PERMIT #2026 2624788- CT | RSN:1973370

THE MEDICAL CENTER OF AURORA - SOUTH
IR AHU 15 REPLACEMENT
MODIFICATION TO EXISTING FIRE ALARM SYSTEM

DRAWING INDEX

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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

FIRE ALARM SYMBOL LEGEND

QTY	SYMBOL	DESCRIPTION	BRAND / MODEL	BACKBOX	WIRE TYPE(S)
		INITIATING DEVICES			
2N	S OR R	DUCT SMOKE DETECTOR W/ RELAY OUTPUT, ADDRESSABLE R = RETURN, S = SUPPLY	4098-9756	MOUNTS TO DUCTWORK	MI,P
		SAMPLING TUBE, 49"	4098-9856		
		SAMPLING TUBE, 73"	4098-9857		
		MODULES AND RELAYS			
2N	M	ENCAPSULATED RELAY	4098-9843	SINGLE GANG, 2-1/2" D	R
		MISCELLANEOUS DEVICES			
2N		REMOTE TEST STATION W/ LED AND KEY SWITCH	2098-9806	SINGLE GANG 2" D	K
2N	10K	END-OF-LINE RESISTOR 10KΩ, 1/2W (EOL)	4081-9008		

GENERAL INFORMATION:
1. THE INFORMATION OR SYMBOLS SHOWN IN BOLD LINETYPE ARE NEW OR MODIFIED.
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.
K	REMOTE TEST SWITCH/LED	(2) 2 COND. SOLID	14 AWG		X	X				
Mi	IDNET	UTP SOLID	18 AWG	0.60µF MAX TOTAL LINE CAPACITANCE	X	X				
P	POWER	2 COND. SOLID	14 AWG		X	X	X	X		
R	RELAY	2 COND. SOLID	14 AWG		X	X	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.
STP = SHIELDED TWISTED PAIR
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.

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

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

COA Adopted Codes for this project:
ICC-2021 - NEC-2023
NFPA 13-2019 - NFPA 72-2019
COA Amendments 22 & 66

Code violations that are found during the inspection are required to be corrected. Permit issuance does not grant approval of code violations.

City of Aurora Building Division
Counter Permit Authorized by: chavez
RSN: *1973370*
Permit: *2026 2624788-CT*
Date: *May 15, 2026*
2021 INTERNATIONAL CODES & 2023 NEC

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), 2023 EDITION

NATIONAL FIRE ALARM AND SIGNALING CODE (NFPA 72), ~~2022 EDITION~~ 2019

INTERNATIONAL MECHANICAL CODE (IMC), 2021 EDITION

LIFE SAFETY CODE (NFPA 101), 2012 (STATE) EDITION

ICC A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES, 2017 EDITION

ADA STANDARDS FOR ACCESSIBLE DESIGN, 2023 EDITION

COLORADO DEPARTMENT OF HEALTH AND ENVIRONMENT - HOSPITAL LICENSING RULES, 2021 EDITION

OCCUPANCY TYPE(S):
I-2 INSTITUTIONAL GROUP - CONDITION 2

SPRINKLER PROTECTION:
BUILDING IS FULLY SPRINKLERED

AREA:
TOTAL: APPROX. 450,000 SQ. FT.
SCOPE: APPROX. 30 SQ. FT.

STORIES
TOTAL:6 STORIES + BASEMENT
SCOPE: PARTIAL 1ST FLOOR

CONSTRUCTION:
TOTAL: EXISTING TYPE 1A

JOHNSON CONTROLS CONTACTS

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SCOPE OF WORK

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

SCOPE OF WORK TO INCLUDE DUCT SMOKE SENSOR REPLACEMENT FOR THE AHU-15 REPLACEMENT IN THE IR SECTION OF THE MEDICAL CENTER OF AURORA LOCATED AT 1501 SOUTH POTOMAC STREET, AURORA, COLORADO 80012 . NO ARCHITECTURE IS BEING MODIFIED.

(2) NEW DUCT SMOKE SENSORS TO BE INSTALLED IN (2) NEW LOCATIONS FOR NEW AHU-15 WITHIN THE IR AREA. NEW AHU-15 IS OVER 15,000CFM, THEREFORE WILL RECEIVE ONE SENSOR ON SUPPLY AND ONE ON RETURN PER IMC 2021.

NEW DETECTION TO TIE TO EXISTING M11 CIRCUIT OF THE EXISTING 4100 NODE-1 TRANSPONDER 4 LOCATED IN ELECTRICAL 1-CS16. TRANSPONDER TIES BACK TO EXISTING FIRE ALARM CONTROL PANEL LOCATED IN FIRE COMMAND CENTER 1E-2902A.

EXISTING STATIC GRAPHIC MAP FOR THE 1ST FLOOR TO RECEIVE INITIATION UPDATES.

NEW DEVICES TO FOLLOW EXISTING SEQUENCE OF OPERATIONS (SOO); 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 UUJS UNDERWRITERS LABORATORY OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 3011. SUPERVISION OF SYSTEM AND LEASED TELEPHONE LINES SHALL BE ARRANGED BY THE OWNER.

PROJECT DIRECTORY

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

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

Installer
ODIN ELECTRIC
2120 SOUTH ASH STREET
DENVER, COLORADO 80222
PHONE: 720-791-6346

Owner
HEALTH ONE
4900 SOUTH MONACO STREET
AURORA, COLORADO 80012
PHONE: 303-873-5511

DESIGN STATEMENT

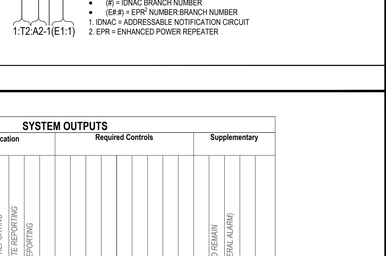
THIS PROJECT'S DESIGN IS BASED ON THE ENGINEERED PLANS AND SPECIFICATIONS PREPARED BY:
SALAS O'BRIEN

ARCHITECTURAL PLANS DATED:	SEPTEMBER 19TH 2025
MECHANICAL PLANS DATED:	SEPTEMBER 19TH 2025
ELECTRICAL PLANS DATED:	SEPTEMBER 19TH 2025
SPECIFICATIONS DATED:	SEPTEMBER 19TH 2025
ADDENDUM DATED:	

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
N.T.S. = 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



PANEL DESIGNATOR
- FA: = FACP (NON-NETWORK)
- E: = 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:
- (LA) = IDNET ISOLATED LOOP NUMBER
- (#) = IDNAC BRANCH NUMBER
- (E#:#) = EPR POWER:BRANCH NUMBER

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

SYSTEM SEQUENCE OF OPERATIONS

M.C.O.A. SOUTH TOWER

SEQUENCE OF OPERATIONS

SYSTEM OUTPUTS

FACP Annunciation

SYSTEM INPUTS	A: ACTUATE COMMON ALARM SIGNAL INDICATOR	B: ACTUATE AUDIBLE ALARM SIGNAL	C: ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	D: ACTUATE AUDIBLE SUPERVISORY SIGNAL	E: ACTUATE COMMON TROUBLE SIGNAL INDICATOR	F: ACTUATE AUDIBLE COMMON TROUBLE SIGNAL
1 SMOKE DETECTOR	X	X				
2 SMOKE DETECTOR AT 2ND, 4TH & 5TH FLR CLERK DESK	X	X				
3 SMOKE DETECTOR AT SMOKE PARTITION	X	X				
4 MANUAL PULL STATION	X	X				
5 HEAT DETECTOR	X	X				
6 DUCT DETECTOR			X	X		
7 DUCT DETECTOR AT F/S DAMPER			X	X		
8 MAIN FLR. ELEV. LOBBY SMOKE DETECTOR	X	X				
9 ELEV. LOBBY SMOKE DETECTORS (EXCL. MAIN FLR.)	X	X				
10 ELEV. MECH. ROOM SMOKE DETECTOR	X	X				
11 ELEV. SHAFT HEAT DETECTOR	X	X				
12 ELEV. MECH. ROOM HEAT DETECTOR	X	X				
13 WATERFLOW SWITCH	X	X				
14 TAMPER SWITCH			X	X		
15 POST INDICATOR VALVE SWITCH			X	X		
16 FACP AC POWER FAILURE					X	X
17 FACP LOW BATTERY					X	X
18 OPEN CIRCUIT					X	X
19 GROUND FAULT					X	X
20 NOTIFICATION APPLIANCE CIRCUIT SHORT					X	X
21 ALARM SIGNAL SILENCE						
22 SYSTEM RESET						
23 CATH LAB BUILDING ALARM	X	X				

Notification

SYSTEM INPUTS	G: ACTUATE EVACUATION SIGNALS (AUDIBLE/VISUAL'S)	H: ACTUATE SPRINKLER BELL	I: DISPLAY CHANGE OF STATUS AT REMOTE ANNUNCIATOR	J: TRANSMIT FIRE ALARM SIGNAL TO OFF-SITE REPORTING	K: TRANSMIT SUPERVISORY SIGNAL TO OFF-SITE REPORTING	L: TRANSMIT TROUBLE SIGNAL TO OFF-SITE REPORTING	M: NOTIFY HOSPITAL PBX
1 SMOKE DETECTOR	X	X	X	X			
2 SMOKE DETECTOR AT 2ND, 4TH & 5TH FLR CLERK DESK	X	X	X	X			
3 SMOKE DETECTOR AT SMOKE PARTITION	X	X	X	X			
4 MANUAL PULL STATION	X	X	X	X			
5 HEAT DETECTOR	X	X	X	X			
6 DUCT DETECTOR				X		X	
7 DUCT DETECTOR AT F/S DAMPER				X		X	
8 MAIN FLR. ELEV. LOBBY SMOKE DETECTOR	X	X		X	X		
9 ELEV. LOBBY SMOKE DETECTORS (EXCL. MAIN FLR.)	X	X		X	X		
10 ELEV. MECH. ROOM SMOKE DETECTOR	X	X		X	X		
11 ELEV. SHAFT HEAT DETECTOR	X	X		X	X		
12 ELEV. MECH. ROOM HEAT DETECTOR	X	X		X	X		
13 WATERFLOW SWITCH	X	X		X	X	X	
14 TAMPER SWITCH						X	
15 POST INDICATOR VALVE SWITCH						X	
16 FACP AC POWER FAILURE							
17 FACP LOW BATTERY							
18 OPEN CIRCUIT							
19 GROUND FAULT							
20 NOTIFICATION APPLIANCE CIRCUIT SHORT							
21 ALARM SIGNAL SILENCE							
22 SYSTEM RESET							
23 CATH LAB BUILDING ALARM							

Required Controls

SYSTEM INPUTS	N: TRANSMIT SHUT DOWN	O: DAMPER SHUT DOWN	P: DOOR HOLD MAG LOCK RELEASE	Q: RELEASE CORRIDOR FIRE DOORS	R: RELEASE ASSOCIATED ROLL-UP DOOR	S: ELEVATOR SHUT DOWN (*)	T: ELEVATOR RECALL - MAIN FLOOR	U: ELEVATOR RECALL - ALTERNATE FLOOR	V: ELEVATOR HAT FLASH
1 SMOKE DETECTOR		X	X	X					
2 SMOKE DETECTOR AT 2ND, 4TH & 5TH FLR CLERK DESK		X	X	X	X				
3 SMOKE DETECTOR AT SMOKE PARTITION		X	X	X					
4 MANUAL PULL STATION			X	X					
5 HEAT DETECTOR			X	X					
6 DUCT DETECTOR	X								
7 DUCT DETECTOR AT F/S DAMPER		X							
8 MAIN FLR. ELEV. LOBBY SMOKE DETECTOR		X	X	X	X			X	X
9 ELEV. LOBBY SMOKE DETECTORS (EXCL. MAIN FLR.)		X		X		X	X		
10 ELEV. MECH. ROOM SMOKE DETECTOR		X		X		X		X	X
11 ELEV. SHAFT HEAT DETECTOR				X		X			
12 ELEV. MECH. ROOM HEAT DETECTOR		X		X		X			
13 WATERFLOW SWITCH		X							
14 TAMPER SWITCH									
15 POST INDICATOR VALVE SWITCH									
16 FACP AC POWER FAILURE									
17 FACP LOW BATTERY									
18 OPEN CIRCUIT									
19 GROUND FAULT									
20 NOTIFICATION APPLIANCE CIRCUIT SHORT									
21 ALARM SIGNAL SILENCE									
22 SYSTEM RESET									
23 CATH LAB BUILDING ALARM									

Supplementary

SYSTEM INPUTS	W: OVERRIDE MUSIC SYSTEM	X: SILENCE AUDIBLE SIGNAL ONLY, VISUALS TO REMAIN	Y: ACTUATE OUTSIDE HORN/STROBE (3W) GENERAL ALARM	Z: RESET PANEL TO "NORMAL" CONDITION	
1 SMOKE DETECTOR		X	X		1
2 SMOKE DETECTOR AT 2ND, 4TH & 5TH FLR CLERK DESK		X	X		2
3 SMOKE DETECTOR AT SMOKE PARTITION		X	X		3
4 MANUAL PULL STATION		X	X		4
5 HEAT DETECTOR		X	X		5
6 DUCT DETECTOR					6
7 DUCT DETECTOR AT F/S DAMPER					7
8 MAIN FLR. ELEV. LOBBY SMOKE DETECTOR	X	X	X		8
9 ELEV. LOBBY SMOKE DETECTORS (EXCL. MAIN FLR.)		X	X		9
10 ELEV. MECH. ROOM SMOKE DETECTOR		X	X		10
11 ELEV. SHAFT HEAT DETECTOR					11
12 ELEV. MECH. ROOM HEAT DETECTOR					12
13 WATERFLOW SWITCH		X	X		13
14 TAMPER SWITCH					14
15 POST INDICATOR VALVE SWITCH					15
16 FACP AC POWER FAILURE					16
17 FACP LOW BATTERY					17
18 OPEN CIRCUIT					18
19 GROUND FAULT					19
20 NOTIFICATION APPLIANCE CIRCUIT SHORT					20
21 ALARM SIGNAL SILENCE		X			21
22 SYSTEM RESET				X	22
23 CATH LAB BUILDING ALARM					23

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 to follow existing Sequence of Operations; no further changes to occur.

