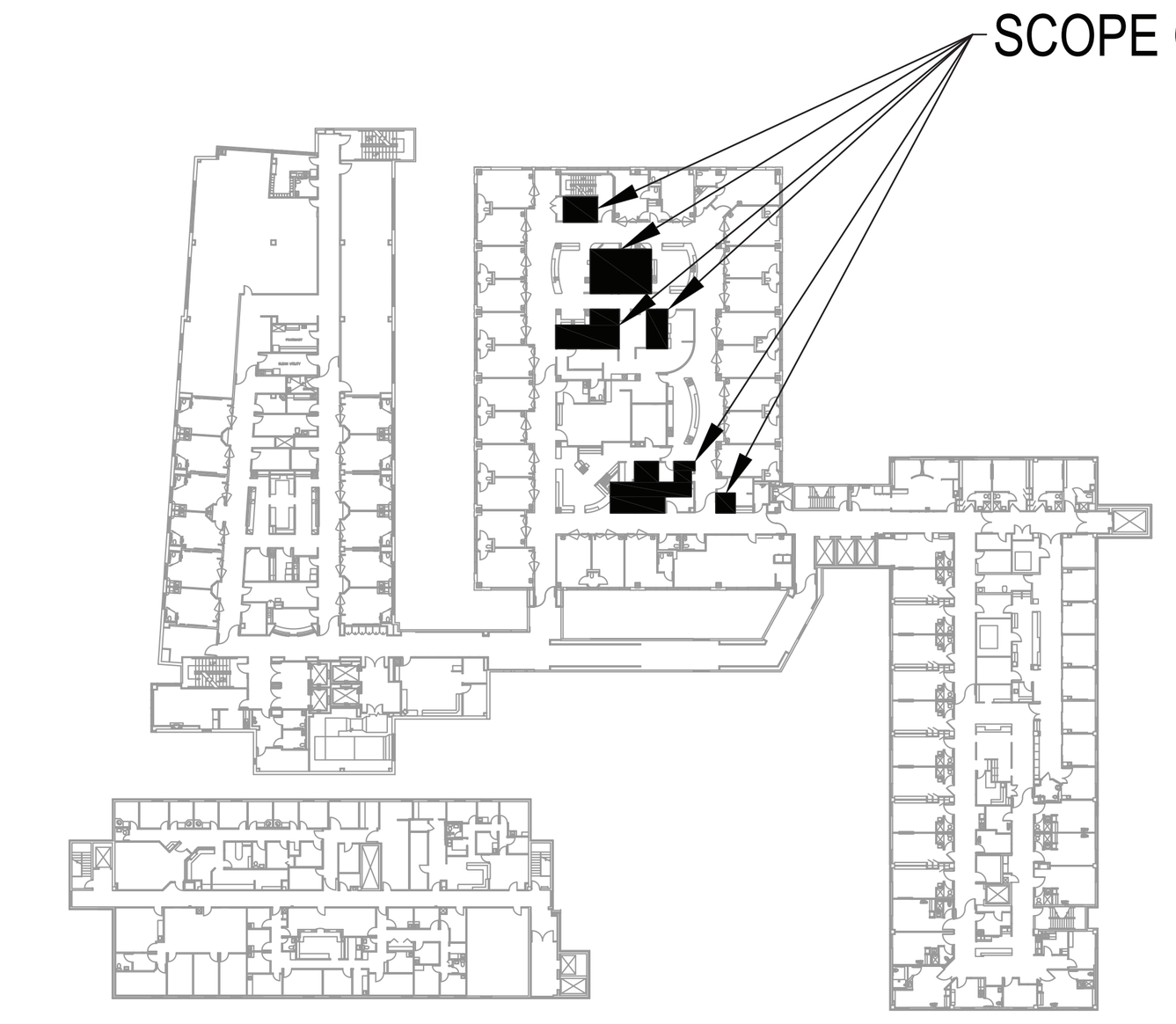
(ACCEPTABLE CABLE TYPES: FPLR, FPLP, THHN, TFFN, OUTDOOR **, C.I.)

CONDUIT SIZE	MAX CONDUCTOR AREA	CONDUIT SIZE	MAX CONDUCTOR AREA
1/2"	0.122 SQ. INCH*	1-1/4"	0.598 SQ INCH*
3/4"	0.213 SQ INCH*	1-1/2"	0.814 SQ INCH*
1"	0.346 SQ INCH*	2"	1.342 SQ INCH*

* 40% CONDUIT FILL PER N.E.C.

UTP = UNSHIELDED TWISTED PAIR

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.



KEYPLAN
SCALE:N.T.S.

Johnson Controls
DISTRICT - 419
14200 E. EXPOSITION AVE
AURORA, CO 80012
SERVICE: 303-355-0500
PHONE: 303-355-0500
FAX: 303-355-0615

NICET CERTIFICATION INFORMATION

NANCY S. WILTSIE
NICET Fire Alarm, III
Certification #93727
Valid Through: 03/01/24

November 4, 2022

THE MEDICAL CENTER OF AURORA - SOUTH
3RD FLOOR - EAST TOWER B - SMOKE ADDITION

THE MEDICAL CENTER OF AURORA
1501 SOUTH POTOMAC STREET
AURORA, COLORADO 80012

Revisions shown with △ symbol

ISSUE LOG: MARK	DATE	CAD	CHK	DESCRIPTION

FOR PERMIT

DRAWN BY:	CCD
CHECKED BY:	CBR
ISSUE DATE:	10/28/22
JOB #:	
PROJECT #:	419:650290733

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SYSTEM: FIRE ALARM SYSTEM

SHEET: 3RD FLOOR PARTIAL DEVICE PLACEMENT PLAN

FA-101

FILE PATH: C:\Users\jdixonc4\Johnson Controls\Project Electronics - Medical Center of Aurora\1501 S Potomac - Aurora South\South Tower - Node 136-3rd Flr SmokeAdd - 2022 - 650290733\Fire\FA-101.dwg
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30" x 42" - Arch E1 Size

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RSN: 1688189
Permit # 2022-2275333-CT
Sheet 3 of 14



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-001 FOR SPECIFIC CODE REFERENCES.
3. THE INFORMATION OR SYMBOLS SHOWN IN BOLD LINETYPE ARE NEW OR RELOCATED.
4. THE INFORMATION OR SYMBOLS SHOWN IN LIGHT LINETYPE ARE EXISTING TO REMAIN.
5. ALL ITEMS THAT ARE HATCHED ARE NOT IN THIS SCOPE OF WORK.

