



**Remote Paging Unit for the DVC
System
DVC-RPU
Manual**

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ECN 13-201

Fire Alarm & Emergency Communication System Limitations

While a life safety system may lower insurance rates, it is not a substitute for life and property insurance!

An automatic fire alarm system—typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control panel (FACP) with remote notification capability—can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

An emergency communication system—typically made up of an automatic fire alarm system (as described above) and a life safety communication system that may include an autonomous control unit (ACU), local operating console (LOC), voice communication, and other various interoperable communication methods—can broadcast a mass notification message. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire or life safety event.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premises following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. This document can be found at <http://www.systemsensor.com/appguides/>. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second-floor detector, for example, may not sense a first-floor or basement fire.

Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls, chimneys, even wet or humid areas may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not reach the ceiling or upper walls where detectors are located.
- Smoke particles may be blown away from detectors by air outlets, such as air conditioning vents.
- Smoke particles may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions

(caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Rate-of-rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist. Heat detectors are designed to protect property, not life.

IMPORTANT! Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not so located, a developing fire may damage the alarm system, compromising its ability to report a fire.

Audible warning devices such as bells, horns, strobes, speakers and displays may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol, or medication. Please note that:

- An emergency communication system may take priority over a fire alarm system in the event of a life safety emergency.
- Voice messaging systems must be designed to meet intelligibility requirements as defined by NFPA, local codes, and Authorities Having Jurisdiction (AHJ).
- Language and instructional requirements must be clearly disseminated on any local displays.
- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond to or comprehend the meaning of the signal. Audible devices, such as horns and bells, can have different tonal patterns and frequencies. It is the property owner's responsibility to conduct fire drills and other training exercises to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A life safety system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

Equipment used in the system may not be technically compatible with the control panel. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premises to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of life safety system malfunction is inadequate maintenance. To keep the entire life safety system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL and NFPA standards. At a minimum, the requirements of NFPA 72 shall be followed. Environments with large amounts of dust, dirt, or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled monthly or as required by National and/or local fire codes and should be performed by authorized professional life safety system installers only. Adequate written records of all inspections should be kept.

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Installation Precautions

Adherence to the following will aid in problem-free installation with long-term reliability:

WARNING - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until manuals are read and understood.

CAUTION - System Re-acceptance Test after Software Changes: To ensure proper system operation, this product must be tested in accordance with NFPA 72 after any programming operation or change in site-specific software. Re-acceptance 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.

This system meets NFPA requirements for operation at 0-49° C/32-120° F and at a relative humidity $93\% \pm 2\%$ RH (non-condensing) at $32^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ($90^{\circ}\text{F} \pm 3^{\circ}\text{F}$). However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of $15\text{-}27^{\circ}\text{C}/60\text{-}80^{\circ}\text{F}$.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interference, proper grounding will reduce susceptibility. Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes. Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, or printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over-tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system 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 static suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

Precau-D1-9-2005

FCC Warning

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing devices pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when devices are operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his or her own expense.

Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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Software Downloads

In order to supply the latest features and functionality in fire alarm and life safety technology to our customers, we make frequent upgrades to the embedded software in our products. To ensure that you are installing and programming the latest features, we strongly recommend that you download the most current version of software for each product prior to commissioning any system. Contact Technical Support with any questions about software and the appropriate version for a specific application.

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Send email messages to:

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Section 1: General Information

1.1 Product Description

The DVC-RPU is a Remote Paging Unit used with the DVC system for applications that require remote paging or remote control annunciation. Each DVC-RPU assumes one address on the digital audio loop of the DVC using wire media, or fiber media using optional fiber conversion modules. DVC programming allows the DVC-RPU to be configured to fulfill requirements for multiple paging priorities such as emergency, fire, and non-emergency paging, and to use the 24 programmable DVC-KD buttons on the keypad for control and annunciation of points or software zones.

The DVC-RPU can be configured with a CMIC-RP paging microphone and well when used with the CAB-RP. The CAB-RP provides a compact installation for the remote paging station. Required 24VDC power must be provided from a separate location when using the CAB-RP.

Applications that require larger CAB-4 series cabinets are configured in a single row using the CA-1 chassis, a DPA-1 dress plate, and a microphone and well.

1.2 Standards and Other Documents

The DVC-RPU complies with the following standards:

- NFPA-72 2007 National Fire Alarm Code
- Underwriter Laboratories Standard UL 864
- Part 15 Class A conducted and radiated emissions as required by the FCC
- UFC 4-021-01, Design and O&M: Mass Notification Systems

The installer should be familiar with the following documents and standards:

NFPA Standards

NFPA 72 National Fire Alarm Code

Underwriter Laboratories

UL 464 Audible Signaling Appliances

UL 864 Standard for Control Unit and Accessories for Fire Alarm Systems

UL 1481 Power Supplies for Fire Protective Signaling Systems

UL 1638 Visual Signaling Appliances - Private-Mode Emergency and General Utility Signaling

UL 1711 Amplifiers for Fire Protective Signaling Systems

UL 60950 Safety of Information Technology Equipment

UL 1971 Signaling Devices for the Hearing Impaired

UL 2572 Standard for Mass Notification Systems

Other

FCC Part 15 Class A Conducted and Radiated Emissions

UFC 4-021-01, Design and O&M: Mass Notification Systems

1.3 Related Documentation

The table below provides a list of documents referenced in this manual, as well as documents for other compatible devices.

VeriFire Tools help file	Included in VeriFire Tools
DVC Digital Voice Command Manual	52411
DVC-KD Keypad Product Installation Document	52709
Wire Guide Addendum for Digital Audio Loops	52916ADD
Heat Dissipation for Cabinets with Digital Audio Products	53645
CA-1 Chassis Product Installation Document	52474
CMIC-RP PID	50107640-001
CAB-RP PID	50107639-001
NFS2-3030 UL Listing Document	LS10006-051NF-E
NFS2-640 UL Listing Document	LS10010-151NF-E
AMPS-24 Manual	51907
ACPS-610 Addressable Power Supply Manual	53018
NCA-2 Network Control Annunciator Manual	51482
ONYXWorks Workstation Manual	52342
DAL Devices Product Information Sheet	52410
ACS Annunciator Manual	15842
CAB-4 Series Cabinets Installation Instructions	15330
EQ-CAB Series Installation Instructions	53412

Table 1.1 Related Documentation

1.4 Cautions and Warnings

This manual contains cautions and warnings to alert the reader as follows:



CAUTION:

INFORMATION ABOUT PROCEDURES THAT COULD CAUSE PROGRAMMING ERRORS, RUNTIME ERRORS, OR EQUIPMENT DAMAGE.



WARNING:

INDICATES INFORMATION ABOUT PROCEDURES THAT COULD CAUSE IRREVERSIBLE DAMAGE TO THE CONTROL PANEL, IRREVERSIBLE LOSS OF PROGRAMMING DATA, OR PERSONAL INJURY.

Section 2: Overview

2.1 Description

The DVC-RPU consists of a control board and a DVC-KD keypad. A CMIC-RP microphone and well are ordered separately. The DVC-RPU may be mounted in a CAB-RP cabinet (with keyed entry) or a CAB-4 Series cabinet. A monitor module on the SLC of a fire alarm control panel is required when a tamper switch is used to indicate the DVC-RPU's cabinet door has been opened.

