

Description

The DAPB-100 is an audio power booster/expander 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 an existing installation. Multiple DAPB-100s can be added for additional power and/or speaker circuits.

1. System Configuration

The DAPB-100 system is a self-contained cabinet that can be surface mounted or fit between standard studs.

2. System Installation

The cabinets can be surface or semi-flush mounted. All can fit between standard 16" on center (OC) studs, with mounting holes in the corners that accept up to #8 utility or wood screws. There are numerous knockouts that provide a pathway for the field wiring into the cabinets.

- For semi-flush mount installations, the rough openings are 14-3/16"W x 18-5/8"H and 4" deep. There is about a 1" reveal that will protrude into the occupied area.
- If surface mounting is required, there are 2 Key-holes at the top that accept #8 utility screws to help hang the cabinet, with 2 holes near the bottom to secure the cabinet to a solid surface such as 2x4 studding, backboard, rails or a dry cement block / brick wall.

It is intended for indoor, dry locations only, with an environment of 32 to 120 degrees F, and 90% humidity non-condensing maximum. Care must be taken to avoid water infiltration or condensation. Do not mount directly on an exterior wall that could enhance condensation, use of a back board or rails is recommended.

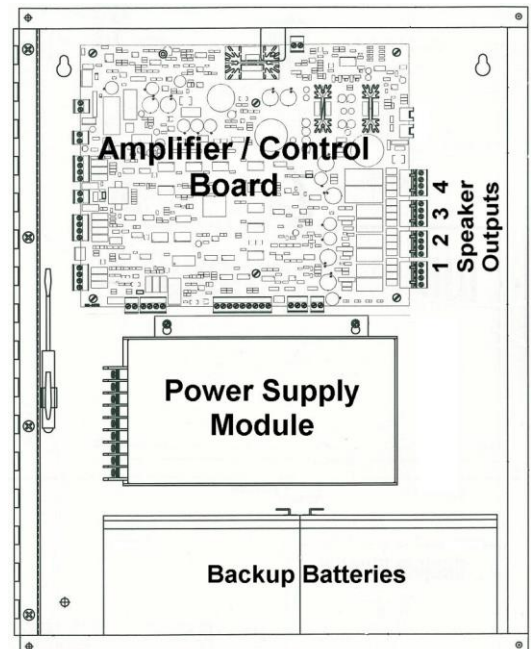
3. Power Supply Connections

All high voltage and low voltage wiring must be completed in accordance with NFPA, NEC, local code standards and requirements, and others as directed by your AHJ.

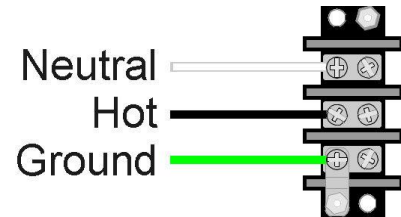
Non-Power-Limited wiring (120VAC, battery connections, and external N.P.L. wires) must be separated from Power-Limited wiring by at least 1/4", and run in separate conduits and through separate knockouts.

The primary (AC) power must be from a dedicated branch circuit, labeled to indicate that is part of the Fire Alarm or Emergency Communication System.

Use 14AWG minimum to connect the 120V, 5A 60Hz AC service to the panel, onto the terminal strip provided on the lower left side of the cabinet.



- Remove the plastic protective cover from the terminal block
- Connect the Neutral, Hot (line), and Ground from the AC circuit to the terminal block
- Replace the cover over the terminal block



AC supply, Non-Power-Limited wiring
Must be separated from Power-Limited wiring by 1/4" and wired using separate knockout.
Connect AC supply with over current protection using 14AWG (min) wire rated for 600V.
Connect the Ground terminal to a good earth ground.

4. System Connections

4.1 Input Connections

J4 NAC Activation Input: The primary activation input connection for the DAPB-100 inputs is the Reverse-Polarity supervising Notification Appliance Circuit (NAC) input. This input needs to be 10-30VDC, steady, non-coded, without synch-pulses. Connections to the existing system are described in the DAPB-Installation Sheet in detail.

