



The **DVS-25/50** Series Voice Evacuation Control Panel (VECP) contains a state-of-the-art, high efficiency power amplifier for use in life safety applications. The **DVS-25/50** includes features and options that are designed to provide outstanding performance and reliability while allowing simple installation.

The **DVS-25/50P** is connected directly to the 120VAC with its integral power supply, and backup battery charger.

While the **DVS-25/50** is used in conjunction with, a UL listed power supply.

Both require a Fire Alarm Control Panel (FACP) Notification Appliance Circuit (NAC) for activation and supervision.

Power Supply Connections:

DVS-25/50P - with Integral Power Supply: (TB1 1H, 2N, 3G)

The DVS-PS (AU-340-P) is mounted to the left of the main pc board. This supplies the 24VDC for the audio system with Battery Backup and charging. The 120VAC input connections are at the upper part of the power supply. The three-position terminal block is connected left to right with Hot, Neutral, and Ground wires. The AC-Power wiring must be kept at least 1/4" away from all 'Power-Limited' (NAC, speaker) wiring. A separate enclosure knockout is provided above the terminal block for these wires. In ALL applications, using the DVS-PS, a pair of 12V-7AH batteries is required to be connected to the Backup-Battery wires (Orange+, Gray-) to provide power for the system should the AC-Power fail.

See the *Application Note - DVS Battery Calculation Guide* for specific Standby/Alarm time requirements.

DVS-25/50 - with External Supply: (JP1 1+, 2-)

An external Listed - Battery Backed up Power Supply can be used with the **DVS-25/50**.

The connection for the 24VDC Power is JP1, at the bottom-center of the **DVS-25/50** board.

JP1-1 (on the right) is the connection for the positive (+) power wire, JP1-2 (left) wires to the negative (common).

Double check connections as reversed power wires could result in non-warranted damage.

To provide for the Battery-Saver function of the **DVS-25/50**, the external power supply's AC-fail trouble (NC) contacts should be connected to the JP6 pins 3 & 4. If the external power supply's AC-Fail indicator (NC contacts) aren't used then the JP6-3&4 connections need to be jumped and the standby current in the formula goes from 0.08A to 0.20A.

See the *Application Note - DVS Battery Calculation Guide* for specific Standby/Alarm time requirements.

NAC Connections: (JP8 1-, 2+)

The **DVS-25/50** is activated and supervised by a 9-30VDC polarity-reversing supervised continuous (non-coded) NAC connection from the FACP. This should be a dedicated NAC for the 'Audio System' only.

However, to accommodate limited NAC output FACPs, the **DVS-25/50** is equipped with a 'pass-through' NAC connection.

This allows the attachment of up to 5Amps of strobe-light load to be connected after the DVS-25/50 NAC input.

Note: The **DVS-25/50** does *NOT* supply any strobe power, the JP8 connections will 'pass-through' the power from an external (NAC) power source to the strobes, but will *NOT* source the power. Sync-modules need to be placed *AFTER* the DVS.

The primary NAC connections are on JP8, with the positive (in-alarm) wire from the FACP on the JP8-2 terminal and the negative on the JP8-1 terminal. The FACP-EOLR is attached to the JP8-3&4 terminals, or in the case of a 'pass-through' connection, in the last strobe-light on the loop.

Speaker Circuit Connections: (OUT1 1+, 2-)

The **DVS-25/50**, provides for up to 4 supervised, power-limited speaker circuits. The **DVS-25** provides 25Watts to any one output or combination of outputs not exceeding 25Watts total. The **DVS-50** will provide up to 25Watts on two outputs (OUT1 & OUT2), or up to 25Watts combined at OUT1 & OUT4, and up to 25Watts total at OUT2 & OUT3.

All Outputs have 'Class B' (two wire) outputs on terminals 1+ and 2-, with 'Class A' (four wire) returns on terminals 3-, and 4+. Each output is independently supervised for shorts and/or opens, but power limiting is shared between common alarm outputs, 1&2&3&4 for the **DVS-25**, with the **DVS-50** having shared outputs 1&4 on one amp, and 2&3 on the other.