KEYED NOTES:

1. 120VAC PRIMARY POWER SOURCE SHALL BE A MECHANICALLY PROTECTED BRANCH CIRCUIT. THE CIRCUIT DISCONNECTING MEANS SHALL HAVE A RED MARKING, AND BE IDENTIFIED AS "FIRE ALARM CIRCUIT"

3RD FLOOR PARTIAL RISER DIAGRAM

SCALE:N.T.S.

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10650 E. BOSTON AVE
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NANCY S. WILTSIE
NICET Fire Alarm, III
Certification #93727
Valid Through: 03/01/24

Nancy S Wiltsie
November 4, 2022

THE MEDICAL CENTER OF AURORA - SOUTH
3RD FLOOR - EAST TOWER B - SMOKE ADDITION

THE MEDICAL CENTER OF AURORA
1501 SOUTH POTOMAC STREET
AURORA, COLORADO 80012

ISSUE LOG				
MARK	DATE	CAD	CHK	DESCRIPTION

Revisions shown with Δ symbol

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DRAWN BY:	CCD
CHECKED BY:	CBR
ISSUE DATE:	10/28/22
JOB #:	
PROJECT #:	419:650290733

JOHNSON CONTROLS © 2022

SYSTEM: FIRE ALARM SYSTEM

SHEET: 3RD FLOOR PARTIAL RISER DIAGRAM

FA-201

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FILE PATH: C:\Users\jbonn4\Johnson Controls\Project Electronics - Medical Center of Aurora\1501 S Potomac - Aurora South\South Tower - Node 1\3k-3rd Flr Smoke\4x6_2022_4501090733\FireFA-201.dwg
LAST SAVED BY: JBONN4
LAST PRINTED: 11/4/2022 9:30:07 AM
30" x 42" Arch E1 Size

MEDICAL CENTER OF AURORA SOUTH TOWER TRANSPONDER 1 4100es XPDR							
Module	Qty	Description		Standby Current	Total Standby	Alarm Current	Total Alarm
Panel Equipment							
4100-6600	*1*	*BASIC TRANSPONDER*	"	*0.0870*	*0.0870*	*0.0870*	*0.0870*
4100-3102	*3*	*MAPNET MODULE. UP TO 127 PTS*	"	*0.2550*	*0.7650*	*0.2750*	*0.8250*
4100-4321	*3*	*6 CIRCUIT CLASS B (STYLE Y)*		*0.0250*	*0.0750*	*0.0700*	*0.2100*
4100-3003	*1*	*8 PT AUX RELAY MODULE 3 AMP*		*0.0250*	*0.0250*	*0.2800*	*0.2800*
4100-6005	*1*	*MASTER CONTROLLER POWER SUPPLY*		*0.0000*	*0.0000*	*0.0000*	*0.0000*
4100-5125	*1*	*REMOTE POWER SUPPLY W/CHARGER - 120VAC*		*0.1500*	*0.1500*	*0.1850*	*0.1850*
		Panel Totals			**1.1020**		**1.5870**
Mapnet Addressable Devices (SLC)							
2190-9161	*2*	*MAPNET CLASS B SIGNAL ZAM*	"				
2190-9163	*4*	*MAPNET UNSUPERVISED CONTROL ZAM*	"				
2190-9172	*4*	*MAPNET SUPERVISED IAM*	"				
2099-9795	*13*	*MAPNET SINGLE ACTION PULL STATION*	"				
4098-9714	**197**	**TRUEALARM PHOTO SMOKE SENSOR**					
4098-9733	**3**	**TRUEALARM HEAT SENSOR**					
4098-9706	*16*	*TRUEALARM DUCT SMOKE SENSOR HOUSING W/ RELAY*	"				
4098-9789	*26*	*TRUEALARM SENSOR BASE W/ LED OUTPUT*	"				
4098-9792	**174**	**TRUEALARM SENSOR BASE**	*				
Miscellaneous Peripheral Devices That Require (Additional) System Power							
4098-9706	*16*	*TRUEALARM DUCT SMOKE SENSOR HOUSING W/ RELAY*		*0.0003*	*0.0045*	*0.0290*	*0.4640*
2098-9808	*26*	*REMOTE ALARM INDICATOR*		*0.0000*	*0.0000*	*0.0000*	*0.0000*
Notification Appliances			**Setting**				
4009-9001	*2*	*FOUR CIRCUIT NAC EXTENDER, 120 VAC*		*0.0000*	*0.0000*	*0.0150*	*0.0300*
4903-9292	*22*	*CH70-2415W-FR CHIME/STROBE (STROBE)*	*15*	*0.0000*	*0.0000*	*0.0600*	*1.3200*
4903-9292	*25*	*CH70-2415W-FR CHIME/STROBE (CHIME)*	*CHIME*	*0.0000*	*0.0000*	*0.0220*	*0.5500*
4904-9137	*53*	*15CD VISIBLE ONLY RED*	*15*	*0.0000*	*0.0000*	*0.0950*	*5.0350*
		Peripheral Totals			**0.0045**		**4.0790**
		RUI Totals	**0**		**0.0000**		**0.0000**
		Address Totals	**244 Addresses**		**0.4148**		**0.4148**
* Device Address current draw included below (See Additional Current Draws):			**System Totals*:**		**Standby** **1.5213**		**Alarm** **6.6808**

Battery Set #1 (Cabinet\Charger #1)				Standby Current	Standby Total	Alarm Current	Alarm Total
Select ALL Power Supplies on this battery set:							
RPS-1					1.1065		6.4660
			Sub Total		**1.1065**		**6.4660**
Additional Current Draws:							
MAPNET/IDNet Device Address Communication Current	244	x 0.001700	= 0.4148		x 0.001700	= 0.4148	
			Sub Total		**1.5213**		**6.8808**
Spare addressable point capacity	**20%**	49	x 0.0017	= 0.0833		x 0.0017	= 0.0833
			Total		**1.6046**		**6.9641**
Standby Time =	4	Hrs	x 1.6046	= 6.4183	Standby Ah		
Alarm Time =	10	Min	0.16667 x 6.9641	= 1.1607	Alarm Ah		
					7.5790		
Additional Spare Battery Capacity =	**20%**			+	1.5158		
					9.0948		
Battery Discharge Factor =	**20%**			+	1.8190		
Minimum Battery Required	**2081-9288 12AH (2x)**				**10.9138**		
Battery Supplied	**2081-9276 33AH (2x)**				**(EXISTING)**		

* System Totals represent total system current requirements. Those currents may be distributed between multiple battery sets or power supplies as shown above.