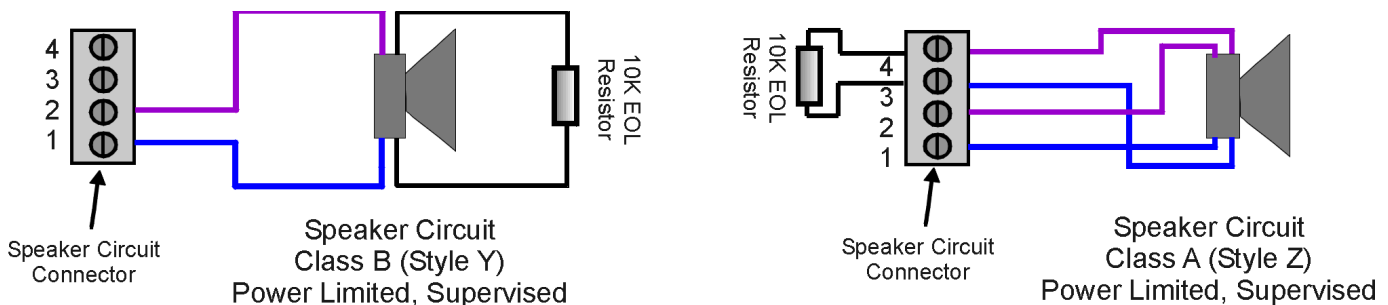
J8 High Level Audio Input: A high level (25V or 70VRMS) input such as a speaker line is connected to J8. This input is transformer isolated to reduce grounding issues. The 25/70 VRMS selection jumper is J7, is between J8 and isolation transformer. Install the J7 jumper for 25VRMS, or remove for 70VRMS depending upon system requirements.

Note: Be sure to remove the J7 jumper in 70V systems as failure to do so can over-drive and damage the amplifier.

This does NOT set the outputs for 70V, only the input sensitivity.

4.2 Output Connections

Whether there is one or multiple speaker circuits connected to the DAPB-100, all connect the same way. The Speaker outputs can be connected either Class-B or Class-A, without loss of any zones or circuits.



There are four Speaker Circuits (Zones) on the main board of the DAPB-100. Output circuits 1, 2, 3, and 4 correspond to J14, 16, 18 and 19 respectively on the lower-right side of the board.

On these connections, the pin 1 is the positive (+) output.

There is an approximate 10 to 13VDC between pins 1 and 2 at all times, with the 10K EOLR attached. This is the supervision voltage, and is present during standby, supervisory mode or in alarm activated. During Alarm-Active condition, this DC voltage may be difficult for some Digital Multi-Meters (DMM) to read with the audio AC at the same time.

For Class-A connections, the return pins are 3 and 4, with 3 being the positive (+) connection. The 10K EOLR must be placed in the connector with the return wires.

4.3 70VRMS Output

Jumper J7, described 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.

5. Indicators

The Amplifier-Controller Board includes 3 LED indicators that are visible through the front panel.

The **GREEN** LED is a "**Power**" indicator that shows the presence of the 24VDC power input.

The **YELLOW** LED is a common "**System Fault**" indicator that turns on as a result of any fault in the system.

The **RED** LED serves two purposes.

It is an indication that the system is "**Active**" when it is on solid, or it can flash to represent a **code** for a fault condition.

When the "System Fault" LED is on, the "**Active**" LED could flash one or more of the codes that are shown in the table below. The code sequence will repeat itself approximately every 6 seconds.

# Flashes	Status
1	AC Fail
2	Low Battery
3	Amplifier Fault
4	Charger Fault
5	Ground or Dry Contact Fault
6	Audio Fault
7	I ² C Fault
8	*LOC Fault
9	*Message Time Out
10	*Input Board Fault
11	*Serial Connection Fault

Note: In addition to the "**System-FLT**" LED, the Controller Board opens the contacts of the System Fault relay which opens the NAC circuit and puts the supervising FACP in a fault condition.

Other Yellow LEDs on the board could light along with the System Fault LED to determine the cause of the fault.

These LEDs are:

- Amp Fault This indicates there is a failure in the Amplifier circuit of the board
- Spkr4 Limit Speaker Circuit (Zone) 4 power output limiting has been exceeded
- RM Fault* The Remote Microphone circuit has lost supervision – contact factory
- Mic Fault* The Local Microphone is either un-plugged or a wire has broken – contact factory
- Aux2 Fault* The Aux 2 Input has lost either audio or contact supervision
- Spkr Faults There are 4 LEDs associated with a fault on each of the Speaker (Zone) outputs
These indicate either a short or open in the speaker circuit wiring

There are 4 Speaker Circuit (Zone) Active Red LEDs that indicate the outputs are activated.

The output audio level is roughly indicated by a 4-LED bar graph. This is in the upper right corner of the board. Each LED corresponds to approximately 25% audio output level.

***NOTE:**

Some indicators, switches, connections, and/or jumpers are not used on the DAPB, but may be described here to provide help if troubles or faults do occur.

6. DAPB-100 Board Layout