2.1.1 Features

- Uploads and downloads via the DVC. Programmable through VeriFire Tools.
- Multiple levels of access priority that could include emergency, fire, and general non-emergency paging.
- Paging to all areas or defined areas.
- DVC-KD keypad is for local annunciation and controls. Refer to “Using the DVC-KD Keypad on the DVC-RPU” on page 22 for more information on the DVC-KD.
- Programmable pre-announce message.
- Up to 32 DVC-RPUs on a DAL.
- Dedicated cabinet with keyed entry, and mounting for an optional tamper switch.

2.1.2 Options

DS-FM, DS-SFM, DS-RFM

The fiber option modules convert the DVC-RPU from a wire to a single- or multi-mode fiber board. Refer to “Options: Fiber Option Boards” on page 11 for more information.

2.1.3 Specifications

24VDC Power - TB1

24VDC input, 360 mA, alarm or standby, regulated, non-resettable, power-limited (Class 2) by the source, non-supervised.

- If one fiber module is attached, add: 60 mA
- If another fiber module is attached, add another: 60 mA

For a possible total of: 480 mA alarm or standby

Recommended wiring: 14-18 AWG twisted-pair (max. 14 AWG.)

Digital Audio Ports A and B - TB2, TB3

Refer to the Wiring Guide, p/n 52916ADD, for acceptable wire types.

EIA-485 format.

Power-limited (Class 2).

Refer to “Options: Fiber Option Boards” on page 11 for fiber specification and connection information. When a fiber option module is mounted on a DVC-RPU, it disables the corresponding wire terminals. TB3 (Digital Audio Port A) is disabled when a fiber option board is connected at J15. TB2 (DAP B) is disabled when a fiber option board is connected at J16.

Push-to-talk Interface - TB10

Dry contact.

Common, non-supervised.

Recommended wiring: 14-18 AWG twisted-pair (max. 14 AWG).

2.2 DVC-RPU Board Layout

2.2.1 Connections

Board connections for the DVC-RPU are illustrated and identified in Figure 2.1.

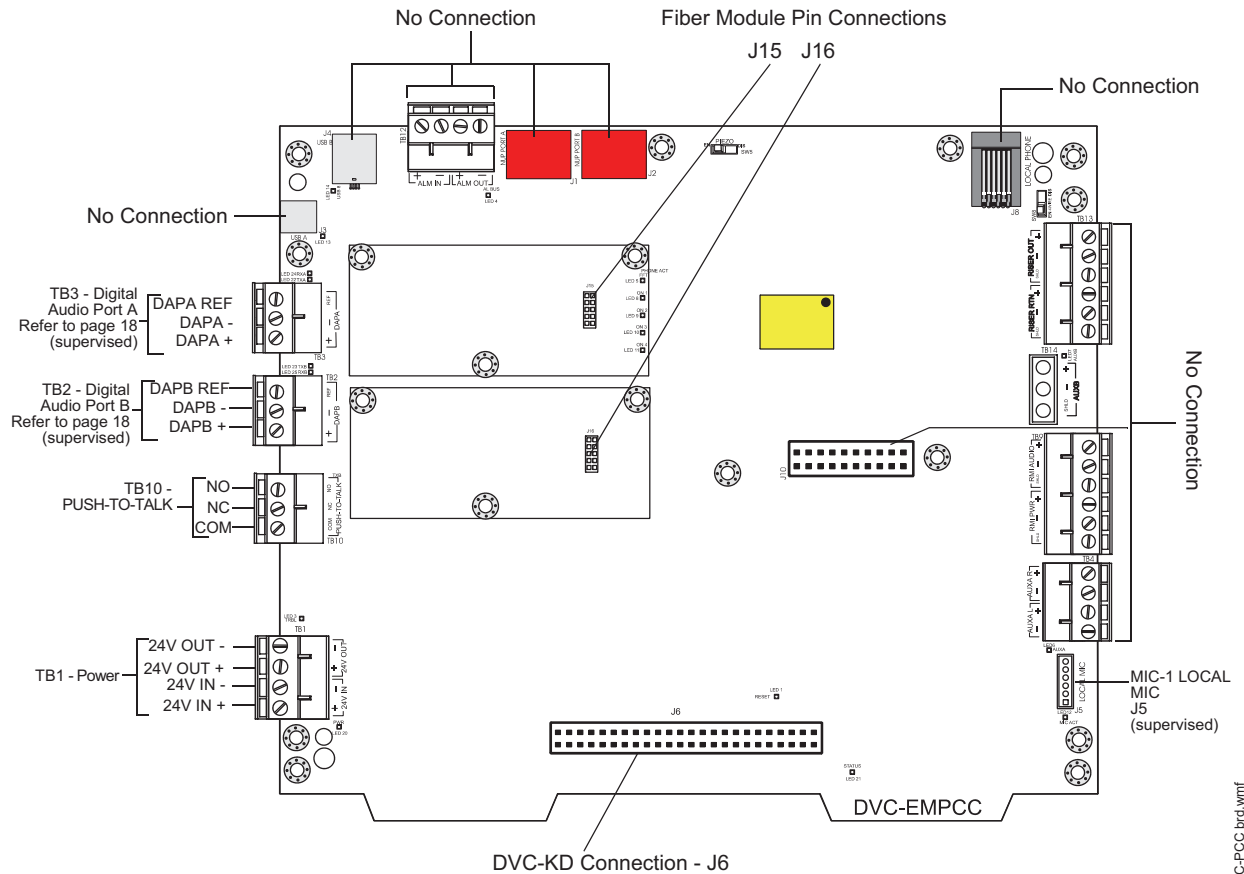


Figure 2.1 DVC-RPU Connections

2.2.2 Indicators

LED indicator locations on the DVC-RPU are illustrated in Figure 2.2.

