WESTLAKE ACE HARDWARE

3511 SW MARKET
LEE'S SUMMIT, MO 64082
Fire Alarm System

DRAWING INDEX:

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FIRE ALARM GENERAL NOTES

NOTE#	NOTE TEXT
1.	ALL CIRCUIT POLARITY SHALL BE MAINTAINED.
2.	SHIELD CONTINUITY SHALL BE MAINTAINED THROUGH OUT ALL SHIELDED CIRCUITS. SHIELDS SHALL BE GROUNDED AT ONLY ONE POINT (THE EQUIPMENT HEAD END UNLESS NOTED OTHERWISE).
3.	ALL CIRCUITS SHALL BE FREE OF GROUNDS, WIRE TO WIRE SHORTS, AND OPENS.
4.	NOTIFICATION APPLIANCE CIRCUITS (NAC) & INITIATING DEVICE CIRCUITS (IDC) ARE SUPERVISED . NO PARALLEL BRANCHING (TEE-TAPPING) SHALL BE PERMITTED. NON-STYLE 6 & 7 SIGNALING LINE CIRCUITS (SLC) ALLOW PARALLEL BRANCHING (TEE-TAPPING) AT DEVICES AND RISER BOXES ONLY.
5.	ALL FIRE ALARM CONDUIT SHALL BE SIZED TO MEET OR EXCEED THE NEC MINIMUM REQUIREMENTS. ALL FIRE ALARM CONDUIT SIZE SHALL BE 3/4" MINIMUM UNLESS SHOWN OTHERWISE. STUB-UPS TO INDIVIDUAL DEVICES ALLOWED TO BE IN 1/2".
6.	INSTALLATION MATERIALS (I.E. CONDUIT, FITTINGS, HANGERS, STANDARD BOXES, ETC.) ARE NOT PROVIDED BY MIDWEST ALARM SERVICES.
7.	ON OPEN WIRE INSTALLATIONS CONDUIT SHALL BE PROVIDED BY OTHERS THROUGH ALL INACCESSIBLE AREAS (I.E. ABOVE HARD CEILINGS, STUB-UPS THROUGH ENCLOSED WALLS, ECT.) AND IN ALL EXPOSED AREAS (I.E. MECHANICAL ROOMS, ELECTRICAL ROOMS, ETC.).
8.	MANUAL PULL BOXES SHALL BE MOUNTED 48" AFF TO THE ACTUATING HANDLE.
9.	WALL-MOUNTED AUDIBLE/VISUAL & VISUAL ONLY DEVICES SHALL BE MOUNTED 80" AFF TO THE BOTTOM OF THE DEVICE OR 6" FROM THE CEILING TO THE TOP OF THE DEVICE WHICHEVER IS LOWER.
10.	INSTALLATION SHALL BE IN STRICT CONFORMANCE WITH THE NATIONAL ELECTRIC CODE, NFPA CODES, LOCAL CODES, AUTHORITIES HAVING JURISDICTION AND ALL OF THE MANUFACTURERS REQUIREMENTS.
11.	ALL FIRE ALARM CONTROL RELAYS SHALL BE MOUNTED WITHIN 3' OF THE DEVICES THEY CONTROL. ALL RELAY CONTROL CIRCUITS SHALL BE SUPERVISED.
12.	ALL FIRE ALARM JUNCTION BOX COVERS SHALL BE PAINTED RED OR LABELED FOR DISTINCT IDENTIFICATION.
13.	ALL FIRE ALARM PANELS & EQUIPMENT CABINETS REQUIRE A DEDICATED 120VAC CIRCUIT FOR PRIMARY POWER. FIRE ALARM AC POWER CIRCUITS SHALL BE PERMANENTLY IDENTIFIED AT THE DISTRIBUTION PANEL AND INSIDE THE FIRE EQUIPMENT CABINETS SERVED.

PROJECT NARRATIVE

This project is a new building, use group B. A new fire alarm system with horn/strobe notification and DACT is being installed in the building. The building is fully sprinklered. There is an unattached open lawn/garden product area that is not sprinklered.

AUTHORITY HAVING JURISDICTION

City of Lee's Summit, MO

CODE REFERENCES

#	REFERENCED CODE	YEAR
1	International Building Code (IBC)	2018
2	International Fire Code (IFC)	2018
3	International Mechanical Code (IMC)	2018
4	NFPA 70 National Electrical Code	2017
5	NFPA 72 National Fire Alarm Code	2016

POTTER — The Symbol of Protection

NAC Circuit Configuration & Voltage Drop — *Westlake Ace Hardware* — *3/23/2023*

NAC 1 — MAX Circuit Current (amps): 3 — Source Voltage Used (VDC): 20.4

Usage: Notification — Description: Back Area

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.07	200	1.228	0.437	19.86	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
1	Strobes	Sys Sens SCRL,SCWL 75cd	0.000000	0.000000	0.111000	0.111000
1	Horn Strobes	Sys Sens PC2RL,temp high, 75cd	0.000000	0.000000	0.143000	0.143000
3	Strobes	Sys Sens SRL,SWL 15cd	0.000000	0.000000	0.043000	0.129000
1	Horn Strobes	Sys Sens P2RL,temp high, 15cd	0.000000	0.000000	0.054000	0.054000
				Total Standby:	0.00000	Total Alarm: 0.43700

NAC 2 — MAX Circuit Current (amps): 3 — Source Voltage Used (VDC): 20.4

Usage: Notification — Description: Front/Sales Area

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.07	410	2.517	1.070	17.71	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
2	Horn Strobes	Sys Sens PC2RL,temp high, 150cd	0.000000	0.000000	0.217000	0.434000
2	Strobes	Sys Sens SCRL,SCWL 150cd	0.000000	0.000000	0.189000	0.378000
2	Strobes	Sys Sens SCRL,SCWL 15cd	0.000000	0.000000	0.041000	0.082000
1	Horn Strobes	Sys Sens P2R[W,T]3 high, 75cd	0.000000	0.000000	0.176000	0.176000
				Total Standby:	0.00000	Total Alarm: 1.07000

I/O Circuit Configuration & Voltage Drop — *Westlake Ace Hardware* — *3/23/2023*

I/O 1 — MAX Circuit Current (amps): 1 — Source Voltage Used (VDC): 20.4

Usage: Aux Power — Description: Duct Det & FDC strobe

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.07	250	1.535	0.484	19.66	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
1	Horn Strobes	Sys Sens P2RK,non-temp High, 75cd	0.000000	0.000000	0.176000	0.176000
1	SLC Aux Power	Potter PAD100-NAC Output Module	0.003000	0.003000	0.008000	0.008000
5	SLC Aux Power	Potter PAD100-DUCTR Duct Det w/ Relay	0.030000	0.150000	0.060000	0.300000
				Total Standby:	0.15300	Total Alarm: 0.48600

