

# DVC Series

## Digital Voice Command DVC-EM, DVC-EMF, DVC-EMSF



Voice Control Systems

### General

The **DVC** is the heart of an integrated, full-featured Audio Command Center. The DVC Digital Voice Command combines the capabilities of a powerful digital audio processor, an event-driven audio message generator, and a router. Designed for use with **DAA** series Digital Audio Amplifiers, each DVC supports a dedicated audio network with up to eight channels of audio, five channels of firefighters' telephone, and control and supervision for up to 32 DAA series amplifiers. Twisted-pair wire, multi-mode fiber, or single-mode fiber media options are supported. Larger audio systems incorporating hundreds of amplifiers can be created by networking additional DVC units via **NOTI•FIRE•NET™**.

The DVC may be networked with ONYX® Series panels via **NOTI•FIRE•NET** with an **NCA-2**, or used in a standalone panel configuration with an **NFS2-640** or **NFS2-3030** Fire Alarm Control Panel (FACP). When used as an Audio Command Center with Emergency Paging capability, the optional **DVC-KD** Keypad Display is required.

**NOTE:** Unless otherwise noted, the term "DVC" refers to the DVC-EM, DVC-EMF, and DVC-EMSF models.

### Features

- Listed to UL Standard 864, 9th edition.
- Programmable from NUP port using **VeriFire® Tools** with:
  - **DVC-EM:** up to 32 minutes of standard quality or 4 minutes of high quality digital audio storage of user-selected/created messages and tones. Supports twisted-pair wire media.
  - **DVC-EMF:** Same as DVC-EM, except supports multi-mode fiber-optic media.
  - **DVC-EMSF:** Same as DVC-EM, except supports single-mode fiber-optic media.
- Up to 1000 audio sequences.
- Message prioritization.
- Equations support flexible programming for distribution of messages.
- Electrically isolated digital audio ports for direct connection with up to 32 DAA amplifiers. Style 4 or 7 configurations supported.
- DCC (Display and Control Center) capabilities when used with optional DVC-KD.
- FireFighters' Telephone Communications to local FFT riser on DVC, 32 local DAA FFT risers, and FFT communication to additional command stations via **NOTI•FIRE•NET™**.
- Local paging microphone option.
- Remote microphone option.
- Broad All-Call functionality when used with DVC-KD (DVC-Keyboard Display): All Call, Page Active Evac Areas, Page Active Alert Areas, Page Inactive Areas.
- Auxiliary input for 12 V<sub>p-p</sub> analog low-level audio sources. Includes user audio level adjustment feature.
- Auxiliary input accepts external audio sources such as telephone paging or background music. Hi impedance input accepts 600 ohm, line level, 1.0 VRMS, or 1.41 V<sub>p-p</sub> low level audio. Selectable AGC, user control of audio level, and audio supervision are supported.



**DVC**  
Shown using CA-2 mounting option,  
CAB-C4, and ADDR-C4 door.

- Associated NCA-2 supports **NOTI•FIRE•NET** applications.
- Multiple audio command centers supported via **NOTI•FIRE•NET**.
- Distribution of one channel of standard-level paging audio on **NOTI•FIRE•NET**.
- Three standalone, non network mode options:
  - NFS2-3030 (NUP to NUP) digital and analog.
  - NFS2-640 (NUP to NUP) analog.
  - NFS2-640 with NCA-2 (NUP to NUP to NUP) digital and analog.
- Push-to-talk relay.
- Isolated alarm bus input, to be used for backup activation of alarm messages when normal digital communication is lost.

### Installation Options

The DVC provides flexible installation options based on two chassis options: the **CA-1** or the **CA-2** (one-row or two-row audio chassis). Both these chassis mount into size "B", "C", or "D" CAB-4 Series cabinets. The CA-2 must be installed in the top two rows of the cabinet. The **DPA-1** dress panel is used with chassis CA-1. The **DPA-2B** dress panel is required for the CA-2 chassis.