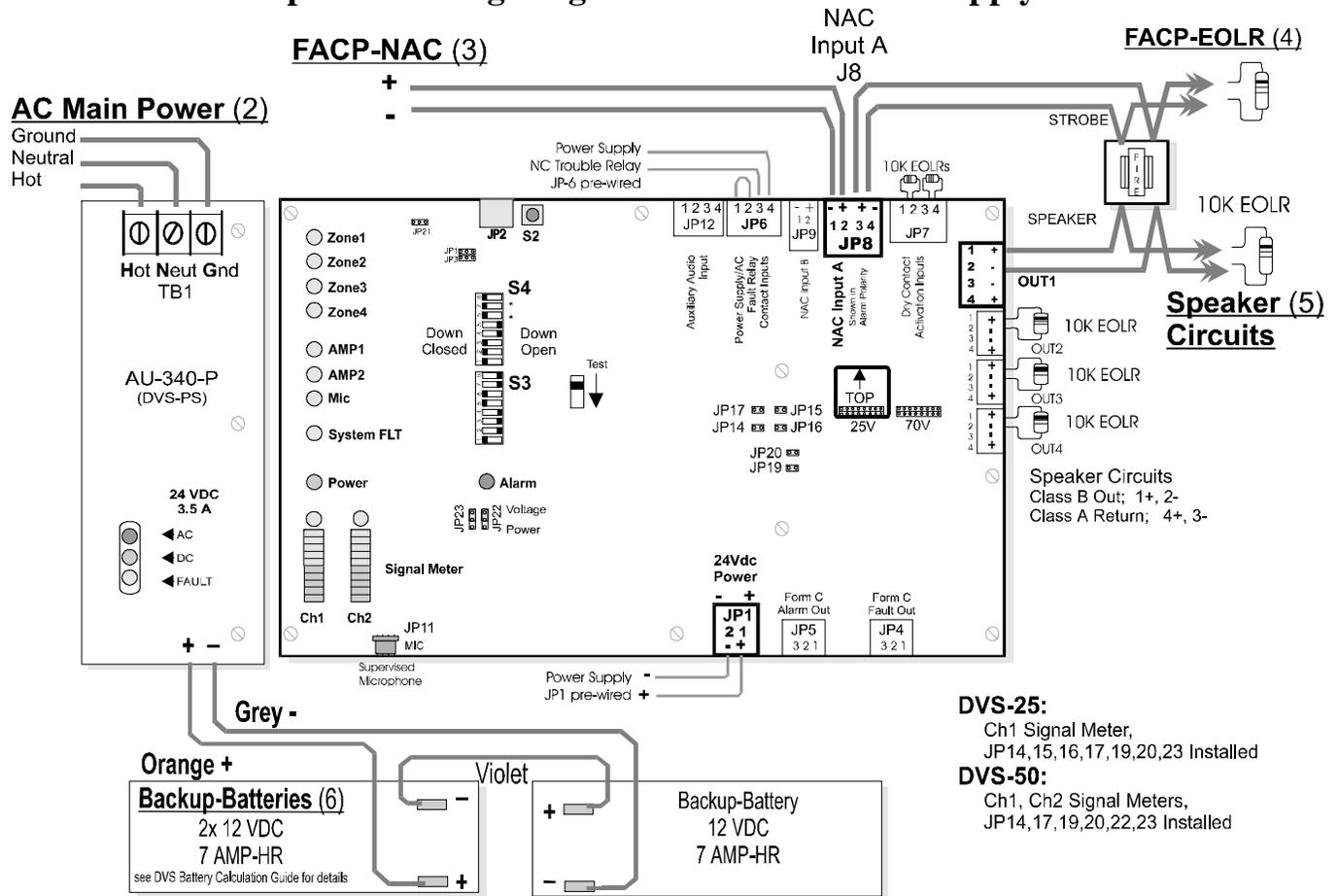
Tone Selection:

As shipped from the factory, the **DVS-25/50** will broadcast the Slow-Whoop alarm tone for 7 seconds, then send the pre-recorded message, and return to the tone for another 5 seconds before going back to the message. This sequence repeats 3 times, then continues with the tone until the NAC input is reset.

Tests have proven that the Slow Whoop tone is more effective at getting peoples attention, especially in noisy situations.

The NFPA has set the Temporal (Code 3) pattern as the 'standard'. To set the tone to the Temporal pattern, all that needs to be changed is the position of the **S4 switches 6 & 7** from Closed (pushed down on the left) to **Open** (pushed down on the right).

DVS-25/50-P Simplified Wiring Diagram – Internal Power Supply



Installation Steps:

Do NOT change settings or jumpers until system is operational, the DVS is fully tested and will work out-of-the-box. See 'Final-Setup' section to change system configuration.