I/O 2 — MAX Circuit Current (amps): 1 — Source Voltage Used (VDC): 20.4

Usage: Aux Power — Description: DACT

Wire Type	Ohms/1000ft	Length 1-Way	Actual Ohms	Max Load (amps)	Volts @ EOL	Min Volts Req'd
#14 Solid	3.07	10	0.061	0.082	20.39	16

Circuit Devices			Standby (amps)		Alarm (amps)	
Qty	Lookup Type	Description	Each	Total	Each	Total
1	DualComNF-LV	Universal DACT - I/P or Cellular	0.030000	0.030000	0.082000	0.082000
				Total Standby:	0.03000	Total Alarm: 0.08200

POTTER — The Symbol of Protection

IPA-100 Battery & Voltage Drop Calculations

Project Name: Westlake Ace Hardware — Standby Hours: 24
3511 SW Market, Lee's Summit, MO — Alarm Mins: 5
Installed By: Midwest Alarm Services — Efficiency Factor: 20%
Designed By: D.Lane — SLC Type: Class B
Date: 3/23/2023 — NAC Source Voltage: 20.4

Model #: IPA-100 — Max Panel Current (amps): 5
Panel ID: FACP
Location: Back Room 105

User assumes all responsibility to ensure the quantities and current draw values in this worksheet are accurate prior to submittal.

Addressable Fire Panel			Standby (amps)		Alarm (amps)	
Qty	Part #	Description	Each	Total	Each	Total
1	IPA-100	Analog Addressable FACP	0.130	0.130	0.220	0.220
			Panel Standby:	0.130	Panel Alarm:	0.220

P-LINK (RS-485)			Standby		Alarm	
1	UD-2000 / UD-1000	DACT Card	0.016	0.016	0.023	0.023
	RA-6075R	LCD Annunciator	0.020		0.025	
1	RA-6500R(F)	Flush Mount LCD Annunciator	0.020	0.020	0.050	0.050
	LED-16(F)	Flush Mount LED Annunciator	0.025		0.025	
	LED-16	LED Annunciator LED Power*	0.015		0.210	
	CA-6075	Class A Module	0.012		0.044	
	PS/N-1000(E)	Power Expander	0.015		0.015	
	PAD100-SLCE-127	SLC Expander	0.060		0.060	
	IDC-6	Initating Zone Expander	0.020		0.020	
	IDC-6	Initating Zone Expander Power*	0.030		0.270	
	RLY-5	Relay Expander	0.025		0.035	
	RLY-5	Relay Expander Power*	0.010		0.135	
(Maximum current draw on P-Link limited to 1 Amp)			P-LINK Standby:	0.036	P-LINK Alarm:	0.073

*Only enter quantity if PLINK power is being used to power devices

SLC Devices			Standby		Alarm	
AFC / ARC / IPA Series						
1	PAD-PD	Analog Photo Smoke	0.000300	0.000300	0.000300	0.000300
	PAD-PHD	Analog Photo Smoke/Heat	0.000300		0.000300	
	PAD-HD	Analog Fixed Temp Heat	0.000300		0.000300	
	PAD-CD	Analog Carbon Monoxide Detector	0.000300		0.000300	
	PAD-PCD	Analog Smoke/Carbon Monoxide Detector	0.000300		0.000300	
	PAD-PHCD	Analog Smoke/Heat/Carbon Detector	0.000300		0.000300	
	PAD-DUCT	Addressable Duct Detector	0.000300		0.000300	
4	PAD-DUCTR*	Add. Duct Detector w/Relay	0.000500	0.002000	0.000500	0.002000
4	PAD100-DRTS	Duct Remote Test Switch	0.010000	0.040000	0.015000	0.060000
1	PAD100-PSSA/PSDA	Add. Pull Station Single/Dual Action	0.000200	0.000200	0.000200	0.000200
	PAD100-MIM	Micro Input Module	0.000200		0.000200	
	PAD100-SIM	Single Input Module	0.000240		0.000240	
1	PAD100-DIM	Dual Input Module	0.000240	0.000240	0.000240	0.000240
	PAD100-RM	Relay Module	0.000240		0.000240	
	PAD100-OROI	One Relay One Input Module	0.000240		0.000240	
	PAD100-TRTI	Two Relay Two Input Module	0.000240		0.000240	
	PAD100-ZM*	Conventional Zone Module	0.000240		0.000240	
1	PAD100-NAC*	Notification Appliance Circuit	0.000200	0.000200	0.000200	0.000200
	PAD100-SM	Speaker Module	0.000200		0.000200	
	PAD100-IM	Isolator Module	0.000150		0.000150	
	PAD100-LED	LED Module	0.000240		0.000240	
	PAD100-LEDK	Addressable LED w/ KeySwitch	0.000200		0.000200	
	PAD100-SB*	Addressable Sounder Base	0.000200		0.000200	
	PAD100-RB	Addressable Relay Base	0.000200		0.000200	
	PAD100-IB	Addressable Isolator Base	0.000150		0.000150	
		SLC Loop Alarm LED Current	0.000000	0.000000	0.036000	0.036000
*	Requires Aux Power (Configure Below)		SLC Standby:	0.042940	SLC Alarm:	0.098940

NAC Circuits (See NAC Configuration below)			Standby (amps)		Alarm (amps)
Ckt	Use	Description		Total	Total
1	Notification	Back Area		0.00000	0.43700
2	Notification	Front/Sales Area		0.00000	1.02900
			NAC Standby:	0.00000	NAC Alarm: 1.46600

I/O Circuits (See I/O Configuration below)			Standby (amps)		Alarm (amps)
Ckt	Use	Description		Total	Total
1	Aux Power	Duct Det & FDC strobe		0.12300	0.42400
2	Aux Power	DACT		0.03000	0.08200
			I/O Standby:	0.15300	I/O Alarm: 0.50600

Battery Calculation Summary			
		Standby (amps)	Alarm (amps)
	Panel Current:	0.13000	0.22000
	P-Link Current:	0.03600	0.07300
	SLC Device Current:	0.04294	0.09894
	NAC Circuit Current:	0.00000	1.46600
	I/O Circuit Current:	0.15300	0.50600
	Total Standby:	0.36194	Total Alarm: 2.36394
	Standby Hours:	24	Alarm Mins: 5
	AH Required:	8.69	AH Required: 0.20

SLC Loop Type: Class B
Device Addresses Used: 8
Device Addresses Available: 127
Device Addresses Remaining: 119

Total Combined Standby & Alarm AmpHours Required: 8.89
Efficiency Factor: 20%
Required Battery AmpHours:: 10.67
Battery AmpHours Provided: 12

Note: The cabinet will house two 8 AH or 18 AH batteries. The charging circuit is rated for up to two 55 AH batteries.

