Johnson Controls

THE MEDICAL CENTER OF AURORA - SOUTH
CATH LAB HVAC DEHUMIDIFICATION
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 MANUFACTURERS 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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FILE PATH: C:\Users\jdixon2\OneDrive - Johnson Controls\Medical Center of Aurora\1501 S Potomac - Aurora South\South Tower - Node 1\42-2nd Dehumidification - 2024 - 650461645FireFA-001.dwg
LAST SAVED BY: JDIXON2
LAST PRINTED: 3/12/2024 1:41:51 PM
30" x 42" Arch E1 Size

LEGENDS

FIRE ALARM SYMBOL LEGEND

QTY	SYMBOL	DESCRIPTION	BRAND	MODEL	BACKBOX	WIRE TYPE
		INITIATING DEVICES				
2N		ADDRESSABLE STANDARD HEAT SENSOR W/ STANDARD BASE	SIMPLEX	4098-9733 HEAD 4098-9792 BASE	4" OCT, 1-1/2" D	M
2N	S	ADDRESSABLE DUCT SMOKE DETECTOR W/ RELAY OUTPUT S = SUPPLY; R = RETURN SAMPLING TUBE, 24"	SIMPLEX SIMPLEX	4098-9756 4098-9855	MOUNTS TO DUCTWORK	M P
		MODULES AND RELAYS				
2N	M	ENCAPSULATED RELAY	SIMPLEX	4098-9843	SINGLE GANG 2-1/8" D W/ COVER	R
		MISCELLANEOUS DEVICES				
2N		REMOTE TEST STATION	SIMPLEX	2098-9806	SINGLE GANG 2"D	K
2N	10K-WW	END-OF-LINE RESISTOR 10kΩ, 1/2W (EOL)	SIMPLEX	4081-9008		

GENERAL NOTES:

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

FIRE ALARM WIRE LEGEND

	CIRCUIT DESCRIPTION	CONSTRUCTION	GAUGE	CIRCUIT PROPERTIES	ACCEPTABLE CABLE TYPES: FPLR	FPLP	THHN	TFFN	OUTDOOR *	C.I.
K	REMOTE TEST SWITCH/LED	(2) 2 COND. SOLID	14 AWG		X	X				
M	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.

UTP = UNSHIELDED TWISTED PAIR

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

BUILDING/FIRE DEPT GENERAL NOTES

- FIRE ALARM SYSTEMS CANNOT BE COMBINED WITH BURGLAR ALARM SYSTEMS.
- THE INSTALLER IS REQUIRED TO COORDINATE WITH THE MECHANICAL CONTRACTOR TO DETERMINE INSTALLATION OF SMOKE DETECTORS OR SENSORS (i.e., NOT CLOSER THAN 3 FEET FROM ANY SUPPLY/RETURN DIFFUSER AND THAT ADDITIONAL DETECTION MAY BE REQUIRED DUE TO THE RELOCATION OR SPACING ADJUSTMENT OF DETECTORS, AS A RESULT).
- FIRE ALARM DEVICES MUST BE PLACED IN PROTECTED AREAS WITH AMBIENT TEMPERATURE RANGING FROM 32 DEGREES F 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.

City of Aurora Building Division
Counter Permit Authorized by: Steve Kirchner
RSN: 1800546
Permit: 2024-2433248-CT
Date: May 07, 2024
2021 INTERNATIONAL CODES & 2023 NEC

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

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

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

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

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

SPRINKLER PROTECTION:
BUILDING IS FULLY SPRINKLERED

AREA:
TOTAL: APPROX. 14,500 SQ. FT.
SCOPE: APPROX. 240 SQ. FT.

STORIES:
TOTAL: 6 STORIES + BASEMENT
SCOPE: PARTIAL SECOND FLOOR

SCOPE OF WORK

MODIFY EXISTING FIRE ALARM SYSTEM: PROVIDE NEW DEVICES, RELOCATE AND DEMO EXISTING DEVICES AS SHOWN ON DRAWINGS.

AREA TO RECEIVE WORK INCLUDES APPROXIMATELY 240 SQUARE FEET ENCOMPASSING THE SECOND FLOOR OF THE MEDICAL CENTER OF AURORA - SOUTH, AT 1501 SOUTH POTOMAC STREET, AURORA, COLORADO 80012.

FOR INTERIM - DURING HVAC DEMOLITION, INTERIM HEAT-DETECTORS TO BE INSTALLED IN SCOPE AREA FOR CONSTRUCTION. HVAC DEMOLITION LINES ARE NOT SHOWN ON FIRE ALARM DRAWINGS.

FOR BUILDOUT - REMOVE INTERIM DEVICES FROM SCOPE AREA. INSTALL NEW ADDRESSABLE INITIATION DUCT SMOKE DEVICES FOR CATH LAB 4 AHU. NEW DEVICES WILL TIE TO EXISTING NODE-2 4100ES FIRE ALARM CONTROL PANEL (FACP) IN FIRE COMMAND CENTER ROOM 1146B. NEW INITIATION TO TIE TO N2:M1 CIRCUIT.

NO GRAPHIC MAP EXISTS FOR THIS AREA. NO MAP TO BE UPDATED AT THIS TIME.

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

ALL NEW WIRING TO BE CLASS B.

THE EXISTING FIRE ALARM SYSTEM SHALL NOT BE DISCONNECTED OR TAKEN OUT OF SERVICE WITHOUT WRITTEN PERMISSION FROM THE OWNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER THE TIMING OF ANY EXISTING FIRE ALARM SYSTEM DEMOLITION WORK.

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

ABBREVIATIONS LEGEND

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

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PROJECT DIRECTORY

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

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

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

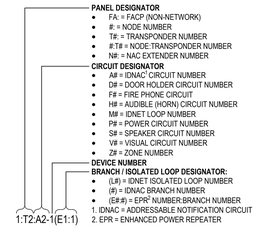
Installer
E LIGHT ELECTRIC SERVICES, INC.
361 INVERNESS DRIVE SOUTH, SUITE B
ENGLEWOOD, COLORADO 80112
PHONE: 303-754-0001

DESIGN STATEMENT

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

ARCHITECTURAL PLANS DATED:
MECHANICAL PLANS DATED: AUGUST 01, 2023
ELECTRICAL PLANS DATED: AUGUST 01, 2023
SPECIFICATIONS DATED:
ADDENDUM DATED:

DEVICE TAG LEGEND



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

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

DEVICE NUMBER

BRANCH / ISOLATED LOOP DESIGNATOR:
- (L#): = IDNET ISOLATED LOOP NUMBER
- (#): = IDNAC BRANCH NUMBER
- (E#:#) = EPR² NUMBER:BRANCH NUMBER

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

SYSTEM SEQUENCE OF OPERATIONS

The City of Aurora requires that the exterior horn/ strobe shall activate on all general alarm(s).

M.C.O.A. SOUTH TOWER		SYSTEM OUTPUTS																													
		FACP Annunciation					Notification								Required Controls									Supplementary							
SEQUENCE OF OPERATIONS		ACTIVATE COMMON ALARM SIGNAL INDICATOR	ACTIVATE AUDIBLE ALARM SIGNAL	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTIVATE AUDIBLE SUPERVISORY SIGNAL	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR	ACTIVATE AUDIBLE COMMON TROUBLE SIGNAL	ACTIVATE EVACUATION SIGNALS (AUDIBLE/VISUAL)	ACTIVATE STROBE BELL	DISPLAY CHANGE OF STATE AT REMOTE ANNUNCIATOR	TRANSMIT FIRE ALARM SIGNAL TO OFF-SITE REPORTING	TRANSMIT SUPERVISORY SIGNAL TO OFF-SITE REPORTING	TRANSMIT TROUBLE SIGNAL TO OFF-SITE REPORTING	KOTRY HOSPITAL PBX	FAN SHUT DOWN	DAMPER SHUT DOWN	RELEASE CORRIDOR FIRE DOORS	RELEASE ASSOCIATED ROLL UP DOOR	ELEVATOR SHUT DOWN (1)	ELEVATOR RECALL - MAIN FLOOR	ELEVATOR RECALL - ALTERNATE FLOOR	ELEVATOR HAT FLASH	OVERRIDE MUSIC SYSTEM	SILENCE AUDIBLE SIGNAL (DECLOWNS EXTERIOR HS)	ACTIVATE OUTSIDE HORN/STROBE (IN GENERAL ALARM)	RESET PANEL TO NORMAL CONDITION	
SYSTEM INPUTS		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y					
1	SMOKE DETECTOR	X	X					X		X	X				X	X	X							X		X				1
2	SMOKE DETECTOR AT 2ND, 4TH & 5TH FLR CLERK DESK	X	X					X		X	X				X		X	X	X					X		X				2
3	SMOKE DETECTOR AT SMOKE PARTITION	X	X					X		X	X				X		X							X		X				3
4	MANUAL PULL STATION	X	X					X		X	X						X							X		X				4
5	HEAT DETECTOR	X	X					X		X	X				X		X							X		X				5
6	DUCT DETECTOR			X	X					X		X			X	X								X						6
7	DUCT DETECTOR AT F/S DAMPER			X	X					X	X				X	X								X						7
8	MAIN FLR. ELEV. LOBBY SMOKE DETECTOR	X	X					X		X	X				X	X	X	X			X	X	X	X		X				8
9	ELEV. LOBBY SMOKE DETECTORS (EXCL. MAIN FLR.)	X	X					X		X	X				X			X		X	X	X	X	X		X				9
10	ELEV. MECH. ROOM SMOKE DETECTOR	X	X					X		X	X				X			X		X	X	X	X	X		X				10
11	ELEV. SHAFT HEAT DETECTOR	X	X					X		X	X								X											11
12	ELEV. MECH. ROOM HEAT DETECTOR	X	X					X		X	X								X											12
13	WATERFLOW SWITCH	X	X					X	X	X	X													X		X				13
14	TAMPER SWITCH			X	X					X		X																		14
15	POST INDICATOR VALVE SWITCH			X	X					X		X																		15
16	FACP AC POWER FAILURE					X	X						X																	16
17	FACP, LOW BATTERY					X	X						X																	17
18	OPEN CIRCUIT					X	X						X																	18
19	GROUND FAULT					X	X						X																	19
20	NOTIFICATION APPLIANCE CIRCUIT SHORT					X	X						X																	20
21	ALARM SIGNAL SILENCE																							X						21
22	SYSTEM RESET																													22
23	CATH LAB BUILDING ALARM	X	X							X				X																23
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y					

NOTE: Audible Evacuation Signal shall be Temporal Pattern per NFPA 72.

- *Disconnect power after a time delay equal to the time it takes for the car to travel from the highest to the lowest level plus 10 seconds.*

New devices will be added to the existing sequence of operations. No further changes will occur.

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

FOR PERMIT

DRAWN BY:	CCD
CHECKED BY:	CBR
ISSUE DATE:	3/11/24
JOB #:	
PROJECT #:	419:650461645

JOHNSON CONTROLS © 2024

SYSTEM: **FIRE ALARM SYSTEM**

SHEET: **COVER SHEET**

FA-001

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

NICET CERTIFICATION INFORMATION
CALE RAUCH
NICET Fire Alarm, III
Certification #151588
Valid Through: 12/01/25
03/12/2024

FIRE ALARM SYMBOL LEGEND

QTY	SYMBOL	DESCRIPTION	BRAND	MODEL	BACKBOX	WIRE TYPE
		INITIATING DEVICES				
2N		ADDRESSABLE STANDARD HEAT SENSOR W/ STANDARD BASE	SIMPLEX	4098-9733 HEAD 4098-9792 BASE	4" OCT, 1-1/2" D	M
2N	S	ADDRESSABLE DUCT SMOKE DETECTOR W/ RELAY OUTPUT S = SUPPLY; R = RETURN	SIMPLEX	4098-9756	MOUNTS TO DUCTWORK	M P
		SAMPLING TUBE, 24"	SIMPLEX	4098-9855		
		MODULES AND RELAYS				
2N	M	ENCAPSULATED RELAY	SIMPLEX	4098-9843	SINGLE GANG 2-1/8" D W/ COVER	R
		MISCELLANEOUS DEVICES				
2N		REMOTE TEST STATION	SIMPLEX	2098-9806	SINGLE GANG 2"D	K
2N	10K	END-OF-LINE RESISTOR 10kΩ, 1/2W (EOL)	SIMPLEX	4081-9008		

FIRE ALARM WIRE LEGEND

	CIRCUIT DESCRIPTION	CONSTRUCTION	GAUGE	CIRCUIT PROPERTIES	ACCEPTABLE CABLE TYPES: FPLR	FPLP	THHN	TFFN	OUTDOOR **	C.I.
K	REMOTE TEST SWITCH/LED	(2) 2 COND. SOLID	14 AWG		X	X				
M	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.

UTP = UNSHIELDED TWISTED PAIR

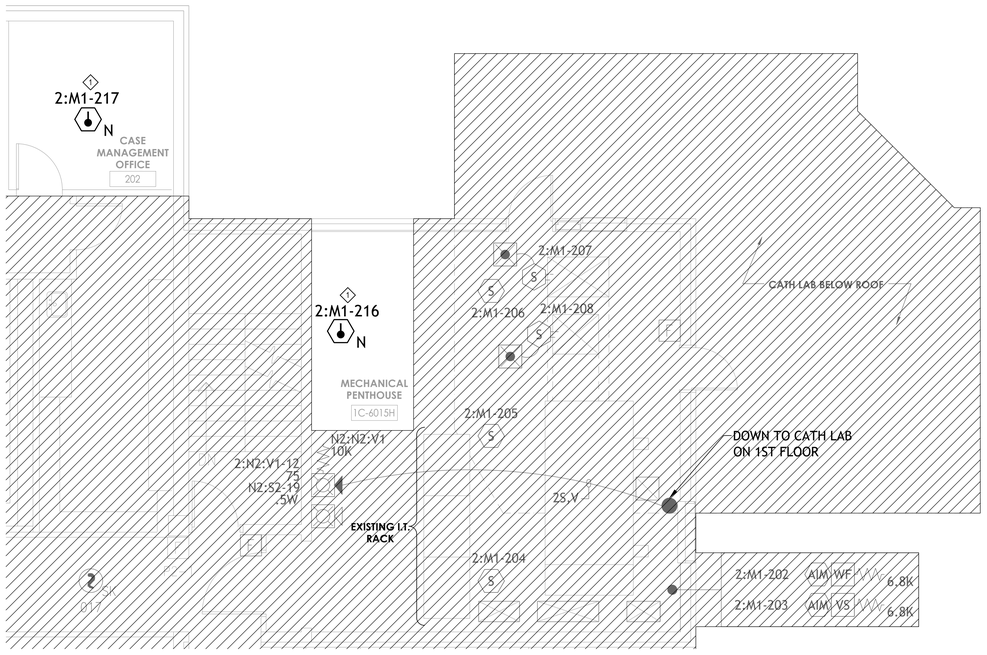
ITEMS SUCH AS CAPACITANCE BETWEEN CONDUCTORS AND WIRE GAUGE CAN BE CRUCIAL TO THE CIRCUIT DESIGN OF THIS SYSTEM INSTALLATION. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR SELECTING AND INSTALLING CABLE MANUFACTURER AND MODEL THAT MEETS OR EXCEEDS THE ABOVE REQUIREMENTS. RECOMMENDED CABLE MANUFACTURERS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

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 RELOCATED.
4. THE INFORMATION OR SYMBOLS SHOWN IN LIGHT LINETYPE ARE EXISTING.
5. ALL ITEMS THAT ARE HATCHED ARE NOT IN THIS SCOPE OF WORK.