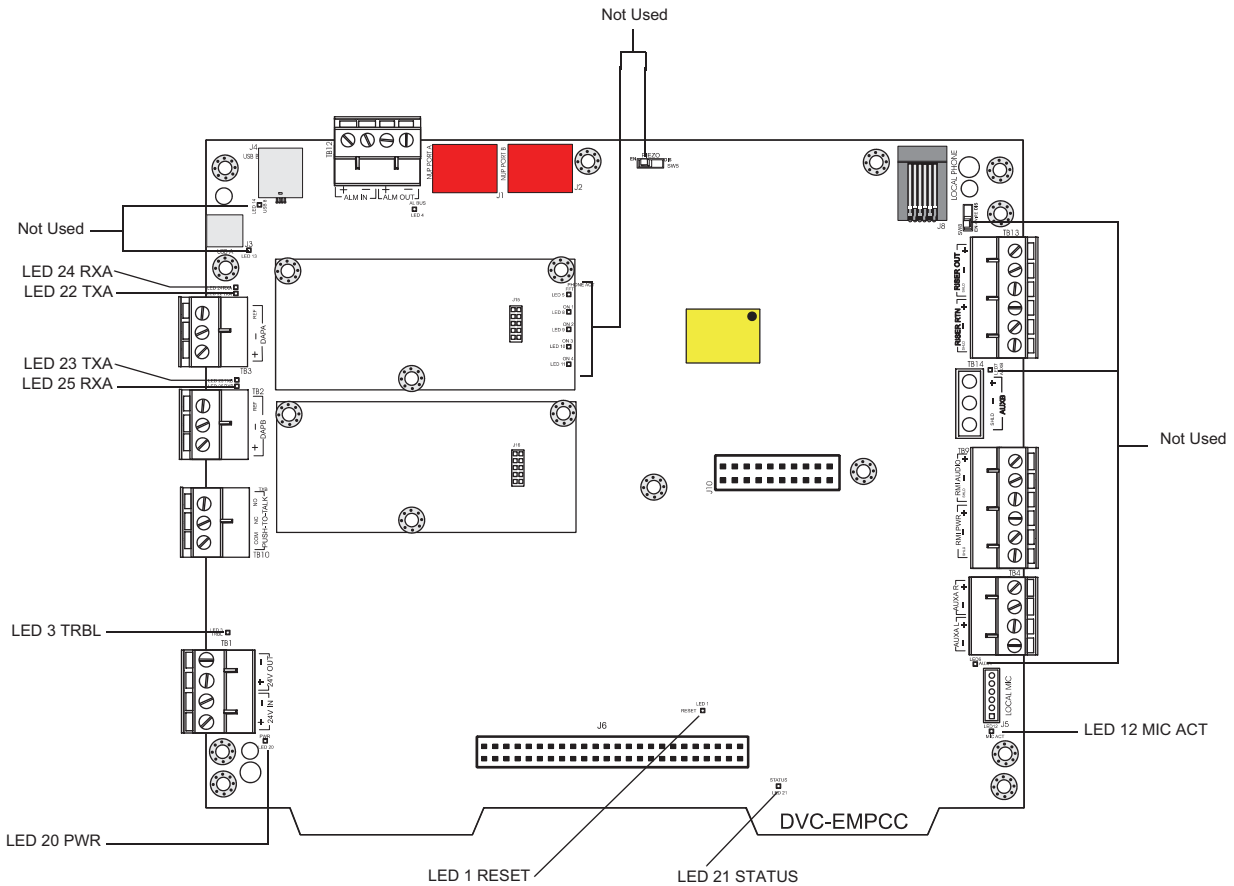


Figure 2.2 LED Indicator Locations

The diagnostic LEDs indicate various conditions and troubles. All are located as indicated in Figure 2.2.

LED Name	Color	Description	LED#
RESET	Yellow	Factory use only	1
TRBL	Yellow	Illuminates when a trouble occurs. Blinks for an unacknowledged trouble, illuminates steadily for an acknowledged trouble.	3
MIC ACT	Green	Illuminates steadily while push-to-talk is activated on the MIC-1 microphone.	12
PWR	Green	Illuminates steadily while local 24V from power supply is present.	20
STATUS	Green	Blinks slowly (once a second) under normal operation, Blinks fast (4 times a second) when the DVC-RPU is in bootload or diagnostic mode. Does not blink when the board is not operational or starting up. Call the factory if this LED is off for a prolonged period of time.	21
TXA	Green	Illuminated while data is transmitted on Digital Audio Port (DAP) A. Illumination will flicker on wire versions, turning on when activity is detected and off when it is not. LED does not illuminate for fiber media.	22
TXB	Green	Illuminated while data is transmitted on Digital Audio Port (DAP) B. Illumination will flicker on wire versions, turning on when activity is detected and off when it is not. LED does not illuminate for fiber media.	23
RXA	Green	Illuminated while data is received on Digital Audio Port (DAP) A. Illumination will flicker on wire versions, turning on when activity is detected and off when it is not. LED does not illuminate for fiber media.	24

LED Name	Color	Description	LED #
RXB	Green	Illuminated while data is received on Digital Audio Port (DAP) B. Illumination will flicker on wire versions, turning on when activity is detected and off when it is not. LED does not illuminate for fiber media.	25

Table 2.1 LED Indicator Descriptions

2.3 Options: Fiber Option Boards

The DVC-RPU supports wire media as shipped. Use of fiber optic media requires the use of fiber option modules. Each DVC-RPU can be used with either one or two modules. This flexibility allows for the creation of digital audio networks with mixed wire, multi-mode fiber, and single-mode fiber segments on the same loop. Fiber option modules consist of the following models.

Model	Fiber Type	For direct fiber connection between....	Not Used on
DS-FM	multi-mode	Two DAL devices.	Single or multi-mode DVC-PCA, DVC-PCB or DAA
DS-SFM	single-mode	Two DAL devices. An ST [®] style connector is required at a single-mode DVC/DAA end.	Multi-mode DVC-PCA, DVC-PCB or DAA
DS-RFM	multi-mode	Two DAL devices, one of which is a multi-mode fiber DVC or DAA. An ST [®] style connector is required at the multi-mode DVC/DAA end.	Single-mode DVC-PCA, DVC-PCB or DAA

Table 2.2 Fiber Option Modules



NOTE: Whenever a fiber option module is used on a DAL device port, the next DAL device that is linked to that port must have the same model fiber option module or equivalent style DAA.

One or two fiber option modules may be connected to a DVC-RPU to convert it from a board with two wire DAP ports to:

- a board with one wire and one fiber port,
- a board with two single-mode fiber ports,
- a board with two multi-mode fiber ports, or
- a board with one single-mode and one multi-mode fiber port.

When a fiber option module is mounted on a DVC-RPU, it disables the corresponding wire terminals. TB3 (Digital Audio Port A) is disabled when a fiber option board is connected at J15. TB2 (DAP B) is disabled when a fiber option board is connected at J16.

Specifications

Single- and Multi-mode Fiber-Optic Digital Audio Ports

LC Style connection.

Supervised.

Fiber optic cable, multi-mode: 50/125 or 62.5/125 micrometers.

Fiber optic cable, single-mode: 9/125 micrometers.

Attenuation of cabling between two nodes (fiber-optic circuits are point-to-point) must not exceed the maximum attenuation, specified below.

To determine attenuation:

1. Find the rated dB loss per foot within the cable manufacturer's specifications. Determine the total attenuation between the two nodes due to the cable.

$$\text{Loss} = (\text{loss/ft.}) \times (\text{length in feet})$$
2. Establish the dB loss for each connector and splice. Sum all the losses.
3. Total the attenuation factors obtained in steps 1 and 2. This will provide an approximate attenuation total. The actual attenuation should be measured end-to-end with fiber-optic industry standard equipment.

DS-FM and DS-SFM (except when directly connected to a fiber DAA)

The maximum attenuation:

6.5dB for multi-mode with 50/125 micrometer cable @ 1310 nm.

10dB for multi-mode with 62.5/125 micrometer cable @ 1310 nm.

30dB for single-mode with 9/125 micrometer cable @ 1310 nm.

DS-SFM/Single-mode fiber DAA Connection

The maximum attenuation:

17dB for single-mode with 9/125 micrometer cable at 1310 nm going *from* the DS-SFM *to* the fiber DAA.

4dB for single-mode with 9/125 micrometer cable going *from* fiber DAA *to* the DS-SFM.

The minimum attenuation:

12dB minimum* going *from* the DS-SFM *to* the fiber DAA.

*If the length of the fiber run results in an attenuation of less than 12dB, a suitable attenuator must be used.