NOTIFICATION POWER SUMMARY - HORN/STROBE CIRCUITS

FACP	Circuit	Qty	Alm Load	Max.	% Loaded	Length	wire type	Volts	Line Ω	Load Ω	Vdrop	endV
Back Area	P1	6	0.437 A	3.00 A	14.57%	196 Ft	14ga solid Cu	20.4	1.20	46.68	0.5 V	19.87
Front sales area	P2	7	1.070 A	3.00 A	35.67%	410 Ft	14ga solid Cu	20.4	2.52	19.07	2.7 V	17.71
duct det aux power/FDC	I/O1	6	0.484 A	1.00 A	48.40%	250 Ft	14ga solid Cu	20.4	1.54	42.15	0.7 V	19.66
DACT	I/O2	1	0.082 A	1.00 A	8.20%	10 Ft	14ga solid Cu	20.4	0.06	248.78	0.0 V	20.39
TOTALS		20	2.073 A	5.00 A	41.46%							

FIRE ALARM SEQUENCE OF OPERATIONS:

SYSTEM INPUTS	ALARM	SUPERVISORY	TROUBLE	REPORT TO FIRE ALARM CONTROL PANEL	TRANSMIT SIGNAL TO SUPERVISING STATION	ACTIVATE GENERAL FIRE ALARM NOTIFICATION APPLIANCES	ACTIVATE EXTERIOR FIRE NOTIFICATION APPLIANCE	SHUTDOWN LOCAL AIR HANDLER UNIT
SIGNALING LINE OR NOTIFICATION APPLIANCE CIRCUIT - OPEN		●		●	●			
SIGNALING LINE OR NOTIFICATION APPLIANCE CIRCUIT - SHORT		●		●	●			
SIGNALING LINE OR NOTIFICATION APPLIANCE CIRCUIT - GROUND		●		●	●			
FIRE ALARM CONTROL PANEL LOSS OF POWER		●		●				
SPRINKLER WATERFLOW SWITCH ACTIVATION	●			●	●	●	●	
MANUAL PULL STATION ACTIVATION	●			●	●	●		
SMOKE DETECTOR ACTIVATION	●			●	●	●		
SPRINKLER VALVE TAMPER SWITCH ACTIVATION (NOT USED)		●		●	●			
DUCT SMOKE DETECTOR ACTIVATION		●		●	●		●	

FIRE ALARM SYMBOLS LEGEND

SYMBL	DESCRIPTION
FACP	POTTER IPA-100 FIRE ALARM PANEL MOUNT AS SHOWN ON SHEET FA-4 BACK BOX: INCLUDED
ANN	POTTER RA-6500FB REMOTE ANNUNCIATOR MOUNT AS SHOWN ON SHEET FA-4 BACK BOX: BACKBOX INCLUDED
F	POTTER PAD100-PSDA ADDRESSABLE MANUAL PULL STATION SEE FA GENERAL NOTE 8 FOR MOUNTING HEIGHT BACK BOX: SINGLE GANG 1.875" DEEP MIN
	POTTER PAD100-DIM ADDR. DUAL MONITOR MODULE MOUNT AS INDICATED ON PRINT BACK BOX: 4"SQUARE x 2-1/8" DEEP
	POTTER PAD100-RM ADDRESSABLE RELAY MODULE MOUNT WITHIN 3' OF DEVICE CONTROLLED. BACK BOX: 4"SQUARE x 2-1/8" DEEP
	POTTER PAD100-NAC ADDRESSABLE CONTROL MODULE MOUNT AS INDICATED ON PRINT BACK BOX: 4"SQUARE x 2-1/8" DEEP
	POTTER PAD200-PD ADDRESSABLE SMOKE DETECTOR, PHOTO MOUNT AS INDICATED ON PRINT BACK BOX: 4"SQUARE OR 3.5" OCTAGONAL x 1-1/2" DEEP
	POTTER PAD100-DUCTR DUCT SMOKE DETECTOR w/RELAY MOUNT AS INDICATED ON PRINT BACK BOX: N/A
RTS	POTTER PAD100-DRTS REMOTE ALARM/TEST STATION MOUNT ON CEILING OR WALL, COLUMN AT 72" A.F.F. BACK BOX: SINGLE GANG
	SYSTEM SENSOR PC2WL HORN/STROBE, CLNG MOUNT, WHITE MOUNT ON CEILING OR BOTTOM OF STRUCTURAL STEEL BACK BOX: SINGLE GANG x 1.875" DEEP MIN.
	SYSTEM SENSOR SCWL STROBE, CEILING MOUNT, WHITE MOUNT ON CEILING OR BOTTOM OF STRUCTURAL STEEL BACK BOX: SINGLE GANG x 1.875" DEEP MIN.
	SYSTEM SENSOR P2WL HORN/STROBE, WALL MOUNT, WHITE FOR MOUNTING HEIGHT SEE FA GENERAL NOTE 9. BACK BOX: SINGLE GANG x 1.875" DEEP MIN.
	SYSTEM SENSOR SWL STROBE, WALL MOUNT, WHITE FOR MOUNTING HEIGHT SEE FA GENERAL NOTE 9. BACK BOX: SINGLE GANG x 1.875" DEEP MIN.
WP	SYSTEM SENSOR P2WK HORN/STROBE, OUTDOOR MOUNT DIRECTLY ABOVE FDC AT 8'-10' A.F.G BACK BOX: PLASTIC BACKBOX INCLUDED WITH DEVICE

FIRE ALARM WIRE LEGEND

TAG	DESCRIPTION
A	SIGNALING LINE CIRCUIT (SLC) (2C) 18AWG SOLID, TWISTED, JACKETED CABLE, FPLP
B	NOTIFICATION APPLIANCE CIRCUIT (NAC) (2C) 14AWG SOLID, TWISTED, JACKETED CABLE. FPLP
C	REMOTE TEST/INDICATOR CIRCUIT (4C) 18AWG SOLID, TWISTED, JACKETED CABLE. FPLP
P	AUX. POWER FOR DUCT DETECTORS (2C) 14AWG SOLID, TWISTED, JACKETED CABLE. FPLP
R	P-LINK COMMUNICATION & POWER (4C) 18AWG SOLID, TWISTED, JACKETED CABLE. FPLP