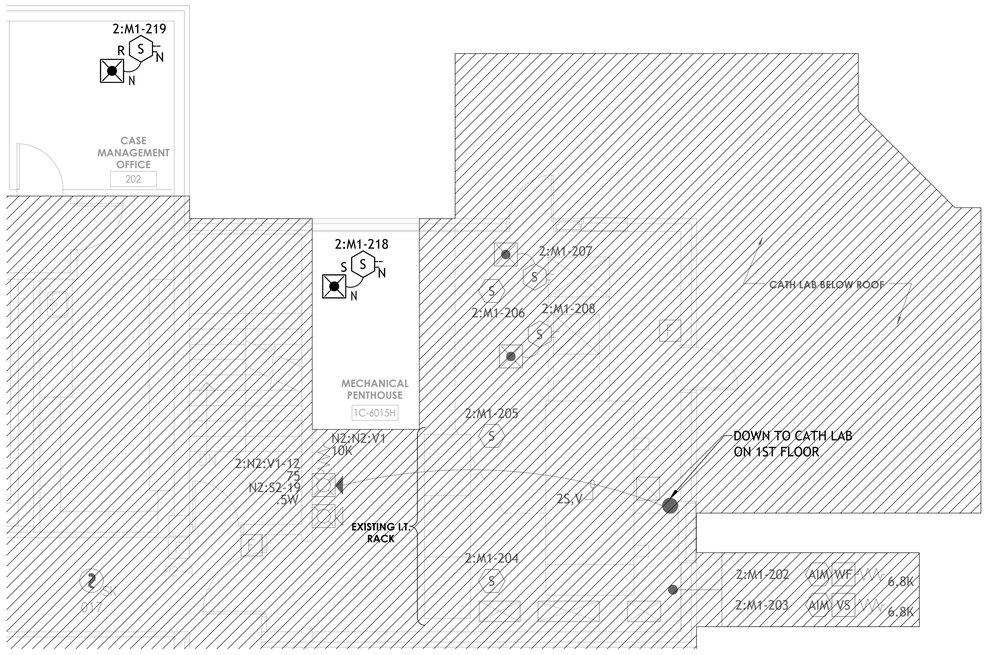
KEYNOTES:

1. DEVICE IS FOR INTERIM CONSTRUCTION. TO BE REMOVED DURING BUILDOUT CONSTRUCTION.



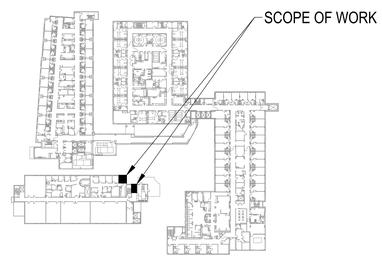
N **SECOND FLOOR PARTIAL DEVICE PLACEMENT PLAN - INTERIM**
SCALE:1/4" = 1'-0"

SCALE:1/4" = 1'-0" IN FEET 0 2' 4' 8'



N **SECOND FLOOR PARTIAL DEVICE PLACEMENT PLAN - BUILDOUT**
SCALE:1/4" = 1'-0"

SCALE:1/4" = 1'-0" IN FEET 0 2' 4' 8'



N **KEYPLAN**
SCALE:N.T.S.

Johnson Controls
PHONE: 303-350-9500
FAX: 303-355-9415
DISTRICT: 1-418
10065 E. EXPOSITION AVE
AURORA, CO 80017
SERVICE: 303-355-9500

NICET CERTIFICATION INFORMATION

CALE RAUCH
NICET Fire Alarm, III
Certification #151588
Valid Through: 12/01/25

03/12/2024

THE MEDICAL CENTER OF AURORA - SOUTH
CATH LAB HVAC DEHUMIDIFICATION

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

Revisions shown with ▲ symbol

ISSUE LOG MARK	DATE	CAD	CHK	DESCRIPTION

FOR PERMIT

DRAWN BY:	CCD
CHECKED BY:	CBR
ISSUE DATE:	3/1/24
JOB #:	
PROJECT #:	419:650461645

JOHNSON CONTROLS © 2024

SYSTEM:
FIRE ALARM SYSTEM

SHEET:
SECOND FLOOR DEVICE PLACEMENT PLANS - INTERIM & BUILDOUT

FA-101

FILE PATH: C:\Users\jdsmoc\OneDrive - Johnson Controls\Medical Center of Aurora\1501 S Potomac - Aurora South\South Tower - Node 1\42nd Dehumidification - 2024 - 650461645FireFA-101.dwg
LAST SAVED BY: JDSMOC
LAST PRINTED: 3/1/2024 2:41:56 PM
30" x 42" - Arch E Size

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FIRE ALARM SYMBOL LEGEND

QTY	SYMBOL	DESCRIPTION	BRAND	MODEL	BACKBOX	WIRE TYPE
		INITIATING DEVICES				
2N		ADDRESSABLE STANDARD HEAT SENSOR W/ STANDARD BASE	SIMPLEX	4098-9733 HEAD 4098-9792 BASE	4" OCT, 1-1/2" D	M
2N	S F	ADDRESSABLE DUCT SMOKE DETECTOR W/ RELAY OUTPUT S = SUPPLY; R = RETURN SAMPLING TUBE: 24"	SIMPLEX	4098-9756 4098-9855	MOUNTS TO DUCTWORK	M P
		MODULES AND RELAYS				
2N	R	ENCAPSULATED RELAY	SIMPLEX	4098-9843	SINGLE GANG 2-1/8" D W/ COVER	R
		MISCELLANEOUS DEVICES				
2N		REMOTE TEST STATION	SIMPLEX	2098-9806	SINGLE GANG 2"D	K
2N	10K	END-OF-LINE RESISTOR 10kΩ, 1/2W (EOL)	SIMPLEX	4081-9008		

FIRE ALARM WIRE LEGEND

	CIRCUIT DESCRIPTION	CONSTRUCTION	GAUGE	CIRCUIT PROPERTIES	ACCEPTABLE CABLE TYPES: FPLR	FPLP	THHN	TFFN	OUTDOOR **	C.I.
K	REMOTE TEST SWITCH/LED	(2) 2 COND. SOLID	14 AWG		X	X				
M	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*
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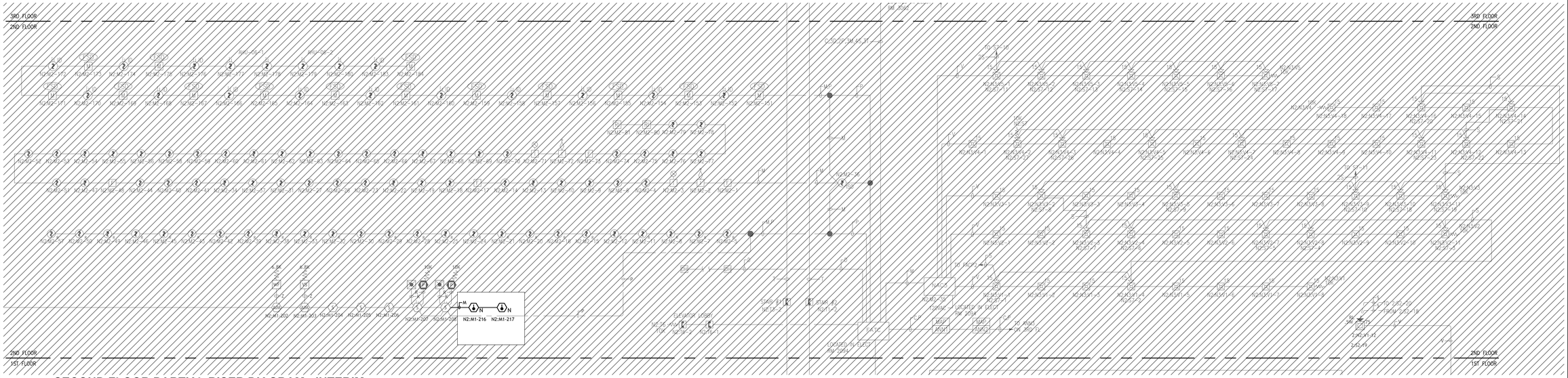
* 40% CONDUIT FILL PER N.E.C.

UTP = UNSHIELDED TWISTED PAIR

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

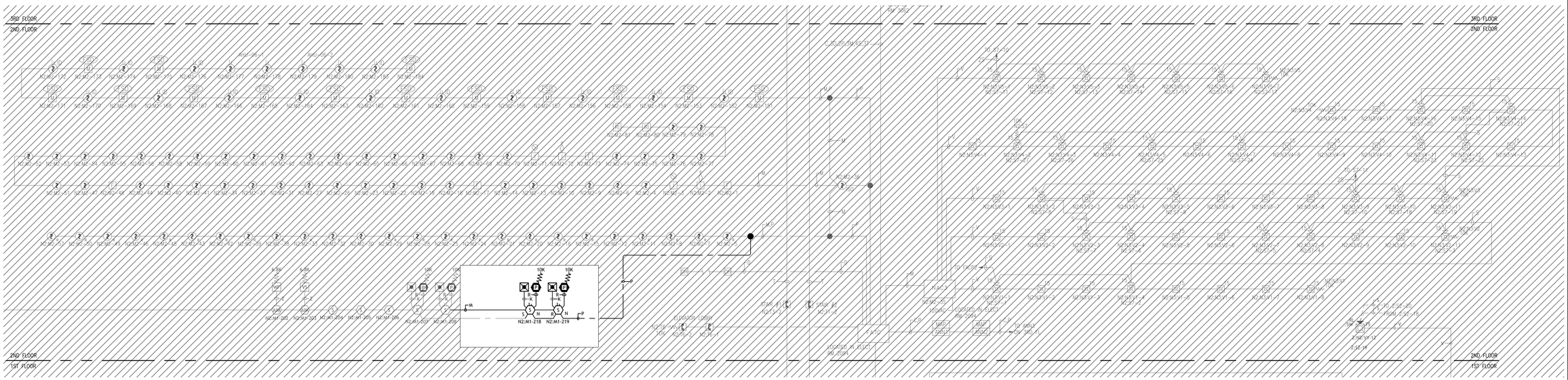
RISER NOTES:

1. RISER IS A DIAGRAMMATICAL REPRESENTATION OF THE SYSTEM ARCHITECTURE IN BUILDING CROSS SECTION. IT IS NOT INTENDED TO REPRESENT ACTUAL WIRE RUNS, PANEL CONFIGURATIONS OR PENETRATIONS. REFER TO FLOOR PLANS AND PANEL DETAILS FOR CIRCUIT ROUTING AND CONFIGURATION INFORMATION.
2. ALL WIRING SHALL COMPLY WITH APPLICABLE ELECTRICAL CODES. REFER TO 'APPLICABLE CODES & STANDARDS' ON SHEET FA-001 FOR SPECIFIC CODE REFERENCES.
3. THE INFORMATION OR SYMBOLS SHOWN IN BOLD LINETYPE ARE NEW OR RELOCATED.
4. THE INFORMATION OR SYMBOLS SHOWN IN LIGHT LINETYPE ARE EXISTING.
5. ALL ITEMS THAT ARE HATCHED ARE NOT IN THIS SCOPE OF WORK.



SECOND FLOOR PARTIAL RISER DIAGRAM - INTERIM

SCALE:N.T.S.



SECOND FLOOR PARTIAL RISER DIAGRAM - BUILDOUT

SCALE:N.T.S.

Johnson Controls
PHONE: 303-350-9500
FAX: 303-350-9615
DISTRICT 1-418
10200 E. GIRARD AVE
AURORA, CO 80017
SERVICE: 303-350-9500

NICET CERTIFICATION INFORMATION

CALE RAUCH
NICET Fire Alarm, III
Certification #151588
Valid Through: 12/01/25

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THE MEDICAL CENTER OF AURORA - SOUTH CATH LAB HVAC DEHUMIDIFICATION

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

Revisions shown with ⚠number

ISSUE LOG			
MARK	DATE	CAD	CHK	DESCRIPTION

FOR PERMIT

DRAWN BY:	CCD
CHECKED BY:	CBR
ISSUE DATE:	3/11/24
JOB #:	
PROJECT #:	419-650461645

JOHNSON CONTROLS © 2024

SYSTEM: FIRE ALARM SYSTEM

SHEET: SECOND FLOOR PARTIAL RISER DIAGRAMS - INTERIM & BUILDOUT

FA-201

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FILE PATH: C:\Users\jbuono\OneDrive - Johnson Controls\Medical Center of Aurora\1501 S Potomac - Aurora South\South Tower - Mods 1\42-2nd Dehumidification - 2024 - 650461645FireFA-201.dwg
LAST SAVED BY: JBUONO4
LAST PRINTED: 3/12/2024 7:42:01 PM
36" x 42" - Arch E1 Size

TMCA NODE 2 4100es FACP

Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
Panel Equipment						
4100-9111	*1*	*4100 CONFIG. DOMESTIC 120V*	*0.3730*	*0.3730*	*0.4700*	*0.4700*
4100-5101	*4*	*EXPANSION PWR SUPPLY (XPS) - 120VAC 60HZ*	*0.0500*	*0.2000*	*0.0500*	*0.2000*
4100-9621	*1*	*BASIC AUDIO WITH MICROPHONE - DIGITAL*	*0.0750*	*0.0750*	*0.0820*	*0.0820*
4100-1326	*4*	*DIGITAL FLEX 50W AMP W/3 NACS - 25V*	*0.0850*	*0.3400*	*2.2700*	*9.0800*
4100-1240	*1*	*AUXILIARY AUDIO INPUT BOARD*	*0.0100*	*0.0100*	*0.0100*	*0.0100*
4100-1242	*1*	*MESSAGE EXPANSION BOARD - 32 MINUTES*	*0.0020*	*0.0020*	*0.0170*	*0.0170*
4100-1270	*1*	*MASTER TELEPHONE, PHONE CONTROL*	*0.0800*	*0.0800*	*0.1400*	*0.1400*
4100-1272	*3*	*EXPANSION PHONE CONTROLLER*	*0.0800*	*0.2400*	*0.1400*	*0.4200*
4100-3101	*3*	*IDNET MODULE, UP TO 250 POINTS* *	*0.0750*	*0.2250*	*0.1150*	*0.3450*
4100-6014	*1*	*NETWORK IF CARD, WIRED*	*0.0460*	*0.0460*	*0.0460*	*0.0460*
4100-6056	*2*	*NETWORK MEDIA CARD WIRED*	*0.0550*	*0.1100*	*0.0550*	*0.1100*
4100-3206	*1*	*8 RELAYS - 3 AMP*	*0.0150*	*0.0150*	*0.1900*	*0.1900*
4100-1254	*1*	*2 CHANNEL AUDIO OPERATOR INTERFACE*	*0.0000*	*0.0000*	*0.0240*	*0.0240*
4100-1282	*4*	*8 SW, 16RED/YEL LED MODULE*	*0.0000*	*0.0000*	*0.0240*	*0.0960*
4100-1284	*31*	*8 SW, 16 RED/GREEN LED MODULE*	*0.0000*	*0.0000*	*0.0240*	*0.7440*
4100-1288	*5*	*64/64 LED/SWITCH CONTROLLER*	*0.0200*	*0.1000*	*0.0200*	*0.1000*
4100-1289	*4*	*EXPANSION 64/64 LED/SW MODULE*	*0.0200*	*0.0800*	*0.0200*	*0.0800*
4009-9601	*4*	*IDNAC REPEATER 120V PLATINUM UL/ULC*	*0.0700*	*0.2800*	*0.0960*	*0.3840*
		Panel Totals		**2.1760**		**12.5380**
IDNet Addressable Devices (SLC)						
4099-9004	*30*	*ADDRESSABLE SINGLE ACTION MANUAL STATION* *				
4090-9001	*37*	*IDNET SUPERVISED IAM* *				
4090-9002	*25*	*IDNET RELAY IAM* *				
4090-9006	*1*	*SUP RELEASE PERIPH & ENCLOSURE* *				
4090-9118	*45*	*RELAY IDNET 2.1AM W/T SENSE* *				
4098-9714	*290*	*TRUEALARM PHOTO SMOKE SENSOR*				
4098-9717	*3*	*TRUEALARM ION SMOKE SENSOR*				
4098-9733	**7**	**TRUEALARM HEAT SENSOR**				
4098-9755	*47*	*TRUEALARM DUCT SMOKE SENSOR W/O RELAY OUTPUT* *				
4098-9756	*20*	*TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT* *				
4098-9792	**240**	**TRUEALARM SENSOR BASE** *				
4098-9780	*60*	*TRUEALARM 2 WIRE RELAY SENSOR BASE* *				
Miscellaneous Peripheral Devices That Require (Additional) System Power						
4098-9843	*20*	*ENCAPSULATED RELAY PAM-SD*	*0.0000*	*0.0000*	*0.0150*	*0.3000*
4098-9756	*20*	*TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT*	*0.0030*	*0.0600*	*0.0150*	*0.3000*
4098-9860	*60*	*2-WIRE RELAY FOR USE WITH 4098-9780 SENSOR BASE*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
4603-9101	*1*	*SERIAL LCD ANNUNCIATOR*	*0.0650*	*0.0650*	*0.1400*	*0.1400*
2098-9806	*20*	*REMOTE TEST STATION W/ LED AND KEY SWITCH*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
		Peripheral Totals		**0.1250**		**0.7400**
		Added Current for EPS Conversion of 24 to 29 Volt IDNac Devices		**0.0000**		**0.0000**
		RUI Totals **1**		**0.0035**		**0.0035**
		Address Totals **505** **Addresses**		**0.4040**		**0.5050**
		System Totals*: **Standby**		**2.7085**	**Alarm**	**13.7865**

* Device Address current draw included below (See Additional Current Draws):

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".