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NICET CERTIFICATION INFORMATION
CALE RAUCH
NICET Fire Alarm, III
Certification #151588
Valid Through: 12/01/28
05/13/2026

THE MEDICAL CENTER OF AURORA - SOUTH
IR AHU 15 REPLACEMENT
THE MEDICAL CENTER OF AURORA - SOUTH
1501 SOUTH POTOMAC STREET
AURORA, COLORADO 80012

ISSUE LOG	DATE	CAD	CHK	DESCRIPTION
MARK				Revisions shown with A symbol

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DRAWN BY:	AMW
CHECKED BY:	CBR
ISSUE DATE:	5/13/26
JOB #:	
PROJECT #:	419.65109102 5

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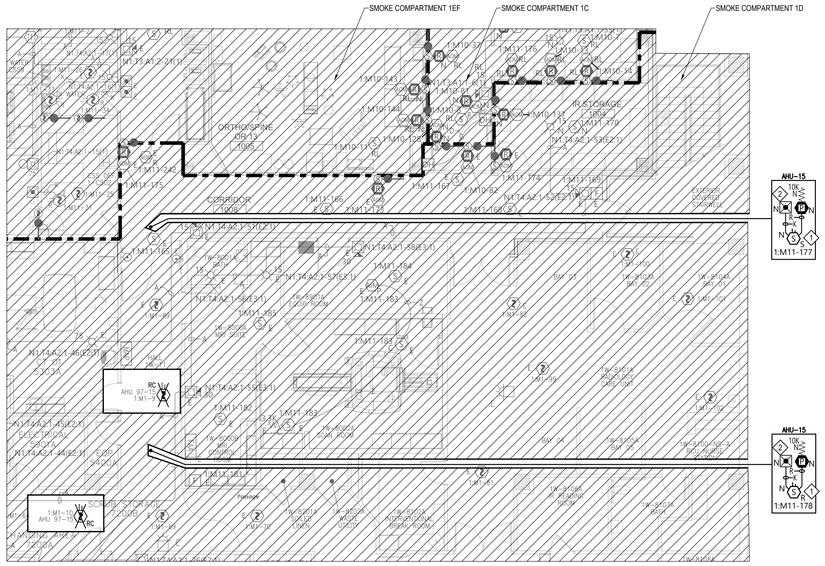
SYSTEM: **FIRE ALARM SYSTEM**

SHEET: **COVER SHEET**

FA-001

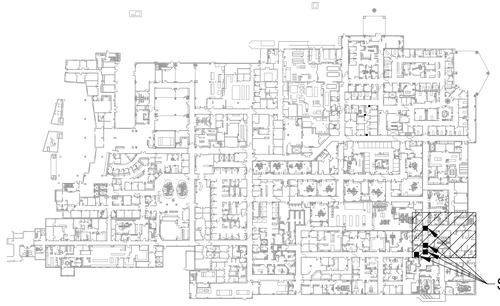
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30" x 42" - Arch E Size

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1ST FLR PARTIAL DEVICE PLACEMENT PLAN
SCALE:1/8" = 1'-0"

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



KEYPLAN
SCALE:N.T.S.

GENERAL NOTES:

1. ALL CEILINGS ARE ASSUMED TO BE 10' A.F.F., SMOOTH CONSTRUCTION UNLESS NOTED OTHERWISE.
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 MODIFIED.
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.

KEYNOTES:

1. EXACT DEVICE PLACEMENT TO BE FIELD DETERMINED BY ASSOCIATED INSTALLER PRIOR TO RUNNING ANY NEW CONDUIT.
2. REMOTE TEST STATION TO BE MOUNTED IN ACCESSIBLE AND CONDITIONED SPACE.

FIRE ALARM SYMBOL LEGEND

QTY	SYMBOL	DESCRIPTION	BRAND / MODEL	BACKBOX	WIRE TYPE(S)
		INITIATING DEVICES			
2N	S OR 2	DUCT SMOKE DETECTOR W/ RELAY OUTPUT, ADDRESSABLE R = RETURN, S = SUPPLY	4098-9756	MOUNTS TO DUCTWORK	MI,P
		SAMPLING TUBE, 49"	4098-9856		
		SAMPLING TUBE, 73"	4098-9857		
		MODULES AND RELAYS			
2N	M	ENCAPSULATED RELAY	4098-9843	SINGLE GANG, 2-1/2" D	R
		MISCELLANEOUS DEVICES			
2N	K	REMOTE TEST STATION W/ LED AND KEY SWITCH	2098-9806	SINGLE GANG 2" D	K
2N	10K	END-OF-LINE RESISTOR 10KΩ, 1/2W (EOL)	4081-9008		

FIRE ALARM WIRE LEGEND

	CIRCUIT DESCRIPTION	CONSTRUCTION	GAUGE	CIRCUIT PROPERTIES	ACCEPTABLE CABLE TYPES: FPLR	FPLP	THHN	TFFN	OUTDOOR *	C.L.
K	REMOTE TEST SWITCH/LED	(2) 2 COND. SOLID	14 AWG		X	X				
MI	IDNET	UTP SOLID	18 AWG	0.60µF MAX TOTAL LINE CAPACITANCE	X	X				
P	POWER	2 COND. SOLID	14 AWG		X	X	X	X		
R	RELAY	2 COND. SOLID	14 AWG		X	X	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.
STP = SHIELDED TWISTED PAIR
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.



1ST FLR PARTIAL RISER DIAGRAM
SCALE:N.T.S.

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 MODIFIED.
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"

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NICET CERTIFICATION INFORMATION
CALE RAUCH
NICET Fire Alarm, III
Certification #151588
Valid Through: 12/01/28
05/13/2026

THE MEDICAL CENTER OF AURORA - SOUTH IR AHU 15 REPLACEMENT

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

ISSUE LOG: Revisions shown with ⚠ symbol

MARK	DATE	CAD	CHK	DESCRIPTION

FOR PERMIT

DRAWN BY:	AMW
CHECKED BY:	CBR
ISSUE DATE:	5/13/26
JOB #:	
PROJECT #:	419-651091025

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SYSTEM: FIRE ALARM SYSTEM

SHEET: 1ST FLR PARTIAL DEVICE PLACEMENT PLAN AND PARTIAL RISER DIAGRAM

FA-101

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30" x 42" Arch E1 Size

MEDICAL CENTER OF AURORA SOUTH NODE-1 FACP

Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
Panel Equipment						
4100-7150	1	MASTER CONTROLLER UPGRADE W/ 2X40 DISPLAY (4100 BA	0.1630	0.1630	0.2100	0.2100
4100-6078	1	NETWORK IF CARD, MODULAR	0.0460	0.0460	0.0460	0.0460
4100-6056	2	NETWORK MEDIA CARD WIRED	0.0550	0.1100	0.0550	0.1100
4100-0304	1	STYLE 7 REMOTE UNIT INTERFACE	0.0850	0.0850	0.0850	0.0850
4100-5005	8	ZONE MODULE, 8 IDC, CLASS B	0.0750	0.6000	0.1950	1.5600
4100-4321	10	6 CIRCUIT CLASS B (STYLE Y)	0.0250	0.2500	0.0700	0.7000
4100-3003	2	6 PT AUX RELAY MODULE 3 AMP	0.0250	0.0500	0.2800	0.5600
4100-0110	5	MAPNET II ADDRESSABLE MODULE *	0.2700	1.3500	0.2900	1.4500
4100-6005	1	MASTER CONTROLLER POWER SUPPLY	0.0000	0.0000	0.0000	0.0000
4100-0108	2	EXPANSION 120V 6AMP POWER SUPPLY	0.0000	0.0000	0.0000	0.0000
4100-6038	1	DUAL RS-232 IF CARD	0.1320	0.1320	0.1320	0.1320
4100-5101	2	EXPANSION PWR SUPPLY (XPS) - 120VAC 60HZ	0.0500	0.1000	0.0500	0.1000
4100-3110	3	IDNet2+2 MODULE - UP TO 250 DEVICES 4 ISOLATED LOOPS *	0.0500	0.1500	0.1000	0.3000
4100-5325	1	ENHANCED POWER SUPPLY, 3 CHANNELS, 120V	0.1250	0.1250	0.2200	0.2200
4009-9601	1	IDNAC REPEATER 120V PLATINUM UL/ULC	0.0700	0.0700	0.0960	0.0960
4100-96xx	3	REMOTE ANNUNCIATORS & MINIPLEX TRANSPONDERS *		RUI CURRENT DRAWS INCLUDED BELOW		
		Panel Totals		**3.2310**		**5.5690**
IDNet Addressable Devices (SLC)						
4090-9001	7	IDNET SUPERVISED IAM *				
4090-9002	1	IDNET RELAY IAM *				
4098-9714	48	TRUEALARM PHOTO SMOKE SENSOR				
4098-9733	8	TRUEALARM HEAT SENSOR				
4098-9756	5	TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT *				
4098-9789	1	TRUEALARM SENSOR BASE W/ LED OUTPUT *				
4098-9792	55	TRUEALARM SENSOR BASE *				
4099-9006	12	ADDRESSABLE DOUBLE ACTION MANUAL STATION, PUSH *				

Constant current draw of .8mA standby and 1mA alarm per address used. Devices requiring additional current are accounted for in the section labeled "Miscellaneous Peripheral Devices Requiring Additional System Power".

Mapnet Addressable Devices (SLC)						
2190-9161	6	MAPNET CLASS B SIGNAL ZAM *				
2190-9163	44	MAPNET UNSUPERVISED CONTROL ZAM *				
2190-9172	41	MAPNET SUPERVISED IAM *				
2190-9173	3	MAPNET 2 POINT INPUT/OUTPUT ZAM *				
2099-9795	20	MAPNET SINGLE ACTION PULL STATION *				
4098-9714	305	TRUEALARM PHOTO SMOKE SENSOR				
4098-9733	32	TRUEALARM HEAT SENSOR				
4098-9756	**36**	**TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT ***				
4098-9789	293	TRUEALARM SENSOR BASE W/ LED OUTPUT *				
4098-9792	44	TRUEALARM SENSOR BASE *				
4090-9008	3	ADDRESSABLE DUAL CONTACT RELAY IAM *				
Miscellaneous Peripheral Devices That Require (Additional) System Power						
4098-9843	**41**	**ENCAPSULATED RELAY PAM-SD**	**0.0000**	**0.0000**	**0.0150**	**0.6150**
4098-9756	**41**	**TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT**	**0.0030**	**0.1230**	**0.0150**	**0.6150**
4603-9101	13	SERIAL LCD ANNUNCIATOR	0.0650	0.8450	0.1400	1.8200
2098-9806	26	REMOTE ALARM INDICATOR	0.0010	0.0260	0.0000	0.0000
2098-9806	**37**	**REMOTE TEST STATION W/ LED AND KEY SWITCH**	**0.0000**	**0.0000**	**0.0000**	**0.0000**
2190-9155	1	MAPNET CLASS B MONITOR ZAM	0.0200	0.0200	0.0900	0.0900
2190-9163	45	MAPNET UNSUPERVISED CONTROL ZAM	0.0100	0.4500	0.0400	1.8000
2190-9161	6	MAPNET CLASS B SIGNAL ZAM	0.0150	0.0900	0.0400	0.2400
2098-9021	2	ENCAPSULATED RELAY PAM-1	0.0000	0.0000	0.0150	0.0300

Notification Appliances		**Setting**				
4009-9601	2	FOUR CIRCUIT NAC EXTENDER, 120 VAC		0.0000	0.0000	0.0150	0.0300
4903-9219	10	HORN/STROBE, NON-SYNC, RED, WALL MTD	15	0.0000	0.0000	0.0220	0.2200
4903-9292	88	CHT0-2415W-FR,CHIME/STROBE, NON-SYNC,RED, WALL MTD	15	0.0000	0.0000	0.0700	6.1600
4904-9137	105	15CD VISIBLE ONLY RED	15	0.0000	0.0000	0.0900	9.4500
4906-9101	1	W/O MC NON-ADDRESS, RED, WALL	15	0.0000	0.0000	0.0600	0.0600
4906-9101	5	W/O MC NON-ADDRESS, RED, WALL	75	0.0000	0.0000	0.1860	0.9300
CHT0-2415TSW-FR (C)	1	CHIME, NON-SYNC,RED, WALL MTD	CHIME	0.0000	0.0000	0.0220	0.0220
CHT0-24MCW-FR	4	MULTI CD CHIME STROBE, WALL MNT, RED	15	0.0000	0.0000	0.0820	0.3280
RSS-24MCW-FR	1	MULTI CD STROBE, WALL MNT, RED	15	0.0000	0.0000	0.0600	0.0600

IDNac Notification Appliances		**Setting**				
4009-9601	1	IDNAC REPEATER 120V PLATINUM UL/ULC *		0.0032	0.0032	0.0032	0.0032
4905-9929	2	TRUEALERT ISOLATOR MODULE		0.0032	0.0064	0.0100	0.0200
49MTV-WRF	38	MULTI-TONE A/V, RED, WALL MOUNT	15	0.0016	0.0608	0.1450	5.5100
49MTV-WRF	1	MULTI-TONE A/V, RED, WALL MOUNT	185	0.0016	0.0016	0.2990	0.2990
49MTV-WRF	5	MULTI-TONE A/V, RED, WALL MOUNT	30	0.0016	0.0080	0.1630	0.8150
49VO-APPLC	31	STROBE, APPLIANCE ONLY, CEILING MOUNT	15	0.0008	0.0248	0.0550	1.7050
49VO-APPLC	1	STROBE, APPLIANCE ONLY, CEILING MOUNT	30	0.0008	0.0008	0.0830	0.0830
49VO-APPLC	1	STROBE, APPLIANCE ONLY, CEILING MOUNT	75	0.0008	0.0008	0.1530	0.1530
49VO-WRFO	2	VO, WALL MT, RED, FIRE LABEL, WEATHERPROOF	15	0.0008	0.0016	0.0600	0.1200
49VO-WRF	4	VO, WALL MT, RED, FIRE LABEL	15	0.0008	0.0032	0.0470	0.1880
49VOH-APPLCR	2	STROBE, APPLIANCE ONLY, CEILING MOUNT, RED LENS	75	0.0008	0.0016	0.1280	0.2560
		Total IDNac Device Current:			**0.1128**		**9.1522**
		IDNac Current Boost for 29vdc Regulated Output **					**5.2178**
		Peripheral Totals			**1.5540**		**36.8400**
		RUI Totals	**16**		**0.0560**		**0.0560**
		Address Totals	**594.5**	**Addresses**	**0.9378**		**0.9540**
*** Device Address current draw included below (See Additional Current Draws):**		**System Totals*:**		**Standby**	**5.8916**	**Alarm**	**43.4190**

1. 2-wire detector alarm current is included in the alarm current of the Initiating Device Circuit.