**NOTE:** For NFS2-640/DVC applications using DAA series amplifiers, an NCA-2 is required to annunciate DAA events.

### Specifications

- **24 VDC power (TB1):** 24 VDC, 1.0 A, non-resettable, power-limited by the source. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair.
- **Digital audio ports, wire media, A and B (TB2, TB3):** Maximum distance per segment is 1900 feet (579.12 m) on

Belden 5320UJ (18 AWG, TP) FPL cable: 18 AWG (0.821 mm<sup>2</sup>) twisted-pair, foil-shielded, power-limited. Consult wiring documentation provided in document P/N 52916ADD:C *Addendum to DVC and DAA Manuals*.

- **Digital audio ports, single- and multi-mode fiber-optic RXA, TXA, RXB, and TXB (J100, J101, J102, and J103):** ST® style, supervised. Multi-mode fiber-optic cable: 50/125 or 62.5/125 micrometers. Single-mode fiber-optic cable: 9/125 micrometers. Attenuation of cabling between two nodes (fiber-optic circuits are point-to-point) must not exceed the following maximum attenuations: 4.2 dB for multi-mode with 50/125 micrometer cable @ 850 nm. 8.0 dB for multi-mode with 62.5/125 micrometer cable @ 850 nm. 5.0 dB for single-mode with 9/125 micrometer cable @ 1300 nm.
- **Auxiliary input A (AUX A, TB4):** Signal strength from low-level analog audio input: maximum 1.0 VRMS, or 1.41 V<sub>p-p</sub>. Optional supervision is selectable through programming. Recommended wiring: 18 AWG (0.821 mm<sup>2</sup>) twisted-pair; max. 14 AWG (2.08 mm<sup>2</sup>). Auxiliary input must be in the same room as the DVC.
- **Remote microphone interface (TB9):** Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair. Power-limited. Maximum distance between remote microphone and DVC: 1000 feet (300 m).
- **Push-to-talk interface (TB10):** Dry contact. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair.
- **Alarm bus (TB12):** Power-limited by source. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair.
- **FFT riser (TB13):** Power-limited output. Class A (Style Z) or Class B (Style Y) operation. Style Y two-wire connections require a 3.9K ohm, 1/2 watt resistor (P/N K-3.9K). Maximum wiring resistance (including individual telephone zone to last handset) permitted is 50 ohms, 10,000 feet (3048 m) maximum wiring distance at 12 AWG (3.31 mm<sup>2</sup>) to last handset.
- **Auxiliary input B (AUX B, TB14):** Signal strength from low-level analog audio input: 12 V<sub>p-p</sub> nominal, 15 V<sub>p-p</sub> maximum. Optional supervision is selected through programming. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm<sup>2</sup>) twisted-pair.
- **Optional DVC-AO analog audio output circuits (TB5, TB6, TB7, and TB8):** Supervised, power-limited outputs. Signal strength: +12 V<sub>p-p</sub> nominal, +15 V<sub>p-p</sub> maximum. Recommended wiring: 18 AWG (0.821 mm<sup>2</sup>) twisted-pair; max. 14 AWG (2.08 mm<sup>2</sup>). Maximum impedance: 66 ohms.

## Standards and Codes

The Digital Voice Command DVC, DVC-EM, DVC-EMF, and DVC-EMSF comply with the following standards:

- NFPA 72 2002 National Fire Alarm Code.
- Underwriters Laboratories Standard UL 864, 9th edition.
- Underwriters Laboratories of Canada (ULC) ULC-S527-99 Standard of Control Units for Fire Alarm Systems.

## Listings and Approvals

The listings and approvals below apply to the DVC, DVC-EM, DVC-EMF, and DVC-EMSF Digital Voice Command. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** file S635.
- **ULC Listed:** file S635.
- **FM Approved.**
- **CSFM approved:** file 7165-0028:224 (NFS2-3030); 7165-0028:243 (NFS2-640).
- **FDNY:** COA#6026 (NFS2-3030); COA#6025 (NFS2-640).
- **City of Chicago approved:** High Rise, Class 1, Class 2 (NFS2-3030, NFS2-640, NCA-2).
- **City of Denver approved** (NFS2-3030).
- **PSB Corporation approved** (*Singapore*) (NFS2-3030).

