Product Manual

10-2751

Digital Paging Assembly

P/N 06-564, Rev. 0
May 2010

DEVELOPED BY	Fike 704 SW 10th Street P.O. Box 610 Blue Springs, Missouri 64013 U.S.A. Phone: (888) 628-FIKE (3453) (816) 229-3405 Fax: (866) 211-9239
COPYRIGHT NOTICE	Copyright © 2010. All rights reserved. Fike copyrights this manual and products it describes. You may not reproduce, transmit, transcribe, or any part of this manual without express, written permission from Fike. This manual contains proprietary information intended for distribution to authorized persons or companies for the sole purpose of conducting business with Fike. If you distribute any information contained in this manual to unauthorized persons, you have violated all distributor agreements and we may take legal action.
TRADEMARKS	Fike© is a registered trademark of Fike.
QUALITY	Fike has maintained ISO 9001 certification since 1996. Prior to shipment, we thoroughly test our products and review our documentation to assure the highest quality in all respects.
WARRANTY	Fike provides a one-year limited manufacturer's warranty on this product. All warranty returns must be returned from an authorized Fike Distributor. Contact Fike's Marketing department for further warranty information. Fike maintains a repair department that is available to repair and return existing electronic components or exchange/purchase previously repaired inventory component (advance replacement). All returns must be approved prior to return. A Material Return Authorization (MRA) number must be indicated on the box of the item being returned. Contact the appropriate Regional Sales Manager for further information regarding product return procedures.
LIMITATIONS OF LIABILITY	Installation in accordance with this manual, applicable codes, and the instructions of the Authority Having Jurisdiction is mandatory. Fike can not be held liable for any incidental or consequential damages arising from the loss of property or other damages or losses resulting from the use or misuse of Fike products beyond the cost of repair or replacement of any defective components. Fike reserves the right to make product improvements and change product specifications at any time. While every precaution has been taken during the preparation of this manual to ensure the accuracy of its content, Fike assumes no responsibility for errors or omissions.

TABLE OF CONTENTS

LIST OF EXHIBITS

1.0 ABOUT THIS MANUAL

This manual is intended to be a complete reference for the installation, operation, and service of the Fike Digital Paging Assembly (P/N 10-2751). The information contained in this manual shall be used by factory trained service technicians who are authorized to work on this product. This manual also serves as the Operations Manual for the component.

The first-time installer and/or user should thoroughly read and understand the instructions contained within this manual before using this device. These instructions must be followed to avoid damage to the equipment itself or adverse operating conditions caused by improper installation and programming.

1.1 DOCUMENT HISTORY

Document Title: Digital Paging Assembly, Product Manual

Document Reorder Number: 06-564

Revision	Section	Date	Reason for Change
0	All Sections	05/2010	Initial Release

1.2 PRODUCT SUPPORT

If you have a question or encounter a problem not covered in this manual, you should first try to contact the distributor who installed the Fike system. Fike has a worldwide distribution network. Each distributor sells, installs, and services Fike equipment. Look on the back of the cabinet door, there should be a sticker with an indication of the distributor who installed the system. If you can not locate the distributor, please call Fike Customer Service for locating your nearest distributor, or go to our web-site at www.fike.com. If you are unable to contact your installing distributor or you simply do not know who installed the system, you can contact Fike Technical Support at (888) 628-3453, Option 2, Monday through Friday, 8:00 am to 4:30 pm CST.

1.3 SAFETY INFORMATION

Important safety admonishments are used throughout this manual to warn of possible hazards to persons or equipment.

⚠Caution

Cautions are used to indicate the presence of a hazard which will or may cause damage to the equipment if safety instructions are not followed or if the hazard is not avoided.

Note: Provides information on installation, operation, maintenance, performance or general tips that are important but not hazardous to anything or anyone.

1.4 TERMS USED IN THIS MANUAL

Authority Having Jurisdiction – The organization, office, or individual responsible for approving equipment, materials, and installation, or a procedure.

Configure – Panel set-up to properly recognize and supervise a device as the design requires.

Fire Alarm Control Unit (Panel) – A system component that receives inputs from automatic and manual fire alarm devices and might supply power to detection devices and to a transponder(s) or off-premises transmitter(s). The control unit might also operate releasing circuits or solenoids, provide transfer of power to the notification appliances, or transfer of condition to relays or devices connected to the control unit. The fire alarm control unit can be a local fire alarm control unit or a master control unit.

Power Limited – A circuit designation given for wiring purposes. The amount of current flowing through the circuit is limited versus being unlimited, or non-power limited.

Zone – A defined area within the protected premises. A zone can define an area from which a signal can be received, an area to which a signal can be sent, or an area in which a form of control can be executed. This term is used to create the relationship between activation inputs to notification outputs and peripherals.

Fire Command Center (FCC) – The principal attended or un-attended location where the status of the detection, alarm communications, and control systems is displayed and from which the system(s) can be manually controlled.

2.0 PRODUCT DESCRIPTION

The 10-2751, Digital Paging Assembly (See Exhibit 1) provides the interface between the Voice Alarm Communication System's paging equipment and the system amplifiers. It must be installed on all voice systems that incorporate multiple amplifiers serving separate zones or systems that require firefighter's phone capabilities. The assembly includes the following components: Digital Paging Card (P/N 10-2727), Paging Control Card (P/ 10-2741), 10-pin ribbon cable (P/N 10-2764), and Microphone Housing (P/N 10-2757).

The assembly is designed to be mounted in any of the following voice systems enclosures: CyberCat™ 1016 fire command center enclosure with 19 card dead-front (P/N 10-2483-x-x-19); CyberCat™ 254 fire command center enclosure with 19 card dead-front (P/N 10-2527-x-x-19); retrofit enclosure with 16 card dead-front (P/N 10-2753-x-x) or fire command center enclosure with 21 card dead-front (P/N 10-2771-x-x). If mounted in the retrofit enclosure, the enclosure must be physically located directly adjacent to the main Fire Alarm Control Panel (FACP).

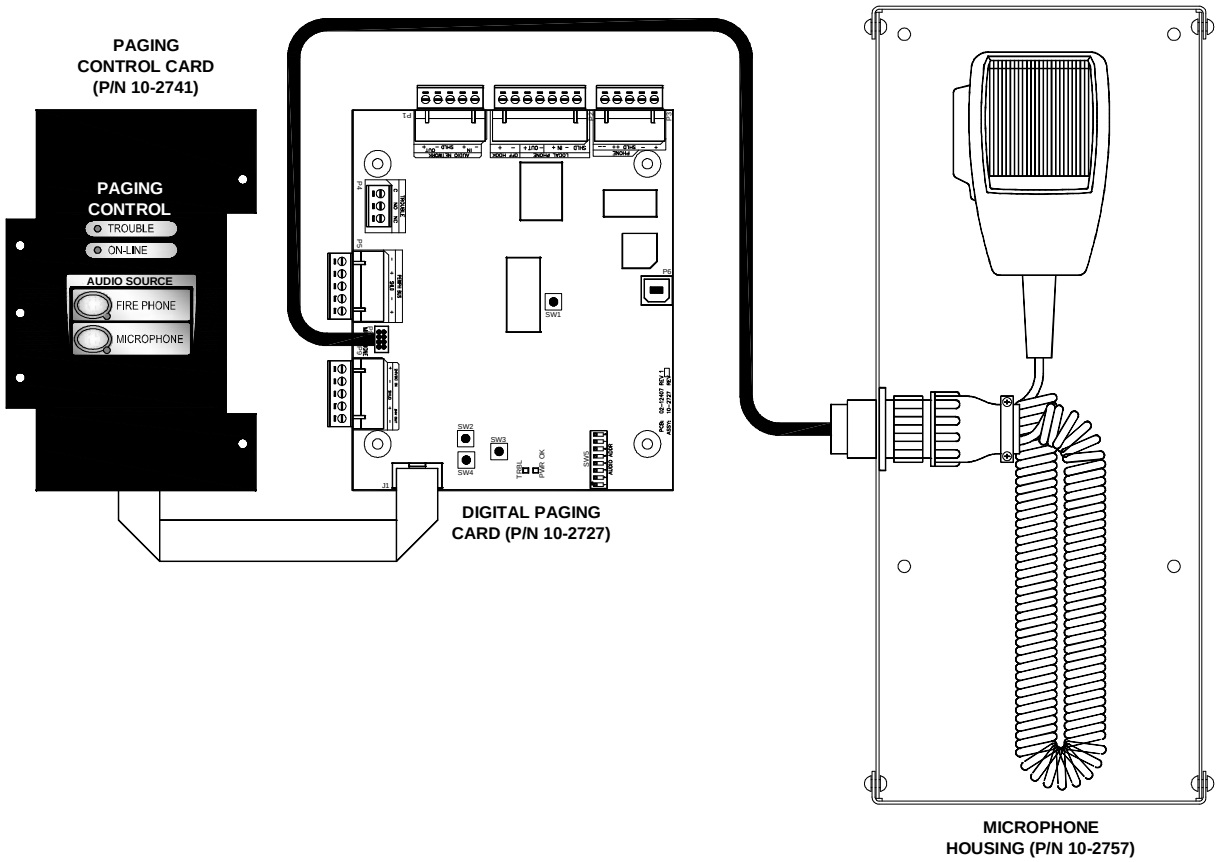


Exhibit 1: Digital Paging Assembly

2.1 ORDERING INFORMATION

The Digital Paging Assembly can be ordered with either a red or black microphone housing using the following ordering format:

Part Number: 10-2751-**c**, where **c** = enclosure color (**R**ed or **B**lack)

2.2 COMPATIBILITY

The Digital Paging Assembly is compatible with Fike's CyberCat 254 and CyberCat 1016 intelligent control panels that are equipped with firmware version 5.XX.