Battery Set #1 (Cabinet/Charger #1)			Standby Current	Standby Total	Alarm Current	Alarm Total
Select ALL Power Supplies on this battery set:						
PS-1				1.3150		6.9520
PS-2				1.0530		11.0640
PS-3				1.9310		8.9410
XPS-1				0.1560		0.5110
XPS-2				0.1000		0.1500
EPS-1				0.3260		7.9772
				Sub Total 4.8810		**35.5952**
Additional Current Draws:						
RUI Connected Peripheral Devices	16	x 0.0035		= 0.0560	x 0.0035	= 0.0560
MAPNET/IDNet Device Address Communication Current	595	x 0.001577		= 0.9378	x 0.001605	= 0.9540
				Sub Total 5.8748		**40.9131**
Spare addressable point capacity	**20%**	119 x 0.001577		= 0.1877	x 0.001605	= 0.1910
				Total 6.0625		**41.1041**
Standby Time =	**4** Hrs	x 6.0625		= 24.2498	Standby Ah	
Alarm Time =	**5** Min	0.08333 x 41.1041		= 3.4253	Alarm Ah	
				27.6752		
Additional Spare Battery Capacity =	**20%**		+	5.5350		
				33.2102		
Battery Discharge Factor =	**25%**		+	8.3026		
Minimum Battery Required	**2081-9296 50AH (2x)**			**41.5128**		
Battery Supplied	**2081-9296 50AH (2x)**					

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

Repeater Power Supply Battery Set:			Standby Total	Alarm Total
EPR-1			0.0168	**1.5960**
Additional Current Draw:				
IDNac Current Boost for 29vdc Regulated Output **			0.0000	0.9099
		Total	**0.0168**	**2.5059**
Standby Time =	**4** Hrs	x 0.0168	= 0.0672	Standby Ah
Alarm Time =	**5** Min	0.08333 x 2.5059	= 0.2088	Alarm Ah
			0.2760	
Additional Spare Battery Capacity =	**20%**	+	0.0552	
			0.3312	
Battery Discharge Factor =	**25%**	+	0.0828	
Minimum Battery Required	**2081-9272 6.2AH (2x)**		**0.4140**	
Battery Supplied	**2081-9274 10AH (2x)**			

MAPNET CHANNEL 1:M1

	Address	Device Type	Point Type	Location Description	1	2	3	4	5	6	7	8		9
	1:M1-1	ADRPUL	PULL	1:M1-1 FLR 1 W - EXIT BY X-RAY WAITING	X								ON	
	1:M1-2	ADRPUL	PULL	1:M1-2 FLR 1W - EXIT HALL BY NUCLEAR MED		X							ON	
	1:M1-3	ADRPUL	PULL	1:M1-3 FLR 1W - EXIT BY INTERVENTIONAL	X	X							ON	
	1:M1-4	ADRPUL	PULL	1:M1-4 FLR 1 CENTRAL TWR EXIT BY MRI			X						ON	
	1:M1-5	RPHOTO	SDUCT	1:M1-5 X-RAY ROOF - AHU-97-9 DUCT D.	X		X						ON	
	1:M1-6	RPHOTO	SDUCT	1:M1-6 X-RAY ROOF - AHU-97-9 DUCT D		X	X						ON	
	1:M1-7	RPHOTO	SDUCT	1:M1-7 X-RAY ROOF - AHU-97-14 DUCT D.	X	X	X						ON	
	1:M1-8	RPHOTO	SDUCT	1:M1-8 X-RAY ROOF - AHU-97-14 DUCT D.				X					ON	
1	**1:M1-9**			**SPARE**	X			X					ON	
1	**1:M1-10**			**SPARE**		X		X					ON	
	1:M1-11	GENIAM	SO	1:M1-11 FLR 1 CENTRAL TWR X-RAY HALL	X	X		X					ON	
	1:M1-12	RZAM	RELAY	1:M1-12 X-RAY ROOF - AHU-97-9 DOWN			X	X					ON	
	1:M1-13	RZAM	RELAY	1:M1-13 X-RAY ROOF AHU 97-14 SHUTDOWN	X		X	X					ON	
	1:M1-14	RZAM	RELAY	1:M1-14 X-RAY ROOF AHU 97-15 SHUTDOWN		X	X	X					ON	
	1:M1-15	PHOTO	VSMOKE	1:M1-15 FLR 1W - HALL BY X-RAY WAITING	X	X	X	X					ON	
	1:M1-16	PHOTO	VSMOKE	1:M1-16 FLR 1W - X-RAY - PET SCAN					X				ON	
	1:M1-17	PHOTO	VSMOKE	1:M1-17 FLR 1W - X-RAY - PET SCAN	X				X				ON	
	1:M1-18	PHOTO	VSMOKE	1:M1-18 FLR 1W - HALL BY X-RAY WAITING		X			X				ON	
	1:M1-19	PHOTO	VSMOKE	1:M1-19 FLR 1W - HALL BY X-RAY WAITING	X	X			X				ON	
	1:M1-20	PHOTO	VSMOKE	1:M1-20 FLR 1W - X-RAY WAITING RM			X		X				ON	
	1:M1-21	PHOTO	VSMOKE	1:M1-21 FLR 1W - HALL BY X-RAY WAITING	X		X		X				ON	
	1:M1-22	PHOTO	VSMOKE	1:M1-22 FLR 1W - HALL BY X-RAY WAITING		X	X		X				ON	
	1:M1-23	PHOTO	VSMOKE	1:M1-23 FLR 1W - BY PATHOLOGY STAIRS	X	X	X		X				ON	
	1:M1-24	PHOTO	VSMOKE	1:M1-24 FLR 1W - HALL BY PATHOLOGY				X	X				ON	
	1:M1-25	PHOTO	VSMOKE	1:M1-25 FLR 1W - HALL BY PATHOLOGY	X			X	X				ON	
	1:M1-26			SPARE		X		X	X				ON	
	1:M1-27			SPARE	X	X		X	X				ON	
	1:M1-28			SPARE			X	X	X				ON	
	1:M1-29			SPARE	X		X	X	X				ON	
	1:M1-30			SPARE		X	X	X	X				ON	
	1:M1-31			SPARE	X	X	X	X	X				ON	
	1:M1-32			SPARE						X			ON	
	1:M1-33			SPARE	X					X			ON	
	1:M1-34			SPARE		X				X			ON	
	1:M1-35			SPARE		X	X			X			ON	
	1:M1-36	PHOTO	VSMOKE	1:M1-36 FLR 1W - PATHOLOGY LAB			X			X			ON	
	1:M1-37	PHOTO	VSMOKE	1:M1-37 FLR 1W - ULTRASOUND SUITE	X		X			X			ON	
	1:M1-38	PHOTO	VSMOKE	1:M1-38 FLR 1W - ULTRASOUND SUITE		X	X			X			ON	
	1:M1-39	PHOTO	VSMOKE	1:M1-39 FLR 1W - HALL BY X-RAY WAITING	X	X	X			X			ON	
	1:M1-40	PHOTO	VSMOKE	1:M1-40 FLR 1W - HALL BY X-RAY OFFICES				X		X			ON	
	1:M1-41	PHOTO	VSMOKE	1:M1-41 FLR 1W - X-RAY WAITNG RM	X			X		X			ON	
	1:M1-42	PHOTO	VSMOKE	1:M1-42 FLR 1W - X-RAY OFFICE SUITE		X		X		X			ON	
	1:M1-43	PHOTO	VSMOKE	1:M1-43 FLR 1W - X-RAY OFFICE SUITE	X	X		X		X			ON	
	1:M1-44	PHOTO	VSMOKE	1:M1-44 FLR 1W - X-RAY OFFICE SUITE			X	X		X			ON	
	1:M1-45	PHOTO	VSMOKE	1:M1-45 FLR 1W - HALL BY X-RAY OFFICES	X		X	X		X			ON	
	1:M1-46	PHOTO	VSMOKE	1:M1-46 FLR 1W - HALL BY X-RAY OFFICES		X	X	X		X			ON	
	1:M1-47	PHOTO	VSMOKE	1:M1-47 FLR 1W - HALL BY NUCLEAR MED	X	X	X	X		X			ON	
	1:M1-48	PHOTO	VSMOKE	1:M1-48 FLR 1W - HALL BY NUCLEAR MED					X	X			ON	
	1:M1-49	PHOTO	VSMOKE	1:M1-49 FLR 1W - HALL BY NUCLEAR MED	X				X	X			ON	
	1:M1-50	PHOTO	VSMOKE	1:M1-50 FLR 1W - NUCLEAR MEDICINE		X			X	X			ON	
	1:M1-51	PHOTO	VSMOKE	1:M1-51 FLR 1W - NUCLEAR MEDICINE	X	X			X	X			ON	
	1:M1-52	PHOTO	VSMOKE	1:M1-52 FLR 1W - NUCLEAR MED HOT LAB			X		X	X			ON	
	1:M1-53	PHOTO	VSMOKE	1:M1-53 FLR 1W - HALL BY NUCLEAR MED	X		X		X	X			ON	
	1:M1-54	PHOTO	VSMOKE	1:M1-54 FLR 1W - EXIT HALL BY X-RAY 4		X	X		X	X			ON	
	1:M1-55	PHOTO	VSMOKE	1:M1-55 FLR 1W - EXIT HALL BY X-RAY 3	X	X	X		X	X			ON	
	1:M1-56	PHOTO	VSMOKE	1:M1-56 FLR 1W - INTER-HALL BY X-RAY 3				X	X	X			ON	
	1:M1-57	PHOTO	VSMOKE	1:M1-57 FLR 1W - INTER-HALL BY X-RAY 3	X			X	X	X			ON	
	1:M1-58	PHOTO	VSMOKE	1:M1-58 FLR 1W - INTER-HALL BY X-RAY 3		X		X	X	X			ON	
	1:M1-59	PHOTO	VSMOKE	1:M1-59 FLR 1W - INTER-HALL BY X-RAY 4	X	X		X	X	X			ON	
	1:M1-60	PHOTO	VSMOKE	1:M1-60 FLR 1W - HALL BY CAT SCAN			X	X	X	X			ON	
	1:M1-61	PHOTO	VSMOKE	1:M1-61 FLR 1W - HALL BY CAT SCAN	X		X	X	X	X			ON	
	1:M1-62	PHOTO	VSMOKE	1:M1-62 FLR 1W - HALL BY CAT SCAN		X	X	X	X	X			ON	
	1:M1-63			SPARE	X	X	X	X	X	X			ON	
	1:M1-64	PHOTO	VSMOKE	1:M1-64 FLR 1W - HALL BY CAT SCAN							X		ON	
	1:M1-65			SPARE	X						X		ON	
	1:M1-66			SPARE		X					X		ON	
	1:M1-67			SPARE	X	X					X		ON	
	1:M1-68			SPARE			X				X		ON	
	1:M1-69	PHOTO	VSMOKE	1:M1-69 FLR 1W - HALL BY X-RAY LOUNGE	X		X				X		ON	
	1:M1-70	PHOTO	VSMOKE	1:M1-70 FLR 1W - HALL BY INTERVENTIONAL		X	X				X		ON	
	1:M1-71			SPARE	X	X	X				X		ON	
	1:M1-72	RZAM	RELAY	1:M1-72 FL1W IDF RM M - SE HALL ACCTL ML				X			X		ON	
	1:M1-73	RZAM	RELAY	1:M1-73 1ST FL ROLL UP DOOR	X			X			X		ON	
	1:M1-74	PHOTO	VSMOKE	1:M1-74 FLR 1W - HALL BY INTERVENTIONAL		X		X			X		ON	
	1:M1-75	PHOTO	VSMOKE	1:M1-75 FLR 1W - INTERVENTIONAL X-RAY	X	X		X			X		ON	
	1:M1-76	PHOTO	VSMOKE	1:M1-76 FLR 1W - HALL BY INTERVENTIONAL			X	X			X		ON	
	1:M1-77	PHOTO	VSMOKE	1:M1-77 FLR 1W - HALL BY INTERVENTIONAL	X		X	X			X		ON	
	1:M1-78			SPARE		X	X	X			X		ON	
	1:M1-79			SPARE	X	X	X	X			X		ON	
	1:M1-80	PHOTO	VSMOKE	1:M1-80 FLR 1W - INTERVENTIONAL X-RAY					X		X		ON	
	1:M1-81	PHOTO	VSMOKE	1:M1-81 FLR 1W - INTERVENTIONAL X-RAY	X				X		X		ON	
	1:M1-82	PHOTO	VSMOKE	1:M1-82 FLR 1W - INTERVENTIONAL X-RAY		X			X		X		ON	
	1:M1-83			SPARE	X	X			X		X		ON	
	1:M1-84			SPARE			X		X		X		ON	
	1:M1-85			SPARE	X		X		X		X		ON	
	1:M1-86			SPARE		X	X		X		X		ON	
	1:M1-87			SPARE	X	X	X		X		X		ON	
	1:M1-88			SPARE				X	X		X		ON	
	1:M1-89	PHOTO	VSMOKE	1:M1-89 FLR 1W - HALL BY MRI	X			X	X		X		ON	
	1:M1-90			SPARE		X		X	X		X		ON	
	1:M1-91	PHOTO	VSMOKE	1:M1-91 FLR 1W - X-RAY - PET SCAN	X	X		X	X		X		ON	
	1:M1-92			SPARE			X	X	X		X		ON	
	1:M1-93	GENIAM	SO	1:M1-93 1ST FL PHARMACY SUPPLY TAMPER	X		X	X	X		X		ON	
	1:M1-94	GENIAM	WATER	1:M1-94 FLR 1W - BLOOD BANK FLOW		X	X	X	X		X		ON	
	1:M1-95			SPARE	X	X	X	X	X		X		ON	
	1:M1-96			SPARE						X	X		ON	
	1:M1-97			SPARE	X					X	X		ON	
	1:M1-98			SPARE		X				X	X		ON	
	1:M1-99	PHOTO	VSMOKE	1:M1-99 FLR 1W - INTERVENTIONAL X-RAY	X	X				X	X		ON	
	1:M1-100	PHOTO	VSMOKE	1:M1-100 FLR 1W - INTERVENTIONAL BAY 2			X			X	X		ON	
	1:M1-101	PHOTO	VSMOKE	1:M1-101 FLR 1W - INTERVENTIONAL BAY 1	X		X			X	X		ON	
	1:M1-102	PHOTO	VSMOKE	1:M1-102 FLR 1W - INTERVENTIONAL N.STAT.		X	X			X	X		ON	
	1:M1-103			SPARE	X	X	X			X	X		ON	
	1:M1-104			SPARE				X		X	X		ON	
	1:M1-105			SPARE	X			X		X	X		ON	
	1:M1-106	PHOTO	VSMOKE	1:M1-106 FLR 1W - ELECTRIC RM BY LAB		X		X		X	X		ON	
	1:M1-107	PHOTO	VSMOKE	1:M1-107 FLR 1 W - OR STORAGE	X	X		X		X	X		ON	
	1:M1-108			SPARE			X	X		X	X		ON	
	1:M1-109			SPARE	X		X	X		X	X		ON	
	1:M1-110			SPARE		X	X	X		X	X		ON	
	1:M1-111			SPARE	X	X	X	X		X	X		ON	
	1:M1-112			SPARE					X	X	X		ON	
	1:M1-113			SPARE	X				X	X	X		ON	
	1:M1-114			SPARE		X			X	X	X		ON	
	1:M1-115	PHOTO	VSMOKE	1:M1-115 FLR 1 RADI. 03 CHANGING AREA	X	X			X	X	X		ON	
	1:M1-116			SPARE			X		X	X	X		ON	
	1:M1-117			SPARE	X		X		X	X	X		ON	
	1:M1-118			SPARE		X	X		X	X	X		ON	
	1:M1-119			SPARE	X	X	X		X	X	X		ON	
	1:M1-120			SPARE				X	X	X	X		ON	
	1:M1-121			SPARE	X			X	X	X	X		ON	
	1:M1-122			SPARE		X		X	X	X	X		ON	
	1:M1-123			SPARE	X	X		X	X	X	X		ON	
	1:M1-124			SPARE			X	X	X	X	X		ON	
	1:M1-125			SPARE	X		X	X	X	X	X		ON	
	1:M1-126			SPARE		X	X	X	X	X	X		ON	
	1:M1-127			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.

