DAPB-100
Audio Power Booster
Installation Sheet

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Description

The DAPB-100 is an audio power booster/expander which allows an existing 25v or 70v audio system to be expanded to provide additional audio power output and additional speaker circuits. Each DAPB-100 unit can add up to 100watts of audio power and up to 4 speaker circuits to and existing installation. The DAPB-100 simply connects to an existing 25Vrms or 70Vrms speaker circuit and uses a standard reverse polarity NAC circuit input for activation. The DAPB-100 can also be activated by a single dry contact closure.

Audio
The DAPB-100 connects to a standard supervised speaker circuit and can be configured for 25 or 70Vrms using an on-board jumper. Regardless of the input audio level, the output audio level of the DAPB-100 is always 25Vrms and requires a transformer to step up the audio level to 70Vrms. Please refer to SIG-70V-XFMR data sheet for additional information.

Control
Activation control of the DAPB-100 is normally from a listed voice evacuation panel or a listed fire alarm control panel. In either case, for fire alarm applications, the controlling system must have the capability of supervising the wiring to the DAPB-100.
The DAPB-100 can be activated by contact closure or by reverse voltage NAC input.

Voltage Control
The voltage control is recommended for all applicants and can be from a listed FACP.
Voltage control allows longer cabling between the Primary and Secondary DAPB-100 units and is the recommended control method for all installations.
The NAC output supervises the control wiring and the DAPB-100 repots faults by opening the EOLR.

Contact Closure
Contact Closure is generally used when the DAPB-100 panels are located close to the Primary panels. Supervision of the writing and the DAPB-100 is via the speaker circuit and is reported back to the Primary panel as a Speaker Circuit Fault.

Specifications

AudioInput	25VRMS Speaker Circuit
	25K Impedance, 0.025W loading
	70VRMS Speaker Circuit
	70K Impedance, .07W loading
Control Input	Voltage, Polarity Reversal, Supervised
	10K Impedance, 9 to 30VDC
or	
	Contact Closure, Supervised
	10K EOLR, 100ohms max wire resistance
Output	
Audio Power	100Watts
Audio voltage	25VRMS (70VRMS with MNS-70V-Xfmr option)
Speaker Circuits	4 Class A or B, Power Limited, Supervised

Connections

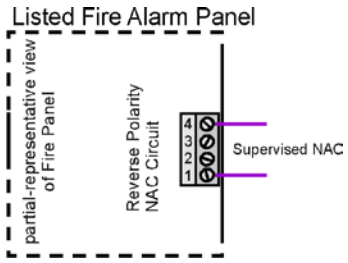
Voltage Control

Primary	Secondary
Speaker Output **1**	J8 pin 2
Speaker Output **2**	J8 pin 1

Speaker EOLR across J8 pins 1 to 2

Voltage output + J4 pin 1
Voltage output - J4 pin 2
Alarm polarity voltage shown

Supervisory EOLR across J4 pins 3 to 4
Supervision via Activation circuit



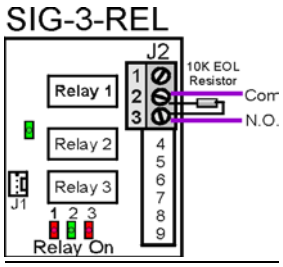
Contact Closure Control (Relay)