2.3 LISTINGS AND APPROVALS

Approval Agency	File Number
Underwriters Laboratories	S3217
Factory Mutual	Pending
California State Fire Marshall (CSFM)	Planned
City of New York (MEA)	Planned

2.4 AGENCY STANDARDS AND COMPLIANCE

This Fire Alarm product complies with the following standards:

NFPA 70 – NEC, Article 300 Wiring Methods

NFPA 70 – NEC, Article 760 Fire Protective Signaling Systems

NFPA 72 – National Fire Alarm Code

UL 864 – Control Units and Accessories for Fire Alarm Systems

2.5 RELATED FIRE ALARM STANDARDS

NFPA 1 – Fire Prevention Code

NFPA 77 – Static Electricity

NFPA 101 – Life Safety Code

Applicable Local and State Building Codes

Requirements of the Local Authority Having Jurisdiction

2.6 RELATED DOCUMENTATION

Further details about the product referenced in this document can be found in the following manuals.

Document Title	Part Number
CyberCat 254/1016 Product Manual	06-326-1
CyberCat 254/1016 Operation & Maintenance Manual	06-326-2
Microphone Housing Installation Instructions	06-569
Fire Command Center Enclosure Installation Instructions	06-570
Retrofit Enclosure Installation Instructions	06-571
Paging Control Card Installation Instructions	06-575
Audio Control Card Product Manual	06-558
Input/Output Control Card Product Manual	06-446
Amplifier Card Product Manual	06-576

Exhibit 2: Related Documentation

3.0 ASSEMBLY COMPONENTS

This section provides a complete description of the components that make up the Digital Paging Assembly.

3.1 DIGITAL PAGING CARD (P/N 10-2727)

The Digital Paging Card (See Exhibit 3) is the main component of the voice systems distributed live audio. It provides the primary connection points for the voice system's live audio bus, firefighter's telephone riser, integral paging microphone, and integral firefighter's telephone. The specification for each of the card's terminal block connections is provided as follows.

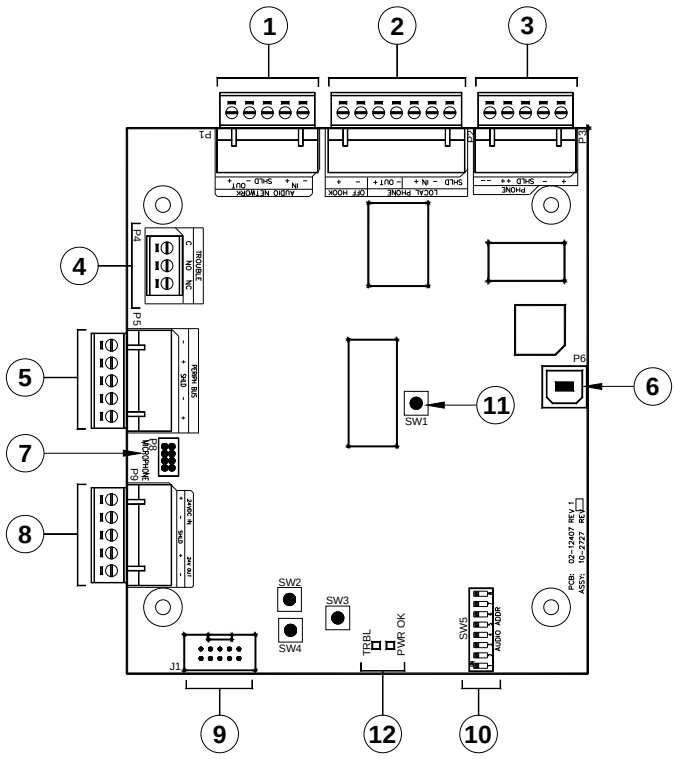


Exhibit 3: Digital Paging Card Layout

Exhibit 4: Digital Paging Card Specifications

ID	Terminal Block	Terminal Labels	Function and Electrical Ratings/Requirements	Wiring Requirements
1	P1	AUDIO NETWORK (B-, B+, SHLD, A-, A+)	Digital audio bus input/output; used for live paging	Port A on one amplifier connects to Port B on another.
				Belden 9841 wire or equivalent; maximum 4,000 ft. (1,219 m)
			Power-limited and Supervised	
2	P2	LOCAL PHONE IN/OUT (SHLD, -, +)	Local Fire Phone connection; Power-limited and Non supervised 24 VDC @ 20 mA	Belden 9841 wire or equivalent Maximum 5 remote phones
		OFF HOOK (-, +) ***Future Use Only***	Local Fire Phone off-hook connection, Power-limited and Non supervised	1.2 K eol
3	P3	PHONE (--, ++, SHLD, -, +)	Fire phone riser connection; rated 24 VDC	Class A or B (2.2K eol)
			Power-limited and Supervised	50 ohms max. line impedance

Exhibit 4: Digital Paging Card Specifications – Continued

ID	Terminal Block	Terminal Labels	Function and Electrical Ratings/Requirements	Wiring Requirements
4	P4	TROUBLE RELAY (NC, C, NO)	Normally energized (common) relay; contacts shown with power applied and no troubles present; SPDT form C relay contact, Non supervised	
			DC operation: 2 A @ 30 VDC (pf=.35) AC operation: 0.5 A @ 120 VAC (pf=.35)	
			Relay may be connected to power-limited or non power-limited sources, not both	
5	P5	PERIPH BUS (SHLD, -, +, -, +) ***Future Use Only***	RS485 peripheral input; 9600 Baud, 1 start bit, 2 stop bits, 8 data bits	Belden 9841 wire or equivalent; maximum 4,000 ft. (1,219 m)
			Power-limited and Supervised	
			Connection to Peripheral Terminal P5 on CyberCat	
6	P6	USB ***Future Use Only***	Computer USB interface; not intended for continuous connection – configuration and data retrieval only. Do not connect the PC if a ground fault is present.	USB A-B cable; 6 ft. (1.8 m) maximum
			Power-limited and Supervised	
7	P8	MICROPHONE (IN+, IN-, TRBL, GND, GND, PTT)	Local microphone input; Power-limited and Supervised	
8	P9	24 VDC IN/OUT (+, -)	24 VDC power input; Power-limited and Supervised[1]	
			24 VDC power output to next device (feed through); Power-limited and Supervised	
			Operating Voltage: 24 VDC	
			Current Draw: Standby = 92 mA (power LED on) Alarm = 125 mA (all LEDs on)	
9	J1		Ribbon interface cable connection (P/N 10-2764) to Paging Control Card	
			Non Supervised	
10	SW5	***Future Use Only***	Dip-switch for assigning cards address on the panel's RS485 peripheral bus (1-31)	
			Dip-switch eight (8) is used to turn on Class A circuit supervision for the fire-phone riser (terminal P3)	
11	SW1		Digital Paging Card reset button	
12			Digital Paging Card Trouble and Power OK LEDs – See Appendix B for a listing of the trouble conditions that may occur.	

[1] Power for the Digital Paging Card must be supplied by the host fire alarm control panel.

3.2 PAGING CONTROL CARD (P/N 10-2741)

The Paging Control Card (See Exhibit 5) provides a means for the system operator to manually change the input source for live paging from the system microphone to the firefighter's telephone handset. The card must be used on all systems that incorporate firefighter's phones. The card is designed to be mounted to the CyberCat's dead-front door panel.

The card provides two momentary push buttons with corresponding LED's. When the switch is pressed, the LEDs will illuminate solid to indicate which audio source is selected for live paging. The card is equipped with a Trouble LED which indicates problems with the card, as well as an On-Line LED to indicate when either audio source (Microphone or Firefighter's Phone) is active. The card communicates with and receives its operating power directly from the voice systems Digital Paging Card via a ribbon cable connection.

Refer to Fike document 06-575 for further details.

Exhibit 5: Paging Control Card

3.3 MICROPHONE HOUSING (P/N 10-2757-C)

The Microphone Housing (See Exhibit 6) is used in conjunction with the Digital Paging Card (P/N 10-2727) or the amplifier card (P/N 10-2726) to provide manual paging capability to the voice system.

The housing consists of an 18 gauge steel enclosure with a baked on enamel finish (**C** = **R**ed or **B**lack), paging microphone and cable for connection to Digital Paging Card. The housing is designed to allow mounting inside the voice evacuation system enclosure using hardware provided.

Refer to Fike document 06-569 for further details.

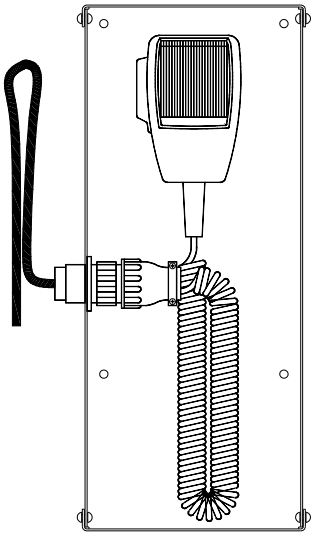


Exhibit 6: Microphone Housing

4.0 CONTROL SWITCH CARDS

The following switch cards are used to provide control capabilities for the voice system. Each card provides programmable switches that can be configured to activate individual or multiple speaker zones for live paging. The cards are designed to mount to any of the fire alarm control systems dead front door panels. This configuration allows easy access to switch operation and viewing of cards status LEDs. The card interfaces to the fire alarm system via the panel's RS485 peripheral bus and requires 24VDC power from the panel.

The cards are ordered separately to suit your specific project requirements.

4.1 AUDIO CONTROL CARD (P/N 10-2661)

The Audio Control Card (See Exhibit 7) provides EVAC, ALERT and PAGE switches that can be used by the system operator to manually initiate recorded or live audio messages in response to a system event. Each switch is programmed to activate a single or multiple audio zones when pressed. Each switch is provided with an LED, that when lit indicates the active status of the switch. Zoned audio amplifiers, if assigned to the selected zone, will play either the EVAC or ALERT message for the selected zone, or will broadcast the live message from the system microphone or firefighter's phone based on the selected switch.

Refer to Fike document 06-558 for further details.