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

KEYNOTES:

1 DEVICES REMOVED PER AHU-15 REPLACEMENT.

Johnson Controls
DISTRICT 1-415
1501 S POTOMAC AVE
AURORA, CO 80012
SERVICE: 303-355-6000
PHONE: 303-326-6500
FAX: 303-369-9815

NICET CERTIFICATION INFORMATION
CALE RAUCH
NICET Fire Alarm, III
Certification #151588
Valid Through: 12/01/28
05/13/2026

THE MEDICAL CENTER OF AURORA - SOUTH
IR AHU 15 REPLACEMENT

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

Revisions shown with Δ symbol

ISSUE LOG				
MARK	DATE	CAD	CHK	DESCRIPTION

FOR PERMIT

DRAWN BY:	AMW
CHECKED BY:	CBR
ISSUE DATE:	5/13/26
JOB #:	
PROJECT #:	419:65109102S

JOHNSON CONTROLS © 2026

SYSTEM:
FIRE ALARM SYSTEM

SHEET:
NODE-1 FIRE ALARM CONTORL PANEL CALCULATIONS & SCHEDULES

FA-601

FILE PATH: C:\Users\jwilhem\OneDrive - Johnson Controls\Medical Center of Aurora\1501 S Potomac - Aurora South\South Tower - Node 1\FA\R-FA\15-2026-65109102S\Fire\FA-601.dwg
LAST SAVED BY: JWILHEAM
LAST PRINTED: 5/13/2026 7:56:54 PM
30" x 42" Arch E1 Size

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MEDICAL CENTER OF AURORA SOUTH TOWER TRANSPONDER 4 4100es XPDR

Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
Panel Equipment						
4100-9600	*1*	*BASIC TRANSPONDER 1*	*0.0360*	*0.0360*	*0.0360*	*0.0360*
4100-0634	*1*	*POWER DISTRIBUTION MODULE 120V*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
4100-0636	*1*	*BOX TO BOX HARNESS KIT*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
4100-2300	*1*	*EXPANSION BAY (PHASE 10 ONLY)*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
4100-5311	*1*	*ENHANCED POWER SUPPLY, 3 CHANNELS, IDNet, 120V*	*0.2250*	*0.2250*	*0.4900*	*0.4900*
4009-9601	*3*	*IDNAC REPEATER 120V PLATINUM UL/ULC*	*0.0700*	*0.2100*	*0.0960*	*0.2880*
		Panel Totals		**0.4710**		**0.8140**
IDNet Addressable Devices (SLC)						
4090-9001	*3*	*IDNET SUPERVISED IAM **	*Constant current draw of .8mA standby and 1mA alarm per address used. Devices requiring additional current are accounted for in the section labeled "Miscellaneous Peripheral Devices Requiring Additional System Power".*			
4090-9002	*41*	*IDNET RELAY IAM **				
4090-9101	*1*	*IDNET CLASS B MONITOR ZAM **				
4098-9714	*105*	*TRUEALARM PHOTO SMOKE SENSOR*				
4098-9733	*9*	*TRUEALARM HEAT SENSOR*				
4098-9755	*2*	*TRUEALARM DUCT SMOKE SENSOR W/O RELAY OUTPUT **				
4098-9756	**12**	**TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT ***				
4098-9792	*114*	*TRUEALARM SENSOR BASE **				
4098-9096	*6*	*ADDRESSABLE DOUBLE ACTION MANUAL STATION, PUSH **				
Miscellaneous Peripheral Devices That Require (Additional) System Power						
4098-9843	**12**	**ENCAPSULATED RELAY PAM-SD**	**0.0000**	**0.0000**	**0.0150**	**0.1800**
4098-9756	*12*	*TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT*	*0.0030*	*0.0360*	*0.0150*	*0.1800*
4603-9101	*4*	*SERIAL LCD ANNUNCIATOR*	*0.0650*	*0.2600*	*0.1400*	*0.5600*
2088-9021	*11*	*ENCAPSULATED RELAY PAM-1*	*0.0000*	*0.0000*	*0.0150*	*0.1650*
4098-9605	*2*	*PHOTO SMOKE DETECTOR SSD*	*0.0001*	*0.0002*	*0.0000*	*0.0000*
4098-9788	*2*	*2 WIRE DETECTOR BASE*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
2098-9806	**12**	**REMOTE TEST STATION W/ LED AND KEY SWITCH**	**0.0045**	**0.0540**	**0.0000**	**0.0000**
4W-B	*2*	*4-WIRE SMOKE SENSOR*	*0.0005*	*0.0010*	*0.0200*	*0.0400*
4099-9101	*1*	*IDNET CLASS B MONITOR ZAM*	*0.0160*	*0.0160*	*0.0720*	*0.0720*
IDNAC Notification Appliances			**Setting**			
4009-9601	*3*	*IDNAC REPEATER 120V PLATINUM UL/ULC **	*0.0032*	*0.0096*	*0.0032*	*0.0096*
4906-9202	*6*	*ADDRESSABLE CEILING MNT MC V/O, RED*	*15*	*0.0008*	*0.0048*	*0.0600*
4906-9202	*1*	*ADDRESSABLE CEILING MNT MC V/O, RED*	*75*	*0.0008*	*0.0008*	*0.1800*
49MT-WRF	*2*	*MULTI-TONE AUDIBLE ONLY, RED, WALL MOUNT*	*520 Hz*	*0.0016*	*0.0032*	*0.0990*
49MTV-WRF	*18*	*MULTI-TONE A/V, RED, WALL MOUNT*	*15*	*0.0016*	*0.0288*	*0.1450*
49MTV-WRF	*13*	*MULTI-TONE A/V, RED, WALL MOUNT*	*30*	*0.0016*	*0.0208*	*0.1630*
49MTV-WRF	*6*	*MULTI-TONE A/V, RED, WALL MOUNT*	*75*	*0.0016*	*0.0096*	*0.1980*
49VO-APPLC	*12*	*STROBE, APPLIANCE ONLY, CEILING MOUNT*	*15*	*0.0008*	*0.0096*	*0.0550*
49VO-APPLC	*2*	*STROBE, APPLIANCE ONLY, CEILING MOUNT*	*30*	*0.0008*	*0.0016*	*0.0830*
49VO-APPLC	*2*	*STROBE, APPLIANCE ONLY, CEILING MOUNT*	*75*	*0.0008*	*0.0016*	*0.1530*
49VO-APPLW	*1*	*V/O APPLIANCE ONLY WALL MT.*	*15*	*0.0008*	*0.0008*	*0.0470*
49VO-APPLW	*4*	*V/O APPLIANCE ONLY WALL MT.*	*30*	*0.0008*	*0.0032*	*0.0570*
49VO-APPLW	*1*	*V/O APPLIANCE ONLY WALL MT.*	*75*	*0.0008*	*0.0008*	*0.1000*
49VO-WRF	*31*	*VO, WALL MT., RED, FIRE LABEL*	*15*	*0.0008*	*0.0248*	*0.0470*	*1.4570*
49VO-WRF	*4*	*VO, WALL MT., RED, FIRE LABEL*	*30*	*0.0008*	*0.0032*	*0.0570*	*0.2280*
49VO-WRF	*1*	*VO, WALL MT., RED, FIRE LABEL*	*75*	*0.0008*	*0.0008*	*0.1000*	*0.1000*
		Total IDNAC Device Current:		**0.1240**		**9.9566**
		IDNAC Current Boost for 29vdc Regulated Output **				**5.6764**
		Peripheral Totals		**0.3672**		**16.8300**
		RUI Totals 4		**0.0140**		**0.0140**
		Address Totals 179 Addresses		**0.1432**		**0.1790**
		System Totals*:	**Standby**	**1.1194**	**Alarm**	**17.8370**

*** Device Address current draw included below (See Additional Current Draws):**
IDNet cards include 40mA alarm current for 20 device LEDs in alarm in addition to base current listed on datasheet.
1. Base FACP includes current draw for all included components. See data sheet for details.

Battery Set #1 (Cabinet/Charger #1)			Standby Current	Standby Total	Alarm Current	Alarm Total
Select ALL Power Supplies on this battery set:						
EPS-1				0.9126		7.6096
		Sub Total		**0.9126**		**7.6096**
Additional Current Draws:						3.1919
IDNAC Current Boost for 29vdc Regulated Output **						
RUI Connected Peripheral Devices	4	x 0.0035		= 0.0140	x 0.0035	= 0.0140
MAPNET/IDNet Device Address Communication Current	179	x 0.000800		= 0.1432	x 0.001000	= 0.1790
		Sub Total		**1.0698**		**10.9945**
Spare addressable point capacity	**20%**	36 x 0.0008		= 0.0288	x 0.001	= 0.0360
		Total		**1.0986**		**11.0305**
Standby Time =	**4**	Hrs x 1.0986		= 4.3944	Standby Ah	
Alarm Time =	**5**	Min 0.08333 x 11.0305		= 0.9192	Alarm Ah	
				5.3136		
Additional Spare Battery Capacity =	**20%**			+ 1.0627		
				6.3763		
Battery Discharge Factor =	**25%**			+ 1.5941		
Minimum Battery Required	**2081-9274 10AH (2x)**			**7.9704**		
Battery Supplied	*2081-0267 26AH (2x)*					

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

**** IDNac Current Boost formula: ((29.5 * IDNAC Alarm Current) / .921) / 20.4 - IDNAC Alarm Current**
DC-DC Converter Output = 29.5vdc. Terminal Output is 29vdc due to 0.5vdc internal loss.
Converter Worst Case efficiency is 92.1%, 20.4vdc represents battery output in 85% depleted state

Repeater Power Supply Battery Set:				Standby Total		Alarm Total
EPR-1				0.0136		**1.1280**
Additional Current Draw:						
IDNac Current Boost for 29vdc Regulated Output **				0.0000		0.6431
			Total	**0.0136**		**1.7711**
Standby Time =	**4**	Hrs	x 0.0136	= 0.0544	Standby Ah	
Alarm Time =	**5**	Min	0.08333 x 1.7711	= 0.1476	Alarm Ah	
				0.2020		
Additional Spare Battery Capacity =	**20%**			+ 0.0404		
				0.2424		
Battery Discharge Factor =	**25%**			+ 0.0606		
Minimum Battery Required	**2081-9286 7.0AH (2x)**			**0.3030**		
Battery Supplied	*2081-9286 7.0AH (2x)*					

Repeater Power Supply Battery Set:				Standby Total		Alarm Total
EPR-2				0.0312		**2.8020**
Additional Current Draw:						
IDNac Current Boost for 29vdc Regulated Output **				0.0000		1.5975
			Total	**0.0312**		**4.3995**
Standby Time =	**4**	Hrs	x 0.0312	= 0.1248	Standby Ah	
Alarm Time =	**5**	Min	0.08333 x 4.3995	= 0.3666	Alarm Ah	
				0.4914		
Additional Spare Capacity =	**20%**			+ 0.0983		
				0.5897		
Additional Spare Battery Capacity =	**25%**			+ 0.1474		
Minimum Battery Required	**2081-9286 7.0AH (2x)**			**0.7371**		
Battery Supplied	*2081-9286 7.0AH (2x)*					

Repeater Power Supply Battery Set:				Standby Total		Alarm Total
EPR-3				0.0048		**0.4280**
Additional Current Draw:						
IDNac Current Boost for 29vdc Regulated Output **				0.0000		0.2440
			Total	**0.0048**		**0.6720**
Standby Time =	**4**	Hrs	x 0.0048	= 0.0192	Standby Ah	
Alarm Time =	**5**	Min	0.08333 x 0.672	= 0.0560	Alarm Ah	
				0.0752		
Additional Spare Battery Capacity =	**20%**			+ 0.0150		
				0.0902		
Battery Discharge Factor =	**25%**			+ 0.0226		
Minimum Battery Required	**2081-9286 7.0AH (2x)**			**0.1128**		
Battery Supplied	*2081-9286 7.0AH (2x)*					