DS-RFM/Multi-mode fiber DAA Connection

Attenuation going *from* the fiber DAA *to* the DS-RFM:

2dB maximum for multi-mode with 50/125 micrometer cable @ 850 nm for the DS-RFM.

4dB maximum for multi-mode with 62.5/125 micrometer cable @ 850 nm for the DS-RFM.

Attenuation going *from* the DS-RFM *to* the fiber DAA:

12dB minimum*, 16dB maximum for both cable types.

*If the length of the fiber run results in an attenuation of less than 12dB, a suitable attenuator must be used.

The DS-FM, DS-SFM and DS-RFM look the same. The silkscreened board name that applies will be visible: those that do not apply will be crossed off.

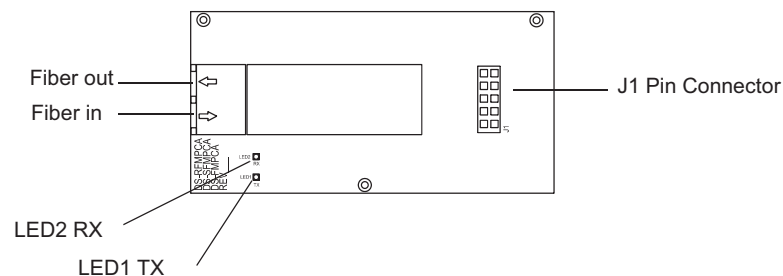


Figure 2.3 Fiber Option Module.

LED #	NAME	COLOR	DESCRIPTION
1	TX	Green	Illuminates while data is transmitted on the digital audio port. Light will flicker, turning on when activity is detected and off when it is not.
2	RX	Green	Illuminates while data is received on the digital audio port. Light will flicker, turning on when activity is detected and off when it is not.

Table 2.3 DS-FM Series LED Indicators

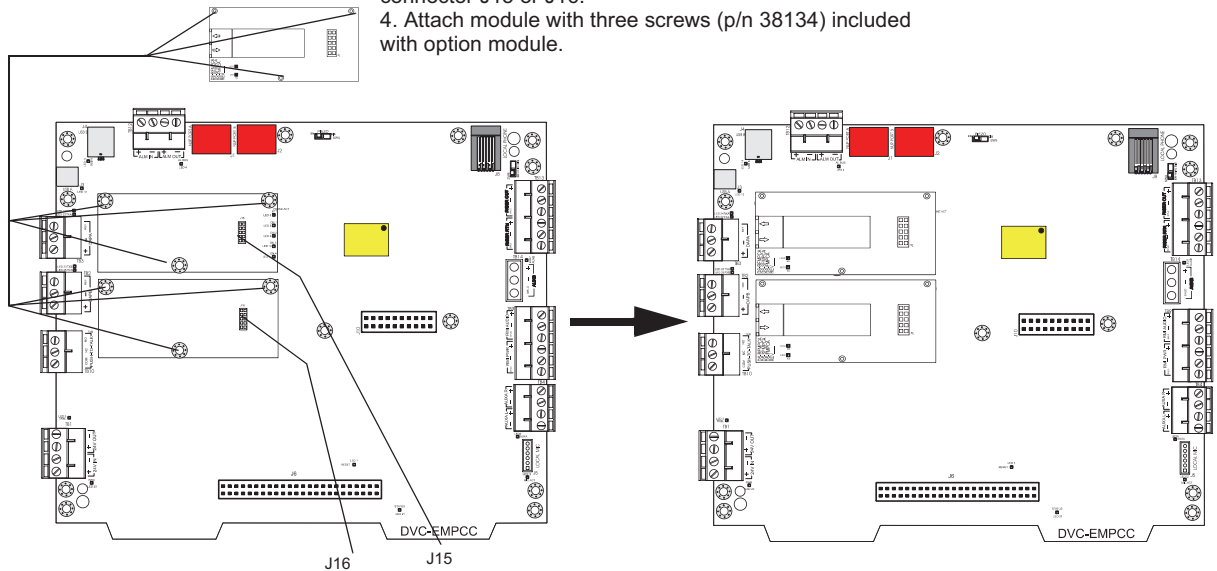
Section 3: Installation

3.1 Fiber Option Modules

The DVC-RPU will require fiber option modules if it is part of a fiber DAL (Digital Audio Loop) segment. The standoffs between the DVC-RPU board and the keypad provide room to install the modules without removing the keypad.

Install fiber option modules as indicated in Figure 3.1 below.

1. Screw in option module standoffs (p/n 42206) at holes indicated.
2. Plug 10-pin connector into *bottom side* of module.
3. Align option module and plug onto DVC-RPU at pin connector J15 or J16.
4. Attach module with three screws (p/n 38134) included with option module.



Plugging a fiber option module into J15 disables TB3 (DAP A).
Plugging a fiber option module into J16 disables TB2 (DAP B).

Figure 3.1 DVC-RPU Fiber Option Module Installation

3.2 DVC-RPU Keypad (DVC-KD)

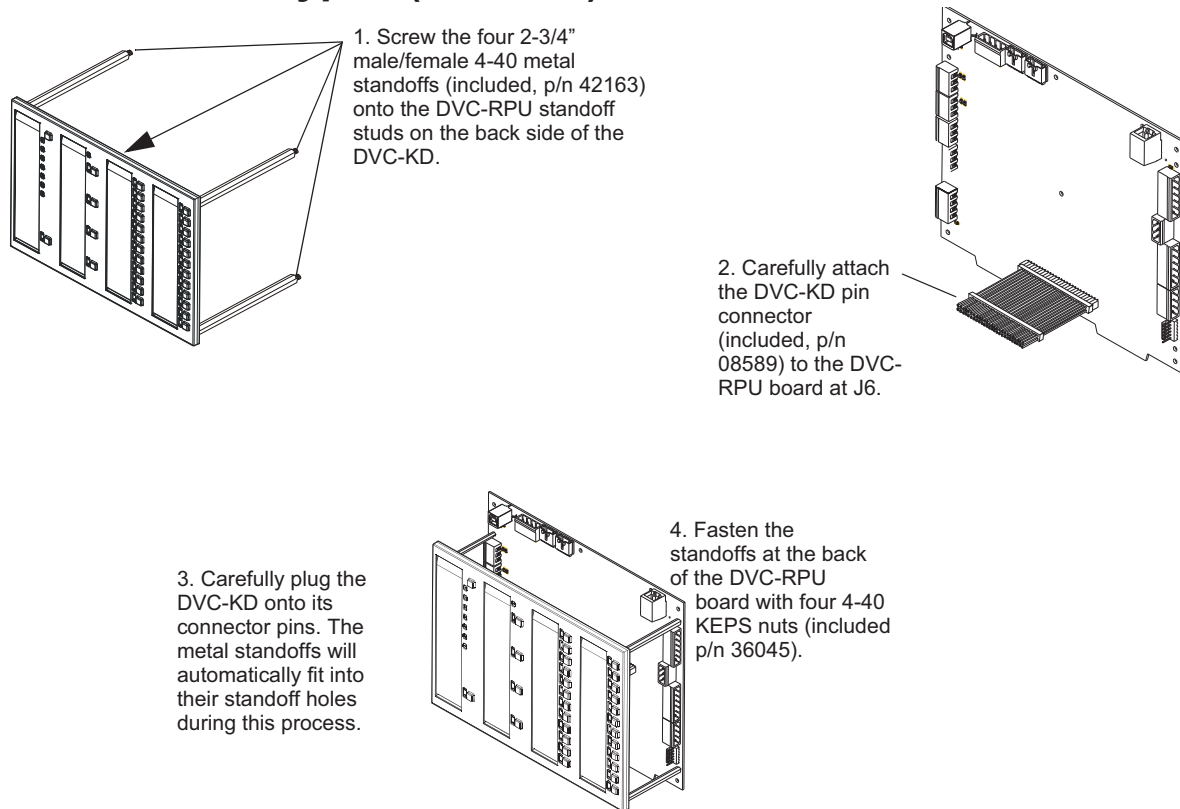


Figure 3.2 Mounting a DVC-KD

Insert the slide-in labels that come with the DVC-KD keypad. Install the pre-printed labels in the two left slots. The label for the second column will require additional labeling for the level buttons programmed for use in VeriFire Tools.