PANEL CALCULATIONS NOTES:

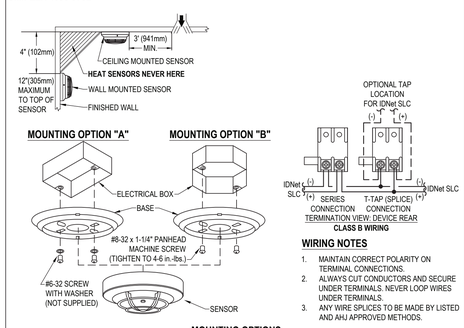
1. THE INFORMATION OR SYMBOLS SHOWN IN BOLD LINETYPE ARE NEW OR RELOCATED.
2. THE INFORMATION OR SYMBOLS SHOWN IN LIGHT LINETYPE ARE EXISTING TO REMAIN

MAPNET CHANNEL 1;M7				SWITCH SETTINGS								
Address	Device Type	Point Type	Location Description	1	2	3	4	5	6	7	8	9
1:M7-1	*ADRPUL*	*PULL*	*1:M7-1 FLR 3 CENTRAL TWR B - ICU POD C*	X								ON
1:M7-2	*PHOTO*	*VSMOKE*	*1:M7-2 FLR 3 CENTRAL TWR B - VOLUNTEER*		X							ON
1:M7-3	*PHOTO*	*VSMOKE*	*1:M7-3 FLR 3 CENTRAL TWR B - BATH HALL*	X	X							ON
1:M7-4	*ADRPUL*	*PULL*	*1:M7-4 FLR 3 CENTRAL TWR B - ICU POD A*			X						ON
1:M7-5	*ADRPUL*	*PULL*	*1:M7-5 FLR 3 CENTRAL TWR B - ICU POD D*	X		X						ON
1:M7-6	*ADRPUL*	*PULL*	*1:M7-6 FLR 3 CENTRAL TWR B - ICU SHOWER*		X	X						ON
1:M7-7	*GENIAM*	*SO*	*1:M7-7 FLR 3 CTRL TWR B STAIRWELL TAMPER*	X	X	X						ON
1:M7-8	*GENIAM*	*WATER*	*1:M7-8 FLR 3 CTRL TWR B STAIRWELL EAST*				X					ON
1:M7-9	*RZAM*	*RELAY*	*1:M7-9 CENTRAL TWR B - ROOF - RTU 97-10*	X			X					ON
1:M7-10	*RPHOTO*	*SDUCT*	*1:M7-10 CENTRAL TWR B - ROOF AHU 97-10*		X		X					ON
1:M7-11	*RPHOTO*	*SDUCT*	*1:M7-11 CENTRAL TWR B - ROOF AHU 97-10*	X	X		X					ON
1:M7-12	*RPHOTO*	*SDUCT*	*1:M7-12 CENTRAL TWR B - ROOF AHU 97-10*			X	X					ON
1:M7-13	*RPHOTO*	*SDUCT*	*1:M7-13 CENTRAL TWR B - ROOF AHU 97-10*	X		X	X					ON
1:M7-14	*RPHOTO*	*SDUCT*	*1:M7-14 CENTRAL TWR B - ROOF AHU 97-13*		X	X	X					ON
1:M7-15	*RPHOTO*	*SDUCT*	*1:M7-15 CENTRALTWR B - ROOF AHU 97-13*	X	X	X	X					ON
1:M7-16	*RPHOTO*	*SDUCT*	*1:M7-16 CENTRALTWR B - ROOF AHU 97-13*					X				ON
1:M7-17	*PHOTO*	*UTILITY*	*1:M7-17 FLR 3 CENTRAL TWR B ICU RM 12*	X				X				ON
1:M7-18	*PHOTO*	*UTILITY*	*1:M7-18 FLR 3 CENTRAL TWR B ICU RM 13*		X			X				ON
1:M7-19	*PHOTO*	*UTILITY*	*1:M7-19 FLR 3 CENTRAL TWR B ICU RM 14*	X	X			X				ON
1:M7-20	*PHOTO*	*UTILITY*	*1:M7-20 FLR 3 CENTRAL TWR B ICU RM 15*			X		X				ON
1:M7-21	*PHOTO*	*UTILITY*	*1:M7-21 FLR 3 CENTRAL TWR B ICU RM 16*	X		X		X				ON
1:M7-22	*PHOTO*	*UTILITY*	*1:M7-22 FLR 3 CENTRAL TWR B ICU RM 17*		X	X		X				ON
1:M7-23	*PHOTO*	*UTILITY*	*1:M7-23 FLR 3 CENTRAL TWR B ICU RM 18*	X	X	X		X				ON
1:M7-24	*PHOTO*	*UTILITY*	*1:M7-24 FLR 3 CENTRAL TWR B ICU RM 19*				X	X				ON
1:M7-25	*PHOTO*	*UTILITY*	*1:M7-25 FLR 3 CENTRAL TWR B ICU RM 20*	X			X	X				ON
1:M7-26	*PHOTO*	*UTILITY*	*1:M7-26 FLR 3 CENTRAL TWR B ICU RM 21*		X		X	X				ON
1:M7-27	*PHOTO*	*UTILITY*	*1:M7-27 FLR 3 CENTRAL TWR B ICU RM 22*	X	X		X	X				ON
1:M7-28	*PHOTO*	*UTILITY*	*1:M7-28 FLR 3 CENTRAL TWR B ICU RM 23*			X	X	X				ON
1:M7-29	*PHOTO*	*VSMOKE*	*1:M7-29 FLR 3 CENTRAL TWR B - BY ICU 29*	X		X	X	X				ON
1:M7-30	*PHOTO*	*UTILITY*	*1:M7-30 FLR 3 CENTRAL TWR B ICU RM 24*		X	X	X	X				ON
1:M7-31	*PHOTO*	*UTILITY*	*1:M7-31 FLR 3 CENTRAL TWR B ICU RM 25*	X	X	X	X	X				ON
1:M7-32	*PHOTO*	*UTILITY*	*1:M7-32 FLR 3 CENTRAL TWR B ICU RM 26*						X			ON
1:M7-33	*PHOTO*	*VSMOKE*	*1:M7-33 FLR 3 CENTRAL TWR B ICU LOUNGE*	X					X			ON
1:M7-34	*PHOTO*	*VSMOKE*	*1:M7-34 FLR 3 CTRL TWR A MAIN ELEV LOBBY*		X				X			ON
1:M7-35	*PHOTO*	*VSMOKE*	*1:M7-35 FLR 3 CENTRAL B - BY ICU SHOWER*	X	X				X			ON
1:M7-36	*PHOTO*	*UTILITY*	*1:M7-36 FLR 3 CENTRAL TWR B ICU RM 1*			X			X			ON
1:M7-37	*PHOTO*	*UTILITY*	*1:M7-37 FLR 3 CENTRAL TWR B ICU RM 2*	X		X			X			ON
1:M7-38	*PHOTO*	*UTILITY*	*1:M7-38 FLR 3 CENTRAL TWR B ICU RM 3*		X	X			X			ON
1:M7-39	*PHOTO*	*UTILITY*	*1:M7-39 FLR 3 CENTRAL TWR B ICU RM 4*	X	X	X			X			ON
1:M7-40	*PHOTO*	*UTILITY*	*1:M7-40 FLR 3 CENTRAL TWR B ICU RM 5*				X		X			ON
1:M7-41	*PHOTO*	*UTILITY*	*1:M7-41 FLR 3 CENTRAL TWR B ICU RM 6*	X			X		X			ON
1:M7-42	*PHOTO*	*UTILITY*	*1:M7-42 FLR 3 CENTRAL TWR B ICU RM 7*		X		X		X			ON
1:M7-43	*PHOTO*	*UTILITY*	*1:M7-43 FLR 3 CENTRAL TWR B ICU RM 8*	X	X		X		X			ON
1:M7-44	*PHOTO*	*UTILITY*	*1:M7-44 FLR 3 CENTRAL TWR B ICU RM 9*			X	X		X			ON