IDNET CHANNEL 1:M11 — **ADDRESSES IN USE: 179 (71.6%) | SPARE ADDRESSES: 71 (28.4%)**

Address	Device Type	Point Type	Location Description	SWITCH SETTINGS 1 2 3 4 5 6 7 8	
1:M11-1	*PHOTO*	*SMOKE*	*1:M11-1 FLR 1W ELEC 1-CS16*	X	ON
1:M11-2	*PHOTO*	*SMOKE*	*1:M11-2 FLR 1W OR-11 1-SS10 SW*	X	ON
1:M11-3	*PHOTO*	*SMOKE*	*1:M11-3 FLR 1W OR-11 1-SS10 NE*	X X	ON
1:M11-4	*RIAM*	*DHOLDER*	*1:M11-4 FLR 1W OR-11 1-SS100*	X	ON
1:M11-5	*HEAT*	*HEAT*	*1:M11-5 FLR 1W TOILET CS15*	X X	ON
1:M11-6	*PHOTO*	*VSMOKE*	*1:M11-6 FLR 1W CORR 1-CS14*	X X	ON
1:M11-7	*PHOTO*	*VSMOKE*	*1:M11-7 FLR 1W CORR 1-CS14*	X X X	ON
1:M11-8	*PHOTO*	*SMOKE*	*1:M11-8 FLR 1W STER STG 1-CS10 NORTH*	X	ON
1:M11-9	*PHOTO*	*SMOKE*	*1:M11-9 FLR 1W STER STG 1-CS10*	X X	ON
1:M11-10	*PHOTO*	*SMOKE*	*1:M11-10 FLR 1W JANT-CS13*	X X	ON
1:M11-11	*PHOTO*	*VSMOKE*	*1:M11-11 FLR 1W STORAGE 1912*	X X X	ON
1:M11-12	*PHOTO*	*SMOKE*	*1:M11-12 FLR 1W STER STG 1-CS10 CTR*	X X	ON
1:M11-13	*PHOTO*	*SMOKE*	*1:M11-13 FLR 1W CENTRAL STERILE*	X X X	ON
1:M11-14	*PHOTO*	*SMOKE*	*1:M11-14 FLR 1W STER STG 1-CS10 SOUTH*	X X X	ON
1:M11-15	*PHOTO*	*SMOKE*	*1:M11-15 FLR 1W STER STG 1-CS10 SOUTH*	X X X X	ON
1:M11-16	*PHOTO*	*SMOKE*	*1:M11-16 FLR 1W MAKE UP 1-CS07 W*	X	ON
1:M11-17	*PHOTO*	*SMOKE*	*1:M11-17 FL 1W CENTRAL STERILE*	X X	ON
1:M11-18	*PHOTO*	*SMOKE*	*1:M11-18 FL 1W MAKE UP 1-CS07 @ CORR*	X X	ON
1:M11-19	*PHOTO*	*SMOKE*	*1:M11-19 FL 1W STERILIZER 1-CS08*	X X X	ON
1:M11-20	*PHOTO*	*SMOKE*	*1:M11-20 FL 1W CLEAN STORAGE 1-CS06*	X X	ON
1:M11-21	*PHOTO*	*SMOKE*	*1:M11-21 FL 1W DECON 1-CS03 NORTH*	X X X	ON
1:M11-22	*PHOTO*	*SMOKE*	*1:M11-22 FL 1W DECON 1-CS03 SOUTH*	X X X	ON
1:M11-23	*PHOTO*	*SMOKE*	*1:M11-23 FL 1W CART WASH 1-CS04 NORTH*	X X X X	ON
1:M11-24	*PHOTO*	*SMOKE*	*1:M11-24 FL 1W CART WASH 1-CS04 SOUTH*	X X	ON
1:M11-25	*PHOTO*	*SMOKE*	*1:M11-25 FL 1W CSS OFF 1-CS02*	X X X	ON
1:M11-26	*PHOTO*	*SMOKE*	*1:M11-26 FL 1W DI WATER 1-CS09*	X X X	ON
1:M11-27	*PHOTO*	*SMOKE*	*1:M11-27 FL 1W STORAGE 1103*	X X X X	ON
1:M11-28	*PHOTO*	*SMOKE*	*1:M11-28 FL 1W CLEAN STORAGE 1-CS05*	X X X	ON
1:M11-29			*SPARE*	X X X X	ON
1:M11-30	*RPHOTO*	*LSDUCT*	*1:M11-30 FLR 1W STER STG SUP FSD 1-CS10*	X X X X	ON
1:M11-31	*RPHOTO*	*LSDUCT*	*1:M11-31 FLR 1W CARTWASH 1-CS04 RET FSD*	X X X X X	ON
1:M11-32			*SPARE*	X	ON
1:M11-33	*RPHOTO*	*LSDUCT*	*1:M11-33 FLR 1W SRG VEND 1-CS01 RET FSD*	X X	ON
1:M11-34			*SPARE*	X	ON
1:M11-35	*RPHOTO*	*LSDUCT*	*1:M11-35 FLR 1W DECON 1- CS03 SUP FSP*	X X X	ON
1:M11-36			*SPARE*	X	ON
1:M11-37			*SPARE*	X X	ON
1:M11-38			*SPARE*	X X X	ON
1:M11-39	*RIAM*	*RELAY*	*1:M11-39 FLR 1W OR 811 ALARM TO DCC*	X X X	ON
1:M11-40	*RIAM*	*RELAY*	*1:M11-40 FLR 1W OR 83 ALARM TO DDC*	X	ON
1:M11-41	*RPHOTO*	*LSDUCT*	*1:M11-41 FLR 1W ELEC RM 1-CS16 SUP FSD*	X X	ON
1:M11-42	*RPHOTO*	*LSDUCT*	*1:M11-42 FLR 1W ELEC RM 1-CS16 RET FSD*	X X	ON
1:M11-43	*RPHOTO*	*LSDUCT*	*1:M11-43 FLR 1W TLT 1-CS15 SUP FSD*	X X X	ON
1:M11-44	*RPHOTO*	*LSDUCT*	*1:M11-44 FLR 1W OR-11 1-SS100 RET FSD*	X X	ON
1:M11-45	*PHOTO*	*VSMOKE*	*1:M11-45 FLR 1W OR-1 1-SS118 NE*	X X X X	ON
1:M11-46	*PHOTO*	*VSMOKE*	*1:M11-46 FLR 1W OR-1 1-SS118 SW*	X X X X	ON
1:M11-47	*RIAM*	*DHOLDER*	*1:M11-47 FLR 1W OR-1 1-SS118 D/H*	X X X X X	ON
1:M11-48	*PHOTO*	*VSMOKE*	*1:M11-48 FLR 1W OR-2 1-SS119 NE*	X X	ON
1:M11-49	*PHOTO*	*VSMOKE*	*1:M11-49 FLR 1W OR-2 1-SS119 SW*	X X X	ON
1:M11-50	*RIAM*	*DHOLDER*	*1:M11-50 FLR 1W OR-2 1-SS119 D/H*	X X	ON
1:M11-51	*PHOTO*	*VSMOKE*	*1:M11-51 FLR 1W CYSTO OR-3 1-SS129 NE*	X X X X	ON
1:M11-52	*PHOTO*	*VSMOKE*	*1:M11-52 FLR 1W CYSTO OR-3 1-SS129 SW*	X X X	ON
1:M11-53	*RIAM*	*DHOLDER*	*1:M11-53 FLR 1W CYSTO OR-3 1-SS129 D/H*	X X X X X	ON
1:M11-54	*PHOTO*	*VSMOKE*	*1:M11-54 FLR 1W EQUIP STG 1-SS131*	X X X X	ON
1:M11-55	*PHOTO*	*VSMOKE*	*1:M11-55 FLR 1W WOMENS LOCKER 1-SS135*	X X X X X	ON
1:M11-56	*HEAT*	*HEAT*	*1:M11-56 FLR 1W WOMENS BATH 1-SS136*	X X X X	ON
1:M11-57	*PHOTO*	*VSMOKE*	*1:M11-57 FLR 1W MENS LOCKER 1-SS138*	X X X X X	ON
1:M11-58	*PHOTO*	*VSMOKE*	*1:M11-58 FLR 1W NURSE LOUNGE 1-SS139*	X X X X X	ON
1:M11-59			*SPARE*	X X X X X	ON
1:M11-60			*SPARE*	X X X X X	ON
1:M11-61			*SPARE*	X X X X X	ON
1:M11-62	*RPHOTO*	*LSDUCT*	*1:M11-62 FLR 1W OR-11 1-SS100 SUP FSD*	X X X X X X	ON
1:M11-63	*RPHOTO*	*LSDUCT*	*1:M11-63 FLR 1W CORR 1-SS112 SUP FSD*	X X X X X X	ON
1:M11-64			*SPARE*	X X X X X	ON
1:M11-65	*RIAM*	*RELAY*	*1:M11-65 FLR 1W OR-1 PHOENIX VALVE*	X X	ON
1:M11-66	*RIAM*	*RELAY*	*1:M11-66 FLR 1W OR-2 PHOENIX VALVE*	X X	ON
1:M11-67	*PHOTO*	*VSMOKE*	*1:M11-67 FLR 1W CORR 1-SS0237 @ STER STG*	X X X	ON
1:M11-68	*PHOTO*	*VSMOKE*	*1:M11-68 FLR 1W CORR 1-SS037 @ STG ALC*	X X	ON
1:M11-69	*PHOTO*	*VSMOKE*	*1:M11-69 FLR 1W CORR 1-SS029 @ N CORR*	X X X	ON
1:M11-70	*PHOTO*	*SMOKE*	*1:M11-70 FLR 1W CORR 1-SS036*	X X X	ON
1:M11-71	*PHOTO*	*SMOKE*	*1:M11-71 FLR 1W CORR 1-SS036*	X X X X	ON
1:M11-72	*PHOTO*	*SMOKE*	*1:M11-72 FLR 1W STOR 1-SS035*	X X	ON
1:M11-73	*PHOTO*	*SMOKE*	*1:M11-73 FLR 1W SOILED FLUIDS 1-SS032*	X X X	ON
1:M11-74	*RIAM*	*DHOLDER*	*1:M11-74 FLR 1W OR 4 CORR 1-SS036*	X X X	ON
1:M11-75	*RIAM*	*RELAY*	*1:M11-75 FLR 1W OR 4 PHOENIX VALVE*	X X X	ON
1:M11-76	*PHOTO*	*SMOKE*	*1:M11-76 FLR 1W DAVINCI OR 4 1-SS031 NW*	X X X	ON
1:M11-77	*PHOTO*	*SMOKE*	*1:M11-77 FLR 1W DAVINCI OR 4 1-SS031 SE*	X X X X	ON
1:M11-78	*PHOTO*	*VSMOKE*	*1:M11-78 FLR 1W PASS 1-PA11*	X X X X	ON
1:M11-79	*PHOTO*	*VSMOKE*	*1:M11-79 FLR 1W CLEAN UTILITY 1-PA07*	X X X X X	ON
1:M11-80	*PHOTO*	*VSMOKE*	*1:M11-80 FLR 1W PRIVATE PACU BAY 1100*	X X	ON
1:M11-81	*PHOTO*	*VSMOKE*	*1:M11-81 FLR 1W PACU RECOVERY 1-PA01 N*	X X X	ON
1:M11-82	*PHOTO*	*VSMOKE*	*1:M11-82 FLR 1W PASS 1-PA12*	X X X	ON
1:M11-83	*PHOTO*	*VSMOKE*	*1:M11-83 FLR 1W STF LNGE 1-PA14*	X X X	ON
1:M11-84	*HEAT*	*HEAT*	*1:M11-84 FLR 1W TLT PA15*	X X X	ON
1:M11-85	*PHOTO*	*SMOKE*	*1:M11-85 FLR 1W PACU RECOVERY 1-PA01 S*	X X X	ON
1:M11-86	*PHOTO*	*SMOKE*	*1:M11-86 FLR 1W SOILED UTILITY 1-PA08*	X X X X	ON
1:M11-87	*PHOTO*	*SMOKE*	*1:M11-87 FLR 1W PASS 1-PA06*	X X X X X	ON
1:M11-88	*PHOTO*	*SMOKE*	*1:M11-88 FLR 1W ELEC 1-PA05*	X X X	ON
1:M11-89	*ADRPUL*	*PULL*	*1:M11-89 FLR 1W NURSE STATION A 1-PA10*	X X X	ON
1:M11-90	*RIAM*	*RRELAY*	*1:M11-90 FLR 1W DAVINCI OR 4 1-SS029*	X X X X	ON
1:M11-91			*SPARE*	X X X X X	ON
1:M11-92	*PHOTO*	*VSMOKE*	*1:M11-92 FLR 1W CORR 1-SS122 @STORAGE*	X X X X	ON
1:M11-93	*PHOTO*	*VSMOKE*	*1:M11-93 FLR 1W STORAGE 1-SS125*	X X X X X	ON
1:M11-94			*SPARE*	X X X X X	ON
1:M11-95			*SPARE*	X X X X X X	ON
1:M11-96			*SPARE*	X X	ON
1:M11-97			*SPARE*	X X X	ON
1:M11-98			*SPARE*	X X X	ON
1:M11-99			*SPARE*	X X X	ON
1:M11-100	*PHOTO*	*VSMOKE*	*1:M11-100 FLR 1W PASS 1-SS204 S*	X X	ON
1:M11-101	*PHOTO*	*VSMOKE*	*1:M11-101 FLR 1W PASS 1-SS204 CTR*	X X X	ON
1:M11-102	*PHOTO*	*VSMOKE*	*1:M11-102 FLR 1W PASS 1-SS204 N*	X X X	ON
1:M11-103	*PHOTO*	*VSMOKE*	*1:M11-103 FLR 1W STORE ROOM 1-SS201*	X X X X	ON
1:M11-104	*PHOTO*	*VSMOKE*	*1:M11-104 FLR 1W EVS 1-SS202*	X X X	ON
1:M11-105	*HEAT*	*HEAT*	*1:M11-105 FLR 1W TOILET 1-SS203*	X X X	ON
1:M11-106	*ADRPUL*	*PULL*	*1:M11-106 FLR 1W NURSE STATION A 1-SS205*	X X X	ON
1:M11-107	*PHOTO*	*VSMOKE*	*1:M11-107 FLR 1W PASS E 1-SS212*	X X X X	ON
1:M11-108	*HEAT*	*HEAT*	*1:M11-108 FLR 1W TOILET 1-SS206*	X X X X	ON
1:M11-109	*PHOTO*	*VSMOKE*	*1:M11-109 FLR 1W MEDS 1-SS207*	X X X X X	ON
1:M11-110	*PHOTO*	*VSMOKE*	*1:M11-110 FLR 1W SOILED UTILITY 1-SS208*	X X X X X	ON
1:M11-111	*PHOTO*	*VSMOKE*	*1:M11-111 FLR 1W OFFICE 1-SS209*	X X X X X	ON
1:M11-112	*PHOTO*	*VSMOKE*	*1:M11-112 FLR 1W PASSAGE 1-SS210*	X X X	ON
1:M11-113	*PHOTO*	*VSMOKE*	*1:M11-113 FLR 1W WORK ROOM 1-SS215*	X X X	ON
1:M11-114	*PHOTO*	*VSMOKE*	*1:M11-114 FLR 1W CLEAN UTILITY 1-SS214*	X X X	ON
1:M11-115	*ADRPUL*	*PULL*	*1:M11-115 FLR 1W NURSE STATION 1-SS213*	X X X	ON
1:M11-116	*PHOTO*	*SMOKE*	*1:M11-116 FLR 1W PASSAGE W 1-SS212*	X X X	ON
1:M11-117	*HEAT*	*HEAT*	*1:M11-117 FLR 1W TOILET 1-SS221*	X X X X	ON
1:M11-118	*PHOTO*	*VSMOKE*	*1:M11-118 FLR 1W NOURISHMENT 1-SS222*	X X X X X	ON
1:M11-119	*PHOTO*	*VSMOKE*	*1:M11-119 FLR 1W PASS E 1-SS224*	X X X X X	ON
1:M11-120	*PHOTO*	*VSMOKE*	*1:M11-120 FLR 1W PASS N 1-SS224*	X X X X X	ON
1:M11-121	*PHOTO*	*VSMOKE*	*1:M11-121 FLR 1W PASS S 1-SS224*	X X X X X	ON
1:M11-122	*ADRPUL*	*PULL*	*1:M11-122 FLR 1W NURSE STAT C 1-SS223*	X X X X X	ON
1:M11-123	*HEAT*	*HEAT*	*1:M11-123 FLR 1W TLT 1-SS219*	X X X X X	ON
1:M11-124	*HEAT*	*HEAT*	*1:M11-124 FLR 1W TLT 1-SS218*	X X X X X	ON
1:M11-125	*PHOTO*	*VSMOKE*	*1:M11-125 FLR 1W NURSE LOUNGE 1-SS217*	X X X X X X	ON

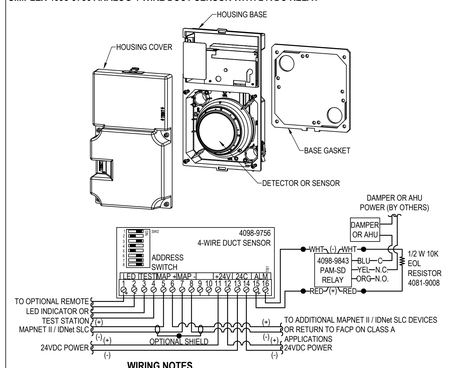
NOTE: THE LABELS SHOWN ABOVE WILL BE USED FOR PROGRAMMING PURPOSES.
THE LABELS ARE BASED UPON INFORMATION SHOWN ON THE ARCHITECTURAL DRAWINGS.
ANY CHANGES TO THESE LABELS MUST BE NOTED ON THE SUBMITTAL REVIEW, PRIOR TO PROGRAMMING.
POINTS SHOWN IN ITALIC TEXT REFER TO EXISTING DEVICES.