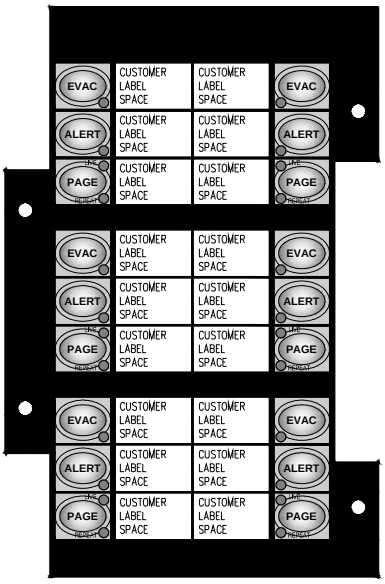


Exhibit 7: Audio Control Card

4.2 INPUT/OUTPUT CARD (P/N 10-2659)

The Input/Output Card (See Exhibit 8) provides twenty configurable switches that can be used by the system operator to manually select individual audio zones for live paging in response to a system event. Each switch is programmed to activate a single or multiple audio zones when pressed. Each switch is provided with an LED, that when lit indicates the active status of the switch. Zoned audio amplifiers, if assigned to the selected zone, will broadcast the live message from the system microphone or firefighter's phone.

Refer to Fike document 06-446 for further details.

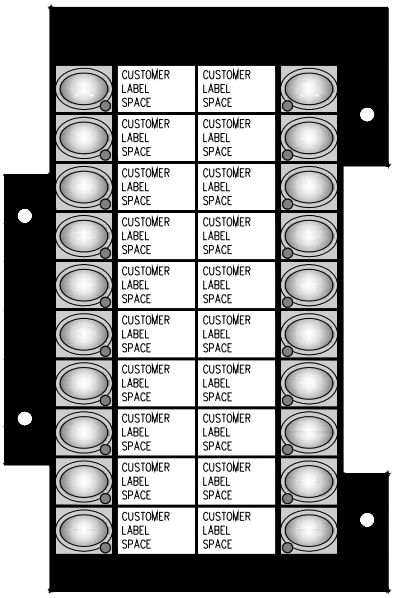


Exhibit 8: Input/Output Card

5.0 ACCESSORY COMPONENTS

The following components can be used to expand the capabilities of the voice system. Each item must be ordered separately.

5.1 FIRE-PHONE HOUSING (P/N 10-2756-C)

The Fire-Phone Housing (See Exhibit 9) is used in conjunction with the Digital Paging Card (P/N 10-2727) to provide firefighter's phone capability for the voice evacuation system.

The housing consists of an 18 gauge steel enclosure with a baked on enamel finish (**C** = **R**ed or **B**lack), firefighter's phone and connection cable. The housing is designed to be mounted inside the Voice Evacuation system enclosure (FCC or Retrofit) using hardware provided.

Refer to Fike document 06-568 for further details.

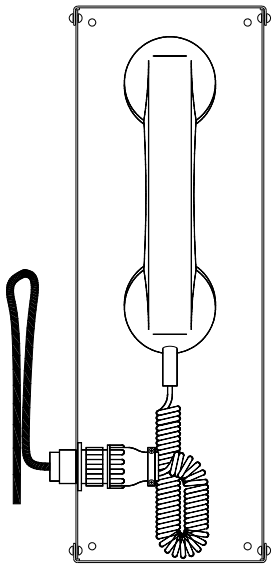


Exhibit 9: Fire-Phone Housing

5.2 FIRE-PHONE CARD (P/N 10-2728)

The Fire-Phone Card (See Exhibit 10) is used on all systems that require addressable firefighter's phone operation; as it is the source of the systems fire phone control module addressable loop (Series 500). This addressable loop allows up to 99 fire-phone control modules to be connected to the circuit. Every phone jack must be connected to the voice system via a fire-phone control module if selective phone connection is required.

The card provides twenty (20) configurable switches that can be used by the system operator to selectively connect fire phone control modules to the voice systems fire-phone bus[2]. This connection allows two-way communication between the master fire phone located in the fire command center and remote phones strategically located throughout the facility. Each switch is provided with an LED, that when lit indicates the active status of the switch.

The fire-phone card is designed to mount to any of the fire alarm control systems dead-front door panels. This configuration allows easy access to switch operation and viewing of cards status LEDs. The card interfaces to the system via the control panel's RS485 peripheral bus and requires 24VDC power from the panel.

Refer to Fike document 06-559 for further details.

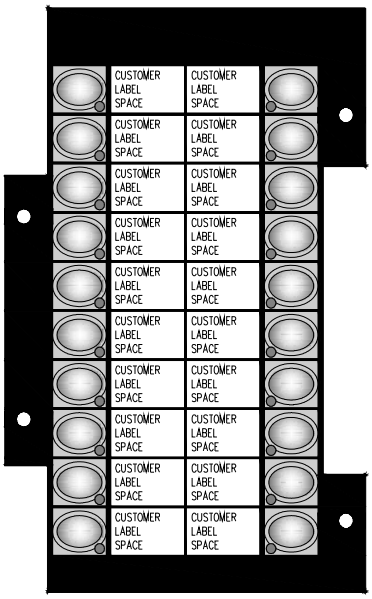


Exhibit 10: Fire-Phone Card

[2] Where more than twenty (20) switches are required, up to four supplemental fire-phone cards can be added to suit your specific project requirements.

5.3 SUPPLEMENTAL FIRE-PHONE CARD (P/N 10-2730)

The Supplemental Fire-Phone Card (See Exhibit 11) is used in conjunction with the Fire-Phone Card (P/N 10-2728) to provide twenty (20) additional configurable switches that can be used by the system operator to selectively connect fire-phone control modules to the voice systems fire phone bus. This connection allows two-way communication between the master fire-phone located in the fire command center and remote phones strategically located throughout the facility. Each switch is provided with an LED, that when lit indicates the active status of the switch.

The card is designed to mount to any of the fire alarm control systems dead-front door panels. This configuration allows easy access to switch operation and viewing of cards status LEDs. The card interfaces to and receives its 24VDC operating power from the fire-phone card (P/N 10-2728) via a 34-pin ribbon cable connection. Up to four supplemental fire-phone cards can be added to the voice system to suit your specific project requirements.

Refer to Fike document 06-560 for further details.

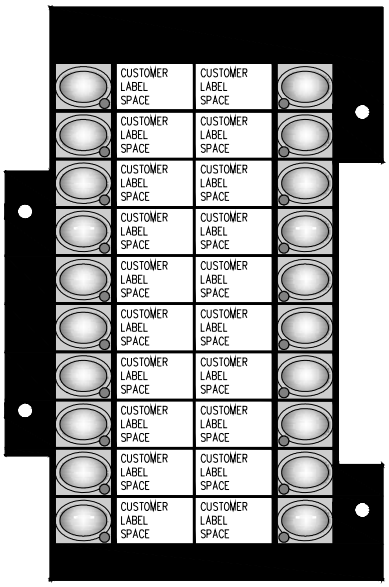


Exhibit 11: Supplemental Fire-Phone Card

5.4 FIRE-PHONE MODULE (SYSTEM SENSOR M500FP / FIKE P/N 24-135)

The Fire-Phone module (See Exhibit 12) is used to monitor and control a loop of firefighter phones. It has the ability to differentiate between normal, off-hook, and trouble conditions. The module is wired to the Digital Paging Card's (P/N 10-2727) fire-phone riser. When taken off-hook or plugged in, a phone will immediately receive a ringing tone and the panel will receive an off-hook indication. The system operator can then connect that off-hook phone to the system fire-phone riser.

Specifications:

Dimensions:	4.5" H x 4.3" W x 1.4" D (11.4cm x 11cm x 3.6cm)
Mounting:	4" square with minimum depth of 2.125" (5.4cm)

Exhibit 12: Fire-Phone Module

5.5 FIREFIGHTER'S PHONE JACK (SPACE AGE IAMFFPJAC / FIKE P/N 24-133)

The Firefighter's Phone Jack (See Exhibit 13) allows a firefighter to plug a portable handset (P/N 23-134) into the phone jack and communicate with other personnel connected to the voice evacuation system. The jack can be wired directly to the digital paging card (P/N 10-2727) where a simple fire phone system is required or to a fire-phone module (P/N 24-135) where selectable phone use is required.

Specifications:

Dimensions:	2.75" W x 4.5" H x 1.5" D (7cm x 11.4cm x 3.8cm)
Mounting:	Single gang box with minimum depth of 1.75" (4.5cm)

Exhibit 13: Firefighter's Phone Jack

5.6 FIREFIGHTER'S PORTABLE HANDSET (SPACE AGE SSU00551 / FIKE P/N 24-134)

The Firefighter's Portable Handset (See Exhibit 14) is designed to be used with the firefighter's phone jack (P/N 24-133). The handset allows firefighter's to move from one location to another and still keep in contact with the voice evacuation system.

Specifications:

High Impact red plastic handset

12" red coil cord that expands to 6 ft. (1.8m)

¼" (6.3mm) male plug

Exhibit 14: Firefighter's Portable Handset

5.7 EMERGENCY TELEPHONE CABINET (SPACE AGE ETC-CX-MD / FIKE P/N 10-2711)

The Emergency Telephone Cabinet (See Exhibit 15) is equipped with an integral telephone handset that allows two-way emergency communication between firefighters and other authorized personnel connected to the voice evacuation system. The jack can be wired directly to the digital paging card (P/N 10-2727) where a simple fire phone system is required or to a fire-phone module (P/N 24-135) where selectable phone use is required.

Specifications:

16 gauge steel enclosure with durable red finish

Surface or flush back box

Clinch type terminals for easy connection of field wiring

Keylock, Magnetic Catch or Break Glass access

Dimensions: 10" W x 13.75" H x 4" D (25.4cm x 35cm x 10.2cm)

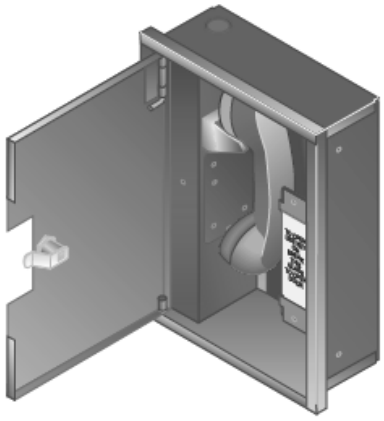


Exhibit 15: Emergency Telephone Cabinet

5.8 FIREFIGHTER PHONE CABINET FIVE PHONES (SPACE AGE SSU00566 / FIKE P/N 10-2712) TEN PHONES (SPACE AGE SSU00567 / FIKE P/N 10-2760)

The Firefighter Phone Cabinet (See Exhibit 16) offers a convenient storage of the portable handsets (P/N 24-134). The phone cabinet is available in two sizes capable of storing either five phones or ten phones.