WIRE TAG AND PATHWAY COLOR LEGEND

A — SIGNALING LINE CIRCUITS
B,S — NOTIFICATION APPLIANCE CIRCUITS
P,R — POWER & ANNUNCIATOR DATA CIRCUITS
2A,2B — COMBINED WIRE PATHWAY
CABLE IDENTITY - LETTER
QUANTITY OF CABLE - NUMBER (NO NUMBER INDICATES QTY OF ONE)

DEVICE NUMBERING DETAILS

TYPE OF SIGNAL CIRCUIT
'N' = NAC REMOTE POWER SUPPLY
'P' = FACP PANEL
'V' = VOICE EVAC
CIRCUIT NUMBER
N1-01 — DEVICE NUMBER
END OF LINE RESISTOR (LAST DEVICE ON CIRCUIT)
30 — CANDELA RATING

NOTIFICATION APPLIANCES

MODULES
DETECTORS

POTTER - NUMBERS ONLY FOR MODULES & DETECTORS
DEVICE ADDRESS NUMBER (1-127)
01

ADDRESSABLE DEVICES

NOTICE: ENGINEERED SYSTEMS

THE NOTIFICATION APPLIANCES ON THESE DRAWINGS WERE PLACED AT PARTICULAR LOCATIONS AND WITH SPECIFIED SETTINGS TO MEET BUILDING CODE REQUIREMENTS FOR PROPER AUDIBLE AND VISUAL COVERAGE.

PLEASE CONSULT WITH YOUR MIDWEST ALARM SERVICES REPRESENTATIVE PRIOR TO MAKING ANY ALTERATIONS TO FIRE ALARM NOTIFICATION DEVICES OR CIRCUITS. FAILURE TO DO SO MAY INCUR LIABILITY, VOID SYSTEM VIABILITY OR RESULT IN FAILED ACCEPTANCE BY THE LOCAL CODE ENFORCEMENT AUTHORITY (AHJ). ANY UNAPPROVED ALTERATIONS REQUIRING REDESIGN OR ADDITIONAL DEVICES WILL RESULT IN ADDITIONAL CHARGES.

STATE OF MISSOURI — LARRY D. RIGGS — NUMBER ENG24611 — REGISTERED PROFESSIONAL ENGINEER
04.11.2023

MIDWEST ALARM SERVICES
9745 Widmer, Lenexa, KS 66215
(913) 677-5771, FAX (913) 677-5772

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NO.	DATE	REVISION DESCRIPTION
1	04.04.23	Added notification device at front door per Engineer
2	04.07.23	Revised per A&E comments, removed pull stations

WESTLAKE ACE HARDWRE
3511 SW MARKET STREET, LEE'S SUMMIT, MO 64082

prepared for: Bart's Electric
7103 Stewart Road, Pleasant Valley, MO 64068

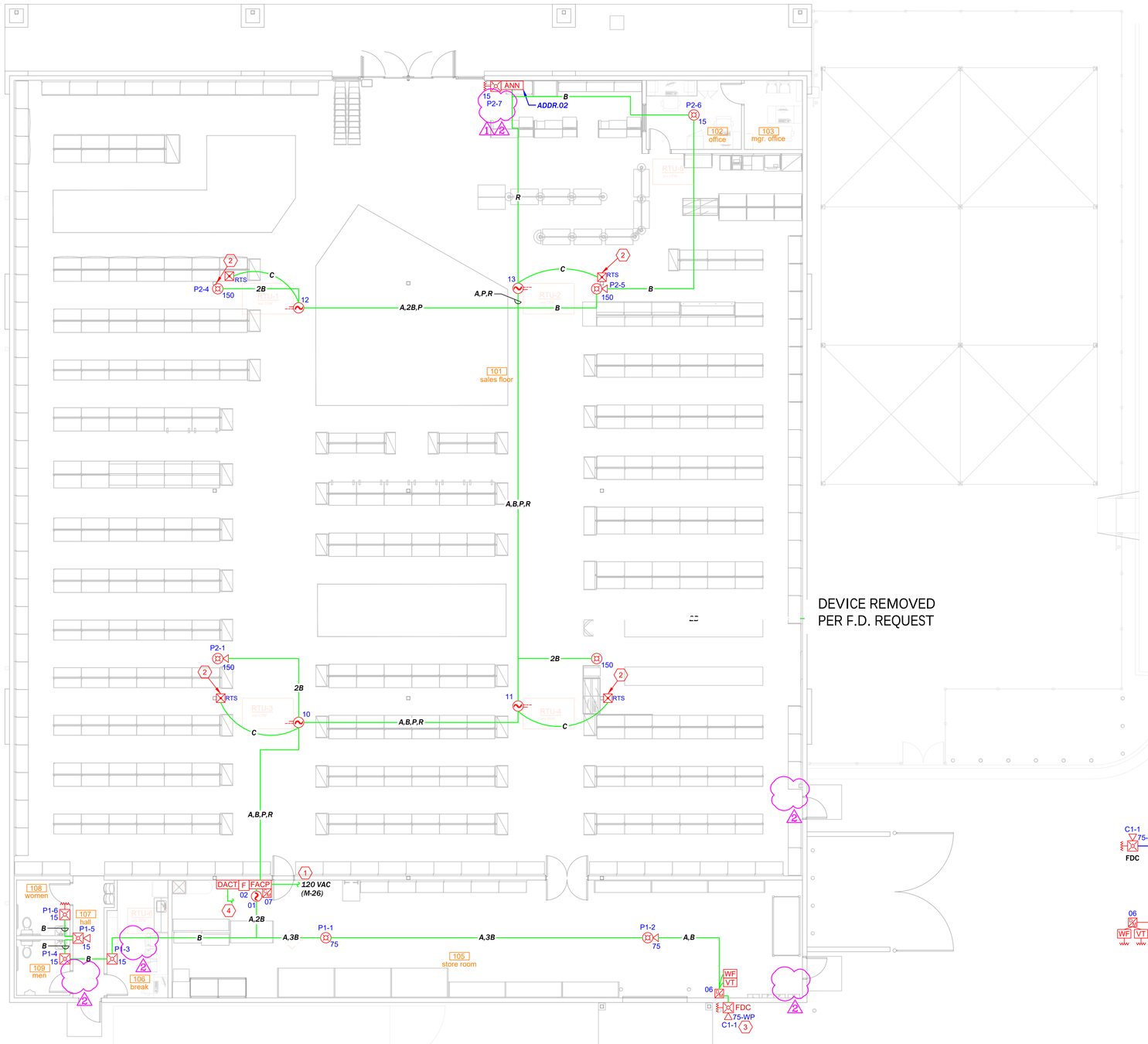
SEAL:

DRAWN BY:	DATE:
D.LANE	03.23.23
DESIGNED BY:	DATE:
JM	03.21.23
APPROVED BY:	DATE:

PROJECT NUMBER: 330323030947

SHEET TITLE: FIRE ALARM SYSTEM Cover Sheet Calculations

SHEET NUMBER: FA-1

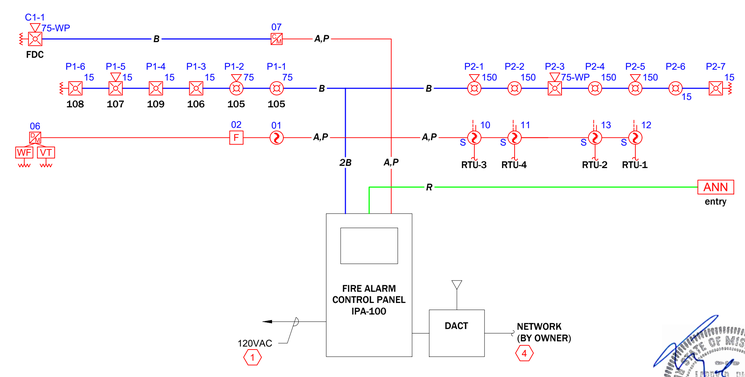


1 Floor Plan - Fire Alarm System

SCALE: NTS

2' 0 4' 8'

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



2 RISER DIAGRAM

SCALE: NONE

FIRE ALARM SYMBOLS LEGEND

SYMBL	DESCRIPTION
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RTS	POTTER PAD100-DRTS REMOTE ALARM/TEST STATION MOUNT ON CEILING OR WALL, COLUMN AT 72" A.F.F. BACK BOX: SINGLE GANG
	SYSTEM SENSOR PC2WL HORN/STROBE, CLNG MOUNT, WHITE MOUNT ON CEILING OR BOTTOM OF STRUCTURAL STEEL BACK BOX: SINGLE GANG x 1.875" DEEP MIN.
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	SYSTEM SENSOR SWL STROBE, WALL MOUNT, WHITE FOR MOUNTING HEIGHT SEE FA GENERAL NOTE 9. BACK BOX: SINGLE GANG x 1.875" DEEP MIN.
WP	SYSTEM SENSOR P2WK HORN/STROBE, OUTDOOR MOUNT DIRECTLY ABOVE FDC AT 8'-10' A.F.G BACK BOX: PLASTIC BACKBOX INCLUDED WITH DEVICE

FIRE ALARM WIRE LEGEND

TAG	DESCRIPTION
A	SIGNALING LINE CIRCUIT (SLC) (2C) 18AWG SOLID, TWISTED, JACKETED CABLE, FPLP
B	NOTIFICATION APPLIANCE CIRCUIT (NAC) (2C) 14AWG SOLID, TWISTED, JACKETED CABLE. FPLP
C	REMOTE TEST/INDICATOR CIRCUIT (4C) 18AWG SOLID, TWISTED, JACKETED CABLE. FPLP
P	AUX. POWER FOR DUCT DETECTORS (2C) 14AWG SOLID, TWISTED, JACKETED CABLE. FPLP
R	P-LINK COMMUNICATION & POWER (4C) 18AWG SOLID, TWISTED, JACKETED CABLE. FPLP

KEYED NOTES

DWG SHEET # FA-2

KEY #	NOTE TEXT
1	ELECTRICAL CONTRACTOR TO PROVIDE DEDICATED 120 VAC POWER CIRCUIT TO FIRE ALARM PANEL. RECORD CIRCUIT NUMBER ON PANELBOARD LEGEND AND INSIDE OF FACP DOOR.
2	MOUNT RTS REMOTE DUCT DETECTOR ALARM INDICATOR ON STEEL COLUMN OR NEAREST AVAILABLE WALL SURFACE. COORDINATE EXACT LOCATION WITH OWNER.
3	EXTERIOR NOTIFICATION DEVICE LOCATED DIRECTLY ABOVE FIRE DEPARTMENT SIAMESE CONNECTION (FDC) AT 8' TO 10' A.F.G. DEVICE PROGRAMMED TO ACTIVATE ON SPRINKLER WATERFLOW IN ACCORDANCE WITH I/O MATRIX ON SHEET FA-1. SEE DETAIL ON FA-3 FOR SOUNDER SETTINGS.
4	OWNER TO PROVIDE I/P CONNECTION FOR DACT IF DESIRED FOR PRIMARY OR BACKUP COMMUNICATION CHANNEL TO CENTRAL STATION MONITORING SERVICE.
5	EXTERIOR HORN/STROBE NOT FOR FDC APPLICATION. DEVICE SHALL OPERATE ON GENERAL ALARM AND MOUNT AT NORMAL NOTIFICATION APPLIANCE HEIGHT.

MIDWEST ALARM SERVICES
9745 Widmer, Lenexa, KS 66215
(913) 677-5771, FAX (913) 677-5772

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NO.	DATE	REVISION DESCRIPTION
1	04.04.23	Added notification device at front door per Engineer
2	04.07.23	Revised per A&E comments, removed pull stations

WESTLAKE ACE HARDWRE
3511 SW MARKET STREET, LEE'S SUMMIT, MO 64082

prepared for: Bart's Electric
7103 Stewart Road, Pleasant Valley, MO 64068

SEAL:

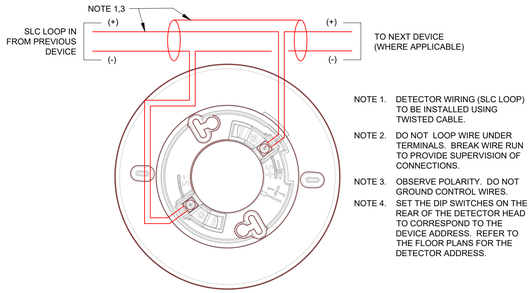
DRAWN BY: D.LANE	DATE: 03.23.23
DESIGNED BY: JM	DATE: 03.21.23
APPROVED BY:	DATE:

PROJECT NUMBER: 330323030947

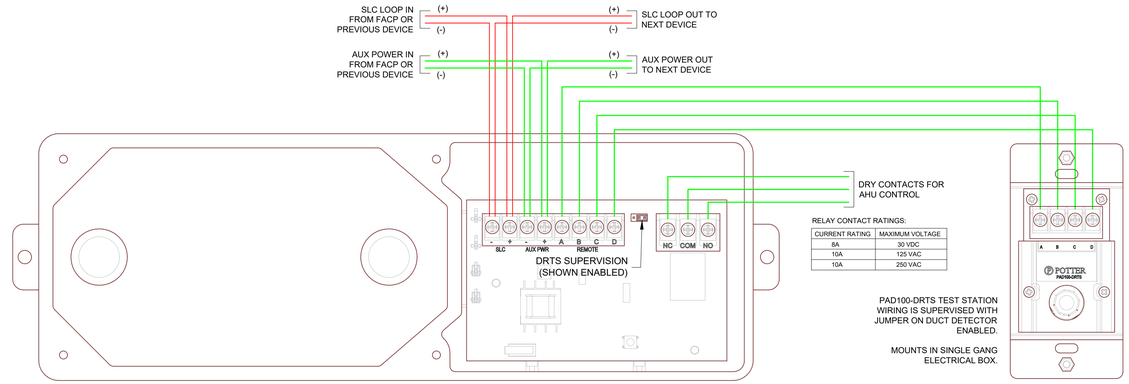
SHEET TITLE: FIRE ALARM SYSTEM Floor Plan

SHEET NUMBER: FA-2

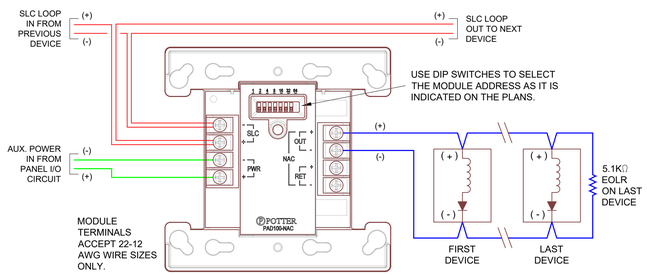
2 of 4



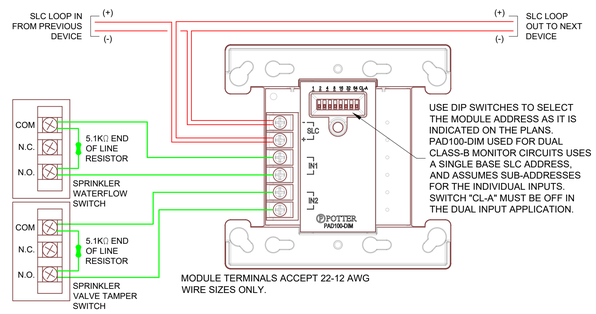
PAD100-6DB DETECTOR BASE DETAIL



PAD100-DUCTR DUCT DETECTOR HOUSING WITH REMOTE TEST STATION

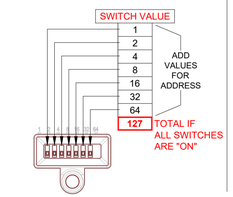


PAD100-NAC CONTROL MODULE DETAIL

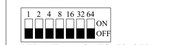


PAD100-DIM DUAL MONITOR MODULE DETAIL

EACH MODULE OR DETECTOR CAN BE SET TO ONE OF 127 ADDRESSES (1-127). CHANGE EACH DEVICE FROM PRESET DEFAULT ADDRESS OF "0" USING A SMALL SCREWDRIVER TO SLIDE THE INDIVIDUAL SWITCHES UP (ON) SO THAT THEIR SUM VALUE EQUALS THE ADDRESS SHOWN ON THE PLANS.

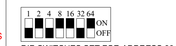


EXAMPLES:



DEFAULT - ALL SWITCHES "OFF" (DEVICE NOT ADDRESSED)

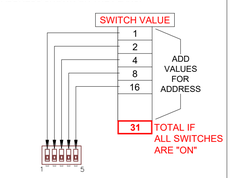
DIP SWITCHES SET FOR ADDRESS 7
SWITCHES #1, 2 & 4 ARE "ON"
(1 + 2 + 4 = 7)



DIP SWITCHES SET FOR ADDRESS 90
SWITCHES #2, 8, 16 & 64 ARE "ON"
(2 + 8 + 16 + 64 = 90)

SETTING SLC ADDRESS (POTTER PAD100)

EACH P-LINK DEVICE CAN BE SET TO ONE OF 31 ADDRESSES (1-31). CHANGE EACH DEVICE FROM PRESET DEFAULT ADDRESS OF "0" USING A SMALL SCREWDRIVER TO SLIDE THE INDIVIDUAL SWITCHES UP (ON) SO THAT THEIR SUM VALUE EQUALS THE ADDRESS SHOWN ON THE PLANS.



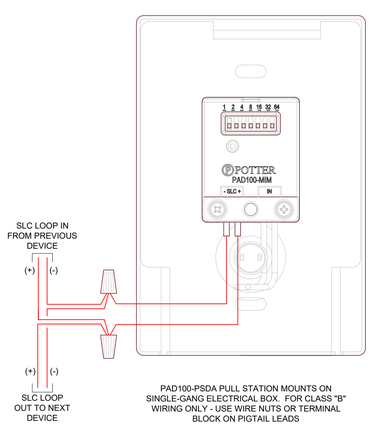
EXAMPLES:

DEFAULT - ALL SWITCHES "OFF" (DEVICE NOT ADDRESSED)

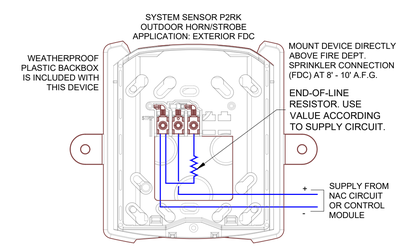
DIP SWITCHES SET FOR ADDRESS 7
SWITCHES #1, 2 & 4 ARE "ON"
(1 + 2 + 4 = 7)

DIP SWITCHES SET FOR ADDRESS 25
SWITCHES #1, 8, & 16 ARE "ON"
(1 + 8 + 16 = 25)

