DVC Series

Digital Voice Command
DVC-EM

NOTIFIER®
by Honeywell

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 Digital Audio Loop (DAL) devices such as DAA2, DAX and DAA series digital amplifiers as well as the DS-DB, each DVC supports a dedicated audio network with up to eight channels of audio, five channels of firefighter telephone communications, and control and supervision for up to 32 DAL devices. The DVC has two wire digital audio ports to connect to wire DAL segments. Either or both ports may be converted to multi-mode fiber or single-mode fiber using fiber option modules. 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 with an NFS2-3030 (running in network monitor mode). A DVC can be connected directly with a single NFS2-640 or NFS2-3030 Fire Alarm Control Panel (FACP) to create a standalone integrated audio solution as well. Refer to the DVC manual for details.

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.*

Features

- Programmable from NUP port using *VeriFire® Tools*.
- 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. Supports single- and multi-mode fiber-optic media when used with fiber option modules.
- 4-channel analog audio supported with optional DVC-AO
- 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 Digital Audio Loop (DAL) devices. Style 4 or 7 configurations supported.
- Optional DS-RFM, DS-FM, and DS-SFM fiber modules may be used to convert one or both Digital Audio Ports for operation with single-mode or multi-mode fiber.
- DCC (Display and Control Center) capabilities when used with optional DVC-KD.
- Firefighters' Telephone Communications to local FFT riser on DVC, 32 local DAL device FFT risers, and FFT communication to additional command stations via **NOTI·FIRE·NET**.
- Local paging microphone option.
- Remote microphone options.
- Optional Digital Voice Command Remote Paging Unit (DVC-RPU), or DVC-RPU mode.

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

- 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$_{p-p}$ analog low-level audio sources. Includes user audio level adjustment feature.
- Auxiliary input accepts external audio sources such as telephone paging or background music. High impedance input accepts 600 ohm, line level, 1.0 VRMS, or 1.41 V$_{p-p}$ low level audio. Selectable AGC, user control of audio level, and audio supervision are supported.
- Associated NCA-2, or NFS2-3030 (programmed for network monitor mode) 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 audio only.
  – NFS2-640 with NCA-2 (NUP to NUP to NUP) digital and analog.
- Push-to-talk relay, or logic argument.
- Isolated alarm bus input, to be used for backup activation of alarm messages in the event network communication is lost.

Installation Options

The DVC provides flexible configurations based on one-row or two-row chassis options that mount into size "B", "C", or "D" CAB-4 Series cabinets.

The CA-2 supports a DVC, paging microphone, optional FFT telephone, and mounting location for an NCA-2 or NFS2-3030D CPU. The ADDR audio door series can be used when a CA-2 is mounted in the top two rows. The CA-1 supports a DVC and an optional microphone in a single row. For firefighters' telephone applications with a CA-1, the CFFT-1 can be mounted in the row below the CA-1.

NOTE: *For NFS2-640/DVC applications using DAL devices, an NCA-2 is required to annunciate DAL device events.*
Refer to the DVC System Audio Product Application Guide (part number M-AG-DVC) for more details on DVC applications).

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 mm²) 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 mm²) 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 media:** (See notes below)
  - **DS-FM and DS-SFM fiber option module (no direct DAA connection)**:
    - *6.5dB maximum attenuation* for multi-mode with 50/125 micrometer cable @ 1310 nm.
    - *10dB maximum attenuation* for multi-mode with 62.5/125 micrometer cable @ 1310 nm.
    - *30dB maximum attenuation* for single-mode with 9/125 micrometer cable @ 1310 nm.
  - **DS-SFM (single-mode fiber DAA connection):**
    - *17dB maximum attenuation* for single-mode with 9/125 micrometer cable at 1310 nm going **from** the DS-SFM **to** the fiber DAA.
    - *4dB maximum attenuation* for single-mode with 9/125 micrometer cable going **from** the fiber DAA **to** the DS-SFM.
    - *12dB minimum attenuation* going **from** the DS-SFM **to** the fiber DAA.
  - DS-RFM (multi-mode fiber DAA connection):
    - Attenuation going **from** the fiber DAA **to** the DS-RFM:
  - 2dB *maximum attenuation* for multi-mode with 50/125 micrometer cable @ 850 nm for the DS-RFM.
  - 4dB *maximum attenuation* for multi-mode with 62/5/125 micrometer cable @ 850 nm for the DS-RFM.
    - Attenuation going **from** the fiber DS-RFM **to** the fiber DAA:
  - 12dB *minimum* attenuation*, 16dB for both cable types.
    Notes:
    1. If the length of the fiber run results in an attenuation of less than 12dB, a suitable attenuator must be used.
    2. ST® Style connection required at DAA end of any fiber connection. LC style connectors are required for the DS-FM, DS-RFM, and DS-SFM.
- **Auxiliary input A (AUX A, TB4)**: Signal strength from low-level analog audio input: maximum 1.0 VRMS, or 1.41 $V_{p\text{-}p}$. Optional supervision is selectable through programming. Recommended wiring: 18 AWG (0.821 mm²) twisted-pair; max. 14 AWG (2.08 mm²). Auxiliary input must be in the same room as the DVC.
- **Auxiliary input B (AUX B, TB14)**: Signal strength from low-level analog audio input: 12 $V_{p\text{-}p}$ nominal, 15 $V_{p\text{-}p}$ maxi-

mum. Optional supervision is selected through programming. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm²) twisted-pair.
- **Remote microphone interface (TB9)**: Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm²) 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 mm²) twisted-pair.
- **Alarm bus (TB12)**: Power-limited by source. Recommended wiring: 14 to 18 AWG (2.08 to 0.821 mm²) 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 mm²) to last handset.
- **Optional DVC-AO analog audio output circuits (TB5, TB6, TB7, and TB8)**: Supervised, power-limited outputs. Signal strength: +12 $V_{p\text{-}p}$ nominal, +15 $V_{p\text{-}p}$ maximum. Recommended wiring: 18 AWG (0.821 mm²) twisted-pair; max. 14 AWG (2.08 mm²). Maximum impedance: 66 ohms.