2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Battery Set #1 (Cabinet/Charger #1)				Standby Current	Standby Total	Alarm Current	Alarm Total
Select ALL Power Supplies on this battery set:							
SPS-1					1.4810		2.7500
					Sub Total **1.4810**		**2.7500**
Additional Current Draws:							
RUI Connected Peripheral Devices	1	x 0.0035			= 0.0035	x 0.0035	= 0.0035
MAPNET/IDNet Device Address Communication Current	187	x 0.000800			= 0.1496	x 0.001000	= 0.1870
					Sub Total **1.6341**		**2.9405**
Spare addressable point capacity	**0%**	0	x 0.0008		= 0.0000	x 0.001	= 0.0000
					Total **1.6341**		**2.9405**
Standby Time =	**24**	Hrs	x 1.6341		= 39.2184	Standby Ah	
Alarm Time =	**5**	Min	0.08333 x 2.9405		= 0.2450	Alarm Ah	
					39.4634		
Additional Spare Battery Capacity =	**0%**			+	0.0000		
					39.4634		
Battery Discharge Factor =	**25%**			+	9.8659		
Minimum Battery Required					**49.3293**		
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.

Battery Set #2 (Cabinet/Charger #2)				Standby Current	Standby Total	Alarm Current	Alarm Total
Select ALL Power Supplies on this battery set:							
XPS-2					0.1350		2.4400
					Sub Total **0.1350**		**2.4400**
Additional Current Draws:							
IDNac Current Boost for 29vdc Regulated Output **					0.0000		0.0000
MAPNET/IDNet Device Address Communication Current	222	x 0.000800			= 0.1776	x 0.001000	= 0.2220
					Sub Total **0.3126**		**2.6620**
Spare addressable point capacity	**0%**	0	x 0.0008		= 0.0000	x 0.001	= 0.0000
					Total **0.3126**		**2.6620**
Standby Time =	**24**	Hrs	x 0.3126		= 7.5024	Standby Ah	
Alarm Time =	**5**	Min	0.08333 x 2.662		= 0.2218	Alarm Ah	
					7.7242		
Additional Spare Battery Capacity =	**0%**			+	0.0000		
					7.7242		
Battery Discharge Factor =	**25%**			+	1.9311		
Minimum Battery Required					**9.6553**		
Battery Supplied	**2081-9274 10AH (2x)**						

Battery Set #3 (Cabinet/Charger #3)				Standby Current	Standby Total	Alarm Current	Alarm Total
Select ALL Power Supplies on this battery set:							
XPS-3					0.1350		3.0640
					Sub Total **0.1350**		**3.0640**
Additional Current Draws:							
MAPNET/IDNet Device Address Communication Current	96	x 0.000800			= 0.0768	x 0.001000	= 0.0960
					Sub Total **0.2118**		**3.1600**
Spare addressable point capacity	**0%**	0	x 0.0008		= 0.0000	x 0.001	= 0.0000
					Total **0.2118**		**3.1600**
Standby Time =	**24**	Hrs	x 0.2118		= 5.0832	Standby Ah	
Alarm Time =	**5**	Min	0.08333 x 3.16		= 0.2633	Alarm Ah	
					5.3465		
Additional Spare Battery Capacity =	**0%**			+	0.0000		
					5.3465		
Battery Discharge Factor =	**25%**			+	1.3366		
Minimum Battery Required					**6.6832**		
Battery Supplied	**2081-9274 10AH (2x)**						

Battery Set #4 (Cabinet/Charger #4)				Standby Current	Standby Total	Alarm Current	Alarm Total
Select ALL Power Supplies on this battery set:							
XPS-4					0.1350		2.3200
					Sub Total **0.1350**		**2.3200**
					Total **0.1350**		**2.3200**
Standby Time =	**24**	Hrs	x 0.2118		= 3.2400	Standby Ah	
Alarm Time =	**5**	Min	0.08333 x 2.32		= 0.1933	Alarm Ah	
					3.4333		
Additional Spare Battery Capacity =	**0%**			+	0.0000		
					3.4333		
Battery Discharge Factor =	**25%**			+	0.8583		
Minimum Battery Required					**4.2917**		
Battery Supplied	**2081-9272 6.2AH (2x)**						

Battery Set #5 (Cabinet/Charger #5)				Standby Current	Standby Total	Alarm Current	Alarm Total
Select ALL Power Supplies on this battery set:							
XPS-5					0.1350		2.3200
					Sub Total **0.1350**		**2.3200**
					Total **0.1350**		**2.3200**
Standby Time =	**24**	Hrs	x 0.2118		= 3.2400	Standby Ah	
Alarm Time =	**5**	Min	0.08333 x 2.32		= 0.1933	Alarm Ah	
					3.4333		
Additional Spare Battery Capacity =	**0%**			+	0.0000		
					3.4333		
Battery Discharge Factor =	**25%**			+	0.8583		
Minimum Battery Required					**4.2917**		
Battery Supplied	**2081-9272 6.2AH (2x)**						

IDNET CHANNEL N2:M1			#N/A	SWITCH SETTINGS								
Address	Device Type	Point Type	Location Description	1	2	3	4	5	6	7	8	9
N2:M1-1	*ADRPUL*	*PULL*	*2:M1-1 1ST FLR AREA A STAIR 1130A*	X							X	ON
N2:M1-2			*SPARE*		X							ON
N2:M1-3	*IAM*	*SO*	*2:M1-3 1ST FLR AREA A STAIR 1130A TAMP*	X	X							ON
N2:M1-4	*PHOTO*	*SMOKE*	*2:M1-4 1ST FLR AREA A ELECT RM 1133*			X					X	ON
N2:M1-5	*ION*	*SMOKE*	*2:M1-5 1ST FL AREA A ELECT RM 1133 PRE*	X		X					X	ON
N2:M1-6	*4009A8*	*SIGNAL*	*2:M1-6 1ST FLR AREA ELECT RM 1133 NAC1*			X	X				X	ON
N2:M1-7	*4009A8*	*SIGNAL*	*2:M1-7 1ST FLR AREA ELECT RM 1133 NAC2*	X	X	X					X	ON
N2:M1-8	*ADRPUL*	*PULL*	*2:M1-8 1ST FLR AREA ELECT RM 1133*				X				X	ON
N2:M1-9	*ADRPUL*	*PULL*	*2:M1-9 1ST FLR AREA A CORR 1140*	X			X				X	ON
N2:M1-10	*PHOTO*	*SMOKE*	*2:M1-10 1ST FLR AREA A CORR 1140*			X		X			X	ON
N2:M1-11	*PHOTO*	*SMOKE*	*2:M1-11 1ST FLR AREA A CORR 1140*	X		X		X			X	ON
N2:M1-12	*PHOTO*	*SMOKE*	*2:M1-12 1ST FLR AREA A ELECT RM 1134*				X	X			X	ON
N2:M1-13	*ION*	*SMOKE*	*2:M1-13 1ST FLR AREA A ELECT RM 1134*	X			X	X			X	ON
N2:M1-14	*ADRPUL*	*PULL*	*2:M1-14 1ST FLR AREA A ELECT RM 1134*			X	X	X			X	ON
N2:M1-15	*IAM*	*WATER*	*2:M1-15 1STFLARE A PUMP 1133B MAIN FLW*	X	X	X	X					ON
N2:M1-16	*IAM*	*SO*	*2:M1-16 1STFLARE A PUMP 1133B TMP MAIN*					X			X	ON
N2:M1-17	*IAM*	*SO*	*2:M1-17 1STFLARE A PUMP 1133B TMP MAIN*	X				X			X	ON
N2:M1-18	*IAM*	*SO*	*2:M1-18 1STFLARE A PUMP 1133B TMP MAIN*				X		X		X	ON
N2:M1-19	*IAM*	*WATER*	*2:M1-19 1STFLARE A PUMP1133B WAT FLW*	X	X				X			ON
N2:M1-20	*IAM*	*SO*	*2:M1-20 1STFLARE A PUMP 1133B TMP MAIN*				X		X		X	ON
N2:M1-21	*IAM*	*SO*	*2:M1-21 1STFLARE A PUMP 1133B TMP MAIN*	X			X		X		X	ON
N2:M1-22	*IAM*	*SO*	*2:M1-22 1STFLARE A PUMP 1133B TMP MAIN*			X	X		X			ON
N2:M1-23	*PHOTO*	*SMOKE*	*2:M1-23 1ST FL AREA A PUMP RM 1133B*	X	X	X			X			ON
N2:M1-24	*ADRPUL*	*PULL*	*2:M1-24 1ST FL AREA A PUMP RM 1133B*					X	X		X	ON
N2:M1-25	*IAM*	*SO*	*2:M1-25 1STFL PUMP RM 1133B TEST HEADER*	X				X	X		X	ON
N2:M1-26	*IAM*	*WATER*	*2:M1-26 1ST FL AREA A PUMP1133B PREACT*			X		X	X		X	ON
N2:M1-27	*PHOTO*	*SMOKE*	*2:M1-27 1ST FL AREA A CORR 1146*	X	X			X	X			ON
N2:M1-28	*ADRPUL*	*PULL*	*2:M1-28 1ST FL AREA A MECH RM 1133A*				X	X	X		X	ON
N2:M1-29	*PHOTO*	*SMOKE*	*2:M1-29 1ST FL AREA A MECH RM 1133A*	X		X	X	X				ON
N2:M1-30	*PHOTO*	*SMOKE*	*2:M1-30 1ST FL AREA A CORR 1146*			X	X	X			X	ON
N2:M1-31			*SPARE*	X	X	X	X	X			X	ON
N2:M1-32	*PHOTO*	*SMOKE*	*2:M1-32 1ST FL AREA A CORR 1146*						X		X	ON
N2:M1-33	*ADRPUL*	*PULL*	*2:M1-33 1ST FL AREA A CORR 1146*	X					X		X	ON
N2:M1-34	*PHOTO*	*SMOKE*	*2:M1-34 1ST FL AREA A CORR 1146*		X				X		X	ON
N2:M1-35	*PHOTO*	*SMOKE*	*2:M1-35 1ST FL AREA A RECEPTION 1135*	X	X				X		X	ON
N2:M1-36	*ADRPUL*	*PULL*	*2:M1-36 1ST FL AREA A LOBBY 1001*			X			X		X	ON
N2:M1-37	*PHOTO*	*SMOKE*	*2:M1-37 1ST FL AREA A CORR 1007*	X		X			X		X	ON
N2:M1-38	*PHOTO*	*SMOKE*	*2:M1-38 1ST FL AREA A CORR 1007*		X	X			X		X	ON
N2:M1-39	*ADRPUL*	*PULL*	*2:M1-39 1ST FL AREA A DINING 1010*	X	X	X			X		X	ON
N2:M1-40	*ADRPUL*	*PULL*	*2:M1-40 1ST FL AREA A LOBBY 1001*			X			X		X	ON
N2:M1-41	*PHOTO*	*SMOKE*	*2:M1-41 1ST FL AREA A LOBBY 1001*	X				X	X		X	ON
N2:M1-42	*PHOTO*	*SMOKE*	*2:M1-42 1ST FL AREA A LOBBY 1001*			X		X	X		X	ON
N2:M1-43	*PHOTO*	*SMOKE*	*2:M1-43 1ST FL AREA A LOBBY 1001*	X	X			X	X		X	ON
N2:M1-44	*ADRPUL*	*PULL*	*2:M1-44 1ST FL AREA A LOBBY 1001*					X	X		X	ON
N2:M1-45	*PHOTO*	*SMOKE*	*2:M1-45 1ST FL AREA A LOBBY 1001*	X				X	X		X	ON
N2:M1-46	*PHOTO*	*SMOKE*	*2:M1-46 1ST FL AREA A CORR 1058*		X	X	X		X		X	ON
N2:M1-47	*PHOTO*	*SMOKE*	*2:M1-47 1ST FL AREA A CORR 1058*	X	X	X	X		X		X	ON
N2:M1-48	*PHOTO*	*SMOKE*	*2:M1-48 1ST FL AREA A LOBBY 1001*					X	X		X	ON
N2:M1-49	*PHOTO*	*SMOKE*	*2:M1-49 1ST FL AREA A WORK AREA 1035*	X				X	X		X	ON
N2:M1-50	*PHOTO*	*SMOKE*	*2:M1-50 1ST FL AREA C WAITING AREA 1029*		X			X	X		X	ON
N2:M1-51	*PHOTO*	*SMOKE*	*2:M1-51 1ST FL AREA B WORK AREA 1035*	X	X			X	X		X	ON
N2:M1-52	*PHOTO*	*SMOKE*	*2:M1-52 1ST FL AREA B BY CONSULT 1042*			X		X	X		X	ON
N2:M1-53	*PHOTO*	*SMOKE*	*2:M1-53 1ST FL AREA B CORR 1062*	X		X		X	X		X	ON
N2:M1-54	*PHOTO*	*SMOKE*	*2:M1-54 1ST FL AREA A CORR 1062*			X		X	X		X	ON
N2:M1-55	*ADRPUL*	*PULL*	*2:M1-55 1ST FL AREA C STAIR 1068A*	X	X	X		X	X		X	ON
N2:M1-56	*ADRPUL*	*PULL*	*2:M1-56 1ST FL AREA C ELEV LOBBY 1004*					X	X		X	ON
N2:M1-57	*HEAT*	*HEAT*	*2:M1-57 BTM OF SHAFT PUB ELEV 1004A*	X				X	X		X	ON
N2:M1-58	*RIAM*	*RRELAY*	*2:M1-58 1ST FL AREA C PUB ELEV DR CNTL*		X			X	X		X	ON
N2:M1-59			*SPARE*	X	X			X	X		X	ON
N2:M1-60	*HEAT*	*HEAT*	*2:M1-60 BTM OF SHAFT SERV ELEV 1061B*			X	X	X	X			ON
N2:M1-61			*SPARE*	X		X	X	X	X		X	ON
N2:M1-62	*IAM*	*SO*	*2:M1-62 1ST FL AREA C STAIR 1068A TAMP*		X	X	X	X	X		X	ON
N2:M1-63	*PHOTO*	*SMOKE*	*2:M1-63 1ST FL PUBLIC ELEV LOBBY 1004*	X	X	X	X	X	X			ON
N2:M1-64	*PHOTO*	*SMOKE*	*2:M1-64 1ST FL AREA C WAITING 1C-5005A*						X		X	ON
N2:M1-65	*HEAT*	*HEAT*	*2:M1-65 BTM OF SHAFT PUB ELEV 1004B*	X						X	X	ON
N2:M1-66			*SPARE*			X				X	X	ON
N2:M1-67			*SPARE*	X	X					X	X	ON
N2:M1-68	*HEAT*	*HEAT*	*2:M1-68 BTM OF SHAFT SERV ELEV 1061A*				X				X	ON
N2:M1-69	*ADRPUL*	*PULL*	*2:M1-69 1ST FL AREA C ELEV LOBBY 1061*	X			X				X	ON
N2:M1-70	*PHOTO*	*SMOKE*	*2:M1-70 1ST FL SERV ELEV LOBBY 1061*		X	X					X	ON
N2:M1-71	*PHOTO*	*SMOKE*	*2:M1-71 1ST FL HALL 1C-5000*	X	X	X					X	ON
N2:M1-72	*PHOTO*	*SMOKE*	*2:M1-72 1ST FL HALL 1C-5002*				X				X	ON
N2:M1-73	*PHOTO*	*SMOKE*	*2:M1-73 1ST FL AREA C CORR 1062*	X			X				X	ON
N2:M1-74	*PHOTO*	*SMOKE*	*2:M1-74 1ST FL HALL 1C-5004*		X		X				X	ON
N2:M1-75	*PHOTO*	*SMOKE*	*2:M1-75 1ST FL AREA C IS RM 1090*	X	X		X				X	ON
N2:M1-76	*PHOTO*	*SMOKE*	*2:M1-76 1ST FL AREA B CORR 1062*			X	X				X	ON
N2:M1-77	*PHOTO*	*SMOKE*	*2:M1-77 1ST FL HALL 1C-5000*	X		X	X				X	ON
N2:M1-78	*PHOTO*	*SMOKE*	*2:M1-78 1ST FL ALCOVE 1C-5005*			X	X	X			X	ON
N2:M1-79	*ADRPUL*	*PULL*	*2:M1-79 1ST FL NURSE STA 1C-5006A*	X	X	X	X				X	ON
N2:M1-80	*PHOTO*	*SMOKE*	*2:M1-80 1ST FL HALL 1C-5004*					X	X		X	ON
N2:M1-81			*SPARE*	X					X		X	ON
N2:M1-82			*SPARE*			X			X		X	ON
N2:M1-83	*IAM*	*SUPERV*	*2:M1-83 1ST FL AREA A RM 1133B PUMP RUN*	X	X			X	X		X	ON
N2:M1-84	*IAM*	*SUPERV*	*2:M1-84 1ST FL AREA A RM 1133B PHA REV*			X		X	X		X	ON
N2:M1-85	*IAM*	*SUPERV*	*2:M1-85 1ST FL AREA A RM 1133B PWR LOSS*	X		X		X	X		X	ON
N2:M1-86	*IAM*	*TROUBLE*	*2:M1-86 1ST FL AREA A RM 1133B PUMP TBL*			X	X		X		X	ON
N2:M1-87			*SPARE*	X	X	X			X		X	ON
N2:M1-88			*SPARE*				X	X	X		X	ON
N2:M1-89			*SPARE*	X			X	X	X		X	ON
N2:M1-90			*SPARE*		X		X	X	X		X	ON
N2:M1-91	*RIAM*	*RELAY*	*2:M1-91 1ST FLR AREA A ELEC RM 1133*	X	X		X	X	X		X	ON
N2:M1-92			*SPARE*			X	X	X	X		X	ON
N2:M1-93	*TRIAM*	*UTILITY*	*2:M1-93 1ST FLR AREA A PUMP RM 1133B*	X		X	X	X	X		X	ON
N2:M1-94	*PHOTO*	*SDUCT*	*2:M1-94 1ST FL AREA A PUMP RM 1133B*		X	X	X	X	X		X	ON
N2:M1-95	*PHOTO*	*SDUCT*	*2:M1-95 1ST FLR AREA A MECH RM 1133A*	X	X	X	X	X	X		X	ON
N2:M1-96	*TRIAM*	*UTILITY*	*2:M1-96 1ST FLR AREA A MECH RM 1133A*						X	X	X	ON
N2:M1-97	*TRIAM*	*UTILITY*	*2:M1-97 1ST FLR AREA RECEPTION 1135*	X					X	X	X	ON
N2:M1-98					X				X	X	X	ON
N2:M1-99	*RIAM*	*RELAY*	*2:M1-99 1ST FLR AREA A DINING 1010*	X	X				X	X	X	ON
N2:M1-100	*PHOTO*	*SDUCT*	*2:M1-100 1ST FLR AREA A DINING 1010*			X			X	X	X	ON
N2:M1-101	*RIAM*	*RELAY*	*2:M1-101 1ST FL AREA A STRG 1006*	X		X			X	X	X	ON
N2:M1-102			*SPARE*		X	X			X	X	X	ON
N2:M1-103	*RIAM*	*RELAY*	*2:M1-103 1ST FLR AREA A STRG 1006*	X	X	X			X	X	X	ON
N2:M1-104	*PHOTO*	*SMOKE*	*2:M1-104 1ST FLR AREA A FIRE CMD CNTR*				X		X	X	X	ON
N2:M1-105			*SPARE*	X			X		X	X	X	ON
N2:M1-106	*PHOTO*	*SDUCT*	*2:M1-106 1ST FLR AREA B CONSULT 1046*		X		X		X	X	X	ON
N2:M1-107	*PHOTO*	*SDUCT*	*2:M1-107 1ST FLR AREA B ELEV LOBBY 1061*	X	X		X		X	X	X	ON
N2:M1-108	*RIAM*	*RELAY*	*2:M1-108 1ST FLR AREA B ELEV LOBBY 1061*			X	X		X	X	X	ON
N2:M1-109	*RIAM*	*RELAY*	*2:M1-109 1ST FLR AREA B CORR 1062*	X		X	X		X	X	X	ON
N2:M1-110	*PHOTO*	*SDUCT*	*2:M1-110 1ST FLR AREA B CORR 1062*			X	X		X	X	X	ON
N2:M1-111	*TRIAM*	*UTILITY*	*2:M1-111 1ST FLR AREA B STRSS TEST 1091*	X	X	X	X		X	X	X	ON
N2:M1-112	*PHOTO*	*SDUCT*	*2:M1-112 1ST FLR AREA B STRSS TEST 1091*					X	X	X	X	ON
N2:M1-113			*SPARE*	X				X	X	X	X	ON
N2:M1-114			*SPARE*		X			X	X	X	X	ON
N2:M1-115	*RIAM*	*RELAY*	*2:M1-115 1ST FLR AREA STRSS TEST 1091*	X	X			X	X	X	X	ON
N2:M1-116	*PHOTO*	*SDUCT*	*2:M1-116 1ST FLR AREA STRSS TEST 1091*			X		X	X	X	X	ON
N2:M1-117	*RIAM*	*RELAY*	*2:M1-117 1ST FLR AREA B I.S. RM 1090*	X		X		X	X	X	X	ON
N2:M1-118	*PHOTO*	*SDUCT*	*2:M1-118 1ST FLR AREA B I.S. RM 1090*		X	X		X	X	X	X	ON
N2:M1-119	*RIAM*	*RELAY*	*2:M1-119 1ST FLR AREA B LAB 1097*	X	X	X		X	X	X	X	ON
N2:M1-120			*SPARE*				X	X	X	X	X	ON
N2:M1-121	*TRIAM*	*UTILITY*	*2:M1-121 1ST FLR AREA B SUPR 1044*	X			X	X	X	X	X	ON
N2:M1-122	*PHOTO*	*SDUCT*	*2:M1-122 1ST FLR AREA B SUPR 1044*		X		X	X	X	X	X	ON
N2:M1-123	*TRIAM*	*UTILITY*	*2:M1-123 1ST FL AREA C CONSULT1042*	X	X		X	X	X	X	X	ON
N2:M1-124	*PHOTO*	*SDUCT*	*2:M1-124 1ST FL AREA C CONSULT1042*			X	X	X	X	X	X	ON
N2:M1-125	*RIAM*	*RELAY*	*2:M1-125 1ST FL AREA C PBC RM 1039*	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.