Specifications:

16 gauge steel enclosure with durable red finish

Surface mount back box

Keyed door lock

White indelible lettering, 1" tall

Dimensions: 23.5" W x 13.125" H x 4" D (59.7cm x 33.3cm x 10.2cm)
23.5" W x 23.625" H x 4" D (59.7cm x 60cm x 10.2cm)

Exhibit 16: Firefighter Phone Cabinet

6.0 INSTALLATION

The following installation instructions must be strictly adhered to when installing the Digital Paging Assembly components to prevent potential damage to the components and the associated control panel.

⚠Caution

The assembly components and associated control panel contains static sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use anti-static packaging to protect electronic assemblies removed from the unit.

⚠Caution

Never remove or install boards, internal cables or components with power applied. Failure to follow the instructions provided in this section can result in irreparable damage to the system components. This damage may adversely affect the operation of the control unit but its effect may not be readily apparent.

6.1 MOUNTING OPTIONS

The Digital Paging Assembly can be mounted in either the voice system's Fire Command Center enclosure or Retrofit enclosure. Each enclosure is equipped with threaded press studs that allow mounting of the components to the enclosure back-box (See Exhibits 17 and 18).

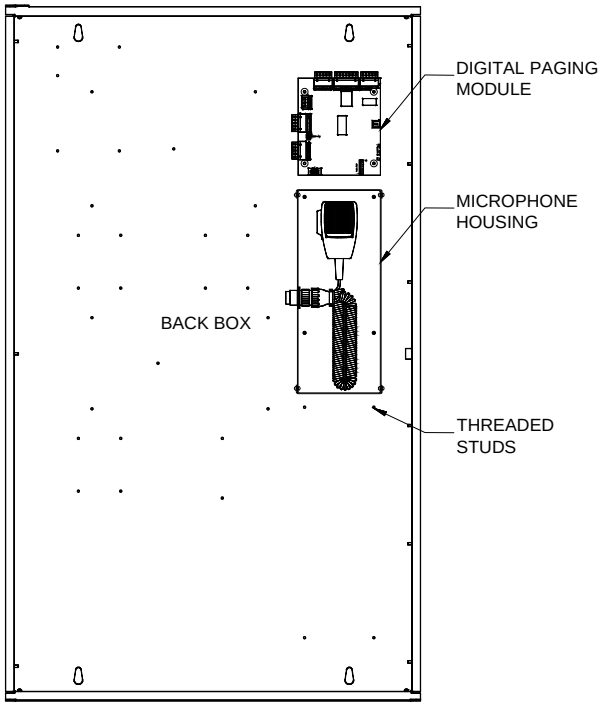


Exhibit 17: FCC Enclosure

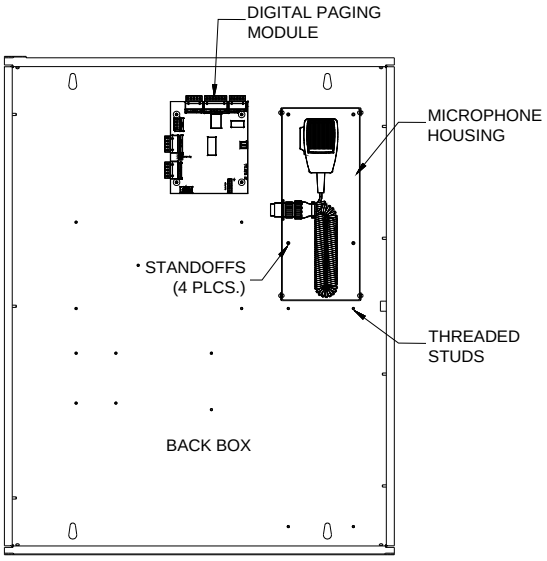


Exhibit 18: Retrofit Enclosure

6.2 DIGITAL PAGING CARD INSTALLATION

To install the card:

1. Remove the card and supplied mounting hardware from the packaging.
2. Locate the four press studs provided in the enclosure for mounting the digital paging card (See Exhibits 17 and 18).
3. Thread the four M/F standoffs onto the press studs (See Exhibit 19).
4. Align the mounting holes in the digital paging card with the standoffs and secure in place with supplied hex nuts (qty. of 4).

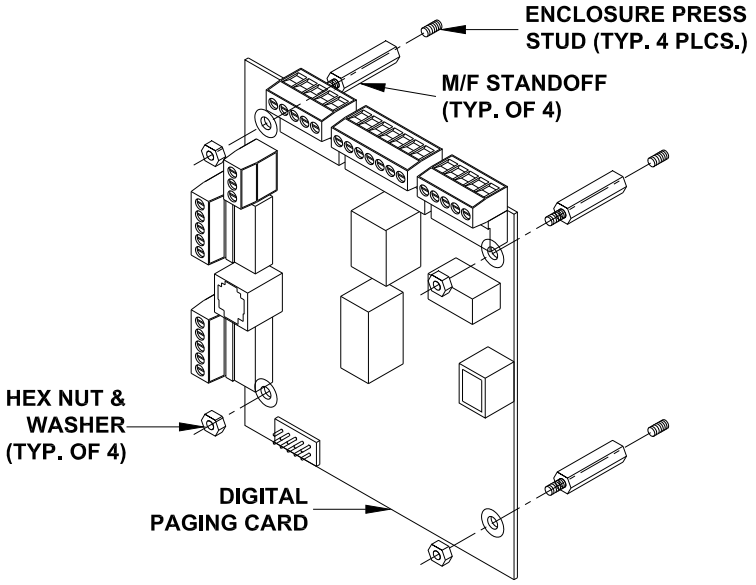


Exhibit 19: Digital Paging Card Installation

6.3 PAGING CONTROL CARD AND MICROPHONE HOUSING INSTALLATION

Refer to the documentation supplied with the Paging Control Card (P/N 10-2741) and Microphone Housing (P/N 10-2757) for instructions on how to install each component.

6.4 DIGITAL PAGING CARD WIRING

Unless otherwise detailed in this manual or in other documents relating to this component, the designer, installation and service technician shall utilize published standards and references such as: NFPA 70 National Electrical Code; NFPA 72 National Fire Alarm Code; and other standards which may be relevant to the Local Authority Having Jurisdiction (AHJ) for field wiring installation requirements.

Exhibit 20 shows the digital paging cards terminal block designations and their general function for reference purposes. Wiring diagrams detailing each terminal block connection are provided as follows.

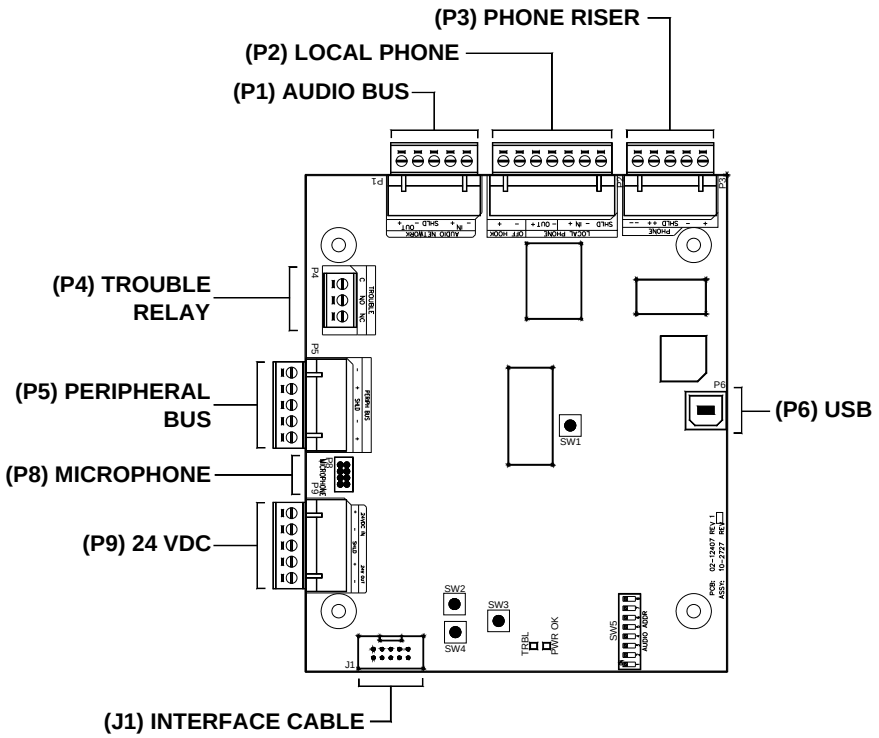


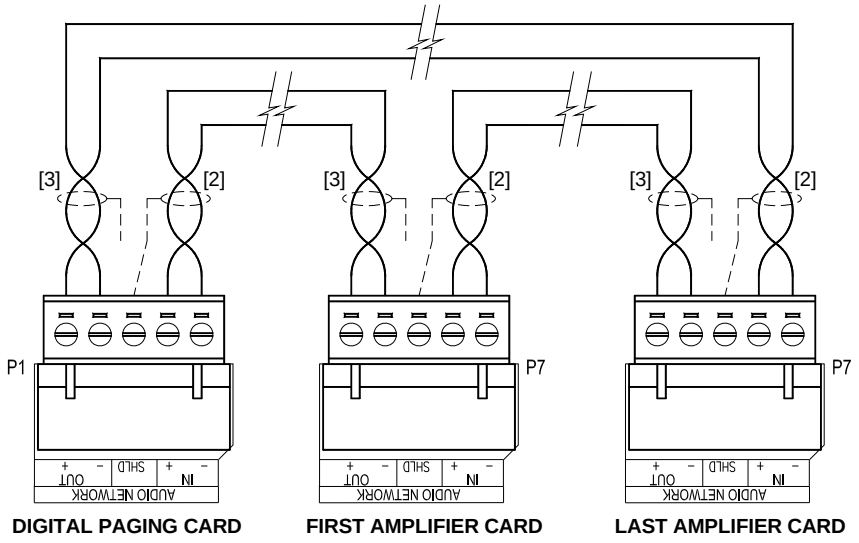
Exhibit 20: Digital Paging Card Terminal Connections

6.4.1 AUDIO NETWORK - (P1)

Exhibit 21 illustrates how to connect the digital paging module to the voice systems digital audio network. This connection is used to connect the digital paging module to all of the voice system amplifiers (128 maximum) for live paging. The audio bus can be ran up to 4,000 ft. (1,219 m) in length between each node, using Belden 9841, twisted-shielded cable or equivalent.