## Product Line Information

**DVC-EM:** Digital Voice Command, digital audio processor with message storage for up to 32 minutes of standard quality (4 minutes at high quality) digital audio. *Supports twisted-pair wire media.*

**DVC-EMF:** Digital Voice Command, digital audio processor with message storage for up to 32 minutes of standard quality (4 minutes at high quality) digital audio. *Supports multi-mode fiber-optic ports, requires DAA-5025F, or DAA-5070F, or DAA-7525F.*

**DVC-EMSF:** Digital Voice Command, digital audio processor with message storage for up to 32 minutes of standard quality (4 minutes at high quality) digital audio. *Supports single-mode fiber-optic ports, requires DAA-5025SF, oDAA-5070SF, or DAA-7525F.*

**DVC-KD:** Keypad for local annunciation and controls; status LEDs and 24 user-programmable buttons.

**DVC-AO:** Optional DVC Analog Output board provides four analog output circuits for use with AA or XPIQ Series amplifiers. Four-channel operation supported.

**CA-1:** Chassis, occupies one tier of a CAB-4 Series enclosure. The left side accommodates one DVC and a DVC-KD (*optional*); and the right side houses a CMIC-1 microphone and its well (*optional*).

**CMIC-1:** Optional microphone and microphone well assembly used with the CA-1 chassis.

**CA-2:** Chassis assembly, occupies two tiers of a CAB-4 Series enclosure. The left side accommodates one DVC mounted on a half-chassis and one NFS2-3030 or NCA-2 mounted on a half-chassis. The right side houses a microphone/handset well. The CA-2 assembly includes a microphone. **DPA-2B** dress plate is required (*below*); the VP-2B Vent Plate is also required for top row configurations. ADDR Series doors with two-tier visibility are available for use with the CA-2 configuration: ADDR-B4, ADDR-C4, ADDR-D4 (*below*).

**DPA-2B:** Dress plate required for CA-2 chassis assembly.

**VP-2B:** Vent plate required for cabinet configurations where the DPA-2B is used for the top two row position.

**TELH-1:** Firefighter's Telephone Handset for use with the DVC when mounted in the CA-2 chassis. Order separately.

**ADDR-B4:** Two-tier-sized door designed for use with the CA-2 chassis configuration. ADDR Series doors are similar to CAB-4 Series "DR" doors, but a clear window space exposes the top two tiers of the CAB-4 enclosure. Use an SBB-B4 backbox with the ADDR-B4 (*see data sheet DN-6857*).

**ADDR-C4:** Three-tier-sized door designed for use with the CA-2 chassis configuration. ADDR Series doors are similar to CAB-4 Series “DR” doors, but a clear window space exposes the top two tiers of the CAB-4 enclosure. Use an SBB-C4 backbox with the ADDR-C4 (see data sheet DN-6857).

**ADDR-D4:** Four-tier-sized door designed for use with the CA-2 chassis configuration. ADDR Series doors are similar to CAB-4 Series “DR” doors, but a clear window space exposes the top two tiers of the CAB-4 enclosure. Use an SBB-D4 backbox with the ADDR-D4 (see data sheet DN-6857).

**DPA-1:** Dress panel, can be used with the CA-1 chassis when configured with a DVC, DVC-KD, and CMIC-1.

**DPA-1A4:** Dress panel, used with the CA-1 chassis when the CMIC-1 is not used. Provides mounting options on right two bays for two ACS annunciators, or for blank plates.