✂✂✂

✂✂✂ 1 Mount; Cabinet to wall

Surface: 16" on center keyed holes
Semi-Flush: 14-1/2"H x 18 3/4"W opening

✂✂✂ 2 Connect; AC to 3 position terminal strip in Power Supply (AU-340-P)

✂✂✂ 3 Connect; NAC circuit (polarity reversing, supervised, non-coded) to JP8-2+, JP8-2-

✂✂✂ 4 Connect; FACP-EOLR to JP8-3+, JP8-4-,

or 'pass-through' strobe power with FACP-EOLR in last strobe device

✂✂✂ 5 Connect; Speaker Circuits to OUT connectors, OUTx-1+, OUTx-2-,

with DVS-EOLR (10K) in last speaker device

✂✂✂ 6 Apply: AC power and Connect Batteries to DVS,

and verify 'System Normal' by Green Power LED, with no Yellow LED's and Signal Meter(s) in center of display

✂✂✂ 7 Press: PTT switch on side of Microphone, and verify Paging function

✂✂✂ 8 Move: Test switch down to test position, and verify Alert Tone, and Evac-Message

✂✂✂ 9 Press: PTT switch on side of microphone, and verify Local Audio override function, then move Test switch up

✂✂✂ 10 Test: Supervision, by removing Speaker connectors, and verify Troubles reported in DVS and FACP

Final Setup

Speaker Voltage Selection: The output voltage is changed from 25 to 70.7VRMS

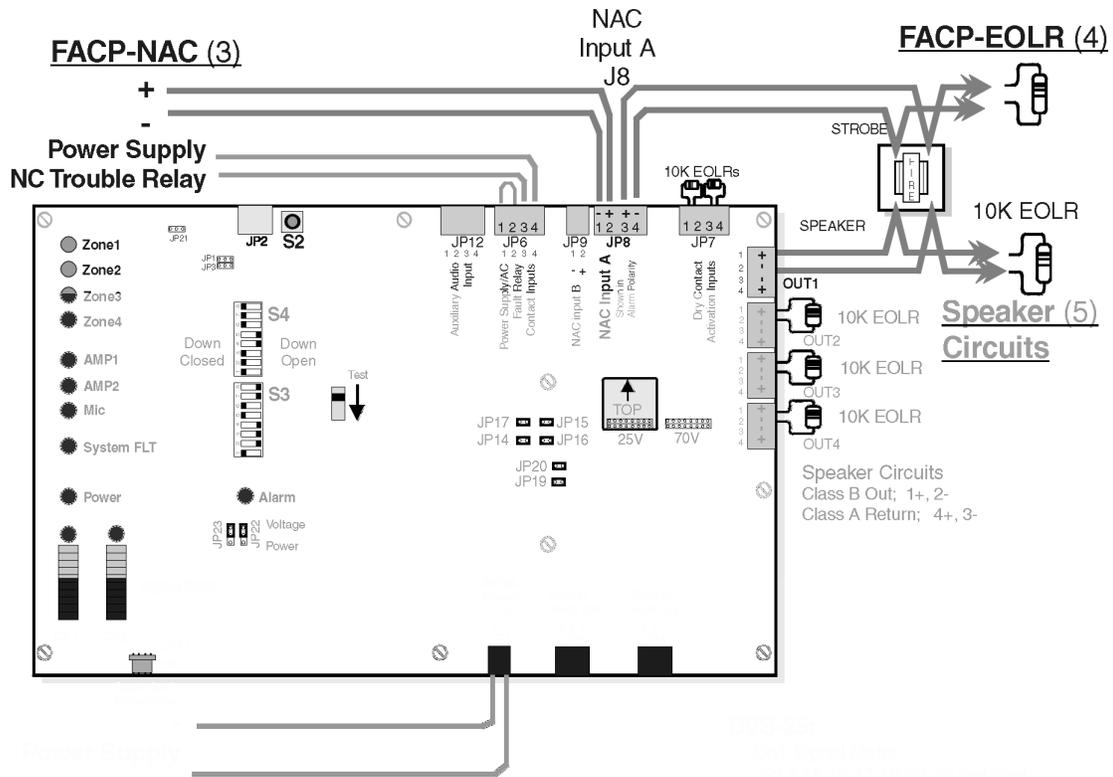
by moving the jumper board from 25V to 70V, while keeping the Top arrow pointed up.

Tone Selection: The 'Temporal Code' is selected by changing S4-6*, 7* to open (pushed down on right)

Initial and Intermediate Tone Times can be varied and set according to the chart in the manual.

NO Jumpers need to be moved.

DVS-25/50 Simplified Wiring Diagram – External Power Supply



Installation Steps:

Do NOT change settings or jumpers until system is operational, the DVS is fully tested and will work out-of-the-box. See 'Final-Setup' section to change system configuration.