The audio network must be ran from audio network connection terminals “IN” to “OUT” and must return to the digital paging module (Class A, Style 7 network).

Refer to Fike document 06-576, “Amplifier Card Product Manual” for amplifier connection details.



NOTES [ ]:
1. ALL WIRING IS SUPERVISED AND POWER-LIMITED.
2. LAND SHIELD WIRE ON "AUDIO NETWORK IN" TERMINALS ONLY.
3. INSULATE SHIELD FROM GROUND, BUT DO NOT LAND.

Exhibit 21: Audio Network Connections

6.4.2 LOCAL PHONE - (P2)

Exhibit 22 illustrates how to connect the Fire-Phone Housing to the digital paging module. The fire-phone housing (P/N 10-2756) must be installed in the same enclosure as the digital paging card.

Refer to Fike document 06-568, “Fire-Phone Housing Installation Instructions” for instructions on how to mount the housing into the enclosure.

Note: Off hook connection is for future use only.

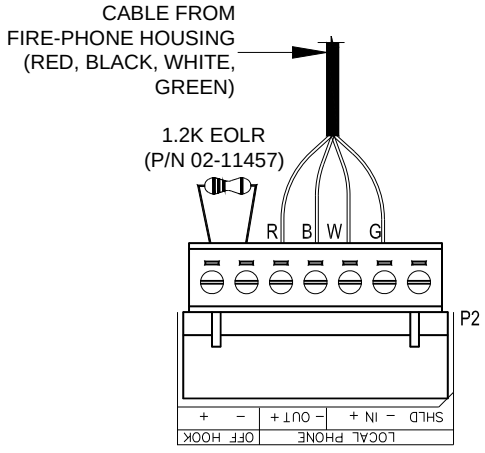
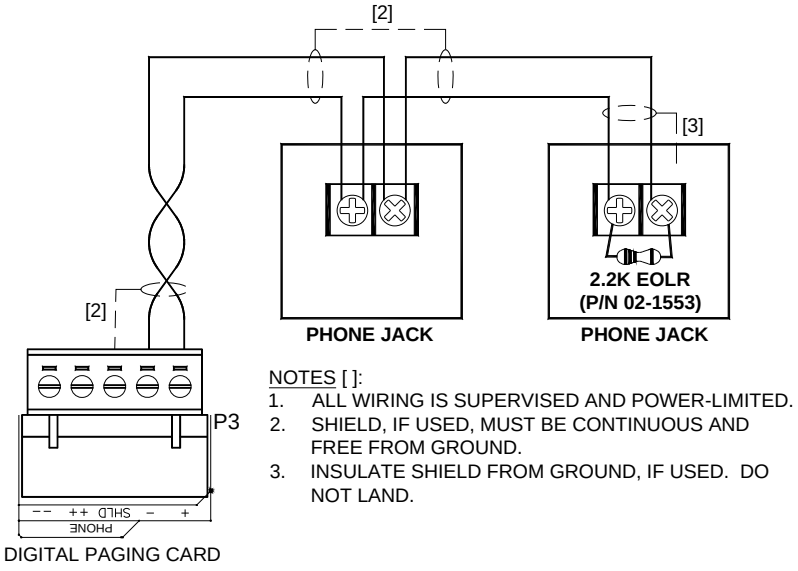


Exhibit 22: Local Phone Connection

6.4.3 PHONE RISER - (P3)

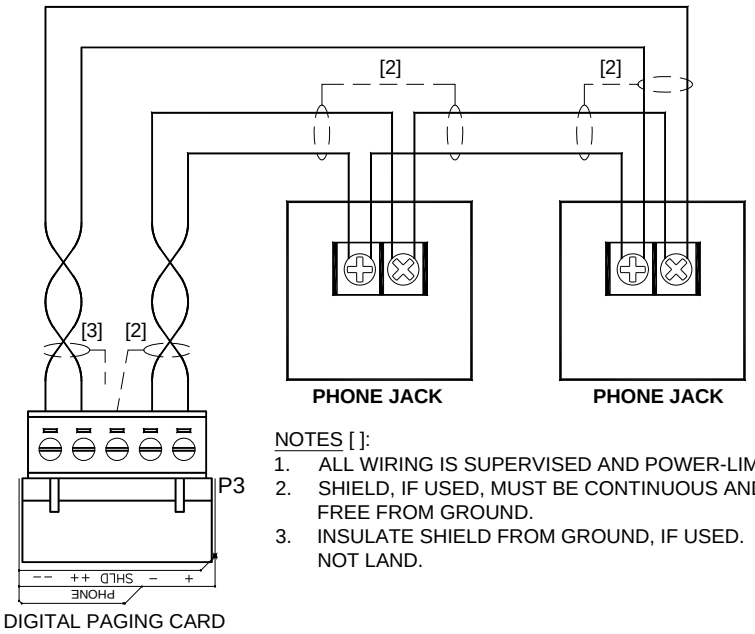
Exhibit 23 illustrates how to wire the phone riser for Class B, direct party line operation. With this configuration, the firefighter's phone jacks are wired directly to the Digital Paging Card (P/N 10-2727). Any phone connected to the phone riser can talk to any other connected phone.



NOTES [ ]:
1. ALL WIRING IS SUPERVISED AND POWER-LIMITED.
2. SHIELD, IF USED, MUST BE CONTINUOUS AND FREE FROM GROUND.
3. INSULATE SHIELD FROM GROUND, IF USED. DO NOT LAND.

Exhibit 23: Phone Riser Connection
Direct Party Line (Class B)

Exhibit 24 illustrates how to wire the phone riser for Class A, direct party line operation.



NOTES [ ]:
1. ALL WIRING IS SUPERVISED AND POWER-LIMITED.
2. SHIELD, IF USED, MUST BE CONTINUOUS AND FREE FROM GROUND.
3. INSULATE SHIELD FROM GROUND, IF USED. DO NOT LAND.

Exhibit 24: Phone Riser Connection
Direct Party Line (Class A)

Exhibit 25 illustrates how to wire the phone riser for selective talk operation. Selective talk requires that all fire-phones be connected to the phone riser via an addressable fire-phone module (P/N 24-135). The module is used to monitor and control either a loop of firefighter's phones or a single phone.

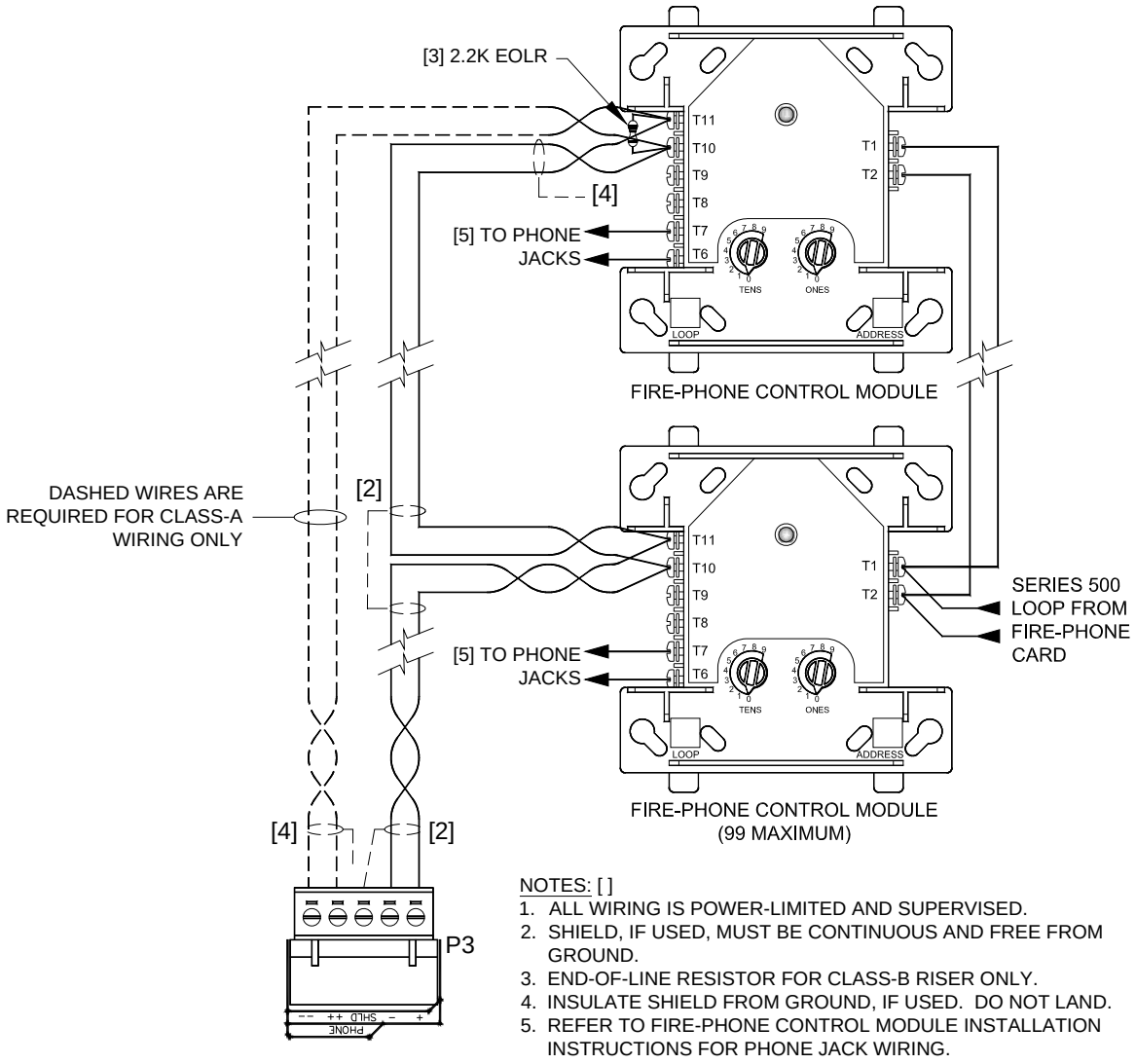


Exhibit 25: Phone Riser Connection Selective Talk (Class A or B)

Note: If using Class A wiring, switch 8 on dip-switch SW5 on the digital paging card must be set to ON for proper wiring supervision.