Standards and Codes

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

- NFPA 72 2002 National Fire Alarm Code.
- Underwriters Laboratories Standards UL 864, 9th edition, and UL 2572.
- 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 and DVC-EM 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**: S635.
- **ULC Listed**: S635.
- **FM Approved.**
- **CSFM**: 7165-0028:0224 (NFS2-3030); 7165-0028:0243 (NFS2-640).
- **FDNY:** COA#6114 (NFS2-3030): COA#6085, COA#6121 (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. Options: DS Fiber modules, DVC-RPU.*

DVC-RPU: Digital Voice Command Remote Paging Unit. Includes the keypad/display. Supports twisted-pair wire media; use DS fiber modules for fiber media. *See DN-60726.*

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.

CFFT-1: The CFFT-1 Chassis for Firefighters' Telephone mounts in the row directly under a DVC that is mounted in a CA-1 single row chassis. The CFFT-1 includes one FFT handset. The DP-CFFT Dress Plate (separately ordered, required) has one open position for mounting an ACS annunciator or a BMP-1 Blank Module Plate.

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: Firefighters' 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 a CA-2 chassis mounted in the top rows. 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 DN-6857.*

ADDR-C4: Three-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. 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 DN-6857.*

ADDR-D4: Four-tier-sized door designed for use with a CA-2 chassis mounted in the top rows. 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 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 for 25V and 70V high-level audio. Used to isolate and convert high-level audio to low-level, supporting applications with large numbers of analog amplifiers.

DAX-3525(E)/DAX-3570(E): 35W, 25 or 70.7VRMS. Digital audio amplifiers with charging power supply and 2 Class B or 1 Class A output, shipped mounted on chassis. Options: BDA-25/70 backup amplifier, DS Fiber modules.

DAX-5025(E)/DAX-5070(E): 50W, 25 or 70.7VRMS. Digital audio amplifiers with power supply and 2 Class B or 1 Class A output, shipped mounted on chassis. Options: BDA-25/70 backup amplifier, DS Fiber modules.

DAA2-5025(E)/DAA2-5070(E): 50W, 25 or 70.7VRMS. Digital audio amplifiers with charging power supply and 4 Class B or 2 Class A outputs, shipped mounted on chassis. RM-1 port, FFT port, Aux audio port. Supports optional BDA for backup amplifier or 2-channel operation, and DS Fiber modules.

DAA2-7525(E): 75W, 25VRMS. Digital audio amplifiers with power supply and 4 Class B or 2 Class A outputs, shipped mounted on chassis. RM-1 port, FFT port, Aux audio port. Supports optional BDA for backup amplifier or 2-channel operation, and DS Fiber modules.

DS-DB: Digital Series Distribution Board, provides bulk amplification capabilities to the DVC while retaining digital audio distribuition capabilities. Can be configured with up to four DS-AMPs, supplying high-level risers spread throughout an installation. *See DN-60565.*

DS-AMP/E: 125W, 25 VRMS, or 100W, 70VRMS. 70VRMS requires DS-XF70V step-up transformer. Digital Series Amplifier, part of the DS-DB system. *See DN-60663.*

DS-BDA: Digital Series Backup Digital Amplifier, 25 or 70VRMS, can be configured to act as a one-to-one backup for DS-AMP/E amplifiers. Can also be programmed to provide a second audio channel for a DS-AMP. *See DN-60663.*

BDA-25, BDA-70: Backup Digital Amplifier, 25 or 70.7VRMS, can be configured to act as a one-to-one backup for DAX and DAA2 series amplifiers. For DAA2 Series only, supports alternative second channel operation.

DS-RFM, DS-FM, DS-SFM: Fiber conversion modules for *DVC*, DS-DB distribution board, and DAX and DAA2 Series amplifiers. *See DN-60633.*

DAA Series Digital Audio Amplifiers: Legacy DAA Series amplifiers are compatible with DVC systems running SR4.0. For DAA-50 series amplifiers, see DN-7046. For DAA-7525 Series, see DN-60257.

- **DAA-5025:** 50W, 25Vrms Digital Audio Amplifier assembly with DAA-PS power supply board, shipped mounted to its chassis. Supports twisted-pair wire media. *(For multi-mode fiber-optic media order DAA-5025F. For single-mode fiber-optic media order **DAA-5025SF**.)*
- **DAA-5070:** 50W, 70.7Vrms Digital Audio Amplifier assembly with DAA-PS power supply board, shipped mounted to its chassis. Supports twisted-pair wire media. *(For multi-mode fiber-optic media order DAA-5070F. For single-mode fiber-optic media order DAA-5070SF.)*
- **DAA-7525:** 75W, 25Vrms 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. *(For multi-mode fiber-optic media order DAA-7525F. For single-mode fiber-optic media order **DAA-7525SF**.)*

SEISKIT-CAB: Seismic kit for CAB-4 series cabinets. Includes battery bracket for two 26AH Power Sonic batteries and TELH-1 telephone handset strap. See document 53829.

SEISKIT-DAA: Seismic kit for DAA, DAA2 and DAX series amplifiers, required when using CHS-BH1 chassis. Includes battery bracket for two 12AH Power Sonic batteries. See document 53851.

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