The two right slots provide for 24 annunciator-type functions that can be programmed in VeriFire Tools. Once they are programmed, label accordingly.

For a custom professional appearance, generate the labels with Notifier's LabelEase in Magni•Fire Version 3.0 or higher.

Pre-printed slide-in labels for functions that automatically activate when the DVC-KD is installed - P/N 50107431-001 for the first (left) column, P/N 50107432-001 for the second column. System-wide paging buttons should be labeled according to their intended use.

Two blank slide-in labels for other programmed functions (P/N 52469).

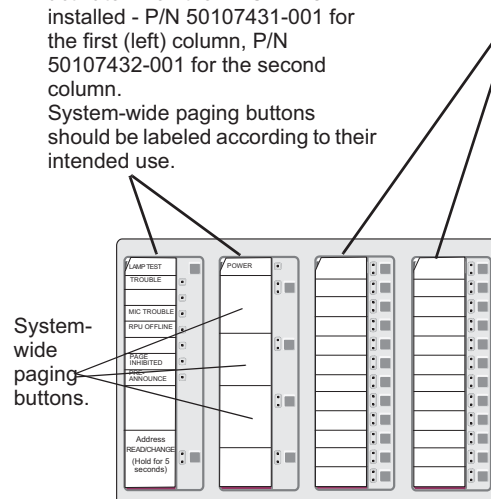


Figure 3.3 DVC-KD with Slide-in Labels

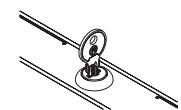
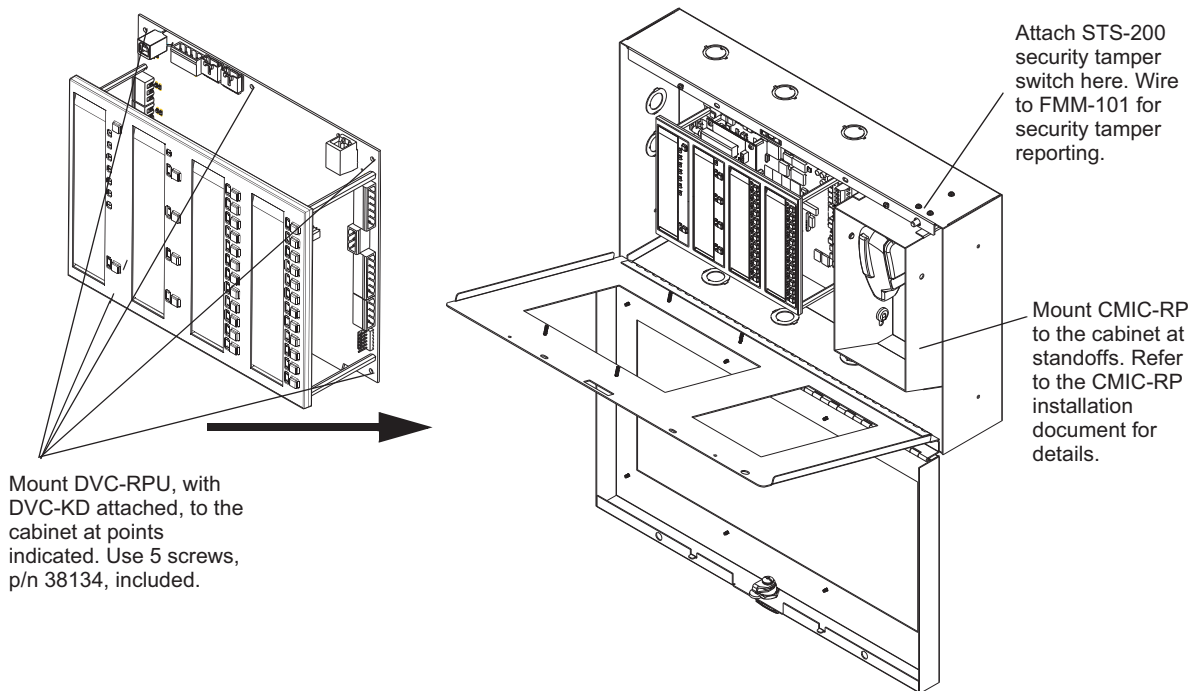
DVC-KDa.wmf

3.3 Cabinet Mounting

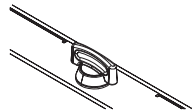
The DVC-RPU and its local microphone and well, CMIC-RP, mount in the CAB-RP cabinet. It can also be mounted in a CA-1 chassis in a CAB-4 Series cabinet, using the CMIC-RP as its local microphone and well.

3.3.1 CAB-RP Cabinet

Mount the DVC-RPU



Keylock closure



Thumblock closure*

*Installations using Thumblock closure require AHJ approval.

The CAB-RP may be flush-mounted using the TR-RP trim ring, ordered separately.

Figure 3.4 DVC-RPU in CAB-RP

3.3.2 CAB-4 Series Cabinet

The DVC-RPU mounts in a CA-1 chassis for CAB-4 installations. This chassis occupies one row of a CAB-4 series enclosure. The left side accommodates the DVC-RPU, and the right side houses a CMIC-1, which consists of a MIC-1 microphone and well. Refer to the CMIC-1 document for the mounting instructions.