**ACT-4:** Audio-coupling transformer. Used to electronically isolate DVC-AO analog risers.

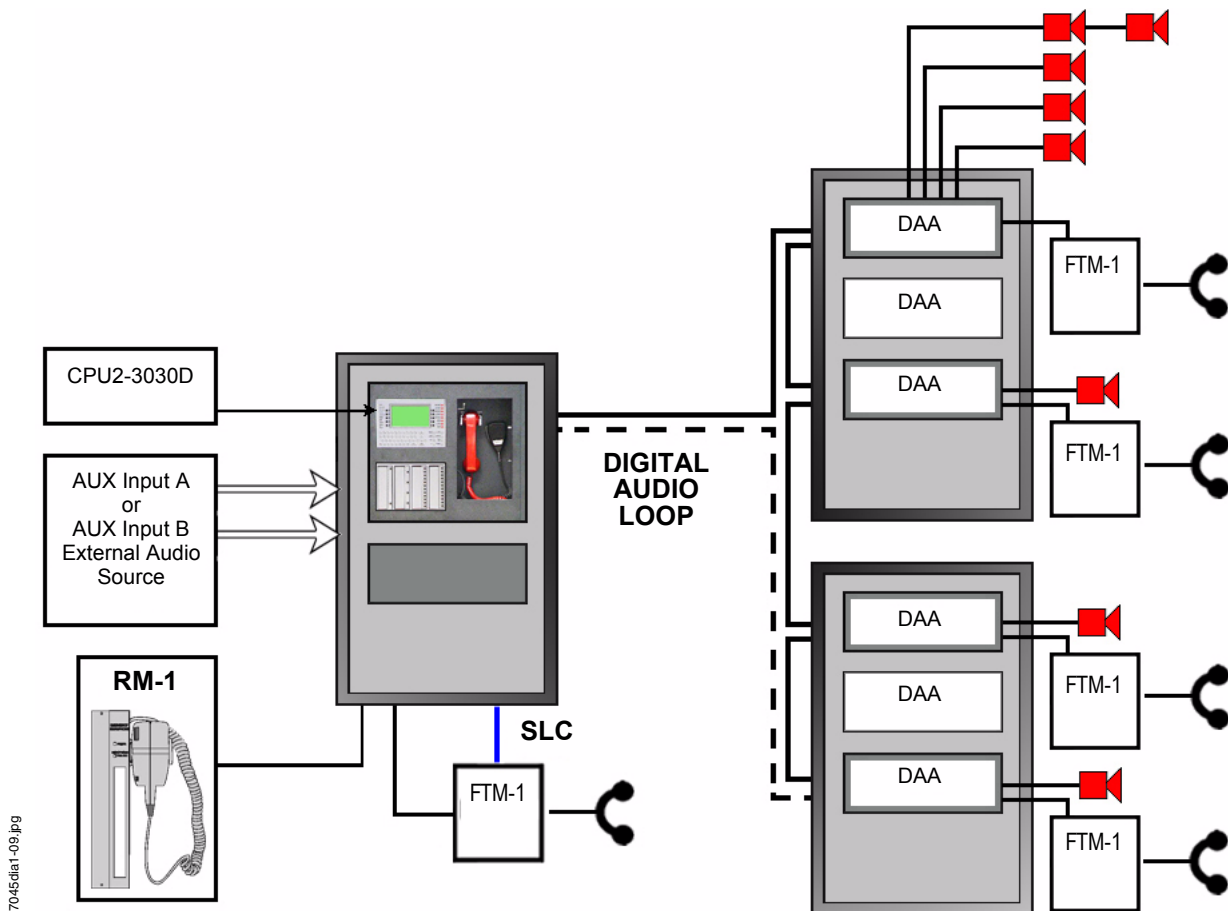
**ACT-25, ACT-70:** Audio-coupling transformers. Used with AA-30 or DAA-series amplifiers to drive thousands of amplifiers in large system applications.

**DAA-5025:** 50W, 25 Vrms Digital Audio Amplifier assembly with DAA-PS power supply board, shipped mounted to its chassis. Supports twisted-pair wire media. See DN-7046. (For multi-mode fiber-optic media order **DAA-5025F**. For single-mode fiber-optic media order **DAA-5025SF**.)