IDNET CHANNEL 1:M11 — **ADDRESSES IN USE: 179 (71.6%) | SPARE ADDRESSES: 71 (28.4%)**

Address			Location Description	SWITCH SETTINGS 1 2 3 4 5 6 7 8	
1:M11-126	*HEAT*	*HEAT*	*1:M11-126 FLR 1W TOILET 1-SS220*	X X X X X X	ON
1:M11-127	*PHOTO*	*VSMOKE*	*1:M11-127 FLR 1W COMM 1-SS216*	X X X X X X	ON
1:M11-128	*PHOTO*	*LSDUCT*	*1:M11-128 ROOF RTU-3 SUP DET TO DDC*	X	ON
1:M11-129	*PHOTO*	*LSDUCT*	*1:M11-129 ROOF RTU-3 RET DET TO DDC*	X	ON
1:M11-130	*RIAM*	*RELAY*	*1:M11-130 ROOF RTU-3 SUPPLY TO DDC*	X	ON
1:M11-131	*RIAM*	*RELAY*	*1:M11-131 ROOF RTU-3 RETURN TO DDC*	X X	ON
1:M11-132	*RIAM*	*RELAY*	*1:M11-132 FLR 1W ALARM TO DDC AHU-3*	X	ON
1:M11-133	*RIAM*	*RELAY*	*1:M11-133 FLR 1W SUPV FSD TO DDC AHU-3*	X X	ON
1:M11-134	*RIAM*	*RELAY*	*1:M11-134 FLR 1W RET FSD TO DDC AHU-3*	X X	ON
1:M11-135	*RIAM*	*RRELAY*	*1:M11-135 FL 1W PACU BY HALL SEC RELEASE*	X X X	ON
1:M11-136			*SPARE*	X	ON
1:M11-137	*PHOTO*	*VSMOKE*	*1:M11-137 FLR 1 1W CHANGING AREA 7200A*	X X	ON
1:M11-138	*PHOTO*	*VSMOKE*	*1:M11-138 FLR 1W BREAK RM 7300A*	X X	ON
1:M11-139	*PHOTO*	*VSMOKE*	*1:M11-139 FLR 1W O/S RADIOLOGY 05 7202A*	X X X	ON
1:M11-140	*PHOTO*	*VSMOKE*	*1:M11-140 FLR1 1W STAFF HALL 7203A E*	X X	ON
1:M11-141	*PHOTO*	*VSMOKE*	*1:M11-141 FLR 1W STAFF HALL 7203A W*	X X X	ON
1:M11-142	*PHOTO*	*VSMOKE*	*1:M11-142 FLR 1W TECH WORK AREA 7204A*	X X X	ON
1:M11-143	*PHOTO*	*VSMOKE*	*1:M11-143 FLR 1W EQUIPMENT RM 7203B*	X X X X	ON
1:M11-144	*PHOTO*	*VSMOKE*	*1:M11-144 FLR 1W CONTROL AREA 7402B*	X	ON
1:M11-145	*PHOTO*	*VSMOKE*	*1:M11-145 FLR 1W PATIENT HOLDING 7402D*	X X	ON
1:M11-146	*PHOTO*	*VSMOKE*	*1:M11-146 FLR1 1W CONTROL AREA 7402B S*	X X	ON
1:M11-147	*IAM*	*SMOKE*	*1:M11-147 FLR 1W MRI 2 7402A HW SMKDET*	X X X	ON
1:M11-148			*SPARE*	X	ON
1:M11-149			*SPARE*	X X X	ON
1:M11-150	*IAM*	*SDUCT*	*1:M11-150 FLR 1W CRAC1 INTERGRAL SMK DET*	X X X	ON
1:M11-151	*PHOTO*	*VSMOKE*	*1:M11-151 FLR 1W EQUIP RM 1W-5902A*	X X X X	ON
1:M11-152	*PHOTO*	*VSMOKE*	*1:M11-152 FLR1 IR RM 03 1W-8113A N*	X X	ON
1:M11-153	*PHOTO*	*VSMOKE*	*1:M11-153 FLR1 IR RM 03 1W-8113A S*	X X X	ON
1:M11-154	*PHOTO*	*VSMOKE*	*1:M11-154 FLR 1W CONTROL RM 1W-8112A*	X X X	ON
1:M11-155	*RIAM*	*RELAY*	*1:M11-155 FLR 1W IR RM 03 MUSIC SHUT-OFF*	X X X X	ON
1:M11-156	*IAM*	*LSDUCT*	*1:M11-156FLR 1W MRI2 7402A CRAC UNIT SMK*	X X X	ON
1:M11-157			*SPARE*	X X X X	ON
1:M11-158	*PHOTO*	*VSMOKE*	*1:M11-158 FLR 1W RADIOLOGY 05 7202A*	X X X X	ON
1:M11-159	*PHOTO*	*VSMOKE*	*1:M11-159 FLR 1W CT SUITE 5300A*	X X X X X	ON
1:M11-160	*PHOTO*	*VSMOKE*	*1:M11-160 FLR 1W CT 01 5303A*	X	ON
1:M11-161	*PHOTO*	*VSMOKE*	*1:M11-161 FLR 1W CT 02 CONTROL 5301A*	X X	ON
1:M11-162	*PHOTO*	*VSMOKE*	*1:M11-162 FLR 1W NUC/SPINE ROOM 1 6307A*	X X	ON
1:M11-163	*PHOTO*	*VSMOKE*	*1:M11-163 FLR 1W CT 02 5302A SE*	X X X	ON
1:M11-164	*PHOTO*	*VSMOKE*	*1:M11-163 FLR 1W CT 02 5302A NW*	X X	ON
1:M11-165	*PHOTO*	*VSMOKE*	*1:M11-165 FLR 1W CORRIDOR 1008 SW DOORS*	X X X	ON
1:M11-166	*PHOTO*	*VSMOKE*	*1:M11-166 FLR 1W CORRIDOR 1008 C*	X X X X	ON
1:M11-167	*PHOTO*	*VSMOKE*	*1:M11-167 FLR 1W CORRIDOR 1008 E*	X X X X X	ON
1:M11-168	*PHOTO*	*VSMOKE*	*1:M11-168 FLR 1W CORRIDOR 1008 NE DOORS*	X X X	ON
1:M11-169	*ADRPUL*	*PULL*	*1:M11-169 FLR 1W CORRIDOR 1008 STAIRS*	X X X X X	ON
1:M11-170	*PHOTO*	*VSMOKE*	*1:M11-170 FLR 1W IR STORAGE 1004*	X X X X X	ON
1:M11-171	*RIAM*	*CDAMPER*	*1:M11-171 FLR 1W DECON 1-CS03 SE RET FSD*	X X X X X	ON
1:M11-172	*R

DUCT SMOKE DETECTOR

SIMPLEX 4098-9756 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.

DUCT SMOKE DETECTOR INSTALLATION GUIDE

PRE-INSTALLATION ROUTINES

DUCT DETECTORS/SENSORS SHOULD BE INSTALLED IN A LOCATION OF RELATIVELY NON-TURBULENT AIR FLOW AND WITHIN THE INTENDED OPERATING VELOCITY RANGE OF 300-4000 FEET-PER-MINUTE (91 TO 1220 M/MIN.)

MEASUREMENTS OF AIR FLOW AND EXAMINATION OF ENGINEERING SPECIFICATIONS THAT DEFINE EXPECTED DUCT AIR VELOCITIES UNDER ALL CONDITIONS IS RECOMMENDED. THIS IS DONE TO DETERMINE IF A LOCATION IS SUITABLE FOR DUCT DETECTOR/SENSOR OPERATION. AN ALNOR INSTRUMENT CO. (CHICAGO) MODEL 6000P VELOMETER OR EQUIVALENT (NOT SUPPLIED) MAY BE USED TO CHECK THE DUCT AIR VELOCITY.

INSTALLATION GUIDELINES

1. LOCATE DUCT HOUSINGS SO THAT DAMPERS DO NOT RESTRICT AIR FLOW AT THE DETECTOR/SENSOR LOCATION. SEE FIGURE 1.
2. LOCATE AIR DUCT DETECTORS/SENSORS ON THE RETURN OR SUPPLY DUCT OF THE EQUIPMENT'S AIR HANDLING SYSTEM. HOWEVER, DETECTORS/SENSORS SHOULD NOT BE INSTALLED IN THE RETURN AIR DAMPER BRANCH. SEE FIGURE 1.
3. LOCATE AIR DUCT DETECTORS/SENSORS ON BRANCH LINES IF CLOSE IDENTIFICATION OF THE ALARM SOURCE IS REQUIRED.
4. LOCATE AIR DUCT DETECTORS/SENSORS ON THE DOWNSTREAM SIDE OF FILTERS TO SENSE FIRE IN FILTERS. HOWEVER, SHOULD THE FILTERS BLOCK, SUFFICIENT AIR FLOW MAY NOT BE AVAILABLE FOR PROPER AIR DUCT DETECTOR/SENSOR OPERATION. SEE FIGURE 1.
5. WHENEVER POSSIBLE, LOCATE AIR DUCT DETECTORS/SENSORS WHERE THEY CAN BE CONVENIENTLY OBSERVED AND READILY SERVICED.
6. LOCATE THE AIR DUCT DETECTORS/SENSORS IN RETURN AIR DUCTS AHEAD OF MIXING AREAS.
7. DO NOT LOCATE AIR DUCT DETECTORS/SENSORS NEXT TO OUTSIDE AIR INLETS UNLESS YOU WANT TO MONITOR SMOKE ENTRY TO THE HANDLING SYSTEM FROM AN ADJACENT AREA.
8. LOCATE AIR DUCT DETECTORS/SENSORS UPSTREAM OF AIR HUMIDIFIERS AND COOLING COILS.
9. DO NOT INSTALL THE DUCT DETECTOR HOUSING OR DUCT TUBES IN LOCATIONS THAT EXCEED THE LISTED TEMPERATURE RATINGS FOR THE DEVICE.
10. DO NOT MOUNT THE DUCT HOUSING ON BOTTOM OF DUCT.

DUCT DETECTOR/SENSOR INSTALLATION

1. TAPE THE TEMPLATE (SUPPLIED) ON THE DUCT SURFACE. DO NOT POSITION THE TEMPLATE WITH EDGES ANGLED WITH RESPECT TO AIR FLOW DIRECTION. SEE FIGURE 2.
2. DRILL TWO 1 1/4 INCH (31.75 MM) HOLES (MARKED "A") AS LOCATED BY THE TEMPLATE. REMOVE TEMPLATE AFTER HOLES HAVE BEEN DRILLED.
3. IF THE DUCT IS MORE THAN 3 FEET (0.9 M) WIDE, THEN PUNCH A 1-INCH (25.4 MM) HOLE IN THE DUCT WALL DIRECTLY OPPOSITE THE UPSTREAM 1-1/4 INCH (31.75 MM) HOLE. SEE FIGURE 3. THIS HOLE IS USED TO SUPPORT THE INLET TUBE.
4. INLET TUBES SHOULD BE SELECTED AND CUT TO LENGTH AS SPECIFIED IN TABLE 1. AFTER TRIMMING THE INLET TUBE OPPOSITE THE SLOT, TAP RUBBER PLUG (SUPPLIED) INTO THE TRIMMED END. SEE FIGURE 3.

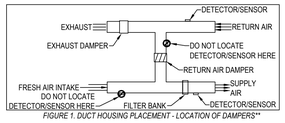


*FIGURE 1. DUCT HOUSING PLACEMENT - LOCATION OF DAMPERS***

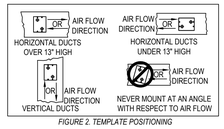


FIGURE 2. TEMPLATE POSITIONING

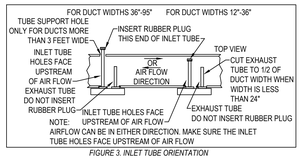


FIGURE 3. INLET TUBE ORIENTATION

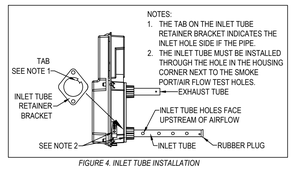


FIGURE 4. INLET TUBE INSTALLATION

INLET TUBE SELECTION

OVERALL DUCT WIDTH	TUBE REQUIRED	TUBE TYPE	SUGGESTED TOTAL LENGTH
12" (30cm)	4098-9854	13" (33.02cm)	1/2" (1.27cm) LONGER THAN DUCT WIDTH
13" (33.02cm) TO 23" (58cm)	4098-9855	24" (60.96cm)	1/2" (1.27cm) LONGER THAN DUCT WIDTH
24" (60cm) TO 46" (116cm)	4098-9856	49" (125.46cm)	2" (5.8cm) LONGER THAN DUCT WIDTH
46" (116cm) TO 71" (180cm)	4098-9857	73" (185cm)	2" (5.8cm) LONGER THAN DUCT WIDTH
71" (180cm) TO 95" (240cm)	4098-9858	97" (245cm)	2" (5.8CM) LONGER THAN DUCT WIDTH

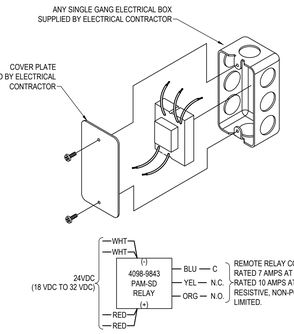
TABLE 1. INLET TUBE SELECTION

* REFER TO INSTALLATION INSTRUCTION DOCUMENT 574-776 FOR MORE DETAILED INFORMATION.

** WHEN PROVIDING CONTROL FOR A SMOKE DAMPER INSTALLED WITHIN AN AIR TRANSFER OPENING IN A WALL, THE DUCT DETECTOR SHALL BE INSTALLED WITHIN 5 FEET HORIZONTALLY OF THE DAMPER.