1:M7-45	*PHOTO*	*UTILITY*	*1:M7-45 FLR 3 CENTRAL TWR B ICU RM 10*	X		X	X		X			ON
1:M7-46	*PHOTO*	*UTILITY*	*1:M7-46 FLR 3 CENTRAL TWR B ICU RM 11*		X	X	X		X			ON
1:M7-47	*PHOTO*	*VSMOKE*	*1:M7-47 FLR 3 CENTRAL TWR B ICU BY RM 12*	X	X	X	X		X			ON
1:M7-48	*PHOTO*	*VSMOKE*	*1:M7-48 FLR 3 CENTRAL TWR B ICU BY RM 15*					X	X			ON
1:M7-49	*PHOTO*	*VSMOKE*	*1:M7-49 FLR 3 CENTRAL B ICU BY RM 17*	X				X	X			ON
1:M7-50	*PHOTO*	*VSMOKE*	*1:M7-50 FLR 3 CENTRAL B ICU BY RM 18*		X			X	X			ON
1:M7-51	*PHOTO*	*VSMOKE*	*1:M7-51 FLR 3 CENTRAL B ICU BY RM 19*	X	X			X	X			ON
1:M7-52	*PHOTO*	*VSMOKE*	*1:M7-52 FLR 3 CENTRAL TWR B - BY ICU 22*			X		X	X			ON
1:M7-53	*PHOTO*	*VSMOKE*	*1:M7-53 FLR 3 CTRL TWR B ICU POD D NRSG*	X		X		X	X			ON
1:M7-54	*PHOTO*	*VSMOKE*	*1:M7-54 FLR 3 CENTRAL TWR B - POD A -MED*		X	X		X	X			ON
1:M7-55	*PHOTO*	*VSMOKE*	*1:M7-55 FLR 3 CENTRAL B ICU BY RM 25*	X	X	X		X	X			ON
1:M7-56	*PHOTO*	*VSMOKE*	*1:M7-56 FLR 3 CENTRAL TWR B - BY ICU 26*				X	X	X			ON
1:M7-57	*PHOTO*	*VSMOKE*	*1:M7-57 FLR 3 CENTRAL TWR B - BY ICU 26*	X			X	X	X			ON
1:M7-58	*PHOTO*	*VSMOKE*	*1:M7-58 FLR 3 CENTRAL B - ICU - EVS RM*		X		X	X	X			ON
1:M7-59	*PHOTO*	*VSMOKE*	*1:M7-59 FLR 3 CENTRAL TWR B - BY ICU 2*	X	X		X	X	X			ON
1:M7-60	*PHOTO*	*VSMOKE*	*1:M7-60 FLR 3 CENTRAL TWR B - BY ICU 4*			X	X	X	X			ON
1:M7-61	*PHOTO*	*VSMOKE*	*1:M7-61 FLR 3 CENTRAL TWR B - BY ICU 5*	X		X	X	X	X			ON
1:M7-62	*PHOTO*	*VSMOKE*	*1:M7-62 FLR 3 CENTRAL TWR B ICU PHARM*		X	X	X	X	X			ON
1:M7-63	*PHOTO*	*VSMOKE*	*1:M7-63 FLR 3 CENTRAL TWR B - BY ICU 8*	X	X	X	X	X	X			ON
1:M7-64	*PHOTO*	*VSMOKE*	*1:M7-64 FLR 3 CENTRAL TWR B - BY ICU 10*							X		ON
1:M7-65	*PHOTO*	*VSMOKE*	*1:M7-65 FLR 3 CENTRAL TWR B - BY ICU 11*	X						X		ON
1:M7-66	*PHOTO*	*VSMOKE*	*1:M7-66 FLR 3 CENTRAL TWR B - ELEC. ROOM*		X					X		ON
1:M7-67			*SPARE*	X	X					X		ON
1:M7-68			*SPARE*			X				X		ON
1:M7-69			*SPARE*	X		X				X		ON
1:M7-70	*PHOTO*	*VSMOKE*	*1:M7-70 FLR 3 CENTRAL TWR B - RESP STOR*		X	X				X		ON
1:M7-71	*PHOTO*	*VSMOKE*	*1:M7-71 FLR 3 CENTRAL TWR B - OFFICE 12*	X	X	X				X		ON
1:M7-72	*PHOTO*	*VSMOKE*	*1:M7-72 FLR 3 CENTRAL TWR B - CLEAN STOR*				X			X		ON
1:M7-73	*PHOTO*	*VSMOKE*	*1:M7-73 FLR 3 CENTRAL TWR B - CLEAN STOR*	X			X			X		ON
1:M7-74	*PHOTO*	*VSMOKE*	*1:M7-74 FLR 3 CENTRAL TWR B - CLEAN STOR*		X		X			X		ON
1:M7-75	*PHOTO*	*VSMOKE*	*1:M7-75 FLR 3 CENTRAL TWR B-SOIL RES EQU*	X	X		X			X		ON
1:M7-76			*SPARE*			X	X			X		ON
1:M7-77			*SPARE*	X		X	X			X		ON
1:M7-78			*SPARE*		X	X	X			X		ON
1:M7-79	**PHOTO**	**VSMOKE**	**1:M7-79 FLR 3 CENTRAL TWR B - VOICE/DATA**	X	X	X	X			X		ON
1:M7-80	**PHOTO**	**VSMOKE**	**1:M7-80 FLR 3 CENTRAL TWR B - UTILITY 34**					X		X		ON
1:M7-81	**PHOTO**	**VSMOKE**	**1:M7-81 FLR 3 CENTRAL TWR B - CONSULT 33**	X				X		X		ON
1:M7-82	**PHOTO**	**VSMOKE**	**1:M7-82 FLR 3 CENTRAL TWR B - S SUPPLY**		X			X		X		ON
1:M7-83	**OHEAT**	**HEAT**	**1:M7-83 FLR 3 CENTRAL TWR B - EVS 36**	X	X			X		X		ON
1:M7-84	**PHOTO**	**VSMOKE**	**1:M7-84 FLR 3 CENTRAL TWR B - MED RM 51**			X		X		X		ON
1:M7-85	**PHOTO**	**VSMOKE**	**1:M7-85 FLR 3 CENTRAL TWR B - CARE NOUR**	X		X		X		X		ON
1:M7-86	**PHOTO**	**VSMOKE**	**1:M7-86 FLR 3 CENTRAL TWR B - PHARM**		X	X		X		X		ON
1:M7-87	**PHOTO**	**VSMOKE**	**1:M7-87 FLR 3 CENTRAL TWR B - MULTI 45**	X	X	X		X		X		ON
1:M7-88	**PHOTO**	**VSMOKE**	**1:M7-88 FLR 3 CENTRAL TWR B - SAT PHARM**				X	X		X		ON
1:M7-89	**PHOTO**	**VSMOKE**	**1:M7-89 FLR 3 CENTRAL TWR B - XRAY 53**	X			X	X		X		ON
1:M7-90	**PHOTO**	**VSMOKE**	**1:M7-90 FLR 3 CENTRAL TWR B - N SOIL UTL**		X		X	X		X		ON
1:M7-91	**PHOTO**	**VSMOKE**	**1:M7-91 FLR 3 CENTRAL TWR B - NOUR 54**	X	X		X	X		X		ON
1:M7-92	**PHOTO**	**VSMOKE**	**1:M7-92 FLR 3 CENTRAL TWR B - SCAN 46**			X	X	X		X		ON
1:M7-93			*SPARE*	X		X	X	X		X		ON
THRU												
1:M7-127			*SPARE*	X	X	X	X	X	X	X		ON