IDNET CHANNEL N2:M1			#N/A	SWITCH SETTINGS								
Address			Location Description	1	2	3	4	5	6	7	8	9
N2:M1-126	*PHOTO*	*SDUCT*	*2:M1-126 1ST FL AREA C PBC RM 1039*		X	X	X	X	X		X	ON
N2:M1-127	*RIAM*	*RELAY*	*2:M1-127 1ST FL AREA C PBX 1022A*	X	X	X	X	X	X			ON
N2:M1-128	*PHOTO*	*SDUCT*	*2:M1-128 1ST FL AREA C PBX 1022A*							X	X	ON
N2:M1-129	*RIAM*	*RELAY*	*2:M1-129 1ST FL AREAC FAM WAITING1020*	X						X	X	ON
N2:M1-130	*PHOTO*	*SDUCT*	*2:M1-130 1ST FL AREAC FAM WAITING1020*		X					X	X	ON
N2:M1-131			*SPARE*	X	X					X	X	ON
N2:M1-132			*SPARE*			X				X	X	ON
N2:M1-133			*SPARE*	X		X				X	X	ON
N2:M1-134			*SPARE*		X	X				X	X	ON
N2:M1-135	*RPHOTO*	*SDUCT*	*2:M1-135 1FL AREA A AHU-06-A SUPP133A*	X	X	X				X	X	ON
N2:M1-136	*RPHOTO*	*SDUCT*	*2:M1-136 1FL AREA A AHU-06-A RET133A*				X			X	X	ON
N2:M1-137	*PHOTO*	*SDUCT*	*2:M1-137 1ST FL AREA A CORR 1005*	X			X			X	X	ON
N2:M1-138	*RIAM*	*RELAY*	*2:M1-138 1ST FL AREA A CORR 1005*		X		X			X	X	ON
N2:M1-139	*PHOTO*	*SDUCT*	*2:M1-139 1ST FL AREA A CORR 1005*	X	X		X			X	X	ON
N2:M1-140	*RIAM*	*RELAY*	*2:M1-140 1ST FL AREA A CORR 1005*			X	X			X	X	ON
N2:M1-141	*RIAM*	*RELAY*	*2:M1-141 1ST FLR AREA A CORR 1007*	X		X	X			X	X	ON
N2:M1-142	*IAM*	*SO*	*2:M1-142 1ST FLR AREA A EAST. CORR 1140*		X	X	X			X	X	ON
N2:M1-143	*IAM*	*SO*	*2:M1-143 1ST FLR AREA A WEST CORR 1140*	X	X	X	X			X	X	ON
N2:M1-144			*SPARE*					X		X	X	ON
N2:M1-145	*PHOTO*	*SMOKE*	*2:M1-145 1ST FL AREA A WAITING 1026*	X				X		X	X	ON
N2:M1-146	*PHOTO*	*SMOKE*	*2:M1-146 1ST FL AREA A WAITING 1026*		X			X		X	X	ON
N2:M1-147	*PHOTO*	*SMOKE*	*2:M1-147 1ST FL AREA A RECEPTION 1025*	X	X			X		X	X	ON
N2:M1-148	*PHOTO*	*SMOKE*	*2:M1-148 1ST FL AREA A BY CONSULT 1037*			X		X		X	X	ON
N2:M1-149	*PHOTO*	*SMOKE*	*2:M1-149 1ST FL AREA A WAITING 1048*	X		X		X		X	X	ON
N2:M1-150	*PHOTO*	*SMOKE*	*2:M1-150 1ST FL AREA A CORR 1057*		X	X		X		X	X	ON
N2:M1-151	*PHOTO*	*SMOKE*	*2:M1-151 1ST FL AREA A CORR 1057*	X	X	X		X		X	X	ON
N2:M1-152	*PHOTO*	*SMOKE*	*2:M1-152 1ST FL AREA A RECEPTION 1025*				X	X		X	X	ON
N2:M1-153	*IAM*	*SUPERV*	*2:M1-153 1STFLAREA A PUMP1133B TMP PRE*	X			X	X		X	X	ON
N2:M1-154	*IAM*	*SUPERV*	*2:M1-154 1STFLAREA A PUMP 1133B LOWAIR*		X		X	X		X	X	ON
N2:M1-155	*IAM*	*SUPERV*	*2:M1-155 1STFLAREA A PUMP1133B TMP WET*	X

TMCA NODE 2 4100es FACP

Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
Panel Equipment						
4100-9111	*1*	*4100 CONFIG. DOMESTIC 120V*	*0.3730*	*0.3730*	*0.4700*	*0.4700*
4100-5101	*4*	*EXPANSION PWR SUPPLY (XPS) - 120VAC 60HZ*	*0.0500*	*0.2000*	*0.0500*	*0.2000*
4100-9621	*1*	*BASIC AUDIO WITH MICROPHONE - DIGITAL*	*0.0750*	*0.0750*	*0.0820*	*0.0820*
4100-1326	*4*	*DIGITAL FLEX 50W AMP W/3 NACS - 25V*	*0.0850*	*0.3400*	*2.2700*	*9.0800*
4100-1240	*1*	*AUXILIARY AUDIO INPUT BOARD*	*0.0100*	*0.0100*	*0.0100*	*0.0100*
4100-1242	*1*	*MESSAGE EXPANSION BOARD - 32 MINUTES*	*0.0020*	*0.0020*	*0.0170*	*0.0170*
4100-1270	*1*	*MASTER TELEPHONE, PHONE CONTROL*	*0.0800*	*0.0800*	*0.1400*	*0.1400*
4100-1272	*3*	*EXPANSION PHONE CONTROLLER*	*0.0800*	*0.2400*	*0.1400*	*0.4200*
4100-3101	*3*	*IDNET MODULE, UP TO 250 POINTS* *	*0.0750*	*0.2250*	*0.1150*	*0.3450*
4100-6014	*1*	*NETWORK IF CARD, WIRED*	*0.0460*	*0.0460*	*0.0460*	*0.0460*
4100-6056	*2*	*NETWORK MEDIA CARD WIRED*	*0.0550*	*0.1100*	*0.0550*	*0.1100*
4100-3206	*1*	*8 RELAYS - 3 AMP*	*0.0150*	*0.0150*	*0.1900*	*0.1900*
4100-1254	*1*	*2 CHANNEL AUDIO OPERATOR INTERFACE*	*0.0000*	*0.0000*	*0.0240*	*0.0240*
4100-1282	*4*	*8 SW, 16RED/YEL LED MODULE*	*0.0000*	*0.0000*	*0.0240*	*0.0960*
4100-1284	*31*	*8 SW, 16 RED/GREEN LED MODULE*	*0.0000*	*0.0000*	*0.0240*	*0.7440*
4100-1288	*5*	*64/64 LED/SWITCH CONTROLLER*	*0.0200*	*0.1000*	*0.0200*	*0.1000*
4100-1289	*4*	*EXPANSION 64/64 LED/SW MODULE*	*0.0200*	*0.0800*	*0.0200*	*0.0800*
4009-9601	*4*	*IDNAC REPEATER 120V PLATINUM UL/ULC*	*0.0700*	*0.2800*	*0.0960*	*0.3840*
		Panel Totals		**2.1760**		**12.5380**
IDNet Addressable Devices (SLC)						
4099-9004	*30*	*ADDRESSABLE SINGLE ACTION MANUAL STATION* *				
4090-9001	*37*	*IDNET SUPERVISED IAM* *				
4090-9002	*25*	*IDNET RELAY IAM* *				
4090-9006	*1*	*SUP RELEASE PERIPH & ENCLOSURE* *				
4090-9118	*45*	*RELAY IDNET 2.1AM W/T SENSE* *				
4098-9714	*290*	*TRUEALARM PHOTO SMOKE SENSOR*				
4098-9717	*3*	*TRUEALARM ION SMOKE SENSOR*				
4098-9733	**5**	**TRUEALARM HEAT SENSOR**				
4098-9755	*47*	*TRUEALARM DUCT SMOKE SENSOR W/O RELAY OUTPUT* *				
4098-9756	**22**	**TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT** *				
4098-9792	**238**	**TRUEALARM SENSOR BASE** *				
4098-9780	*60*	*TRUEALARM 2 WIRE RELAY SENSOR BASE* *				
Miscellaneous Peripheral Devices That Require (Additional) System Power						
4098-9843	**22**	**ENCAPSULATED RELAY PAM-SD**	**0.0000**	**0.0000**	**0.0150**	**0.3300**
4098-9756	**22**	**TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT**	**0.0030**	**0.0660**	**0.0150**	**0.3300**
4098-9856	*60*	*2-WIRE RELAY FOR USE WITH 4098-9780 SENSOR BASE*	*0.0000*	*0.0000*	*0.0000*	*0.0000*
4603-9101	*1*	*SERIAL LCD ANNUNCIATOR*	*0.0650*	*0.0650*	*0.1400*	*0.1400*
2098-9806	**22**	**REMOTE TEST STATION W/ LED AND KEY SWITCH**	**0.0000**	**0.0000**	**0.0000**	**0.0000**
		Peripheral Totals		**0.1310**		**0.8000**
		Added Current for EPS Conversion of 24 to 29 Volt IDNac Devices		**0.0000**		**0.0000**
		RUI Totals	**1**	**0.0035**		**0.0035**
		Address Totals	**505 Addresses**	**0.4040**		**0.5050**
		System Totals*:	**Standby**	**2.7145**	**Alarm**	**13.8465**

2 2

* Device Address current draw included below (See Additional Current Draws):

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".