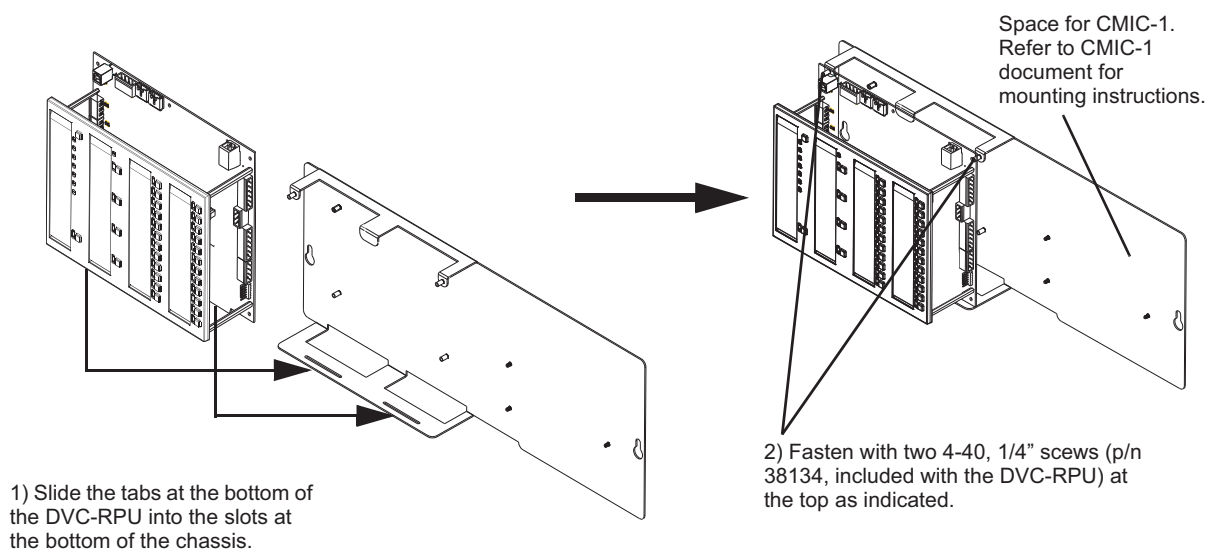


Figure 3.5 CA-1 with DVC-RPU

3.4 Wiring

3.4.1 DVC-RPU to 24V Power

TB1 IN

- Connect to a non-resettable +24V output of an ONYX[®] panel or a local power supply capable of supplying the DVC-RPU's power requirements. (For requirements, see "24VDC Power - TB1" on page 8). Refer to the appropriate panel or power supply manual for connections.
- Power-limited (Class 2) by the source. Max current of 5A available w/ AMPS-24
- The power supply must be monitored from an ONYX[®] panel or an NCA-2.

TB1 OUT

Typically used to power annunciators.

From control panel or local monitored power supply 24VDC connections

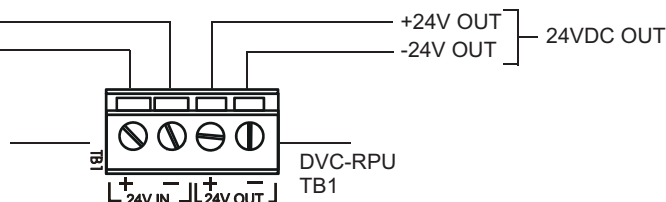


Figure 3.6 TB1 - 24 Volt Power Connections

3.4.2 Digital Audio Ports A and B

Wire Terminals

Digital Audio Ports A and B (DAP A and DAP B) support a direct connection with digital audio loop devices that have wire DAP terminals.

See “Digital Audio Ports A and B - TB2, TB3” on page 8 as well as the Wiring Guide, p/n 52916ADD, for cable types and associated distances between ports.

NOTE: Do not splice a cable. Splicing will degrade the signal, and the recommended distance will no longer apply.

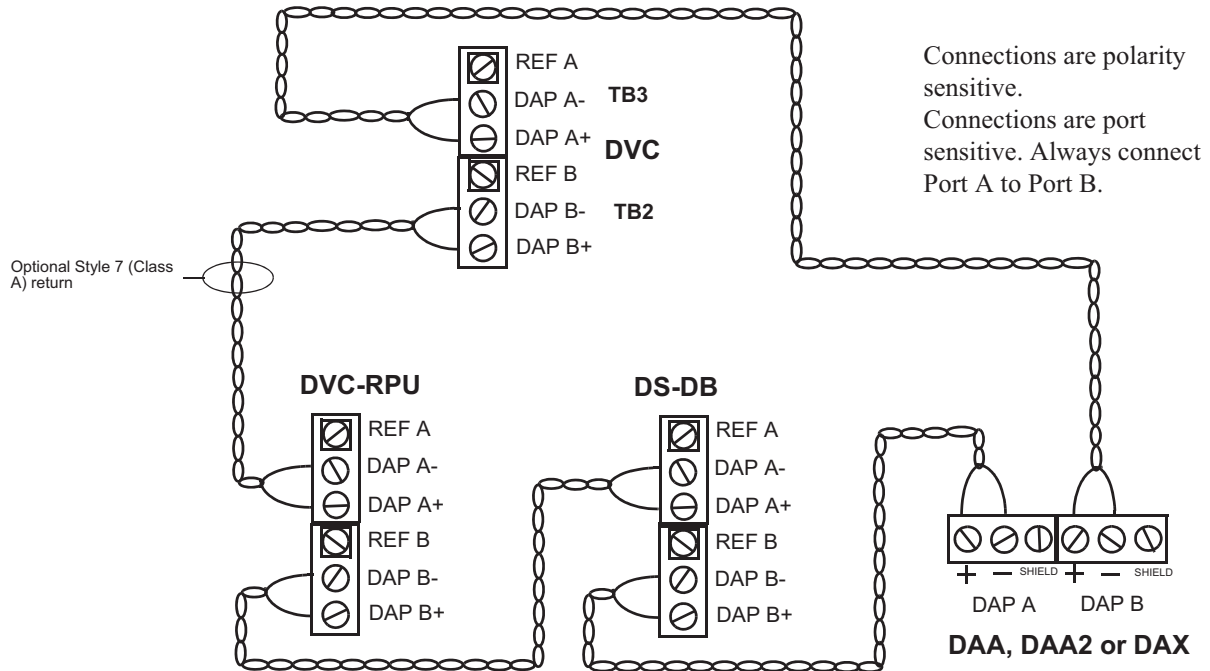


Figure 3.7 Wire DAL Connections



NOTE: Digital Audio Ports A and B must be wired in Style 4 (Class B) or Style 7 (Class A) configuration. Do not wire them in bus configuration.