NOTE: THE LABELS SHOWN ABOVE WILL BE USED FOR PROGRAMMING PURPOSES.
THE LABELS ARE BASED UPON INFORMATION SHOWN ON THE ARCHITECTURAL DRAWINGS.
ANY CHANGES TO THESE LABELS MUST BE NOTED ON THE SUBMITTAL REVIEW, PRIOR TO PROGRAMMING.
POINTS SHOWN IN ITALIC TEXT REFER TO EXISTING DEVICES.

NODE-1 TRANSPONDER-1 CALCULATIONS AND SCHEDULES
SCALE:N.T.S.

STANDARD SENSOR BASE
SIMPLEX 4098-9792



WIRING NOTES

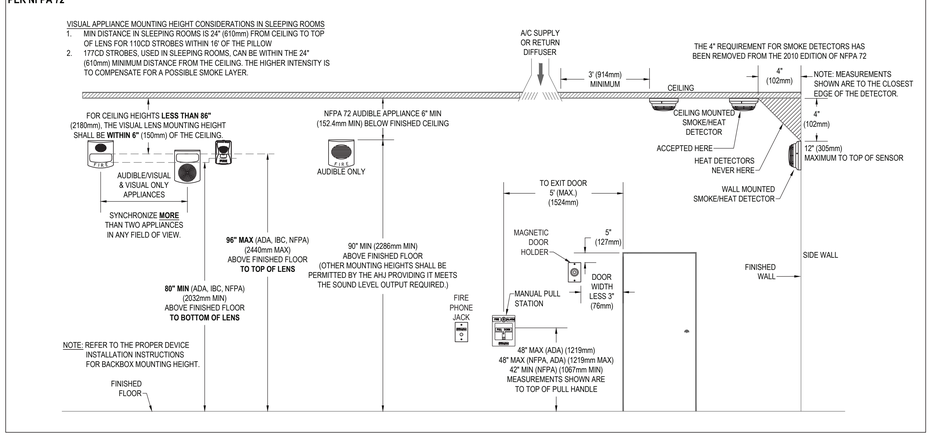
1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS.