Speaker Circuit Supervision

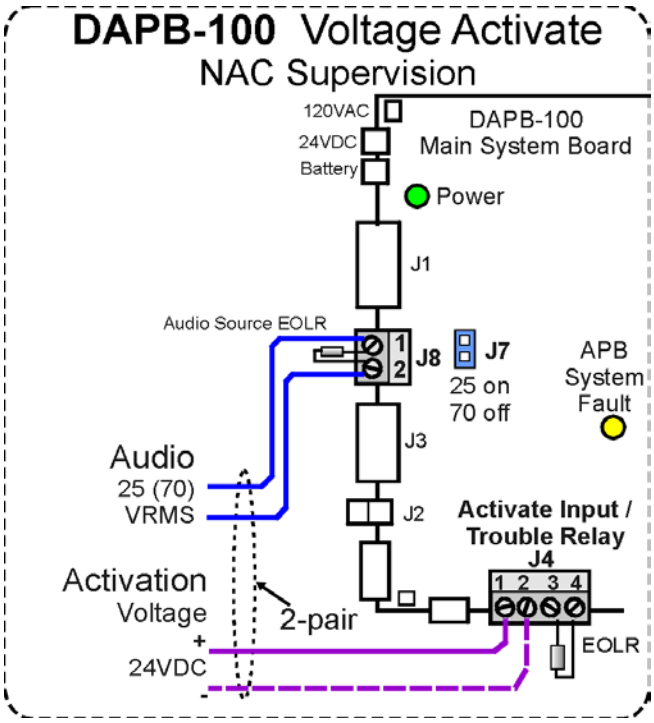
Primary	Secondary
Speaker Output **1**	J4 pin 4
Speaker Output **2**	J8 pin 1
	J4 pin 1 to J8 pin2

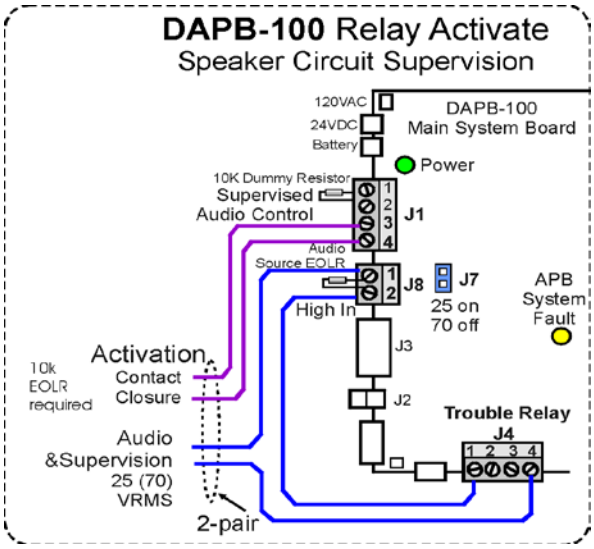
Speaker EOLR across J8 pins 1 to 2

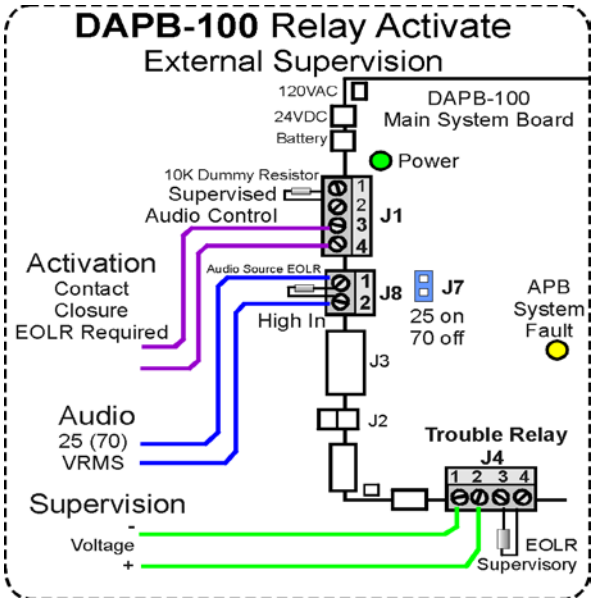
Contact **Com**mon J1 pin 3
Contact **N.O.** J1 pin 4
10K EOLR across Contact C to N.O.
Supervision via Audio/Speaker circuit



External Loop Supervision
Connect Activation; same as Contact Control
Connect Audio, same as Voltage Control
Connect Supervision; across J4-1 to J4-4
Supervision via External loop circuit