6.4.4 TROUBLE RELAY - (P4)

Exhibit 26 shows the terminal configuration for the digital paging card's normally energized, Form C Trouble relay. The relay contacts are rated 2.0 A at 30 VDC or 0.5 A at 120 VAC. Relay may be connected to power-limited or non power-limited sources, not both.

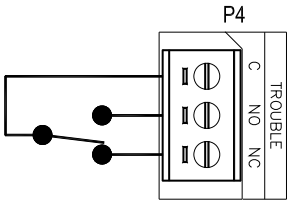


Exhibit 26: Trouble Relay Connections

6.4.5 PERIPHERAL BUS - (P5)

The P5 peripheral bus connection is not used at this time.

6.4.6 USB - (P6)

The P6 USB connection is used to temporarily connect a computer to the digital paging card for programming and data retrieval using a USB A-B interface cable (P/N 10-1874B).

6.4.7 (P7) NOT USED

6.4.8 INTEGRAL MICROPHONE INPUT - (P8)

Exhibit 27 illustrates how to connect the paging microphone to the digital paging card. This connection allows delivery of live audio messages to all system amplifiers.

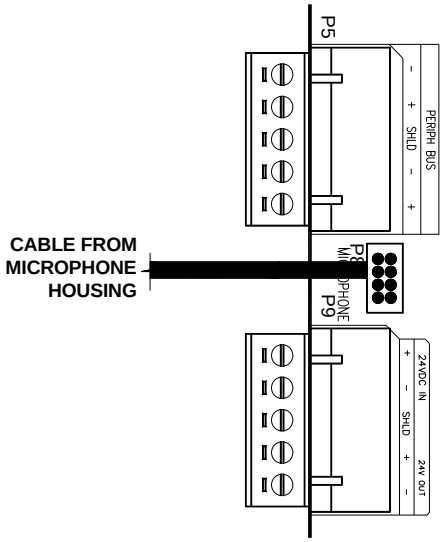


Exhibit 27: Microphone Input

6.4.9 24VDC POWER IN/OUT - (P9)

Exhibit 28 illustrates how to connect 24Vdc power to the digital paging card.

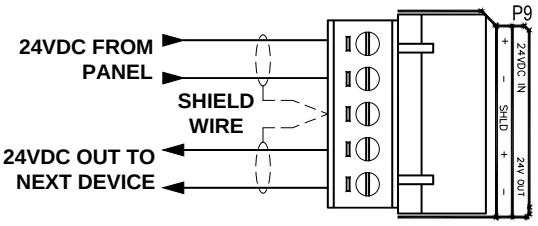


Exhibit 28: Power Input

6.4.10 PAGING CONTROL CARD INTERFACE - (J1)

Exhibit 29 illustrates how to connect the paging control card (P/N 10-2741) to the digital paging card. The paging control card is supplied with an interface cable (P/N 10-2764) for interfacing to the digital paging card (terminal J1). Refer to Fike document 06-575 for paging control card installation instructions.

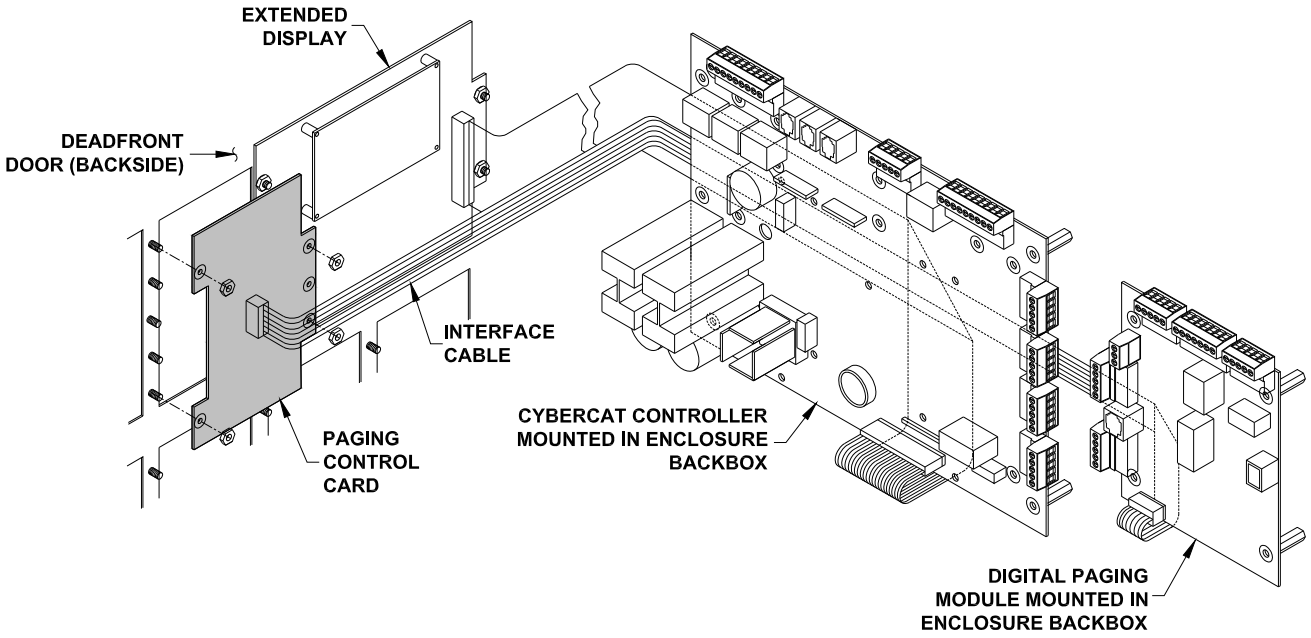


Exhibit 29: Paging Control Card Installation

7.0 PAGING OPERATION

Paging is a manual function that allows the system operator to deliver live voice commands to the building occupants over the systems voice evacuation speakers. Paging requires the system operator to select the paging source: 1) system microphone or 2) system fire-phone(s) and the destination for the page. By default, the system microphone is the primary source of live paging.

Paging has the highest priority over all other system events, which means that even with an Alarm event in the system, the EVAC tone will be suppressed during paging. If the paging microphone plugged directly into the amplifier card, the paging function is non-latching. This means when the microphone key is released, the system amplifiers automatically switch back to the active message that was being played (if any) prior to the page. If using an Input/Output or Audio Control card to initiate the page, the paging function is latching. The switches on the cards must be used to turn on and off the system amplifiers for paging.

7.1 SELECT THE PAGE SOURCE

The Paging Control Card (P/N 10-2741) allows the system operator to change the live paging input source from the system microphone to the fire-phone(s). The function of the controls and indicators provided on the card are described as follows:

Fire Phone Switch
Selects the Fire Phone as the live paging source. The associated red LED will illuminate solid to indicate the active state of the switch.

Microphone Switch
Selects the Microphone as the live paging source. The associated red LED will illuminate solid to indicate the active state of the switch.

Trouble LED
Indicates any trouble on the digital paging module.

On-Line LED
Indicates that the selected paging source is on-line. The LED will illuminate automatically when the paging source is set to fire-phone. When set to microphone, the on-line LED will illuminate only when the microphone is keyed.

Exhibit 30: Paging Control Card

The fire-phone and microphone switches can also be used to silence and reset the digital paging card. Pressing the active switch one (1) time will silence the local audible on the digital paging card. The audible will resound after 24 hours if trouble is still present. Pressing the active switch three (3) times within one second will reset the digital paging card.

7.2 SELECT THE PAGE DESTINATION

The switches on the Audio Control Card (P/N 10-2662) and Input/Output Card (P/N 10-2659) can be programmed to allow manual selection of the paging zone(s). See Exhibit 31. Switches can be configured to activate a single, multiple, or all audio zones.

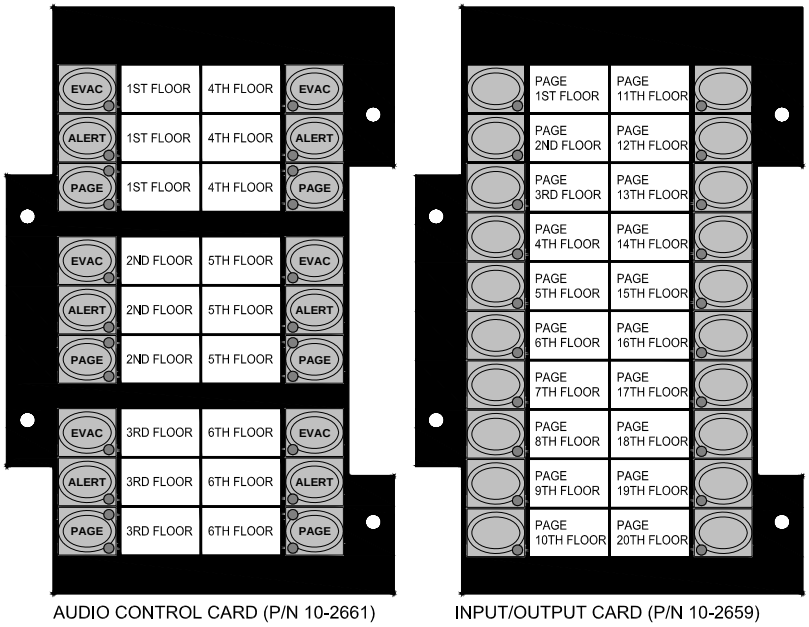


Exhibit 31: Paging Switch Cards

Pressing a switch programmed for PAGE causes the fire alarm control panel to activate the associated system amplifiers in response to the switch activation. The corresponding switch LED will flash until all effected amplifiers are active; at which time the LED will illuminate steady to indicate paging readiness. At this point the system microphone or fire-phone(s) can be used to initiate the live page based on the paging source selected on the Paging Control Card (P/N 10-2741).