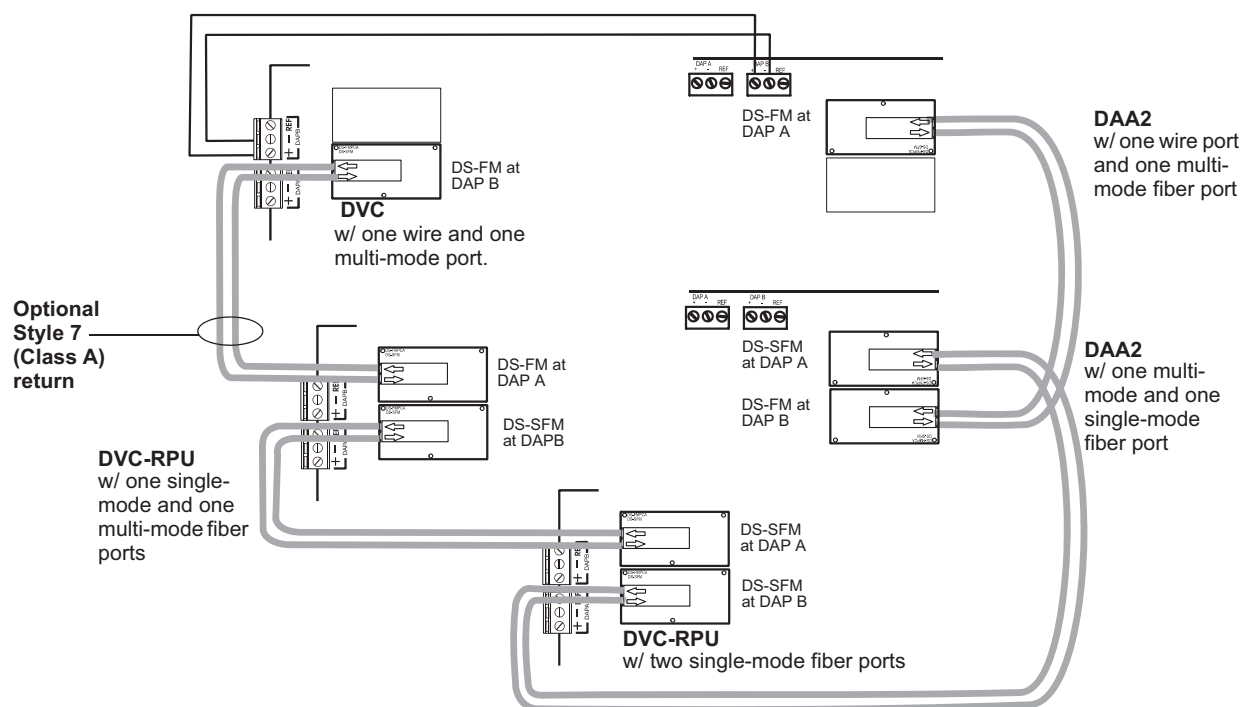


NOTE: Style 4 (Class B) configuration must be installed in accordance with the requirements for survivability from attack by fire in the National Fire Alarm Code, NFPA 72.

Refer to the DAL Earth Fault Detection appendix of the DVC manual for information on enabling earth fault detection on a Digital Audio Loop that contains a DAA.

Fiber Connections (Using Fiber Option Modules)

When a fiber option module is used to convert the DVC-RPU's wire digital audio port to a fiber port, the DVC-RPU will provide a direct connection to any fiber DAL device. Refer to "Options: Fiber Option Boards" on page 11 for module usage. Note that the fiber option modules use LC style fiber connectors.



Consult fiber manufacturer's guidelines for minimum radius of bend for fiber optic media.

Figure 3.8 Mixed Fiber/Wire DAL Connections

3.4.3 Push-to-Talk Indicator

The DVC-RPU Push-to-talk contacts (TB10) provide contact closure when the push-to-talk (PTT) button on the DVC-RPU local microphone (CMIC-RP) is pressed. These contacts may be used to activate a monitor module, which can in turn be used to initiate a CBE event based on a microphone PTT press.



NOTE: As of DVC software 4.0 or higher, push-to-talk operands are available for use in DVC logic equations. See the Logic Equation Builder section of the programming section in the DVC manual. When logic equations are built using a PTT operand to activate CBE, an SLC module is not necessary.

3.4.4 MIC-1 Local Microphone Interface

The local microphone interface (J5) is a plug-in connection for the cable on the MIC-1 microphone, which provides the DVC-RPU with paging capabilities. The microphone connection will be monitored for continuity when MIC01 is enabled in VeriFire Tools.

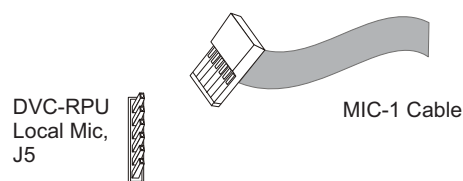


Figure 3.9 MIC-1 Microphone Interface

3.4.5 UL Power-limited (Class 2) Wiring Requirements

DVC-RPU circuit wiring is all power-limited (Class 2), and it may enter or exit the cabinet together. However, when the DVC-RPU is in a cabinet with another product that has non-power-limited wiring, all of the DVC-RPU's circuitry must be separated from any non-power-limited circuitry in the cabinet. All power-limited (Class 2) circuit wiring must remain at least 0.25 inches (6.35 mm) from any non-power-limited circuit wiring. All power-limited (Class 2) and non-power-limited circuit wiring must enter and exit the cabinet through different knockouts and/or conduits. Install tie wraps and adhesive squares to secure the wiring.

3.5 Reading and Setting the DAL Address

The DVC-RPU DAL (Digital Audio Loop) address is assigned using the DVC-RPU's DVC-KD keypad.

To read the DVC-RPU's address:

Press and hold the bottom button in column 1 of the DVC-KD to display the DAL address. A green LED will light steady in column 3 to show the TENS DAL address value, and another green LED will light steady in column 4 to show the ONES DAL address value.

Continuing to hold the bottom button in column 1 for 5 seconds will cause the two LEDs to blink. At this point, the DAL address may be reprogrammed to another value.

To program the DVC-RPU's address using the DVC-KD keypad:

1. Press and hold the bottom button in column 1 of the DVC-KD for 5 seconds until two LEDs, one each in columns 3 and 4, start to blink.
2. While continuing to press the bottom button in column 1, press the buttons with the address values desired in the TENS and ONES columns (Columns 3 and 4 respectively.) Releasing the bottom button stores the values.

See Figure 3.10 for an illustration.

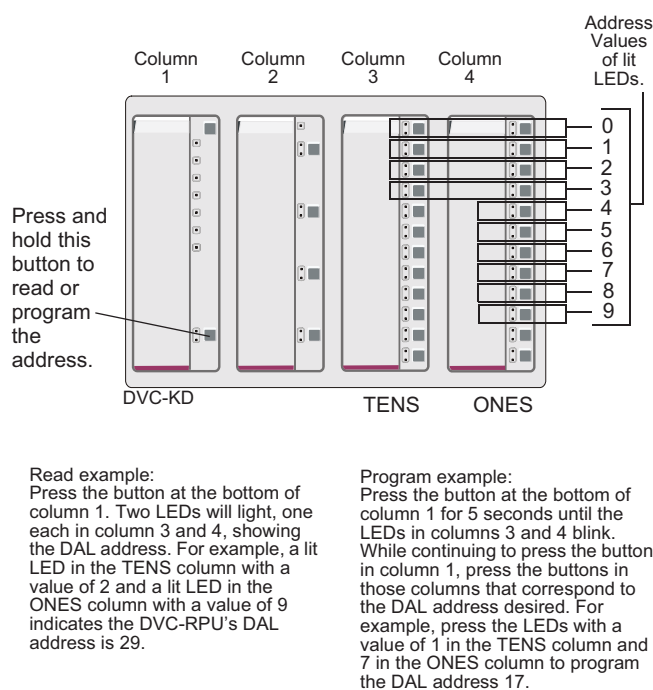


Figure 3.10 Programming and Reading the DAL Address



NOTE: Addresses above 32 are not allowed. Address 00 indicates the DVC-RPU address has not yet been programmed, and is not a valid address.

Section 4: Operation

4.1 Using the DVC-KD Keypad on the DVC-RPU

The DVC-KD allows the DVC-RPU to accept and route live paging, with LED status indicators for paging and other functions.

The DVC-KD contains push-button switches and indicators of two types:

- Those with pre-set functionality, all located in the two left columns.
- Twenty-four user-programmable buttons similar to those on the ACM-24AT annunciators, all located in the two right columns.