MOUNTING OPTIONS

OPTION [1]	DESCRIPTION	NOTE
A	SINGLE GANG BOX, 2-1/8" (54mm) DEEP - FLUSH MOUNT	BY OTHERS
B	4" (102mm) OCTAGONAL BOX, 1-1/2" (38mm) DEEP, MINIMUM - FLUSH MOUNT	BY OTHERS
C	4" (102mm) SQUARE BOX, 1-1/2" DEEP (MIN) W/ SIMPLEX 4098-9832 ADAPTER KIT	BOX BY OTHERS, 4098-9832 ORDERED SEPARATELY
D	4" (102mm) SQUARE BOX, 1-1/2" DEEP (MIN) W/ SINGLE GANG COVER PLATE 3/4" (19mm) EXTENSION	BY OTHERS

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

DEVICE MOUNTING HEIGHT REFERENCE
PER NFPA 72



TYPICAL DEVICE WIRING
SCALE:N.T.S.

Johnson Controls
DISTRICT 1-418
10065 E. HARVARD AVE
AURORA, CO 80017
SERVICE: 303-355-5000
PHONE: 303-355-9500
FAX: 303-355-9515

NICET CERTIFICATION INFORMATION
NANCY S. WILTSIE
NICET Fire Alarm, III
Certification #93727
Valid Through: 03/01/24
November 4, 2022

THE MEDICAL CENTER OF AURORA - SOUTH 3RD FLOOR - EAST TOWER B - SMOKE ADDITION

THE MEDICAL CENTER OF AURORA
1501 SOUTH POTOMAC STREET
AURORA, COLORADO 80012

Revisions shown with Δ symbol

ISSUE LOG				
MARK	DATE	CAD	CHK	DESCRIPTION

FOR PERMIT

DRAWN BY:	CCD
CHECKED BY:	CBR
ISSUE DATE:	10/28/22
JOB #:	
PROJECT #:	419-650290733
JOHNSON CONTROLS © 2022	

SYSTEM:
FIRE ALARM SYSTEM

SHEET:
NODE-1 TRANSPONDER-1 CALCS AND SCHEDULES & TYPICAL DEVICE WIRING

FA-601

FILE PATH: C:\Users\jsfonc4\Johnson Controls\Project Electronics - Medical Center of Aurora\1501 S Potomac - Aurora South\South Tower - Node 1\3E-3rd Flr Smoke\4x5 - 2022 - 6502907333rdFireFA-601.dwg
LAST SAVED BY: JSFONC4
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RSN: 1688189
Permit # 2022-2275333-CT
Sheet 5 of 14

Johnson Controls
14200 E. Exposition Avenue
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
3rd Floor - East Tower B - Smoke Addition
1501 S Potomac Street
Aurora, Colorado 80012

Prepared for:

E Light Electric Services, Inc.
361 Invernes Drive, Suite B
Englewood, Colorado 80112

Johnson Controls
14200 E. Exposition Avenue
Aurora, Colorado 80012
Sales: (303) 355-0500
Service: (303) 355-0500
Fax: (303) 355-0615

PROJECT:	The Medical Center of Aurora - South 3rd Floor - East Tower B - Smoke Addition
PREPARED FOR:	E Light Electric Services, Inc.

TYPE:	***DESCRIPTION:***
4098-9714	TRUEALARM PHOTO SMOKE SENSOR
4098-9733	TRUEALARM HEAT SENSOR
4098-9792	TRUEALARM SENSOR BASE

RSN: 1688189
Permit # 2022-2275333-CT
Sheet 9 of 14
Datasheet

Features

TrueAlarm analog sensing provides the following features

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

For use with the following Simplex products

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

Fire alarm control unit provides the folloing features

- Peak value logging with accurate analysis of each sensor for individual sensitivity selection
- Sensitivity monitoring meets 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 for each foot
- Display and print detailed sensor information in plain English language

Photoelectric smoke sensors provide the following features

- Sensitivity levels from 0.2% to 3.1%. See TrueAlarm sensors for more information.

Heat sensors have these features

- Three fixed temperature sensing thresholds: 135°F, 155°F and 190°F
- Rate-of-rise temperature sensing
- Utility temperature sensing
- Listed to UL 521 and ULC-S530

General features

- Ceiling or wall mounting
- Listed to UL 268 7th Edition and ULC-S529
- NEMA 1 rated. See TrueAlarm analog sensing product selection chart for more information.
- 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 testing
- Different bases support a supervised or unsupervised output relay, 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

Description

Digital communication of analog sensing

TrueAlarm analog sensors provide an analog measurement digitally communicated to the host control panel using Simplex addressable communications. The control unit analyses the data, determines an average value and stores it. Comparing the sensor's present value against its average value and time, determines an alarm or other abnormal condition.

Intelligent data evaluation

Monitoring each sensor's average value provides a continuously shifting reference point. A software filtering process compensates for environmental factors, such as dust and dirt, and component aging, to provide an accurate reference for evaluating new activity. This filtering reduces the probability of false or nuisance alarms caused by shifts in sensitivity, either up or down.

Control unit selection

The control unit stores peak activity for each sensor to assist in evaluating specific locations. The host control unit determines the alarm set point for each TrueAlarm sensor, selectable as more or less sensitive as the individual application requires.

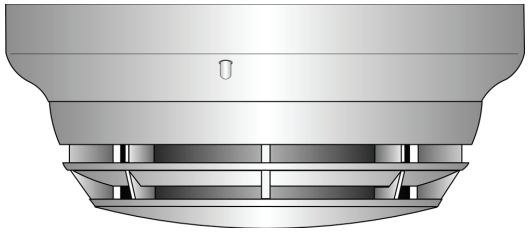


Figure 1: 4098-9714 TrueAlarm photoelectric sensor mounted in base

Timed/multi-stage selection

You can program the sensor alarm set points for timed automatic sensitivity selection, such as more sensitive at night, less sensitive during day. You can program the control unit to provide multi-stage operation for each sensor.