24VDC POLARIZED RELAY

SIMPLEX 4098-9843 / APOLLO AMERICA PAM-SD



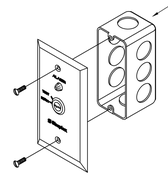
WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON CONNECTIONS.
2. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS. CLASS B APPLICATIONS ONLY.

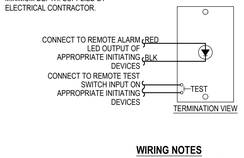
FOR ADDITIONAL DETAILS SEE DATA SHEET 2088-0010 ON HTTP://WWW.SIMPLEX-FIRE.COM

REMOTE ALARM INDICATOR / KEY SWITCH

SIMPLEX 2098-9806



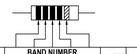
FLUSH MOUNTING



WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ONE INDICATOR MAY BE INSTALLED PER DETECTOR.

END OF LINE RESISTOR CODES



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

MODEL	REF. NUMBER	Ω	BAND NUMBER 3	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. 24 PT. I/O SWITCH SUPV.	2004, 2008, 4004*, 4004R, 4005*, 4006, 4100, 4120, 4100U, ZAMs 4605-7401, 4100 SERIES
4081-9003	733-896	4.7K	YEL	VT	RED	GLD	N/A	1/2	CURRENT LIMITED N.O. INIT., NOTIFICATION (DACT)	4090 IDNET IAM (EOLR) 2080-9024
4081-9004	733-886	6.8K	BLU	GRY	RED	GLD	N/A	1/2	N/O INITIATING PULL, SMOKE, HEAT, W FLOW, TAMPER, ETC	4004, 4005, 4090-9001 IDNET IAM, 2190-9173 MAPNETII 2 PT I/O 4-20MA ZAM (TROUBLE)
4081-9005	733-984	1.8K	BRN	GRY	RED	GLD	N/A	1/2	CURRENT LIMITED N/O. INITIATING (INLINE)	4090-9001 IDNET IAM
4081-9006	733-890	560	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	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.C. INIT. (IN SERIES WITH CONTACT)	4090-9001 IDNET IAM
4081-9011	733-974	100	BRN	BLK	BRN	GLD	N/A	1/2	ANNUNCIATOR (N2), IAM SUPERVISION	2050, 2250, 4006, 4008, 4010, 4090-5258 MX IAM
4081-9012	733-985	22K	RED	RED	ORG	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. NAC	4100-1260
	378-090	8.2K	GRY	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
4081-9020	734-246	200	RED	BLK	BRN	GLD	N/A	1/2	N.O. OR N.C. CONTACT SUPERVISION	4090-5258 MX IAM

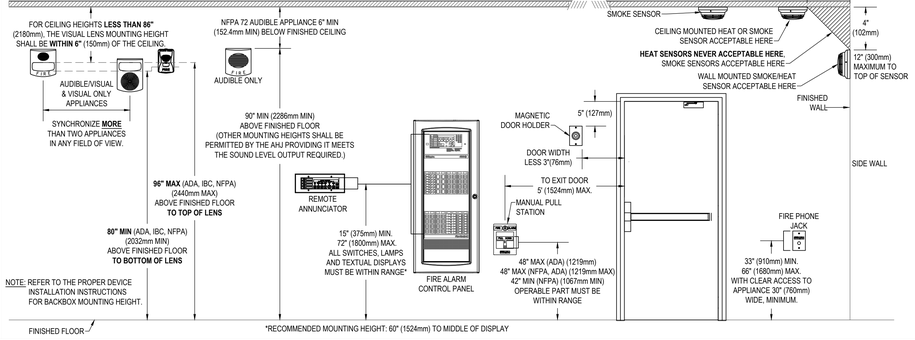
* USE WITH RETROFIT OR HIGH CURRENT MODULE

DEVICE MOUNTING HEIGHT REFERENCE

PER NFPA 72

VISUAL APPLIANCE MOUNTING HEIGHT CONSIDERATIONS IN SLEEPING ROOMS

1. MIN DISTANCE IN SLEEPING ROOMS IS 24" (610mm) FROM CEILING TO TOP OF LENS FOR 110CD STROBES WITHIN 16' OF THE PILLOW
2. 177CD STROBES, USED IN SLEEPING ROOMS, CAN BE WITHIN THE 24" (610mm) MINIMUM DISTANCE FROM THE CEILING. THE HIGHER INTENSITY IS TO COMPENSATE FOR A POSSIBLE SMOKE LAYER.



Johnson Controls
DISTRICT 1-418
1501 S POTOMAC ST
AURORA, CO 80012
PHONE 303-350-9500
FAX 303-350-9515
SERVICE 303-355-6000

NICET CERTIFICATION INFORMATION

CALE RAUCH
NICET Fire Alarm, III
Certification #151588
Valid Through: 12/01/28

05/13/2026

THE MEDICAL CENTER OF AURORA - SOUTH IR AHU 15 REPLACEMENT

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

Revisions shown with △ symbol

ISSUE LOC.	DESCRIPTION	CHK	CAD	DATE	MARK

FOR PERMIT

DRAWN BY:	AMW
CHECKED BY:	CBR
ISSUE DATE:	5/13/26
JOB #:	
PROJECT #:	419-651091025

JOHNSON CONTROLS © 2026

SYSTEM: **FIRE ALARM SYSTEM**

SHEET: **WIRING TYPICALS**

FA-701

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LAST PRINTED: 5/13/2026 7:57:02 PM
36" x 42" Arch E1 Size

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GENERAL NOTES:

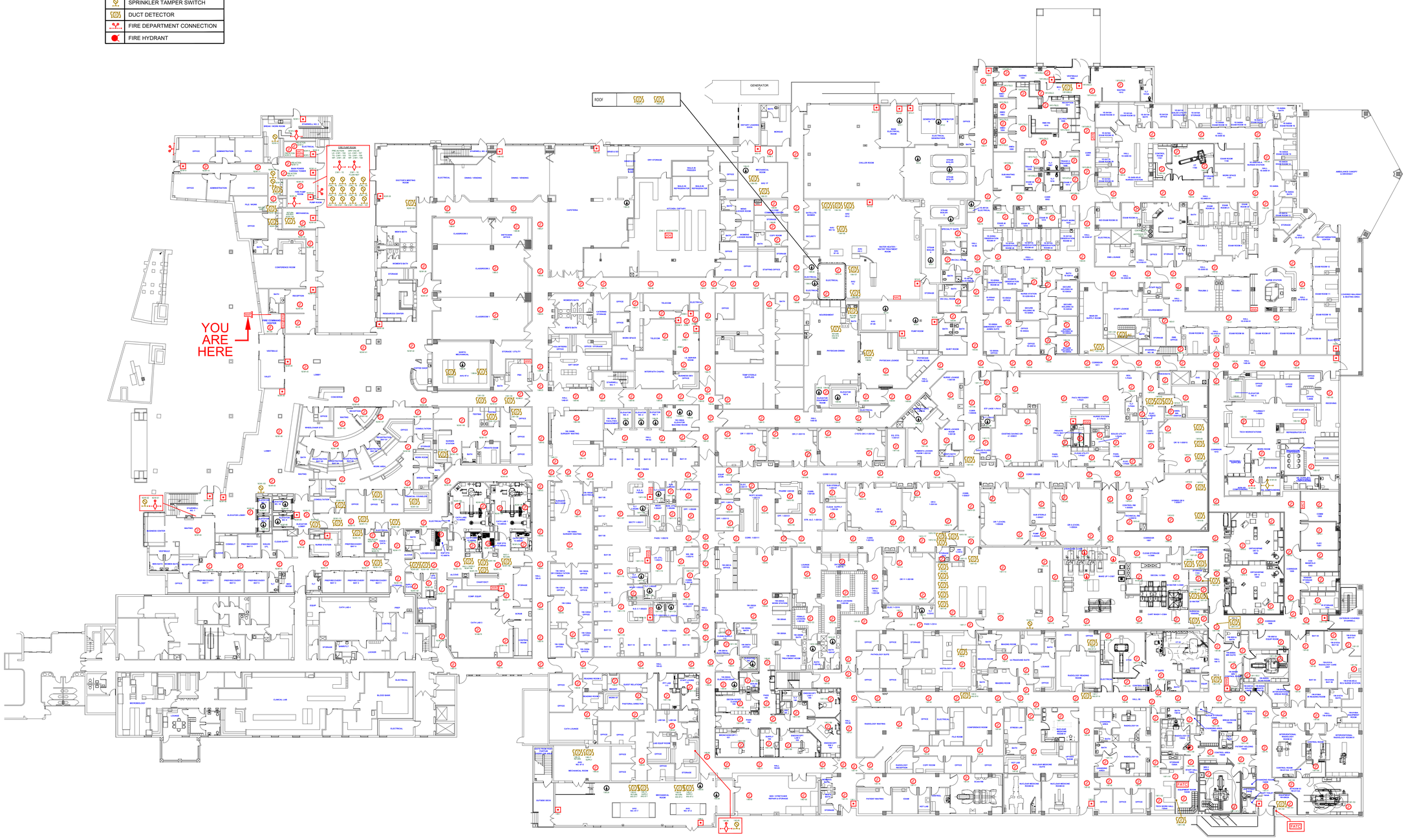
1. THIS 36"X48" STATIC GRAPHIC MAP IS NOT SHOWN TO SCALE.

AS OF: 05/13/2026

THE MEDICAL CENTER OF AURORA
1501 S. POTOMAC ST
AURORA, COLORADO 80012

LEGEND:

FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
ANN	FIRE ALARM ANNUNCIATOR
MAP	GRAPHIC ZONE MAP
	SMOKE DETECTOR
	HEAT DETECTOR
	MANUAL PULL STATION
KH	KITCHEN HOOD SYSTEM
	SPRINKLER WATERFLOW VALVE
	SPRINKLER TAMPER SWITCH
	DUCT DETECTOR
	FIRE DEPARTMENT CONNECTION
	FIRE HYDRANT


ROOF
GENERATOR C
YOU ARE HERE
FACP
FATC
FIRE CAMP ROOM
PRE-ACTION: 1st: 1,000 GPM - 2nd: 1,000 GPM - 3rd: 1,000 GPM
DRY VALVE: 1st: 1,000 GPM - 2nd: 1,000 GPM - 3rd: 1,000 GPM
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Johnson Controls
14200 E. Exposition Avenue
Aurora, Colorado 80012

www.johnsoncontrols.com

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

Fire Alarm
Product Data Submittal for:

THE MEDICAL CENTER OF AURORA - SOUTH
IR AHU 15 REPLACEMENT
1501 SOUTH POTOMAC STREET
AURORA, COLORADO 80012

NICET CERTIFICATION
INFORMATION

CALE RAUCH
NICET Fire Alarm, III
Certification #151588
Valid Through: 12/01/28

05/13/2026

Prepared for:

ODIN ELECTRIC
2120 SOUTH ASH STREET
DENVER, COLORADO 80222

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 IR AHU 15 REPLACEMENT
PREPARED FOR:	ODIN ELECTRIC

TYPE:	***DESCRIPTION:***
4098-9756	TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT
2098-9806	REMOTE TEST STATION W/ LED AND KEY SWITCH
4098-9856	SAMPLING TUBES 49", PLASTIC
4098-9857	SAMPLING TUBES 72", PLASTIC
4098-9843	ENCAPSULATED RELAY PAM-SD
4081-9008	EOL, 10K 1/2W

Simplex®

TrueAlarm Analog Sensing

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

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

Features

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

Includes factory installed TrueAlarm photoelectric smoke sensor and features:

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

Model 4098-9755:

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

Model 4098-9756:

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

General features:

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

Diagnostic LEDs (on interface board):

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

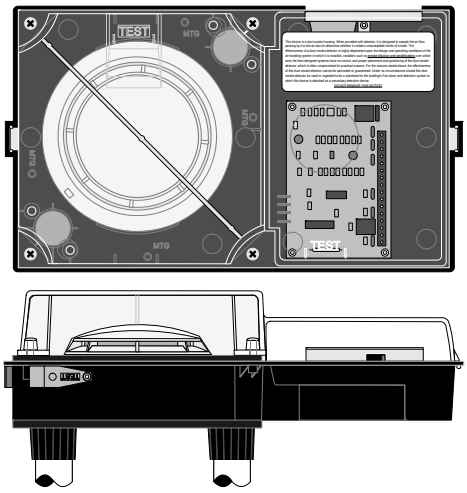
Sampling tubes (ordered separately):

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

Remote module options (ordered separately):

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

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

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)	4007ES, 4008, 4010, 4010ES, 4020, 4100, 4100ES, 4100E, 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

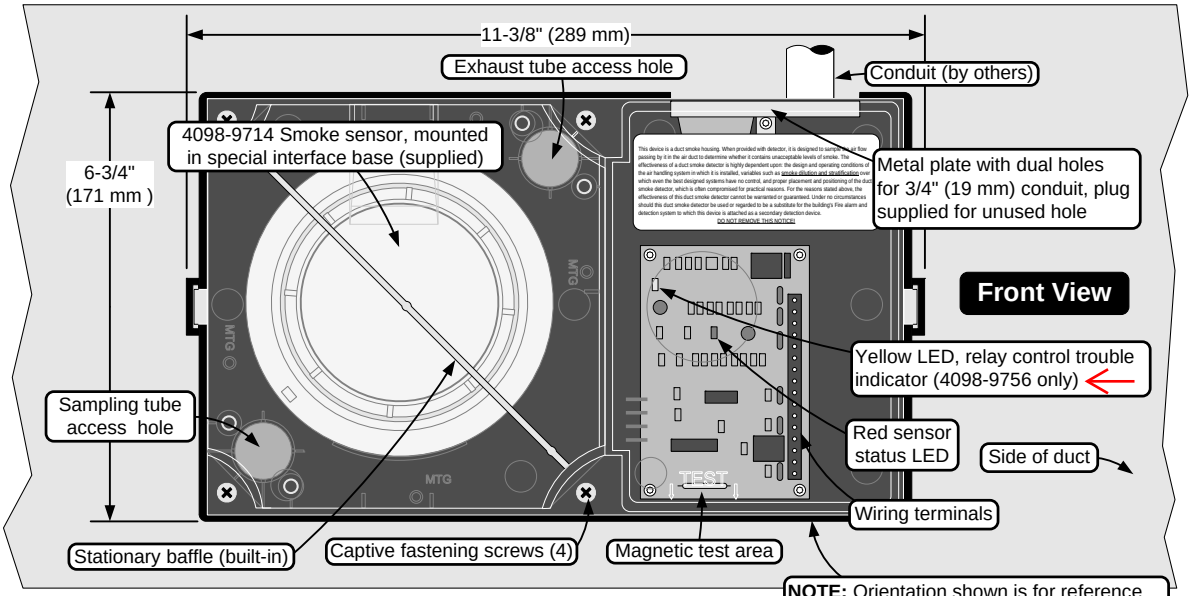
* Each duct housing includes an internally mounted model 4098-9714 TrueAlarm photoelectric sensor and an exhaust tube. A correctly sized sampling tube (ordered per application) is required, refer to chart below.