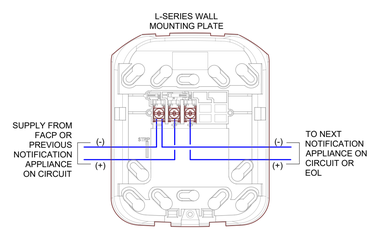
SETTING P-LINK ADDRESS (POTTER PAD100)



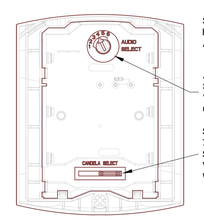
PAD100-PSDA WIRING DETAIL



SYSTEM SENSOR P2RK OUTDOOR HORN / STROBE



SYSTEM SENSOR L-SERIES HORN / STROBE & STROBE

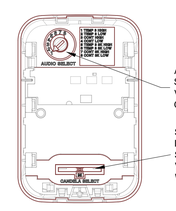


SYSTEM SENSOR P2RK OUTDOOR HORN/STROBE APPLICATION: EXTERIOR FDC

AUDIBLE SETTING SELECTION- SET AT "4" NON-TEMPORAL, HIGH VOLUME, FOR THIS APPLICATION ONLY.

STROBE CANDELA TO BE SET AT 75CD FOR THIS APPLICATION. SLIDE SELECTOR UNTIL PROPER VALUE SHOWS THROUGH WINDOW ON FRONT.

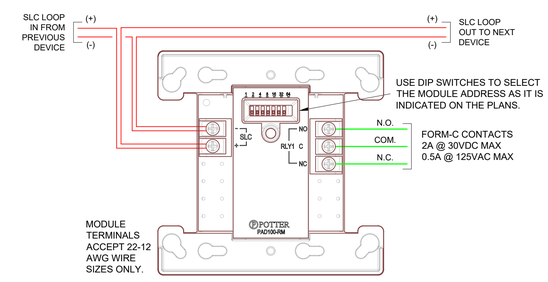
P2RK OUTDOOR HORN / STROBE CANDELA & AUDIBLE SETTINGS



AUDIBLE SETTING SELECTION- SET AT "1" TEMPORAL-3, HIGH VOLUME, UNLESS INDICATED OTHERWISE ON THE PLANS.

STROBE CANDELA TO BE SET AS INDICATED ON PLAN. SLIDE SELECTOR UNTIL PROPER VALUE SHOWS THROUGH WINDOW ON FRONT.

L-SERIES HORN / STROBE CANDELA & AUDIBLE SETTINGS



PAD100-RM RELAY MODULE DETAIL

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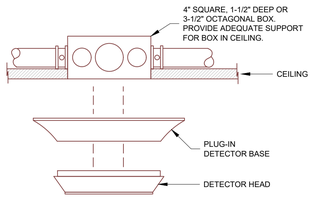
NO.	DATE	REVISION DESCRIPTION

WESTLAKE ACE HARDWRE
3511 SW MARKET STREET, LEE'S SUMMIT, MO 64082

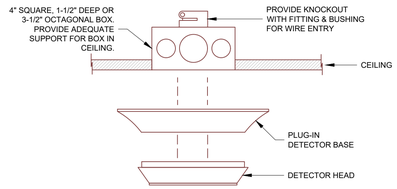
prepared for: Bart's Electric
7103 Stewart Road, Pleasant Valley, MO 64068

SEAL:

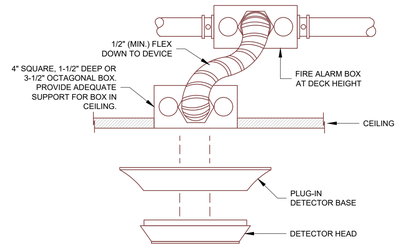
DRAWN BY: D.LANE	DATE: 03.23.23
DESIGNED BY: JM	DATE: 03.21.23
APPROVED BY:	DATE:
PROJECT NUMBER: 330323030947	
SHEET TITLE: FIRE ALARM SYSTEM Device Details	
SHEET NUMBER: FA-3 (3 of 4)	



BOX MOUNTING IN SHEETROCK OR PLASTER TYPE CEILINGS (MUST BE INSTALLED WITH CONDUIT)



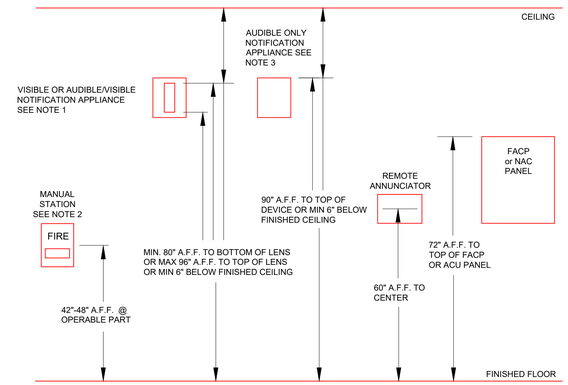
BOX MOUNTING IN LIFT OUT OR INTERLOCKING TYPE CEILINGS FOR SYSTEMS WITH CABLE INSTALLED IN PLENUM



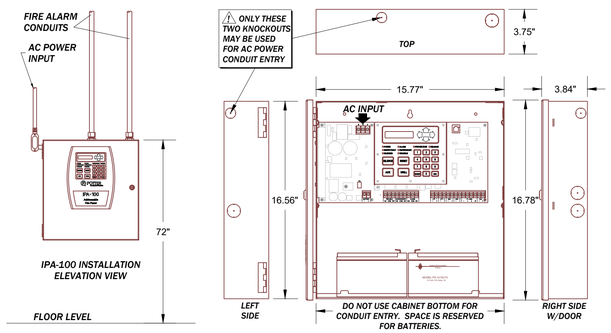
BOX MOUNTING IN LIFT OUT OR INTERLOCKING TYPE CEILINGS WITH SYSTEMS INSTALLED IN CONDUIT

NOTES:

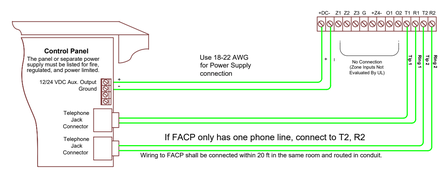
1. VISIBLE OR AUDIBLE/VISIBLE APPLIANCES SHALL BE MOUNTED SO THAT THE ENTIRE LENS IS NOT LESS THAN 80"A.F.F. OR GREATER THAN 96" A.F.F. WHERE LOW CEILING HEIGHTS PREVENT ABOVE, MOUNT AT 6" BELOW CEILING TO TOP OF LENS. FOR CORRIDORS 20' OR LESS WIDE, MOUNT VISUAL APPLIANCES NO MORE THAN 15' FROM END OF CORRIDOR WITH NO MORE THAN 100' SEPARATION BETWEEN VISUAL APPLIANCES. MAXIMUM CORRIDOR LENGTH COVERED BY A SINGLE 15cd STROBE SHALL NOT EXCEED 30'.
2. MOUNT MANUAL STATIONS WITHIN 5' OF EXIT DOORWAY OPENING.
3. AUDIBLE ONLY APPLIANCES SHALL BE MOUNTED SO THAT THE TOP OF DEVICE IS NOT LESS THAN 90" A.F.F. IF CEILING PERMITS AND A MINIMUM 6" FROM CEILING.