Sensor alarm and trouble LED indication

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

TrueAlarm sensor bases and accessories

Sensor base features

Base mounted address selection

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

General features

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

* 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. 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.

Permit # 2022-2275333-CT
Sheet 10 of 14

Sensor bases

4098-9792, standard sensor base

4098-9789, sensor base with wired connections

- 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 unit
- 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 at 28 VDC
- non-power limited rating of 3 A at 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 at 30 VDC, resistive; non-power limited rating of 0.5 A at 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 at 28 VDC; non-power limited rating of 1/2 A at 120 VAC, (requires external 24 VDC coil power)

4098-9832, adapter plate

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

2098-9808, remote red LED alarm indicator

- Mounts on single gang box

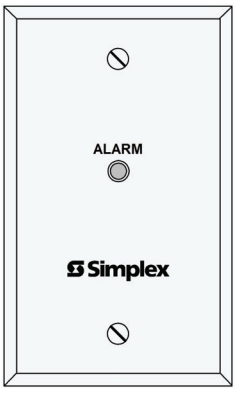


Figure 2: Remote red LED alarm indicator

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 unit every four seconds.

You can easily interchange different TrueAlarm sensor types to meet specific location requirements. This feature allows intentional sensor substitution during building construction. When conditions are temporarily dusty, you can install heat sensors without reprogramming the control unit, as covering smoke sensors causes them to be disabled. Although the control unit 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

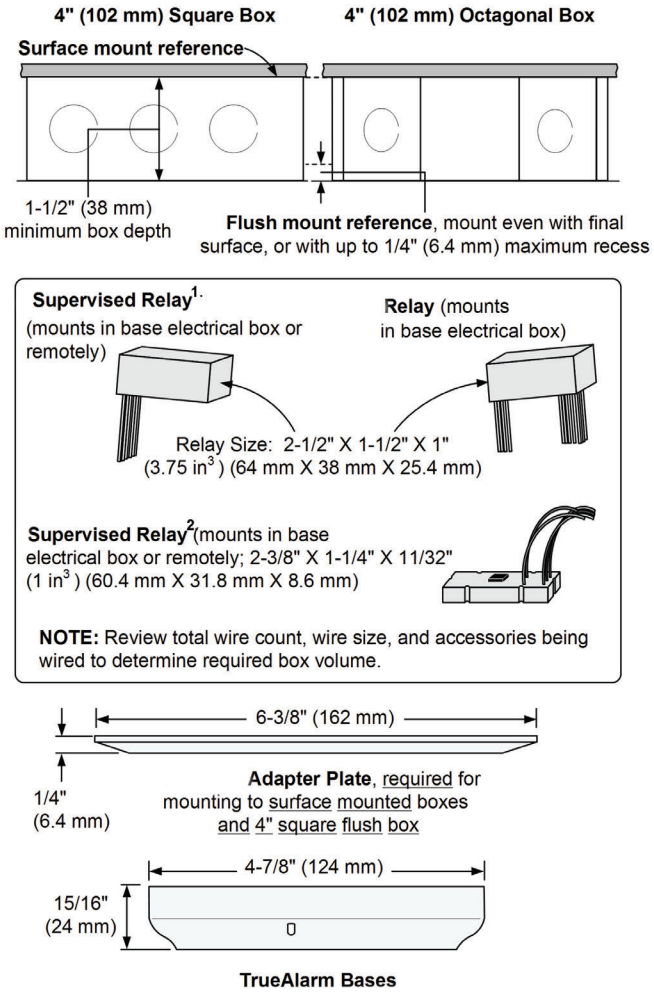


Figure 3: Mounting reference

Table 1: Product mounting - SKU reference

Product	SKU
Relay	4098-9822
Supervised relay	Example 1 2098-9739 Example 2 4098-9860
Adapter plate	4098-9832
TrueAlarm bases	4098-9780, 4098-9789, 4098-9791, 4098-9792

FSP-1008-EX
Permit # 2022-2275333-CT
Sheet 11 of 14

TrueAlarm sensors

Features

- Sealed against rear air flow entry
- Interchangeable mounting
- EMI/RFI shielded electronics
- Heat sensors:
  - Selectable rate compensated, fixed temperature sensing with or without rate-of-rise operation
  - Rated spacing distance between sensors:

Fixed Temp. Setting	UL and ULC Spacing	FM Spacing, Either Fixed Temperature Setting
135°F (57.2°C) 190°F (88°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

Note: 190°F (88°C) ratings apply only to the 4098-9734 sensor.

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 LED light source and a silicon photodiode receiver to deliver consistent and accurate low power smoke sensing. There are three user-selectable sensitivities for special applications for each individual sensor: 0.2%, 0.5%, and 1% for each foot. Standard sensitivity is 1.25% to 3.1% for each foot. The fire alarm control unit runs an algorithm that can vary the sensitivity for normal applications between 1.25% and 3.1% for each foot.

Note: Fixed sensitivity settings higher than 1.0% for each foot are not UL268 7th Edition compliant.

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.

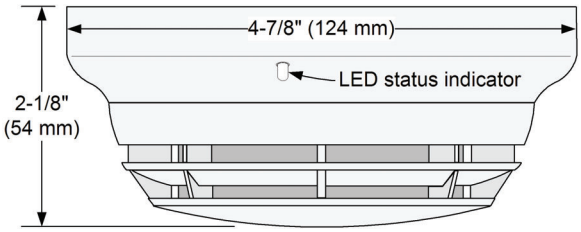


Figure 4: 4098-9714 photoelectric sensor with base

4098-9733 and 4098-9734 heat sensors

TrueAlarm heat sensors are self-restoring and provide rate-compensated, fixed temperature sensing, you can select 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 unit.

You can select rate-of-rise temperature detection at the control unit for either 15°F or 20°F, (8.3°C or 11.1°C) for each minute. Fixed temperature sensing is independent of rate-of-rise sensing and you can program it to operate at 135°F or 155°F (57.2°C or 68°C). The 4098-9734 sensor provides an additional 190°F (88°C) set point.