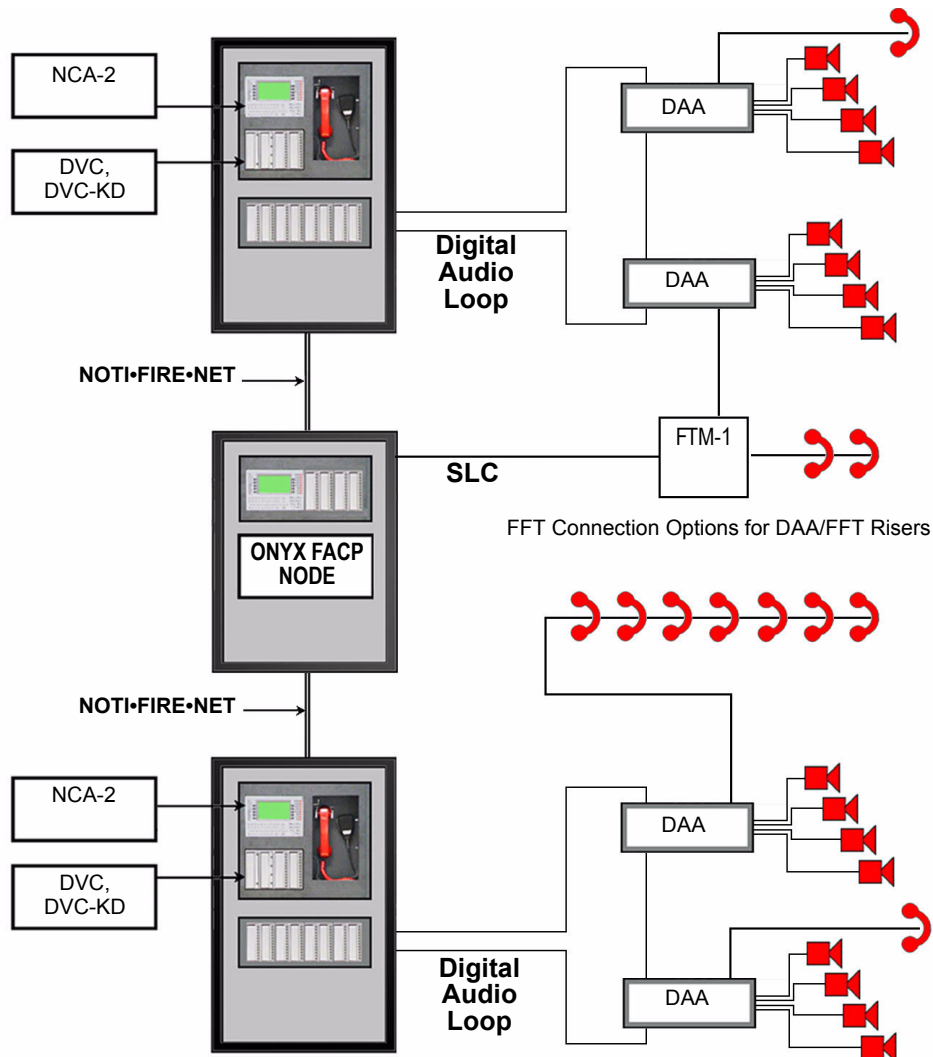
**DAA-5070:** 50W, 70.7 Vrms Digital Audio Amplifier assembly with DAA-PS power supply board, shipped mounted to its chassis. Supports twisted-pair wire media. See DN-7046. (For multi-mode fiber-optic media order **DAA-5070F**. For single-mode fiber-optic media order **DAA-5070SF**.)

**DAA-7525:** 75W, 25 Vrms Digital Audio Amplifier assembly with DAA-PS power supply board. Shipped mounted to its chassis (no battery charger on DAA-7525 power supply board). Supports twisted-pair wire media. See DN-60257. (For multi-mode fiber-optic media order **DAA-7525F**. For single-mode fiber-optic media order **DAA-7525SF**.)