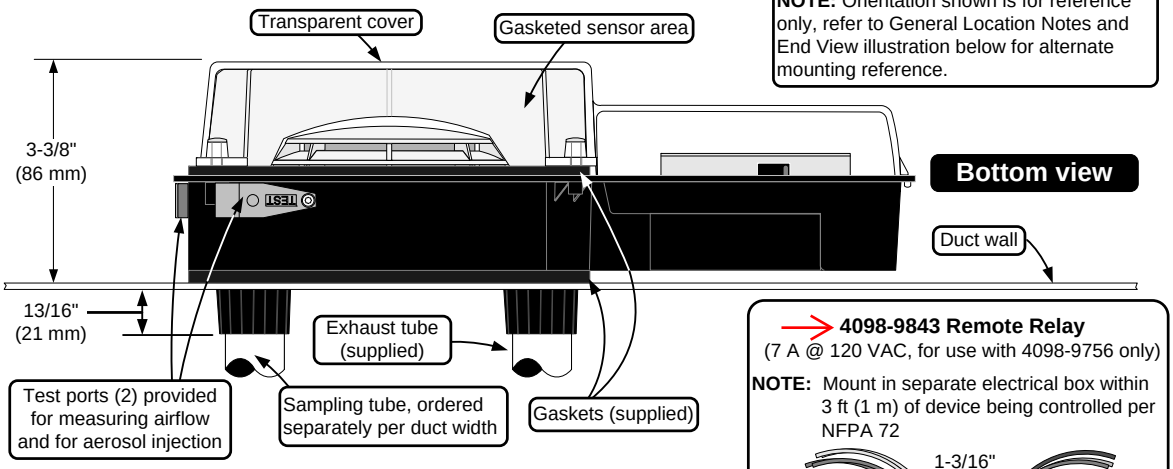
Sampling Tube Selection Chart, Ordered Separately Per Duct Width, Select One

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

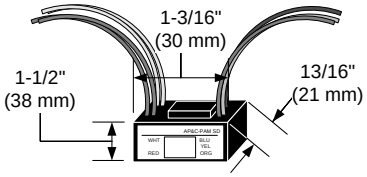
NOTE: Refer to Installation Instructions 574-776 for additional installation detail and maintenance information.

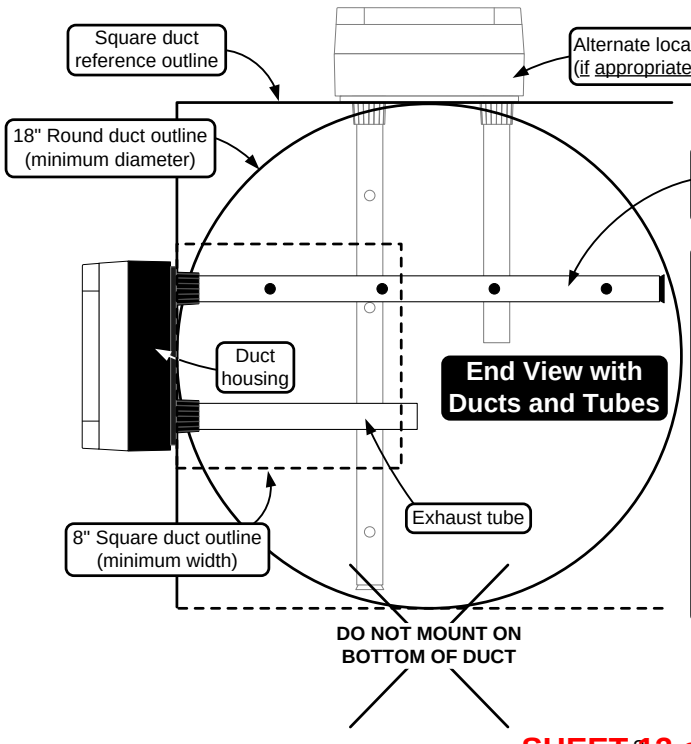




4098-9843 Remote Relay
(7 A @ 120 VAC, for use with 4098-9756 only)

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

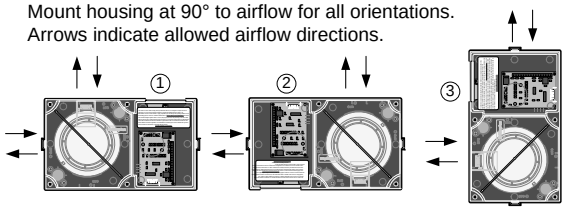




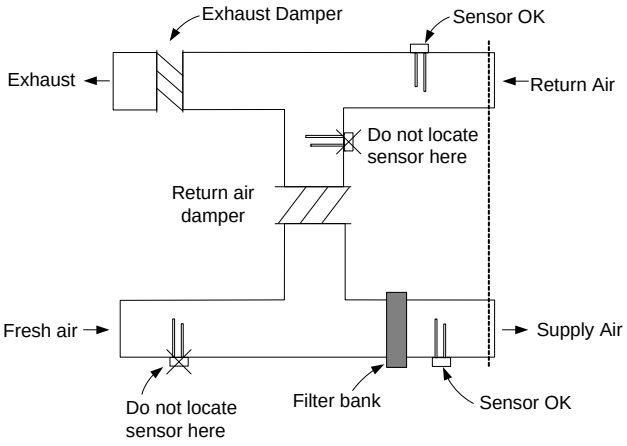
Sampling tube, keyed for proper hole alignment **with holes facing into airflow** (template is provided for proper tube installation). (Housing is shown as position 2 per note 2 below.)

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.



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 and Material	Black ABS base with clear polycarbonate cover
Sampling and Exhaust Tube Material	Black CPVC, custom extrusion; sampling tubes are pre-drilled
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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Simplex

System Accessories

UL, CSFM Listed;
*MEA (NYC) Acceptance**

Fire Alarm Control Relays, Track Mount and Encapsulated; Model 4098-9843 and 2088 Series

Features

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

Track mount package availability:

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

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

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

Description

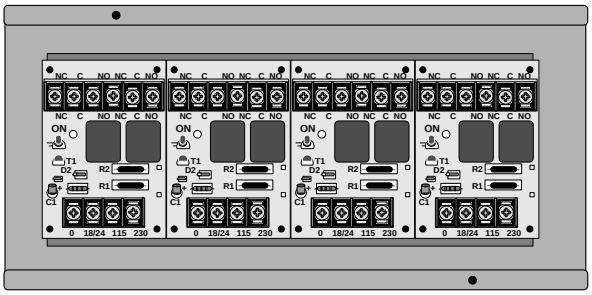
These multi-purpose control relays offer SPDT or DPDT, 10 A (or 7 A) contacts in a variety of mechanical packages. Models are available for coil operation by one of four input voltages allowing a single relay to be energized from a voltage source of 18-35 VDC or VAC, 120 VAC, or 230 VAC (not available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

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

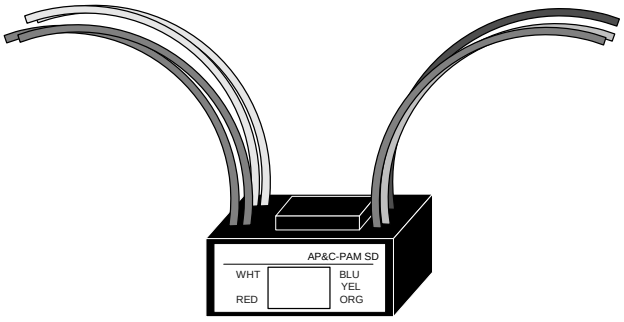
Mounting options are varied for application flexibility. Track mounted relays may be "snapped apart" from a standard four-module assembly and used independently if desired.

Specifications

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



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



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

Specifications *Continued*

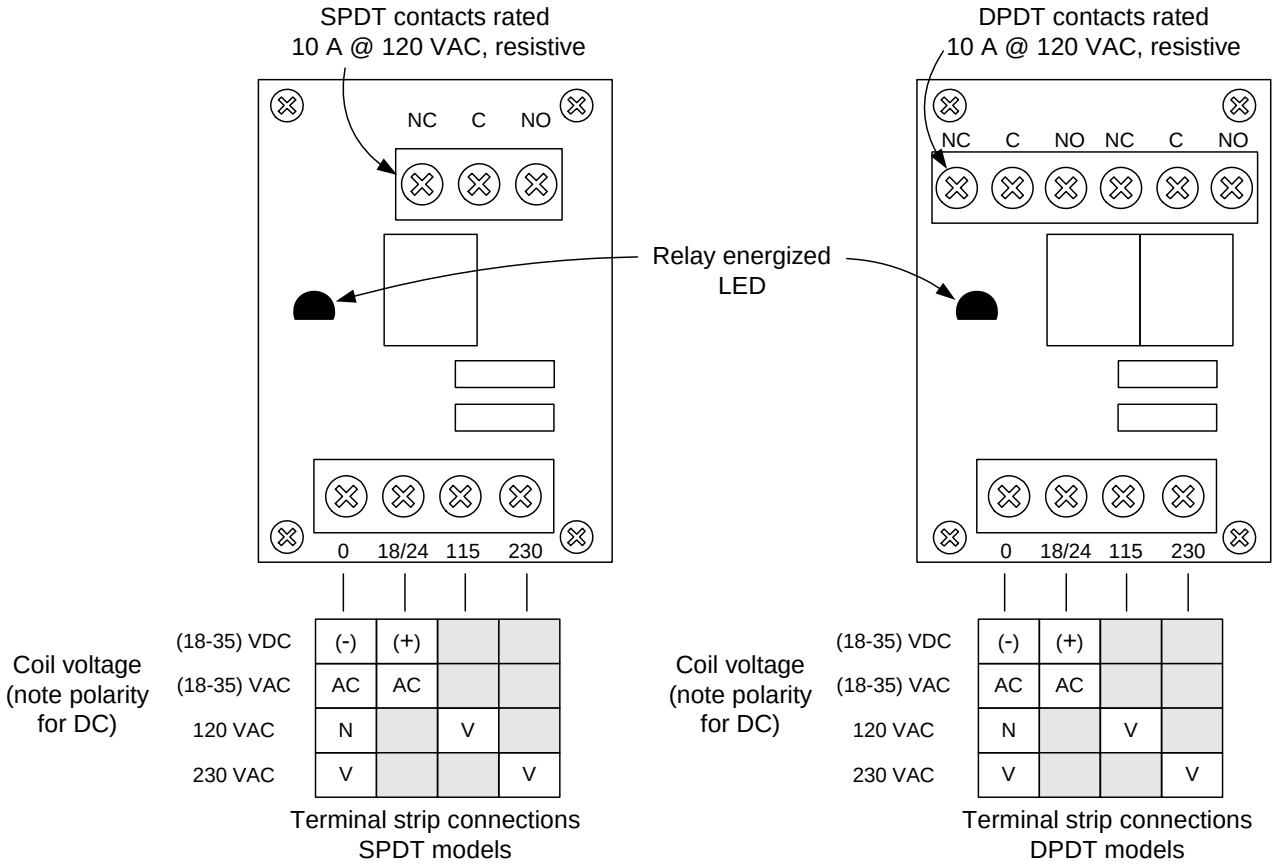
Encapsulated Relays, see page 2 for dimensions		
Connections		18 AWG (0.82 mm^2) color-coded wire leads
Relay 2088-9021		
Contact Ratings		10 A @ 120 VAC, resistive
Coil Ratings	Voltage	18-35 VAC/VDC, 120, or 240 VAC
	Current	15 mA @ 24 VAC/VDC, & @ 120 or 230 VAC
Relay 4098-9843		
Coil Ratings		18-32 VDC input, polarized, 15 mA @ 24 VDC
Contact Ratings		7 A at 0.35 p.f @ 28 VDC & 120 VAC
		250 µA @ 5 VDC
Temperature Ratings		
UL Listed Range		32° F to 120° F (0° C to 49° C)
Humidity		100% RH, condensing

* Listings are under Apollo America Inc. per model numbers shown on page 2. See CSFM Listing 7300-1004:0101 for allowable values and/or conditions concerning material presented in this document.

Relay Selection Chart

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

Track Mount Relay Wiring Reference



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Features

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

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

UL Listed to Standard 864

Product Selection

Table 1: Product Selection

SKU	Reference Number	Description
4081-9001	733-892	2.2 kΩ, 1/2 W, ± 5%
4081-9002	733-893	3.3 kΩ, 1 W, ± 5%
4081-9003	733-896	4.7 kΩ, 1/2 W, ± 5%
4081-9004	733-886	6.8 kΩ, 1/2 W, ± 5%
4081-9005	733-984	1.8 kΩ, 1/2 W, ± 5%
4081-9006	733-890	560 Ω, 1 W, ± 5%
4081-9007	733-891	1.2 kΩ, 1 W, ± 5%
4081-9008	733-894	10 kΩ, 1/2 W, ± 5%
4081-9009	733-912	20 Ω, 1 W, ± 5%
4081-9010	733-973	1 kΩ, 1 W, ± 5%
4081-9011	733-974	100 Ω, 1/2 W, ± 5%
4081-9012	733-985	22 kΩ, 1/2 W, ± 5%
4081-9013	734-086	4.99 kΩ, 1/2 W, ± 1%
4081-9014	734-092	2.4 kΩ, 1/2 W, ± 5%
4081-9015	734-093	1.5 kΩ, 1/2 W, ± 5%
4081-9016	734-149	150 kΩ, 1/2 W, ± 5%
4081-9017	734-171	3.9 kΩ, 1 W, ± 5%
4081-9018	734-168	10 kΩ, 1 W, ± 5%
4081-9026	A163819W6P	51.1K Ω ,1/2 W, ± 1%

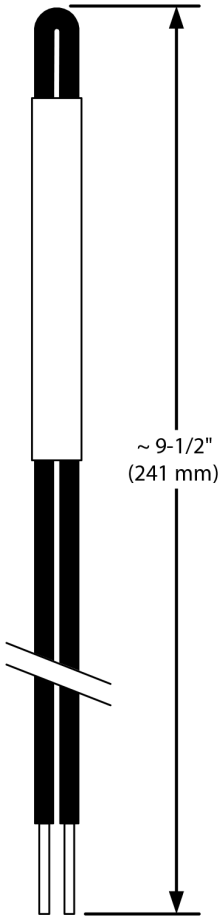


Figure 1: Typical 4081 Series Resistor Harness Assembly (full size except for lead length)

* 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® supplier for the latest status.

Specifications

Table 2: Specifications

Specification	Rating
Overall Length	Approximately 9-1/2" (241 mm)
Wire Length	7" (178 mm) ± 1" (25 mm)
Wire Size	18 AWG (0.82 mm2)
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

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