In a slowly 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.

You can program TrueAlarm heat sensors as a utility device to monitor for temperature extremes in the range of 32°F to 155°F (0°C to 68°C). This feature can provide freeze warnings, or alert you to HVAC system problems. Refer to panel specifications for availability.

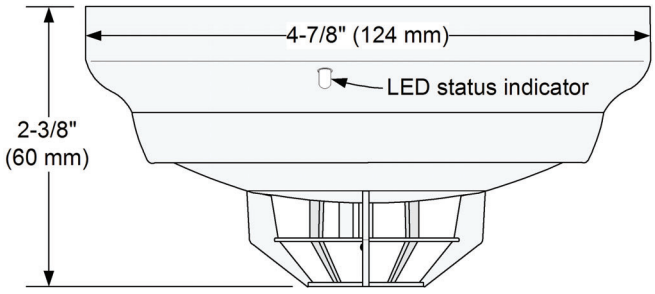


Figure 5: 4098-9733 heat sensor with base

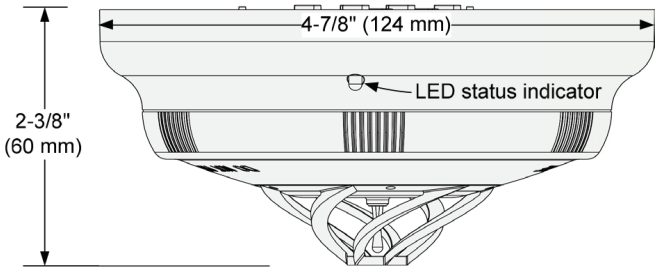


Figure 6: 4098-9734 high temperature heat sensor with base

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, a smoke sensor spacing of 30 ft (9.1 m) can be used as a guide.

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

Simplex
Permit # 2022-2275333-CT
Sheet 12 of 14

TrueAlarm analog sensing product selection chart

Table 2: TrueAlarm sensor bases (for use with sensors 4098-9714 and 4098-9733)

SKU	Color	Description	Compatibility	Mounting requirements
4098-9792 GSA4098-9792	White	Standard sensor base	No options	4 in. octagonal or 4 in. square box, 1 1/2 in. min. depth; or single gang box, 2 in. min. depth
4098-9776	Black			
4098-9789 4098-9789IND GSA4098-9789	White	Sensor base with connections for remote LED alarm indicator **or** unsupervised relay	2098-9808 remote alarm indicator or 4098-9822 unsupervised relay	4 in. octagonal or 4 in. square box **Note:** Box depth requirements depend on total wire count and wire size, see Table 4 for reference.
4098-9775	Black			
4098-9791 **Note:** NOT compatible with the 2120 CDT	White	4-wire sensor supervised relay base with connections for LED indicator or unsupervised relay	2098-9737 supervised remote relay	
			2098-9808 remote alarm indicator or 4098-9822 unsupervised relay	
4098-9780 GSA4098-9780 **Note:** NOT compatible with the 2120 CDT	White	2-wire sensor supervised relay base with connections for LED indicator or unsupervised relay	4098-9860 supervised remote relay	
			2098-9808 remote alarm indicator or 4098-9822 unsupervised relay	

Note: SKU numbers ending in IND are assembled in India. SKU numbers with GSA prefix are assembled in the USA.

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

Table 3: TrueAlarm sensors

SKU	Color	Description	Compatibility	Mounting requirements
4098-9714 4098-9714-IND GSA4098-9714	White	Photoelectric smoke sensor	Bases 4098-9775, 4098-9776, 4098-9792, 4098-9789, 4098-9791, and 4098-9780	Refer to base requirements
4098-9774	Black			
4098-9733 GSA4098-9733	White	Heat sensor		
4098-9778	Black			
4098-9734 GSA4098-9734	White	High temperature heat sensor		

Note:

- All of these SKUs are NEMA 1 rated.
- The 4098-9734 Heat Sensor is compatible with IDNet on the 4100ES, 4010ES, and 4007ES only.
- SKU numbers with GSA prefix are assembled in the USA.

Table 4: TrueAlarm sensor/base accessories

SKU	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 in. octagonal or 4 in. square box, 1 1/2 in. minimum depth Base mounting requires 4 in. octagonal box, 2 1/8 in. deep with 1 1/2 in. 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 in. 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 in. octagonal box, 2 1/8 in. deep with 1 1/2 in. extension ring
4098-9832	Adapter plate	Bases 4098-9792, 4098-9789, 4098-9791, and 4098-9780	Required for surface or semi-flush mounted 4 in. square box and for surface mounted 4 in. octagonal box

Note: 2098-9808 is NEMA 1 rated.

Permit # 2022-2275333-CT
Sheet 13 of 14

Specifications

Table 5: General operating specifications

Specification		Rating
Communications and sensor supervisory power		IDNet or MAPNET II communications, auto-selected, one address for each 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°F to 100°F, 0°C to 38°C
Operating temperature range	with 4098-9733 Heat Sensor	32°F to 122°F, 0°C to 50°C
	with 4098-9714 Smoke Sensor	15°F to 122°F, -9°C to 50°C
	with 4098-9734 Heat Sensor	32°F to 150°F, 0°C to 66°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 to 4000 ft/min, 0 to 1220 m/min
Housing color		Frost white or black

Table 6: 4098-9791 Base with supervised remote relay 2098-9737

Specification	Rating
Externally supplied relay coil voltage	18 VDC to 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
Note: See Sensor base options for contact ratings.	

Table 7: 4098-9780 Base with supervised remote relay 4098-9860

Specification	Rating
Power	Supplied from communications

Table 8: 4098-9822 Unsupervised relay, requirements for bases 4098-9789, 4098-9791, and 4098-9780

Specification	Rating
Externally supplied relay coil voltage	18 VDC to 32 VDC, nominal 24 VDC
Supervisory current	Supplied from communications
Alarm current	13 mA from separate 24 VDC supply
Note: See Sensor base options for contact ratings.	

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