2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Battery Set #1 (Cabinet/Charger #1) Select ALL Power Supplies on this battery set:				Standby Current	Standby Total	Alarm Current	Alarm Total
SPS-1					1.4870		2.8100
				Sub Total	**1.4870**		**2.8100**
Additional Current Draws:							
RUI Connected Peripheral Devices	1	x 0.0035			= 0.0035	x 0.0035	= 0.0035
MAPNET/IDNet Device Address Communication Current	187	x 0.000800			= 0.1496	x 0.001000	= 0.1870
				Sub Total	**1.6401**		**3.0065**
Spare addressable point capacity	0%	0	x 0.0008		= 0.0000	x 0.001	= 0.0000
				Total	**1.6401**		**3.0065**
Standby Time = 24 Hrs			x 1.6401		= 39.3624	Standby Ah	
Alarm Time = 5 Min			0.08333 x 3.0005		= 0.2500	Alarm Ah	
					39.6124		
Additional Spare Battery Capacity = 0%				+	0.0000		
					39.6124		
Battery Discharge Factor = 25%				+	9.9031		
Minimum Battery Required 2081-9296 50AH (2x)					**49.5156**		
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.

Battery Set #2 (Cabinet/Charger #2) Select ALL Power Supplies on this battery set:				Standby Current	Standby Total	Alarm Current	Alarm Total
XPS-2					0.1350		2.4400
				Sub Total	**0.1350**		**2.4400**
Additional Current Draws:							
IDNac Current Boost for 29vdc Regulated Output **					0.0000		0.0000
MAPNET/IDNet Device Address Communication Current	222	x 0.000800			= 0.1776	x 0.001000	= 0.2220
				Sub Total	**0.1126**		**2.6620**
Spare addressable point capacity	0%	0	x 0.0008		= 0.0000	x 0.001	= 0.0000
				Total	**0.1126**		**2.6620**
Standby Time = 24 Hrs			x 0.3126		= 7.5024	Standby Ah	
Alarm Time = 5 Min			0.08333 x 2.662		= 0.2218	Alarm Ah	
					7.7242		
Additional Spare Battery Capacity = 0%				+	0.0000		
					7.7242		
Battery Discharge Factor = 25%				+	1.9311		
Minimum Battery Required 2081-9274 10AH (2x)					**9.6553**		
Battery Supplied 2081-9274 10AH (2x)							

Battery Set #3 (Cabinet/Charger #3) Select ALL Power Supplies on this battery set:				Standby Current	Standby Total	Alarm Current	Alarm Total
XPS-3					0.1350		3.0640
				Sub Total	**0.1350**		**3.0640**
Additional Current Draws:							
MAPNET/IDNet Device Address Communication Current	96	x 0.000800			= 0.0768	x 0.001000	= 0.0960
				Sub Total	**0.2118**		**3.1600**
Spare addressable point capacity	0%	0	x 0.0008		= 0.0000	x 0.001	= 0.0000
				Total	**0.2118**		**3.1600**
Standby Time = 24 Hrs			x 0.2118		= 5.0832	Standby Ah	
Alarm Time = 5 Min			0.08333 x 3.16		= 0.2633	Alarm Ah	
					5.3465		
Additional Spare Battery Capacity = 0%				+	0.0000		
					5.3465		
Battery Discharge Factor = 25%				+	1.3366		
Minimum Battery Required 2081-9274 10AH (2x)					**6.6832**		
Battery Supplied 2081-9274 10AH (2x)							

Battery Set #4 (Cabinet/Charger #4) Select ALL Power Supplies on this battery set:				Standby Current	Standby Total	Alarm Current	Alarm Total
XPS-4					0.1350		2.3200
				Sub Total	**0.1350**		**2.3200**
				Total	**0.1350**		**2.3200**
Standby Time = 24 Hrs			x 0.2118		= 3.2400	Standby Ah	
Alarm Time = 5 Min			0.08333 x 2.32		= 0.1933	Alarm Ah	
					3.4333		
Additional Spare Battery Capacity = 0%				+	0.0000		
					3.4333		
Battery Discharge Factor = 25%				+	0.8583		
Minimum Battery Required 2081-9272 6.2AH (2x)					**4.2917**		
Battery Supplied 2081-9272 6.2AH (2x)							

Battery Set #5 (Cabinet/Charger #5) Select ALL Power Supplies on this battery set:				Standby Current	Standby Total	Alarm Current	Alarm Total
XPS-5					0.1350		2.3200
				Sub Total	**0.1350**		**2.3200**
				Total	**0.1350**		**2.3200**
Standby Time = 24 Hrs			x 0.2118		= 3.2400	Standby Ah	
Alarm Time = 5 Min			0.08333 x 2.32		= 0.1933	Alarm Ah	
					3.4333		
Additional Spare Battery Capacity = 0%				+	0.0000		
					3.4333		
Battery Discharge Factor = 25%				+	0.8583		
Minimum Battery Required 2081-9272 6.2AH (2x)					**4.2917**		
Battery Supplied 2081-9272 6.2AH (2x)							

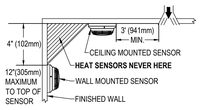
IDNET CHANNEL N2:M1			#N/A	SWITCH SETTINGS								
Address	Device Type	Point Type	Location Description	1	2	3	4	5	6	7	8	9
N2:M1-1	*ADRPUL*	*PULL*	*2:M1-1 1ST FLR AREA A STAIR 1130A*	X								ON
N2:M1-2			*SPARE*		X							ON
N2:M1-3	*IAM*	*SO*	*2:M1-3 1ST FLR AREA A STAIR 1130A TAMP*	X	X							ON
N2:M1-4	*PHOTO*	*SMOKE*	*2:M1-4 1ST FLR AREA A ELECT RM 1133*			X						ON
N2:M1-5	*ION*	*SMOKE*	*2:M1-5 1ST FL AREA A ELECT RM 1133 PRE*	X		X						ON
N2:M1-6	*4009A8*	*SIGNAL*	*2:M1-6 1ST FLR AREA ELECT RM 1133 NAC1*		X	X						ON
N2:M1-7	*4009A8*	*SIGNAL*	*2:M1-7 1ST FLR AREA ELECT RM 1133 NAC2*	X	X	X						ON
N2:M1-8	*ADRPUL*	*PULL*	*2:M1-8 1ST FLR AREA ELECT RM 1133*				X					ON
N2:M1-9	*ADRPUL*	*PULL*	*2:M1-9 1ST FLR AREA A CORR 1140*	X			X					ON
N2:M1-10	*PHOTO*	*SMOKE*	*2:M1-10 1ST FLR AREA A CORR 1140*		X		X					ON
N2:M1-11	*PHOTO*	*SMOKE*	*2:M1-11 1ST FLR AREA A CORR 1140*	X	X		X					ON
N2:M1-12	*PHOTO*	*SMOKE*	*2:M1-12 1ST FLR AREA A ELECT RM 1134*			X	X					ON
N2:M1-13	*ION*	*SMOKE*	*2:M1-13 1ST FLR AREA A ELECT RM 1134*	X		X	X					ON
N2:M1-14	*ADRPUL*	*PULL*	*2:M1-14 1ST FLR AREA A ELECT RM 1134*		X	X	X					ON
N2:M1-15	*IAM*	*WATER*	*2:M1-15 1STFLRAREA A PUMP 1133B MAIN FLW*	X	X	X	X					ON
N2:M1-16	*IAM*	*SO*	*2:M1-16 1STFLRAREA A PUMP 1133B TMP MAIN*					X				ON
N2:M1-17	*IAM*	*SO*	*2:M1-17 1STFLRAREA A PUMP 1133B TMP MAIN*	X			X					ON
N2:M1-18	*IAM*	*SO*	*2:M1-18 1STFLRAREA A PUMP 1133B TMP MAIN*			X		X				ON
N2:M1-19	*IAM*	*WATER*	*2:M1-19 1STFLRAREA A PUMP1133B WAT FLW*	X	X		X					ON
N2:M1-20	*IAM*	*SO*	*2:M1-20 1STFLRAREA A PUMP 1133B TMP MAIN*			X		X				ON
N2:M1-21	*IAM*	*SO*	*2:M1-21 1STFLRAREA A PUMP 1133B TMP MAIN*	X		X		X				ON
N2:M1-22	*IAM*	*SO*	*2:M1-22 1STFLRAREA A PUMP 1133B TMP MAIN*		X	X		X				ON
N2:M1-23	*PHOTO*	*SMOKE*	*2:M1-23 1ST FL AREA A PUMP RM 1133B*	X	X	X		X				ON
N2:M1-24	*ADRPUL*	*PULL*	*2:M1-24 1ST FL AREA A PUMP RM 1133B*				X	X				ON
N2:M1-25	*IAM*	*SO*	*2:M1-25 1STFL PUMP RM 1133B TEST HEADER*	X			X	X				ON
N2:M1-26	*IAM*	*WATER*	*2:M1-26 1ST FL AREA A PUMP1133B PREACT*		X		X	X				ON
N2:M1-27	*PHOTO*	*SMOKE*	*2:M1-27 1ST FL AREA A CORR 1146*	X	X		X	X				ON
N2:M1-28	*ADRPUL*	*PULL*	*2:M1-28 1ST FL AREA A MECH RM 1133A*			X	X	X				ON
N2:M1-29	*PHOTO*	*SMOKE*	*2:M1-29 1ST FL AREA A MECH RM 1133A*	X		X	X	X				ON
N2:M1-30	*PHOTO*	*SMOKE*	*2:M1-30 1ST FL AREA A CORR 1146*			X	X	X				ON
N2:M1-31			*SPARE*	X	X	X	X	X				ON
N2:M1-32	*PHOTO*	*SMOKE*	*2:M1-32 1ST FL AREA A CORR 1146*						X			ON
N2:M1-33	*ADRPUL*	*PULL*	*2:M1-33 1ST FL AREA A CORR 1146*	X					X			ON
N2:M1-34	*PHOTO*	*SMOKE*	*2:M1-34 1ST FL AREA A CORR 1146*		X				X			ON
N2:M1-35	*PHOTO*	*SMOKE*	*2:M1-35 1ST FL AREA A RECEPTION 1135*	X	X				X			ON
N2:M1-36	*ADRPUL*	*PULL*	*2:M1-36 1ST FL AREA A LOBBY 1001*		X				X			ON
N2:M1-37	*PHOTO*	*SMOKE*	*2:M1-37 1ST FL AREA A CORR 1007*	X		X			X			ON
N2:M1-38	*PHOTO*	*SMOKE*	*2:M1-38 1ST FL AREA A CORR 1007*		X	X			X			ON
N2:M1-39	*ADRPUL*	*PULL*	*2:M1-39 1ST FL AREA A DINING 1010*	X	X	X			X			ON
N2:M1-40	*ADRPUL*	*PULL*	*2:M1-40 1ST FL AREA A LOBBY 1001*				X		X			ON
N2:M1-41	*PHOTO*	*SMOKE*	*2:M1-41 1ST FL AREA A LOBBY 1001*	X			X		X			ON
N2:M1-42	*PHOTO*	*SMOKE*	*2:M1-42 1ST FL AREA A LOBBY 1001*			X		X	X			ON
N2:M1-43	*PHOTO*	*SMOKE*	*2:M1-43 1ST FL AREA A LOBBY 1001*	X	X			X	X			ON
N2:M1-44	*ADRPUL*	*PULL*	*2:M1-44 1ST FL AREA A LOBBY 1001*			X	X	X				ON
N2:M1-45	*PHOTO*	*SMOKE*	*2:M1-45 1ST FL AREA A LOBBY 1001*	X		X	X	X				ON
N2:M1-46	*PHOTO*	*SMOKE*	*2:M1-46 1ST FL AREA A CORR 1058*		X	X	X	X				ON
N2:M1-47	*PHOTO*	*SMOKE*	*2:M1-47 1ST FL AREA A CORR 1058*	X	X	X	X	X				ON
N2:M1-48	*PHOTO*	*SMOKE*	*2:M1-48 1ST FL AREA A LOBBY 1001*					X	X			ON
N2:M1-49	*PHOTO*	*SMOKE*	*2:M1-49 1ST FL AREA A WORK AREA 1035*	X				X	X			ON
N2:M1-50	*PHOTO*	*SMOKE*	*2:M1-50 1ST FL AREA C WAITING AREA 1029*		X			X	X			ON
N2:M1-51	*PHOTO*	*SMOKE*	*2:M1-51 1ST FL AREA B WORK AREA 1035*	X	X			X	X			ON
N2:M1-52	*PHOTO*	*SMOKE*	*2:M1-52 1ST FL AREA B BY CONSULT 1042*			X		X	X			ON
N2:M1-53	*PHOTO*	*SMOKE*	*2:M1-53 1ST FL AREA B CORR 1062*	X		X		X	X			ON
N2:M1-54	*PHOTO*	*SMOKE*	*2:M1-54 1ST FL AREA A CORR 1062*			X	X	X	X			ON
N2:M1-55	*ADRPUL*	*PULL*	*2:M1-55 1ST FL AREA C STAIR 1068A*	X	X	X		X	X			ON
N2:M1-56	*ADRPUL*	*PULL*	*2:M1-56 1ST FL AREA C ELEV LOBBY 1004*				X	X	X			ON
N2:M1-57	*HEAT*	*HEAT*	*2:M1-57 BTM OF SHAFT PUB ELEV 1004A*	X			X	X	X			ON
N2:M1-58	*RIAM*	*RRELAY*	*2:M1-58 1ST FL AREA C PUB ELEV DR CNTL*		X		X	X	X			ON
N2:M1-59			*SPARE*	X	X		X	X	X			ON
N2:M1-60	*HEAT*	*HEAT*	*2:M1-60 BTM OF SHAFT SERV ELEV 1061B*			X	X	X	X			ON
N2:M1-61			*SPARE*	X		X	X	X	X			ON
N2:M1-62	*IAM*	*SO*	*2:M1-62 1ST FL AREA C STAIR 1068A TAMP*		X	X	X	X	X			ON
N2:M1-63	*PHOTO*	*SMOKE*	*2:M1-63 1ST FL PUBLIC ELEV LOBBY 1004*	X	X	X	X	X	X			ON
N2:M1-64	*PHOTO*	*SMOKE*	*2:M1-64 1ST FL AREA C WAITING 1C-6005A*						X	X		ON
N2:M1-65	*HEAT*	*HEAT*	*2:M1-65 BTM OF SHAFT PUB ELEV 1004B*	X						X		ON
N2:M1-66			*SPARE*		X					X		ON
N2:M1-67			*SPARE*	X	X					X		ON
N2:M1-68	*HEAT*	*HEAT*	*2:M1-68 BTM OF SHAFT SERV ELEV 1061A*			X				X		ON
N2:M1-69	*ADRPUL*	*PULL*	*2:M1-69 1ST FL AREA C ELEV LOBBY 1061*	X		X				X		ON
N2:M1-70	*PHOTO*	*SMOKE*	*2:M1-70 1ST FL SERV ELEV LOBBY 1061*		X	X				X		ON
N2:M1-71	*PHOTO*	*SMOKE*	*2:M1-71 1ST FL HALL 1C-5000*	X	X	X				X		ON
N2:M1-72	*PHOTO*	*SMOKE*	*2:M1-72 1ST FL HALL 1C-5002*				X			X		ON
N2:M1-73	*PHOTO*	*SMOKE*	*2:M1-73 1ST FL AREA C CORR 1062*	X				X		X		ON
N2:M1-74	*PHOTO*	*SMOKE*	*2:M1-74 1ST FL HALL 1C-5004*			X		X		X		ON
N2:M1-75	*PHOTO*	*SMOKE*	*2:M1-75 1ST FL AREA C IS RM 1090*	X	X		X			X		ON
N2:M1-76	*PHOTO*	*SMOKE*	*2:M1-76 1ST FL AREA B CORR 1062*			X	X			X		ON
N2:M1-77	*PHOTO*	*SMOKE*	*2:M1-77 1ST FL HALL 1C-5000*	X		X	X			X		ON
N2:M1-78	*PHOTO*	*SMOKE*	*2:M1-78 1ST FL ALCOVE 1C-5005*		X	X	X			X		ON
N2:M1-79	*ADRPUL*	*PULL*	*2:M1-79 1ST FL NURSE STA 1C-5006A*	X	X	X	X			X		ON
N2:M1-80	*PHOTO*	*SMOKE*	*2:M1-80 1ST FL HALL 1C-5004*					X		X		ON
N2:M1-81			*SPARE*	X				X		X		ON
N2:M1-82			*SPARE*		X			X		X		ON
N2:M1-83	*IAM*	*SUPERV*	*2:M1-83 1ST FL AREA A RM 1133B PUMP RUN*	X	X			X		X		ON
N2:M1-84	*IAM*	*SUPERV*	*2:M1-84 1ST FL AREA A RM 1133B PHA REV*			X		X		X		ON
N2:M1-85	*IAM*	*SUPERV*	*2:M1-85 1ST FL AREA A RM 1133B PWR LOSS*	X		X		X		X		ON
N2:M1-86	*IAM*	*TROUBLE*	*2:M1-86 1ST FL AREA A RM 1133B PUMP TBL*		X	X		X		X		ON
N2:M1-87			*SPARE*	X	X	X		X		X		ON
N2:M1-88			*SPARE*				X	X		X		ON
N2:M1-89			*SPARE*	X			X	X		X		ON
N2:M1-90			*SPARE*		X		X	X		X		ON
N2:M1-91	*RIAM*	*RELAY*	*2:M1-91 1ST FLR AREA A ELEC RM 1133*	X	X		X	X		X		ON
N2:M1-92			*SPARE*			X	X	X		X		ON
N2:M1-93	*TRIAM*	*UTILITY*	*2:M1-93 1ST FLR AREA A PUMP RM 1133B*		X		X	X		X		ON
N2:M1-94	*PHOTO*	*SDUCT*	*2:M1-94 1ST FLR AREA A PUMP RM 1133B*			X	X	X		X		ON
N2:M1-95	*PHOTO*	*SDUCT*	*2:M1-95 1ST FLR AREA A MECH RM 1133A*	X	X	X	X	X		X		ON
N2:M1-96	*TRIAM*	*UTILITY*	*2:M1-96 1ST FLR AREA A MECH RM 1133A*						X	X		ON
N2:M1-97	*TRIAM*	*UTILITY*	*2:M1-97 1ST FLR AREA RECEPTION 1135*	X					X	X		ON
N2:M1-98					X				X	X		ON
N2:M1-99	*RIAM*	*RELAY*	*2:M1-99 1ST FLR AREA A DINING 1010*	X	X				X	X		ON
N2:M1-100	*PHOTO*	*SDUCT*	*2:M1-100 1ST FLR AREA A DINING 1010*			X			X	X		ON
N2:M1-101	*RIAM*	*RELAY*	*2:M1-101 1ST FL AREA A STRG 1006*	X		X			X	X		ON
N2:M1-102			*SPARE*		X	X			X	X		ON
N2:M1-103	*RIAM*	*RELAY*	*2:M1-103 1ST FLR AREA A STRG 1006*	X	X	X			X	X		ON
N2:M1-104	*PHOTO*	*SMOKE*	*2:M1-104 1ST FLR AREA A FIRE CMD CNTR*				X	X	X			ON
N2:M1-105			*SPARE*	X			X	X	X			ON
N2:M1-106	*PHOTO*	*SDUCT*	*2:M1-106 1ST FLR AREA B CONSULT 1046*		X		X	X	X			ON
N2:M1-107	*PHOTO*	*SDUCT*	*2:M1-107 1ST FLR AREA B ELEV LOBBY 1061*	X	X		X	X	X			ON
N2:M1-108	*RIAM*	*RELAY*	*2:M1-108 1ST FLR AREA B ELEV LOBBY 1061*			X	X	X	X			ON
N2:M1-109	*RIAM*	*RELAY*	*2:M1-109 1ST FLR AREA B CORR 1062*	X		X	X	X	X			ON
N2:M1-110	*PHOTO*	*SDUCT*	*2:M1-110 1ST FLR AREA B CORR 1062*		X	X	X	X	X			ON
N2:M1-111	*TRIAM*	*UTILITY*	*2:M1-111 1ST FLR AREA B STRSS TEST 1091*	X	X	X	X	X	X			ON
N2:M1-112	*PHOTO*	*SDUCT*	*2:M1-112 1ST FLR AREA B STRSS TEST 1091*				X	X	X			ON
N2:M1-113			*SPARE*	X			X	X	X			ON
N2:M1-114			*SPARE*		X		X	X	X			ON
N2:M1-115	*RIAM*	*RELAY*	*2:M1-115 1ST FLR AREA STRSS TEST 1091*	X	X		X	X	X			ON
N2:M1-116	*PHOTO*	*SDUCT*	*2:M1-116 1ST FLR AREA STRSS TEST 1091*			X	X	X	X			ON
N2:M1-117	*RIAM*	*RELAY*	*2:M1-117 1ST FLR AREA B I.S. RM 1090*	X		X	X	X	X			ON
N2:M1-118	*PHOTO*	*SDUCT*	*2:M1-118 1ST FLR AREA B I.S. RM 1090*		X	X	X	X	X			ON
N2:M1-119	*RIAM*	*RELAY*	*2:M1-119 1ST FLR AREA B LAB 1097*	X	X	X		X	X			ON
N2:M1-120			*SPARE*				X	X	X			ON
N2:M1-121	*TRIAM*	*UTILITY*	*2:M1-121 1ST FLR AREA B SUPR 1044*	X			X	X	X			ON
N2:M1-122	*PHOTO*	*SDUCT*	*2:M1-122 1ST FLR AREA B SUPR 1044*		X		X	X	X			ON
N2:M1-123	*TRIAM*	*UTILITY*	*2:M1-123 1ST FL AREA C CONSULT1042*	X	X		X	X	X			ON
N2:M1-124	*PHOTO*	*SDUCT*	*2:M1-124 1ST FL AREA C CONSULT1042*			X	X	X	X			ON
N2:M1-125	*RIAM*	*RELAY*	*2:M1-125 1ST FL AREA C PBC RM 1039*	X		X	X	X	X			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.