Pressing a PAGE switch two (2) times causes the voice system to enter the record and repeat mode. In this mode, the live paging message is recorded and will be repeatedly played by the associated system amplifiers upon completion of the page.

8.0 FIRE-PHONE OPERATION

The voice system's integral firefighter's phone allows the system operator located at the Fire Command Center (FCC) to communicate with emergency response personnel located throughout the building via fire-phone jacks. The voice system is capable of supporting either a Basic fire-phone system or an Addressable (selective talk) fire-phone system as described below:

8.1 BASIC FIRE-PHONE SYSTEM

The basic fire-phone system utilizes the Digital Paging Assembly (P/N 10-2751) in conjunction with the following components to provide fire-phone operation: Fire-Phone Housing (P/N 10-2756) and Firefighter's Phone Jacks (P/N 24-133). The system operates on a party-line configuration, which means once any phone is plugged into a phone jack it is automatically connected to the phone riser allowing communication with other connected phones. A maximum of five (5) phones may be connected to fire-phone bus at one time, not including the fire-phone located at the FCC.

The basic fire-phone system does not provide any indication of an incoming call. The system operator must use the integral fire-phone handset to frequently check for the presence of an incoming call.

8.2 ADDRESSABLE (SELECTIVE TALK) FIRE-PHONE SYSTEM

The addressable fire-phone system utilizes the Digital Paging Assembly (P/N 10-2751) in conjunction with the following components to provide selective talk fire-phone operation: Fire-Phone Housing (P/N 10-2756), Firefighter's Phone Jacks (P/N 24-133), Fire-Phone Cards (P/N 10-2728 and P/N 10-2730), and Addressable Fire-Phone Modules (P/N 24-135). Using addressable fire-phone modules to connect the fire-phones allows the system operator to manually select which phones will be connected to the phone riser. Only phones connected to the phone riser by the system operator will be able to communicate on the phone system. A maximum of five phones may be connected to the fire-phone bus at one time, not including the integral fire-phone handset.

8.2.1 CONNECT AN INCOMING CALL

The addressable fire-phone system provides the system operator with positive indication that an incoming call is pending. The fire-phone card (See Exhibit 32) is equipped with a buzzer that will sound upon receiving indication of an incoming call. In addition, each switch on the module is equipped with an LED that will flash in response to an incoming call. The LED will illuminate solid once the system operator has connected the call by pressing the corresponding switch. The incoming caller hears a ringing tone until connected by the system operator.

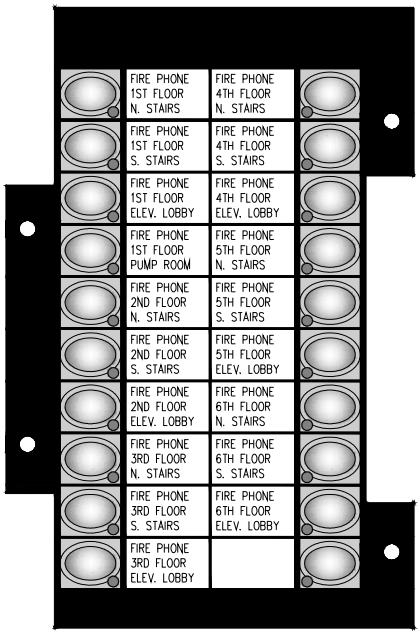


Exhibit 32: Fire-Phone Switch Card

8.2.2 PAGING VIA THE FIREFIGHTER'S PHONE

The addressable fire-phone system can be used to broadcast a live page through the voice system speakers. Pressing the Fire Phone switch on the Paging Control Card (P/N 10-2741) switches the live audio input source from the system microphone (default) to the fire-phone. The associated switch LED will illuminate solid to indicate the selected paging source. See 7.0 for paging procedure.

9.0 TESTING AND PLACING INTO SERVICE

To ensure proper system operation, this product must be tested in accordance with the requirements of NFPA 72 after programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

10.0 SERVICING

There are no serviceable components on this card.

APPENDIX A – APPLICATION EXAMPLES

The following Exhibits show several different application examples for the digital paging assembly, associated control cards and accessory components.

A.1 DISTRIBUTED PAGING SYSTEM

Exhibit A-1 shows the components that are necessary to form a distributed paging system. All system amplifiers are connected together and to the digital paging card via the live audio bus. This connection allows live paging from the paging microphone to be distributed to all interconnected system amplifiers.

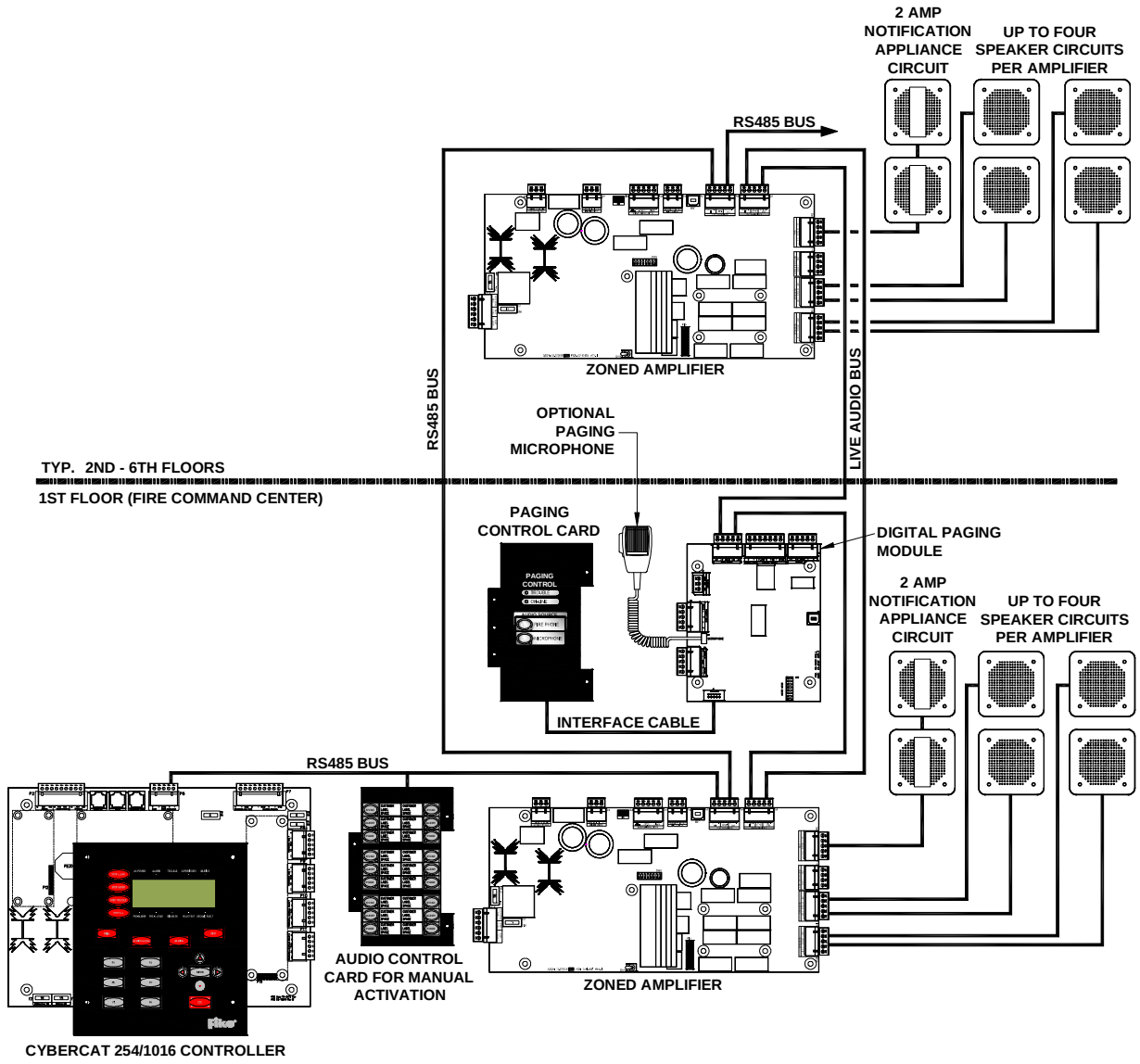


Exhibit A-1: Distributed Paging System

A.2 DISTRIBUTED PAGING SYSTEM WITH "BASIC" FIRE-PHONES

Exhibit A-2 shows a distributed paging system with basic fire-phone functions. All system amplifiers are connected together and to the digital paging card via the live audio bus. This connection allows live paging from the paging microphone or firefighter's phones to be distributed to all interconnected system amplifiers. The firefighter's phone jacks are connected directly to the digital paging card. This allows any phone connected to the phone riser to communicate with any other connected phone (party-line operation).