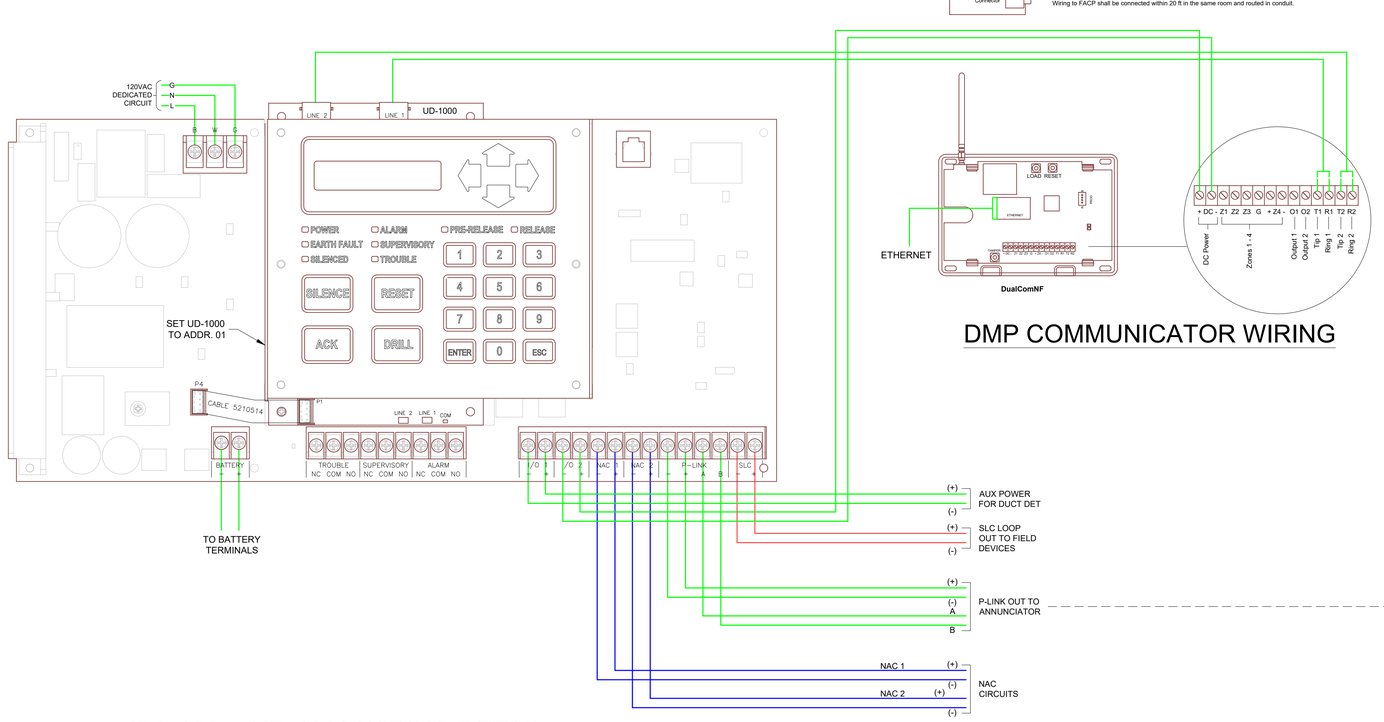


INSTALLATION HEIGHTS FOR WALL MOUNTED DEVICES



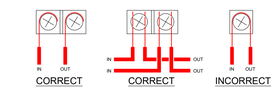
IPA-100 FIRE ALARM PANEL MOUNTING





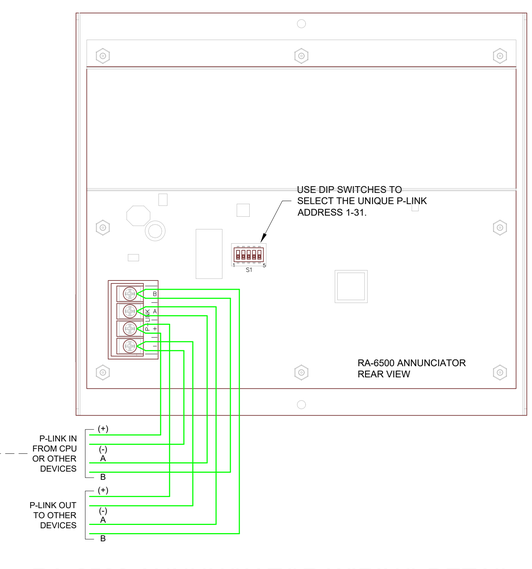
DMP COMMUNICATOR WIRING

IPA-100 w/UD-1000 WIRING DETAIL



WIRING MUST BE BROKEN AT DEVICE CONNECTION POINTS AS SHOWN TO INSURE MONITORING OF CIRCUIT INTEGRITY.

WIRING METHODS



RA-6500 ANNUNCIATOR WIRING DETAIL

STATE OF MISSOURI
LARRY D. DISSS
NUMBER ENC24611
REGISTERED PROFESSIONAL ENGINEER
04.11.2023

MIDWEST ALARM SERVICES
9745 Widmer, Lenexa, KS 66215
(913) 677-5771, FAX (913) 677-5772

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NO.	DATE	REVISION DESCRIPTION

WESTLAKE ACE HARDWRE
3511 SW MARKET STREET, LEE'S SUMMIT, MO 64082

prepared for: Bart's Electric
7103 Stewart Road, Pleasant Valley, MO 64068

SEAL:

DRAWN BY: D.LANE	DATE: 03.23.23
DESIGNED BY: JM	DATE: 03.21.23
APPROVED BY:	DATE:

PROJECT NUMBER: 330323030947

SHEET TITLE: FIRE ALARM SYSTEM Panel Details & Mounting Details

SHEET NUMBER: FA-4