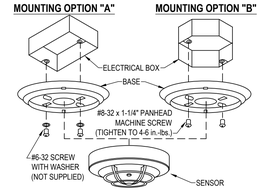
IDNET CHANNEL N2:M1			#N/A	SWITCH SETTINGS								
Address			Location Description	1	2	3	4	5	6	7	8	9
N2:M1-126	*PHOTO*	*SDUCT*	*2:M1-126 1ST FL AREA C PBC RM 1039*		X	X	X	X	X			ON
N2:M1-127	*RIAM*	*RELAY*	*2:M1-127 1ST FL AREA C PBX 1022A*	X	X	X	X	X	X			ON
N2:M1-128	*PHOTO*	*SDUCT*	*2:M1-128 1ST FL AREA C PBX 1022A*							X		ON
N2:M1-129	*RIAM*	*RELAY*	*2:M1-129 1ST FL AREAC FAM WAITING1020*	X						X		ON
N2:M1-130	*PHOTO*	*SDUCT*	*2:M1-130 1ST FL AREAC FAM WAITING1020*		X					X		ON
N2:M1-131			*SPARE*	X	X					X		ON
N2:M1-132			*SPARE*			X				X		ON
N2:M1-133			*SPARE*	X						X		ON
N2:M1-134			*SPARE*		X	X				X		ON
N2:M1-135	*RPHOTO*	*SDUCT*	*2:M1-135 1FL AREA A AHU-06-A SUP1133A*	X	X	X				X		ON
N2:M1-136	*RPHOTO*	*SDUCT*	*2:M1-136 1FL AREA A AHU-06-A RET1133A*				X			X		ON
N2:M1-137	*PHOTO*	*SDUCT*	*2:M1-137 1ST FL AREA A CORR 1005*	X			X			X		ON
N2:M1-138	*RIAM*	*RELAY*	*2:M1-138 1ST FL AREA A CORR 1005*		X		X			X		ON
N2:M1-139	*PHOTO*	*SDUCT*	*2:M1-139 1ST FL AREA A CORR 1005*	X	X		X			X		ON
N2:M1-140	*RIAM*	*RELAY*	*2:M1-140 1ST FL AREA A CORR 1005*			X	X			X		ON
N2:M1-141	*RIAM*	*RELAY*	*2:M1-141 1ST FLR AREA A CORR 1007*	X		X	X			X		ON
N2:M1-142	*IAM*	*SO*	*2:M1-142 1ST FLR AREA A EAST. CORR 1140*		X	X	X			X		ON
N2:M1-143	*IAM*	*SO*	*2:M1-143 1ST FLR AREA A WEST CORR 1140*	X	X	X	X			X		ON
N2:M1-144			*SPARE*					X		X		ON
N2:M1-145	*PHOTO*	*SMOKE*	*2:M1-145 1ST FL AREA A WAITING 1026*	X				X		X		ON
N2:M1-146	*PHOTO*	*SMOKE*	*2:M1-146 1ST FL AREA A WAITING 1026*		X			X		X		ON
N2:M1-147	*PHOTO*	*SMOKE*	*2:M1-147 1ST FL AREA A RECEPTION 1025*	X	X			X		X		ON
N2:M1-148	*PHOTO*	*SMOKE*	*2:M1-148 1ST FL AREA A BY CONSULT 1037*			X		X		X		ON
N2:M1-149	*PHOTO*	*SMOKE*	*2:M1-149 1ST FL AREA A WAITING 1048*	X		X		X		X		ON
N2:M1-150	*PHOTO*	*SMOKE*	*2:M1-150 1ST FL AREA A CORR 1057*		X	X		X		X		ON
N2:M1-151	*PHOTO*	*SMOKE*	*2:M1-151 1ST FL AREA A CORR 1057*	X	X	X		X		X		ON
N2:M1-152	*PHOTO*	*SMOKE*	*2:M1-152 1ST FL AREA A RECEPTION 1025*				X	X		X		ON
N2:M1-153	*IAM*	*SUPERV*	*2:M1-153 1STFLAREA A PUMP1133B TMP PRE*	X			X	X		X		ON
N2:M1-154	*IAM*	*SUPERV*	*2:M1-154 1STFLAREA A PUMP 1133B LOWAIR*		X		X	X		X		ON
N2:M1-155	*IAM*	*SUPERV*	*2:M1-155 1STFLAREA A PUMP1133B TMP WET*	X	X		X	X		X		ON
N2:M1-156	*IAM*	*SUPERV*	*2:M1-156 1FL AREA A PUMP 1133B TMP MAIN*			X	X	X		X		ON
N2:M1-157	*IAM*	*SUPERV*	*2:M1-157 1STFLAREA A PUMP1133B LA DRY*	X		X	X	X		X		ON
N2:M1-158	*IAM*	*WATER*	*2:M1-158

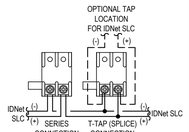
STANDARD SENSOR BASE

SIMPLEX 4098-9792



MOUNTING OPTION "A" **MOUNTING OPTION "B"**





WIRING NOTES

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

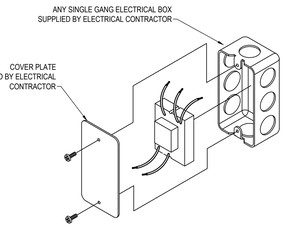
MOUNTING OPTIONS

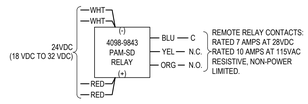
OPTION [1]	DESCRIPTION	NOTE
A	SINGLE GANG BOX, 2-1/8" (54mm) DEEP - FLUSH MOUNT	BY OTHERS
B	4" (102mm) OCTAGONAL BOX, 1-1/2" (38mm) DEEP, MINIMUM - FLUSH MOUNT	BY OTHERS
C	4" (102mm) SQUARE BOX, 1-1/2" DEEP (MIN) W/ SIMPLEX 4098-9832 ADAPTER KIT	BOX BY OTHERS, 4098-9832 ORDERED SEPARATELY
D	4" (102mm)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

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

24VDC POLARIZED RELAY

SIMPLEX 4098-9843 / APOLLO AMERICA PAM-SD





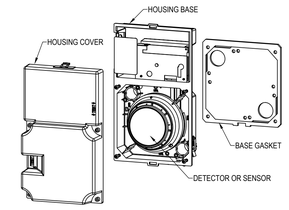
WIRING NOTES

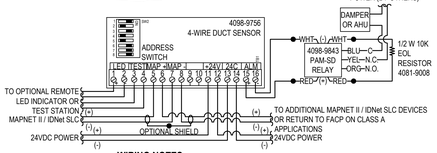
1. MAINTAIN CORRECT POLARITY ON CONNECTIONS.
2. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS. CLASS B APPLICATIONS ONLY.

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

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.

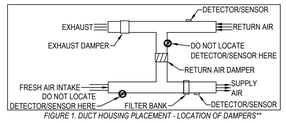


*FIGURE 1. DUCT HOUSING PLACEMENT - LOCATION OF DAMPERS***

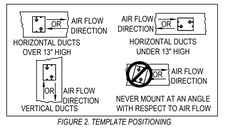


FIGURE 2. TEMPLATE POSITIONING

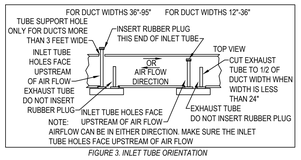


FIGURE 3. INLET TUBE ORIENTATION

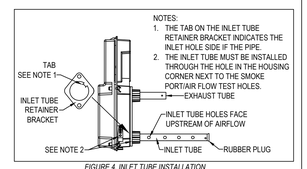


FIGURE 4. INLET TUBE INSTALLATION

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

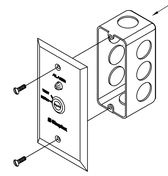
TABLE 1. INLET TUBE SELECTION

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

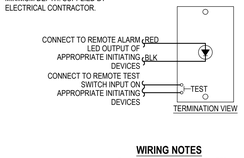
** WHEN PROVIDING CONTROL FOR A SMOKE DAMPER INSTALLED WITHIN AN AIR TRANSFER OPENING IN A WALL, THE DUCT DETECTOR SHALL BE INSTALLED WITHIN 5 FEET HORIZONTALLY OF THE DAMPER.

REMOTE ALARM INDICATOR / KEY SWITCH

SIMPLEX 2098-9806



FLUSH MOUNTING

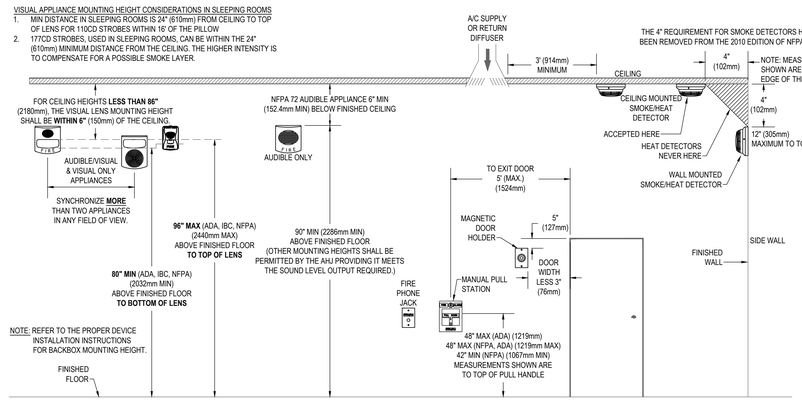


WIRING NOTES

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.