### Standalone NFS2-3030 with DVC

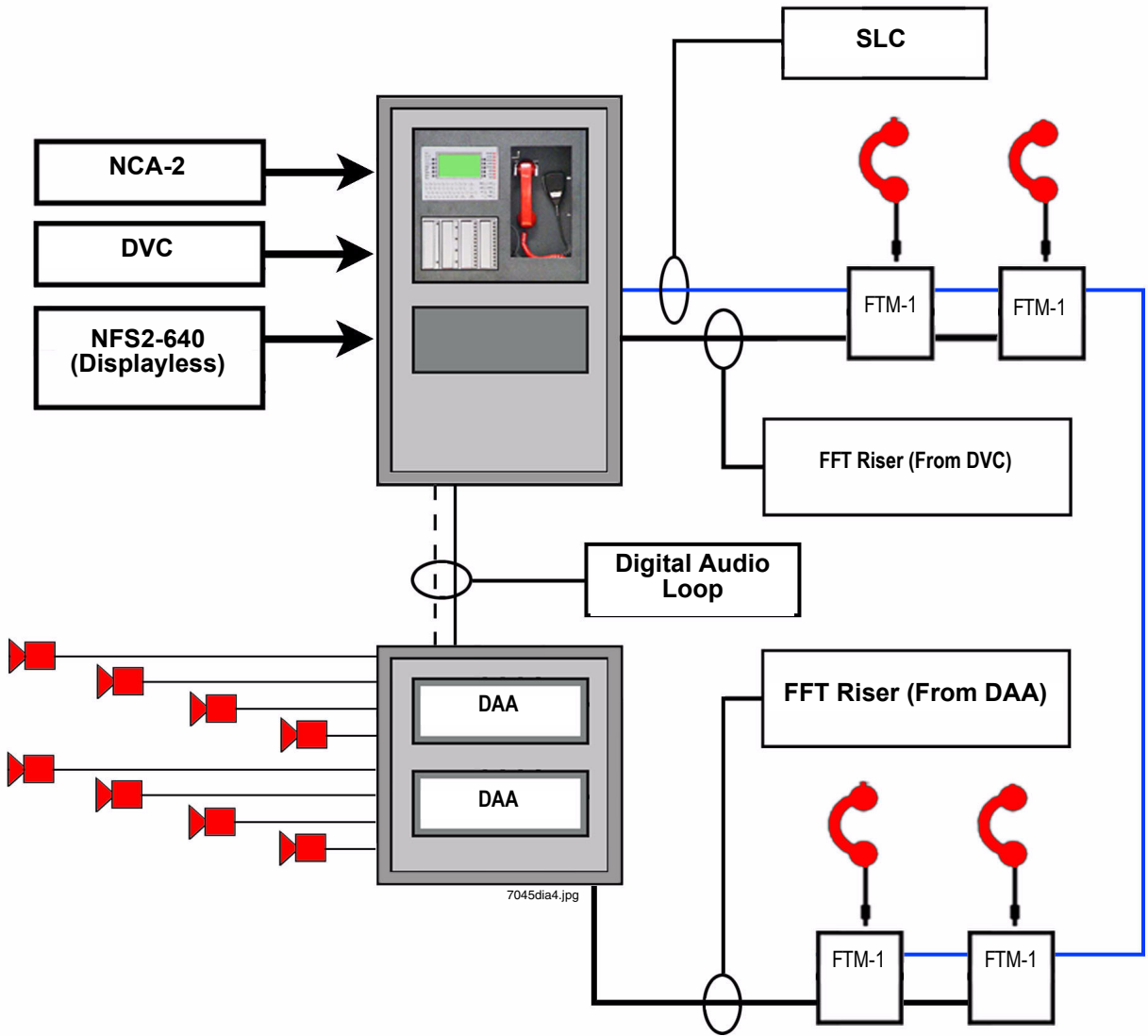


# Networked DVC with NCA-2

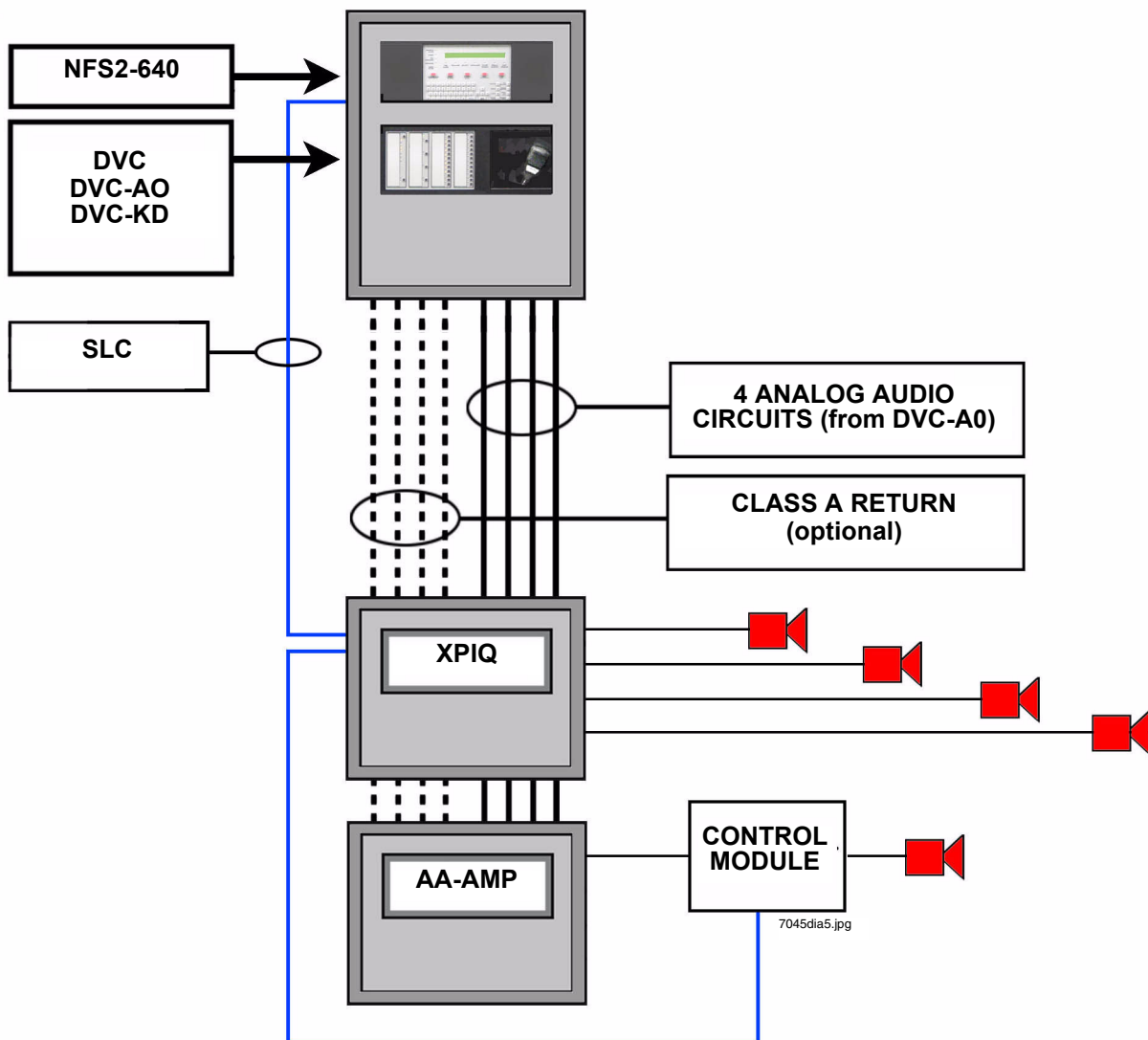


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# Standalone NFS2-640 with DVC



## Standalone NFS2-640 with DVC-AO



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