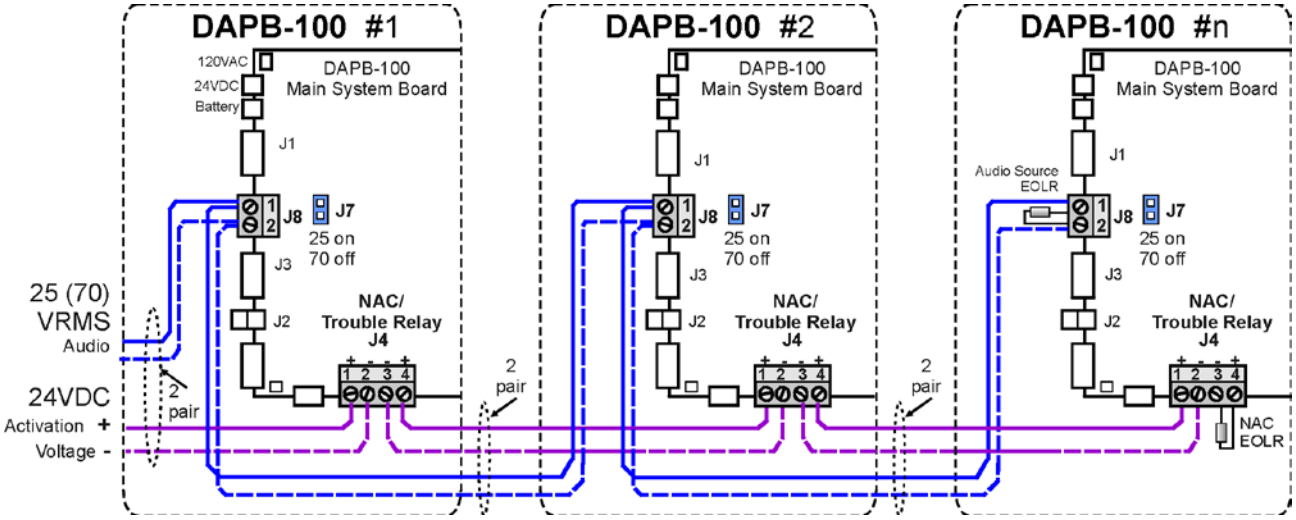






More than one DAPB-100

If the system requires 200Watts or more of total power output, additional DAPB-100s can be used. The additional DAPB-100s are daisy chained from the primary cabinet. More than one speaker and voltage output from the primary can be used to provide multiple path (star configuration) if needed.



Audio

The audio input is from a standard 25/70Vrms speaker circuit. The additional DAPB-100s have their audio paralleled onto the previous unit's inputs, with the last DAPB-100 containing the EOL Resistor for supervision of the wiring. 'Tapping' into an existing speaker circuit is acceptable as long as proper supervision is maintained. Use of a dedicated audio circuit is recommended for ease of documentation, future circuit tracing and trouble shooting.

Activation

The activation voltage is routed in and out of the J4 Inputs of each DAPB-100, with the EOLR in the last.
J4 Active polarity voltage Input is 1 positive, and 2 negative. The continuation of the activation is the J4 output with 3 being negative and 4 positive. If any DAPB-100 goes into Fault, it will open the Trouble contact in J4 and open the supervision circuit which will cause a fault condition at the supervising panel. If during this trouble, the system is activated, the Trouble Contact will re-close to continue the activation signal down the chain of DAPB-100s.

70VRMS Option

Jumper J7, shown in the diagram above, must be configured for the audio input level (25v or 70v). Otherwise damage could occur. Jumper J7 is removed if the input is 70V and installed across the 2 pins for 25V inputs.
Regardless of the input level, the output of the DAPB-100 is always 25Vrms unless a SIG-70V-XFMR 70v transformer is used.

Adding the SIG-70V-XFMR to the DAPB-100 will convert all 4 outputs to 70Vrms. A separate transformer is required for each DAPB-100 that requires a 70V output.
Follow Installation Instructions (#1000-0831-G, SIG-70V-XFMR) for 70Vrms output configuration.