DEVICE MOUNTING HEIGHT REFERENCE

PER NFPA 72



Johnson Controls
DISTRICT 1-418
1001 SOUTH POTOMAC AVE
AURORA, CO 80012
SERVICE: 303-355-0500
PHONE: 303-326-0500
FAX: 303-369-9415

NICET CERTIFICATION INFORMATION
CALE RAUCH
NICET Fire Alarm, III
Certification #151588
Valid Through: 12/01/25
03/12/2024

THE MEDICAL CENTER OF AURORA - SOUTH CATH LAB HVAC DEHUMIDIFICATION

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

Revisions shown with Δ symbol

ISSUE LOG: MARK	DATE	CAD	CHK	DESCRIPTION

FOR PERMIT

DRAWN BY:	CCD
CHECKED BY:	CBR
ISSUE DATE:	3/11/24
JOB #:	
PROJECT #:	419:650461645

JOHNSON CONTROLS © 2024

SYSTEM: **FIRE ALARM SYSTEM**

SHEET: **TYPICAL DEVICE WIRING**

FA-701

FILE PATH: C:\Users\jdunovic\OneDrive - Johnson Controls\Medical Center of Aurora\1501 S Potomac - Aurora South\South Tower - Node 1\42-2nd Dehumidification - 2024 - 650461645FireFA-701.dwg
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LAST PRINTED: 3/12/2024 2:42:07 PM
30" x 42" Arch E1 Size
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RSN: 1800546
Permit #2024-2433248-CT
Sheet 7 of 24

Johnson Controls
14200 E. Exposition Avenue
Aurora, Colorado 80012

www.simplexgrinnell.com

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

Fire Alarm
Product Data Submittal for:

THE MEDICAL CENTER OF AURORA - SOUTH
CATH LAB HVAC DEHUMIDIFICATION
1501 SOUTH POTOMAC STREET
AURORA, COLORADO 80012

Prepared for:

E LIGHT ELECTRIC SERVICES, INC.
361 INVERNESS DRIVE SOUTH, SUITE B
ENGLEWOOD, COLORADO 80112

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

PROJECT:	THE MEDICAL CENTER OF AURORA - SOUTH CATH LAB HVAC DEHUMIDIFICATION
PREPARED FOR:	E LIGHT ELECTRIC SERVICES, INC.

TYPE:	***DESCRIPTION:***
4098-9733	TRUEALARM HEAT SENSOR
4098-9792	TRUEALARM SENSOR BASE
4098-9756	TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT
2098-9806	REMOTE TEST STATION W/ LED AND KEY SWITCH
4098-9855	SAMPLING TUBES 24", PLASTIC
4098-9843	ENCAPSULATED RELAY PAM-SD
4081-9008	EOL, 10K 1/2W

Features

TrueAlarm analog sensing

You can use TrueAlarm analog sensing to digitally transmit analog sensor values with IDNet or MAPNET II two-wire communications.

You can use True Alarm analog sensing with the following Simplex products:

- 4007ES, 4010, 4010ES, 4100ES, and 4100U series fire alarm control units (FACUs), and 4008 series FACUs with reduced feature set.
- 4020, 4100, and 4120 series FACUs, Universal Transponders, and 2120 TrueAlarm CDTs equipped for MAPNET II operation

Features compatible with the FACU

- Peak value logging with accurate analysis of each sensor for individual sensitivity selection
- Sensitivity monitoring meets NFPA 72 sensitivity testing requirements. The automatic individual sensor calibration check verifies sensor integrity
- Automatic environmental compensation, multi-stage alarm operation, and display of sensitivity directly in percent for each foot
- Display and print detailed sensor information in English

Photoelectric smoke sensors features

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

Heat sensors features

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

General features

- Ceiling or wall mounting
- Listed to UL 268 7th Edition and ULC-S529
- NEMA 1 rated. See TrueAlarm analog sensing product selection chart for more information.
- Louvered smoke sensor design enhances smoke capture by directing flow to chamber. Entrance areas are minimally visible when ceiling mounted
- Designed for EMI compatibility
- Magnetic testing
- Different bases support a supervised or unsupervised output relay, or a remote LED alarm indicator

Additional base reference

- For isolator bases, refer to data sheet *S4098-0025*
- For isolator2 bases, refer to data sheet *S4098-0026*
- For sounder bases, refer to data sheet *S4098-0028*
- For photo/heat sensors, refer to data sheet *S4098-0024* , single address and *S4098-0033* , dual address

Description

Digital communication of analog sensing

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

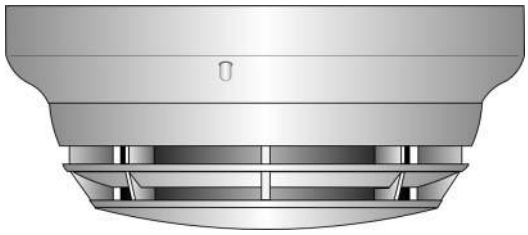
Intelligent data evaluation

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

Control unit selection

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

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



Timed/multi-stage selection

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

Sensor alarm and trouble LED indication

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

TrueAlarm sensor bases and accessories

Sensor base features

Base mounted address selection

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

General features

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

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

Simplex
Permit #2024-2433248-CT
Sheet 12 of 24

Sensor bases

4098-9792, standard sensor base

4098-9789, sensor base with wired connections

- 2098-9808 remote LED alarm indicator or 4098-9822 relay. The relay is unsupervised and requires separate 24 VDC.

Supervised relay bases not compatible with 2120 CDT:

- **4098-9791, four-wire sensor base,** use with remote or locally mounted 2098-9737 relay, requires separate 24 VDC
- **4098-9780, two-wire sensor base,** use with remote or locally mounted 4098-9860 relay, no separate power required
- You can program supervised relay operation, and manually operate it from the control unit
- Includes wired connections for remote LED alarm indicator **or** 4098-9822 relay, relay is unsupervised and requires separate 24 VDC

Sensor base options

2098-9737, remote or local mount supervised relay

- DPDT contacts for resistive or suppressed loads
- power limited rating of 3 A at 28 VDC
- non-power limited rating of 3 A at 120 VAC, requires external 24 VDC coil power

4098-9860, remote or local mount supervised relay

- SPDT dry contacts, power limited rating of 2 A at 30 VDC, resistive. Non-power limited rating of 0.5 A at 125 VAC, resistive

4098-9822, LED annunciation relay

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

4098-9832, adapter plate

- Required for surface or semi-flush mounting to 4 in. square electrical box and for surface mounting to a 4 in. octagonal box
- You can use the 4098-9832 adapter plate for cosmetic retrofitting to an existing 6 3/8 in. diameter base product

2098-9808, remote red LED alarm indicator

- Mounts on single gang box

Figure 2: Remote red LED alarm indicator



Description

TrueAlarm sensor bases contain integral addressable electronics that monitor the status of the detachable photoelectric or heat sensors. The sensors transmit digitalized output to the system fire alarm control unit every four seconds.

You can change different TrueAlarm sensor types to meet location requirements. You can use this feature to substitute sensors during building construction. When conditions are temporarily dusty, you can install heat sensors without reprogramming the control unit. Although the control unit indicates an incorrect sensor type, the heat sensor operates at a default sensitivity and provides heat detection for building protection at that location.

Mounting reference

Figure 3: Mounting reference

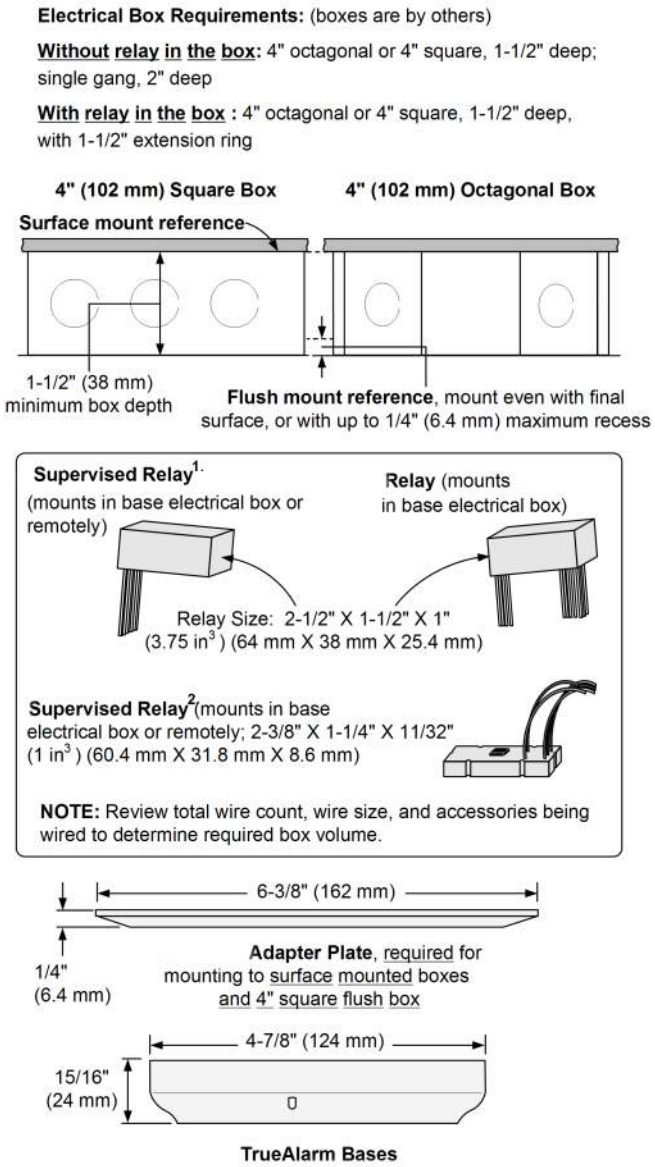


Table 1: Product mounting - SKU reference

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

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TrueAlarm sensors

Features

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

Table 2: Rated spacing distance between sensors

Fixed Temp. Setting	UL and ULC Spacing	FM Spacing, Either Fixed Temperature Setting
135°F (57.2°C) 190°F (88°C)	60 ft x 60 ft (18.3 m)	20 ft x 20 ft (6.1 m) for fixed temperature only. RTI = Quick
155°F (68°C)	40 ft x 40 ft (12.2 m)	50 ft x 50 ft (15.2 m) for fixed temperature with either rate-of-rise selection. RTI = Ultra Fast

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

Smoke sensors

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

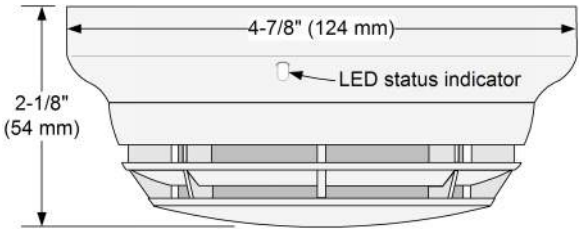
4098-9714 photoelectric sensor

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

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

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

Figure 4: 4098-9714 photoelectric sensor with base



4098-9733 and 4098-9734 heat sensors

TrueAlarm heat sensors are self-restoring and provide rate-compensated, fixed temperature sensing with or without rate-of-rise temperature sensing. The sensor measures the local temperature for analysis at the fire alarm control unit.

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

In a slowly developing fire, the temperature may not increase rapidly enough to operate the rate-of-rise feature. However, when the temperature reaches the rated fixed temperature setting, it triggers an alarm.

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

Figure 5: 4098-9733 heat sensor with base

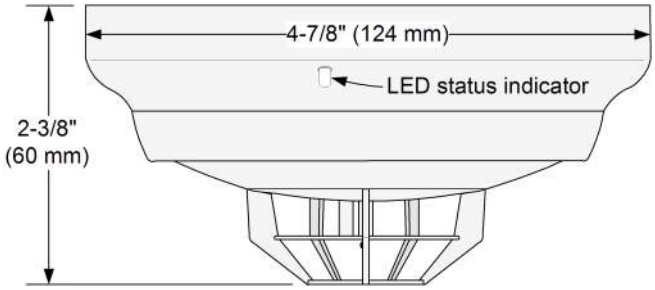
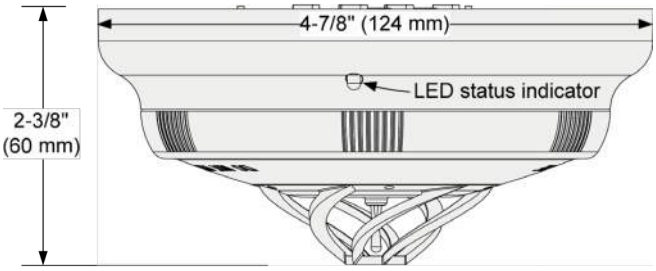


Figure 6: 4098-9734 high temperature heat sensor with base



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

Application reference

Only choose sensor locations after careful consideration of the physical layout and contents of the area that you want to protect. Refer to NFPA 72, *the National Fire Alarm and Signaling Code*. On smooth ceilings, you can use a smoke sensor spacing of 30 ft (9.1 m) as a guide.

For detailed application information including sensitivity selection, refer to *4098 Detectors, Sensors, and Bases Application Manual (574-709)*.

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TrueAlarm analog sensing product selection chart

Table 3: TrueAlarm sensor bases, for use with sensors 4098-9714 and 4098-9733

SKU	Color	Description	Compatibility	Mounting requirements
4098-9792	White	Standard sensor base	No options	4 in. octagonal or 4 in. square box, 1 1/2 in. min. depth, or single gang box, 2 in. min. depth
4098-9776	Black			
4098-9789 4098-9789IND	White	Sensor base with connections for remote LED alarm indicator **or** unsupervised relay	2098-9808 remote alarm indicator or 4098-9822 unsupervised relay	4 in. octagonal or 4 in. square box **Note:** Box depth requirements depend on total wire count and wire size. See Table 5
4098-9775	Black			
4098-9791 **Note:** NOT compatible with the 2120 CDT	White	Four-wire sensor supervised relay base with connections for LED indicator or unsupervised relay	2098-9737 supervised remote relay	
			2098-9808 remote alarm indicator or 4098-9822 unsupervised relay	
4098-9780 **Note:** NOT compatible with the 2120 CDT	White	Two-wire sensor supervised relay base with connections for LED indicator or unsupervised relay	4098-9860 supervised remote relay	
			2098-9808 remote alarm indicator or 4098-9822 unsupervised relay	

Note: SKU numbers ending in IND are assembled in India.

Refer to *4098 Detectors, Sensors, and Bases Application Manual (574-709)* and *4098 Smoke/Heat Sensor Bases Installation Instructions (574-707)* for additional information.

Table 4: TrueAlarm sensors

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

Note:

- SKUs are NEMA 1 rated.
- The 4098-9734 Heat Sensor is only compatible with IDNet on the 4100ES, 4010ES, and 4007ES

Table 5: TrueAlarm sensor and base accessories

SKU	Description	Compatibility	Mounting requirements
2098-9737	Supervised relay, mounts remote or in base electrical box	4098-9791 base	Remote mounting requires 4 in. octagonal or 4 in. square box, 1 1/2 in. minimum depth Base mounting requires 4 in. octagonal box, 2 1/8 in. deep with 1 1/2 in. extension ring
4098-9860	Supervised relay, mounts remote or in base electrical box	4098-9780 base	
2098-9808	Remote red LED alarm indicator on single gang stainless steel plate	Bases 4098-9789, 4098-9791, and 4098-9780	Single gang box, 1 1/2 in. minimum depth
4098-9822	Unsupervised relay, tracks base led status. **Note:** Only mounts in base electrical box.	Bases 4098-9789, 4098-9791, and 4098-9780	4 in. octagonal box, 2 1/8 in. deep with 1 1/2 in. extension ring
4098-9832	Adapter plate	Bases 4098-9792, 4098-9789, 4098-9791, and 4098-9780	Required for surface or semi-flush mounted 4 in. square box and for surface mounted 4 in. octagonal box

Note: 2098-9808 is NEMA 1 rated.