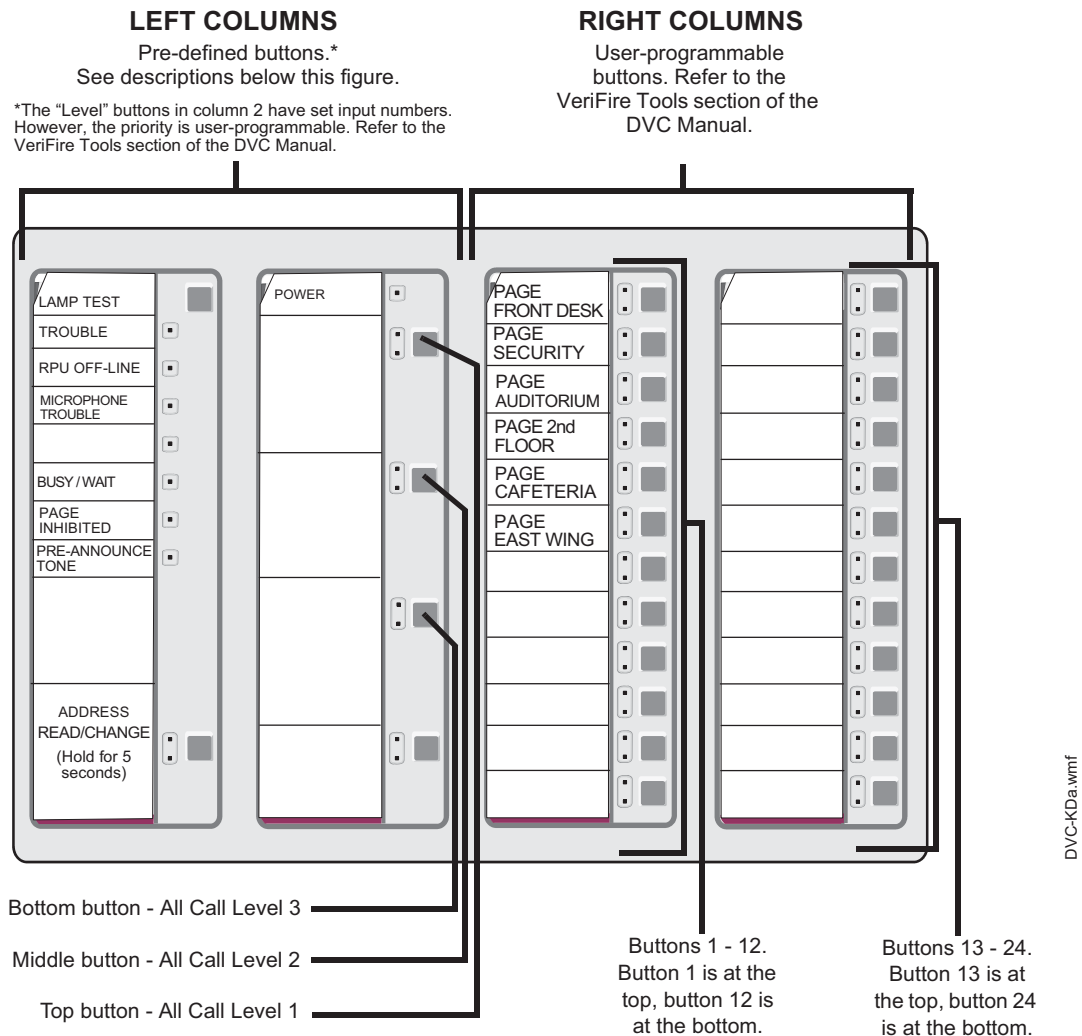


Figure 4.1 DVC-KD Keypad

4.1.1 Buttons/Indicators in Two Left Columns

Buttons

LAMP TEST

Press and hold to perform a lamp test of all the LEDs on the keypad. LEDs on the DVC-RPU will also be tested with the following exceptions: Reset, TXA, TXB, RXA and RXB.

ADDRESS READ/CHANGE (Hold for 5 seconds)

Press this button to read or program the DVC-RPU's DAL (Digital Audio Loop) address. Refer to "Reading and Setting the DAL Address" on page 20 for instructions.

All-Call Level Buttons

Press this button to initiate All Call paging at the level indicated on the label. The user creates the button labels, using terms that clarify the function, such as Remote Page, Fire Page, or General Page. Each of these buttons has a set input number, but the priority is user-programmable in VeriFire Tools programming.

The local DVC node residing on the same DAL as the DVC-RPU will participate in the All Call. Additionally, DVC nodes that are programmed to receive an All Call from the local DVC will also participate. The green "active" LED will light when an All Call is being performed from the DVC-RPU. If there is no microphone activity for seven seconds, the LED will blink rapidly. If three more seconds elapse without microphone activity, the All Call will terminate and the LED will extinguish. The green LED will blink slowly if another DVC-RPU or DVC is actively paging at that level. When a paging level is unavailable, the yellow LED will illuminate. This occurs when either another DVC-RPU or the DVC is actively paging at that level, or when the DVC-RPU is actively paging at a higher level.

LED Indicators

TROUBLE - Illuminates steady during system initialization and when there are acknowledged troubles at the DVC node. Blinks for unacknowledged troubles.

OFFLINE - Illuminates when the DVC-RPU is not providing fire protection.

BUSY/WAIT - Illuminates when a code or database download from the DVC to DAL devices is in effect.

MIC TROUBLE - Illuminates when a connection failure exists.

PAGE INHIBITED - Illuminates when a page ends, as the system inhibits another page from being initiated for 3 seconds. It will also illuminate when another node has assumed paging control and locked out paging from this DVC-RPU. This occurs when the DVC-RPU requests paging permission over a standard or high-speed Noti-Fire-Net from the DCC node (refer to the Display and Control Center section of the DVC manual), and the DCC has not granted it. Also illuminates when the Page Inhibit feature is active.

PRE-ANNOUNCE - Illuminates while the pre-announce sequence is playing before paging from the DVC-RPU's local microphone.

4.1.2 24 User-programmable Buttons in the Two Right Columns

These buttons are programmed in VeriFire Tools to perform annunciator-type control, and monitor functions within the system. The button programming will be global for all DVC-RPU units on the DAL network (or connected to a single DVC).

When a button is used to initiate a page from the DVC-RPU, the LEDs will behave as they do for an All Call (see, "All-Call Level Buttons" in section 4.1.1.) When a page is initiated from the DVC-RPU, the green LED will blink rapidly when no microphone activity exists between seven and ten seconds. After ten seconds, the page is terminated.

When a paging level is unavailable, the yellow LED will illuminate. This occurs when either another DVC-RPU or the DVC is actively paging at that level, or when the DVC-RPU is actively paging at a higher level.

4.2 Paging

The MIC-1 microphone can perform paging operations to their local DVC or across a standard or high-speed Noti-Fire-Net to another DVC.

4.2.1 MIC-RP Microphone Paging

To page using the MIC-RP:

1. Remove the microphone from its cradle.
2. Press the DVC-KD button for the desired paging zone (for example, Level 1 ALL CALL). The green LED at the ALL CALL button will light steady.
3. Press the push-to-talk button on the microphone. If there is a pre-announce tone, it will play at this time and the Pre-Announce LED will light as it plays. Wait until this LED goes off before paging.
4. Page.
5. Release the push-to-talk button on the microphone.
6. Press the ALL CALL button to disengage the ALL CALL function. The green LED will turn off.

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