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⚡⚡⚡ 1 **Mount; Cabinet** to wall

Surface: 16" on center keyed holes

Semi-Flush: 14-1/2"H x 18 3/4"W opening

⚡⚡⚡ 2 **Connect; 24 VDC Power** to JP1 1+, 2- from a listed, battery backed up Power Supply

⚡⚡⚡ 3 **Connect; Power Supply Trouble Contacts** (Normally Closed) to JP6 3,4

If no NC Contacts are available, jumper JP6 3&4 (Battery-Saver function disabled, see first page)

⚡⚡⚡ 4 **Connect; NAC circuit** (polarity reversing, supervised, non-coded) to JP8-2+, JP8-2-

⚡⚡⚡ 5 **Connect; FACP-EOLR** to JP8-3+, JP8-4-,

or 'pass-through' strobe power with FACP-EOLR in last strobe device

⚡⚡⚡ 6 **Connect; Speaker Circuits** to OUT connectors, OUTx-1+, OUTx-2-,

with DVS-EOLR (10K) in last speaker device

⚡⚡⚡ 7 **Apply: Power** to DVS,

and verify 'System Normal' by Green Power LED, with no Yellow LED's and Signal Meter(s) in center of display

⚡⚡⚡ 8 **Press: PTT** switch on side of Microphone, and verify Paging function

⚡⚡⚡ 9 **Move: Test** switch down to test position, and verify Alert Tone, and Evac-Message

⚡⚡⚡ 10 **Press: PTT** switch on side of microphone, and verify Local Audio override function, then move Test switch up

⚡⚡⚡ 11 **Test: Supervision**, by removing Speaker connectors, and verify Troubles reported in DVS and FACP

Final Setup

Speaker Voltage Selection: The output voltage is changed from 25 to 70.7VRMS

by moving the jumper board from 25V to 70V, while keeping the Top arrow pointed up.

Tone Selection: The 'Temporal Code' is selected by changing S4-6*, 7* to open (pushed down on right)

Initial and Intermediate Tone Times can be varied and set according to the chart in the manual.

NO Jumpers need to be moved.



The **DVS-25/50 Series Voice Evacuation Control Panel (VECP)** contains a state-of-the-art, high efficiency power amplifier for use in life safety applications. The **DVS-25/50 Series** includes features and options which provide outstanding performance and reliability while allowing simple installation. The **DVS-25/50P** can operate stand alone with its integral power supply. While the **DVS-25/50** is used in conjunction with, a UL listed power supply.

Active Current requirements:

The **DVS-25** requires a maximum current of 1.5 Amps from a 24 VDC power supply.

A fully loaded 50-Watt **DVS-50** will draw 2.8 Amps from the supply.

The built-in power supply of the **DVS-25/50P** will handle **Full** (average and peak) power requirements.

If an external supply is being used, and the current requirements are needed, use the following formula:

$$I = 0.1 + (0.054 \times Pout)$$

Where **I** is the active current draw from the 24VDC supply in Amps.

And **Pout** is the total speaker load in Watts.

Battery requirements:

If the integral power supply is used, the battery selection process is simple, put a pair of **12-Volt 7-AH** sealed lead-acid batteries in the cabinet, connect the wires and you're good-to-go.

This includes all power loads, and all standby time requirements from 24-Hour standby with 5-Minutes of alarm, to 60-Hours and 15-Minutes.

To calculate the exact battery required (if an external power supply is used), use the following formula:

$$C = (0.08 \times 24) + (I \times 0.25)$$

Where **C** is the battery capacity. **I** is the active alarm current calculated from the formula above.

If the external power supply's AC-Fail indicator (NC contacts) aren't used then the standby current in the formula goes from 0.08 to 0.20.

The above formula is for a **24-Hour** standby with **15-Minutes** in alarm, the old VECP standard. For different times, substitute the Standby time for the 24, and the Alarm time for the 0.25 (in hours).

Note:

Since the NFPA-72 1996 edition, the requirement for the 15-minute alarm may be reduced to 5 minutes.

“Where. . . used to notify all occupants automatically and simultaneously to evacuate the. . . premises. . .”

This change ('96' 3-12.5.2 / '99' 3-8.4.1.3.4.2), benefits the majority of the DVS-25/50 uses.

The following chart shows the Backup Battery AmpHour requirements for various DVS systems (assuming maximum power), and Standby / Alarm times.

With integral supply(int.supply), external supply (ext.supply), and external supply (ext.no.battsaver) without AC loss sensing

Standby/Alarm Hrs / Mins	DVS-25P	DVS-25	DVS-25	DVS-50P	DVS-50	DVS-50
	int.supply	ext.supply	ext.no.battsaver	int.supply	ext.supply	ext.no.battsaver
24 / 5	2.4	2.1	5.0	2.5	2.2	2.5
24 / 15	2.6	2.4	5.2	2.9	2.7	5.6
60 / 5	5.6	5.0	12.2	5.7	5.1	12.3
60 / 15	5.8	5.2	12.4	6.2	5.6	12.8