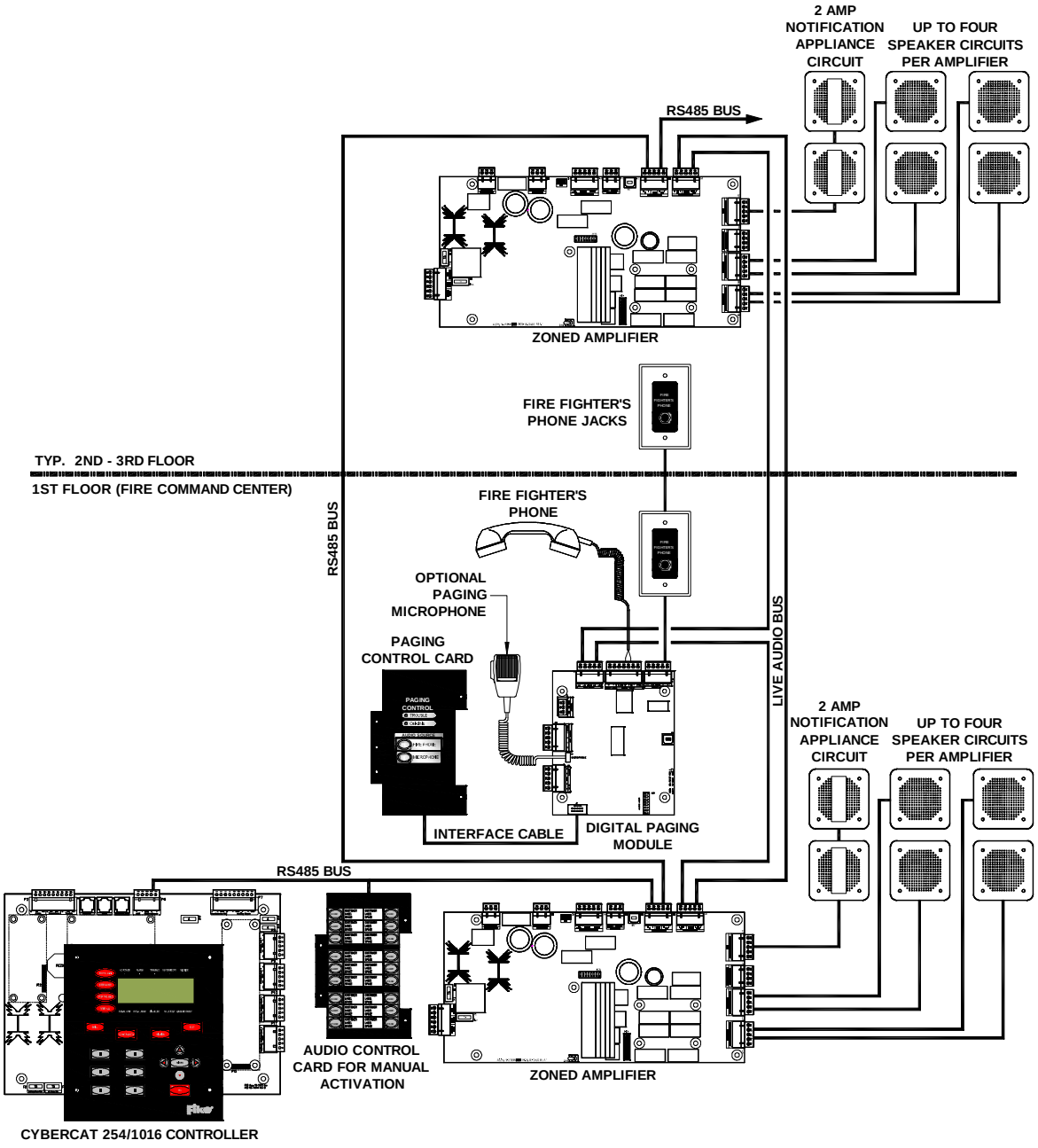


Exhibit A-2: Distributed Paging System with "Basic" Fire-Phones

A.3 DISTRIBUTED PAGING SYSTEM WITH "ADDRESSABLE" FIRE-PHONES

Exhibit A-3 shows a distributed paging system with addressable fire-phone functions. All system amplifiers are connected together and to the digital paging card via the live audio bus. This connection allows live paging from the paging microphone or firefighter's phones to be distributed to all interconnected system amplifiers. Firefighter's phone jacks (one or multiple) are connected to the phone riser via an addressable fire-phone module (P/N 24-135). This allows the system operator to manually select individual phones for connection to the phone riser.

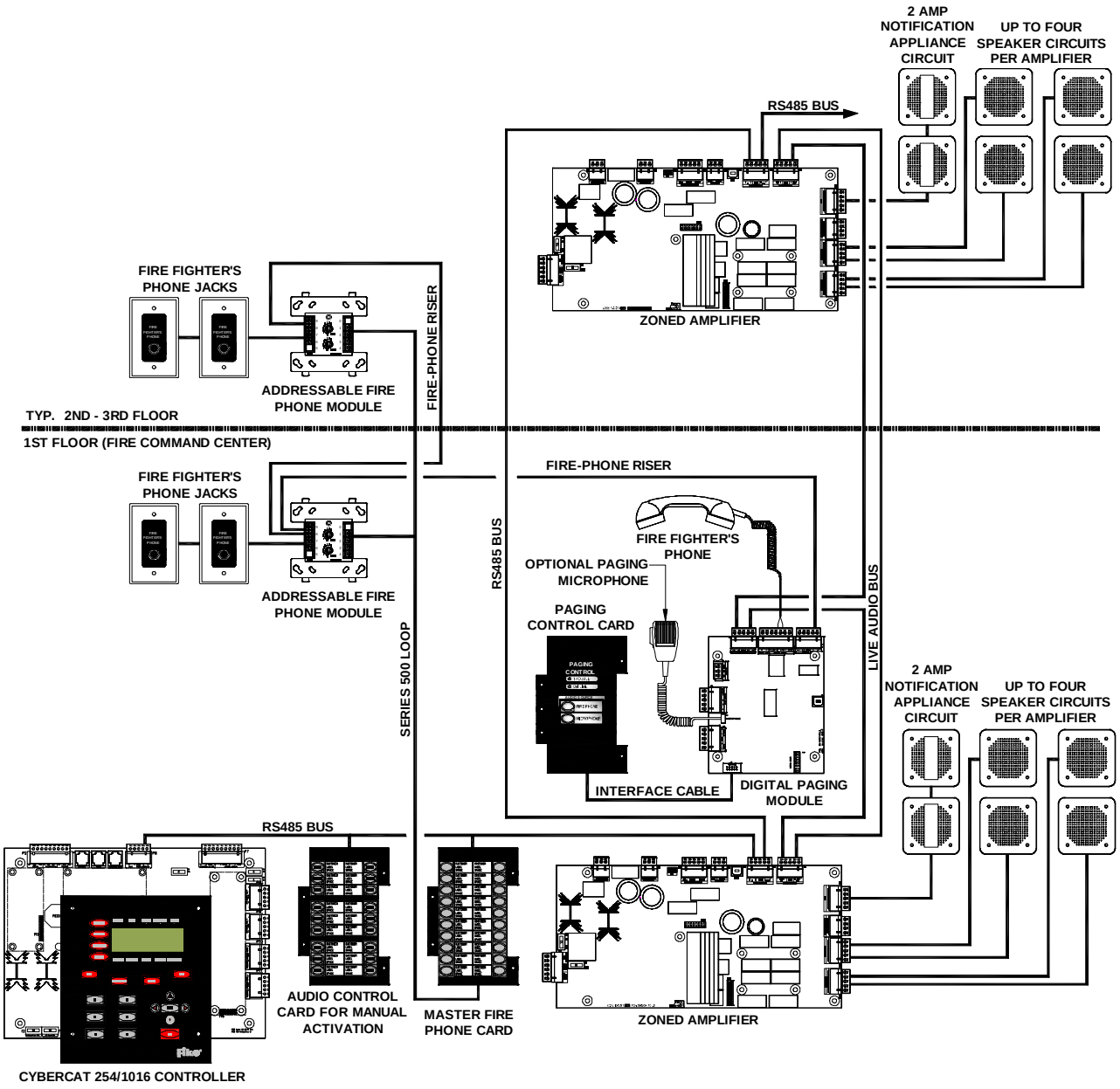


Exhibit A-3: Distributed Paging System with "Addressable" Fire-Phones

B.1 TROUBLESHOOTING

When an event occurs on the digital paging card, it does not appear on the CyberCat display since the card is not intelligently connected to the panel via its RS485 bus. Therefore, diagnosing problems with the digital paging card must be done using the process of elimination. Should a Trouble event be detected, the yellow LED (D12) on the digital paging card will blink and the card's audible will turn on. In addition, the yellow Trouble LED on the Paging Control Card will illuminate.

The following are the possible events that could cause a trouble to occur on the digital paging card, followed by the event description, and the recommended steps to restore the system to normal:

Exhibit B-1: Event Description

Problem	Description	Suggested Corrective Action
Microphone Disconnected	The microphone connection to the digital paging card has been lost (non-latching).	1. Check all wiring connections.
Audio Bus Disconnected	Audio Bus communication has been lost (non-latching).	1. Check for a wiring fault (open or short) on the audio bus. 2. Check the digital paging card for power and proper operation.
Fire-phone Off Hook	An open has been detected on the fire-phone off hook connection, terminal P2 (non-latching).	1. Check for the presence of a 1.2K eol.
Fire-phone Riser Short	A short has been detected on the fire-phone riser, terminal P3 (latching).	1. Remove the fire-phone riser circuit and meter the wires for a short condition. 2. Break down the circuit into sections to locate the short. If meter does not detect a short condition, one of the devices connected to the circuit is pulling excessive current. 3. Break down the circuit into sections to determine which device is pulling the excessive current.
Fire-phone Riser Open	An open has been detected on the fire-phone riser, terminal P3 (latching).	1. Meter the voltage at the fire-phone riser terminals. 2. Go to the last device on the circuit that is working and meter for the same voltage. Open condition will be located between the last working device and the first non-working device.
Audio Codec or Serial Flash Memory Chip Communication Error	An error has occurred on the digital paging module's memory chips.	1. Return the digital paging card for repair or replacement.

Reserved for future use.

704 SW 10th Street
P.O. Box 610
Blue Springs, Missouri 64013

Tel: (816) 229-3405
Fax: (816) 229-0314
www.fike.com