Specifications

Table 6: General operating specifications

Specification	Rating
Communications and sensor supervisory power	IDNet or MAPNET II communications, auto-selected, one address for each base
Communications connections	Screw terminals for in/out wiring, 18 to 14 AWG, 0.82 mm^2 to 2.08 mm^2
Remote LED alarm indicator current	1 mA typical, no impact to alarm current
Remote LED alarm indicator and relay connections	Color coded wire leads, 18 AWG, 0.82 mm^2
UL listed operating temperature range	32°F to 100°F, 0°C to 38°C

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Table 6: General operating specifications

Specification		Rating
Operating temperature range	with 4098-9733 Heat Sensor	32°F to 122°F, 0°C to 50°C
	with 4098-9714 Smoke Sensor	15°F to 122°F, -9°C to 50°C
	with 4098-9734 Heat Sensor	32°F to 150°F, 0°C to 66°C
Storage temperature range		0°F to 140°F, -18°C to 60°C
Humidity range		10% to 95% RH
4098-9714 smoke sensor air velocity rating		0 to 4000 ft/min, 0 to 1220 m/min
Housing color		Frost white or black

Table 7: 4098-9791 Base with supervised remote relay 2098-9737

Specification	Rating
Externally supplied relay coil voltage	18 VDC to 32 VDC, nominal 24 VDC
Supervisory current	270 µA, from 24 VDC supply
Alarm current with 2098-9737 relay	28 mA, from 24 VDC supply
Note: See Sensor base options for contact ratings.	

Table 8: 4098-9780 Base with supervised remote relay 4098-9860

Specification	Rating
Power	Supplied from communications

Table 9: 4098-9822 Unsupervised relay, requirements for bases 4098-9789, 4098-9791, and 4098-9780

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

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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)

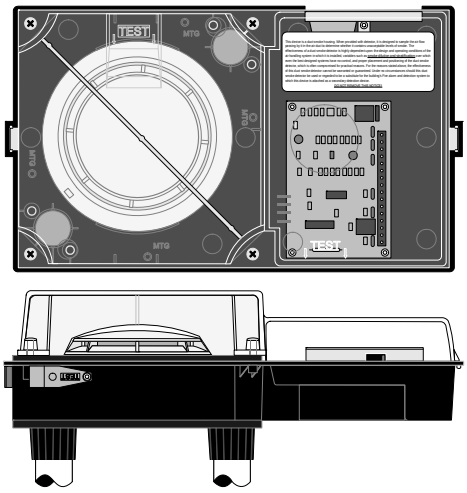
Sampling tubes (ordered separately):

- 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.

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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

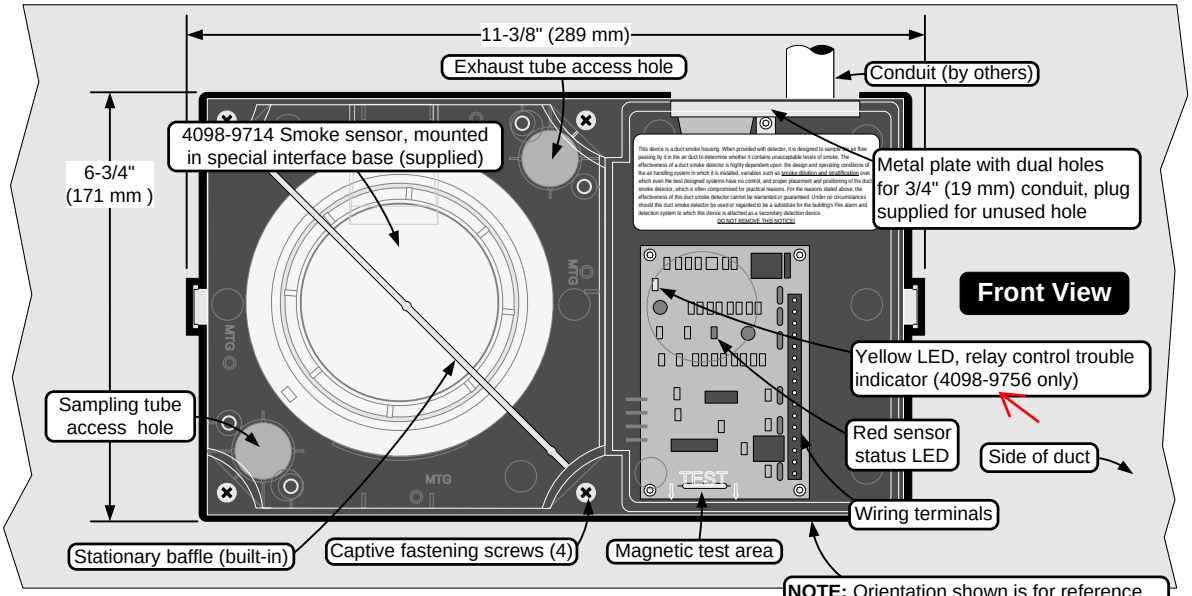
* Each duct housing includes an internally mounted model 4098-9714 TrueAlarm photoelectric sensor and an exhaust tube. A correctly sized sampling tube (ordered per application) is required, refer to chart below.

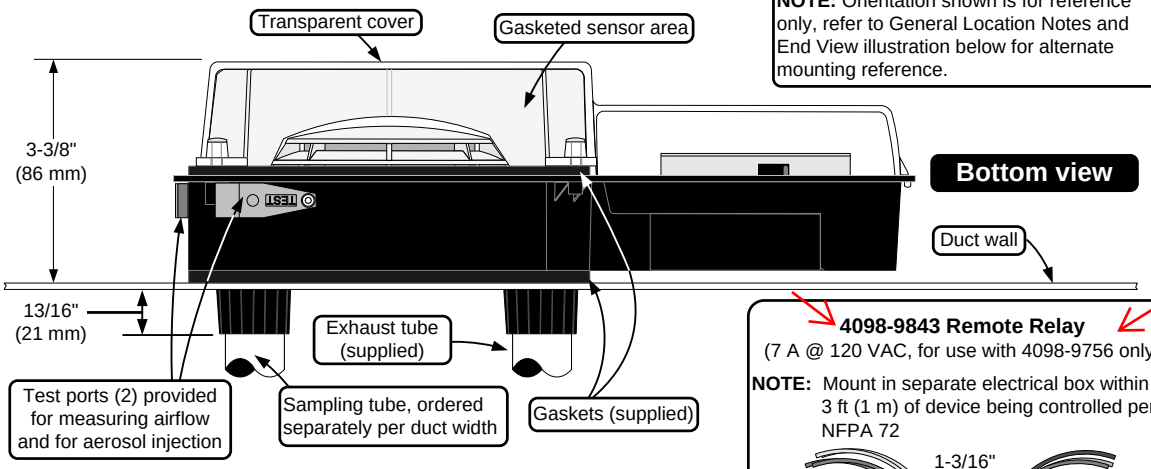
Sampling Tube Selection Chart, Ordered Separately Per Duct Width, Select One

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

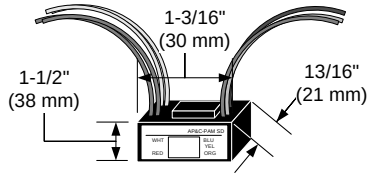
NOTE: Refer to Installation Instructions 574-776 for additional installation detail and maintenance information.

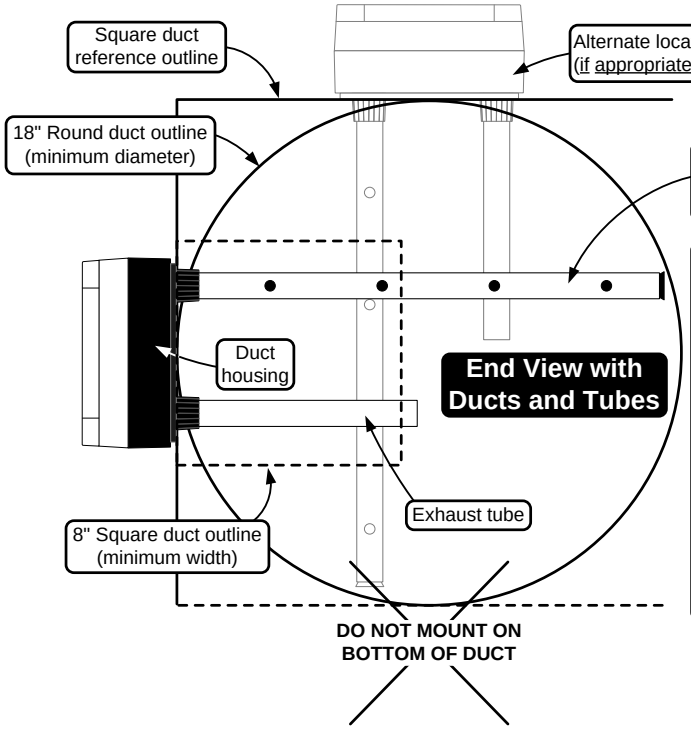




4098-9843 Remote Relay
(7 A @ 120 VAC, for use with 4098-9756 only)

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

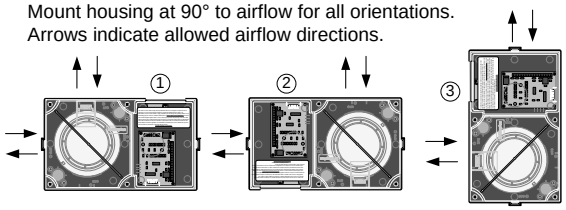




Sampling tube, keyed for proper hole alignment **with holes facing into airflow** (template is provided for proper tube installation). (Housing is shown as position 2 per note 2 below.)

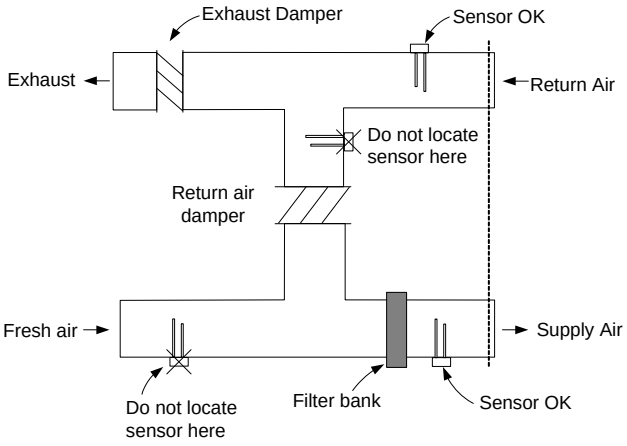
General Location Notes:

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.



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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

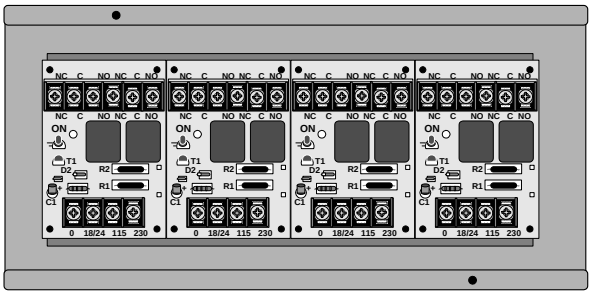
These multi-purpose control relays offer SPDT or DPDT, 10 A (or 7 A) contacts in a variety of mechanical packages. Models are available for coil operation by one of four input voltages allowing a single relay to be energized from a voltage source of 18-35 VDC or VAC, 120 VAC, or 230 VAC (not available 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.

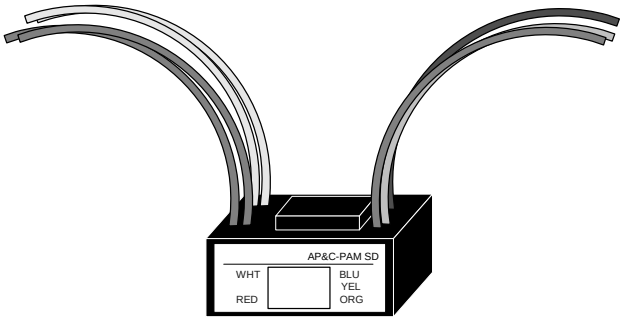
Mounting options are varied for application flexibility. Track mounted relays may be "snapped apart" from a standard four-module assembly and used independently if desired.

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*

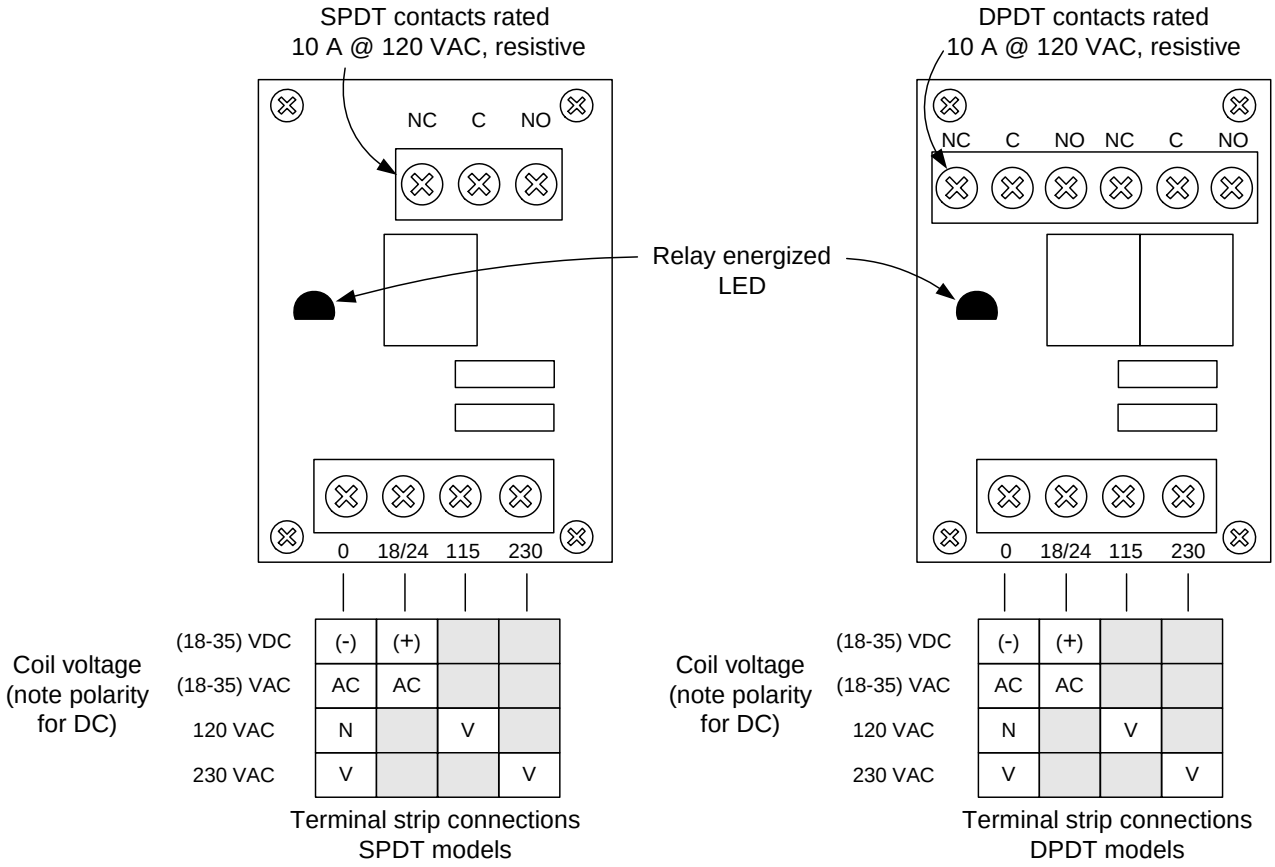
Encapsulated Relays, see page 2 for dimensions		
Connections		18 AWG (0.82 mm^2) color-coded wire leads
Relay 2088-9021		
Contact Ratings		10 A @ 120 VAC, resistive
Coil Ratings	Voltage	18-35 VAC/VDC, 120, or 240 VAC
	Current	15 mA @ 24 VAC/VDC, & @ 120 or 230 VAC
Relay 4098-9843		
Coil Ratings		18-32 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%

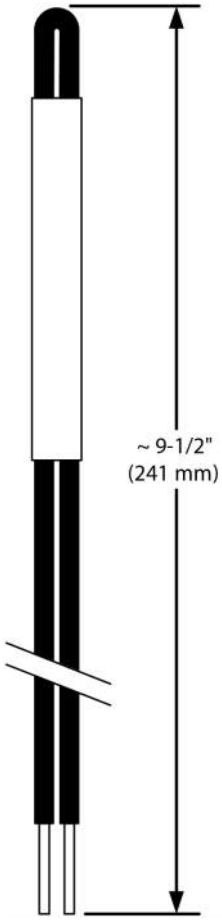


Figure 1: Typical 4081 Series Resistor Harness Assembly (full size except for lead length)

* 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.

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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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